



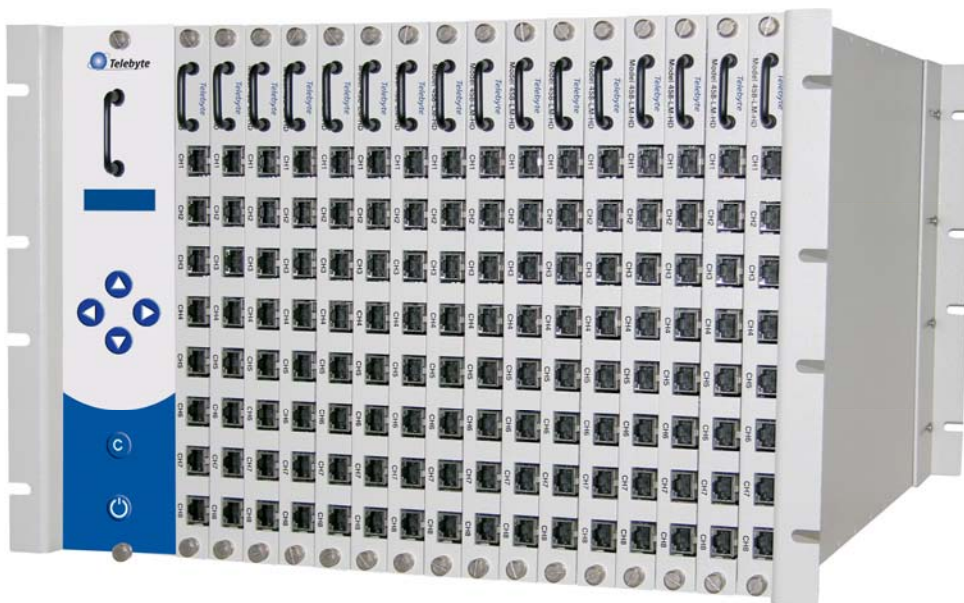
"Results You Can Count On"

Model 458-CC-16/458-CM

(16-Slot Chassis & Control Module)

Rev.I

Date of Publication: 04/05/2011



Line Modules Not Included



Customer Support

Thank you for your purchase of the Telebyte Model 458-CC-16/458-CM (16-Slot Chassis & Control Module). This versatile product provides a wide variety of configurations through the use of up to 16 plug-in Line Modules. The Model 458-CC-16/458-CM is ideally suited for testing DSL modems and other bandwidth-compliant telecom devices in a high-volume production line environment. When used in conjunction with up to 16, 8-channel 458 Line Modules, it becomes a 128-channel local loop simulator. The 458-CM Control Module interfaces with a PC or terminal via IEEE-488 or RS-232/Ethernet to control loop-length settings or the 458-CC-16/458-CM can be used as a stand-alone unit. User-command language may be used for control. In addition, line length is displayed on the front of the unit and can be set via a keypad on the front panel.

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Warranty

Included With Your Purchase

One-year Warranty

- Telebyte will furnish parts and labor for the repair or replacement of products found by Telebyte to be defective in material or workmanship during the warranty period.¹

One-year Calibration (where applicable)

- One N.I.S.T. traceable calibration on the first-year anniversary of the product ship date.²
- Calibration report to ensure traceability.

Extended Customer Care

There are two options available. Our three-year extended warranty extends the original warranty by an additional 36 months and the three-year calibration contract provides 36 additional months of calibration.

Three-Year Extended Warranty

You can extend the original one-year warranty that comes with your product by purchasing the **Three-Year Extended Warranty**.³

Features:

- Telebyte will furnish parts and labor for the repair or replacement of products found by Telebyte to be defective in material or workmanship during the warranty period.¹

Three-Year Calibration Contract (where applicable)

Extended calibration is available through the **Three-Year Calibration Contract**.⁴

Features:

- Yearly N.I.S.T. traceable calibrations, each on the second, third and fourth anniversary of the ship date.²
- Report to ensure traceability.
- Automatic notification when calibration of your product is due.

Disclaimer of Warranties and Other Terms and Conditions

¹ TELEBYTE, INC. warrants its broadband simulation equipment to be free from defects in material and workmanship, under normal and proper use and in its unmodified condition, for 12-months, starting on the date it is delivered for use. TELEBYTE'S sole obligation under this warranty shall be to furnish parts and labor for the repair or replacement of products found by TELEBYTE to be defective in material or workmanship during the warranty period. Warranty repairs will be performed at the point of manufacture. Equipment approved for return for warranty service shall be returned F.O.B. TELEBYTE factory and will be redelivered by TELEBYTE freight prepaid, except for non-continental U.S.A. locations. These deliveries will be sent COD freight and import/export charges.

² The customer is responsible for freight and customs charges when shipping products to and from Telebyte for calibration services.

³ You must purchase the extended warranty at the time of purchase or during the initial warranty period.

⁴ You must purchase the calibration contract at the time of purchase or during the initial warranty period. The above warranty is in lieu of all other warranties, expressed or implied, statutory or otherwise, including any implied warranty of merchantability or fitness for a particular purpose. TELEBYTE shall not be liable for any damages sustained by reseller or any other party arising from or relating to any equipment failure, including but not limited to consequential damages, nor shall TELEBYTE have any liability for delays in replacement or repair of equipment.



Equipment Returns

Out of warranty equipment may be returned, prepaid, to the Hauppauge, N.Y. customer service facility. Return shipping charges will be billed to the customer. The repaired unit will have a 90-day warranty. In those cases where "no trouble" is found, a reduced charge will be billed to cover handling, testing, and packaging. Whether in or out of warranty, a Return Material Authorization number (RMA) is required and may be obtained by:

Calling customer service at 631-423-3232 or 800-835-3298

Sending a request via Fax at 631-385-8184

E-mailing us at support@telebytebroadband.com

Visiting us at http://www.telebytebroadband.com/main/support_index.asp

Please be sure to reference the RMA number on the outside container.



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1.0 Introduction

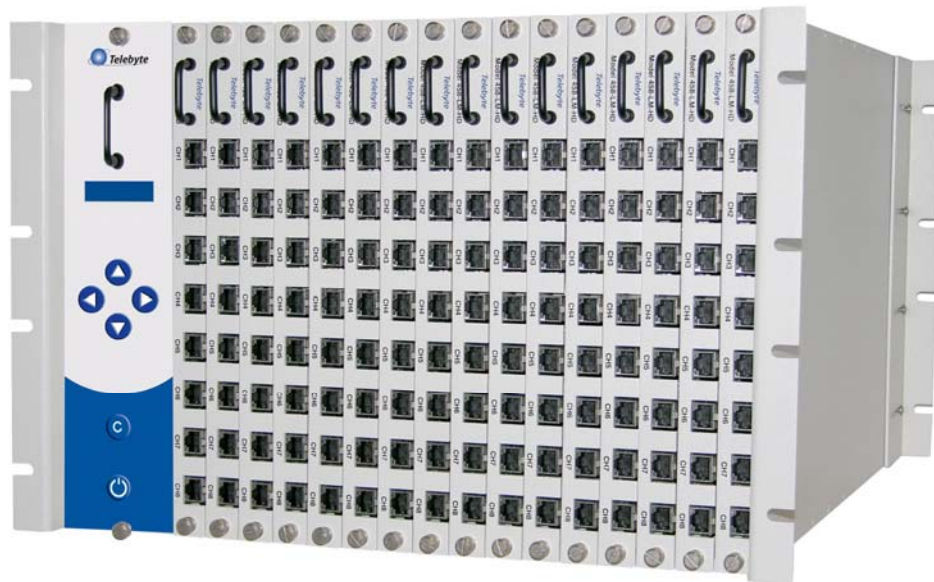
The Model 458-CC-16/458-CM (16-Slot Chassis & Control Module) accepts 1 - 16 line modules and controls from 1 - 128 channels. It is ideal for testing DSL modems and other bandwidth-compliant telecom devices in a high-volume production environment. While the 458-CC-16/458-CM can be used as a stand-alone unit, the 458-CM interfaces with a PC via RS-232, IEEE-488, or Ethernet. Line lengths and configuration settings appear on an LCD display on the front of the unit and can be set via a keypad. For added convenience, the 458-CM firmware is field-upgradeable through the RS-232 port.

The Model 458-CC-16/458-CM is used with our advanced 458 Line Modules that simulate several cable types and offer the bandwidth requirements for today's xDSL technologies such as varieties of ADSL, ADSL2+ and VDSL2. User-friendly GUIs (included with line modules) provide another means of controlling loop lengths and communication parameters. For more information about Telebyte's plug-in line modules, refer to the individual datasheets or manuals.

- ① While the 458-CC-16 (16-Slot Chassis) and 458-CM (Control Module) are purchased separately, they are both addressed in this manual, together or separately, as required.

Chassis

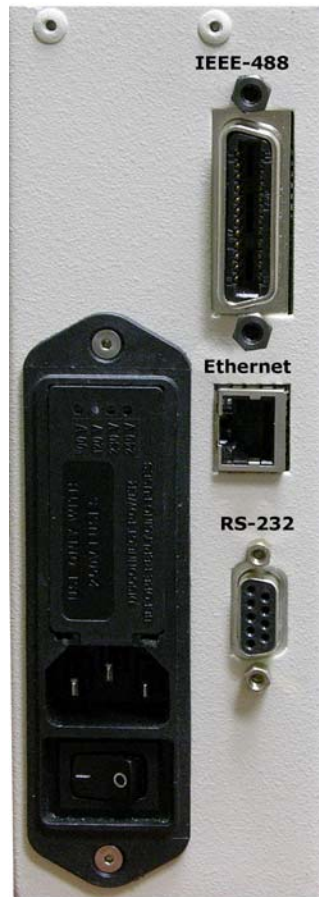
The 458-CC-16 may be mounted in a standard 19-in rack and accepts a maximum of 16 Line Modules.



The front of the Model 458-CC-16 is shown with the 458-CM and 16 line modules installed.



Control Module



The image above shows the connectors on the back of the 458-CM, labeled RS232, IEEE-488 and Ethernet.

The 458-CM is used to configure a Line Module to a particular length via a pushbutton keypad on the front of the unit. The user may also use the IEEE-488, RS-232 or Ethernet port for remote control. When configured for IEEE-488, the 458-CM can be operated from an IEEE Controller such as a PC equipped with an IEEE interface board. In RS-232 mode, the unit can be connected to any RS-232 device (e.g., a terminal or PC) that has a terminal emulation program such as Hyper Terminal installed. In Ethernet mode, RS-232 commands are sent over an Ethernet connection. This allows a remote PC connected to a LAN to communicate with the 458-CM.

- ① In order to send RS-232 commands over an Ethernet connection, this feature must be enabled. Refer to section *Enabling Ethernet Connectivity* for detailed instructions.



Line Module Series

A maximum of 16 Model 458 Line Modules (sold separately) can be placed into the chassis. Each 458 Line Module can be individually set by the 458-CM. Communications between the 458-CM and the 458 Line Module are via a backplane. The backplane will pass power and the signals to control the length of each card. The RJ-45 connectors used to connect to the unit to be tested are mounted directly on the 458 Line Module. Telebyte provides GUI software for a user-friendly interface when configuring 458 Line Modules (available for download from our Web site at www.telebytebroadband.com). Refer to the individual documentation for more information on our Line Module series.



2.0 Specifications

Product Specifications 458-CC-16 (16-Slot Chassis) & 458-CM (sold separately)	
Controls	Keypad for setting loop lengths and IEEE-488 address, RS-232, or Ethernet communication parameters.
Indicators	Backlit LCD display of line length and set up parameters.
Power	88 to 264 VAC, 50 or 60 Hz
Size	[7U] 19 in W x 22 in D x 12.22 in H (482.6 mm W x 558.8 mm D x 310.4 mm H)
Environmental	Operating: +32 F to +122 F (0 to +50 degrees C) Storage: 0 to 95% relative humidity (non-condensing)
Remote Control Connectors	RS-232: DB9 female (DCE); GPIB: IEEE488 24-pin connector. Ethernet: RJ-45
Plug-In Compatibility	Accepts 1-16 458 Line Modules



3.0 RS-232 Connections & Commands

RS-232 Connections

The Model 458-CM is completely controllable from an RS-232 source. The following section explains the connections and the controls necessary for RS-232 operation. See Figure 2 for an illustration of the pin connectors.

