

Technical Note



ReFlex Power™ Firmware Updates

Document No. M380570-01 Rev B • 1/23/2009

PURPOSE

Provide instructions for updating firmware on all ReFlex Power™ modules.



Review this procedure carefully before attempting the update.

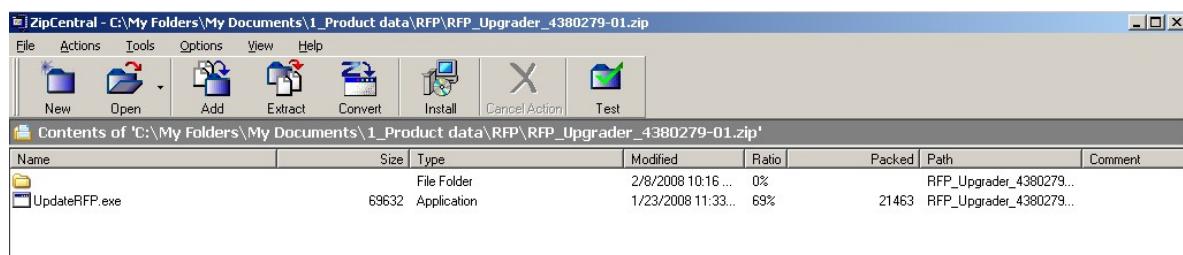
CAUTION

BACKGROUND

ReFlex Power™ modules, including the ReFlex Power™ Controller (RFPC), Low Power DC (LPDC), High Power DC (HPDC), AC Power Supply (ACPS), Low Power/High Power Active Loads (LPAL/HPAL), and Fixed Power DC (FPDC) contain embedded firmware in Flash Memory. The release of ReFlex Power™ includes periodic pre-planned feature enhancements implemented through firmware updates.

PROCEDURE

1. On the Internet, go to http://www.programmablepower.com/go/rfp_downloads.
2. In the Software section, click the downloadable for Firmware Update Executable.
3. An RFP Upgrader zip file will pop up; this zip file contains the update Image files, installation programs and instructions.



If the folder is empty, the files may not be available; contact the AMETEK Customer Care Department at service@programmablepower.com to receive the files.

4. Save this zip and extract the contents to an appropriate location on your computer.
5. Follow the instruction documents carefully.

UPDATE IMAGE FILES

The update Image files contain two types of files “.rbf” and “.bin” files. Below are typical names of the image files. The names define the type of module, the destination partition and firmware version. The Destination partition defines where the files will be physically loaded in firmware during the update.

DC:

FPGA Image A: DC_FPGA1_2_000_000.rbf

This is the DC module Field Programmable Gate Array Image 1 version 2.000.000.

FPGA Image B: DC_FPGA2_2_000_000.rbf

This is the DC module Field Programmable Gate Array Image 2, version 2.000.000.

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MINIMUM SYSTEM REQUIREMENTS

Personal Computer – Pentium 4 with Network Interface Card, Windows XP, or Vista (XP 2000 98Se Optional) Operating System.

Before you start, review the following summary of update steps. All of these steps will be covered in more detail later in the procedure:

1. Verify firmware version numbers for all RFPC, DC and AC modules to determine which modules need to be updated.
2. Remove any RFPC modules with versions older than **0.073** from chassis.
3. Remove any DC modules with versions older than **0.066** from chassis.
4. Remove any Fixed DC power modules with versions older than **0.004** from chassis.
5. Proceed with upgrading the remaining module(s) as needed.

Note: At some point the older modules that were removed have to be updated. These older versions are not capable of field updating and must be returned to the AMETEK factory. To return these older modules for update submit an RMA request form on our website at the link below or phone 800-733-5427 (press 2 once message starts).

