

PowerXL Series Firmware Upgrade Process

Application Summary

The PowerXL Series adjustable frequency drive has the ability to upgrade firmware through a PC Firmware Upgrade Tool. It can be used to load a single packaged firmware file for the MCU, DSP, Keypad and Option boards. To load firmware to the drive, full line power is required to be able to program all the required processors. In addition, there are two different ways to load firmware depending on the method of connection to the drive, either the RJ45 Keypad Port or the RS485 A and B terminal.

Software Prerequisites

- a. **Install Eaton Power Xpert *inControl* - Firmware Upgrade Tool (FUT):** this can be found under the software tab at www.eaton.com/dg1 using the with the *One Installer* download file.
- b. **DG1 - Firmware Bundle DG_VXXXX:** this bundle will include two .xml files; one being the code bundle DG_VXXXX.xml and the other being the configuration file DG_CXXXX.xml. In addition to the .xml files there will be release notes provided. The latest firmware file can be found at www.eaton.com/dg1.

DH1 - Firmware Bundle DH_VXXXX-ETN: this bundle will include two .xml files; one being the code bundle DH_VXXXX-ETN.xml and the other being the configuration file DH_CXXXX.xml. In addition to the .xml files there will be release notes provided. The latest firmware file can be found at www.eaton.com/dh1.
- c. **ModBus Communication Adapter to Connect PC to the Drive:** Eaton has a USB to RJ45 connector cable available (Part Number: DXG-CBL-PCCABLE) that can be used for installing firmware through the keypad port with a driver that installs with the firmware upgrade pc tool. In addition, it is possible to connect through the green RS485 A and B control terminals on the drive control module, a third part RS485 converter device would connect to these ports (A is positive, B is negative).