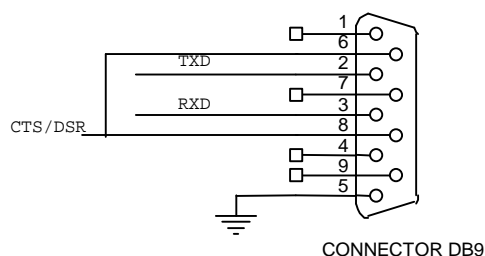


Figure 2 DB-9 for RS-232 Control

Pin 2 on the Model 458-CM connects to the RECEIVED DATA pin in the Communications Port Connector on the PC or controller.

Pin 3 on the Model 458-CM connects to the TRANSMIT DATA pin in the Communications Port Connector on the PC or controller.

Pin 5 on the Model 458-CM connects to the GROUND pin in the Communications Port Connector on the PC or controller.

Pins 6 and 8 are connected together and held at a positive voltage.

Common Communications Port Connectors, such as those found on PCs, are DB-9 and DB-25. The standard pin assignments for these connectors are as follows:

	DB-9	DB-25	Direction
Received Data	2	3	Serial Data from Model 458-CM
Transmitted Data	3	2	Serial Data to Model 458-CM
Ground	5	7	Common Ground
CTS	8	5	+ Voltage Out
DSR	6	6	+ Voltage Out

The remaining pins are not connected to the Model 458-CM.



User Command Interface

ASCII command set compliant with IEEE 488.2 and in Hex ASCII two-character bytes per 488 bus data byte.

RS-232 - LF, Baud rate 300 to 19200, commands use terminating character (Carriage Return), eight Data Bits, one Stop Bit.

RS-232 Mode Command List

- ① All Set card lengths, English/Metric mode and Echo enable/disable are maintained during power off in both RS-232 and IEEE modes. Manual control is enabled at power on.

id

Identify model no. and rev.

Read model no. and software revision code

re

Read last error

Read description of last error

ee

Echo enable

Echo all inputs and format output for terminal display

ed

Echo disable

Inputs not echoed and format output for user control program

h

Help RS232 command list

Read RS232 command list

cs:BR

Configure serial

Where BR = 300, 600, 1200, 2400, 4800, 9600 or 19200



cp:ADD Configure 488

Where ADD = 1, 2, ... 29, 30 (No leading zeroes used)

Set Length command

sl:LM:H:LE,C

Where:

LM = Module slot number → 01 – 16

H = Channel number → 1 - 8

LE = Length (in feet)

C = Connect mode:

N = connect both CO and CPE ends.

P = connect CPE only CO is open.

O = connect CO only CPE is open.

Z = open both CO and CPE ends

Example: SL:01:1:2000,N sets channel 1 to 2000 ft for a line module in slot 1.

The connect mode may be used to create an “open loop” condition at either the CO or CPE ends, or both.

Set all channels on all boards in the system command

sl:all:LE,C

Example: sl:all:2000,n sets all channels in the system to 2000 ft

Set all channels on a range of boards command

sl:LM-LM:LE,C

Example: sl:01-03:2000,n sets all channels on boards 1, 2, and 3 to 2000 ft.



Set all channels on one board command

sl:LM:a:LE,C

Example: sl:01:a:2000,n sets all channels on the board in slot 1 to 2000 ft.

Read Length command

rl:LM:H

Example: rl:01:1 reports the length of channel 1 on the board in slot 1.

Read the Lengths of all channels on one board command

rl:LM:a

Example: rl:01:a reports the lengths of all channels on the board in slot 1.

Read the lengths of all channels on all boards command

rl:all

Example: rl:all reports the lengths of all channels on all boards

Read the serial number of one line module command

rs:LM

Read the serial numbers of all cards command

rs:all

Responses to SL (Set Length) Command	
*	Command valid and completed execution. Ready for next command.
?[XXX] Card Not Found	Card not found in slot specified.
?[XXX] Invalid Card Number	Card number outside the range for the type of control module.
?[XXX] Invalid Channel Number	Channel number out of range (e.g., not 1 – 8)
?[XXX] Invalid Length	Length not valid for the specific line module and/or channel
?[XXX] Invalid Command	Any error not covered in the above list, including the specification of incorrect line numbers for a given channel.



4.0 IEEE Connections & Commands

Connections

The Model 458-CM is completely controllable from an IEEE 488.1 (488.2) source. The following section explains the connections and controls necessary for IEEE operation.

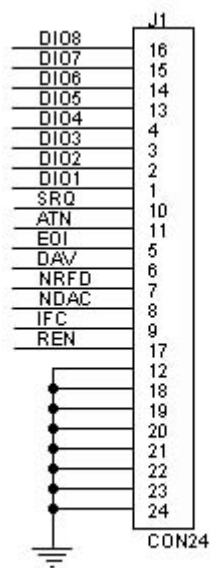


Figure 3 IEEE 24-pin Connector

Connect a standard IEEE cable from the Model 458-CM to the IEEE General Purpose Interface Bus controller.

User Command Interface

The Model 458-CM is intended to be operated from an IEEE Controller such as a PC equipped with an IEEE interface board. The set up of your computer and IEEE controller board may be different depending on the manufacturer of your equipment. Follow the set up instructions supplied with your equipment.



IEEE Mode Command List

- ① All Set card lengths, English/Metric mode and Echo enable/disable are maintained during power off in both RS-232 and IEEE modes. Manual control is enabled at power on.

:manual:disable

Disable manual control

Disable manual setting of lengths or configuration

:manual:enable

Enable manual control

Enable manual setting of lengths or configuration

:lasterror

Read last error

Read description of last error

***idn?**

Identify model no. and rev.

Read model no. and software revision code

***esr?**

Event Status Register read

Read IEEE esr

***sre?**

Status Request Enable read

Read IEEE sre

***stb?**

Status Byte register read

Read IEEE stb



***ese?**

Enable Status Event read

Read IEEE ese

***sre xx**

Status Request Enable write

Write IEEE sre xx

***ese xx**

Enable Status Event write

Write IEEE ese

:cs:BR

Configure serial

Where BR = 300, 600, 1200, 2400, 4800, 9600 or 19200

:cp:ADD

Configure 488

Where ADD = 1, 2, ... 29, 30 (No leading zeroes used)

*SRExx	Enables Status Bits as defined by the numerical value of the bits following the command.
*SRE?	Used to read the Enabling Bits in the Status Register.
*STB?	Reads the Status Register
*ESExx	Enables Event Status Bits as defined by the numerical value of the bits following the command.
*ESE?	Used to read the Enabling Bits in the Event Status Enable Register.
*ESR?	Reads the Event Status Enable Register.

Status Byte Register			
Bit	Value	Set	Operation
0	1	0	Not Supported
1	2	0	Not Supported
2	4	0	Not Supported
3	8	0	Not Supported
4	16	1	Enable Message Available bit (MAV)
5	32	1	Enable Event Status Bit (ESB)
6	64	1	MSS this bit is always enabled
7	128	0	Not Supported



Event Status Enable Register			
Bit	Value	Set	Operation
0	1	1	Operation Complete
1	2	0	Not Supported
2	4	1	Query Error
3	8	0	Not Supported
4	16	1	Execution Error
5	32	1	Command Error
6	64	0	Not Supported
7	128	1	Power On

Set Length command

:setcard:length:LM:H:LE,C

Where:

LM = Module slot number → 01 – 16

H = Channel number → 1 - 8

LE = Length (in feet)

C = Connect mode:

N = connect both CO and CPE ends.

P = connect CPE only CO is open.

O = connect CO only CPE is open.

Z = open both CO and CPE ends

Example: :setcard:length:01:1:2000,n sets channel 1 of the line module in slot 1 to 2000 ft.

Responses to SC (SetCard) Command	
*	Command valid and completed execution. Ready for next command.
?[XXX] Card Not Found	Card not found in slot specified.
?[XXX] Invalid Card Number	Card number outside the range for the type of control module.
?[XXX] Invalid Channel Number	Channel number out of range (e.g., not 1 – 8)
?[XXX] Invalid Length	Length not valid for the specific line module and/or channel
?[XXX] Invalid Command	Any error not covered in the above list, including the specification of incorrect line numbers for a given channel.



Set all channels on all boards in the system command

:setcard:length:all:LE,C

Example: :setcard:length:all:2000,n sets all channels on all boards to 2000 ft.

Set all channels on a range of boards command

:setcard:length:LM-LM:LE,C

Example: :setcard:length:01-03:2000,n sets boards 1, 2 and 3 to 2000 ft.

Set all channels on one board command

:setcard:length:LM:a:LE,C

Example: :setcard:length:1:a:2000,n sets all channels on the board in slot 1 to 2000 ft.

Read Length command

:readcard:length:LM:H

Example: :readcard:length:01:1

Read the lengths of all channels on one board command

:readcard:length:LM:a

Example: :readcard:length:01:a

Read the lengths of all channels on all boards command

:readcard:length:all

Read serial number of one line module command

:readcard:sn:LM

Read all serial numbers command

:readcard:sn:all

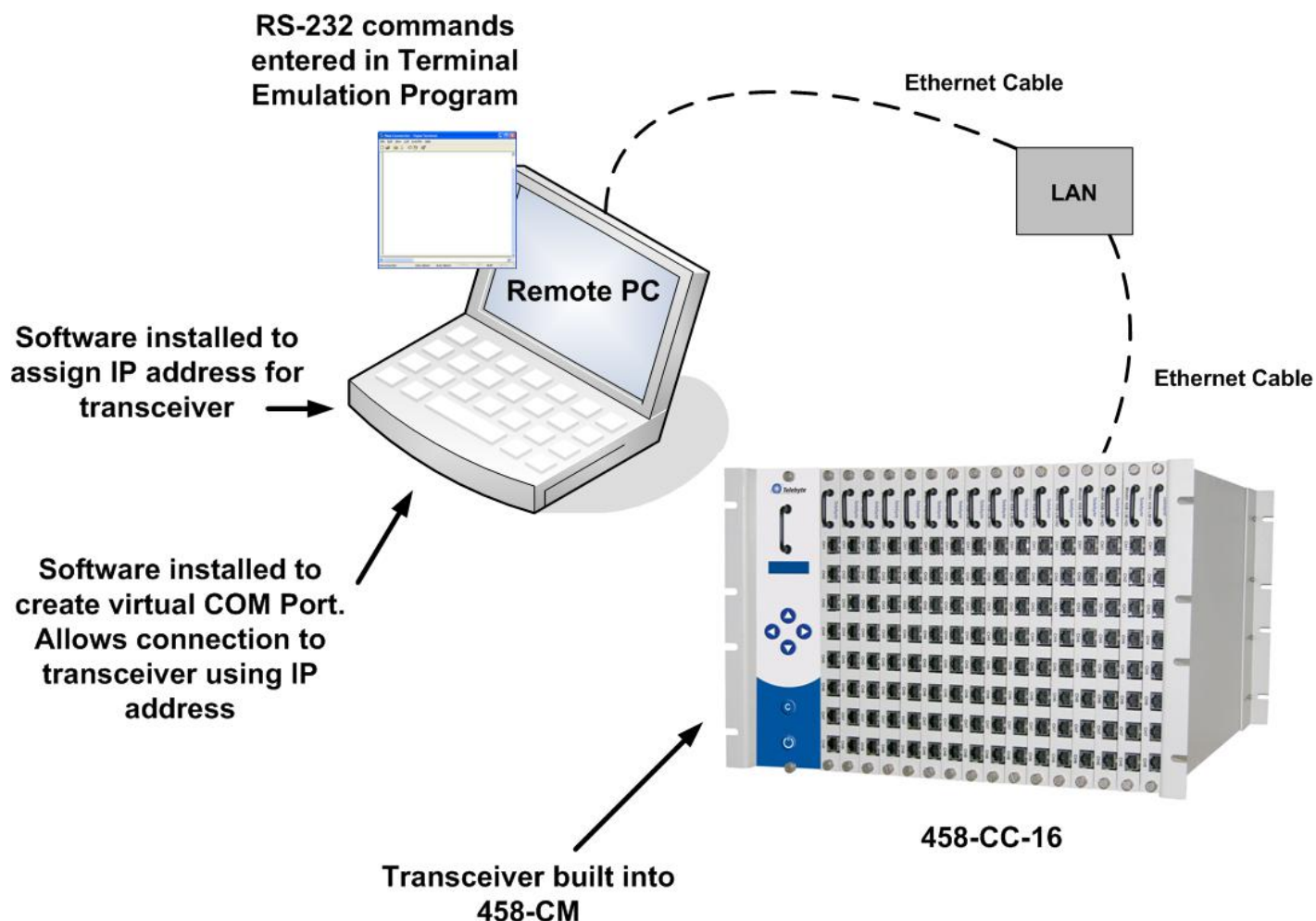


5.0 Ethernet Connections & Commands

Enabling Ethernet Connectivity

RS-232 commands may be sent over an Ethernet connection to control the Model 458-CM. This is made possible by a Lantronix XPort transceiver installed in the unit. A one-time set up must be performed to assign an IP address to the transceiver and configure a virtual COM port. This is all done using a remote PC. It requires one software installation to assign an IP address to the transceiver and a second one to configure the virtual COM port.

