

SmartLog V4 Installation, Operation and Maintenance



Made in America



Figure 1. EMIT SmartLog V4

Description

The EMIT SmartLog V4 is designed for fast, frequent, and accurate testing of ESD personnel grounding items. By touching the electrode button once the SmartLog V4 tests the resistance path limits of the worn wrist strap and both worn ESD footwear independently within one second. (Or worn ESD garment if it is used as part of personnel grounding path). Test results are electronically stored in the SmartLog V4 and are easily downloaded to a PC for logging records and evaluation. This product can be used as one of the tools to fulfill the ANSI/ESD S20.20 section 7.3 "Compliance Verification Plan".

Paperless data can enhance operator accountability immediately identifying problems while reducing logging and auditing costs. There is no need to dedicate a computer for each test station. The SmartLog V4 is a complete system including all required components. Operator identification can be accomplished by using the keypad, swiping a barcode card, or waving a proximity card (verify compatibility with the factory).

The SmartLog V4 can test either single or dual-wire wrist straps; the split footplate design allows for individual footwear testing all in one test. If a resistance path is below or exceeds the set limits failure will be noted via audio and visual alarms. Passing tests can enable a relay for automated door openers. However, if the user desires to test the wrist strap and ESD footwear separately this can be accomplished. The wrist strap test is activated by inserting wrist strap plug into the designated jack. See [TEAM5 Operation Manual](#) for more information on setting individual test requirements.

As many as 32 SmartLogs can be daisy-chained and connected to one computer allowing data to be collected to one central computer for all SmartLogs. The SmartLog V4 can also be networked to a company's Intranet with the optional 50461 Ethernet Adapter. The SmartLog V4 is calibrated to NIST traceable standards.

The SmartLog V4's default Wrist Strap test range is 1 - 10 megohms, and the default Footwear test range is 1 - 35 megohms. The ranges are easily adjusted.

TEAM5 Software

Use the powerful versatile TEAM5 Software to collect and analyze records.

- 1) Specify tests and shifts for each employee in database
- 2) Auto or manual polling of data to computer
- 3) Auto archive and network data posting
- 4) Allow data to be saved and stored automatically
- 5) Data retrieval at selectable time intervals
- 6) Allow easy data analysis
- 7) [Click Here](#) to view the TEAM5 Comparison Chart

See [TEAM5 Operation Manual](#) for more information.

ESD Association Information

"Compliance verification should be performed prior to each use (daily, shift change, etc.). The accumulation of insulative materials may increase the foot grounder system resistance. If foot grounders are worn outside the ESD protected area testing for functionality before reentry to the ESD protected area should be considered." ESD SP9.2 APPENDIX B - Foot Grounder Usage Guidance

"Process monitoring (measurements) shall be conducted in accordance with a Compliance Verification Plan that identifies the technical requirements to be verified, the measurements limits and the frequency at which those verifications shall occur...Compliance verification records shall be established and maintained to provide evidence of conformity to the technical requirements.

The test equipment selected shall be capable of making the measurements defined in the Compliance Verification Plan." (ANSI/ESD S20.20-2007) section 7.3

ANSI/ESD S20.20 Table 1 Flooring-Footwear Systems Technical Requirements Recommended Range "less than 3.5 x 10E7 ohms measured per ANSI/ESD STM 97.1".

"Typical test programs recommend that wrist straps that are used daily should be tested daily. However, if the products that are being produced are of such value that knowledge of a continuous, reliable ground is needed, and then continuous monitoring should be considered or even required." (ESD Handbook ESD TR 20.20 section 5.3.2.4.4)

Carefully unpack the SmartLog. The SmartLog comes ready to install without any changes to the clock's configuration.

If multiple SmartLogs are to be installed in a daisy-chain configuration refer to page 5 for instructions.

Please see the following technical bulletins for more information on the SmartLog V4.

Document No.	Description
TB-6546	Ethernet Adapter
	TEAM5 Software Operation Manual

The EMIT SmartLog V4 is available in four models:

Item	Description
50741	SmartLog V4, N. America
50743	SmartLog V4, Asia
50747	SmartLog V4, Europe
50751	SmartLog V4, Europe, 10mm Adapter

SMARTLOG ACCESS CONTROLLER

The EMIT SmartLog Access Controller is designed to control the access to areas where ESD testing is not required or has already taken place (i.e. supply cage, gowning room, etc.). The built-in relay terminal allows compatibility with electro-magnetic doors, turn styles or light towers.

