Dolphin MXH95x Transparent Adapter Firmware Release Note

7th May 2021

Version 2.2

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1 Introduction

This release note covers the MXH95x PCIe Gen4 x16 Transparent Adapter card firmware. . The firmware consists of Microchip PFX runtime executables and configuration data and Board Management Controller firmware (BMC config). 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. The actual maximum link width and number of links are limited by the type of card / number and type of FireFly modules mounted. More information can be found in the MXH95x Transparent Adapter Users Guide.

- 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 covers the MXH95x BMC firmware changelog

Firmware version	Release date	Note
1.0	September 24th 2020	Initial firmware release. Support for single x16 link.
1.1	November 12th, 2020	• Added reset LED, 500ms pulse triggered by EDGE_PERST falling edge. • Create 5ms reset pulse on all cables in a logical port.
1.2	December 3rd, 2020	• Adds Board Firmware Recovery support. • Adds support for transparent dual x8 and quad x4 configurations.
1.4	February 25th 2021	• Adds firmware version reporting. • FireFly temperature and voltage readouts.
1.5	March 12th, 2021	• Fixed issue with reset on dual x8 configurations Current shipping version. Bundled with eXpressWare 5.18

1.3 PFX FLASH Versions

The PFX FLASH version changelog. Please note that the Dolphin software tools report the PFX FLASH version as the EEPROM version.

PFX Multiconfig version	Release date	Note
1	October 13th, 2020	Initial internal firmware release. • Support for single link configurations. • PMC Firmware version pm74605_pfx_03600049
2	December 10th, 2020	• Updated GPIO control required by BMC version 1.2 • Fixes PFX upgrade problem
3	February 16th, 2020	• Applied PFX: MR2 3.70.0.4F Bundled with eXpressWare 5.18 Current shipping version.

1.4 Known problems and planned improvements

- Safety mechanism to trigger board shutdown on overtemperature will be added in firmware version 2.1
- PFX Synthetic Endpoint not supported. Contact Dolphin for information.

2 Appendix

2.1 How to determine the Firmware versions

The version of the firmware components can be retrieved using the **dis_diag** tool. Please see options using –h option. This tool is available by installing eXpressWare Board Management Software 5.18 or newer. The software is available for both Windows and Linux and can be downloaded from www.dolphinics.com/mx

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 5.18.0 (Mon Oct 12 16:44:17 CET 2020)
===============================================================================

dis_diag compiled in 64 bit mode
Driver : Dolphin IRM (GX) 5.18.0 Oct 24th 2020 (rev 33fff3a)
Date   : Mon Oct 12 12:59:28 CET 2020
System : Linux somenode 3.10.0-514.21.1.el7.x86_64 #1 SMP Thu Oct 12 17:04:51 UTC 2020
x86_64 x86_64 x86_64 GNU/Linux


Number of configured local adapters found: 1


Adapter 0 > Type                   : MXH942
            Mode                   : TRANSPARENT
            NodeId                 : 4
            Serial number          : MXH952-CC-000015
            MXH chip family        : MICROSEMI - PFX GEN4
            MXH chip vendorId      : 0x11f8
            MXH chip device        : 0x4036
            MXH chip revision      : 0x0 (ZB)
            EEPROM version         : 3
            EEPROM vendor info     : 0x0000
            Firmware version       : 1.5
            Card revision          : CC
```

2.2 How to upgrade the firmware

The firmware can be upgraded using the upgrade_eeprom utility bundled with eXpressWare version 5.18 or newer.

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.ps1 --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.