

NetClock version 5.0.2 Update Instructions

NetClock Model 9400 series software upgrade

Important recommendation to delete the unit's logs before performing the version 5.0.2 software update

Specific to the version 5.0.2 update and due to the potential for the unit's logs to be quite large, which can potentially result in the loss of some or all of the unit's configurations upon completion of the version 5.0.2 update process, we highly recommend the logs be deleted before performing the version 5.0.2 software update. The logs can be backed-up to a single bundled file and then extracted before deleting them, if necessary. The process to easily save and delete the logs before updating the software is described further within.

Important Note about saving/restoring configuration files

Due to fairly significant changes to the system configuration files from Archive software versions 4.x.x to versions 5.x.x, it is not recommended to perform a configuration restore with version 5.x.x software installed, from a configuration save that was performed in an earlier 4.x.x software version. If a configuration restore from versions 4.x.x software is performed on a version 5.x.x time server, a 'clean' will be required to be performed via the front panel keypad (Model 9483 only) thereafter to reset the NTP server to the factory default settings for the installed version.

In general, due to possible changes to configuration files from one version to another, if you wish to have a configuration backup file saved, we recommend performing a new configuration save after each new software update is performed, to replace the earlier configuration bundle. This will ensure that if a configuration restore is performed, the configs in the captured file will be identical to the ones in the NTP server.

This document provides instructions on how to upgrade the Spectracom NetClock Model 9400 series software from Archive software versions 4.8.9, 4.8M or 4.8S (or 5.x.x), to the most current Archive software version of version 5.0.2.

Please Note: In order to upgrade the NetClock directly to version 5.0.2, the currently installed version of Archive software needs to be **versions 4.8.9, 4.8M or 4.8S (or 5.x.x)**. If the currently installed Archive software version is **4.8.8 or below**, please first upgrade the NetClock to version 4.8.9 before applying the version 5.0.2 update.

The Update instructions and Update files for the version 4.8.9 update can be downloaded from our website. To download these items, please visit us at:

<http://www.spectracomcorp.com/Support/HowCanWeHelpYou/Software/tabid/61/Default.aspx#NetClock>.

For your information, if the current version of installed Archive software is not already known, it can be obtained from the "Tools" → "Versions" page of the NetClock's web browser. Refer to: [Viewing the current versions](#).

A) Ability to perform a software upgrade via CLI command (instead of using the web browser), such as for scripting software updates

Starting in Archive software version 4.8.8, the software update can be initiated using a CLI command (issued via telnet, SSH or the front panel Serial port), instead of using the web browser, if desired. This entails performing an FTP/SCP transfer of the software update file into the NetClock's `/home/spectracom` directory and then issuing the `sysupgrade` CLI command to initiate the software upgrade.

Important note: When transferring the update file using either FTP or SCP (instead of uploading it using the web browser), make sure the Update file is transferred using BINARY mode. Otherwise, this file will likely be altered during the file transfer, preventing the updater from being able to extract it. The following error message will be asserted into the Update log if the Update file is altered/can't be extracted: **"ERROR (-1) - Failure while unpacking Upgrade Bundle (SWUE)"**.

The syntax for issuing the `sysupgrade` command is:

- **Standard upgrade** (Such as upgrading versions 4.8.8 to 4.8.9 for example): `sysupgrade` followed by the upgrade file name (Example: `sysupgrade update489.tar.gz`).
- **Forced upgrade** (Such as downgrading versions 4.8.9 to 4.8.8 for example, but can also be used with Standard upgrades, also): `sysupgrade force` followed by the upgrade file name (Example: `sysupgrade force update489.tar.gz`).
- **Clean upgrade** (Such as first performing a Forced upgrade from 4.8.8 to 4.8.9, for example. Then automatically resetting the NTP server back to factory default settings and deleting all log files): `sysupgrade clean` followed by the upgrade file name (Example: `sysupgrade clean update489.tar.gz`).

B) Desire to downgrade to a previous software, after applying this software upgrade:

In general, due to configuration file changes incorporated between various software versions, we do not typically recommend downgrading from one version to a previous version, unless recommended by Spectracom Tech Support/Customer Service.

However, if you must downgrade to an earlier version, we recommend downgrading only to previous version 4.8.9.

