



DL4500-MEDH+ Quick start

The DL4500-MEDH+ hardware platform was designed to be a gateway, which interfaces your Modbus TCP/IP to A-B's Data Highway Plus (DH+) network. It comes in a DC powered Din-Rail Mountable compact cabinet for ease of portability and installation. The DL4500-MEDH+ combines the Lantronix Ethernet Microprocessor with our proven A-B DH+ interface. This allows for multiple Modbus TCP/IP connections to be running simultaneously to one DH+ network.

This quick start is to help you get started with your DL4500, for more in-depth configuration please refer to the DL4500 User Manual.

Install the Lantronix software (DeviceInstaller and Redirector)

1. Insert the product CD into your CD-ROM drive.
 - Select Install Lantronix DeviceInstaller from the menu
2. If Menu fails to Load
 - Click the Start button on the Task Bar and select Run.
 - Enter your CD drive letter, colon, backslash, cd-start.exe
 - (E.g., E:\cd-start.exe)
3. To Download from the web
 - DeviceInstaller - (<ftp://ftp.lantronix.com/pub/DeviceInstaller/>)

Note: A reboot of your PC will be required at this time.

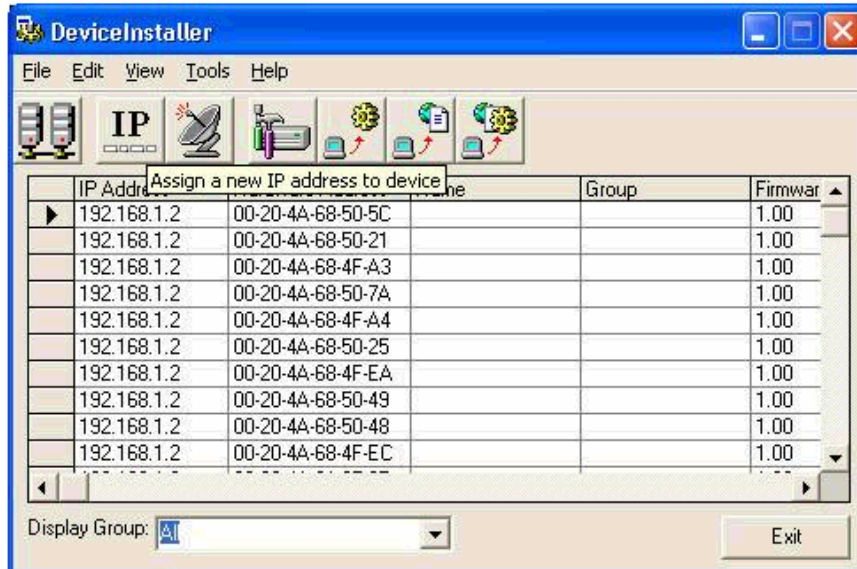
Equustek Solutions, Inc.
Suite 815 – 1200 W 73rd Ave.
Vancouver, BC, Canada – V6P 6G5
Toll Free: 888-387-3787
Tel: (604) 266-8547 Fax (604) 266-9547
Web-site: www.equustek.com



Next is to set the IP address on the internal Lantronix Ethernet Microprocessor.

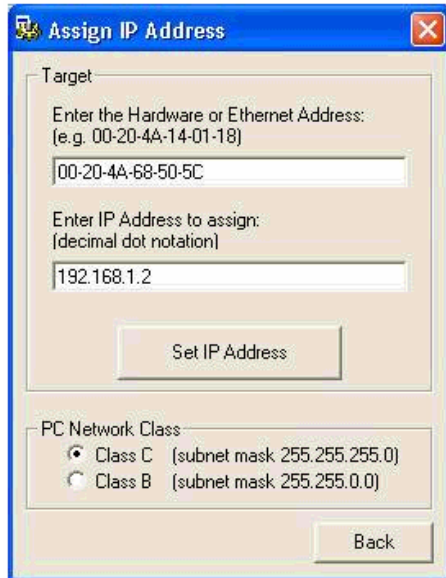
Assign IP Address and Network Class

Click the Start button on the Task Bar and select **Programs \Device Installer\DeviceInstaller**. The Device Installer window displays.



