



DigiSlim

Installation Instructions

Fiber Optic Audio Transmission System

Part Number:

ST/SR-2A-x (3 Pin) Series

ST/SR-2AB-x (3 Pin) Series

(Single-Slot 2-channel Audio Transmitter & Receiver)

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

Document Version 1.0

08/25/2015

Table of Contents

1.0	Product Description	3
2.0	Installation	3
3.0	Product Signal Format & Specifications.....	4
3.1	Optical Specifications	4
4.0	Connector Pin Assignment.....	5
5.0	Signal Conditioning Jumper Settings.....	6
5.1	Audio Impedance Selection jumpers.....	6
5.2	Changing default jumpers settings.....	8
6.0	Product Part Numbers	8
7.0	Troubleshooting	8

ST/SR-2A-x

Fiber Optic Audio Transmission System

Installation Instructions

1.0 Product Description

Meridian's product series ST/SR-2A (audio balanced) and ST/SR-2AB (audio unbalanced) are fiber optic modems that transmit & receive two uni-directional audio channels 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-1002/S, SR-1600/R 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. Optional conformal coating provides an additional level of protection from environments with high humidity.

2.0 Installation

Series ST/SR-2A products are one-slot wide cards and, as such, occupy one slot in Meridian's standard 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 ST/SR-2A series products can transmit and receive the following signals:

Signal Type	Channels
Audio	2

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 balanced (A) or 47K Ohm unbalanced (AB)
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

Connectors	
Audio	Two 3 pin screw terminal connectors
Optical	Singlemode – ST or FC Multimode - ST

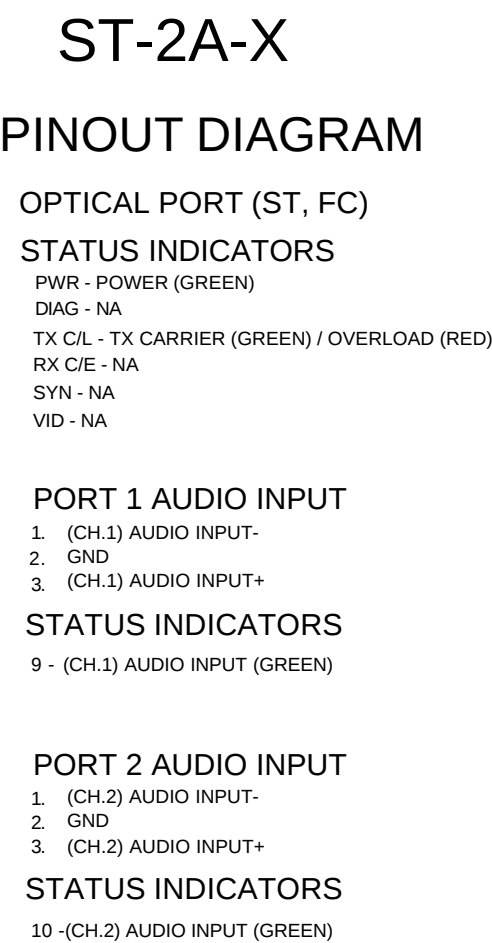
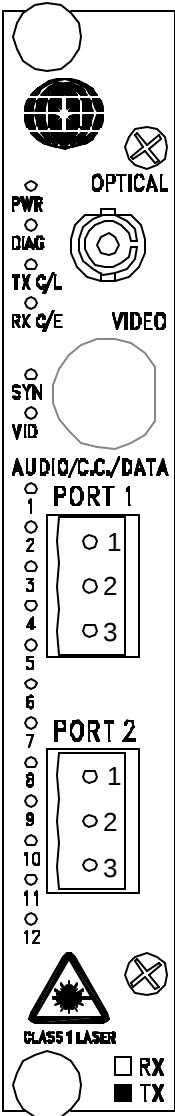
3.1 Optical Specifications