Important Note: If the software does need to be downgraded to any earlier version, the downgrade needs to be "Forced" (to override version checking that normally occurs) by selecting "Force Update" during the update process. Also, a "Restore Factory Configuration", due to incompatibilities between later and earlier configuration files, is required to be performed during the update process.

To simultaneously downgrade and "Restore Factory Configuration", in addition to selecting the "Update System", and "Force Update" checkboxes, also select the "Restore Factory Configuration" checkbox, before pressing Submit (as shown in the following screenshot).

UPGRADE/BACKUP

Software/License Upgrade Configuration

Current Software Version

Software Version Spectracom NetClock 9483 Version 5.0.0

Upload Update/License File

Upload File Browse... Upload

Upgrade the System

Update File	<input type="text" value="update489.tar.gz"/>
Update System	<input checked="" type="checkbox"/>
Force Update	<input checked="" type="checkbox"/>
Delete Update File	<input type="checkbox"/>
Restore Factory Configuration	<input checked="" type="checkbox"/>

Select the “**Update System**”, the “**Force Update**” and the “**Restore Factory Configuration**” check-boxes when downgrading to any previous version (such as downgrading from version 5.0.2 to version 4.8.9, for example).

The “**Restore Factory Configuration**” checkbox resets all of the unit’s configurations back to the factory default settings. This will remove new configurations that were added in the version 4.8.6 update (Since the web browser will be inaccessible until the “Clean” has been performed, the “Clean” command can be performed using the CLI interface - telnet, ssh or the front panel Serial port).

C) Software Update Log entries

Software update log entries, such as upgrades that have already been performed, or an error occurring during the update process, are placed in the “Update” Log (**Tools** -> **Logs** page of the web browser, **Update** tab). Please refer to this log if you have any problems with the software update process (such as if the message “**Upgrade Failure**” is displayed, for instance).

Procedure to upgrade the NetClock Model 9400 software from the current Archive software version of 4.8.9 (or higher) to version 5.0.2

Specific to the available Option 12: PTP Input/Output card (if installed):

Option 12: PTP Input/Output cards have one Ethernet jack and should be identified with a small “12” label screened onto a corner of the metal plate of the Option Card itself).

- 1) When there are software updates that need to be automatically applied to installed PTP modules during the upgrade process, the upgrade process will take an additional 5 to 7 minutes longer, for each PTP module that is installed in the NetClock.
- 2) When using the Option 12: PTP modules(s) in the PTP Slave Mode, the synchronization of the PTP module will not be reliable while performing the upgrade process. We recommend first disabling the PTP input reference in “**Reference Priority Setup**” table (located on the **Setup** -> **Reference Priority** page of the web browser). In the Index (row) that lists PTP in the Time and/or PPS columns, just change the “**State**” field of that same Index to “**Disabled**” and then hit Submit. You can switch it back to “**Enabled**” once the software upgrade has been completed.

The NetClock software upgrade process takes about 10 minutes or so to complete. The upgrade process is performed using a Windows PC that is either on the same network as the NetClock, or is connected directly to the NetClock using a network cross-over cable (In order to perform the software upgrade process, the NetClock’s web browser must be accessible from that particular PC).

The upgrade process consists of first downloading the software update file from the Spectracom website and then using the NetClock’s web browser to automatically transfer this file from the PC into the NetClock (or you can also use FTP/SFTP to manually transfer the file to the “home/spectracom” directory, if desired). During the time that the file is being uploaded into the NetClock, the NetClock will remain fully functional and reachable by the network PCs.

Once the update file has been transferred into the NetClock, the NetClock is configured via the browser to perform the software update (“Upgrade System”). All current NetClock configurations are automatically saved and restored as part of the update process. During the “Upgrade System” process, the front panel LCDs will go blank and the NetClock will not be operational until the upgrade process has completed.

To begin, save the NetClock update file (“**update502.tar.gz**”) which was downloaded from the Spectracom website, to an accessible directory in your local Windows machine (such as “C:\Temp”, for example).

Next, open the NetClock’s web browser and Login.

Delete the unit’s logs (highly recommended)

To prevent the potential that the unit’s configuration may be lost during the version 5.0.2 update process, we highly recommend the logs be deleted before performing this update. Note the logs can be backed-up before deleting, if necessary (they can be bundled into a single file via the browser, and then exported to another machine using an FTP/SCP utility).

