



Dolphin MXP909 PXIe Peripheral module Firmware Release Note

10th April 2025

Version 1.1

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1 Introduction

This release note covers the MXP909 PXIe Peripheral module firmware. The firmware consists of Microchip PFX runtime executables, 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 latest released firmware supports the following transparent configurations

Cable Configuration:

- Single x4 / x8 / Downstream using cable port 1 and 2
- Dual x4 Downstream cable port 1 and 2

Backplane Configuration:

- PCIe Gen3 x8

1.2 BMC Firmware versions

The Firmware version covers the MXP909 BMC firmware changelog.

| Firmware version | Release date | Note |
|------------------|-----------------------------------|---|
| 1 | September 24 th , 2020 | Initial firmware release. |
| 1.4 | February 25 th , 2021 | <ul style="list-style-type: none">• Adds Board Firmware Recovery support.• Adds firmware version reporting.• Add support for AOC temperature reporting. |
| 1.5 | March 9 th , 2021 | <ul style="list-style-type: none">• BMC stability improvement |
| 2.0 | June 24 th , 2021 | <ul style="list-style-type: none">• Added support for PCI-SIG CMI sideband support, including reset and wake signals.• Added longer delay before releasing PFX from reset after power on in order to allow clocks to stabilize.• Fixed link status issues with MR2 PFX firmware.• Added MXP909-BB base board |
| 2.1 | October 11 th , 2021 | <ul style="list-style-type: none">• Added safety mechanism to trigger board shutdown on overtemperature.• New and improved Gen3 LED blinking pattern.• Added support for MXP909-CC |
| 2.4 | December 16 th , 2021 | <ul style="list-style-type: none">• Added support for DIP-switch to enable WAKE and PowerON. Off by default Bundled with eXpressWare 5.20.1 and newer |
| 2.7 | April 26 th , 2022 | <ul style="list-style-type: none">• Minor bugfixes and support more PFX configs Bundled with eXpressWare 5.20.0 and newer |
| 3.2 | February 4 th , 2025 | <ul style="list-style-type: none">• Added WAKE generation (can be turned on with the WAKE dip) Bundled with eXpressWare 5.23.0 and newer |

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.

| FLASH version | Release date | Note |
|---------------|---------------------------------|--|
| 1 | January 24 th , 2021 | Initial firmware version. |
| 2 | March 20 th , 2021 | <ul style="list-style-type: none">• Applied Microchip MR2, 3.70.0.4f |

| | | |
|---|---------------------------------|--|
| | | <ul style="list-style-type: none"> • Disabled prefetch for management BAR0 • Updated patch tables • Updated port assignment. |
| 3 | August 16 th , 2021 | <ul style="list-style-type: none"> • Multiconfig cleanup |
| 3 | October 6 th , 2021 | <ul style="list-style-type: none"> • Fixed reset handling • Added support for adding more configurations in the future Bundled with eXpressWare 5.20.1 and newer |
| 4 | January 25 th , 2025 | <ul style="list-style-type: none"> • Converted to Maintenance Release 6 (MR6) • Added config #8 (HOST_1x8) and #9 (HOST_2x4) without hot-plug capability * • Will no longer link down when the link de-trains • Link will now reach correct speed quicker ** Bundled with eXpressWare 5.23.0 and newer |

* The host machine allocates resources to support hot plug. Using these configs will result in fewer resources being allocated, especially in cases with several daisy-chained chassis.

** Adjusted “hold of” time to make link training more responsive

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 5.20.1 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 5.20.1 (Mon Oct 12 16:44:17 CET 2021)
=====
```

```
Adapter 1 > Type           : MXP909
             Mode          : TRANSPARENT
             NodeId        : 4
             Serial number  : MXP909-CC-000048
             MXH chip family : MICROCHIP - PFX GEN4
             MXH chip vendorId : 0x11f8
             MXH chip device : 0x4028
             MXH chip revision : ZB
             EEPROM version : 06
             EEPROM vendor info : 0x0000
             Firmware version : 3.2
             Card revision   : CC
             Topology type   : Not determined
             Topology Autodetect : No
             Number of enabled links : 2
             Max payload size (MPS) : 128
             Multicast group size : 2 MB
             Multicast groups : 4
             Clock mode slot : Port
             Clock mode link : Global
             BDF             : 03:00.0
             PCIe slot hwport : P 8
             PCIe slot state : x4, Gen4 (16 GT/s)
             PCIe slot capabilities : x4, Gen3 (8 GT/s)
```

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

Start PowerShell with administrative capabilities (Press Windows+X, select Windows PowerShell (Admin))

```
PS > cd "${env:ProgramFiles}\Dolphin Express MX\Util"
PS > Set-ExecutionPolicy AllSigned -Scope Process
PS > .\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

For general support questions, please contact Dolphin via the Jira Service Management portal:

<https://www.dolphinics.com/csp>.