DeviceInstaller Window

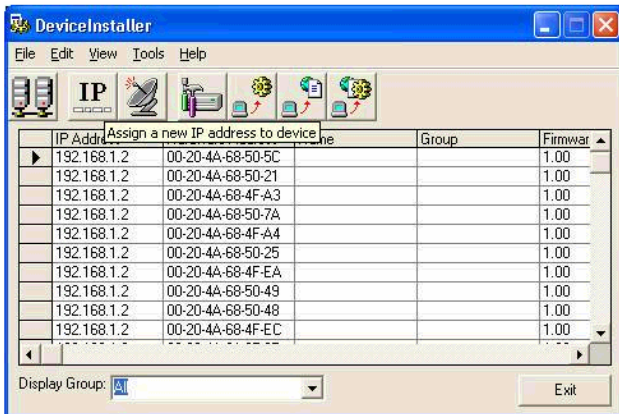
1. Click the IP icon.  The **Assign IP Address** window displays.



Assign IP Address Window

2. In the **Enter the Hardware or Ethernet Address** field, enter the Ethernet Address (MAC address), which is listed on the label on the bottom of the unit.
3. In the **Enter IP Address to assign** field, enter the unit's IP address in XXX.XXX.XXX.XXX format.

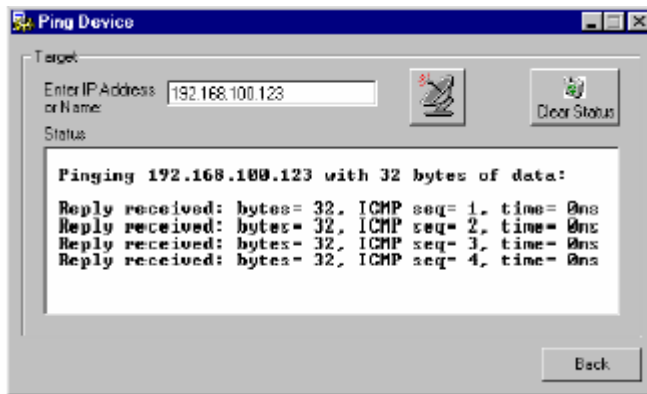
4. In the PC Network Class section, select the class (subnet mask).
(Most users select Class C).
5. Click the **Set IP Address** button.
6. Confirm that the “Successful” message displays and click OK.
7. Click the **Back** button to return to the DeviceInstaller window.



DeviceInstaller Window

Test the IP Address

1. Click the **Ping** icon.  The Ping Device window displays. Enter the IP Address and click the Ping icon.



Ping Device Window

2. Confirm that “Reply received” messages display in the window, indicating that the IP address has been entered successfully.
Note: If you do not receive “Reply received” messages, make sure the unit is properly attached to the network and that the IP address assigned is valid for the particular Network segment you are working with. If you are not sure, check with your systems Administrator.
3. Click the Back button to return to the Device Installer window.

Install the DL32 V3.X Configuration Software (DL32V3)

1. Select DL Product Configuration Software from the menu
 - Select Install DL32 V3.X from the menu
 - Follow Prompts.
2. If Menu fails to Load
 - Click the Start button on the Task Bar and select Run.
 - Enter your CD drive letter, colon, backslash, DL32V3, backslash, setup.exe
 - (E.g., E:\DL32V3\setup.exe)
3. To Download from the Equustek website
 - DL32V3 - (<http://www.equustek.com/downloads.html>)

