



"Results You Can Count On"

Model 458-LM-HD
ADSL2+ Local Loop Simulator
for North America

0315-0349 Rev. E
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Customer Support

Thank you for your purchase of the Telebyte Model 458-LM-HD ADSL2+ Local Loop Simulator, featuring 8 channels for simulation of 26 AWG PIC as specified in ANSI T1.417.

Contact Information:

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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.

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 www.telebytebroadband.com

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



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1.0 Introduction

The Model 458-LM-HD ADSL2+ Local Loop Simulator for North America simulates 26 AWG PIC as specified in T1.417. This plug and play line module provides seven channels (2 - 8) with loop lengths from 0 to 30,000 ft, in 2,000-ft increments. There is one high-resolution channel (1) that provides 250-foot increments from 0 to 31.75 kft, for a total of eight channels per line module.

Features:

- Simulates 26 AWG PIC as specified in ANSI T1.417
- Bandwidth to 4.5 MHz
- 8 channels per line module
 - Channel 1: loop lengths programmable from 0 to 31,750 ft in 250-ft increments
 - Channel 2 - 8: loop lengths programmable from 0 to 30,000 ft in 2,000-ft increments
- Plugs into our Model 458-CC-16 (16-slot) or 458-3SLB (3-slot) chassis
- Channel-to-channel isolation up to 90dB
- Ability to open loop at either end of any channel



Figure 1: Front View of Model 458-LM-HD. Both the front and rear of the line module have 8 RJ-45 connectors.



2.0 Specifications

2.1 458-LM-HD

Product Specifications 458-LM-HD	
Simulation	Accurately simulates attenuation and impedance Full bidirectional operation at all specified frequencies 26 AWG PIC as specified in ANSI T1.417
Bandwidth	DC to 4.5 MHz
Attenuation Accuracy (when source and load impedances are 100 ohms)	MAE < 1 dB 25 kHz to 4.5 MHz +/- 1 dB channel-to-channel uniformity
Maximum Attenuation	>90dB
Impedance Accuracy	Typically +/- 10% 25 kHz to 4.5 MHz
Maximum Voltage Tip – Ring	200 V
Maximum DC Current	130 mA
Connectors	8 RJ-45's on front, 8 RJ-45's on back

2.2 458-3SLB

Product Specifications (Chassis and Control Module)	
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	[2U] 19 in W x 22 in D x 3.47 in H (482.6 mm W x 558.8 mm D x 88.1 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 one, two or three 458 Line Modules or one 458-RT



2.3 458-CC-16/458-CM

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

Specifications are subject to change without notice. Made in USA.

- Detailed information about the operation of the 458-3SLB and 458-CC-16/458-CM can be found in the reference manuals for those products. Only information unique to the 458-LM-HD is provided in this manual.



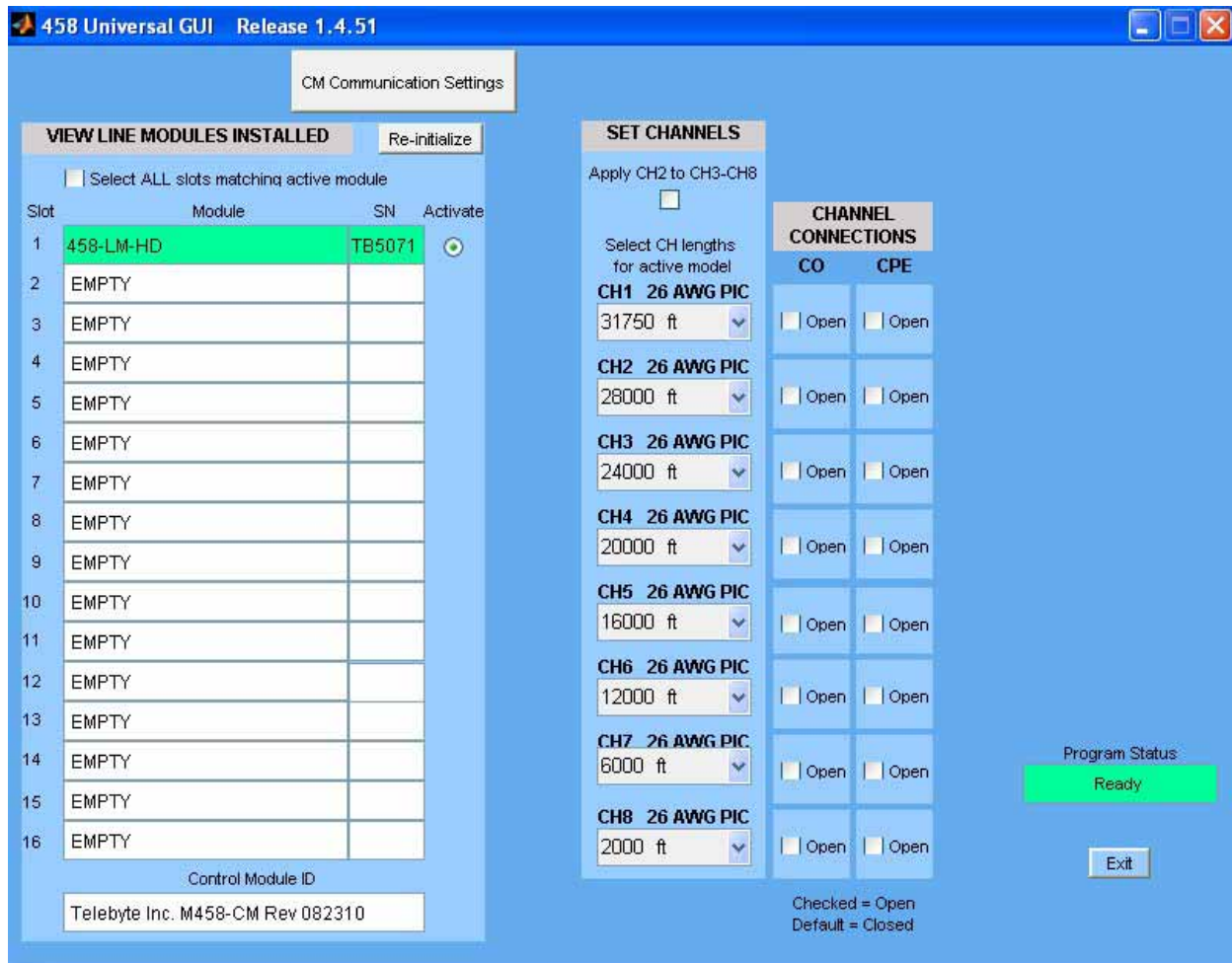
3.0 Control

The Model 458-LM-HD can be controlled three ways: via RS-232 and IEEE488 Remote Commands, our 458 Universal GUI interface or the LCD display and push buttons on the front panel of our 458-3SLB or 458-CM.

3.1 Remote Commands

Only information unique to the 458-LM-HD is provided in this manual. Refer to the 458-3SLB or 458-CC-16/458-CM manuals for common commands used with this product.

3.2 Graphical User Interface



➤ Refer to the 458 Universal Graphical User Interface manual for more information.



3.3 LCD Display/Front Panel

Basic Operation

Make selections by pushing the UP, DOWN, LEFT and RIGHT arrow buttons on the front panel. The LCD Display shows the choices made. Refer to the chassis manual for additional details.

Step One – Select Slot/Channel

- Navigate to the desired slot/channel in the 458-3SLx (3-Slot) Chassis or 458-CC16/458-CM (16-Slot) Chassis using the UP or DOWN arrows.

Step Two – Select Increment

- Step through the allowable lengths for the current slot/channel using the LEFT or RIGHT arrow buttons.