ORBIT *POWER GROUP*
Behlman Electronics

**USER'S GUIDE AND
TECHNICAL REFERENCE**

**VP*Xtra*® MONITOR
USER MANUAL**
REV 1

FOR SERVICE ASSISTANCE

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DATE: 9/19/22 REV 1

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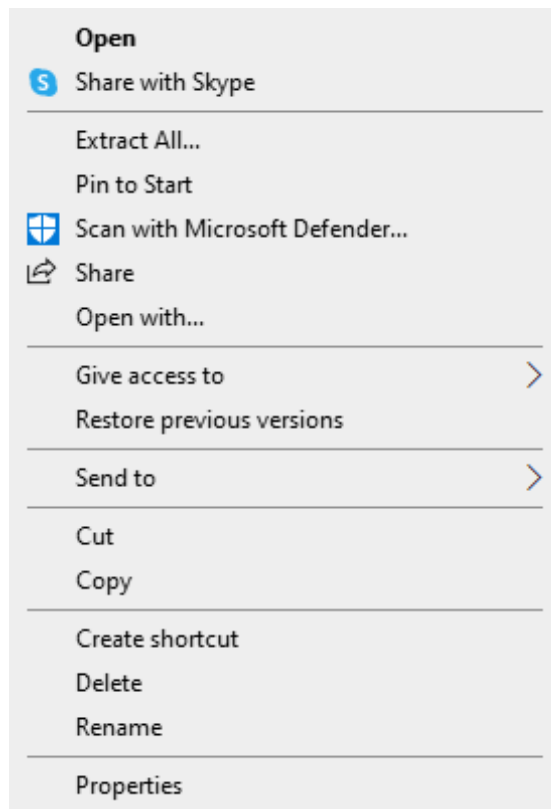**VP*XTRA*® MONITOR**

1.0   OVERVIEW

VP*Xtra*® Monitor is a Windows 10-based communication interface for VP*Xtra*® products with the -IQI option. The program enables customers to review status information sent from the power supply to a computer via the front panel USB port. Customers are also able to update VP*Xtra*® firmware without returning those units to Behlman Electronics.
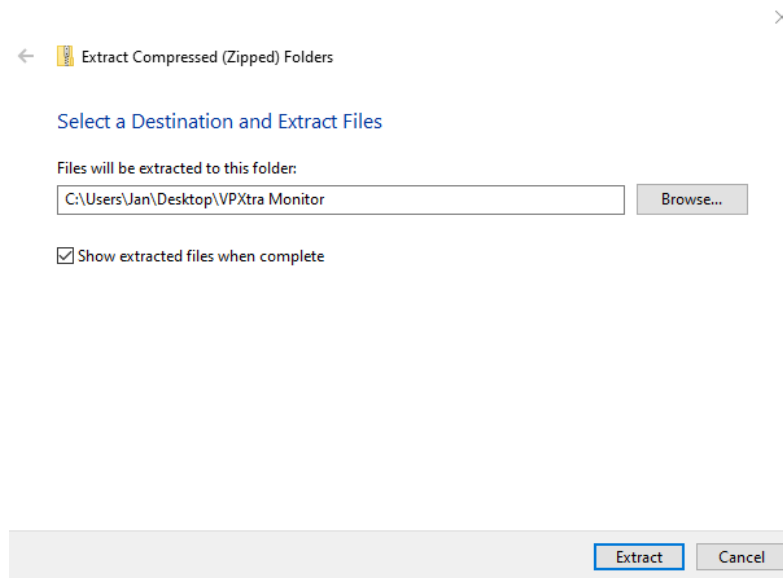

2.0   INSTALLATION

This section details the installation of the VP*Xtra*® Monitor software on a PC running Windows 10. VP*Xtra*® Monitor only supports operation on Windows based operating systems.

2.1   Ensure that the VP*Xtra*® power supply is not connected to the PC that the software is installed on. If it is, unplug the USB cable until this procedure is completed.

