

# WARRANTY

All fiber optic transmission systems, products and accessories manufactured by Liteway, Inc. and its subsidiaries are fully tested prior to shipment and are warranted against defective materials and workmanship for a period of two full years from the date of the original shipment. Should a problem occur, a Return Material Authorization Number (RMA) must be obtained from Liteway Inc. at (516) 931-2800 and the item returned to Liteway, Inc. 166 Haverford Road, Hicksville, NY 11801, USA, prepaid. Liteway Inc. will then, at its option repair or replace the defective item.

Liteway, Inc. maximum liability under this warranty is limited to the cost of the defective item only. No contingent liabilities of any kind are either assumed or implied.

Any items returned to Liteway, Inc. that have been misused, abused, damaged, modified, connected or adjusted in any way contrary to the instructions furnished by Liteway, Inc. or repaired by unauthorized personnel will not be covered by this warranty. Any non-warranty repairs required will be quoted at the current rate for such services.



## Important Notices



### **CAUTION ! AVOID DIRECT EXPOSURE TO BEAM.**

All -5, -7, -8, and -9 Models use laser diodes. These solid-state laser diodes are located in the optical ports of these units. Laser diodes produce invisible radiation that may be harmful to human eyes. Never look directly into the optical port of any fiber optic unit designed to operate with single-mode optical fiber.

### **NOT FOR LIFE SUPPORT SYSTEMS**

Liteway, Inc. does not authorize or warrant any of its products or accessories for use in critical life support systems or applications of any kind.

# OPERATING INSTRUCTIONS

## Fiber Optic Telephone Transmission System

### TLLX-1001 TLPX-1001



The TLLX/TLPX1001 system consists of the TLPX1001 telephone set transceiver and TLLX1001 telephone line transceiver and is intended to connect a standard US telephone set (tone type only) to a standard US telephone line via two fiber optic conductors.

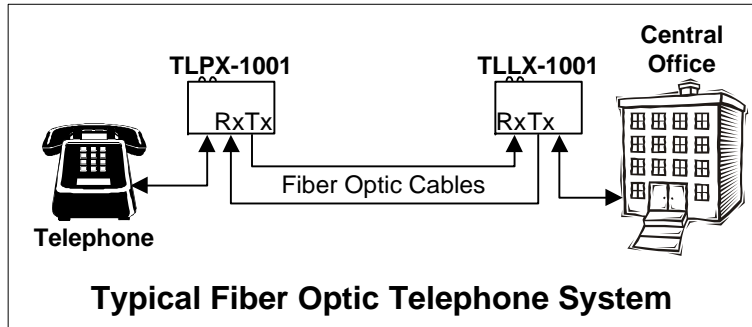
### Technical Specifications

Audio Bandwidth	300Hz to 3KHz typical
TLLX-1001 Compatibility	Standard US tone type telephone set
TLPX-1001 Compatibility	Standard US telephone line
Signal/Noise Ratio	50 dB minimum
Electrical Connector	Modular RJ11
Optical Loss Budget	10 dB typical
Optical Output	-16dBm typical
Operating Wavelength	850nm, 1300nm, or 1550nm
Fibers Accommodated	Multimode or Single-mode
Number of Fibers	2
Temperature Range	-35° to +75°C
Power Requirements	11-24 VAC/DC @350 mA max
Physical Size (mm)	5.0"(127)L x 1.0" (25.4)W x 3.0"(7)D

All specifications measured with 1Km of 62.5u multimode fiber and specifications are subject to change without prior notice.

# Operating Instructions

The diagram below shows the typical installation of the TLPX / TLLX-1001 fiber optic telephone transmission system.



Note that the TLPX-1001 connects to the telephone set (tone type only) and the TLLX-1001 connects to the telephone line, POTS, Plain Old Telephone System, only. PBX systems may not operate properly or require a special calibration procedure.

## Power Terminal Block Connections

Pin	Function
1	Alarm output for use with optional Alarm Sensing Unit ALM-1000. No other connections should be made to this terminal
2	+11 to 24 DC or AC Volts input
3	AC or DC (-) return (Common to Housing)

## Indicator Lights

Indicator	Lights when
Pwr	Proper power is present.
Alm	There is a loss of internal operating power.
Sig	TLPX1001: lights when a valid link is established with the companion TLLX1001
	TLLX1001: lights when the telephone set handset connected to the TLPX1001 is in the "off hook" position and a valid link is established

## Telephone Set and Telephone Line Connections

The telephone set and telephone line are connected by means of standard RJ11 modular connectors.

## Initial Setup and Alignment Instructions

After the initial installation the units must be adjusted to compensate for the unique losses in your fiber optic cables. This is a one-time

adjustment. There are two different procedures depending on your installation. (For PBX to PBX links, please see application note for a special calibration procedure.)

## Telephone to Telephone Line

1. Connect the TLPX-1001 and TLLX-1001 to each other with two fiber optic cables. Be certain the **Tx** optical ports of each unit are connected to the **Rx** optical ports of the companion unit. Connect the telephone set, but do not connect the telephone line.
2. Apply power to both units. Turn the **Gain** adjustment on both units fully counter clockwise.
3. Slowly adjust the **Gain** control on the TLPX-1001 until the telephone rings. Turn the Gain control counter clock wise 1/8 of turn beyond the point where the phone stops ringing.
4. Place in the "off-hook" mode. If the **Sig** indicator on the TLLX-1001 is not already lit, slowly adjust the **Gain** control on the TLLX-1001 until the **Sig** indicator just illuminates. Do not adjust the control further.
5. Place the telephone set in the "on-hook" mode. Connect the telephone line. The system is now ready for operation.

## Telephone to Telephone for an intercom use.

Using two TLPX-1001 units and two standard telephone sets as an intercom.

1. Connect both TLPX-1001 units together with fiber optic cable and connect a standard telephone to both TLPX-1001 units. For reference purposes call one side of the link "A" and the other "B".
2. Lift the telephone set connected to "A" and slowly turn the Level control on the TLPX-1001 at "B" (with the telephone at this location on hook) clockwise until the phone just rings. Do not turn further.
3. Replace the telephone at "A" and determine that the telephone at "B" stops ringing.
4. Lift the telephone set connected to "B" and slowly turn the Level control on the TLPX-1001 at "A" (with the telephone at this location on hook) clockwise until the phone just rings. Do not turn further.
5. Replace the telephone at "B" and determine that the telephone at "A" stops ringing.