PlusConnect™ for Harris 3DX Transmitters
Installation and Operation Manual

Introduction

The PlusConnect™ for Harris 3DX provides a connection between the Harris 3DX transmitters and the ARC Plus transmitter remote control system. Transmitter parameters are read by the PlusConnect using a serial connection to the transmitter. They are then forwarded to a receiving ARC Plus unit via Ethernet. PlusConnect channels can then be monitored and controlled via:

- Front panel of the ARC Plus
- Web browser, with the web server built into the ARC Plus
- PC via optional AutoPilot® Plus software
- Optional telephone connection to the ARC Plus.

The PlusConnect is part of the Plus-X™ family of expansion products designed for the ARC Plus.

Important! The PlusConnect operates in conjunction with an ARC Plus system. Be sure to complete configuration of the ARC Plus before adding the PlusConnect to the system.

Installation Tip

Even though the ARC Plus and the PlusConnect may be operated on different subnets, it is strongly recommended that the PlusConnect be installed on the same LAN as the ARC Plus. In a network failure, a PlusConnect on the same LAN as the ARC Plus benefits from the macros, event logging and alarm reporting handled onboard the ARC Plus.

Unpacking

The PlusConnect for Harris 3DX ships with the following:

- Manual
- PlusConnect unit
- Power cord
- Null modem cable
- DB-9M to DB-9F straight-through serial cable
- 10’ Shielded CAT5 cable

Front Panel Indicators

- The POWER LED indicates power is applied
- The LINK LED verifies connectivity between the transmitter and the PlusConnect. If the LED is off, the serial cable is disconnected or there is a connection error.

Hardware Configuration

This step will link the PlusConnect to a specific ARC Plus unit and will identify the transmitter to which the unit will be connected.

1. Use the supplied null modem cable to connect a COM port on a PC to the DB-9M serial port on the PlusConnect.
2. Open a HyperTerminal connection (9600 8-N-1) to the COM port you are using.
3. Use a paper clip or similar small object to press the **Config** button on the PlusConnect unit while applying power. The power LED will blink when the unit is in config mode.
4. HyperTerminal will display the current configuration settings for the PlusConnect. If this is the first time you are setting up the PlusConnect, default values will be returned.
5. Enter new configuration settings for the PlusConnect where prompted. You will be asked to configure:

   IP address. The network address of the PlusConnect unit.
   Subnet mask. The subnet mask for the PlusConnect.
   Port number. The Plus-X port number configured on the ARC Plus. Leave this set to default (45000) unless the Plus-X port number has been changed on the ARC Plus.*
   ARC Plus IP address. The IP address of the ARC Plus used to connect to the PlusConnect.*
   Gateway. The gateway address of the network.
   PC ID and TX ID. Leave these parameters set to default unless there is reason to change them.

   **If you are not sure, you can view the ARC Plus network settings from the front panel of the ARC Plus by selecting Config > System > Network.*

6. Power off the PlusConnect when you are done.

Installation

After entering the configuration settings, you are ready to install the PlusConnect in its permanent location.

1. Use the supplied serial cable to connect the system controller serial port on the Harris 3DX transmitter to the serial port on the PlusConnect.
2. Connect the PlusConnect to your network hub or switch using the supplied 10' shielded Ethernet cable (or equivalent).
3. Apply power to the PlusConnect.

