



# Dolphin PXH832 Adapter Firmware Release Note

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28<sup>th</sup> March 2023

Version 1.7

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# 1 Introduction

This release note covers the Transparent PXH832 PCIe Gen3 x16 Adapter card firmware. The firmware consists of PLX EEPROM configuration data and Management processor firmware (BMC / STM config). This release note contains a summary of the changes made. Please contact Dolphin for details.

## 1.1 Firmware versions

The Firmware version is covering the PXH832 STM firmware changes. Firmware version 8.14 is current and recommended.

Firmware version	Release date	Note
8.4 - 8.8		Pre-development. Not recommended for use, please upgrade the latest available firmware.
8.9	September 23 <sup>rd</sup> 2019	Known problems: <ul style="list-style-type: none"><li>• STM stability during Host reboot.</li><li>• Temperature sensor may give false values.</li><li>• Incompliance issues related to the CMI specification.</li></ul> Impact: This version is not recommended as devices may not be detected after a reboot.  3 <sup>rd</sup> party devices supporting the CMI protocol may not be reset. The link may not be properly trained to x16  Please upgrade to the latest firmware.
8.10	October 31 <sup>st</sup> 2019	Fixes: <ul style="list-style-type: none"><li>• Fixes noncompliance issues related to the CMI specification.</li><li>• Improve stability during Host reboot. With some servers, transparent IO devices may be undetected.</li><li>• Fixed issue reading onboard temperature sensor. Incorrect values may be reported.</li></ul> Known problems: <ul style="list-style-type: none"><li>• Target cards connected with a single CMI cable may not be reset.</li></ul> Impact: A reboot may be required to detect all devices when using a single CMI cable.
8.11	February 20 <sup>th</sup> 2020	Fixes: Improved CMI reset handling with one cable
8.12	June 2 <sup>nd</sup> 2020	Fixes: <ul style="list-style-type: none"><li>• Fixed reboot problem that could cause host lookup using x8/x16 CMI cables</li><li>• Fixed BMC stability issue that could cause target device not being detected during boot.</li></ul> Bundled with eXpressWare 5.18
8.13		Not released for PXH83x cards
8.14	March 8 <sup>th</sup> 2022	Fixes: <ul style="list-style-type: none"><li>• Fixed issue to support AOC on some systems.</li><li>• Fixes wrong CMI addressing issue.</li></ul> Current shipping version.

## 1.2 EEPROM Versions

The EEPROM version is tracking the PXH832 PLX EEPROM configuration changes. The firmware can be upgraded using the upgrade\_eeprom utility bundled with eXpressWare. EEPROM version 12 is current and recommended.

EEPROM version	Release date	Note
10	March 29 <sup>th</sup> 2019	Added improved SerDes tuning for dual x8 links
11	April 10 <sup>th</sup> 2019	Fixes: Improved the Cable TX SerDes tuning for long cables
12	May 14 <sup>th</sup> 2019	No changes for PXH832 Bundled with eXpressWare 5.18
13	June 11th, 2020	Added LnkCap register to control surprise down error handling. Current shipping version

## 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 tool is available by installing eXpressWare Board Management available at <http://www.dolphinics.com/px> 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 PX\Util
> .\dis_diag
```

#### 2.1.3 Example output

```
# dis_diag
=====
Dolphin diagnostic tool -- dis_diag version 5.18.0 (Mon Mar 19 16:44:17 CET 2021)
=====

dis_diag compiled in 64 bit mode
Driver : Dolphin IRM (GX) 5.18.0 Jan 24th 2021 (rev 33fff3a)
Date   : Thu Mar 22 12:59:28 CET 2021
System : Linux somenode 3.10.0-514.21.1.el7.x86_64 #1 SMP Thu Jan 25 17:04:51 UTC 2021
x86_64 x86_64 x86_64 GNU/Linux

Number of configured local adapters found: 1

Adapter 0 > Type           : PXH832
           Mode           : NTB
           NodeId         : 8
           Serial number  : PXH832-CF-021467
           PXH chip family : PLX_DRACO_2
           PXH chip vendorId : 0x10b5
           PXH chip device  : 0x8733
           PXH chip revision : 0xCA
           > EEPROM version : 12
           EEPROM vendor info : 0x0000
           > Firmware version : 8.12
           > Card revision : CG
```

#### 2.1.4 Old firmware warning

If **dis\_diag** detects an outdated firmware, it will display something like this (depending on the version of the firmware and version of eXpressWare used):

```
***** TEST OF ADAPTER 0 *****
PROBLEM: EEPROM version 7 is too old. EEPROM version 10 or higher is required. Please upgrade adapter 0.
Run 'upgrade_eeprom' to upgrade
Possible explanation(s):
- Old EEPROM version.
[NOTE] Adapter 0: Current EEPROM version is 7, but a newer EEPROM version 11 exists
[NOTE] Run 'upgrade_eeprom' command to upgrade the EEPROM
OK: PXH chip alive in adapter 0.
```

**NOTE:** If you are using a card with custom firmware loaded – DO NOT run `upgrade_eeprom` to install the firmware bundled with eXpressWare unless you intend to migrate to the using firmware.

## 2.2 How to upgrade the firmware

The firmware can be upgraded using the upgrade\_eeprom utility bundled with eXpressWare Board Management Software.

### 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 PX\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 after the firmware upgrade.**

Please verify the firmware upgrade was successful after system is powered on again following the steps found in section **Error! Reference source not found. Error! Reference source not found.** above.

## 2.3 How to contact Dolphin Support

Please contact Dolphin support via

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

if you have any questions or issue.