IBM Fiscal Printer
Argentina Model 4610-GR3/GR4 (Macarena)
Programming Guide Supplement
Version 05 01

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Reviewers

Version	Reviewers
All versions	Eduardo Revelli - Argentina Marketing

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Summary of Changes

Changes resulting in document revisions will be summarized in this table in reverse chronological sequence. Revision numbers and letters will highlight the text changed in new document versions.

Version	Date	Change Description
V05 01	Dic 12, 2001	• MACARENA XINGU (Protocol USB - Cable USB) Fiscal Unit Status: was added. • This version of Technical Specification corresponds to microcode EC level 05. Internal microcode version 01.
V04 02	Nov 23, 2001	• 25 cmd. (Ticket Invoice/Credit Note Set Customer Information): the rules were changed. • This version of Technical Specification corresponds to microcode EC level 04. Internal microcode version 02.
V04 01	Nov 19, 2001	• 30 cmd. (Credit Note Print Header): flag FCUSTCN was added. • 30 cmd. (Credit Note Print Header): flag FCUSTSET was eliminated. • 39 cmd. (Credit Note End): flag FCUSTCN was added. • 3A cmd. (Credit Note Cancel): flag FCUSTCN was added. • D58, D59, D60, D61 and M53 msg.: were added. • Daily Entry Table: FM_DE_N_DNFH and FM_DE_N_DNF accumulators were added. • DA cmd. (Electronic Read Fiscal Memory Tables - Read Daily Entry Table): FM_DE_N_DNFH and FM_DE_N_DNF accumulators were added. • The Microcode EC Level will be printed in decimal format. • The Homologated Level will be printed in decimal format. • Microcode EC Level and Homologated Level are replicated on SJ station only when the sale period is been open. • Ticket, Ticket Invoice and Credit Note: 6 ordinary printing lines are allowed. • 2E cmd. (Set General Parameters): default value for Number of Lines To Print in Ticket Invoice and Credit Note is 9999. • This version of Technical Specification corresponds to microcode EC level 04. Internal microcode version 01.
V03 03	Sep 25, 2001	• Fiscal Memory Report: in V.ANT only homologated level (hh) is printed, microcode EC level (ee) was eliminated. • Non-Fiscal Homologated Documents: only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document. • RC 156: was changed. • This version of Technical Specification corresponds to microcode EC level 03. Internal microcode version 03.

9
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Version	Date	Change Description
V03 02	Ago 27, 2001	• The initialization sequence: was changed. • 18 cmd. (Set Fiscal Mode): flag FSETDATE was added. • CA cmd. (Download Graphics): new rules were added. • 2E cmd. (Set General Parameters): notes for cmd. extension 05 were changed. • RC 200: only valid for Macarena Xingu. • RC 203: there are ones for Macarena Xingu and another for Macarena Bobo. • RC 206: was changed. • RC 209: only valid for Macarena Xingu. • This version of Technical Specification corresponds to microcode EC level 03. Internal microcode version 02.
V02 06	Ago 15, 2001	• Serial Number Table: was added. • 1B cmd. (Serialize Fiscal Printer): was changed. • DB cmd. (Electronic Read Counters and Accumulators): transaction counters was changed. • RC 163: was changed. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 06.
V02 05	Jul 24, 2001	• CA cmd. (Download Graphics): was added. • Initialization Download Graphics printouts: were added. • 01 cmd. (Ticket Print Header): was changed. • Ticket Header printout: was changed. • 08 cmd. (Retrieve/Send Interrupted Command): was changed. • RC's 77, 78, 79 and 80: were added. • RC 75 and 105: were changed. • Microcode EC Level Table: was eliminated. • Homologated Level Table: was added. • DA cmd. (Electronic Read Fiscal Memory Tables) - Response to read Microcode EC Level Table: was eliminated. • DA cmd. (Electronic Read Fiscal Memory Tables) - Response to read Homologated Level Table: was added. • Msg. D57: was added. • All printouts: the homologated level was added. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 05.
V02 01	Jul 4, 2001	• E7 cmd. (Diagnostic and Alignment Utilities): acceptable state restrictions were added. • 30 cmd. (Credit Note Print Header): flag FHDRPRT (Ticket Header Printed): was added. • DB cmd. (Electronic Read Counters and Accumulators): Lif_N_RetV_A and Lif_N_RetV_BC were added. • Msg's C32, C33, D16 and D17: were added. • X-Report: new messages lines were added. • Closure Report: new messages lines were added. • Fiscal Memory Report: new messages lines were added. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 01.

Version	Date	Change Description
V01 01	Jun 13, 2001	• 03 cmd. (Item Additional Description): was changed. • E0 cmd. (Ticket Invoice Print Header): was changed. • 30 cmd. (Credit Note Print Header): was added. • 31 cmd. (Credit Note Fixed Price Item Sale): was added. • 32 cmd. (Credit Note Fixed Price Negative Item Sale): was added. • 33 cmd. (Credit Note Item Sale): was added. • 34 cmd. (Credit Note Negative/Uplift Item Sale): was added. • 35 cmd. (Credit Note Subtotal/Total): was added. • 36 cmd. (Credit Note Global Perception): was added. • 37 cmd. (Credit Note Uplift/Discount on Subtotal): was added. • 38 cmd. (Credit Note Payment): was added. • 39 cmd. (Credit Note End): was added. • 3A cmd. (Credit Note Cancel): was added. • C8 cmd. (Set Barcode Parameters): was added. • C9 cmd. (Print Barcode): was added. • D7 cmd. (Ticket Set/Reset Header): reset action was added. • B7 cmd. (Ticket Invoice/Credit Note Set/Reset Header): reset action was added. • 17 cmd. (Set/Reset Trailer): reset action was added. • 22 cmd. (TI/CN Set/Reset Perception Type): reset action was added. • 24 cmd. (Set/Reset Payment Type): reset action was added. • DB cmd. (Electronic Read Counters and Accumulators): initialization setting values were added. • EB cmd. (Ordinary Printing Line on DI Station): was changed. • EC cmd. (Line Feed): was changed. • EE cmd. (Cut Paper): was changed. • F4 cmd. (Return Print Head and Throat): was changed. • F8 cmd. (Report Printer EC): was changed. • E7 cmd. (Diagnostic and Alignment Utilities): was changed. • Flag FCRENOT (Credit Note in Progress): was added. • Flag FTOTACN (Credit Note Total): was added. • RC's 104, 105, 125, 126, 169, 204, 208, 209, 210, 235: were added. • RC's 75, 163, 200, 203, 206, 214: were changed. • Msg's V25, M13, M14, M51, M52: were added. • Cmd Extension: the reserved bits will be set to 0. • Ticket Invoice and Credit Note Type 'A': VAT Not Enrolled calculations applicable to the item sale was added. • Fiscal Memory (Daily Entry Table): daily total and daily VAT total are stored in ones-complement notation. • This version of Technical Specification corresponds to microcode EC level 01. Internal microcode version 05.

Table 1. Change Summary

Contents

Figures

1.0 Fiscal Hardware Technical Specification

1.1 4610-GR3/GR4 Fiscal Printer Features

The 4610-GR3/GR4 fiscal printer is the TI-3/4 printer with a second thermal station which is used as a journal station. Since 4610-GR3/GR4 in based on the TI-3/4, it has the same SBCS logic card as a the TI-3/4.

The printer features are:

- Customer Receipt Station (CR) - thermal printing

- Summary Journal Station (SJ) - thermal printing

- Document Insert Station (DI) - impact printing

- User defined character sets

- RS232 communication interfaces

- RS485 (BOBO) or USB (XINGU) communication interfaces

- Bar Code printing capability (all stations)

- MICR character reading (DI station only)

- Paper Cutter (CR station only)

- Check Flipping (DI station only)

- PDF417 bar code generation (CR and SJ stations only)

1.1.1 Characters Per Inch

- Thermal Printing (CR and SJ stations)

    - 15 CPI => 44 characters/line
    - 12 CPI => 34 characters/line

- Impact Printing (DI stations

    - 15 CPI => 47 characters/line
    - 12 CPI => 37 characters/line

1.2 Fiscal Security Characteristics of the Model 4610-GR3/GR4 Fiscal Printer

The IBM POS fiscal solution is based on the concept of a ′fiscal printer′. Because of the restrictions in most countries relative to the definition of a ′fiscal machine′, a distributed POS must have the fiscal electronics sealed in the printer. The printer becomes the ′fiscal machine′ in a distributed POS.
This solution prevents fraud by ensuring absolutely that what is printed is recorded in the fiscal electronics.
In this case the only fiscal dependency remaining on the POS terminal that the printer is attached to is the ability to sense connection of the POS displays.
Our system provides that capability by having all the POS I/O wired in parallel which allows the fiscal printer to monitor the serial I/O responses to polls from the configured displays. If a display is disconnected or stops operating, the fiscal printer will inhibit further printing until the display resumes operation.

1.2.1 Method of Sealing

IBM seals the printer with a single screw covered by a lead plug. The CE uses an official tool to stamp the authorized fiscal logo into the lead seal when it is inserted into the opening over the screw.

1.2.2 Fiscal Processing

The IBM fiscal printer has a special electronics board sealed in the fiscal base which intercepts the data from the POS terminal and processes it before sending it to the printer to be printed. This ensures that nothing is printed that does not completely comply with the fiscal law requirements and that all data is captured in the fiscal printer non-volatile memory.
The fiscal processor logic board has 64K bytes of static RAM and a time of day clock module both backed up by a 10 year lithium battery.
A fixed pattern in the memory is checked each time the printer is powered on as an alternative to having a battery voltage sensor.

For Macarena (SIO) BOBO, a DS80C320 microprocessor is used to process the data and perform arithmetic.

For Macarena (USB) XINGU, a DS80C390 microprocessor is used to process the data and perform arithmetic.

All fiscal data is calculated by the fiscal processor board and any totals sent from the POS terminal are verified before printing is allowed. The microprocessor has special internal circuitry which detects power down situations with enough warning to save all fiscal data in the battery backed up memory.

1.2.3 (J4) CE Jumper

There is a CE jumper which is used to reset the RAM after a repair or in the event of a temporary data error in the RAM. The CE jumper can also be used to control some commands so that only the CE can perform them.

When the J4 (CE) jumper is activated, the RAM is cleared and all totals are reset. Available information, such as the serial number, is loaded from the fiscal memory to the RAM.

A battery jumper is available on the fiscal printer logic card to allow a certification test to verify that the processor card would detect a low battery condition.

1.2.3.1 J4 (CE) Jumper Function

The activate jumper procedure consists in:

- Turn OFF the Fiscal Printer

- Put the J4 (CE) jumper in ON (ACTIVE) position

- Turn ON the Fiscal Printer

The deactivate jumper procedure consists in:

- Turn OFF the Fiscal Printer

- Put the J4 (CE) jumper in OFF (STORED) position

- Turn ON the Fiscal Printer

1.2.3.2 Calculations while the jumper is active:

- Recover the following counters from the fiscal memory tables

  Lif_N_Clos

  Lif_N_Ract

  Lif_N_Lock

- Operate on the following counters as shown below and they are incremented on every IPL with jumper ON (ACTIVE) position.

  Day_N_Ract = Day_N_Ract + 1

  Lif_N_Ract = Lif_N_Ract + 1

  Day_N_Lock = Day_N_Lock + 1

  Lif_N_Lock = Lif_N_Lock + 1

1.2.3.3 J4 (CE) Jumper Function Rules

- Only authorized service personnel can move the J4 (CE) jumper.
- 200 repair actions are allowed during the life of the fiscal printer and each repair action is stored in the fiscal memory.
- When the fiscal printer is locked only the following commands can be issued:
  - (15) Extended and Short Fiscal Memory Report
  - (1F) POS Identification Report
  - (FF) Dump Fiscal RAM and Fiscal Memory
  - (DA) Electronic Read Fiscal Memory Tables
  - (DB) Electronic Read Counters and Accumulators
- When the number repair reach 200, no more J4 (CE) jumper action can be issued and only the following commands are allowed:
  - (15) Fiscal Memory Report - Extended and Short
  - (1F) POS Identification Report
  - (FF) Dump Fiscal RAM and Fiscal Memory
  - (DA) Electronic Read Fiscal Memory Tables
  - (DB) Electronic Read Counters and Accumulators
- The RAM pattern is initialized after all the other initialization has been completed.
- This process can take a long time if the fiscal memory is almost full or full.
- Flags are set or cleared as shown below.

1.2.4 Fiscal Memory

IBM uses a 2 megabit EPROM (electronically programmable read-only memory) sealed in a tub of epoxy on the base of the fiscal printer for the long term fiscal memory. At the end of each day the daily totals are written to the fiscal memory. The fiscal processor logic board generates the appropriate voltages and logic to write data to an EPROM. EPROMs are completely non-volatile and have a life span measured in decades rather than years.
Because it is covered with epoxy the EPROM data cannot be erased.
(Although EPROMs start at all 'ones', so if the fiscal seal is breached any 'one' bits could be programmed to 'zero' even in previously recorded data.)

The IBM fiscal printer can store 3840 days of data at 64 bytes of data per day.

The IBM fiscal printer provides electronic readout of the fiscal data (if allowed by law) to allow a tax inspector to readout the data electronically, possibly from the store controller/server, as opposed to having to printout the data from each cash register on the register tape.

1.2.5 Fiscal Memory - A5 pattern

The fiscal microcode writes the pattern "A5" in address 82 (hexa) in the fiscal memory to be able to detect the eprom connection.
It is read by all fiscal commands.
If it isn't found, the fiscal printer returns error code 109.

1.2.6 Fiscal Label

The fiscal label is attached to the base of the fiscal printer and contains the same serial number that is electronically written in the fiscal memory.
Since the label is part of the same field replaceable unit as the fiscal base with epoxied fiscal memory there is no danger of having a serial number mismatch.

In accordance with many of the fiscal laws, the integrated mounting hardware for the IBM 469X POS terminals has been modified to allow visibility of the fiscal label and fiscal seal to a person walking around the POS terminal without requiring any disassembly.

1.2.7 Display Checking

The microcode continually checks for connection of the POS displays by monitoring the Serial I/O (Device Channel) connection for display polls and then checking for appropriate responses.

If the microcode detects a required display missing, the FDISPLY flag is set to NO. If the correct number of displays is connected and operational the microcode sets the FDISPLY state to YES.

2.0 Fiscal Accounting Technical Description

This section discusses the fiscal printer operation, defines the terminology used in the operation of the printer, and describes the fiscal commands in terms of the function they provide.

2.1 Fiscal Printer Operation

The fiscal printer operates under control of an application program communicating with it through a serial link (Device Channel).
It is designed to execute a predefined set of commands, logically sequenced according to the type of operations to be performed.
The application program has no direct control of the resources residing in the fiscal unit, but it can retrieve data related to accumulators, counters, fiscal unit state, and fiscal memory.

The fiscal printer performs the following operations, assuring that they are executed according to the fiscal law in Argentina:

- Record serialization parameters
- Record fiscal configuration options
- Record store configuration options
- Record sale amount and generate customer ticket
- Record ticket invoice amount and generate ticket invoice document
- Print X-Report
- Record daily sales in the fiscal memory and generate closure report
- Generate fiscal memory content reports
- Print reports generated by the application program
- Report selected data to the application program
- Print on credit card slips

2.2 Definition of Terminology

Please study these definitions:

Initial Program Loading (IPL)
          is a procedure executed when the power is turned on.

Power Line Disturbance (PLD)
          is a power failure.

J4 (CE) Jumper   is a procedure performed by service representatives that clears the battery-backed RAM.

Customer Receipt (CR)
          is the left side print station that prints from rolls of paper. This station prints the slip of paper that verifies that a sales transaction occurred.

Summary Journal (SJ)
          is the right side print station that prints on rolls of paper and winds up the printed paper in the printer as the journal of the day's printing.

Document Insert (DI)
          is the print station that has the capability to insert forms from the top or the bottom of the printer and print either in a forward or reverse direction, where allowed.

Sales Period   is a group of sales transactions over a given amount of time, usually measured daily.

Sales Transaction	is a process of recording item sales and arriving at the amount to be paid by or to a customer. The receiving of payment for merchandise or services is also included in a transaction.
Rectify	is an option on certain sales transaction commands used to modify, cancel, or undo a previous operation.
Ticket	The ticket is the slip of paper that verifies that a sales transaction occurred. The ticket is printed on the customer receipt station of the printer.
Ticket Invoice	is used to indicate a wholesale transaction printed on the document insert station of the fiscal printer. There are rules that apply in this case.
Credit Note	is used to indicate a credit note printed on the document insert station of the fiscal printer. There are rules that apply in this case.
VAT	is value-added tax.
Item Ordinal Number	
	is the number that designates each item in a sales transaction. For example, the first item is number one, the second is number two and so on.
Fixed-price Items	are item prices that are not affected by discount on subtotal or uplift on subtotal operations.
Void	is used when cancelling or voiding items.
Discount	is the reduction of the item price (negative item), or the reduction of a part of a sales transaction (discount on subtotal), or the reduction of an entire sales transaction (discount on total).
Tendering	is the process of concluding a sales transaction and accounting for the methods of payment.
Cancel	is used when cancelling or voiding an entire sales transaction.
Ordinary Printing	also known as application-originated (or normal) printing, these are print lines that do not have a specific fiscal law function monitored or controlled by the printer.

2.3 Definition of Fiscal Printer States

2.3.1 Initialization States

2.3.1.1 Fiscal Printer Serialized - (FMEMNIT)

The fiscal printer has been serialized, fiscal commands can be executed.
However, fiscal memory is not used until the fiscal printer is placed in the Fiscal Mode of operation.

2.3.1.2 Fiscal Printer Set in Fiscal Mode - (FISCFLG)

This is the normal mode of fiscal operation. Totals are stored into the fiscal memory at the time of the daily closure.

2.3.1.3 Date/Time Set - (FSETDAT)

This indicates that the time and date has been set.

2.3.1.4 Ticket Headers Set - (FHEADER)

This indicates that the ticket headers have been loaded into the fiscal printer.

2.3.1.5 POS Trailers Set - (FTRAILR)

This indicates that the stored POS trailer lines have been loaded into the fiscal printer.

2.3.1.6 Identification Information Loaded - (FPOSIDS)

This indicates that the POS information have been loaded into the fiscal memory.

2.3.1.7 VAT Table Verified - (FVTXTBL)

This state is active when the VAT table has been verified since the last CE jumper operation.

2.3.2 POS Fiscal States

2.3.2.1 Sales Period in Progress - (FSALEON)

This indicates that a daily sales period has been started. Typically, many of the fiscal configuration commands cannot be allowed during a day.
To end this state a daily closure must be performed.

2.3.2.2 Sales Transaction

Steps in a sale transaction are listed below:

2.3.2.2.1 Ticket Header Printed - (FHDRPRT): This indicates that the ticket header has been printed. However, it does not yet start a actual ticket.

2.3.2.2.2 Item Processed - (FTRANON): This indicates that a ticket is officially started.

2.3.2.2.3 Total Requested - (FTOTALR): This indicates that the total has been requested.

2.3.2.2.4 Payment in Progress - (FPAYMNT): This indicates that the payment phase is in progress due to either a payment command.

2.3.2.2.5 End of Transaction Attempted - (FENDTRA): This indicates that an end of transaction command was attempted but an error or power down occurred before all the printing associated with this command could complete.

2.3.2.2.6 Cancel Transaction Attempted - (FCANCEL): This indicates that a cancel transaction command was attempted but an error or power down occurred before all the printing associated with this command could complete.

2.3.2.3 Ticket Invoice in Progress - (FPRNTCK)

This indicates that a ticket invoice (printed on the document insert station) is in progress.

2.3.2.4 Ticket Invoice Total - (FTOTINVO)

This indicates that the second ticket invoice total has been requested.

2.3.2.5 Credit Note in Progress - (FCREDNOT)

This indicates that a credit note (printed on the document insert station) is in progress.

2.3.2.6 Credit Note Total - (FTOTACN)

This indicates that the second credit note total has been requested.

2.3.2.7 CR - Application-Originated Report in Progress - (FOPENCR)

This indicates that an application-originated report is open on the customer receipt station.

2.3.2.8 SJ - Application-Originated Report in Progress - (FOPENSJ)

This indicates that an application-originated report is open on the summary journal station.

2.3.2.9 DI Portrait - Application-Originated Report in Progress - (FOPNDIP)

This indicates that a portrait application-originated report is open on the document insert station.

2.3.2.10 Training Mode Active - (FTRAINM)

This indicates that training mode is active.

2.3.2.11 Power on in Progress - (FIPLINP)

This indicates that a power on sequence is in progress.

2.3.2.12 Fiscal Printer Ready - (FISCRDY)

This indicates that the fiscal printer is ready for new commands.

2.3.2.13 Fiscal Memory Locked - (FLOCKED)

This indicates that the fiscal printer is locked.

2.3.2.14 CE Jumper Finished - (FJMPFIN)

The CE jumper activation procedure was performed. Certain initialization procedures are allowed before normal fiscal commands are executed.

2.3.3 Non-Fiscal Homologated Reports

2.3.3.1 NFH Report Issued - (FDNFHON)

This indicate that any non-fiscal homologated report was issued.

2.3.3.2 NFH Report in Progress - (FOPNNFH)

This indicate that a non-fiscal homologated report is in progress.

2.3.4 POS Fiscal Hardware States

2.3.4.1 CE Jumper Active - (FJUMPER)

The CE jumper is in the active position.

2.3.4.2 Fiscal Memory Connected - (FEPROMC)

The fiscal memory is connected to the fiscal processor card.
Each time that this flag is tested in the specification, the microcode is reading a test pattern from the fiscal memory to ensure that it is connected.
If the test pattern is bad the FEPROMC state is cleared. This state can only be set when the CE jumper is active.

2.3.4.3 Fiscal Memory Full - (FEPROMF)

The fiscal memory is full.

2.3.4.4 200 Repair Actions Already Performed - (FEPROMR)

The limit of repair actions has been reached.

2.3.4.5 Display(s) Connected - (FDISPLY)

This indicates that the displays that have been configured by the 1A cmd. are connected and working. Note that there is no ′Displays Set′ state. So until they are set correctly, this state will not be set.

2.4 POS Fiscal General Information and Rules

2.4.1 Fiscal Memory Connection

Fiscal memory may not be disconnected. The microcode checks for a good connection at power up and before execution of the following commands:

- (01) Ticket - Print Header
- (E0) Ticket Invoice - Print Header
- (30) Credit Note - Print Header
- (15) Fiscal Memory Report
- (13) Daily Closure

If the fiscal memory is not connected, an error is reported to the application when the application attempts to execute the commands above.

Once the memory is detected as being disconnected, an error is sent to the application if any of the following commands are sent to the printer:

- (1B) Serialize Fiscal Printer
- (D7) Ticket - Set/Reset Header
- (18) Set Fiscal Mode
- (22) Ticket Invoice/Credit Note - Set/Reset Perception Type
- (24) Set/Reset Payment Type
- (C4) Fiscal Parameter Configuration
- (D0) Ticket - Fixed Price Item Sale
- (D1) Ticket - Fixed Price Negative/Uplift Item Sale
- (D2) Ticket - Item Sale
- (D3) Ticket - Negative or Uplift Item Sale
- (D4) Ticket - Subtotal/Total
- (D5) Ticket - Payment
- (D9) Ticket - Uplift/Discount on Subtotal
- (06) Ticket - End
- (07) Ticket - Cancel
- (B7) Ticket Invoice/Credit Note - Set/Reset Header
- (25) Ticket Invoice/Credit Note - Set Customer Information
- (B0) Ticket Invoice - Fixed Price Item Sale
- (B1) Ticket Invoice - Fixed Price Negative/Uplift Item Sale
- (B2) Ticket Invoice - Item Sale
- (B3) Ticket Invoice - Negative/Uplift Item Sale
- (B4) Ticket Invoice - Subtotal/Total
- (B8) Ticket Invoice - Global Perception
- (B9) Ticket Invoice - Uplift/Discount on Subtotal
- (B5) Ticket Invoice - Payment
- (E3) Ticket Invoice - End
- (0F) Ticket Invoice - Cancel
- (31) Credit Note - Fixed Price Item Sale
- (32) Credit Note - Fixed Price Negative Item Sale
- (33) Credit Note - Item Sale
- (34) Credit Note - Negative/Uplift Item Sale
- (35) Credit Note - Subtotal/Total
- (36) Credit Note - Global Perception
- (37) Credit Note - Uplift/Discount on Subtotal
- (38) Credit Note - Payment

- (39) Credit Note - End
- (3A) Credit Note - Cancel
- (C0) Print Credit Card Slips
- (14) X-Report
- (1F) Print POS ID Info Report
- (DD) Start Application-Originated Report
- (DE) End Application-Originated Report
- All Printer Commands

If Fiscal memory is not connected, an error is reported to the application. Recovery from this error requires that the RAM is cleared using the hardware J4 (CE) jumper.

2.5 Y2K Issues

2.5.1 Scope

The Fiscal Printer microcode have the ability to correctly process, provide and receive date data within and between the 20th and 21st centuries constrained to a 100 year window as described below.

2.5.2 Year Window Description

The microcode is utilizing the fixed window method.
It Define a 100 years window from Jan 1, 1990 through Dec 31, 2089 and interprets the date in 2-digit year format using this window.
Year values from 90 to 99 must be interpreted as 1990 through 1999.
Year values from 00 to 89 must be interpreted as 2000 through 2089.

2.5.3 Format Date in Printouts

In the following reports the format date printed is:

- Ticket: dd/mm/yy

- Ticket Invoice: dd/mm/yy

- Credit Note: dd/mm/yy

- Credit Card: dd/mm/yy

- X-Report: dd/mm/yy

- Z-Report (Closure): dd/mm/yy

- Fiscal Memory Report: dd/mm/yy

- Dump Fiscal RAM and Fiscal Memory: dd/mm/yy

- POS Identification Report: dd/mm/yy

- Initialization Reports: dd/mm/yy

- Audit Error Reports: dd/mm/yy

- Lock Reports: dd/mm/yy

- Power-On Report: dd/mm/yy

Where:

dd (date) ranges from 01 to 31.
mm (month) ranges from 01 to 12.
yy (year) ranges from 90 (1990) to 89 (2089).

2.5.4 Commands that have dates as I/O

- Have dates as input:

  - 16 cmd. (Set Date) use 'ddmmyyyy' input format

  - 1E cmd. (Set POS Identification) use 'mmyyyy' input format

  - C0 cmd. (Print Credit Card Slips) use 'ddmmyy' input format

– 15 cmd. (Fiscal Memory Report) use ′ddmmyyyy′ input format

- Have dates as output:
  – DA cmd. (Electronic Read Fiscal Memory Tables) use ′dd/mm/yy′ input format
  – DB cmd. (Electronic Read Counters & Accumulators) use ′dd/mm/yy′ input format

2.5.5 Date in Fiscal Memory

The date is stored in fiscal memory (′yymmdd′ compacted format) during each:

- Daily entry table generated with 13 cmd.
- Repair action table generated with jumper intervention.
- Locked action table generated with 85 cmd.

2.6 Homologated Level

- When a final EC microcode level is homologated in the I.N.T.I. institution, the homologated level in the fiscal printer is updated.

  The homologated level is stored in a table in fiscal memory and can be changed 30 times during the life of the fiscal printer (the first entry of this table will be usually filled during the first IPL in factory).
  When the table is full and is installed a homologated level not equal to the last stored in the table, the microcode must be exchanged by the last EC level stored in the table or the fiscal memory must be exchanged.

  When a IPL occurs the homologated level stored in EPROM code is compared to the last entry in the homologated level table stored in fiscal memory.
  If the homologated level is the same, a new entry is not added to the table.
  If the homologated level is not the same, a new entry is added to the table

  When a IPL occurs and the homologated level is not equal to the last stored in fiscal memory and the homologated level table is full, the RC 107 will be returned and the message M07 will printed during IPL printout.

- When a beta EC microcode level (not homologated) is send to a customer:

  - The homologated level table is not updated.
  - In the reports the character ′β′ will be printed instead of homologated level.
  - If FC cmd. (cmd. extension 04) is issued, the homologated version response will be 99.

3.0 Fiscal Accounting Variables

The following variables are defined in this section:

- Transaction accumulators.
- Transaction counters.
- Daily accumulators.
- Daily counters.
- Lifetime accumulators.
- Lifetime counters.
- Miscellaneous counters.

3.1 Definition of Transaction Accumulators

Table 2 list the accumulators used during a sales transaction.

Table 2. Transaction Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Tra_Tot	General totals	0	99999999,49
Tra_Tot_v(vv)	General totals by VAT category	0	99999999,49
Tra_Tot_Fixed	General fixed item total	0	99999999,49
Tra_Tot_Fixed_v(vv)	General fixed item total by VAT category	0	99999999,49
Tra_Tax_v(vv)	General not taxable concepts by VAT category	0	99999999,49
Tra_Tax_F	Fixed not taxable concepts	0	99999999,49
Tra_Tax_F_v(vv)	Fixed not taxable concepts by VAT category	0	99999999,49
Tra_Tax_P	Percentage not taxable concepts	0	99999999,49
Tra_Tax_P_v(vv)	Percentage not taxable concepts by VAT category	0	99999999,49
Tra_Tax_Fixed	Fixed item not taxable concepts	0	99999999,49
Tra_Tax_Fixed_v(vv)	Fixed item not taxable concepts by VAT category	0	99999999,49
Tra_VAT	General VAT	0	99999999,49
Tra_VAT_v(vv)	General VAT by VAT category	0	99999999,49
Tra_VAT_Fixed	General VAT fixed item	0	99999999,49
Tra_VAT_Fixed_v(vv)	General VAT fixed item by VAT category	0	99999999,49
Tra_VAT_NE	General VAT not enrolled	0	99999999,49
Tra_VAT_NE_v(vv)	General VAT not enrolled by VAT category	0	99999999,49
Tra_Tot_NE_v(vv)	General VAT not enrolled total by VAT category	0	99999999,49
Tra_Tot_Fixed_NE_v(vv)	General fixed VAT not enrolled total by VAT category	0	99999999,49
Tra_Tot_Percep_t(tt)	General global perception total by perception type	0	99999999,49
Tra_Percep	General perception total	0	99999999,49
Tra_Percep_t(tt)	General perception by perception type	0	99999999,49
Tra_Percep_vt(vv,tt)	General perception by VAT category and perception type	0	99999999,49
Tra_Disc_Quo_v(vv)	Discount Ratio by VAT category	0	99999999,49
Tra_Pay_Type	General payment total	0	99999999,49
Tra_Pay_Type(pp)	General payment total by payment type	0	99999999,49
Tra_Amt_Due	Amount due	−99999999,49	99999999,49

Where:

vv = VAT category, range from 01 to 20.
tt = Perception type, range from 01 to 30.
pp = Payment type, range from 01 to 30.

3.2 Definition of Transaction Counters

Table 3 lists the transaction counters.

Table 3. Transaction Counters

Counter Name	Description	Minimum Range	Maximum Range
Item_Ordinal_Number	The number (position) of an item in a sale ticket or ticket invoice.	1	999

3.2.1 Definition of Daily Accumulators

Table 4 list the accumulators that are used during a sales period.

Table 4. Daily Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Day_Tot_v(vv)	Total by VAT category	0	999999999,49
Day_Tot	Total	0	999999999,49
Day_VAT_v(vv)	VAT total by VAT category	0	999999999,49
Day_VAT	VAT total	0	999999999,49
Day_Tax_v(vv)	Not taxable concepts by VAT category	0	999999999,49
Day_Tax	Not taxable concepts	0	999999999,49
Day_VAT_NE_v(vv)	VAT not enrolled by VAT category	0	999999999,49
Day_Percep	Perception	0	999999999,49
Day_Percep_t(tt)	Perception by perception type	0	999999999,49
Day_Pay_Type	Payment total	0	999999999,49
Day_Pay_Type(pp)	Payment total by payment type	0	999999999,49
Day_RetV_Tot_v(vv)	Credit note total by VAT category	0	999999999,49
Day_RetV_Tot	Credit note total	0	999999999,49
Day_RetV_VAT_v(vv)	Credit note VAT total by VAT category	0	999999999,49
Day_RetV_VAT	Credit note VAT total	0	999999999,49
Day_RetV_Tax_v(vv)	Credit note not taxable concepts total by VAT category	0	999999999,49
Day_RetV_Tax	Credit note not taxable concepts total	0	999999999,49
Day_RetV_VAT_NE_v(vv)	Credit note VAT not enrolled by VAT category	0	999999999,49
Day_RetV_Percep	Credit note perception	0	999999999,49
Day_RetV_Percep_t(tt)	Credit note perception by perception type	0	999999999,49
Day_RetV_Pay_Type(pp)	Credit note payment total by payment type	0	999999999,49

Where:

vv = VAT category, range from 01 to 20.
tt = Perception type, range = 01 up to 30
pp = Payment type, range = 01 up to 30

3.3 Definition of Daily Counters

Table 5 lists the counters used during a Sales Period.

Table 5. Daily Counters

Counter Name	Description	Minimum Range	Maximum Range
Day_N_Vouc	Number of tickets and tickets invoice B, C	0	65535
Day_N_TInv_A	Number of tickets invoice A	0	65535
Day_N_RetV_A	Number of credit notes A	0	65535
Day_N_RetV_BC	Number of credit notes B and C	0	65535
Day_N_Ract	Number of repair actions	0	200
Day_N_Lock	Number of locked actions	0	99
Day_N_Dump	Number of fiscal memory reports	0	9999
Day_N_Canc	Number of cancelled transactions	0	9999
Day_N_NFHD	Number of non-fiscal homologated documents.	0	9999
Day_N_NFR	Number of application-originated reports − all stations	0	9999

3.4 Definition of Lifetime Accumulators

Table 6 lists the accumulators kept for the life of the fiscal printer.

Table 6. Lifetime Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Gran_Tot	Grand total	0	1080863910568915200

3.5 Definition of Lifetime Counters

Table 7 lists the counters kept for the life of the fiscal printer.

Table 7. Lifetime Counters

Counter Name	Description	Minimum Range	Maximum Range	See Notes
Lif_N_Clos	Closure number	1	3840	1
Lif_N_Ract	Number of repair actions	0	200	1
Lif_N_Lock	Number of locked actions	0	99	1
Lif_N_Vouc	Number of tickets and tickets invoice B, C	1	99999999	2, 3
Lif_N_TInv_A	Number of tickets invoice A	1	99999999	2, 3
Lif_N_RetV_A	Number of credit notes A	1	99999999	2, 3
Lif_N_RetV_BC	Number of credit notes B and C	1	99999999	2, 3

Notes:

1. This counter must be recovered from the fiscal memory in the case of the J4 (CE) jumper activation procedure being performed.
2. After reaching 99999999 the lifetime number rolls over to 00000001.
3. This value is reset to 00000001 by use of the J4 (CE) jumper procedure.

3.6 Definition of Miscellaneous Counters

Table 8 lists the counters used during a ticket invoice or credit note.

Table 8. Miscellaneous Counters

Counter Name	Description	Minimum Range	Maximum Range
Mis_N_TI_Lines_To_Print	Number of lines to print in a ticket invoice sheet paper	50	9999
Mis_N_TI_End_Lines_To_Print	Number of lines to print by end ticket invoice (E3 cmd.)	4	4
Mis_N_TI_Cancel_Lines_To_Print	Number of lines to print by cancel ticket invoice (0F cmd.)	2	2
Mis_N_CN_Lines_To_Print	Number of lines to print in a credit note sheet paper	50	9999
Mis_N_CN_End_Lines_To_Print	Number of lines to print by end credit note (39 cmd.)	5	5
Mis_N_CN_Cancel_Lines_To_Print	Number of lines to print by cancel credit note (3A cmd.)	2	2
Mis_N_Lines_Printed	Number of lines printed	0	9999
Mis_N_Cmd_Lines_To_Print	Number of lines to print during a command	0	9999
Mis_N_Lines_Avail_To_Print	Number of lines available to print	0	9999

4.0 Initialization and Flows

4.1 Initialization Sequence

The initialization sequence (where the fiscal printer wasn't serialized or fiscalized) for Argentina is:

1. **RAM CLEAR**

   - Turn on the fiscal printer **with jumper in OFF (stored) position**
   - **Put jumper in ON (active) position**
   - Execute -->   Reset = 1B66 4s
   - **Put jumper in OFF (stored) position**
   - Execute -->   Reset = 1B66 4s

2. **SERIALIZATION**

   - Execute -->   Set Primary   Serial Number = 1B66 1B00

3. **FISCALIZATION**

   - **Put Jumper in ON (active) position**
   - Execute -->   Reset = 1B66 4s
   - Execute -->   Set Date = 1B66 1600
   - Execute -->   Set Fiscal Mode = 1B66 1800
   - **Put Jumper in OFF (stored) position**
   - Execute -->   Reset = 1B66 4s

4. **SET FISCAL PARAMETER CONFIGURATION**

   (Optional)

   - Execute -->   Set Display Sensing Definition = 1B66 C402

5. **SET DISPLAY ADDRESS**

   (Optional)

   - Execute -->   Set Display = 1B66 1A00

6. **SET POS IDENTIFICATION**

   - Execute -->   Set POS Identification = 1B66 1E01

7. **TICKET SET HEADERS**

   (Optional)

   - Execute -->   Ticket Set Header 1 = 1B66 D701
   - Execute -->   Ticket Set Header 2 = 1B66 D702

- Execute --> Ticket Set Header 3 = 1B66 D703
- Execute --> Ticket Set Header 4 = 1B66 D704
- Execute --> Ticket Set Header 5 = 1B66 D705
- Execute --> Ticket Set Header 6 = 1B66 D706
- Execute --> Ticket Set Header 7 = 1B66 D707

8. **TICKET INVOICE/CREDIT NOTE SET HEADER**

   (Optional)

   - Execute --> TI/CN Set Header 1 = 1B66 B700
   - Execute --> TI/CN Set Header 2 = 1B66 B701
   - Execute --> TI/CN Set Header 3 = 1B66 B702
   - Execute --> TI/CN Set Header 4 = 1B66 B703
   - Execute --> TI/CN Set Header 5 = 1B66 B704
   - Execute --> TI/CN Set Header 6 = 1B66 B705
   - Execute --> TI/CN Set Header 7 = 1B66 B706

9. **SET VAT AND COMPARE VAT**

   - Execute --> Set Vat = 1B66 2001
   - Execute --> Cmp Vat = 1B66 2101

10. **SET TRAILER**

    (Optional)

    - Execute --> Set Trailer 1 = 1B66 1701
    - Execute --> Set Trailer 2 = 1B66 1702
    - Execute --> Set Trailer 3 = 1B66 1703
    - Execute --> Set Trailer 4 = 1B66 1704
    - Execute --> Set Trailer 5 = 1B66 1705
    - Execute --> Set Trailer 6 = 1B66 1706
    - Execute --> Set Trailer 7 = 1B66 1707

11. **SET PAYMENT TYPE**

    (Optional)
    (Can be executed 30 times)

    - Execute --> Set Payment Type = 1B66 2400

12. **TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE**

    (Optional)
    (Can be executed 30 times)

    - Execute --> TI/CN Set Perception Type = 1B66 2200

13. **SET GENERAL PARAMETERS**

- Execute --> Set Limit for Ticket Total = 1B66 2E00

- Execute --> Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01

- Execute --> Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02

- Execute --> Set VAT Not Enrolled Percent = 1B66 2E03

- Execute --> Set Taxpayer Issuer Condition = 1B66 2E04

- Execute --> Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

4.2 Reinitialization Sequence

The reinitialization sequence (where the fiscal printer was serialized and fiscalized previously) for Argentina is:

1. **RAM CLEAR**

   - Turn on the fiscal printer **with jumper in OFF (stored) position**

   - **Put jumper in ON (active) position**

   - Execute -->   Reset = 1B66 4s

   - **Put jumper in OFF (stored) position**

   - Execute -->   Reset = 1B66 4s

2. **SET DATE**

   - Execute -->   Set Date = 1B66 1600

3. **SET FISCAL PARAMETER CONFIGURATION**

   (Optional)

   - Execute -->   Set Display Sensing Definition = 1B66 C402

4. **SET DISPLAY ADDRESS**

   (Optional)

   - Execute -->   Set Display = 1B66 1A00

5. **SET POS IDENTIFICATION**

   - Execute -->   Set POS Identification = 1B66 1E01

6. **TICKET SET HEADER**

   (Optional)

   - Execute -->   Ticket Set Header 1 = 1B66 D701
   - Execute -->   Ticket Set Header 2 = 1B66 D702
   - Execute -->   Ticket Set Header 3 = 1B66 D703
   - Execute -->   Ticket Set Header 4 = 1B66 D704
   - Execute -->   Ticket Set Header 5 = 1B66 D705
   - Execute -->   Ticket Set Header 6 = 1B66 D706
   - Execute -->   Ticket Set Header 7 = 1B66 D707

7. **TICKET INVOICE/CREDIT NOTE SET HEADER**

   (Optional)

   - Execute -->   TI/CN Set Header 1 = 1B66 B700
   - Execute -->   TI/CN Set Header 2 = 1B66 B701

- Execute -->   TI/CN Set Header 3 = 1B66 B702

- Execute -->   TI/CN Set Header 4 = 1B66 B703

- Execute -->   TI/CN Set Header 5 = 1B66 B704

- Execute -->   TI/CN Set Header 6 = 1B66 B705

- Execute -->   TI/CN Set Header 7 = 1B66 B706

8. **SET VAT AND COMPARE VAT**

   - Execute -->   Set Vat = 1B66 2001

   - Execute -->   Cmp Vat = 1B66 2101

9. **SET TRAILER**

   (Optional)

   - Execute -->   Set Trailer 1 = 1B66 1701

   - Execute -->   Set Trailer 2 = 1B66 1702

   - Execute -->   Set Trailer 3 = 1B66 1703

   - Execute -->   Set Trailer 4 = 1B66 1704

   - Execute -->   Set Trailer 5 = 1B66 1705

   - Execute -->   Set Trailer 6 = 1B66 1706

   - Execute -->   Set Trailer 7 = 1B66 1707

10. **SET PAYMENT TYPE**

    (Optional)
    (Can be executed 30 times)

    - Execute -->   Set Payment Type = 1B66 2400

11. **TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE**

    (Optional)
    (Can be executed 30 times)

    - Execute -->   TI/CN Set Perception Type = 1B66 2200

12. **SET GENERAL PARAMETERS**

    - Execute -->   Set Limit for Ticket Total = 1B66 2E00

    - Execute -->   Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01

    - Execute -->   Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02

    - Execute -->   Set VAT Not Enrolled Percent = 1B66 2E03

    - Execute -->   Set Taxpayer Issuer Condition = 1B66 2E04

    - Execute -->   Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

4.3 Unlocked Sequence

The unlocked sequence for Argentina is:

1. **RAM CLEAR**

   - Turn on the fiscal printer **with jumper in OFF (stored) position**
   - **Put jumper in ON (active) position**
   - Execute --> Reset = 1B66 4s
   - **Put jumper in OFF (stored) position**
   - Execute --> Reset = 1B66 4s

2. **SET DATE**

   - Execute --> Set Date = 1B66 1600

3. **SET FISCAL PARAMETER CONFIGURATION**

   (Optional)

   - Execute --> Set Display Sensing Definition = 1B66 C402

4. **SET DISPLAY ADDRESS**

   (Optional)

   - Execute --> Set Display = 1B66 1A00

5. **SET POS IDENTIFICATION**

   - Execute --> Set POS Identification = 1B66 1E01

6. **TICKET SET HEADER**

   (Optional)

   - Execute --> Ticket Set Header 1 = 1B66 D701
   - Execute --> Ticket Set Header 2 = 1B66 D702
   - Execute --> Ticket Set Header 3 = 1B66 D703
   - Execute --> Ticket Set Header 4 = 1B66 D704
   - Execute --> Ticket Set Header 5 = 1B66 D705
   - Execute --> Ticket Set Header 6 = 1B66 D706
   - Execute --> Ticket Set Header 7 = 1B66 D707

7. **TICKET INVOICE/CREDIT NOTE SET HEADER**

   (Optional)

   - Execute --> TI/CN Set Header 1 = 1B66 B700
   - Execute --> TI/CN Set Header 2 = 1B66 B701

- Execute --> TI/CN Set Header 3 = 1B66 B702

- Execute --> TI/CN Set Header 4 = 1B66 B703

- Execute --> TI/CN Set Header 5 = 1B66 B704

- Execute --> TI/CN Set Header 6 = 1B66 B705

- Execute --> TI/CN Set Header 7 = 1B66 B706

8. **SET VAT AND COMPARE VAT**

- Execute --> Set Vat = 1B66 2001

- Execute --> Cmp Vat = 1B66 2101

9. **SET TRAILER**

(Optional)

- Execute --> Set Trailer 1 = 1B66 1701

- Execute --> Set Trailer 2 = 1B66 1702

- Execute --> Set Trailer 3 = 1B66 1703

- Execute --> Set Trailer 4 = 1B66 1704

- Execute --> Set Trailer 5 = 1B66 1705

- Execute --> Set Trailer 6 = 1B66 1706

- Execute --> Set Trailer 7 = 1B66 1707

10. **SET PAYMENT TYPE**

(Optional)
(Can be executed 30 times)

- Execute --> Set Payment Type = 1B66 2400

11. **TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE**

(Optional)
(Can be executed 30 times)

- Execute --> TI/CN Set Perception Type = 1B66 2200

12. **SET GENERAL PARAMETERS**

- Execute --> Set Limit for Ticket Total = 1B66 2E00

- Execute --> Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01

- Execute --> Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02

- Execute --> Set VAT Not Enrolled Percent = 1B66 2E03

- Execute --> Set Taxpayer Issuer Condition = 1B66 2E04

- Execute --> Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

4.4 States of the printer during its lifetime.

```
              PRINTER BRAND NEW
                     |
              SERIALIZATION
                     |
     +------------+
     |            |
     |    Training Mode Operative
     |            |
     +------------>*
                  |
              FISCALIZATION
                  |
        Fiscal Mode Operative
                  |
          FISCAL MEMORY FULL
                  |
      PRINTER END OF LIFETIME
```
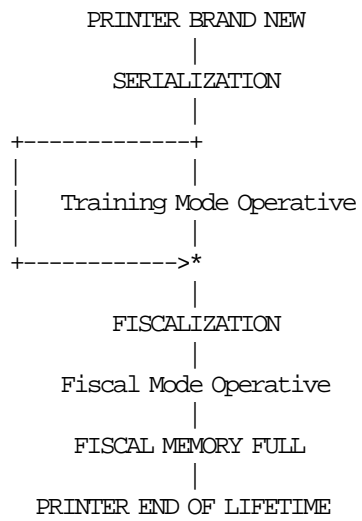
4.5 Training Mode Initialization.

The following procedure initializes the printer and gets it ready to work in training mode, to fiscalize the printer see the following procedure.

Once in fiscal mode, the training mode can not be achieved.

```
                    |
         RESET (JUMPER ON (ACTIVE))  (4s)
                    |
         RESET (JUMPER OFF (STORED)) (4s)
                    |
         SET SERIAL NUMBER  (1B)         Note 1
                    |
              SET POS ID (1E)
                    |
         SET GENERAL PARAMETERS (2E)
                    |
               SET DATE (16)
                    |
      CONFIGURE DISPLAY SENSING (C4)  (Optional)
                    |
         SET DISPLAY ADDRESS (1A)
                    |
              +<-----------+
              |           |  UP TO
         SET PAYMENT TYPE (24) |   30      (Optional)
              |           |  TIMES
              +------------+
                    |
              +<-------+
              |       |  UP TO
      TICKET SET HEADER (D7) |    7        (Optional)
              |       |  TIMES
              +--------+
                    |
              +<------------+
              |            |  UP TO
         TI/CN SET HEADER (B7)   |    7      (Optional)
              |            |  TIMES
              +-------------+
                    |
              +<--------------------+
              |                    |  UP TO
      TI/CN SET PERCEPTION TYPE (22)         |   30    (Optional)
              |                    |  TIMES
              +---------------------+
                    |
              +<-------------+
              |             |
         SET VAT RATES (20)     |    UNTIL
              |             |  COMPLETE
         COMPARE VAT RATES (21)  | THE 20 VATS
              |             |
              +-------------+
                    |
      +-------------+<-------------+
      |             |             |  UP TO
      |        SET TRAILER LINE (17)  |    7
      |             |             |  TIMES
      |             +--------------+
      +------------->+
                    |
        Machine Ready to work in Training Mode
                    |
```

Note 1: If the machine is factory serialized this command has not to be executed.

4.6 Fiscal Mode Initialization.

The following procedure initializates the printer and gets it ready to work in fiscal mode.

```
                     |
         RESET (JUMPER ON (ACTIVE))  (4s)
                     |
         RESET (JUMPER OFF (STORED)) (4s)          Note 1
                     |
         SET SERIAL NUMBER  (1B)                   Note 1
                     |
         RESET (JUMPER ON (ACTIVE))  (4s)          Note 1
                     |
              SET DATE (16)
                     |
            SET FISCAL (18)
                     |
         RESET (JUMPER OFF (STORED)) (4s)
                     |
            SET POS ID (1E)
                     |
        SET GENERAL PARAMETERS (2E)
                     |
      CONFIGURE DISPLAY SENSING (C4)  (Optional)
                     |
        SET DISPLAY ADDRESS (1A)
                     |
             +<-----------+
             |           | UP TO
        SET PAYMENT TYPE (24) |   30      (Optional)
             |           | TIMES
             +-----------+
                     |
             +<-------+
             |       | UP TO
        TICKET SET HEADER (D7) |   7       (Optional)
             |       | TIMES
             +--------+
                     |
             +<------------+
             |            | UP TO
        TI/CN SET HEADER (B7)  |   7       (Optional)
             |            | TIMES
             +-------------+
                     |
             +<--------------------+
             |                    | UP TO
        TI/CN SET PERCEPTION TYPE (22) |  30   (Optional)
             |                    | TIMES
             +--------------------+
                     |
             +<------------+
             |            |
        SET VAT RATES    (20) | UNTIL COMPLETE
        COMPARE VAT RATES (21) | THE 20 VATS
             |            |
             +-------------+
                     |
    +-------------+<-------------+
    |            |             | UP TO
    |     SET TRAILER LINE (17) |   7
    |            |             | TIMES
    |            +--------------+
    +------------>+
                     |
         Machine Ready to work in Fiscal Mode
```

Note 1: If the machine is factory serialized or is already set in Training Mode,
        these commands have not to be executed.

5.0 Command Set Reference

A command consists of a string of data received from the serial communication link. The minimum length of a command string is four byte; the maximum length depends on the command type.
The microcode checks that the length is not less than the minimum required for the command type specified in byte 2. A command is composed of four parts:

1. **Command Prefix**

   It consists of two constant bytes x′1B66′ (ESC f).
   Command prefix is not present in system commands.

2. **Command Code**

   Command code is in byte 2 of command string. It identifies the command to be executed.
   Its value can range from x′00′ to x′FF′.

3. **Command Extension**

   Command extension is in byte 3 of command string. It contains command options.
   Reserved bits must be set to 0. Only exception is retry bit which is ignored by microcode on commands where it has not any effect.

4. **Command Data**

   Command data starts from byte 4 of command string. Its content depends on the command type.
   Character strings must be left aligned.
   Numeric strings must be right aligned.
   Non significant digits in numeric fields can be blank.

At least one status is sent in response to a command.
The only exception is related to system commands: no response is given for system commands not recognized by the fiscal unit.
The format of the status is described in 6.0, "Fiscal Unit Status" on page 283.

Note - 7 is the most significant bit and 0 is the least significant bit.

5.1 Initialization Commands

Those commands that require FJUMPER=ON (ACTIVE) have to be executed with the jumper in active position and those that require FJUMPER=OFF (STORED) have to be executed with the jumper in store position, taking care that the jumper position is sensed during IPL, so each time the jumper is moved it's necessary to execute an IPL immediately after in order to have the jumper state updated.

Note: To execute several commands which require the jumper in active position it's necessary to execute only one IPL and then all the commands.

These are the initialization commands:

- (1B) Serialize Fiscal Printer
- (18) Set Fiscal Mode
- (16) Set Date
- (C4) Fiscal Parameter Configuration
- (1A) Set Display Address
- (1E) Set POS Identification
- (D7) Ticket Set/Reset Header
- (B7) Ticket Invoice/Credit Note - Set/Reset Header
- (20) Load VAT Rate Table
- (21) Verify VAT Rate Table
- (17) Set/Reset Trailer
- (24) Set/Reset Payment Type
- (22) Ticket Invoice/Credit Note - Set/Reset Perception Type
- (2E) Set General Parameters

There are no calculations performed for any of the initialization commands.

5.1.1 (1B) - Serialize Fiscal Printer

This command is used at the end of the manufacturing process to write the unit serial number in a fixed area of the fiscal memory.

5.1.1.1 Command Format

```
 ------------------------------------------------------------------------

 BYTE BIT   CONTENT                                    TYPE    LENGTH

  0-1        1B66 - cmd prefix                         hex       2
  2          1B - Serialize Fiscal Printer             hex       1
  3          00 - Cmd Extension                        hex       1
  4-4        Manufacturing_Code                        ASCII     1 (Note 1)
  5-5        Brand_Code                                ASCII     1 (Note 1)
  6-6        Model_Code                                ASCII     1 (Note 1)
  7-13       Serial_Number                             ASCII     7 (Note 2)


 ------------------------------------------------------------------------
```

Notes:

1. Characters from 'A' to 'Z' and from 'a' to 'z' are allowed.

2. Values from '0000000' to '9999999' are allowed.

5.1.1.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------------+
      | x'1B66' | x'1B' | x'00' | 'ARG1234567' |
      +---------+-------+-------+--------------+
           |        |       |        |
           |        |       |        ----------------> Serial Number
           |        |       ----------------------> Cmd Extension
           |        ------------------------------> Serialize Fiscal Printer
           ----------------------------------------> Escape Sequence
```
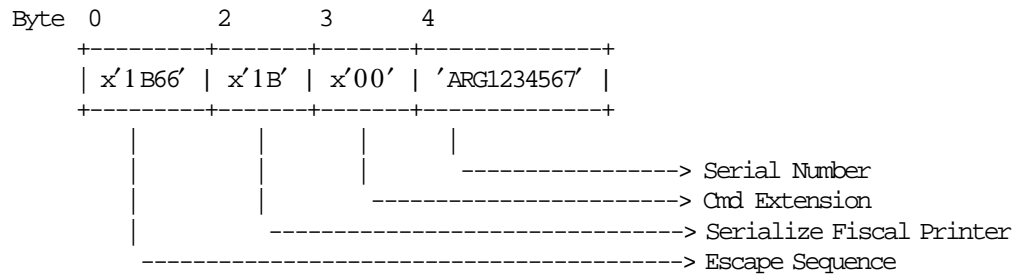
5.1.1.3 Serialize Fiscal Printer Rules

• This command can be executed only once and updates the fiscal memory.

5.1.2 (18) - Set Fiscal Mode

This command is used to pass the training mode to fiscal mode. In this mode the information is write in fiscal memory.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.1.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - cmd prefix                          hex        2
 2        18 - Set Fiscal Mode                       hex        1
 3        00 - Cmd Extension                         hex        1


---------------------------------------------------------------------
```

5.1.2.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'18' | x'00' |
      +---------+-------+-------+
           |         |       |
           |         |       -----------------------> Cmd Extension
           |         -------------------------------> Set Fiscal Mode
           ---------------------------------------> Escape Sequence
```
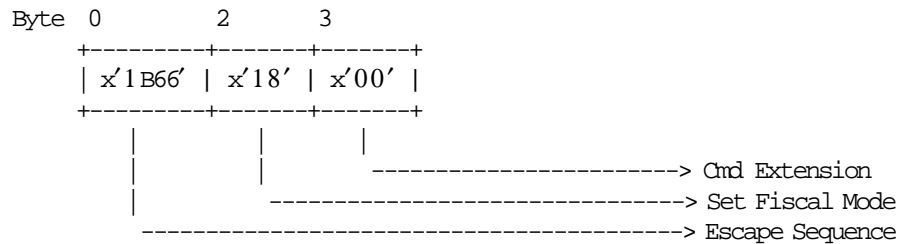
5.1.2.3 Set Fiscal Mode Rules

• Once this procedure has been executed the fiscal printer operates according to the configured country fiscal law.
• This command can be executed only once and updates the fiscal memory.
• The CE jumper must be used immediately prior to execution of this command to clear all RAM.

5.1.3 (16) - Set Date

This command is used to update the fiscal printer time of day clock.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.1.3.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

  0-1      1B66 - cmd prefix                         hex       2
  2        16 - Set Date                             hex       1
  3        00 - Cmd Extension                        hex       1
  4-5      Day                                       ASCII     2 (Note 1)
  6-7      Month                                     ASCII     2 (Note 2)
  8-11     Year                                      ASCII     4 (Note 3)
 12-13     Hours                                     ASCII     2 (Note 4)
 14-15     Minutes                                   ASCII     2 (Note 5)
 16-17     Seconds                                   ASCII     2 (Note 5)


--------------------------------------------------------------------------
```

Notes:

1. Values from '01' to '31' are allowed according to month and leap year.

2. Values from '01' to '12' are allowed.

3. Values from '1990' to '2089' are allowed.

4. Values from '00' to '23' are allowed.

5. Values from '00' to '59' are allowed.

5.1.3.2 Command Example

```
Byte  0         2       3
      +---------+------+-------+---
      | x'1B66' | x'16' | x'00' |
      +---------+------+-------+---
           |        |       |
           |        |       ----------------------> Cmd Extension
           |         ------------------------------> Set Date
            -------------------------------------------> Escape Sequence


Byte  4      6      8        12     14     16
      +------+------+--------+------+------+------+
      | '22' | '05' | '1997' | '08' | '11' | '27' |
      +------+------+--------+------+------+------+
          |      |      |        |      |      |
          |      |      |        |      |       ------> Seconds (27)
          |      |      |        |       -------------> Minutes (11)
          |      |      |         -------------------> Hours   (08)
          |      |       ---------------------------> Year    (1997)
          |       ----------------------------------> Month   (May)
           -------------------------------------------> Day     (22)
```
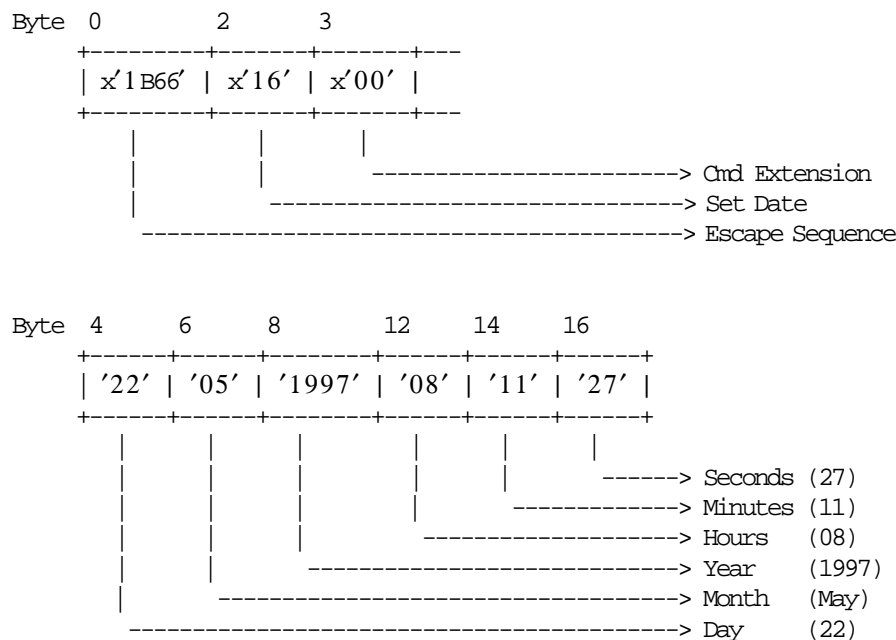
5.1.3.3 Set Date Rules

- The time and date can be set only if a sales period is not in progress.
- The time and date can be set once out of a sales period.
- The date/time cannot be set previous to the time stamp of the last closure in the fiscal memory.
- The command is rejected if the new date is more than one day after the current date.
- When J4 (CE) jumper is in ″ON″ position, any date and time can be set, providing it is later than the time stamp of the last closure.

5.1.4 (D7) - Ticket Set/Reset Header

This command is used to set or reset the header into fiscal printer battery backed up RAM.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.1.4.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 – cmd prefix                            hex       2
 2        D7 – Ticket Set/Reset Header                 hex       1
 3        Cmd Extension                                hex       1
      7   Reserved (always = '0')
      6   Action
          0 = Set
          1 = Reset
     5-3  Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
     2-0  Line Number                                         (Note 1, 2)
          001 = First   Line
          010 = Second  Line
          011 = Third   Line
          100 = Fourth  Line
          101 = Fifth   Line
          110 = Sixth   Line
          111 = Seventh Line
 4-41     Description                                  ASCII    38 (Note 3)


----------------------------------------------------------------------
```

Notes:

1. If the line number is not set, it is not printed.

2. If the line number is reset, it is not printed.

3. If all blank character are specified in the description string, then the corresponding header
   line is not printed.

5.1.4.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+-----------------+
      | x'1B66' | x'D7' | x'09' | 'Supermarket....' |
      +---------+-------+-------+-----------------+
           |         |       |       |
           |         |       |       -------------------> Header Description
           |         |       -------------------------> Cmd Extension
           |         |                                   (12 CPI, 1st. line)
           |         ----------------------------------> Ticket Set/Reset Header
           ---------------------------------------------> Escape Sequence
```
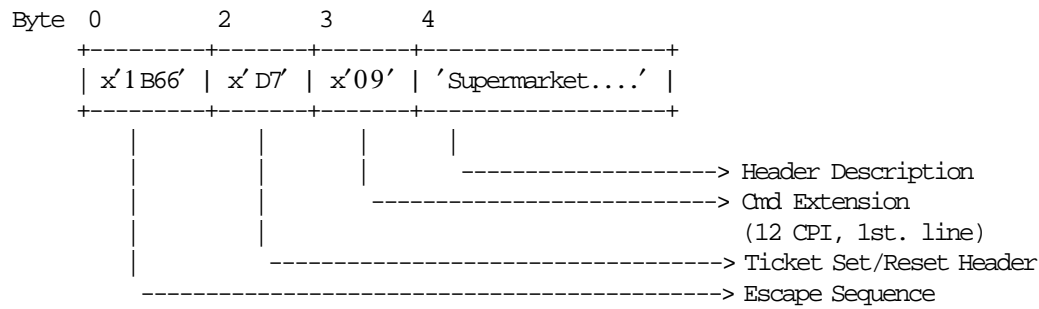
5.1.4.3 Ticket Set/Reset Header Calculations

There are not calculations for this command.

5.1.4.4 Ticket Set/Reset Header Rules

- The header is erased when RAM is cleared by activation of the (J4) CE jumper.
- This command cannot be executed when sales period is in progress.
- The minimum number of header lines that can be set is 0.
- The maximum number of header lines that can be set is 7.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.1.5 (24) - Set/Reset Payment Type

This command is used to set or reset different payment types.

5.1.5.1 Command Format

```
  ----------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                              hex        2
 2         24 - Set/Reset Payment Type                    hex        1
 3         Cmd Extension                                  hex        1
     7     Reserved (always = '0')
     6     Action
           0 = Set
           1 = Reset
     5-3   Print Mode
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = Reserved
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = Reserved
     2-1   Reserved (always = '0')
     0     Payment Type
           0 = Reserved
           1 = Credit Card
 4-5       Payment Type Number                            ASCII      2 (Note 1)
 6-27      Description                                    ASCII     22 (Note 2)

  ----------------------------------------------------------------------
```

Notes:

1. Values 01 to 30 are allowed.

2. When set action, blank description string is not allowed.

5.1.5.2 Command Example

```
Byte  0        2       3       4       6
      +---------+-------+-------+------+----------+
      | x'1B66' | x'24' | x'01' | '02' | 'dd...dd' |
      +---------+-------+-------+------+----------+
          |         |       |      |      |
          |         |       |      |      --------------> Description
          |         |       |      --------------------> Payment Type Number
          |         |       ---------------------------> Cmd Extension
          |         |                                    (set, 15 CPI, credit card)
          |         -----------------------------------> Set/Reset Payment Type
          -------------------------------------------> Escape Sequence
```
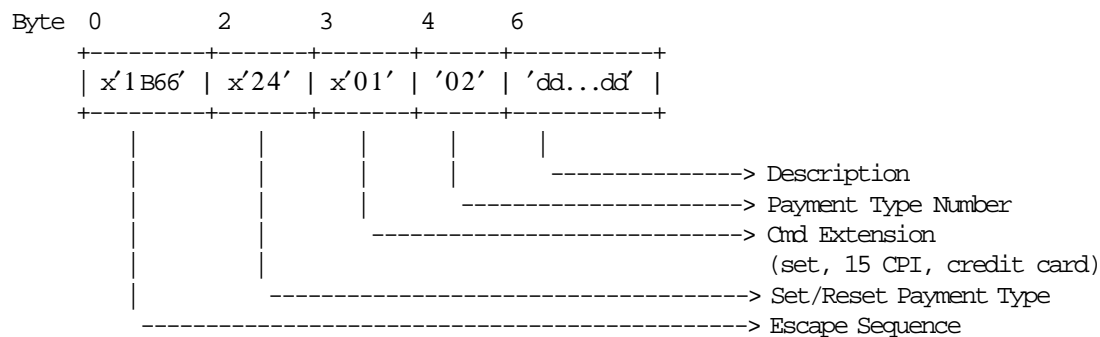
5.1.5.3 Set/Reset Payment Type Calculations

There are not calculations for this command.

5.1.5.4 Set/Reset Payment Type Rules

- This information is stored in RAM memory.
- This command can be executed only out of sale period.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.1.6 (17) - Set/Reset Trailer

This command is used to set or reset the trailer lines into fiscal printer battery backed up RAM.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.1.6.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - Cmd Prefix                            hex        2
 2        17 - Set/Reset Trailer                       hex        1
 3        Cmd Extension                                hex        1
     7    Reserved (always = '0')
     6    Action
          0 = Set
          1 = Reset
     5-3  Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
     2-0  Line Number                                          (Note 1, 2)
          001 = First   Line
          010 = Second  Line
          011 = Third   Line
          100 = Fourth  Line
          101 = Fifth   Line
          110 = Sixth   Line
          111 = Seventh Line
 4-41     Description                                  ASCII     38 (Note 3)


------------------------------------------------------------------------
```

Notes:

1. If the line number is not set, it is not printed.

2. If the line number is reset, it is not printed.

3. If all blank character are specified in the description string, then the corresponding header
   line is not printed.

5.1.6.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------------------+
      | x'1B66' | x'17' | x'09' | 'Thanks and bye...' |
      +---------+-------+-------+--------------------+
           |         |       |       |
           |         |       |       ----------------------> Header Description
           |         |       ------------------------------> Cmd Extension
           |         |                                       (set, 12 CPI, 1st. line)
           |         --------------------------------------> Set/Reset Trailer
           -------------------------------------------------> Escape Sequence
```

5.1.6.3 Set/Reset Trailer Calculations

There are not calculations for this command.

5.1.6.4 Set/Reset Trailer Rules

- The trailer lines are erased when RAM is cleared by activation of the CE jumper.
- This command cannot be executed when sales period is in progress.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.1.7 (20) - Load VAT Rate Table

This command is used to load the VAT rate table into fiscal battery backed up RAM.
To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), ticket set/reset header (D7 cmd.) and ticket invoice/credit note set/reset header (B7 cmd.) have to be executed before.

