

Upgrading Matrix Quad Controller

Here are detailed instructions for upgrading Matrix Quad Controller boxes firmware.

Overview

There are 4 microprocessors and 2 FPGA (Field Programmable Gate Array) chips inside a quad controller module. The microprocessors will receive new firmware during the update. In some releases, the FPGA chips will also receive updates the upgrade. Processor number 1 is capable of communicating with the outside world so all firmware must be downloaded first to this processor from a host computer and then that processor will take care of loading the firmware into the other items inside the box. It is, unfortunately, not possible to program firmware through the RS-485 connections, so each quad controller module in the system must be downloaded separately.

Prepare the System

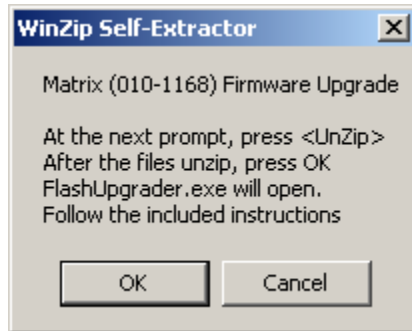
This upgrade will return all system settings back to factory settings. Settings saved in memory slots will be preserved, so be sure all your configurations have been saved into a slot. Color balance settings are stored in the LCD Interface module and will also be preserved. If you have made adjustments to any of the settings in the following menus, you will need to restore them by hand after the upgrade completes so make a note of the settings now:

Menu	Items that will be set to default
Cable Equalization	all
Miscellaneous	all
Backlight Settings	all
Serial Port Settings	all
Set Clock/ Schedule Events	all events (real time clock will not need to be reset)
Big Picture Setup	Frame Compensation Frame Width Frame Height

Connect an RS-232 cable from your host system to the RS-232 in connection on one of the quad controller modules. **If upgrading multiple quad controllers, upgrade controller A last.** You do not need to disconnect any other cables, but be sure that nothing is being sent to the system on the Aux connector during the entire process.

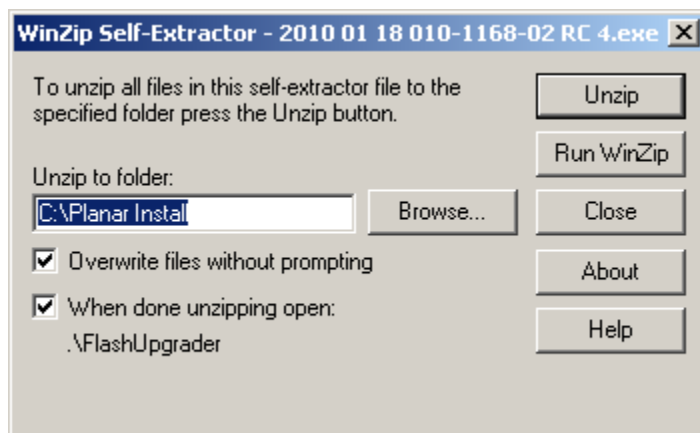
Unzip the files

The files are packaged as a self extracting executable. If you received them by email, you may have to rename the file extension to .exe since the name might have been changed in order to send it. Click on the .exe in an explorer window.

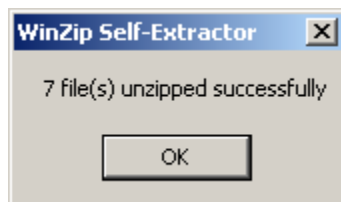


Click on OK.

The default folder is C:\Planar Install but you may extract the files anywhere you wish. Note, if you have installed other Planar products in the past, choose a different folder or delete the previous Planar Install folder.