When used in conjunction with the SmartLog V4, a user with a PASS condition can use the SmartLog Access Controller for entry by simply entering their PIN or swiping their badge.

The EMIT SmartLog Access Controller is available in three models:

Item	Description
50752	SmartLog Access Controller, N. America
50753	SmartLog Access Controller, Asia
50754	SmartLog Access Controller, Europe

NOTE: SmartLogs are not designed to work in high humidity environments above 70 RH%.

Packaging

SMARTLOG V4

- 1 SmartLog V4, Wrist Strap / Footwear Tester, and Numeric Keypad on mounting plate
- 1 Dual Independent Foot Plate
- 1 Stereo Cable for Dual Foot Plate
- 1 AC Adapter 12VDC 500mA center pos.
- 1 DB9 Serial Adapter
- 1 25' RS-232 Non-inverted Data Cable
- 4 Mounting Anchors
- 4 Mounting Screws
- 1 Banana-to-Ring Terminal ground Cable
- 1 10mm Adapter (50751 only)

SMARTLOG ACCESS CONTROLLER

- 1 SmartLog Access Controller and Numeric Keypad on mounting plate
- 1 AC Adapter 12VDC 500mA center pos.
- 4 Mounting Anchors
- 4 Mounting Screws

Features and Components

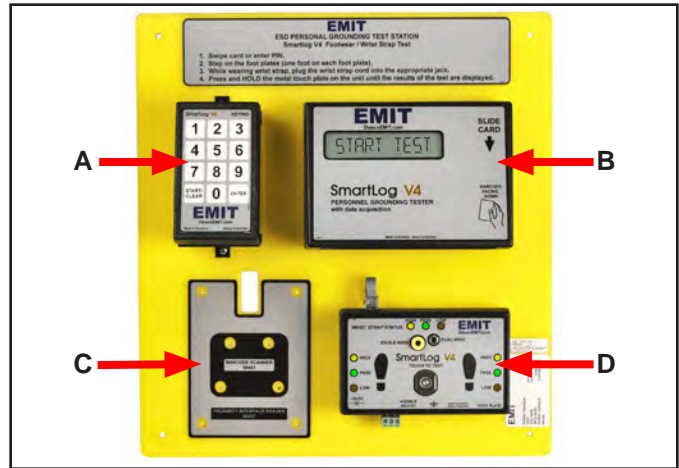


Figure 2. SmartLog V4 features and components (Items 50741, 50743, 50747)

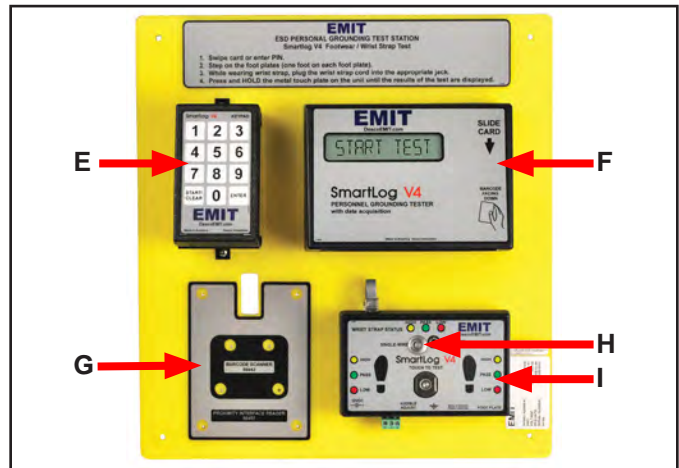


Figure 3. SmartLog V4 features and components (Item 50751)