5.1.7.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH


 0-1      1B66 - cmd prefix                              hex       2
 2        20 - Load VAT Tables                           hex       1
 3        Cmd Extension                                  hex       1
          01 = VAT Categories 01 - 05
          02 = VAT Categories 06 - 10
          03 = VAT Categories 11 - 15
          04 = VAT Categories 16 - 20
 4-7      Password                                       ASCII     4
 8-9      Reserved                                       ASCII     2
10-13     VAT Rate For Category 01/06/11/16              ASCII     4
14-15     Reserved                                       ASCII     2
16-19     VAT Rate For Category 02/07/12/17              ASCII     4
20-21     Reserved                                       ASCII     2
22-25     VAT Rate For Category 03/08/13/18              ASCII     4
26-27     Reserved                                       ASCII     2
28-31     VAT Rate For Category 04/09/14/19              ASCII     4
32-33     Reserved                                       ASCII     2
34-37     VAT Rate For Category 05/10/15/20              ASCII     4


------------------------------------------------------------------------
```

Notes:

1. VAT rate is a fixed point number with 2 decimal digits. Separator characters must not be included in the VAT rate string. For example, for VAT rate 8%, specify '0800'.

2. VAT rate field can range from '0000' to '9999'. Values from '0000' to '9998' are used to specify the VAT rate, while value '9999' is used to inhibit the corresponding category.

3. The print format for VAT rates depends on their specification:

   a. If all rates are specified as 'xx00' the print format is %rr.
   b. If at least one rate is not specified as 'xx00' the print format is %rr.rr.

5.1.7.2 Command Example

```
Byte  0           2       3       4
     +---------+------+------+-------+---
     | x′1B66′ | x′20′ | x′01′ | ′nnnn′ |
     +---------+------+------+-------+---
          |        |     |      |
          |        |     |      -------------------> Password
          |        |     --------------------------> Cmd Extension
          |        |                                 (VAT category 01 - 05)
          |        -----------------------------------> Load VAT Rate Table
          ---------------------------------------------> Escape Sequence


Byte  8      10      14      16      20      22
     +------+--------+------+--------+------+--------+---
     | ′  ′ | ′0500′ | ′  ′ | ′1523′ | ′  ′ | ′2000′ |
     +------+--------+------+--------+------+--------+---
         |      |        |       |         |      |
         |      |        |       |         |      --------> VAT rate for category 03 (20.00%)
         |      |        |       |         --------------> Reserved
         |      |        |       -----------------------> VAT rate for category 02 (15.23%)
         |      |        -----------------------------> Reserved
         |      ------------------------------------------> VAT rate for category 01 (05.00%)
         -----------------------------------------------> Reserved


Byte  26     28      32      34
     +------+--------+------+--------+
     | ′  ′ | ′3080′ | ′  ′ | ′5000′ |
     +------+--------+------+--------+
         |      |        |       |
         |      |        |       -----------------------> VAT rate for category 05 (50.00%)
         |      |        ----------------------------> Reserved
         |      ------------------------------------------> VAT rate for category 04 (30.80%)
         -----------------------------------------------> Reserved
```
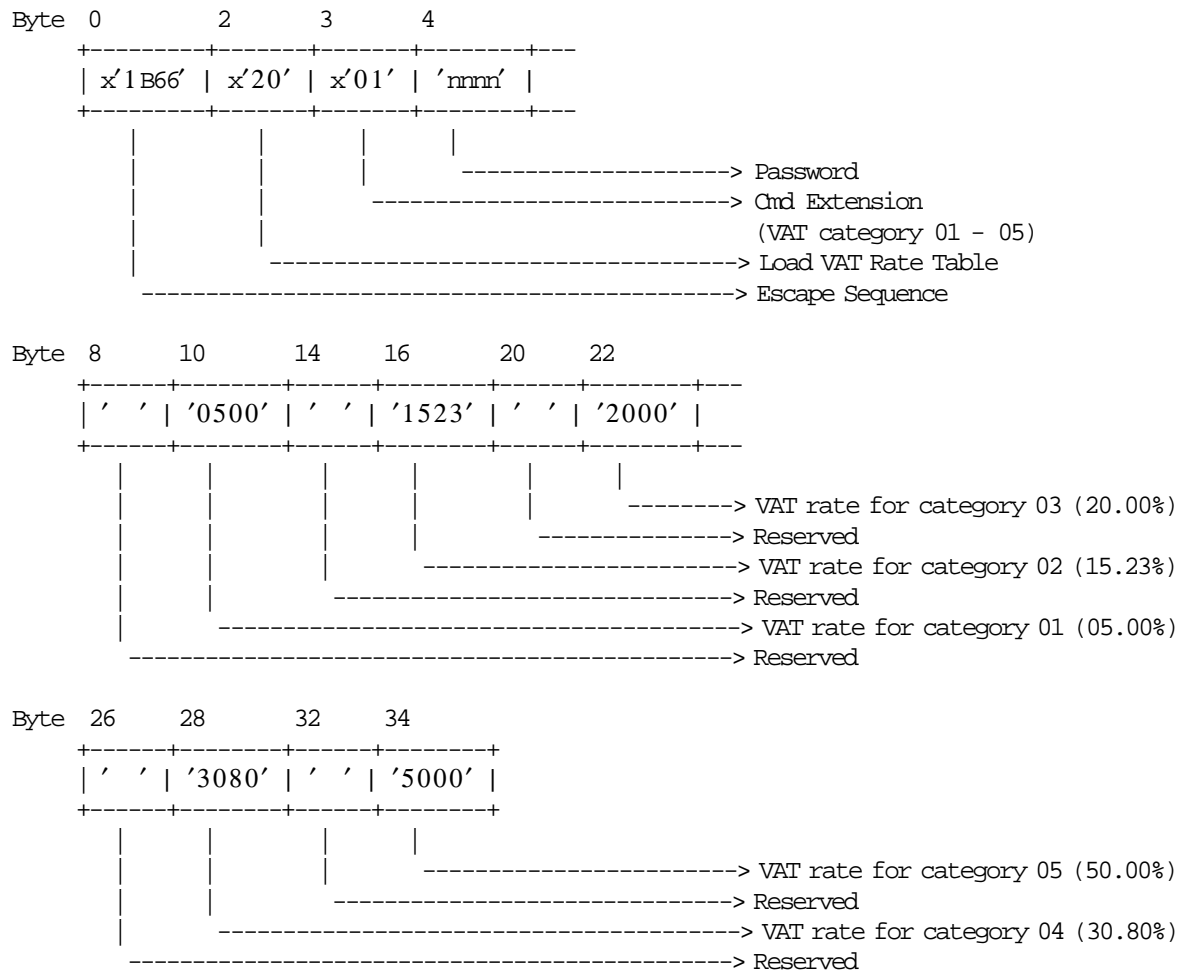
5.1.7.3 Load VAT Rate Table Calculations

There are not calculations for this command.

5.1.7.4 Load VAT Rate Table Rules

- In Argentina, 20 categories can be loaded.
- The VAT category 01 is ″GENERAL VAT″. Its value cannot be ′0000′ or ′9999′.
- The VAT rate tables are stored in the BATTERY-BACKED RAM.

5.1.8 (21) - Verify VAT Rate Table

This command is used to compare the VAT rates loaded with 20 command. If the VAT rates are equals, the table will be write into fiscal battery backed up RAM.
To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), ticket set/reset header (D7 cmd.) and ticket invoice/credit note set/reset header (B7 cmd.) have to be executed before.

5.1.8.1 Command Format

```
-----------------------------------------------------------------------


BYTE BIT   CONTENT                                    TYPE    LENGTH


 0-1       1B66 - cmd prefix                          hex       2
 2         21 - Verify VAT Tables                     hex       1
 3         Cmd Extension                              hex       1
           01 = VAT Categories 01 - 05
           02 = VAT Categories 06 - 10
           03 = VAT Categories 11 - 15
           04 = VAT Categories 16 - 20
 4-7       Password                                   ASCII     4
 8-9       Reserved                                   ASCII     2
10-13      VAT Rate for Category 01/06/11/16          ASCII     4
14-15      Reserved                                   ASCII     2
16-19      VAT Rate for Category 02/07/12/17          ASCII     4
20-21      Reserved                                   ASCII     2
22-25      VAT Rate for Category 03/08/13/18          ASCII     4
26-27      Reserved                                   ASCII     2
28-31      VAT Rate for Category 04/09/14/19          ASCII     4
32-33      Reserved                                   ASCII     2
34-37      VAT Rate for Category 05/10/15/20          ASCII     4


-----------------------------------------------------------------------
```

Notes:

1. VAT rate is a fixed point number with 2 decimal digits. Separator characters must not be included in the VAT rate string. For example, for VAT rate 8%, specify '0800'.

2. VAT rate field can range from '0000' to '9999'. Values from '0000' to '9998' are used to specify the VAT rate, while value '9999' is used to inhibit the corresponding category.

3. The print format for VAT rates depends on their specification:

   a. If all rates are specified as 'xx00' the print format is %rr.
   b. If at least one rate is not specified as 'xx00' the print format is %rr.rr.

5.1.8.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+---
      | x′1B66′ | x′21′ | x′01′ | ′nnnn′ |
      +---------+-------+-------+--------+---
           |         |       |       |
           |         |       |        --------------------> Password
           |         |        --------------------------> Cmd Extension
           |         |                                     (VAT category 01 - 05)
           |          ------------------------------------> Verify VAT Rate Table
            ---------------------------------------------> Escape Sequence
```

```
Byte  8       10      14      16      20      22
      +------+--------+------+--------+------+--------+---
      | ′  ′ | ′0500′ | ′  ′ | ′1523′ | ′  ′ | ′2000′ |
      +------+--------+------+--------+------+--------+---
          |      |        |      |        |      |
          |      |        |      |        |       --------> VAT rate for category 03 (20.00%)
          |      |        |      |         ---------------> Reserved
          |      |        |       -----------------------> VAT rate for category 02 (15.23%)
          |      |         ------------------------------> Reserved
          |       --------------------------------------> VAT rate for category 01 (05.00%)
           ----------------------------------------------> Reserved
```

```
Byte  26      28      32      34
      +------+--------+------+--------+
      | ′  ′ | ′3080′ | ′  ′ | ′5000′ |
      +------+--------+------+--------+
          |      |        |      |
          |      |        |       -----------------------> VAT rate for category 05 (50.00%)
          |      |         ------------------------------> Reserved
          |       --------------------------------------> VAT rate for category 04 (30.80%)
           ----------------------------------------------> Reserved
```
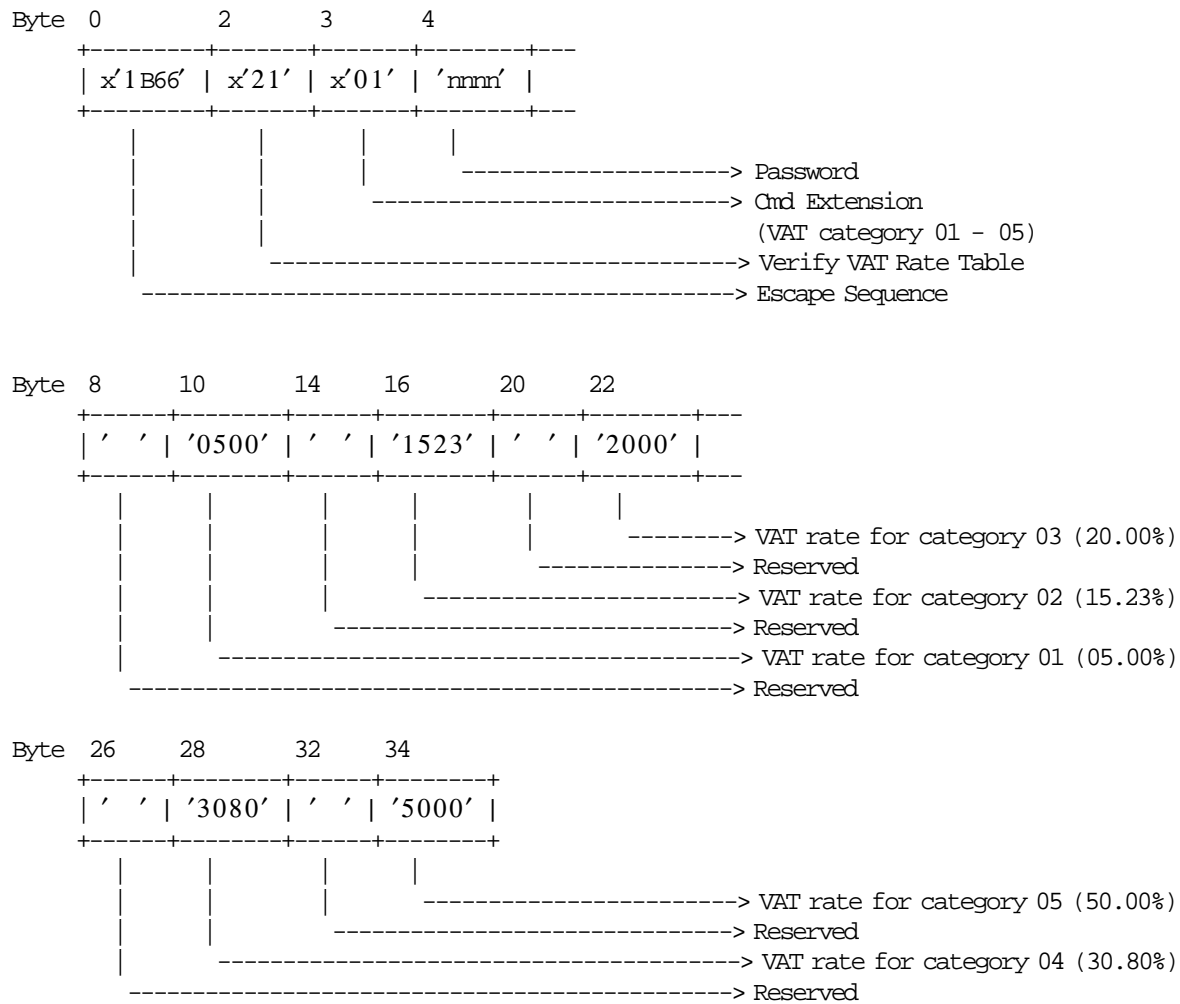
5.1.8.3 Verify VAT Rate Table Calculations

There are not calculations for this command.

5.1.8.4 Verify VAT Rate Table Rules

• In Argentina, 20 categories can be verified before the VAT table verified status is set.

5.1.9 (85) - Lockup Fiscal Printer

This command is used to disabled the operation of the fiscal printer. Only authorized service personnel will can restore the fiscal printer using the J4(CE) jumper procedure.

To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), set/reset header (D7 cmd.), TAX table verified (21 cmd.) and set date (16 cmd.) have to be executed before.

5.1.9.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE   LENGTH

  0-1      1B66 - cmd prefix                            hex       2
  2        85 - Lockup Fiscal Printer                   hex       1
  3        00 - Command extension                       hex       1


---------------------------------------------------------------------
```

5.1.9.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'85' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       -------------------> Cmd Extension
          |            --------------------------> Lockup Fiscal Printer
              -------------------------------------> Escape Sequence
```
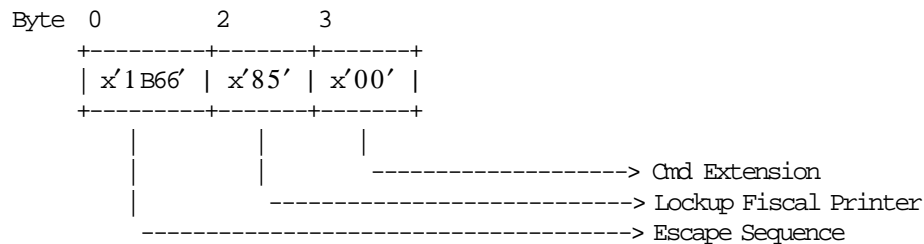
5.1.9.3 Lockup Fiscal Printer Calculations

The Lif_N_Lock counter is incremented when the activate and desactive (J4) CE jumper operation is done to restore the fiscal printer.

5.1.9.4 Lockup Fiscal Printer Rules

- 99 locked actions are allowed during the life of the fiscal printer and each locked action is stored into the fiscal memory.
- When the number locked reach 99, the printer can never be unlocked again.
- This command cannot be executed when sales period is in progress.
- When the fiscal printer is locked only the following commands can be issued:
  - (15) Extended and Short Fiscal Memory Report
  - (1F) POS Identification Report
  - (FF) Dump Fiscal RAM and Fiscal Memory
  - (DA) Electronic Read Fiscal Memory Tables
  - (DB) Electronic Read Counters and Accumulators

5.2 Setup and Utility Commands

The utility and configuration commands include:

- (C4) Fiscal Parameter Configuration
- (1A) Set Display Address
- (F1) Communicate Power On Status
- (F9) Read Current Status
- (1E) Set POS Identification
- (2E) Set General Parameters

5.2.1 (C4) - Fiscal Parameter Configuration

This command is used to configure the number of displays to be sensed during the printer operation.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.2.1.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - cmd prefix                              hex       2
 2         C4 - Fiscal Parameter Configuration            hex       1
 3         Cmd Extension                                  hex       1
           02 = Set Display Sensing Definition
 4-7       Reserved                                       ASCII     4
 8         Display Sensing Definition                     ASCII     1
           1 = Single/Dual Display Sensing
           2 = Dual Display Sensing Only


--------------------------------------------------------------------------
```

5.2.1.2 Command Example

```
Byte  0         2       3       4             8
      +---------+-------+-------+-------------+
      | x'1B66' | x'C4' | x'02' | '    ' | '2' |
      +---------+-------+-------+-------------+
           |         |       |       |       |
           |         |       |       |       --------> Display Sensing Definition
           |         |       |       -----------------> Reserved
           |         |       -----------------------> Cmd Extension
           |         -------------------------------> Fiscal Parameter Configuration
           -----------------------------------------> Escape Sequence
```
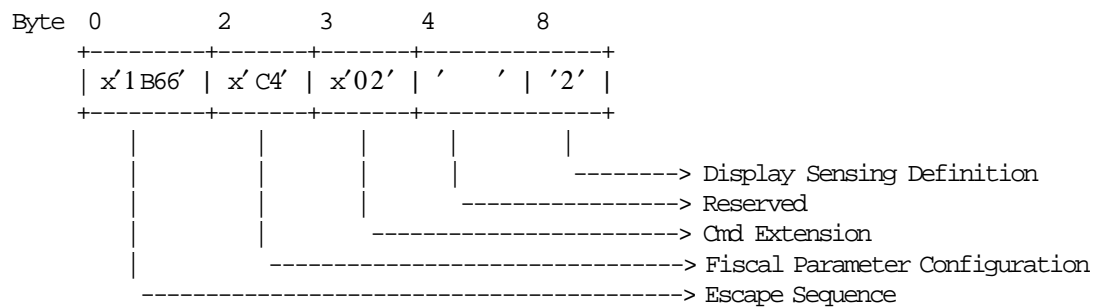
5.2.1.3 Fiscal Parameter Configuration Calculations

There are no calculations for this command.

5.2.1.4 Fiscal Parameter Configuration Rules

There are not rules for this command.

5.2.2 (1A) - Set Display Address

This command is used to set into fiscal printer battery backed up RAM the addresses of the 2 display(s) that have to be monitored for connection by the fiscal unit.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.2.2.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

  0-1      1B66 - cmd prefix                          hex       2
  2        1A - Set Display Address                   hex       1
  3        00 - Cmd Extension                         hex       1
  4-7      Password                                   ASCII     4
  8-9      First  Display Address                     ASCII     2 (Note 1)
 10-11     Second Display Address                     ASCII     2 (Note 1, 2)


-------------------------------------------------------------------------
```

Notes:

1. Specify the ASCII representation of the hexadecimal address.
   Example: for hexadecimal address x'2A' specify ASCII characters '2', 'A'.
   Valid display addresses are: x'20'- x'27' and x'2A'- x'2F'.

2. If command C4 was issued to allow single display, specify the second address as x'0000' for
   single display sensing.

5.2.2.2 Command Example

```
Byte  0         2       3       4        8      10
      +---------+-------+-------+--------+------+------+
      | x'1B66' | x'1A' | x'00' | 'nnnn' | '20' | '27' |
      +---------+-------+-------+--------+------+------+
         |         |       |       |        |      |
         |         |       |       |        |      ------> 2nd. display address
         |         |       |       |        -------------> 1st. display address
         |         |       |       ---------------------> Password
         |         |       ----------------------------> Cmd Extension
         |         ----------------------------------> Set Display Address
         --------------------------------------------> Escape Sequence
```
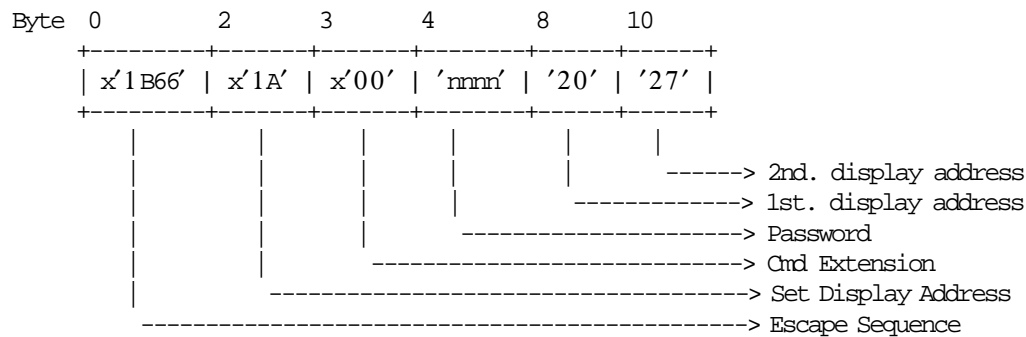
5.2.2.3 Set Display Address Calculations

There are no calculations for this command.

5.2.2.4 Set Display Flow

The following flow show the procedure to set displays.

```
.
.
|
|
|     +---------------------+           +----------------------------+
+--->| C4 cmd (single/dual) |---+--->| 1A cmd (specify address 1) |------>
|     +---------------------+   |      +----------------------------+           |
|                                |                                                 v
|                                |      +------------------------------+    |
|                                +--->| 1A cmd (specify address 1 & 2) |-->|
|                                       +------------------------------+    |
|                                                                              |
|                                                                              v
|     +--------------+           +------------------------------+    |
+--->| C4 cmd (dual) |-------------->| 1A cmd (specify address 1 & 2) |-->|
|     +--------------+           +------------------------------+    |
|                                                                              |
|                                                                              v
|                                  +----------------------------+    |
+------------------------------->| 1A cmd (specify address 1) |------>|
|                                  +----------------------------+    |
|                                                                              |
|                                                                              v
|                                  +------------------------------+    |
+------------------------------->| 1A cmd (specify address 1 & 2) |-->|
|                                  +------------------------------+    |
|                                                                              |
|                                                                              v
|     +-------------+                                                          |
+--->| Non Display |------------->-------------------->------------------>|
      +-------------+                                                          |
                                                                              .
                                                                              .
```
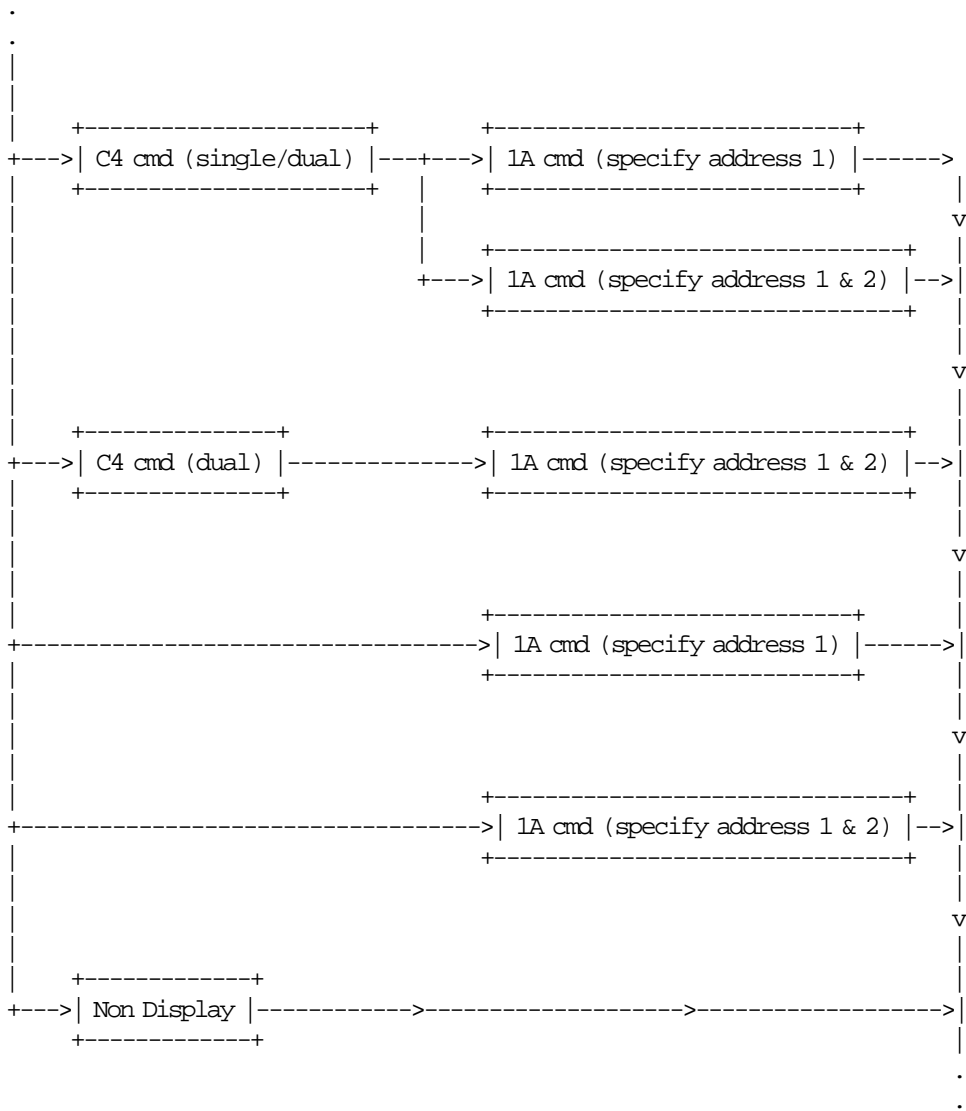
5.2.2.5 Set Displays Rules

- Display addresses are erased when RAM is cleared by activation of the CE jumper.

5.2.3 (F1) - Communicate Power On Status

This command requests the fiscal unit to communicate the power-on completion status.

5.2.3.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 - Command prefix                          hex        2
 2        F1 - Communicate IPL Completion Status         hex        1
 3        00 - Cmd Extension                             hex        1


 ----------------------------------------------------------------------
```

5.2.3.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'F1' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ---------------------> Cmd Extension
          |         ----------------------------> Communicate Power On Status
           -------------------------------------> Escape Sequence
```
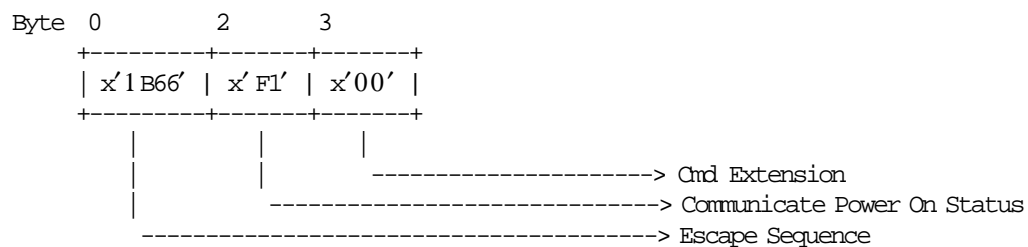
5.2.3.3 Communicate Power On Status Calculations

There are no calculations for this command.

5.2.3.4 Communicate Power On Status Rules

- Determines if the printer power was turned off in the middle of a command as shown by status byte 6, bit 4.

5.2.4 (F9) - Read Current Status

This command is used to requests the fiscal unit to report its current status.

5.2.4.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                     TYPE    LENGTH

 0-1       1B66 - command prefix                       hex        2
 2         F9 - Report Current Status                  hex        1
 3         00 - Cmd Extension                          hex        1


----------------------------------------------------------------------
```

5.2.4.2 Command Example

```
Byte  0        2       3
      +--------+------+------+
      | x'1B66'| x'F9'| x'00'|
      +--------+------+------+
          |       |      |
          |       |      ----------------------> Cmd Extension
          |        ----------------------------> Read Current Status
           -----------------------------------> Escape Sequence
```
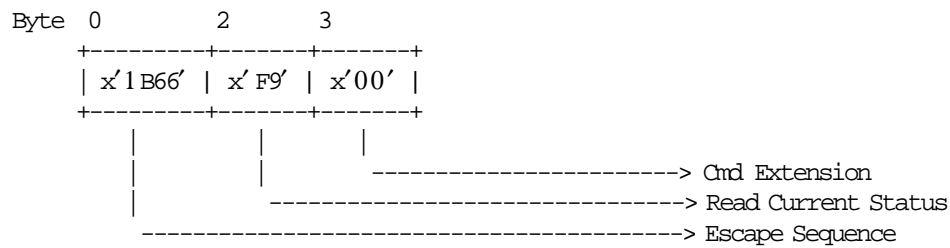
5.2.4.3 Read Current Status Calculations

There are no calculations for this command.

5.2.4.4 Read Power On Status Rules

There are not rules for this command.

5.2.5 (1E) - Set POS Identification

This command is used to load specific store information into the fiscal memory.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.2.5.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

0-1        1B66 - Command Prefix                         hex       2
2          1E - Set POS Identification                   hex       1
3          Cmd Extension                                 hex       1
      7-6  Reserved (always = '0')
      5-3  Print Typeface                                          (Note 1)
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = Reserved
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = Reserved
      2-0  Line Number
           001 = First Line
 4-41      Store Name                                    ASCII     38
42-52      UTIK Issuer Number                            ASCII     11
53-56      POS Id Number                                 ASCII      4 (Note 2)

-------------------------------------------------------------------------
```

Notes:

1. The number of CPI and emphasized apply to store name.

2. Values from '0001' to '9998'.

5.2.5.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+-----------------+---
      | x'1B66' | x'1E' | x'09' | 'Premium S.A....' |
      +---------+-------+-------+-----------------+---
           |         |       |       |
           |         |       |       ---------------------> Store Name
           |         |       ---------------------------> Cmd Extension
           |         |                                     (12 CPI, 1st. line)
           |         -------------------------------------> Set POS Identification
           ---------------------------------------------> Escape Sequence


Byte  42             53
      +--------------+--------+
      | '12345678901' | '1234' |
      +--------------+--------+
            |              |
            |              -----------------------------> POS Id Number (1234)
            ---------------------------------------------> UTIK Issuer Number (12-34567890-1)
```
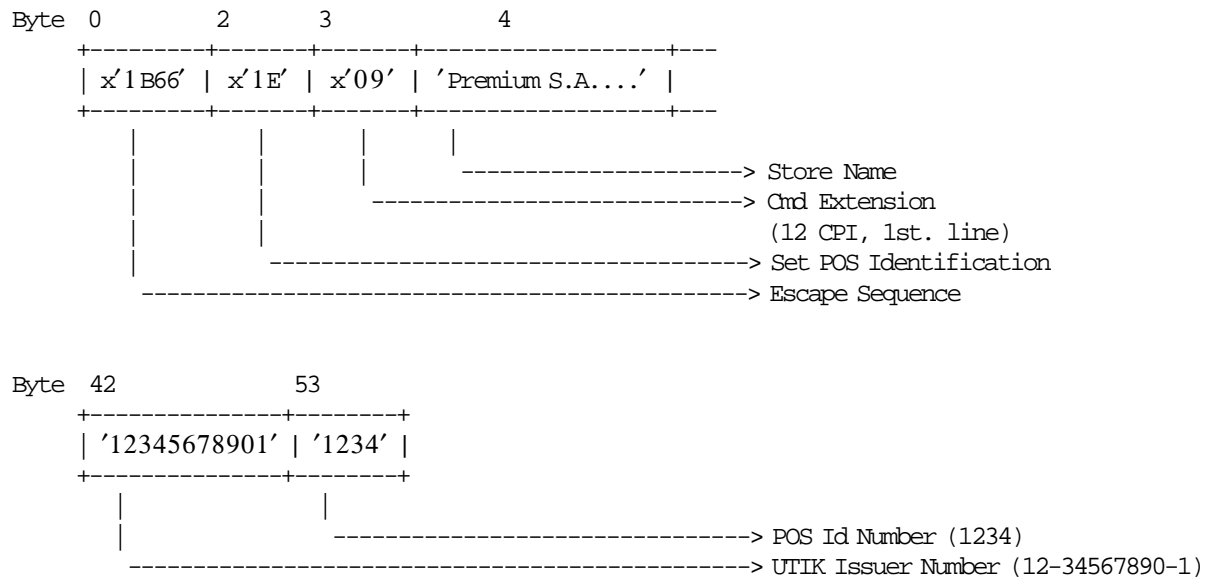
5.2.5.3 Set POS Identification Calculations

5.2.5.4 Set POS Identification Rules

- New POS information can be loaded into the fiscal memory 1 time(s) during the life of the fiscal printer.
- The string TOTAL in upper, lower or mixed case is not allowed in the store name field of this command.

5.2.6 (2E) - Set General Parameters

This command is used to set general parameters in fiscal RAM and fiscal EPROM memory.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

5.2.6.1 Command Format

```
 --------------------------------------------------------------------------

 BYTE BIT  CONTENT                                       TYPE   LENGTH

 1         1B66 - cmd prefix                             hex      2
 2         2E - Set General Parameters                   hex      1
 3         Cmd Extension                                 hex      1
           00 = Set Maximum Total for Ticket
           01 = Set Maximum Total for Ticket Invoice/Credit Note
           02 = Set Maximum Total for Ticket Invoice/Credit Note to Final Customer
           03 = Set VAT Not Enrolled Percent
           04 = Set Taxpayer Issuer Condition
           05 = Set Number of Lines To Print in a Sheet Paper (DI Station)
           06 = Reserved


        For Cmd Extension = 00 or 01 or 02
 4-13     Amount                                         ASCII    10 (Note 1)


        For Cmd Extension = 03
 4-7      Percent                                        ASCII    4 (Note 2)


        For Cmd Extension = 04
 4-4      Taxpayer Issuer Condition                      ASCII    1
           0 = VAT Responsible Enrolled
           1 = VAT Responsible Not Enrolled
           2 = VAT Not Responsible
           3 = VAT Exempt
           4 = Monotribute Responsible


        For Cmd Extension = 05
 4-7      Number of Lines To Print in Ticket Invoice     ASCII    4 (Note 3)
 8-11     Number of Lines To Print in Credit Note        ASCII    4 (Note 3)


 --------------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

2. Range allowed = 0000 to 9999.

3. Range allowed = 0050 to 9999.
   Default value = 9999.
   Value 9999 disables the paper control.

5.2.6.2 Command Example

```
Byte  0          2        3        4
     +---------+-------+-------+-----+
     | x'1B66' | x'2E' | x'04' | '2' |
     +---------+-------+-------+-----+
          |        |       |      |
          |        |       |      ----------------> VAT Not Responsible
          |        |       ----------------------> Cmd Extension (Set Taxpayer Issuer Condition)
          |        --------------------------------> Set General Parameters
          ------------------------------------------> Escape Sequence
```
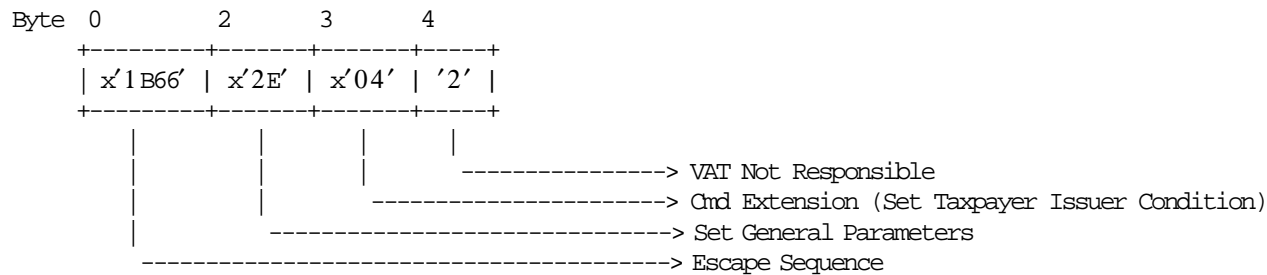
5.2.6.3 Set General Parameters Calculations

Mis_N_TI_Lines_To_Print = Number_of_Lines_To_Print_in_Ticket_Invoice
Mis_N_CN_Lines_To_Print = Number_of_Lines_To_Print_in_Credit_Note

5.2.6.4 Set General Parameters Rules

- Set Limit for Ticket Total
  - The amount is stored in RAM memory.
- Set Limit for Ticket Invoice/Credit Note Total
  - The amount is stored in RAM memory.
- Set Limit for Ticket Invoice/Credit Note Total to Final Customer
  - The amount is stored in RAM memory.
- Set VAT Not Enrolled Percent
  - The percent is stored in RAM memory.
- Set Taxpayer Issuer Condition
  - In training mode, the taxpayer issuer condition is loaded in the RAM memory and can be changed unlimited times during the life of the fiscal printer.
  - In fiscal mode, the taxpayer issuer condition is loaded in the fiscal EPROM memory and can be changed 5 times during the life of the fiscal printer.
    The taxpayer issuer condition data is compared to the last entry in the table.
    If the data is the same, the new entry is not added to the table.
  - When taxpayer issuer condition is changed, the perception types set with 22 cmd. (Set Perception Type) are eliminated.
    Therefore, in order to use the perception types again, the 22 cmd. must be executed.
- Set Number of Lines To Print in a Sheet Paper (DI Station)
  - This set represent the number of lines to print in a ticket invoice and credit note sheet paper and will be used to control the out of paper.
  - The set is optional.
    If the set isn't issued, the default value will be **50 lines** to print in sheet paper.
  - The number of lines set are stored in RAM memory.
  - If the CE jumper intervention is executed, the restored value will be 50.
  - Examples of the number of lines that can be printed in differents paper size to 6 lines/inch:
    — Letter size (11″): 63 lines
    — Legal size (14″): 81 lines

5.3 Sales Period in Progress Commands

- These commands can be executed to start a sale period and sale transaction

    - (01) Ticket - Print Header
    - (E0) Ticket Invoice - Print Header
    - (30) Credit Note - Print Header

- When a sale period is in progress or after that a PLD or printer error occurs, these commands can be executed.

    - (00) - System Commands
    - (03) - Item Additional Description
    - (D0) - Ticket - Fixed Price Item Sale
    - (D1) - Ticket - Fixed Price Negative/Uplift Item Sale
    - (D2) - Ticket - Item Sale
    - (D3) - Ticket - Negative/Uplift Item Sale
    - (D4) - Ticket - Subtotal/Total
    - (D9) - Ticket - Uplift/Discount on Subtotal
    - (D5) - Ticket - Payment
    - (06) - Ticket - End
    - (07) - Ticket - Cancel
    - (25) - Ticket Invoice/Credit Note - Set Customer Information
    - (22) - Ticket Invoice/Credit Note - Set/Reset Perception Type
    - (B0) - Ticket Invoice - Fixed Price Item Sale
    - (B1) - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
    - (B2) - Ticket Invoice - Item Sale
    - (B3) - Ticket Invoice - Negative/Uplift Item Sale
    - (B4) - Ticket Invoice - Subtotal/Total
    - (B8) - Ticket Invoice - Global Perception
    - (B9) - Ticket Invoice - Uplift/Discount on Subtotal
    - (B5) - Ticket Invoice - Payment
    - (E3) - Ticket Invoice - End
    - (0F) - Ticket Invoice - Cancel
    - (30) Credit Note - Print Header
    - (31) Credit Note - Fixed Price Item Sale
    - (32) Credit Note - Fixed Price Negative/Uplift Item Sale
    - (33) Credit Note - Item Sale
    - (34) Credit Note - Negative/Uplift Item Sale
    - (35) Credit Note - Subtotal/Total
    - (36) Credit Note - Global Perception
    - (37) Credit Note - Uplift/Discount on Subtotal
    - (38) Credit Note - Payment
    - (39) Credit Note - End
    - (3A) Credit Note - Cancel
    - (08) - Retrieve Interrupted Command
    - (C8) - Set Barcode Parameters
    - (C9) - Print Barcode
    - (DA) - Electronic Read Fiscal Memory Tables
    - (DB) - Electronic Read Counters and Accumulators
    - (F1) - Communicate Power On Status
    - (F4) - Return Print Head and Throat
    - (F8) - Communicate Printer EC
    - (F9) - Read Current Status
    - (FA) - Reset Fiscal Printer
    - (FC) - Communicate Fiscal Printer EC

- (FF10) - Electronic Dump Fiscal RAM Memory
- (FF11) - Electronic Dump Fiscal EPROM Memory

- Additionally, the following commands can be executed when a sales period is or not in progress:

  - (C0) - Legacy Print Credit Card Slips
  - (DD) - Start Application-Originated Report
  - (DE) - End Application-Originated Report
  - (EA) - Ordinary Printing Line on CR/SJ Station
  - (EB) - Ordinary Printing Line on DI Station
  - (A7) - Set   NFH Information
  - (A8) - Start NFH Document
  - (A9) - Print NFH Document
  - (AA) - End   NFH Document
  - (AB) - Cancel NFH Document

The calculations listed in this section are performed after the successful execution of the command.

5.4 Ticket in Progress Commands

The ticket in progress commands include:

- (01) Ticket - Print Header
- (03) Item Additional Description
- (D0) Ticket - Fixed Price Item Sale
- (D1) Ticket - Fixed Price Negative/Uplift Item Sale
- (D2) Ticket - Item Sale
- (D3) Ticket - Negative/Uplift Item Sale
- (D4) Ticket - Subtotal/Total
- (D9) Ticket - Uplift/Discount on Subtotal
- (D5) Ticket - Payment
- (06) Ticket - End
- (07) Ticket - Cancel

5.4.1 Ticket Flow Chart

```
                    PRINT HEADER (01)
                           |
                    +-------------------------------------------->+
        +----------------->+                                      |
        |                  |                                      |
        |      ITEM ADDITIONAL DESCRIPTION (03)                   |
        |                  |                                      |
        |           +------+------+                               |
        |           |             |                               |
        |       ITEM (D2)    FIXED ITEM (D0)                      |
        |           |             |                               |
        |           +------>+<------+                              |
        |                  |                                      v
        +<----------------+------------------------------------->+
        +----------------->+------------------------+             |
        |           +------+------+                 |             |
        |           |             |                 |             |
        | NEG/UPL ITEM (D3)  FIXED NEG/UPL ITEM (D1) |             |
        |           |             |                 |             |
        |           +------>+<------+                |             |
        |                  |                 |       |             v
        +<----------------+-----------------------|----------------->+
        +----------------->+<----------------------+             |
        |                  |                       |             |
        |        TOTAL/SUBTOT. (D4)                |             |
        |                  |                       |             |
        |           +------+------+                |             |
        |           |             |                |             |
        | DISCOUNT SBT.(D9) | UPLIFT SBT.(D9)      |             |
        |           |       |     |                |             |
        +<--------+       +       +------------->+               |
                       |                                         |
            +------------->+                                      |
            |             |                                      |
            |         PAYMENT (D5)                               |
            |             |                                      v
            +<-----------+------------------------------------->+
            +------------->+<--------+                           |
            |             | UP TO                               |
            | ORDINARY PRINTING (EA) |  6                       |
            |             | TIMES                               |
            +------------->+<--------+                           |
                       |                                         v
                       |                                         |
                  END (06)                              CANCEL (07)
                       |                                         |
                       +<----------------------------------------+
                       |
```
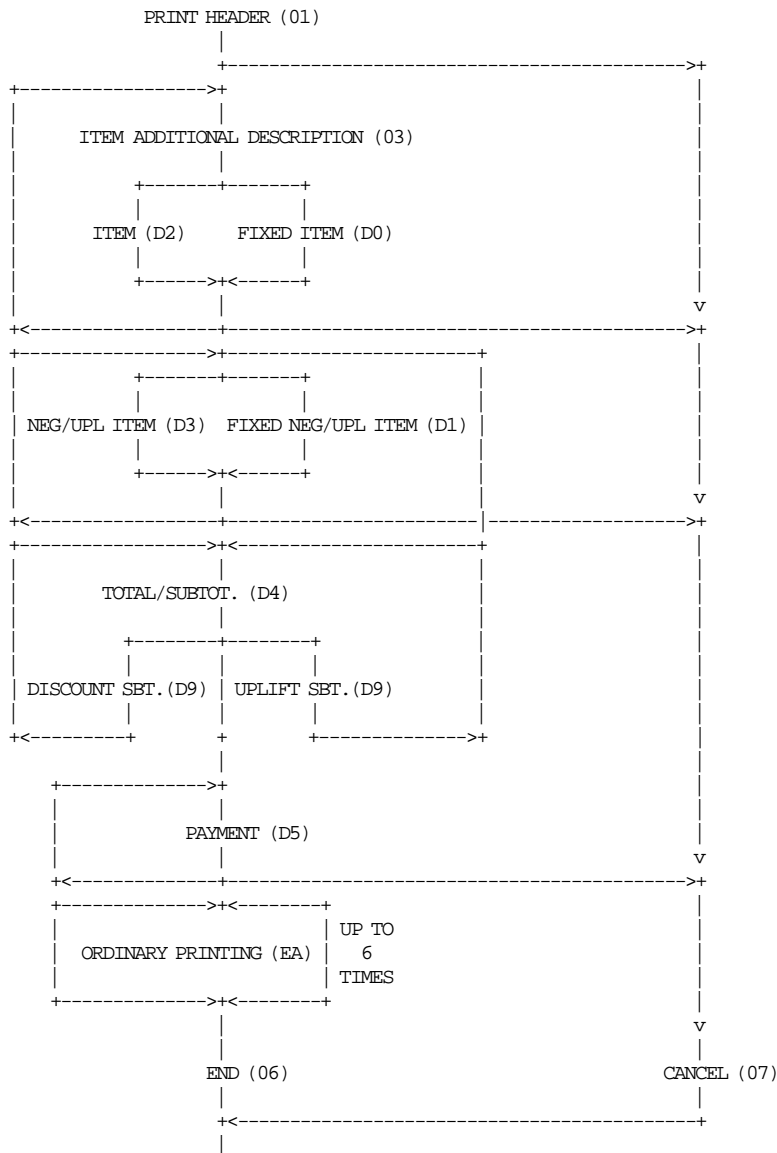
5.4.2 General Ticket Rules

- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on CR station can be printed.
  After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.
- Credit card printing on the DI station is allowed in the payment phase only.

5.4.3 (01) - Ticket Print Header

This command is used to print the ticket header on customer receipt station.
To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

5.4.3.1 Command Format

```
------------------------------------------------------------------------

 BYTE       CONTENT                                       TYPE    LENGTH

 0-1        1B66 - cmd prefix                             hex        2
 2          01 - Ticket Print Header                      hex        1
 3          Graphic                                       hex        1
            00 = NO
            01 = YES

   If Cmd Extension = 01 specify
 4          Graphic Number                                hex        1 (Note 1)


------------------------------------------------------------------------
```
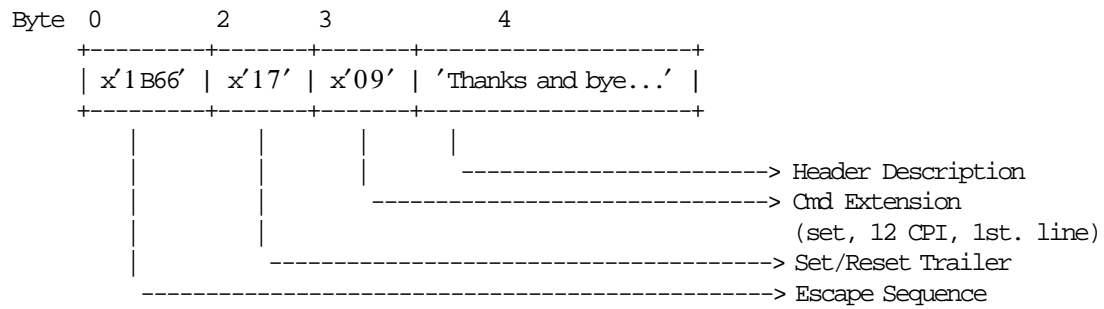
Notes:

1. Valid value is x01.

5.4.3.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'01' | x'01' |
      +---------+-------+-------+
           |         |       |
           |         |       ----------------------> With Graphic
           |         --------------------------------> Ticket Print Header
           ----------------------------------------> Escape Sequence
```
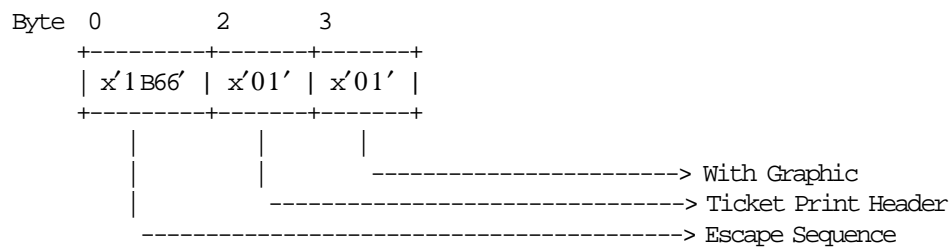
5.4.3.3 Ticket Print Header Calculations

Item_Ordinal_Number = 0

5.4.3.4 Ticket Print Header Rules

- The following checking is performed before the execution of the command in order to ensure that the ticket could be eventually cancelled.

  (999,999,999.49 - Day_Canc_g(gg)) > Limit for Ticket Total
  The Limit for Ticket Total is set with 2E cmd.

  If this expression isn't satisfied the error code 016 is returned.
- Graphics are printed on CR station and are not replicated on SJ station.
- All graphics will be printed always at 200 DPI.
- The maximum number of lines to print a graphic is 5.

5.4.4 (03) - Item Additional Description

This command is used to print the additional description lines during a ticket, ticket invoice or credit note.
To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

5.4.4.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                   TYPE    LENGTH

 0-1      1B66 - Cmd Prefix                         hex       2
 2        03 - Item Additional Description          hex       1
 3        Document                                  hex       1
          00 = Ticket or Ticket Invoice
          01 = Credit Note
 4-25     Description                               ASCII     22


---------------------------------------------------------------------
```

5.4.4.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+--------------+
      | x'1B66' | x'03' | x'00' | 'Apples ...' |
      +---------+-------+-------+--------------+
           |         |       |       |
           |         |       |       ----------------> Description
           |         |       ----------------------> Document (Ticket or Ticket Invoice)
           |         ------------------------------> Item Additional Description
           --------------------------------------> Escape Sequence
```
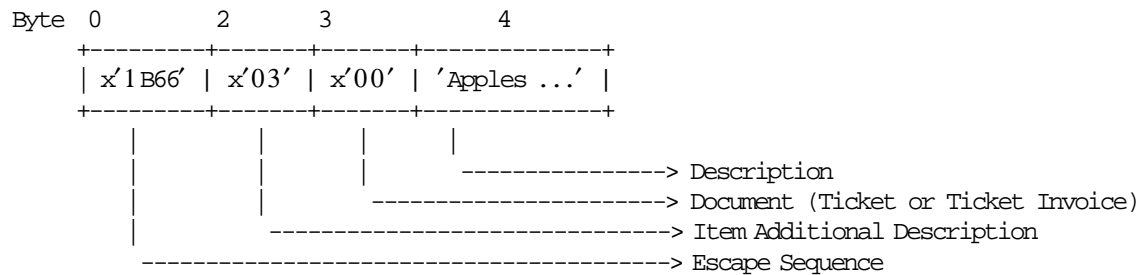
5.4.4.3 Item Additional Description Calculations

There are not calculation for this command.

5.4.4.4 Item Additional Description Rules

- The maximum number of item additional description lines allowed in the ticket - item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - fixed negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - negative/uplift fixed item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - negative/uplift item sale is 4.

- The maximum number of item additional description lines allowed in the credit note - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - negative/uplift fixed item sale is 4.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.4.5 (D0) - Ticket Fixed Price Item Sale

The fixed price negative items are items which prices are not affect by discount or uplift on subtotal operations.
This command is used to record the amount of an fixed price item and to print lines containing description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

5.4.5.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                          hex        2
 2         D0 - Ticket Fixed Price Item Sale          hex        1
 3         Cmd Extension                              hex        1
     7     Retry
           0 = NO
           1 = YES
     6     Reserved (always = '0')
     5     Print Density
           0 = Normal
           1 = Emphasized
     4     Reserved (always = '0')
     3     Print Typeface
           0 = 15 CPI
           1 = 12 CPI
     2-0   Reserved (always = '0')
 4-12      Item Amount                                ASCII      9 (Note 1)
13-14      VAT Category                               ASCII      2 (Note 2)
15-23      Tax Amount                                 ASCII      9 (Note 3)
24         Tax Type                                   ASCII      1 (Note 4)
25-46      Description                                ASCII     22 (Note 5)


----------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

2. Specify a valid VAT category if amount string is not blank.
   Range allowed is from 01 up to 20.
   For ticket type 'C', value allowed is 00.

3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
   The tax amount must be less than item amount.

4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
   If blank, the tax amount is ignored.

5. The special character 0x0E is not accepted.

5.4.5.2 Command Example

```
Byte  0           2       3       4
      +---------+-------+-------+------------+
      | x'1B66' | x'D0' | x'00' | '000000100' |
      +---------+-------+-------+------------+
           |        |       |       |
           |        |       |       ----------------> Item Amount
           |        |       -----------------------> Cmd Extension (retry NO,
           |        |                                  print normal, print 15 CPI)
           |        -------------------------------> Ticket Fixed Price Item Sale
           -----------------------------------------> Escape Sequence


Byte  13     15            24    25
      +------+------------+-----+------------+
      | '01' | '000000100' | 'F' | 'Apples ...' |
      +------+------------+-----+------------+
          |       |          |      |
          |       |          |      ----------------> Description
          |       |          ---------------------> Tax Type (Fixed)
          |       -----------------------------------> Tax Amount
          -----------------------------------------> VAT Category (01)
```
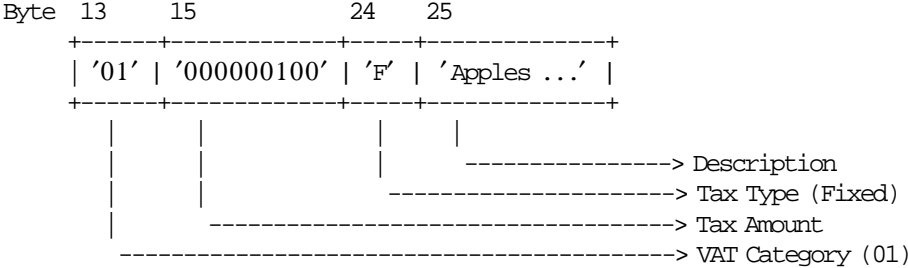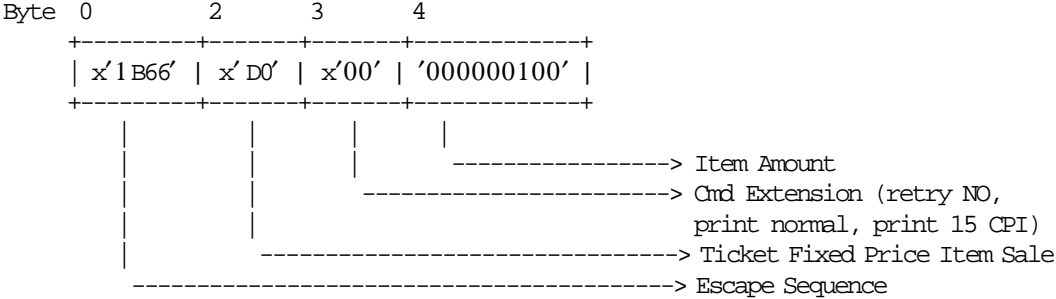
5.4.5.3 Ticket Fixed Price Item Sale Calculations

Item_Ordinal_Number = Item_Ordinal_Number + 1

- **For Taxpayer Issuer Condition = VAT Responsible Enrolled**

  Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + ItemAmount

  – **If Tax Amount is greater than 0**

  $$Factor = TRUNC(\frac{(ItemAmount - TaxAmount) \times (VAT\_Rate(vv) \times 100)}{(ItemAmount \times (VAT\_Rate(vv) + 100))} \times 100 + 0.5)/100$$

  The calculated Factor must be printed in the ticket.

  Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount

- **For Taxpayer Issuer Condition <> VAT Responsible Enrolled**

  Tra_Tot_Fixed = Tra_Tot_Fixed + ItemAmount

  Tra_Tax_Fixed = Tra_Tax_Fixed + TaxAmount

Where:

  vv = VAT category, range = 01 up to 20.

5.4.5.4 Ticket Fixed Price Item Sale Rules

- The item ordinal number is reset to 1 at the start of every sales transaction.
- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket total calculated (Tra_Tot_v + Item Amount) can not be greater than the limit ticket total allowed (Set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- Each item is assigned a value-added tax (VAT) category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the ″GENERAL VAT″.
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in the fixed price item sale command is disabled (rate = 9999).
- The fixed price item sale amount includes VAT.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.4.6 (D1) - Ticket Fixed Price Negative/Uplift Item Sale

The Fixed Price Negative/Uplift Items are items which prices are not affect by discount or uplift on subtotal operations.
This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the print header (01 cmd.) and at least one fixed price item sale (D0 cmd.) have to be executed before.

5.4.6.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                            hex        2
 2         D1 - Ticket Fixed Price Neg/Upl Item Sale    hex        1
 3         Cmd Extension                                hex        1
      7    Retry
           0 = NO
           1 = YES
      6    Reserved (always = '0')
      5    Print Density
           0 = Normal
           1 = Emphasized
      4    Reserved (always = '0')
      3    Print Typeface
           0 = 15 CPI
           1 = 12 CPI
      2-0  Item Type
           000 = Reserved
           001 = VOID (on previous Item Sale)
           010 = REDUCTION (by VAT)
           011 = DISCOUNT (on previous Item Sale)
           100 = EMPTY (by VAT)
           101 = DISCOUNT (by VAT)
           110 = UPLIFT (on previous Item Sale)
           111 = Reserved
 4-12      Item Amount                                  ASCII      9 (Note 1)
13-14      VAT Category                                 ASCII      2 (Note 2)
15-23      Tax Amount                                   ASCII      9 (Note 3)
24         Tax Type                                     ASCII      1 (Note 4)
25-27      Item Ordinal Number                          ASCII      3 (Note 5 on page 89)
28-49      Description                                  ASCII     22 (Note 6 on page 89)


------------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

2. Range allowed is from 01 to up 20.
   Fixed point number with 2 decimal digits.
   For ticket type 'C', value allowed is 00.

3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
   The tax amount must be less or equal than item amount.

4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
   If blank, the tax amount is ignored.

5. Is applied to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

6. The special character 0x0E is not accepted.

5.4.6.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+-------------+
      | x'1B66' | x'D1' | x'03' | '000000100' |
      +---------+-------+-------+-------------+
          |          |       |       |
          |          |       |       ----------------> Item Amount
          |          |       ----------------------> Cmd Extension (retry NO,
          |          |                                 print normal, print 15 CPI, discount)
          |          ----------------------------> Ticket Fixed Price Negative/Uplift Item Sale
          -----------------------------------------> Escape Sequence


Byte  13     15           24    25      28
      +------+------------+-----+-------+-------------+
      | '01' | '000000100' | 'F' | '014' | 'Apples ...' |
      +------+------------+-----+-------+-------------+
         |        |          |      |        |
         |        |          |      |        --------> Description
         |        |          |      ----------------> Ordinal Number (014)
         |        |          ---------------------> Tax Type (Fixed)
         |        -----------------------------------> Tax Amount
         -------------------------------------------> VAT Category (01)
```
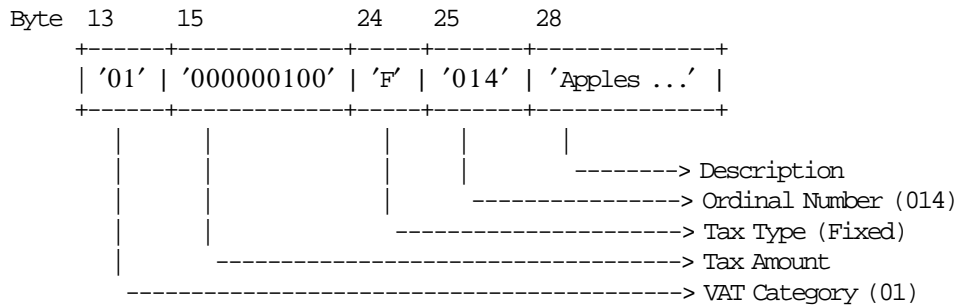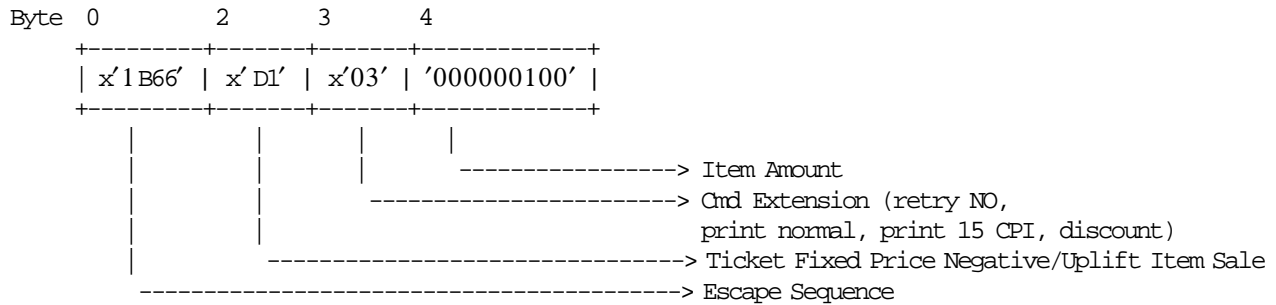
5.4.6.3 Ticket Fixed Price Negative Item Sale Calculations

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

  - **If Item Type <> Uplift**

    $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - ItemAmount$
    $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + ItemAmount$
    $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$

  - **If Tax Amount is greater than 0**

    $$Factor = TRUNC(\frac{(ItemAmount - TaxAmount) \times (VAT\_Rate(vv) \times 100)}{(ItemAmount \times (VAT\_Rate(vv) + 100))} \times 100 + 0.5)/100$$

    The calculated Factor must be printed in the ticket.

- **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

  - **If Item Type <> Uplift**

    $Tra\_Tot\_Fixed = Tra\_Tot\_Fixed - ItemAmount \quad Tra\_Tax\_Fixed = Tra\_Tax\_Fixed - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot\_Fixed = Tra\_Tot\_Fixed + ItemAmount \quad Tra\_Tax\_Fixed = Tra\_Tax\_Fixed + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20

5.4.6.4 Ticket Fixed Price Negative/Uplift Item Sale Rules

- The factor percent will be printed between brackets. Example: [12,32] or [12].
- The VAT category 01 is the ″GENERAL VAT″.
- Fixed price negative/uplift item cannot be accepted if the VAT category specified in the fixed price item sale is disabled (rate = 9999).
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (14,34) or (14).
- To void a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:

  - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)

  - D1.Amount   = D0.Amount

  - D1.Tax Amount = D0.Tax Amount

  - D1.Description = D0.Description

  - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be voided.

- To discount a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:

  - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)

  - D1.Amount < D0.Amount

  - D1.Tax Amount ≤ D0.Tax Amount

  - (D0.Amount - D1.Amount) > (D0.Tax Amount - D1.Tax Amount)

  - D1.Description = D0.Description

  - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be discounted.

- To uplift a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:

  - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)

  - (D0.Amount   + D1.Amount)   ≤ 999999949

  - (D0.Tax Amount + D1.Tax Amount)   ≤ 999999949

  - (D0.Amount - D1.Amount) > (D0.Tax Amount + D1.Tax Amount)

  - D1.Description = D0.Description

  - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be uplifted.

- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- None of the fixed price negative or uplift item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.

5.4.7 (D2) - Ticket Item Sale

This command is used to record the amount of an item and to print lines containing item description, item amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

5.4.7.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                              hex        2
 2         D2 - Ticket Item Sale                          hex        1
 3         Cmd Extension                                  hex        1
      7    Retry
           0 = NO
           1 = YES
      6    Reserved (always = '0')
      5    Print Density
           0 = Normal
           1 = Emphasized
      4    Reserved (always = '0')
      3    Print Typeface
           0 = 15 CPI
           1 = 12 CPI
    2-0    Reserved (always = '0')
 4-12      Item Amount                                    ASCII      9 (Note 1)
13-14      VAT Category                                   ASCII      2 (Note 2)
15-23      Tax Amount                                     ASCII      9 (Note 3)
24         Tax Type                                       ASCII      1 (Note 4)
25-46      Description                                    ASCII     22 (Note 5)


-----------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

2. Specify a valid VAT category if amount string is not blank.
   Range allowed is from 01 up to 20.
   Fixed point number with 2 decimal digits.
   For ticket type 'C', value allowed is 00.

3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
   The tax amount must be less than item amount.

4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
   If blank, the tax amount is ignored.

5. The special character 0x0E is not accepted.

5.4.7.2 Command Example

```
Byte  0          2       3       4
      +---------+------+------+-------------+
      | x'1B66' | x'D2' | x'00' | '000000100' |
      +---------+------+------+-------------+
           |        |      |      |
           |        |      |      ----------------> Item Amount
           |        |      ----------------------> Cmd Extension (retry NO,
           |        |                               print normal, print 15 CPI)
           |        --------------------------------> Ticket Item Sale
           ------------------------------------------> Escape Sequence


Byte  13     15            24    25
      +------+------------+-----+-------------+
      | '01' | '000000100' | 'F' | 'Apples ...' |
      +------+------------+-----+-------------+
          |        |          |      |
          |        |          |      ----------------> Description
          |        |          ---------------------> Tax Type (Fixed)
          |        -----------------------------------> Tax Amount
          -------------------------------------------> VAT Category (01)
```

5.4.7.3 Ticket Item Sale Calculations

Item_Ordinal_Number = Item_Ordinal_Number + 1

- **For Taxpayer Issuer Condition = VAT Responsible Enrolled**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + ItemAmount$

  - **If Tax Amount is greater than 0**

    $$Factor = TRUNC(\frac{(ItemAmount - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(ItemAmount \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

    The calculated Factor must be printed in the ticket.

  - **If Tax Type = F**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

  - **If Tax Type = P**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

- **For Taxpayer Issuer Condition NOT = VAT Responsible Enrolled**

  $Tra\_Tot = Tra\_Tot + ItemAmount$

  - **If Tax Type = F**

    $Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$

  - **If Tax Type = P**

    $Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20.

5.4.7.4 Ticket Item Sale Rules

- The item ordinal number is reset to 1 at the start of every sales transaction.
- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket total calculated (Tra_Tot_v + Item Amount) can not be greater than the limit ticket total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- Each item is assigned a value-added tax (VAT) category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the ″GENERAL VAT″.
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (21,34) or (21).
- Items cannot be accepted if the VAT category specified in the item sale command is disabled (rate = 9999).
- The item price includes VAT.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.4.8 (D3) - Ticket Negative/Uplift Item Sale

This command is used to record the amount of a negative/uplift item and prints lines containing the item description, item amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the print header (01 cmd.) and at least one item sale (D2 cmd.) have to be executed before.

5.4.8.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                  TYPE   LENGTH


 0-1      1B66 - Cmd Prefix                        hex      2
 2        D3 - Ticket Negative/Uplift Item Sale    hex      1
 3        Cmd Extension                            hex      1
      7   Retry
          0 = NO
          1 = YES
      6   Reserved (always = '0')
      5   Print Density
          0 = Normal
          1 = Emphasized
      4   Reserved (always = '0')
      3   Print Typeface
          0 = 15 CPI
          1 = 12 CPI
    2-0   Item Type
          000 = Reserved
          001 = VOID (on previous Item Sale)
          010 = REDUCTION (by VAT)
          011 = DISCOUNT (on previous Item Sale)
          100 = EMPTY (by VAT)
          101 = DISCOUNT (by VAT)
          110 = UPLIFT (on previous Item Sale)
          111 = Reserved
 4-12     Item Amount                              ASCII    9 (Note 1)
13-14     VAT Category                             ASCII    2 (Note 2)
15-23     Tax Amount                               ASCII    9
24        Tax Type                                 ASCII    1 (Note 3, 4)
25-27     Item Ordinal Number                      ASCII    3 (Note 5 on page 95)
28-49     Description                              ASCII   22 (Note 6 on page 95)


---------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

2. Range allowed is from 01 to up 20.
   Fixed point number with 2 decimal digits.
   For ticket type 'C', value allowed is 00.

3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
   The tax amount must be less or equal than item amount.

4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
   If blank, the tax amount is ignored.

