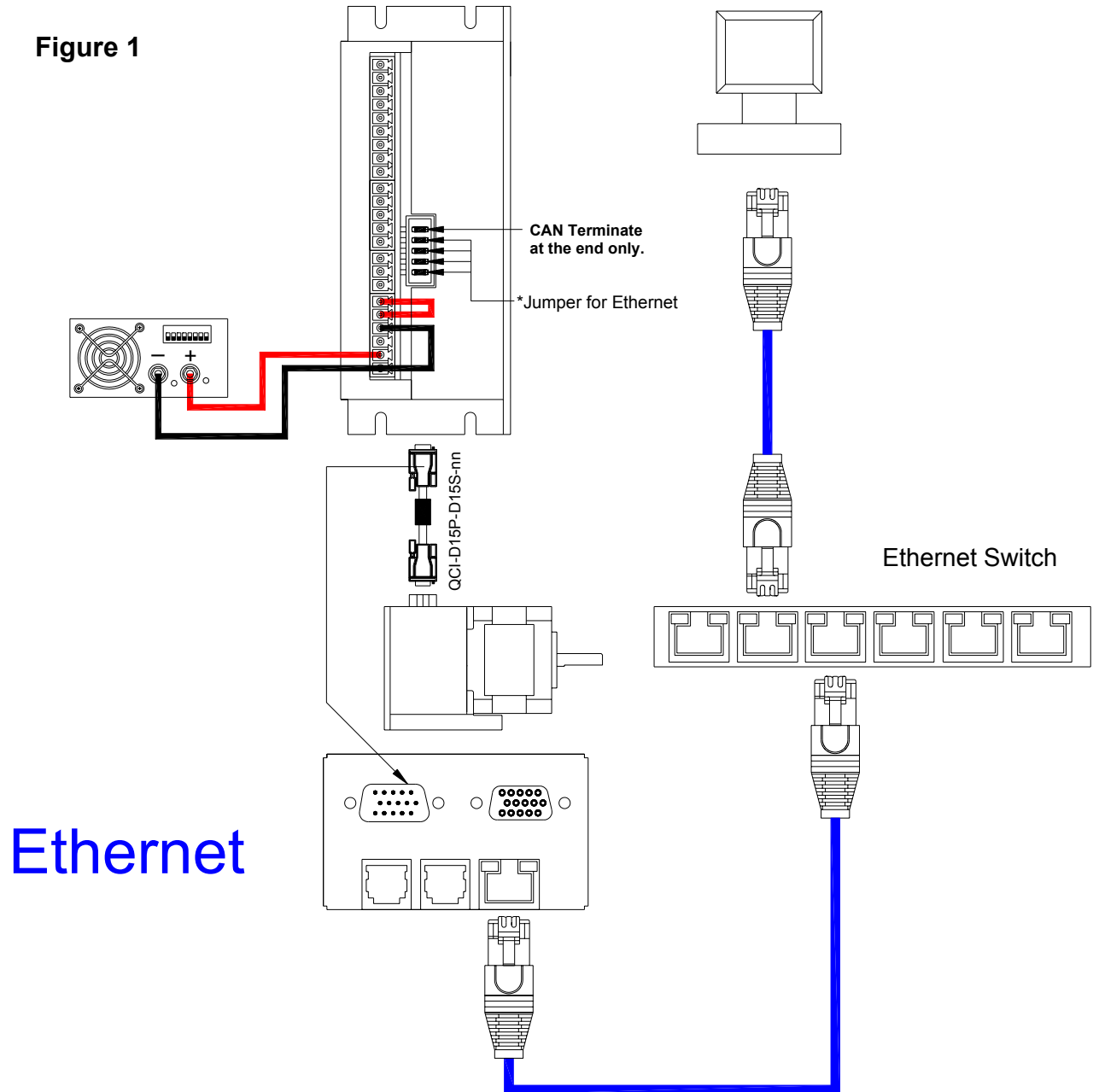## E-485 Bridge-Ethernet

To setup the SilverDust's E-485 Bridge, connect the hardware according to the **Figure 1**. Make sure the router or server is setup to give out IP addresses to DHCP devices. The SilverDust QCI-D2-IG8-E is setup to receive DHCP IP from the factory. Hardware Setup
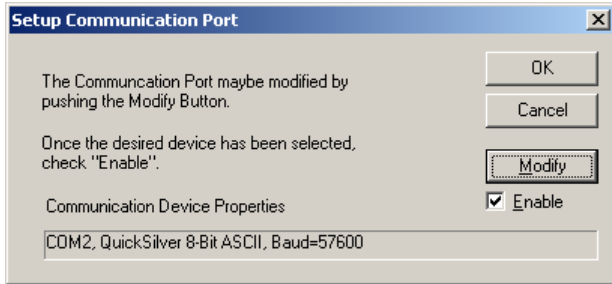
Figure 1

CAN Terminate at the end only.