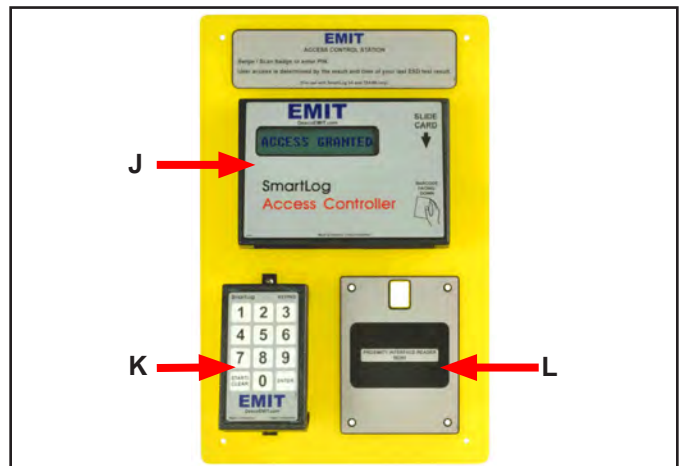


Figure 4. SmartLog Access Controller features and components (Items 50752, 50753, 50754)

- A. Numeric Keypad:** Inputs numeric IDs.
- B. Infrared Barcode Reader:** Reads Code 39 and Code 128 Barcode.
- C. Accessory Mount:** The following accessories may be mounted at this location:
50443 Laser Barcode Scanner
50461 Ethernet Adapter
Proximity Interface (contact manufacturer for more info)
- D. SmartLog V4 Wrist Strap / Footwear Tester:**
Default wrist strap test range is 1 - 10 megohms. The default footwear test range is 1 - 35 megohms. The default test ranges may be changed to suit personal ground device testing. See Technical Bulletin [TB-6564](#) for instructions.
- E. Numeric Keypad:** Inputs numeric IDs.
- F. Infrared Barcode Reader:** Reads Code 39 and Code 128 Barcode.
- G. Accessory Mount:** The following accessories may be mounted at this location:
50443 Laser Barcode Scanner
50461 Ethernet Adapter
Proximity Interface (contact manufacturer for more info)
- H. 10mm Snap Adapter:** Place 10mm wrist cord here to test wrist strap.
- I. SmartLog V4 Wrist Strap / Footwear Tester:**
Default wrist strap test range is 1 - 10 megohms. The default footwear test range is 1 - 35 megohms. The default test ranges may be changed to suit personal ground device testing. See Technical Bulletin [TB-6564](#) for instructions.
- J. Infrared Barcode Reader:** Reads Code 39 and Code 128 Barcode.
- K. Numeric Keypad:** Inputs numeric IDs.
- L. Accessory Mount:** The following accessories may be mounted at this location:
50443 Laser Barcode Scanner
50461 Ethernet Adapter
Proximity Interface (contact manufacturer for more info)

Configuring the Clock, Mounting the Unit, and Cable Connections

A. Clock's Baud Rate, ID, Parity, Daylight Option and Port Expand (see Figure 6)

1. Plug the power supply into the unit and then to the appropriate AC source. Refer to Figure 6 to locate the power input jack. The SmartLog will cycle through a self diagnostic program. The time and date will appear on the screen when the diagnostics is complete. Do not continue until this step has been completed.

NOTE: If any of the below settings are not correct, proceed to step 2 and press the Advance button until the correct value appears on the display.

Power Requirement: It is highly recommended that these units are installed on power lines separate from other devices. The clock should not be installed on the same power line with devices containing electric motors. These units have a built-in

self-healing fuse and surge, spike, and noise protection. The clock should be powered on a dedicated electrical circuit. If you are located in an area where there are frequent electrical storms, power surges, blackouts, or other similar problems we strongly recommend that the unit be placed on a surge protector.

2. After the self diagnosis press the MENU button six times. If you do not press the Menu button within 20 seconds the clock will exit out of the set-up menu and will need to be reset by disconnecting then reconnecting the power supply. Refer to Figure 6 for button locations.
3. Baud Rate should be set at 9600 (factory default). Press Enter for the next screen.
4. Parity should be set for ODD (factory default). Press Enter for next screen.
5. The SmartLog ID is a 2 digit field with valid I.D. numbers 00 through 63. Each SmartLog should have a different I.D. number if they are connected to the same communication line. The SmartLog should be numbered sequentially starting with 00, so that automatic polling in the software will not be interrupted.
6. The Daylight Option enables daylight savings in the clock.
7. Port Expand should be set to YES (factory default).
8. Press Enter button once more to cycle to the next setting before hitting the Menu button to exit.

NOTE: The setting will not change if you do not cycle to the next setting by hitting the Enter button.