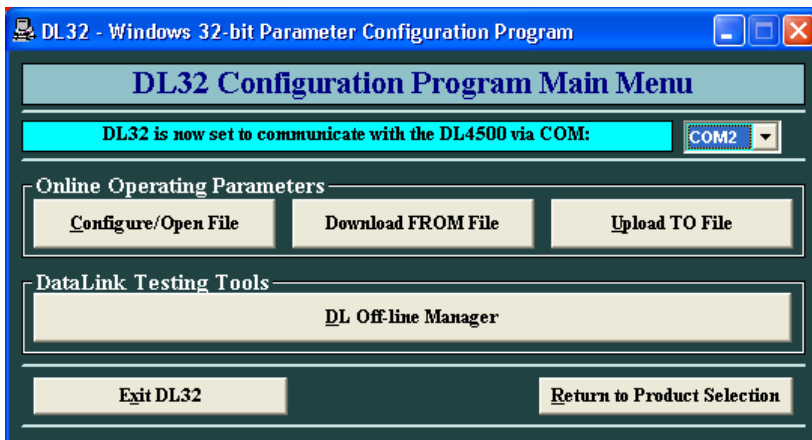
Run the DL32 V3.X Configuration Software (DL32V3)



DL32 Welcome Screen

Select DL4500 Models and the Main Menu appears with only the Exit and Return buttons enabled

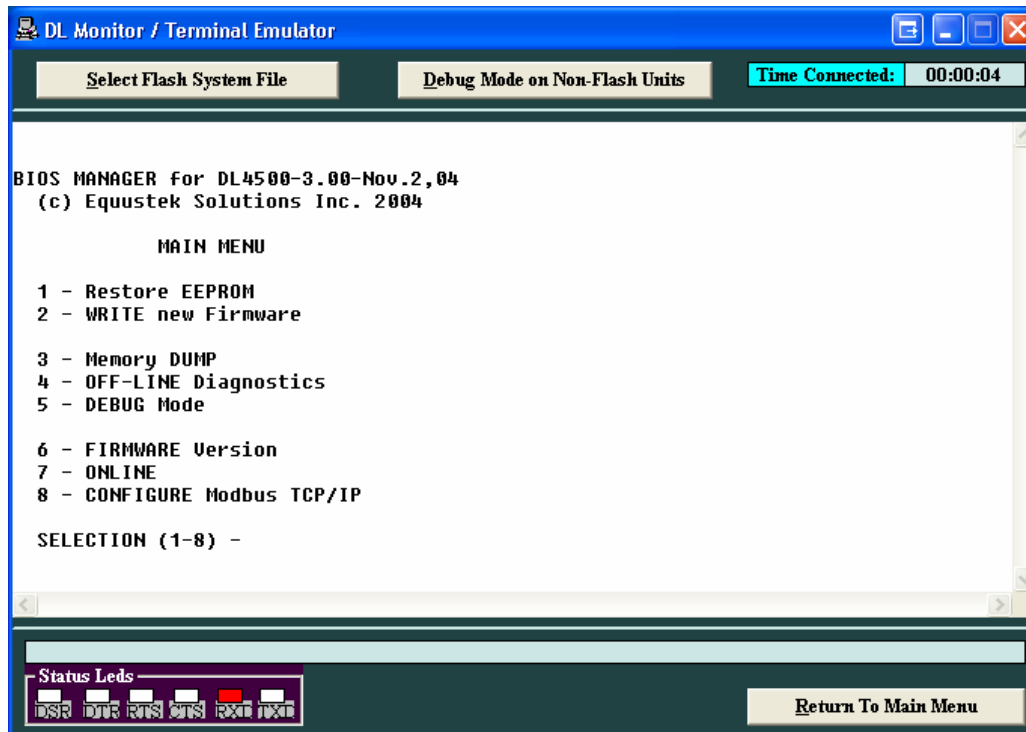
Select the COM Port on your PC/Laptop connected to the DL4500 and the Operating Parameter and Testing Tools buttons become enabled.



DL32 Main Menu

Updating DL4500-MEDH+ operating Parameters

First choose Option '1' to Restore the EEPROM to Factory Settings



DL Monitor/Terminal Emulator window Restore EEPROM to Factory settings

The DL4500-MEDH+ Modbus Protocol Parameter Configuration Parameters

Choose Option '8' to CONFIGURE Modbus TCP/IP parameters.

Follow the prompts and instructions on the screen.

First you will set the AB PLC Type that you are communicating to.

SELECTION (1-8) - 8

Enter Modbus Translation table parameters for Modicon to AB mapping.

