

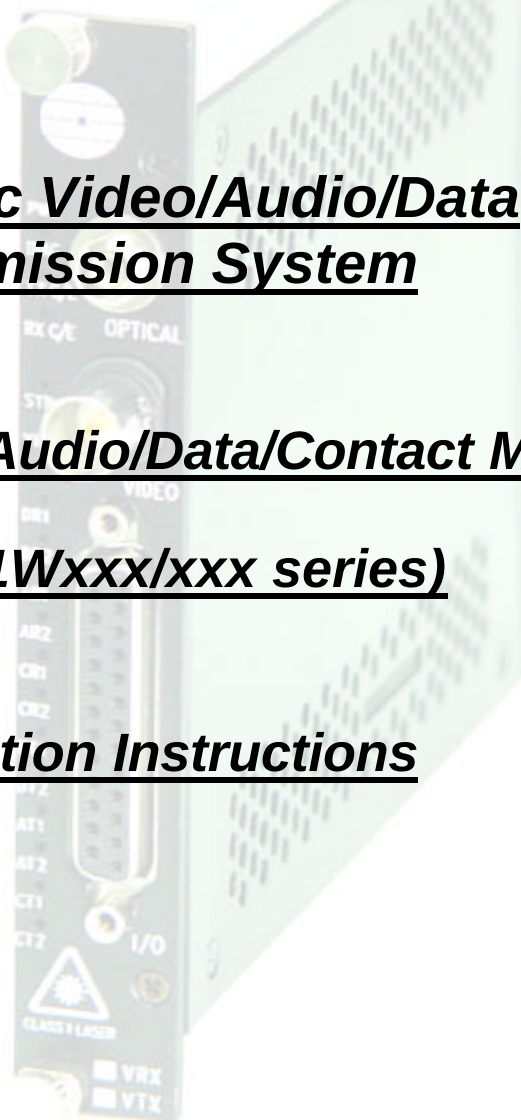


Fiber Optic Video/Audio/Data Transmission System

Single-Slot Video/Audio/Data/Contact Mapping

(ST/SR-1Wxxx/xxx series)

Installation Instructions



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
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ST/SR-1Wxxx/xxx-x **Fiber Optic Data Transmission System** **Installation Instructions**

1.0 Product Description

Meridian's product series ST/SR-1Wxxx/xxx are fiber optic modems that transmit & receive one uni-directional video channel and a combination of bi-directional Audio, Data and Contact Closure 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/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 ST/SR-1Wxxx/xxx products are one-slot wide cards and, as such, occupy one slot in Meridian's standard chassis (SR-500/S, SR-1002/S, SR-1600/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 ST/SR-1Wxxx/xxx series products can be configured to 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
Audio	2
Contact Mapping	2

Again, 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.

Video	
Format	NTSC, PAL, SECAM
Voltage/Impedance	1Vp-p, 75 Ohm, 1.5Vp-p (max)
Differential Gain	<0.6%
Differential Phase	<0.3°
SNR	>67dB (weighted)
Return Loss	>30dB

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}

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	
Video	75 Ohm BNC w/gold center pin
Audio/Data/Contact	DB25F (25 pin Female 'D' style connector)
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	1300/850	ST	24
Singlemode (FP Laser) 9/125	-5	-26	21	1310/1550	ST, FC	24

4.0 Data Connector Pin Assignment

The 25-pin connector on the front of the module is used for all Audio & Data interfaces. Refer to the table below for the signal pinouts associated with the appropriate module part number found in Appendix 1.

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

****RS-232 FACTORY SETTINGS**

NOTE: This settings can be preconfigured to any data selection only by customer request.

