



Release Notes

MT23108 InfiniHost Firmware

FW-23108 Rev 3.3.5

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1 Overview

These are the release notes for the MT23108 InfiniHost firmware, FW-23108 Rev 3.3.5. This firmware supports the MT23108 device (A1 silicon version only), and the Mellanox HCA Adapter Cards listed in Table 1.

Note: After burning new firmware to an HCA board, reboot the machine so that the new firmware can take effect.

Table 1 - Supported HCA Adapter Cards

| HCA Card OPN | Code Name | Description |
|---|------------|---|
| MHX-CEXXX-T ¹ (previously MTPB23108) | Cougar | InfiniHost PCI-X HCA Adapter Card |
| MHXL-CFXXX / MHXL-CFXXX-T ¹ (previously MTLP23108) | Cougar Cub | Low Profile InfiniHost PCI-X HCA Adapter Card |

1. XXX reflects the size of on-board memory (in MB): 128, 256, or 512. OPN with -T indicates a tall bracket card; OPN without -T indicates a short bracket card.

This document consists of the following sections:

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2 Major Changes and New Features

- The .ini files for the **Cougar Cub** HCA cards (i.e., the low profile HCA cards only) now *enable* Port 1 and Port 2 SerDes RX Equalization. (Previously disabled by default.)
- This release supports *only* .ini configuration files. Board (.brd) files are no longer supported.

3 Known Issues

The following table describes known issues in this firmware release and possible workarounds.

Table 2 - Known Issues

| Index | Issue | Description | Current Implemented Workaround in FW | Possible Workaround in Driver | Patch Release (fix) | Scheduled Release (fix) |
|-------|---|---|---|---|---------------------|-------------------------|
| 1. | MSIx vectors | Writing to MSIX vectors (Address/Data/Mask) does not take immediate effect. There may be MSIX messages that leave the device according to the old vector. | NA | Commit a PCI configuration cycle after the MSIX modification | NA | NA |
| 2. | QPC.Flight_LIM | QPC field – no HW limit, infinite WQEs on send. | NA | NA | NA | NA |
| 3. | QUERY_DDR | Query does not return JEDEC vendor ID yet. Scope of status is limited to active / not active. | NA | NA | NA | NA |
| 4. | RTR2RTS_QPEE; SQD2RTS_QPEE: changing optional fields rra_max and ra_buf_index is not supported. | The optional fields rra_max and ra_buf_index are not supported in the RTR2RTS_QPEE and SQD2TRS_QPEE commands. | Change requests for these fields do not take effect, and no error indication is provided. | Mask these optional fields. | NA | NA |
| 5. | PCI 2.3 control and status for interrupts | InfiniHost does not support PCI2.3 control and status bits for interrupts. | NA | NA | NA | NA |
| 6. | SW reset in memory controller mode | On PCIX systems with the bus downgraded to PCI: When the Flash image is corrupted and InfiniHost comes up as a memory controller and the I2C connector is attached, a SW reset may hang the system. | NA | 1. Reboot the system. 2. Disconnect I2C when issuing a SW reset. | NA | NA |
| 7. | Config cycles during sys_en | PCIX cfg cycles issued while the system-enable command is in progress may take a long time to complete. This causes some ServerWork chipsets to time-out and hang the system. | NA | Do not issue config cycles during a sys_en command. | NA | NA |

4 Bug Fixes

None in this firmware release.

5 Invariant Sector (IS) Changes / Fixes

None in this firmware release.