AT Any time hit <ENTER> To Keep existing parameter value

Select A-B PLC TYPE: **PLC5**

Enter 0 for PLC5, 1 for PLC3 or 2 for SLC or Micrologix or <ENTER> to keep:

Program Modbus/A-B Translation Parameters

Hit <ENTER> to keep existing value or Type in New Value

Need to enter Leading Zeros. **IE. file 7 = 007**

Hit <ENTER> to Proceed any other key to exit now.

The table maps Modicon Registers of any range (0x, 1x, 3x and 4x) to an A-B file and offset inside your PLC. Please note that N files are used for the 4x registers (as shown below), B files for the 0x and 1x registers and F files are used for Floating Point numbers. In the example below Registers 40001 to 40100 are mapped to file N7:0, and 40101 to 40200 to file N13:0.

REC No	Modbus Start Add.	Modbus End Add.	A-B Start Address (File:Word)	Floating Point Yes/No
	xxxxx	xxxxx	xxx:xxx	
00	40001	40100	007:000	N
01	40101	40200	013:000	N
02	00000	00000	000:000	N
03	00000	00000	000:000	N
04	00000	00000	000:000	N
05	00000	00000	000:000	N
06	00000	00000	000:000	N
07	00000	00000	000:000	N
08	00000	00000	000:000	N
09	00000	00000	000:000	N
10	00000	00000	000:000	N
11	00000	00000	000:000	N
12	00000	00000	000:000	N
13	00000	00000	000:000	N
14	00000	00000	000:000	N
15	00000	00000	000:000	N
16	00000	00000	000:000	N
17	00000	00000	000:000	N
18	00000	00000	000:000	N
19	00000	00000	000:000	N
20	00000	00000	000:000	N
21	00000	00000	000:000	N
22	00000	00000	000:000	N
23	00000	00000	000:000	N
24	00000	00000	000:000	N
25	00000	00000	000:000	N
26	00000	00000	000:000	N
27	00000	00000	000:000	N
28	00000	00000	000:000	N
29	00000	00000	000:000	N
30	00000	00000	000:000	N
31	00000	00000	000:000	N
32	00000	00000	000:000	N
33	00000	00000	000:000	N
34	00000	00000	000:000	N
35	00000	00000	000:000	N
36	00000	00000	000:000	N
37	00000	00000	000:000	N
38	00000	00000	000:000	N
39	00000	00000	000:000	N

CONFIRM New Configuration (Y/N)

If the parameters are correct Enter <Y> to write the values into EEPROM.

Writing EEPROM. Please Wait.

.....
.....
.....
.....

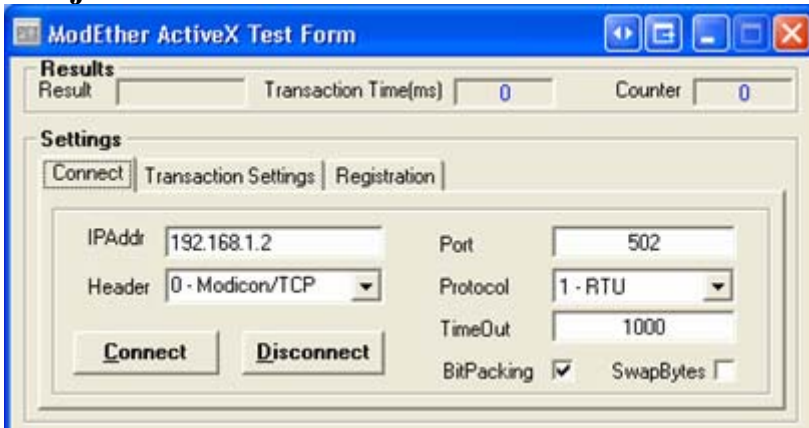
SELECTION (1-8) -

The DL4500-MEDH+ is now configured. Press **RESET** or **CYCLE POWER** to bring the unit online.



