



Linx Matrix Switchers Firmware Upgrade Procedures

Firmware Version 4.0.5

Please review this document fully before beginning any upgrade.

For all upgrades, it is recommended that all system settings be exported and copied to a PC before updating firmware. See the EXPORTSETTINGS command in the product manuals.

Note	The FTP client must be in binary mode to upload firmware. The mode does not have to be set when performing transfers through Windows Explorer.
-------------	--

Performing the firmware upgrade via the serial port is preferable to using the Ethernet port, because the Linx will continue to communicate its status even through system reset. While Telnet may be used to enter commands, Ethernet connections are lost when the Linx resets, requiring a new log-in after each occurrence and therefore cannot provide the continual status, including when a reset cycle has completed.

Important	<p><u>Some early I/O card versions are not supported for upgrade to version 4.0.5. Contact the factory if your unit was received prior to March, 2010.</u></p> <p><i>Do not interrupt power to the unit during the firmware update. Update commands may take up to 30 minutes to complete execution in large systems (or longer if scaler cards are included). If using the serial port, you will know an upgrade command or reset has been completed when the prompt returns. If using Telnet via the Ethernet port, please see the upgrade instructions below for the required time before attempting to log back into the Linx.</i></p> <p><i>After uploading the firmware file to the RGB folder of the Linx do not transfer any additional files to the same folder for any reason until UFW has completed. If the wrong firmware file has been uploaded, reboot the switcher before uploading the correct file.</i></p> <p><i>Do not reboot any connected source computers during the firmware upgrade.</i></p> <p><i>Do not send any other commands to the Linx during the firmware upgrade.</i></p> <p><i>When performing a firmware upgrade using a serial interface, set the baud rate to 9600.</i></p>
------------------	--

Linx Matrix Switchers Firmware Upgrade Procedure

Firmware prior to 3.0.X requires intermediate steps before upgrading to version 4.0.5. This table indicates the upgrade path to install firmware version 4.0.5.

Version	Upgrade to 2.0	Upgrade to 2.4.1	Install 4.0 Pre-Install	Install 4.0.5
1.X	YES	YES	YES	YES
2.0-2.2	—	YES	YES	YES
2.4.1	—	—	YES	YES
3.0.X	—	—	—	YES
4.0.1	—	—	—	YES

Before Updating

It is highly recommended that all system settings be saved and download to a PC prior to beginning the update procedure.

1. Using a serial or telnet connection save settings by executing the command:

```
exportsettings all [file_name.txt]
```

If no file name is entered, the default will be **export.txt**.

2. Download the settings file to the PC using an FTP session. See uploading and downloading instructions on the following pages.

Uploading a File to the Linx Switcher

In the steps below, an FTP session is illustrated using Windows Explorer.

1. Open Windows Explorer.
2. In the address bar, enter the ftp command:

```
ftp://rgb:spectrum@nnn.nnn.nnn.nnn
```

where **nnn.nnn.nnn.nnn** is the IP address of the *Linx Switcher*; **rgb:spectrum** is the user name and password. The example in Figure 1 uses the address 192.168.35.149.

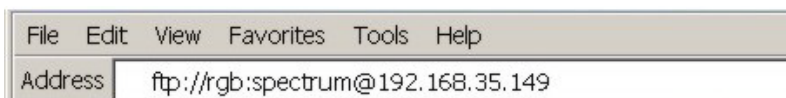


Figure 1 - FTP Address Entry

The Linx FTP directory will be displayed in the Explorer as shown in **Figure 2 - FTP Open**.

