



Firmware Update Procedure for

Astek A34012-PCI

In Band Method

CONFIDENTIAL

PREPARED BY: Paul Beckmann 5/2/18
(Engineer, name) (Date)

Product Description

The Astek A34012-PCI expander card has two x4 mini-SAS HD external connectors (SFF- 8644) and eight x4 mini-SAS HD internal connectors (SFF-8643). The internal connections are dedicated to internal drive connections (32 ports) and for SAS Controller connectivity (8 ports). This device supports SAS data transfer rates of 12, 6, 3Gb/s, and SATA data transfer rates of 6 and 3Gb/s.



Equipment Required:

- PC running Window7 or 10
- SAS HBA – Astek recommends LSI 9300-8E
- SAS HD external cable.
- Standard PC power supply with 6-pin power connector if A34012-PCI is to be table top programmed. Plugging A34012-PCI into any PCIe slot will also work.
- Bench fan. (Required only if the A34012-PCI is to be reprogrammed outside of a PC.)

Operating Requirement:

- User log-in **must** have administrator privileges
- A functional HBA driver must exist on the PC

Software and Files:

- load_customer.bat --batch file will commands required to update all firmware regions.
- g3xflash.exe --LSI expander flash utility use to update the A34012-PCI board.
- A34012-PCI-XX.XX.XXX.fw -- Astek A34012-PCI firmware file.
- A34012-PCI-XX.XX.XXX.bin --Astek A34012-PIC manufacturing image

A34012-PCI In Band Reprogramming Procedure

This procedure assumes the reprogramming will be done on a loose board on a bench. If the A34012-PCI is installed in a PCIe slot in a computer, ignore steps 5 and 7 concerning the power supply and fan.

This procedure uses an LSI low level flash utility. The operation of this flash utility cannot be guaranteed unless an LSI HBA is used. Astek strongly recommends that you use a 9300-8E HBA.

Procedure:

1. Unzip and store all the files provided for this procedure in the same directory.
2. On the back of the A34012-PCI, locate and record the WWID (world-wide ID). It is a 16-digit hex number like 50012BE0000887FF. See picture below.



3. **Or** if the A34012-PCI is inside the PC:
Type g3xflash.exe -l get avail and you will see a response like the example below. Confirm that the WWID that is returned matches the label on the back of the A34012-PCI.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>**g3xflash.exe -l get avail**

```
*****  
****
```