2.2   Locate the compressed zip file "VP*Xtra* Monitor.zip" which contains "VP*Xtra* Monitor.msi" installer and "Setup.exe" executables. Right-select the folder and select "Extract All…" (Figure 1).
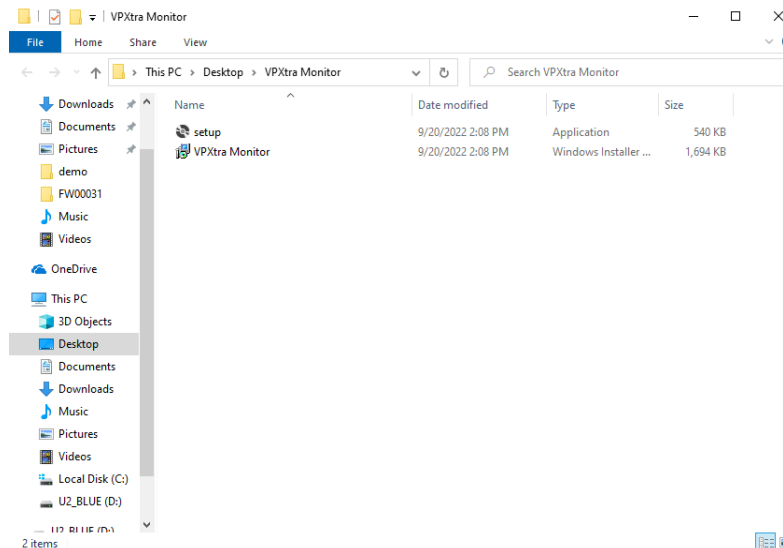

Figure 1: General Menu

2.3 A prompt will appear asking the user to select a file destination. Files will be extracted to the folder identified. Select the desired file location, then select "Extract" to continue.

Figure 2: Extraction Destination

2.4 Once extracted, ensure that both the installer, "VP*Xtra* Monitor.msi", and executable, "Setup.exe" are located in the folder selected in step 2.

Figure 3: Installation Requirements

2.5   Double select the "Setup.exe" executable and select "Next >" on the "Welcome to the VP*Xtra* Monitor Setup Wizard" splash screen shown in Figure 4.
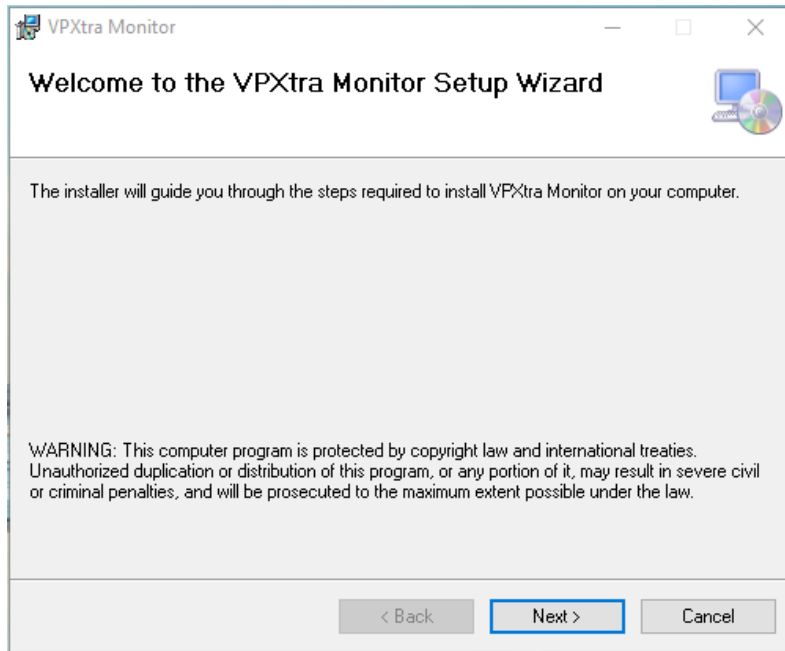