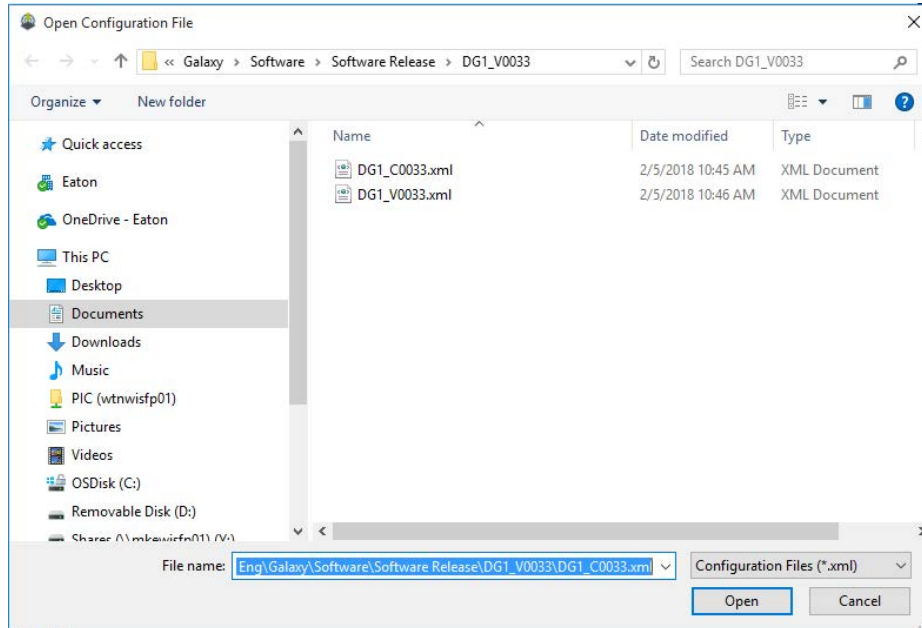


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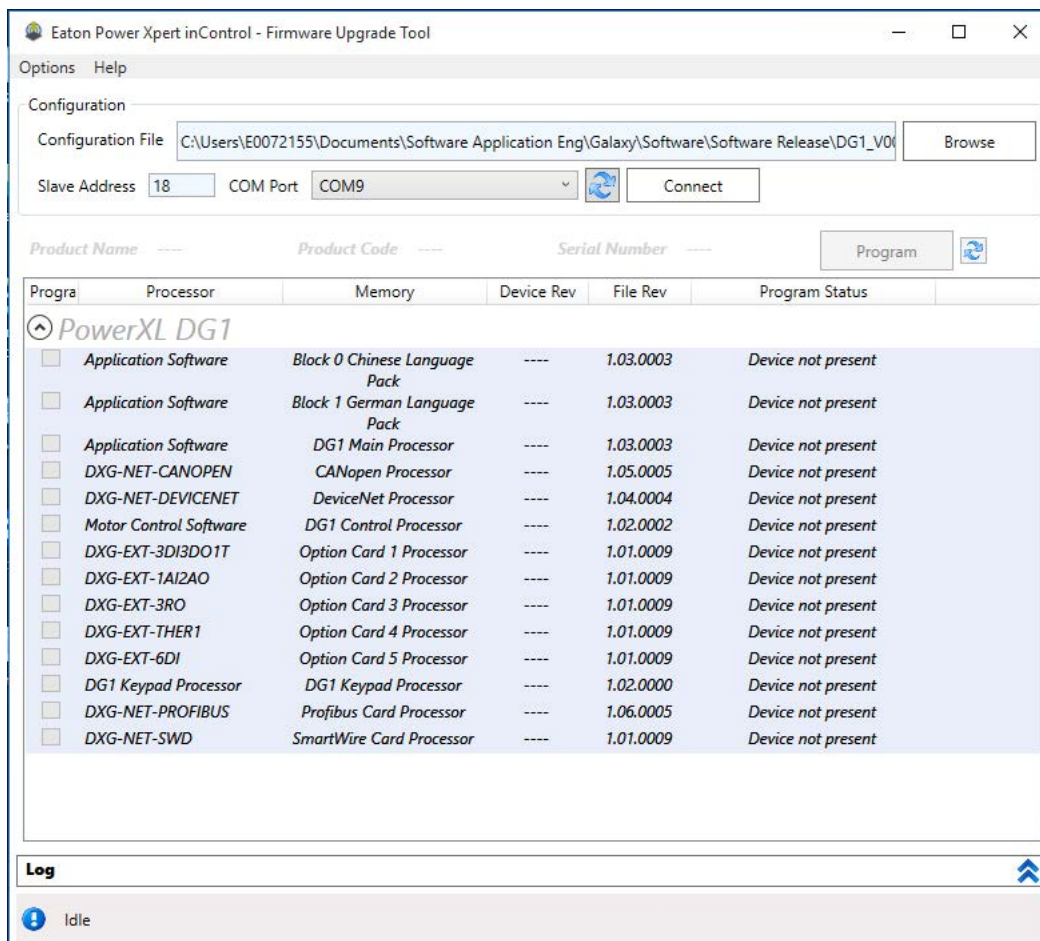
Upgrading Through RJ45 Keypad Port

1. Open the Eaton Power Xpert *inControl* – Firmware Upgrade Tool (FUT). With the FUT open there will be a Configuration file path box to enter in the location of the DG_VXXXX/DH_VXXXX-ETN folder. Select the *Browse* button in the right hand side of the screen, located the Firmware Bundle folder of DG_VXXXX.xml or DH_VXXXX.xml, in that bundle will be the Configuration file DG_CXXXX.xml or DH_CXXXX.xml. (The latest firmware bundle can be obtained from www.eaton.com/dg1 or www.eaton.com/dh1 website).

Note: The PowerXL DG1 drive cannot be loaded with PowerXL DH1 firmware or vice versa. Error message will be displayed if trying to do so after connecting to the drive.

