Telebyte

"Results You Can Count On"

Model 458-LM-A8-30
Model 458-LM-A8-30+
Multi-Standard Local Loop Simulator

Rev. C
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Customer Support

Thank you for your purchase of the Telebyte Model 458-LM-A8-30 (or 458-LM-A8-30+) Multi-Standard Local Loop Simulator, featuring 30 MHz bandwidth and 8 loop simulation channels.

Contact Information:

Telephone		**E-mail/Internet**
General:	631-423-3232	support@telebytebroadband.com
Technical support:	800-835-3298	sales@telebytebroadband.com
Fax:	631-385-8184	www.telebytebroadband.com

Mail

Telebyte, Inc.
355 Marcus Blvd
Hauppauge, NY 11788

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 www.telebytebroadband.com

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

1.0 Introduction

This manual provides information for the Model 458-LM-A8-30 and the Model 458-LM-A8-30+ Multi-Standard Local Loop simulator. The main difference between these two units is found in the frequency band. Here is a summary of the features of these products.

458-LM-A8-30 Features:

- Bandwidth to 30 MHz
- Simulates 26 AWG PIC as specified in ANSI T1.417
- Ideal for testing ADSL, ADSL2+, VDSL, VDSL2 modems/DSLAMs
- 8 channels per line module
- Loop lengths programmable from 0 to 15,000 ft in 1,000-ft increments
- MAE < 1 dB (25 kHz to 30 MHz)

458-LM-A8-30+ Features:

- Bandwidth to 30 MHz
- Simulates 26 AWG PIC as specified in ANSI T1.417
- Simulates 26 AWG PIC as specified in G.991.2 Annex A
- Ideal for testing G.SHDSL, E-SHDSL, ADSL, ADSL2+, VDSL, VDSL2 modems/DSLAMs
- 8 channels per line module
- Loop lengths programmable from 0 to 15,000 ft in 1,000-ft increments
- MAE < 1 dB (1 kHz to 30 MHz)

Figure 1: Front View of Model 458-LM-A8-30. Both the front and rear of the line module have 8 RJ-45 connectors.

2.0 Specifications

2.1 458-LM-A8-30

Product Specifications	
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 30 MHz
Attenuation Accuracy (when source and load impedances are 100 ohms)	MAE < 1 dB (25 kHz to 30 MHz)
Maximum Attenuation	90 dB
Impedance Accuracy	Typically +/- 10%
Maximum Voltage Tip – Ring	200 V
Maximum Current	130 mA
Connectors	8 RJ-45's on front, 8 RJ-45's on back

2.2 458-LM-A8-30+

Product Specifications	
Simulation	• Accurately simulates attenuation and impedance • Full bidirectional operation at all specified frequencies • 26 AWG PIC as specified in ANSI T1.417 • 26 AWG PIC as specified in G.991.2 Annex A
Bandwidth	DC to 30 MHz
Attenuation Accuracy (when source and load impedances are 100 ohms)	MAE < 1 dB (1 kHz to 30 MHz)
Maximum Attenuation	90 dB
Impedance Accuracy	Typically +/- 10%
Maximum Voltage Tip – Ring	200 V
Maximum Current	130 mA
Connectors	8 RJ-45's on front, 8 RJ-45's on back

2.3 458-3SLB

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

2.4 458-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 specific to the 458-LM-A8-30 and 458-LM-A8-30+ is provided in this manual.