Figure 4: Install Splash Screen

2.6   Folder location and user accessibility can be modified in the "Select Installation Folder" window, shown in Figure 5. Select "Next >" to continue.
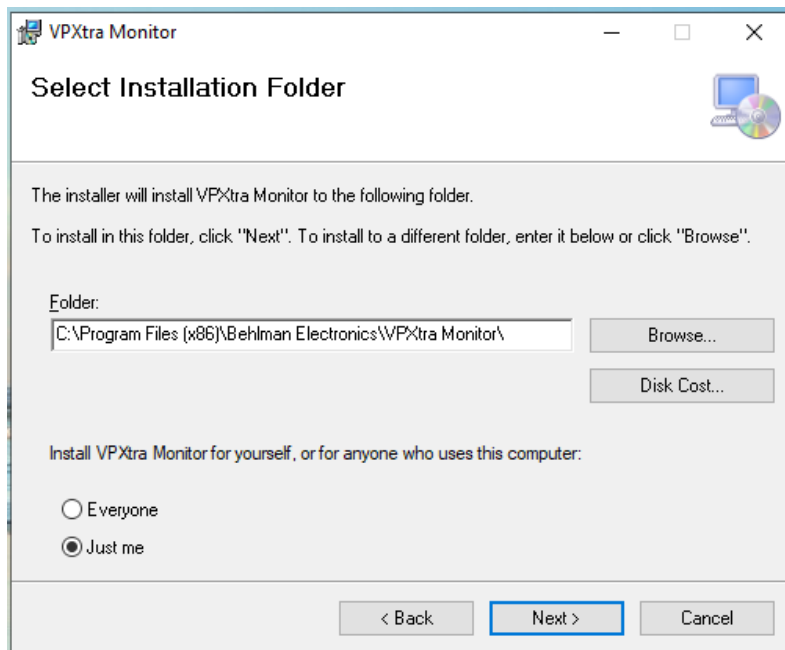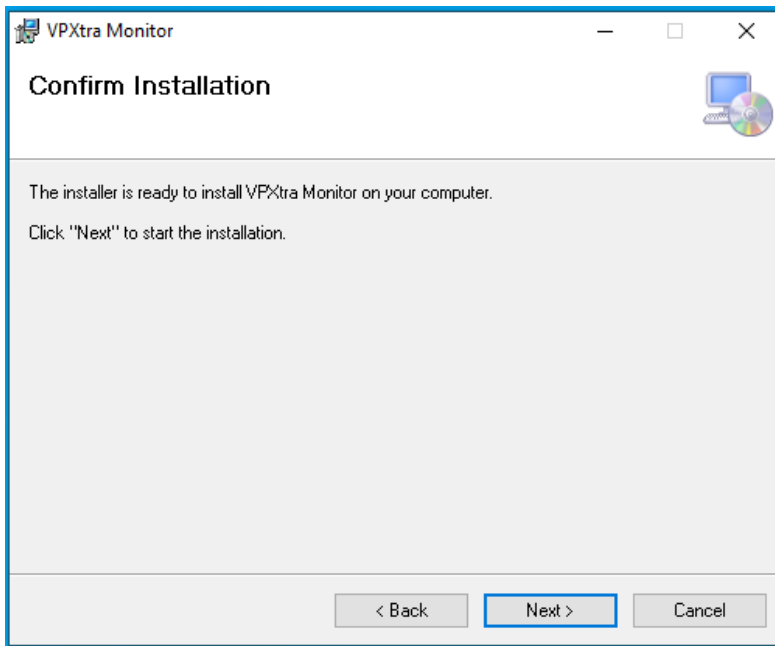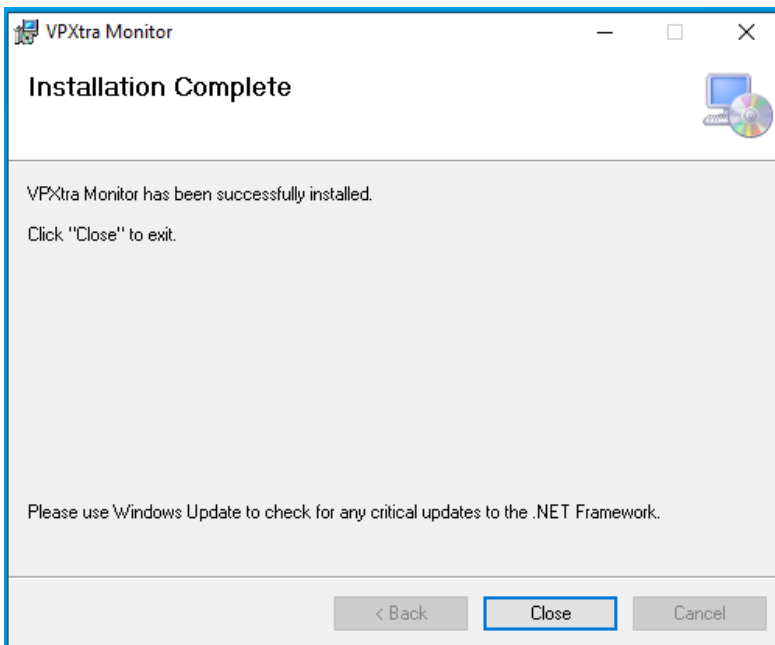

