



## *DigiSlim*

### **Fiber Optic Data Transmission System** **Installation Instructions**

**Part Number:**

*SXA/SXB-1J/1J-xs Series*

*(1-Channel RS-485 2-wire Data Transceiver)*

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Document Version 1.0

09/01/2009

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**SXA/SXB-1J/1J-x**  
**Fiber Optic Data Transmission System**  
**Installation Instructions**

## **1.0 Product Description**

Meridian's product series SXA-1J/1J-xs and SXB-1J/1J-xs are fiber optic modems that transmit & receive one channel of bi-directional RS-485 2-wire data signal over one optical fiber using digital transmission technologies. This product series uses Meridian's standard 1-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-500/S, SR-1000, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

Both ST and FC optical connectors are supported, depending on the part number. An ST optical interface is available for both multimode and singlemode fiber applications. The FC optical interface is available only for singlemode products. Conformal coating provides an additional level of protection from environments with high humidity.

## **2.0 Installation**

Series SXA/SXB-1J/1J products are one-slot wide cards and, as such, occupy one slots in Meridian's standard chassis (SR-500/S, SR- 1000, SR- 1000/S, SR- 1200/S, SR- 1500/S, and SR-2001 & SR-2000 series 19" equipment chassis). To install in these chassis, orient the card with the Meridian logo at the top of the module and slide onto the top and bottom card guides in the chassis. Press securely on the top and bottom of the module to ensure that it is fully seated in the chassis so that the electrical connector mates with the chassis-mounted motherboard. Once installed, manually tighten the two thumbscrews located at the top and bottom of the card. Do not use tools to secure these and do not over tighten.

**Note:** A fully loaded 19" subrack should have forced-air cooling to avoid excessive heat generation inside the chassis. A fan assembly tray (P/N FA-2000) with three (3) fans is available and should be installed under the 19" SR-2000/1 whenever possible.

### 3.0 Product Signal Format & Specifications

The SXA/SXB-1J/1J series products transmit and receive one of the following signals:

Signal Type	Channels
RS-485 (2-wire)	1

The tables below identify the specifications for the various signals that these modems transmit/receive.

Data	
Formats	RS-485
Data Rate RS-485	DC to 300Kb/s
Bit Error Rate (BER)	Better than $10^{-9}$

Connectors	
Data	14 pin terminal strip (one 5 pin connectors)
Optical	Singlemode – ST or FC Multimode - ST

### 4.0 Data Interface.

The 14 pin terminal connector on the front of the module is used for data interfaces. This module supports the following data formats:

RS-485 One channel (2 wire)

### 4.1 Front Panel Pinout Diagram

Data Connector Pinout Assignment	
Pin #	RS-485 (2-wire)
1	IN/OUT (-)
2	IN/OUT (+)
3	
4	
5	GND

# SXA/SXB-1J/1J-x

(J - 2-wire RS-485)

## PINOUT DIAGRAM

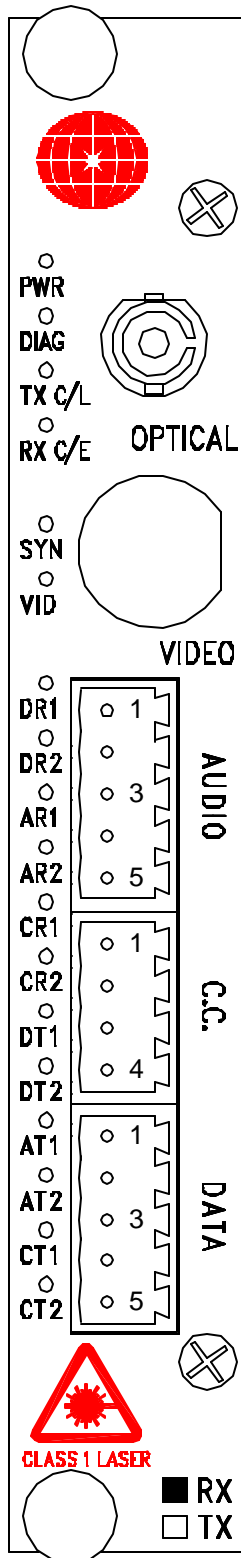
### STATUS INDICATORS

PWR - POWER (GREEN)  
 DIAG - NA  
 TX C/L - TX CARRIER (GREEN)  
           / OVERLOAD (RED)  
 RX C/E - RX CARRIER (GREEN)  
           / ERROR (RED)

