

## FIO-1821-13

### DESCRIPTION

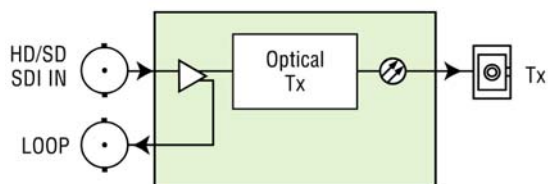
The FIO-1821-13 is a serial digital video-to-fiber module for the Densité frame. The FIO-1821-13 is designed for SD and HD serial video as well as compressed bit-streams. It supports any data rate in the range 5 Mbps to 1.5 Gbps and provides a single fiber Tx. The FIO-1821-13 can be installed in the same chassis as a series of interface modules, providing a wide variety of video, audio and data conversion and multiplexing functions.

This card operates with the MSB-1121 Monitoring Switching Bridge which allows the output of any module in the Densité frame to be monitored.

### Features and Benefits

- Supports any serial data rate from 5 Mbps to 1.5 Gbps (HD-SDI)
- Supports SMPTE 292M, SMPTE 259M, SMPTE 297M, SMPTE-310M, DVB-ASI
- Single-mode 1310 nm transmitter
- Convenient front loading design
- Fully hot swappable
- Electrical signal presence detection
- Remote monitoring and control
- Ideal for long video run with "Hum" immunity
- Provides output to Monitoring Switching Bridge option (SD only)

### FUNCTIONAL BLOCK DIAGRAM



### SPECIFICATIONS

#### MECHANICAL

I/O CONNECTORS: 75  $\Omega$  BNC (2)  
Optical SC (2)

#### VIDEO INPUT

SIGNAL: SMPTE 292M  
(1.485, 1.485/1.001 Gbps)  
SMPTE 259M-ABCD  
(143, 270, 360 Mbps)  
SMPTE 305M (SDTI)  
SMPTE 310M (19.4 Mbps)  
DVB-ASI (270 Mbps)  
Supports proposed 540 Mbps  
standard

RCLK SIGNAL: 143, 270, 360, 540 Mbps and  
1.5 Gbps

CABLE LENGTH: 75 m (250') at 1.485 Gbps  
(Belden 1694A)

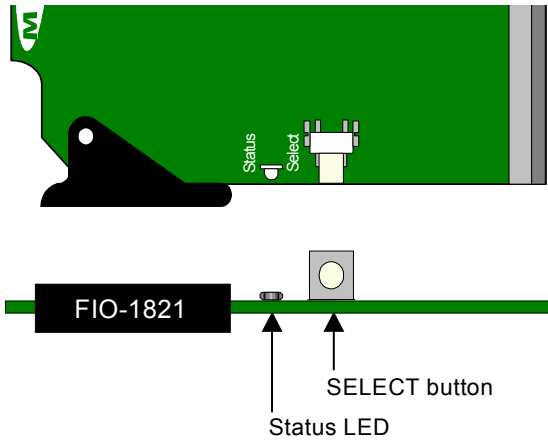
RETURN LOSS: > 15 dB up to 1.5 GHz

#### OPTICAL TRANSMITTER

SIGNAL COMPATIBILITY: 5 Mbps to 1.5 Mbps  
SMPTE 259M (143-540  
Mbps)  
SMPTE 292M (1.485  
Gbps)  
SMPTE 297M (Fiber)  
SMPTE 305M (SDTI)  
SMPTE 310 (19.4 Mbps)  
DVB-ASI (270 Mbps)

WAVELENGTH: 1310 nm  
OUTPUT POWER: -7.5 dBm (Laser Diode)  
FIBER TYPE: Single Mode

# FIO-1821-13 Single Electrical to Optical Converter Guide to Installation and Operation



**REF-1701 Rear Connector Panel**

## INSTALLATION

Make sure you have ordered and received the FIO-1821-13 and its associated rear panel. If any of the following items are missing, contact your distributor or Miranda Technologies Inc.

- \* FIO-1821-13 Internal Audio Reference DA
- \* FIO-1821-13-SRP Rear Panel (see figure)

The FIO-1821-13 must be mounted in a DENSITÉ frame. The installation includes both the FIO-1821-13 module, and the rear panel module. It is not necessary to switch off the power from these frames when installing or removing the FIO-1821-13.

*Note 1 : Before attempting to install the FIO-1821-13 module in the Densité frame, ensure that protective caps on the fiber ends of the SC connectors have been removed prior to shipping, otherwise remove them.*

*Note 2: If the loop-through output is not used, terminate it with a 75 Ω termination.*

Detailed instructions for installing cards and their associated rear panels in the Densité frame are given in the Densité Frame manual.

## OPERATION

### Overview

The DENSITÉ frame incorporates a central controller card, located in the center of the frame, it is equipped with an LCD display and a control panel. The controller handles error reporting and local and remote control for all cards installed in the frame. The display and control panel are assigned to the card in the frame whose SELECT button has been pushed.