Pin #	RS-232	RS-422	RS-485 (2-wire)	RS-485 (4-wire)	Audio	Contact Closures
1	GND	GND	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	-----	-----	-----	-----	-----	Ch 1 IN
7	GND	GND	GND	GND	GND	GND
8	-----	-----	-----	-----	-----	Ch 1 OUT
9	-----	-----	-----	-----	-----	Ch 2 OUT
10	-----	-----	-----	-----	Ch 1 IN (+)	-----
11	-----	-----	-----	-----	Ch 2 IN (+)	-----
12	-----	-----	-----	-----	Ch 1 OUT (-)	-----
13	-----	-----	-----	-----	Ch 2 OUT (-)	-----
14	-----	Ch 2 IN (+)	-----	-----	-----	-----
15	-----	Ch 2 OUT (+)	-----	-----	-----	-----
16	-----	Ch 1 IN (+)	IN/OUT (+)	IN (+)	-----	-----
17	-----	Ch 1 OUT (+)	-----	OUT (+)	-----	-----
18	-----	-----	-----	-----	-----	Ch 2 IN
19	-----	-----	-----	-----	-----	+5VDC
20	-----	-----	-----	-----	-----	Ch 1 OUT
21	-----	-----	-----	-----	-----	Ch 2 OUT
22	-----	-----	-----	-----	Ch 1 IN (-)	-----
23	-----	-----	-----	-----	Ch 2 IN (-)	-----
24	-----	-----	-----	-----	Ch 1 OUT (+)	-----
25	-----	-----	-----	-----	Ch 2 OUT (+)	-----

5.0 Signal Conditioning Switch/Jumper Settings

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

5.1 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 ST & SR 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 #1-4 set in the OFF ("UP") position).

Data Format Selection Switch Settings				
	Switch #1	Switch #2	Switch #3	Switch #4
RS-232	OFF (up)	OFF (up)	OFF (up)	OFF (up)
RS-422	ON (down)	ON (down)	OFF (up)	OFF (up)
RS-485 (2-wire)	OFF (up)	ON (down)	ON (down)	OFF (up)
RS-485 (4-wire)	OFF (up)	ON (down)	OFF (up)	OFF (up)

The remaining Switches 5 through 10 should be in the OFF (up) position.