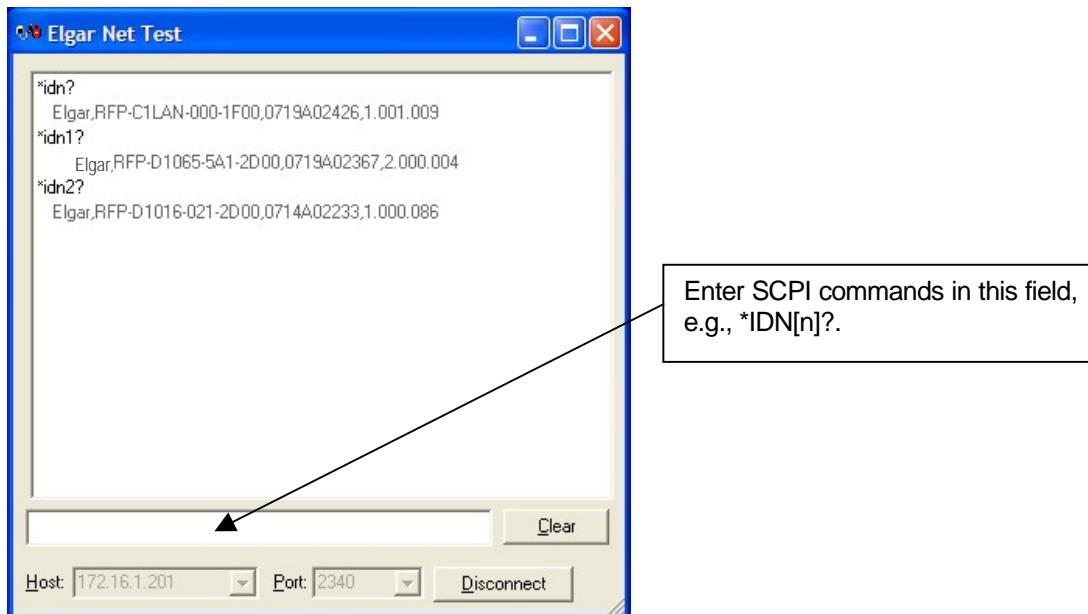
http://www.programmablepower.com/support/support_rma.htm

STEP 1: FIRMWARE VERIFICATION

You can use your own software to determine the current firmware or use the Enet test.exe utility that was shipped with ReFlex Power™. Using the *IDN[n]? Command, where [n] is the module's location identification (address)¹; note the software version number that is returned in the IDN response string.

¹ For information on module addressing, refer to the ReFlex Power™ Quick Start Guide, P/N M380056-04, *Module Location Identification (Address)*

Example:



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If you are using the ENetTest software open the software by double clicking the ENetTest Icon



If you are unfamiliar with the EnetTest utility see the ReFlex Power™ Quick Reference Guide, P/N M380056-04.

Click the Connect/Disconnect button, and when the field to the left of the Clear button turns white, type the *IDN? Commands and tap Enter.

In the example above

*IDN? returned information on the controller module: the Elgar RFP-C1LAN-000-1F00, serial number 0719A02426, firmware version is 1.001.009 (Note in this example the module needs to be updated.)

*IDN1? returned information on the power supply module in Address 1 (Slot 1 of the Mainframe): the Elgar RFP-D1065-5A1-2D00, serial number 0719A02367, firmware version is 2.000.004 (Note that this module does not need to be updated.)

*IDN2? Returned information on the power supply module in Address 2 (Slot 2 of the Mainframe): the Elgar RFP-D1016-021-2D00, serial number 0714A02233 and the firmware version is 1.000.086 (Note in this example the module needs to be updated.)

CAUTION: FIRMWARE VERSIONS

On older systems watch for firmware versions that start at .0 they may not be able to be updated. See the examples below:

If *IDN8? returns Elgar,RFP-DC1065005-000,0608A02833,.066, then the Firmware level is .066.

The minimum level for a ReFlex Power™ power supply module is .065. If the module is .064 or an earlier version it CANNOT participate in the update process.

The minimum level for the ReFlex Power™ controller module is 0.056. If the controller module is 0.055 or an earlier version it CANNOT be used in the update process.