How Line Modules are controlled using RS-232 commands sent over an Ethernet connection





Before You Begin

Connect the 458-CM and a remote PC to the LAN using Ethernet cables. Please note, when connecting the Model 458-CM directly to a PC a crossover Ethernet cable is used for communication; when connecting to a network (through a switch or router) a straight-through Ethernet cable is used.

- ① Administrator access to the remote PC is required.

Installing IP Address Assignment Software

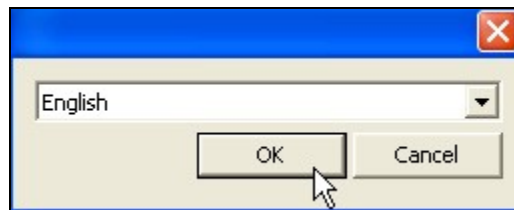
The IP address assignment software (Lantronix Device Installer) is obtained from the CD supplied with your unit or downloaded from www.telebytebroadband.com (select Support/Software option). It is then copied to the remote PC and expanded. After installation, it is used to assign an IP address to the XPort.

Obtain the IP address and subnet mask for the XPort from your network administrator as it is needed during the assignment process. In addition, note the MAC address of the XPort which is located on the back of the 458-3SLB. This address allows the assignment software to locate the XPort.

- ① In some cases, firewall protection on the PC may interfere with the installation or assignment process. If this occurs, contact your network administrator.

Install Software

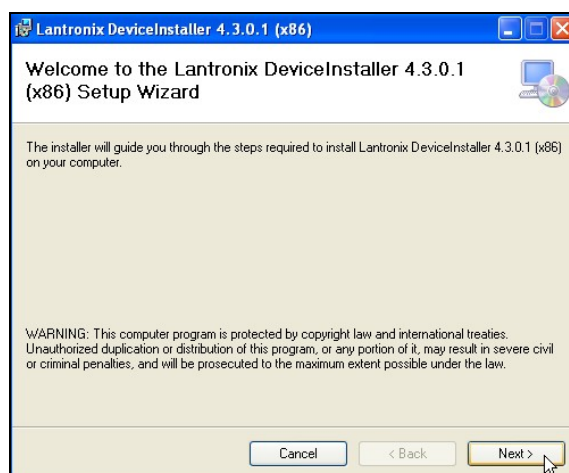
1. Save the **4583SL-Ethernet-Install.zip** file to the desktop.
2. Extract the files and then navigate to the folder on the desktop.
3. Double-click on the setup_di_x86x64cd_4.3.0.1.exe program file.



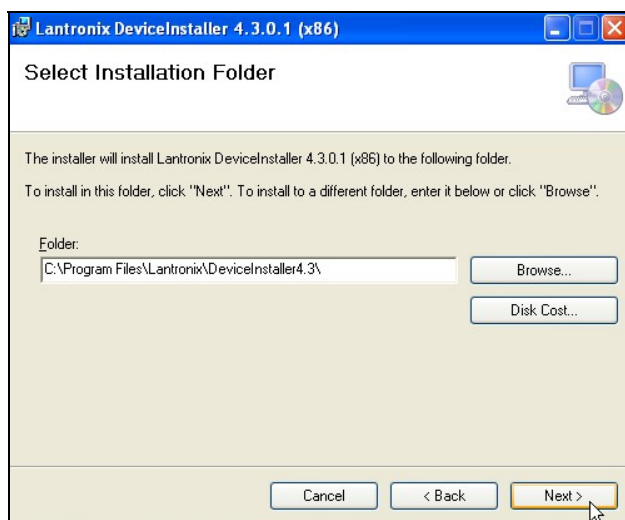
4. Select the language.



5. Click **Install**.



6. Click **Next**. The Select Installation Folder screen is shown.

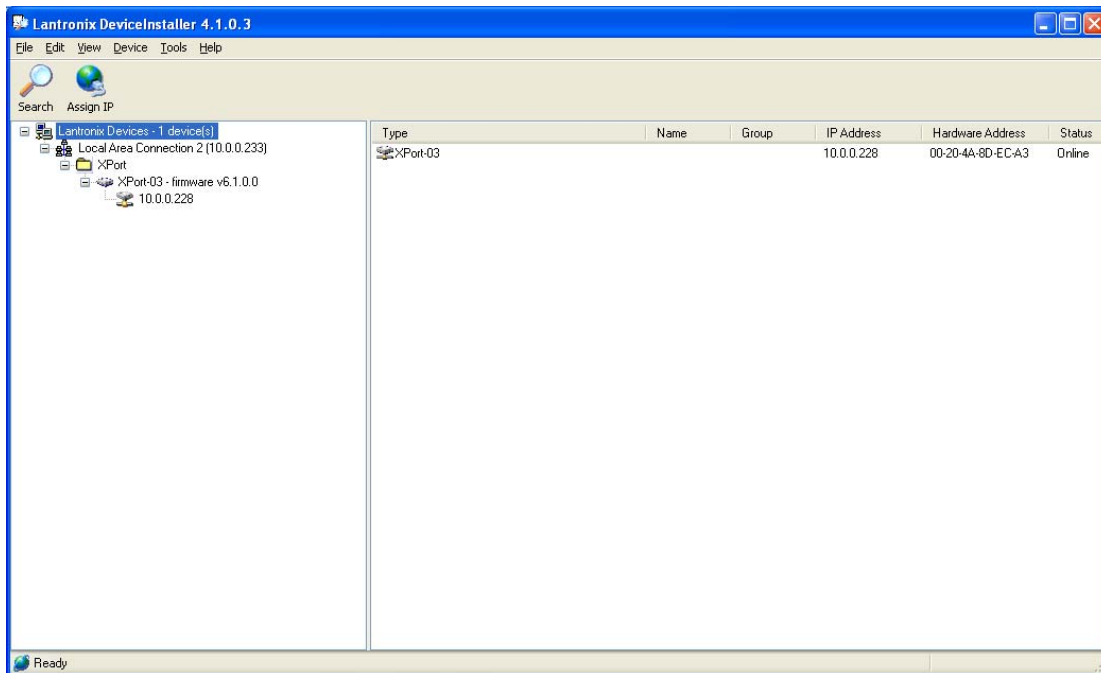


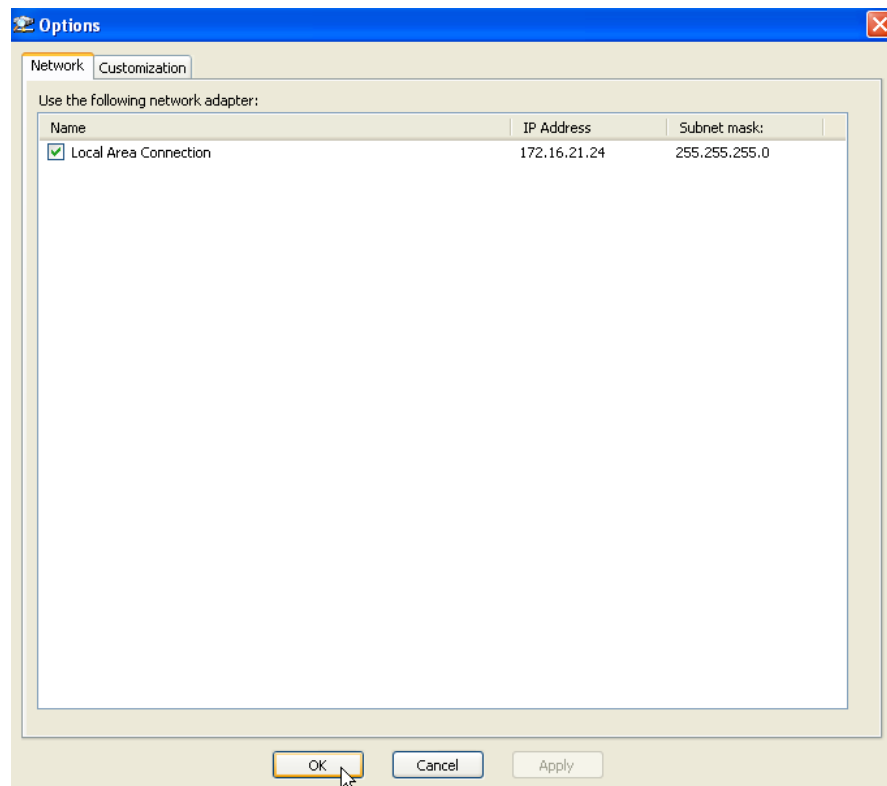
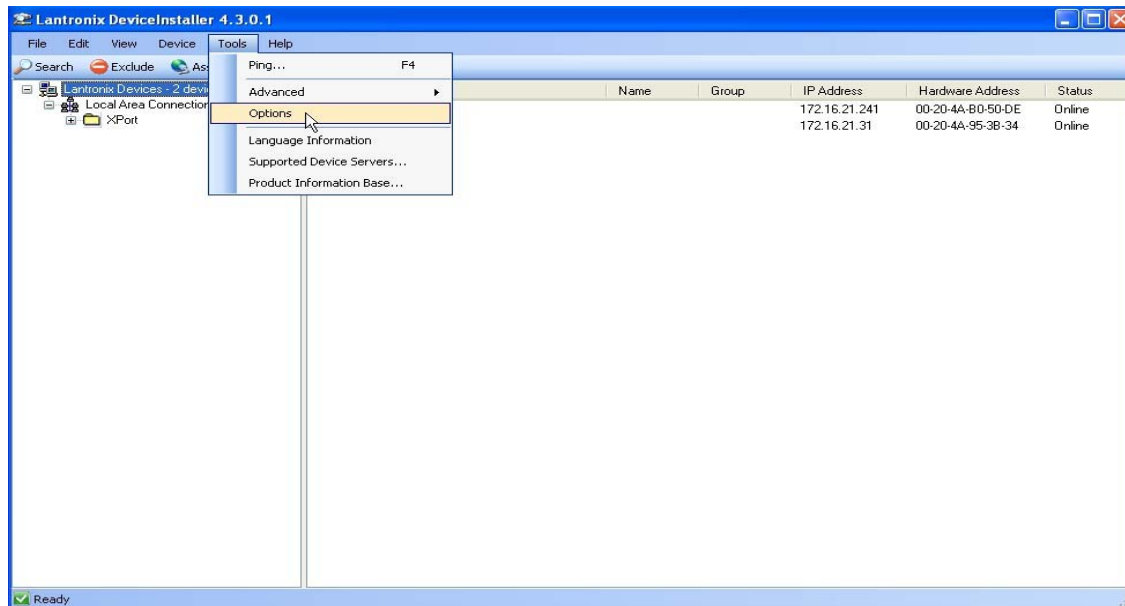
7. Use the default folder information or click **Browse** to find and select a new location. The Confirm Installation screen is displayed.
8. Click **Next** to begin installation. The progress screen is shown, followed by the Installation Complete screen.
9. Click **Close** to complete the installation.



Assign IP Address to XPort

1. Launch the Lantronix Device Installer program:
 - a. For Windows 95, 98, ME, NT, 2000: Click **Start/Programs/Lantronix/DeviceInstaller/ DeviceInstaller.**
 - b. For Windows XP: Click **Start/All Programs/Lantronix/DeviceInstaller/ DeviceInstaller**
- ① If the remote PC has more than one network adapter, a prompt appears. Select the adapter representing the network card connected to the same LAN as the XPort and click **OK.**
2. The DeviceInstaller control screen is shown, displaying a default IP address.

