picoLink Series

FEO-871p

Guide to Installation and Operation

M733-9900-100

HD/SD Electrical to Optical Converter

FEO-871p

Specifications may be subject to change.
Printed in Canada
July 2003

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Warranty Policies

Warranty Statement

Miranda Technologies Inc. warrants that the equipment it manufactures shall be free from defects in material and workmanship for a period of two (2) years from the date of shipment from the factory. If equipment fails due to such defects, Miranda Technologies Inc. will, at its option, repair or provide a replacement for the defective part or product.

Equipment that fails after the warranty period, has been operated or installed in a manner other than that specified by Miranda, or has been subjected to abuse or modification, will be repaired for time and material charges at the Buyer's expense.

All out-of-warranty repairs are warranted for a period of ninety (90) days from the date of shipment from the factory.

Miranda Technologies Inc. makes no other warranties, expressed or implied, of merchantability, fitness for a particular purpose or otherwise. Miranda's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement by Miranda, at its sole discretion.

In no event shall Miranda Technologies Inc. be liable for any incidental or consequential damages, including loss of profits.

Effective January 1, 2002

Warranty Exchange Policies

Miranda Technologies Inc. warrants that the equipment it manufactures shall be free from defects in materials and workmanship for a period of two (2) years from the date of shipment from the factory. If equipment fails due to such defects, Miranda will provide repair of the failed unit under the terms of the Miranda warranty.

If the equipment has been proven to be defective on arrival, Miranda will ship a new product in exchange, usually within 36 hours of factory notification.

If the equipment to be repaired is essential and the customer so requests, Miranda will, at its option, provide a service replacement or loaner part or product, usually within 36 hours of factory notification, weekends and holidays excluded.

All warranty exchange or loaner parts or products shall be shipped to the Buyer with a packing list clearly describing the items and stating the date of shipment. Repaired parts or products will be shipped to the Buyer with a similar packing list.

In the case of exchange, the defective products or parts must be returned to Miranda within fifteen (15) days from receipt by the customer of the exchange product.

In the case of a loaner, the loaned products or parts must be returned to Miranda within fifteen (15) days from receipt by the customer of the repaired equipment.

If the equipment is not returned within fifteen (15) days, as described for either exchanges or loans, A Rental Invoice will be generated. Rental terms will be fifteen (15) percent of the current list price of the products or parts per month or a fraction thereof.

Before returning the equipment to Miranda Technologies Inc., for any reason, the Buyer must first obtain a Return Authorization Number from Miranda Technologies Inc.

Miranda Technologies Inc will pay freight and insurance charges for the delivery of the loaner or exchange products or parts. Freight and insurance charges for the return of the defective product or part will also be paid by Miranda Technologies.

Out-Of-Warranty Repair Policy

Miranda will repair equipment which is out of Warranty. The current pricing structure for this service is available from the Miranda web site at www.miranda.com or from Miranda Technical Support Services at (514) 333-1772. All out-of-warranty repairs are warranted for a period of 90 days from the date of shipment from the factory. Before returning the equipment to Miranda Technologies Inc., for any reason, the Buyer must first obtain a Return Authorization Number from Miranda Technologies Inc. In the case of a product deemed by Miranda to be beyond repair, the customer must purchase a new product at current retail prices.

The Buyer will pay freight and insurance charges for the return of the defective product or part to the manufacturer for repair. Miranda Technologies will pay freight and insurance charges for the return of the repaired product or part to the Buyer.

Out-Of Warranty Equipment Updates and Spare Parts Policy

Miranda Technologies will charge cost plus 20% of the parts costs and $40.00 shipping and handling for out-of-warranty equipment updates, or the sales of spare parts.

Radio Frequency Interference and Immunity

This unit generates, uses, and can radiate radio frequency energy. If the unit is not properly installed and used in accordance with this guide, it may cause interference with radio communications. Operation with non-certified peripheral devices is likely to result in interference with radio and television reception. This equipment has been tested and complies with the limits in accordance with the specifications in:

- FCC Part 15, Subpart B
- CE EN50081-1:1992
- CE EN50082-1:1992.

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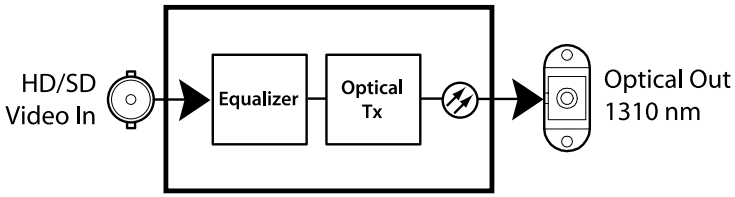
1.0 FEO-871p Electrical to Optical Converter

1.1 Introduction

The FEO-871p is a compact stand-alone solution for transmitting Standard Definition digital video (SMPTE 259M SDI 270 Mbps) as well as High Definition signal (SMPTE 292M up to 1.5 Gbps). The laser transmitter, when interconnected with the FOE-871p, can reach distances up to 15 km (depends on the optical link) on single mode fiber optic allowing transparent digital transmission for short haul applications. The FEO-871p can be used stand-alone or can be mounted in a special rack tray that allows the picoLink fiber converters to become an electrical to optical patch field. The fiber picoLink converters' flexible packagings make them ideal for both temporary and permanent, intra- and inter-facility fiber optic links.