5. Is applied to Void (on previous Item Sale), Discount (on previous Item Sale) and Uplift (on previous Item Sale) only.

6. The special character 0x0E is not accepted.

5.4.8.2 Command Example

```
Byte  0           2       3       4
      +---------+-------+-------+-------------+
      | x'1B66' | x'D3' | x'03' | '000000100' |
      +---------+-------+-------+-------------+
           |         |       |       |
           |         |       |       ----------------> Item Amount
           |         |       -----------------------> Cmd Extension (retry NO,
           |         |                                  print normal, print 15 CPI, discount)
           |         -----------------------------> Ticket Negative/Uplift Item Sale
           ---------------------------------------> Escape Sequence
```

```
Byte  13    15            24    25     28
      +------+------------+-----+-------+-------------+
      | '01' | '000000100' | 'F' | '014' | 'Apples ...' |
      +------+------------+-----+-------+-------------+
          |         |          |     |       |
          |         |          |     |       --------> Description
          |         |          |     ----------------> Item Ordinal Number (014)
          |         |          ---------------------> Tax Type (Fixed)
          |         ----------------------------------> Tax Amount
          -----------------------------------------> VAT Category (01)
```

5.4.8.3 Ticket Negative/Uplift Item Sale Calculations

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**
  - **If Item Type <> Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Item\_Amt$

    — **If Tax Type = 'F'**

      $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) - TaxAmount$

    — **If Tax Type = 'P'**

      $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

    — **If Tax Type = 'F'**

      $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

    — **If Tax Type = 'P'**

      $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

  - **If Tax Amount is greater than 0**

    $$Factor = TRUNC(\frac{(ItemAmount - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(ItemAmount \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the ticket.

- **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**
  - **If Item Type <> Uplift**

    $Tra\_Tot = Tra\_Tot - Item\_Amt$
    - — **If Tax Type = ′F′**

      $Tra\_Tax\_F = Tra\_Tax\_F - TaxAmount$
    - — **If Tax Type = ′P′**

      $Tra\_Tax\_P = Tra\_Tax\_P - TaxAmount$
  - **If Item Type = Uplift**

    $Tra\_Tot = Tra\_Tot + Item\_Amt$
    - — **If Tax Type = ′F′**

      $Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$
    - — **If Tax Type = ′P′**

      $Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20

5.4.8.4 Ticket Negative/Uplift Item Sale Rules

- A minus sign is printed for negative items.
- The factor percent will be printed between brackets.
  Example: [12,32] or [12].
- The VAT category 01 is the ″GENERAL VAT″.
- Negative or uplifts items cannot be accepted if the VAT category specified in the item sale command is disabled (rate = 9999).
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses.
  Example: (21,34) or (21).
- To void item previously sold in the same transaction with D2 cmd., the following rules has to be apply:

  - D3.Item Additional Descrip. = D2.Item Additional Descrip. (printed with 03 cmd.)

  - D3.Amount   = D2.Amount

  - D3.Tax Amount = D2.Tax Amount

  - D3.Description = D2.Description

  - D3.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be voided.

- To discount a item previously sold in the same transaction with D2 cmd., the following rules has to be apply:

  - D3.Item Additional Descrip. = D2.Item Additional Descrip. (printed with 03 cmd)

  - D3.Amount < D2.Amount

  - D3.Tax Amount ≤ D2.Tax Amount

- (D2.Amount - D3.Amount) > (D2.Tax Amount - D3.Tax Amount)

- D3.Description = D2.Description

- D3.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be discounted.

- To Uplift a item previously sold in the same transaction with D2 cmd., the following rules has to be apply:

  - D3.Item Additional Descrip. = D2.Item Additional Descrip. (printed with 03 cmd.)

  - (D2.Amount   + D3.Amount)   ≤ 999999949

  - (D2.Tax Amount + D3.Tax Amount)   ≤ 999999949

  - (D2.Amount - D3.Amount) > (D2.Tax Amount + D3.Tax Amount)

  - D3.Description = D2.Description

  - D3.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be uplifted.

- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- None of the negative or uplift item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.
- The negative/uplift item number must match the item that it is modifying.
- If the void option is selected, the command amount must match exactly the adjusted item accumulator that has resulted from any operations on the item.
- The resulting operation must respect the minimum and maximum values of the item accumulator. Only voids can result in an item accumulator of zero, otherwise the minimum item accumulator value is 1.
- Once an item is voided, no future negative item or uplift item operations are allowed against that item.

5.4.9 (D4) - Ticket Subtotal/Total

This command is used to calculate the transaction subtotal or total and amount due and verify that the total amount accumulated by the fiscal unit matches the amount accumulated by the application program.
To execute this command the serialize fiscal printer (1B cmd.) and any item sale (D2 cmd.) have to be executed before.

5.4.9.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT   CONTENT                                         TYPE    LENGTH

 0-1        1B66 – cmd prefix                              hex       2
 2          D4 – Ticket Subtotal/Total                     hex       1
 3          Cmd Extension                                  hex       1
     7      Retry
            0 = NO
            1 = YES
     6      Reserved (always = '0')
     5      Print Density
            0 = Normal
            1 = Emphasized
   4-0      Reserved (always = '0')
 4-13       Amount                                         ASCII    10 (Note 1)


--------------------------------------------------------------------------
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

5.4.9.2 Command Example

```
Byte  0           2       3       4
      +---------+-------+-------+-------------+
      | x'1B66' | x'D4' | x'00' | '0000001000' |
      +---------+-------+-------+-------------+
          |         |       |       |
          |         |       |       ----------------> Amount
          |         |       ------------------------> Cmd Extension (print normal)
          |         --------------------------------> Ticket Subtotal/Total
          ------------------------------------------> Escape Sequence
```
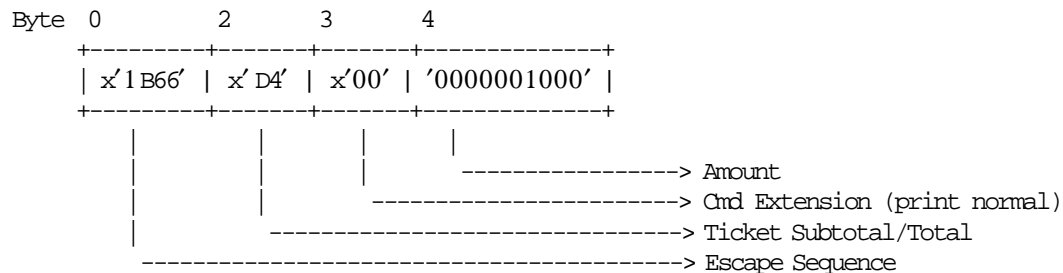
5.4.9.3 Ticket Subtotal/Total Calculations

VAT rates are recorded as percentages.

VAT rates of 00.00% to 99.98% are supported. 99.99% loaded into the VAT rate table disables the use of that category.

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra\_Tot = \sum_{vv} Tra\_Tot\_v(vv)$$

$$Tra\_Tot\_Fixed = \sum_{vv} Tra\_Tot\_Fixed\_v(vv)$$

$$Tra\_Tax\_F = \sum_{vv} Tra\_Tax\_F\_v(vv)$$

$$Tra\_Tax\_P = \sum_{vv} Tra\_Tax\_P\_v(vv)$$

$$Tra\_Tax\_Fixed = \sum_{vv} Tra\_Tax\_Fixed\_v(vv)$$

$$Tra\_VAT\_Fixed\_v(vv) = TRUNC(\frac{(Tra\_Tot\_Fixed\_v(vv) - Tra\_Tax\_Fixed\_v(vv)) \times VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT\_Fixed = \sum_{vv} Tra\_VAT\_Fixed\_v(vv)$$

$$Tra\_VAT\_v(vv) = TRUNC(\frac{(Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv) - Tra\_Tax\_P\_v(vv)) \times VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT = \sum_{vv} Tra\_VAT\_v(vv)$$

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed$$

Where:

vv = VAT category, range = 01 up to 20

5.4.9.4 Ticket Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum total ticket allowed (Vouc_Max_Total).
- The item accumulators are erased and the item ordinal number is reset to 1. No negative item or uplift item operations are accepted on items that occurred before the total cmd. If this need arises, a cancel (07 cmd.) must be performed.
- The string "TOTAL" will be printed double-wide.
- The string "SUBTOT." will be printed single-wide.

5.4.10 (D9) - Ticket Discount/Uplift on Subtotal

This command is used to apply discount or uplift on subtotal.
To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

5.4.10.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - cmd prefix                            hex        2
 2         D9 - Ticket Discount/Uplift on Subtotal      hex        1
 3         Cmd Extension                                hex        1
      7    Retry
           0 = NO
           1 = YES
      6-1  Reserved (always = '0')
      0    Operation Type
           0 = Discount on Subtotal
           1 = Uplift   on Subtotal
 4-23      Description                                  ASCII     20 (Note 1)
24-25      Reserved                                     ASCII      2
26-35      Amount                                       ASCII     10


 ----------------------------------------------------------------------
```

Notes:

1. The special character 0x0E is not accepted.

5.4.10.2 Command Example

```
Byte  0        2       3       4
     +---------+-------+-------+-------------------+---
     | x'1B66' | x'D9' | x'00' | 'Discount 10% ...' |
     +---------+-------+-------+-------------------+---
         |         |       |       |
         |         |       |        ----------------> Description
         |         |        ----------------------> Cmd Extension (discount on subtotal)
         |          --------------------------------> Ticket Discount/Uplift on Subtotal
          ------------------------------------------> Escape Sequence


Byte  24     26
     +------+-------------+
     | ' '  | '0000001000' |
     +------+-------------+
        |       |
        |        ---------------------------------> Amount
         ------------------------------------------> Reserved
```

5.4.10.3 Ticket Discount/Uplift on Subtotal Calculations

$$Factor = TRUNC((\frac{Tra\_VAT}{Tra\_Tot - Tra\_Tax\_F} \times 100) + 0.5)/100$$

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra\_Disc\_Quo\_v(vv) = TRUNC((Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times \frac{Amount}{Tra\_Tot - Tra\_Tax\_F})$$

$$Tra\_Disc\_Rem\_v(vv) = mod(TRUNC((Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times \frac{Amount}{Tra\_Tot - Tra\_Tax\_F}))$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest reminder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **DISCOUNT ON SUBTOTAL**
  - **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

    $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Disc\_Quo\_v(vv)$$

    $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) - TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

    $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  - **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

    $$Tra\_Tot = Tra\_Tot - Amount$$

    $$Tra\_Tax\_P = Tra\_Tax\_P - TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

- **UPLIFT ON SUBTOTAL**
  - **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

    $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Disc\_Quo\_v(vv)$$

    $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) + TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

    $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  - **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

    $$Tra\_Tot = Tra\_Tot + Amount$$

    $$Tra\_Tax\_P = Tra\_Tax\_P + TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

Where:

vv = VAT category, range = 01 up to 20

5.4.10.4 Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code 133 is issued.

5.4.11 (D5) - Ticket Payment

This command is used to select the payment type and to apply the paid amount.
To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

5.4.11.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - Cmd Prefix                          hex        2
 2        D5 - Ticket Payment                        hex        1
 3        Cmd Extension                              hex        1
       7  Retry
          0 = NO
          1 = YES
       6  Rectify
          0 = NO
          1 = YES
     5-3  Print Typeface                                     (Note 1)
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = Reserved
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = Reserved
     2-0  Reserved (always = '0')
 4-5      Payment Type Number                        ASCII      2 (Note 2)
 6-15     Amount                                     ASCII     10 (Note 3)
16-53     Payment Trailer Line                       ASCII     38 (Note 4)


------------------------------------------------------------------------
```

Notes:

1. Print typeface is also applied to the change due line.

2. Values 01 to 30 are allowed.

3. Maximum Amount = 9999999949.

4. If payment type number correspond to "credit card" payment type this field is mandatory.
   For others payment types, this field is not allowed.
   When this field is applied, the special character 0x0E is not accepted.

5.4.11.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+---
     | x'1B66' | x'D5' | x'00' |
     +---------+-------+-------+---
          |        |       |
          |        |       ----------------------> Cmd Extension
          |        |                               (rectify NO, print 15 CPI)
          |        -------------------------------> Ticket Payment
          -----------------------------------------> Escape Sequence


Byte  4      6             16
     +------+-------------+-----------------+
     | '02' | '0000001000' | 'ddd.........ddd' |
     +------+-------------+-----------------+
        |        |               |
        |        |               ---------------------> Description
        |        -----------------------------------> Amount
        -------------------------------------------> Payment Type
```
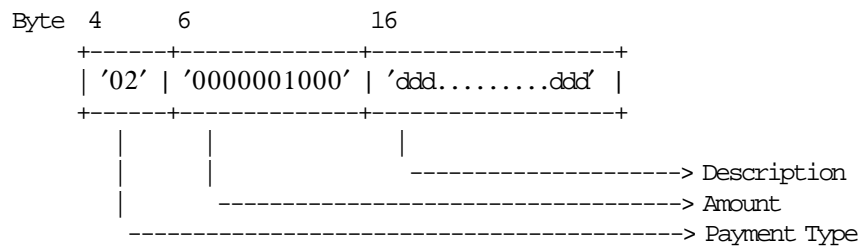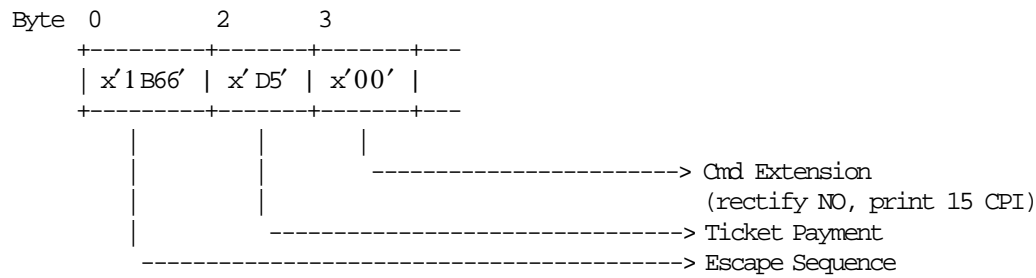
5.4.11.3 Ticket Payment Calculations

- **Rectify = NO**

  Tra_Amt_Due = Tra_Amt_Due − Payment_Amt

  Tra_Pay_Type(pp) = Tra_Pay_Type(pp) + Payment_Amt

- **Rectify = YES**

  Tra_Amt_Due = Tra_Amt_Due + Payment_Amt

  Tra_Pay_Type(pp) = Tra_Pay_Type(pp) − Payment_Amt

Where:

  pp = payment type, range = 01 up to 30

5.4.11.4 Ticket Payment Rules

- This command is optional.
- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed in a ticket.
- The end transaction command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 normal print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.4.12 (06) - Ticket End

This command is used to end the sale transaction.
To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

5.4.12.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

  0-1      1B66 - cmd prefix                         hex       2
  2        06 - Ticket End                           hex       1
  3        00 - Cmd Extension                        hex       1
  4-7      Operator Code                             ASCII     4
  8-15     Reserved                                  ASCII     8
 16-53     Trailer Message Line 1                    ASCII     38 (Note 1)
 54-91     Trailer Message Line 2                    ASCII     38 (Note 1)


------------------------------------------------------------------------
```
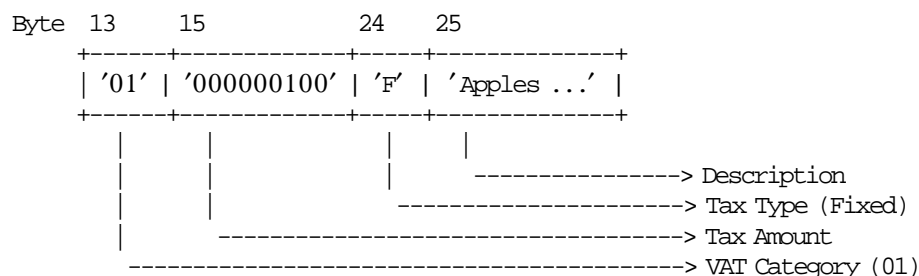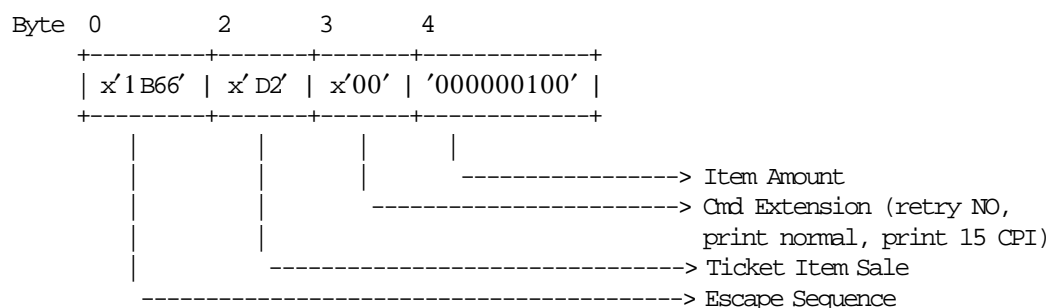
Notes:

1. Optional fields.

   If trailer message line 1 is not filled, the trailer message line 2 is ignored.

5.4.12.2 Command Example

```
Byte  0         2       3       4       8
      +---------+------+-------+--------+-----------+---
      | x'1B66' | x'06' | x'00' | 'AB05' | '        ' |
      +---------+------+-------+--------+-----------+---
          |         |      |       |          |
          |         |      |       |          ----------> Reserved
          |         |      |       --------------------> Operator Code (AB05)
          |         |      -------------------------> Cmd Extension
          |         ---------------------------------> Ticket End
          -------------------------------------------> Escape Sequence


Byte  16             54
      +--------------+----------------+
      | 'Thanks ....' | 'Good Bye ...' |
      +--------------+----------------+
        |              |
        |              --------------------------> Trailer Message Line 1
        -------------------------------------------> Trailer Message Line 2
```

5.4.12.3 Ticket End Calculations

$Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

$Day\_N\_Vouc = Day\_N\_Vouc + 1$

$Day\_Pay\_Type(pp) = Day\_Pay\_Type(pp) + Tra\_Pay\_Type(pp)$

- **If Tra_Amt_Due < 0**

  $Change\_Due = Tra\_Amt\_Due \times (-1)$

- **For Taxpayer Issuer Condition = VAT Responsible Enrolled**

  $Day\_Tot\_v(vv) = Day\_Tot\_v(vv) + Tra\_Tot\_v(vv) + Tra\_Tot\_Fixed\_v(vv)$

  $Day\_Tot = \sum\limits_{vv} Day\_Tot\_v(vv)$

  $Day\_VAT\_v(vv) = Day\_VAT\_v(vv) + Tra\_VAT\_v(vv) + Tra\_VAT\_Fixed\_v(vv)$

  $Day\_VAT = \sum\limits_{vv} Day\_VAT\_v(vv)$

  $Day\_Tax\_v(vv) = Day\_Tax\_v(vv) + Tra\_Tax\_F\_v(vv) + Tra\_Tax\_P\_Fixed\_v(vv) + Tra\_Tax\_Fixed\_v(vv)$

- **For Taxpayer Issuer Condition <> VAT Responsible Enrolled**

  $Day\_Tot = Day\_Tot + Tra\_Tot + Tra\_Tot\_Fixed$

  $Day\_Tax = Day\_Tax + Tra\_Tax\_F + Tra\_Tax\_P + Tra\_Tax\_Fixed$

- **Clearing Transaction Accumulators**

  $Tra\_Tot = 0$
  $Tra\_Tot\_v(vv) = 0$

  $Tra\_Tot\_Fixed = 0$
  $Tra\_Tot\_Fixed\_v(vv) = 0$

  $Tra\_Tax\_F = 0$
  $Tra\_Tax\_F\_v(vv) = 0$

  $Tra\_Tax\_P = 0$
  $Tra\_Tax\_P\_v(vv) = 0$

  $Tra\_Tax\_Fixed = 0$
  $Tra\_Tax\_Fixed\_v(vv) = 0$

  $Tra\_VAT\_v(vv) = 0$
  $Tra\_VAT\_Fixed\_v(vv) = 0$

  $Tra\_Pay\_Type(pp) = 0$

  $Tra\_Amt\_Due = 0$

Where:

   vv = VAT category, range = 01 up to 20
   pp = payment type, range = 01 up to 30

5.4.12.4 Ticket End Rules

- If the payment phase is desidered, this command is allowed only if the "total paid amount ≥ transaction total amount".
  Tra_Amt_Due must be less than or equal to 0.
- The string TOTAL in upper, lower, or mixed case is not allowed in the trailer message line 1 and 2 fields of this command.
- If the 'FTRAILR' state = YES, then the stored trailer lines will be printed (up till a blank trailer line is encountered or until all stored lines have been printed) before the variable trailer lines on the ticket.

5.4.13 (07) - Ticket Cancel

This command is used to cancel the sale transaction at any point.
To execute this command the serialize fiscal printer (1B cmd.) and the print header (01 cmd.) have to be executed before.

5.4.13.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                     TYPE    LENGTH

 0-1      1B66 - cmd prefix                           hex       2
 2        07 - Ticket Cancel                          hex       1
 3        00 - Cmd Extension                          hex       1
 4-7      Operator Code                               ASCII     4


------------------------------------------------------------------------
```

5.4.13.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'07' | x'00' | 'AB11' |
      +---------+-------+-------+--------+
           |        |       |       |
           |        |       |       ----------------> Operator Code (AB11)
           |        |       ------------------------> Cmd Extension
           |        --------------------------------> Ticket Cancel
           -----------------------------------------> Escape Sequence
```
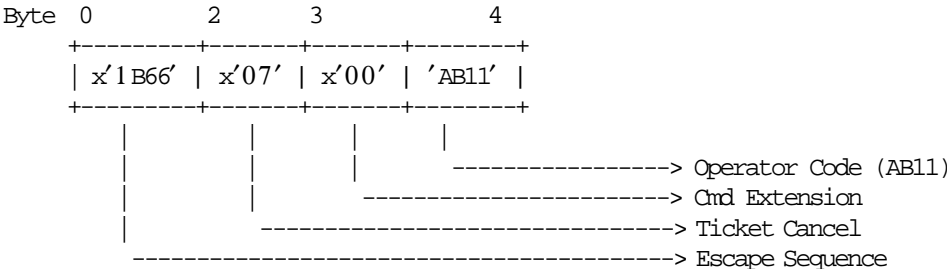
5.4.13.3 Ticket Cancel Calculations

$Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

$Day\_N\_Vouc = Day\_N\_Vouc + 1$
$Day\_N\_Canc = Day\_N\_Canc + 1$

- **If anything more than the store header is printed, the following calculations are performed:**

$$Tra\_Tot = \sum_{vv} Tra\_Tot\_v(vv) + \sum_{vv} Tra\_Tot\_Fixed\_v(vv)$$

- **Clearing Transaction Accumulators:**

$Tra\_Tot = 0$
$Tra\_Tot\_v(vv) = 0$

$Tra\_Tot\_Fixed = 0$
$Tra\_Tot\_Fixed\_v(vv) = 0$

$Tra\_Tax\_F = 0$
$Tra\_Tax\_F\_v(vv) = 0$

$Tra\_Tax\_P = 0$
$Tra\_Tax\_P\_v(vv) = 0$

$Tra\_Tax\_Fixed = 0$
$Tra\_Tax\_Fixed\_v(vv) = 0$

$Tra\_VAT\_v(vv) = 0$
$Tra\_VAT\_Fixed\_v(vv) = 0$

$Tra\_Amt\_Due = 0$

$Tra\_Pay\_Type(pp) = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = paymente type, range = 01 up to 30

5.4.13.4 Ticket Cancel Rules

- The fiscal logo and machine serial number will be not printed in the ticket.

5.5 Ticket Invoice in Progress Commands

The ticket invoice in progress commands include:

- (B7) Ticket Invoice/Credit Note - Set/Reset Header
- (25) Ticket Invoice/Credit Note - Set Customer Information
- (22) Ticket Invoice/Credit Note - Set/Reset Perception Type
- (E0) Ticket Invoice - Print Header
- (B0) Ticket Invoice - Fixed Price Item Sale
- (B1) Ticket Invoice - Fixed Price Negative/Uplift Item Sale
- (B2) Ticket Invoice - Item Sale
- (B3) Ticket Invoice - Negative Item
- (B4) Ticket Invoice - Subtotal/Total
- (B8) Ticket Invoice - Global Perception
- (B9) Ticket Invoice - Uplift/Discount on Subtotal
- (B5) Ticket Invoice - Payment
- (E3) Ticket Invoice - End
- (0F) Ticket Invoice - Cancel

5.5.1 Ticket Invoice Flow Chart

```
              TI/CN SET CUSTOMER INFORMATION (25)
                           |
                  TI PRINT HEADER (E0)
                           |
                +------------------------------------------->+
      +----------------->+                                   |
      |                  |                                   |
      |      ITEM ADDITIONAL DESCRIPTION (03)                |
      |                  |                                   |
      |          +-------+-------+                           |
      |          |               |                           |
      |     TI ITEM (B2)  TI FIXED ITEM (B0)                 |
      |          |               |                           v
      |          +------>+<------+                           |
      |                  |                                   |
      +<----------------------------------------------->+
      +----------------->+------------------+
      |                  |                  |               |
      |          +-------+-------+          |               |
      |          |               |          |               |
      |    TI NEGITEM (B3)  TI FIXED NEGITEM (B1) |          |
      |          |               |          |               v
      |          +------>+<------+          |               |
      |                  |                  |               |
      +<----------------+------------------ | --------------------->+
      +----------------->+<------------------+
      |                  |                  |               |
      |          TI TOTAL (B4)              |               |
      |                  |                  |               |
      |          TI GLOBAL PERC. (B8)       |               |
      |                  |                  |               |
      |          +-------+-------+          |               |
      |          |       |       |          |               |
      | TI DISC.SBT. (B9) | TI UPLIFT SBT. (B9) |           |
      |          |       |       |          |               |
      +-----<----+       |       +------->----+             +
        +-------------->+                                   |
        |               |                                   |
        |       TI PAYMENT (B5)                             v
        |               |                                   |
        +<-------------+-------------------------------------->+
        +-------------->+<--------+                          |
        |               | UP TO                              |
        |  ORDINARY PRINTING (EA) |   6                      |
        |               | TIMES                              |
        +-------------->+<--------+                          v
                        |                                    |
                 TI END (E3)                          TI CANCEL (0F)
                        |                                    |
                  +<-------------------------------------+
                        |
```
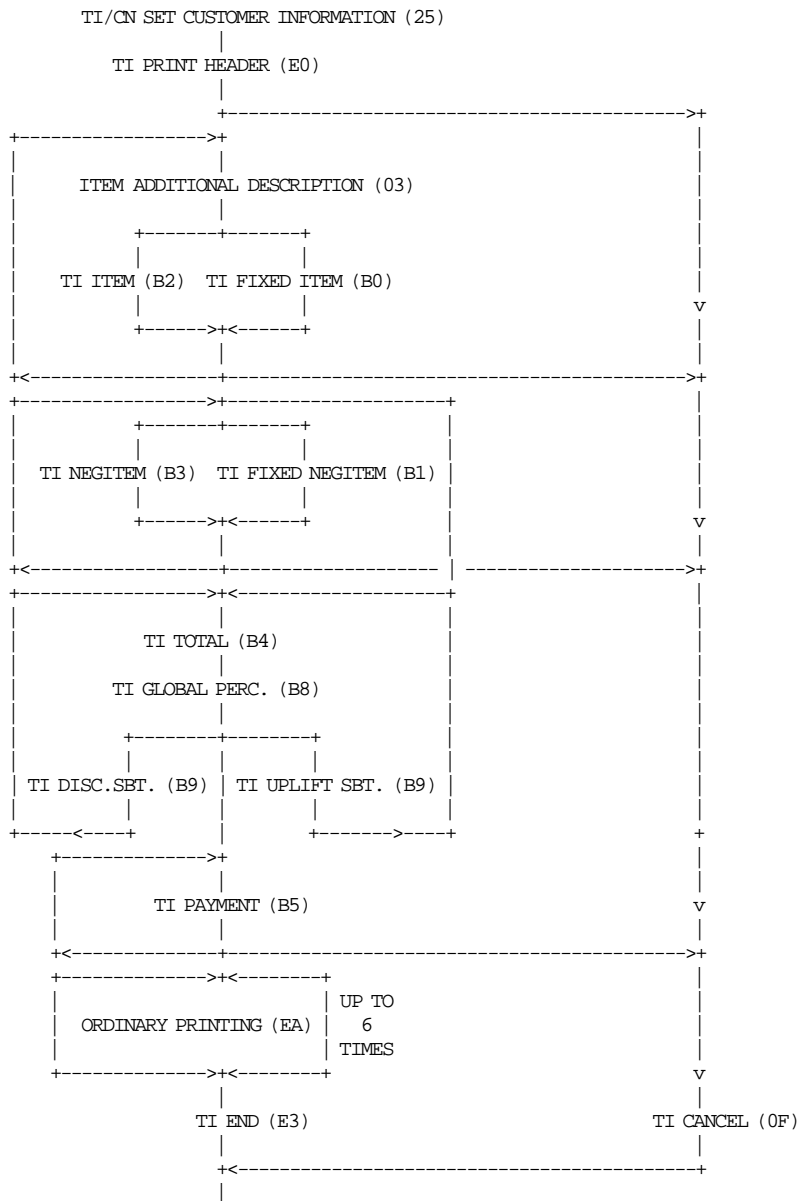
5.5.2 General Ticket Invoice Rules

- The ticket invoice is printed on DI station (portrait orientation) and all lines are replicated to the SJ station exactly as printed to the DI station except header.
- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on DI station can be printed.
  After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.

- The following table show the ticket invoice/credit note types allowed between issuer and customer conditions.

ISSUER CONDITION	CUSTOMER CONDITION	TYPE
VAT Responsible Enrolled (0)	VAT Responsible Enrolled (0)	A
	VAT Responsible Not Enrolled (1)	A
VAT Responsible Enrolled (0)	VAT Not Responsible (2)	B
	VAT Exempt (3)	B
	Monotribute Responsible (4)	B
	To Final Consumer (5)	B
	VAT Responsible Not Enrolled CGP (6)	B
	Not Categorized (7)	B
VAT Responsible Not Enrolled (1)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
VAT Not Responsible (2)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
VAT Exempt (3)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
Monotibute Responsible (4)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C

Table 9. Ticket invoice/credit note types between issuer and customer conditions

5.5.3 (22) - Ticket Invoice/Credit Note Set/Reset Perception Type

This command is used to set or reset a perception type and description.

5.5.3.1 Command Format

```
 ----------------------------------------------------------------------

 BYTE BIT  CONTENT                                       TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                             hex       2
 2         22 - TI/CN Set/Reset Perception Type          hex       1
 3         Cmd Extension                                 hex       1
     7     Reserved (always = '0')
     6     Action
           0 = Set
           1 = Reset
     5-3   Print Mode
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = Reserved
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = Reserved
     2-0   Reserved (always = '0')
 4-5       Perception Type Number                        ASCII     2 (Note 1)
 6-27      Description                                   ASCII    22 (Note 2)


 ----------------------------------------------------------------------
```

Notes:

1. Values 01 to 30 are allowed.

2. When set action, blank description string is not allowed.

5.5.3.2 Command Example

```
Byte  0        2       3
      +---------+-------+-------+---
      | x'1B66' | x'22' | x'00' |
      +---------+-------+-------+---
          |         |       |
          |         |       ------------------------> Cmd Extension (set, print 15 CPI)
          |         --------------------------------> TI/CN Set/Reset Perception Type
          -------------------------------------------> Escape Sequence


Byte  4      6
      +------+------------------+
      | '02' | 'ddd.........ddd' |
      +------+------------------+
         |        |
         |        ----------------------------------> Description
         -------------------------------------------> Perception Type Number
```
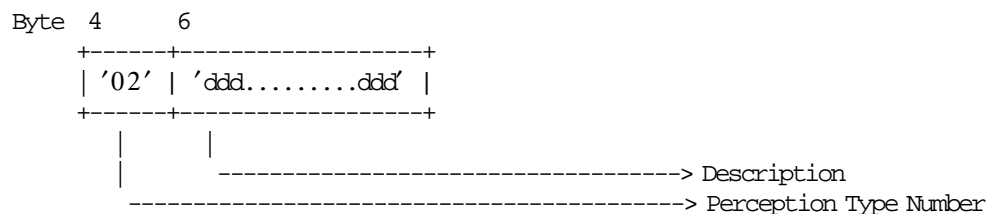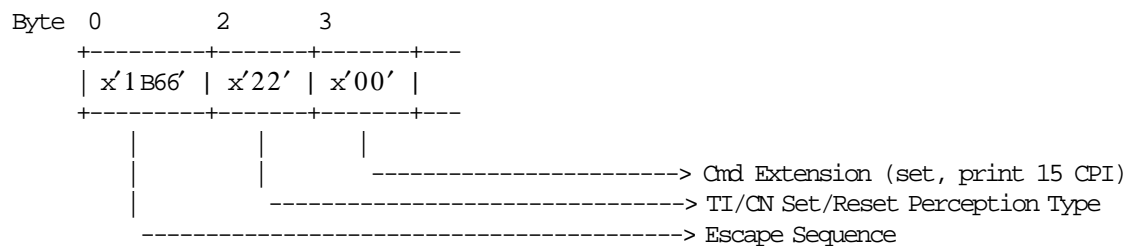
5.5.3.3 Ticket Invoice/Credit Note Set/Reset Perception Type Calculations

There are not calculations for this command.

5.5.3.4 Ticket Invoice/Credit Note Set/Reset Perception Type Rules

- This information is stored in RAM memory.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.5.4 (25) - Ticket Invoice/Credit Note Set Customer Information

This command is used to set customer information.

5.5.4.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                     TYPE    LENGTH

 0-1       1B66 - cmd prefix                           hex       2
 2         25 - Ticket Invoice/Credit Note Set Cust.Inf.  hex    1
 3         Cmd Extension                               hex       1
           00 = Mandatory Data
           01 = Description Data (Line 1)
           02 = Description Data (Line 2)
           03 = Description Data (Line 3)
           04 = Description Data (Line 4)
           05 = Description Data (Line 5)

    If Cmd Extension is 00 specify:
 4-4         Customer Document Type                    ASCII     1 (Note 1, 2)
 5-15        Customer Document Number                  ASCII    11
16-16        Taxpayer Customer Condition               ASCII     1 (Note 3)
17-54        Customer Name                             ASCII    38

    If Cmd Extension is 01 or 02 or 03 or 04 o 05 specify:
 4-41        Description Data                          ASCII    38


-----------------------------------------------------------------------
```

Notes:

1. The Customer Document Type will be:

   - 0 – C.U.I.T.

   - 1 – C.U.I.L.

   - 2 – D.N.I.

   - 3 – C.I.

   - 4 – Passport

   - 5 – L.C.

   - 6 – L.E.

   - 7 – Document

   - 8 – Not Document

2. When customer document type is equal '0', '1', '2', '3', '4', '5', '6' or '7', the customer document number must be a valid number.
   When customer document type is equal '8', the customer document number must be blank.

3. The Taxpayer Customer Condition will be:

   - 0 = VAT Responsible Enrolled

   - 1 = VAT Responsible Not Enrolled

   - 2 = VAT Not Responsible

- 3 = VAT Exempt

- 4 = Monotribute Responsible

- 5 = To Final Consumer

- 6 = VAT Responsible Not Enrolled Capital Goods Purchasing

- 7 = Not Categorized

5.5.4.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+---
      | x′1B66′ | x′25′ | x′00′ |
      +---------+-------+-------+---
          |         |       |
          |         |       ----------------------> Cmd Extension (Mandatory Data)
          |         --------------------------------> Ticket Invoice/Credit Note Set Customer Information
          ----------------------------------------> Escape Sequence


Byte  4      5              16    17
      +------+-------------+-----+----------------+
      | ′2′  | ′11111111111′ | ′1′ | ′ddd.......ddd′ |
      +------+-------------+-----+----------------+
         |       |               |      |
         |       |               |      --------------> Description Data
         |       |               --------------------> Taxpayer Customer Condition
         |       ------------------------------------> Customer Document Number
         ----------------------------------------------> Customer Document Type
```
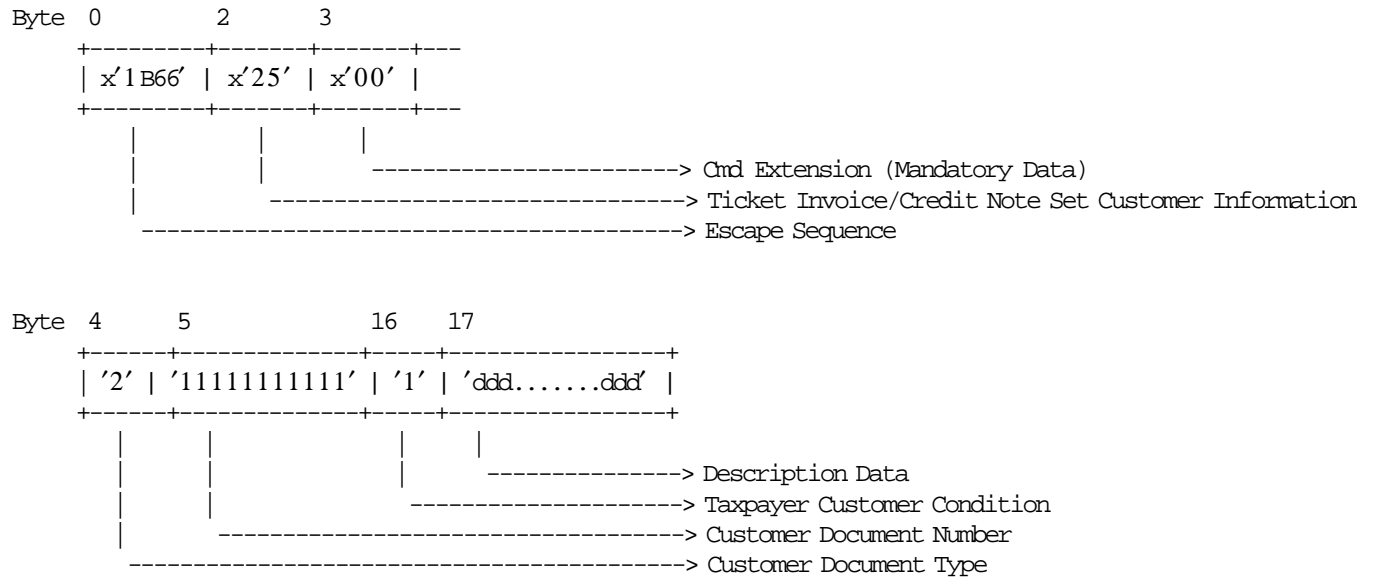
5.5.4.3 Ticket Invoice/Credit Note Set Customer Information Calculations

There are no calculations for this command.

5.5.4.4 Ticket Invoice/Credit Note Set Customer Information Rules

- The customer information is stored in RAM memory.

- The following table shows the information to set

```
****************************************************************************************
*       *           TICKET INVOICE             *           CREDIT NOTE              *
*       *             A – B – C                 *             A – B – C              *
*       ****************************************************************************
*       * TCC = "To Final * TCC not equal "To  * TCC = "To Final * TCC not equal "To *
*       *       Consumer" *     Final Consumer" *     Consumer"  *    Final Consumer" *
*       * (5)             * (1, 2, 3, 4, 6, 7)  * (5)            * (1, 2, 3, 4, 6, 7) *
****************************************************************************************
* CDT *  Mandatory       *     Mandatory       *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* CDN *  Mandatory       *     Mandatory       *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* TCC *  Mandatory       *     Mandatory       *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* CN  *  Optional        *     Mandatory       *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* D1  *  Optional        *     Mandatory       *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* D2  *  Optional        *     Optional        *   Mandatory    *     Mandatory      *
*_____*_____*_____*_____*_____*
* D3  *  Optional        *     Optional        *   Optional     *     Optional       *
*_____*_____*_____*_____*_____*
* D4  *  Optional        *     Optional        *   Optional     *     Optional       *
*_____*_____*_____*_____*_____*
* D5  *  Optional        *     Optional        *   Optional     *     Optional       *
****************************************************************************************

     CDT = Customer Document Type        (set with cmd. x25 00)
     CDN = Customer Document Number       (set with cmd. x25 00)
     TCC = Taxpayer Customer Condition    (set with cmd. x25 00)
     CN  = Customer Name                  (set with cmd. x25 00)
     D1  = Description Data (Line 1)       (set with cmd. x25 01)
     D2  = Description Data (Line 2)       (set with cmd. x25 02)
     D3  = Description Data (Line 3)       (set with cmd. x25 03)
     D4  = Description Data (Line 4)       (set with cmd. x25 04)
     D5  = Description Data (Line 5)       (set with cmd. x25 05)
```

• The string TOTAL in upper, lower or mixed case is not allowed in any field of this command.

5.5.5 (B7) - Ticket Invoice/Credit Note Set/Reset Header

This command is used to set or reset the taxpayer information header.

5.5.5.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE   LENGTH

 0-1      1B66 - Cmd Prefix                              hex       2
 2        B7 - Tick. Invoice/Credit Note Set/Reset Header hex      1
 3        Cmd Extension                                  hex       1
     7    Reserved (always = '0')
     6    Action
          0 = Set
          1 = Reset
    5-3   Print Mode
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
    2-0   Line Number                                            (Note 1, 2)
          001 = First
          010 = Second
          011 = Third
          100 = Fourth
          101 = Fifth
          110 = Sixth
          111 = Seventh
 4-41     Description                                    ASCII    38 (Note 3)


 ----------------------------------------------------------------------
```

Notes:

1. If the line number is not set, it is not printed.

2. If the line number is reset, it is not printed.

3. If all blank character are specified in the description string, then the corresponding header line is not printed.

5.5.5.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+-----------------+
      | x'1B66' | x'B7' | x'01' | 'ddd.........ddd' |
      +---------+-------+-------+-----------------+
           |         |      |        |
           |         |      |        ---------------------> Description
           |         |      ----------------------------> Cmd Extension
           |         |                               (print 15 CPI, first line)
           |         -------------------------------------> Ticket Invoice/Credit Note Set/Reset Header
           ----------------------------------------------> Escape Sequence
```
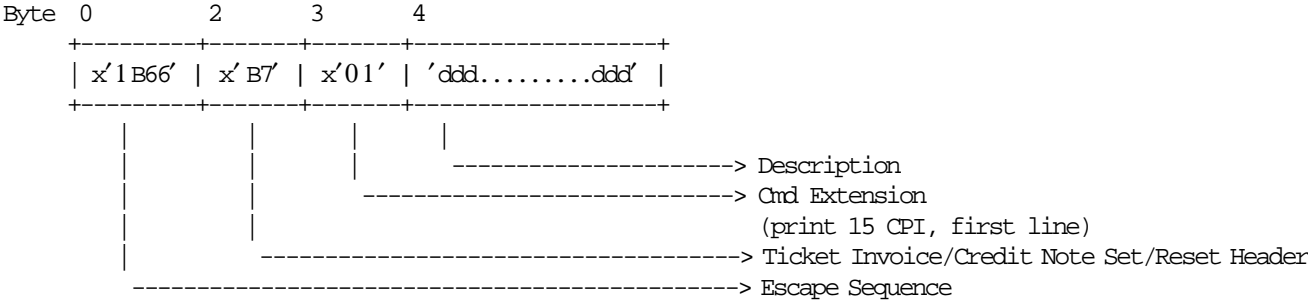
5.5.5.3 Ticket Invoice/Credit Note Set/Reset Header Calculations

There are no calculations for this command.

5.5.5.4 Ticket Invoice/Credit Note Set/Reset Header Rules

- The header set is stored into fiscal printer battery backed up RAM.
  The header is erased when RAM is cleared by activation of the CE jumper.
- This command cannot be executed when sales period is in progress.
- The minimum number of header lines that can be set is 0.
- The maximum number of header lines that can be set is 7.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.5.6 (E0) - Ticket Invoice Print Header

This command is used to print the taxpayer header on the ticket invoice type selected.
To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

5.5.6.1 Command Format

```
  ------------------------------------------------------------------------

BYTE BIT  CONTENT                                   TYPE    LENGTH

 0-1      1B66 - Command Prefix                     hex        2
 2        E0 - Ticket Invoice Print Header          hex        1
 3        Cmd Extension                             hex        1
     7    Reserved (always = '0')
     6-5  Type
          00 = A
          01 = B
          10 = C
          11 = Reserved
     4-2  Reserved (always = '0')
     1-0  Printer Station                                          (Note 1)
          00 = DI
          01 = Reserved
          10 = Reserved
          11 = Reserved
 4-41     Description 1                             ASCII     38 (Note 2)
42-79     Description 2                             ASCII     38 (Note 2)
80-117    Description 3                             ASCII     38 (Note 2)


  ------------------------------------------------------------------------
```

Notes:

1. The selected station print will be preserved until an end transaction command will be sent.

2. The description field is optional.

5.5.6.2 Command Example

```
Byte  0          2      3
      +---------+------+------+---
      | x'1B66' | x'E0' | x'00' |
      +---------+------+------+---
           |        |      |
           |        |      ----------------------------> Cmd Extension
           |        |                                     (ticket invoice type A, DI station)
           |        -------------------------------------> Ticket Invoice Print Header
           -----------------------------------------------> Escape Sequence
```

```
Byte  4               42              80
      +---------------+---------------+---------------+
      | 'ddd......ddd' | 'ddd......ddd' | 'ddd......ddd' |
      +---------------+---------------+---------------+
            |               |               |
            |               |               ----------------> Description 3
            |               -----------------------------> Description 2
            -----------------------------------------------> Description 1
```
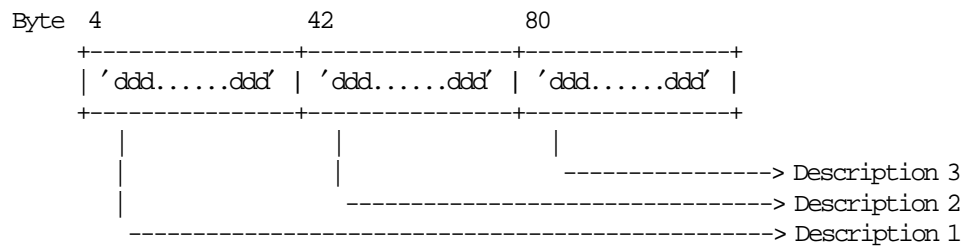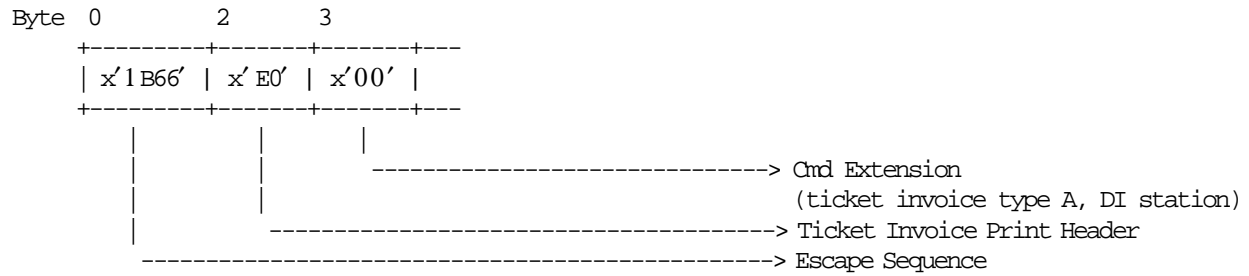
5.5.6.3 Ticket Invoice Print Header Calculations

Item_Ordinal_Number = 0

5.5.6.4 Control Paper Calculations

- **Before the lines are printed**

  Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print

- **After the lines were printed correctly**

  Mis_N_Lines_Printed = Mis_N_Cmd_Lines_To_Print

5.5.6.5 Ticket Invoice Print Header Rules

- The following checking is performed before the execution of the command in order to ensure that the ticket invoice could be eventually cancelled.

  (999,999,999.49 - Day_Canc_g(gg)) > Limit for Ticket Invoice Total
  The Limit for Ticket Invoice Total is set with 2E cmd.
  If this expression isn't satisfied the error code 016 is returned.

- The string TOTAL in upper, lower or mixed case is not allowed in the description fields of this command.

5.5.7 (B0) - Ticket Invoice Fixed Price Item Sale

The ticket invoice fixed price items are items which prices are not affect by discount or uplift on subtotal operations.
To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice print header (E0 cmd.) have to be executed before.

5.5.7.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE   LENGTH


 0-1      1B66 - Cmd Prefix                            hex       2
  2       B0 - Ticket Invoice Fixed Price Item Sale    hex       1
  3       Cmd Extension                                hex       1
     7    Retry
          0 = NO
          1 = YES
     6    Reserved (always = '0')
     5    Print Density
          0 = Normal
          1 = Emphasized
     4    VAT Not Enrolled                                     (Note 1)
          0 = YES
          1 = NO
     3    Print Typeface
          0 = 15 CPI
          1 = 12 CPI
    2-0   Reserved (always = '0')
 4-12     Unit Price (Amount)                          ASCII     9 (Note 2)
13-19     Quantity                                     ASCII     7 (Note 3)
20-21     VAT Category                                 ASCII     2 (Note 4)
22-30     Tax Amount                                   ASCII     9 (Note 5)
 31       Tax Type                                     ASCII     1 (Note 6)
32-40     Item Perception Amount                       ASCII     9 (Note 7 on page 122)
41-42     Item Perception Type                         ASCII     2 (Note 8 on page 122)
43-64     Description                                  ASCII    22


---------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'A', the amount will be Unit Base Price.
   For ticket invoice type 'A', the VAT ISN'T included in the amount.
   For ticket invoice type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. For ticket invoice type 'A', range allowed is from 01 to up 20.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'B', the tax amount must be less than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

5.5.7.2 Command Example

```
Byte  0          2       3
     +---------+-------+-------+
     | x'1B66' | x'B0' | x'00' |
     +---------+-------+-------+
          |         |       |
          |         |       ------------------------> Cmd Extension (retry NO, print normal
          |         |                                  VAT not enrolled, print 15 CPI)
          |         --------------------------------> Ticket Invoice Fixed Price Item Sale
          ------------------------------------------> Escape Sequence


Byte  4              13         20     22
     +------------+----------+------+------------+
     | '000000100'| '0000002'| '01' | '000001400'|
     +------------+----------+------+------------+
          |            |         |       |
          |            |         |       ----------> Tax Amount
          |            |         ------------------> VAT Category
          |            ----------------------------> Quantity
          ------------------------------------------> Unit Price


Byte  31   32           41     43
     +-----+------------+------+-------------+
     | 'F' | '000000800'| '20' | 'Apples ...'|
     +-----+------------+------+-------------+
        |      |            |       |
        |      |            |       ---------------> Description
        |      |            -----------------------> Item Perception Index
        |      ------------------------------------> Item Perception Amount
        ------------------------------------------> Tax Type (Fixed)
```

5.5.7.3 Ticket Invoice Fixed Price Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

$Item\_Ordinal\_Number = Item\_Ordinal\_Number + 1$

• **For Ticket Invoice Type A**

$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$

   • If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
     Taxpayer Customer Condition = VAT Responsible Not Enrolled

     $Tra\_Tot\_Fixed\_NE\_v(vv)$ $Tra\_Tot\_Fixed\_NE\_v(vv) + Item\_Amt$

   – **If Tax Amount is greater than 0**

$$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

The calculated Factor must be printed in the ticket invoice.

$$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

- **If Item Perception Amount is greater than 0**

$$Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$$

- **For Ticket Invoice Type B**

$$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the ticket invoice.

$$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

- **For Ticket Invoice Type C**

$$Tra\_Tot\_Fixed = Tra\_Tot\_Fixed + Item\_Amt$$

$$Tra\_Tax\_Fixed = Tra\_Tax\_Fixed + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30

5.5.7.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$$

  - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print

    Return_Code 125

- **After the lines were printed correctly**

$$Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$$

5.5.7.5 Ticket Invoice Fixed Price Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).

- For ticket invoice type A, the Item_Amt does not include VAT.
- For ticket invoice type B, the Item_Amt includes VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.5.8 (B1) - Ticket Invoice Fixed Price Negative/Uplift Item Sale

The fixed price negative/uplift items are items which prices are not affect by discount or uplift on subtotal operations.
This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the ticket invoice print header (E0 cmd.) and at least one ticket invoice fixed price item sale (B0 cmd.) have to be executed before.

5.5.8.1 Command Format

```
 ----------------------------------------------------------------------


 BYTE BIT   CONTENT                                    TYPE   LENGTH


  0-1       1B66 - Command Prefix                      hex      2
  2         B1 - T.I. Fixed Price Negative/Uplift      hex      1
  3         Cmd Extension                              hex      1
       7    Retry
            0 = NO
            1 = YES
       6    Reserved (always = '0')
       5    Print Density
            0 = Normal
            1 = Emphasized
       4    VAT Not Enrolled                                         (Note 1 on page 126)
            0 = YES
            1 = NO
       3    Print Typeface
            0 = 15 CPI
            1 = 12 CPI
       2-0  Item Type
            000 = Reserved
            001 = VOID (on previous Item Sale)
            010 = REDUCTION (by VAT)
            011 = DISCOUNT (on previous Item Sale)
            100 = EMPTY (by VAT)
            101 = DISCOUNT (by VAT)
            110 = UPLIFT (on previous Item Sale)
            111 = Reserved
  4-12      Unit Price (Amount)                        ASCII    9 (Note 2 on page 126)
 13-19      Quantity                                   ASCII    7 (Note 3 on page 126)
 20-21      VAT Category                               ASCII    2 (Note 4 on page 126)
 22-30      Tax Amount                                 ASCII    9 (Note 5 on page 126)
 31         Tax Type                                   ASCII    1 (Note 6 on page 126)
 32-40      Item Perception Amount                     ASCII    9 (Note 7 on page 126)
 41-42      Item Perception Index                      ASCII    2 (Note 8 on page 126)
 43-45      Item Ordinal Number                        ASCII    3 (Note 9 on page 126)
 46-67      Description                                ASCII   22


 ----------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'A', the amount will be Unit Base Price.
   For ticket invoice type 'A', the VAT ISN'T included in the amount.
   For ticket invoice type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. Range allowed is from 01 to up 20.
   For ticket invoice type 'C', value allowed is 00.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'B', the tax amount must be less or equal than Item_Amt.
   For ticket invoice type 'C', the tax amount must be less or equal than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A', range allowed is from 01 to up 30.
   For ticket invoice type 'B' and 'C', value allowed is 00.

9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

5.5.8.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+
      | x'1B66' | x'B1' | x'00' |
      +---------+-------+-------+
           |         |      |
           |         |      ----------------------> Cmd Extension (retry NO, print normal,
           |         |                               VAT not enrolled, print 15 CPI)
           |         --------------------------------> Ticket Invoice Fixed Price Negative Item Sale
           ------------------------------------------> Escape Sequence


Byte  4             13          20     22
      +------------+----------+------+------------+
      | '000000100' | '0000002' | '01' | '000001400' |
      +------------+----------+------+------------+
           |            |         |       |
           |            |         |       ----------> Tax Amount
           |            |         -----------------> VAT Category
           |            ---------------------------> Quantity
           ------------------------------------------> Unit Price


Byte  31   32           41     43     46
      +-----+------------+------+-------+--------------+
      | 'F' | '000000800' | '20' | '003' | 'Apples ...' |
      +-----+------------+------+-------+--------------+
         |    |            |      |       |
         |    |            |      |       --------> Description
         |    |            |      -----------------> Item Ordinal Number
         |    |            ----------------------> Item Perception Index
         |    ------------------------------------> Item Perception Amount
         ------------------------------------------> Tax Type (Fixed)
```

5.5.8.3 Ticket Invoice Fixed Price Negative/Uplift Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

- **For Ticket Invoice Type A**

    - **If Item Type <> Uplift**

        $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$
        $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$
        $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - ItemPerceptionAmount$
        $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - ItemPerceptionAmount$

        - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
          Taxpayer Customer Condition = VAT Responsible Not Enrolled

            Tra_Tot_Fixed_NE_v(vv) Tra_Tot_Fixed_NE_v(vv) – Item_Amt

    - **If Item Type = Uplift**

        $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$
        $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$

$$Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$$
$$Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$$

- If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
  Taxpayer Customer Condition = VAT Responsible Not Enrolled

  `Tra_Tot_Fixed_NE_v(vv)  Tra_Tot_Fixed_NE_v(vv)+Item_Amt`

- If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
  Taxpayer Customer Condition = VAT Responsible Not Enrolled

  `Tra_Tot_Fixed_NE_v(vv)  Tra_Tot_Fixed_NE_v(vv)+Item_Amt`

– **If Tax Amount is greater than 0**

$$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

The calculated Factor must be printed in the ticket invoice.

- **For Ticket Invoice Type B**

  – **If Item Type <> Uplift**

  $$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$$
  $$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$$

  – **If Item Type = Uplift**

  $$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$$
  $$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

  – **If Tax Amount is greater 0**

  $$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

  The calculated Factor must be printed in the ticket invoice.

- **For Ticket Invoice Type C**

  – **If Item Type <> Uplift**

  $$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$$
  $$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$$

  – **If Item Type = Uplift**

  $$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$$
  $$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20
vt = VAT category (range = 01 up to 20) and perception type (range = 01 up to 30)
tt = perception type, range = 01 up to 30

5.5.8.4 Control Paper Calculations

- **Before the lines are printed**

  $$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$$

- If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print

  Return_Code 125

- **After the lines were printed correctly**

  Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

5.5.8.5 Ticket Invoice Fixed Price Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated (Tra_Tot_Fixed_v + Item_Amt) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For ticket invoice type A, the Item_Amt does not include VAT.
- For ticket invoice type B, the Item_Amt includes VAT.
- To void a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:

  – B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)

  – B1.Description = B0.Description

  – B1.Unit Price = B0.Unit Price

  – If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $B1.VATNotEnrolled = B0.VATNotEnrolled$

  – B1.Quantity   ≤ B0.Quantity

  – If B1.Quantity = B0.Quantity
    $B1.TaxAmount = B0.TaxAmount$
    $B1.ItemPercep.Amount = B0.ItemPercep.Amount$

  – If B1.Quantity < B0.Quantity
    $0 \leq B1.TaxAmount \leq B0.TaxAmount$
    $0 \leq B1.ItemPercep.Amount \leq B0.ItemPercep.Amount$

  – If ticket invoice type ≠ A
    $((B0.Quantity - B1.Quantity) \times B0.Amount) > (B0.TaxAmount - B1.TaxAmount)$

- To discount a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:

  – B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)

  – B1.Description   = B0.Description

  – B1.Quantity   = B0.Quantity

  – If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $B1.VATNotEnrolled = B0.VATNotEnrolled$

  – B1.Unit Price   < B0.Unit Price

  – B1.Item Percep.Amount ≤ B0.Item Percep.Amount

  – B1.Item Percep.Amount ≥ 0

- B1.Tax Amount ≥ 0

- If ticket invoice type ≠ A

  $(B0.Quantity \times (B0.Amount - B1.Amount)) > (B0.TaxAmount - B1.TaxAmount)$

- To uplift a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:

  - B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)

  - B1.Description = B0.Description

  - B1.Quantity = B0.Quantity

  - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled $B1.VATNotEnrolled = B0.VATNotEnrolled$

  - ((B0.Amount + B1.Amount) * B0.Quantity) ≤ 999999949

  - (B0.Tax Amount + B1.Tax Amount) ≤ 999999949

  - (B0.Item Percep.Amount + B1.Item Percep.Amount) ≤ 999999949

  - If ticket invoice type ≠ A
    $(B0.Quantity \times (B0.Amount + B1.Amount)) > (B0.TaxAmount + B1.TaxAmount)$

- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.5.9 (B2) - Ticket Invoice Item Sale

This command is used to record the amount of an item and to print lines containing quantity, unit price, description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice print header (E0 cmd.) have to be executed before.
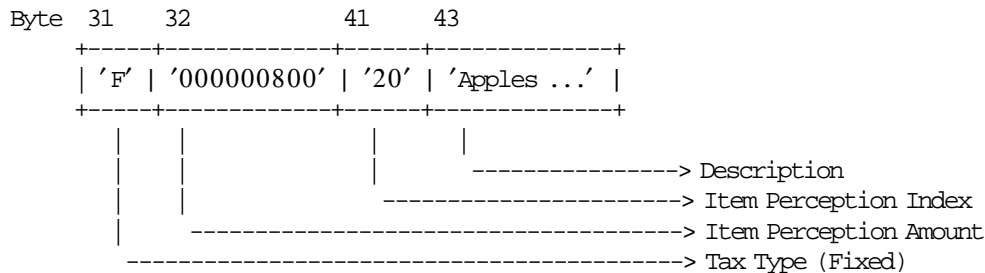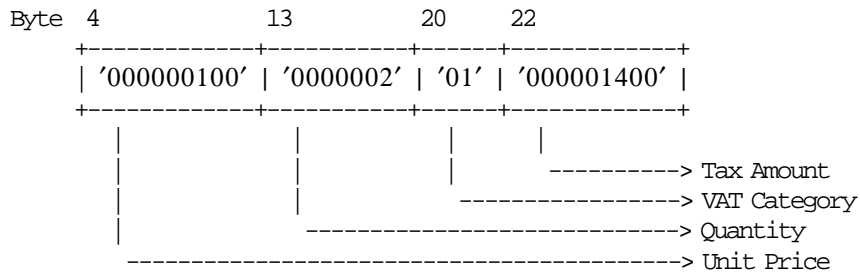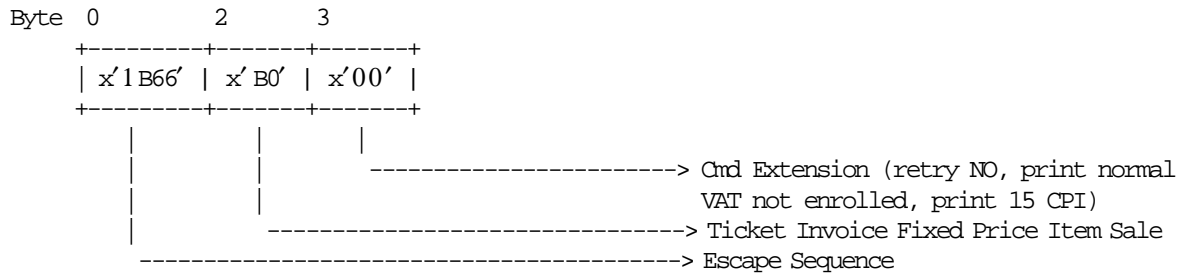
5.5.9.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH


 0-1       1B66 - Command Prefix                        hex        2
 2         B2 - Ticket Invoice Item Sale                hex        1
 3         Cmd Extension                                hex        1
      7    Retry
           0 = NO
           1 = YES
      6    Reserved (always = '0')
      5    Print Typeface
           0 = Normal
           1 = Emphasized
      4    VAT Not Enrolled                                      (Note 1)
           0 = YES
           1 = NO
      3    Print Density
           0 = 15 CPI
           1 = 12 CPI
    2-0    Reserved (always = '0')
 4-12      Unit Price (Amount)                          ASCII      9 (Note 2)
13-19      Quantity                                     ASCII      7 (Note 3)
20-21      VAT Category                                 ASCII      2 (Note 4)
22-30      Tax Amount                                   ASCII      9 (Note 5)
31         Tax Type                                     ASCII      1 (Note 6)
32-40      Item Perception Amount                       ASCII      9 (Note 7 on page 132)
41-42      Item Perception Type                         ASCII      2 (Note 8 on page 132)
43-64      Description                                  ASCII     22


---------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'A', the amount will be Unit Base Price.
   For ticket invoice type 'A', the VAT ISN'T included in the amount.
   For ticket invoice type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. For ticket invoice type 'A', range allowed is from 01 to up 20.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'B', the tax amount must be less than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

5.5.9.2 Command Example

```
Byte  0          2      3
      +---------+-------+-------+
      | x'1B66' | x'B2' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension (retry NO, print normal
           |        |                                VAT not enrolled, print 15 CPI)
           |        --------------------------------> Ticket Invoice Item Sale
           ----------------------------------------> Escape Sequence


Byte  4             13         20     22
      +------------+----------+------+------------+
      | '000000100' | '0000002' | '01' | '000001400' |
      +------------+----------+------+------------+
           |            |         |      |
           |            |         |      ----------> Tax Amount
           |            |         -----------------> VAT Category
           |            ---------------------------> Quantity
           --------------------------------------> Unit Price


Byte  31    32           41     43
      +-----+------------+------+-------------+
      | 'F' | '000000800' | '20' | 'Apples ...' |
      +-----+------------+------+-------------+
         |     |            |      |
         |     |            |      ----------------> Description
         |     |            ----------------------> Item Perception Index
         |     -----------------------------------> Item Perception Amount
         -----------------------------------------> Tax Type (Fixed)
```

5.5.9.3 Ticket Invoice Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

$Item\_Ordinal\_Number = Item\_Ordinal\_Number + 1$

- **For Ticket Invoice Type A**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

    - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
      Taxpayer Customer Condition = VAT Responsible Not Enrolled

        $Tra\_Tot\_NE\_v(vv)$ $Tra\_Tot\_NE\_v(vv) + Item\_Amt$

    - **If Tax Amount is greater than 0**

        $$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

The calculated Factor must be printed in the ticket invoice.

- **If Tax Type = F**

  $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

- **If Tax Type = P**

  $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

- **If Item Perception Amount is greater than 0**

  $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$

  $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$

- **For Ticket Invoice Type B**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

  - **If Tax Amount is greater than 0**

    $$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

    The calculated Factor must be printed in the ticket invoice.

  - **If Tax Type = F**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

  - **If Tax Type = P**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

- **For Ticket Invoice Type C**

  $Tra\_Tot = Tra\_Tot + Item\_Amt$

  - **If Tax Type = F**

    $Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$

  - **If Tax Type = P**

    $Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30

5.5.9.4 Control Paper Calculations

- **Before the lines are printed**

  $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

  - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print

    Return_Code 125

- **After the lines were printed correctly**

    Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

5.5.9.5 Ticket Invoice Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the ticket invoice item sale command is disabled (rate = 9999).
- For ticket invoice type B, the item_amt includes VAT.
- For ticket invoice type A, the item_amt does not include VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.5.10 (B3) - Ticket Invoice Negative/Uplift Item Sale

This command is used to record the amount of a negative item and prints lines containing the quantity, unit price, item description, item amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the fiscal invoice print header (E0 cmd.) and at least one ticket invoice item sale (B2 cmd.) have to be executed before.
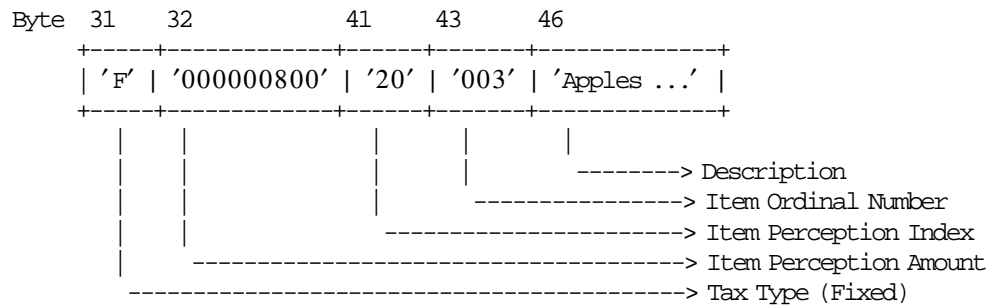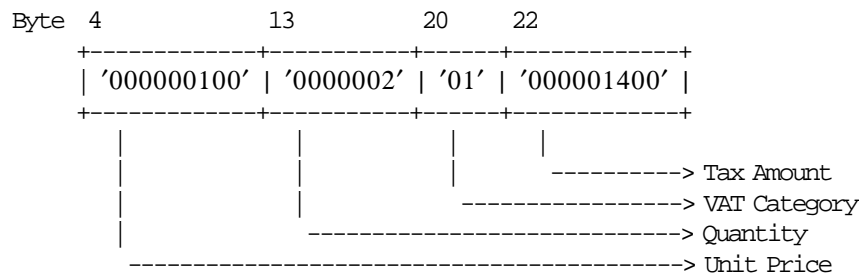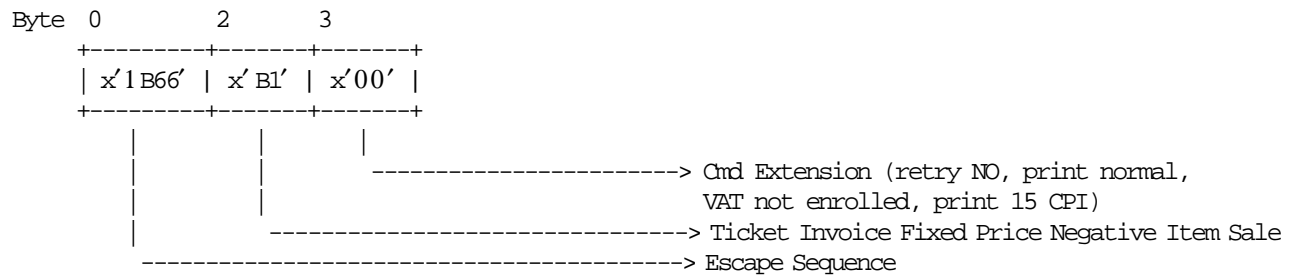
5.5.10.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH


 0-1      1B66 - Command Prefix                          hex        2
  2       B3 - Ticket Invoice Negative/Uplift Item Sale  hex        1
  3       Cmd Extension                                  hex        1
      7   Retry
          0 = NO
          1 = YES
      6   Reserved (always = '0')
      5   Print Density
          0 = Normal
          1 = Emphasized
      4   VAT Not Enrolled                                        (Note 1)
          0 = YES
          1 = NO
      3   Print Typeface
          0 = 15 CPI
          1 = 12 CPI
     2-0  Item Type
          000 = Reserved
          001 = VOID (on previous Item Sale)
          010 = REDUCTION (by VAT)
          011 = DISCOUNT (on previous Item Sale)
          100 = EMPTY (by VAT)
          101 = DISCOUNT (by VAT)
          110 = UPLIFT (on previous Item Sale)
          111 = Reserved
 4-12     Unit Price (Amount)                            ASCII      9 (Note 2)
13-19     Quantity                                       ASCII      7 (Note 3 on page 136)
20-21     VAT Category                                   ASCII      2 (Note 4 on page 136)
22-30     Tax Amount                                     ASCII      9 (Note 5 on page 136)
31        Tax Type                                       ASCII      1 (Note 6 on page 136)
32-40     Item Perception Amount                         ASCII      9 (Note 7 on page 136)
41-42     Item Perception Index                          ASCII      2 (Note 8 on page 136)
43-45     Item Ordinal Number                            ASCII      3 (Note 9 on page 136)
46-67     Description                                    ASCII     22

----------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'A', the amount will be Unit Base Price.
   For ticket invoice type 'A', the VAT ISN'T included in the amount.
   For ticket invoice type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. Range allowed is from 01 to up 20.
   For ticket invoice type 'C', value allowed is 00.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For ticket invoice type 'B', the tax amount must be less or equal than Item_Amt.
   For ticket invoice type 'C', the tax amount must be less or equal than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A', range allowed is from 01 to up 30.
   For ticket invoice type 'B' and 'C', value allowed is 00.