The log bundling is controlled in the “**Tools**”-> “**Upgrade/Backup**” page of the NetClocks’s web browser. Click on the “**Configuration**” tab. Then, to bundle the logs, change “**Save Log Files**” to “**Enabled**” and then hit Submit. This generates a single bundled file of the logs. This file (“**securesync.log**”) is placed in the “**home/spectracom/xfer/log**” directory. Once it has been created, you can FTP/SCP it off the box (just make

sure “FTP Service” is enabled in the **Network -> General** page of the browser, “**Services**” tab). If you need a free FTP client, we often use CoreFTP Lite (<http://www.coreftp.com/>).

To delete the logs, navigate to the **Setup -> Logs** page of the browser. In the default “**General Settings**” tab, select “**Clear all Log files**” and press Submit. The logs have now been deleted.

To update the software

Then, navigate to the “**Tools**” → “**Upgrade/Backup**” page of the browser (as shown in Figure 1).

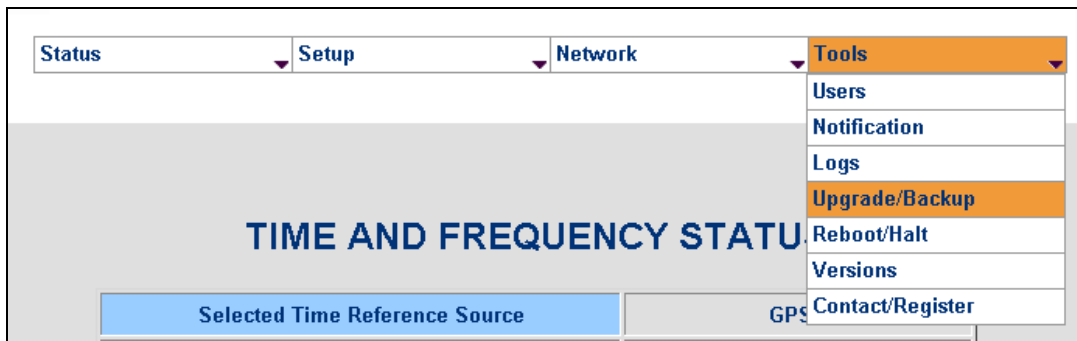
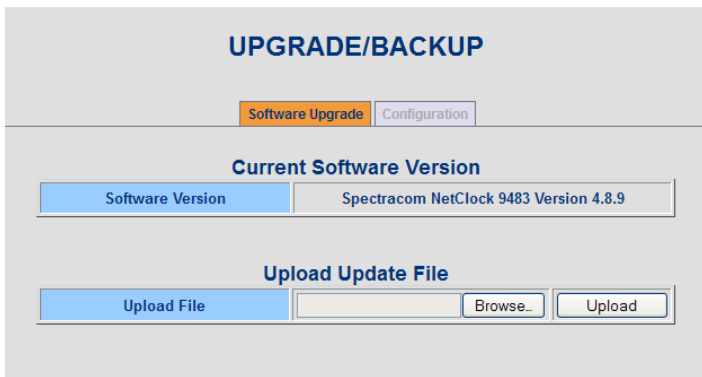


Figure 1: Upgrade/Backup



(Refer to Figure 2) Ensure the “**Software Upgrade**” tab is orange (Orange indicates the tab is selected). Either click in the blank text box located next to “**Upload File**”, or select “**Browse**” to be able to select the update file.

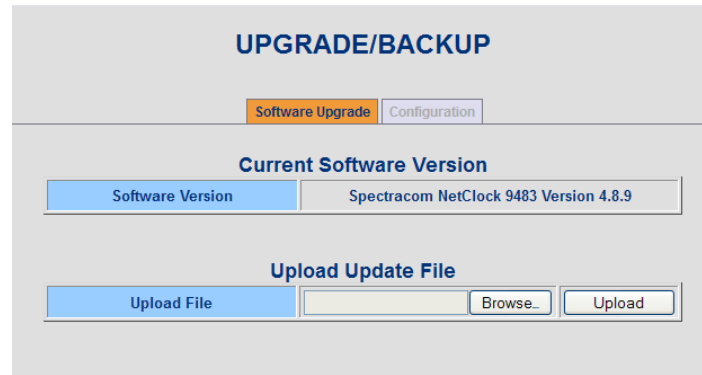


Figure 2: Software Upgrade tab

Use the explorer to navigate to the location of where the update file (“**update502.tar.gz**”) was stored on the PC (such as C:/Temp) and then select it. Once the path appears in the text field (such as is shown in Figure 3), click the “**Upload**” button.