Linux Matrix Switchers Firmware Upgrade Procedure

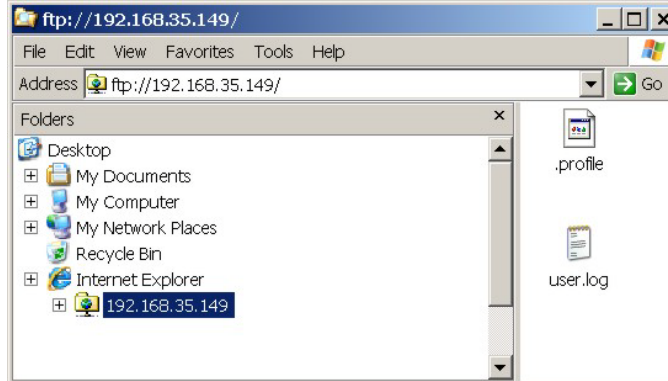


Figure 2 - FTP Open

3. Open another Explorer window and navigate to the location on the computer that contains the desired file, firmware in this case.

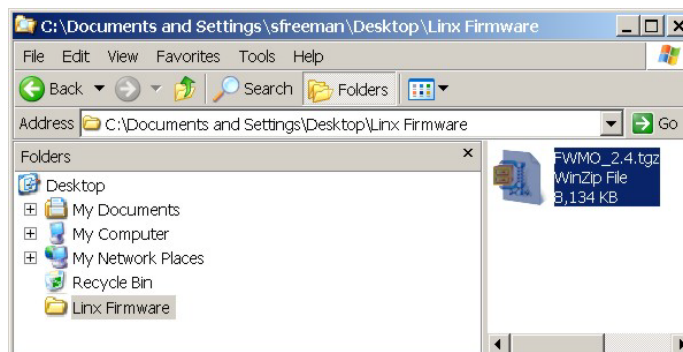


Figure 3 - Locate File to Upload

4. Select the firmware and drag it to the Linux FTP directory. Copy progress is displayed.

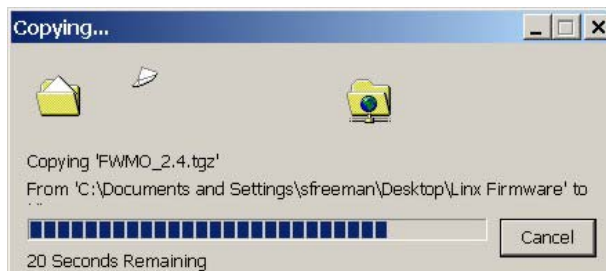


Figure 4 - Copying Firmware to the Linux Switcher

5. When copying is complete, the firmware will be visible in the Linux FTP directory along with other system files.

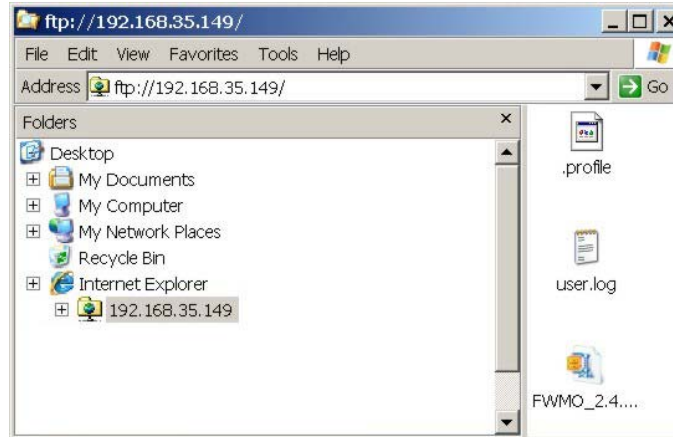


Figure 5 - Firmware Uploaded

Files that may be uploaded to the *Linx Switcher* include previously saved system settings, EDID information, and presets.

Downloading a File from the Linx Switcher

Use the above procedure to initiate a browser-based FTP session. Drag files from the *Linx Switcher* FTP folder to the desired location on the connected PC. Files that may be downloaded from the *Linx Switcher* include exported system settings, EDID information, and presets.

Upgrade from 4.0.1 to 4.0.5

1. Upload the **4.0.5** firmware to the **Linx**.
2. Using a serial or Telnet connection, issue the **UFW** command.

Important

After issuing the **UFW** command, DO NOT turn monitors off. This can adversely affect output settings.