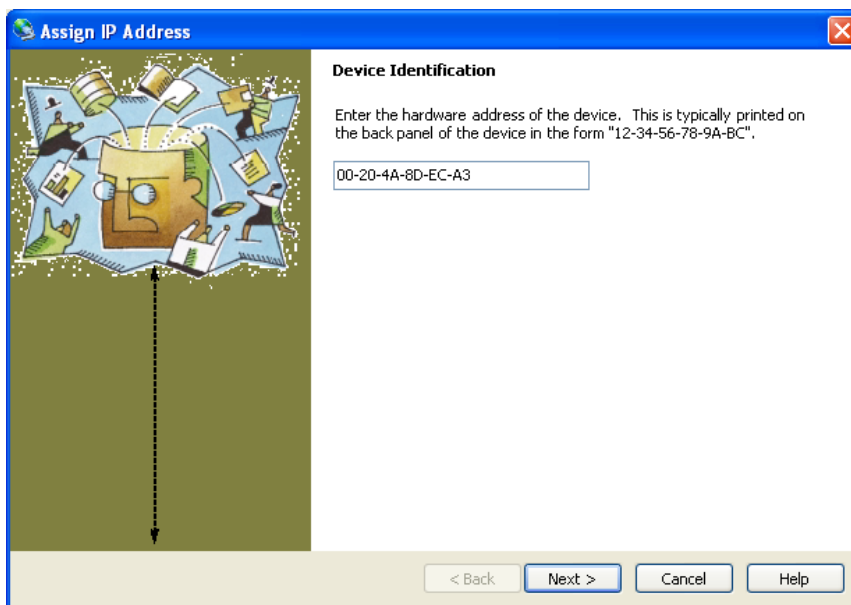




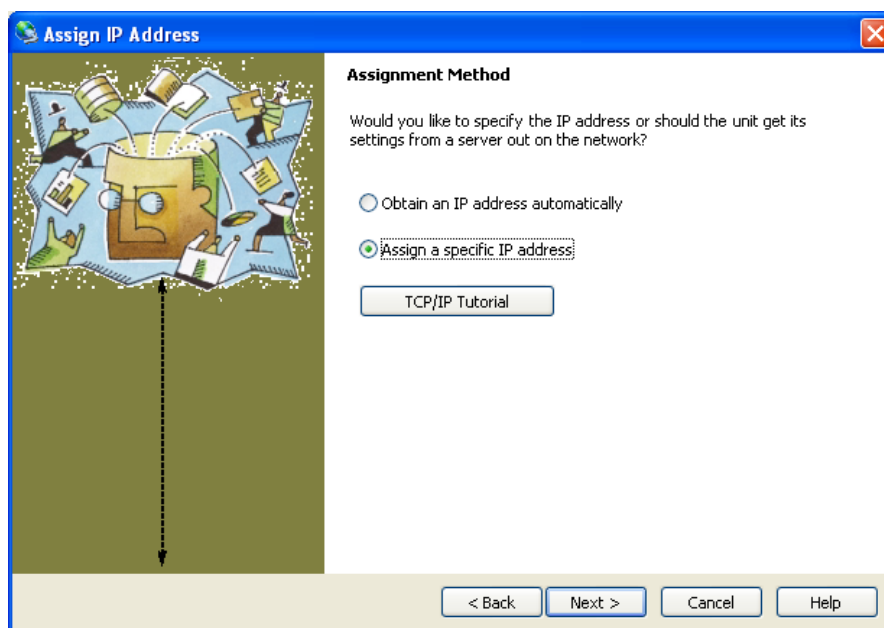
3. If the Local Area Connection is not displayed in the left panel, the Xport device associated with the 458 chassis may not be displayed in the right panel. If that is the case, click **Tools** => **Options**. Local Area Connection should be checked. Uncheck any additional adapters such as wireless network adapters. Then click **OK** at the bottom of the window.



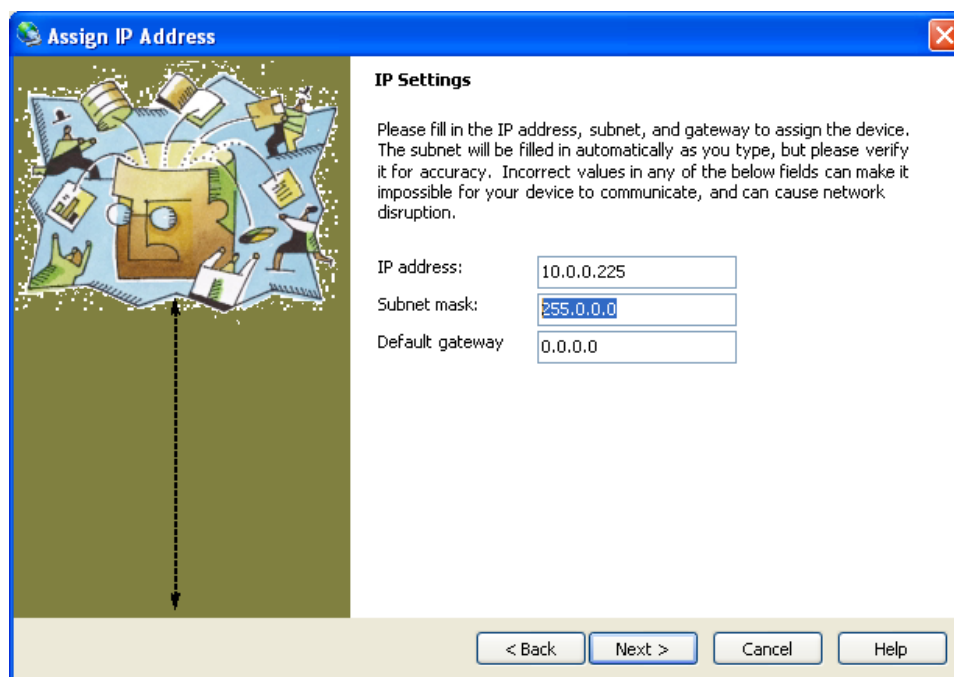
4. If the default IP address is not correct, click the **Assign IP** icon on the top-left of the DeviceInstaller control screen.



5. If the Device Identification screen is displayed. Enter the MAC address of the XPort device and click **Next**. Otherwise, skip to step 6.



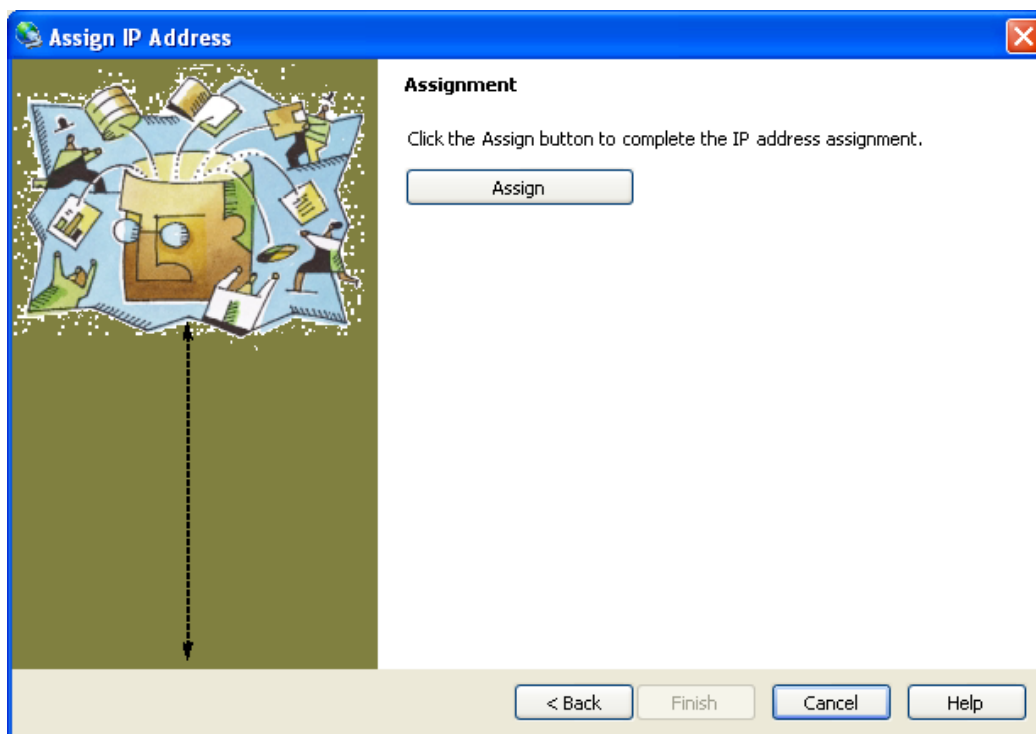
6. The Assign Method screen is displayed. Select the **Assign a specific IP address** option and click **Next**. The IP Settings screen is displayed.



7. Enter the IP address in the **IP address** field.



8. Enter the subnet mask for the network in the **Subnet mask** field.
9. If the remote PC and 458-3SLB reside on separate subnets, enter the IP address of the subnet's router into the **Default gateway** field.
10. Click **Next**. The Assignment screen is shown.



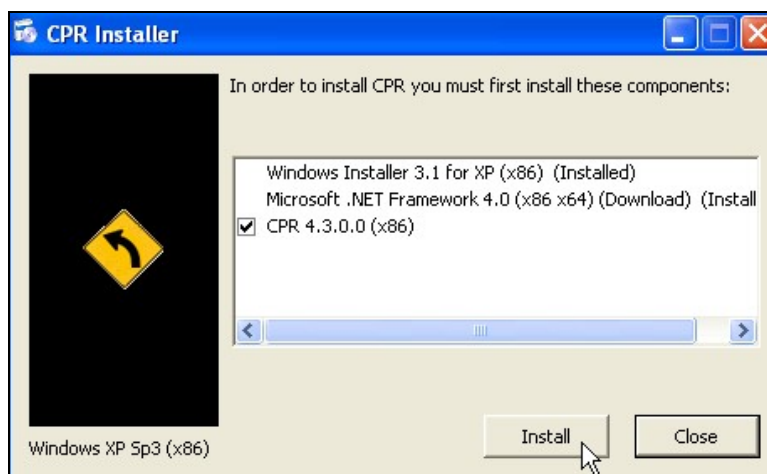
11. Click **Assign** to assign the IP address to the XPort. The progress of the task is shown, followed by the message "**Completed Successfully**." Click **Finish**. Note the Device Installer control window now reflects the new IP address.

Configure Virtual Com Port on Remote PC

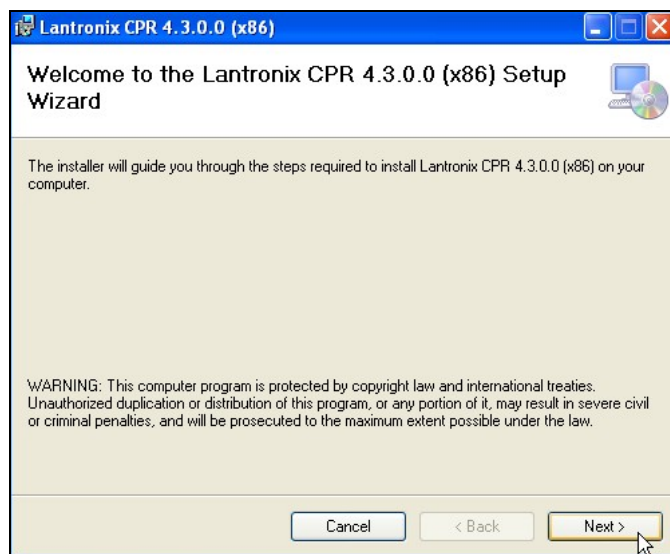
The virtual COM port software (Lantronix Com Port Redirector) is obtained from the CD supplied with your unit or downloaded from www.telebytebroadband.com (select Support/Software option) and copied to a remote PC prior to beginning installation. After installation, it is used to create/configure a virtual COM port on the remote PC for communication with the 458-3SLB.

