



DigiSlim

Fiber Optic Video/Audio/Data Transmission System

Installation Instructions

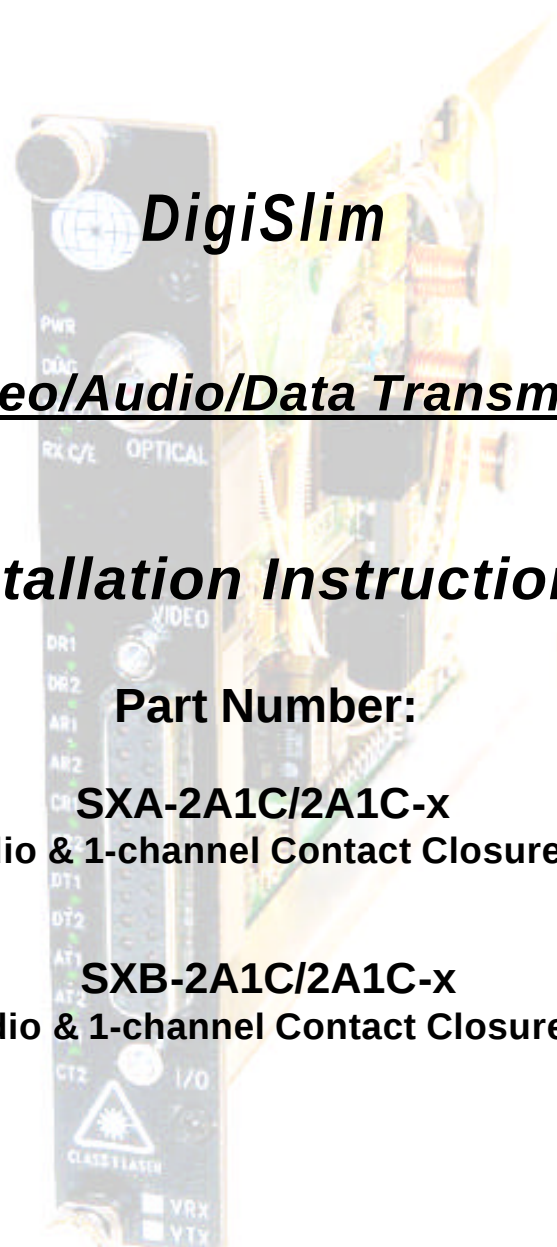
Part Number:

SXA-2A1C/2A1C-x

(2-channel Audio & 1-channel Contact Closure Transceiver)

SXB-2A1C/2A1C-x

(2-channel Audio & 1-channel Contact Closure Transceiver)



Meridian Technologies, Inc.
700 Elmont Road, Elmont NY 11003
Telephone : 516. 285. 1000 Fax: 516. 285. 6300
E-mail : sales@meridian-tech.com Web: www.meridian-tech.com

04/09-Rev.1

Table of Contents

1.0	Product Description.....	3
2.0	Installation	3
3.0	Product Signal Format & Specifications	4
4.0	Connector Pin Assignment	5
5.0	Signal Conditioning Switch/Jumper Settings	6
5.1	Audio Impedance and Contact Mapping jumpers	6
6.0	Optical Specifications	8
7.0	Product Part Numbers	8
8.0	Troubleshooting	8
	Appendix 1 – Applicable Part Number Variations.....	9

SXA/SXB-2A1C/2A1C-x **Fiber Optic Audio/Data Transmission System** **Installation Instructions**

1.0 Product Description

Meridian's product series SXA/SXB-2A1C/2A1C-x are fiber optic modems that transmit & receive two bi-directional audio channels and one bi-directional channel of contact closure 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, 1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

Refer to Appendix 1 at the back of this manual for the module part numbers applicable in this manual.

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. Optional conformal coating provides an additional level of protection from environments with high humidity.

2.0 Installation

Series SXA/SXB-2A1C/2A1C products are one-slot wide cards and, as such, occupy one slot 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-2A1C/2A1C series products can transmit and receive the following signals:

Signal Type	Channels
Audio	2
Contact Mapping	1

Refer to Appendix 1 for the product part number and associated functional description. The above number and type of signals will vary based on the product part number.