Figure 5: Installation Details

2.7   Select "Next >" in the "Confirm Installation" window (Figure 6).

Figure 6: Confirmation Screen

2.8   To complete the installation process, select "Next >" in the "Installation Complete" window (Figure 7).

Figure 7: Completion Screen

2.9 A successful installation will result in the creation of a shortcut on the Desktop screen (reference Figure 8). The program may also be accessed by searching for VP*Xtra*® Monitor in the Windows Search bar as an installed program. Once the installation process is complete the executable and installer files can be removed from their locations.
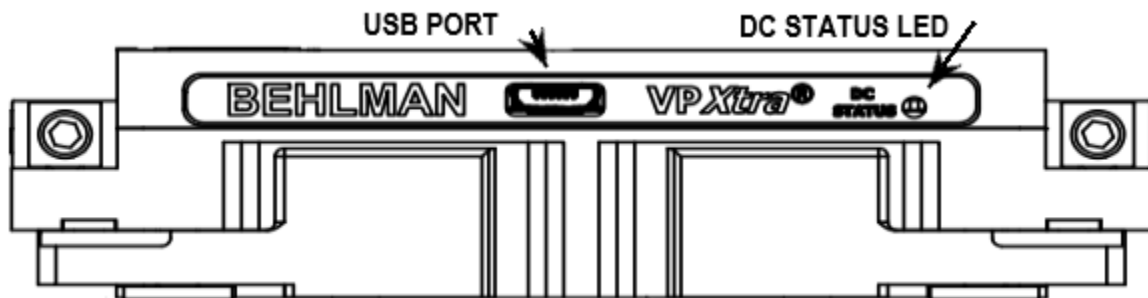

Figure 8: VP*Xtra*® Monitor Shortcut

3.0   PROGRAM USE

This section provides information for getting started with the VP*Xtra*® Monitor software, including information on available functions, unit front panel uses and successful connection to VP*Xtra*® Monitor. For information regarding unit operation or performance parameters refer to the specific product's data sheet. Please make sure that USB communication is supported by your model.

3.1   UNIT FRONT PANEL

3.1.1   A USB port on the front panel of all applicable models (see Figure 9) is used to connect the VP*Xtra*® unit to your computer.

3.1.2   The DC STATUS LED is a bicolor LED illuminating green during normal operation, red during hardware failure, and flashing red/green when in bootloader mode.

Figure 9: Typical 3U VP*Xtra*® Front Panel Layout

3.1.3   For communication over USB to take place the proper input power must be supplied to the VP*Xtra*® unit through a VPX backplane or similar interface board. Once input voltage is valid the DC STATUS LED should illuminate green.

3.2   GETTING STARTED

3.2.1   Double select the VP*Xtra*® Monitor shortcut to start the software. If no VP*Xtra*® unit is plugged in a window like the one shown in Figure 10 should appear. The yellow banner along the bottom edge of the window will indicate that USB communication has not yet been established with a VP*Xtra*® unit. If a VP*Xtra*® unit is detected a window like the one shown in Figure 10 should appear.

Figure 10: Program running but unconnected to a VP*Xtra*® Unit

3.2.2   If a connection is not automatically made after the unit is turned on check the USB cable connection. Note that USB hot swapping is not supported, therefore restarting the unit may be necessary if the USB host connection is passed between different computers.

3.3   AVAILIABLE FUNCTIONS

3.3.1   With the VP*Xtra*® Monitor software open and the VP*Xtra*® unit powered, the user has access to information and functions using the "File", "Advanced", and "Help" options located in the top left corner of the application window.

3.3.1.1   Selecting "File", "Exit" closes the program, similar to selecting the "X" button in the top right corner of the application window.

3.3.1.2   Selecting "Advanced", "BOOTLOADER" allows users to upgrade firmware with files provided by Behlman Electronics.

