



Dolphin MXH832 Adapter Firmware Release Note

April 27th 2021

Version 1.5

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1 Introduction

This release note covers the Transparent MXH832 PCIe Gen3 x16 Adapter card firmware. The firmware consists of Microchip PFX runtime executables and configuration data (PFX FLASH) and Board Management Controller firmware (BMC firmware). This release note contains a summary of the changes made. Please contact Dolphin for details.

1.1 Supported topologies

The firmware supports the following transparent configurations

- Single Transparent x16 Host
- Dual Transparent x8 Host
- Quad Transparent x4 Host
- Transparent Target (any PCIe width)

1.2 BMC Firmware versions

The Firmware version is covering the MXH832 BMC firmware changes. The recommended BMC firmware version is 8.12.

Firmware version	Release date	Note
Pre 8.9		Not recommended for use, please upgrade the latest available firmware.
8.9	September 23 rd 2019	Known problems: <ul style="list-style-type: none">• BMC stability during Host reboot.• Temperature sensor may give false values.• Incompliance issues related to the CMI specification. Impact: This version is not recommended as devices may not be detected after a reboot. 3 rd party devices supporting the CMI protocol may not be reset. The link may not train to a full x16 link width. Please upgrade to the latest firmware.
8.10	October 31 st 2019	Fixes: <ul style="list-style-type: none">• Fixes noncompliance issues related to the CMI specification.• Improve stability during Host reboot.• Fixed issue reading onboard temperature sensor.
8.11	February 20 th 2020	Fixes: <ul style="list-style-type: none">• Improved CMI reset handling with one cable
8.12	June 2 nd 2020	Fixes: <ul style="list-style-type: none">• Fixed reboot problem that could cause host lookup using x8/x16 CMI cables• Fixed BMC stability issue that could cause target device not being detected during boot.• Bundled with eXpressWare 5.18 Current shipping version.

1.3 PFX FLASH Versions

The PFX FLASH version changelog can be found below. Please note that the Dolphin software tools report the PFX FLASH version as the EEPROM version. The recommended PFX FLASH version is 14.

FLASH version	Release date	Note
10	March 29 th 2019	ChipLink 1.45.06
11	April 10 th 2019	ChipLink 1.46.24

12	May 14 th 2019	ChipLink version 1.47.13 - Enabled Optical support for all ports
13	August 27 th 2019	ChipLink version 1.48.36
14	Sept 17 th 2019	<p>PFX Firmware MR4 Patch 4 (1.B.0.8C) / ChipLink version 1.49.00</p> <ul style="list-style-type: none"> - Management Settings, Credit Timeout interval = 7000 = 14.336 ms (Was 4 - 5 ms) - Physical Port Settings, Enable Credit timeout = Enable (Was inconsistently set on various ports across configs) - Partition settings, Maximum Payload Size = 128 for PCIe Base Specification Compliance on edge port (Was inconsistently set across configs) <p>Bundled with eXpressWare 5.18 Current shipping version</p>

2 Appendix

2.1 How to determine the Firmware version

The version of the firmware components can be retrieved using the **dis_diag** tool. This tool is available by installing the Board Management Software / eXpressWare 5.18 or newer available from Dolphin. Please see options using **-h** option. This software is available for both Windows and Linux. Only the EEPROM (PFX FLASH) version is reported, version 14 is bundled with BMC firmware version 5.12

2.1.1 Linux platforms

```
# cd /opt/DIS/sbin
# ./dis_diag
```

2.1.2 Windows platforms

```
> cd %ProgramFiles%\Dolphin Express MX\Util
> .\dis_diag
```

2.1.3 Example output

```
# dis_diag
=====
Dolphin diagnostic tool -- dis_diag version 5.14.0 (Mon Mar 19 16:44:17 CET 2018)
=====

dis_diag compiled in 64 bit mode
Driver : Dolphin IRM (GX) 5.6.0 Jan 24th 2018 (rev 33fff3a)
Date   : Thu Mar 22 12:59:28 CET 2018
System : Linux somenode 3.10.0-514.21.1.el7.x86_64 #1 SMP Thu May 25 17:04:51 UTC 2017
x86_64 x86_64 x86_64 GNU/Linux

Number of configured local adapters found: 1

Adapter 0 > Type           : MXH832
           Mode           : TRANSPARENT
           NodeId         : 244
           Serial number  : MXH832-CG-000413
           MXH chip family : MICROSEMI - PFX GEN3
           MXH chip vendorId : 0x11f8
           MXH chip device : 0x8532
           MXH chip revision : 0x0 (ZA)
           EEPROM version  : 14
           EEPROM vendor info : 0x0000
           Card revision   : CG
           Topology type   : Not determined
           Topology Autodetect : No
           Number of enabled links : 1
           Max payload size (MPS) : 128
           Multicast group size : 2 MB
           Multicast groups : 0
           Clock mode slot : Port
           Clock mode link : Global
           PCIe slot state : x16, Gen3 (8 GT/s)
           PCIe slot capabilities : x16, Gen3 (8 GT/s)
```

2.2 How to upgrade the firmware

To upgrade the firmware, please install the eXpressWare Board Management Software 5.18 or newer and follow the instructions for Firmware Upgrade. The software for MXH832 adapters can be found at www.dolphinics.com/mx

2.2.1 Linux platforms

```
# cd /opt/DIS/sbin  
# ./upgrade_eeprom.sh --upgrade
```

2.2.2 Windows platforms

```
> cd %ProgramFiles%\Dolphin Express MX\Util  
> .\upgrade_eeprom.cmd --upgrade
```

Please carefully review the output from the upgrade utility. A complete power cycle of the system (including removal of AuxPower) is required. Please verify the firmware upgrade was successful after system is powered on again following the steps found in section 2.1 How to determine the Firmware version above.

2.3 How to contact Dolphin Support

Please contact Dolphin support at pci-support@dolphinics.com if you have any questions or issue.