Install Software

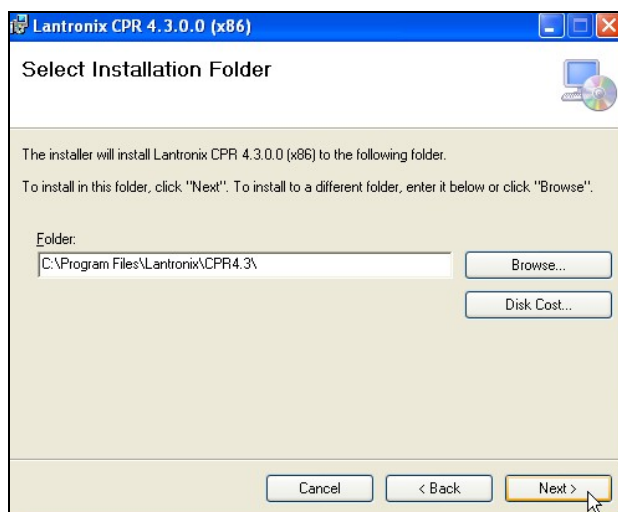
1. From the **C:\Temp** location, double click the **setup_cpr_4.3.0.0.exe** file to begin installation.



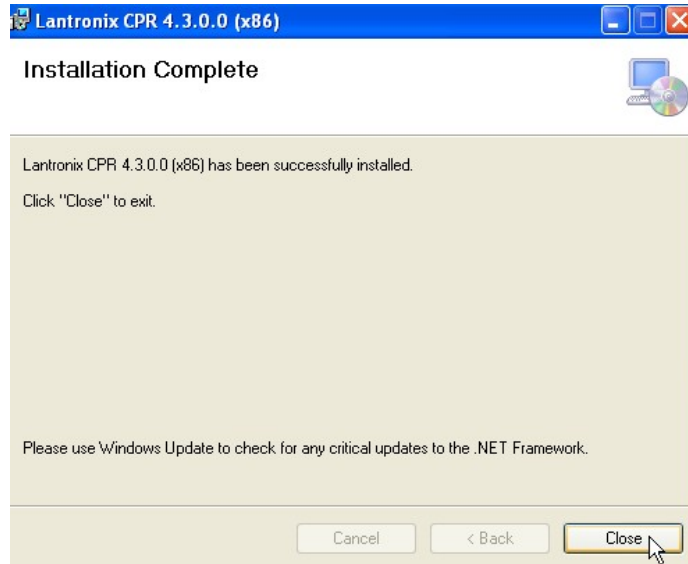
2. Click **Install**. The Welcome screen is displayed.



3. Click **Next**. The installation progress is shown and you are returned to the Welcome screen again. Click **Next**. The Choose Destination Location screen is displayed.



4. Click **Next** to accept the default location and install the files or click **Browse** to navigate to the desired location. A Setup Status screen is displayed, indicating the progress of the installation. When complete, the InstallShield Wizard Complete screen is shown.

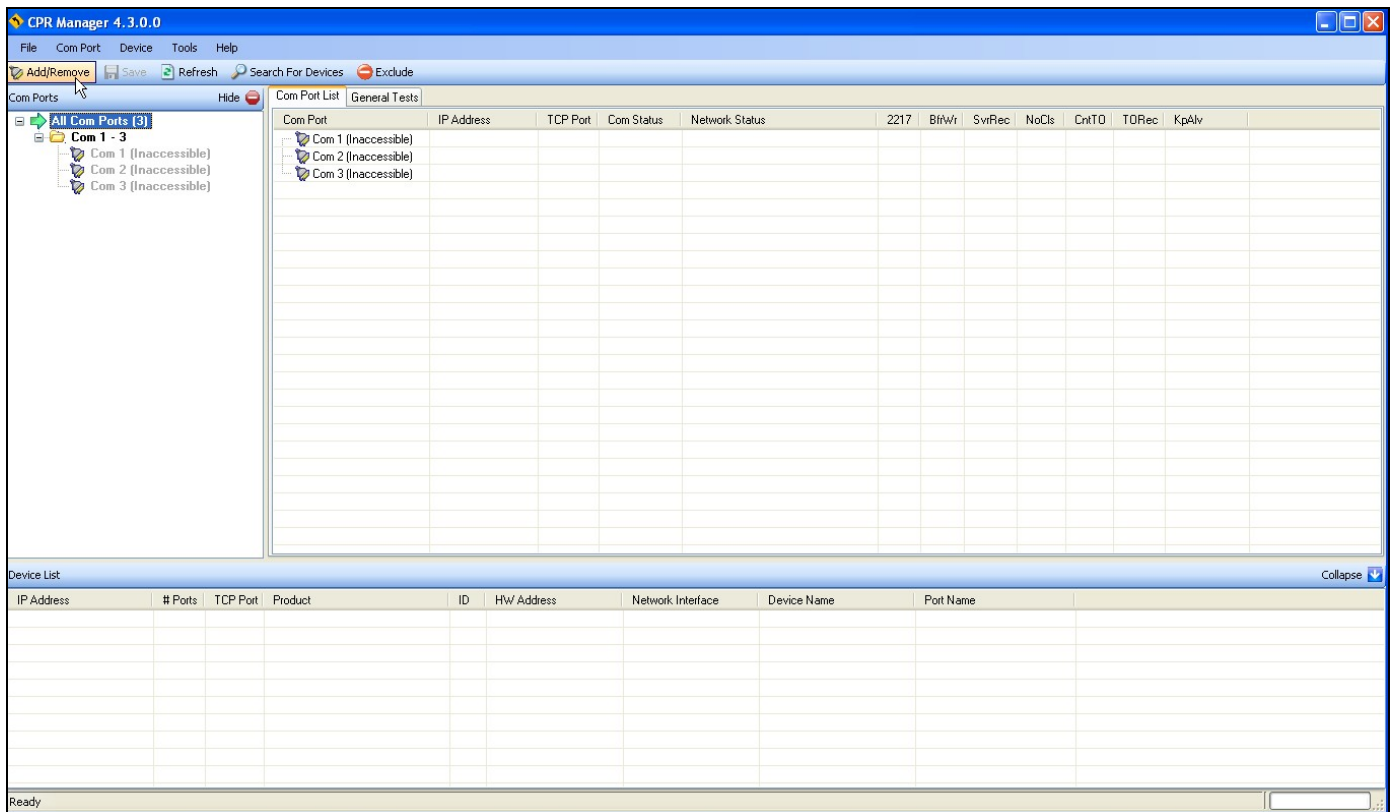


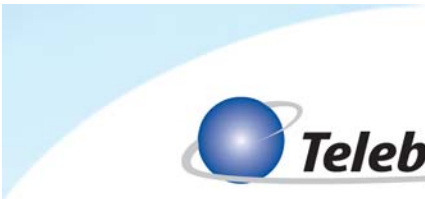
5. Click **Close** and then **OK** on CPR successfully installed message.



Create Virtual COM Port

1. Launch the Lantronix Redirector program. **Start/All Programs/Lantronix/ CPR 4.3/CPR Manager**
2. The CPR Manager window is shown.





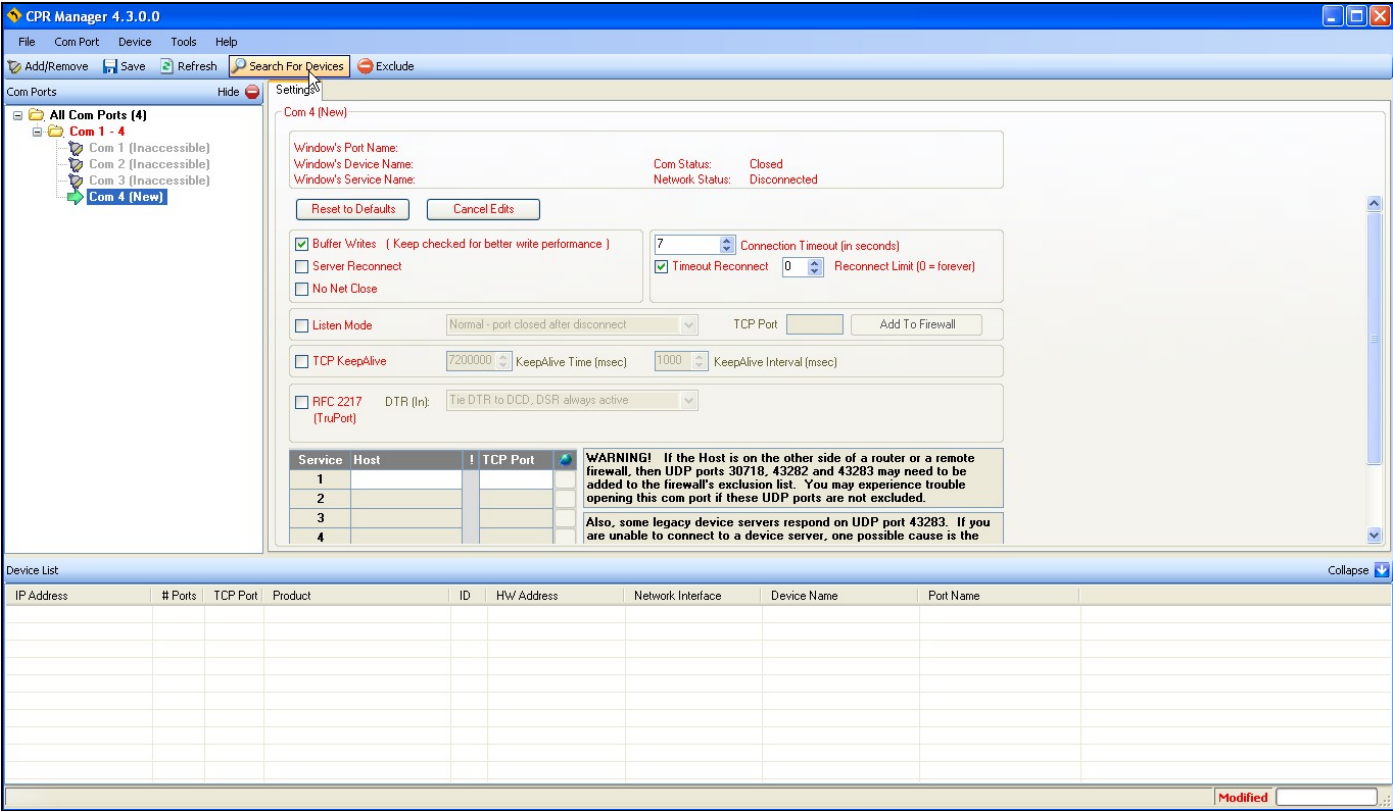
3. Click **Add/Remove** on the upper left of the screen. The Com Setup screen is displayed.