3.3.1.3   "Help", "About …" displays the manufacturer and software revision number for the VP*Xtra* Monitor software as shown in Figure 11.
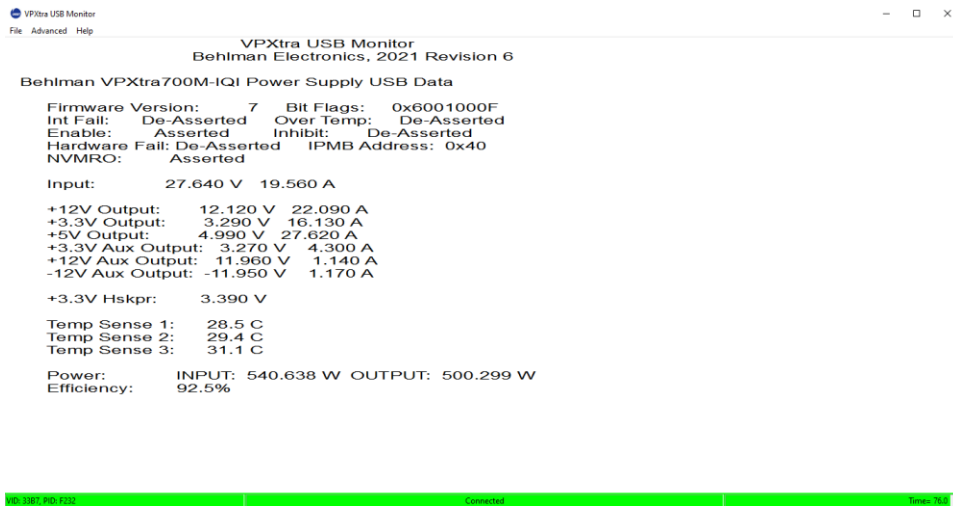
Figure 11: Help Popup

3.4 CONNECTION TO UNIT

3.4.1 Once the VP*Xtra*® Monitor software connects to the VP*Xtra*® unit successfully, the software should begin to show product information and the bottom band of the application window should change from yellow to green, reading "Connected" in the bottom center of the screen as shown in Figure 12.

3.4.2

Figure 12: Successful Communication with VP*Xtra*® Power Supply

3.4.3   As shown in Figure 12, product information is displayed in the VP*Xtra*® USB Monitor window. A breakdown of the product information is shown in the following table. In the event of a successful connection but an unrecognized Product ID (PID) the program will display "Unknown VPX Model Connected...".

Product Information	Description
Firmware Version	Version release of firmware installed on the VP*Xtra*® unit.
Int Fail	Output voltage out of tolerance; Also indicated by Red DC STATUS LED
Enable	ANSI/VITA 62.0 Defined Signal; see product data sheet for details
Inhibit	ANSI/VITA 62.0 Defined Signal; see product data sheet for details
NVMRO	ANSI/VITA 62.0 Defined Signal; see product data sheet for details
Hardware Fail	Internal sensor out of tolerance
Over Temp	Temp. sensor has reached critical or non-recoverable readings
IPMB Address	I2C hardware address used for communication

3.4.4   Analog data from the unit will take the form of six fields. Please reference the VP*Xtra*® unit's datasheet to verify that the input and output data are as expected.
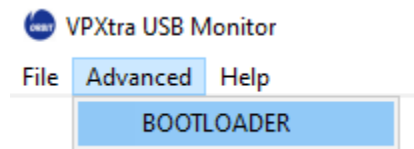
Analog Data	Description
Input Line	Voltage (Volts) and Current (Amps) of input power lines
Output Line(s)	Voltage (Volts) and Current (Amps) of output power lines
Internal 3.3V	Status of the internal 3.3V line that powers on-board ICs (Volts)
Temperature	Sensors keep track of board temperatures (Celsius)
Power	Value derived from voltage and current values. Input power will be greater than output power (Watts)
Efficiency	Applicable only when load is applied to unit. (%)