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6 History

Table 3 - History of Bug Fixes

| Issue | Description | Discovered in | Fixed in |
|--|--|---------------|----------|
| MADs:PortInfo Get() | When querying for information about an InfiniHost III Ex IB port via its other IB port, the wrong Local port number is returned. Instead of the number of the second port, the one which received the MAD packets, the number of the first port is being returned. (ID: 24177) | 3.3.2 | 3.3.3 |
| Requester ScatterList corruption upon CQ error | A CQ error can cause corruption in the Requester ScatterList Database. As a result QPs may move to error, and the device may stop sending packets (30670) | 3.3.2 | 3.3.3 |
| Big UAR pages | Support for big UAR pages is not complete (ID: 29496) | 3.3.2 | 3.3.3 |
| Multicast Index mis-calculation | Multicast Index mis-calculation may cause dropping of multicast packets instead of inserting them. (ID: 29469) | 3.3.2 | 3.3.3 |
| CQ error or QP error together with 2ERR_QPEE may cause CommandIF to hang | (ID: 29431,29737) | 3.3.2 | 3.3.3 |
| FW deadlock when flushing a QP | (ID: 29277) | 3.3.2 | 3.3.3 |
| After a Catastrophic Error, HCA start may fail | (ID: 29066) | 3.3.2 | 3.3.3 |
| Port state ACTIVE_DIFFER should be reported as ACTIVE | (ID: 28811) | 3.3.2 | 3.3.3 |
| DIMM Unrecoverable Error not detected | (ID: 28902) | 3.3.2 | 3.3.3 |
| EQC.intr for the Catastrophic Error EQ is hard wired to 0x0 | It now can be any legal value (including MSIX) (28815,28377) | 3.3.2 | 3.3.3 |
| SRQ performance is too low | (ID: 28702) | 3.3.2 | 3.3.3 |
| MSIX vector race when updating MSIX Table | (ID: 26599) | 3.3.2 | 3.3.3 |
| UD starvation | UD messages are not sent because RC ACKs are not arriving (ID: 28374,28427) | 3.3.2 | 3.3.3 |
| DIMM timing parameters | DIMM timing parameters are not configured correctly. | 3.3.2 | 3.3.3 |
| Configuration Cycles get many RETRIES when FW does SysEn/SysDis | (ID: 21332) | 3.3.2 | 3.3.3 |
| Long scatterLists may cause data corruption | (ID: 28888) | 3.3.2 | 3.3.3 |
| Enforcement of burnt Max_Read_Byte_count | Burnt Max_Read_Byte_count was not enforced. (ID: 29807) | 3.3.2 | 3.3.3 |
| Single Symbol Errors are breaking the link instead of being ignored | Cannot raise link with IB spec 1.2 compatible device. (ID: 28465) | 3.3.2 | 3.3.3 |
| Consumer Index corruption in a Completion Queue | When using Increment_CI doorbells, to increment the CI in more than 1, CI may advance wrongly, causing a false CQ overrun, or not detecting a real overrun (ID: 27893) | 3.3.1 | 3.3.2 |

The following table summarizes the history of Invariant Section bug fixes:

Table 4 - IS Changes/Fixes

| Issue | Description | Discovered in | Fixed in |
|---|---|---------------|-----------|
| FailSafe failure report | Corruption of FW image in NVRAM does not result in a correct PCI cfg syndrome in register 20 as required. (ID:15912) | 1.16.0000 | 1.18.0000 |
| Header corruption on boot2 section | If one of the first two words in the image is corrupted (0), FailSafe code cannot recover nor respond to configuration cycles. (ID:16181) | 1.16.0000 | 1.18.0000 |
| IS memory controller non-PCIX compliant | On PCIX systems, when InfiniHost comes up as a memory controller, a SW reset may hang the system.(ID:16181) | 1.16.0000 | 1.18.0000 |
| FailSafe when two images are damaged | In Failsafe mode, when both the primary and secondary images are damaged, InfiniHost does not come up as a memory controller. | 1.16.0000 | 1.16.0008 |

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7 Creating a Device Configuration (.ini) File

Mellanox firmware burning tools enable setting and/or changing configuration variables by the use of an *optional* configuration (.ini) file. This is needed in case the default values of some variables do not suit a user's specific system requirements. This section describes how to create this configuration file.

To begin with, the .ini file is a text file is composed of one or several configuration *sections* (see [Section 7.1](#) for the format and/or an example). It is recommended to include, under the appropriate sections, only those variables that need to be changed.

A firmware release includes a reference file called fw-23108-defaults.ref. This file contains the list of all variables which can be configured by a configuration (.ini) file. For each variable the reference file includes a short explanation, the [<section>] it should be under, the range of possible values, and a line with the *default* setting of the variable which is assumed by the firmware release.

To create the .ini file, simply copy the lines with the variables you wish to set, paste them under their appropriate [<section>] headings, and change the setting values as desired.

7.1 Configuration (.ini) File Format

The .ini file is composed of one or more *sections* with variable settings. Each section in the file starts with its name between square brackets, e.g. [ADAPTER], [HCA], [IB], etc. The section name is followed by one or more lines of configuration settings and comments, as in the .ini file example shown below. Note that comment lines start with a semicolon.

Excerpt from fw-23108-defaults.ref:

```
;;;; VPD support can be Disabled/Enabled
;;;; Under [ADAPTER] section
;;;; Boolean parameter. Possible values: true, false .
```

```
vpd_enable = true
```

Example of a .ini file:

```
;Begin of .ini file

[ADAPTER]
vpd_enable = false

;This is a comment line
;End of .ini file
```