Com Ports

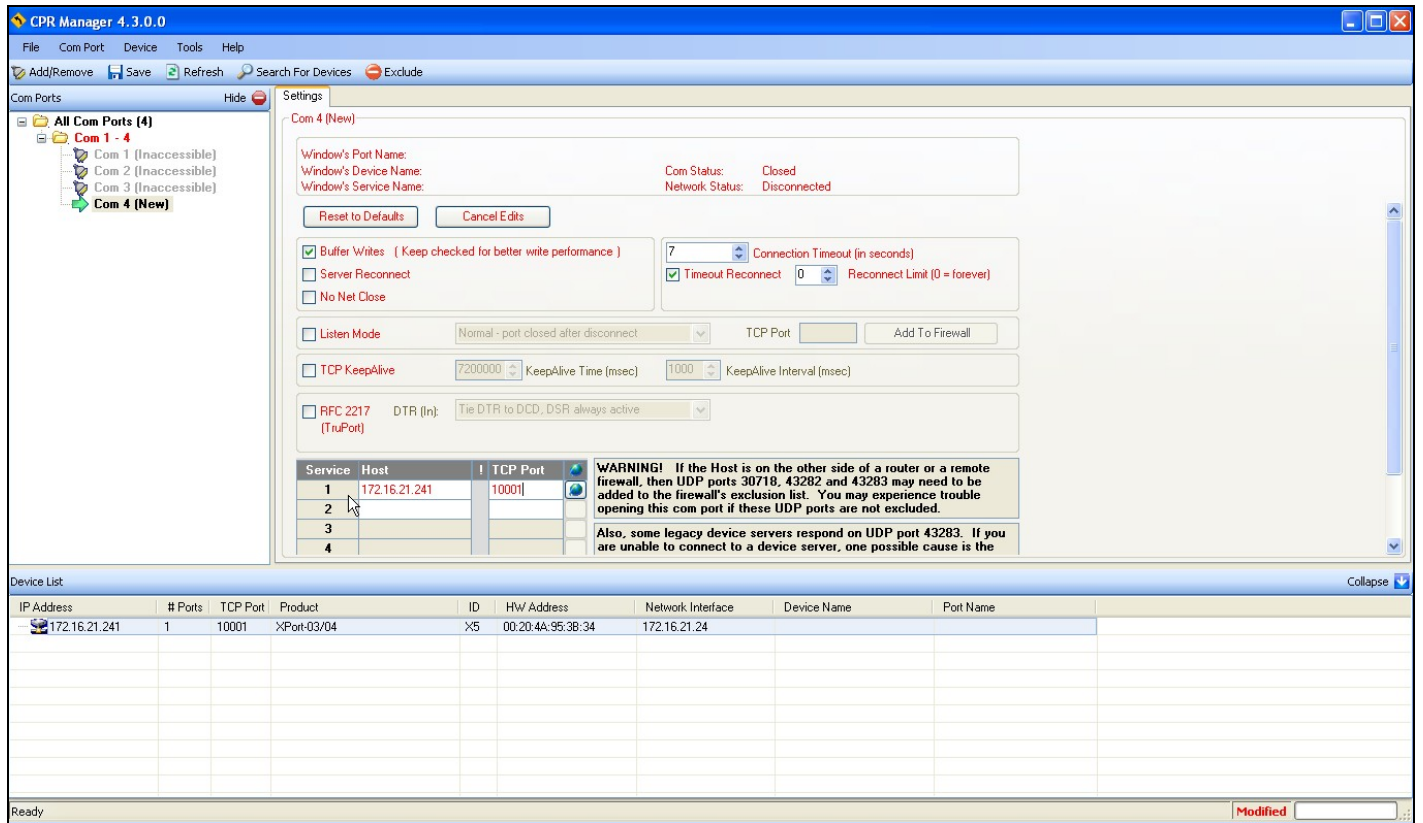
<input checked="" type="checkbox"/> Com1	<input type="checkbox"/> Com21	<input type="checkbox"/> Com41	<input type="checkbox"/> Com61	<input type="checkbox"/> Com81	<input type="checkbox"/> Com101	<input type="checkbox"/> Com121
<input checked="" type="checkbox"/> Com2	<input type="checkbox"/> Com22	<input type="checkbox"/> Com42	<input type="checkbox"/> Com62	<input type="checkbox"/> Com82	<input type="checkbox"/> Com102	<input type="checkbox"/> Com122
<input checked="" type="checkbox"/> Com3	<input type="checkbox"/> Com23	<input type="checkbox"/> Com43	<input type="checkbox"/> Com63	<input type="checkbox"/> Com83	<input type="checkbox"/> Com103	<input type="checkbox"/> Com123
<input checked="" type="checkbox"/> Com4	<input type="checkbox"/> Com24	<input type="checkbox"/> Com44	<input type="checkbox"/> Com64	<input type="checkbox"/> Com84	<input type="checkbox"/> Com104	<input type="checkbox"/> Com124
<input type="checkbox"/> Com5	<input type="checkbox"/> Com25	<input type="checkbox"/> Com45	<input type="checkbox"/> Com65	<input type="checkbox"/> Com85	<input type="checkbox"/> Com105	<input type="checkbox"/> Com125
<input type="checkbox"/> Com6	<input type="checkbox"/> Com26	<input type="checkbox"/> Com46	<input type="checkbox"/> Com66	<input type="checkbox"/> Com86	<input type="checkbox"/> Com106	<input type="checkbox"/> Com126
<input type="checkbox"/> Com7	<input type="checkbox"/> Com27	<input type="checkbox"/> Com47	<input type="checkbox"/> Com67	<input type="checkbox"/> Com87	<input type="checkbox"/> Com107	<input type="checkbox"/> Com127
<input type="checkbox"/> Com8	<input type="checkbox"/> Com28	<input type="checkbox"/> Com48	<input type="checkbox"/> Com68	<input type="checkbox"/> Com88	<input type="checkbox"/> Com108	<input type="checkbox"/> Com128
<input type="checkbox"/> Com9	<input type="checkbox"/> Com29	<input type="checkbox"/> Com49	<input type="checkbox"/> Com69	<input type="checkbox"/> Com89	<input type="checkbox"/> Com109	<input type="checkbox"/> Com129
<input type="checkbox"/> Com10	<input type="checkbox"/> Com30	<input type="checkbox"/> Com50	<input type="checkbox"/> Com70	<input type="checkbox"/> Com90	<input type="checkbox"/> Com110	<input type="checkbox"/> Com130
<input type="checkbox"/> Com11	<input type="checkbox"/> Com31	<input type="checkbox"/> Com51	<input type="checkbox"/> Com71	<input type="checkbox"/> Com91	<input type="checkbox"/> Com111	<input type="checkbox"/> Com131
<input type="checkbox"/> Com12	<input type="checkbox"/> Com32	<input type="checkbox"/> Com52	<input type="checkbox"/> Com72	<input type="checkbox"/> Com92	<input type="checkbox"/> Com112	<input type="checkbox"/> Com132
<input type="checkbox"/> Com13	<input type="checkbox"/> Com33	<input type="checkbox"/> Com53	<input type="checkbox"/> Com73	<input type="checkbox"/> Com93	<input type="checkbox"/> Com113	<input type="checkbox"/> Com133
<input type="checkbox"/> Com14	<input type="checkbox"/> Com34	<input type="checkbox"/> Com54	<input type="checkbox"/> Com74	<input type="checkbox"/> Com94	<input type="checkbox"/> Com114	<input type="checkbox"/> Com134
<input type="checkbox"/> Com15	<input type="checkbox"/> Com35	<input type="checkbox"/> Com55	<input type="checkbox"/> Com75	<input type="checkbox"/> Com95	<input type="checkbox"/> Com115	<input type="checkbox"/> Com135
<input type="checkbox"/> Com16	<input type="checkbox"/> Com36	<input type="checkbox"/> Com56	<input type="checkbox"/> Com76	<input type="checkbox"/> Com96	<input type="checkbox"/> Com116	<input type="checkbox"/> Com136
<input type="checkbox"/> Com17	<input type="checkbox"/> Com37	<input type="checkbox"/> Com57	<input type="checkbox"/> Com77	<input type="checkbox"/> Com97	<input type="checkbox"/> Com117	<input type="checkbox"/> Com137
<input type="checkbox"/> Com18	<input type="checkbox"/> Com38	<input type="checkbox"/> Com58	<input type="checkbox"/> Com78	<input type="checkbox"/> Com98	<input type="checkbox"/> Com118	<input type="checkbox"/> Com138
<input type="checkbox"/> Com19	<input type="checkbox"/> Com39	<input type="checkbox"/> Com59	<input type="checkbox"/> Com79	<input type="checkbox"/> Com99	<input type="checkbox"/> Com119	<input type="checkbox"/> Com139
<input type="checkbox"/> Com20	<input type="checkbox"/> Com40	<input type="checkbox"/> Com60	<input type="checkbox"/> Com80	<input type="checkbox"/> Com100	<input type="checkbox"/> Com120	<input type="checkbox"/> Com140

1 to 256
 1 to 256

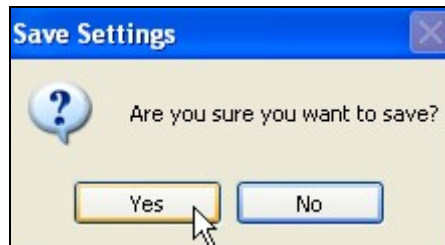
4. Select an available COM port. Select additional COM ports for each 458 chassis on the local area network. These COM ports can be used with a terminal emulation program. Click **OK** to return to the CPR Manager window.



5. In the Com Ports panel on the left, click on the New com port to highlight it. Select **Search For Devices**.



6. Any Lantronix device configured with an IP will be displayed in the **Device List** panel along the bottom. Double click on the device in order to assign it to the highlighted com port. The Host IP address and TCP Port will automatically be populated in the Settings panel. Do the same for each additional Com port and device if necessary.
7. Click on the **Save** icon on the upper left.



8. Select **Yes** when asked to save.



9. There will be two Hardware installation warning windows. These warnings are due to the new virtual com ports added. Click **Continue Anyway** in both prompts to complete the installation.



Connecting to the Model 458-3SLB via Ethernet Connector

Using the 458-3SLB front panel buttons, press the "C" button immediately followed by the up and/or down arrows, until the LCD displays "ENET:9600."

To communicate with the 458-3SLB, launch a terminal emulator program such as Hyper Terminal. Configure the connection within that program to use the COM port selected in the Redirector program. Use the following standard settings:

Baud Rate: 9600bps
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None

Refer to section *4.0 RS-232/Ethernet Controls* for a list of the RS-232 commands available to control the Model 458-3SLB.

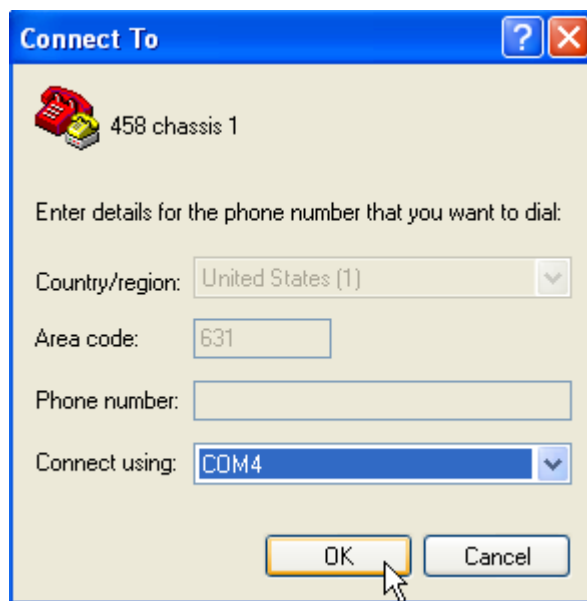
- ① Only one connection at a time is allowed. If you receive a message in the terminal emulator program that the COM port is not available, it may be the result of another user accessing the unit. In addition, the user should ensure that the local port setting for the transceiver is the same as the one entered during set of the virtual COM port. Refer to the *Local Port Setting* section later in this chapter.

Communicating with a 458 Chassis using Remote terminal software

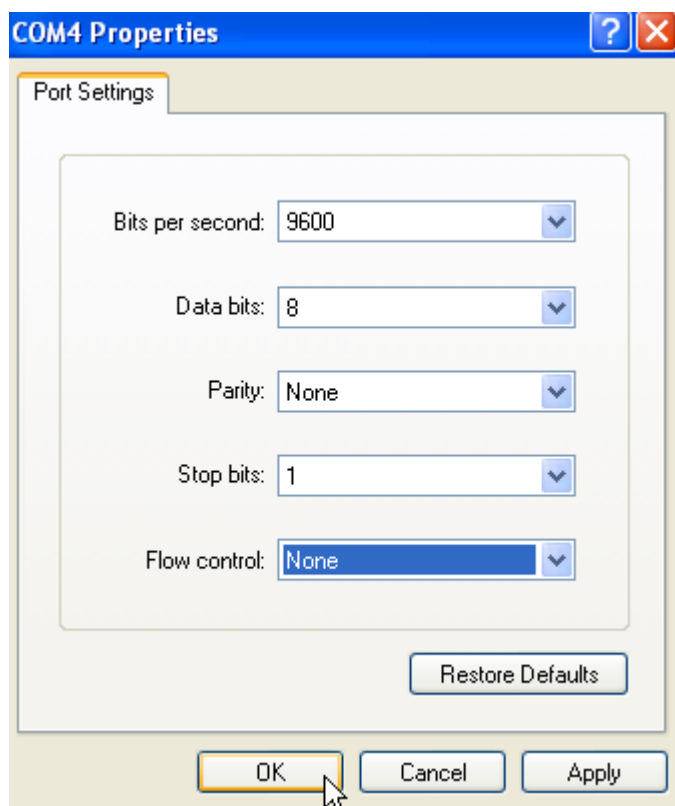
1. Open a program such as HyperTerminal. **Start/All Programs/Accessories/Communication/HyperTerminal**
2. If the program was launched for the first time an area code should be entered to proceed.