9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

5.5.10.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'B3' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd Extension (retry NO, print normal,
          |        |                                VAT not enrolled, print 15 CPI)
          |        --------------------------------> Ticket Invoice Negative/Uplift Item Sale
          -------------------------------------------> Escape Sequence


Byte  4             13         20     22
     +-------------+----------+------+-------------+
     | '000000100' | '0000002' | '01' | '000001400' |
     +-------------+----------+------+-------------+
          |             |          |      |
          |             |          |      ----------> Tax Amount
          |             |          ------------------> VAT Category
          |             ---------------------------> Quantity
          -------------------------------------------> Unit Price


Byte  31  32           41     43      46
     +-----+------------+------+-------+-------------+
     | 'F' | '000000800' | '20' | '003' | 'Apples ...' |
     +-----+------------+------+-------+-------------+
        |   |            |      |       |
        |   |            |      |       --------> Description
        |   |            |      ----------------> Item Ordinal Number
        |   |            ----------------------> Item Perception Index
        |   --------------------------------------> Item Perception Amount
        -------------------------------------------> Tax Type (Fixed)
```

5.5.10.3 Ticket Invoice Negative/Uplift Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

- **If Ticket Invoice Type = ′A′**

  - **If Item Type <> Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Item\_Amt$
    $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - ItemPerceptionAmount$
    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - ItemPerceptionAmount$

    - If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
      Taxpayer Customer Condition = VAT Responsible Not Enrolled

      `Tra_Tot_NE_v(vv)  Tra_Tot_NE_v(vv) - Item_Amt`

    — **If Tax Type = ′F′**

      $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) - TaxAmount$

    — **If Tax Type = ′P′**

      $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$
    $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$
    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$

    — **If Tax Type = ′F′**

      $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

    — **If Tax Type = ′P′**

      $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

  - **If Tax Amount is greater than 0**

    $$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

    The calculated Factor must be printed in the ticket invoice.

- **If Ticket Invoice Type = ′B′**

  - **If Item Type <> Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Item\_Amt$

    — **If Tax Type = ′F′**

      $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) - TaxAmount$

    — **If Tax Type = ′P′**

      $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

    — **If Tax Type = ′F′**

$$Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$$

— **If Tax Type = ′P′**

$$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$$

– **If Tax Amount is greater than 0**

$$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the ticket invoice.

- **If Ticket Invoice Type = ′C′**
  - **If Item Type <> Uplift**

    $$Tra\_Tot = Tra\_Tot - Item\_Amt$$

    — **If Tax Type = ′F′**

    $$Tra\_Tax\_F = Tra\_Tax\_F - TaxAmount$$

    — **If Tax Type = ′P′**

    $$Tra\_Tax\_P = Tra\_Tax\_P - TaxAmount$$

  - **If Item Type = Uplift**

    $$Tra\_Tot = Tra\_Tot + Item\_Amt$$

    — **If Tax Type = ′F′**

    $$Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$$

    — **If Tax Type = ′P′**

    $$Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30

5.5.10.4 Control Paper Calculations

- **Before the lines are printed**

  $$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$$

  - If `Mis_N_Lines_Avail_To_Print` < `Mis_N_Cmd_Lines_To_Print` + `Mis_N_TI_Cancel_Lines_To_Print`
    `Return_Code  125`

- **After the lines were printed correctly**

  $$Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$$

5.5.10.5 Ticket Invoice Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the ticket invoice item sale command is disabled (rate = 9999).
- For ticket invoice type B, the item_amt includes VAT.
- For ticket invoice type A, the item_amt does not include VAT.
- To void a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:

  - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)

  - B3.Description = B2.Description

  - B3.Item Ordinal Number = Sequence number of the item previously sold which to be voided.

  - B3.Unit Price = B2.Unit Price

  - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $B3.VATNotEnrolled = B2.VATNotEnrolled$

  - B3.Quantity ≤ B2.Quantity

  - If B3.Quantity = B2.Quantity
    $B3.TaxAmount = B2.TaxAmount$
    $B3.ItemPercep.Amount = B2.ItemPercep.Amount$

  - If B3.Quantity < B2.Quantity
    $0 \leq B3.TaxAmount \leq B2.TaxAmount$
    $0 \leq B3.ItemPercep.Amount \leq B2.ItemPercep.Amount$

  - If ticket invoice type ≠ A
    $((B2.Quantity - B3.Quantity) \times B2.Amount) > (B2.TaxAmount - B3.TaxAmount)$

- To discount a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:

  - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)

  - B3.Description = B2.Description

  - B3.Item Ordinal Number = Sequence number of the item previously sold which to be discounted.

  - B3.Quantity = B2.Quantity

  - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $B3.VATNotEnrolled = B2.VATNotEnrolled$

  - B3.Unit Price < B2.Unit Price

  - B3.Item Percep.Amount ≤ B2.Item Percep.Amount

  - B3.Item Percep.Amount ≥ 0

  - B3.Tax Amount ≥ 0

  - If ticket invoice type ≠ A

$$(B2.Quantity \times (B2.Amount - B3.Amount)) > (B2.TaxAmount - B3.TaxAmount)$$

- To uplift a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:

    - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)

    - B3.Description   = B2.Description

    - B3.Item Ordinal Number = Sequence number of the item previously sold which to be uplifted.

    - B3.Quantity   = B2.Quantity

    - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
      $B3.VATNotEnrolled = B2.VATNotEnrolled$

    - ((B2.Amount + B3.Amount) * B2.Quantity)   ≤ 999999949

    - (B2.Tax Amount   + B3.Tax Amount)   ≤ 999999949

    - (B2.Item Percep.Amount   + B3.Item Percep.Amount) ≤ 999999949

    - If ticket invoice type ≠ A
      $$(B2.Quantity \times (B2.Amount + B3.Amount)) > (B2.TaxAmount + B3.TaxAmount)$$

- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

5.5.11 (B4) - Ticket Invoice Subtotal/Total

This command is used to verify that the subtotal or total amount accumulated by the fiscal unit matches the amount accumulated by the application program.
To execute this command the serialize fiscal printer (1B cmd.) and any ticket invoice item sale (B2 cmd.) have to be executed before.
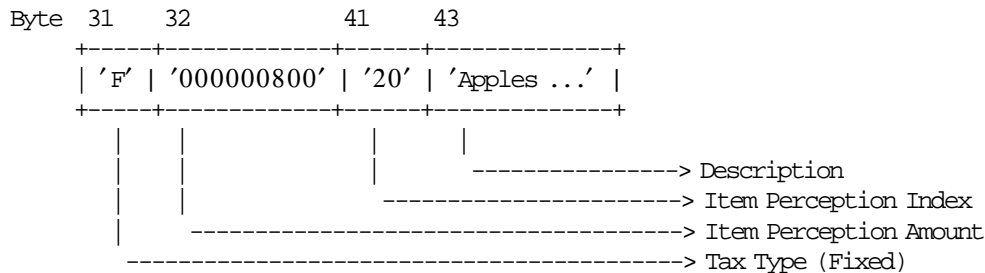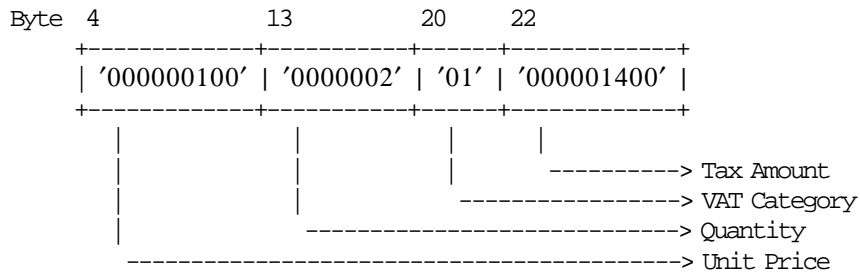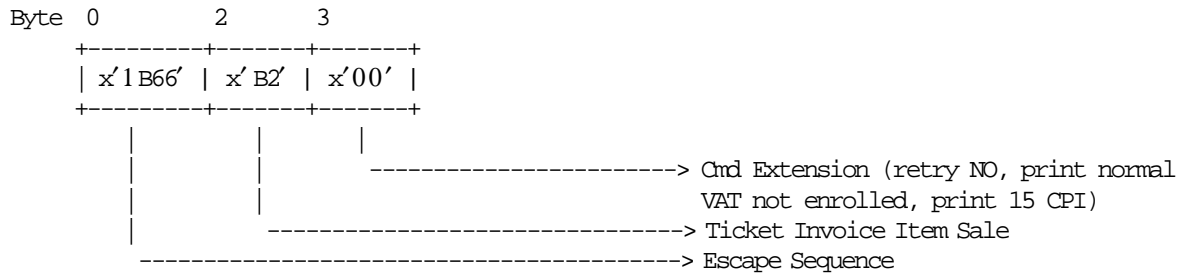
5.5.11.1 Command Format

```
  ----------------------------------------------------------------------

 BYTE BIT   CONTENT                                      TYPE    LENGTH

  0-1       1B66 - Command Prefix                        hex        2
  2         B4 - Ticket Invoice Subtotal/Total           hex        1
  3         Cmd Extension                                hex        1
      7     Retry
            0 = NO
            1 = YES
      6     Reserved (always = '0')
      5     Print Density
            0 = Normal
            1 = Emphasized
     4-0    Reserved (always = '0')
  4-13      Amount                                       ASCII     10 (Note 1)


  ----------------------------------------------------------------------
```

Notes:

 1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

5.5.11.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+-------------+
      | x'1B66' | x'B4' | x'00' | '0000001000' |
      +---------+-------+-------+-------------+
           |         |       |       |
           |         |       |       |_____> Amount
           |         |       |_____> Cmd Extension (print normal)
           |         |_____> Ticket Invoice Subtotal/Total
           |_____> Escape Sequence
```

5.5.11.3 Ticket Invoice Subtotal/Total Command Flow

```
                        .
   +-------------->|
   |        -------------------
   |        |      Previous     |
   |        | Condition Flags:  |
   |        |  FTOTALR  = NO    |
   |        |  FTOTINVO = NO    |
   |        -------------------
   |        |   Command B4      |---->+
   |        |   (First Total)   |     |
   |        -------------------       |
   |        |     Modified      |     |
   |        | Condition Flag:   |     |
   |        |  FTOTALR  = YES   |     |
   |        -------------------       |
   |              |                   |
   |        -------------------       |
   |        |     Previous      |     |
   |        | Condition Flags:  |     |
   |        |  FTOTALR  = YES   |     |
   |        |  FTOTINVO = NO    |     |
   |        -------------------       |
   +<----|    Command B9     |     |
         |(Dsc/Upl. on Subt.)|     |
         -------------------        |
         |     Modified      |      |
   +---->| Condition Flag:   |      |
   |     |  FTOTALR  = NO    |      |
   |     -------------------        |
   |           |                    |
   |     -------------------    \
   |     |     Previous      |  |     |
   |     | Condition Flags:  |  |     |
   |     |  FTOTALR  = YES   |  |     |
   |     |  FTOTINVO = NO    |  |     |
   |     -------------------     |   |
   |     |   Command B8      |<----|    > (Note 1)
   |     |(Global Perception)|  |  |
   |     -------------------    |  |
   |     |     Modified      |  |  |
   |     | Condition Flag:   |  |  |
   |     |   none            |  |  |
   |     -------------------   |  /
   |           |               |
   |     -------------------    |
   |     |     Previous      |  |
   |     | Condition Flags:  |  |
   |     |  FTOTINVO = NO    |  |
   |     -------------------    |
   |     |   Command B4      |  |
   |     |   (Second Total)  |<----+
   +<----|Check limit without|
         |perception         |
         -------------------
         |     Modified      |
         | Condition Flag:   |
         |  FTOTALR  = NO    |
         |  FTOTINVO = YES   |
         -------------------
              |   |
          +-<-+----+->-+
          |            |
-------------------  | | -------------------    -------------------
|     Previous    |  | | |     Previous    |    |     Previous    |
| Condition Flags:|  | | | Condition Flags:|    | Condition Flags:|
|  none           |  | | |  FTOTINVO = YES |    |  FTOTINVO = YES |
-------------------  | | -------------------    -------------------
|   Command 0F    | +--->|   Command B5    |------>|   Command E3    |
|   (Cancel)      |    |(Payment) Optional |      |   (End)         |
-------------------    -------------------        -------------------
|     Modified    |    |     Modified    |        |     Modified    |
| Condition Flag: |    | Condition Flag: |        | Condition Flag: |
|  FTOTALR  = NO  |    |  FPAYMNT = YES  |        |  FTOTALR  = NO  |
|  FTOTINVO = NO  |    -------------------        |  FTOTINVO = NO  |
-------------------                               -------------------

Note 1: Optional for Ticket Invoice 'A' and 'B'.
        Not allowed for Ticket Invoice 'C'.
```

Figure 1. Ticket Invoice Subtotal/Total Command Flow

5.5.11.4 Ticket Invoice Subtotal/Total Calculations

- **For Ticket Invoice Type = ′A′ or ′B′**

$$Tra\_Tot = \sum_{vv} Tra\_Tot\_v(vv)$$

$$Tra\_Tot\_Fixed = \sum_{vv} Tra\_Tot\_Fixed\_v(vv)$$

$$Tra\_Tax\_v(vv) = Tra\_Tax\_F\_v(vv) + Tra\_Tax\_P\_v(vv) + Tra\_Tax\_Fixed\_v(vv)$$

$$Tra\_Tax\_F = \sum_{vv} Tra\_Tax\_F\_v(vv)$$

$$Tra\_Tax\_P = \sum_{vv} Tra\_Tax\_P\_v(vv)$$

$$Tra\_Tax\_Fixed = \sum_{vv} Tra\_Tax\_Fixed\_v(vv)$$

- **For Ticket Invoice Type = ′A′**

$$Tra\_VAT\_Fixed\_v(vv) = TRUNC(Tra\_Tot\_Fixed\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_v(vv) = TRUNC(Tra\_Tot\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

  - **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra\_VAT\_NE\_Fixed\_v(vv) = TRUNC(Tra\_Tot\_Fixed\_NE\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_NE\_v(vv) = TRUNC(Tra\_Tot\_NE\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_NE\_v(vv) = (Tra\_VAT\_NE\_v(vv) + Tra\_VAT\_NE\_Fixed\_v(vv)) \times (VATNotEnrolledPercent)$$

$$Tra\_VAT = \sum_{vv} Tra\_VAT\_v(vv)$$

$$Tra\_VAT\_Fixed = \sum_{vv} Tra\_VAT\_Fixed\_v(vv)$$

$$Tra\_VAT\_NE = \sum_{vv} Tra\_VAT\_NE\_v(vv)$$

$$Tra\_Percep = \sum_{tt} Tra\_Percep\_t(tt)$$

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed + Tra\_VAT + Tra\_VAT\_Fixed + \\ Tra\_Tax\_F + Tra\_Tax\_P + Tra\_Tax\_Fixed + Tra\_VAT\_NE + Tra\_Percep$$

- **For Ticket Invoice Type = ′B′**

$$Tra\_VAT\_Fixed\_v(vv) = TRUNC((Tra\_Tot\_Fixed\_v(vv) - Tra\_Tax\_Fixed\_v(vv)) \times \frac{VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT\_v(vv) = TRUNC((Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv) - Tra\_Tax\_P\_v(vv)) \times \frac{VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT = \sum_{vv} Tra\_VAT\_v(vv)$$

$$Tra\_VAT\_Fixed = \sum_{vv} Tra\_VAT\_Fixed\_v(vv)$$

$$Tra\_Percep = \sum_{tt} Tra\_Percep\_t(vv,tt)$$

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed + Tra\_Percep$$

- **For Ticket Invoice Type = ′C′**

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed$$

Where:

    vv = VAT category, range = 01 up to 20
    tt = perception type, range = 01 up to 30
    VAT Not Enrolled Percent was loaded with 2E cmd.

5.5.11.5 Ticket Invoice Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum ticket invoice total allowed (loaded with 2E cmd.).
- The string ″TOTAL″   will be printed double-high and emphasized.
- The string ″SUBTOT.″ will be printed double-high and emphasized.
- When the ticket invoice total exceed the limit for ticket invoice total allowed (loaded with 2E cmd.) the following action can be performed:
    – Cancel transaction
      OR
    – Issue discount on item or discount on subtotal

5.5.12 (B8) - Ticket Invoice Global Perception

This command is used to apply global perceptions.

5.5.12.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE   LENGTH

 0-1       1B66 - Command Prefix                         hex       2
 2         B8 - Ticket Invoice Global Perception         hex       1
 3         Cmd Extension                                 hex       1
     7     Retry
           0 = NO
           1 = YES
     6     Rectify
           0 = NO
           1 = YES
    5-0    Reserved (always = '0')
 4-5       Perception Type Number                        ASCII     2 (Note 1)
 6-7       VAT Category                                  ASCII     2 (Note 2)
 8-17      Amount                                        ASCII    10


-----------------------------------------------------------------------
```
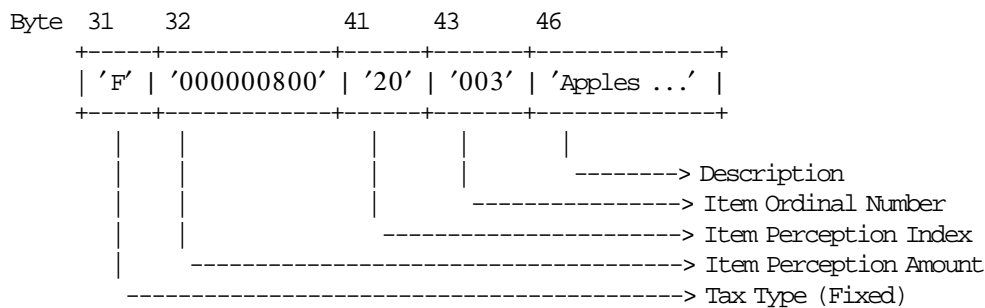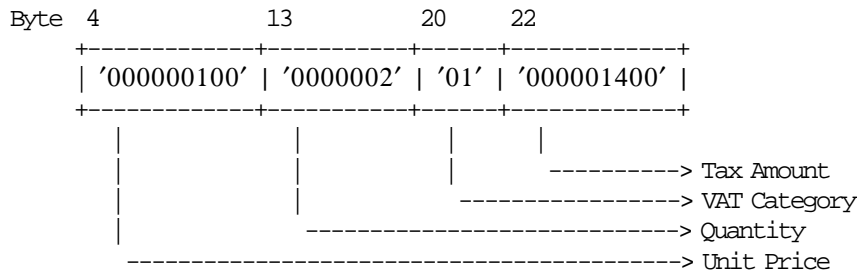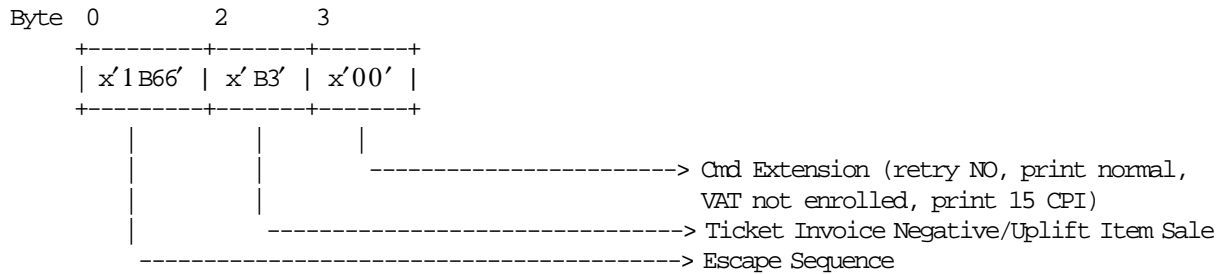
Notes:

1. Range allowed is from 01 to up 30.

2. For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to 20.
   For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible not enrolled, value allowed is 00.
   For ticket invoice type 'B' and all taxpayer customer conditions, value allowed is 00.

5.5.12.2 Command Example

```
Byte  0         2       3       4      6      8
      +---------+-------+-------+------+------+--------------+
      | x'1B66' | x'B8' | x'00' | '01' | '01' | '00000001000' |
      +---------+-------+-------+------+------+--------------+
           |         |       |      |      |      |
           |         |       |      |      |      --------------> Amount
           |         |       |      |      --------------------> VAT Category
           |         |       |      --------------------------> Perception Type
           |         |       ----------------------------------> Cmd Extension
           |         |                                           (retry NO, rectify NO)
           |         ------------------------------------------> Ticket Invoice Global Perception
           --------------------------------------------------> Escape Sequence
```
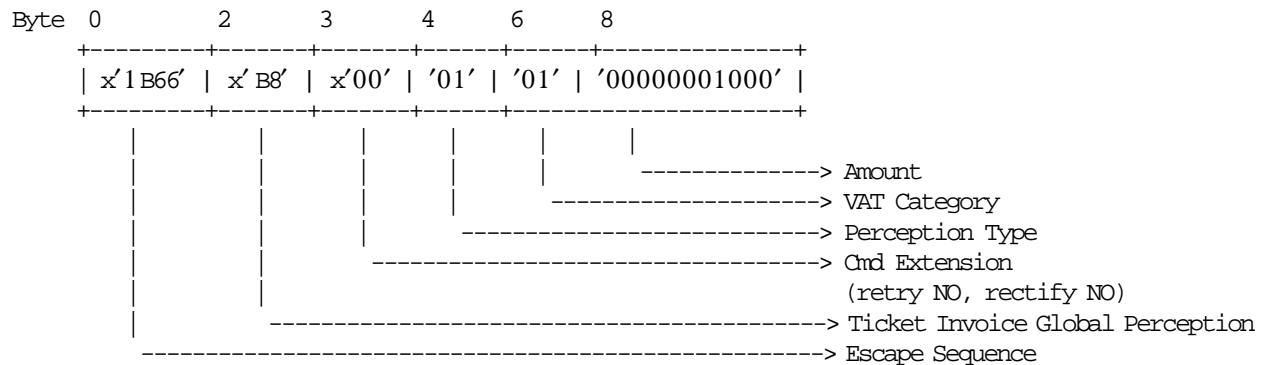
5.5.12.3 Ticket Invoice Global Perception Calculations

- **For Ticket Invoice Type = ′A′**
  - **If Rectify = NO**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) + Amount$

    — **If VAT Category not = ′00′**

      $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

  - **If Rectify = YES**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) - Amount$

    — **If VAT Category not = ′00′**

      $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

- **For Ticket Invoice Type = ′B′**
  - **If Rectify = NO**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) + Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

  - **If Rectify = YES**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) - Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

Where:

vv = VAT category, range = 00 up to 20
tt = perception type, range = 01 up to 30

5.5.12.4 Ticket Invoice Global Perception Rules

- This command is applicable to ticket invoice types A and B.
- This command is allowed if taxpayer customer condition is VAT Responsible Enrolled or if taxpayer customer condition is VAT Responsible Not Enrolled and is allowed the perception for this customer condition (set with 2E cmd.).

5.5.13 (B9) - Ticket Invoice Uplift/Discount on Subtotal

This command is used to apply discount or uplift on subtotal.
To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice subtotal/total (B4 cmd.) have to be executed before.

5.5.13.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE   LENGTH

 0-1      1B66 - Command Prefix                          hex       2
 2        B9 - Ticket Invoice Upl/Disc on Subtotal       hex       1
 3        Cmd Extension                                  hex       1
      7   Retry
          0 = NO
          1 = YES
      6   Reserved (always = '0')
      5   Print Density
          0 = Normal
          1 = Emphasized
      4   Reserved (always = '0')
      3   Print Typeface
          0 = 15 CPI
          1 = 12 CPI
    2-1   Reserved (always = '0')
      0   Type
          0 = Discount
          1 = Uplift
 4-25     Description                                    ASCII     22
26-35     Amount                                         ASCII     10


-----------------------------------------------------------------------
```

5.5.13.2 Command Example

```
Byte  0         2       3       4            26
      +---------+-------+-------+------------+-------------+
      | x'1B66' | x'B9' | x'00' | 'Apples ..'| '000001000' |
      +---------+-------+-------+------------+-------------+
           |         |       |       |            |
           |         |       |       |            ----------------> Amount
           |         |       |       ----------------------------> Description
           |         |       ------------------------------------> Cmd Extension
           |         |                                             (print normal, 15 CPI, Discount)
           |         ---------------------------------------------> Ticket Invoice Upl/Disc. on Subt.
           -------------------------------------------------------> Escape Sequence
```
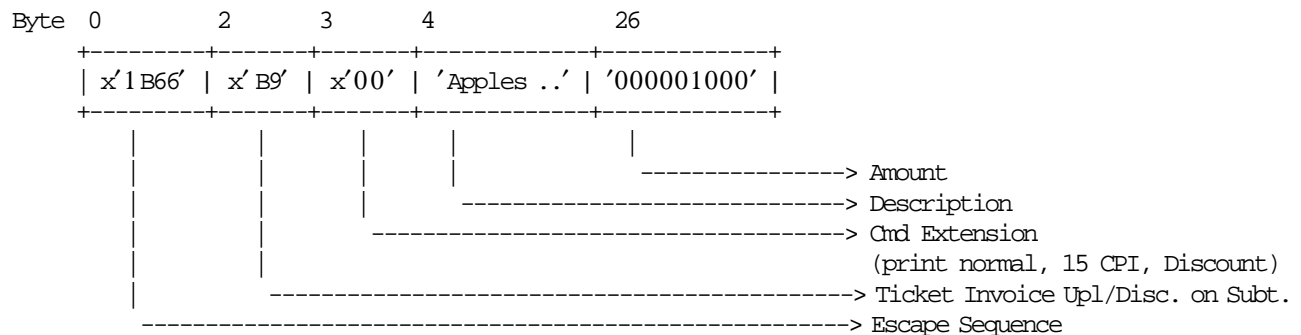
5.5.13.3 Ticket Invoice Uplift/Discount on Subtotal Calculations

- **For Ticket Invoice Type = 'A'**

  With Decimals

  $$Factor = TRUNC(\frac{Tra\_Tot \times 100}{Tra\_Tot + Tra\_Tax\_P})$$

Without Decimals

$$Factor = TRUNC(\frac{Tra\_Tot \times 100}{Tra\_Tot + Tra\_Tax\_P}) + 0.5$$

$$Tra\_Disc\_Quo\_v(vv) = TRUNC(\frac{Tra\_Tot\_v(vv) \times Amount}{Tra\_Tot})$$

$$Tra\_Disc\_Rem\_v(vv) = mod(TRUNC(\frac{Tra\_Tot\_v(vv) \times Amount}{Tra\_Tot}))$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest reminder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

– **For Uplift on Subtotal**

$$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Disc\_Quo\_v(vv)$$

$$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot} + 0.5)$$

— **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra\_Tot\_NE\_v(vv) = Tra\_Tot\_NE\_v(vv) + TRUNC((\frac{Tra\_Tot\_NE\_v(vv) \times Item\_Amt \times 10}{Tra\_Tot}) + 5)/10$$

– **For Discount on Subtotal**

$$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Disc\_Quo\_v(vv)$$

$$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot} + 0.5)$$

— **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra\_Tot\_NE\_v(vv) = Tra\_Tot\_NE\_v(vv) - TRUNC((\frac{Tra\_Tot\_NE\_v(vv) \times Item\_Amt \times 10}{Tra\_Tot}) + 5)/10$$

• **For Ticket Invoice Type = ′B′**

With Decimals

$$Factor = TRUNC(\frac{Tra\_VAT}{Tra\_Tot - Tra\_Tax\_F} \times 100)$$

Without Decimals

$$Factor = TRUNC((\frac{Tra\_VAT}{Tra\_Tot - Tra\_Tax\_F} \times 100) + 0.5)$$

$$Tra\_Disc\_Quo\_v(vv) = TRUNC(\frac{(Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times Amount}{Tra\_Tot - Tra\_Tax\_F})$$

$$Tra\_Disc\_Rem\_v(vv) = mod(TRUNC(\frac{(Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times Amount}{Tra\_Tot - Tra\_Tax\_F}))$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest reminder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **For Uplift on Subtotal**

   $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Disc\_Quo\_v(vv)$

   $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) + TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

   $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

- **For Discount on Subtotal**

   $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Disc\_Quo\_v(vv)$

   $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) - TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

   $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

- **For Ticket Invoice Type = ′C′**
  - **For Uplift on Subtotal**

     $Tra\_Tot = Tra\_Tot + Amount$

     $$Tra\_Tax\_P = Tra\_Tax\_P + TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  - **For Discount on Subtotal**

     $Tra\_Tot = Tra\_Tot - Amount$

     $$Tra\_Tax\_P = Tra\_Tax\_P - TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

Where:

   vv = VAT category, range = 01 up to 20

5.5.13.4 Control Paper Calculations

- **Before the lines are printed**

   $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

  - If `Mis_N_Lines_Avail_To_Print` < `Mis_N_Cmd_Lines_To_Print` + `Mis_N_TI_Cancel_Lines_To_Print`

     `Return_Code  125`

- **After the lines were printed correctly**

   $Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$

5.5.13.5 Ticket Invoice Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code error is issued.

5.5.14 (B5) - Ticket Invoice Payment

This command is used to select the payment type and to apply the paid amount.
To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice subtotal/total (B4 cmd.) have to be executed before.

5.5.14.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - Cmd Prefix                          hex        2
 2        B5 - Ticket Invoice Payment                hex        1
 3        Cmd Extension                              hex        1
      7   Retry
          0 = NO
          1 = YES
      6   Rectify
          0 = NO
          1 = YES
    5-3   Print Mode                                          (Note 1)
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = Reserved
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = Reserved
    2-0   Reserved (always = '0')
 4-5      Payment Type Number                        ASCII      2 (Note 2)
 6-15     Amount                                     ASCII     10 (Note 3)
16-53     Payment Trailer Line                       ASCII     38 (Note 4)


-----------------------------------------------------------------------
```

Notes:

1. Print mode is applied to the change due printed line only.

2. Range allowed is from 01 to 30.

3. Maximum Amount = 9999999949. The amount is printed with the same print mode used by the description field set in the 24 command (Set Payment Type).

4. If payment type number correspond to "credit card" payment type this field is mandatory.
   For others payment types, this field is not allowed.
   When this field is applied, the special character 0x0E is not accepted.

5.5.14.2 Command Example

```
Byte  0          2       3
     +---------+------+-------+---
     | x'1B66' | x'B5' | x'00' |
     +---------+------+-------+---
          |        |       |
          |        |       ----------------------> Cmd Extension
          |        |                               (rectify NO, print 15 CPI)
          |        -------------------------------> Ticket Invoice Payment
          --------------------------------------> Escape Sequence


Byte  4      6             16
     +------+-------------+------------------+
     | '02' | '0000001000' | 'ddd.........ddd' |
     +------+-------------+------------------+
         |       |                 |
         |       |                 --------------------> Payment Trailer Line
         |       ----------------------------------> Amount
         ------------------------------------------> Payment Type
```
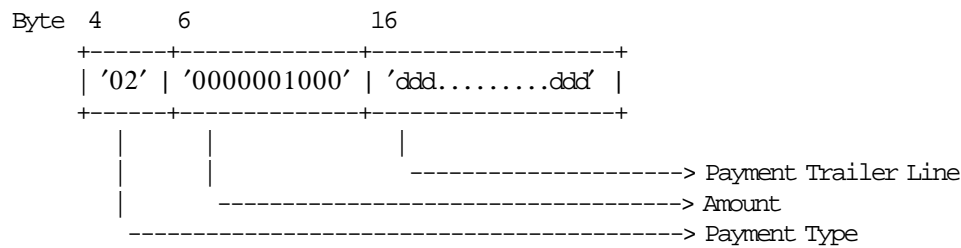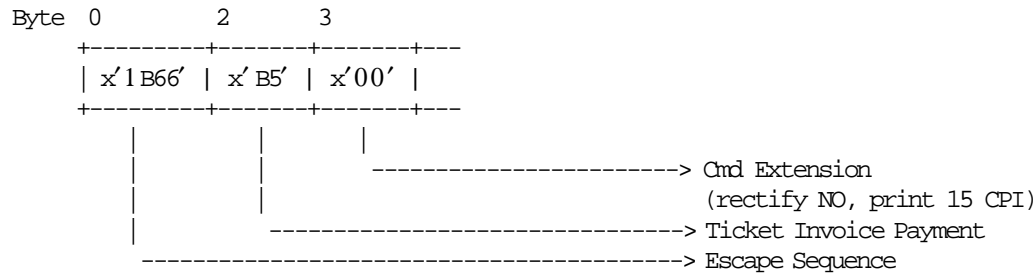
5.5.14.3 Ticket Invoice Payment Calculations

- **Rectify = NO**

  $Tra\_Pay\_Type(pp) = Tra\_Pay\_Type(pp) + Amount$

  $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

- **Rectify = YES**

  $Tra\_Pay\_Type(pp) = Tra\_Pay\_Type(pp) - Amount$

  $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

Where:

  pp = payment type, range = 01 up to 30

5.5.14.4 Ticket Invoice Payment Rules

- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed.
- The Ticket Invoice End Transaction command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 Normal Print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the Payment Trailer Line field of this command.

5.5.15 (E3) - Ticket Invoice End

This command is used to end a ticket invoice sale transactions.
To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice subtotal/total (B4 cmd.) have to be executed before.
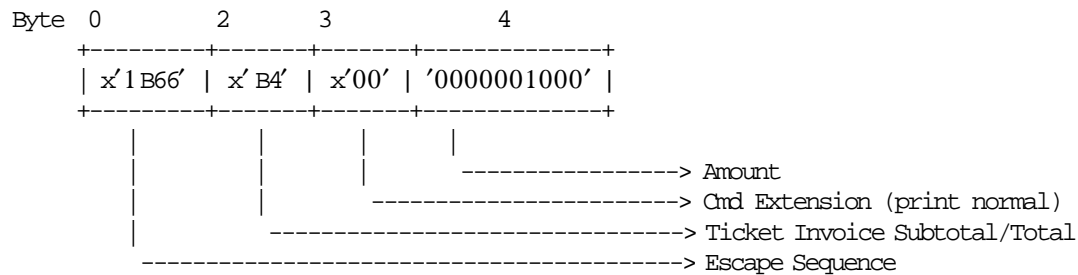
5.5.15.1 Command Format

```
 ---------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Command prefix                        hex        2
 2         E3 - Ticket Invoice End                      hex        1
 3         00 - Cmd Extension                           hex        1
 4-7       Operator Code                                ASCII      4


 ---------------------------------------------------------------------
```

5.5.15.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'E3' | x'00' | 'AB11' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |        ----------------> Operator Code (AB11)
           |         |        -----------------------> Cmd Extension
           |          ------------------------------> Ticket Invoice End
            ------------------------------------------> Escape Sequence
```
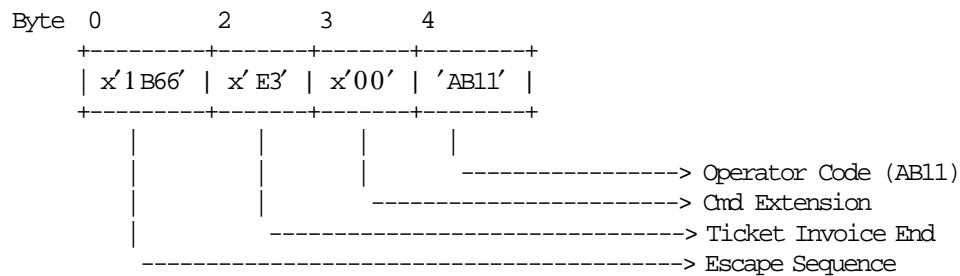
5.5.15.3 Ticket Invoice End Calculations

- **If Ticket Invoice Type = ′A′**

  $Day\_N\_TInv\_A = Day\_N\_TInv\_A + 1$

  $Lif\_N\_TInv\_A = Lif\_N\_TInv\_A + 1$

- **If Ticket Invoice Type = ′B′ or ′C′**

  $Day\_N\_Vouc = Day\_N\_Vouc + 1$

  $Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

- **If Tra_Amt_Due < 0**

  $Change\_Due = Tra\_Amt\_Due \times (-1)$

- **If Ticket Invoice = ′A′, ′B′ or ′C′**

  $Day\_Pay\_Type(pp) = Day\_Pay\_Type(pp) + Tra\_Pay\_Type(pp)$

- **If Ticket Invoice = ′A′ or ′B′**

  $Day\_Tot\_v(vv) = Day\_Tot\_v(vv) + Tra\_Tot\_v(vv) + Tra\_Tot\_Fixed\_v(vv)$

$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) + Tra\_VAT\_Fixed\_v(vv)$

$Day\_VAT\_v(vv) = Day\_VAT\_v(vv) + Tra\_VAT\_v(vv)$

$Tra\_Tax\_v(vv) = Tra\_Tax\_F\_v(vv) + Tra\_Tax\_v(vv) + Tra\_Tax\_Fixed\_v(vv)$

$Day\_Tax\_v(vv) = Day\_Tax\_v(vv) + Tra\_Tax\_v(vv)$

$Day\_VAT\_NE\_v(vv) = Day\_VAT\_NE\_v(vv) + Tra\_VAT\_NE\_v(vv)$

$Day\_Percep\_t(tt) = Day\_Percep\_t(tt) + Tra\_Percep\_t(tt)$

- **If Ticket Invoice Type = ′A′**

  $Day\_Tot\_v(vv) = Day\_Tot\_v(vv) + Tra\_VAT\_v(vv) + Tra\_Tax\_v(vv) + Tra\_VAT\_NE\_v(vv)$

- **If Ticket Invoice Type = ′C′**

  $Day\_Tot = Day\_Tot + Tra\_Tot + Tra\_Tot\_Fixed$

  $Tra\_Tax = Tra\_Tax\_F + Tra\_Tax\_P + Tra\_Tax\_Fixed$

  $Day\_Tax = Day\_Tax + Tra\_Tax$

- **Clearing Transaction Accumulators**

  $Tra\_Tot = 0$
  $Tra\_Tot\_v(vv) = 0$

  $Tra\_Tot\_Fixed = 0$
  $Tra\_Tot\_Fixed\_v(vv) = 0$

  $Tra\_Tot\_Fixed\_NE\_v(vv) = 0$
  $Tra\_Tot\_NE\_v(vv) = 0$
  $Tra\_Tax\_Fixed = 0$
  $Tra\_Tax\_Fixed\_v(vv) = 0$

  $Tra\_Tax\_F = 0$
  $Tra\_Tax\_F\_v(vv) = 0$

  $Tra\_Tax\_P = 0$
  $Tra\_Tax\_P\_v(vv) = 0$

  $Tra\_VAT\_v(vv) = 0$
  $Tra\_VAT\_NE\_v(vv) = 0$
  $Tra\_VAT\_Fixed\_v(vv) = 0$

  $Tra\_Percep\_t(tt) = 0$
  $Tra\_Percep\_vt(vv,tt) = 0$
  $Tra\_Tot\_Percep\_t(tt) = 0$

  $Tra\_Pay\_Type(pp) = 0$

  $Tra\_Amt\_Due = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

5.5.15.4 Control Paper Calculations

- **If EB cmd. wasn't issued before**

  - **Before the lines are printed**

    Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print − Mis_N_Lines_Printed

    Mis_N_Cmd_Lines_To_Print = Totalization_Lines + Mis_N_TI_End_Lines_To_Print

    - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print

      Return_Code 125

  - **After the lines were printed correctly**

    Mis_N_Lines_Printed = 0

- **If EB cmd. was issued before**

  - **Before the lines are printed**

    Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print − Mis_N_Lines_Printed

    Mis_N_Cmd_Lines_To_Print = Mis_N_TI_End_Lines_To_Print

  - **After the lines were printed correctly**

    Mis_N_Lines_Printed = 0

5.5.15.5 Ticket Invoice End Rules

There are not rules for this command.

5.5.16 (0F) - Ticket Invoice Cancel

This command is used to cancel the sale transaction at any point.
To execute this command the serialize fiscal printer (1B cmd.) and the ticket invoice print header (E0 cmd.) have to be executed before.

5.5.16.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                       TYPE    LENGTH

 0-1      1B66 - Command Prefix                         hex        2
 2        0F - Ticket Invoice Cancel                    hex        1
 3        00 - Cmd Extension                            hex        1
 4-7      Operator Code                                 ASCII      4


------------------------------------------------------------------------
```

5.5.16.2 Command Example

```
Byte  0        2       3        4
      +---------+-------+-------+--------+
      | x'1B66' | x'0F' | x'00' | '0012' |
      +---------+-------+-------+--------+
          |         |       |       |
          |         |       |       ----------------> Operator Code
          |         |       ----------------------> Cmd Extension
          |         --------------------------------> Ticket Invoice Cancel
          ------------------------------------------> Escape Sequence
```
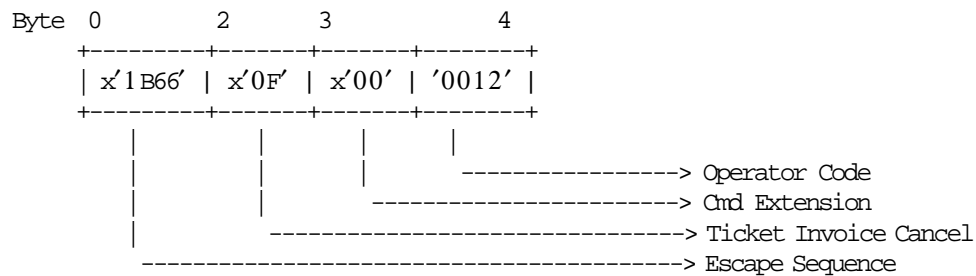
5.5.16.3 Ticket Invoice Cancel Calculations

$Day\_N\_Canc = Day\_N\_Canc + 1$

- **For Ticket Invoice Type 'A'**

  $Day\_N\_TInv\_A = Day\_N\_TInv\_A + 1$
  $Lif\_N\_TInv\_A = Lif\_N\_TInv\_A + 1$

- **For Ticket Invoice Type 'B' or 'C'**

  $Day\_N\_Vouc = Day\_N\_Vouc + 1$
  $Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

- **Clearing Transaction Accumulators:**

  $Tra\_Tot = 0$
  $Tra\_Tot\_v(vv) = 0$
  $Tra\_Tot\_Fixed\_v(vv) = 0$

  $Tra\_Tot\_Fixed\_NE\_v(vv) = 0$
  $Tra\_Tot\_NE\_v(vv) = 0$

  $Tra\_Tax\_F\_v(vv) = 0$

$Tra\_Tax\_P\_v(vv) = 0$
$Tra\_Tax\_Fixed\_v(vv) = 0$

$Tra\_Percep\_t(tt) = 0$
$Tra\_Tot\_Percep\_t(tt) = 0$
$Tra\_Percep\_vt(vv,tt) = 0$

$Tra\_VAT\_v(vv) = 0$
$Tra\_VAT\_NE\_v(vv) = 0$
$Tra\_VAT\_Fixed\_v(vv) = 0$

$Tra\_Amt\_Due = 0$

$Tra\_Pay\_Type(pp) = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

5.5.16.4 Control Paper Calculations

- **Before the lines are printed**

  $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

- **After the lines were printed correctly**

  $Mis\_N\_Lines\_Printed = 0$

5.5.16.5 Ticket Invoice Cancel Rules

- This command is not allowed if V24 message ″TOTAL″ was printed before.
- The fiscal logo and machine serial number will be not printed.

5.6 Credit Notes

This procedure is used to generate credit notes and is controlled by the following commands:

- (B7) Ticket Invoice/Credit Note - Set/Reset Header
- (25) Ticket Invoice/Credit Note - Set Customer Information
- (22) Ticket Invoice/Credit Note - Set/Reset Perception Type
- (30) Credit Note - Print Header
- (31) Credit Note - Fixed Price Item Sale
- (32) Credit Note - Fixed Price Negative Item Sale
- (33) Credit Note - Item Sale
- (34) Credit Note - Negative/Uplift Item Sale
- (35) Credit Note - Subtotal/Total
- (36) Credit Note - Global Perception
- (37) Credit Note - Uplift/Discount on Subtotal
- (38) Credit Note - Payment
- (39) Credit Note - End
- (3A) Credit Note - Cancel

5.6.1 Credit Note Flow Chart

```
            TI/CN SET CUSTOMER INFORMATION (25)
                          |
                  CN PRINT HEADER (30)
                          |
                    +------------------------------------------->+
        +------------------>+                                     |
        |                   |                                     |
        |       ITEM ADDITIONAL DESCRIPTION (03)                  |
        |                   |                                     |
        |            +------+------+                              |
        |            |             |                              |
        |      CN ITEM (33)   CN FIXED ITEM (31)                  |
        |            |             |                        v     |
        |            +------>+<-----+                              |
        |                    |                              |     |
        +<------------------------------------------------->+
        +------------------>+--------------------+          |
        |            +------+------+             |          |
        |            |             |             |          |
        |      CN NEGITEM (34)  CN FIXED NEGITEM (32) |      |
        |            |             |             |          |
        |            +------>+<-----+             |   v     |
        |                    |                    |   |     |
        +<------------------------------+ -------------------->+
        +------------------>+<-------------------+          |
        |                   |                    |          |
        |             CN TOTAL (35)              |          |
        |                   |                    |          |
        |          CN GLOBAL PERC. (36)          |          |
        |                   |                    |          |
        |            +------+------+             |          |
        |            |             |             |          |
        | CN DISC.SBT. (37) | CN UPLIFT SBT. (37) |        |
        |            |      |      |             |          |
        +-----<----+ |      +------->----+       +          |
          +-------------->+                                 |
          |             |                                   |
          |       CN PAYMENT (38)                     v     |
          |             |                             |     |
          +<-------------+------------------------------------>+
          +-------------->+<--------+                       |
          |             | UP TO     |                       |
          | ORDINARY PRINTING (EA) | 6 |                    |
          |             | TIMES     |                       |
          +-------------->+<--------+                 v     |
                        |                             |     |
                   CN END (39)                   CN CANCEL (3A)
                        |                             |
                        +<----------------------------+
                        |
```
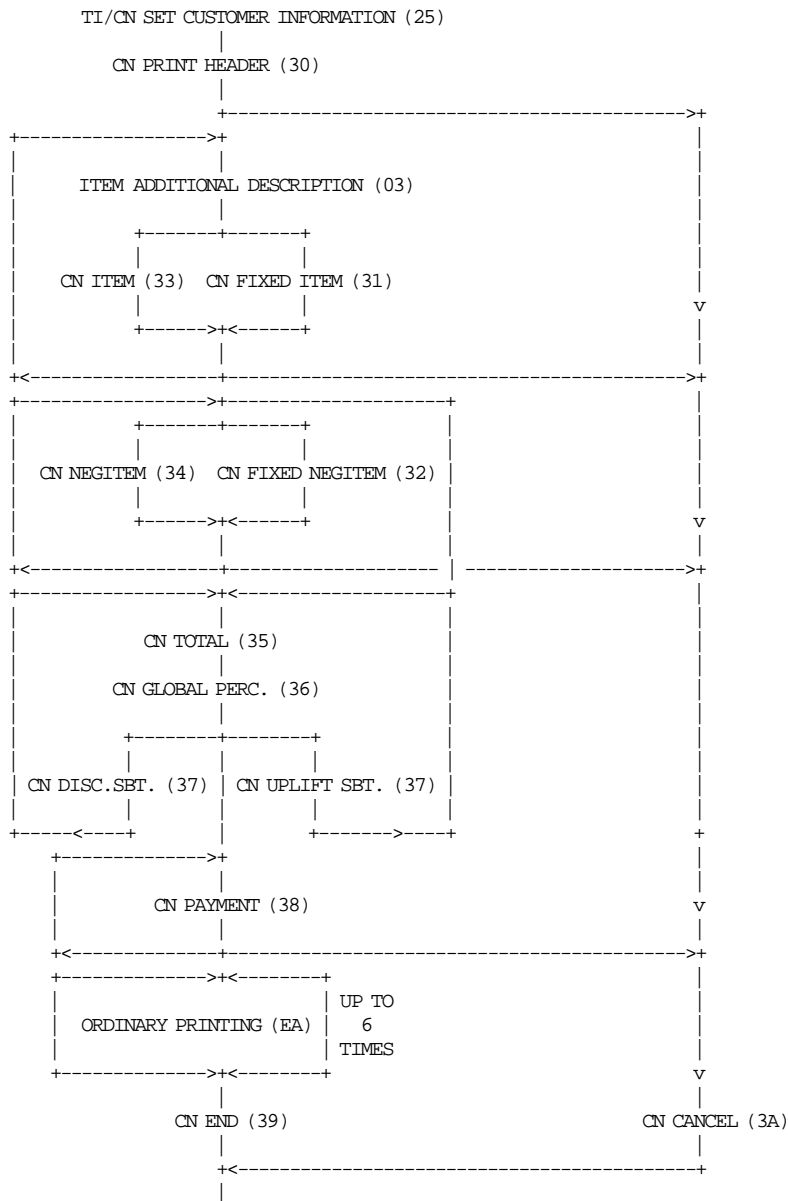
5.6.2 Credit Notes Rules

- The credit note is printed on DI station (portrait orientation) and all lines are replicated to the SJ station exactly as printed to the DI station except header.
- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on DI station can be printed.
  After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.

5.6.3 (30) - Credit Note Print Header

This command is used to print the credit note header on document insert station.
To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

5.6.3.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 – Command Prefix                      hex        2
 2        30 – Credit Note Print Header              hex        1
 3        Cmd Extension                              hex        1
     7    Reserved (always = '0')
     6-5  Type
          00 = A
          01 = B
          10 = C
          11 = Reserved
     4-2  Reserved (always = '0')
     1-0  Printer Station                                   (Note 1)
          00 = DI
          01 = Reserved
          10 = Reserved
          11 = Reserved
 4-41     Description 1                               ASCII    38 (Note 2)
42-79     Description 2                               ASCII    38 (Note 2)
80-117    Description 3                               ASCII    38 (Note 2)


-------------------------------------------------------------------------
```

Notes:

1. The selected station print will be preserved until an end transaction command will be sent.

2. The description field is optional.

5.6.3.2 Command Example

```
Byte  0          2       3
     +---------+-------+-------+---
     | x'1B66' | x'30' | x'00' |
     +---------+-------+-------+---
          |         |       |
          |         |       |
          |         |       ----------------------------> Cmd Extension
          |         |                                      (credit note type A, DI station)
          |         --------------------------------------> Credit Note Print Header
          -------------------------------------------------> Escape Sequence


Byte  4              42              80
     +---------------+---------------+---------------+
     | 'ddd......ddd' | 'ddd......ddd' | 'ddd......ddd' |
     +---------------+---------------+---------------+
          |               |               |
          |               |               ----------------> Description 3
          |               ------------------------------> Description 2
          ------------------------------------------------> Description 1
```
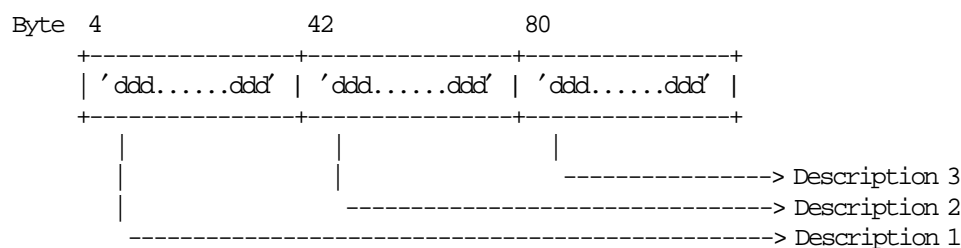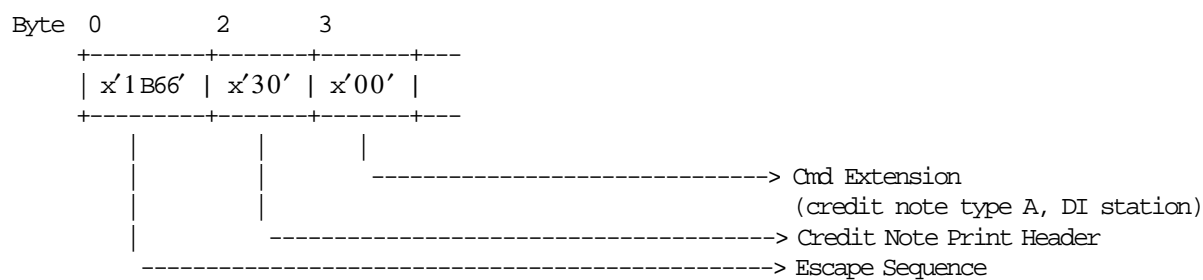
5.6.3.3 Credit Note Print Header Calculations

Item_Ordinal_Number = 0

5.6.3.4 Control Paper Calculations

- **Before the lines are printed**

  Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print

- **After the lines were printed correctly**

  Mis_N_Lines_Printed = Mis_N_Cmd_Lines_To_Print

5.6.3.5 Credit Note Print Header Rules

- The string TOTAL in upper, lower or mixed case is not allowed in the description fields of this command.

5.6.4 (31) - Credit Note Fixed Price Item Sale

The fixed price items are items which prices are not affected by discount or uplift on subtotal operations.
To execute this command the serialize fiscal printer (1B cmd.) and credit note print header (30 cmd.) have to be executed before.

5.6.4.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE   LENGTH

 0-1       1B66 - Cmd Prefix                          hex       2
 2         31 - Credit Note Fixed Price Item Sale     hex       1
 3         Cmd Extension                              hex       1
       7   Retry
           0 = NO
           1 = YES
       6   Reserved (always = '0')
       5   Print Density
           0 = Normal
           1 = Emphasized
       4   VAT Not Enrolled                                         (Note 1)
           0 = YES
           1 = NO
       3   Print Typeface
           0 = 15 CPI
           1 = 12 CPI
     2-0   Reserved (always = '0')
 4-12      Unit Price (Amount)                        ASCII     9 (Note 2)
13-19      Quantity                                   ASCII     7 (Note 3)
20-21      VAT Category                               ASCII     2 (Note 4)
22-30      Tax Amount                                 ASCII     9 (Note 5)
31         Tax Type                                   ASCII     1 (Note 6)
32-40      Item Perception Amount                     ASCII     9 (Note 7)
41-42      Item Perception Type                       ASCII     2 (Note 8 on page 164)
43-64      Description                                ASCII    22

------------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'A', the amount will be Unit Base Price.
   For credit note type 'A', the VAT ISN'T included in the amount.
   For credit note type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. For credit note type 'A', range allowed is from 01 to up 20.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'B', the tax amount must be less than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type ´A´ and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

5.6.4.2 Command Example

```
Byte  0           2       3
      +---------+-------+-------+
      | x´1B66´ | x´31´ | x´00´ |
      +---------+-------+-------+
           |        |       |
           |        |       ---------------------------> Cmd Extension (retry NO, print normal,
           |        |                                     VAT not enrolled, print 15 CPI)
           |        ---------------------------------> Credit Note Fixed Price Item Sale
           ------------------------------------------> Escape Sequence


Byte  4             13          20     22
      +-------------+-----------+------+-------------+
      | ´000000100´ | ´0000002´ | ´01´ | ´000001400´ |
      +-------------+-----------+------+-------------+
            |             |        |       |
            |             |        |       ----------> Tax Amount
            |             |        -----------------> VAT Category
            |             --------------------------> Quantity
            ------------------------------------------> Unit Price


Byte  31    32           41     43
      +-----+------------+------+-------------+
      | ´F´ | ´000000800´ | ´20´ | ´Apples ...´ |
      +-----+------------+------+-------------+
         |    |             |      |
         |    |             |      ----------------> Description
         |    |             ----------------------> Item Perception Index
         |    --------------------------------------> Item Perception Amount
         ------------------------------------------> Tax Type (Fixed)
```
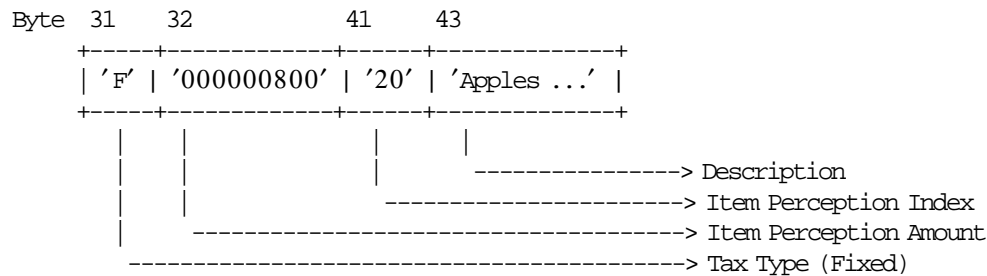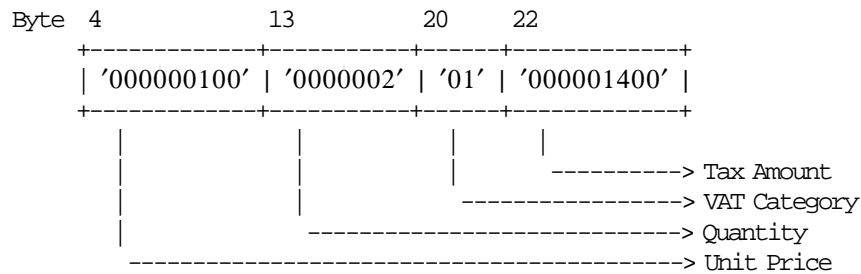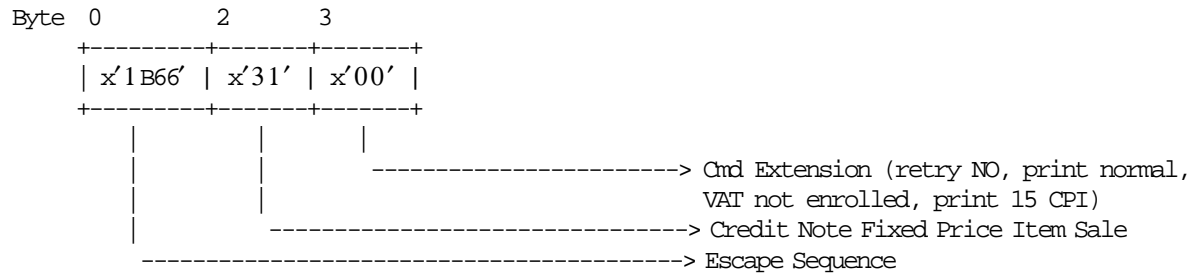
5.6.4.3 Credit Note Fixed Price Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

$Item\_Ordinal\_Number = Item\_Ordinal\_Number + 1$

- **For Credit Note Type ´A´**

  $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$

  - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
    Taxpayer Customer Condition = VAT Responsible Not Enrolled

    Tra_Tot_Fixed_NE_v(vv) Tra_Tot_Fixed_NE_v(vv) + Item_Amt

    – **If Tax Amount is greater than 0**

      $$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

      The calculated Factor must be printed in the Credit Note.

$$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

   – **If Item Perception Amount is greater than 0**

$$Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$$

- **For Credit Note Type ′B′**

$$Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$$

   – **If Tax Amount is greater than 0**

$$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the credit note.

$$Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$$

- **For Credit Note Type ′C′**

$$Tra\_Tot\_Fixed = Tra\_Tot\_Fixed + Item\_Amt$$

$$Tra\_Tax\_Fixed = Tra\_Tax\_Fixed + TaxAmount$$

Where:

   vv = VAT category, range = 01 up to 20
   tt = perception type, range = 01 up to 30

5.6.4.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_CN\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$$

   - If `Mis_N_Lines_Avail_To_Print` < `Mis_N_Cmd_Lines_To_Print` + `Mis_N_CN_Cancel_Lines_To_Print`

     `Return_Code  125`

- **After the lines were printed correctly**

$$Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$$

5.6.4.5 Credit Note Fixed Price Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated (Tra_Tot_Fixed_v + Item_Amt) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the Item_Amt does not include VAT.
- For credit note type B, the Item_Amt includes VAT.

- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.6.5 (32) - Credit Note Fixed Price Negative/Uplift Item Sale

The fixed price negative/uplift items are items which prices are not affected by discount or uplift on subtotal operations.
This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the credit note print header (30 cmd.) and at least one credit note fixed price item sale (31 cmd.) have to be executed before.