5.2 Audio Impedance, Contact Mapping and Data 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).

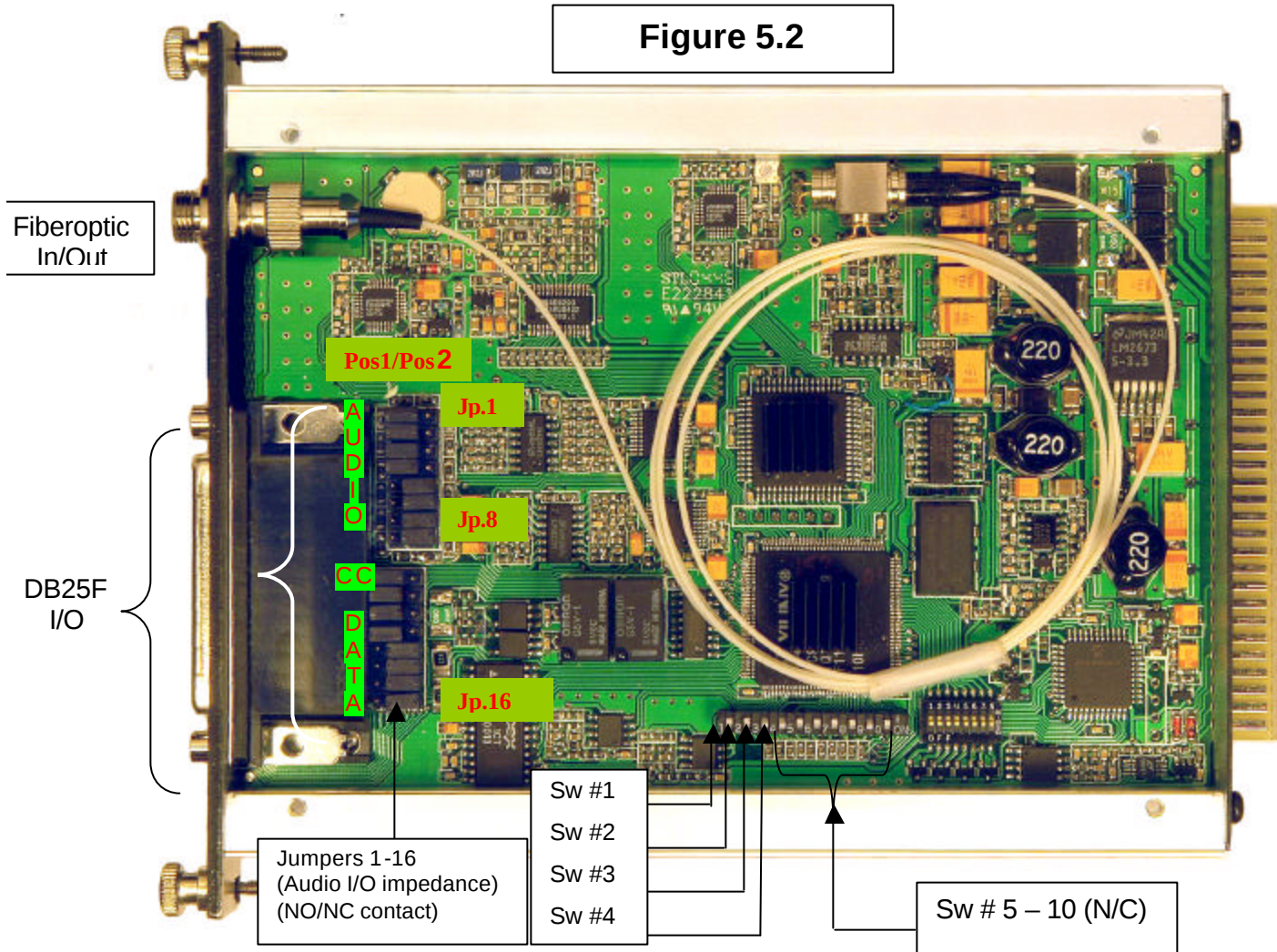
There are sixteen (16) 3-pin jumpers located directly behind the DB25 front-panel mounted connector. The top 10 jumpers are used to select the Input/Output Audio Impedance and the power-on state of the contacts (NO or NC). The bottom 6 jumpers are used for 2 & 4-wire RS-485 selection and removing the default 120 Ohm load on the RS-422 input channels. 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		Contact Ch 2 (OUT) – Normally Open (NO) - default
Jumper 10		Contact Ch 1 (OUT) – Normally Open (NO) - default
Jumper 11		RS-485 (4-wire/2-wire selection) – 4-wire default
Jumper 12		RS-485 (4-wire/2-wire selection) – 4-wire default
Jumper 13		RS-422 Ch 1 (IN) – 120 Ohm load – ON default
Jumper 14		Reserved
Jumper 15		Reserved
Jumper 16		RS-422 Ch 2 (IN) – 120 Ohm Load – ON default

Figure 5.1

RS-485 (2-wire & 4-wire) selection – In addition to selecting the proper switch position for conversion from 4-wire RS-485 to 2-wire Rs-485 (see Section 5.1), jumpers 11 & 12 (as shown above) must be moved to the position 2 as indicated. The default position of these jumpers is for 4-wire RS-485 (Pos.1)

Figure 5.2



5.3 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 DB-25F 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 5.2)
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.

6.0 Front Panel Indicator Lights

There are 18 LED indicator lights mounted on the left side of the module's front panel (see Figure 6.1 below). These indicators show the operation status of the module's power, optical carriers, video signal and the various data/audio channels. Not all of the LEDs apply to all versions of these modules. Please refer to the module's part number for the appropriate signals, description.