STEPS 2, 3, AND 4: REMOVE MODULES THAT CANNOT USE THIS UPDATE PROCEDURE

The modules that do not meet the update requirements MUST BE REMOVED from the ReFlex Power™ System. With the power off, loosen the retaining screw and slide the modules out about 2 inches or remove them completely. If they remain, the update process will fail (with unwanted results!).

Modules should only be updated one module type at a time. Make sure that the correct module address is selected for the file(s) to be downloaded. If the wrong file is downloaded, factory servicing will be required; the module will not operate correctly.

STEP 5: UPGRADING THE MODULES

Copy the UpdateRFP.exe file to the computer hard drive. Then create a short cut to the desktop. Start the UpdateRFP PC program by double clicking on the icon (see below).

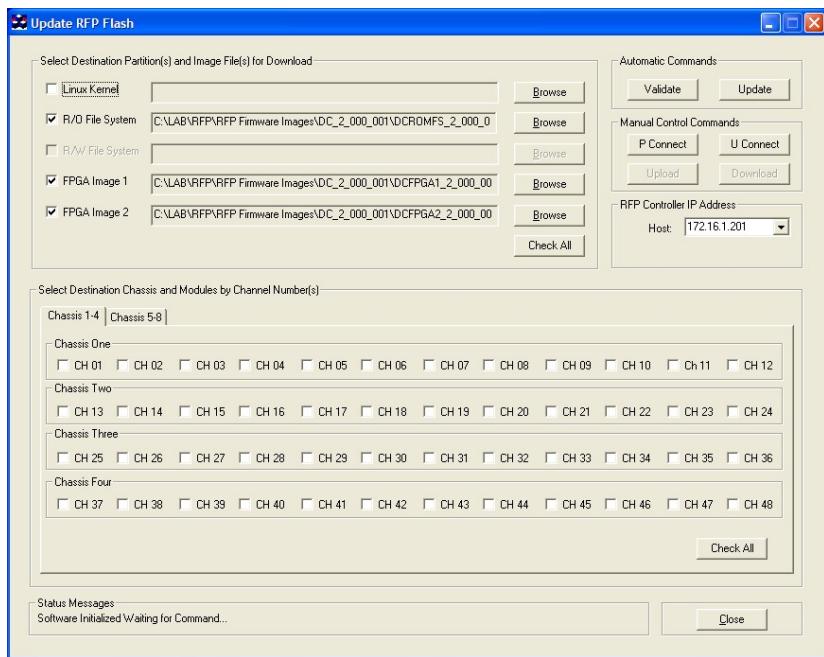


A screen similar to the one below will appear.

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Note: It is recommended that the controller module be updated last when upgrading a system. The reason is that once the controller is updated, the system will need to be restarted before the update of other modules can continue. This will eliminate an unnecessary restart.

IMPORTANT: Be familiar with the file names to avoid selecting the wrong files.