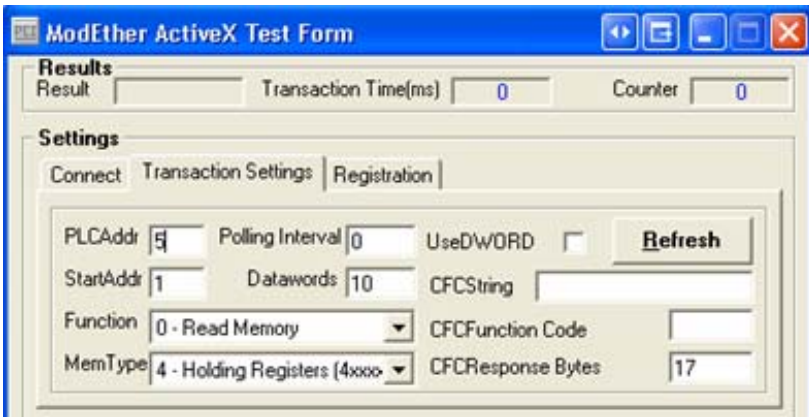
Sample Driver configurations to use the DL4500-MEDH+

Parijat ModEther:



The screenshot shows the 'ModEther ActiveX Test Form' window. At the top, there is a 'Results' section with 'Result', 'Transaction Time(ms)' (0), and 'Counter' (0). Below this is the 'Settings' section with three tabs: 'Connect', 'Transaction Settings', and 'Registration'. The 'Connect' tab is active. It contains the following fields: 'IPAddr' (192.168.1.2), 'Port' (502), 'Header' (0 - Modicon/TCP), 'Protocol' (1 - RTU), 'TimeOut' (1000), 'BitPacking' (checked), and 'SwapBytes' (unchecked). There are 'Connect' and 'Disconnect' buttons at the bottom of the settings area.

Setting up the IP address of the DL4500 then click Connect. The TX/RX LED should go from solid on to flashing.



The screenshot shows the 'ModEther ActiveX Test Form' window with the 'Transaction Settings' tab selected. It contains the following fields: 'PLCAddr' (5), 'Polling Interval' (0), 'UseDWORD' (unchecked), 'StartAddr' (1), 'Datawords' (10), 'CFCString', 'Function' (0 - Read Memory), 'CFCFunction Code', 'MemType' (4 - Holding Registers (4xxx)), 'CFCResponse Bytes' (17), and a 'Refresh' button.

Setting up the driver to read from PLC (DH+) node 5. Register 4001 and 10 registers. Using the lookup table set above it would translate to AB file N7:0.

Modicon PLC MSTR Instruction:

TCP/IP Page 2 of 4

Operation: Write Registers AR:

Description	Address/Symbol	Data
MSTR Operation Code	409600	00001 Decimal
Error Status	409601	0000 Hexadecimal
# of Registers	409602	00010 Decimal
Func Dependent Info	409603	00001 Decimal
Head # and Map Index	409604	0708 Hexadecimal
IP Routing Byte 4	409605	00010 Decimal
IP Routing Byte 3	409606	00000 Decimal
IP Routing Byte 2	409607	00000 Decimal
IP Routing Byte 1	409608	00014 Decimal
# of Input Regs (FC23)	409609	00000 Decimal
Server Input Base	409610	00001 Decimal

Description	Address/Symbol	Data
Source 0001	405000	0001 Hexadecimal
Source 0002	405001	0002 Hexadecimal
Source 0003	405002	0003 Hexadecimal
Source 0004	405003	0004 Hexadecimal
Source 0005	405004	0005 Hexadecimal