5.6.5.1 Command Format

```
 ----------------------------------------------------------------------

 BYTE BIT   CONTENT                                      TYPE   LENGTH

 0-1    1B66 – Command Prefix                            hex       2
 2      32 – C.N. Fixed Price Negative/Uplift            hex       1
 3      Cmd Extension                                    hex       1
    7   Retry
        0 = NO
        1 = YES
    6   Reserved (always = '0')
    5   Print Density
        0 = Normal
        1 = Emphasized
    4   VAT Not Enrolled                                      (Note 1 on page 168)
        0 = YES
        1 = NO
    3   Print Typeface
        0 = 15 CPI
        1 = 12 CPI
    2-0 Item Type
        000 = Reserved
        001 = VOID (on previous Item Sale)
        010 = REDUCTION (by VAT)
        011 = DISCOUNT (on previous Item Sale)
        100 = EMPTY (by VAT)
        101 = DISCOUNT (by VAT)
        110 = UPLIFT (on previous Item Sale)
        111 = Reserved
 4-12   Unit Price (Amount)                              ASCII     9 (Note 2 on page 168)
 13-19  Quantity                                         ASCII     7 (Note 3 on page 168)
 20-21  VAT Category                                     ASCII     2 (Note 4 on page 168)
 22-30  Tax Amount                                       ASCII     9 (Note 5 on page 168)
 31     Tax Type                                         ASCII     1 (Note 6 on page 168)
 32-40  Item Perception Amount                           ASCII     9 (Note 7 on page 168)
 41-42  Item Perception Index                            ASCII     2 (Note 8 on page 168)
 43-45  Item Ordinal Number                              ASCII     3 (Note 9 on page 168)
 46-67  Description                                      ASCII    22

 ----------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'A', the amount will be Unit Base Price.
   For credit note type 'A', the VAT ISN'T included in the amount.
   For credit note type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. Range allowed is from 01 to up 20.
   For credit note type 'C', value allowed is 00.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'B', the tax amount must be less or equal than Item_Amt.
   For credit note type 'C', the tax amount must be less or equal than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type 'A', range allowed is from 01 to up 30.
   For credit note type 'B' and 'C', value allowed is 00.

9. Is applied to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

5.6.5.2 Command Example

```
Byte  0          2        3
      +---------+------+-------+
      | x'1B66' | x'32' | x'00' |
      +---------+------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension (retry NO, print normal,
           |        |                               VAT not enrolled, print 15 CPI)
           |        --------------------------------> Credit Note Fixed Price Negative Item Sale
           ------------------------------------------> Escape Sequence


Byte  4             13         20     22
      +------------+----------+------+------------+
      | '000000100' | '0000002' | '01' | '000001400' |
      +------------+----------+------+------------+
           |            |         |       |
           |            |         |       ----------> Tax Amount
           |            |         -----------------> VAT Category
           |            ---------------------------> Quantity
           ------------------------------------------> Unit Price


Byte  31    32           41     43     46
      +-----+------------+------+-------+--------------+
      | 'F' | '000000800' | '20' | '003' | 'Apples ...' |
      +-----+------------+------+-------+--------------+
         |     |            |      |       |
         |     |            |      |       --------> Description
         |     |            |      ----------------> Item Ordinal Number
         |     |            ----------------------> Item Perception Index
         |     --------------------------------------> Item Perception Amount
         ------------------------------------------> Tax Type (Fixed)
```

5.6.5.3 Credit Note Fixed Price Negative/Uplift Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

- **For Credit Note Type A**
  - **If Item Type <> Uplift**

    $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$
    $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$
    $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - ItemPerceptionAmount$
    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - ItemPerceptionAmount$

    - If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
      Taxpayer Customer Condition = VAT Responsible Not Enrolled

      Tra_Tot_Fixed_NE_v(vv) Tra_Tot_Fixed_NE_v(vv) - Item_Amt

  - **If Item Type = Uplift**

    $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$
    $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$

$Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$
$Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$

- If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
  Taxpayer Customer Condition = VAT Responsible Not Enrolled

  `Tra_Tot_Fixed_NE_v(vv)  Tra_Tot_Fixed_NE_v(vv)+Item_Amt`

    – **If Tax Amount is greater than 0**

$$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

The calculated Factor must be printed in the credit note.

- **For Credit Note Type B**

  – **If Item Type <> Uplift**

  $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$
  $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$

  – **If Item Type = Uplift**

  $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$
  $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$

  – **If Tax Amount is greater 0**

$$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the credit note.

- **For Credit Note Type C**

  – **If Item Type <> Uplift**

  $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) - Item\_Amt$
  $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) - TaxAmount$

  – **If Item Type = Uplift**

  $Tra\_Tot\_Fixed\_v(vv) = Tra\_Tot\_Fixed\_v(vv) + Item\_Amt$
  $Tra\_Tax\_Fixed\_v(vv) = Tra\_Tax\_Fixed\_v(vv) + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20
vt = VAT category (range = 01 up to 20) and perception type (range = 01 up to 30)
tt = perception type, range = 01 up to 30

5.6.5.4 Control Paper Calculations

- **Before the lines are printed**

  $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_CN\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

  - If `Mis_N_Lines_Avail_To_Print` < `Mis_N_Cmd_Lines_To_Print` + `Mis_N_CN_Cancel_Lines_To_Print`

    `Return_Code  125`

- **After the lines were printed correctly**

Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

5.6.5.5 Credit Note Fixed Price Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated (Tra_Tot_Fixed_v + Item_Amt) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the Item_Amt does not include VAT.
- For credit note type B, the Item_Amt includes VAT.
- To void a fixed price item previously sold in the same transaction with 31 cmd., the following rules has to be apply:

    - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)

    - 32.Description = 31.Description

    - 32.Unit Price = 31.Unit Price

    - 32.Quantity ≤ 31.Quantity

    - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
      32.*VATNotEnrolled* = 31.*VATNotEnrolled*

    - If 32.Quantity = 31.Quantity

      32.*TaxAmount* = 31.*TaxAmount*
      32.*ItemPercep.Amount* = 31.*ItemPercep.Amount*

    - If 32.Quantity < 31.Quantity
      $0 \leq 32.TaxAmount \leq 31.TaxAmount$
      $0 \leq 32.ItemPercep.Amount \leq 31.ItemPercep.Amount$

    - If credit note type ≠ A
      $((31.Quantity - 32.Quantity) \times 31.Amount) > (31.TaxAmount - 32.TaxAmount)$

- To discount a fixed price item previously sold in the same transaction with 31 command, the following rules has to be apply:

    - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)

    - 32.Description = 31.Description

    - 32.Quantity = 31.Quantity

    - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
      32.*VATNotEnrolled* = 31.*VATNotEnrolled*

    - 32.Unit Price < 31.Unit Price

    - 32.Item Percep.Amount ≤ 31.Item Percep.Amount

    - 32.Item Percep.Amount ≥ 0

    - 32.Tax Amount ≥ 0

    - If credit note type ≠ A
      $(31.Quantity \times (31.Amount - 32.Amount)) > (31.TaxAmount - 32.TaxAmount)$

- To uplift a fixed price item previously sold in the same transaction with 31 cmd., the following rules has to be apply:

  - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)

  - 32.Description = 31.Description

  - 32.Quantity   = 31.Quantity

  - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    32.$VATNotEnrolled$ = 31.$VATNotEnrolled$

  - ((31.Amount + 32.Amount) * 31.Quantity)   ≤ 999999949

  - (31.Tax Amount   + 32.Tax Amount)   ≤ 999999949

  - (31.Item Percep.Amount   + 32.Item Percep.Amount) ≤ 999999949

  - If credit note type ≠ A
    $(31.Quantity \times (31.Amount + 32.Amount)) > (31.TaxAmount + 32.TaxAmount)$

- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.6.6 (33) - Credit Note Item Sale

This command is used to record the amount of an item and to print lines containing quantity, unit price, description, amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.) and credit note print header (30 cmd.) have to be executed before.

5.6.6.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE   LENGTH


 0-1      1B66 - Command Prefix                          hex       2
 2        33 - Credit Note Item Sale                     hex       1
 3        Cmd Extension                                  hex       1
     7    Retry
          0 = NO
          1 = YES
     6    Reserved (always = '0')
     5    Print Typeface
          0 = Normal
          1 = Emphasized
     4    VAT Not Enrolled                                      (Note 1)
          0 = YES
          1 = NO
     3    Print Density
          0 = 15 CPI
          1 = 12 CPI
   2-0    Reserved (always = '0')
 4-12     Unit Price (Amount)                            ASCII     9 (Note 2)
13-19     Quantity                                       ASCII     7 (Note 3)
20-21     VAT Category                                   ASCII     2 (Note 4)
22-30     Tax Amount                                     ASCII     9 (Note 5)
31        Tax Type                                       ASCII     1 (Note 6)
32-40     Item Perception Amount                         ASCII     9 (Note 7 on page 174)
41-42     Item Perception Type                           ASCII     2 (Note 8 on page 174)
43-64     Description                                    ASCII    22


-----------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'A', the amount will be Unit Base Price.
   For credit note type 'A', the VAT ISN'T included in the amount.
   For credit note type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. For credit note type 'A', range allowed is from 01 to up 20.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'B', the tax amount must be less than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

5.6.6.2 Command Example

```
Byte  0            2       3
      +---------+-------+-------+
      | x'1B66' | x'33' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension (retry NO, print normal,
           |        |                                VAT not enrolled, print 15 CPI)
           |        ---------------------------> Credit Note Item Sale
           -------------------------------------> Escape Sequence
```

```
Byte  4              13         20      22
      +------------+----------+------+------------+
      | '000000100' | '0000002' | '01' | '000001400' |
      +------------+----------+------+------------+
           |            |         |      |
           |            |         |      ----------> Tax Amount
           |            |         ----------------> VAT Category
           |            --------------------------> Quantity
           -------------------------------------> Unit Price
```

```
Byte  31    32           41      43
      +-----+------------+------+-------------+
      | 'F' | '000000800' | '20' | 'Apples ...' |
      +-----+------------+------+-------------+
         |     |            |      |
         |     |            |      ---------------> Description
         |     |            ----------------------> Item Perception Index
         |     -------------------------------------> Item Perception Amount
         -------------------------------------------> Tax Type (Fixed)
```
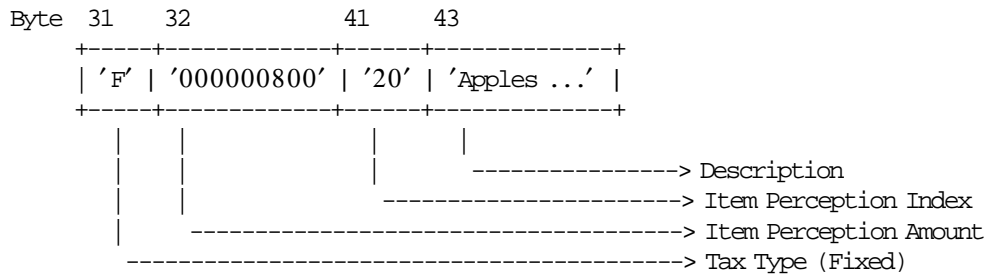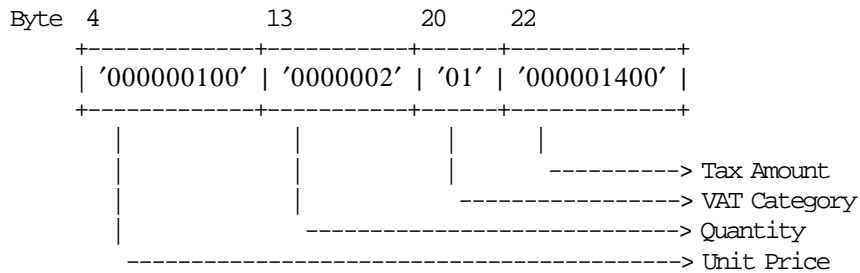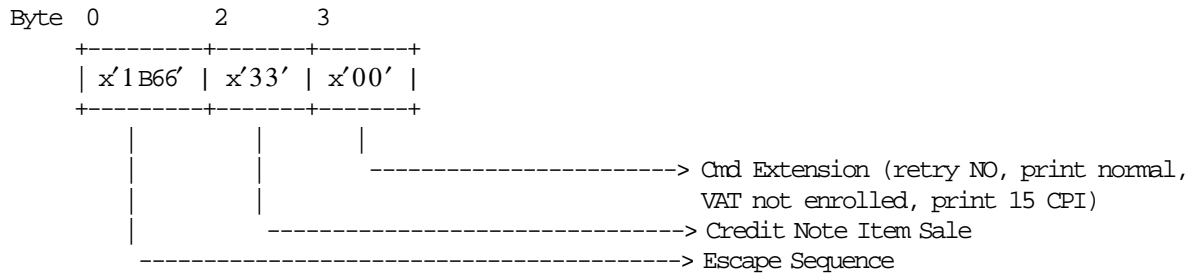
5.6.6.3 Credit Note Item Sale Calculations

Item_Amt = UnitPrice × Quantity

Item_Ordinal_Number = Item_Ordinal_Number + 1

- **For Credit Note Type A**

  Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt

  - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
    Taxpayer Customer Condition = VAT Responsible Not Enrolled

    Tra_Tot_NE_v(vv) Tra_Tot_NE_v(vv) + Item_Amt

  – **If Tax Amount is greater than 0**

$$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

The calculated Factor must be printed in the credit note.

– **If Tax Type = F**

$Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

– **If Tax Type = P**

$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

– **If Item Perception Amount is greater than 0**

$Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$

$Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$

- **For Credit Note Type B**

$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

– **If Tax Amount is greater than 0**

$$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

The calculated Factor must be printed in the credit note.

– **If Tax Type = F**

$Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

– **If Tax Type = P**

$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

- **For Credit Note Type C**

$Tra\_Tot = Tra\_Tot + Item\_Amt$

– **If Tax Type = F**

$Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$

– **If Tax Type = P**

$Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30

5.6.6.4 Control Paper Calculations

- **Before the lines are printed**

$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_CN\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

- If `Mis_N_Lines_Avail_To_Print` < `Mis_N_Cmd_Lines_To_Print` + `Mis_N_CN_Cancel_Lines_To_Print`

  `Return_Code  125`

- **After the lines were printed correctly**

  Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

5.6.6.5 Credit Note Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the item_amt does not include VAT.
- For credit note type B, the item_amt includes VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.6.7 (34) - Credit Note Negative/Uplift Item Sale

This command is used to record the amount of a negative item and prints lines containing the quantity, unit price, item description, item amount, VAT percent and factor percent.
To execute this command the serialize fiscal printer (1B cmd.), the credit note print header (30 cmd.) and at least one credit note item sale (33 cmd.) have to be executed before.

5.6.7.1 Command Format

```
--------------------------------------------------------------------

BYTE BIT   CONTENT                                  TYPE    LENGTH


 0-1       1B66 - Command Prefix                    hex        2
 2         34 - Credit Note Negative/Uplift         hex        1
 3         Cmd Extension                            hex        1
      7    Retry
           0 = NO
           1 = YES
      6    Reserved (always = '0')
      5    Print Density
           0 = Normal
           1 = Emphasized
      4    VAT Not Enrolled                                         (Note 1)
           0 = YES
           1 = NO
      3    Print Typeface
           0 = 15 CPI
           1 = 12 CPI
    2-0    Item Type
           000 = Reserved
           001 = VOID (on previous Item Sale)
           010 = REDUCTION (by VAT)
           011 = DISCOUNT (on previous Item Sale)
           100 = EMPTY (by VAT)
           101 = DISCOUNT (by VAT)
           110 = UPLIFT (on previous Item Sale)
           111 = Reserved
 4-12      Unit Price (Amount)                      ASCII      9 (Note 2)
13-19      Quantity                                 ASCII      7 (Note 3 on page 178)
20-21      VAT Category                             ASCII      2 (Note 4 on page 178)
22-30      Tax Amount                               ASCII      9 (Note 5 on page 178)
   31      Tax Type                                 ASCII      1 (Note 6 on page 178)
32-40      Item Perception Amount                   ASCII      9 (Note 7 on page 178)
41-42      Item Perception Index                    ASCII      2 (Note 8 on page 178)
43-45      Item Ordinal Number                      ASCII      3 (Note 9 on page 178)
46-67      Description                              ASCII     22


--------------------------------------------------------------------
```

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
   Select NO if VAT Not Enrolled is not applicable to the item sale.

2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'A', the amount will be Unit Base Price.
   For credit note type 'A', the VAT ISN'T included in the amount.
   For credit note type 'B', the VAT IS   included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.

4. Range allowed is from 01 to up 20.
   For credit note type 'C', value allowed is 00.

5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
   For credit note type 'B', the tax amount must be less or equal than Item_Amt.
   For credit note type 'C', the tax amount must be less or equal than Item_Amt.

6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
   If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type 'A', range allowed is from 01 to up 30.
   For credit note type 'B' and 'C', value allowed is 00.

9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

5.6.7.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'34' | x'00' |
     +---------+-------+-------+
          |         |       |
          |         |       -----------------------> Cmd Extension (retry NO, print normal,
          |         |                                VAT not enrolled, print 15 CPI)
          |         --------------------------------> Credit Note Negative Item Sale
          ------------------------------------------> Escape Sequence


Byte  4             13          20      22
     +-------------+----------+------+-------------+
     | '000000100' | '0000002' | '01' | '000001400' |
     +-------------+----------+------+-------------+
           |            |         |        |
           |            |         |        ----------> Tax Amount
           |            |         ------------------> VAT Category
           |            --------------------------> Quantity
           --------------------------------------> Unit Price


Byte  31   32          41     43      46
     +-----+------------+------+-------+-------------+
     | 'F' | '000000800' | '20' | '003' | 'Apples ...' |
     +-----+------------+------+-------+-------------+
        |    |           |      |       |
        |    |           |      |       --------> Description
        |    |           |      ----------------> Item Ordinal Number
        |    |           ----------------------> Item Perception Index
        |    ------------------------------------> Item Perception Amount
        ------------------------------------------> Tax Type (Fixed)
```

5.6.7.3 Credit Note Negative or Uplift Item Sale Calculations

$Item\_Amt = UnitPrice \times Quantity$

- **For Credit Note Type ′A′**

  – **If Item Type <> Uplift**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Item\_Amt$
  $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - ItemPerceptionAmount$
  $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - ItemPerceptionAmount$

    - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
      Taxpayer Customer Condition = VAT Responsible Not Enrolled

      Tra_Tot_NE_v(vv) Tra_Tot_NE_v(vv) – Item_Amt

    — **If Tax Type = ′F′**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) - TaxAmount$

    — **If Tax Type = ′P′**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TaxAmount$

  – **If Item Type = Uplift**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$
  $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + ItemPerceptionAmount$
  $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + ItemPerceptionAmount$

    - If VAT Not Enrolled (byte 3 – bit 4) = 0 (YES) AND
      Taxpayer Customer Condition = VAT Responsible Not Enrolled

      Tra_Tot_NE_v(vv) Tra_Tot_NE_v(vv) + Item_Amt

    — **If Tax Type = ′F′**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

    — **If Tax Type = ′P′**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

  – **If Tax Amount is greater than 0**

  $$Factor = TRUNC((\frac{Item\_Amt \times 100}{Item\_Amt + TaxAmount} \times 100) + 0.5)/100$$

  The calculated Factor must be printed in the credit note.

- **For Credit Note Type ′B′**

  – **If Item Type <> Uplift**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Item\_Amt$

    — **If Tax Type = ′F′**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) - TaxAmount$

    — **If Tax Type = ′P′**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TaxAmount$

- **If Item Type = Uplift**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Item\_Amt$

  — **If Tax Type = ′F′**

    $Tra\_Tax\_F\_v(vv) = Tra\_Tax\_F\_v(vv) + TaxAmount$

  — **If Tax Type = ′P′**

    $Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TaxAmount$

- **If Tax Amount is greater than 0**

  $$Factor = TRUNC(\frac{(Item\_Amt - TaxAmount) \times (VAT\_Rate(vv) \times 1000)}{(Item\_Amt \times (VAT\_Rate(vv) + 100))} + 0.5)/10$$

  The calculated Factor must be printed in the credit note.

- **For Credit Note Type ′C′**
  - **If Item Type <> Uplift**

    $Tra\_Tot = Tra\_Tot - Item\_Amt$

    — **If Tax Type = ′F′**

      $Tra\_Tax\_F = Tra\_Tax\_F - TaxAmount$

    — **If Tax Type = ′P′**

      $Tra\_Tax\_P = Tra\_Tax\_P - TaxAmount$

  - **If Item Type = Uplift**

    $Tra\_Tot = Tra\_Tot + Item\_Amt$

    — **If Tax Type = ′F′**

      $Tra\_Tax\_F = Tra\_Tax\_F + TaxAmount$

    — **If Tax Type = ′P′**

      $Tra\_Tax\_P = Tra\_Tax\_P + TaxAmount$

Where:

  vv = VAT category, range = 01 up to 20
  tt = perception type, range = 01 up to 30

5.6.7.4 Control Paper Calculations

- **Before the lines are printed**

  $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_CN\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

  - If `Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_Cancel_Lines_To_Print`

    `Return_Code  125`

- **After the lines were printed correctly**

  $Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$

5.6.7.5 Credit Note Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is ″GENERAL VAT″.
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the credit note item sale command is disabled (rate = 9999).
- For credit note type B, the item_amt includes VAT.
- For credit note type A, the item_amt does not include VAT.
- To void a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:
  - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)
  - 34.Description = 33.Description
  - 34.Item Ordinal Number = Sequence number of the item previously sold which to be voided.
  - 34.Unit Price = 33.Unit Price
  - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $34.VATNotEnrolled = 33.VATNotEnrolled$
  - $34.Quantity \leq 33.Quantity$
  - If 34.Quantity = 33.Quantity
    $34.TaxAmount = 33.TaxAmount$
    $34.ItemPercep.Amount = 33.ItemPercep.Amount$
  - If 34.Quantity < 33.Quantity
    $0 \leq 34.TaxAmount \leq 33.TaxAmount$
    $0 \leq 34.ItemPercep.Amount \leq 33.ItemPercep.Amount$
  - If credit note type $\neq$ A

    $((33.Quantity - 34.Quantity) \times 33.Amount) > (33.TaxAmount - 34.TaxAmount)$

- To discount a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:
  - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)
  - 34.Description = 33.Description
  - 34.Item Ordinal Number = Sequence number of the item previously sold which to be discounted.
  - 34.Quantity = 33.Quantity
  - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $34.VATNotEnrolled = 33.VATNotEnrolled$
  - 34.Unit Price < 33.Unit Price
  - 34.Item Percep.Amount $\leq$ 33.Item Percep.Amount
  - 34.Item Percep.Amount $\geq$ 0
  - 34.Tax Amount $\geq$ 0
  - If credit note type $\neq$ A

$$(33.Quantity \times (33.Amount - 34.Amount)) > (33.TaxAmount - 34.TaxAmount)$$

- To uplift a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:

  - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)

  - 34.Description   = 33.Description

  - 34.Item Ordinal Number = Sequence number of the item previously sold which to be uplifted.

  - 34.Quantity   = 33.Quantity

  - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
    $34.VATNotEnrolled = 33.VATNotEnrolled$

  - ((33.Amount + 34.Amount) * 33.Quantity) $\leq$ 999999949

  - (33.Tax Amount   + 34.Tax Amount) $\leq$ 999999949

  - (33.Item Percep.Amount + 34.Item Percep.Amount) $\leq$ 999999949

  - If credit note type $\neq$ A
    $(33.Quantity \times (33.Amount + 34.Amount)) > (33.TaxAmount + 34.TaxAmount)$

- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.6.8 (35) - Credit Note Subtotal/Total

This command is used to verify that the subtotal or total amount accumulated by the fiscal unit matches the amount accumulated by the application program.
To execute this command the serialize fiscal printer (1B cmd.) and any credit note fixed item sale (31 cmd.) or credit note item sale (33 cmd.) have to be executed before.

5.6.8.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Command Prefix                        hex        2
 2         35 - Credit Note Subtotal/Total              hex        1
 3         Cmd Extension                                hex        1
      7    Retry
           0 = NO
           1 = YES
      6    Reserved (always = '0')
      5    Print Density
           0 = Normal
           1 = Emphasized
    4-0    Reserved (always = '0')
 4-13      Amount                                       ASCII     10 (Note 1)


 ----------------------------------------------------------------------
```

Notes:

```
 1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.
```

5.6.8.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+-------------+
      | x'1B66' | x'35' | x'00' | '0000001000' |
      +---------+-------+-------+-------------+
           |         |       |       |
           |         |       |       ----------------> Amount
           |         |       ------------------------> Cmd Extension
           |         |                                 (print normal)
           |         --------------------------------> Credit Note Subtotal/Total
           ------------------------------------------> Escape Sequence
```

5.6.8.3 Credit Note Subtotal/Total Command Flow

```
+-------------->|
|    -------------------
|    |    Previous     |
|    | Condition Flags:|
|    | FTOTALR = NO    |
|    | FTOTACN = NO    |
|    -------------------
|    |   Command 35    |---->+
|    |  (First Total)  |    |
|    -------------------    |
|    |    Modified     |    |
|    | Condition Flag: |    |
|    | FTOTALR  = YES  |    |
|    -------------------    |
|    |        |         |    |
|    -------------------    |
|    |    Previous     |    |
|    | Condition Flags:|    |
|    | FTOTALR = YES   |    |
|    | FTOTACR = NO    |    |
|    -------------------    |
+<----|   Command 37    |    |
|     |(Dsc/Upl. on Subt.)|  |
|     -------------------    |
|     |    Modified     |    |
+---->| Condition Flag: |    |
|     | FTOTALR  = NO   |    |
|     -------------------    |
|     |        |         |    |
|     -------------------    \
|     |    Previous     |    |    |
|     | Condition Flags:|    |    |
|     | FTOTALR = YES   |    |    |
|     | FTOTACN = NO    |    |    |
|     -------------------    |    |
|     |   Command 36    |<----|      > (Note 1)
|     |(Global Perception)|   |    |
|     -------------------    |    |
|     |    Modified     |    |    |
|     | Condition Flag: |    |    |
|     |    none         |    |    |
|     -------------------    |    /
|     |        |         |    |
|     -------------------    |
|     |    Previous     |    |
|     | Condition Flags:|    |
|     | FTOTACN = NO    |    |
|     -------------------    |
|     |   Command 35    |    |
|     |  (Second Total) |<----+
+<----|Check limit without|
      |perception       |
      -------------------
      |    Modified     |
      | Condition Flag: |
      | FTOTALR = NO    |
      | FTOTACN = YES   |
      -------------------
           |   |
      +-<-+----+->-+
      |        |         |
-------------------   |   -------------------      -------------------
|    Previous     |   |   |    Previous     |      |    Previous     |
| Condition Flags:|   |   | Condition Flags:|      | Condition Flags:|
| none            |   |   | FTOTACN = YES   |      | FTOTACN = YES   |
-------------------   |   -------------------      -------------------
|   Command 3A    | +--->|   Command 38    |------>|   Command 39    |
|   (Cancel)      |      |(Payment) Optional|      |   (End)         |
-------------------      -------------------      -------------------
|    Modified     |      |    Modified     |      |    Modified     |
| Condition Flag: |      | Condition Flag: |      | Condition Flag: |
| FTOTALR = NO    |      | FPAYMNT  = YES  |      | FTOTALR = NO    |
| FTOTACN = NO    |      -------------------      | FTOTACN = NO    |
-------------------                                -------------------

Note 1: Optional for Credit Note 'A' and 'B'.
        Not allowed for Credit Note 'C'.
```

Figure 2. Credit Note Subtotal/Total Command Flow

5.6.8.4 Credit Note Subtotal/Total Calculations

- **For Credit Note Type = ′A′ or ′B′**

$$Tra\_Tot = \sum_{vv} Tra\_Tot\_v(vv)$$

$$Tra\_Tot\_Fixed = \sum_{vv} Tra\_Tot\_Fixed\_v(vv)$$

$$Tra\_Tax\_v(vv) = Tra\_Tax\_F\_v(vv) + Tra\_Tax\_P\_v(vv) + Tra\_Tax\_Fixed\_v(vv)$$

$$Tra\_Tax\_F = \sum_{vv} Tra\_Tax\_F\_v(vv)$$

$$Tra\_Tax\_P = \sum_{vv} Tra\_Tax\_P\_v(vv)$$

$$Tra\_Tax\_Fixed = \sum_{vv} Tra\_Tax\_Fixed\_v(vv)$$

- **For Credit Note Type = ′A′**

$$Tra\_VAT\_Fixed\_v(vv) = TRUNC(Tra\_Tot\_Fixed\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_v(vv) = TRUNC(Tra\_Tot\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

  - **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra\_VAT\_NE\_Fixed\_v(vv) = TRUNC(Tra\_Tot\_Fixed\_NE\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_NE\_v(vv) = TRUNC(Tra\_Tot\_NE\_v(vv) \times \frac{VAT\_Rate(vv)}{100} + 0.5)$$

$$Tra\_VAT\_NE\_v(vv) = (Tra\_VAT\_NE\_v(vv) + Tra\_VAT\_NE\_Fixed\_v(vv)) \times (VATNotEnrolledPercent)$$

$$Tra\_VAT = \sum_{vv} Tra\_VAT\_v(vv)$$

$$Tra\_VAT\_Fixed = \sum_{vv} Tra\_VAT\_Fixed\_v(vv)$$

$$Tra\_VAT\_NE = \sum_{vv} Tra\_VAT\_NE\_v(vv)$$

$$Tra\_Percep = \sum_{tt} Tra\_Percep\_t(tt)$$

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed + Tra\_VAT + Tra\_VAT\_Fixed +$$
$$Tra\_Tax\_F + Tra\_Tax\_P + Tra\_Tax\_Fixed + Tra\_VAT\_NE + Tra\_Percep$$

- **For Credit Note Type = ′B′**

$$Tra\_VAT\_Fixed\_v(vv) = TRUNC((Tra\_Tot\_Fixed\_v(vv) - Tra\_Tax\_Fixed\_v(vv)) \times \frac{VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT\_v(vv) = TRUNC((Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv) - Tra\_Tax\_P\_v(vv)) \times \frac{VAT\_Rate(vv)}{100 + VAT\_Rate(vv)} + 0.5)$$

$$Tra\_VAT = \sum_{vv} Tra\_VAT\_v(vv)$$

$$Tra\_VAT\_Fixed = \sum_{vv} Tra\_VAT\_Fixed\_v(vv)$$

$$Tra\_Percep = \sum_{tt} Tra\_Percep\_t(vv,tt)$$

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed + Tra\_Percep$$

- **For Credit Note Type = ′C′**

$$Tra\_Amt\_Due = Tra\_Tot + Tra\_Tot\_Fixed$$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
VAT Not Enrolled Percent was loaded with 2E cmd.

5.6.8.5 Credit Note Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum credit note total allowed (loaded with 2E cmd.).
- The string ″TOTAL″ will be printed double-high and emphasized.
- The string ″SUBTOT.″ will be printed double-high and emphasized.
- When the credit note total exceed the limit for credit note total allowed (loaded with 2E cmd.) the following action can be performed:
  - Cancel transaction
    OR
  - Issue discount on item or discount on subtotal

5.6.9 (36) - Credit Note Global Perception

This command is used to apply global perceptions.

5.6.9.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE   LENGTH

 0-1      1B66 - Command Prefix                        hex      2
 2        36 - Credit Note Global Perception           hex      1
 3        Cmd Extension                                hex      1
     7    Retry
          0 = NO
          1 = YES
     6    Rectify
          0 = NO
          1 = YES
   5-0    Reserved (always = '0')
 4-5      Perception Type Number                       ASCII    2 (Note 1)
 6-7      VAT Category                                 ASCII    2 (Note 2)
 8-17     Amount                                       ASCII   10

-----------------------------------------------------------------------
```

Notes:

1. Range allowed is from 01 to up 30.

2. For credit note type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to 20.
   For credit note type 'A' and taxpayer customer condition equal to VAT responsible not enrolled, value allowed is 00.
   For credit note type 'B' and all taxpayer customer conditions, value allowed is 00.

5.6.9.2 Command Example

```
Byte  0         2       3      4      6      8
      +---------+-------+-------+------+------+--------------+
      | x'1B66' | x'36' | x'00' | '01' | '01' | '00000001000' |
      +---------+-------+-------+------+------+--------------+
           |        |       |      |      |       |
           |        |       |      |      |       ------------> Amount
           |        |       |      |      --------------------> VAT Category
           |        |       |      -----------------------------> Perception Type
           |        |       ------------------------------------> Cmd Extension
           |        |                                            (retry NO, rectify NO)
           |        ---------------------------------------------> Credit Note Global Perception
           ------------------------------------------------------> Escape Sequence
```
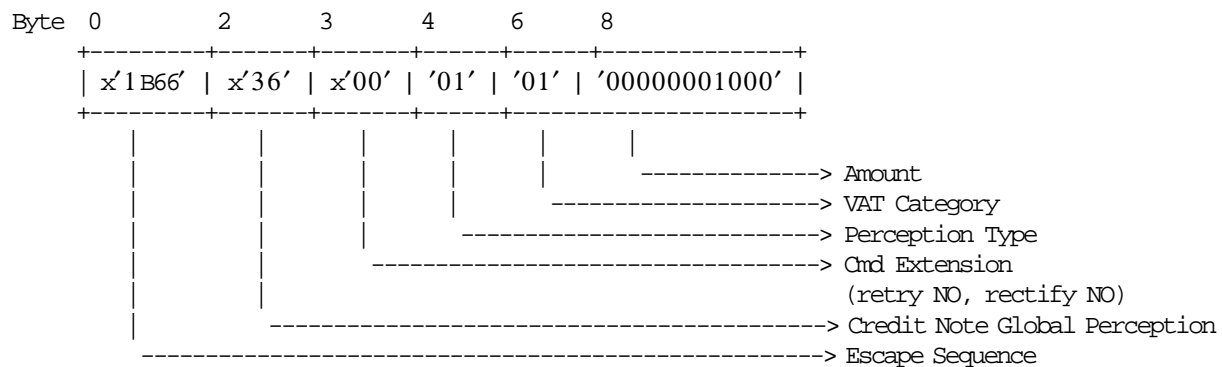
5.6.9.3 Credit Note Global Perception Calculations

- **For Credit Note Type = ′A′**
  - **If Rectify = NO**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) + Amount$

    — **If VAT Category not = ′00′**

      $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) + Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

  - **If Rectify = YES**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) - Amount$

    — **If VAT Category not = ′00′**

      $Tra\_Percep\_vt(vv,tt) = Tra\_Percep\_vt(vv,tt) - Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

- **For Credit Note Type = ′B′**
  - **If Rectify = NO**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) + Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) + Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

  - **If Rectify = YES**

    $Tra\_Percep\_t(tt) = Tra\_Percep\_t(tt) - Amount$

    — **If VAT Category = ′00′**

      $Tra\_Tot\_Percep\_t(tt) = Tra\_Tot\_Percep\_t(tt) - Amount$

    $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

Where:

vv = VAT category, range = 00 up to 20
tt = perception type, range = 01 up to 30

5.6.9.4 Credit Note Global Perception Rules

- This command is applicable to credit note types A and B.
- This command is allowed if taxpayer customer condition is VAT Responsible Enrolled or if taxpayer customer condition is VAT Responsible Not Enrolled and is allowed the perception for this customer condition (set with 2E cmd.).

5.6.10 (37) - Credit Note Uplift/Discount on Subtotal

This command is used to apply discount or uplift on subtotal.
To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

5.6.10.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT  CONTENT                                     TYPE    LENGTH

 0-1      1B66 - Command Prefix                       hex       2
 2        37 - Credit Note Upl/Disc on Subtotal       hex       1
 3        Cmd Extension                               hex       1
      7   Retry
          0 = NO
          1 = YES
      6   Reserved (always = '0')
      5   Print Density
          0 = Normal
          1 = Emphasized
      4   Reserved (always = '0')
      3   Print Typeface
          0 = 15 CPI
          1 = 12 CPI
    2-1   Reserved (always = '0')
      0   Type
          0 = Discount
          1 = Uplift
 4-25     Description                                 ASCII     22
26-35     Amount                                      ASCII     10


--------------------------------------------------------------------------
```

5.6.10.2 Command Example

```
Byte  0         2       3       4             26
      +---------+-------+-------+-------------+-------------+
      | x'1B66' | x'37' | x'00' | 'Apples ..' | '000001000' |
      +---------+-------+-------+-------------+-------------+
           |         |       |       |             |
           |         |       |       |             ----------------> Amount
           |         |       |       -----------------------------> Description
           |         |       -------------------------------------> Cmd Extension
           |         |                                              (print normal, 15 CPI, Discount)
           |         ---------------------------------------------> Credit Note Upl/Disc. on Subtotal
           -------------------------------------------------------> Escape Sequence
```
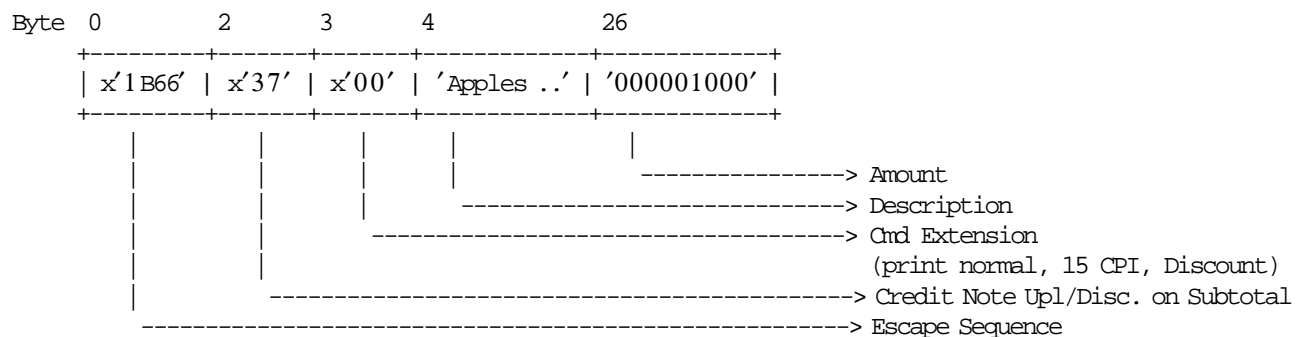
5.6.10.3 Credit Note Uplift/Discount on Subtotal Calculations

- **For Credit Note Type = 'A'**

  With Decimals

$$Factor = TRUNC(\frac{Tra\_Tot \times 100}{Tra\_Tot + Tra\_Tax\_P})$$

Without Decimals

$$Factor = TRUNC(\frac{Tra\_Tot \times 100}{Tra\_Tot + Tra\_Tax\_P}) + 0.5$$

$$Tra\_Disc\_Quo\_v(vv) = TRUNC(\frac{Tra\_Tot\_v(vv) \times Amount}{Tra\_Tot})$$

$$Tra\_Disc\_Rem\_v(vv) = mod(TRUNC(\frac{Tra\_Tot\_v(vv) \times Amount}{Tra\_Tot}))$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest reminder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **For Uplift on Subtotal**

  $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Disc\_Quo\_v(vv)$$

  $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot} + 0.5)$$

  — **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

  $$Tra\_Tot\_NE\_v(vv) = Tra\_Tot\_NE\_v(vv) + TRUNC((\frac{Tra\_Tot\_NE\_v(vv) \times Item\_Amt \times 10}{Tra\_Tot}) + 5)/10$$

- **For Discount on Subtotal**

  $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Disc\_Quo\_v(vv)$$

  $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot} + 0.5)$$

  — **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

  $$Tra\_Tot\_NE\_v(vv) = Tra\_Tot\_NE\_v(vv) - TRUNC((\frac{Tra\_Tot\_NE\_v(vv) \times Item\_Amt \times 10}{Tra\_Tot}) + 5)/10$$

- **For Credit Note Type = ′B′**

  With Decimals

  $$Factor = TRUNC(\frac{Tra\_VAT}{Tra\_Tot - Tra\_Tax\_F} \times 100)$$

  Without Decimals

  $$Factor = TRUNC((\frac{Tra\_VAT}{Tra\_Tot - Tra\_Tax\_F} \times 100) + 0.5)$$

  $$Tra\_Disc\_Quo\_v(vv) = TRUNC(\frac{(Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times Amount}{Tra\_Tot - Tra\_Tax\_F})$$

  $$Tra\_Disc\_Rem\_v(vv) = mod(TRUNC(\frac{(Tra\_Tot\_v(vv) - Tra\_Tax\_F\_v(vv)) \times Amount}{Tra\_Tot - Tra\_Tax\_F}))$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest reminder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **For Uplift on Subtotal**

  $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Disc\_Quo\_v(vv)$$

  $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) + TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) + TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

- **For Discount on Subtotal**

  $$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Disc\_Quo\_v(vv)$$

  $$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) - TRUNC(\frac{Tra\_VAT\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  $$Tra\_Tax\_P\_v(vv) = Tra\_Tax\_P\_v(vv) - TRUNC(\frac{Tra\_Tax\_P\_v(vv) \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

- **For Credit Note Type = ′C′**
  - **For Uplift on Subtotal**

    $$Tra\_Tot = Tra\_Tot + Amount$$

    $$Tra\_Tax\_P = Tra\_Tax\_P + TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

  - **For Discount on Subtotal**

    $$Tra\_Tot = Tra\_Tot - Amount$$

    $$Tra\_Tax\_P = Tra\_Tax\_P - TRUNC(\frac{Tra\_Tax\_P \times Amount}{Tra\_Tot - Tra\_Tax\_F} + 0.5)$$

Where:

vv = VAT category, range = 01 up to 20

5.6.10.4 Credit Note Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code error is issued.

5.6.11 (38) - Credit Note Payment

This command is used to select the payment type and to apply the paid amount.
To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

5.6.11.1 Command Format

```
 ------------------------------------------------------------------------

 BYTE BIT  CONTENT                                      TYPE    LENGTH

  0-1       1B66 - Cmd Prefix                           hex        2
  2         38 - Credit Note Payment                    hex        1
  3         Cmd Extension                               hex        1
       7    Retry
            0 = NO
            1 = YES
       6    Rectify
            0 = NO
            1 = YES
     5-3    Print Mode                                          (Note 1)
            000 = 15 CPI
            001 = 12 CPI
            010 = Reserved
            011 = Reserved
            100 = 15 CPI Emphasized
            101 = 12 CPI Emphasized
            110 = Reserved
            111 = Reserved
     2-0    Reserved (always = '0')
  4-5       Payment Type Number                         ASCII      2 (Note 2)
  6-15      Amount                                      ASCII     10 (Note 3)
 16-53      Payment Trailer Line                        ASCII     38 (Note 4)


 ------------------------------------------------------------------------
```

Notes:

1. Print mode is applied to the change due printed line only.

2. Range allowed is from 01 to 30.

3. Maximum Amount = 9999999949.
   The amount is printed with the same print mode used by the description field set in the 24 cmd.
   (Set Payment Type).

4. If payment type number correspond to "credit card" payment type this field is mandatory.
   For others payment types, this field is not allowed.
   When this field is applied, the special character 0x0E is not accepted.

5.6.11.2 Command Example

```
Byte  0          2        3
     +---------+------+------+---
     | x′1B66′ | x′38′ | x′00′ |
     +---------+------+------+---
          |         |      |
          |         |      ----------------------> Cmd Extension
          |         |                              (rectify NO, print 15 CPI)
          |         --------------------------------> Credit Note Payment
          --------------------------------------------> Escape Sequence


Byte  4       6              16
     +------+-------------+------------------+
     | ′02′ | ′0000001000′ | ′ddd.........ddd′ |
     +------+-------------+------------------+
         |       |                 |
         |       |                 --------------------> Payment Trailer Line
         |       ----------------------------------> Amount
         --------------------------------------------> Payment Type
```
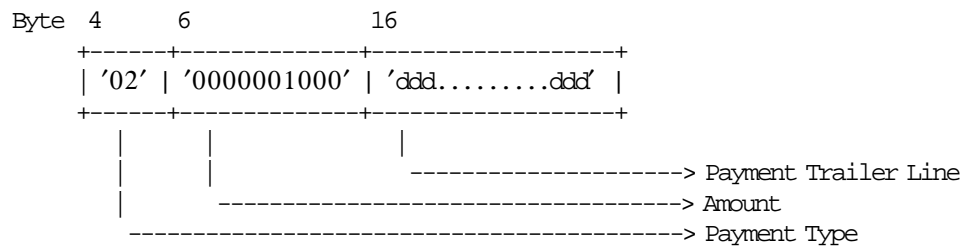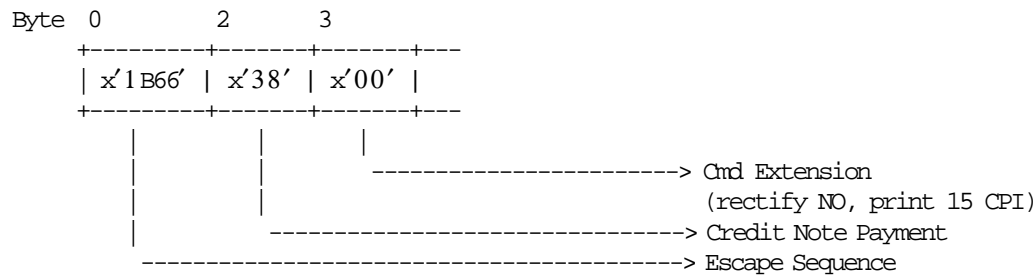
5.6.11.3 Credit Note Payment Calculations

- **Rectify = NO**

  $Tra\_Pay\_Type(pp) = Tra\_Pay\_Type(pp) + Amount$

  $Tra\_Amt\_Due = Tra\_Amt\_Due - Amount$

- **Rectify = YES**

  $Tra\_Pay\_Type(pp) = Tra\_Pay\_Type(pp) - Amount$

  $Tra\_Amt\_Due = Tra\_Amt\_Due + Amount$

Where:

  pp = payment type, range = 01 up to 30

5.6.11.4 Credit Note Payment Rules

- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed.
- The credit note end command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 normal print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the payment trailer line field of this command.

5.6.12 (39) - Credit Note End

This command is used to end a credit note.
To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

5.6.12.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Command prefix                         hex        2
 2         39 - Credit Note End                          hex        1
 3         00 - Cmd Extension                            hex        1
 4-7       Operator Code                                 ASCII      4


---------------------------------------------------------------------
```

5.6.12.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'39' | x'00' | 'AB11' |
      +---------+-------+-------+--------+
           |        |       |       |
           |        |       |       ----------------> Operator Code (AB11)
           |        |       -----------------------> Cmd Extension
           |        --------------------------------> Credit Note End
           ----------------------------------------> Escape Sequence
```
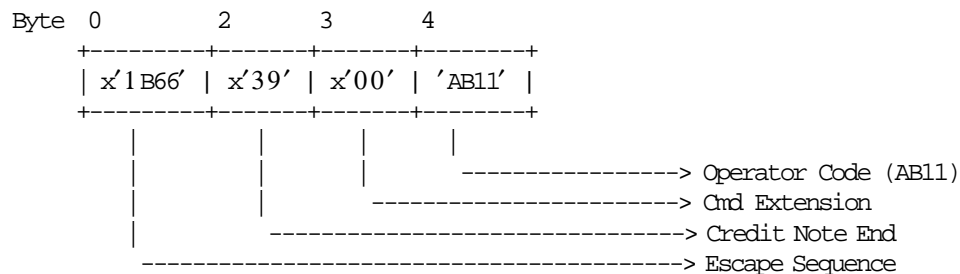
5.6.12.3 Credit Note End Calculations

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

- **For Credit Note Type 'A'**

  $Day\_N\_RetV\_A = Day\_N\_RetV\_A + 1$

  $Lif\_N\_RetV\_A = Lif\_N\_RetV\_A + 1$

- **If Credit Note Type 'B' or 'C'**

  $Day\_N\_RetV\_BC = Day\_N\_RetV\_BC + 1$

  $Lif\_N\_RetV\_BC = Lif\_N\_RetV\_BC + 1$

- **If Tra_Amt_Due < 0**

  $Change\_Due = Tra\_Amt\_Due \times (-1)$

- **For Credit Note Type 'A', 'B' or 'C'**

  $Day\_RetV\_Pay\_Type(pp) = Day\_RetV\_Pay\_Type(pp) + Tra\_Pay\_Type(pp)$

- **For Credit Note Type 'A' or 'B'**

$Day\_RetV\_Tot\_v(vv) = Day\_RetV\_Tot\_v(vv) + Tra\_Tot\_v(vv) + Tra\_Tot\_Fixed\_v(vv)$

$Tra\_VAT\_v(vv) = Tra\_VAT\_v(vv) + Tra\_VAT\_Fixed\_v(vv)$

$Day\_RetV\_VAT\_v(vv) = Day\_RetV\_VAT\_v(vv) + Tra\_VAT\_v(vv)$

$Tra\_Tax\_v(vv) = Tra\_Tax\_F\_v(vv) + Tra\_Tax\_v(vv) + Tra\_Tax\_Fixed\_v(vv)$

$Day\_RetV\_Tax\_v(vv) = Day\_RetV\_Tax\_v(vv) + Tra\_Tax\_v(vv)$

$Day\_RetV\_VAT\_NE\_v(vv) = Day\_RetV\_VAT\_NE\_v(vv) + Tra\_VAT\_NE\_v(vv)$

$Day\_RetV\_Percep\_t(tt) = Day\_RetV\_Percep\_t(tt) + Tra\_Percep\_t(tt)$

- **For Credit Note Type ′A′**

  $Day\_RetV\_Tot\_v(vv) = Day\_RetV\_Tot\_v(vv) + Tra\_VAT\_v(vv) + Tra\_Tax\_v(vv) + Tra\_VAT\_NE\_v(vv)$

- **For Credit Note Type ′C′**

  $Day\_RetV\_Tot = Day\_RetV\_Tot + Tra\_Tot + Tra\_Tot\_Fixed$

  $Tra\_Tax = Tra\_Tax\_F + Tra\_Tax\_P + Tra\_Tax\_Fixed$

  $Day\_RetV\_Tax = Day\_RetV\_Tax + Tra\_Tax$

- **Clearing Transaction Accumulators**

  $Tra\_Tot = 0$
  $Tra\_Tot\_v(vv) = 0$

  $Tra\_Tot\_Fixed = 0$
  $Tra\_Tot\_Fixed\_v(vv) = 0$

  $Tra\_Tot\_Fixed\_NE\_v(vv) = 0$
  $Tra\_Tot\_NE\_v(vv) = 0$

  $Tra\_Tax\_Fixed = 0$
  $Tra\_Tax\_Fixed\_v(vv) = 0$

  $Tra\_Tax\_F = 0$
  $Tra\_Tax\_F\_v(vv) = 0$

  $Tra\_Tax\_P = 0$
  $Tra\_Tax\_P\_v(vv) = 0$

  $Tra\_VAT\_v(vv) = 0$
  $Tra\_VAT\_NE\_v(vv) = 0$
  $Tra\_VAT\_Fixed\_v(vv) = 0$

  $Tra\_Percep\_t(tt) = 0$
  $Tra\_Percep\_vt(vv,tt) = 0$
  $Tra\_Tot\_Percep\_t(tt) = 0$

  $Tra\_Pay\_Type(pp) = 0$

  $Tra\_Amt\_Due = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

5.6.12.4 Control Paper Calculations

- **If EB cmd. wasn't issued before**

  - **Before the lines are printed**

    Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print − Mis_N_Lines_Printed

    Mis_N_Cmd_Lines_To_Print = Totalization_Lines + Mis_N_CN_End_Lines_To_Print

    - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print
      Return_Code 125

  - **After the lines were printed correctly**

    Mis_N_Lines_Printed = 0

- **If EB cmd. was issued before**

  - **Before the lines are printed**

    Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print − Mis_N_Lines_Printed

    Mis_N_Cmd_Lines_To_Print = Mis_N_CN_End_Lines_To_Print

  - **After the lines were printed correctly**

    Mis_N_Lines_Printed = 0

5.6.12.5 Credit Note End Rules

There are not rules for this command.

5.6.13 (3A) - Credit Note Cancel

This command is used to cancel the credit note transaction at any point.
To execute this command the serialize fiscal printer (1B cmd.) and the credit note print header (30 cmd.) have to be executed before.

5.6.13.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

  0-1      1B66 - Command Prefix                     hex        2
  2        3A - Credit Note Cancel                   hex        1
  3        00 - Cmd Extension                        hex        1
  4-7      Operator Code                             ASCII      4


----------------------------------------------------------------------
```

5.6.13.2 Command Example

```
Byte  0          2       3           4
      +---------+------+-------+--------+
      | x'1B66' | x'3A' | x'00' | '0012' |
      +---------+------+-------+--------+
          |         |      |       |
          |         |      |       ----------------> Operator Code
          |         |      -----------------------> Cmd Extension
          |         ------------------------------> Credit Note Cancel
          ----------------------------------------> Escape Sequence
```
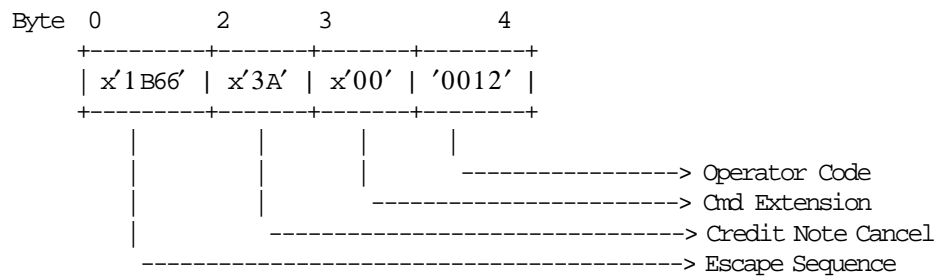
5.6.13.3 Credit Note Cancel Calculations

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

- **For Credit Note Type 'A'**

  $Day\_N\_RetV\_A = Day\_N\_RetV\_A + 1$

  $Lif\_N\_RetV\_A = Lif\_N\_RetV\_A + 1$

- **If Credit Note Type 'B' or 'C'**

  $Day\_N\_RetV\_BC = Day\_N\_RetV\_BC + 1$

  $Lif\_N\_RetV\_BC = Lif\_N\_RetV\_BC + 1$

Clearing Transaction Accumulators:

$Tra\_Tot = 0$
$Tra\_Tot\_v(vv) = 0$
$Tra\_Tot\_Fixed\_v(vv) = 0$

$Tra\_Tot\_Fixed\_NE\_v(vv) = 0$
$Tra\_Tot\_NE\_v(vv) = 0$

$Tra\_Tax\_F\_v(vv) = 0$

Tra_Tax_P_v(*vv*) = 0
Tra_Tax_Fixed_v(*vv*) = 0

Tra_Percep_t(*tt*) = 0
Tra_Tot_Percep_t(*tt*) = 0
Tra_Percep_vt(*vv,tt*) = 0

Tra_VAT_v(*vv*) = 0
Tra_VAT_NE_v(*vv*) = 0
Tra_VAT_Fixed_v(*vv*) = 0

Tra_Amt_Due = 0

Tra_Pay_Type(*pp*) = 0

Where:

    vv = VAT category, range = 01 up to 20
    tt = perception type, range = 01 up to 30
    pp = payment type, range = 01 up to 30

5.6.13.4 Control Paper Calculations

- **Before the lines are printed**

  Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print − Mis_N_Lines_Printed

- **After the lines were printed correctly**

  Mis_N_Lines_Printed = 0

5.6.13.5 Credit Note Cancel Rules

- This command is not allowed if V24 message ″TOTAL″ was printed before.
- The fiscal logo and machine serial number will not be printed.

5.7 Credit Card in Progress Command

The credit card in progress commands include:

- (C0) Print Credit Card Slips

5.7.1 (C0) - Legacy Print Credit Card Slips

This command is used to print credit card slips for the store and customer.
To execute this command the serialize fiscal printer (1B cmd.) and set POS identification (1E cmd.) have to be executed before.

5.7.1.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE   LENGTH

 0-1      1B66 - Cmd Prefix                          hex        2
 2        C0 - Legacy Print Credit Card Slips        hex        1
 3        Cmd Extension                              hex        1
          00 = Store Data
          01 = Credit Card Data
          02 = Customer Data


----------------------------------------------------------------------
```

(continued on next page)

(C0 command continued ....)

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                          TYPE   LENGTH

   If Cmd Extension = 00
 4-41      Fantasy Name Store                               ASCII    38
42-79      Address Store                                    ASCII    38
80-94      Store Number                                     ASCII    15

   If Cmd Extension = 01
 4-19      Card Number                                      ASCII    16
20-23      Expiration Date                                  ASCII     4
24-24      Entry Mode                                       ASCII     1
           T = Track
           M = Manual
25-25      Operation Type                                   ASCII     1
           0 = Compra                (Sale)
           1 = Anulacion de Compra   (Cancel Sale)
           2 = Devolucion            (Return)
           3 = Anulacion de devolucion (Cancel Return)
26-26      Mode                                             ASCII     1
           0 = ON-Line
           1 = OFF-Line
27-32      Autorization Code                                ASCII     6
33-33      Debit                                            ASCII     1
           0 = NO
           1 = YES
34-34      Account Type                                     ASCII     1
           0 = CA (Saving Account)
           1 = CC (Checking Account)
35-35      Currency                                         ASCII     1
           0 = Pesos   (Pesos)
           1 = Dolares (Dollars)
36-45      Account Number                                   ASCII    10
46-55      Amount                                           ASCII    10
56-57      Quantity Quota                                   ASCII     2
58-74      Plan                                             ASCII    17
75-75      Devolution                                       ASCII     1
           0 = NO
           1 = YES
76-79      Ticket Orig.                                     ASCII     4
80-85      Date Orig. (ddmmyy)                              ASCII     6
86-89      Operator Number                                  ASCII     4
90-92      Lote                                             ASCII     3
93-96      Coupon                                           ASCII     4

   If Cmd Extension = 02
 4-41      Customer Name                                    ASCII    38

-------------------------------------------------------------------------
```

5.7.1.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+-------------+---
     | x'1B66' | x'C0' | x'00' | 'Burger ...' |
     +---------+-------+-------+-------------+---
         |         |       |       |
         |         |       |        ----------------> Store Name
         |         |       ----------------------> Cmd Extension
         |         ------------------------------> Legacy Print Credit Card Slips
         ---------------------------------------> Escape Sequence


Byte  42           80
     +-------------+----------+
     | 'Cramer ...' | '1234...' |
     +-------------+----------+
         |             |
         |             -------------------------> Address Store
         ----------------------------------------> Store Number
```

5.7.1.3 Legacy Print Credit Card Slips Calculations

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

5.7.1.4 Legacy Print Credit Card Slips Rules

- The string TOTAL in upper, lower or mixed case is not allowed in any field of this command.
- Are printed credit card slip for the customer and store. Only for the store is replicated on SJ station.

5.8 Report Printing Commands

These are the report printing commands:

- (13) Daily Closure (Z-Report)
- (14) X-Report
- (15) Fiscal Memory Report
- (1F) Print POS ID Information Report
- (DA) Electronic Read Fiscal Memory Tables
- (DB) Electronic Read Counters and Accumulators

5.8.1 (13) - Daily Closure (Z-Report)

This command is used to close the sale period, update the fiscal memory (when fiscal mode is seted) and issued the closure report.
To execute this command the serialize fiscal printer (1B cmd.), verify VAT table (21 cmd.) and set/reset header (D7 cmd.) have to be executed before.

5.8.1.1 Command Format

```
--------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE   LENGTH

 0-1      1B66 - cmd prefix                          hex       2
 2        13 - Close Sales Period                    hex       1
 3        00 - Cmd Extension                         hex       1
 4-7      Operator Code                              ASCII     4


--------------------------------------------------------------------
```

5.8.1.2 Command Example

```
Byte  0            2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'13' | x'00' | 'AB34' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Operator Code (AB34)
           |         |       ----------------------> Cmd Extension
           |         ------------------------------> Daily Closure (Z-Report)
           ----------------------------------------> Escape Sequence
```
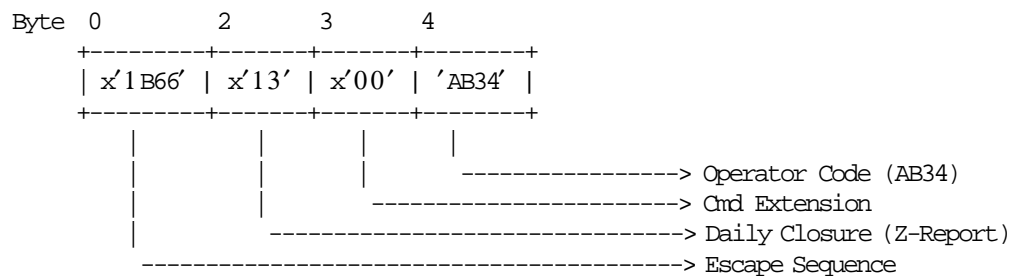
5.8.1.3 Daily Closure Calculations

- **The following operations are performed before printing the report and writing the fiscal memory:**

    $Lif\_N\_Clos = Lif\_N\_Clos + 1$

    $Gran\_Tot = Gran\_Tot + Day\_Tot$

    $Day\_Percep = \sum_{tt} Day\_Percep\_t(tt)$

    $Day\_RetV\_Percep = \sum_{tt} Day\_RetV\_Percep\_t(tt)$

    - **For Ticket Invoice 'A' or 'B'**

        $Day\_Tot = \sum_{vv} Day\_Tot\_v(vv)$

        $Day\_VAT = \sum_{vv} Day\_VAT\_v(vv)$

        $Day\_Tax = \sum_{vv} Day\_Tax\_v(vv)$

    - **For Credit Note 'A' or 'B'**

        $Day\_RetV\_Tot = \sum_{vv} Day\_RetV\_Tot\_v(vv)$

        $Day\_RetV\_VAT = \sum_{vv} Day\_RetV\_VAT\_v(vv)$

        $Day\_RetV\_Tax = \sum_{vv} Day\_RetV\_Tax\_v(vv)$

- **The following operations are performed after writing the fiscal memory:**

  - **Clearing Daily Accumulators:**

    $Day\_Tot = 0$
    $Day\_Tot\_v(vv) = 0$

    $Day\_VAT = 0$
    $Day\_VAT\_v(vv) = 0$
    $Day\_VAT\_NE\_v(vv) = 0$

    $Day\_Percep = 0$
    $Day\_Percep\_t(tt) = 0$

    $Day\_Tax\_v(vv) = 0$

    $Day\_Pay\_Type(pp) = 0$

    $Day\_Pay\_Type = 0$

    $Day\_RetV\_Tot = 0$
    $Day\_RetV\_VAT\_v(vv) = 0$
    $Day\_RetV\_VAT = 0$
    $Day\_RetV\_Tax\_v(vv) = 0$
    $Day\_RetV\_Tax = 0$
    $Day\_RetV\_VAT\_NE\_v(vv) = 0$
    $Day\_RetV\_Percep = 0$
    $Day\_RetV\_Percep\_t(tt) = 0$
    $Day\_RetV\_Pay\_Type\_p(pp) = 0$

  - **Clearing Daily Counters:**

    $Day\_N\_Ract = 0$

    $Day\_N\_Lock = 0$

    $Day\_N\_Vouc = 0$
    $Day\_N\_Dump = 0$
    $Day\_N\_Canc = 0$
    $Day\_N\_NFHD = 0$
    $Day\_N\_NFR = 0$
    $Day\_N\_TInv\_A = 0$

Where:

  vv = VAT category, range = 01 up to 20
  tt = perception type, range = 01 up to 30
  pp = payment type, range = 01 up to 30

5.8.1.4 Daily Closure Rules

- New daily entry can be loaded into the fiscal memory 3840 times during the life of the fiscal printer.
- If FISCFLG (fiscal printer set in fiscal mode) = NO, then fiscal memory is NOT updated by the closure command.

5.8.2 (14) - Summary Fiscal Report (X-Report)

This command is used to print the accumulators and counters, like the closure report, without writing anything in the fiscal memory and can be executed at any time during the day.
To execute this command the serialize fiscal printer (1B cmd.), the verify VAT table (21 cmd.) and set/reset header (D7 cmd.) have to be executed before.

5.8.2.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH


 0-1       1B66 – cmd prefix                            hex       2
 2         14 – Print X-Report                          hex       1
 3         00 – Cmd Extension                           hex       1
 4-7       Operator Code                                ASCII     4


-----------------------------------------------------------------------
```

5.8.2.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'14' | x'00' | '12AB' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ------------> Operator Code (12AB)
           |         |       -------------------> Cmd Extension
           |         --------------------------> Summary Fiscal Report (X-Report)
           -----------------------------------> Escape Sequence
```
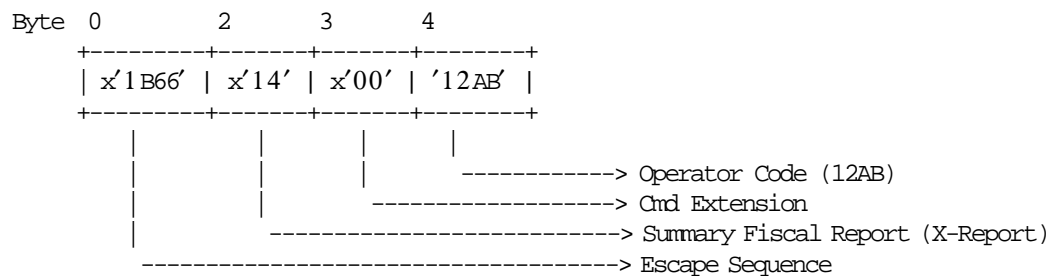
5.8.2.3 X-Report Calculations

The calculations done during this command are the same as those done during the daily closure (13 cmd.) before the fiscal memory is written.

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

The calculations done during the daily closure command (after the fiscal memory is written) are NOT done in this command.

5.8.2.4 X-Report Rules

There are not rules for this command.

5.8.3 (15) - Fiscal Memory Report

This command is used to print the fiscal memory content on customer receipt station.
To execute this command the serialize fiscal printer (1B cmd.) and set fiscal mode (18 cmd.) have to be executed before.
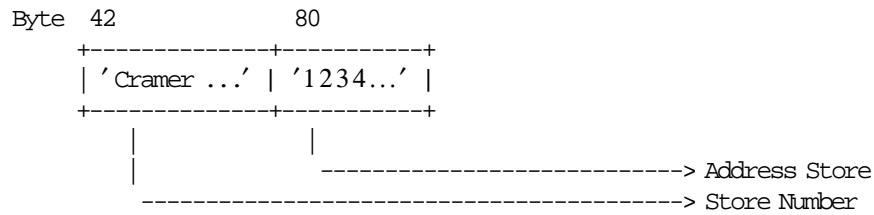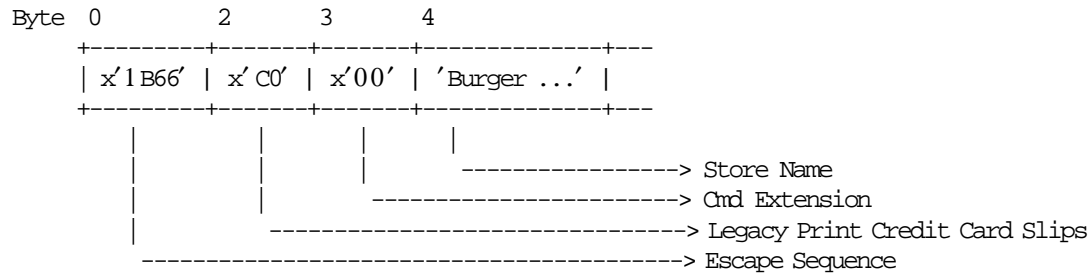
5.8.3.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                         hex        2
 2         15 - Fiscal Memory Report                 hex        1
 3         Cmd Extension                             hex        1
      7    Reserved (always = '0')
      6    Type
           0 = Extended
           1 = Short
      5-3  Reserved (always = '0')
      2-0  Range
           100 (4) = Between Closure Numbers
           010 (2) = Between Closure Dates
           001 (1) = All Fiscal Memory

    If range = 1 specify:
 4-23      Reserved                                  ASCII      20
24-27      Operator Code                             ASCII       4

    If range = 2 specify:
 4-11      First Closure Date                        ASCII       8 (Note 1)
12-19      Last  Closure Date                        ASCII       8 (Note 1)
20-23      Reserved                                  ASCII       4
24-27      Operator Code                             ASCII       4

    If range = 4 specify:
 4-7       First Closure Number                      ASCII       4
 8-11      Last  Closure Number                      ASCII       4
12-23      Reserved                                  ASCII      12
24-27      Operator Code                             ASCII       4

-------------------------------------------------------------------------
```

Notes:

1. Dates strings must be formatted as: ddmmyyyy

   where:

   • dd   = day

   • mm   = month

   • yyyy = year

5.8.3.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+---
      | x'1B66' | x'15' | x'04' |
      +---------+-------+-------+---
           |        |       |
           |        |       ------------------> Cmd Extension
           |        |                           (extended, between closure nbr.)
           |        -------------------------> Fiscal Memory Report
           ----------------------------------> Escape Sequence


Byte  4        8        20       24
      +--------+--------+--------+--------+
      | '0001' | '0010' | '    ' | 'AX90' |
      +--------+--------+--------+--------+
          |        |        |        |
          |        |        |        ----------> Operator Code (AX90)
          |        |        -------------------> Reserved
          |        ---------------------------> Last  Closure Number (10)
          -----------------------------------> First Closure Number (1)
```
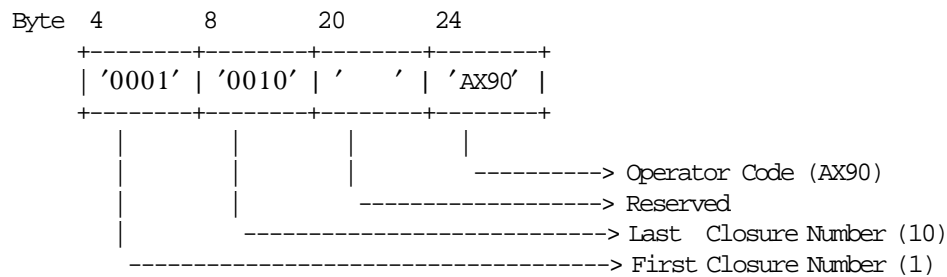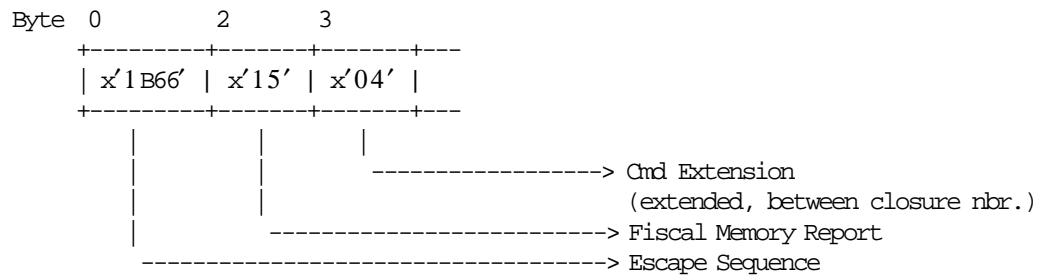
5.8.3.3 Fiscal Memory Report Calculations

$Day\_N\_Dump = Day\_N\_Dump + 1$

5.8.3.4 Fiscal Memory Report Rules

- Fiscal memory content must be printed on customer receipt station.
- Two types of fiscal memory reports are provided: short and extended.
- This process can take a long time if the fiscal memory is almost full or full.

5.8.4 (1F) - POS Identification Report

This command is used to print a report listing of the POS Identification.
To execute this command the serialize fiscal printer (1B cmd.), the set POS identification (1E cmd.) and set fiscal mode (18 cmd.) have to be executed before.

5.8.4.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                     TYPE    LENGTH

 0-1       1B66 - cmd prefix                           hex        2
 2         1F - POS Identification Report              hex        1
 3         00 - Cmd Extension                          hex        1
 4-7       Operator Code                               ASCII      4


---------------------------------------------------------------------
```

5.8.4.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'1F' | x'00' | 'AB12' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Operator Code (AB12)
           |         |       -----------------------> Cmd Extension
           |         --------------------------------> POS Identification Report
           ------------------------------------------> Escape Sequence
```
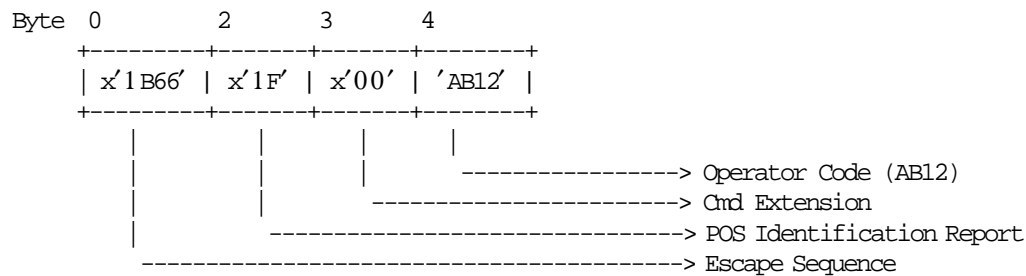
5.8.4.3 POS Identification Report Calculations

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

5.8.4.4 POS Identification Report Rules

- The POS Identification to print is stored into the fiscal printer by the 1E cmd.

5.8.5 (DA) - Electronic Read Fiscal Memory Tables

This command is used to request the fiscal unit to report the fiscal memory table content.
To execute this command the serialize fiscal printer (1B cmd.) and set fiscal mode (18 cmd.) have to be executed before.