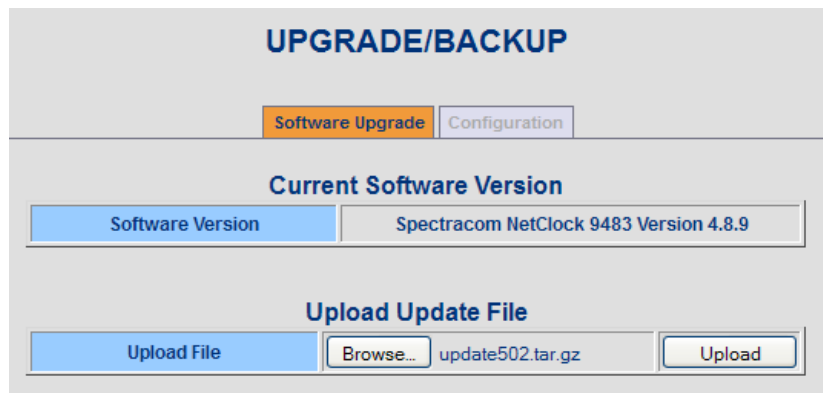


Figure 3: Upload Archive File

The file upload process may take several minutes. Once the file has been uploaded into the NetClock unit, the message “The file updatexxx.tar.gz has been uploaded.” (where xxx is the version) will be displayed underneath the “Upload Archive File” field (as shown in Figure 4).

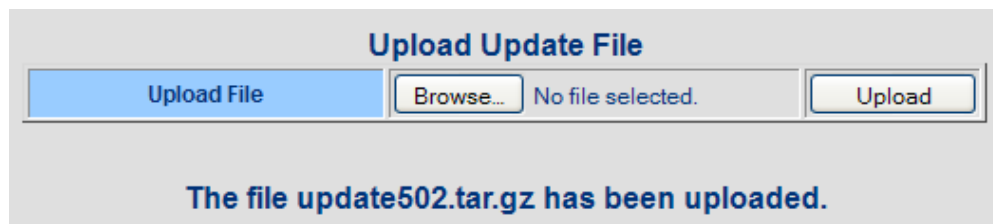


Figure 4: “Upload Successful” message

Now refer to the bottom of this page, under the title “**Upgrade the System**” (or “**Upload Update/License File**” starting in version 5.0.0):

Upgrade the System	
Update File	update502.tar.gz ▾
Update System	<input checked="" type="checkbox"/>
Force Update	<input type="checkbox"/>
Delete Update File	<input type="checkbox"/>
Restore Factory Configuration	<input type="checkbox"/>

Figure 5: “Upgrade the System” section

- 1) Ensure the correct file name (“**update502.tar.gz**”) is selected in the box next to “Archive File”.
- 2) Check the box next to “Update System” to install the software update.

Other available checkboxes:

“Force Update” when checked, will force the software to install all packages, even if they are already at the current revision (for example, it’s desired to install version 5.0.2 even though version 5.0.2 is already installed). The software will just reinstall over the previously installed packages.

“Delete the Archive File” when checked, will remove the Archive file that was uploaded into the NetClock.

Note: It will not remove the file from your PC, just from the NetClock.

Note: If the NetClock has had any previous software updates applied and if any of the earlier upgrade files have not since been deleted from the NetClock, the web browser screen may indicate the Upgrade process is “Complete”. This does not affect the software update process

“Restore Factory Configuration” when checked, will return the NetClock to its original factory configuration.

Note: This checkbox should be selected if it’s ever desired to downgrade to a previous version (such as version 4.8.9).

- 3) To perform the software update from an earlier version, only the box next to “Update System” should be checked. Then, hit the Submit button.

During the System Upgrade you will see an analysis screen (as shown in

UPGRADE STATUS

Analyzing...

Package	Old Version	New Version	Action	Status
Application	4.8.9	-	-	Analyzing
Timing FW	2.89	-	-	Analyzing
Timing FPGA	2.89	-	-	Analyzing
OC 1 ID 1F HW 01	0101	-	-	Analyzing
OC 2 ID 06 HW 02	0000	-	-	Analyzing
OC 3 ID FF HW FF	0000	-	-	Analyzing
OC 4 ID FF HW FF	0000	-	-	Analyzing
OC 5 ID FF HW FF	0000	-	-	Analyzing
OC 6 ID FF HW FF	0000	-	-	Analyzing

Figure 6 (Figure 11).