Click on Unzip



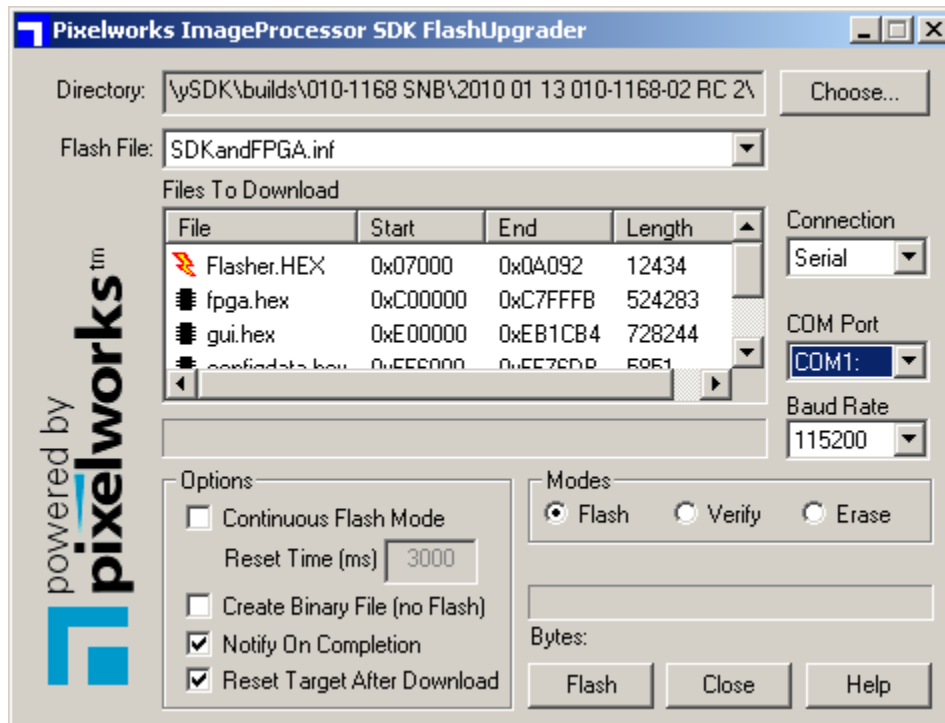
Click On OK

Connect a Serial Cable

Connect your computer's serial port to the quad controller module using the adapter. Connect to the RJ45 port labeled RS232 (on the left side of the back of the unit, in the upper left of the block of 4 connectors).

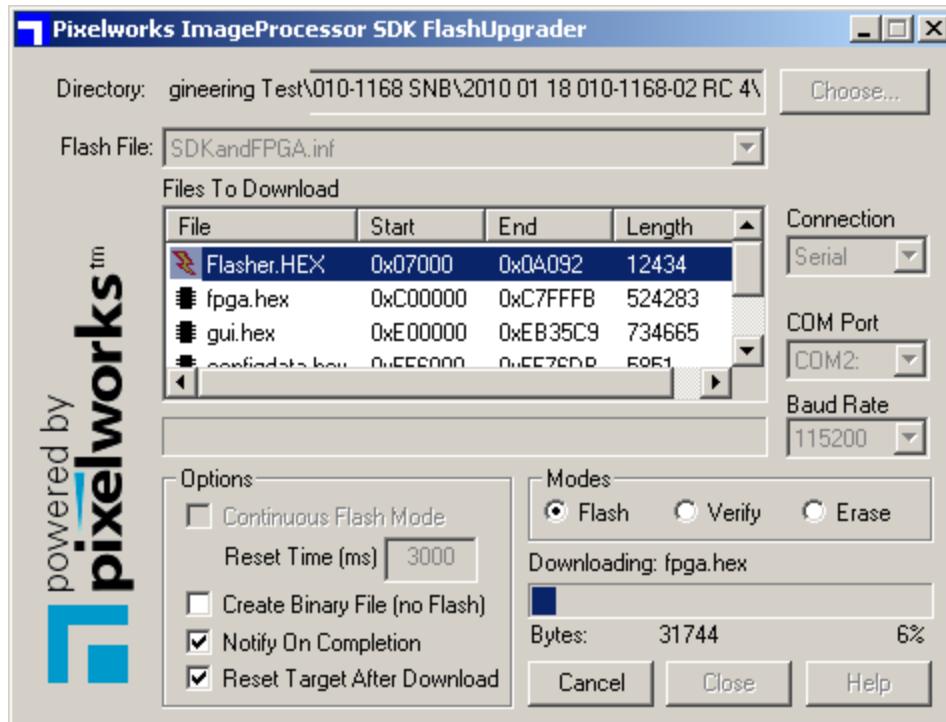
Run FlashUpgrader for all Quad Controller Modules