*Jumper for Ethernet

QCI-D15P-D15S-nn

Ethernet Switch

Ethernet

QuickControl Setup
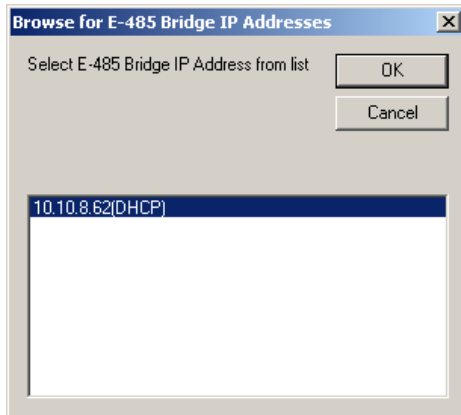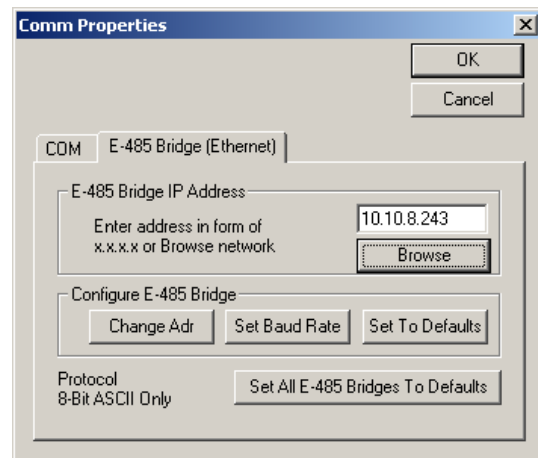Requires QuickControl 4.5 or greater

Go to Setup-> Com Port -> Modify

Figure 2

Select the E-485 Bridge (Ethernet) tab. Since all units are setup to accept DHCP from the local network, the SilverDust QCI-D2-IG8-E will have a local IP address whenever plugged in.

Press Browse.

The browser should display all SilverDust IG8-E units on the network. Units with a DHCP address assigned will have a "(DHCP)" next to the IP Address. Select the E-485 Bridge you wish to setup and press OK. See E-485 Bridge Details (below) if nothing appears.
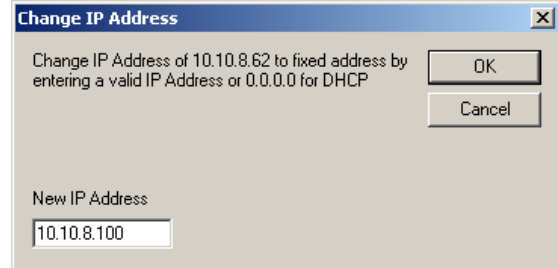
Press "Change Adr" to set the address.
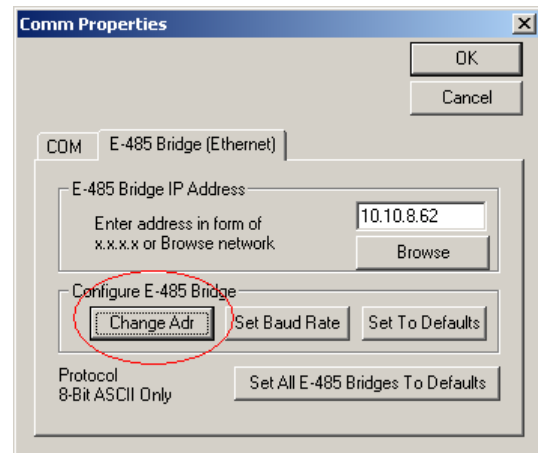
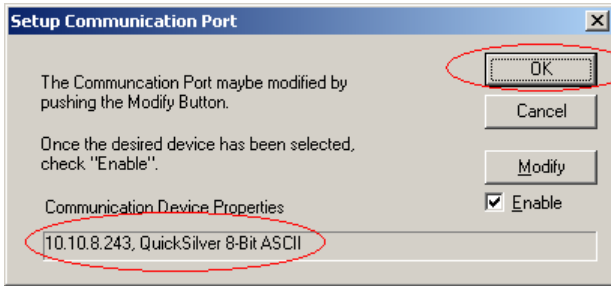Enter the new IP address or accept the default.