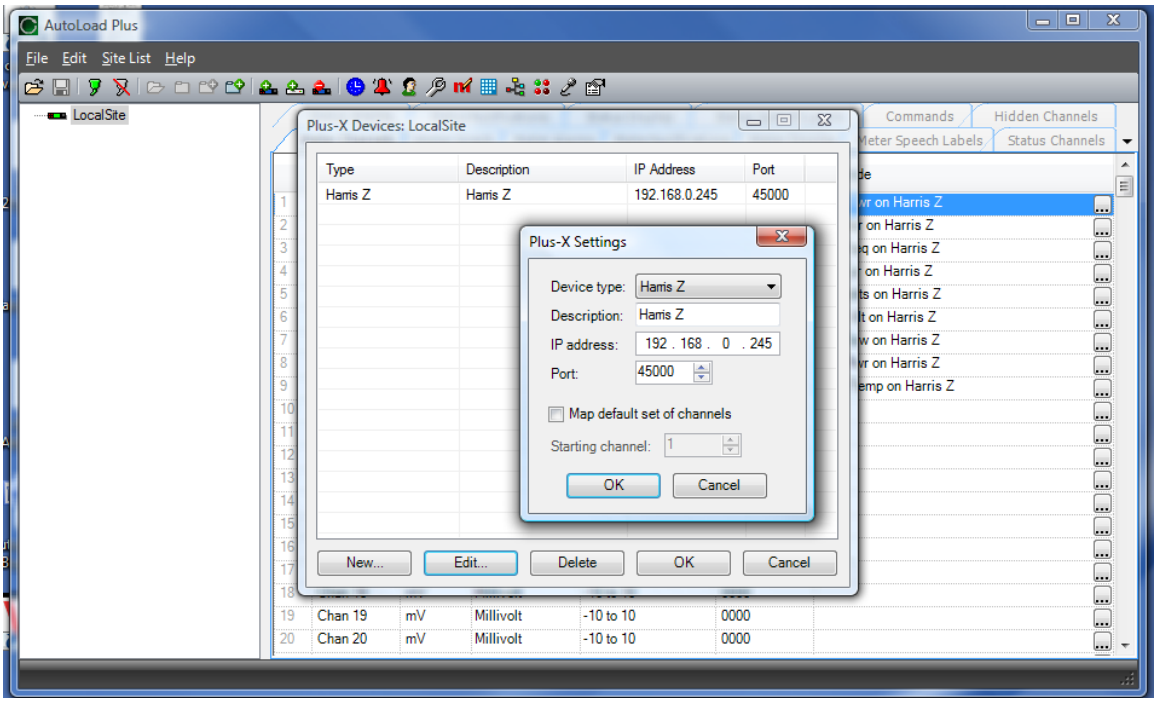
Software Configuration

Now that the PlusConnect is installed on the network and connected to the transmitter, you are ready to add the PlusConnect to the ARC Plus configuration using AutoLoad Plus software. AutoLoad Plus is included with the ARC Plus and may also be downloaded from the support section of www.burk.com.

Configuration involves:

- Adding the PlusConnect unit to the ARC Plus site
- Mapping PlusConnect parameters to unused ARC Plus channels

Adding the PlusConnect Unit to the ARC Plus Site



In order for the ARC Plus to recognize the PlusConnect, the PlusConnect must be added to the site:

1. Open AutoLoad Plus and connect to the ARC Plus site where the PlusConnect will be added.
2. From the **Edit** menu, select **Plus-X Devices** to open the Plus-X device configuration dialog.
3. Click **New…** to add the PlusConnect to the site.
4. You will be asked to select the device type, which in this case is "Harris 3DX." You may optionally change the Description for the PlusConnect. The description appears in AutoLoad Plus to identify each PlusConnect channel.

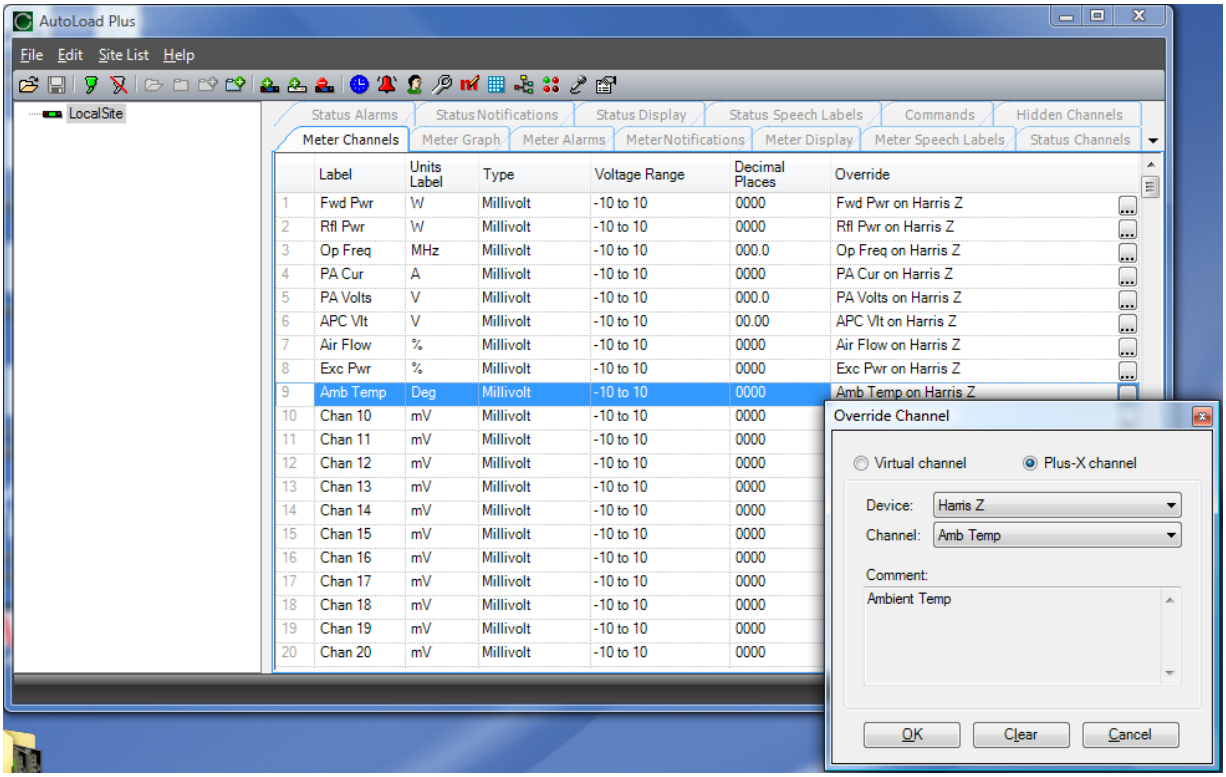
   Important! If your transmitter model does not appear in the drop-down list under Plus-X devices, you will need to download the XML file containing configuration data for the transmitter. This is available in the AutoLoad Plus support section of the web site at www.burk.com. After downloading the file, save it to C:\Program Files\Burk Technology\AutoLoad Plus\Plus-X.