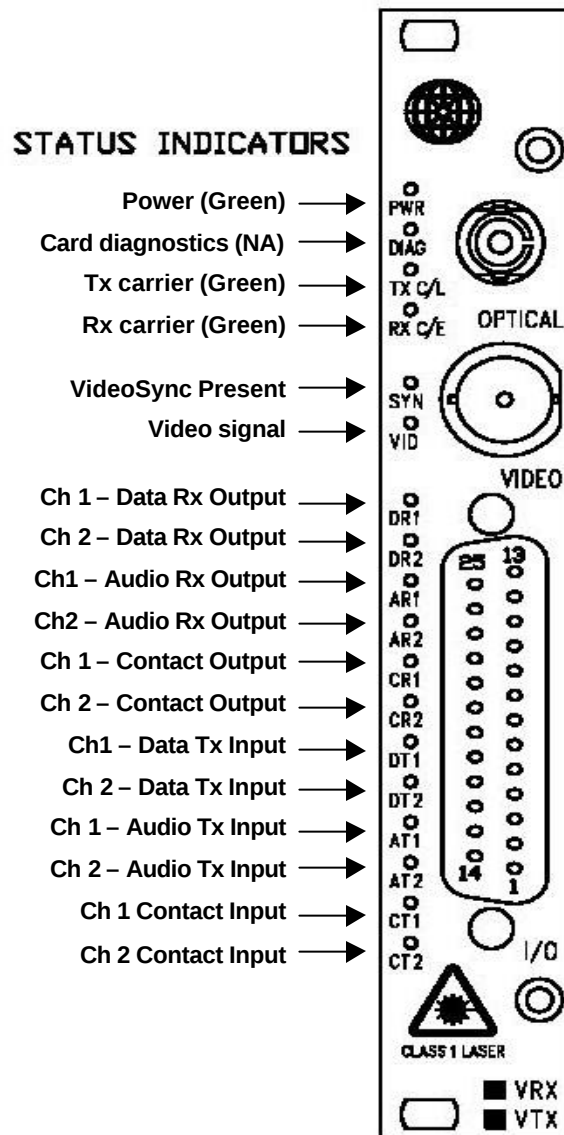


Figure 6.1
Module LED Status Indicators

Each of the indicator lights will light when activity is detected for that particular input or output channel. These indicators can be used for troubleshooting the module, electrical and optical connections. Please note that not all lights are active for a given product model number. Please refer to the functional description of the module for the indicators that pertain to that specific product.

7.0 Spectra View™ Network Monitoring System

Description:

Meridian's SpectraView Network Monitoring System is built into Meridian's DigiSlim, 1-slot, digitally-encoded fiber optic transmission product system. SpectraView provides real-time monitoring of the video signal and fiber continuity. In addition, remote and local loop-back testing as well as individual Transmit & Receive automatic channel testing is available to verify functionality of any audio, data and contact mapping channels on the respective DigiSlim modules.

The capabilities of each of these individual monitoring & test functions are as follows:

CCTV Video Status (real-time monitoring):

Under normal operation, the live video from the CCTV camera will be displayed on the respective monitor at the receive side. There are two SpectraView 'alarm' modes - one for loss of video sync and one for loss of optical signal. When one or the other of these alarm modes is present, the monitor will display the following:

Loss of video sync - 4 vertical gray-scale bars across the monitor screen

Loss of optical signal - 8 vertical gray-scale bars across the monitor screen

Module Test Mode Functions

Each DigiSlim module has a bank of 10 DIP switches located on the bottom of the circuit board. See the figure below for location information.

The table below lists the function of each of these switches (numbered from left to right) and identifies how to set the various diagnostic test modes.