Press OK.

Note: It is recommended to choose an IP address outside the network's DHCP range to avoid IP address conflict. Contact your network administrator if you are not sure.

Change IP Address

Change IP Address of 10.10.8.62 to fixed address by entering a valid IP Address or 0.0.0.0 for DHCP

OK

Cancel

New IP Address

10.10.8.100

The new IP address is stored in the E-485 Bridge's non-volatile memory.

Press OK to exit Comm Properties.

Setup Communication Port

The Communication Port maybe modified by pushing the Modify Button.

Once the desired device has been selected, check "Enable".

Communication Device Properties

10.10.8.243, QuickSilver 8-Bit ASCII

OK

Cancel

Modify

☑ Enable

Make sure the "Enabled" box is checked. Press OK to exit Setup Communication Port.

The E-485 Bridge's IP Address and baud rate will be printed in the Device Status window if the bridge was setup correctly.

Unknown Device Wizard

The Unknown Device Wizard for the E-485 Bridge is a little bit different than the standard communication. In standard communication, the user normally shuts off the power to the whole system. With the E-485 Bridge, the user must use the SilverDust's processor power switch. The processor switch does not turn off power to the E-485 Bridge.

Turn the switch OFF, press Next, then turn the switch ON.
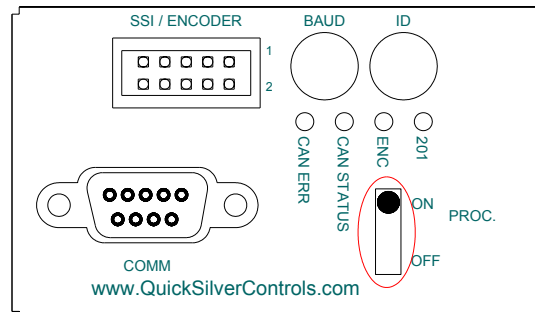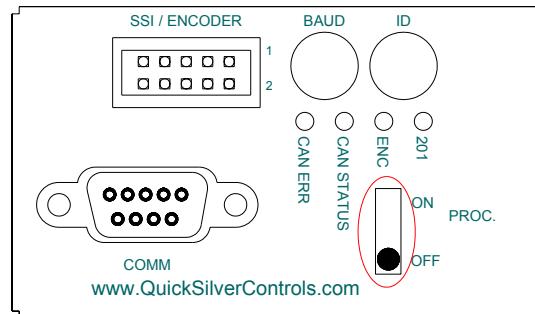
The red communication light on the unit should blinking rapidly. If the red light is not blinking, then there is something wrong with the hardware setup. See the E-485 Bridge Details (below).

Press Next.
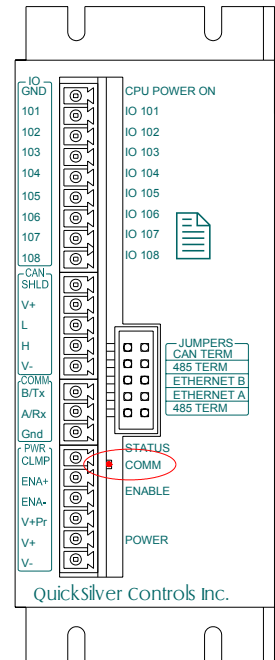
Select RS-485.

