



Fiber Optic Video/Data Transmission System

Installation Instructions

Part Number:

SXA/SXB-2G/2G-x Series

(2-Channel Multi-Protocol Data Transceiver)

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Fiber Optic Data Transmission System
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1.0 Product Description

Meridian's product series SXA-2G/2G-x and SXB-2G/2G-x are fiber optic modems that transmit & receive two channels of bi-directional, user-selectable RS-232, RS-422 or RS-485 data signals 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/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-2G/2G products are one-slot wide cards and, as such, occupy one slots in Meridian's standard chassis (SR-500/S, 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-2G/2G series products transmit and receive the following signals:

Signal Type	Channels
RS-232 (Tx & Rx data)	2
RS-422 (Tx & Rx data)	2
RS-485 (2 & 4-wire)	1

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

Data	
Formats	RS-232, RS-422, RS-485, Manchester, Bi-Phase
Date Rate (RS-232)	DC to 125Kb/s
Data Rate (RS-422 & RS-485)	DC to 300Kb/s
Bit Error Rate (BER)	Better than 10^{-9}

Connectors	
Video	75Ω BNC w/gold center pin
Data	DB25F (25 pin Female 'D' style connector)
Optical	Singlmode – ST or FC Multimode - ST

4.0 Data Connector Pin Assignment

The 25 pin connector on the front of the module is used for all data interfaces. This module supports the following data formats:

RS-232	Two full speed channels (Tx/Rx)
RS-422	Two channels
RS-485	One channel (either 2 or 4 wire)

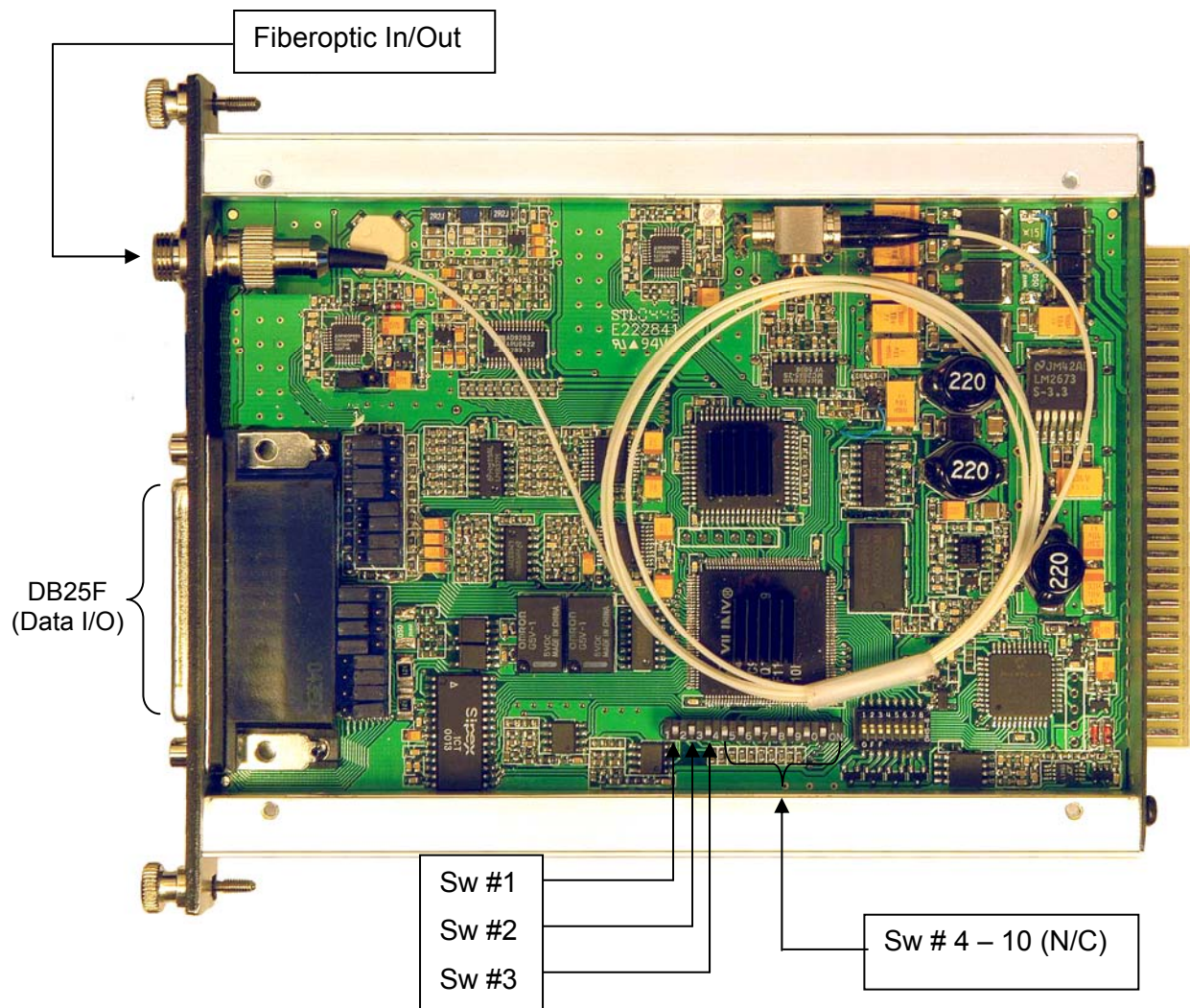
User-settable switches on the module's motherboard are used to select the appropriate data format as required.

Data Connector Pinout Assignment				
Pin #	RS-232	RS-422	RS-485 (2-wire)	RS-485 (4-wire)
1	GND	GND	GND	GND
2	Ch 2 IN	Ch 2 IN (-)	-----	-----
3	Ch 2 OUT	Ch 2 OUT (-)	-----	-----
4	Ch 1 IN	Ch 1 IN (-)	IN/OUT (-)	IN (-)
5	Ch 1 OUT	Ch 1 OUT (-)	-----	OUT (-)
6	-----	-----	-----	-----
7	GND	GND	GND	GND
8 - 13	-----	-----	-----	-----
14	-----	Ch 2 IN (+)	-----	-----
15	-----	Ch 2 OUT (+)	-----	-----
16	-----	Ch 1 IN (+)	IN/OUT (+)	IN (+)
17	-----	Ch 1 OUT (+)	-----	OUT (+)
18	-----	-----	-----	-----
19	+ 5VDC	+ 5VDC	+ 5VDC	+ 5VDC
20 - 25	-----	-----	-----	-----

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 default setting is for RS-232 data for both data channels (Switches #1-3 ON).

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



1-Slot Module Data Format Selection Switch Location

6.0 Optical Specifications

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

Optical Specifications						
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	1310/1550	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.

Product Part Number Guide			
Part Number	Matching Part #	Fiber Interface	Optical Connector
SXA-2G/2G-2	SXB-2G/2G-2	Multimode	ST
SXA-2G/2G-5	SXB-2G/2G-5	Singlemode	FC
SXA-2G/2G-5ST	SXB-2G/2G-5ST	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
- Problem:** *Make sure the card guides in the chassis are aligned with the extrusion on the module*
Action: *Card power LED does not light when power to the module/subrack is applied or power indicator turns on and off*
- Problem:** *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.*
Action:
- 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 DB25 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).