

PrintCapture and Prologix GPIB Controller Setup

www.printcapture.com

Prologix (www.prologix.biz) has developed one version of a GPIB-Ethernet Controller and two versions of a GPIB-USB Controller that works well with PrintCapture. These controllers require a setup so they can be used with PrintCapture. This document does not replace the documentation available from Prologix – it is meant as a supplement.

On April 24, 2012, PrintCapture added an interface to the Prologix GPIB-Ethernet Controller. This controller does not require a device driver.

The Prologix GPIB-USB Controllers use a device driver from FTDI (www.ftdichip.com) that creates a virtual COM port on your PC. The virtual COM port can be used by PrintCapture to receive the printer/plotter data sent by your oscilloscope, logic analyzer, or spectrum analyzer.

Many customers have purchased the Prologix controllers to use with PrintCapture and then run into trouble configuring Prologix and PrintCapture to work together. Hopefully this document will get you started. The information in this document is from the Prologix User's Manuals and is simply paraphrased here to aid our customers.

Common Setup information

You must determine the GPIB address your source device (oscilloscope, logic analyzer, spectrum analyzer, etc.) expects for its printer or plotter. Generally this is in the source device's menu setup or its documentation. Note that the default GPIB address for most HPGL plotters is 5, but your source device may be different.

GPIB-Ethernet Controller 1.2

Download the "NetFinder.exe" utility from the Prologix website (www.prologix.biz/resources.html). This utility can be used to search for all GPIB-Ethernet Controllers connected to your network.

Setup GPIB-Ethernet Controller

Make sure you have access to the manual for this device. It is online at www.prologix.biz. You should print it for easier viewing.

This GPIB-Ethernet Controller uses on-board memory to configure the interface.

For first time initialization follow these steps.

1. GPIB-Ethernet Controllers are identified by two different numbers: (1) The controller's serial number is the human readable number and is also the controller's MAC address on the network, (2) The controller's IP address is the number used by programs to communicate with the controller. You will need both numbers to configure a GPIB-Ethernet Controller.
2. Record your GPIB-Ethernet Controller's serial number. This also serves as the network MAC address. If your serial number is 0021690109E3 then its MAC address is 00-21-69-01-09-E3.
3. Connect the GPIB-Ethernet Controller to the computer, either directly or through a router, with an Ethernet cable. You can also use a wireless bridge.
4. Run Prologix's NetFinder utility and search for the controllers connected to your network.
5. Using your controller's MAC address record the IP address from the NetFinder utility.

6. Start the HyperTerminal program. When you do you will probably have to select a name and icon for the connection. "Prologix" is a good name and easy to remember. From now on we will assume you picked "Prologix" as the name.
7. HyperTerminal will display a "Connect To" dialog box.
8. In the "Connect Using" list box select "TCP/IP (Winsock)".
9. The "Host Address" and "Port Number" edit boxes will appear.
10. In the "Host Address" edit box enter the IP address that corresponds to your controller's MAC address.
11. In the "Port Number" edit box enter "1234". This is a port number that applies to all GPIB-Ethernet Controllers.
12. Click "OK".
13. The status bar at the bottom of HyperTerminal should display "Connected ...", "AutoDetect", and "TCP/IP" (or something very similar).
14. Select File | Properties to display the "Prologix Properties" dialog box with the "Connect To" tab selected.
15. Select the "Settings" tab.
16. These are the settings that seem to work well for us. Start with these settings and then later you can modify them to your satisfaction.
 - "Function, Arrow..." = Terminal Keys.
 - "Backspace Key Sends" = Ctrl+H.
 - "Emulation" = Auto detect.
 - "Telnet Terminal ID" = ANSI
 - "Backscroll Buffer Lines" = 500.
17. Click on the "Input Translation" button:
 - Select "Shift-JIS"
 - Click "OK".
18. Click on the "ASCII Setup" button:
 - Check "Send line ends with line feeds".
 - Check "Echo typed characters locally".
 - Select "Line delay" = 0 milliseconds.
 - Select "Character delay" = 0 milliseconds.
 - Check "Append line feeds to incoming line ends".
 - Uncheck "Force incoming data to 7-bit ASCII".
 - Check "Wrap lines that exceed terminal width".
 - Click "OK".
19. In the "Prologix Properties" dialog box, click "OK".
20. You should be back to the main HyperTerminal window.
21. Type "++ver" in lowercase, and hit "Enter". You should see a response similar to " Prologix GPIB-ETHERNET Controller version 01.06.02.00". This is just a verification that you are actually communicating with the Prologix device.
22. If you made it this far then you are successfully communicating with your Prologix GPIB-Ethernet Controller.
23. You can now proceed with configuring your controller to suit your needs. Refer to the Prologix GPIB-Ethernet Controller's manual for all the commands and their use. The only hints that we can offer are:
 - The controller must be a DEVICE to work with PrintCapture. See the "++mode 0" command.

- Refer to Prologix's NetFinder utility. On our system, a 'dynamic' IP address changes roughly every 12 hours of operation. If it changes while PrintCapture is using it, PrintCapture simply stops receiving data and could cause a problem. We solved this problem by setting our controller to use a 'static' IP address instead of a 'dynamic' IP address.
24. When you are satisfied with your controller's operation and configuration you can close HyperTerminal.
 25. Plug the GPIB-Ethernet Controller directly, or using a GPIB cable, on to the GPIB connector of the source device.

Setup PrintCapture

To setup PrintCapture's Prologix GPIB-Ethernet Control interface go to Setup> Configuration> Prologix LAN.