SYN - NA  
 VID - NA

### STATUS INDICATORS

DR1 - (CH.1) DATA OUTPUT  
 DR2 - NA  
 AR1 - NA  
 AR2 - NA  
 CR1 - NA  
 CR2 - NA  
 DT1 - (CH.1) DATA INPUT  
 DT2 - NA  
 AT1 - NA  
 AT2 - NA  
 CT1 - NA  
 CT2 - NA



OPTICAL PORT (ST, FC)

VIDEO N/A

AUDIO N/A

CC N/A

### DATA RS485 INPUT/OUTPUT

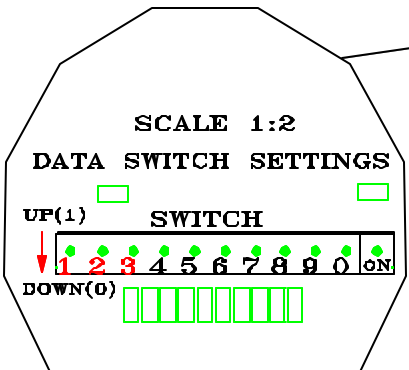
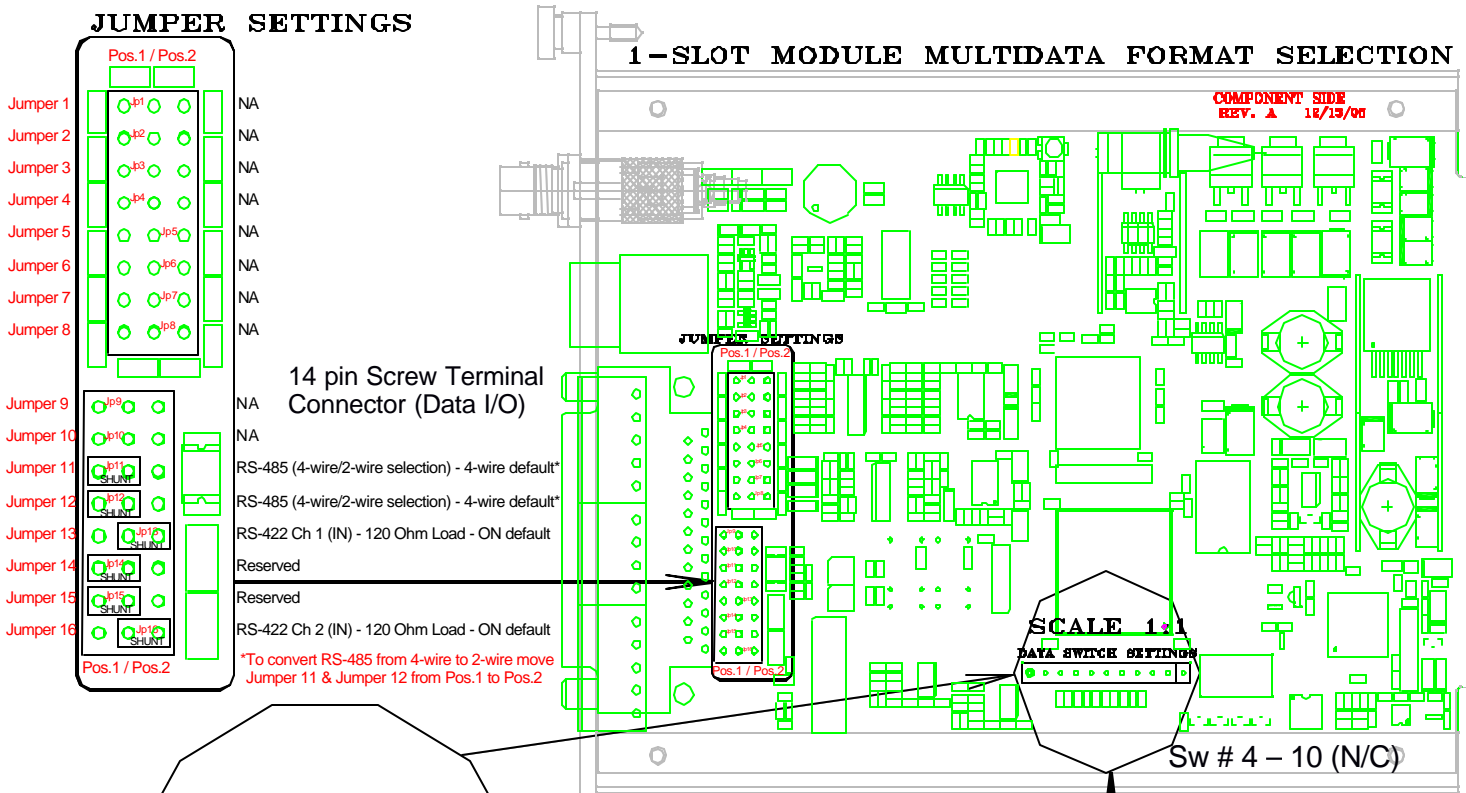
1. (CH.1) RS485 (2W) INPUT/OUTPUT-
2. (CH.1) RS485 (2W) INPUT/OUTPUT+
3. NA
4. NA
5. GND