Test Switch	Local Loop Back	Remote Loop Back	Transmit Test	Receive Test	Video Test	Video Bars Enabled
SW1 – SW3 – Data format selection						
SW4 - Reserved						
SW5	ON	OFF	OFF	OFF	OFF	OFF
SW6	OFF	ON	OFF	OFF	OFF	OFF
SW7	OFF	OFF	ON	OFF	OFF	OFF
SW8	OFF	OFF	OFF	ON	OFF	OFF
SW9	OFF	OFF	OFF	OFF	ON	OFF
SW10	OFF	OFF	OFF	OFF	OFF	ON

Note: To turn a switch "ON", move the switch in the down position. Likewise, to turn a switch "OFF", move it in the up position.

In order to enter the test modes on the module, it is necessary to actuate one of the above switches as described below:

Local Loopback test (SW5) (applicable to full-duplex transceiver modules (SXA-xxx & SXB-xxx only). These tests will test all of the bi-directional audio, data and contact closures installed on the module associated with the loopback test. Obviously, the channels that can be tested are determined by the type of channels associated with the particular module under test.

The following procedures can be used to properly perform the loopback testing on both the SXA & SXB series modules. Note that it is not necessary for both of the modules to be connected via fiber in order to perform the Local Loopback tests.

Note: Local loopback test is not available for RS-485 (2-wire) configuration or transmit/receive modules with a video channel.

Audio Test:

1. Place SW 5 in the ON (down) position
2. Apply an audio signal (compliant with the audio specifications) into the respective audio input (either Channel 1 or 2).
3. Connect an audio monitoring device (oscilloscope, audio line amp, etc.) to the respective audio output channel.
4. The output channel should be receiving the same audio signal that was input to the respective audio channel.
5. The front panel Audio Transmit & Receive LEDs (ATx & ARx) on the module's audio channel under test should light.
6. If the module has a second audio channel, repeat steps 1 through 4
7. When complete, place SW5 in the OFF (up) position to return it to its normal operating mode

Data Test:

1. Place SW 5 in the ON (down) position
2. Use Switches 1-4 to select the appropriate data format to be tested
3. Apply an appropriate digital signal into the respective data input connector (either Channel 1 or 2).
4. Connect a data monitoring device (oscilloscope, BERT test equipment, etc.) to the respective data output channel.
5. The output channel should be receiving the same data signal that was input to the respective data input channel.
6. The front panel Data Transmit & Receive LEDs (DTx & DRx) on the module's data channel under test should light.
7. If the module has a second data channel, repeat steps 1 through 5
8. When complete, place SW5 in the OFF (up) position to return it to its normal operating mode

Contact mapping test:

1. Place SW 5 in the ON (down) position
2. Connect an input contact to one of the contact input channels. Contact actuation is caused when the contact input channel pin is connected to ground.
3. When each of the contact input channels is connected to ground, the appropriate channel's output contact will change state. Monitor with an ohmmeter to confirm proper operation.
4. The front panel Contact Transmit & Receive LEDs (CTx & CRx) on the module's contact mapping channel under test should flash in response to contact closure inputs
5. If the module has a second contact channel, repeat steps 1-3.
6. When complete, place SW5 in the OFF (up) position to return it to its normal operating mode

Remote Loopback Tests (SW6) - (applicable to full-duplex transceiver modules (SXA-xxx & SXB-xxx only). These tests will test all of the bi-directional audio, data and contact closures installed on the module associated with the remote loopback test. Obviously, the channels that can be tested are determined by the type of channels associated with the particular module under test.

Note: Remote loopback test is not available for RS-485 (2-wire) configuration or transmit/receive modules with a video channel.