Press Next.
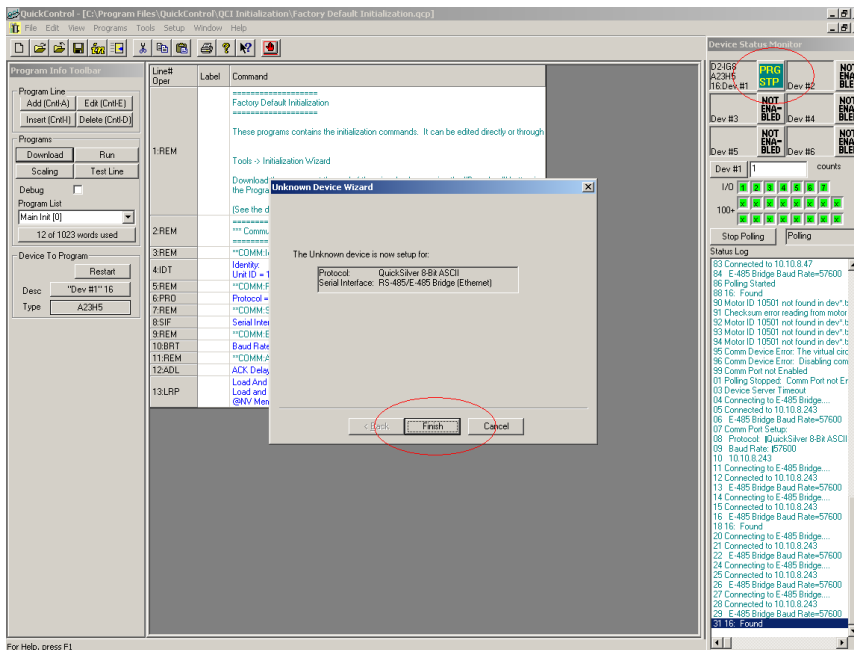
Press Finish.

Verify you have a green PRG STP icon. You may need to press "Scan Network".

E-485 Bridge Details
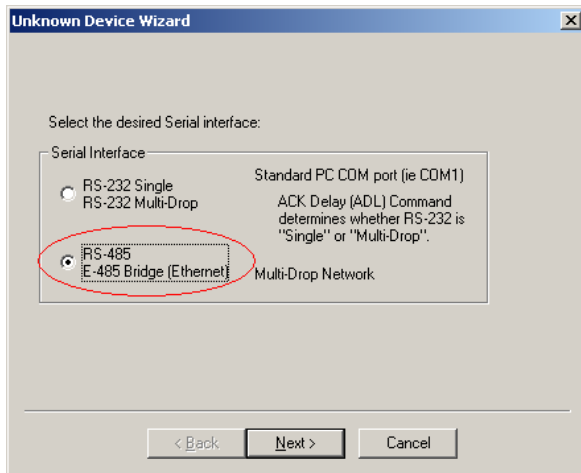
QuickSilver's E-485 Bridge is simply an onboard Ethernet-to-RS485 converter.   The name "E-485 bridge" came from the signal conversion process.   The two jumpers labeled Ethernet B and Ethernet A are there to isolate the Ethernet communication from the serial 485 communication. Whenever Ethernet is in use, 458-Term, Ethernet A, Ethernet B, and 485-Term must be jumpered (see diagram below).

Ethernet → Serial RS-485 → SilverDust

If Ethernet is not working, check serial communication first by taking all the jumpers off the unit. Connect the SilverDust to the computer via the RS-232 port.
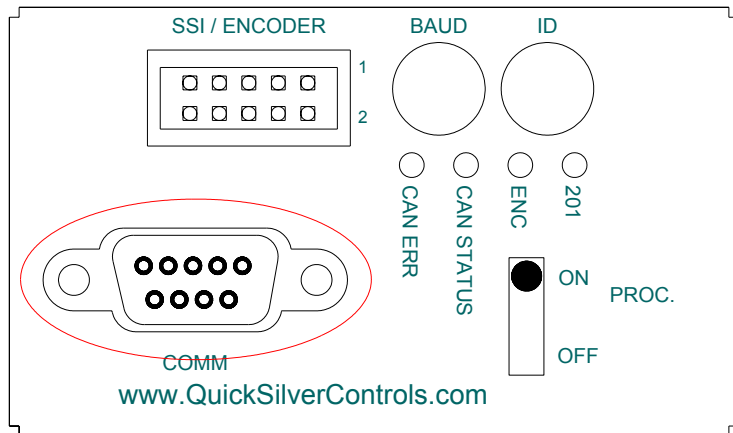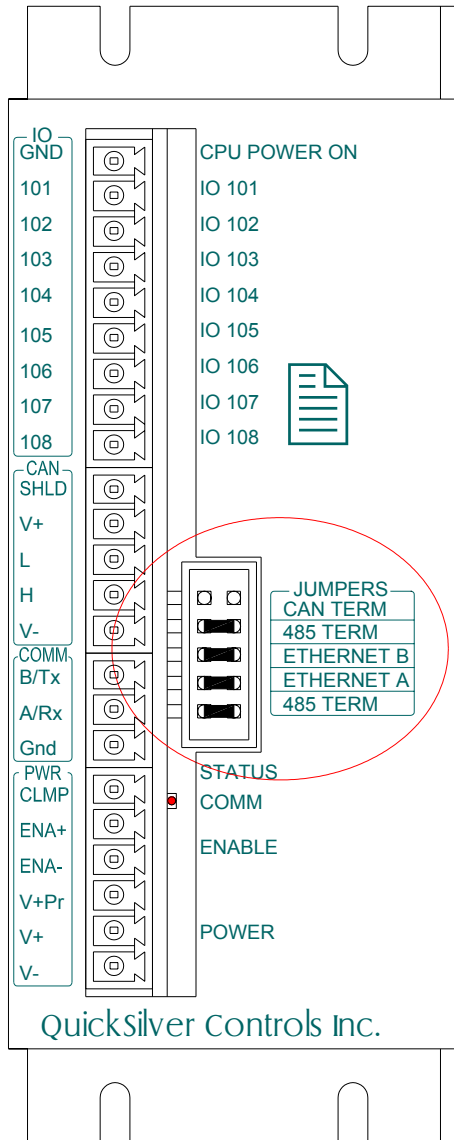
If serial does not work, then Ethernet will not work.