1. Select the MAC Address for your Prologix GPIB-Ethernet Controller. If it is not listed, and you know it is connected to your network, you can try the "Search" button to see if it can be found on your network.
2. Check the IP Address to see if it is a Static IP Address. See Step 23 above.
3. Select the GPIB address you want to use with your GPIB system.
4. Set End-of-Data Processing Timeout to about 5 seconds.

GPIB-USB Controller 6.0 and 4.2

Setup GPIB-USB Controller

Make sure you have access to the manual for this device. It is online at www.prologix.biz. You should print it for easier viewing.

This GPIB-USB Controller uses on-board memory to configure the interface,

1. Make sure you have downloaded the Virtual COM Port (VCP) device drivers for the FT245R from the FTDI website at www.ftdichip.com/Drivers/VCP.htm
2. Make sure you have downloaded the device driver installation guide from the FTDI website at www.ftdichip.com/Documents/InstallGuides.htm.
3. Connect the GPIB-USB Controller to the computer with a USB cable.
4. Install the FTDI device driver according to the FTDI installation guide.
5. Start the HyperTerminal program. When you do you will probably have to select a name and icon for the connection. "Prologix" is a good name and easy to remember. From now on we will assume you picked "Prologix" as the name.
6. HyperTerminal will display a "Connect To" dialog box.
7. In the "Connect Using" list box select the COM port assigned to your GPIB-USB Controller. Everything else is disabled.
8. Click "OK".
9. The "COMx Properties" dialog box will be displayed with the "Port Settings" tab. Enter these settings:
 - "Bits per second" = 2400. Actually this setting is not really used. You can set it to anything.
 - "Data bits" = 8.
 - "Parity" = None.
 - "Stopbits" =1.
 - "Flow control" =

- Hardware.
 - Click "OK".
10. The status bar at the bottom of HyperTerminal should display "Connected ...", "AutoDetect", and "Auto Detect" (or something very similar).
 11. Select File | Properties to display the "Prologix Properties" dialog box with the "Connect To" tab selected.
 12. Select the "Settings" tab.
 13. These are the settings that seem to work well for us. Start with these settings and then later you can modify them to your satisfaction.
 - "Function, Arrow..." = Terminal Keys.
 - "Backspace Key Sends" = Ctrl+H.
 - "Emulation" = Auto detect.
 - "Telnet Terminal ID" = ANSI
 - "Backscroll Buffer Lines" = 500.
 14. Click on the "Input Translation" button:
 - Select "Shift-JIS"
 - Click "OK".
 15. Click on the "ASCII Setup" button:
 - Check "Send line ends with line feeds".
 - Check "Echo typed characters locally".
 - Select "Line delay" = 0 milliseconds.
 - Select "Character delay" = 0 milliseconds.
 - Uncheck "Append line feeds to incoming line ends".
 - Uncheck "Force incoming data to 7-bit ASCII".
 - Check "Wrap lines that exceed terminal width".
 - Click "OK".
 16. In the "Prologix Properties" dialog box, click "OK".
 17. You should be back to the main HyperTerminal window.
 18. Enter "++ver" in lowercase and hit ENTER. You should receive a response similar to "Prologix GPIB-USB Controller version 6.00". This is just a verification that you are actually communicating with the Prologix device.
 19. If you made it this far then you are successfully communicating with your Prologix GPIB-USB Controller.
 20. You can now proceed with configuring your controller to suit your needs. Refer to the Prologix GPIB-USB Controller's manual for all the commands and their use.
 21. Type "++mode 0" and hit ENTER. There is no response to this command.
 22. Type "++mode" and hit ENTER. You should get a "0" back. This verifies that the Controller is in DEVICE mode.
 23. If your source device requires a specific GPIB address, type "++addr <addr>", where <addr> is the GPIB address that your source device expects for the plotter, and hit ENTER. There is no response to this command.
 24. Type "++addr" and hit ENTER. You should see <addr>. This verifies that the Controller now has the correct GPIB address.
 25. Steps 26, 27, and 28 apply only to GPIB-USB Controller 6.0. GPIB-USB Controller 4.2 does not support "Listen Only".

26. The Prologix GPIB-USB Controller's "Listen Only" mode is difficult to specify exactly. "Listen Only" mode blocks ALL data from being sent from PrintCapture back to your source device. Consequently, if Listen Only mode is set and PrintCapture is set to "Process Output Commands" (see Setup> Configuration> HPGL Processing> Special HPGL Command Processing "Process Output Command (e.g. OE, OI, OP)") PrintCapture's response to an HPGL Output Command will be blocked. Our Prologix GPIB-USB Controller's Listen Only mode is disabled (++lon 0). This seems to work for us.
27. If your source device's GPIB output is set to "Talk Only" you should set the Prologix GPIB-USB Controller to "Listen Only". Type "++lon 1" and hit ENTER. There is no response to this command.
28. Type "++lon" and hit ENTER. You should see "1". This verifies that the Controller is now in "Listen Only" mode.
29. When you are satisfied with your controller's operation and configuration you can close HyperTerminal.
30. Plug the GPIB-USB Controller directly, or using a GPIB cable, on to the GPIB connector of the source device.

Setup PrintCapture

To setup PrintCapture's serial port parameters go to Setup> Configuration> Serial Port.

5. Set Port to the virtual COM port assigned by the device driver for the GPIB-USB Controller 4.2.
6. The following serial port parameters are not applicable for the GPIB-USB Controller 6.0. However, we recommend these settings just to avoid confusion:
 - Set Baud Rate to 115200.
 - Set Word Size to 8.
 - Set Parity to NONE.
 - Set Stopbits to 1.
 - Set Flow Control Handshake to RTS/CTS and Automatic.
7. Set End-of-Data Processing Timeout to about 5 seconds.