The following procedures can be used to properly perform the loopback testing on both the SXA & SXB series modules. In order to perform the remote loop back tests, it is necessary to configure both the SXA & SXB modules as follows:

- ✍✍ Both the SXA & SXB modules must be connected together via fiber and power applied in order to perform the Remote Loopback tests.
- ✍✍ When testing the data channels, it is necessary that the data formats for both the SXA & SXB units be set the same (RS-232, RS-422, RS-485)
- ✍✍ The Remote Loopback test switch (SW6) on the remote module must be in the ON (down) position
- ✍✍ Test switches (SW5-10) on the local unit must be in the OFF (up) position

Audio Test:

1. Place SW 6 on the remote unit in the ON (down) position
2. Place SW6 on the local unit in the OFF (up) position
3. Apply an audio signal (compliant with the audio specifications) into the respective audio input of the local unit (either Channel 1 or 2).
4. Connect an audio monitoring device (oscilloscope, audio line amp, etc.) to the respective audio output channel of the local unit.
5. The output channel should be receiving the same audio signal that was input to the respective audio channel.
6. The front panel Audio Transmit LED (ATx) on the transmit module's audio channel under test should light as well as the Audio Receive LED (ARx) on the receiver module's front panel for each audio channel under test.
7. If the module has a second audio channel, repeat steps 1 through 4
8. When complete, place SW6 on the remote unit in the OFF (up) position to return it to its normal operating mode

Data Test:

1. Place SW 6 on the remote unit in the ON (down) position
2. Use Switches 1-4 to select the appropriate data format to be tested.
3. Apply an appropriate digital signal into the respective data input connector on the local unit (either Channel 1 or 2).
4. Connect a data monitoring device (oscilloscope, BERT test equipment, etc.) to the respective data output channel on the local unit.
5. The output channel should be receiving the same data signal that was input to the respective data input channel.
6. The front panel Data Transmit LED (DTx) on the transmit module's data channel under test should light as well as the Data Receive LED (DRx) on the receiver module's front panel for each data channel under test.
7. If the module has a second data channel, repeat steps 1 through 5
8. When complete, place SW6 on the remote unit in the OFF (up) position to return it to its normal operating mode

Contact mapping test:

1. Place SW 6 on the remote unit in the ON (down) position
2. Connect an input contact to one of the contact input channels on the local unit. Contact actuation is caused when the contact input channel pin is connected to ground.
3. When each of the contact input channels is connected to ground, the appropriate channel's output contact on the same local unit will change state. Monitor with an ohmmeter to confirm proper operation.

4. The front panel Contact Transmit LED (CTx) on the transmit module's contact mapping channel under test should light as well as the Contact Receive LED (CRx) on the receiver module's front panel for each contact mapping channel under test.
5. If the module has a second contact channel, repeat steps 1-3.
6. When complete, place SW6 on the remote unit in the OFF (up) position to return it to its normal operating mode

Data/Audio/Contact Transmit Test (SW7) – (applicable to both full-duplex transceiver modules (SXA-xxx & SXB-xxx) and one-way data/audio transmission modules. The type and quantity of channels that can be tested are determined by the type of channels associated with the particular module under test.

In order to perform the transmit test, it is necessary to configure both the modules as follows:

- ✍✍ The ST or SR and SXA & SXB modules must be connected together via fiber and power applied in order to perform the Transmit tests.
- ✍✍ When testing the data channels, it is necessary that the data formats for both the modules be set the same (RS-232, RS-422, RS-485)
- ✍✍ The Transmit Test switch (SW7) on the module initiating the test must be in the ON (down) position
- ✍✍ Test switches (SW5-10) on the local unit must be in the OFF (up) position
- ✍✍ This test overrides any external audio or data that may be at the input terminals of the unit under test.

This test will inject the Audio, Data and Contact Closure test signals into the transmitter and will be sent over fiber to the associated receiver module. This test will perform diagnostic tests on all of the channels integrated in the module using the module's own internal test signals. In addition, the The internal frequency/data rate of the various internal tests is as follows:

Audio	- 1Khz square wave
Data	- 1Hz square wave
Contact closure	- 1Hz square wave

Once the Transmit test switch on the remote ST, SR, SXA or SXB module is switched ON, the above signals will be transmitted over fiber to the receiving unit. The outputs can be monitored by standard Audio, Data and Contact mapping measurement/monitoring techniques.