3. In the Connection Description field, enter a name for the connection. Click **OK**.



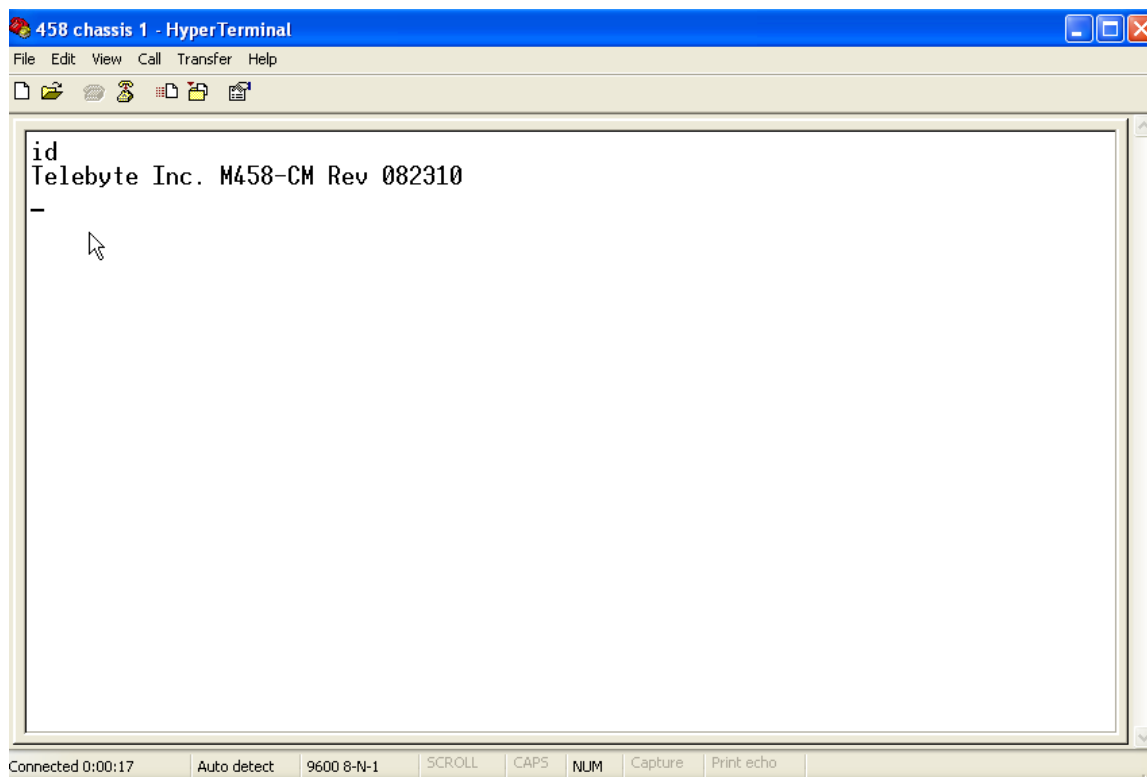
4. In the Connect using filed, select the virtual Com port which was created and configured. Then click **OK**.



5. The Port Settings should be:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Click OK to establish the connection.



6. In order to verify communication enter the command "id" and press the enter key. If data is received back, then communication is successfully established.

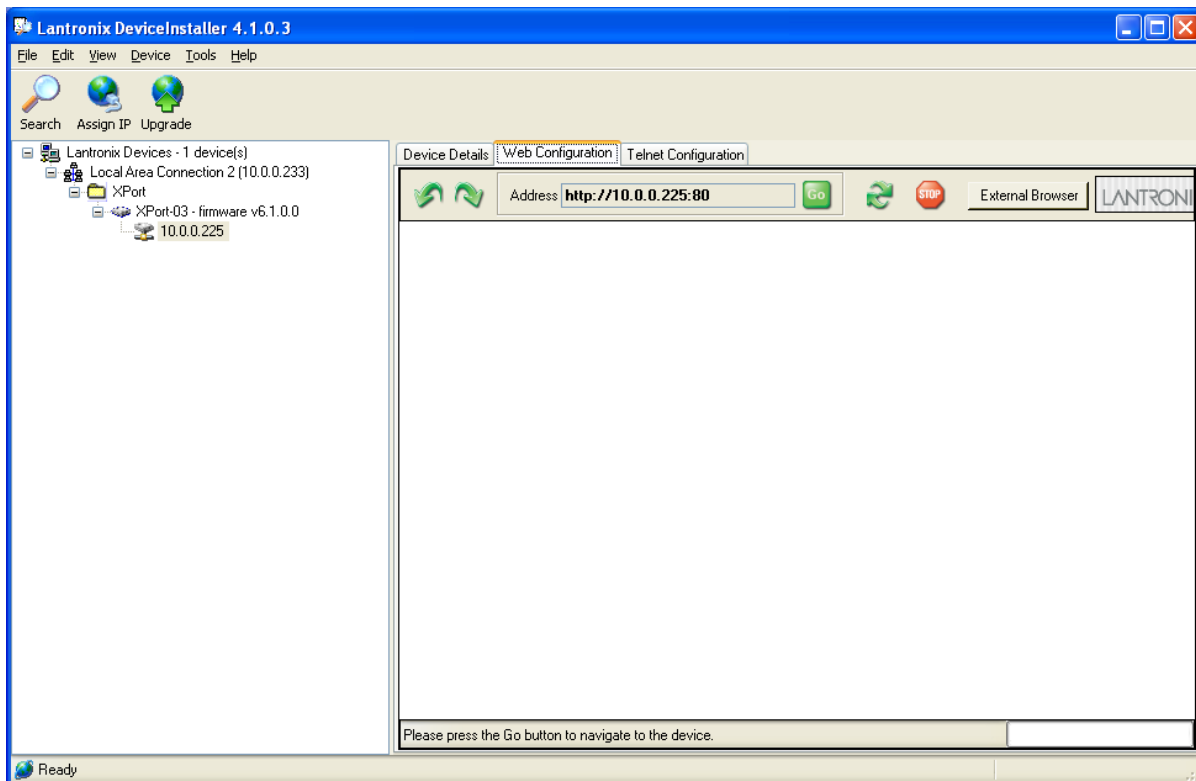
NOTE: The text "id" may not be displayed as seen in the above image if character echo is not enabled on the 458 chassis. Enter the command "ee" (echo enable). For a short list of commands, type the command "h" for help. For model specific commands, refer to the line module documentation.

NOTE: If multiple 458 chassis' are on the local area network, a virtual Com port should be configured and assigned to each device as described above. These devices can then be controlled through HyperTerminal (or equivalent software) independently.

Using the Web Interface to Change Settings

The DeviceInstaller application provides a Web interface to select or change settings for the XPort. To access the Web interface, do the following:

1. Launch the DeviceInstaller program. The DeviceInstaller control screen is displayed. Expand the XPort device on the left side of the screen and click on the IP address for the device. The right side of the screen changes to an interface with three tabs: Device Details, Web Configuration and Telnet Configuration. Select the **Web Configuration** tab.



2. Click the **Go** button to the right of the **Address** field. (Please note the address in this field may be entered directly into a Web browser for direct access without using the DeviceInstaller program).
3. The Password screen is shown. If required, enter the Username and Password required. Click **OK**. The Device Server Configuration Manager screen is displayed.

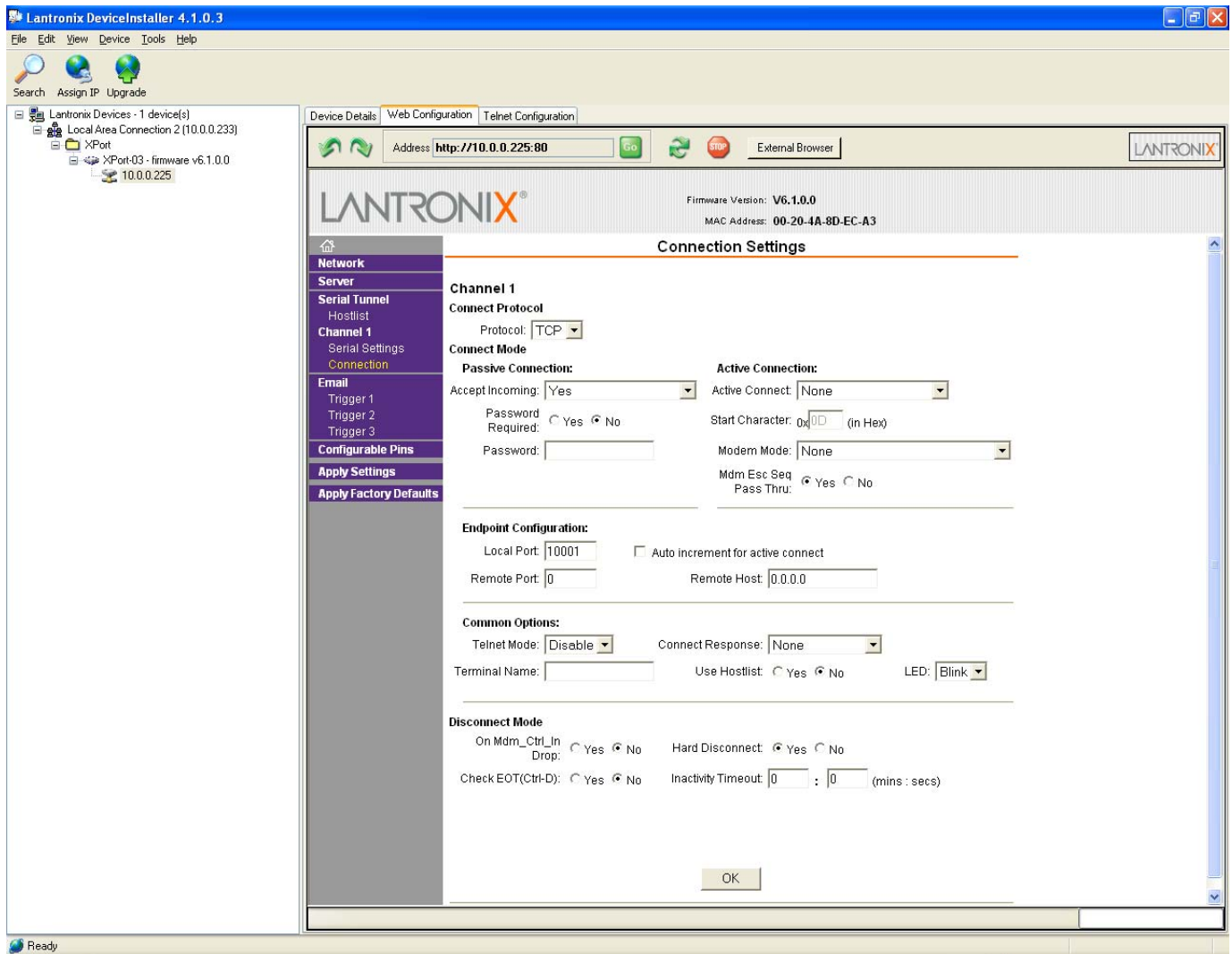


Use the menu on the left side of the screen to navigate.

Local Port Setting

To ensure the local port setting matches the one entered when configuring the virtual COM port, do the following:

1. Click on **Connection** under the Channel 1 section. The Connection Settings screen appears.



2. In the Endpoint Configuration section, enter **10001** in the **Local Port** field. Click **OK**.
3. The message “**Done!**” is displayed to the right of the OK button at the bottom of the screen. When this message disappears, click **Apply Settings** on the left-side menu bar. A message appears indicating the settings are being saved and a progress bar is shown. When the update to the transceiver is complete, the Device Server Configuration Manager screen is displayed.