3. For serial control, wait until the prompt is displayed again. For Telnet operation, wait approximately 30 minutes before re-establishing communication. If scaler cards are included in the system, upgrade times will be longer.
4. Issue the **SYSINFO** command.
5. Verify that the firmware version is correct at 4.0.5.

Upgrade from 3.0 to 4.0.5

1. Upload the **4.0.5** firmware to the **Linx**.
2. Using a serial or Telnet connection, issue the **UFW** command.

Important

After issuing the **UFW** command, DO NOT turn monitors off. This can adversely affect output settings.

Linx Matrix Switchers Firmware Upgrade Procedure

3. For serial control, wait until the prompt is displayed again. For Telnet operation, wait approximately 30 minutes before re-establishing communication.
4. Issue the **SYSINFO** command.
5. Verify that the firmware version is correct at 4.0.5.

Upgrade from 2.4 to 4.0.5

Upgrading to version 4.0.5 requires that RAM disk size be increased prior to the actual upgrade. This must be done by upgrading to version **4.0 Pre-Install**. DO NOT attempt to operate the Linx Switcher under **4.0 Pre-install**; continue with the upgrade to 4.0.5.

The firmware upgrade from version 2.4 or 2.4.1 to 4.0 pre-install requires a single **UFW** command be executed. Following the update, issue the **SYSINFO** command to verify that the new firmware is present; the FPGA version of the input and output modules should reflect those indicated in the release notes. Depending on the model and configuration, the upgrade procedure may require up to 10 minutes.

1. Upload the **4.0 Pre-Install** firmware to the **Linx**.
2. Using a serial or Telnet connection, issue the **UFW** command.

Important

After issuing the **UFW** command, DO NOT turn monitors off. This can adversely affect output settings.

3. For serial control, wait until the prompt is displayed again. For Telnet operation, wait approximately 10 minutes before re-establishing communication.
4. Issue the **SYSINFO** command.
5. Verify that the firmware version is correct at 4.0 - Pre-Install. Note that the firmware and FPGA version numbers for the I/O cards will remain the same until the full 4.0 upgrade is complete.
6. Delete the pre-install firmware from the Linx FTP folder before uploading the 4.0 release firmware.
7. Use the procedure described above for upgrade from **3.0 to 4.0.5** to upgrade from the 4.0 Pre-Install.

Upgrade from Firmware 2.1

Use this procedure to update firmware to version 3.0 from 2.1. If upgrading from a version prior to 2.1, please see **Upgrade from 2.0 or Earlier**, below..

1. Upload the new firmware to the **Linx**.
2. Using a serial or Telnet connection, issue the **UFW** command.
3. For serial control, wait until the prompt is displayed again. For Telnet operation, wait approximately 10 minutes before re-establishing communication.
4. Issue the **SYSINFO** command.
5. Verify that the firmware version is now 2.4.
6. Issue the **UFW** command a second time. Again, the prompt will be displayed when the update has completed execution via the serial port. Allow 30 minutes before re-establishing a Telnet connection.

Linx Matrix Switchers Firmware Upgrade Procedure

7. Issue the **SYSINFO** and verify that firmware FPGA versions listed for the input and output modules match those in the release notes.

Upgrade from 2.0 or Earlier

Linx Switchers with firmware version 2.0 or earlier must first be upgraded to version 2.1 before the upgrade to 3.0 can be performed. Use the following instructions to upgrade to 2.1.

Note	The firmware upgrade procedure includes three separate steps, each with its own command and subsequent verification. These steps must be executed in order. Save any EDID and presets to a PC using the EXPORTSETTINGS command and FTP.
-------------	---

SERIAL CONTROL

1. Upload the new firmware to the **Linx**.
2. Using TeraTerm or other terminal emulation program through the RS-232 port, issue the **UpdateFirmWare (UFW)** command.
3. When the update has finished the prompt will return on the screen. Type the **SYSINFO** command. The firmware and backplane versions listed should match what was just loaded i.e., 2.1.
4. Now execute the **UpgradeIOCardFirmWare (UIOCFW)** command.
5. Once the prompt returns on the screen, type **SYSRST**. Wait for the prompt to return again (90 seconds) and type **SYSINFO**.
6. Check that the firmware versions listed for the Input and Output cards match those listed in the release notes. If the versions do not match, repeat the **SYSRST** and **SYSINFO** commands as previously described until they do.
7. Execute the **UpgradeIOCardFPGA (UIOCFPGA)** command.
8. Once the prompt returns on the screen, type **SYSINFO** and check that the FPGA versions listed for the input and output modules match those in the release notes. If the versions do not match, repeat the **SYSRST** and **SYSINFO** as previously described until they do.

