
Base Package Release Notes

Software Beta Release 2.23

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Conventions

Convention	Description
commands	This typeface means that the command must be entered exactly as shown in the text and the [Return] or [Enter] key pressed.
Screen displays	This typeface represents information as it appears on the screen.
[Key] names	Key names appear in the text written with brackets. For example [Return] or [F7]. If it is necessary to press more than one simultaneously, the key names are linked with a plus (+) sign: Press [Ctrl] + [Alt] + [Del]
Bold-face text	Signal names, instructions and register names are displayed in bold. Selections made via the menu hierarchy of a software application.
Words in <i>italicized</i> type	Italics emphasize a point, concept or denote new terms.
	This symbol indicates important information or instructions.

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Contents

Release Notes for the Base Package

What's new in Release 2.23	4
Issues fixed in Release 2.23	4
Known Issues	4
Runtime	4
CSXL	5
CSDFT	6

Release Notes for the Base Package

This document describes the most important changes to the base package since release 2.22. In addition, it lists the known open issues and limitations in release 2.23 of the base package.

For more information regarding the status and workarounds related to any of these issues, please contact ClearSpeed support quoting the relevant CTS number.

What's new in Release 2.23

Beta 2.23 contains a number of fixed bugs since release 2.22. There is no new functionality in this release.

Issues fixed in Release 2.23

The following issues have been fixed in this release:

CTS 2309: Improvements in robustness of the install script.

CTS 2432: The documentation for CSDFT is missing the function `CSDFT_free_user_func` which is used to free up a user function. This function is as follows:

```
CSDftStatus CSDFT_free_user_func( CSDftUserFunc handle ) ;
```

CTS 2449: A flashing yellow LED is used to indicate that the *Advance* Accelerator board is operating out of its recommended temperature range. On some boards, this warning could be triggered at normal operating temperatures because the threshold value was incorrectly set

CTS 2491: Improvements made to the comments in `csapi.h`.

Known Issues

The following issues are currently open.

Runtime

CTS 239: `csrun` or host client applications do not check whether the simulator has been reset. Running code on a simulator that has not been reset should not be attempted. It is the responsibility of the user to reset the simulator before running code (using `csreset -s`).

CTS 647: Calling `dprintf` frequently on the board will cause the host to block other interrupts while each print is completed. This may cause the system to slow down if semaphores are being used to communicate between the host and the board at the same time.

CTS 1195: The driver may produce a warning message of the form:

```
HalfBridge_waitforDMA: pre_enable_mask = 7, should be 0  
or HalfBridge_waitforDMA: post_dma_int_mask not zero = 7
```

This message is due to an internal check failing however it does not affect the operation of the driver.

CTS 1417: If a program running on the *Advance* Accelerator board is abnormally terminated, it is possible that it may continue to run in the background. Further attempts to use the board will fail to connect, giving the process

ID of the process still using the board. You should ensure that any applications are properly terminated. For example, using `[CTRL]+[Z]` to background a process will cause problems for other programs.

CTS 1747: An error will arise on RHE3 platforms if an older release of the runtime (pre 2.20) is used in conjunction with the new kernel driver. The machine will typically crash with a message starting "do_IRQ: stack overflow".

It is important that the installation process be completed as documented to ensure that the correct version of the runtime is used with the correct kernel driver.

CTS 1820: The functions `CSAPI_read_mono_memory_async_wait`, `CSAPI_read_mono_memory_async_poll` and their `CSAPI_write` counterparts will not return an error code if the asynchronous transfer failed.

CTS 1982: The kernel driver for 2.4 kernels (RHEL 3) may cause the kernel's memory space to become fragmented, resulting in out of memory failures after a very long period of continuous use.

CTS 2004: This release includes a script for resetting the *Advance* Accelerator board when `csreset` fails to do so. This does a 'hard' reset of the processors. This functionality will be incorporated into `csreset` in a future release. Before using `csreset`, please gather any diagnostic or debugging information as all state will be lost by the hard reset. For example, the output from `csreset -v`

Before running the script, first setup your environment if you have not already done so. Under Linux, source the `bashrc` file (usually present in `/opt/clearspeed/csx600_m512_le/bin`). For Windows, start a command prompt using the shortcut from the ClearSpeed start menu item. If you have more than one board, set the environment variable `LLDINST` to the instance number of the board to be recovered. For example, to reset only the first board under Linux enter: `export LLDINST=0`

To run the script, type the command `recover_board`. You should then see some output like this:

```
Board recovery utility

This should only be used:
- when csreset fails to reset your board
- after any useful diagnostic information has been gathered (e.g. the output from
csreset -v).

If you wish to continue, press the return key. Otherwise, press control-c to exit.

If you are happy to run, then press the return key. You will then see output as
follows:

Starting...
25%
50%
75%
DONE.

Board recovery attempted - you can now re-run csreset.
```

To be safe, the `recover_board` script and `csreset` should be run whenever the board is powered up.

CSXL

CTS 1108: If a host application program using the CSXL library is terminated abnormally (for example, by using `[Ctrl]+[C]`), the *Advance* Accelerator board may be left in an undefined state. It may be necessary to reset the board (using the `csreset` command) before restarting the application.

CTS 2364: The example `dgemmtest.c` program in the *CSXL User Guide*, and provided as source code, may not compile on all platforms. An alternative example is available from the customer support website:

<https://support.clearspeed.com/search.php?text=dgemm&type=7>

CSDFT

CTS 1430: The board side plan (`CSDFT_create_plan_<1|2|3>d` and `CSDFT_create_convolution_plan_<1|2>d`) and `execute` (`CSDFT_execute` and `CSDFT_execute_convolution`) functions for CSDFT do little checking on correctness of input. It is possible to get bus errors if unsupported values are used.

CTS 1807: The CSDFT Library is at a pre-beta stage and as such there are a number of incomplete or unsupported features. Please refer to the README included in the package for a more complete description of what features are currently available.