5. Enter the IP address and port number of the PlusConnect. These should be the same settings you used when you configured the PlusConnect with HyperTerminal.
6. Check the **Map default set of channels** box if you wish to automatically add the most commonly used PlusConnect parameters to the ARC Plus (recommended). In the case of the 3DX, the default set of channels includes all available parameters. This will replace unused ARC Plus channels with 77 PlusConnect status channels, 36 meters and 13 commands. Enter the number of the first unused ARC Plus channel. **There must be 77 consecutive unused channels, including this starting channel.** You do *not* need to have additional Integrated Input Units and Integrated Command Relay Units in order to use these channels.

   Important! PlusConnect channels take the place of normal I/O channels. If a metering input, status input, or command relay is connected to an ARC Plus channel and a PlusConnect parameter is subsequently mapped to that channel, the I/O channel will no longer be displayed.

7. Click **OK.**

Manually Mapping PlusConnect Parameters



Even if you chose to map the default set of channels when you added the PlusConnect to the site, you may wish to map additional channels to the ARC Plus, provided there is sufficient unused channel capacity in the ARC Plus system

Map additional channels is accomplished in AutoLoad Plus by selecting the **Metering Channels**, **Status Channels** or **Commands** tabs, as appropriate:

1. Within any of these tabs, click the **Override** button to change a channel's assignment from a traditional I/O channel to a Plus-X channel.
2. When the Override Channel dialog appears, select **Plus-X channel** and choose the Plus-X device from the list. Then select the PlusConnect channel you wish to use instead of the I/O channel.
3. Press OK.

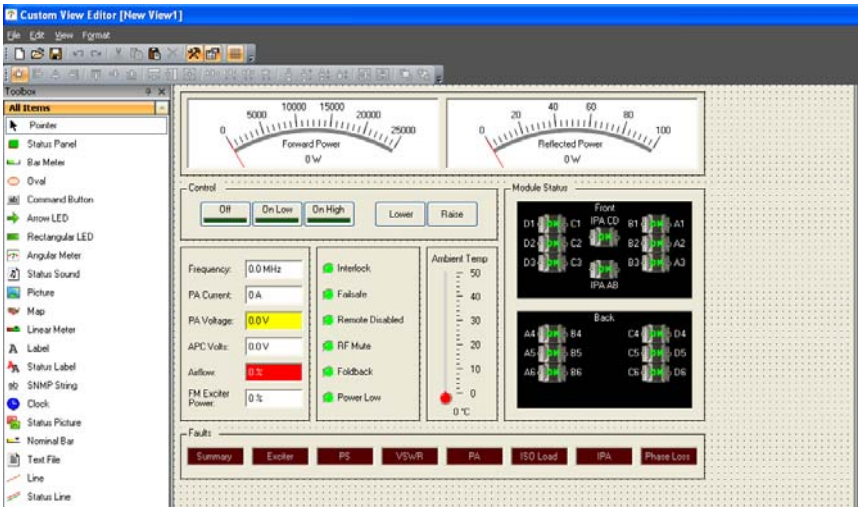
Once mapped, the PlusConnect channel will appear on the front panel of the ARC Plus, in AutoPilot Plus software, on the web server, and will be accessible via optional telephone dial-up (ESI Plus).