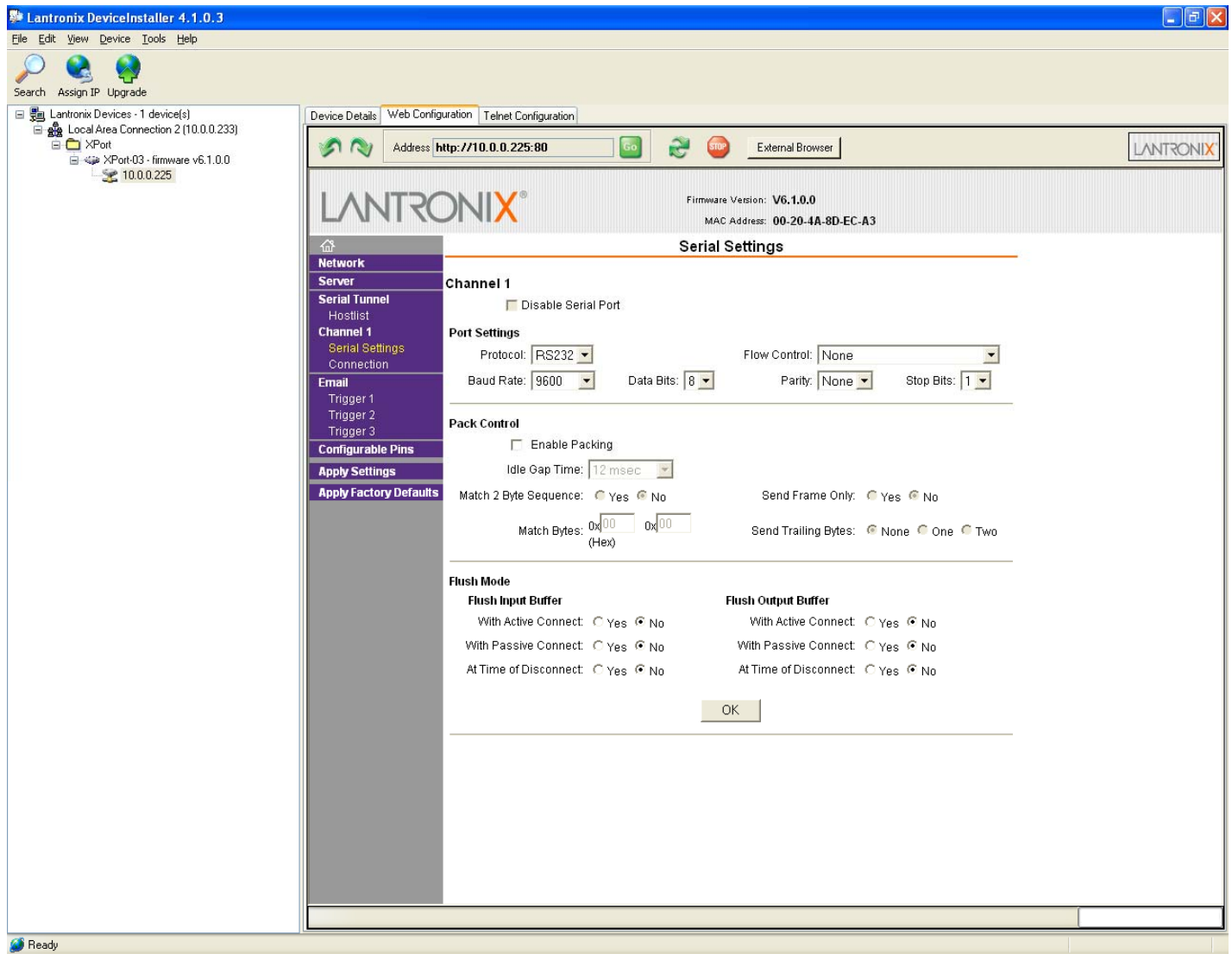
Selecting/Setting Baud Rate

The Baud Rate settings used with the terminal emulator program must match the settings in the 458-3SLB and the transceiver. Set the Baud Rate on the 458-3SLB using the keypad controls (refer to section 6.0 Keypad Controls). Set the Baud Rate for the transceiver using the DeviceInstaller program or a Telnet Connection. Both methods are explained in this section.



Set Baud Rate for Transceiver Using the DeviceInstaller

1. Select the **Serial Settings** option on the left side of the screen under Channel 1. The Serial Settings screen appears.



2. Select the desired Baud Rate from the Port Settings section. Click **OK**. The message “**Done!**” is displayed to the right of the OK button at the bottom of the screen. When this message disappears, click **Apply Settings** on the left-side menu bar. A message appears indicating the settings are being saved and a progress bar is shown. When the update to the transceiver is complete, the Device Server Configuration Manager screen is displayed.



Configuring and Controlling the Transceiver Using a Telnet Connection

1. Select **Windows/Start/Run**. The Run window is shown.
2. Enter **arp -s <IP address> <MAC address>**. Example: arp -s 172.16.21.241 00-20-4A-95-B0-E6
3. Enter **telnet <IP address> 1**. Example: telnet 172.16.21.241 1
4. Enter **telnet <IP address> 9999**. Example: telnet 172.16.21.241 9999
5. There will be a 5 second window to Press the Enter key. If the connection is lost repeat step 4.
6. The **Change Setup** menu will be displayed.



```
C:\WINDOWS\system32\cmd.exe
- Trigger 3
Serial trigger input: disabled
  Channel: 1
  Match: 00,00
Trigger input1: X
Trigger input2: X
Trigger input3: X
Message :
Priority: L
Min. notification interval: 1 s
Re-notification interval : 0 s

Change Setup:
0 Server
1 Channel 1
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit
Your choice ? 0

IP Address : (172) 172.(016) 16.(021) 21.(241) 241
Set Gateway IP Address (N) ?
Netmask: Number of Bits for Host Part (0=default) (16)
Set DNS Server IP addr (N) ?
Change telnet config password (N) ?

Change Setup:
0 Server
1 Channel 1
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit
Your choice ? 1

Baudrate (9600) ?
I/F Mode (4C) ?
Flow (00) ?
Port No (10001) ?
ConnectMode (C0) ?
Send '+++' in Modem Mode (Y) ?
Show IP addr after 'RING' (Y) ?
Auto increment source port (N) ?
Remote IP Address : (000) .(000) .(000) .(000)
Remote Port (0) ?
DisConnMode (40) ? (Telnet Com Port Cntrl Enabled)
FlushMode (00) ?
DisConnTime (00:00) ? :
SendChar 1 (00) ?
SendChar 2 (00) ?
Terminal name (<) ?

Change Setup:
0 Server
1 Channel 1
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit
Your choice ? 9

Parameters stored ...
```

Note: Values shown in brackets are the current values for the setting.

7. In the **Change Setup** menu, type **0** to configure the server. Press Enter key.

8. Enter the IP address in the standard format (e.g. 172.16.21.241). The remaining settings can be left at their default values.



9. When returned to the **Change Setup** menu, type option **1** to configure Channel 1.

Note: There are several Channel 1 options that can be configured. The ones to make note of are the following:

- a. **Baudrate:** This will be important to know for settings up serial communication in remote terminal software.
- b. **Port No:** This is the TPC port number to be used over a telnet connection. The default is **10001**.
- c. **DisConnMode:** The default value for this is **00**. Entering the value **40** for this parameter will allow controlling the unit remotely via telnet. This is indicated as **<Telnet Com Port Cntrl Enabled>**

Note: When the **DisConnMode** is set to **40**, there may be odd characters displayed if using remote terminal software such as HyperTerminal. It is recommended to only enable this feature if controlling it via telnet.

10. At the **Change Setup** menu, enter **9** to Save and exit.

The message "**Parameters stored. Connection to Host lost**" is shown. The Telnet window closes automatically and the update is now complete.

11. If telnet com port control has been enabled, it can be tested right from the command prompt.

12. Enter **telnet <IP address> <TCP port>**. Example: telnet 172.16.21.241 10001.

13. Enter **h** for help to display the list of commands for the 458-3SLB. This will verify communication.



RS-232 Mode Command List

- ① All Set card lengths, English/Metric mode and Echo enable/disable are maintained during power off in both RS-232 and IEEE modes. Manual control is enabled at power on.

id

Identify model no. and rev.

Read model no. and software revision code

re

Read last error

Read description of last error

ee

Echo enable

Echo all inputs and format output for terminal display



ed
Echo disable

Inputs not echoed and format output for user control program

h
Help RS232 command list

Read RS232 command list

cs:BR
Configure serial

Where BR = 300, 600, 1200, 2400, 4800, 9600 or 19200

cp:ADD
Configure 488

Where ADD = 1, 2, ... 29, 30 (No leading zeroes used)

Set Length command

sl:LM:H:LE,C

Where:

LM = Module slot number → 01 – 16

H = Channel number → 1 - 8

LE = Length (in feet)

C = Connect mode:

N = connect both CO and CPE ends.

P = connect CPE only CO is open.

O = connect CO only CPE is open.

Z = open both CO and CPE ends

Example: SL:01:1:2000,N sets channel 1 to 2000 ft for a line module in slot 1.

The connect mode may be used to create an “open loop” condition at either the CO or CPE ends, or both.



Set all channels on all boards in the system command

sl:all:LE,C

Example: sl:all:2000,n sets all channels in the system to 2000 ft

Set all channels on a range of boards command

sl:LM-LM:LE,C

Example: sl:01-03:2000,n sets all channels on boards 1, 2, and 3 to 2000 ft.

Set all channels on one board command

sl:LM:a:LE,C

Example: sl:01:a:2000,n sets all channels on the board in slot 1 to 2000 ft.

Read Length command

rl:LM:H

Example: rl:01:1 reports the length of channel 1 on the board in slot 1.

Read the Lengths of all channels on one board command

rl:LM:a

Example: rl:01:a reports the lengths of all channels on the board in slot 1.

Read the lengths of all channels on all boards command

rl:all

Example: rl:all reports the lengths of all channels on all boards



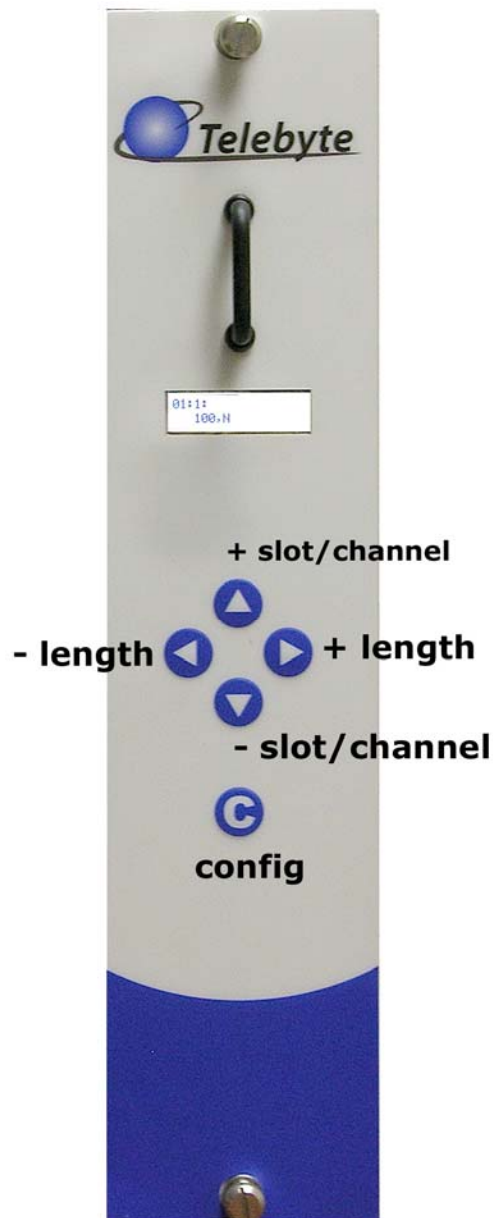
Read the serial number of one line module command

rs:LM

Read the serial numbers of all cards command

rs:all

6.0 Keypad Controls



*The sample screen above shows how the keypad controls are used.
The LCD displays the slot, channel, length and configuration type.
In this example the length for slot 01:channel 1, is set to 100.*



1. **Up Arrow:** increase slot/channel number
2. **Down Arrow:** decrease slot/channel number
3. **Left Arrow:** decrease length
4. **Right Arrow:** increase length
5. **C:** Config switch used to access second menu for communications settings such as RS232 baud rates, GPIB addresses, etc.

Baud Rates: 19200, 9600, 4800, 2400, 1200, 600

GPIB Addresses: 1 – 30