Note: If the NetClock has had any previous software updates applied and if any of the earlier upgrade files have not since been deleted from the NetClock, the web browser screen may indicate the Upgrade process is “Complete”. This does not affect the software update process and the analysis screen will be displayed shortly thereafter.

UPGRADE STATUS

Analyzing...

Package	Old Version	New Version	Action	Status
Application	4.8.9	-	-	Analyzing
Timing FW	2.89	-	-	Analyzing
Timing FPGA	2.89	-	-	Analyzing
OC 1 ID 1F HW 01	0101	-	-	Analyzing
OC 2 ID 06 HW 02	0000	-	-	Analyzing
OC 3 ID FF HW FF	0000	-	-	Analyzing
OC 4 ID FF HW FF	0000	-	-	Analyzing
OC 5 ID FF HW FF	0000	-	-	Analyzing
OC 6 ID FF HW FF	0000	-	-	Analyzing

Figure 6: Example “Upgrade Status” when it first appears

Note: “OC” being displayed in the bottom rows refers to NetClock “Options” which may or may not be installed in the NetClock. The rows with “OC” displayed in these screenshots will likely differ from your NetClock update screens.

UPGRADE STATUS				
Analyzing...				
Package	Old Version	New Version	Action	Status
Application	4.8.9	5.0.2	Upgrade Needed	In Progress
Timing FW	2.89	3.02	Upgrade Needed	In Progress
Timing FPGA	2.89	3.02	Upgrade Needed	In Progress
OC 1 ID 1F	0101	1.01	No Upgrade Needed	Completed
OC 2 ID 06	0000	-	No Upgrade Available	Completed
OC 3 ID FF	0000	-	No Upgrade Available	Completed
OC 4 ID FF	0000	-	No Upgrade Available	Completed
OC 5 ID FF	0000	-	No Upgrade Available	Completed
OC 6 ID FF	0000	-	No Upgrade Available	Completed

Figure 7: “Upgrade Status” after the update process has begun

Note: Do not close the web browser or attempt to reboot the NetClock unit. The installation is in progress and may take several minutes to complete.

The NetClock will reboot itself during the update process, as shown in the screenshot below:

UPGRADE STATUS				
Rebooting...				
Package	Old Version	New Version	Action	Status
Application	4.8.9	5.0.2	Upgrade Needed	Processing
Timing FW	2.89	3.02	Upgrade Needed	Processed
Timing FPGA	2.89	3.02	Upgrade Needed	Processed
OC 1 ID 1F	0101	1.01	No Upgrade Needed	Completed
OC 2 ID 06	0000	-	No Upgrade Available	Completed
OC 3 ID FF	0000	-	No Upgrade Available	Completed
OC 4 ID FF	0000	-	No Upgrade Available	Completed
OC 5 ID FF	0000	-	No Upgrade Available	Completed
OC 6 ID FF	0000	-	No Upgrade Available	Completed

Figure 8: “Upgrade Status” while NetClock is rebooting

Note: If using a DHCP assigned IP address (instead of the NetClock having a statically assigned IP address), the NetClock’s IP address may change once the update has completed (it may be re-assigned a different IP address by the DHCP server). Automatic Reloading of the web page will not work, if the address has been changed by the DHCP server. Therefore, a new web browser connection using the newly assigned IP address will need to be opened (The following “Upgrade Status - Complete” screen won’t be viewed).

If the front panel LCD is configured to display network settings, the LCD window will show the newly assigned IP address.

When using a static-assigned IP address (or if the DHCP server did not assign a new IP address after the reboot), and as long the web browser didn’t time-out during the update process (if it times-out, press the F5 key

to refresh the connection), once the update is complete, the “Upgrade Status” screen will now change to “Complete”.