LED indicator status – During the test, the Tx channel indicator lights for the data and contact mapping (DTx & CTx) on the module initiating the test will flash at a 1Hz rate. The audio transmit light (ATx) will be ON continuously. This applies to each type and number of channels in the module. Likewise, each of the channel's front panel Rx channel indicator lights for the data and contact mapping (DRx & CTx) on the receiver module's front panel will flash at a 1Hz rate to indicate proper reception of the test signals while the audio receive light (ARx) will be ON continuously.

To disable the test, move SW7 on the ST, SXA or SXB switch to the OFF position.

Data/Audio/Contact Receive Test (SW8) - (applicable to both full-duplex transceiver modules (SXA-xxx & SXB-xxx) and one-way receiver modules. These tests will test all of the audio, data and contact closure transmission channels installed on the module associated with the remote loopback test. Obviously, the channels that can be tested are determined by the type of channels associated with the particular module under test.

In order to perform the receive tests, it is necessary to configure both the modules as follows:

- ✍✍ The SR and SXA & SXB modules do not need to be connected together via fiber.

- ✍✍ The type of data output will be as per the data format selection switches 1 through 4 (RS-232, RS-422, RS-485)
- ✍✍ The Receive Test switch (SW8) on the module initiating the test must be in the ON (down) position

The receive test will perform diagnostic tests on all of the channels integrated in the module using the module's own internal test signals. The internal frequency/data rate of the various internal tests is as follows:

Audio	- 1Khz square wave
Data	- 1Hz square wave
Contact closure	- 1Hz square wave

Once the Receive test switch on the ST, SR, SXA or SXB module is switched ON, the above signals sent to the appropriate electrical outputs on the same module. These signal outputs can be monitored by standard Audio, Data and Contact mapping measurement/monitoring techniques.

LED indicator status – During the test, each of the channel's front panel Rx channel indicator lights for the data and contact mapping (DRx & CTx) on the receiver module's front panel will flash at a 1Hz rate to indicate proper reception of the test signals while the audio receive light (ARx) will be ON continuously. This applies to each type and number of channels in the module.

To disable the test, move SW7 on the SR, SXA or SXB switch to the OFF position. This will restore operation to its normal mode.

Video Test (SW9) – (Applicable to one-way transmission modules (ST & SR units). This video test mode will allow the user to test the video transmission channel without the use of an external camera to generate a video signal.

There are two video tests available – Transmit video & Receive video. The following describes the test setup for each:

Transmit video test – This test injects a 4-bar video test pattern into the video transmitter and sends this signal over fiber to the associated receiver module.

In order to initiate the internal transmit video test it is necessary to configure the modules as follows:

- ✍✍ SW9 on the ST video Tx module must be set to the ON (down) position.
- ✍✍ SW9 on the SR video Rx module must be set to the OFF (up) position.
- ✍✍ The optical fiber between the ST & SR modules must be connected together
- ✍✍ Connect a standard video monitor to the output of the SR (Video Receiver) module
- ✍✍ 4 grey-scale vertical bars will be displayed on the monitor
- ✍✍ Receiver module LEDs – If a video monitor is not available, the activity of the transmit video test can be monitored on the receiver's front panel LEDs. When this test is activated, the receiver modules Video Sync & Video Present green LEDs (SYN & VID) will light.

Receive video test – This test injects a 8-bar video test pattern into the video receiver and sends it to the receiver output BNC for display on a video monitor.

In order to initiate the internal receive video test it is necessary to configure the modules as follows:

- ✍✍ SW9 on the ST video Tx module must be set to the OFF (up) position.
- ✍✍ SW9 on the SR video Rx module must be set to the ON (down) position.
- ✍✍ The optical fiber between the ST & SR modules must be connected together
- ✍✍ Connect a standard video monitor to the output of the SR (Video Receiver) module

4 grey-scale vertical bars will be displayed on the monitor

Spectra View Enabled (SW10) - (Applicable to one-way transmission modules with video (ST & SR units). This video mode will enable the vertical video bars to be displayed in the event that either the incoming video signal has been removed or if the optical signal from the transmitter has been interrupted.