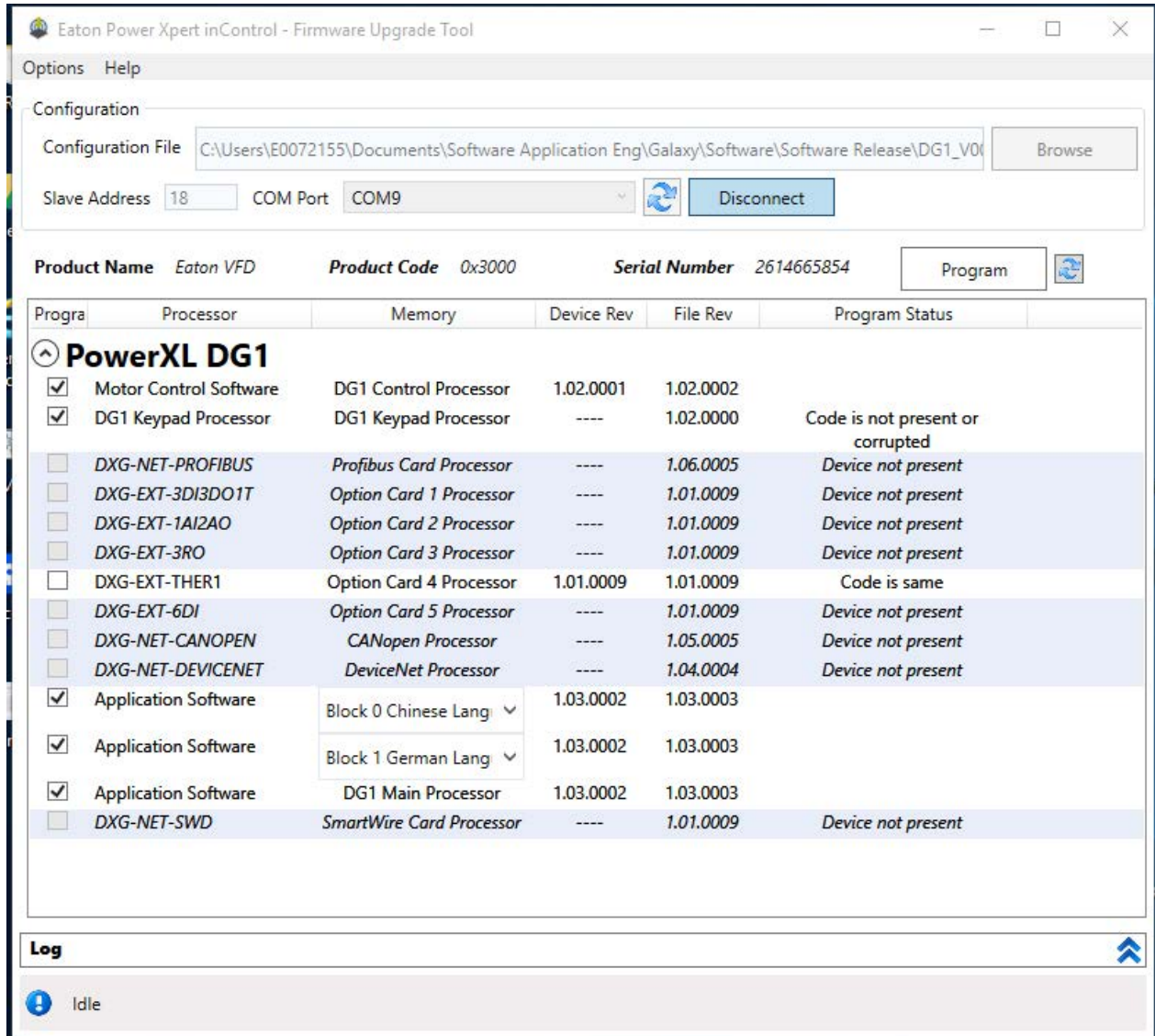


- 2a. **Upgrading through RJ45 Keypad Port:** Select that file and click *Open*. With the file open you will see all the processors that are loaded in the configuration file. When using the keypad port for loading, the slave address should stay at 18. (Slave address of keypad port is not changeable and does not port into boot loader, requiring it to stay at 18.) With the slave address set, select the *COM Port* that the computer set up for the USB Converter (To verify COM port, go into Windows Device Properties and look under the Ports drop down.) If the required COM Port does not show up in the tool, click the *Refresh* button to the right of the drop down. Once the settings are complete, click the *Connect* button.
- 2b. **Upgrading through RS485 Terminals A and B:** Select that file and click *Open*. With the file open you will see all the processors that are loaded in the configuration file. When using the RS485 terminals for loading the slave address should be whatever the drive has setup for the slave address which can be set on the keypad in the "Communication Parameter Group". With the *Address* set, select the *COM Port* that the computer set up for the USB Converter (To verify COM port, go into Windows Device Properties and look under the Ports drop down.) If the required COM Port does not show up in the tool click the *Refresh* button to the Right of the drop down. Once settings are set click the *Connect* button.



