



Release Notes

MT25204 InfiniHost III Lx Firmware

FW-25204 Rev 1.0.700

Mellanox Technologies

© Copyright 2005. Mellanox Technologies, Inc. All Rights Reserved.

MT25204 InfiniHost III Lx Firmware Release Notes

Document Number:

Mellanox Technologies, Inc.
2900 Stender Way
Santa Clara, CA 95054
U.S.A.
www.Mellanox.com

Tel: (408) 970-3400
Fax: (408) 970-3403

Mellanox Technologies Ltd
PO Box 586 Hermon Building
Yokneam 20692
Israel

Tel: +972-4-909-7200
Fax: +972-4-959-3245

Mellanox Technologies

1 Overview

These are the release notes for the MT25204 InfiniHost III Lx firmware, FW-25204 Rev 1.0.700. This firmware supports 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 |
|-------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|
| MHES14-XT | Tiger SDR | InfiniHost III Lx PCI Express x4 MemFree HCA Adapter Card. Note: IB ports support operation at single data rate (SDR) only. |
| MHES18-XT (Tall Bracket) MHES18-XS (Short Bracket) | Cheetah SDR | InfiniHost III Lx PCI Express x8 MemFree HCA Adapter Card. Note: IB ports support operation at single data rate (SDR) only. |
| MHGS18-XT (Tall Bracket) MHGS18-XS (Short Bracket) | Cheetah DDR | InfiniHost III Lx PCI Express x8 MemFree HCA Adapter Card. Note: IB ports support operation at double data rate (DDR). |

The document consists of the following sections:

- “Major New Features” (page 3)
- “Known Issues” (page 4)
- “Bug Fixes” (page 5)
- “Creating a Device Configuration (.ini) File” (page 6)

2 Major New Features

- A new firmware versioning method is now applied
- The IB link specification as it is defined in IBTA v1.2 is now supported also for Single Data Rate operation of the link

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 | Patch Release (fix) | Scheduled Release (fix) |
|-------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------|-------------------------|
| 1. | Possible wrong PCI Rev-ID returned for early versions of MHES14-XT and MHES18-XT HCA Cards | Early MHES14-XT (Tiger) Cards (Rev A1/B00) and early MHES18-XT (Cheetah) Cards (Rev A00/B00) may appear as IB DDR capable (PCI Rev-ID 0x20) though they are not. (ID: 33834) | NA | Treat the HCA Card as if its PCI RevID is 0xA0 (SDR) and not 0x20 | NA | 1.0.800 |
| 2. | IB performance counters | IB performance counters are not visible through GSI (ID: 28304) | NA | NA | NA | NA |
| 3. | 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 |
| 4. | QPC.Flight_LIM | QPC field – no HW limit, infinite WQEs on send. | NA | NA | NA | NA |
| 5. | 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 will not take effect, and no error indication is provided. | Mask these optional fields | NA | NA |
| 6. | PCI 2.3 control and status for interrupts | InfiniHost III Lx does not support PCI2.3 control and status bits for interrupts. | NA | NA | NA | NA |
| 7. | Change of memory bars on a disabled system | Changing size / addresses of memory bars between SYS_DIS and SYS_EN may cause the InfiniHost III Lx to hang (ID: 24206) | NA | NA | NA | NA |
| 8. | BAR resizing on an enabled system | Changing bar sizes when a system is enabled may cause the InfiniHost III Lx to hang (ID: 24208). | NA | NA | NA | NA |
| 9. | SW reset via configuration cycles | SW reset via configuration cycles may create double PCI Express completions for the configuration transaction. | NA | If InfiniHost III Lx boots in memory controller mode, perform power cycle / hot reset after restoring the flash | NA | NA |

Table 2 - Known Issues (Continued)

| Index | Issue | Description | Current Implemented Workaround in FW | Possible Workaround | Patch Release (fix) | Scheduled Release (fix) |
|-------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------|---------------------|-------------------------|
| 10. | SW reset is performed during a configuration transaction | If SW reset is performed while a configuration transaction is outstanding, it may create double PCI Express completions for the configuration transaction. | NA | Do not perform SW reset during configuration cycles | NA | NA |
| 11. | Flash CRC error | InfiniHost III Lx fails to report a Flash CRC error. | NA | NA | NA | NA |

3.1 Unsupported InfiniHost III Programmer's Reference Manual Features

The following features of the *InfiniHost III Programmer's Reference Manual, Document no. 2248PM*, are not supported:

1. Flight lim value in QPC may show a value other than 0'1111 even when set for unlimited usage. (Note: this feature is *not* scheduled for support.)
2. Power Management per the *PCI Express Base Specification, Rev. 1.0a* is not implemented.

4 Bug Fixes

The following table describes known issues from previous releases of InfiniHost III Ex firmware which were fixed in this firmware release.

Table 3 - Bug Fixes

| Issue | Description | Discovered in | Fixed in |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------|----------|
| MAD_IFC command does not check all bits of port number | The MAD_IFC command now checks all of the 8-bit port field in the command input-modifier(ID:33213) | 1.0.1 | 1.0.700 |
| Send WQ with size 1 causes wrong WQE address in CQE | Fixed (ID:33302) | 1.0.1 | 1.0.700 |
| ACK delay when sender is back-pressured | This causes a transport timeout to the remote peer | 1.0.1 | 1.0.700 |
| RNR timer is always set to 0x1F | RNR timer for a Sender retry is always configured to 0x1F regardless of the QP set value (ID:31959) | 1.0.1 | 1.0.700 |
| Unreliable-QP context corruption | Fixed (ID:31927) | 1.0.1 | 1.0.700 |
| Long PCI express delays during boot | Fixed (ID:30081, 31119) | 1.0.1 | 1.0.700 |

5 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 5.1 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-25204-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.

5.1 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-25204-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
```