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

Audio	
In/Out Impedance	600 Ohm, unbalanced/unbalanced
Frequency Response	10Hz to 20KHz
SNR	>90dB (weighted) @ 1KHz
In/Out Level	-8 to +8 dBm (4Vp-p, max)
THD	<0.01% @ 1KHz
Digitized Resolution	24 bit

Contact Mapping	
Contact type	Relay, normally-open, normally-closed, jumper selectable, Isolated contacts
Contact rating	0.3amps, 30 VAC/VDC
Contact bounce	5 msec
Max switching rate	10Hz

Connectors	
Audio	DB25F (25 pin Female 'D' style connector)
Contact Mapping	DB25F (25 pin Female 'D' style connector)
Optical	Singlemode – ST or FC Multimode - ST

4.0 Connector Pin Assignment

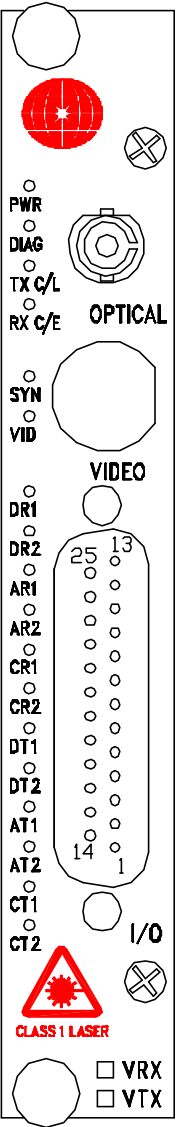
The DB-25-pin connector on the front of the module is used for the Audio interfaces and Contact Closure. The diagrams below indicate audio input/output & contact closure input/output connection.

SXA/SXB-2A1C/2A1C-X 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

- DR1 - NA
- DR2 - NA
- AR1 - (CH.1) AUDIO OUTPUT
- AR2 - (CH.2) AUDIO OUTPUT
- CR1 - (CH.1) C/C OUTPUT
- CR2 - NA
- DT1 - NA
- DT2 - NA
- AT1 - (CH.1) AUDIO INPUT
- AT2 - (CH.2) AUDIO INPUT
- CT1 - (CH.1) C/C INPUT
- CT2 - NA



OPTICAL PORT (ST, FC)

AUDIO/DATA INPUT/OUTPUT
(DB-25 FEMALE)

- 22. (CH.1) AUDIO INPUT-
- 10. (CH.1) AUDIO INPUT+
- 12. (CH.1) AUDIO OUTPUT-
- 24. (CH.1) AUDIO OUTPUT+
- 23. (CH.2) AUDIO INPUT-
- 11. (CH.2) AUDIO INPUT+
- 13. (CH.2) AUDIO OUTPUT-
- 25. (CH.2) AUDIO OUTPUT+
- 6. (CH.1) CC INPUT
- 20. (CH.1) CC OUTPUT-
- 8. (CH.1) CC OUTPUT+
- 19. +5V
- 1. GND
- 7. GND

5.0 Signal Conditioning Switch/Jumper Settings

The sections below illustrate how to change the various audio impedance and contact mapping conditions.

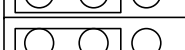
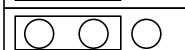
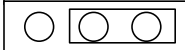
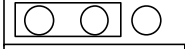
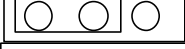
5.1 Audio Impedance & Contact Mapping Selection jumpers

Audio Impedance - The input/Output impedance of each of the audio channels can be changed between 600 Ohm balanced and 47K Ohm unbalanced. The default impedance is 600 Ohm.