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

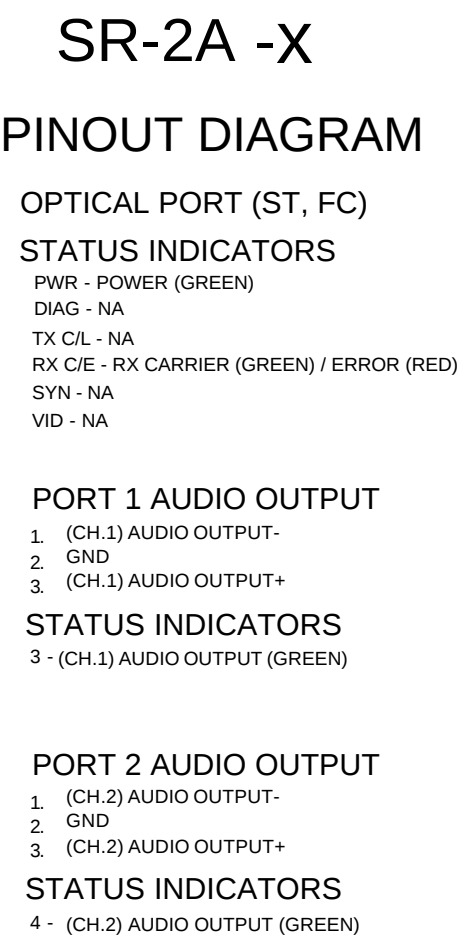
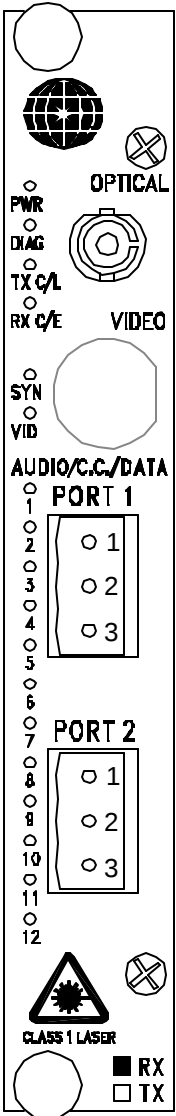
Optical Specifications						
Fiber Type/Size (um)	Optical Output (dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)
Multimode (FP Laser) 62.5/125	-5	-26	21	850 or 1300	ST	24
Singlemode (FP Laser) 9/125	-5	-26	21	1310	ST, FC	24

4.0 Audio Connector Pin Assignment

The two 3-pin screw connectors on the front of the module are used for the Audio interfaces. The diagrams below indicate the audio input/output connection terminals.

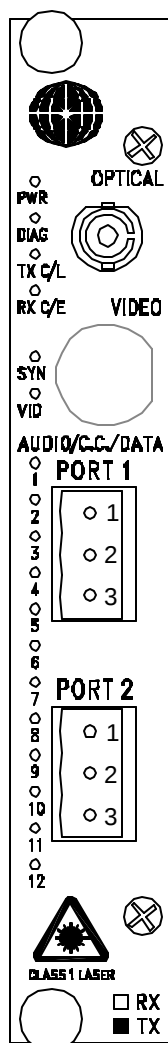


04/10/2013 V.2



04/10/2013 V.2

Figure 4.1
ST/SR-2A-x Card Front Panel



ST-2AB-X

PINOUT DIAGRAM

OPTICAL PORT (ST, FC)

STATUS INDICATORS

PWR - POWER (GREEN)

DIAG - CARD DIAGNOSTIC*

(GREEN-OK, RED-ALARM)

TX C/L - TX CARRIER (GREEN) / OVERLOAD (RED)

RX C/E - NA

SYN - NA

VID - NA

PORT 1 AUDIO INPUT

1. (CH.1) AUDIO INPUT
2. GND
3. GND

STATUS INDICATORS

9 - (CH.1) AUDIO INPUT (GREEN)

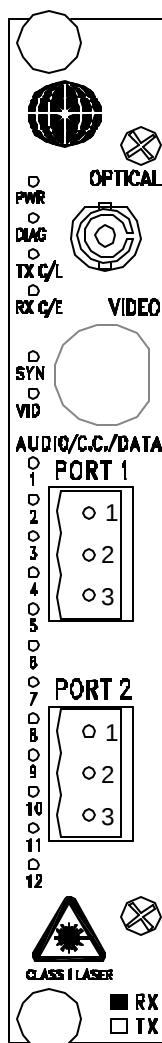
PORT 2 AUDIO INPUT

1. (CH.2) AUDIO INPUT
2. GND
3. GND

STATUS INDICATORS

10 - (CH.2) AUDIO INPUT (GREEN)

* CARD DIAGNOSTIC IF APPLICABLE
08/25/2015 V.0



SR-2AB-X

PINOUT DIAGRAM

OPTICAL PORT (ST, FC)

STATUS INDICATORS

PWR - POWER (GREEN)

DIAG - CARD DIAGNOSTIC*

(GREEN-OK, RED-ALARM)