3.5   BOOTLOADING

Bootloading as used here is the process of upgrading the firmware installed on the VP*Xtra*® unit with new firmware provided by Behlman Electronics. Some user data such as FRU SEL information will not be affected by the bootloading process. Other custom data such as SDR and hysteresis thresholds will be reset to default.
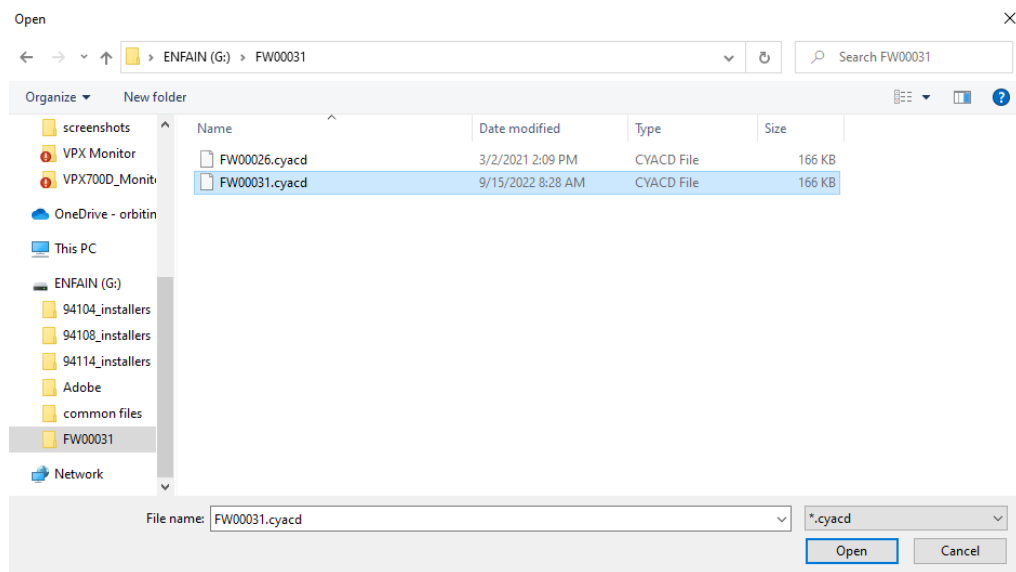
During this process, the unit will be unresponsive to IPMI commands until the new firmware is programmed. It is required that the unit have continuous access to power (indicated by a green or red DC STATUS LED) during this process. Power loss during this process may cause issues requiring factory service.

3.5.1   To initiate the bootloading process select "Advanced", "Bootloader" (Figure 13).
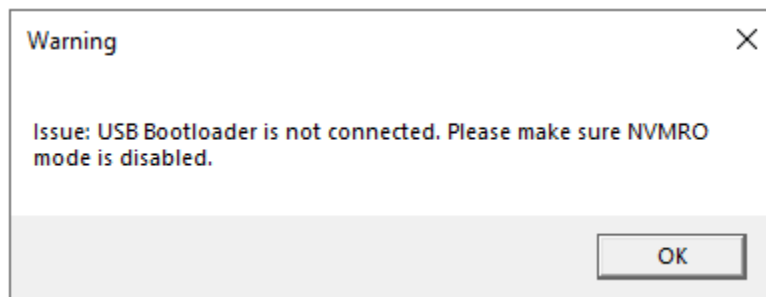

Figure 13: BOOTLOADER Access

3.5.2   The DC STATUS LED on the unit should indicate with rapid flashing indicating that bootloader mode has been entered and a prompt to choose a firmware file will appear (Figure 14). Select the desired file provided by Behlman Electronics for this purpose. Note that the firmware must have a .cyacd file extension.
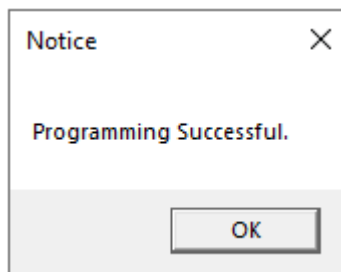

Figure 14: Choosing Firmware

3.5.3 If the DC STATUS LED does not start to flash and the file selection window does not appear, an error message (Figure 15) will appear. Ensure that the NVMRO signal is De-asserted then retry.

Figure 15: Unable to write to unit

3.5.4 Once the new firmware file is selected the program will pause for a few seconds as the firmware is installed. If the programming is successful, the DC STATUS LED will stop flashing and the screen will return to one similar to Figure 12, showing USB Data from the unit. A message indicating successful completion will be displayed (Figure 16) notifying the user that programming has finished. The 'Firmware Version' field on the USB screen should change to reflect the appropriate version number which will also indicate a proper firmware upgrade.

Figure 16: VP*Xtra*® unit Programming Complete

REVISION HISTORY			
Rev.	**ECO**	**DESCRIPTION**	**DATE**
-	N/A	RELEASED UNDER REVISION CONTROL.	9/19/22