5.8.5.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT   CONTENT                                         TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                               hex       2
 2         DA - Electronic Read Fiscal Memory Tables       hex       1
 3         Cmd Extension                                   hex       1
           11  Read  Taxpayer Issuer Condition Table
           10  Start Taxpayer Issuer Condition Table
           0F  Read  Homologated Level Table
           0E  Start Homologated Level Table
           0D  Read  Next Locked Action Table
           0C  Start Read Locked Action Table
           0B  Reserved (always = '0')
           0A  Read POS Identification Table
           09  Reserved (always = '0')
           08  Reserved (always = '0')
           07  Read  Next Repair Action Table
           06  Start Read Repair Action Table
           05  Reserved (always = '0')
           04  Reserved (always = '0')
           03  Reserved (always = '0')
           02  Reserved (always = '0')
           01  Read  Next Daily Entry Table
           00  Start Read Daily Entry Table
 4-7       Closure Number                                  ASCII    4 (Note 1)


--------------------------------------------------------------------------
```

Note 1: Bytes 4-7 apply to start read daily entry table only.

Response to read Daily Entry Table will be formatted as follows:

BYTE BIT	CONTENT	TYPE	LENGTH	VARIABLE NAME	
0-8	Fiscal Unit Status	hex	9		
9	DA - Electronic Read Fiscal Memory Tables	hex	1		
10-23	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14		
24	Return Code	hex	1		(Note 1, 2)
	43 = Good Completion				
	60 = Invalid Character in Bytes 4-8 of Command				
	5A = Closure Not Found				
	64 = Error on Reading Fiscal Memory				
	BB = Block Empty				
25	Reserved	hex	1		(Note 2)
26-33	Closure Date (dd/mm/yy)	ASCII	8	FM_DE_DATE	
34-38	Closure Time (hh:mm)	ASCII	5	FM_DE_TIME	
39-42	Closure Number	ASCII	4	FM_DE_N_Clos	
43-48	Total	hex	6	FM_DE_Tot	(Note 2)
49-54	VAT Total	hex	6	FM_DE_VAT	(Note 2)
55-58	Last Ticket & Ticket Invoice B, C Number	hex	4	FM_DE_N_Vouc	(Note 2)
59-60	Cancelled Transactions Number	hex	2	FM_DE_N_Canc	(Note 2)
61-64	Last Invoice A Number	hex	4	FM_DE_N_TInv_A	(Note 2)
65-70	Credit Note Total	hex	6	FM_DE_RetV_Tot	(Note 2)
71-76	Credit Note VAT Total	hex	6	FM_DE_RetV_VAT	(Note 2)
77-80	Last Credit Note A Number	hex	4	FM_DE_N_RetV_A	(Note 2)
81-84	Last Credit Note BC Number	hex	4	FM_DE_N_RetV_BC	(Note 2)
85-85	Locked Action Number	hex	1	FM_DE_N_Lock	(Note 2)
86-87	Non-Fiscal Homologated Document Number	hex	2	FM_DE_N_DNFH	(Note 2)
88-89	Non-Fiscal Document Number	hex	2	FM_DE_N_DNF	(Note 2)

Note   : Bit 7 is the most significant bit and bit 0 is the least significant bit.

Note 1: If the return code indicates an error, then closure data are meaningless.

Note 2: Hex data is in normal format, not byte switch format.

Response to read Taxpayer Issuer Condition Table will be formatted as follows:

```
--------------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH VARIABLE NAME

 0-8       Fiscal Unit Status                         hex        9
 9         DA - Electronic Read Fiscal Memory Tables  hex        1
10-23      Request Date and Time                      ASCII     14
           (dd/mm/yy hh:mm)
24         Return Code                                hex        1              (Note 1)
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
           BB = Block Empty
25         Reserved                                   hex        1
26-29      Closure Number                             ASCII      4 FM_TI_N_Clos
30-30      Taxpayer Issuer Condition                  ASCII      1 FM_TI_Taxp_I_Cond


--------------------------------------------------------------------------------
```

Response to read Homologated Level Table will be formatted as follows:

```
--------------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH VARIABLE NAME

 0-8       Fiscal Unit Status                         hex        9
 9         DA - Electronic Read Fiscal Memory Tables  hex        1
10-23      Request Date and Time                      ASCII     14
           (dd/mm/yy hh:mm)
24         Return Code                                hex        1              (Note 1)
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
           BB = Block Empty
25         Reserved                                   ASCII      1
26-27      Homologated Level                          ASCII      2 FM_EC_Level
28-35      Date (dd/mm/yy)                            ASCII      8 FM_EC_Date
36-40      Time (hh:mm)                               ASCII      5 FM_EC_Time
41-44      Closure Number                            ASCII      4 FM_EC_Clos


--------------------------------------------------------------------------------
```

Note 1: If the return code indicates an error then data are meaningless.

Response to read POS Identification Table will be formatted as follows:

```
-----------------------------------------------------------------------------------

BYTE BIT  CONTENT                                       TYPE    LENGTH VARIABLE NAME

 0-8      Fiscal Unit Status                            hex       9
 9        DA - Electronic Read Fiscal Memory Tables     hex       1
10-23     Request Date and Time                         ASCII    14
          (dd/mm/yy hh:mm)
24        Return Code                                   hex       1            (Note 1)
          43 = Good Completion
          5C = Register Not Found
          64 = Error on Reading Fiscal Memory
          BB = Block Empty
25        Reserved                                      hex       1
26-63     Store Name                                    ASCII    38 FM_PI_StNa
64-74     UTIK Number                                   ASCII    11 FM_PI_UTIK
75-78     POS ID Number                                 ASCII     4 FM_PI_POS
79-82     Closure Number                                ASCII     4 FM_PI_N_Clos


-----------------------------------------------------------------------------------
```

Response to read Repair Action Table will be formatted as follows:

```
-----------------------------------------------------------------------------------

BYTE BIT  CONTENT                                       TYPE    LENGTH VARIABLE NAME

 0-8      Fiscal Unit Status                            hex       9
 9        DA - Electronic Read Fiscal Memory Tables     hex       1
10-23     Request Date and Time                         ASCII    14
          (dd/mm/yy hh:mm)
24        Return Code                                   hex       1            (Note 1)
          43 = Good Completion
          5C = Register Not Found
          64 = Error on Reading Fiscal Memory
          BB = Block Empty
25        Reserved                                      hex       1
26-28     Repair Action Number                          ASCII     3 FM_RA_N_Ract
29-32     Closure Number                                ASCII     4 FM_RA_N_Clos
33-40     Repair Action Date (dd/mm/yy)                 ASCII     8 FM_RA_Date
41-45     Repair Action Time (hh:mm)                    ASCII     5 FM_RA_Time


-----------------------------------------------------------------------------------
```

   Note 1: If the return code indicates an error then data are meaningless.

Response to the Electronic Read Fiscal Memory Tables command for read Locked Action Table will be formatted as follows:

```
----------------------------------------------------------------------------

BYTE BIT  CONTENT                                   TYPE    LENGTH VARIABLE NAME

  0-8     Fiscal Unit Status                        hex        9
  9       DA - Electronic Read Fiscal Memory Tables hex        1
 10-23    Request Date and Time                     ASCII     14
          (dd/mm/yy hh:mm)
 24       Return Code                               hex        1          (Note 1)
          43 = Good Completion
          5C = Register Not Found
          64 = Error on Reading Fiscal Memory
          BB = Block Empty
 25       Reserved                                  hex        1
 26-28    Locked Action Number                      ASCII      3 FM_LO_N_Lock
 29-32    Closure Number                            ASCII      4 FM_LO_N_Clos
 33-40    Locked Action Date (dd/mm/yy)             ASCII      8 FM_LO_Date
 41-45    Locked Action Time (hh:mm)                ASCII      5 FM_LO_Time


----------------------------------------------------------------------------
```

Note 1: If the return code indicates an error then data are meaningless.

5.8.5.2 Command Example

```
Byte  0        2       3       4
     +---------+-------+-------+--------+
     | x'1B66' | x'DA' | x'00' | '0011' |
     +---------+-------+-------+--------+
          |         |       |       |
          |         |       |       ----------------> Closure Number (11)
          |         |       -----------------------> Cmd Extension
          |         |                                (start read daily entry table)
          |         ------------------------------> Electronic Read Fiscal Memory Tables
          ----------------------------------------> Escape Sequence
```
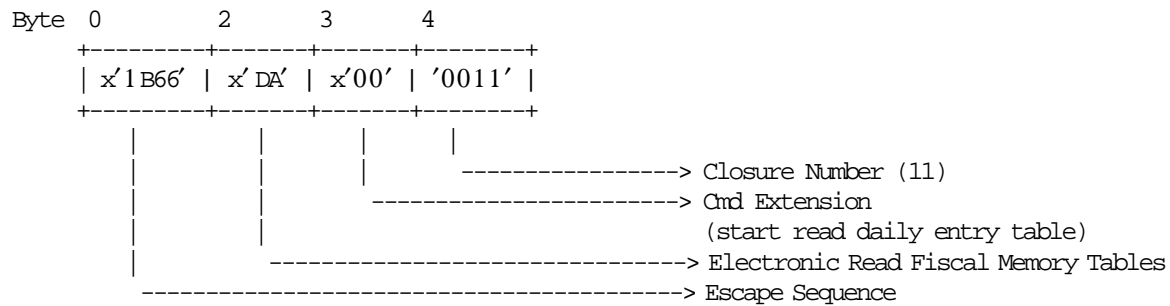
5.8.5.3 Electronic Read Fiscal Memory Tables Rules

• The totals and counters related to each sales period are read from the fiscal memory and sent over the serial I/O.

5.8.6 (DB) - Electronic Read Counters and Accumulators

This command is used to request the fiscal unit to report the content of transaction and daily counters and accumulators.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.8.6.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENTS                                      TYPE  LENGTH

 0-1      1B66 - Command Prefix                         hex     2
 2        DB - Electronic Read Counters and Accumulators hex    1
 3        Cmd Extension                                 hex     1
     7-4  Reserved (always = '0')
     3-2  Query Criterial
          00 = Accumulators By VAT Category,
               Perception Type and Payment Type
          01 = Initialization Setting Values
          10 = Counters
     1-0  Accounting Variables
          00 = Transaction
          01 = Daily
          10 = Lifetime
 4-5      VAT Category (vv)                             ASCII   2 (Note 1)
 6-7      Payment Type (pp)                             ASCII   2 (Note 2)
 8-9      Perception Type (tt)                          ASCII   2 (Note 3)

   If (byte 3 - bit 3-2) = 01
10-11     Header Line Number                            ASCII   2 (Note 4)
12-13     TI/CN Header Line Number                      ASCII   2 (Note 5)
14-15     Trailer Line Number                           ASCII   2 (Note 6)


----------------------------------------------------------------------
```

Note 1: VAT Category, range 01 up to 20.
        To read the sum of the transaction totals for all VAT categories,
        use '00' as the ASCII data string.

Note 2: Payment Type, range 01 up to 30.
        To read the sum of the transaction totals and transaction counters
        for all payment types, use '00' as the ASCII data string.

Note 3: Perception Type, range 01 up to 30.
        To read the sum of the transaction totals and transaction counters
        for all perception types, use '00' as the ASCII data string.

Note 4: Header Line Number, range 01 up to 07.

Note 5: TI/CN Header Line Number, range 01 up to 07.

Note 6: Trailer Line Number, range 01 up to 07.

5.8.6.2 Electronic Read Counters and Accumulators Response

```
----------------------------------------------------------------------

BYTE BIT   CONTENTS                                      TYPE   LENGTH

  0-8      Fiscal Unit Status                            hex       9
   9       DB - Record Identification                    hex       1
 10-23     Request Date and Time                         ASCII    14
           (dd/mm/yy hh:mm)
  24       Return Code                                   hex       1
           43 = Good Completion
  25       FISCAL UNIT PROCEDURE IN PROGRESS             hex       1
           00 = No Procedure in Progress
           01 = Ticket in Progress
           02 = Reserved
           03 = Ticket Invoice in Progress
           04 = Reserved
           05 = Appl.Orig. Report on CR in Progress
           06 = Appl.Orig. Report on SJ in Progress
           07 = Reserved
           08 = Appl.Orig. Report on DI Portrait   in Progress
           09 = Credit Card Slip Printing in Progress
           0A = NFH Document in Progress
           0B = Credit Note in Progress
  26       SALES TRANSACTION STEP                        hex       1
       7   1 = Header Printed
       6   1 = Item/Negitem Sold
       5   1 = Total Requested
       4   1 = Payment Phase
       3   1 = End    Transaction in Progress
       2   1 = Cancel Transaction in Progress
       1   1 = Ordinary Printing Phase
       0   1 = Second Total Requested
  27       FISCAL UNIT MODE                              hex       1
       7   1 = Fiscal Mode Set
       6   Reserved
       5   1 = Sales Period in Progress
       4   1 = Training Mode Set
       3   1 = NFH Document Issued
     2-0   Reserved
  28       END APPL.ORIG. REPORT ON DI                   hex       1
       7   1 = End Appl.Orig. Report on DI in Progress
       6   1 = End Appl.Orig. Report on DI - Phase 1 Done
     5-0   Reserved
  29       NFH DOCUMENT TYPE                             hex       1 (Note 1)
  30       INITIALIZATION SET                            hex       1
       7   1 = Header Set
       6   1 = Ticket Invoice/Credit Note Header Set
       5   1 = Trailer Set
       4   1 = Payment Set
       3   1 = Perception Table Set
       2   1 = VAT Table Set
       1   1 = General Parameters Set
       0   Reserved (always = '0')


----------------------------------------------------------------------
```

Note 1: range from 00 to 05.

Response where **Query Criterial = ′00′ and Accounting Variable = ′00′** is formatted as follows:

```
-----------------------------------------------------------------------------------

BYTE BIT CONTENTS                                     TYPE LENGTH   VARIABLE NAME

              TRANSACTION ACCUMULATORS
              -----------------------

  31-35   General Total by VAT                        hex      5   Tra_Tot_v(vv)          (Note 1)
  36-40   General Fixed Item Total by VAT             hex      5   Tra_Tot_Fixed_v(vv)
  41-45   Fixed Item Not Taxable Concepts by VAT      hex      5   Tra_Tax_Fixed_v(vv)
  46-50   Fixed Not Taxable Concepts by VAT           hex      5   Tra_Tax_F_v(vv)
  51-55   Percentage Not Taxable Concepts by VAT      hex      5   Tra_Tax_P_v(vv)
  56-60   General VAT by VAT                          hex      5   Tra_VAT_v(vv)          (Note 2)
  61-65   General VAT Not Enrolled by VAT             hex      5   Tra_VAT_NE_v(vv)       (Note 3)
  66-70   General VAT Fixed Item by VAT               hex      5   Tra_VAT_Fixed_v(vv)
  71-75   Item Perception by Percep. Type             hex      5   Tra_Percep_t(tt)
  76-80   Item Perception by VAT and Percep. Type     hex      5   Tra_Percep_vt(vv,tt)   (Note 4)
  81-85   General Global Perception by Percep. Type   hex      5   Tra_Tot_Percep_t(tt)
  86-90   General Payment Total by Payment Type       hex      5   Tra_Pay_Type(pp)       (Note 5)
  91-95   Amount Due                                  hex      5   Tra_Amt_Due            (Note 6)
  96-100  General VAT Not Enrolled Total by VAT       hex      5   Tra_Tot_NE_v(vv)       (Note 7)
 101-105  General Fixed VAT Not Enrolled Total by VAT hex      5   Tra_Tot_Fixed_NE_v(vv) (Note 8)


-----------------------------------------------------------------------------------
```

  Note 1: When the VAT Category selected = ′00′, the Tra_Tot accumulator will be showed.

  Note 2: When the VAT Category selected = ′00′, the Tra_VAT accumulator will be showed.

  Note 3: When the VAT Category selected = ′00′, the Tra_VAT_NE accumulator will be showed.

  Note 4: When the VAT Category selected = ′00′ and Perception Type = ′00′,
          the Tra_Percep accumulator will be showed.

  Note 5: When the Payment Type = ′00′, the Tra_Pay_Type will be showed.

  Note 6: When Amount Due is negative, it is expresed in two′s complement.

  Note 7: When the VAT Category selected = ′00′, the sum(Tra_Tot_NE_v(vv)) will be showed.

  Note 8: When the VAT Category selected = ′00′, the sum(Tra_Tot_Fixed_NE_v(vv)) will be showed.

Response where **Query Criterial = ′10′ and Accounting Variable = ′00′** is formatted as follows:

```
-----------------------------------------------------------------------------------

BYTE BIT CONTENTS                                     TYPE LENGTH   VARIABLE NAME

        TRANSACTION COUNTERS
        -------------------

  31-32   Item Ordinal Number                         hex      2   Item_Ordinal_Number
  33-34   Lines Printed in T.Invoice or Credit Note   hex      2   Mis_N_Lines_Printed


-----------------------------------------------------------------------------------
```

        (DB Response continued on next page)

Response where **Query Criterial = ′00′ and Accounting Variable = ′01′** is formatted as follows:

```
--------------------------------------------------------------------------------

BYTE BIT CONTENTS                                    TYPE LENGTH  VARIABLE NAME

            DAILY ACCUMULATORS
            ------------------

31-36   Total by VAT                                 hex      6  Day_Tot_v(vv)       (Note 1)
37-42   VAT Total by VAT                             hex      6  Day_VAT_v(vv)       (Note 1)
43-48   Not Taxable Concepts by VAT                  hex      6  Day_Tax_v(vv)       (Note 1)
49-54   VAT not Enrolled by VAT                      hex      6  Day_VAT_NE_v(vv)    (Note 1)
55-60   Perception by Percep. Type                   hex      6  Day_Percep_t(tt)    (Note 2)
61-66   Payment Total by Payment Type                hex      6  Day_Pay_Type(pp)    (Note 3)
67-72   Credit Note Total by VAT                     hex      6  Day_RetV_Tot_v(vv)  (Note 1)
73-78   Credit Note VAT Total by VAT                 hex      6  Day_RetV_VAT_v(vv)  (Note 1)
79-84   Credit Note Not Taxable Concepts by VAT      hex      6  Day_RetV_Tax_v(vv)  (Note 1)
85-90   Credit Note VAT Not Enrolled by VAT          hex      6  Day_RetV_VAT_NE_v(vv) (Note 1)
91-96   Credit Note Perception by Percep. Type       hex      6  Day_RetV_Percep_t(tt) (Note 2)
97-102  Credit Note Payment Total by Payment Type    hex      6  Day_RetV_Pay_Type(pp) (Note 3)


--------------------------------------------------------------------------------
```

Response where **Query Criterial = ′10′ and Accounting Variable = ′01′** is formatted as follows:

```
--------------------------------------------------------------------------------

BYTE BIT CONTENTS                                    TYPE LENGTH  VARIABLE NAME

            DAILY COUNTERS
            --------------

31-32   Number of Tickets & Tickets Invoice B, C     hex      2  Day_N_Vouc
33-34   Number of Repair Actions                     hex      2  Day_N_Ract
35-36   Number of Fiscal Memory Reports              hex      2  Day_N_Dump
37-38   Number of Cancelled Transactions             hex      2  Day_N_Canc
39-40   Number of Non-Fiscal Homologated Reports     hex      2  Day_N_NFHD
41-42   Number of Application-Originated Reports      hex      2  Day_N_NFR
43-44   Number of Ticket Invoice A                   hex      2  Day_N_TInv_A
45-46   Number of Credit Notes A                     hex      2  Day_N_RetV_A
47-48   Number of Credit Notes B, C                  hex      2  Day_N_RetV_BC
49-49   Number of Locked Actions                     hex      1  Day_N_Lock


--------------------------------------------------------------------------------
```

   Note 1: Will be showed for VAT Category (range 01 up to 20).

   Note 2: Will be showed for Perception Type (range 01 up to 30).

   Note 3: Will be showed for Payment Type (range 01 up to 30).

        (DB Response continued on next page)

Response where **Accounting Variable = '10'** is formatted as follows:

```
-------------------------------------------------------------------------------------

BYTE BIT CONTENTS                                   TYPE LENGTH  VARIABLE NAME

        LIFETIME ACCUMULATORS AND COUNTERS
        ----------------------------------

31-38   Reserved                                    hex     8
39-42   Number of Tickets Invoice A                 hex     4    Lif_N_TInv_A
43-46   Number of Tickets and Tickets Invoice B, C  hex     4    Lif_N_Vouc
47-48   Last Closure Number                         hex     2    Lif_N_Clos
49-50   Repair Actions                              hex     2    Lif_N_Ract
51-60   Fiscal Printer Serial Number                ASCII  10
61-61   Number of Locked Actions                    hex     1    Lif_N_Lock
62-65   Number of Credit Note A                     hex     4    Lif_N_RetV_A
66-69   Number of Credit Note BC                    hex     4    Lif_N_RetV_BC


-------------------------------------------------------------------------------------
```

(DB Response continued on next page)

Response where **Query Criterial = 01** is formatted as follows:

```
--------------------------------------------------------------------------

  BYTE BIT CONTENTS                                       TYPE LENGTH

          INITIALIZATION SETTING
          ----------------------

 31-68    Ticket Header Description                       ASCII   38
 69-106   Ticket Invoice/Credit Note Header Description   ASCII   38
107-144   Trailer Description                             ASCII   38
145-166   Payment Description                             ASCII   22
167-188   Perception Description                          ASCII   22
189-190   VAT Rate                                        hex      2
191-195   Maximum Total for Ticket                        hex      5
196-200   Maximum Total for Ticket Invoice/Credit Note    hex      5
201-205   Maximum Total for TI/CN to Final Customer        hex      5
206-207   VAT Not Enrolled Percent                        hex      2
208-209   Number of Lines To Print in Ticket Invoice      hex      2
210-211   Number of Lines To Print in Credit Note         hex      2


--------------------------------------------------------------------------
```

5.8.6.3 Command Example

```
Byte  0         2       3       4      6      8
     +---------+------+------+-----+------+-----+
     | x'1B66' | x'DB'| x'00'| '15' | '27' | '30' |
     +---------+------+------+-----+------+-----+
         |         |      |      |      |      |
         |         |      |      |      |      ------> Perception Type
         |         |      |      |      -------------> Payment Type
         |         |      |      --------------------> VAT Category
         |         |      -------------------------> Cmd Extension
         |         --------------------------------> Electronic Read Counters and Accumulators
         -----------------------------------------> Escape Sequence
```
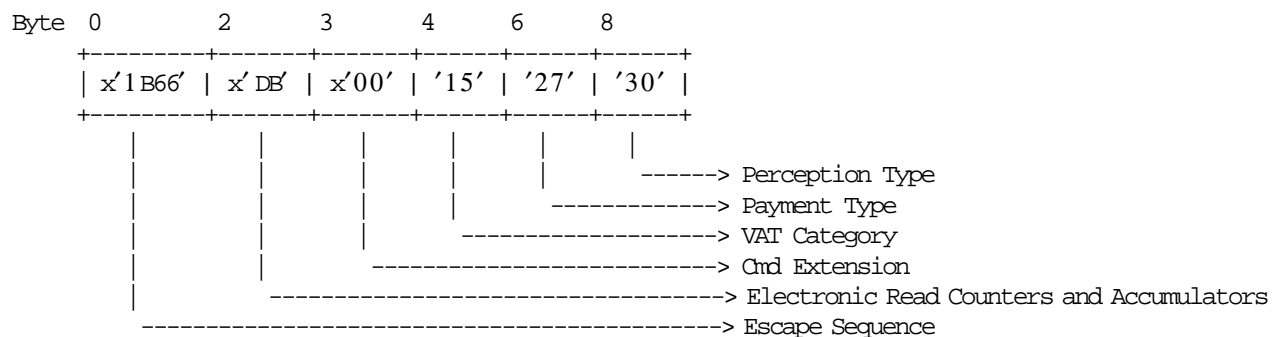
5.8.6.4 Electronic Read Counters and Accumulators Calculations

$$Tra\_Pay\_Type = \sum_{pp} Tra\_Pay\_Type(pp)$$

$$Day\_Pay\_Type = \sum_{pp} Day\_Pay\_Type(pp)$$

$$Day\_RetV\_Percep = \sum_{vv} Day\_RetV\_Percep\_v(vv)$$

$$Day\_RetV\_Tot = \sum_{vv} Day\_RetV\_Tot\_v(vv)$$

$$Day\_RetV\_VAT = \sum_{vv} Day\_RetV\_VAT\_v(vv)$$

$$Day\_RetV\_Tax = \sum_{vv} Day\_RetV\_Tax\_v(vv)$$

Where:

    pp = payment type, range = 01 up to 30
    vv = VAT category, range = 01 up to 20

5.8.6.5 Electronic Read Counters and Accumulators Rules

- This command can be issued at any time.
- It is useful for the application program to determine the state of the fiscal printer and read its accumulators and counters.

5.9 Application-Originated Reports

There are two commands that control application-originated reports:

- (DD) Start Application-Originated Report
- (DE) End   Application-Originated Report

5.9.1 Application-Originated Report Flow Chart

```
                        |
        START APPLICATION-ORIGINATED REPORT (DD)
                        |
                        |
                +<-----------------+
                |                  |
                |                  |
ORDINARY PRINTING LINES CR/SJ/DI (EA-EB)   |
                |                  |
                |                  |
                +------------------+
                |
                |
        END APPLICATION-ORIGINATED REPORT (DE)
                |
```
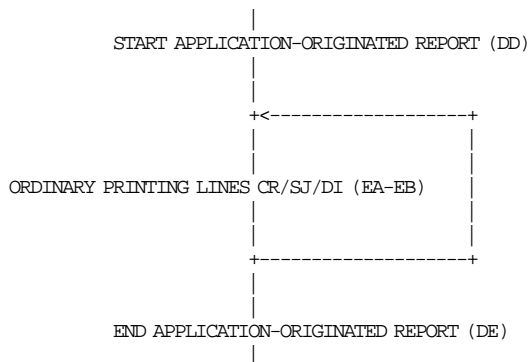
5.9.2 General Application-Originated Printing Rules

If a special printout format is available for an application-originated report, it will be defined in the section "Format of Printouts for Argentina".

5.9.2.1 Inserted "NO FISCAL" Message Rules During an Application-Originated Report

- A a-o report on the CR station is preceded by an inserted "NO FISCAL" (M05 msg.).
  This message will be printed by the first ordinary printing line (EA or E9 cmd.) printed.
- A a-o report on the SJ station is preceded by an inserted "NO FISCAL" (M05 msg.).
  This message will be printed by the first ordinary printing line (EA or E9 cmd.) printed.
- A a-o report on the DI station is preceded by an inserted "NO FISCAL" (M05 msg.).
  This message will be printed by the first ordinary printing line (EB or E9 cmd.) printed.
- A a-o report on the CR station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- A a-o report on the SJ station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- A a-o report on the DI station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- During an a-o report on the CR station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- During an a-o report on the SJ station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- During an a-o report on the DI station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- In Argentina count is kept of empty lines (EC or EA cmd.) during an a-o report on the CR station.
- In Argentina count is kept of empty lines (EC or EA cmd.) during an a-o report on the SJ station.
- In Argentina count is kept of empty lines (EC or EB cmd.) during an a-o report on the DI station.
- The a-o report on CR station is replicated to SJ station.
- The a-o report on SJ station isn't replicated.

5.9.3 (DD) - Start Application-Originated Report

This command is used to start a non-fiscal document printing a ″NO FISCAL″ message line.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.9.3.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH


0-1       1B66 - command prefix                          hex       2
2         DD - Start Application-Originated Report        hex       1
3         Cmd Extension                                  hex       1
     7-2  Reserved (always = '0')
     1-0  Station
          00 (0) = CR
          01 (1) = SJ
          10 (2) = Reserved
          11 (3) = DI - Portrait


-------------------------------------------------------------------------
```

5.9.3.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'DD' | x'03' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension (DI Portrait)
           |        ------------------------------> Start Application-Originated Report
           ----------------------------------------> Escape Sequence
```
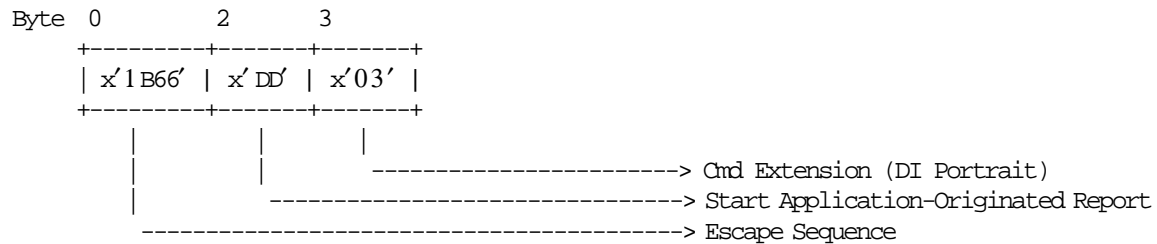
5.9.3.3 Start Application-Originated Report Calculations

There are no calculations for this command.

5.9.3.4 Start Application-Originated Report Rules

- The execution of the start application-originated report command sets the fiscal unit into the application-originated report in progress.
- This report can be printed on customer receipt, summary journal and document insert stations.

5.9.4 (DE) - End Application-Originated Report

This command is used to end a non-fiscal document printing a ″NO FISCAL″ message line.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.9.4.1 Command Format

```
 ------------------------------------------------------------------------

 BYTE BIT   CONTENT                                        TYPE    LENGTH

  0-1       1B66 - command prefix                          hex        2
  2         DE - End Application-Originated Report          hex        1
  3         Cmd Extension                                  hex        1
            00 = End Phase 1
            01 = End Phase 2


 ------------------------------------------------------------------------
```

5.9.4.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x′1B66′ | x′DE′ | x′00′ |
      +---------+-------+-------+
           |         |       |
           |         |       ------------> Cmd Extension (End Phase 1)
           |         --------------------> End Application-Originated Report
           ----------------------------> Escape Sequence
```
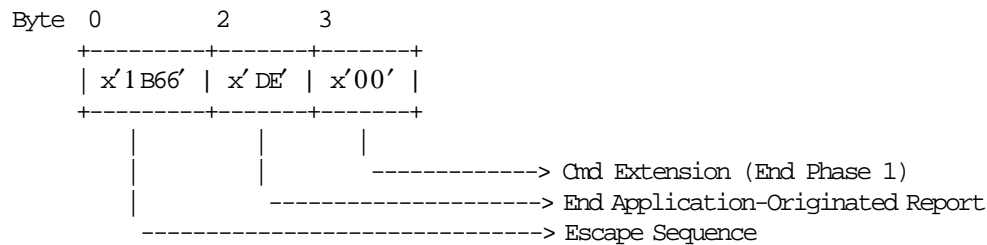
5.9.4.3 End Application-Originated Report Calculations

$Day\_N\_NFR = Day\_N\_NFR + 1$

5.9.4.4 End Application-Originated Report Rules

- If end application-originated report is on CR or SJ stations, only the phase 1 must be issued.
- If end application-originated report is on DI station, the phase 1 and then phase 2 must be issued.

  The following steps must be completed:

  – Issue the phase 1 (In this phase the report is ended and the paper is ejected).

  – Remove the paper.

  – Issue the phase 2 (In this phase the M05, M15 and M09 are printed in SJ station).

- This procedure is used to exit from the Application-Originated Report In Progress state.
- This report ends with a ″NO FISCAL″ message line.

5.10 Non-Fiscal Homologated Documents

This procedure is used to generate non-fiscal homologated documents and is controlled by the following commands:

- (A7) Set   NFH Information
- (A8) Start NFH Document
- (A9) Print NFH Document
- (AA) End   NFH Document
- (AB) Cancel NFH Document

The non-fiscal homologated documents types allowed are:

- 01 = Credit Card
- 02 = Fidelity Programs Voucher
- 03 = Services Payment
- 04 = Home Shipment
- 05 = Cash Flow

5.10.1 Non-Fiscal Homologated Documents Flow

- **Set NFH Information**

```
 --------------------       --------------------       --------------------
|      Cmd xA7       |     |      Cmd xA7       |     |      Cmd xA7       |
|  Set NFH - Header  |     |  Set NFH - Field   |     |  Set NFH - Trailer |
 --------------------       --------------------       --------------------
```

- **NFH Documents Process**

```
                                  ---------------------
       +----------<------------|       Cmd xA8       |------------->----------+
       |                       |  Start NFH  Document |                       |
       |                        ---------------------                         |
       |                                  |                                   |
       |                                  v                                   |
       |          +--------------------+--------------------+                 |
       |          |                    |                    |                 |
       |          v                    v                    v                 |
       |    -----------------    -----------------    -----------------       |
       |   |    Cmd xA9      |<--->|  Cmd xEA/xE9  |<--->|    Cmd xEC      |   |
       |   | Print NFH Field |   | Ord. Print. Line |   |    Line Feed    |   |
       |    -----------------    -----------------    -----------------       |
       |          |                    |                    |                 |
       |          v                    v                    v                 |
       |          +--------------------+--------------------+                 |
       |                    |                    |                            |
       |                    v                    v                            |
       |          ---------------------    ---------------------              |
       +--------->|      Cmd xAA       |  |      Cmd xAB        |<---------+
                  |  End NFH Document  |  | Cancel NFH Document |
                   ---------------------    ---------------------
```
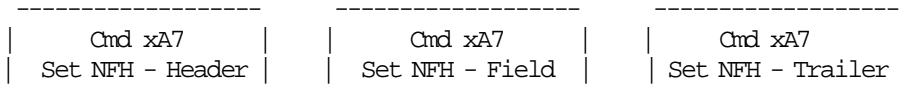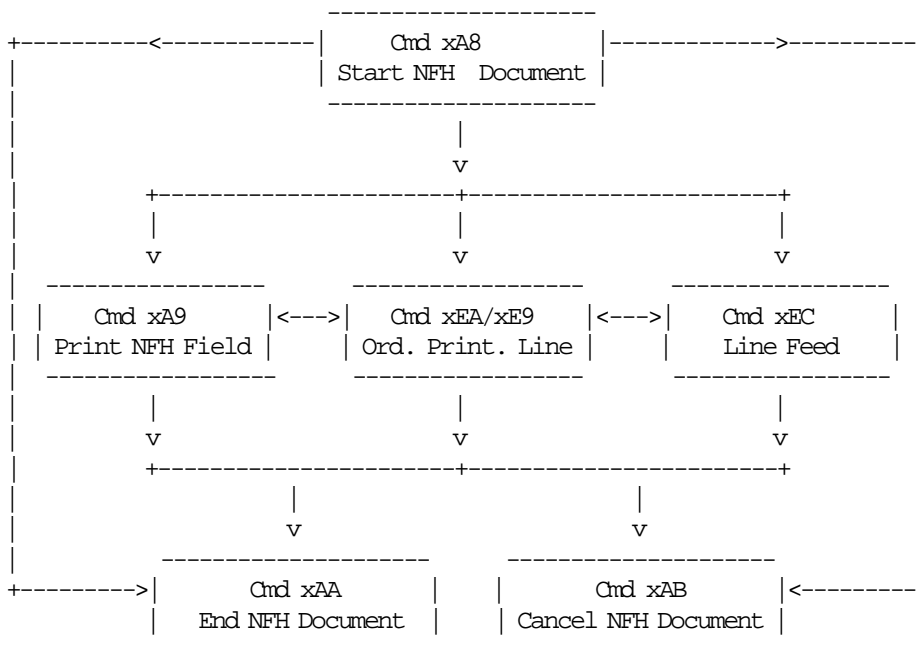
5.10.2 Non-Fiscal Homologated Documents Rules

- These documents are printed on CR station and some lines are replicated on SJ station.
- These documents are allowed during fiscal and training mode and are printed similarly in both modes.
- Only a total of 4 ordinary printing lines (EA cmd. or E9 cmd.) on CR station without SJ replication can be printed in any place of the document.
- Only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document.
- Line feed lines (EC cmd. or E9 cmd.) are allowed in CR station only. It can be issued unlimited times in any place of the document.
- If PLD or paper out occurs during print header (A8 cmd.) of the document, it will be cancelled printing ″* DOCUMENTO CANCELADO *″ msg. on CR station.
  In the PLD case, the power on report will be printed.
- If PLD or paper out occurs during printing document (except header), the command that was in progress before the PLD or paper out occurs can be issued again. In this case the power on report in not printed.

5.10.3 NFH Tables Definition

There are three NFH tables types and each one is stored in RAM memory.

- NFH Header Table Definition

    - Header_Table_00 (General Template)
    - Header_Table_01 (Credit Card Template)
    - Header_Table_02 (Fidelity Programs Voucher Template)
    - Header_Table_03 (Services Payment Template)
    - Header_Table_04 (Home Shipment Template)
    - Header_Table_05 (Cash Flow Template)

- NFH Field Tables Definition

    - Field_Table_00 (General Template)
    - Field_Table_01 (Credit Card Template)
    - Field_Table_02 (Fidelity Programs Voucher Template)
    - Field_Table_03 (Services Payment Template)
    - Field_Table_04 (Home Shipment Template)
    - Field_Table_05 (Cash Flow Template)

- NFH Trailer Table Definition

    - Trailer_Table_00 (General Template)
    - Trailer_Table_01 (Credit Card Template)
    - Trailer_Table_02 (Fidelity Programs Voucher Template)
    - Trailer_Table_03 (Services Payment Template)
    - Trailer_Table_04 (Home Shipment Template)
    - Trailer_Table_05 (Cash Flow Template)

5.10.3.1 NFH Header Table Definition

The header table for each template type (tt = template type) is defined as follow:

- **Header_Table_tt (tt range = 00 to 05)**

```
* --------------------------------------------------------------------------------- *
* Field *                          MESSAGE DESCRIPTION                               *
* Line # *             Spanish                            English                    *
* ------ * ------------------------------------- * ------------------------------------- *
*   1    * Header Line 1 (user defined w/A7 cmd.) *                                   *
*   2    * Header Line 2 (user defined w/A7 cmd.) *                                   *
*   3    * Header Line 3 (user defined w/A7 cmd.) *                                   *
*   4    * Header Line 4 (user defined w/A7 cmd.) *                                   *
* --------------------------------------------------------------------------------- *
```

Figure 3. Header_Table_tt (NFH Header Table)

5.10.3.2 NFH Field Tables Definition

The field tables for each document type are defined as follow:

- **Field_Table_00 (General Template)**

```
* ---------------------------------------------------------------------------- *
*  Field *                       MESSAGE DESCRIPTION                            *
* Line # *           Spanish                              English              *
* ------ * --------------------------------- * --------------------------------- *
*   1    * CLIENTE NRO.:                      * CUSTOMER NB.:                     *
*   2    * CLIENTE NOMBRE:                    * CUSTOMER NAME :                   *
*   3    * DOCUMENTO: ........................ * DOCUMENT : ...................... *
*   4    * FIRMA: ........................... * SIGN : ......................... *
*   5    * ACLARACION: ...................... * CLARIFICA.: .................... *
*   6    *  FECHA   HORA  SUC  CAJA  TICKET CJRO * DATE    TIME  SUC  CASH  TICKET CSHR *
*   7    * IMPORTE:                           * AMOUNT:                           *
*   8    * PAGO:                              * PAYM:                             *
*   9    * DOMICILIO:                         * ADDRESS:                          *
*  10    * TICKET ORIGINAL:                   * ORIGINAL TICKET:                  *
*  11    * COMERCIO:                          * STORE:                            *
*  12    * TARJETA NRO.:                      * CARD NBR.:                        *
* ---------------------------------------------------------------------------- *
```

Figure 4. Field_Table_00 (General Template)

- **Field_Table_01 (Credit Card Template)**

```
* ---------------------------------------------------------------------------- *
*  Field *                       MESSAGE DESCRIPTION                            *
* Line # *           Spanish                              English              *
* ------ * --------------------------------- * --------------------------------- *
*   1    * Field Line 1 (user defined w/A7 cmd.) *                              *
*   2    * Field Line 2 (user defined w/A7 cmd.) *                              *
*   3    * Field Line 3 (user defined w/A7 cmd.) *                              *
*   4    * Field Line 4 (user defined w/A7 cmd.) *                              *
*   5    * C.U.I.T.:                          * U.T.I.K.:                         *
*   6    * TERMINAL:                          * TERMINAL:                         *
*   7    * INGR.:                             * INPUT:                            *
*   8    * LOTE/CUPON:                        * LOTE/COUP.:                       *
*   9    * PLAN:                              * PLAN:                             *
*  10    * VTO.:                              * EXP.:                             *
*  11    * CREDITO                            * CREDIT                            *
*  12    * DEBITO                             * DEBIT                             *
*  13    * OFF-LINE                           * OFF-LINE                          *
*  14    * ON-LINE                            * ON-LINE                           *
*  15    * CODIGO DE AUTORIZACION:            * AUTORIZATION CODE:                *
*  16    * FECHA ORIGINAL:                    * ORIGINAL DATE:                    *
*  17    * CANT.CUOTAS:                       * QUANT.QUOTA:                      *
*  18    * FACTURA:                           * INVOICE:                          *
*  19    * ORIGINAL PARA EL COMERCIO          * ORIGINAL FOR STORE                *
*  20    * COPIA PARA EL CLIENTE              * CUSTOMER COPY                     *
* ---------------------------------------------------------------------------- *
```

Figure 5. Field_Table_01 (Credit Card Template)

- **Field_Table_02 (Fidelity Programs Voucher Template)**

```
* ------------------------------------------------------------------------------------------- *
*  Field *                        MESSAGE DESCRIPTION                                          *
* Line # *                Spanish                                English                       *
* ------ * ------------------------------------- * ------------------------------------------- *
*    1   * Field Line 1 (user defined w/A7 cmd.) *                                             *
*    2   * Field Line 2 (user defined w/A7 cmd.) *                                             *
*    3   * Field Line 3 (user defined w/A7 cmd.) *                                             *
*    4   * Field Line 4 (user defined w/A7 cmd.) *                                             *
*    5   * PUNTAJE ACUMULADO AL:                 * CUMULATE POINT AT:                          *
*    6   * PUNTOS ACUMULADOS:                    * CUMULATE POINTS:                            *
*    7   * PUNTOS DE LA COMPRA:                  * SALE POINTS:                                *
*    8   * PUNTOS EXTRAS:                        * EXTRA POINTS:                               *
*    9   * PUNTOS CANJEADOS:                     * EXCHANGED POINTS:                           *
*   10   * TARJETA NOMBRE:                       * CARD NAME                                   *
*   11   * PREMIO:                               * AWARD:                                      *
*   12   * CODIGO DE PREMIO:                     * AWARD CODE:                                 *
* ------------------------------------------------------------------------------------------- *
```

Figure 6. Field_Table_02 (Fidelity Programs Voucher Template)

- **Field_Table_03 (Services Payment Template)**

```
* ------------------------------------------------------------------------------------------- *
*  Field *                        MESSAGE DESCRIPTION                                          *
* Line # *                Spanish                                English                       *
* ------ * ------------------------------------- * ------------------------------------------- *
*    1   * Field Line 1 (user defined w/A7 cmd.) *                                             *
*    2   * Field Line 2 (user defined w/A7 cmd.) *                                             *
*    3   * Field Line 3 (user defined w/A7 cmd.) *                                             *
*    4   * Field Line 4 (user defined w/A7 cmd.) *                                             *
*    5   * CONCEPTOS A PAGAR:                    * PAYMENT FOR:                                *
*    6   * CAMBIO:                               * CHANGE:                                     *
*    7   * SEGURIDAD:                            * SECURITY:                                   *
*    8   * CODIGO DE BARRAS:                     * BAR CODE:                                   *
*    9   * TRANSACCION:                          * TRANSACTION:                                *
* ------------------------------------------------------------------------------------------- *
```

Figure 7. Field_Table_03 (Services Payment Template)

- **Field_Table_04 (Home Shipment Template)**

```
* --------------------------------------------------------------------------------- *
*  Field *                        MESSAGE DESCRIPTION                                *
* Line # *             Spanish                            English                    *
* ------ * ----------------------------------- * ----------------------------------- *
*    1   * Field Line 1 (user defined w/A7 cmd.)  *                                  *
*    2   * Field Line 2 (user defined w/A7 cmd.)  *                                  *
*    3   * Field Line 3 (user defined w/A7 cmd.)  *                                  *
*    4   * Field Line 4 (user defined w/A7 cmd.)  *                                  *
*    5   * TIPO DE ENVIO:                      * SHIP TYPE:                           *
*    6   * CONTROL NRO.:                       * CONTROL NBR.:                        *
*    7   * ADEUDA:                             * DUE:                                 *
*    8   * FECHA DE ENTREGA:                   * DELIVERY DATE:                       *
*    9   * CANASTO:                            * BASKET:                              *
*   10   * RECIBI CONFORME                     * RECEIVE OK:                          *
* --------------------------------------------------------------------------------- *
```

Figure 8. Field_Table_04 (Home Shipment Template)

- **Field_Table_05 (Cash Flow Template)**

```
* ----------------------------------------------------------------------------------- *
*  Field *                          MESSAGE DESCRIPTION                                *
* Line # *              Spanish                             English                    *
* ------ * ----------------------------------- * ----------------------------------- *
*    1   * Field Line 1 (user defined w/A7 cmd.)  *                                    *
*    2   * Field Line 2 (user defined w/A7 cmd.)  *                                    *
*    3   * Field Line 3 (user defined w/A7 cmd.)  *                                    *
*    4   * Field Line 4 (user defined w/A7 cmd.)  *                                    *
*    5   * RETIROS                             * WITHDRW                               *
*    6   * CAMBIO DE VALORES                   * VALUES EXCHANGE                       *
*    7   * RECUENTO DE PAGOS                   * PAYMENTS RECOUNT                      *
*    8   * RETIRO NRO.:                        * WITHDRW NB.:                          *
*    9   * TRANSFERENCIA DE CAJA               * CASH TRANSFER                         *
*   10   * AN                                  * AN                                    *
*   11   * RE                                  * RE                                    *
*   12   * TOT.RECUENTO:                       * RECOUNT TOT:                          *
*   13   * TOT.RETIRO:                         * WITHD.TOT.:                           *
*   14   * AUTORIZA (POR TECLADO):             * KEYBOARD AUTORIZATION:                *
*   15   * OPERACION FINALIZADA                * OPERATION ENDED                       *
*   16   * DESCONECTADO                        * DISCONNECT                            *
*   17   * CAJA:                               * CASH:                                 *
*   18   * CAJERO DESHABILITADO:               * CASHIER DISABLED:                     *
* ----------------------------------------------------------------------------------- *
```

Figure 9. Field_Table_05 (Cash Flow Template)

5.10.3.3 NFH Trailer Table Definition

The trailer table for each template type (tt = template type) is defined as follow:

- **Trailer_Table_tt (tt range = 00 to 05)**

```
* ------------------------------------------------------------------------------------- *
*  Field *                        MESSAGE DESCRIPTION                                    *
* Line # *               Spanish                              English                    *
* ------ * ------------------------------------ * ------------------------------------ *
*   1    * Trailer Line 1 (user define w/A7 cmd.) *                                      *
*   2    * Trailer Line 2 (user define w/A7 cmd.) *                                      *
*   3    * Trailer Line 3 (user define w/A7 cmd.) *                                      *
*   4    * Trailer Line 4 (user define w/A7 cmd.) *                                      *
* ------------------------------------------------------------------------------------- *
```

Figure 10. Trailer_Table_tt (NFH Trailer Table)

5.10.4 (A7) - Set NFH Information

This command is used to set free header, field and trailer lines.

5.10.4.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE     LENGTH

 0-1       1B66 - cmd prefix                            hex        2
 2         A7 - Set NFH Information                     hex        1
 3         Cmd Extension                                hex        1
     7-6   Reserved (always = '0')
     5-3   Print Typeface                                       (Note 1)
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = 15 CPI Double-High
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = 15 CPI Double-High, Emphasized
     2     Reserved (always = '0')
     1-0   Information Type
           00 = Header  Line
           01 = Field   Line
           10 = Trailer Line
           11 = Reserved
 4-5       Template Type                                ASCII      2 (Note 2)
 6-7       Line Number                                  ASCII      2 (Note 3)
 8-45      Description                                  ASCII      38


-----------------------------------------------------------------------
```

Notes:

1. Only apply to header and trailer description lines.

2. The template types can be:

   - 00 = General
   - 01 = Credit Card
   - 02 = Fidelity Programs Voucher
   - 03 = Services Payment
   - 04 = Home Shipment
   - 05 = Cash Flow

3. For each information type and template type, the number lines allowed are from 01 up to 04.

5.10.4.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+
      | x'1B66' | x'A7' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |        --------------------------------> Set NFH Information
           ----------------------------------------> Escape Sequence


Byte  4      6      8
      +------+------+----------------+
      | '01' | '01' | 'ddd.......ddd' |
      +------+------+----------------+
         |      |        |
         |      |        ----------------------------> Description
         |      ----------------------------------> Line Number
         ------------------------------------------> Template Type (01)
```
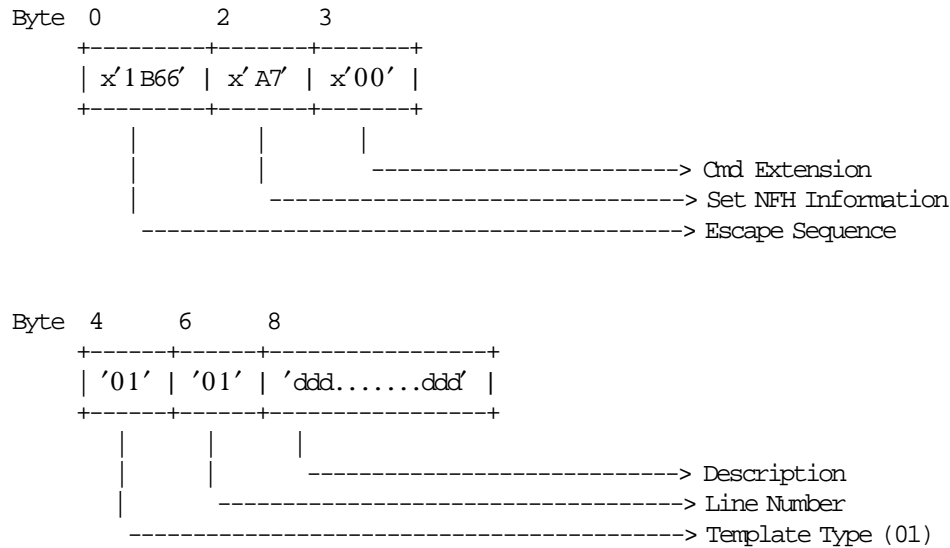
5.10.4.3 Set NFH Information Calculations

$Day\_N\_NFR = Day\_N\_NFR + 1$

5.10.4.4 Set NFH Information Rules

- This command is optional.
- The general header description lines can be used in all documents types and are stored in Header_Table_00.
- The header description lines for:
  - Credit card document is stored in Header_Table_01.
  - Fidelity programs voucher document is stored in Header_Table_02.
  - Services payment document is stored in Header_Table_03.
  - Home shipment document is stored in Header_Table_04.
  - Cash flow document is stored in Header_Table_05.
  The NFH header table is described in 5.10.3.1, "NFH Header Table Definition" on page 228.
- The general field description lines can be used in all documents types and are stored in Field_Table_00.
- The field description lines for:
  - Credit card document is stored in Field_Table_01.
  - Fidelity programs voucher document is stored in Field_Table_02.
  - Services payment document is stored in Field_Table_03.
  - Home shipment document is stored in Field_Table_04.
  - Cash flow document is stored in Field_Table_05.
  The NFH field tables are described in 5.10.3.2, "NFH Field Tables Definition" on page 229.
- The general trailer description lines can be used in all documents types and are stored in Trailer_Table_00.
- The trailer description lines for:
  - Credit card document is stored in Trailer_Table_01.
  - Fidelity programs voucher document is stored in Trailer_Table_02.
  - Services payment document is stored in Trailer_Table_03.
  - Home shipment document is stored in Trailer_Table_04.
  - Cash flow document is stored in Trailer_Table_05.
  The NFH trailer table is described in 5.10.3.3, "NFH Trailer Table Definition" on page 232.
- The blank lines or not set, won't be printed.

5.10.5 (A8) - Start NFH Document

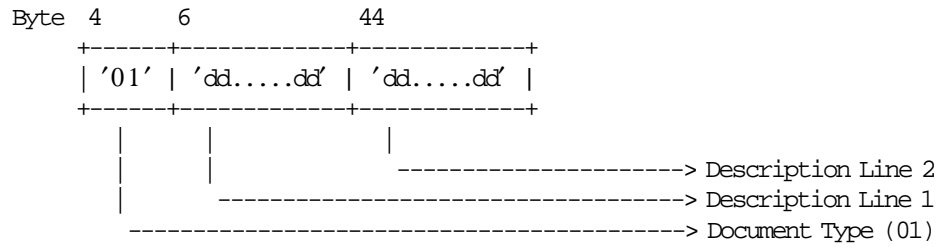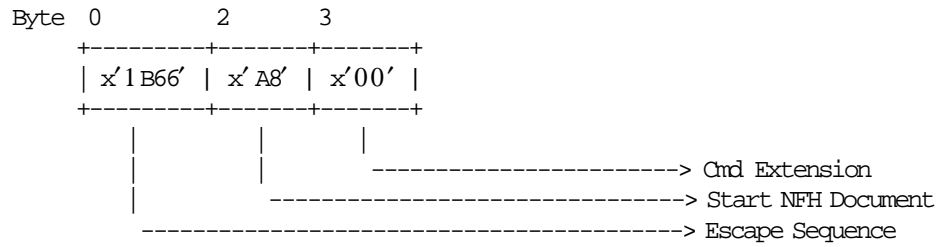This command is used to start a non-fiscal homologated document.

5.10.5.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 – cmd prefix                          hex       2
 2        A8 – Start NFH Document                    hex       1
 3        Cmd Extension                              hex       1
    7-6   Reserved (always = '0')
    5-3   Print Typeface                                           (Note 1)
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
    2     Print General Header (Header_Table_00)                   (Note 2)
          0 = NO
          1 = YES
    1     Print Document Type Header (Header_Table_01...05)        (Note 2)
          0 = NO
          1 = YES
    0     Reserved (always = '0')
 4-5      Document Type                              ASCII     2 (Note 3)
 6-43     Supplementary Header Line 1               ASCII    38
44-81     Supplementary Header Line 2               ASCII    38


------------------------------------------------------------------------
```
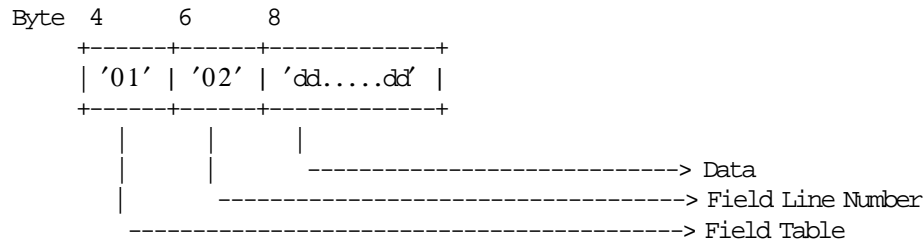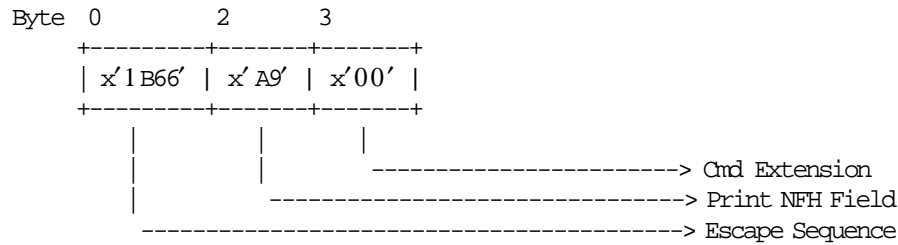
Notes:

1. Only apply in supplementary header lines.

2. Will be printed with the typeface and attributes so then were defined during A7 cmd.

3. The documents types can be:

   - 01 = Credit Card
   - 02 = Fidelity Programs Voucher
   - 03 = Services Payment
   - 04 = Home Shipment
   - 05 = Cash Flow

5.10.5.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'A8' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |        --------------------------------> Start NFH Document
           -----------------------------------------> Escape Sequence


Byte  4      6            44
      +------+------------+------------+
      | '01' | 'dd.....dd' | 'dd.....dd' |
      +------+------------+------------+
          |      |             |
          |      |             ---------------------> Description Line 2
          |      --------------------------------> Description Line 1
          -----------------------------------------> Document Type (01)
```

5.10.5.3 Start NFH Document Calculations

There are not calculations for this command.

5.10.5.4 Start NFH Document Rules

- This command is optional.

5.10.6 (A9) - Print NFH Field

This command is used to print non-fiscal homologated fields.

5.10.6.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                         TYPE    LENGTH

 0-1       1B66 - cmd prefix                               hex        2
 2         A9 - Print NFH Field                            hex        1
 3         Cmd Extension                                   hex        1
     7-6   Reserved (always = '0')
     5-3   Print Typeface
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = 15 CPI Double-High
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = 15 CPI Double-High, Emphasized
     2-0   Reserved (always = '0')
 4-5       Field Table                                     ASCII      2 (Note 1)
 6-7       Field Line Number                               ASCII      2
 8-45      Data                                            ASCII     38


------------------------------------------------------------------------
```
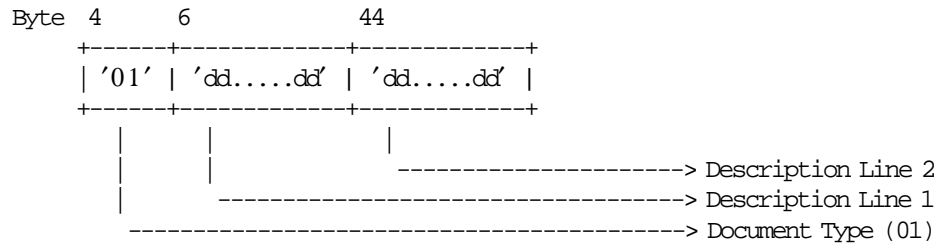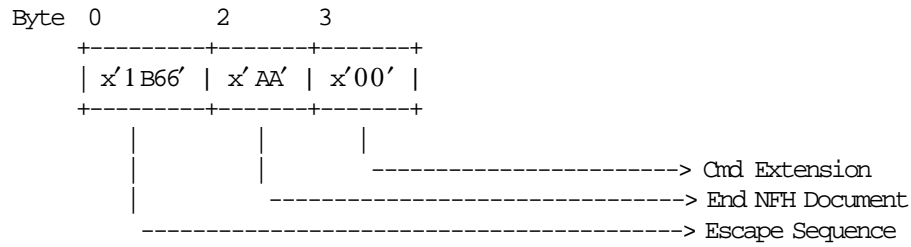
Notes:

1. The field table can be:

   - If NFH Document IS NOT in Progress (FOPNNFH = NO)

     – 01 = Field_Table_01 (Credit Card Template)
     – 02 = Field_Table_02 (Fidelity Programs Voucher Template)
     – 03 = Field_Table_03 (Services Payment Template)
     – 04 = Field_Table_04 (Home Shipment Template)
     – 05 = Field_Table_05 (Cash Flow Template)

   - If NFH Document IS in Progress (FOPNNFH = YES)

     – 00 = Field_Table_00 (General Template)
     – 01 = Field_Table_01 (Credit Card Template)
     – 02 = Field_Table_02 (Fidelity Programs Voucher Template)
     – 03 = Field_Table_03 (Services Payment Template)
     – 04 = Field_Table_04 (Home Shipment Template)
     – 05 = Field_Table_05 (Cash Flow Template)

5.10.6.2 Command Example

```
Byte  0          2       3
      +---------+------+-------+
      | x'1B66' | x'A9' | x'00' |
      +---------+------+-------+
           |         |      |
           |         |      ----------------------> Cmd Extension
           |         --------------------------------> Print NFH Field
           ------------------------------------------> Escape Sequence


Byte  4      6       8
      +------+------+------------+
      | '01' | '02' | 'dd.....dd' |
      +------+------+------------+
          |      |       |
          |      |       ---------------------------> Data
          |      ----------------------------------> Field Line Number
          -------------------------------------------> Field Table
```

5.10.6.3 Print NFH Field Calculations

There are not calculations for this command.

5.10.6.4 Print NFH Field Rules

- The data field will be truncated to 38 characters which include the message description defined in Field_Table_tt (tt range from 00 to 05).
  The NFH field tables are described in 5.10.3.2, "NFH Field Tables Definition" on page 229.
- Only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document.
- The string TOTAL in upper, lower or mixed case is not allowed in the data field of this command.
- The string TOTAL in upper, lower or mixed case is not allowed in the message description defined in Field_Table_tt (tt range from 00 to 05).

5.10.7 (AA) - End NFH Document

This command is used to end a non-fiscal homologated document.

5.10.7.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                       TYPE     LENGTH

 0-1      1B66 - cmd prefix                             hex         2
 2        AA - End NFH Document                         hex         1
 3        Cmd Extension                                 hex         1
     7-6  Reserved (always = '0')
     5-3  Print Typeface                                        (Note 1)
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
     2    Print General Trailer (Trailer_Table_00)
          0 = NO
          1 = YES
     1    Print Trailer for Document Type (Trailer_Table_01...05)   (Note 2)
          0 = NO
          1 = YES
     0    Reserved (always = '0')
 4-5      Document Type                                 ASCII       2 (Note 3)
 6-43     Supplementary Trailer Line 1                  ASCII      38
44-81     Supplementary Trailer Line 2                  ASCII      38


------------------------------------------------------------------------
```
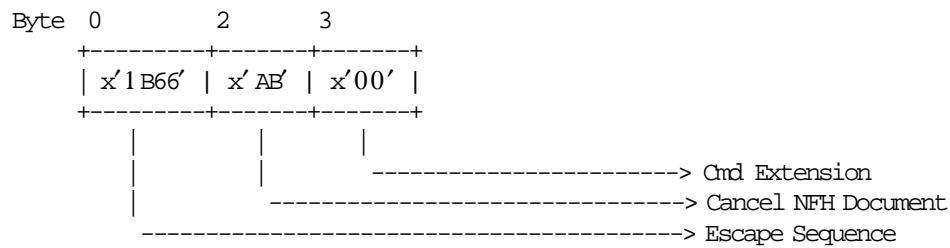
Notes:

1. Only apply in supplementary trailer lines.

2. Will be printed with the typeface and attributes so then were defined during A7 cmd.

3. The documents types can be:

   - 01 = Credit Card
   - 02 = Fidelity Programs Voucher
   - 03 = Services Payment
   - 04 = Home Shipment
   - 05 = Cash Flow

5.10.7.2 Command Example

```
Byte  0         2       3
      +---------+------+-------+
      | x'1B66' | x'AA' | x'00' |
      +---------+------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |        -------------------------------> End NFH Document
           ------------------------------------------> Escape Sequence


Byte  4      6            44
      +------+------------+-------------+
      | '01' | 'dd.....dd' | 'dd.....dd' |
      +------+------------+-------------+
          |       |             |
          |       |             ---------------------> Description Line 2
          |       --------------------------------> Description Line 1
          ----------------------------------------> Document Type (01)
```

5.10.7.3 End NFH Document Calculations

$Day\_N\_NFHD = Day\_N\_NFHD + 1$

5.10.7.4 End NFH Document Rules

There are not rules for this command.

5.10.8 (AB) - Cancel NFH Document

This command is used to cancel a non-fiscal homologated document.

5.10.8.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                         TYPE    LENGTH

 0-1       1B66 - cmd prefix                               hex        2
 2         AB - Cancel NFH Document                        hex        1
 3         00 - Cmd Extension                              hex        1


-----------------------------------------------------------------------
```

5.10.8.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'AB' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |          ------------------------------> Cancel NFH Document
            -----------------------------------------> Escape Sequence
```

5.10.8.3 Cancel NFH Document Calculations

There are not calculations for this command.

5.10.8.4 Cancel NFH Document Rules

There are not rules for this command.

5.11 Miscellaneous Commands

The miscellaneous commands include:

- (08) Retrieve/Send Interrupted Command
- (C8) Set Barcode Parameters
- (C9) Print Barcode
- (CA) Download Graphics

5.11.1 (08) - Retrieve/Send Interrupted Command

This command is used to retrieve or send the same command that was in progress when a PLD or printer error occured and returns it as part of the command response.

5.11.1.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                   TYPE    LENGTH

 0-1       1B66 - Command prefix                     hex       2
 2         08 - Retrieve/Send Interrupted Command    hex       1
 3         Cmd Extension                             hex       1
           00 = Fixed    Response Length                            (Note 1)
           01 = Variable Response Length                            (Note 2)
           02 = Informed Response Length                            (Note 3)
           03 = Send Interrumped Command                            (Note 4)
           04 = Send Interrumped Command                            (Note 5)


-----------------------------------------------------------------------
```

Notes:

1. The length of the command response is fixed always.

2. The length of the command response is variable depending the command to retrieve.

3. The length of the command to retrieve is informed in the response and the command response have these length.

4. Using this cmd. extension: if a command is in progress when a PLD or printer error occur the interrumped command is sent, otherwise error code 165 is returned.

5. Using this cmd. extension: if a command is in progress when a PLD or printer error occur the interrumped command is sent, otherwise no actions are executed and error code 67 is returned.

Response for Cmd Extension 00 will be formatted as follows :

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                   TYPE    LENGTH

 0-8       Fiscal Unit Status                        hex        9
 9-127     Command Response                          ASCII    118


-----------------------------------------------------------------------
```

Response for Cmd Extension 01 will be formatted as follows :

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                   TYPE    LENGTH

 0-8       Fiscal Unit Status                        hex        9
 9-9       Record Type                               hex        1
 10-nnn    Command Response                          ASCII    nnn


-----------------------------------------------------------------------
```

Response for Cmd Extension 02 will be formatted as follows :

```
  ---------------------------------------------------------------------

  BYTE BIT   CONTENT                                      TYPE    LENGTH

   0-8       Fiscal Unit Status                           hex        9
   9-9       Record Type                                  hex        1
  10-10      Length                                       hex        1
  11-nnn     Command Response                             ASCII    nnn


  ---------------------------------------------------------------------
```

5.11.1.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'08' | x'01' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |        ------------------------------> Retrieve/Send Interrupted Command
           ------------------------------------------> Escape Sequence
```
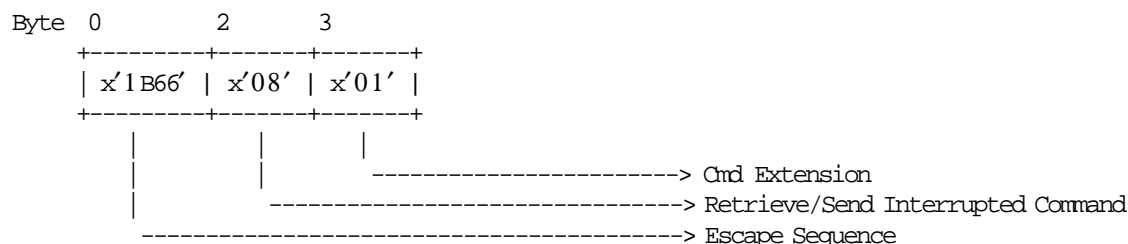
5.11.1.3 Retrieve/Sale Interrupted Command Rules

- This command is allowed if a PLD or printed error occurs before.
- This command is optional.
- Using this command, the following commands can be retrieved or send after PLD or printer error:

  - (01) Ticket - Print Header
  - (D0) Ticket - Fixed Price Item Sale
  - (D1) Ticket - Fixed Price Negative/Uplift Item Sale
  - (D2) Ticket - Item Sale
  - (D3) Ticket - Negative or Uplift Item Sale
  - (D9) Ticket - Uplift/Discount on Subtotal
  - (06) Ticket - End
  - (07) Ticket - Cancel

  - (E0) Ticket Invoice - Print Header
  - (B0) Ticket Invoice - Fixed Price Item Sale
  - (B1) Ticket Invoice - Fixed Price Negative/Uplift Item Sale
  - (B2) Ticket Invoice - Item Sale
  - (B3) Ticket Invoice - Negative/Uplift Item Sale
  - (B9) Ticket Invoice - Uplift/Discount on Subtotal
  - (E3) Ticket Invoice - End
  - (0F) Ticket Invoice - Cancel

  - (30) Credit Note - Print Header
  - (31) Credit Note - Fixed Price Item Sale
  - (32) Credit Note - Fixed Price Negative/Uplift Item Sale
  - (33) Credit Note - Item Sale
  - (34) Credit Note - Negative/Uplift Item Sale
  - (37) Credit Note - Uplift/Discount on Subtotal
  - (39) Credit Note - End
  - (3A) Credit Note - Cancel

  - (C9) Print Barcode

- (EA) Ordinary Printing Line on CR/SJ Station
- (EB) Ordinary Printing Line on DI Station
- (E9) Printer Native Commands

5.11.2 (C8) - Set Barcode Parameters

This command is used to set the barcode parameters.

5.11.2.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                            hex        2
 2         C8 - Set Barcode Parameters                  hex        1
 3         Cmd. Extension                               hex        1
           00 = Size Selection

 If Cmd Extension = 00 specify
 4         Barcode Width                                ASCII      1 (Note 1)
 5-7       Barcode Height                               ASCII      3 (Note 2)


-----------------------------------------------------------------------
```

Notes:

1. Horizontal magnification of the line width in the barcode.
       Minimum = 2
       Maximum = 4

2. The dot height of the barcode.
       Minimum = 001
       Maximum = 255

5.11.2.2 Set Barcode Parameters Rules

- Horizontal default magnification of the line width is 3.
- The dot height default is 162.
- After PLD or (J4) CE jumper operation, the printer returns to its default station (CR).