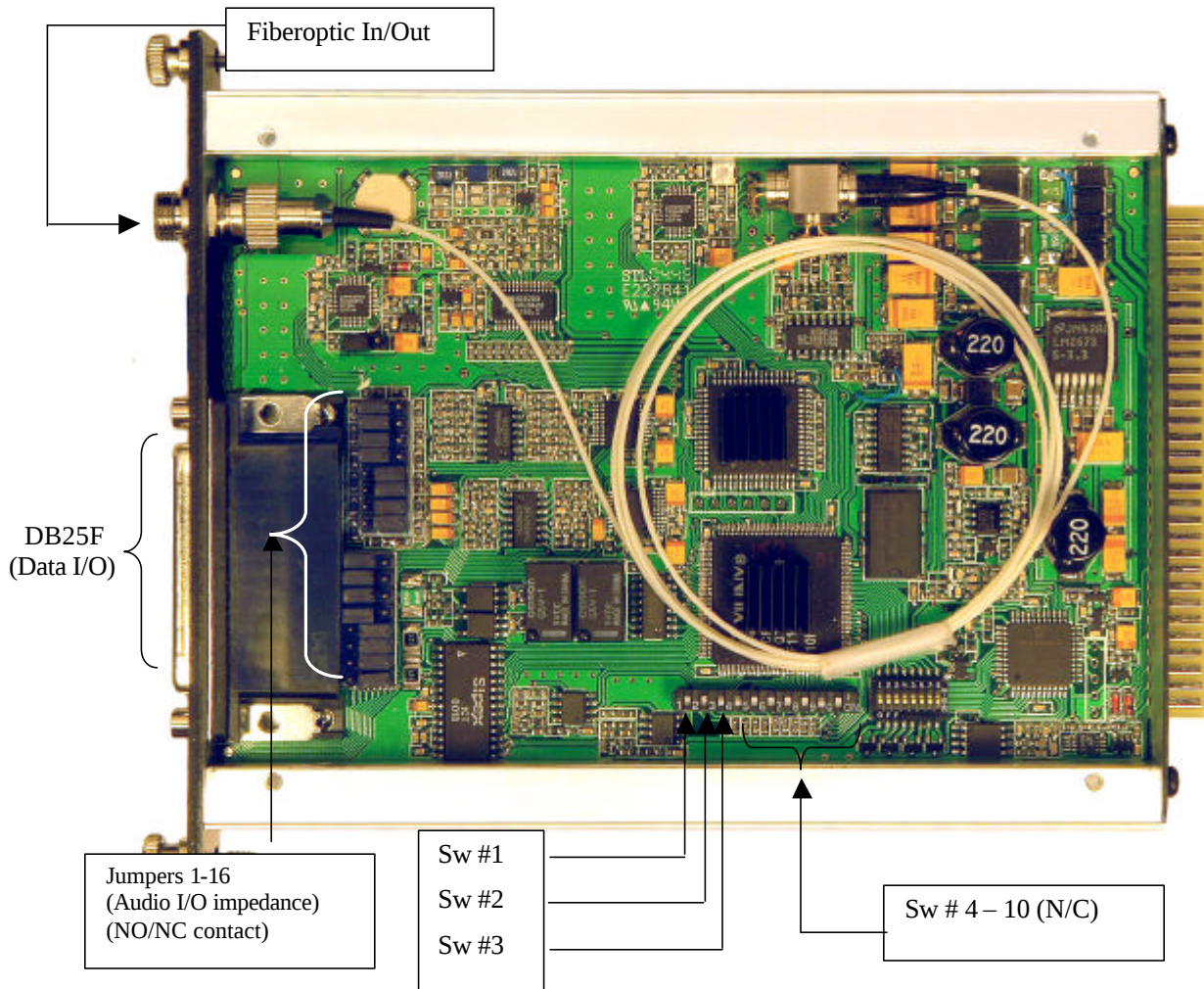
Contact Mapping - The output state of each of the contacts can be changed from Normally-Open (NO) to Normally-Closed (NC) by properly selecting the jumpers. A NO contact (output side) closes when the contact input on the input module's side is closed to ground. The default contact setting is NO (normally-open).

There are sixteen (16) 3-pin jumpers located directly behind the DB-25 pin front-panel mounted connector. The top 10 jumpers are used to select the Input/Output Audio Impedance and the power-on state of the contacts (NO or NC).

The illustration below describes the function of each of these 16 jumpers. The jumpers are shown in their default condition.

Jumper 1		Audio Ch 1 (-) (OUT) – 600 Ohm / Low Z
Jumper 2		Audio Ch 1 (+) (OUT) – 600 Ohm / Low Z
Jumper 3		Audio Ch 2 (-) (OUT) – 600 Ohm / Low Z
Jumper 4		Audio Ch 2 (+) (OUT) – 600 Ohm / Low Z
Jumper 5		Audio Ch 2 (+) (IN) – 47KOhm / 600Ohm
Jumper 6		Audio Ch 2 (-) (IN) – 47KOhm / 600Ohm
Jumper 7		Audio Ch 1 (+) (IN) – 47KOhm / 600Ohm
Jumper 8		Audio Ch 1 (-) (IN) – 47KOhm / 600Ohm
Jumper 9		N/A
Jumper 10		Contact Ch 1 (OUT) – Normally Open (NO) - default
Jumper 11		N/A
Jumper 12		N/A
Jumper 13		N/A
Jumper 14		Reserved
Jumper 15		Reserved
Jumper 16		N/A

1-Slot Module Data Format Selection Switch & Jumper 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	-6	-26	20	1300	ST	24
Singlemode (FP Laser) 9/125	-6	-26	20	1310	ST, FC	24

7.0 Product Part Numbers

See Appendix 1 for a listing of the product part numbers and their description that pertain to this document.

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 or distorted Audio*

Action: Check to ensure that the audio input/output connections are correct and that the Input/Output impedance jumpers are set correctly. The I/O impedance of each audio channel can be set independently so be sure to check that the appropriate channel is configured properly.

Problem: *Contact closure not working*

Action: Input side – Ensure that the input contact is connected between the appropriate input connection and ground

Output side – Ensure that the terminal device is connected to the proper output contact pinouts and that the individual contact channel jumpers are set to the appropriate normally-open or normally-closed position

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

Appendix 1 – Applicable Part Number Variations

Transmitter Part #	Receiver Part #	# of Audio Channels	# of Contact Channels	Optical Connector	Description
SXA-2A1C/2A1C-2R	SXB-2A1C/2A1C-2R	2	1	ST	Tx/Rx, multimode, rack mount
SXA-2A1C/2A1C-5R	SXB-2A1C/2A1C-5R	2	1	FC	Tx/Rx, singlemode, rack mount
SXA-2A1C/2A1C-5RST	SXB-2A1C/2A1C-5RST	2	1	ST	Tx/Rx, singlemode, rack mount