B. Terminator Jumper, RS-485 Switch, RS-232 Switch and Relay Terminal

1. The RS-485 is set default on SLAVE position (right side) and does not need to be switched unless the unit is in a daisy-chain. For units in a daisy-chain, set the RS-485 of the first and last SmartLog to MASTER (left position). All others in between need to be set to SLAVE.
2. The Relay Terminal connections can be made on the back of the SmartLog (see Figure 5). They can be used to control doors, gates, etc. The relay terminal is limited to a maximum of 1A @ 30VDC or .5A @ 125VAC.

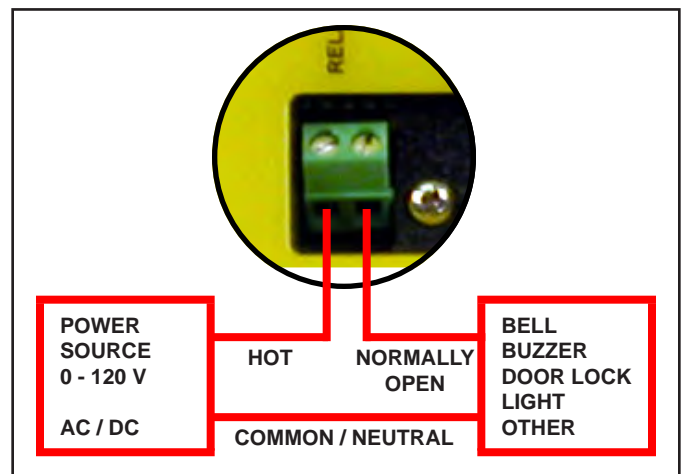


Figure 5. Relay installation

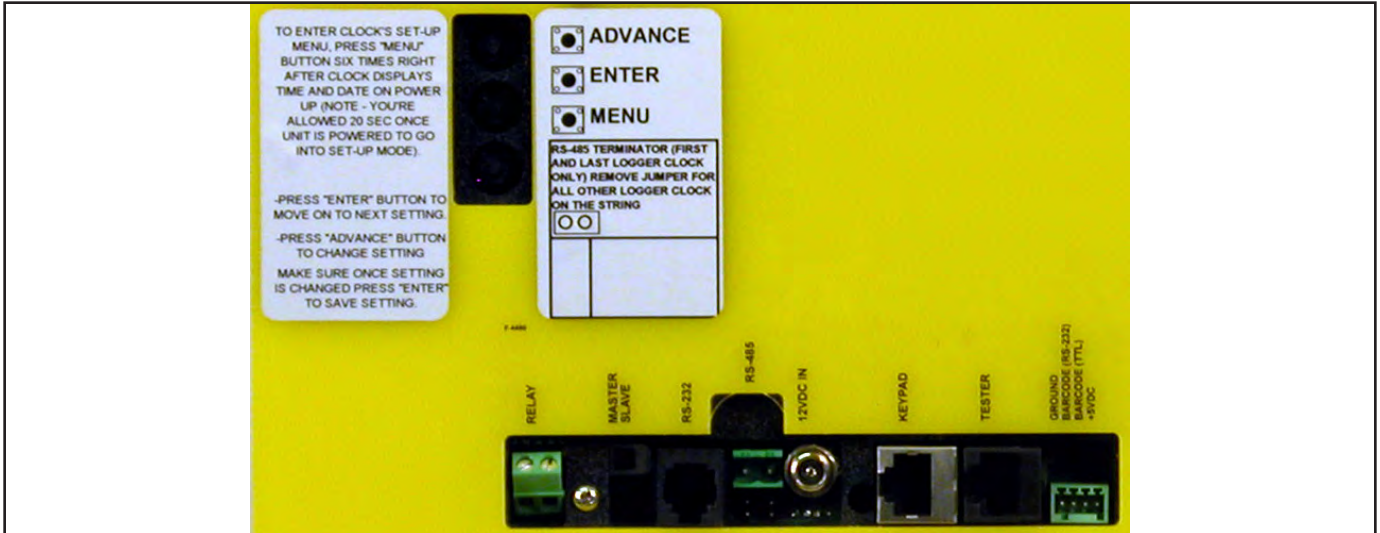


Figure 6. Back-side of SmartLog V4 plate

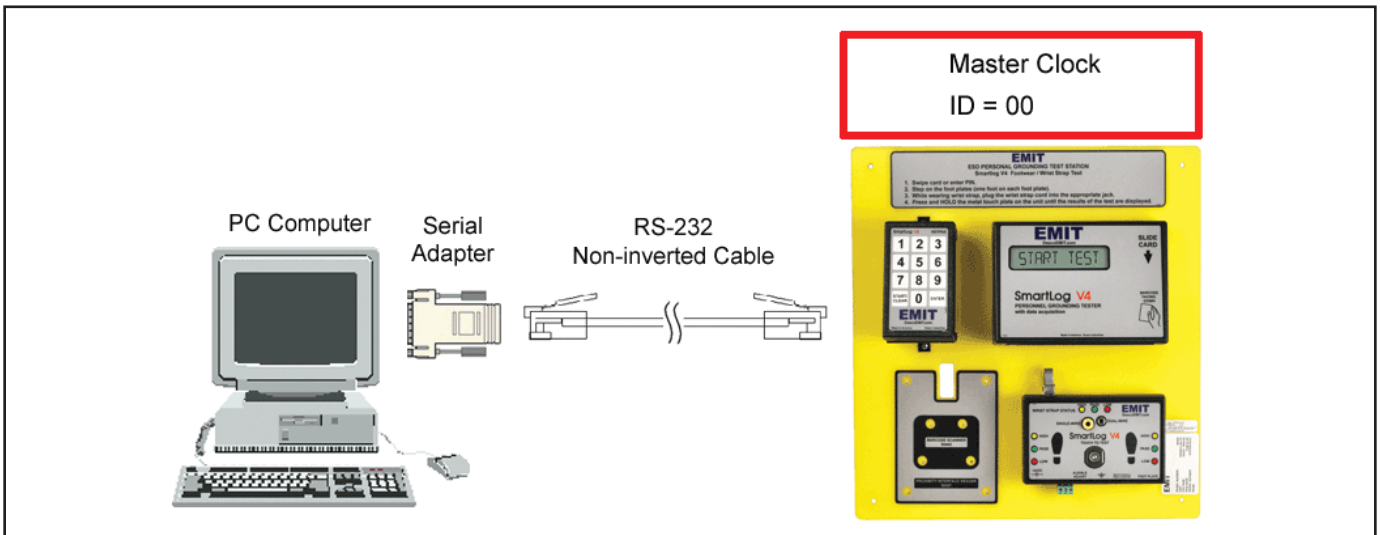


Figure 7. Connecting one SmartLog V4

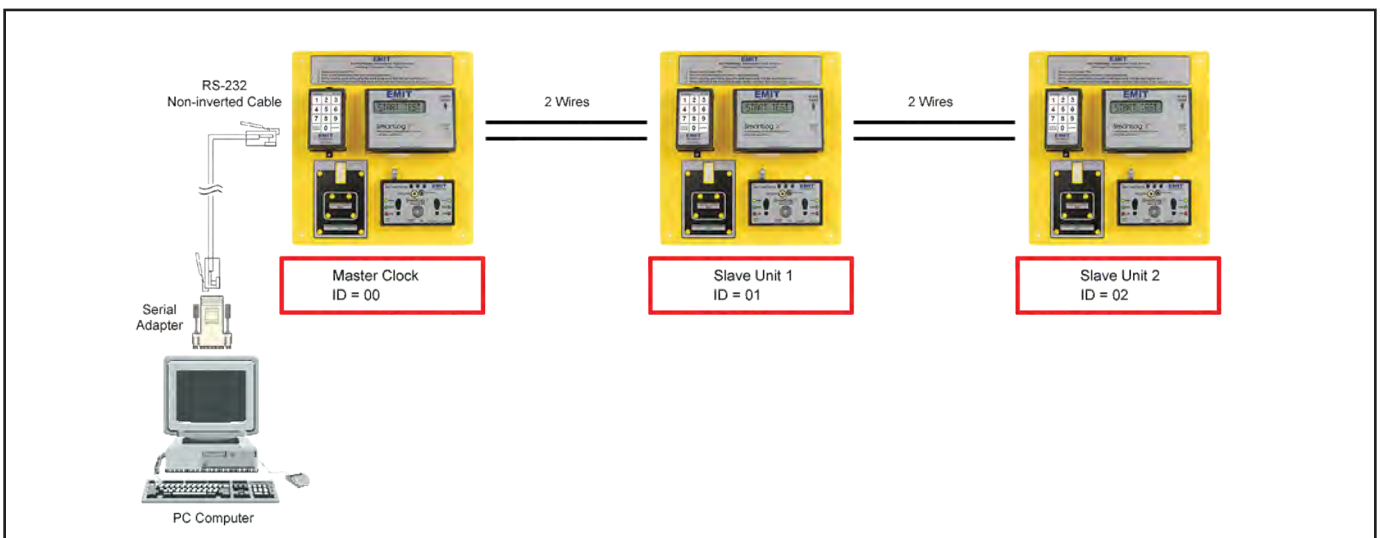


Figure 8. Connecting more than one SmartLog

3. The RS-232 Interface is described by the Electronic Industries Association (EIA) as EIA-232 or RS-232. Special consideration should be used when installing the communications cable. Keep a 3 feet separation distance from any EMF source (power wires, fluorescent lights, etc). The cable length shall not exceed 50 feet from PC to unit. The EMIT 50461 Ethernet Adapter should be used if distance requirements exceed 50 feet.

C. Connecting the SmartLog

NOTE: Both the SmartLog and computer should be turned off during the following procedures.

Connecting One SmartLog V4 (See Figure 7)

1. Connect the Serial Adapter to the desired PC.
2. Connect one end of the provided RS-232 Non-inverted Data Cable to the Serial Adapter.
3. Connect the other end of the RS-232 Non-inverted Data Cable to port labeled "RS-232" on the SmartLog.