This completes the firmware upgrade procedure. Power-cycle the Linx unit. Restore any preset and EDID files previously saved on the PC.

TELNET CONTROL

1. Copy the new firmware to the **Linx**.
2. Using Telnet through the 100/1000 BASE-T port issue the **UpdateFirmWare (UFW)** command.
3. Wait 30 minutes. Re-establish Telnet communication and type the **SYSINFO** command. The firmware and backplane versions listed should match what was just loaded i.e. 2.1.
4. Now execute the **UpgradeIOCardFirmWare (UIOCFW)** command.
5. Wait 5 minutes and type **SYSRST**.
6. After 90 seconds, log back in to the Linx; type **SYSINFO** and check that the firmware versions listed for the input and output modules match those listed in the release notes.

Linx Matrix Switchers Firmware Upgrade Procedure

If the versions do not match, repeat the **SYSRST** and **SYSINFO** commands as previously described until they do.

- Execute the **UpgradelOCardFPGA (UIOCFPGA)** command. Wait 5 minutes and type **SYSRST**.
- After 90 seconds, log back in to the Linx; type **SYSINFO** and check that the firmware FPGA versions listed for the Input and Output cards match those listed in the release notes. If the versions do not match, repeat the **SYSRST** and **SYSINFO** commands as previously described until they do.

This completes the firmware upgrade procedure. Power-cycle the Linx unit. Restore any preset and EDID files previously saved on the PC.

Below **SYSINFO Report Example** is an example of what the **SYSINFO** command will display. The firmware version, boot version, and FPGA values should match those listed in the release notes after the final **UFW**.

```
Model:                Linx 800/900/1000
Manufacture date:     09/14/2011
Serial number:        1002348
Firmware version:     4.0.5
SH4 firmware version: 4.0.5
Firmware build date:  Dec 12 2011  16:46:07
Hardware revision:
CPLD version:         1.17
WCP Applet Version:   1.4
Reboot count:         77
System up time:       0d 0h 2m 40s
Total system up time: 39d 18h 49m 33s
Host name:            Linx800
IP address:           192.168.34.179
Subnet mask:          255.255.255.0
Gateway IP address:  192.168.34.1
MAC address:          00:18:7e:00:2e:2b
Options:              Auto-Sync Dual-Link HD-SDI Fiber-IO Scaler
System logging level: Warning
Backplane FPGA version: 1.23
Input
Card  FW Ver  HW Ver  Card Type                FPGA Ver  Boot
-----
1     0.140  3.0    Dual Single Link DVI     1.1.2    0.22
2     0.140  2.0    Single Dual Link DVI/RGB 2.1.10   0.22
3     0.046  2.0    HD SDI                   6.1.7    0.22
4     0.140  1.0    Fiber IN                 8.1.6    0.22
Output
Card  FW Ver  HW Ver  Card Type                FPGA Ver  Boot
-----
1     0.134  3.0    Single Dual Link DVI     3.2.9    0.22
2     0.134  3.0    Single Dual Link DVI     3.2.9    0.22
3     0.153  3.0    Dual Single Link DVI/RGB Scaler 7.1.2-1.0.1A 0.26
```

SYSINFO Report Example

After Upgrading

When the upgrade is complete, the saved system setting should be uploaded and imported to the *Linx*.

1. Upload the settings file from the PC.
2. Using a serial or telnet connection import system settings by executing the command:

```
importsettings file_name.txt
```