02/07/2008 V.0

# 5.0 Data Format Selection

A group of 10 switches is located on the bottom center of the module's circuit card (see figure below). The left three (3) switches control the data format that is transmitted/received. These switches on both the SXA & SXB modules must be set the same in order to have proper data communications format between them. The figure and table below illustrates these switch locations on the board and how they are configured for the proper data format options. The factory-supplied setting is for RS-485 data for both data channels (Switches #1-3 ON).

Channel 1	RS-485 (2-wire)
Switch #1	1
Switch #2	0
Switch #3	0
Switch #4 - #10	N/A



Data Format Selection Switch Settings				
Channel 1	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
Switch #1	1	0	1	1
Switch #2	1	0	0	0
Switch #3	1	1	1	0
Switch #4 - #10	N/A	N/A	N/A	N/A

**1-Slot Module Data Format Selection Switch**

## 6.0 Optical Specifications

The table below lists the optical specifications for both singlemode and multimode fiber applications.

<b>Optical Specifications</b>						
Fiber Type/Size (um)	Optical Output (dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)
Multimode (FP Laser) 62.5/125	-3	-24	21	1300/850	ST	24
Singlemode (FP Laser) 9/125	-3	-24	21	1310/1 550	ST, FC	24
Singlemode (DFB Laser) 9/125	+3	-24	27	1310/1550	ST, FC	24

## 7.0 Product Part Numbers

The table below lists the various part numbers and description that are available for this series of product.

<b>Product Part Number Guide</b>			
Part Number	Matching Part #	Fiber Interface	Optical Connector
SXA-1J/1J-2s	SXB-1J/1J-2s	Multimode	ST
SXA-1J/1J-5s	SXB-1J/1J-5s	Singlemode	FC
SXA-1J/1J-5sST	SXB-1J/1J-5sST	Singlemode	ST

## 8.0 Troubleshooting

Below is a listing of several problems that may arise during the installation & operation of the modules. If you are having difficulty installing or operating the modules please refer to this list below.

**Problem:** *Module does not fit in chassis slots*

**Action:** Check module orientation. Meridian “Globe” must be oriented on the top left hand side of the module. Make sure the card guides in the chassis are aligned with the extrusion on the module

**Problem:** *Card power LED does not light when power to the module/subrack is applied or power indicator turns on and off*

**Action:** Check power supply to ensure that it is plugged in and turned on. If flashing continues, move module to another chassis or location in the same chassis, if available.

**Problem:** *No Data*

**Action:** Check that both the SXA & SXB modules are set to transmit/receive the same data format (see section 5.0 for switch settings). Confirm that the data connections are correct (see section 4.0 for data pinout connections). Check to ensure that the data source is operating properly. The front panel lights located next to the 14 pin connector should be flashing as data is being sent to the transmit side. Check to ensure that data is being transmitted to the unit.

If the problem still persists after reviewing the above items, please contact Meridian technical support (516- 285-1000).