5.11.3 (C9) - Print Barcode

This command is used to print barcode.

5.11.3.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                            hex        2
 2         C9 - Print Barcode                           hex        1
 3         Cmd Extension                                hex        1
     7     Reserved (always = '0')
     6     HRI font                                                     (Note 1)
           1 = 12 CPI
           0 = 15 CPI
     5-4   HRI location                                                 (Note 2)
           00 = Not printed
           01 = Above the barcode
           10 = Below the barcode
           11 = Both above and below the barcode
     3-0   Barcode Type
           0000 = UPC_A
           0001 = UPC_E
           0010 = JAN13 (EAN-13)
           0011 = JAN8  (EAN-8)
           0100 = CODE39
           0101 = ITF
           0110 = CODABAR
           0111 = CODE128
           1000 = CODE93
           1001 = Reserved
           1010 = Reserved
           1011 = Reserved
           1100 = Reserved
           1101 = Reserved
           1110 = Reserved
           1111 = Reserved
 4-n       Barcode Data                                 ASCII      n (Note 3)


--------------------------------------------------------------------------
```

Notes:

1. The Human Readable Characters font, if it must be printed.

2. Printing Position of the Human Readable Characters.

3. Data to be encoded in the barcode. The data must be null terminated and each barcode type has it's own rules.

5.11.3.2 Print Barcode Rules

- In barcode types CODE39 and CODE93, if the width is $\geq$ 3, the barcode might not fit in the sheet. In this case, it will be truncated.
- The barcodes can be printed:
  - **Inside of non-fiscal homologated documents**
    — Is printed without restrictions in times and place.
    — Is printed on CR station without SJ replication.

– **Inside of application-originated reports**
  — Has the same considerations of a ordinary printing line.
  — If the report is started on CR station, the barcode is printed on CR station with SJ replication.
  — If the report is started on SJ station, the barcode is printed on SJ station without CR replication.
  — If the report is started on DI station, the barcode is printed on DI station without SJ replication.

5.11.4 (CA) - Download Graphics

This command is used to download graphics.

5.11.4.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH


 0-1       1B66 – Cmd Prefix                            hex        2
 2         CA – Download Graphics                       hex        1
 3         Cmd Extension                                hex        1
           00 = Reserved
           01 = Reserved
           02 = Download First Packet                            (Note 1)
           08 = Download Next   Packet
           09 = Download Last   Packet
           0A = Cancel Graphics Transmission
           10 = Initialize Graphics Download Area
           11 = Reserved
           12 = Reserved


   If Cmd Extension = 02 specify
 4         Width                                        hex        1 (Note 2)
 5         Height                                       hex        1 (Note 2)
 6         Graphic Number                               hex        1 (Note 3)
 7-65      First Pixels in Graphics                     hex       59


   If Cmd Extension = 08 or 09 specify
 4-65      Pixels in Graphics                           hex       62


------------------------------------------------------------------------
```

Notes:

1. If the number of data bytes exceeds 61 or 62 (depending on the cmd. extension), the POS will need to send a next or last packet after the first packet.

2. The number given in this field is expresed in bytes, it should be multiplied by 8 in order to get the number of pixels.

3. Valid value is x01.

Response to the Cmd Extension 02 will be formatted as follows:

```
 ------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-8       Fiscal Unit Status                         hex          9
 9         CA - Record Identification                 hex          1
10         Return Code                                hex          1
           43 = Good Completion
           74 = Invalid Sequence
           75 = Invalid Size
           76 = Invalid Graphic Number
           77 = Graphic with same number already in printer flash


 ------------------------------------------------------------------------
```

Response to the Cmd Extension 08 or 09 will be formatted as follows:

```
 ------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-8       Fiscal Unit Status                         hex          9
 9         CA - Record Identification                 hex          1
10         Return Code                                hex          1
           43 = Good Completion
           74 = Invalid Sequence


 ------------------------------------------------------------------------
```

5.11.4.2 Download Graphics Flow

```
                     +-------------------------<------------------------------+
                     |                                                        |
                     v                                                        |
       ------------------------------------                                   |
       |            Cmd. xCA10             |                                  |
       | Initialize Graphics Download Area |                                  |
       ------------------------------------                                   |
                     |                                                        |
                     v                                                        |
       ------------------------------------                                   |
       |            Cmd. xCA02             |------->------------+             |
       |       Download First Packet       |                   |             |
       ------------------------------------                    |             |
                     |                                         |             |
     +------------------>|                                     |             |
     |               v                                         v             |
     |    ------------------------------------     ------------------------------   |
     |    |            Cmd. xCA08             |     |           Cmd. xCA0A        |---+
     |    |       Download Next Packet        |     | Cancel Graphics Transmission |
     |    ------------------------------------     ------------------------------
     |                 |
     +-------<------------|
                     v
       ------------------------------------
       |            Cmd. xCA09             |
       |       Download Last Packet        |
       ------------------------------------
```
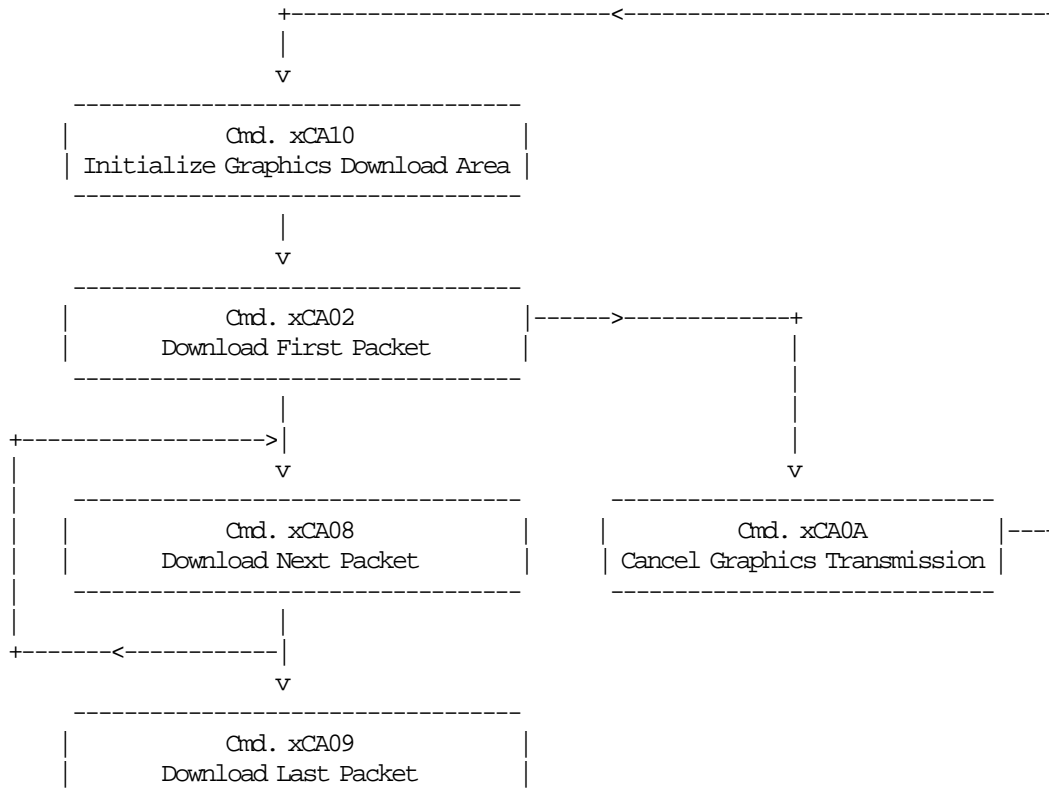
5.11.4.3 Print Graphics Flow

```
       ------------------------------------
       |            Cmd. x0101             |
       |      Print Header with Graphic    |
       ------------------------------------
```
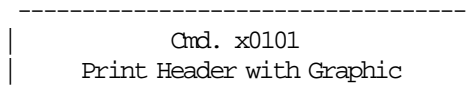
5.11.4.4 Print Graphic Example.

In order to understand the graphic data format used for the fiscal printer an example will be given.

- The number of bytes per row is specified in the width field and they represent the graphic row from left to right. The leftmost pixel is the most significant bit.
- The first data bytes correspond to the upper row.
- The last data bytes correspond to the bottom row.
- A bit should be set to ′1′ when the corresponding pixel is black and ′0′ when it is white. In the example below the ′X′s are black and the ′.′s are white.

```
Example: width = 2 (16 pixels) & heigth = 2 (16 pixels)


                                                                  Data
Column #  1   2   3   4   5   6   7   8   9   10  11  12  13  14  15  16  Bytes

Row #
0         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   1    2
1         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   3    4
2         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   5    6
3         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   7    8
4         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   9    10
5         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   11   12
6         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   13   14
7         X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   15   16
8         .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   17   18
9         .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   19   20
10        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   21   22
11        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   23   24
12        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   25   26
13        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   27   28
14        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   29   30
15        .   X   .   X   .   X   .   X   .   X   .   X   .   X   .   X   31   32


Send the following packet in order to set the above graphic in 200 DPI in the CR station.
The semicolons (;) are used only to separate bytes in this example.

X'1B;66;CA;02;02;02;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;55;55;55;55;55;55;55;55;55;55;55;55;55;55;55;55'
```

Figure 11. Print Graphic Example.

5.11.4.5 Download Graphics Rules

- The graphic printing is allowed in the header ticket.
- When a PLD, CE jumper intervention, reset printer or cancel graphics transmission occur during the download packet, the graphics download area is corrupted. In this case, issue initialize graphics download area (CA cmd. - cmd. extension 10) and then download packet again.
- All graphics will be printed always at 200 DPI.
- The maximum size allowed for one graphic is 62 x 21 bytes (representing 496 x 168 pixels).

5.12 Training Mode Rules

- After serialization and before fiscalization the machine is in training mode.

- In this mode the machine allows regular operations without writing in the fiscal memory.

- In this mode the following fiscal documents are allowed:

    - Ticket
    - Ticket Invoice
    - Credit Note
    - Daily Closure (Z-Report)

- In this mode the following non-fiscal documents are allowed:

    - Credit Card Slips
    - Summary Fiscal Report (X-Report)
    - Application-Originated Reports
    - Engineering Dump of the Fiscal RAM and the Fiscal Memory (Unformatted)
    - Non-Fiscal Homologated Documents

- Fiscal Documents:

    - The blanks characters are replaced by question marks (?).
    - Are started with a ″NO FISCAL″ message line.
    - Is insert a ″NO FISCAL″ message line each 6 lines.
    - Are ended with a ″NO FISCAL″ message line.
    - Count is kept of empty lines.
    - For control paper in ticket invoice or credit note, the number of lines to print during a command is: Mis_N_Cmd_Lines_To_Print = Mis_N_Cmd_Lines_To_Print in fiscal mode + ″NO FISCAL″ message lines.

- Application-originated Reports:

    - Are started with a ″NO FISCAL″ message line.
    - Are inserted a ″NO FISCAL″ message line each 6 lines.
    - Are ended with a ″NO FISCAL″ message line.
    - Count is kept of empty lines.

- Non-Fiscal Homologated Documents

    - Are printed as in fiscal mode.

- The fiscal logo will not be printed.

5.13 Printer Commands

The printer commands include:

- (EA) Ordinary Printing Line on CR/SJ Station
- (EB) Ordinary Printing Line on DI Station
- (EC) Line Feed
- (ED) Ready Document
- (EE) Cut Paper
- (E8) Set Number of Dot Rows per Line Feed
- (EF) Document Eject
- (F4) Return Print Head and Throat

There are no calculations performed for any printer commands.

5.13.1 (EA) - Ordinary Printing Line on CR/SJ Station

This command is used to print one line on customer receipt and summary journal stations.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.13.1.1 Command Format

```
--------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 - Command Prefix                          hex       2
 2        EA - Ordinary Printing Line on CR/SJ Station   hex       1
 3        Cmd Extension                                  hex       1
     7    Reserved (always = '0')
     6    Station
          0 = CR
          1 = SJ
   5-3    Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = 15 CPI Double-High
          100 = 15 CPI Emphasized
          101 = 12 CPI Emphasized
          110 = Reserved
          111 = 15 CPI Double-High, Emphasized
   2-0    Reserved (always = '0')
 4-41     Description                                    ASCII    38


--------------------------------------------------------------------
```

5.13.1.2 Command Example

```
Byte  0        2       3       4
      +--------+-------+-------+---------------+
      | x'1B66'| x'EA' | x'00' | 'Today is ...'|
      +--------+-------+-------+---------------+
          |        |       |       |
          |        |       |       ------------> Description
          |        |       -------------------> Cmd Extension
          |        |                             (CR station, print 15 CPI)
          |        ---------------------------> Ordinary Printing Line on CR/SJ Station
          ------------------------------------> Escape Sequence
```
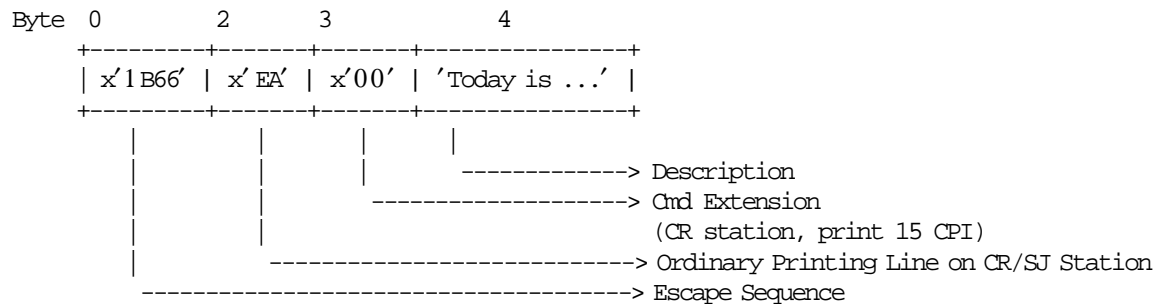
5.13.1.3 Ordinary Printing Line on CR/SJ Station Calculations

There are no calculations for this command.

5.13.1.4 Ordinary Printing Line on CR/SJ Station Rules

- Ordinary printing lines can be printed during a applications-originated reports.
- Ordinary printing lines can be printed during a ticket after the payment phase.
- Ordinary printing lines can be printed during a non-fiscal homologated reports.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.13.2 (EB) - Ordinary Printing Line on DI Station

This command is used to print one line on document insert station.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.13.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                          TYPE    LENGTH

 0-1       1B66 - Command Prefix                            hex       2
 2         EB - Ordinary Printing Line on DI Station        hex       1
 3         Cmd Extension                                    hex       1
     7-6   Reserved (always = '0')
     5-3   Print Typeface
           000 = 15 CPI
           001 = 12 CPI
           010 = Reserved
           011 = 15 CPI Double-High
           100 = 15 CPI Emphasized
           101 = 12 CPI Emphasized
           110 = Reserved
           111 = 15 CPI Double-High, Emphasized
     2-0   Orientation Print and Linefeed Direction
           000 = Reserved
           001 = Reserved
           010 = Reserved
           011 = Portrait - Reverse
           100 = Reserved
           101 = Reserved
           110 = Portrait - Forward
           111 = Reserved
 4-89      Description                                      ASCII    86 (Note 1)

---------------------------------------------------------------------
```

Notes:

```
1. Description field will be truncated as follows:
   Portrait  orientation at 15 CPI to 38 characters.
   Portrait  orientation at 12 CPI to 30 characters.
```

5.13.2.2 Command Example

```
Byte  0         2       3       4
     +---------+------+-------+---------------+
     | x'1B66' | x'EB'| x'03' | 'Today is ...'|
     +---------+------+-------+---------------+
          |        |      |       |
          |        |      |       ----------------> Description
          |        |      ----------------------> Cmd Extension (print 15 CPI, portrait reverse)
          |        --------------------------------> Ordinary Printing Line on DI Station
          -------------------------------------------> Escape Sequence
```
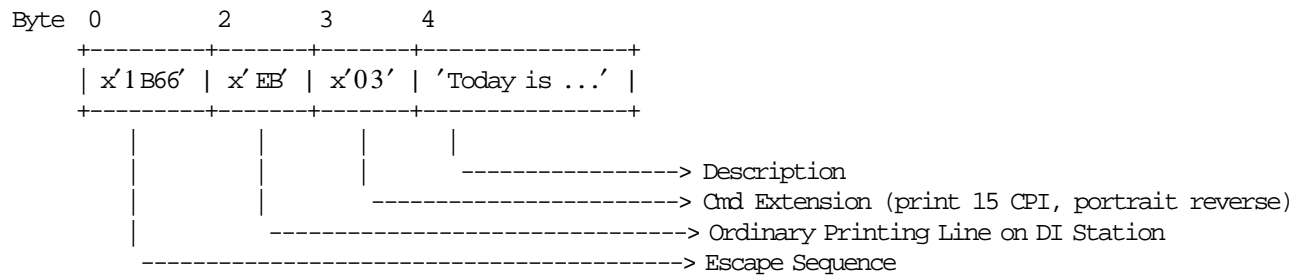
5.13.2.3 Ordinary Printing Line on DI Station calculations

There are not calculations for this command.

5.13.2.4 Control Paper Calculations

- **If Ticket Invoice is in Progress**
    - **Before the lines are printed**

      $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_TI\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

        — **If 1st. Ordinary Printing Line**

          $Mis\_N\_Cmd\_Lines\_To\_Print = Totalization\_Lines + 1$

        — **If 2nd., 3st or 4th Ordinary Printing Line**

          $Mis\_N\_Cmd\_Lines\_To\_Print = 1$

        - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_End_Lines_To_Print

          Return_Code 125

    - **After the lines were printed correctly**

      $Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$

        — **If 2nd., 3st or 4th Ordinary Printing Line**

          $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_Lines\_Avail\_To\_Print - Mis\_N\_Lines\_Printed$

- **If Credit Note is in Progress**
    - **Before the lines are printed**

      $Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_CN\_Lines\_To\_Print - Mis\_N\_Lines\_Printed$

        — **If 1st. Ordinary Printing Line**

          $Mis\_N\_Cmd\_Lines\_To\_Print = Totalization\_Lines + 1$

        — **If 2nd., 3st or 4th Ordinary Printing Line**

          $Mis\_N\_Cmd\_Lines\_To\_Print = 1$

        - If Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_End_Lines_To_Print

          Return_Code 125

    - **After the lines were printed correctly**

$$Mis\_N\_Lines\_Printed = Mis\_N\_Lines\_Printed + Mis\_N\_Cmd\_Lines\_To\_Print$$

— **If 2nd., 3st or 4th Ordinary Printing Line**

$$Mis\_N\_Lines\_Avail\_To\_Print = Mis\_N\_Lines\_Avail\_To\_Print - Mis\_N\_Lines\_Printed$$

5.13.2.5 Ordinary Printing Line on DI Station Rules

- Ordinary printing lines can be printed during applications-originated reports.
- Ordinary printing lines can be printed during a ticket invoice after the payment phase.
- Ordinary printing lines can be printed during a credit note after the payment phase.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.13.3 (EC) - Line Feed

This command is used to feed the paper a specified number of lines on one of the printer stations.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.13.3.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 - command prefix                          hex       2
 2        EC - Line Feed                                 hex       1
 3        Cmd Extension                                  hex       1
      7-6 Reserved (always = '0')
      5-4 Station
          00 = CR
          01 = SJ
          10 = DI Portrait - Forward
          11 = DI Portrait - Reverse
      3-0 Number of Line Feeds (min 1, max 15)


--------------------------------------------------------------------------
```
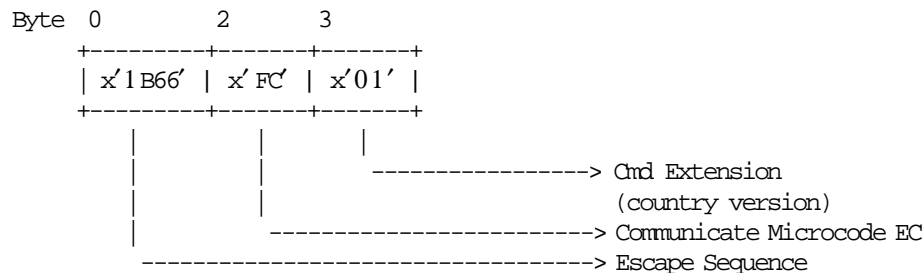
5.13.3.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'EC' | x'01' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd Extension
          |        |                               (CR station, 3 line feed)
          |        -----------------------------> Line Feed
          ---------------------------------------> Escape Sequence
```
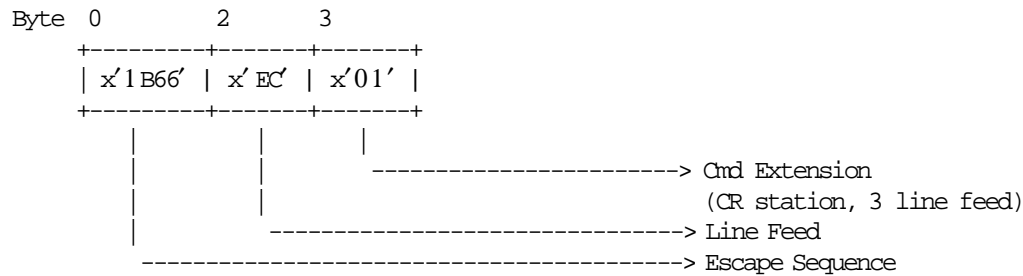
5.13.3.3 Line Feed Calculations

There are not calculations for this command.

5.13.3.4 Line Feed Rules

• This command is allowed inside of application-originated reports and non-fiscal homologated documents.

5.13.4 (ED) - Ready Document

This command is used to request the printer to advance the inserted document to the first print position.

5.13.4.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT   CONTENT                                     TYPE    LENGTH

 0-1       1B66 - command prefix                       hex       2
 2         ED - Ready Document                         hex       1
 3         Cmd Extension                               hex       1
     7-1   Reserved (always = '0')
     0     Registration
           0 = Top
           1 = Botton


 ----------------------------------------------------------------------
```

5.13.4.2 Command Example

```
Byte  0        2       3
      +--------+------+------+
      | x'1B66' | x'ED' | x'00' |
      +--------+------+------+
          |        |      |
          |        |      --------------------> Cmd Extension (top registration)
          |        ---------------------------> Ready Document
          --------------------------------------> Escape Sequence
```
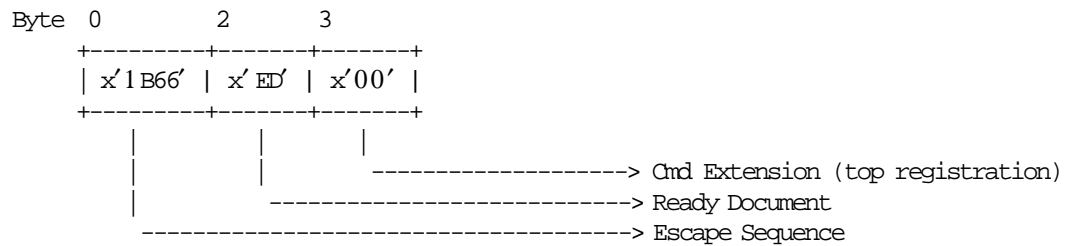
5.13.4.3 Ready Document Calculations

There are not calculations for this command.

5.13.4.4 Ready Document Rules

There are not rules for this command.

5.13.5 (EE) - Cut Paper

This command is used to do a partial cut of the customer receipt paper.

5.13.5.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - command prefix                      hex        2
 2         EE - Cut Paper                             hex        1
 3         Cmd Extension                              hex        1
     7-2   Reserved (always = '0')
     1-0   Guillotine
           00 = Partial Cut
           01 = Partial Cut


------------------------------------------------------------------------
```

5.13.5.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'EE' | x'00' |
      +---------+-------+-------+
           |         |       |
           |         |       ----------------------> Cmd Extension (partial cut)
           |         -------------------------------> Cut Paper
           -----------------------------------------> Escape Sequence
```
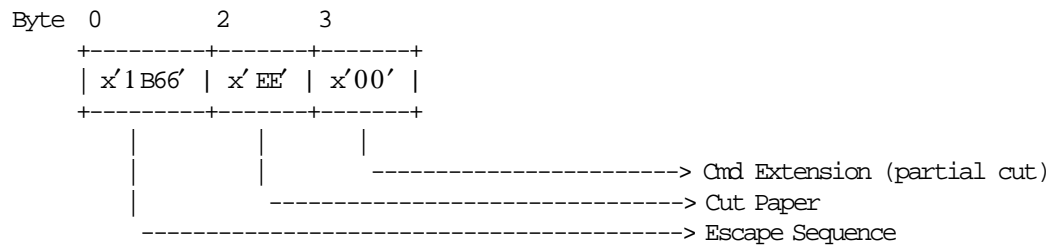
5.13.5.3 Cut Paper Calculations

There are not calculations for this command.

5.13.5.4 Cut Paper Rules

• The cut paper is not allowed during a Application-Originated Report.

5.13.6 (E8) - Set Number of Dot Rows per Line Feed

This command is used to change the number of dot rows per line feed from 12 (default - 6 lines/inch) to 9 (alternate - 8 lines/inch).
To execute this command the serialize fiscal printer (1B cmd.) had to be previously executed.

5.13.6.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - command prefix                          hex        2
 2         E8 - Set Number of Dot Rows per LF             hex        1
 3         Cmd Extension                                  hex        1
     7-3   Reserved (always = '0')
      2    DI Station (Portrait)
           0 = Set Default   Value (6 lines/inch)
           1 = Set Alternate Value (8 lines/inch)
      1    SJ Station
           0 = Set Default   Value (6 lines/inch)
           1 = Set Alternate Value (8 lines/inch)
      0    CR Station
           0 = Set Default   Value (6 lines/inch)
           1 = Set Alternate Value (8 lines/inch)


------------------------------------------------------------------------
```

5.13.6.2 Command Example

```
Byte  0        2       3
     +---------+------+------+
     | x'1B66' | x'E8' | x'00' |
     +---------+------+------+
          |        |      |
          |        |      -------------> Cmd Extension
          |        |                     (CR set default value)
          |        --------------------> Set Number of Dot Rows per Line Feed
          -----------------------------> Escape Sequence
```
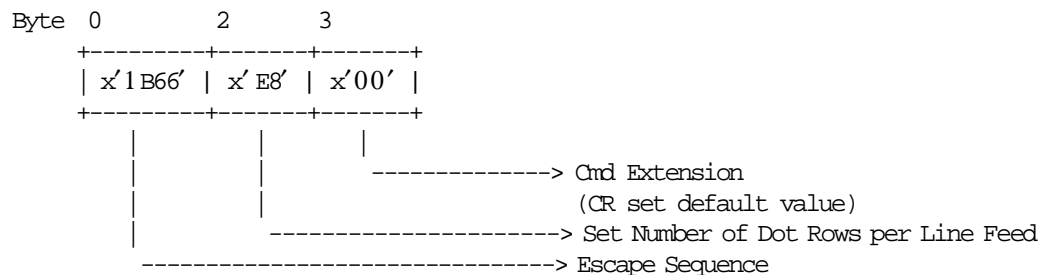
5.13.6.3 Set Number of Dot Rows per Line Feed Calculations

There are not calculations for this command.

5.13.6.4 Set Number of Dot Rows per Line Feed Rules

- The number of dot rows per line feed are restored to the default value when RAM is cleared by installing the J4 (CE) jumper.

5.13.7 (EF) - Document Eject

This command is used to request the printer to line feed a document until EOF sensor is broken.

5.13.7.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                          TYPE    LENGTH

 0-1      1B66 - command prefix                            hex        2
 2        EF - Document Eject                              hex        1
 3        Cmd Extension                                    hex        1
    7-1   Reserved (always = '0')
    0     Line Feed Direction
          0 = Forward
          1 = Reverse


-----------------------------------------------------------------------
```

5.13.7.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'EF' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------------> Cmd Extension
           |        |                                (forward)
           |        ------------------------------> Document Eject
           --------------------------------------> Escape Sequence
```
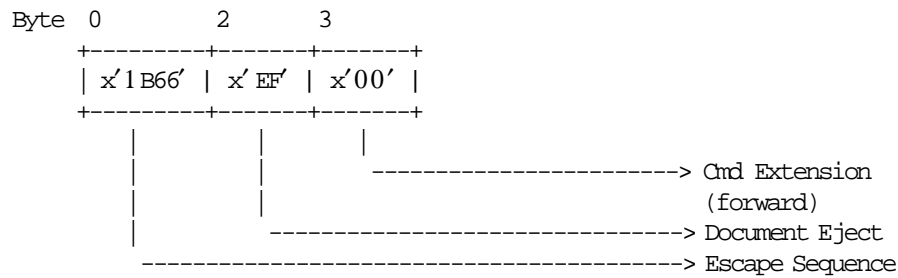
5.13.7.3 Document Eject Calculations

There are not calculations for this command.

5.13.7.4 Document Eject Rules

- Either forward feed or reverse feed can be specified.

5.13.8 (F4) - Return Print Head and Throat

This command requests the printer to return the print head to center or left home position.

5.13.8.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - command prefix                          hex        2
 2         F4 - Return Print Head and Throat              hex        1
 3         Cmd Extension                                  hex        1
     7-2  Reserved (always = '0')
     1-0  Home Position
          00 (00) = Right
          01 (01) = Left
          10 (02) = Open  Throat
          11 (03) = Close Throat


-----------------------------------------------------------------------
```

5.13.8.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'F4' | x'00' |
     +---------+-------+-------+
         |         |       |
         |         |       ----------------------> Cmd Extension
         |         |                               (center home position)
         |         ------------------------------> Return Print Head and Throat
         ----------------------------------------> Escape Sequence
```
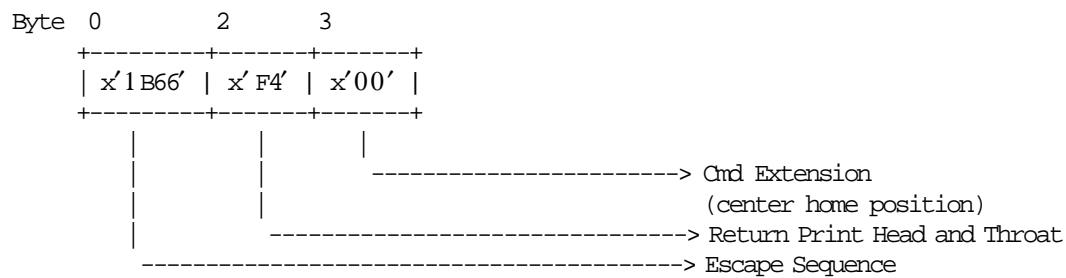
5.13.8.3 Return Print Head and Throat Calculations

There are not calculations for this command.

5.13.8.4 Return Print Head and Throat Rules

- Either center or left home position can be specified.

5.14 Original Equipment Manufacturer Commands

The OEM commands include:

- (FC) Communicate Microcode EC
- (F8) Communicate Printer EC
- (FA) Reset Fiscal Printer
- (00) System Commands
- (E9) Printer Native Commands
- (FF) Dump Fiscal RAM and Fiscal Memory
- (E7) Diagnostic and Alignment Utilities
- (FB) Run Diagnostics

5.14.1 (FC) - Communicate Microcode EC

This command is used to retrieve the fiscal microcode EC level in the return code.

5.14.1.1 Command Format

```
 ----------------------------------------------------------------------

 BYTE BIT   CONTENT                                    TYPE    LENGTH

  0-1       1B66 - command prefix                      hex       2
  2         FC - Communicate Microcode EC              hex       1
  3         Cmd Extension                              hex       1
            00 = Fiscal Microcode External EC Level
            01 = Fiscal Microcode Internal EC Level
            02 = Country Code                                    (Note 1)
            03 = Country Version (Hardware Model)                (Note 2)
            04 = Homologated Version                             (Note 3)


 ----------------------------------------------------------------------
```

Notes:

1. Country Code for Argentina is x07.

2. Country Version for Argentina is x01 (4610 GR3/GR4 (RS485) Hardware Model).

3. If the homologated version is BETA, the '99' value will be returned.

5.14.1.2 Command Example

```
Byte  0         2       3
     +---------+-------+------+
     | x'1B66' | x'FC' | x'01' |
     +---------+-------+------+
          |        |       |
          |        |       ----------------> Cmd Extension
          |        |                          (country version)
          |        ------------------------> Communicate Microcode EC
          ----------------------------------> Escape Sequence
```

5.14.1.3 Communicate Microcode EC Rules

There are not rules for this command.

5.14.2 (F8) - Report Printer EC

This command is used to request the fiscal unit to report the printer EC level. Printer EC level is returned in the fiscal unit status.

5.14.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1       1B66 - cmd prefix                           hex        2
 2         F8 - Report Printer EC                      hex        1
 3         Cmd Extension                               hex        1
     7-2   Reserved (always='0')
     1-0   Information
           00 (00) = Fiscal Unit
           01 (01) = Fiscal  Device Information (RS485)
           10 (02) = Printer Device Information (RS485)


---------------------------------------------------------------------
```

Response to the Fiscal Unit:

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-5       Printer Status                              hex        6
 6         Fiscal Unit Status                          hex        1
 7         Additional Data and Country Code            hex        1
 8         Fiscal Unit Return Code                     hex        1


---------------------------------------------------------------------
```

Response to the Fiscal Device Information (RS485):

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-5       Printer Status                              hex        6
 6         Fiscal Status & Device Info                 hex        1
     7-1  Fiscal Status
     0    Fiscal/Printer Device Info
          0 = Fiscal Device Info is NOT contained
                in this message
          1 = Fiscal or Printer Device Info IS contained
                in this message
 7         Additional Status                           hex        1
     7    Device Information Response
          0 = NO
          1 = YES
     6-0  Version and Country Codes
 8         Fiscal Return Code                          hex        1
 9         Device Type                                 hex        1
          0x31 = Fiscal Printer
10         Device ID                                   hex        1
          0x00       = 4610 F03/F04 (Jacare)
          0x01       = 4610 GR3/GR4 (Macarena)
          0x01 - 0xFF = Reserved
11         Feature Byte #1                             hex        1
     7-4  Reserved
     3    Reference Data Base
          0 = NOT Present
          1 = Present
     2    Microcode Flash Update
          0 = CAN NOT be flashed
          1 = CAN be flashed
     1    Compact Flash
          0 = NOT Present
          1 = Present
     0    Fiscal Memory Size
          0 = 512 KB
          1 = 256 KB
12         Reserved                                    hex        1
13         Fiscal EC Level                             hex        1

----------------------------------------------------------------------
```

Response to the Printer Device Information (RS485):

```
 ──────────────────────────────────────────────────────────────────

 BYTE BIT   CONTENT                                   TYPE    LENGTH

  0-5        Printer Status                           hex        6
  6          Fiscal Status                            hex        1
     7-1     Fiscal Status
     0       Fiscal/Printer Device Info
             0 = Fiscal Device Info is NOT contained
                  in this message
             1 = Fiscal or Printer Device Info IS contained
                  in this message
  7          Additional Status                        hex        1
     7       Device Information Response
             0 = NO
             1 = YES
     6-0     Version and Country Codes
  8          Fiscal Return Code                       hex        1
  9-13       Device Info Bytes (exactly as received from  hex     5
             the printer microcode - See SureMark User Guide
             Extended Address Command)


 ──────────────────────────────────────────────────────────────────
```

5.14.2.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x′1B66′ | x′F8′ | x′00′ |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd Extension
          |          -------------------------------> Report Printer EC
           ----------------------------------------> Escape Sequence
```
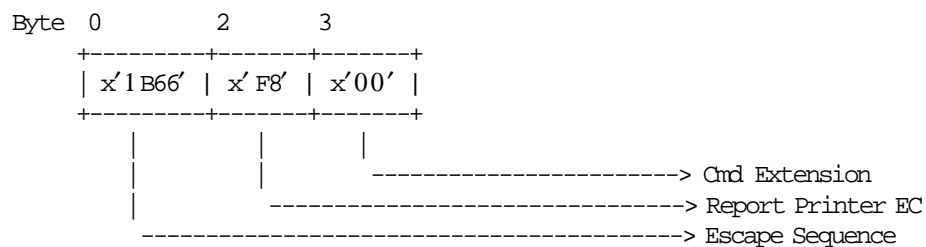
5.14.2.3 Report Printer EC Calculations

There are not calculations for this command.

5.14.2.4 Report Printer EC Rules

There are not rules for this command.

5.14.3 (FA) - Reset Fiscal Printer

This command is used to reset the fiscal unit and fiscal printer.

5.14.3.1 Command Format

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - command prefix                        hex        2
 2         FA - Perform POR                             hex        1
 3         Cmd Extension                                hex        1
    7-1    Reserved (always = '0')
    0      Unit
           0 = Fiscal Unit
           1 = Printer


-------------------------------------------------------------------------
```

5.14.3.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'FA' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       |
          |        |       ----------------------> Cmd Extension
          |        |                               (Fiscal Unit)
          |        ------------------------------> Reset Fiscal Printer
          ------------------------------------------> Escape Sequence
```
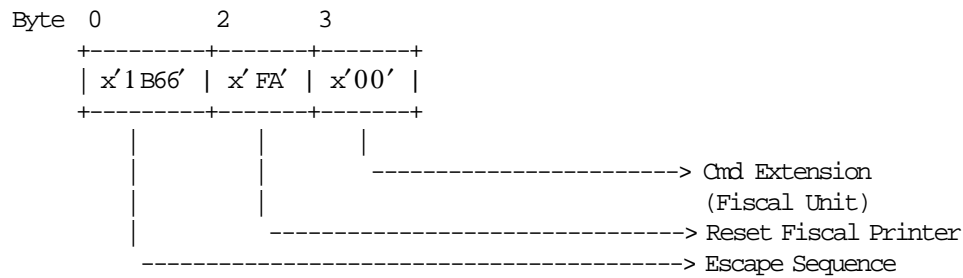
5.14.3.3 Reset Fiscal Printer Calculations

There are not calculations for this command.

5.14.3.4 Reset Fiscal Printer Rules

- This command cannot be used by applications using the IBM device drivers. It is intended for device driver use only.

5.14.4 (00) - System Commands

System commands are processed as follows:

Test – First a fiscal unit test is performed and then the fiscal unit status is sent over the communication link.

Status – The fiscal unit status is sent over the communication link.

POR – The microcode performs a software fiscal unit POR.

EC level – Bytes 6 and 7 of the fiscal unit status followed by the 1 microcode EC level byte are sent over the communication link.

5.14.4.1 Command Format

```
--------------------------------------------------------------------

BYTE      CONTENT                                    TYPE    LENGTH


0         00 - System Commands                       hex        1
1         10 - Test                                  hex        1
          20 - Status
          40 - POR
          80 - EC LEVEL


--------------------------------------------------------------------
```

If command byte 1 is different than those defined here, no processing is performed and no response is given.

5.14.4.2 Command Example

```
Byte  0        1
     +------+------+
     | x'00' | x'40' |
     +------+------+
         |      |
         |       -----------------------> Power On Reset
          ------------------------------> System Commands
```
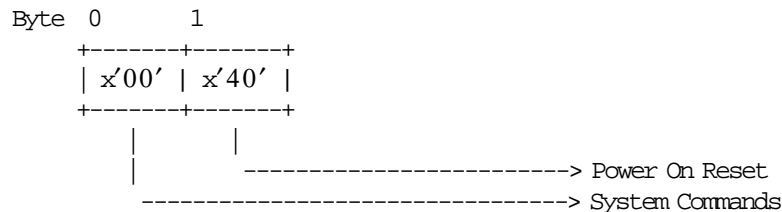
5.14.4.3 System Commands Calculations

There are not calculations for this command.

5.14.4.4 System Commands Rules

- This command cannot be used by applications using the IBM device drivers.
  It is intended for device driver use only.

5.14.5 (E9) - Printer Native Commands

This command is used to execute the printer native commands.
To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

5.14.5.1 Command Format

```
------------------------------------------------------------------------

BYTE  BIT  CONTENT                                       TYPE  LENGTH

0-1        1B66 - command prefix                         hex     2
2          E9 - Printer Native Commands                  hex     1
3          00 - Cmd Extension                            hex     1
4-n        Start of Model 3 printer commands and data.
           The Model 3 printer interface can be
           obtained through IBM Corporate Relations.


------------------------------------------------------------------------
```

5.14.5.2 Command Example

```
Byte  0         2       3       4             14
      +---------+-------+-------+-------------+--------------+
      | x'1B66' | x'E9' | x'00' | b'0101000000 | 'Message ...' |
      +---------+-------+-------+-------------+--------------+
           |         |       |       |             |
           |         |       |       |              ------> Message to be printed
           |         |       |        -------------------> Native Print on CR Command (*)
           |         |        --------------------------> Cmd Extension
           |          ---------------------------------> Printer Native Commands
            -------------------------------------------> Escape Sequence
```
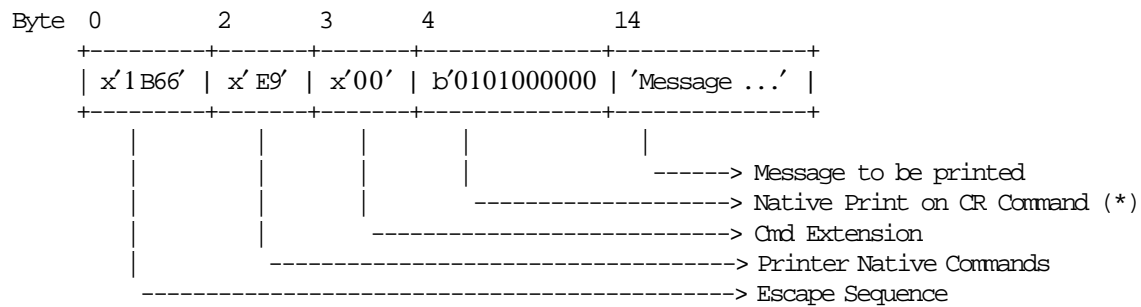
(*) See Model 3 Printer Operation Manual.

5.14.5.3 Printer Native Commands Rules

- This command is not intended for application programs.
- It is only intended for use by device drivers to provide compatibility with the Model 3 printer for application-originated printing.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

5.14.6 (FF) - Dump Fiscal RAM and Fiscal EPROM Memory

This command is used to print the content of the fiscal EPROM or the fiscal RAM memory in hexadecimal format.

5.14.6.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                           TYPE    LENGTH

 0-1      1B66 - command prefix                             hex     2
 2        FF - Dump Fiscal RAM and Fiscal EPROM Memory      hex     1
 3        Cmd Extension                                     hex     1
    7-5   Reserved (always = '0')
    4     Type Report
          0 = Printed    (on paper)
          1 = Electronic (on screen)
    3-1   Reserved (always = '0')
    0     Type Memory
          0 = RAM
          1 = EPROM
 4-8      Start Address                                     ASCII   5 (Note 1)
 9-13     End   Address                                     ASCII   5 (Note 2)


-----------------------------------------------------------------------
```

Notes:

1. The fiscal RAM   address range is X'00000' - X'0FFFF'

2. The fiscal EPROM address range is X'00000' - X'3FFFF'

5.14.6.2 Command Example

```
Byte  0         2       3       4         9
      +---------+-------+-------+---------+---------+
      | x'1B66' | x'FF' | x'10' | '00000' | '00100' |
      +---------+-------+-------+---------+---------+
           |         |       |       |         |
           |         |       |       |         ----------> End   Address (00100)
           |         |       |       --------------------> Start Address (00000)
           |         |       --------------------------> Cmd Extension
           |         |                                    (Electronic - RAM Memory)
           |         -------------------------------------> Dump Fiscal RAM and Fiscal EPROM memory
           ---------------------------------------------> Escape Sequence
```
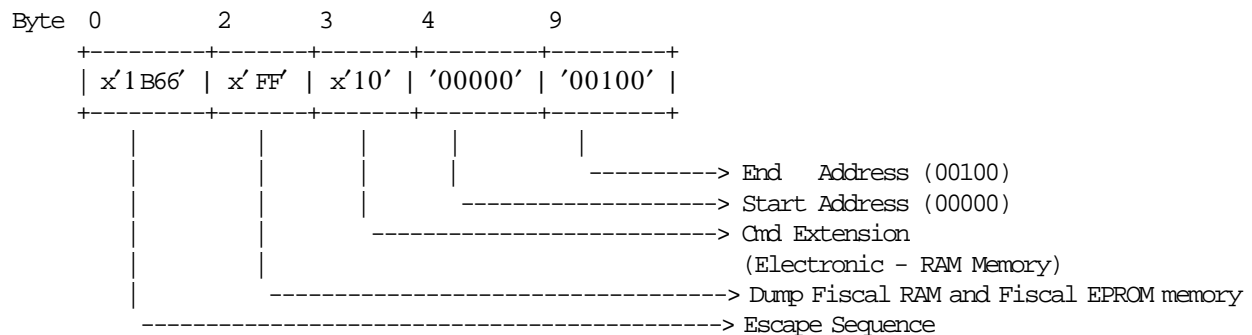
5.14.6.3 Dump Fiscal RAM and Fiscal EPROM Memory Calculations

- **If Type Report = 00 (Printed)**

  Day_N_NFHD = Day_N_NFHD + 1

5.14.6.4 Dump Fiscal RAM and Fiscal EPROM Memory Rules

- This command can be issued with CE jumper (FJUMPER flag) in ON or OFF position.

5.14.7 (E7) - Diagnostic and Alignment Utilities

This command is used to diagnostics and alignmets.

5.14.7.1 Command Format

```
--------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 - cmd prefix                              hex        2
 2        E7 - Diagnostic and Alignment Utilities        hex        1
 3        Cmd Extension                                  hex        1
          00 = Set MCT Value
          01 = DI Print Document Top     Registration Pattern
          02 = DI Print Document Botton Registration Pattern
          03 = DI Print Backlash     Adjustment Pattern
          04 = DI Print Reinsertion Adjustment Pattern
          05 = CR Read MCT Value
          06 = Reserved
          07 = Reserved
          08 = CR Print Test Command
          09 = SJ Print "HIHI...HIHI" Pattern
          0A = DI Print "HIHI...HIHI" Pattern
          0B = DI Character Alignment
          0C = DI MICR Read, Print Front Check,
                Print Back Check & CR Print MICR data
          0D = CR Cut Paper
          0E = DI Home Head Left
          0F = DI Home Head Right

If Cmd Extension = 00 or 01

 4-4      MCT Number                                     hex        1
 5-5      MCT Value - High Order Byte                    hex        1
 6-6      MCT Value - Low  Order Byte                    hex        1


--------------------------------------------------------------------------

      (Continued in the next page)
```

Diagnostic and Alignment Utilities Command continued ....

BYTE BIT CONTENT   TYPE   LENGTH

If Cmd Extension = 03 or 0B

  4-4   MCT Number 1   hex   1
  5-5   MCT Value 1 - High Order Byte   hex   1
  6-6   MCT Value 1 - Low Order Byte   hex   1
  7-7   MCT Number 2   hex   1
  8-8   MCT Value 2 - High Order Byte   hex   1
  9-9   MCT Value 2 - Low Order Byte   hex   1
10-10   MCT Number 3   hex   1
11-11   MCT Value 3 - High Order Byte   hex   1
12-12   MCT Value 3 - Low Order Byte   hex   1
13-13   MCT Number 4   hex   1
14-14   MCT Value 4 - High Order Byte   hex   1
15-15   MCT Value 4 - Low Order Byte   hex   1
16-16   MCT Number 5   hex   1
17-17   MCT Value 5 - High Order Byte   hex   1
18-18   MCT Value 5 - Low Order Byte   hex   1
19-19   MCT Number 6   hex   1
20-20   MCT Value 6 - High Order Byte   hex   1
21-21   MCT Value 6 - Low Order Byte   hex   1
22-22   MCT Number 7   hex   1
23-23   MCT Value 7 - High Order Byte   hex   1
24-24   MCT Value 7 - Low Order Byte   hex   1
25-25   MCT Number 8   hex   1
26-26   MCT Value 8 - High Order Byte   hex   1
27-27   MCT Value 8 - Low Order Byte   hex   1
28-28   MCT Number 9   hex   1
29-29   MCT Value 9 - High Order Byte   hex   1
30-30   MCT Value 9 - Low Order Byte   hex   1

If Cmd Extension = 05

  4-4   MCT Number   hex   1

(Continued in the next page)

Diagnostic and Alignment Utilities Command continued ....

Response to the Diagnostic and Alignment Utilities Command for Read MCT Value (Cmd Extension 05):

```
 ------------------------------------------------------------------------

 BYTE BIT  CONTENT                                    TYPE    LENGTH

  0-8      Fiscal Unit Status                         hex        9
  9        MCT Value - High Order Byte                hex        1
  10       MCT Value - Low  Order Byte                hex        1


 ------------------------------------------------------------------------
```

5.14.7.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+
      | x'1B66' | x'E7' | x'00' |
      +---------+-------+-------+
           |         |      |
           |         |      ----------> Cmd Extension
           |         |                  (set MCT value)
           |         ------------------> Diagnostic and Alignment Utilities
           ----------------------------> Escape Sequence
```
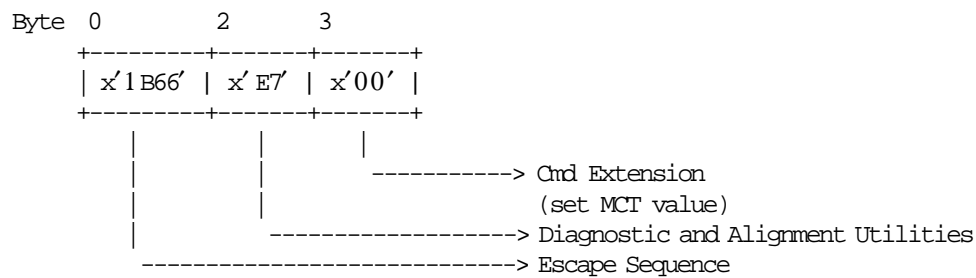
5.14.7.3 Diagnostic and Alignment Utilities Rules

- The printed documents are fixed format and cannot be modified by the users.
- The printed documents on CR, SJ or DI stations are not replicated.

5.14.8 (FB) - Run Diagnostics

This command is used to run the print diagnostics.

5.14.8.1 Command format

```
-------------------------------------------------------------------------

BYTE BIT  CONTENT                                          TYPE    LENGTH

 0-1      1B66 - command prefix                            hex       2
 2        FB - Run Diagnostics                             hex       1
 3        Cmd Extension                                    hex       1
   7-3    Reserved (always = '0')
   2      1 = Test Port RS232
   1      1 = Printer
   0      1 = Fiscal Unit


-------------------------------------------------------------------------
```

5.14.8.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'FB' | x'05' |
      +---------+-------+-------+
           |         |       |
           |         |       ----------------> Cmd Extension
           |         |                         (Test Port RS232 & Fiscal Unit)
           |           -----------------------> Run Diagnostics
            ------------------------------------> Escape Sequence
```
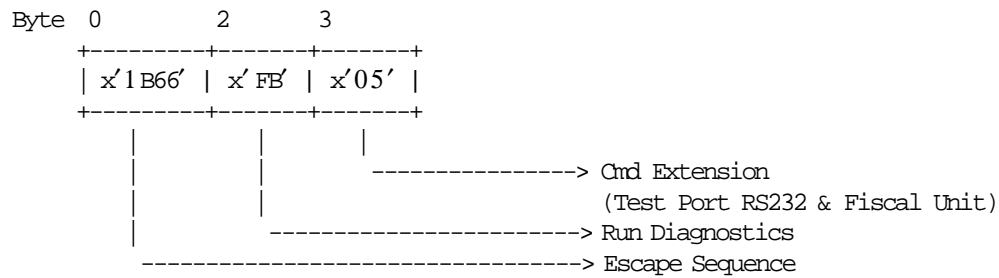
5.14.8.3 Run Diagnostics Rules

- For test port RS232 is necessary the usage of RS232 (DB9) wrap connector.

5.15 Command Set Summary List

This section contains a cross-reference between the fiscal unit command code and command name.
The command code preceding the command name represents the hexadecimal value of command byte 0.

5.15.1 Initialization

16 Set Date and Time
17 Set/Reset Trailer
18 Set Fiscal Mode
1A Set Display Address
24 Set/Reset Payment Type
1B Serialize Fiscal Printer
1E Set POS Identification
2E Set General Parameters
20 Load VAT Rate Table
21 Verify VAT Rate Table
B7 TI/CN - Set/Reset Header
22 TI/CN - Set/Reset Perception Type
25 TI/CN - Set Customer Information
C4 Fiscal Parameter Configuration
D7 Ticket Set/Reset Header

5.15.2 Sales Transaction

Sales transactions are printed on the customer receipt and summary journal stations.

5.15.2.1 Ticket

01 Ticket - Print Header
03 Item Additional Description
D0 Ticket - Fixed Price Item Sale
D1 Ticket - Fixed Price Negative/Uplift Item
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
D2 Ticket - Item Sale
D3 Ticket - Negative/Uplift Item Sale
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
D4 Ticket - Subtotal/Total
D5 Ticket - Payment
06 Ticket - End
07 Ticket - Cancel
D9 Ticket - Discount/Uplift on Subtotal

5.15.2.2 Ticket Invoice

E0 Ticket Invoice - Print Header
B0 Ticket Invoice - Fixed Price Item Sale
B1 Ticket Invoice - Fixed Price Negative/Uplift Item
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
B2 Ticket Invoice - Item Sale
B3 Ticket Invoice - Negative/Uplift Item
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
B4 Ticket Invoice - Subtotal/Total
B8 Ticket Invoice - Global Perceptions
B9 Ticket Invoice - Uplift/Discount on Subtotal
B5 Ticket Invoice - Payment
E3 Ticket Invoice - End
0F Ticket Invoice - Cancel

5.15.2.3 Credit Note

30 Credit Note - Print Header
31 Credit Note - Fixed Price Item Sale
32 Credit Note - Fixed Price Negative/Uplift Item
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
33 Credit Note - Item Sale
34 Credit Note - Negative/Uplift Item
       Void   (on previous Item Sale)
       Reduction (by VAT)
       Discount (on previous Item Sale)
       Empty   (by VAT)
       Discount (by VAT)
       Uplift   (on previous Item Sale)
35 Credit Note - Subtotal/Total
36 Credit Note - Global Perceptions
37 Credit Note - Uplift/Discount on Subtotal
38 Credit Note - Payment
39 Credit Note - End
3A Credit Note - Cancel

5.15.3 Close Sales Period

13 Daily Closure (Z-Report)

5.15.4 Credit Card Printing

C0 Print Credit Card Slip

5.15.5 Non-Fiscal Homologated Documents

A7 Set NFH Information
A8 Start NFH Document
A9 Print NFH Document
AA End NFH Document
AB Cancel NFH Document

5.15.6 Reports

14 Summary Fiscal Report (X-Report)
15 Fiscal Memory Report
DD Start Application-Originated Report
DE End Application-Originated Report
1F POS Identification Report

5.15.7 Printer

E7 Diagnostic and Alignment Utilities
E8 Set Number of Dot Rows per Line Feed
EA Ordinary Print on CR and SJ Station
EB Ordinary Printing on DI Station
         Line Feed
EC Line Feed
ED Ready Document (Top/Bottom Registration)
EE Cut paper
EF Document Eject
E9 Application-Originated Printing (Model 3 Format)

5.15.8 Utilities

FB Run Diagnostics

5.15.9 Query Commands (Electronics)

00 System Commands
DA Electronic Read Fiscal Memory Tables
DB Electronic Read Accumulators and Counters
F1 Report IPL Completion Status
F4 Return Print Head and Throat
F8 Communicate Printer EC
F9 Report Current Status
FA Reset Fiscal Printer
FC Communicate Microcode EC
FF Engineering Dump Fiscal RAM and Fiscal Memory

5.15.10 Lockup

85 Lockup Fiscal Printer

5.15.11 Miscellaneous

08 Retrieve/Send Interrupted Command
C8 Set Barcode Parameters
C9 Print Barcode
CA Download Graphics

6.0 Fiscal Unit Status

6.1 MACARENA BOBO (Protocol SIO - Cable RS485) Fiscal Unit Status

The fiscal unit response to the application program is contained in the fiscal unit status, which is 9 bytes long (6 bytes for the printer status and 3 bytes for fiscal unit status).

For compatibility reasons, the printer status bytes received from the 4610 are mapped in the closest possible way to the model 3 status bytes.
The "MAPPED FROM" column shows from which byte/bit of the 4610 status bytes was the returned taken form.

The following table shows the content of the fiscal unit status.

BYTE	BIT	CONTENT	MAPPED FROM BYTE	BIT
1		PRINTER UNIT STATUS	n/a	
	0 (LSB)	COMMAND COMPLETE		
		Set to 1 when the command is complete.		
	1	LEFT HOME POSITION	1	2
		Set to 1 when the print head is in the left home position.		
	2	RESERVED (Always = '0')	n/a	
	3	MICR PRESENT	n/a	
		Set to 1 when the micr is present.		
	4	RESERVED (Always = '0')	n/a	
	5	HOME ERROR	3	1
	6	DOCUMENT ERROR	3	2
		The document not inserted after document station was selected and the wait timed out.		
	7 (MSB)	COMMAND REJECT		
2		PRINTER UNIT STATUS		
	0 (LSB)	CASH RECEIPT PRINT ERROR	1	6
		Paper cover is open or the CR station is out of paper.		
	1	RESERVED (Always = '0')	n/a	
	2	PRINTER KEY PRESSED	7	4
		Set to 1 when a printer key operation is in progress.		
	3	EC LEVEL	5	1
		Set to 1 when responding to an EC level request.		
	4	SJ COVER OPEN	5	6
		Set to 1 when the cover on the SJ station is open.		
	5	DOCUMENT READY	2	0
		Set to 0 when the DI station is ready for printing. This occurs when both document sensors are made and the document has been fed to the first print position.		
	6	DOCUMENT PRESENT UNDER THE FRONT SENSOR		
		Set to 0 when a document is under the front document sensor.	2	1
	7	CASH RECEIPT PRINT ERROR		
		Paper cover is open or the CR station is out of paper.		

Figure 12. Fiscal Unit Status - Part 1 of 2

```
BYTE   BIT       CONTENT                                                          MAPPED FROM
                                                                                  BYTE   BIT
 3               PRINTER UNIT STATUS
       0 (LSB)   LEFT HOME POSITION                                                 1      2
                 Set to 1 when the print head is in the left home position.
       1         DOCUMENT ERROR                                                     3      2
                 The document not inserted after DI station was selected and
                 the wait timed out.
       2         DOCUMENT PRESENT UNDER THE TOP SENSOR                              2      2
                 Set to 0 when a document is under the top document sensor.
       3         RESERVED (Always = '0')                                              n/a
       4         FLASH EPROM LOAD ERROR OR MCT LOAD ERROR                           3      3
       5         RIBBON COVER OPEN                                                  1      5
                 Set to 1 when the ribbon cover is open.
       6         RESERVED (Always = '0')                                              n/a
       7 (MSB)   SJ STATION PAPER FAULT                                            5      7
                 Set to 1 when the paper is not present.

 4               PRINTER UNIT STATUS                                               4
                 Contains the printer EC level with all status messages.

 5               RESERVED (Always = '00')                                            n/a

 6               PRINTER UNIT STATUS                                               6
                 Contains the current line count the printer is on.

 7               FISCAL UNIT STATUS                                                  (Note 1)
       0 (LSB)   RESERVED (Always = '0')
       1         IPL STATUS
                 When set, it indicates that status byte 9 contains the IPL completion
                 status; and bit 4 of byte 6 is set as it was at IPL time.
       2         IPL IN PROGRESS
                 Set to indicate that the fiscal unit is performing the IPL sequence.
       3         MICROCODE EC
                 When set it indicates that status byte 8 contains the microcode EC.
       4         PLD
                 This bit is set at IPL time to indicate that a command was in execution
                 during PLD and that all modifications caused by the suspended command have been deleted.
       5         ASYNCHRONOUS STATUS
                 When set it indicates that the fiscal unit is executing an internal
                 command (e.g. POR sequence) or it received an asynchronous status from the printer.
       6         INTERMEDIATE STATUS
                 When set it indicates that execution of a command is still in progress.
       7 (MSB)   FISCAL UNIT BUSY
                 Set to 1 when a command is received while a previous command is still in execution.

 8               ADDITIONAL DATA/COUNTRY VERSION/COUNTRY CODE - x27 (39)
       7 (MSB)   ADDITIONAL DATA                                                     (Note 2)
       6-5       COUNTRY VERSION (Hardware Model)
                 4610 GR3/GR4 (RS485) = x01 (01)
       4-0       COUNTRY CODE
                 Argentina = x00111 (07)

 9               FISCAL UNIT RETURN CODE                                             (Note 3)

10 - n           ADDITIONAL DATA (if byte 7 bit 7 is on)
```

  Note : Bit 7 is the most significant bit and bit 0 is the least significant bit.

  Note 1: When fiscal unit status byte 6 is 00 then command is complete.

  Note 2: Where additional data follows the nine fiscal status bytes.

  Note 3: When fiscal unit return code is 43 hex. (67_{10}), it means that
          no error is indicated on this status message.

Figure 13. Fiscal Unit Status - Part 3 of 3

The fiscal unit return codes are defined in chapter 7.0, "Fiscal Unit Return Codes" on page 291.

6.2 Version/Country Code Definitions

- Country Name = Argentina

- Country Version (hardware model) = 01 (4610 GR3/GR4 (Protocol SIO, Cable RS485))

- Country Code = 07

- Country Version + Country Code

  - Hexadecimal = 27
  - Decimal = 39

- Fiscal Microcode EC Level = 05

6.3 MACARENA XINGU (Protocol USB - Cable USB) Fiscal Unit Status

The fiscal unit response to the application program is contained in the fiscal unit status, which is 15 bytes long (8 bytes for the fiscal printer status and 7 bytes for fiscal unit status).

The following figure shows the content of the fiscal status.

```
 --------------------------------------------------------------------------------------------

 BYTE  BIT          CONTENT

  1                 PRINTER UNIT STATUS
       0 (LSB)      COMMAND LOADED
                    For RS485 buffered commands.
                    Set to 1 when the command is received into the print buffer.
                    Note: this is not when the line is actually printed.
                    COMMAND COMPLETE
                    For RS232 and RS485 immediate command and flash storage commands.
                    Set to 1 when the command is complete.
       1            CASH RECEIPT RIGHT HOME POSITION
                    Set to 1 when the print head is in the cash receipt right home position.
       2            LEFT HOME POSITION
                    Set to 1 when the print head is in the left home position.
       3            DOCUMENT RIGHT HOME POSITION
                    Set to 1 when the print head is in the document right home position.
       4            RESERVED (Always = '0')
       5            RIBBON COVER OPEN
                    Set to 1 when the ribbon cover is open.
       6            CASH RECEIPT PRINT ERROR
                    Paper cover is open or the CR station is out of paper.
       7 (MSB)      COMMAND REJECT

  2                 PRINTER UNIT STATUS
       0 (LSB)      DOCUMENT READY
                    Set to 0 when the DI station is ready for printing. This occurs when both
                    document sensors are made and the document has been fed to the first print position.
       1            DOCUMENT PRESENT UNDER THE FRONT SENSOR
                    Set to 0 when a document is under the front document sensor.
       2            DOCUMENT PRESENT UNDER THE TOP SENSOR
                    Set to 0 when a document is under the top document sensor.
       3            RESERVED (Always = '1').
       4            PRINT BUFFER HELD
                    Set to a 1 when the print buffer is being held. Cleared when buffer released.
                    The printer may be held due to a hold buffer command or one of the following
                    printer errors:
                    - Ribbon cover open with commands to be printed on the DI station.
                    - CR print error with commands to the CR station.
       5            OPEN THROAT POSITION
                    Set to 1 when the print head is in the open throat position.
       6            BUFFER EMPTY
                    Set when there is no longer any print data or commands in the buffer.
       7 (MSB)      BUFFER FULL
                    Set when only 512 bytes remain in the buffer.
                    Cleared when 3k bytes are free (RS485 only).

 --------------------------------------------------------------------------------------------
```

Figure 14. Fiscal Unit Status - Part 1 of 3

```
9   -------------------------------------------------------------------------------------------------

9   BYTE   BIT          CONTENT

9   3                   PRINTER UNIT STATUS
9          0 (LSB)      MEMORY SECTOR IS FULL
9          1            HOME ERROR
9          2            DOCUMENT ERROR
9                       The document not inserted after document station was selected and the wait
9                       timed out.
9          3            FLASH EPROM LOAD ERROR OR MCT LOAD ERROR
9          4            RESERVED (Always = '0')
9          5            USER FLASH STORAGE SECTOR IS FULL
9          6            FIRMWARE ERROR
9                       CRC on the firmware failed. The printer is running out of the boot sector.
9                       ONLY system commands and firmware commands will be accepted.
9          7 (MSB)      FISCAL BIT
9                       Set to show a line completed printing.

9   4                   PRINTER UNIT STATUS
9                       Contains the printer EC level with all status messages.

9   5                   PRINTER UNIT STATUS
9          0 (LSB)      PRINTER ID REQUEST/EXTENDED ADDRESS CMD
9                       Set to 1 when responding to a printer ID request.
9          1            EC LEVEL
9                       Set to 1 when responding to an EC level request.
9          2            MICR READ
9                       Set to 1 when responding to a MICR read command.
9          3            MCT READ
9                       Set to 1 when responding to a MCT read command.
9          4            USER FLASH READ
9                       Set to 1 when responding to a user flash read command.
9          5            Reserved (Always = '1').
9          6            SJ COVER OPEN
9                       Set to 1 when the cover on the SJ station is open.
9          7            SJ STATION PAPER FAULT
9                       Set to 1 when the paper is not present.

9   6                   PRINTER UNIT STATUS
9                       Contains the current line count the printer is on.

9   7                   PRINTER UNIT STATUS
9          0 (LSB)      JOURNAL STATUS SELECTION                                              (Note 1)
9                       1 = Selected
9                       0 = Not Selected
9          1
9          2            PDF417 BAR CODE GENERATION PROBLEM
9                       Set to 1 when there is a problem creating a pdf417 bar code image.
9          3            CASH DRAWER STATUS
9                       Set to 1 when cash draw is opened.
9          4            PRINTER KEY PRESSED
9                       Set to 1 when a printer key operation is in progress.
9          5            RESERVED (Always = '1')
9          6            STATION SELECTED
9                       Set when the DI station is selected. Clear when the CR station is selected.
9          7 (MSB)      DOCUMENT FEED ERROR
9                       Set when there is an error after a Flip Check or a MICR command is executed.

9   -------------------------------------------------------------------------------------------------
```

9 Figure 15. Fiscal Unit Status - Part 2 of 3

```
9   --------------------------------------------------------------------------------------

9   BYTE   BIT        CONTENT

9   8                 PRINTER UNIT STATUS (reserved for future use)
9          0-5        RESERVED (Always = '0')
9          6          Host attempted to send a new command without reading the feature report for the
9                     previous command.
9          7          ADDITIONAL DATA AND COUNTRY VERSION
9                     (= 1 when any data is available; otherwise = 0)

9   9                 FISCAL UNIT STATUS
9          0          RESERVED (Always = '0')
9          1          IPL STATUS
9                     When set, it indicates that status byte 14 contains the IPL completion status and
9                     bit 4 of byte 6 is set as it was at IPL time.
9          2          IPL IN PROGRESS
9                     Set to indicate that the fiscal unit is performing the IPL sequence.
9          3          MICROCODE EC
9                     When set it indicates that status byte 8 contains the microcode EC.
9          4          PLD
9                     This bit is set at IPL time to indicate that a command was in execution during
9                     PLD and that all modifications caused by the suspended command have been deleted.
9          5          ASYNCHRONOUS STATUS
9                     When set it indicates that the fiscal unit is executing an internal command
9                     (e.g. POR sequence) or it received an asynchronous status from the printer).
9          6          INTERMEDIATE STATUS
9                     When set it indicates that execution of a command is still in progress.
9          7          FISCAL UNIT BUSY
9                     Set to 1 when a command is received while a previous command is still in execution.

9   10                FISCAL UNIT STATUS (reserved for future use).

9   11                COUNTRY CODE
9                     07 = Argentina

9   12                ADDITIONAL DATA AND COUNTRY VERSION
9          0-4        COUNTRY VERSION (printer model)
9          5-6        RESERVED
9          7          ADDITIONAL DATA                                                     (Note 2)

9   13                FISCAL MICROCODE EC LEVEL

9   14                FISCAL UNIT RETURN CODE                                             (Note 3)

9   15                FISCAL UNIT RETURN CODE (reserved for future use)

9   16-n              ADDITIONAL DATA (if byte 12 bit 7 is ON)

9   --------------------------------------------------------------------------------------

9     Note  : Bit 7 is the most significant bit and bit 0 is the least significant bit.

9     Note 1: In order to remain compatible with existing 4610 printer status definitions,
9             when reading the status bytes to determine which station is selected, the
9             journal station selected status bit and the CR/DI station selected status
9             bit must be checked in the following sequence:
9             1 - Check byte 7, bit 0 first
9                 - If it is '1' then the journal station is selected
9                 - If it is '0' then the journal station is not selected and status byte 7,
9                   bit 6 must be cheched to determine which station is selected.
9                   If status byte 7, bit 6 is a '0' then the CR is selected.
9                   If status byte 7, bit 6 is a '1' then the DI is selected.

9     Note 2: Where additional data follows the sixteen fiscal status bytes.

9     Note 3: When fiscal unit return code is 43 hex. ($67_{10}$), it means that
9             no error is indicated on this status message.
```

9   Figure 16. Fiscal Unit Status - Part 3 of 3

9   **The fiscal unit return codes are defined in 7.0, "Fiscal Unit Return Codes" on page 291** .