TX C/L - NA

RX C/E - RX CARRIER (GREEN) / ERROR (RED)

SYN - NA

VID - NA

PORT 1 AUDIO OUTPUT

1. (CH.1) AUDIO OUTPUT
2. GND
3. NA

STATUS INDICATORS

3 - (CH.1) AUDIO OUTPUT (GREEN)

PORT 2 AUDIO OUTPUT

1. (CH.2) AUDIO OUTPUT
2. GND
3. NA

STATUS INDICATORS

4 - (CH.2) AUDIO OUTPUT (GREEN)

* CARD DIAGNOSTIC IF APPLICABLE
08/25/2015 V.0

Figure 4.2
ST/SR-2AB-x Card Front Panel

5.0 Signal Conditioning Jumper Settings

The sections below illustrate how to change various audio impedance settings.

5.1 Audio Impedance Selection jumpers

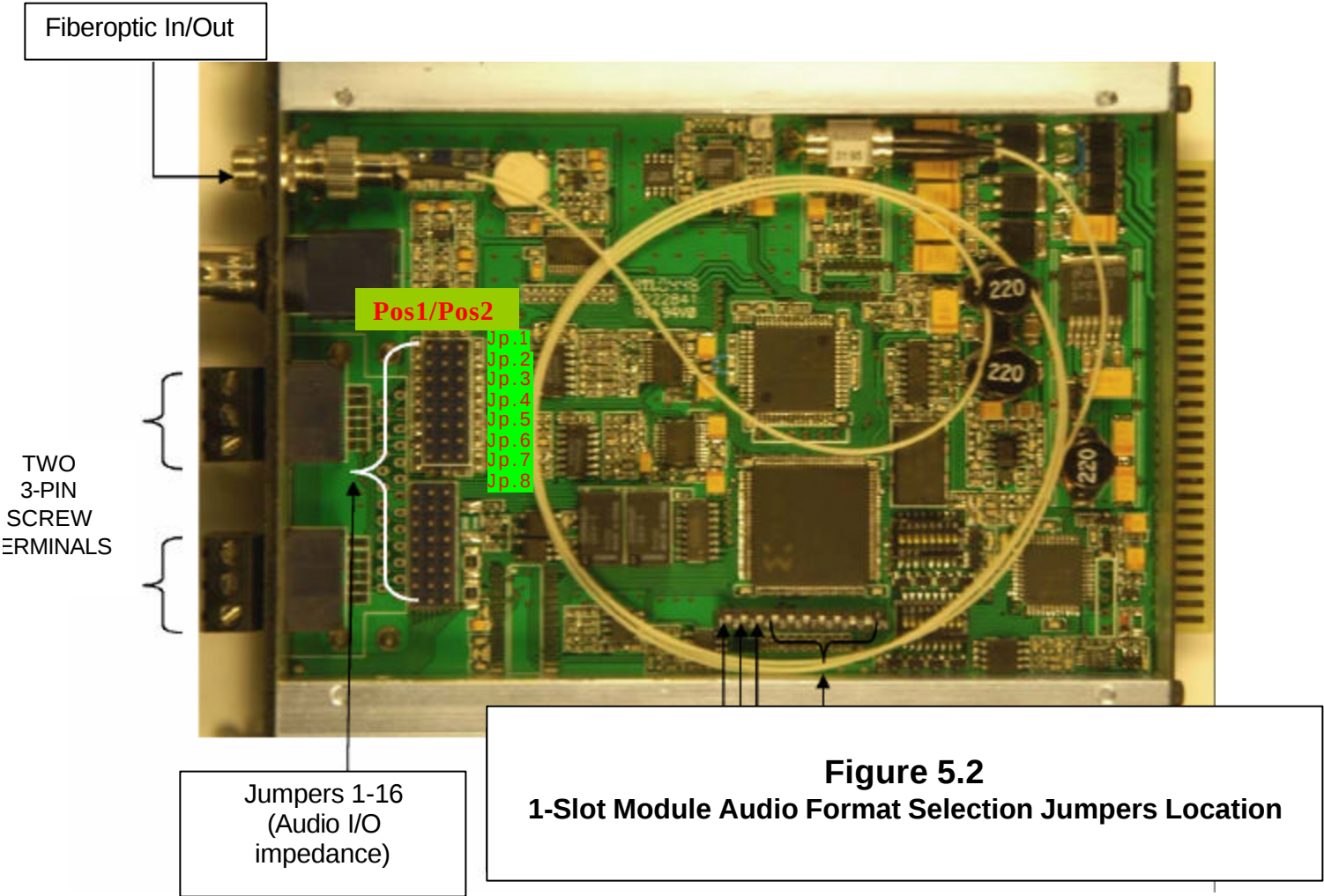
Audio Impedance - The input/Output impedance of each of the audio channels can be changed between 600 Ohm balanced for ST/SR-2A and 47K Ohm unbalanced for ST/SR-2AB. The default impedance is 600 Ohm.