UPGRADE STATUS				
Complete				
Package	Old Version	New Version	Action	Status
Application	4.8.9	5.0.2	Upgraded	Completed
Timing FW	2.89	3.02	Upgraded	Completed
Timing FPGA	2.89	3.02	Upgraded	Completed
OC 1 ID 1F	0101	1.01	No Upgrade Needed	Completed
OC 2 ID 06	0000	-	No Upgrade Available	Completed
OC 3 ID FF	0000	-	No Upgrade Available	Completed
OC 4 ID FF	0000	-	No Upgrade Available	Completed
OC 5 ID FF	0000	-	No Upgrade Available	Completed
OC 6 ID FF	0000	-	No Upgrade Available	Completed

Figure 9: “Upgrade Status” when the upgrade process is complete

Viewing the new software version information

Note that you will need to log into the browser using your login account information.

Navigate to the “**Tools**” → “**Versions**” page of the browser. The following information should now be displayed with version 5.0.2 software installed:

MODEL AND SERIAL NUMBER

Model Number	1209-012
Serial Number	01396

SYSTEM VERSION

Archive Version	Spectracom NetClock 9483 Version 5.0.2
KTS Version	SW V3.0.2 FPGA 00 V0113
Slot 1 Version	OC 1F V0001 FPGA 1F V0101
Slot 2 Version	OC 06 V0002 FPGA 00 V0000
Slot 3 Version	Empty
Slot 4 Version	Empty
Slot 5 Version	Empty
Slot 6 Version	Empty
Options	

FPGA AND FIRMWARE VERSION

Run-time Firmware Image	3.02
Run-time FPGA Image	3.02
Boot Loader	2.10
Compressed FPGA Image	2.10

Archive version has been updated to Version 5.0.2

Note: Information displayed in the six “Slot” (“Slot 1” through “Slot 6”) fields will likely differ from those in this screenshot, based on what Options, if any, are currently installed.

Figure 10: “System Version” information upon completion of the update

Note: If the Multi-port Ethernet Option (Option 16) is installed in the NetClock and if any of its Ethernet ports are disconnected/unused (and DHCP is enabled on that network port), the time to reach NTP Stratum 1 synchronization can be significantly increased.

Before NTP can begin to synchronize, the NetClock’s power-up initializations need to first be completed. If any of the network ports of the Multi-port Ethernet Option module is configured for DHCP and a DHCP server cannot be located on that port (because the network port is either disconnected or no DHCP server can be found on that network), it will take some time for the network port to “time-out” looking for a DHCP server on that port, before the start-up initializations can continue. Configuring any disconnected Ethernet ports of the Multi-port Ethernet Option for static network settings (by disabling DHCP configuration) will help expedite the system initialization sequence, to be able to achieve faster NTP synchronization.

Refer to the NetClock instruction manual for more information on configuring the Multi-port Ethernet Option’s Ethernet ports for static addresses.

Viewing the current versions of software installed

To view all the current versions of all the NetClock software packages, navigate to the “Tools” → “Versions” page of the browser. You may be prompted to login. Use the same username and password you used to perform the update.

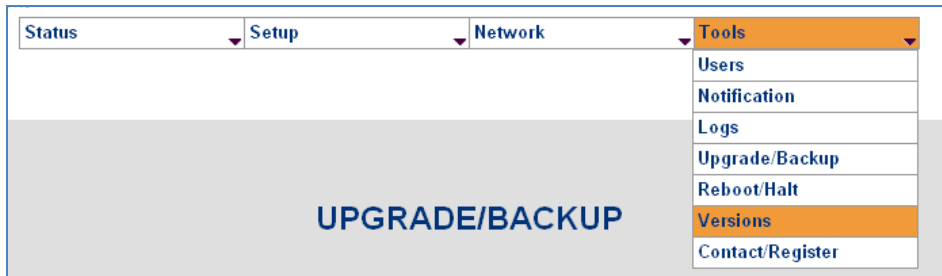


Figure 11: Tools → Versions page

MODEL AND SERIAL NUMBER	
Model Number	1209-012
Serial Number	01396

SYSTEM VERSION	
Archive Version	Spectracom NetClock 9483 Version 5.0.2
KTS Version	SW V3.0.2 FPGA 00 V0113
Slot 1 Version	OC 1F V0001 FPGA 1F V0101
Slot 2 Version	OC 06 V0002 FPGA 00 V0000
Slot 3 Version	Empty
Slot 4 Version	Empty
Slot 5 Version	Empty
Slot 6 Version	Empty
Options	

FPGA AND FIRMWARE VERSION	
Run-time Firmware Image	3.02
Run-time FPGA Image	3.02
Boot Loader	2.10
Compressed FPGA Image	2.10

Figure 12: Version information

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