Figure 1 *FEO-871p functional block diagram*



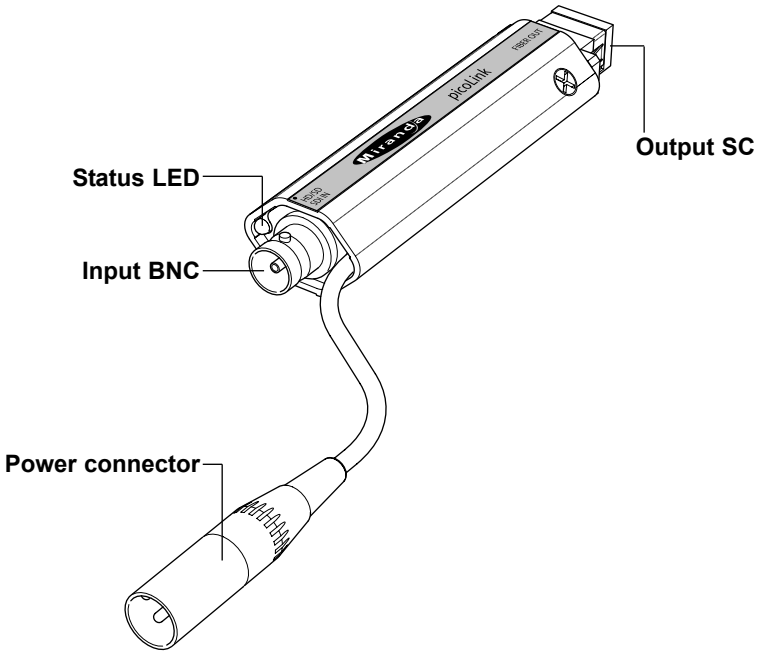
1.2 Features

- Supports any serial data rate from 5 Mbps (ATSC) to 1.5 Gbps (HD SDI)
- Equalized serial digital video from 143 Mbps to 1.5 Gbps
- Supports SMPTE 259M, SMPTE 292M, SMPTE 305, SMPTE 310M, DVB-ASI
- Laser transmitter allowing longer distances over single mode fiber optic @ 1310 nm
- Status LED indication
- Cost effective solution, compact and lightweight
- Stand alone mounting
- Optional rack mount tray turns picoLink into optical patch field

2.0 Overall View

Figure 2 illustrates the FEO-871p's major parts and their locations. A high-definition or standard definition digital video source is connected to the HD/SD SDI IN BNC and the optical output is provided by the SC connector. Error status is provided by the status LED. Finally, the power source is connected to the lockable power connector.

Figure 2 *Overall view of the FEO-871p*

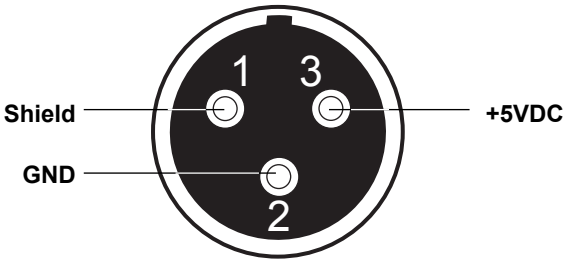


3.0 Installation

3.1 Power Supply

The power supplies LKS-WSU, for 110 V and 220 V operation, is used to power the FEO-871p. The power supply provides a regulated +5 VDC@750 mA power source. The FEO-871p employs a mini XLR-3 connector for its power needs. Figure 3 provides a detailed pinout of the male connector.

Figure 3 *Power connector pinout*



3.2 HD/SD Digital Video Input

Connect a high-definition or standard definition digital video signal to the BNC labeled HD/SD SDI IN. The high-definition serial digital input signal must conform to the SMPTE 292M standard. The standard definition serial digital input signal must conform to the SMPTE 259M-ABCD standard or the DVB-ASI (270 Mbps).

Make sure that the input signal cable has a maximum length of 350 m (1137') for a 270 Mbps input signal or 75 m (250') for a 1.485 Gbps input signal and that all serial digital video equipment are connected point-to-point. For instance, there must be a point-to-point connection between the HD/SD SDI IN BNC and the source equipment. If a T-connector is used to connect other equipment, the maximum specified cable length is no longer valid.

3.3 Optical Output

A single-mode, 1310 nm optical output signal is provided by the SC connector labeled FIBER OUT.

Class 1 laser product

Hazards for the Operator
Active Laser receptacles emit radiation invisible to the naked eye. Never look directly into or through the inside of an active receptacle without having previously ensured that it is not connected to the power supply.

Caution
Although not considered overly dangerous for the eye, avoid accidental exposure to the optic beam emitted from the fiber optic connectors.

4.0 Operation

4.1 Status LED

The bi-colored status LED, located next to the HD/SD SDI input connector, is provided to identify any input errors. The following lists the possible situations.

Off:	No DC power
Green:	Correct operation
Red (steady):	No valid input signal
Red (blinking):	Laser failed

5.0 Specifications

Electrical Input

Signal:	SMPTE 259M-A-C (143, 270 Mbps) SMPTE 292M (1.485 Gbps and 1.485/1.001) SMPTE 305M (SDTI) SMPTE 310M (5Mbps to 40 Mbps) DVB-ASI
Cable length:	75 m (250') at 1.485 Gbps (Belden 1694A) 350m (1137') at 270Mbps (Belden 1694A)
Return loss:	>15 dB up to 1.5 GHz
Connector:	75 Ω BNC (1)

Optical Output

Signal:	Optical Laser
Wavelength:	1310 nm
Output power:	-7.5 dBm (FP Laser Diode)
Fiber type:	Single Mode (core = 9um)
Connector:	Optical SC

General specification

Processing delay:	5 ns
Power voltage:	5VDC
Consumption:	1 W