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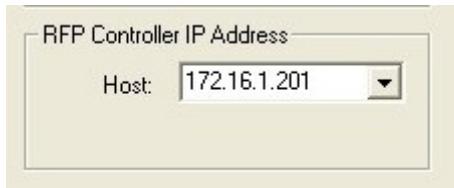
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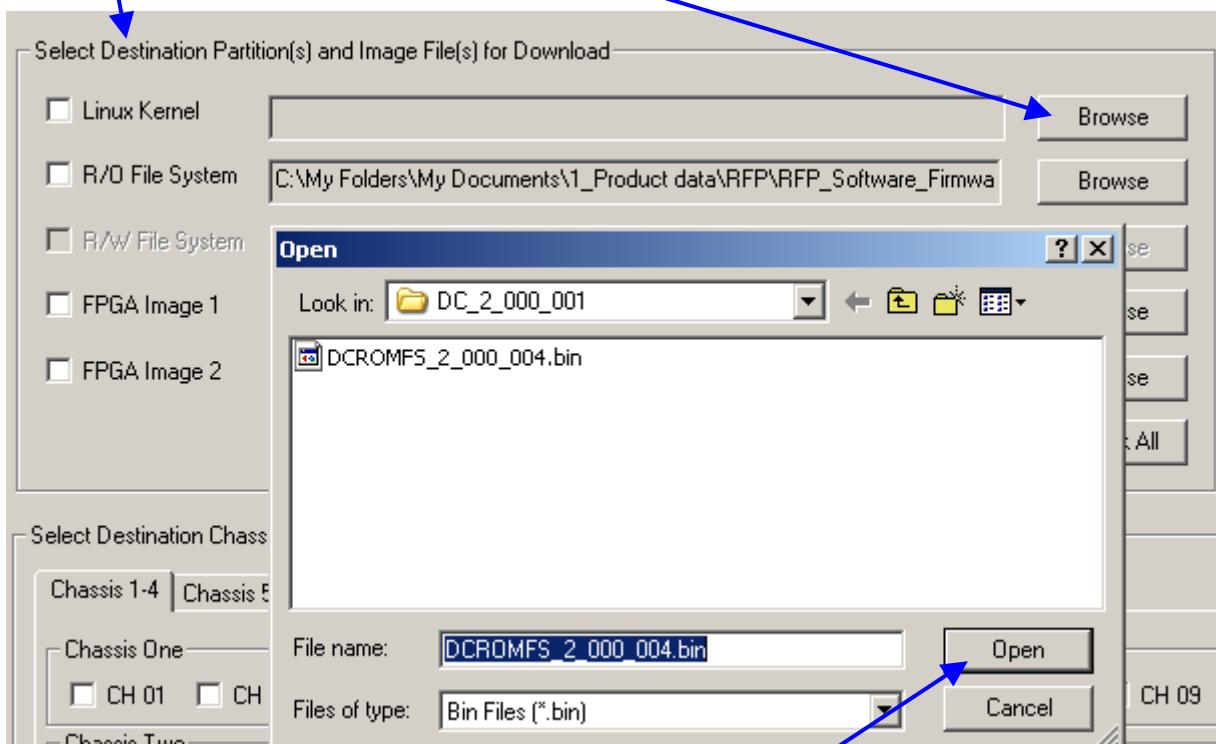


FIRMWARE UPDATE PROCEDURE

Make sure the IP address of the RFPC is entered in the Host : field as shown below (Default is 172.16.1.201).



Select the 'Destination Partition(s) and then Browse to the Image file(s) to download'.



Make SURE you have selected the correct entries before clicking Open.

Depending on the update not all partition fields will be used.

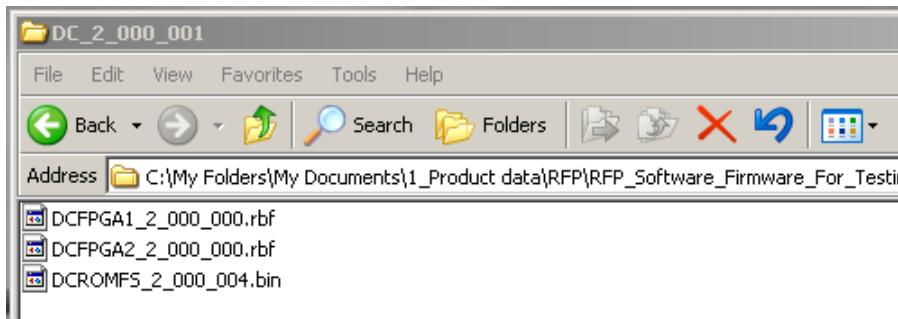
Make sure that the ".rbf" files go into the correct image partitions and the correct ".bin" into the R/O file system partition. An example of the structure is shown in the following image:

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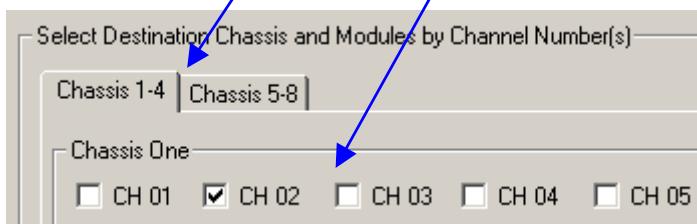
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Factory service will be needed if incorrect files are loaded to the module.