Note: Example is showing going through the keypad port using a PowerXL DG1 drive.

- After hitting the *Connect* button, the FUT will send messages to the drive to place it into the firmware loading mode. Once connected, the list of available processors in the drive will become active. (If processors are not available, they will show up highlighted in purple and the *Program Status* will indicate the *Device not present*.) To refresh the list of processors, click the *Refresh* button next to the *Program* button.



- The *Program Status* column will indicate if the code is the same as in the selected configuration file. To load firmware down to the drive, there is a *Program* column with a check box, select the *Processors* you want to load along with the language files required, if the tool sees a difference in the device and file versions it will auto check the required processors to load. (There are three languages stored on the PowerXL Series drive, English is always standard and then two additional languages can be loaded in the two language blocks, one language per block, there is a drop down to select the language for that block.)

Eaton Power Xpert inControl - Firmware Upgrade Tool

Options Help

Configuration

Configuration File

Slave Address COM Port

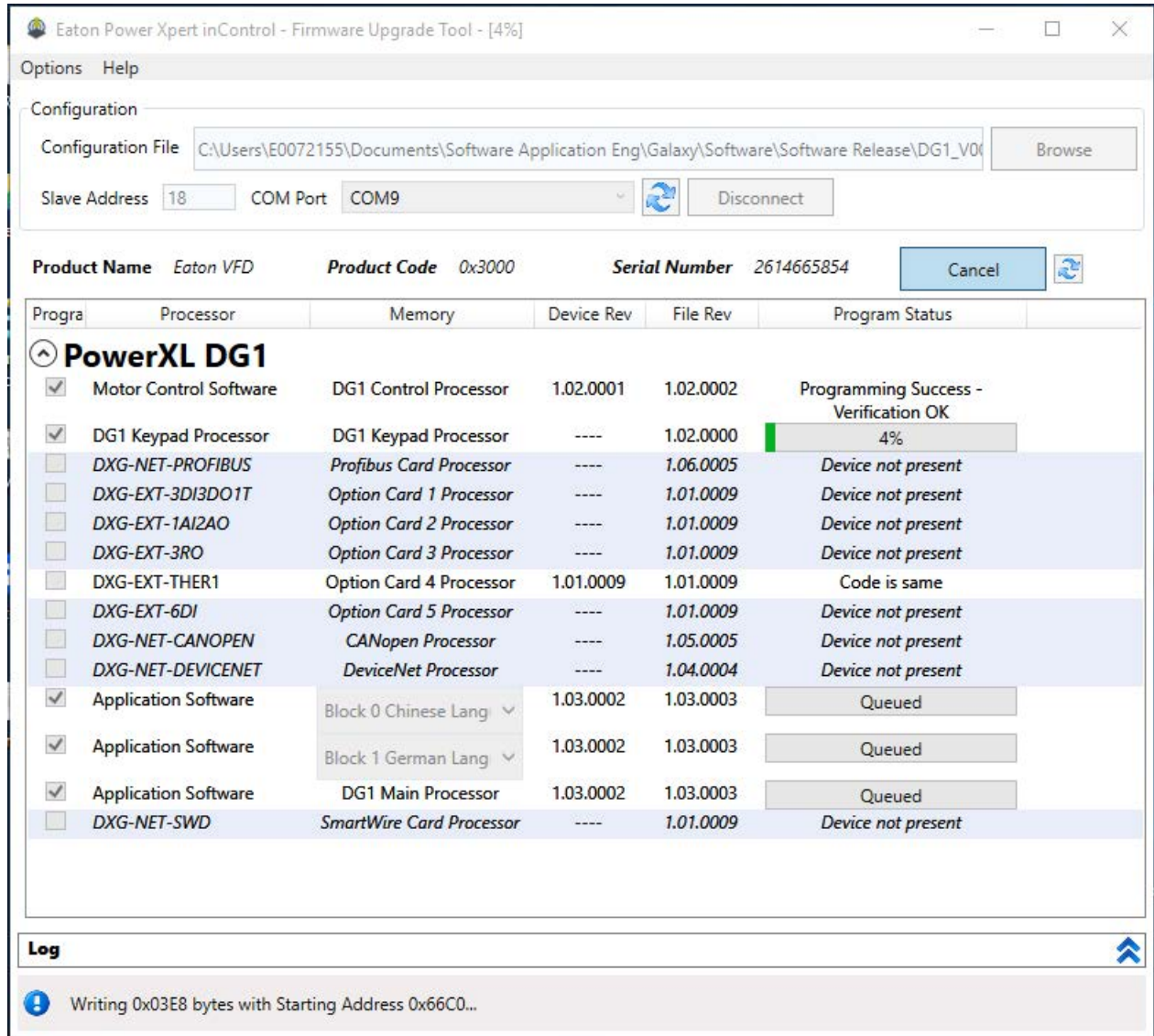
Product Name *Eaton VFD* Product Code *0x3000* Serial Number *2614665854*