NOTE: Ensure that the SmartLog ID is set to 00 and its terminator jumper is left open.

Connecting More Than One SmartLog (See Figure 8)

The following procedure provides an example on connecting 3 SmartLogs.

1. Connect the Serial Adapter to the desired PC.
2. Connect one end of the provided RS-232 Non-inverted Data Cable to the Serial Adapter.
3. Connect the other end of the RS-232 Non-inverted Data Cable to clock port labeled "RS-232" on the SmartLog.
4. Set first SmartLog ID to 00.
5. Connect one end of a pair of 18 gauge wires to the clock port labeled "RS-485" on the first SmartLog.
6. Connect the other end of the pair of 18 gauge wires to the clock port labeled "RS-485" on the second SmartLog.
7. Set second SmartLog ID to 01.
8. Connect one end of another pair of 18 gauge wires to the clock port labeled "RS-485" on the second SmartLog.
9. Connect the other end of the same pair of 18 gauge wires to the clock port labeled "RS-485" on the third SmartLog.
10. Set second SmartLog ID to 02.

D. Mounting the SmartLog

Use the provided anchors and screws to mount the entire SmartLog plate. Be sure to place the SmartLog at a height where all operators can clearly see the display and perform the necessary tests.

When the hardware installation has been completed, refer to the [TEAM5 Operation Manual](#) for installation. This manual will take you through the necessary steps to begin using your new SmartLog system.

Troubleshooting

Problem: The host computer is not recognizing the SmartLog.

- a. Verify that the cable from the computer to the SmartLog is properly connected. The cable should be flat non-inverted (See Figure 7).