## User Interface

Pushing the SELECT button will cause the on-card STATUS LED to flash yellow, and the card identification and the current status will be shown on the controller card's display. The STATUS LED will revert to it's normal state upon a second push of the button, or after a short delay. The messages which may appear are shown in the top line of the menu chart on page 3

### Status Monitor LED

The status monitor LED is located on the front card-edge of the FIO-1821-13 module, and is visible through the front access door of the DENSITÉ frame. This multi-color LED indicates module status by color, and by flashing/steady illumination, according to the following chart (which also indicates fault reporting for this card on the DENSITÉ frame's serial and GPI interfaces).

A "Flashing Yellow" Status LED indicates that the SELECT button on the front panel has been pushed, and the controller display and control panel are now assigned to this card.

The LED color assignments for some error conditions can be reconfigured by the user (see the chart and menu for details).

### Example :

-SELECT button pushed twice when there is no input signal connected to the rear panel and the LED is steady red:

F	I	O	-	1	8	2	1								
N	O	S	I	G	N	A	L								

Use the local control panel to access the detailed status report shown in the STATUS menu next page.

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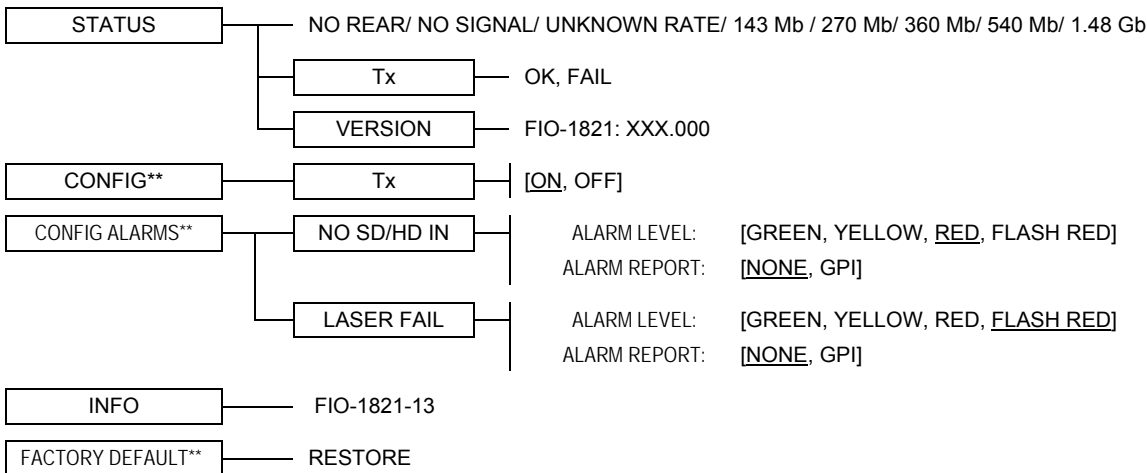
	Serial Report	GPI Report	Green	Yellow	Red	Flashing Red
No SDI In signal	*				*	
Optical Out Failure	*					*
Optical Out Off	*			*		

\* : Factory default

### FIO-1821-13 Card Menu

#### Operating Parameter Adjustment

The FIO-1821-13 have operating parameters which may be adjusted locally at the controller card interface. After pressing the SELECT button on the FIO-1821-13 module, use the keys on the local control panel (described in the Controller card manual) to step through the displayed menu and adjust the parameters. The menus are shown below.



\*\* Press Select pushbutton to activate selection.

### OPERATION (cont'd)

#### STATUS menu

Displays status of the different board alarms, even if not configured to activate the STATUS Led. **ALL OK** indicates an absence of alarm.

**NO REAR:** indicates an absence of the rear panel or an incompatibility between the module and the rear panel. The STATUS led turns on flashing red.

**NO SIGNAL:** indicates an absence of input signal.

**UNKNOW RATE:** the input signal data rate is not recognized by the module.

**143 Mb, 270 Mb, 360 Mb, 540 Mb, 1.48 Gb:** indicates the input signal data rate.

**Tx: OK, FAIL:** indicates the status of the optical transmission.

**VERSION: FIO-1821 : XXX.000:** microcontroller firmware version.

#### CONFIG menu

**Tx:** enables or disables the optical transmission of the video input signal.

#### CONFIGURE ALARM menu

It is possible to associate the STATUS Led color and/or GPI relay activation to each detected error.

Alarm relay activation depends of the ENABLE selection of the controller board menu GPI REPORT.

## *FIO-1821-13 Single Electrical to Optical Converter Guide to Installation and Operation*

**ALARM LEVEL:** Associates to each error the *STATUS* led color: GREEN, YELLOW, RED and FLASH RED. This selection has no influence on the STATUS menu display.

**ALARM REPORT:** The default value NONE is assigned to errors. Alarm relay activation will be associated to an error when GPI is set.

### **INFO menu**

Displays module's type and optical transmission wavelength.

### **FACTORY DEFAULT menu**

Reset all parameters to their original values

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### **WARRANTIES**

Miranda's Warranty and Warranty Policy are explained in full detail in the Warranty Information Sheet.

### **COMPLIANCE**

#### **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.

### **CONTACT MIRANDA**

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