9 6.3.1 Version/Country Code Definitions

9   • Country Name = Argentina

9   • Printer Model = 4610 GR3/GR4 (Protocol USB, Cable USB)

9   • Country Version (printer model) = 04

9   • Country Code = 07

9   • Fiscal Microcode EC Level = 05

7.0 Fiscal Unit Return Codes

7.1 4690 OS Hardware Return Code Descriptions

This list contains information about the return code (RC=*8090xxxx*) in system messages.
If your return code is not listed here **- or -** under "Return Code Descriptions" in the *IBM 4690 OS Store System: Messages Guide*, it is an undefined error.

Note: *Service the fiscal printer to replace both the fiscal processor card and the fiscal printer.*

The following tables define the meaning of fiscal unit return codes reported in byte 8 of fiscal unit status.

7.2 DOS/WINDOWS and 4690 OS Return Code Descriptions

002 => DOS/WINDOWS 80900102 => 4690 OS

Explanation: An overflow occurred. The void transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end transaction commands to end the sales transaction or a cancel transaction command to cancel the sales transaction.

004 => DOS/WINDOWS 80900104 => 4690 OS

Explanation: An overflow occurred. The discount transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

006 => DOS/WINDOWS 80900106 => 4690 OS

Explanation: An overflow occurred. The uplift transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

008 => DOS/WINDOWS 80900108 => 4690 OS

Explanation: An underflow occurred. The current transaction total or one of the VAT category transaction sales totals is less than the minimum allowed value. The request is not processed.

User Response: Cancel the transaction or make the total greater than the minimum allowed value.

010 => DOS/WINDOWS 80900110 => 4690 OS

Explanation: An underflow occurred. The void transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

012 => DOS/WINDOWS 80900112 => 4690 OS

Explanation: An underflow occurred. The discount transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

---

014 => DOS/WINDOWS 80900114 => 4690 OS

Explanation: An underflow occurred. The uplift transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sale transaction or cancel command to cancel the sales transaction.

---

015 => DOS/WINDOWS 80900115 => 4690 OS

Explanation: The requested rectify can not be executed by any of the following causes:

- There is no command executed before that could be rectified.
- The requested rectify has been already done.
- Some data of the rectify issued does not match with the original values.

The request is not processed.

User Response: Check the application program for the first two cases or correct the rectify data for the last one.

---

016 => DOS/WINDOWS 80900116 => 4690 OS

Explanation: An overflow occurred. The daily total or one of the VAT category daily sales totals exceeds the maximum allowed value at total request time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

---

018 => DOS/WINDOWS 80900118 => 4690 OS

Explanation: An overflow occurred. The void daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

---

020 => DOS/WINDOWS 80900120 => 4690 OS

Explanation: An overflow occurred. The discount daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

022 => DOS/WINDOWS 80900122 => 4690 OS

Explanation: An overflow occurred. The uplift daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

023 => DOS/WINDOWS 80900123 => 4690 OS

Explanation: The general parameters has not been set. The request is not processed.

User Response: Use the set general parameters (2E cmd.) to load the information.

024 => DOS/WINDOWS 80900124 => 4690 OS

Explanation: The user total amount is not equal to the fiscal total amount. The values associated with the total request do not match the totals stored in the fiscal memory. The request is not processed.

User Response: Correct the computation procedure of the total, then issue end or cancel command.

025 => DOS/WINDOWS 80900125 => 4690 OS

Explanation: A fiscal rules violation has occurred. The word 'total' (or equivalent) or logo characters occurs in a message when not allowed, or a reserved character is used in the message. Note that not all rules violations apply to all countries. The request is not processed.

User Response: Correct the fiscal rules violation and try the command again.

026 => DOS/WINDOWS 80900126 => 4690 OS

Explanation: An underflow occurred. A transaction amount was negative at total request time. This return code applies (where applicable) to:

- Transaction total
- VAT total
- VAT category total accumulator
- VAT category tax accumulator

The request is not processed.

User Response: Make the amount greater than or equal to zero, then issue an end or cancel command.

027 => DOS/WINDOWS 8090061B => 4690 OS

Explanation: An overflow occurred. The discount on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the amount less than the maximum allowed value, then issue an end or cancel command.

028 => DOS/WINDOWS 8090061C => 4690 OS

Explanation: An overflow occurred. The uplift on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the amount less than the maximum allowed value, then issue end or cancel command.

029 => DOS/WINDOWS 80900129 => 4690 OS

Explanation: Tender is not completed. The payment total was less than the transaction total. The request is not processed.

User Response: Use the rectify option on the payment command or issue an additional payment command to complete processing.

---

030 => DOS/WINDOWS 80900130 => 4690 OS

Explanation: The item or negative item operation is not valid. Possible reasons are:

- The requested VOID amount did not match the current adjusted item accumulator.
- The requested DISCOUNT amount is not less than the current item accumulator.
- The resulting item accumulator is either less than or equal to zero or greater than the maximum allowed item value.
- A negative item operation was requested for an item that was previously voided.
- The TAX category did not match the previously sold referenced item.

The request is not processed.

User Response: If a negative item command was issued, correct the application program. If you issued an item sale command, issue a subtotal command and continue the ticket.

---

031 => DOS/WINDOWS 8090061F => 4690 OS

Explanation: An underflow occurred. The sum of the discount on subtotal operations in this sales transaction is less than the minimum allowed value. The request is not processed.

User Response: Make the amount greater than or equal to the minimum allowed value, then issue an end or cancel command.

---

032 => DOS/WINDOWS 80900620 => 4690 OS

Explanation: An underflow occurred. The sum of the uplift on subtotal operations in this sales transaction is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to zero, then issue an end or cancel command.

---

033 => DOS/WINDOWS 80900141 => 4690 OS

Explanation: The TI/CN set/reset perception type table has not been set or the perception type number is out of range. The request is not processed.

User Response: Use the TI/CN set/reset perception type (22 cmd.) to load the information or correct the perception type number (range 01 to up 30) and then issue the command again.

---

034 => DOS/WINDOWS 80900142 => 4690 OS

Explanation: An underflow occurred. The void daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

035 => DOS/WINDOWS 80900143 => 4690 OS

Explanation: Illegal condition on negative item:

- Documents Type A: The net price accumulator became zero while Tra_Tax or Tra_Percep are not zero of the same VAT category.
- Documents Type B and C: The transaction total accumulator became less than the Tra_Tax of the same Vat category.

The request is not processed.

User Response: Issue the command again with the correct values or issue the command after there is enough amounts in the corresponding accumulators.

036 => DOS/WINDOWS 80900144 => 4690 OS

Explanation: An underflow occurred. The discount daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

037 => DOS/WINDOWS 80900145 => 4690 OS

Explanation: The command is not accepted in phase 1 because it has been done before or the command is not accepted in phase 2 because the phase 1 must be executed first. The request is not processed.

User Response: Issue an phase 2 or issue the phase 1.

038 => DOS/WINDOWS 80900146 => 4690 OS

Explanation: An underflow occurred. The uplift daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

039 => DOS/WINDOWS 80900627 => 4690 OS

Explanation: Not allowed items or negative items sale (D0, D1, D2, D3, B0, B1, B2, B3, 31, 32, 33 or 34 cmd's.) after to issued uplift or discount on subtotal (D9, B9 or 37 cmd's.). The request is not processed.

User Response: Correct the application program.

040 => DOS/WINDOWS 80900628 => 4690 OS

Explanation: The VAT category field is not blank and the amount field is blank in a item sales transaction. The request is not processed.

User Response: Correct the application program.

041 => DOS/WINDOWS 80900629 => 4690 OS

Explanation: The current VAT rate table is not verified. The request is not processed.

User Response: Check the application program. The program must issue a verify VAT rate table command before further operations are processed. The VAT rate table must be loaded before issuing the verify VAT rate table command.

042 => DOS/WINDOWS 8090062A => 4690 OS

Explanation: There is a VAT rate table mismatch. The request is not processed.

User Response: Correct the VAT rate table and issue the command again.

---

043 => DOS/WINDOWS 8090062B => 4690 OS

Explanation: The fiscal memory VAT rate table is full. The request is not processed.

User Response: Call for service. The fiscal base unit must be exchanged in order to load new VAT table rates.

---

044 => DOS/WINDOWS 8090062C => 4690 OS

Explanation: The VAT category specified is not valid or the data supplied with the load VAT rate table (20 cmd.) is not valid or the VAT category is disabled. The request is not processed.

User Response: Correct the application program.

---

045 => DOS/WINDOWS 8090062D => 4690 OS

Explanation: The ticket cancel (07 cmd.) or ticket invoice cancel (0F cmd.) or credit note cancel (3A cmd.) is not allowed because the amount total was already printed. The request is not processed.

User Response: Correct the application program sequence.

---

048 => DOS/WINDOWS 80900630 => 4690 OS

Explanation: An overflow occurred. The sum of the daily operations for discount on subtotal exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

---

049 => DOS/WINDOWS 80900631 => 4690 OS

Explanation: An overflow occurred. The sum of the daily operations for uplift on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

---

050 => DOS/WINDOWS 80900632 => 4690 OS

Explanation: An underflow occurred. The sum of the daily operations for discount on subtotal is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

---

051 => DOS/WINDOWS 80900633 => 4690 OS

Explanation: An underflow occurred. The sum of the daily operations for uplift on subtotal is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

052 => DOS/WINDOWS 80900634 => 4690 OS

Explanation: The transaction total is equal to zero. The request is not processed.

User Response: Adjust the transaction total or issue a cancel command.

053 => DOS/WINDOWS 80900635 => 4690 OS

Explanation: The requested time used on the set date (16 cmd.) is not within the allowed range of the current fiscal printer time or the requested time is previous to the date of the last closure stored in the fiscal memory. The request is not processed.

User Response: Either correct the time sent to the fiscal printer or if the fiscal printer time differs from the actual time by more than the allowed range, call for service.

054 => DOS/WINDOWS 80900636 => 4690 OS

Explanation: The perception type table is not set. The request is not processed.

User Response: Use the TI/CN set/reset perception type (22 cmd.) to load the information.

055 => DOS/WINDOWS 80900203 => 4690 OS

Explanation: The fiscal request message length is less than the minimum required value. The request is not processed.

User Response: Check the application program.

056 => DOS/WINDOWS 80900150 => 4690 OS

Explanation: An overflow occurred. The cancel transaction daily total exceeds the maximum allowed value at cancel transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue a cancel command and then issue a daily closure command.

057 => DOS/WINDOWS 80900151 => 4690 OS

Explanation: An underflow occurred. The cancel transaction daily total is less than the minimum allowed value at cancel transaction time. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue a cancel command and then issue a daily closure command.

058 => DOS/WINDOWS 8090063A => 4690 OS

Explanation: An overflow occurred. The amount due accumulator exceeds the maximum allowed value. The request is not processed.

User Response: Correct the payment amount and issue the command again.

059 => DOS/WINDOWS 8090063B => 4690 OS

Explanation: An underflow occurred. The amount due accumulator is less than the minimum allowed value. The request is not processed.

User Response: Correct the payment amount and issue the command again.

060 => DOS/WINDOWS 8090063C => 4690 OS

Explanation: The payment type table is not loaded. The request is not processed.

User Response: Use the set payment type (24 cmd.) to load the information.

061 => DOS/WINDOWS 8090063D => 4690 OS

Explanation: An overflow occurred. The transaction total or one of the VAT category transaction sales totals exceeds the maximum allowed value on an item command. The request is not processed.

User Response: Issue an end or cancel command.

062 => DOS/WINDOWS 8090063E => 4690 OS

Explanation: The command can be executed only for ticket invoice or credit note type A or B. The request is not processed.

User Response: Check the application program.

063 => DOS/WINDOWS 8090063F => 4690 OS

Explanation: The set POS identification is not set. The request is not processed.

User Response: Use the set POS identification (1E cmd.) to load the information. Depending on the country laws, this command may require IBM service personnel.

064 => DOS/WINDOWS 80900127 => 4690 OS

Explanation: An overflow occurred. The specified value received amount from the application program exceeds the maximum allowed amount or the daily payment type accumulators exceeds the maximum allowed value. The request is not processed.

User Response: Correct the value and try the operation again.

065 => DOS/WINDOWS 80900201 => 4690 OS

Explanation: A request was sent to the fiscal unit and the fiscal command byte is not recognized. The request is not processed.

User Response: Check the application program.

066 => DOS/WINDOWS 80900202 => 4690 OS

Explanation: A request was sent to the fiscal unit and the fiscal command byte extension is not recognized. The request is not processed.

User Response: Check the application program.

067 => DOS/WINDOWS 80900643 => 4690 OS

Explanation: The command was processed successfully. No error occurred.

User Response: No action is required.

068 => DOS/WINDOWS 80900204 => 4690 OS

Explanation: An overflow occurred. The transaction general global perception total by perception type or the transaction general perception by perception type or the transaction general perception by VAT category and perception type or the transaction general perception total exceeds the maximum allowed value. The request is not processed.

User Response: Issue an ticket invoice end or ticket invoice cancel or credit note end or credit note cancel command.

069 => DOS/WINDOWS 80900205 => 4690 OS

Explanation: An attempt was made to print a line on the CR, SJ or DI stations

- without the correct payment phase done inside of ticket, ticket invoice or credit note OR
- that exceeds the maximum number of ordinary print lines allowed during a ticket, ticket invoice or credit note.

The request is not processed.

User Response: Issue the payment phase (D5, B5 or 38 cmd.) OR issue an end (06, E3 or 39 cmd.)

073 => DOS/WINDOWS 80900303 => 4690 OS

Explanation: An error occurred while printing on an inserted document. The request is not processed.

User Response: If the error continues, service the printer.

075 => DOS/WINDOWS 80900209 => 4690 OS

Explanation: Printing not allowed. Possible reasons are:

- If ticket is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If ticket invoice is in progress, ordinary printing line on CR/SJ station (EA cmd.) is not allowed at this point.
- If credit note is in progress, ordinary printing line on CR/SJ station (EA cmd.) is not allowed at this point.
- Orientation print PORTRAIT and linefeed direction REVERSE on DI station not allowed during ticket invoice or credit note.

The request is not processed.

User Response: Check the application program.

076 => DOS/WINDOWS 80900210 => 4690 OS

Explanation: Invalid print station selected. The request is not processed.

User Response: Correct the print station and issue the command again.

077 => DOS/WINDOWS 80900211 => 4690 OS

Explanation: The download graphic is corrupted. The request is not processed.

User Response: The graphics must be initialized. Erase all graphics from printer flash using CA cmd. (cmd. extension 10) and the issued CA cmd. (cmd. extension 02) again.

078 => DOS/WINDOWS 80900304 => 4690 OS

Explanation: Graphic with same number already in printer flash. The request is not processed.

User Response: The user attempted to download a graphic using a number already in printer flash.

Correct the graphic number or erase all graphics from printer flash using the CA cmd. (10 cmd. extension) and then issue the CA cmd. (02 cmd. extension) again.

079 => DOS/WINDOWS 80900212 => 4690 OS

Explanation: Invalid Sequence. This command can only be sent inside a download graphics command set. The request is not processed.

User Response: Issue the CA cmd. (cmd. extension 10) and then restart the download sequence.

080 => DOS/WINDOWS 80900213 => 4690 OS

Explanation: Graphic don't downloaded. The request is not processed.

User Response: Download graphic with CA cmd. (cmd. extension 02) before printing.

081 => DOS/WINDOWS 80900651 => 4690 OS

Explanation: The print typeface specified is not valid. The request is not processed.

User Response: Specify a valid print typeface.

082 => DOS/WINDOWS 80900306 => 4690 OS

Explanation: A request to print on the CR, SJ or DI station was made:

- without start an application-originated report. OR
- without start a NFH Document. OR
- without issue the ticket, ticket invoice or credit note.

The request is not processed.

User Response: Start an application-originated report or a NFH document or issued a ticket, ticket invoice or credit note.

083 => DOS/WINDOWS 80900307 => 4690 OS

Explanation: An unrecoverable error occurred reading the fiscal memory identification/status/setup area.

User Response: Service the printer.

084 => DOS/WINDOWS 80900308 => 4690 OS

Explanation: The payment trailer line is mandatory when the payment type correspond to "credit card".

User Response: Fill the payment trailer line and issue the command again.

085 => DOS/WINDOWS 80900309 => 4690 OS

Explanation: The VAT rate for this VAT category is not valid. The request is not processed.

User Response: Check the application program.

086 => DOS/WINDOWS 80900401 => 4690 OS

Explanation: The password entered is not valid or the maximum number of attempts to enter the correct password was exceeded. The request is not processed.

User Response: Reenter the correct password or if the maximum number of attempts was exceeded, use the J4 (CE) jumper to restore normal operation.

Note: Only authorized service personnel can perform functions that require a password.

---

087 => DOS/WINDOWS 80900657 => 4690 OS

Explanation: The printer command received by the fiscal printer is not valid. The request is not processed.

User Response: Issue a valid printer command.

---

089 => DOS/WINDOWS 80900312 => 4690 OS

Explanation: The fiscal memory is full. All fiscal commands are rejected except the fiscal memory report.

User Response: Service the printer.

---

090 => DOS/WINDOWS 8090065A => 4690 OS

Explanation: The requested daily closure was not found in the fiscal memory. The request is not processed.

User Response: Specify a valid closure number or valid dates.

---

091 => DOS/WINDOWS 80900314 => 4690 OS

Explanation: An error occurred while printing the start-up message.

User Response: Turn the power OFF and ON again. If the error continues, service the printer.

---

092 => DOS/WINDOWS 80900315 => 4690 OS

Explanation: The requested internal table register was not found in the fiscal memory. The request is not processed.

User Response: Specify a valid table entry.

---

095 => DOS/WINDOWS 80900425 => 4690 OS

Explanation: The address or length data is not valid. The requested address range is not valid or is wrong in the engineering dump command. The request is not processed.

User Response: Correct the input data.

---

096 => DOS/WINDOWS 80900140 => 4690 OS

Explanation: A numeric field contains characters that are not valid. The request is not processed.

User Response: Correct the value and issue the command again.

097 => DOS/WINDOWS 80900410 => 4690 OS

Explanation: Fiscal RAM is in error or does not match the fiscal memory.

User Response: Service the printer. The J4 (CE) jumper procedure is required.

Note: Only authorized service personnel can move the J4 jumper.

098 => DOS/WINDOWS 80900411 => 4690 OS

Explanation: Fiscal RAM is restored.

User Response: Remove the J4 (CE) jumper to restore normal operation.

Note: Only authorized service personnel can move the J4 jumper.

099 => DOS/WINDOWS 80900318 => 4690 OS

Explanation: The maximum 200 repair actions have been reached.

User Response: Exchange the fiscal printer at the next failure occurrence.

100 => DOS/WINDOWS 80900329 => 4690 OS

Explanation: An error occurred while reading from the fiscal memory. The request is not processed.

User Response: Service the printer.

101 => DOS/WINDOWS 80900326 => 4690 OS

Explanation: An unrecoverable error occurred when writing to fiscal memory. The request is not processed.

User Response: Service the printer.

102 => DOS/WINDOWS 80900327 => 4690 OS

Explanation: The fiscal parameter configuration (C4 cmd.) was attempted more than once with the same extension since the last J4 (CE) jumper reset or X′C402′ was attempted with the display addresses already set. The request is not processed.

User Response: Reset the printer using the J4 (CE) jumper procedure and initialize the printer again.

Note: Only authorized service personnel can move the J4 jumper.

103 => DOS/WINDOWS 80900421 => 4690 OS

Explanation: The data is not valid. The requested data or number is out-of-range. The request is not processed.

User Response: Correct the input data.

104 = DOS/WINDOWS 80900360 = 4690 OS

Explanation: The barcode data must be null terminated. The request is not processed.

User Response: Correct the barcode data and issue the command again.

105 = DOS/WINDOWS 80900361 = 4690 OS

Explanation: The barcode size is invalid OR the graphic size is invalid. The width is greater than 62 (0x3E) or the height is greater than 21 (0x15). The request is not processed.

User Response: Correct the barcode size and issue the command again OR correct the graphic size an the issue the CA cmd. (cmd. extension 02) again.

107 => DOS/WINDOWS 8090066B => 4690 OS

Explanation: The microcode EC level table is full. The request is not processed.

User Response: Exchange the microcode EC level by the last EC level stored in the microcode EC level table or exchange the fiscal memory.

108 => DOS/WINDOWS 80900328 => 4690 OS

Explanation: The POS identification table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

109 => DOS/WINDOWS 80900324 => 4690 OS

Explanation: The fiscal memory is not connected. The fiscal unit cannot restart processing.

User Response: Service the printer. When servicing, first check to ensure the cable connections on the fiscal processor card are correct.
The J4 (CE) jumper procedure is required when the fiscal memory is reconnected.

Note: Only authorized service personnel can move the J4 jumper.

112 => DOS/WINDOWS 80900670 => 4690 OS

Explanation: The fiscal printer was reset.

User Response: No action is required.

113 => DOS/WINDOWS 80900341 => 4690 OS

Explanation: An unrecoverable printer error occurred after two power-on resets.

User Response: Turn the power off and then on again. If the problem persists, service the printer.

114 => DOS/WINDOWS 80900363 => 4690 OS

Explanation: A printer communication error occurred.

User Response: Service the printer.

115 => DOS/WINDOWS 80900701 => 4690 OS

Explanation: The taxpayer issuer condition table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

116 => DOS/WINDOWS 80900702 => 4690 OS

Explanation: The payment type lines used exceeds the maximum payment type lines allowed. The request is not processed.

User Response: If the payment total is less than transaction total, cancel the transaction or If the payment total is greater than or equal to transaction total, cancel or end the transaction.

---

118 => DOS/WINDOWS 80900704 => 4690 OS

Explanation: The selected payment type or perception type is invalid or the description field data is blank. The request is not processed.

User Response: Select the correct payment type or perception type or input data in the description field and then issue the command again.

---

119 => DOS/WINDOWS 80900677 => 4690 OS

Explanation: Alphabetic fields with invalid data. The request is not processed.

User Response: Correct the data and then issue the command again.

---

120 => DOS/WINDOWS 80900678 => 4690 OS

Explanation: A printer card time-out occurred while executing a command.

User Response: Turn the power OFF and then ON again. If the problem persists, service the printer.

---

121 => DOS/WINDOWS 80900679 => 4690 OS

Explanation: Audit port wrap test fail.

User Response: None. Service the printer.

---

123 => DOS/WINDOWS 8090067B => 4690 OS

Explanation: An overflow occurred. The fixed transaction total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

---

124 => DOS/WINDOWS 8090067C => 4690 OS

Explanation: An overflow occurred. The fixed daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

---

125 => DOS/WINDOWS 8090067D => 4690 OS

Explanation: The number of lines available to print is not sufficient. The request is not processed.

User Response: Possible actions to take are:

- If the string TOTAL wasn′t printed
  - To send any command with less lines to print.
  - Issue the ticket invoice cancel (0F cmd.) or credit note cancel (3A cmd.)

- If the string TOTAL was printed
  - Issue the ticket invoice end (E3 cmd.) or credit note end (39 cmd.) with the less quantity of lines.

---

128 => DOS/WINDOWS 80900320 => 4690 OS

Explanation: Fiscal memory is not serialized. The request is not processed.

User Response: Service the printer.

---

129 => DOS/WINDOWS 80900321 => 4690 OS

Explanation: The fiscal unit is not in fiscal mode. The request is not processed.

User Response: Call for service to set fiscal mode.

---

131 => DOS/WINDOWS 80900323 => 4690 OS

Explanation: A problem was detected in a display or in the configuration for the point-of-sale displays. No fiscal commands can be executed. The minimum number of POS displays that must be configured is 2.

User Response: Follow the maintenance manual procedures to set the configuration correctly. If problem persists, service the POS terminal.

---

133 => DOS/WINDOWS 80900364 => 4690 OS

Explanation: The amount is zero. The request is not processed.

User Response: The amount must be greater than zero.

---

134 => DOS/WINDOWS 80900325 => 4690 OS

Explanation: The fiscal unit detected an internal hardware error. The request is not processed.

User Response: Run the printer test to determine the cause of the problem. Service the printer.

---

136 => DOS/WINDOWS 80900221 => 4690 OS

Explanation: A ticket related command was issued while a sales transaction was not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

138 => DOS/WINDOWS 80900223 => 4690 OS

Explanation: A ticket invoice or credit note related command was issued while a ticket invoice or credit note was not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

139 => DOS/WINDOWS 80900224 => 4690 OS

Explanation: The ticket invoice/credit note set customer information table has not been set or description data (Line 1) has not been set. The request is not processed.

User Response: Use the ticket invoice/credit note set customer information (25 cmd.) to load the information or issue the cmd 25 with cmd.ext. 01 to set the description data (line 1).

140 => DOS/WINDOWS 80900225 => 4690 OS

Explanation: A ticket, ticket invoice or credit note related command was issued before printing the header. The request is not processed.

User Response: Correct the application program sequence.

---

141 => DOS/WINDOWS 80900226 => 4690 OS

Explanation: A command was issued that is not allowed before the total command is successfully executed. The request is not processed.

User Response: Correct the application program sequence.

---

142 => DOS/WINDOWS 80900227 => 4690 OS

Explanation: The transaction payment procedure is not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

144 => DOS/WINDOWS 80900229 => 4690 OS

Explanation: The command was issued before the store header was set. The request is not processed.

User Response: Correct the application program sequence to set the store headers before issuing this command.

---

145 => DOS/WINDOWS 80900691 => 4690 OS

Explanation: The command is not accepted when the J4 (CE) jumper is not active. The request is not processed.

User Response: Activate the CE jumper and try issuing the command again.

---

146 => DOS/WINDOWS 80900692 => 4690 OS

Explanation: A command not related to a NFH document was issued while a NFH document is in progress. The request is not processed.

User Response: Issue the command again after the NFH document is completed.

---

147 => DOS/WINDOWS 80900693 => 4690 OS

Explanation: A NFH related command was issued while a NFH document was not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

148 => DOS/WINDOWS 80900694 => 4690 OS

Explanation: The NFH document type specified don't correspond with the NFH document type in progress. The request is not processed.

User Response: Correct the NFH document type and issue the command again.

149 => DOS/WINDOWS 80900695 => 4690 OS

Explanation: When command extension 00 is selected the customer document type and/or customer document number and/or taxpayer customer condition and/or customer name must be loaded OR the customer document type and/or customer document number and/or taxpayer customer condition and/or customer name is/are invalid. The request is not processed.

User Response: Issue the ticket invoice/credit not set customer information (25 cmd.) to load the information correctly.

150 => DOS/WINDOWS 80900696 => 4690 OS

Explanation: The first two digits of UTIK user number are invalid. The request is not processed.

User Response: Correct the UTIK user number and try the command again.

151 => DOS/WINDOWS 80900697 => 4690 OS

Explanation: The UTIK user number is invalid. The request is not processed.

User Response: Correct the UTIK user number and try the command again.

152 => DOS/WINDOWS 80900698 => 4690 OS

Explanation: Invalid ticket invoice or credit note type selected. The request is not processed.

User Response: Correct the ticket invoice type (E0 cmd.) or credit note type (30 cmd.) and issue the command again.

154 => DOS/WINDOWS 8090069A => 4690 OS

Explanation: The taxpayer issuer condition is invalid. The request is not processed.

User Response: Correct the taxpayer issuer condition and issue the command again.

155 => DOS/WINDOWS 8090069B => 4690 OS

Explanation: The ordinal item number in the negative item operation is not valid. The request is not processed.

User Response: Correct the ordinal item number and issue the command again.

156 => DOS/WINDOWS 8090069C => 4690 OS

Explanation: The NFH field line number (for field) specified could be out of range, or it wasn't set for the document type in progress, or the NFH field line (user defined w/A7 cmd.) has already been used the maximum of times allowed. The request is not processed.

User Response: Issue the command again with the correct NFH field line number.

157 => DOS/WINDOWS 8090069D => 4690 OS

Explanation: The correct operation of credit card slip printing is not in progress. The request is not processed.

User Response: Correct the application program sequence.

158 => DOS/WINDOWS 8090069E => 4690 OS

Explanation: The date is not set by application program. The request is not processed.

User Response: Correct the application program sequence.

159 => DOS/WINDOWS 8090069F => 4690 OS

Explanation: The fiscal printer is locked. The request is not processed.

User Response: Reset the printer using the J4 (CE) jumper procedure and initialize the printer again.

Note: Only authorized service personnel can move the J4 jumper.

160 => DOS/WINDOWS 80900330 => 4690 OS

Explanation: Fiscal memory is serialized. The request is not processed.

User Response: No action is required.

161 => DOS/WINDOWS 80900331 => 4690 OS

Explanation: The fiscal unit is in fiscal mode. The request is not processed.

User Response: No action is required.

163 => DOS/WINDOWS 809006A3 => 4690 OS

Explanation: Invalid command after a printer error or PLD. The request is not processed.

User Response: After a printer error or PLD, the same command that was in progress during a printer error or PLD to be issued again or a cancel transaction if is it allowed. Query commands like DA, DB, F8, F9 ..... are accepted too.

164 => DOS/WINDOWS 80900350 => 4690 OS

Explanation: The power-on sequence is in progress.

User Response: No action is required.

165 => DOS/WINDOWS 809006A5 => 4690 OS

Explanation: The retrieve/send interrupted (08 cmd.) was issued without a printer error or PLD previous. The request is not processed.

User Response: Correct the application program sequence.

166 => DOS/WINDOWS 809006A6 => 4690 OS

Explanation: The set NFH information (A7 cmd.) cannot be issued because any non-fiscal homologated document was printed after the last daily closure. The request is not processed.

User Response: Issue the daily closure (13 cmd.) and issue the set NFH information (A7 cmd.) before to start any NFH document.

167 => DOS/WINDOWS 80900230 => 4690 OS

Explanation: The requested command cannot be issued while a sales period is in progress. The request is not processed.

User Response: Perform a daily closure command and then issue the command again.

168 => DOS/WINDOWS 80900231 => 4690 OS

Explanation: A command not related to a sales transaction was issued while a sales transaction is in progress. The request is not processed.

User Response: Issue the command again after the ticket is completed. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

169 => DOS/WINDOWS 80900232 => 4690 OS

Explanation: A command not related to credit note was issued while a credit note is in progress. The request is not processed.

User Response: Issue the command again after the credit note is complete.

170 => DOS/WINDOWS 80900233 => 4690 OS

Explanation: A command not related to a ticket invoice was issued while a ticket invoice is in progress. The request is not processed.

User Response: Issue the command again after the ticket invoice is complete.

171 => DOS/WINDOWS 80900234 => 4690 OS

Explanation: A command not related to a ticket invoice was issued while a ticket invoice is in progress. The request is not processed.

User Response: Issue the command again after the ticket invoice is complete.

172 => DOS/WINDOWS 80900235 => 4690 OS

Explanation: Only a fiscal ticket related sales transaction command is accepted after the header is printed. The request is not processed.

User Response: Check the application program.

173 => DOS/WINDOWS 80900236 => 4690 OS

Explanation: After the total command was issued, the command sequence is not valid. The request is not processed.

User Response: If the ticket invoice ′A′ is in progress only ticket invoice payment (B5 cmd.) or ticket invoice cancel (0F cmd.) or ticket invoice end (E3 cmd.) are allowed.
If the credit note ′A′ is in progress only credit note payment (38 cmd.). credit note cancel (3A cmd.) or credit note end (39 cmd.) are allowed.
If ticket is in progress, item/negative items sale are not allowed.
If ticket invoice ′B′ or ′C′ is in progress, item/negative items sale are not allowed.
If credit note ′B′ or ′C′ is in progress, item/negative items sale are not allowed.

174 => DOS/WINDOWS 80900237 => 4690 OS

Explanation: A payment is in progress. The request is not processed.

User Response: After the payment processing is complete, issue the request again.

175 => DOS/WINDOWS 80900238 => 4690 OS

Explanation: Training mode is in progress. The request is not processed.

User Response: Correct the application program sequence or issue a set training mode Off command.

176 => DOS/WINDOWS 80900239 => 4690 OS

Explanation: The payments are already completed and printed, so you can't continue paying. The request is not processed.

User Response: Continue with ordinary printing lines or end transaction.

177 => DOS/WINDOWS 809006B1 => 4690 OS

Explanation: The POS Id number is invalid. The request is not processed.

User Response: Correct the POS Id number and issue the command again.

178 => DOS/WINDOWS 809006B2 => 4690 OS

Explanation: Invalid C.U.I.T. or C.U.I.L. or document number. The request is not processed.

User Response: Correct the C.U.I.T or C.U.I.L or document number and issue the command again.

179 => DOS/WINDOWS 809006B3 => 4690 OS

Explanation: Invalid taxpayer customer condition selected. The request is not processed.

User Response: Correct the taxpayer customer condition and issue the command again.

180 => DOS/WINDOWS 809006B4 => 4690 OS

Explanation: Fiscal EPROM is in error. EPROM serialized but pattern not found.

User Response: Service the printer.

181 => DOS/WINDOWS 809006B5 => 4690 OS

Explanation: Fiscal RAM is in error. Return to the FB command.

User Response: Service the printer.

182 => DOS/WINDOWS 809006B6 => 4690 OS

Explanation: An error occurred on an end transaction (06 cmd.). The request is not processed.

User Response: Issue the end transaction command again or issue a cancel transaction command. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

183 => DOS/WINDOWS 809006B7 => 4690 OS

Explanation: An error occurred on a cancel transaction (07 cmd.). The request is not processed.

User Response: Issue the cancel transaction command again. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

184 => DOS/WINDOWS 809006B8 => 4690 OS

Explanation: The command sequence is not valid.

- A command not related to application-originated report was requested that is not allowed during a application-originated report.
- If CR application-originated report is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If SJ application-originated report is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If DI application-originated report is in progress, ordinary printing line on CR or SJ station (EA cmd.) is not allowed at this point.

The request is not processed.

User Response: Check the application program sequence.

185 => DOS/WINDOWS 809006B9 => 4690 OS

Explanation: An EPROM load error occurred on the printer logic card. The request is not processed.

User Response: Service the printer.

186 => DOS/WINDOWS 809006BA = 4690 OS

Explanation: Mismatch between RAM fiscalization flag and EPROM Mark. The request is not processed.

User Response: Insert the jumper and reinitialize the printer.

If the problem persists, service the printer.

187 => DOS/WINDOWS 809006BB => 4690 OS

Explanation: Block read from fiscal memory empty. The request is not processed.

User Response: Check the application program.

188 => DOS/WINDOWS 809006BC => 4690 OS

Explanation: Invalid customer document type selected. The request is not processed.

User Response: Correct the customer document type and issue the command again.

192 => DOS/WINDOWS 80900524 => 4690 OS

Explanation: The command is rejected from the printer logic card. The request is not processed.

User Response: Check for a device driver programming error.

194 => DOS/WINDOWS 80900521 => 4690 OS

Explanation: A print head home error occurred. The request is not processed.

User Response: If the problem persists, service the printer.

200 = DOS/WINDOWS 8090070D => 4690 OS

ONLY VALID FOR MACARENA XINGU

Explanation: CR printer cover is open or CR out of paper occurred. The request is not processed.

User Response: Close the CR cover or ensure the CR paper is installed correctly. If the problem persists, service the printer.

201 => DOS/WINDOWS 80900528 => 4690 OS

Explanation: The front-insert document is not present. The request is not processed.

User Response: Insert the document or if a document is already inserted, try removing and reinserting it. If the problem persists, service the printer.

202 => DOS/WINDOWS 80900527 => 4690 OS

Explanation: The inserted document is not ready. The request is not processed.

User Response: Try removing the document and reinserting it. If the problem persists, service the printer.

203 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR MACARENA XINGU

Explanation: The DI printer cover is open. The request is not processed.

User Response: Close the DI printer cover.

If the cover is already closed, service the printer.

203 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR MACARENA BOBO

Explanation: The CR, SJ or DI printer cover is open, or CR out of paper occurred. The request is not processed.

User Response: Close the CR, SJ or DI printer cover or ensure the CR paper is installed correctly.

If the problem persists, service the printer.

204 => DOS/WINDOWS 80900711 => 4690 OS

Explanation: Internal Error. The request is not processed.

User Response: Service the printer.

205 => DOS/WINDOWS 80900526 => 4690 OS

Explanation: A printer keybutton is pressed. The request is not processed.

User Response: Release the pressed keybutton. If a keybutton is not pressed, service the printer.

206 => DOS/WINDOWS 80900525 => 4690 OS

Explanation: SJ paper error occurred. The request is not processed.

User Response: Ensure the paper is installed correctly.

If the problem persists, service the printer.

208 => DOS/WINDOWS 809006D0 => 4690 OS

Explanation: Printer Error. The request is not processed.

User Response: Service the printer.

209 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR MACARENA XINGU

Explanation: The SJ printer cover is open. The request is not processed.

User Response: Close the SJ printer cover.

If the cover is already closed, service the printer.

210 => DOS/WINDOWS 809006D2 => 4690 OS

Explanation: Printer DI throat is opened. The request is not processed.

User Response: Close the throat and issue the command print again.

214 => DOS/WINDOWS 80900527 => 4690 OS

Explanation: A feed paper error occurred. The request is not processed.

User Response: Ensure that the paper is inserted correctly.

235 => DOS/WINDOWS 809006EB => 4690 OS

Explanation: EPROM load error. The request is not processed.

User Response: Service the printer.

7.3 Return Code Conversion Table (4690 OS to DOS/WINDOWS)

The following table is for converting 4690 OS return codes into DOS/WINDOWS return codes. Find the DOS/WINDOWS return code under 7.0, "Fiscal Unit Return Codes" on page 291.

Table 10 (Page 1 of 2). 4690 OS to DOS/WINDOWS Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code	4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900102	002	80900127	064
80900104	004	80900201	065
80900106	006	80900202	066
80900108	008	80900643	067
80900110	010	80900204	068
80900112	012	80900205	069
80900114	014	80900303	073
80900115	015	80900209	075
80900116	016	80900210	076
80900118	018	80900211	077
80900120	020	80900304	078
80900122	022	80900212	079
80900123	023	80900213	080
80900124	024	80900651	081
80900125	025	80900306	082
80900126	026	80900307	083
8090061B	027	80900308	084
8090061C	028	80900309	085
80900129	029	80900401	086
80900130	030	80900657	087
8090061F	031	80900312	089
80900620	032	8090065A	090
80900141	033	80900314	091
80900142	034	80900315	092
80900143	035	80900425	095
80900144	036	80900140	096
80900145	037	80900410	097
80900146	038	80900411	098
80900627	039	80900318	099
80900628	040	80900329	100
80900629	041	80900326	101
8090062A	042	80900327	102
8090062B	043	80900421	103
8090062C	044	8090066B	107
8090062D	045	80900328	108
80900630	048	80900324	109
80900631	049	80900670	112
80900632	050	80900341	113
80900633	051	80900363	114
80900634	052	80900701	115
80900635	053	80900702	116
80900636	054	80900704	118
80900203	055	80900677	119
80900150	056	80900678	120
80900151	057	80900679	121
8090063A	058	8090067B	123
8090063B	059	8090067C	124
8090063C	060	8090067D	125
8090063D	061	80900320	128
8090063E	062	80900321	129
8090063F	063	80900323	131

Table 10 (Page 2 of 2). 4690 OS to DOS/WINDOWS Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900364	133
80900325	134
80900220	135
80900221	136
80900223	138
80900224	139
80900225	140
80900226	141
80900227	142
80900229	144
80900691	145
80900692	146
80900693	147
80900694	148
80900695	149
80900696	150
80900697	151
80900698	152
8090069A	154
8090069B	155
8090069C	156
8090069D	157
8090069E	158
8090069F	159
80900330	160
80900331	161
809006A3	163
80900350	164
809006A5	165
809006A6	166
80900230	167
80900231	168
80900232	169
80900233	170
80900234	171
80900235	172
80900236	173
80900237	174
80900238	175
80900239	176
809006B1	177
809006B2	178
809006B3	179
809006B4	180
809006B5	181
809006B6	182
809006B7	183
809006B8	184
809006B9	185
809006BA	186
809006BB	187
809006BC	188
809006BF	191
80900524	192
80900521	194
8090070D	200
80900528	201

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900527	202
80900522	203
80900526	205
80900525	206
809006D0	208
809006D1	209
809006D2	210
80900527	214
809006EB	235

8.0 Fiscal Software and Hardware Interface Information

8.1 Supported Printer Typefaces

The printer typefaces supported are:

- 12 characters per inch (CPI), single high
- 12 CPI, single high, emphasized
- 15 CPI, single high
- 15 CPI, single high, emphasized
- 15 CPI, double-high
- 15 CPI, double-high, emphasized

The print typeface is controlled by the application program by setting the required bits in the command extension.
The selected print typeface applies to all characters of the same line.
It is also possible to print one or more substrings, within the same printed line, with a double-wide character size.
The size of each double-wide substring can range from one character to the number of characters in the printed line.
The double-wide substring is enabled by delimiting it with the special control characters X′0E′ (enable double-wide) and X′14′ (disable double-wide).

Note: Double-wide printing does **not** apply to the amount field in fiscal commands.

8.2 Error Conditions

Errors encountered during command execution are processed as follows:

- Command processing is suspended.
- Internal accumulators and counters are restored to their original value (the value they had before the command in error was received).
- An error is included in the final status sent over the communication link.
  The error type indicates the cause of the abnormal termination.
- The application program can retrieve or send the last one command issued again using the Retrieve/Send Interrupted Command (08 cmd.) or send any other command that is valid for the procedure in progress.
  The retrieve/send interrupted command has effect only on the following commands:
  - (01) Ticket - Print Header
  - (D0) Ticket - Fixed Price Item Sale
  - (D1) Ticket - Fixed Price Negative/Uplift Item Sale
  - (D2) Ticket - Item Sale
  - (D3) Ticket - Negative or Uplift Item Sale
  - (D9) Ticket - Uplift/Discount on Subtotal
  - (06) Ticket - End
  - (07) Ticket - Cancel

  - (E0) Ticket Invoice - Print Header
  - (B0) Ticket Invoice - Fixed Price Item Sale
  - (B1) Ticket Invoice - Fixed Price Negative/Uplift Item Sale
  - (B2) Ticket Invoice - Item Sale
  - (B3) Ticket Invoice - Negative/Uplift Item Sale
  - (B9) Ticket Invoice - Uplift/Discount on Subtotal
  - (E3) Ticket Invoice - End

- (0F) Ticket Invoice - Cancel

- (30) Credit Note - Print Header
- (31) Credit Note - Fixed Price Item Sale
- (32) Credit Note - Fixed Price Negative/Uplift Item Sale
- (33) Credit Note - Item Sale
- (34) Credit Note - Negative/Uplift Item Sale
- (35) Credit Note - Subtotal/Total
- (36) Credit Note - Global Perception
- (37) Credit Note - Uplift/Discount on Subtotal
- (38) Credit Note - Payment
- (39) Credit Note - End
- (3A) Credit Note - Cancel

- (E0) Ordinary Printing Line on CR/SJ Station
- (E9) Printer Native Commands

8.2.1 Exceptions

The only exceptions to this overlay process occur during the following commands: daily closure and fiscal memory report.

- **Daily Closure Command** – On receipt of the first command after error, the closure is completed in one of the following two ways:
  Fiscal Memory Already Updated - The Daily Closure command is terminated as if the error did not occur.
  Fiscal Memory Not Yet Updated - The daily data is restored as it was before the Daily Closure command and the closure report printout is voided.
- **Fiscal Memory Report command** – On receipt of first command after an error, the memory report function is terminated and the report is voided.

8.3 (PLD) - Power Line Disturbance

PLD during command execution are processed as follows:

- When a PLD occurs the fiscal unit goes into a power off state.
- When power is restored the microcode checks if command execution was in progress when PLD occurred.
- If no command was in progress a normal IPL is performed. If command was in progress then internal accumulators and counters are restored to their original value (the value they had at PLD time).

8.3.1 Retrieve/Send Interrupted Command

A bit (PLD bit) is included in the IPL status sent over the communication link.
The PLD bit indicates to the application that the last command sent was not executed because of PLD.
The IPL routines restore the accumulators and counters to their original values, but no actions can be performed on totally or partially printed lines.
The application program can retrieve or send the last one command issued again using the Retrieve/Send Interrupted Command (08 cmd.) or send any other command that is valid for the procedure in progress.
The retrieve/send interrupted command has effect only on the following commands:

- (01) Ticket - Print Header
- (D0) Ticket - Fixed Price Item Sale
- (D1) Ticket - Fixed Price Negative/Uplift Item Sale
- (D2) Ticket - Item Sale
- (D3) Ticket - Negative or Uplift Item Sale
- (D9) Ticket - Uplift/Discount on Subtotal
- (06) Ticket - End
- (07) Ticket - Cancel

- (E0) Ticket Invoice - Print Header
- (B0) Ticket Invoice - Fixed Price Item Sale
- (B1) Ticket Invoice - Fixed Price Negative/Uplift Item Sale
- (B2) Ticket Invoice - Item Sale
- (B3) Ticket Invoice - Negative/Uplift Item Sale
- (B9) Ticket Invoice - Uplift/Discount on Subtotal
- (E3) Ticket Invoice - End
- (0F) Ticket Invoice - Cancel

- (30) Credit Note - Print Header
- (31) Credit Note - Fixed Price Item Sale
- (32) Credit Note - Fixed Price Negative/Uplift Item Sale
- (33) Credit Note - Item Sale
- (34) Credit Note - Negative/Uplift Item Sale
- (37) Credit Note - Uplift/Discount on Subtotal
- (39) Credit Note - End
- (3A) Credit Note - Cancel

- (C9) Print Barcode
- (EA) Ordinary Printing Line on CR/SJ Station
- (EB) Ordinary Printing Line on DI Station
- (E9) Printer Native Commands

8.3.2 Exceptions

The only exceptions to this overlay process occurs during the following commands: ticket - print header, ticket invoice - print header, credit note - print header, daily closure and fiscal memory report.

- **Ticket - Print Header command**: On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continues automatically from the point it was interrupted.
- **Ticket Invoice - Print Header command**: On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continues automatically from the point it was interrupted.
- **Credit Note - Print Header command**: On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continues automatically from the point it was interrupted.
- **Daily Closure command**: On IPL completion, after a PLD, the daily data is restored as it was before the daily closure command and the closure report printout is voided.
- **Fiscal Memory Report command** – On IPL completion, after a PLD, this function is terminated and the fiscal memory report printout is voided.

9.0 Serial Communication

The fiscal printer will have a serial communication port for electronic data collection. These services will print the short fiscal memory report.

The information transfer will be initiated for a device data collection (DRD) sending an audit command. The fiscal printer will respond with a data fiscal record (RDF). Each time that the fiscal printer finishes to transmit a RDF, will wait a response from DRD which will be one of the following ASCII characters.

- ACK (Acknowledge, hexadecimal 6), means that DRD received correctly data.
      The fiscal printer will transmit the following RDF.

- NAK (Negative Acknowledge, hexadecimal 15), means that DRD received
      incorrect data.
      The fiscal printer will retransmit the last RDF.

The fiscal printer always will wait ACK or NAK after transmit a RDF and will not accomplish any other task (unless to answer a unexpected test link command (CPV).
From this condition will only come out with some external operation communication, for instance, turning on/off the fiscal printer.
After receiving the ACK response corresponding last RDF transmited, the fiscal printer will send a finish report record (RFR) and then will print the fiscal memory report.

9.1 Communications Parameters

The communications parameters will be:

- 8 bits character length

- 1 start bit

- 1 stop bit

- parity none

- 9600 bauds transmission speed

9.2 Transmission Block Format

The transmission block format is shown in Figure 17 on page 322.

```
      ----------------------------------------
    -  STX  -  DATA  -  ETX  -  CHK  -
      ----------------------------------------
```

```
=====================================================================
=  FIELD  =  LENGTH  =             DESCRIPTION                  =
=====================================================================
=  STX    = 1 byte  =  ASCII character STX (Start of Text,      =
=                   =  hexadecimal 02). Indicate the record start. =
=====================================================================
=  DATA   = variable =  Set of ASCII characters with data to transmit. =
=                   =  The length depend on the Record Type.    =
=====================================================================
=  ETX    = 1 byte  =  ASCII character ETX (End of Text,        =
=                   =  hexadecimal 03). Indicate the record end. =
=====================================================================
=  CHK    = 1 byte  =  Check Byte. Will be the negative value (two's =
=                   =  complement) of the modulus 2**8 sum of the =
=                   =  data, the start and the end characters record. =
=                   =  (STX + DATA + ETX).                       =
=====================================================================
```

Figure 17. Transmission Block format

9.3 Audit Command

This record is used for the DRD to transmit fiscal data and then print the fiscal memory report. It is transmitted only one time at the begining of the communication. The data field have a fixed length of thirteen (13) bytes and its content will depend on the command received from host: Date or Closure Z.

1. Request Fiscal Data by Date

   The field data will be the following:

   FYYMMDDYYMMDD

   Where:

   F   = ASCII character capital letter F (hexadecimal 46), indicating fiscal data by date.

   YYMMDD = ASCII character indicating the period date (YY=year, MM=month, DD=day) initial and final.
            The first YYMMDD set is initial date and second YYMMDD set is final date.

2. Request Fiscal Data by Closure Z

   The field data will be the following:

   Z00dddd00dddd

   Where:

   Z   = ASCII character capital letter Z (hexadecimal 5A), indicating fiscal data by closure Z.

   00dddd = set of six (6) digits compound for ASCII characters, indicating initial closure number
            and final closure number of audit period.
            The first two digits have fixed value (ASCII character 0, hexadecimal 30) while the four
            remaining indicate the closure number. If the closure number is less than 4 digits, this
            field will be padded left with '0'.
            The first 00dddd set is initial closure number and second 00dddd set is final closure number.

9.4 Data Fiscal Record (RDF)

This record is used by the fiscal printer to send fiscal data to DRD. The length of this field is fixed and will consist of the record type 1 or 2.

9.5 Finish Report Record (RFR)

This record is used for the fiscal printer to indicate the DRD the end of fiscal data transmission.
The data field has fixed length of four (4) ASCII characters corresponding to the four-digit number indicating the number of RDF sent. If this number is less than 4 digits, it will be padded left with ′0′.
After receiving the ACK character corresponding to this record, the fiscal printer will print the fiscal memory report.

9.6 Test Link Command (CPV)

Anytime, the DRD will can send a unique character ASCIIENQ (ENQuiry, hexadecimal 05) and the fiscal printer will respond with a ACK character. This will allow to verify the link communication integrity and also restore it in case of a temporary break.

9.7 Lock Command (thru Audit Port)

This record is used by the data collection device (DRD) to perform thru the audit port the locking of the fiscal printer.

The data field of the command will have a length of 13 digits with the following structure.

B00XYZrrrrrrr

Where:

B   One ASCII character of uppercase of letter B (hex 42) indicating
          that this is a locking command to the Fiscal Printer.

00   Two ASCII characters zero (hex 30) for field filling.

XYZ   Three ASCII characters corresponding for manufacturing, brand and
          model code id assignated by the tax offices (DGI).

rrrrrrr   Seven ASCII characters corresponding to the machine serial number.

Upon receiving this command the printer could answer a NAK, which implies the re-transmiting of the command from the DRD. If the command was received OK, the machine will answer with a data fiscal report (RFR) indicating the result of the command execution.

The possible values for RFR could be:

```
CONDITION            ERROR MESSAGE

   0000        Comando de bloqueo ejecutado exitosamente
               (Locking command executed OK)

   0001        Codigo de registro de C.F. no coincidente
               (Serial Number Code not match)

   0002        Falta realizar cierre Z
               (Closure has to be done)

   0003        El C.F. ya esta bloqueado
               (Fiscal Printer already locked)

   0004        Error de solicitud de datos
               (Wrong data requested)
```

In all cases the DRD will finish sending an ACK upon receiving the RFR correcty.

After receiving the corresponding ACK, the message will be printed in a non-fiscal report.

9.8 Calculations

When the lock action is executed OK, the following counters are incremented:

Lif_N_Lock = Lif_N_Lock + 1
Day_N_Lock = Day_N_Lock + 1

9.9 Electronic Data Collection

9.9.1 Audit Data: Specifications and Record Designs

9.9.1.1 Record Type ″6″ Description

The record type 6 will have data from the different fiscal memory reports required by the taxes agent. It must exist a record for each fiscal memory report, the period will be delimited by the field FROM and TO. The days requested in these fields will be included in the audited period.

Field 1: RECORD TYPE
>	Record type identification, fill with constant ″6″.

Field 2: UTIK NUMBER
>	Unique Tributary Identification Key Number of the Fiscal Printer owner.

Field 3: DENOMINATION
>	First name and last name or Enterprise name of the Fiscal Printer owner.

Field 4: MANUFACTURING CODE
>	Alphabetic manufacturing code asigned for Agency Tax Collection (DGI).

Field 5: BRAND CODE
>	Alphabetic brand code assigned for Agency Tax Collection (DGI).

Field 6: MODEL CODE
>	Alphabetic model code assigned for Agency Tax Collection (DGI).

Field 7: SERIAL NUMBER
>	Serial number assigned for factory owner.

Field 8: CURRENT DATE
>	Data extraction date.

Field 9: POINT OF SALE
>	Point of sale number assigned to Fiscal Printer.

Field 10: FIRST CLOSURE
>	First closure number of audit period.

Field 11: FIRST DATE CLOSURE
>	First closure date of audit period. This date will be included in the
>	audit period.

Field 12: LAST CLOSURE
>	Last closure number of audit period.

Field 13: LAST DATE CLOSURE
>	Last closure date of audit period. This date will be included in the
>	audit period.

Field 14: LAST TRANS.FISC.BC
>	Last transaction fiscal number of audit period. Include tickets,

invoices C or invoices B.

Field 15: LAST INVOICE A
    Last invoice A number of audit period.

Field 16: PERIOD TOTAL
    Total amount of audit period.

Field 17: PERIOD VAT TOTAL
    Total VAT amount of audit period.

Field 18: TRANS.FISC.CNT.
    Quantity of tickets, invoices A, invoices B and invoices C emited during
    audit period.

Field 19: TRANS.FISC.CANC.CNT.
    Quantity of tickets, invoices A, invoices B and invoices C cancelled
    during audit period.

Field 20: LOCK CNT.
    Times locked fiscal printer during audit period.

Field 21: LAST CREDIT NOTE A
    Last credit note A number during audit period.

Field 22: LAST CREDIT NOTE BC
    Last credit note B and C number during audit period.

Field 23: LAST REMIT
    Last remit number during audit period.

Field 24: CREDIT NOTE TOTAL
    Credit note total during audit period.

Field 25: CREDIT NOTE VAT TOTAL
    Credit note VAT total during audit period.

```
===============================================================================
= FIELD =      POSITIONS      = DATA =                    =              =
=  NBR. ===================== TYPE =    DESCRIPTION       =  OBSERVATIONS =
=       = FROM =  TO  = QT. = CODE =                      =              =
===============================================================================
=   1   =    1 =   1 =   1 =   2 = Record Type         = Constant 6   =
=   2   =    2 =  12 =  11 =   2 = UTIK Number         =              =
=   3   =   13 =  52 =  40 =   3 = Denomination        =              =
=   4   =   53 =  53 =   1 =   1 = Manufacturing Code  =              =
=   5   =   54 =  54 =   1 =   1 = Brand Code          =              =
=   6   =   55 =  55 =   1 =   1 = Model Code          =              =
=   7   =   56 =  62 =   7 =   3 = Serial Number       =              =
=   8   =   63 =  68 =   6 =   2 = Current Date        = format YYMMDD =
=   9   =   69 =  72 =   4 =   2 = Point of Sale       =              =
=  10   =   73 =  76 =   4 =   2 = First Closure       =              =
=  11   =   77 =  82 =   6 =   2 = Date 1'st Closure   = format YYMMDD =
=  12   =   83 =  86 =   4 =   2 = Last Closure        =              =
=  13   =   87 =  92 =   6 =   2 = Date Last Closure   = format YYMMDD =
=  14   =   93 = 100 =   8 =   2 = Last Trans.Fisc.BC  =              =
=  15   =  101 = 108 =   8 =   2 = Last Invoice A      =              =
=  16   =  109 = 126 =  18 =   2 = Period Total        =              =
=  17   =  127 = 144 =  18 =   2 = Period VAT Total     =              =
=  18   =  145 = 152 =   8 =   2 = Trans.Fisc.Cnt.     =              =
=  19   =  153 = 160 =   8 =   2 = Trans.Fisc.Canc.Cnt. =             =
=  20   =  161 = 164 =   4 =   2 = Lock.Cnt.           =              =
=  21   =  165 = 172 =   8 =   2 = Last Credit Note A  =              =
=  22   =  173 = 180 =   8 =   2 = Last Credit Note BC =              =
=  23   =  181 = 188 =   8 =   2 = Last Remit          =              =
=  24   =  189 = 206 =  18 =   2 = Credit Note Total   =              =
=  25   =  207 = 224 =  18 =   2 = Credit Note VAT Total =            =
===============================================================================
```
DATA TYPE CODE: 1 – alphabetic, 2 – numeric, 3 – alphanumeric

9.9.1.2 Record Type ″6″ Description

The record type 2 will have daily detailed data of the transactions done.
It must exist a record for each closure of the audited period.

Field 1: RECORD TYPE
    Record type identification, fill with constant ″6″.

Field 2: UTIK NUMBER
    Unique Tributary Identification Key Number of the fiscal printer owner.

Field 3: CLOSURE DATE
    Closure date.

Field 4: CLOSURE NUMBER
    Closure number.

Field 5: MANUFACTURING CODE
    Alphabetic manufacturing code asigned for Agency Tax Recolection (DGI).

Field 6: BRAND CODE
    Alphabetic brand code assigned for Agency Tax Recolection (DGI).

Field 7: MODEL CODE

Alphabetic model code assigned for Agency Tax Recolection (DGI).

Field 8: SERIAL NUMBER
Serial number assigned for factory owner.

Field 9: DAILY TOTAL
Daily total corresponding at this closure date.

Field 10: DAILY VAT TOTAL
Daily VAT total corresponding at this closure date.

Field 11: LAST.TRANS.FISC.BC
Last transaction fiscal number corresponding at this closure date.
Include tickets, invoices C and invoices B.

Field 12: LAST INVOICE A
Last invoice A number corresponding at this closure date.

Field 13: TRANS.FISC.CANC.CNT.
Quantity of tickets, invoices A, invoices B and invoices C cancelled
corresponding at this closure date.

Field 14: LOCK CNT.
Times locked fiscal printer corresponding at this closure date.

Field 15: LAST CREDIT NOTE A
Last credit note A number corresponding at this closure date.

Field 16: LAST CREDIT NOTE BC
Last credit note B and C number corresponding at this closure date.

Field 17: LAST REMIT
Last remit number corresponding at this closure date.

Field 18: CREDIT NOTE TOTAL
Credit note total corresponding at this closure date.

Field 19: CREDIT NOTE VAT TOTAL
Credit note VAT total corresponding at this closure date.

```
================================================================================
= FIELD =       POSITIONS      = DATA =                      =               =
=  NBR. = ===================== TYPE =     DESCRIPTION       = OBSERVATIONS  =
=       = FROM =  TO  =  QT. = CODE =                        =               =
================================================================================
=   1   =    1 =   1 =   1 =   2  = Record Type             = Constant 2     =
=   2   =    2 =  12 =  11 =   2  = UTIK Number             =                =
=   3   =   13 =  18 =   6 =   2  = Closure Date            = format YYMMDD  =
=   4   =   19 =  22 =   4 =   2  = Closure Number          =                =
=   5   =   23 =  23 =   1 =   1  = Manufacturing Code      =                =
=   6   =   24 =  24 =   1 =   1  = Brand Code              =                =
=   7   =   25 =  25 =   1 =   1  = Model Code              =                =
=   8   =   26 =  32 =   7 =   3  = Serial Number           =                =
=   9   =   33 =  41 =   9 =   2  = Daily Total             =                =
=  10   =   42 =  50 =   9 =   2  = Daily Vat Total         =                =
=  11   =   51 =  58 =   8 =   2  = Last.Trans.Fisc.BC      =                =
=  12   =   59 =  66 =   8 =   2  = Last Invoice A          =                =
=  13   =   67 =  70 =   8 =   2  = Trans.Fisc.Canc.Cnt.    =                =
=  14   =   71 =  78 =   4 =   2  = Lock.Cnt.               =                =
=  15   =   79 =  86 =   8 =   2  = Last Credit Note A      =                =
=  16   =   87 =  94 =   8 =   2  = Last Credit Note BC     =                =
=  17   =   95 = 102 =   8 =   2  = Last Remit              =                =
=  18   =  103 = 120 =  18 =   2  = Credit Note Total       =                =
=  19   =  121 = 138 =  18 =   2  = Credit Note VAT Total   =                =
================================================================================
DATA TYPE CODE: 1 - alphabetic, 2 - numeric, 3 - alphanumeric
```

10.0 Argentina - Specific Information

This chapter contains information that is specific to Argentina:

- Default Decimal Printing Status
- End of Paper Rules
- Character Set

10.1 Default Decimal Printing Status

The default for Argentina is that the decimal status is ACTIVE for fiscal printing. Amounts should be printed as ′aaa.aaa.aaa,aa′.

10.2 End of Paper Rules

- When end of paper condition is detected on CR station, the message M17 ″END OF PAPER ON CR″ will be printed on SJ station.

- When end of paper condition is detected on SJ station, the message M18 ″END OF PAPER ON SJ″ will be printed on the new paper roll of SJ station.

10.3 Character Set

Argentina uses code page 850.

Hex table — columns are the 1st hex digit (0–F), rows are the 2nd hex digit (0–F). Each cell shows the character and its decimal value.

2nd \ 1st	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	(000)	Õ (016)	(032)	0 (048)	@ (064)	P (080)	. (096)	p (112)	Ç (128)	É (144)	á (160)	. (176)	. (192)	H (208)	. (224)	. (240)
1	Ŏ (001)	µ (017)	! (033)	1 (049)	A (065)	Q (081)	a (097)	q (113)	ü (129)	æ (145)	í (161)	. (177)	. (193)	I (209)	. (225)	. (241)
2	Đ (002)	þ (018)	" (034)	2 (050)	B (066)	R (082)	b (098)	r (114)	é (130)	Æ (146)	ó (162)	. (178)	. (194)	‖‖‖ (210)	. (226)	. (242)
3	Ê (003)	Þ (019)	# (035)	3 (051)	C (067)	S (083)	c (099)	s (115)	â (131)	ô (147)	ú (163)	. (179)	. (195)	⊟ (211)	. (227)	. (243)
4	Ë (004)	res (020)	$ (036)	4 (052)	D (068)	T (084)	d (100)	t (116)	ä (132)	ö (148)	ñ (164)	. (180)	. (196)	■ (212)	Ú (228)	. (244)
5	È (005)	Û (021)	% (037)	5 (053)	E (069)	U (085)	e (101)	u (117)	à (133)	ò (149)	Ñ (165)	Á (181)	. (197)	‖‖‖ (213)	. (229)	. (245)
6	Í (006)	Ù (022)	& (038)	6 (054)	F (070)	V (086)	f (102)	v (118)	ȧ (134)	û (150)	Ḡ (166)	Â (182)	ã (198)	. (214)	. (230)	. (246)
7	Î (007)	ý (023)	' (039)	7 (055)	G (071)	W (087)	g (103)	w (119)	ç (135)	ù (151)	ḡ (167)	À (183)	Ã (199)	. (215)	. (231)	. (247)
8	Ï (008)	Ý (024)	((040)	8 (056)	H (072)	X (088)	h (104)	x (120)	ê (136)	ÿ (152)	¿ (168)	İ (184)	└ (200)	. (216)	. (232)	. (248)
9	Ì (009)	± (025)	) (041)	9 (057)	I (073)	Y (089)	i (105)	y (121)	ë (137)	Ö (153)	. (169)	╣ (185)	╔ (201)	. (217)	. (233)	. (249)
A	Ó (010)	÷ (026)	* (042)	: (058)	J (074)	Z (090)	j (106)	z (122)	è (138)	Ü (154)	. (170)	‖ (186)	╩ (202)	. (218)	. (234)	. (250)
B	β (011)	. (027)	+ (043)	; (059)	K (075)	[(091)	k (107)	{ (123)	Ï (139)	ø (155)	. (171)	╗ (187)	╦ (203)	. (219)	. (235)	. (251)
C	Ô (012)	⊟ (028)	, (044)	< (060)	L (076)	\ (092)	l (108)		(124)	Î (140)	£ (156)	. (172)	╝ (188)	╠ (204)	. (220)	. (236)	. (252)
D	Ò (013)	■ (029)	- (045)	= (061)	M (077)	] (093)	m (109)	} (125)	Ì (141)	Ø (157)	¡ (173)	¢ (189)	═ (205)	. (221)	. (237)	. (253)
E	res (014)	. (030)	. (046)	> (062)	N (078)	^ (094)	n (110)	~ (126)	Ä (142)	Ş (158)	. (174)	. (190)	╬ (206)	. (222)	. (238)	H (254)
F	õ (015)	▶ (031)	/ (047)	? (063)	O (079)	_ (095)	o (111)	. (127)	Å (143)	ş (159)	¤ (175)	. (191)	. (207)	. (223)	. (239)		(255)

Notes: Character '0E' is reserved to turn ON double wide print mode in Fiscal Commands.
Character '14' is reserved to turn OFF double wide print mode in Fiscal Commands.

11.0 Suggestions for Application Developer′s

This chapter is to suggest some hints for the application programs to improve the performance.

- The usage of the emphasized and double-high charaters should be minimized in order to reduce the printing time, due to the lines that contains such characters take four times more than the regular printing.

- If the totals in regular vouchers are calculated by the application instead of be requested to the fiscal printer, generally takes less time.

- We recommend the usage the DA (Electronic Read Fiscal Memory Tables) and DB (Electronic Read Counters and Accumulators) commands after any type of interrupts, like power down, paper out to determine the state of the fiscal printer and the values of internal counters and accumulators to allow the continuation of the current document in progress, if any.
  Fiscal memory tables can also be interrogated.

- In some countries, all the header and trailer lines are not mandatory, so the use of less lines result in a better performance.