g3Xflash

Expander Flash Utility

Version: 0.251.2.0

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```
*****  
****
```

Initializing Interface.

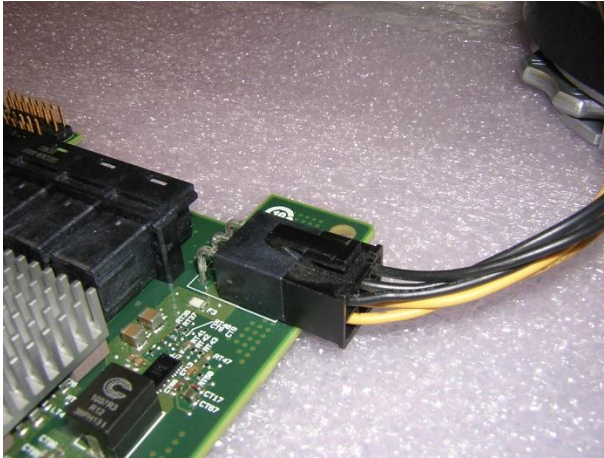
Expander: A34012-PCI-01 (SAS_3X_40)

1) A34012-PCI-01 (SAS_3X_40) (**50012BE0:000887FF**) (192.168.0.100)

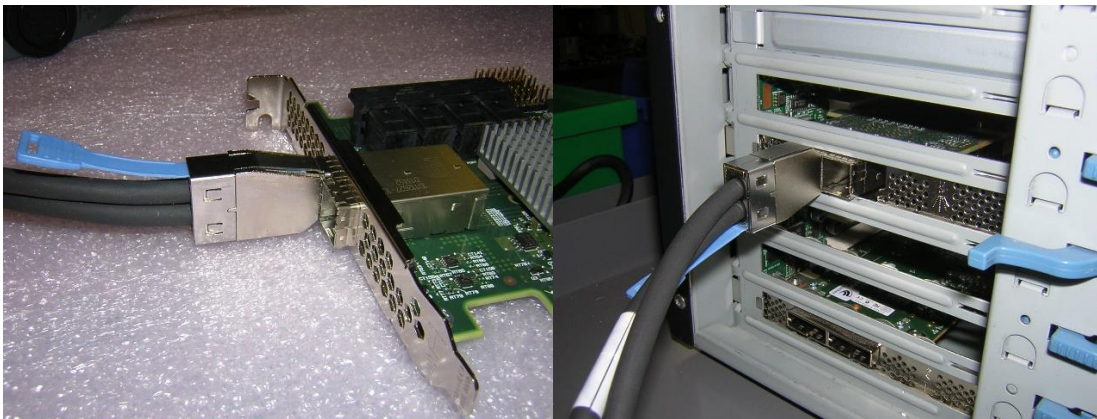
4. Edit the load_customer.bat file and fill in the last eight digits of the WWID as seen below, replacing the "X"s, so that the WWID matches the A34012-PCI:

SET COMPORT=50012BE0XXXXXXX

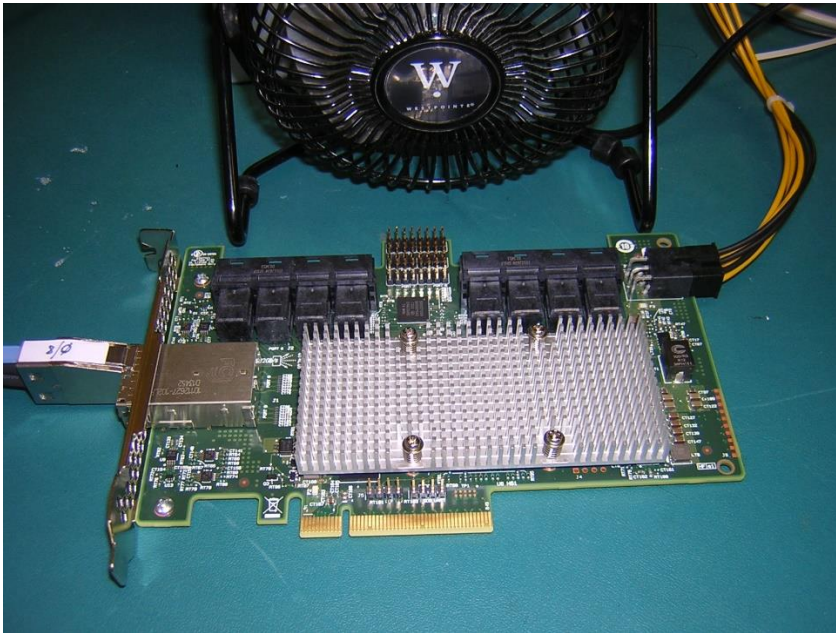
5. Save the file and exit.
6. Attach a standard PC power supply to the A34012-PCI at J16.



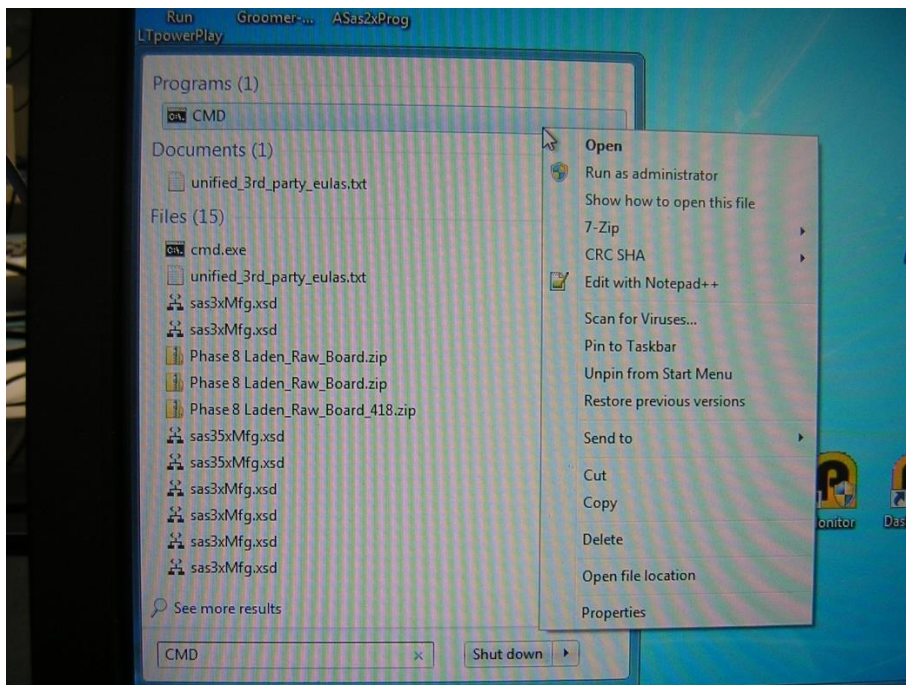
7. Connect a SAS/SATA HD external cable between the A34012-PCI device and the HBA.



8. Place a bench fan near the A34012-PCI heat sink and turn this on.



9. Apply power to the A34012-PCI and confirm a heartbeat at LED CR1.
10. Open a command prompt in Administrator mode.
 - a. To do this, click the start button and type “cmd” and a CMD selection will appear in the menu.
 - b. Right-click this selection and a “Run as administrator” selection will appear. Select this.



11. Change directory (CD) to the directory which contains the files provided for this process.

12. Type DIR to confirm that that you are in the correct directory. It must contain the load_customer.bat file.
13. Type g3xflash.exe -l get avail and you must see a response like the example below. Confirm that the WWID that is returned matches the label on the back of the A34012-PCI.