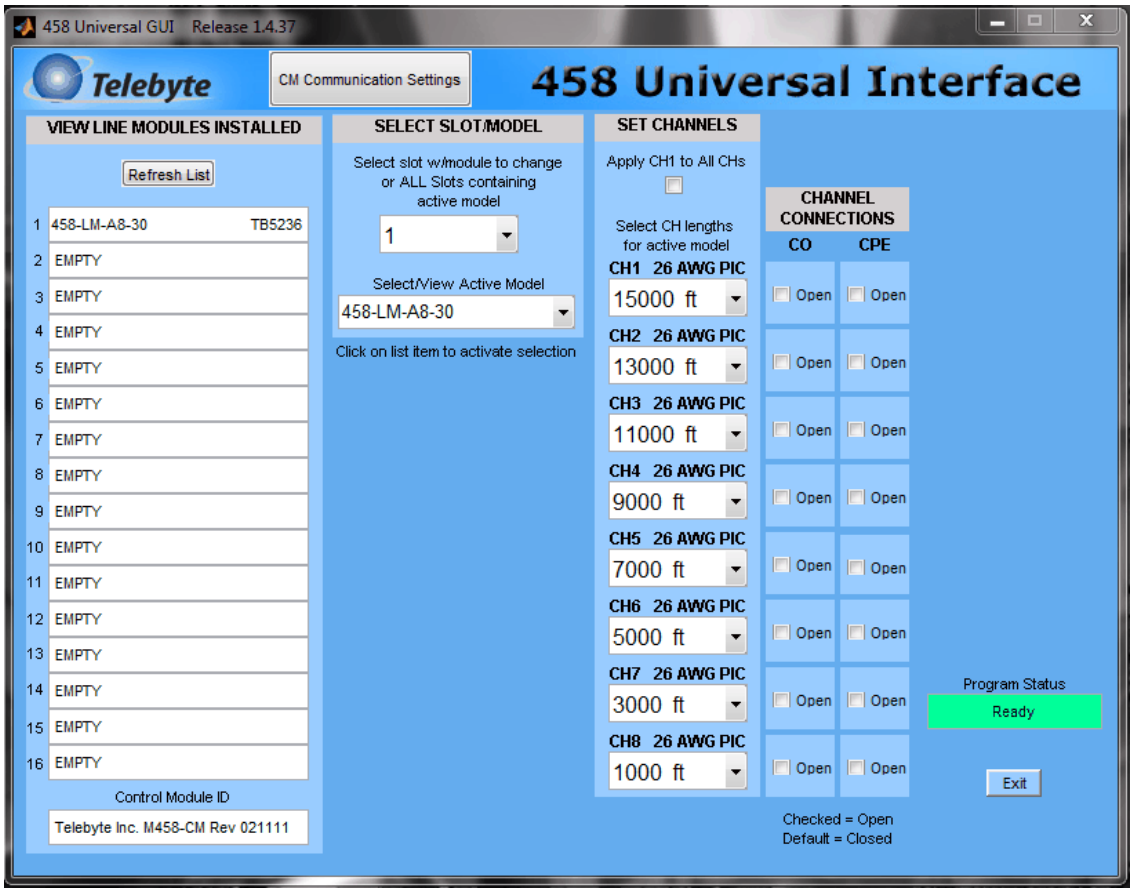
3.0 Control

The Model 458-LM-A8-30 (A8-30+) can be controlled three ways: Via RS-232 and IEEE488 Remote Commands, our 458 Universal GUI interface or the LCD display on the front panel of our 458-3SLB (3-Slot Chassis) or 458-CC-16/458-CM (16-Slot Chassis & Control Module). Refer to the individual manuals for these chassis for more information.

3.1 Remote Commands

Only information specific to the 458-LM-A8-30 (A8-30+) is provided in this manual. Refer to the 458-3SLB or 458-CC-16/458-CM manuals for common commands used with this product.

3.2 458 Universal GUI



- Refer to the 458 Universal Graphical User Interface Reference Manual for more information.

3.3 LCD Display

3.3 LCD Display

- Select the slot in the 458-3SLB (3-Slot) Chassis or 458-CC16/458-CM (16-Slot) Chassis using the UP or DOWN arrows on the LCD display (e.g., when using our 3-slot chassis: slot 1 top, slot 2 middle, slot 3 bottom).

- Select the length for the current slot using LEFT or RIGHT arrow buttons. The length will increment in 1000-ft steps.