Note: Do not connect the serial communication and Ethernet communication to the PC at the same time as this will disrupts the communication bus.

The E-485 Bridge is a converter from an Ethernet network to a serial RS-485 multi-drop network. RS-485 multi-drop may have up to 64 nodes total. Only one Ethernet cable is needed for the whole E-485 Bridge network.

```
                                        ┌──────────────┐
                                        │  485-Term ** │
                                        └──────┬───────┘
                                               │
┌──────────┐    ┌──────────┐   ┌─────────────┐│   ┌────────────────┐
│ Computer │───▶│ Ethernet │──▶│Serial RS-485│┼──▶│ SilverDust IG8 │
└──────────┘    └──────────┘   └─────────────┘│   └────────────────┘
                                               │
                                               │   ┌────────────────┐
                                               ├──▶│  SilverNugget  │
                                               │   └────────────────┘
                                               │
                                               │   ┌────────────────┐
                                               ├──▶│ SilverDust MG  │
                                               │   └────────────────┘
                                               │
                                               │   ┌────────────────┐
                                               ├──▶│ SilverDust IGB │
                                               │   └────────────────┘
                                        ┌──────┴───────┐
                                        │  485-Term ** │
                                        └──────────────┘
```
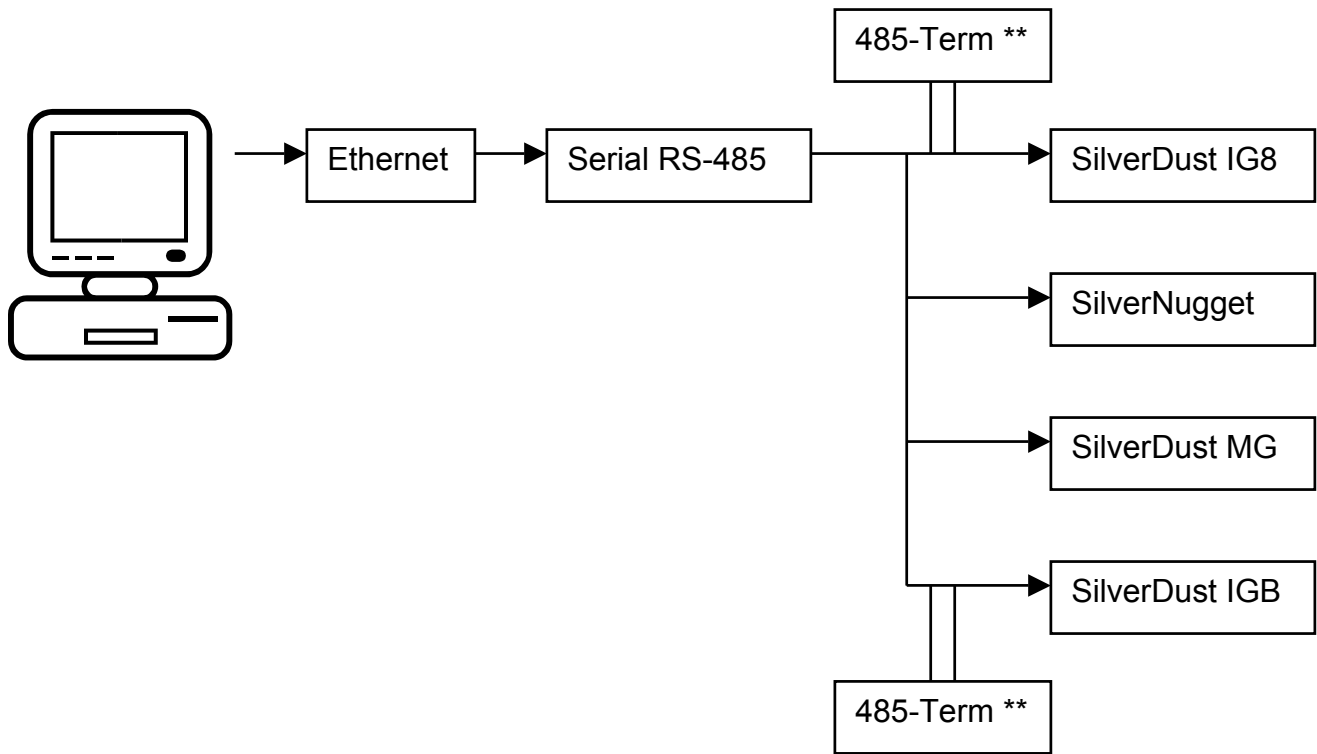
** RS-485 requires a 120 ohm resistor to terminate the beginning and end of the bus. By placing two jumpers in "485-Term" on the IG8, the "beginning" of the bus is terminated. At the end of the RS-485 network, place a 120 ohm resistor between the A & B lines. If a SilverDust IG8 or IGB is at the end of the bus, termination are already provided on those units. See product datasheet for termination scheme.