Setting Up Labels, Limits and Alarms

Labels, limits and alarms for PlusConnect parameters are set up in AutoLoad Plus, and the process is the same as for limits and alarms of other ARC Plus channels. Refer to the ARC Plus manual for information on channel configuration.

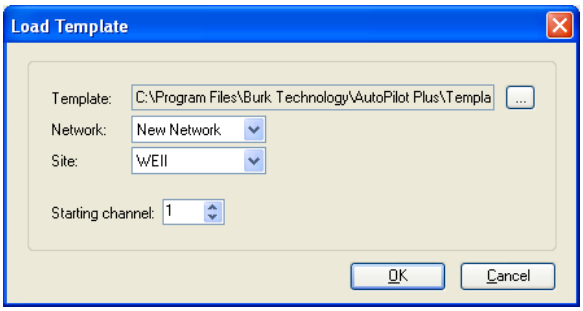
Important! Because operational preferences vary so widely, no alarms are pre-configured within the PlusConnect channels. You must use AutoLoad Plus to set up alarms for PlusConnect channels.

Creating a PlusConnect Custom View in AutoPilot Plus



The easiest way to monitor PlusConnect parameters is by creating a custom view in AutoPilot plus using a pre-built template specific to your transmitter model. In order to use templates, you must map the default set of channels to the ARC Plus during setup. If you have mapped a custom set of channels, you can still use custom views to display them, but the templates will not function as intended.

To create a custom view with a PlusConnect template:



1. Open the custom view editor by selecting **File > New > Custom View**.
2. When the Custom View Editor opens, select **File > New From Template…** This opens the Load Template dialog.
3. Browse for the desired template. The default location for templates is c:\Program Files\Burk Technology\Custom Views. Choose the **PlusConnect** folder, followed by the **Harris 3DX**. Then select the template that corresponds to your transmitter model.

4. Enter the **Network** name and **Site** name for the ARC Plus connected to the PlusConnect, followed by the **Starting channel** for the PlusConnect parameters. This starting channel must be the same as the starting channel you used when adding the PlusConnect to the ARC Plus site.
5. Press OK. AutoPilot Plus will load the template in the editor and automatically populate the channels.
6. Save the custom view using the **Save** icon in the toolbar.
7. Close the editor. You may then select the custom view for display in AutoPilot Plus.

Operation

Once the PlusConnect parameters have been mapped to ARC Plus channels using AutoLoad Plus, accessing the transmitter parameters is no different from any other ARC Plus channel. Channels may be viewed on the front panel of any ARC Plus in the network, using the built-in web server, by connecting to the system with AutoPilot Plus software, or by dialing into the system via optional telephone interface. For more information on using the ARC Plus to monitor and control the remote site, please see the ARC Plus installation and operation manual.

Note that the PlusConnect channels are routed only through the ARC Plus unit specified during PlusConnect configuration. In order to access the transmitter parameters by any means, the ARC Plus unit must be powered and connected to the network.

Troubleshooting

Connection Errors

If the serial connection between the transmitter and the PlusConnect is interrupted, the Link LED on the front panel of the PlusConnect will be off. Check the cable connection to ensure transmitter data is accessible by the PlusConnect.

If the network connection between the PlusConnect and ARC Plus is lost, the ARC Plus will log an alarm after three minutes of network failure.

Tip: PlusConnect events and errors are logged to the ARC Plus event list, which is accessible by the ARC Plus front panel and from AutoPilot Plus software.

Getting Help

For customer support, please send email to support@burk.com or call our direct customer support line at 978-486-3711. We will be glad to assist you. The customer support office is open Monday-Friday, 9AM to 5PM Eastern time.

Warranty

Burk Technology, Inc. warrants the PlusConnect for Harris 3DX transmitters to be free of defects in materials and workmanship for a period of 24 months from the date of purchase. Equipment will be repaired or replaced at the option of Burk Technology and returned freight prepaid to the customer. Damage due to abuse or improper operation or installation of the equipment or caused by fire or flood or harsh environment is not to be covered by this warranty. Damage in shipping is not the responsibility of Burk Technology. A return authorization must be obtained before returning any equipment. Materials returned under this warranty must be shipped freight prepaid and insured in the original shipping carton or suitable substitute to Burk Technology, Inc., 7 Beaver Brook Road, Littleton, MA 01460. Repairs not covered under this warranty will be made at prevailing shop rates established by Burk Technology.

THE WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BURK TECHNOLOGY, INC. SHALL NOT BE LIABLE TO ANY PARTY FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF THIS EQUIPMENT.