To enable this video bars feature it is necessary to configure the modules as follow:

- SW 10 on the SR (video Receiver) module must be set to the ON (down) position
- SW 10 on the ST (video Transmitter) module must be set to the ON (down) position

Under normal operation, the video from the CCTV camera will be displayed on the respective monitor at the receive side. There are two 'alarm' modes - one for loss of video sync and one for loss of optical signal. When one or the other of these alarm modes is present, the monitor will display the following:

Loss of video sync - 4 vertical gray-scale bars across the monitor screen

Loss of optical signal - 8 vertical gray-scale bars across the monitor screen

Note: Modules equipment with Meridian's SpectraSmart Network Diagnostic System option will have a slightly different video display. Instead of the vertical bars, the monitor will actually display a text message (as described below):

Loss of video sync error: will display the message "No Video Sync"

Loss of Optional signal error: will display – "No Optical Fiber"

This procedure concludes the testing of the video/audio/data/contact channels within Meridian's DigiSlim (1-slot) fiber optic digitally-encoded transmission modules.

8.0 Product Part Numbers

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

9.0 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 video at output of module*

Action: Check the SpectraView display on the monitor for an indication of what the problem may be. Also, check to ensure that the video channel-specific LEDs are on (Green). Also, check to ensure that the optical LEDs are ON. If no video is still present, check to ensure that the monitor is ON and the video cable is connected to the correct video port on the Rx module.

Problem: *Video image is dark*

Action: Check the iris control on the camera to ensure that it is open to the proper amount for the conditions

Problem: *Video image is too bright and appears overexposed*

Action: Check the Video overload indicator on the Rx module. If it is Red, the video signal level is too high and the CCTV iris should be checked to ensure that it is open properly for the conditions.

Problem: *No Data*

Action: Check that both the transmit and receive modules are set to transmit/receive the same data format and that the data connections are correct. Check to ensure that the data source is operating properly.

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

The table below indicates the part numbers and product description that are included in this manual. The pinout diagram in section 4.0 shows the connector pinouts (input/output connections) for the all-inclusive product. The appropriate modules consist of 1-channel of uni-directional video and various combinations of bi-directional (symmetric) Audio, Data and Contact Closures. Please use this table to determine the exact pinout of the particular model of interest. Note that where there is only one audio, data or contact closure channel, the pinouts for “Ch1” are used. The “Ch2” connector pinout assignments are only used when two channels of that particular signal are present.

Part Numbers	Description
ST/SR-1W2G/2G-x	Video w/2-ch bi-directional Data
ST/SR-1W2A/2A-x	Video w/2-ch bi-directional Audio
ST/SR-1W2C/2C-x	Video w/2-ch bi-directional Contact Closure
ST/SR-1W1A1G/1A1G-x	Video w/1-ch bi-directional Data & Audio
ST/SR-1W2A2G/2A2G-x	Video w/2-ch bi-directional Data & Audio
ST/SR-1W1A1C1G/1A1C1G-x	Video w/1-ch bi-directional Data & Audio & Contact Closure
ST/SR-1W2A2C2G/2A2C2G-x	Video w/2-ch bi-directional Data & Audio & Contact Closure
ST/SR-1W1A1C/1A1C-x	Video w/1-ch bi-directional Audio & Contact Closure
ST/SR-1W2A2C/2A2C-x	Video w/2-ch bi-directional Audio & Contact Closure
ST/SR-1W1C1G/1C1G-x	Video w/1-ch bi-directional Contact Closure & Data
ST/SR-1W2C2G/2C2G-x	Video w/2-ch bi-directional Contact Closure & Data



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