The executable will automatically start the FlashUpgrader program. You should see this screen. If you are not using COM Port 1, select the correct COM Port. (Be sure that Serial shows in the Connection field). The Baud Rate is correct at 115200; do not change this.



Click on the Flash button.

Turn off the power to the quad controller module, wait a few seconds and turn it back on. You should see the progress bar above the word "Bytes" show the progress as each file is downloaded:



Loading all 4 files should take about 6 minutes. The quad controller will automatically restart itself after the last file is loaded. If an FPGA update has been included with this release, it will then start transferring the firmware to the internal FPGA chips. While it is programming the FPGAs, the front panel LEDs will have a distinctive pattern of green lights, ever other light around the circle is lit and all of the In and Out lights are lit.



This portion of the process will take about 8 minutes. Not all firmware upgrades will require this step. During this time, you may move the serial cable to the next quad controller module and repeat the FlashUpgrader process.

Update Processors 2,3 & 4 in Each Module

After the FPGAs have been loaded, quad controller A will command each of the other quad controllers to “clone” their new software into processors 2,3 and 4 on their module. For this reason, you should

make sure all other quad controllers have been downloaded via FlashUpgrader before you load controller A.

While the quad controller is updating its other 3 processors, the lights on the front have a distinctive pattern similar to when it was loading the FPGA. Every other light in the circle will be illuminated. The Output lights will slowly change from red to green. One of the lights will be red when the other three are green. That is the processor which is currently being programmed. The entire process for all 3 processors should take about 20 minutes. Do not turn off the power during this time. Wait until all controllers have finished and the front panel lights have returned to normal. Then turn off the power to all modules one more time and power the system on as normal.

If you are updating to rev 03 from revs 01 or 02, the processors will not automatically update. Go to the manual update procedure below

Updating Processors manually

After finishing the update process, open the Program Information menu and verify that correct revision firmware has been loaded into every processor. If you do not see the correct revision in any of the slave processors (2,3 or 4), you can start the process manually. If you are upgrading from rev 01 or 02 you will not see a menu at all on the slave processors until you manually update them.

Turn on the system with the remote control. If you can't see an image on A1, press the MISC button to bring up the Cable Equalization menu and use the + or – keys to set the equalization correctly for A1. If you are upgrading from rev 00 or 01, you will only see activity on output 1 of each module. This is normal. Using the remote control, bring up the Program Information menu on A1. While in that menu, press the following sequence on the remote control: Up Up Right Left Down. Hint: watch the IR light on the front panel to make sure you press each key once without repetition. The Factory Settings menu should open. Highlight **Update Flash (All Modules)** and press enter.

Factory Settings	PLANAR
Disable IR Remote	
OEM	CSBU
Display Type	MX46
Slave Settings	▶
Update Flash (All Modules)	

On the confirmation menu, select **Yes** and press enter.

Update Flash	PLANAR	
+/- to select yes to confirm action		
Are you Sure?	Yes	No

All quad controller modules will start programming the other 3 processors.

Restore Settings

Go to the Wall Configuration | Matrix Layout menu and press Auto to reconfigure your layout.

Because the Cable Equalization setting was set back to default, you may not see good video on your displays. Press the MISC button to bring up the Cable Equalization menu on all displays and use the arrow keys to change the setting. If the same setting does not work for all displays, use the arrow keys at the top of the remote to move the menu to each display in turn and adjust them individually.

Restore any other settings you may have changed. (See above for the list of affected menus)