



Installation/Operation Instructions

Fiber Optic Data Transmission System

Part Number:

DXA/DXB-4K/4K
(RS-485 Bi-Directional Data Transceiver)

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1.0 Product Description

Meridian's DXA & DXB-4K/4K product series are fiber optic modems that transmit four bi-directional RS-485 (4-wire) data channels over one optical fiber using digital transmission technologies. This product series uses Meridian's standard 2-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-1001/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

The digital modules consist of various plug-in personality function cards or SIMs. The top card is the optical card that contains the fiber optic interface. The bi-directional optical input/output connector is located on the right side of both the transmitter (DXA) and receiver (DXB) modules. The bottom two SIMs card each contains the two uni-directional RS-485 data channels.

2.0 Installation

Series DXA & DXB-4K/4K products are two-slot wide cards and, as such, occupy two slots in Meridian's standard chassis (SR-1001/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis). To install in the 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 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 DXA&DXB-4K/4K series products transmit and receive the following signals:

Signal Type	Channels	Transmit	Receive
RS-485 (4-wire)	4	Yes	Yes

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

Data	
Formats	RS-485 (4-wire)
Data Rate (RS-485)	DC to 300Kb/s
Bit Error Rate (BER)	Better than 10^{-9}

Connectors	
Video	75 Ω BNC w/gold center pin
Data	DB9 Female
Optical	Singlemode – ST or FC Multimode - ST

4.0 Data SIM Signal Assignment (Pinouts)

There is one data SIM card in these modules. This data cards transmits/receives two RS-485 (4-wire) data channels. The data SIM has a DB9 female connector.

The table below shows the appropriate pinout for each of the connectors

RS-485 Data Connector Pinout Assignment DXA/DXB-4K/4K		
Pin #	DXA-(Port#3) DXB-(PORT#4)	DXA-(Port#4) DXB-(PORT#3)
1	Ch 1 IN (+)	Ch 1 OUT (+)
2	Ch 1 IN (-)	Ch 1 OUT (-)
3	Ch 2 IN (+)	Ch 2 OUT (+)
4	Ch 2 IN (-)	Ch 2 OUT (-)
5	Gnd	Gnd
6	Ch 3 IN(+)	Ch 3 OUT (+)
7	Ch 3 IN (-)	Ch 3 OUT (-)
8	Ch 4 IN (+)	Ch 4 OUT (+)
9	Ch 4 IN (-)	Ch 4 OUT (-)

Figure 4.1
Front Panel Layout/Pinout Diagram

DXA-4K/4K-X

PINOUT DIAGRAM

STATUS INDICATORS

1. POWER (GREEN)
2. NA

STATUS INDICATORS

1. TX CARRIER (GREEN)/ERROR (RED)

DATA RS485 IN (PORT 3)

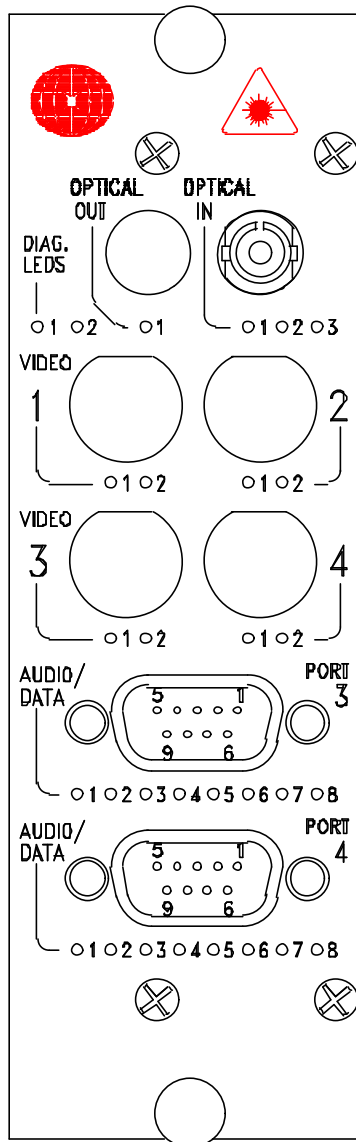
(DB-9 FEMALE)

1. (CH.1) INPUT+
2. (CH.1) INPUT-
3. (CH.2) INPUT+
4. (CH.2) INPUT-
5. GND
6. (CH.3) INPUT+
7. (CH.3) INPUT-
8. (CH.4) INPUT+
9. (CH.4) INPUT-

DATA RS485 OUT (PORT 4)

(DB-9 FEMALE)