- b. Verify that the communication setup on the clock is 9600 baud rate, parity ODD. Refer to the instructions on back of SmartLog plate to enter configuration mode.
- c. If there are more than 2 units, verify that their IDs are unique by entering the SmartLog configuration mode.
- d. Contact your local IT department to verify that the computer's comport is working properly.
- e. Make sure that the SmartLog LED's are blinking during data transmission. If they are not blinking or remain on all the time, please contact EMIT technical support at (909) 664-9980 for further support.

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Limited Warranty

EMIT expressly warrants that for a period of five (5) years from the date of purchase EMIT SmartLogs will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a credit for purchase of replacement EMIT products, or, at EMIT's option, the product will be repaired or replaced free of charge. If product credit is issued, the amount will be calculated by multiplying the unused portion of the expected one year life times the original unit purchase price. Call our Customer Service Department at 909-664-9980 (Chino, CA) for a Return Material Authorization (RMA) and proper shipping instructions and address. Please include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the EMIT factory. Warranty replacements will take approximately two weeks.

If your unit is out of warranty, call our Customer Service Department at 909-664-9980 (Chino, CA) or for a Return Material Authorization (RMA) and proper shipping instructions and address. EMIT will quote repair charges necessary to bring your unit up to factory standards.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will EMIT or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.