There are sixteen (16) 3-pin jumpers located directly behind the 3 pin screw terminal front-panel mounted connectors. The top 8 jumpers are used to select the Input/Output Audio. The illustration below describes the function of each of these 16 jumpers. The jumpers are shown in their default condition.

Figure 5.1

JUMPER SETTINGS

Pos.1/Pos.2		AUDIO 600 Ohm (Default)		Pos.1/Pos.2		AUDIO 47k Ohm Unbalanced	
Jumper 1		Audio Ch 2 (-) (OUT) - 600 Ohm		Jumper 1		Audio Ch 2 (-) (OUT) - Low Z	
Jumper 2		Audio Ch 1 (+) (OUT) - 600 Ohm		Jumper 2		Audio Ch 1 (+) (OUT) - Low Z	
Jumper 3		Audio Ch 1 (-) (OUT) - 600 Ohm		Jumper 3		Audio Ch 1 (-) (OUT) - Low Z	
Jumper 4		Audio Ch 2 (+) (OUT) - 600 Ohm		Jumper 4		Audio Ch 2 (+) (OUT) - Low Z	
Jumper 5		Audio Ch 2 (+) (IN) - 600 Ohm		Jumper 5		Audio Ch 2 (+) (IN) - 47K Ohm	
Jumper 6		Audio Ch 2 (-) (IN) - 600 Ohm		Jumper 6		Audio Ch 2 (-) (IN) - 47K Ohm	
Jumper 7		Audio Ch 1 (+) (IN) - 600 Ohm		Jumper 7		Audio Ch 1 (+) (IN) - 47K Ohm	
Jumper 8		Audio Ch 1 (-) (IN) - 600 Ohm		Jumper 8		Audio Ch 1 (-) (IN) - 47K Ohm	



5.2 Changing default jumpers settings

The jumpers to change the audio from 600 Ohm balanced to 47K Ohm unbalanced format can be easily changed as follows:

1. Lay the module on its side with the front panel facing to the left.
2. Remove the screws in each of the 4 corners of the top cover and carefully remove the cover.
3. The Jumpers (1-16) are located on the top two connectors of the module.
4. Refer to the above drawing to locate the 16 jumpers that are located near the 3 pin connector.
5. Using a small tool, carefully remove the jumper and place it on the appropriate pins to properly select the audio format (see Figure 5.1)
6. Carefully replace the side cover and secure with the screws.
7. Repeat this process for the other module. The jumper selection needs to be the same for both the SXA/ST and SXB/SR units.

** 600Ohm Audio balanced are FACTORY SETTINGS

NOTE: This setting can be preconfigured to any audio selection by customer request.

6.0 Product Part Numbers

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

7.0 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 Tx Carrier light*

Action: Optical module is defective, return to factory for repair.

Problem: *No Rx Carrier light*

Action: Received optical signal absent or low. Check fiber connection and optical power at receiver.

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.

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	Wavelength	Optical Connector	Description
ST-2A-0	SR-2A-0	2	850nm	ST	Audio balanced Tx/Rx, multimode
ST-2A-1	SR-2A-1	2	1300nm	ST	Audio balanced Tx/Rx, multimode
ST-2A-3	SR-2A-3	2	1310nm	FC	Audio balanced Tx/Rx, singlemode
ST-2A-3ST	SR-2A-3ST	2	1310nm	ST	Audio balanced Tx/Rx, singlemode
ST-2AB-0	SR-2AB-0	2	850nm	ST	Audio unbalanced Tx/Rx, multimode
ST-2AB-1	SR-2AB-1	2	1300nm	ST	Audio unbalanced Tx/Rx, multimode
ST-2AB-3	SR-2AB-3	2	1310nm	FC	Audio unbalanced Tx/Rx, singlemode
ST-2AB-3ST	SR-2AB-3ST	2	1310nm	ST	Audio unbalanced Tx/Rx, singlemode

Notes:



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

Document Version 1.0
08/25/2015