```
C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>g3xflash.exe -i get avail
```

```
*****
```

```
g3Xflash
```

```
Expander Flash Utility
```

```
Version: 0.251.2.0
```

```
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```

```
*****
```

```
Initializing Interface.
```

```
Expander: A34012-PCI-01 (SAS_3X_40)
```

```
2) A34012-PCI-01 (SAS_3X_40) (50012BE0:000887FF) (192.168.0.100)
```

14. Run load_customer.bat to begin reprogramming.
15. After the reprogramming is complete, the system will pause and ask you to hit any key to continue. Before doing this, scroll back up through the dialog to ensure that no errors have occurred by comparing the dialog to the example at the end of this document.
16. Confirm a heartbeat at LED CR1.
17. Type **g3xflash -l <WWID> get ver** and confirm the firmware revision is correct.
See example below – WWID is only an example and must be correct for your A34012-PCI.

```
C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>g3xflash -i 50012BE0000887FF get ver
```

SAMPLE ONLY

```
*****
```

```
g3Xflash
```

```
Expander Flash Utility
```

```
Version: 0.251.2.0
```

```
Copyright 2015 Avago Technologies. All rights reserved.
```

```
*****
```

```
Initializing Interface.
```

```
Expander: A34012-PCI-01 (SAS_3X_40)
```

```
Firmware Region Version: 15.01.05.12
```

Reprogramming Complete

“SAMPLE BATCH PROGRAMMING”

Reprogramming dialog example – batch file command entries are bolded.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>**load_customer.bat**

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>SET FILENAME=A34012-PCI-15.01.512

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>SET INTERFACE=i

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>SET WWID=50012BE0000887FF

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>**g3Xflash.exe -i 50012BE0000887FF down fw A34012-PCI-15.01.512.fw 1**

g3Xflash

Expander Flash Utility

Version: 0.251.2.0

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Initializing Interface.

Expander: A34012-PCI-01 (SAS_3X_40)

Expander Validation: Passed

Checksum: Passed

Target Firmware Region: 01

Current Version: 15.01.05.12

Replacement Version: 15.01.05.12

Image Validation: Passed

Pre-Validation of image is successful.

Are you sure to download file to expander?(y/n):y

Downloading File.....Download Complete.

Post-validating.....Post-Validation of image is successful.

Download Successful.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>**g3Xflash.exe -i 50012BE0000887FF down fw A34012-PCI-15.01.512.fw 2**

g3Xflash

Expander Flash Utility

Version: 0.251.2.0

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Initializing Interface.

Expander: A34012-PCI-01 (SAS_3X_40)

Expander Validation: Passed

Checksum: Passed

Target Firmware Region: 02

Current Version: 15.01.05.12

Replacement Version: 15.01.05.12

Image Validation: Passed

Pre-Validation of image is successful.

Are you sure to download file to expander?(y/n):y

Downloading File.....Download Complete.

Post-validating.....Post-Validation of image is successful.

Download Successful.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>g3Xflash.exe -i 50012BE0000887FF down mfg
A34012-PCI-15.01.512.BIN 3

g3Xflash

Expander Flash Utility

Version: 0.251.2.0

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Initializing Interface.

Expander: A34012-PCI-01 (SAS_3X_40)

Image Validation: Passed

Checksum: Passed

Current Version: 0f.01

Replacement Version: 0f.01

Pre-Validation of image is successful.

Are you sure to download file to expander?(y/n):y

Downloading File..Download Complete.

Post-validating.....Post-Validation of image is successful.

Download Successful.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>g3Xflash.exe -i 50012BE0000887FF reset exp

g3Xflash

Expander Flash Utility

Version: 0.251.2.0

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Initializing Interface.

Expander: A34012-PCI-01 (SAS_3X_40)

Are you sure you want to reset Expander?(y/n):y

Expander reset request successfully sent to expander.

C:\Users\pbeckmann\Desktop\LAdon\Ladon 4-13-18>pause

Press any key to continue . . .