



Dolphin MXH94x NTB Adapter Firmware Release Note

9th March 2021

Version 1.1

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1 Introduction

This release note covers the MXH94x PCIe Gen4 x16 NTB Adapter card firmware. The firmware consists of PFX configuration data and Management processor (BMC) firmware. This release note contains a summary of the changes made. Please contact Dolphin for details.

1.1 Supported configurations

The latest released firmware supports the following NTB configurations:

- Dual Host x16 Host

Please find additional information on supported topologies and functionalities in the eXpressWare release notes. Please note eXpressWare 5.18.0 or newer is required for this card.

1.2 BMC Firmware versions

The Firmware version is covering the MXH94x NXP firmware changes.

Firmware version	Release date	Note
1.0	September 24 th 2020	Initial firmware release. Support for single x16 link.
1.2	December 3rd, 2020	<ul style="list-style-type: none">• Adds Board Firmware Recovery support.
1.4	February 25 th , 2021	<ul style="list-style-type: none">• Adds firmware version reporting.• Adds FireFly temperature and voltage readouts.
1.5	March 9 th , 2021	<ul style="list-style-type: none">• Companion release with MXH94x Transparent cards. 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	<ul style="list-style-type: none">• Initial release. Based on Microchip firmware pm74605_pfx_03600049.
2	December 10th, 2020	<ul style="list-style-type: none">• Added DMA support• Set management endpoint BAR to 4MB• Fixed firmware upgrade problem
3	February 16 th 2021	<ul style="list-style-type: none">• Applied Microchip firmware MR2, 3.70.0.4f. Bundled with eXpressWare 5.18

1.4 Known problems and planned improvements

- 3 and 5 node NTB topology not supported, contact Dolphin for an update.
- Safety mechanism to trigger board shutdown on overtemperature. To be added in BMC firmware version 2.1
- PFX Synthetic Endpoint not supported. Contact Dolphin for information.

2 Appendix

2.1 How to check Firmware and EEPROM version

The version of the firmware components can be retrieved using the **dis_diag** tool. This information is available by installing eXpressWare 5.18 or newer. Please see options using **-h** option. This software is available for both Windows and Linux.

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           : MXH940
           Mode           : NTB
           NodeId         : 4
           Serial number  : MXH940-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.

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 check Firmware and EEPROM 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.