CAUTION

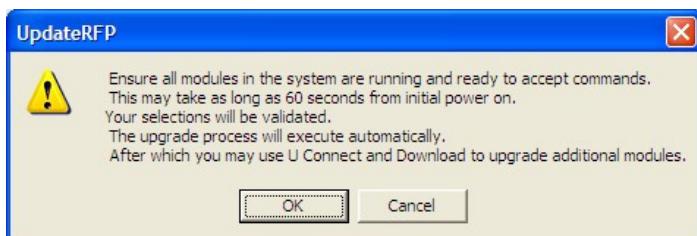
Enter the correct Destination Chassis and Module(s).



Click the "Update" button under the Automatic Commands group.



The following message should appear; when ready click OK.



Your selections will automatically be validated then the download process will start.

During the update the BUS light on the module(s) will go from solid to off when addressed and the NET light on the controller will flash.

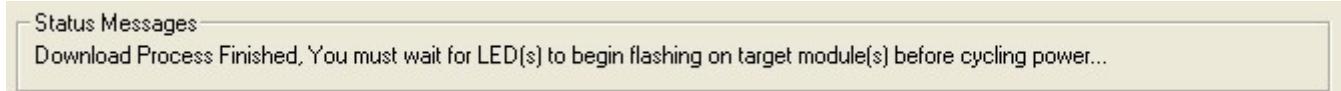
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The status message window at the bottom of the screen will show progress of the update.



When the procedure is complete, the BUS light on the target module(s) will be flashing and the controller NET and LAN lights will be off.



Wait for the process to finish. Interrupting the process during a download can result in the module needing to be returned for factory service..

CAUTION

After an initial “Update” process additional modules can be updated with the U Connect and Download buttons.



At this point, all of the non-controller module's BUS LEDS will be “ON”, signifying that they are in download mode and have not been programmed yet.

Click the “U Connect” button in the Manual Control Commands area.

Wait for the “Download” button to become active, click it. The file types will be validated, if they are valid and you have selected the correct files, click “yes”, and otherwise click “no”.

When a ReFlex Power™ Module's Flash programming is complete the BUS and Fault (RED) LEDs will flash alternately at about 4 Hz.

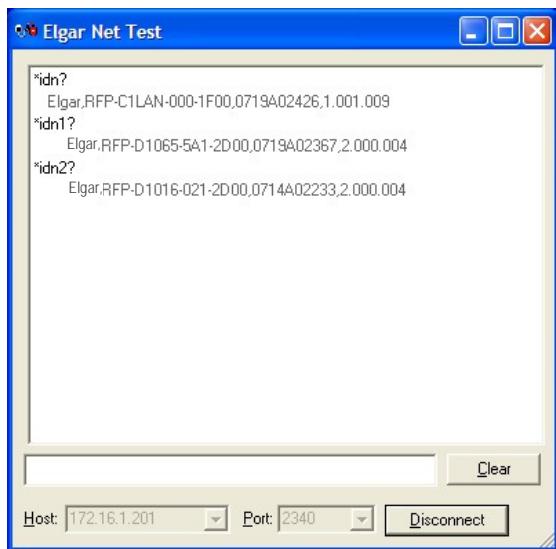
The next module(s) can now be programmed by changing the Destination Module Channel number (and files if needed) and clicking the “U Connect” button.

When RFPC Flash programming is complete, the BUS & FAULT (RED) LEDs will alternately flash at about 4 Hz, then cycle power to restart the system. Use the *IDN[n] command to verify that the modules have the updated version.

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Please contact AMETEK Customer Care at service@programmablepower.com if you have any questions.