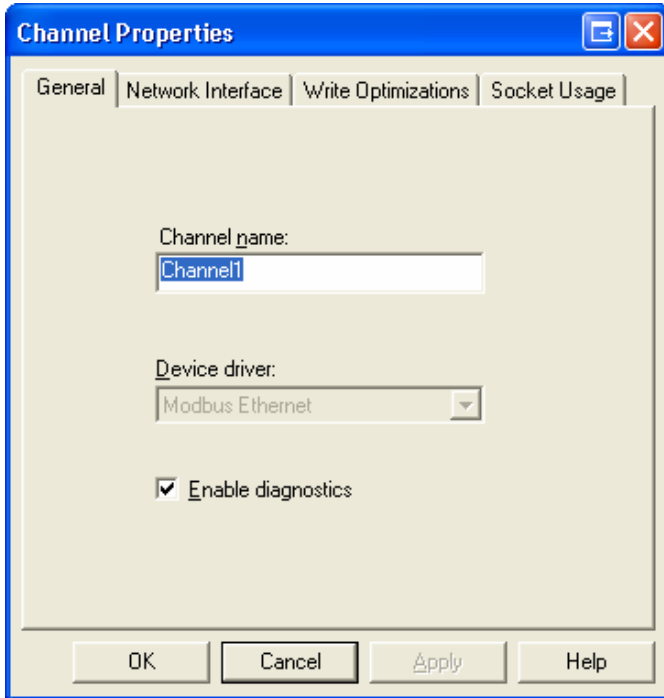
Error: Prev Next

405004 STATUS/ALARMS FROM AB-PLC Program

Close Edit... Doc... Bits... Operation... Radix... Print Help

Setting up the driver to read from DL4500 IP address 10.0.0.14, and then the data from PLC (DH+) node 10 octal (8 decimal- See the Head # and Map Index) Register 40001 and 10 registers. This will be mapped to File N7:0 according to the lookup table configured.

Keeware ServerEx Modicon TCP/IP driver:

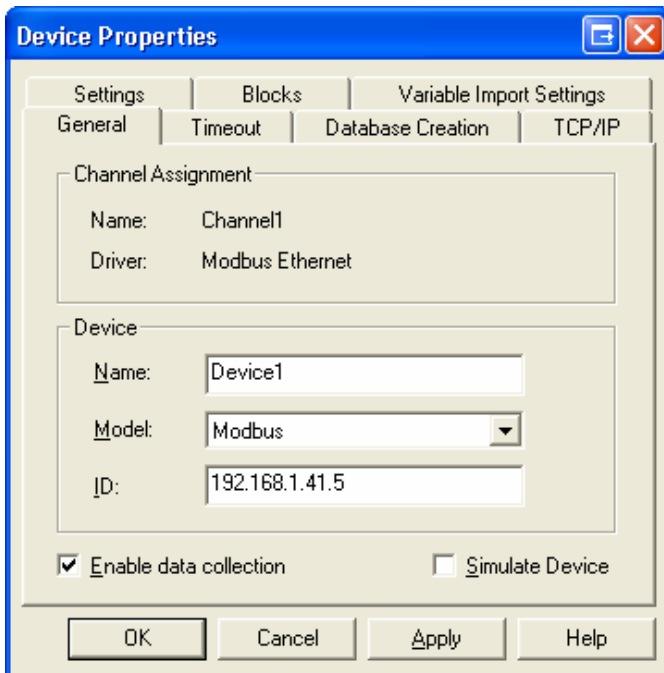


The **Channel Properties** dialog box has four tabs: **General**, **Network Interface**, **Write Optimizations**, and **Socket Usage**. The **General** tab is active. It contains the following fields and controls:

- Channel name:** A text box containing "Channel1".
- Device driver:** A dropdown menu with "Modbus Ethernet" selected.
- Enable diagnostics:** A checked checkbox.

At the bottom are buttons for **OK**, **Cancel**, **Apply**, and **Help**.

Setting up the driver to use the Modbus Ethernet driver.



The **Device Properties** dialog box has three main tabs: **Settings**, **Blocks**, and **Variable Import Settings**. The **Settings** tab is active and contains sub-tabs: **General**, **Timeout**, **Database Creation**, and **TCP/IP**. The **General** sub-tab is active. It contains the following fields and controls:

- Channel Assignment:**
 - Name:** Channel1
 - Driver:** Modbus Ethernet
- Device:**
 - Name:** Device1
 - Model:** Modbus
 - ID:** 192.168.1.41.5
- Enable data collection:** A checked checkbox.
- Simulate Device:** An unchecked checkbox.

At the bottom are buttons for **OK**, **Cancel**, **Apply**, and **Help**.

Setting up the driver to read from DL4500 IP address 192.168.1.41, and then the data from PLC (DH+) node 5 octal (- See the extra .5 after the ID (IP) address.