1. (CH.1) OUTPUT+
2. (CH.1) OUTPUT-
3. (CH.2) OUTPUT+
4. (CH.2) OUTPUT-
5. GND
6. (CH.3) OUTPUT+
7. (CH.3) OUTPUT-
8. (CH.4) OUTPUT+
9. (CH.4) OUTPUT-



OPTICAL PORT

STATUS INDICATORS

1. NA
2. RX OPTICAL SIGNAL (GREEN)/ABSENT (RED)
3. RX CARRIER (GREEN)/ERROR (RED)

STATUS INDICATORS (PORT 3)

1. (CH.1) DATA INPUT
2. (CH.1) NA
3. (CH.2) DATA INPUT
4. (CH.2) NA
5. (CH.3) DATA INPUT
6. (CH.3) NA
7. (CH.4) DATA INPUT
8. (CH.4) NA

STATUS INDICATORS (PORT 4)

1. (CH.1) NA
2. (CH.1) DATA OUTPUT
3. (CH.2) NA
4. (CH.2) DATA OUTPUT
5. (CH.3) NA
6. (CH.3) DATA OUTPUT
7. (CH.4) NA
8. (CH.4) DATA OUTPUT

DXB-4K/4K-X

PINOUT DIAGRAM

STATUS INDICATORS

1. POWER (GREEN)
2. NA

STATUS INDICATORS

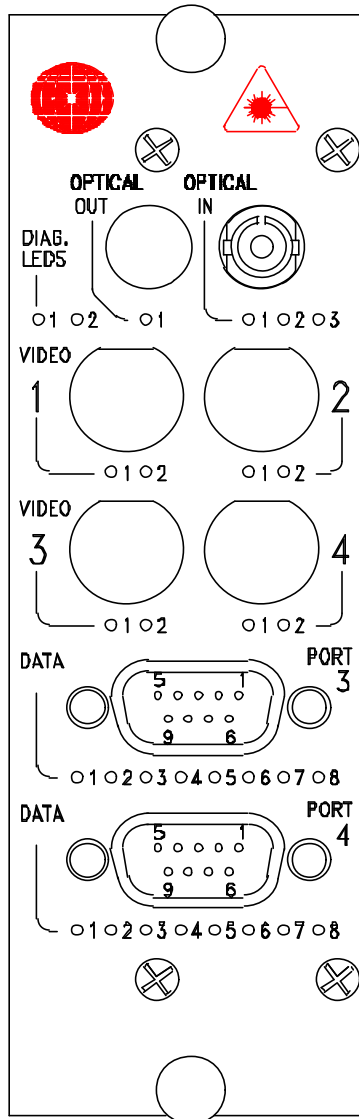
1. TX CARRIER (GREEN)/ERROR (RED)

DATA RS485 OUT (PORT 3) (DB-9 FEMALE)

1. (CH.1) OUTPUT+
2. (CH.1) OUTPUT-
3. (CH.2) OUTPUT+
4. (CH.2) OUTPUT-
5. GND
6. (CH.3) OUTPUT+
7. (CH.3) OUTPUT-
8. (CH.4) OUTPUT+
9. (CH.4) OUTPUT-

DATA RS485 IN (PORT 4) (DB-9 FEMALE)

1. (CH.1) INPUT+
2. (CH.1) INPUT-
3. (CH.2) INPUT+
4. (CH.2) INPUT-
5. GND
6. (CH.3) INPUT+
7. (CH.3) INPUT-
8. (CH.4) INPUT+
9. (CH.4) INPUT-



OPTICAL PORT STATUS INDICATORS

1. NA
2. RX OPTICAL SIGNAL (GREEN)/ABSENT (RED)
3. RX CARRIER (GREEN)/ERROR (RED)

STATUS INDICATORS (PORT 3)

1. (CH.1) NA
2. (CH.1) DATA OUTPUT
3. (CH.2) NA
4. (CH.2) DATA OUTPUT
5. (CH.3) NA
6. (CH.3) DATA OUTPUT
7. (CH.4) NA
8. (CH.4) DATA OUTPUT

STATUS INDICATORS (PORT 4)

1. (CH.1) DATA INPUT
2. (CH.1) NA
3. (CH.2) DATA INPUT
4. (CH.2) NA
5. (CH.3) DATA INPUT
6. (CH.3) NA
7. (CH.4) DATA INPUT
8. (CH.4) NA

5.0 Optical Specifications

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

6.0 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 the data input status indicator light #1 on the transmit module to ensure it is on (indicating a data input signal). Also check the data output status indicator light #2 on the corresponding receiver module to ensure that the signal is being transmitted and received. If not, please check the data input/output and fiber connections.

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

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