Comm Properties Detials

E-485 Bridge (Ethernet)
This tab is for editing the properties of the optional E-485 Bridge.   The E-485 Bridge is a module on the controller that accepts standard Ethernet and converts or "bridges" it to the controller's RS-485.

E-485 Bridge IP Address
Enter the IP address of the E-485 Bridge you want QuickControl to connect to. Alternatively, you can press "Browse" to have QuickControl browse the local subnet for devices with E-485 Bridges.   See "Set All E-485 Bridges To Defaults" below if "Browse" does not find an attached device.
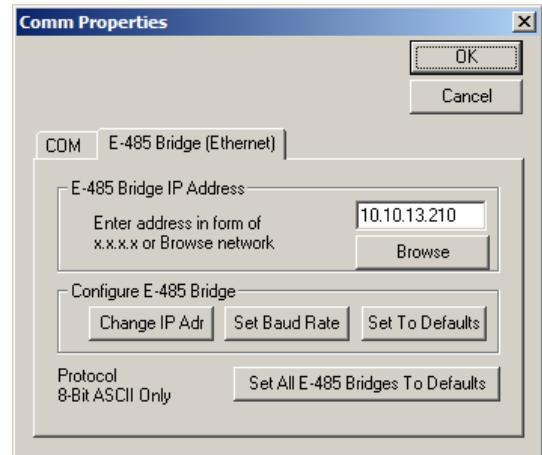
Configure E-485 Bridge
Configure the E-485 Bridge with the above IP address. Note, the following functions configure the E-485 Bridge on the attached controller. The bridge will use the new configuration both now and on future power ups.

- **Change Adr (default DHCP)**: Allows the user to change the E-485 Bridge's IP address or configure it to use DHCP.
- **Set Baud Rate (default 57.6K)**: Allows the user to change the E-485 Bridge's RS-485 baud rate. This is the baud rate the E-485 Bridge will use to communicate to both the local servo controller and any other controllers attached to the RS-485 network. Note, the controller's baud rate (i.e. BRT command) must match the baud rate set here.
- **Set To Default**: Press this button to download the factory default configuration to the E-485 Bridge. Note, this only configures the E-485 Bridge and does not alter the controller's memory.

Set All E-485 Bridges to Defaults
Press this button to download the factory default configuration to all E-485 Bridges on the local subnet (see "Set To Default" above). This is sometimes required before QuickControl can "Browse" a device. For example, if a device was previously configured for IP address 10.10.10.200 and was then moved to subnet 10.10.20, "Browse" would not find it.