Progra	Processor	Memory	Device Rev	File Rev	Program Status
PowerXL DG1					
<input checked="" type="checkbox"/>	Motor Control Software	DG1 Control Processor	1.02.0001	1.02.0002	
<input checked="" type="checkbox"/>	DG1 Keypad Processor	DG1 Keypad Processor	----	1.02.0000	Code is not present or corrupted
<input type="checkbox"/>	<i>DXG-NET-PROFIBUS</i>	<i>Profibus Card Processor</i>	----	<i>1.06.0005</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-EXT-3DI3DO1T</i>	<i>Option Card 1 Processor</i>	----	<i>1.01.0009</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-EXT-1AI2AO</i>	<i>Option Card 2 Processor</i>	----	<i>1.01.0009</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-EXT-3RO</i>	<i>Option Card 3 Processor</i>	----	<i>1.01.0009</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-EXT-THER1</i>	<i>Option Card 4 Processor</i>	<i>1.01.0009</i>	<i>1.01.0009</i>	Code is same
<input type="checkbox"/>	<i>DXG-EXT-6DI</i>	<i>Option Card 5 Processor</i>	----	<i>1.01.0009</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-NET-CANOPEN</i>	<i>CANopen Processor</i>	----	<i>1.05.0005</i>	<i>Device not present</i>
<input type="checkbox"/>	<i>DXG-NET-DEVICENET</i>	<i>DeviceNet Processor</i>	----	<i>1.04.0004</i>	<i>Device not present</i>
<input checked="" type="checkbox"/>	Application Software	Block 0 Chinese Lang <input type="button" value="v"/>	1.03.0002	1.03.0003	
<input checked="" type="checkbox"/>	Application Software	Block 1 German Lang <input type="button" value="v"/>	1.03.0002	1.03.0003	
<input checked="" type="checkbox"/>	Application Software	DG1 Main Processor	1.03.0002	1.03.0003	
<input type="checkbox"/>	<i>DXG-NET-SWD</i>	<i>SmartWire Card Processor</i>	----	<i>1.01.0009</i>	<i>Device not present</i>

Log

Idle

- Once processors required are selected press the *Program* button and the firmware will start loading. The *Program Status* will show the progress of the files being loaded.



- After all *Processors* are loaded, the *Disconnect* button will become active, click the *Disconnect* button to take the drive out of the boot loader mode. Remove the RS485 cable and plug keypad back into the drive. It then will go through an upgrade process to upgrade the keypad processor.

Additional Help

In the US or Canada: please contact the Technical Resource Center at 1-877-ETN-CARE or 1-877-326-2273 option 2, option 6.

All other supporting documentation is located on the Eaton web site at www.eaton.com/Drives

