

One High-Speed RS-422 Data Channel Transceiver



HXA/HXB-1F-x

HX-1F-x

HX-1F-xN

**RS-422
DATA**

FEATURES:

- One Bi-directional High Speed RS-422 Data Channel
- DC to 4 Mb/s Data Rate
- Surface Mount Technology (SMT) for High Reliability and Repeatability
- SpectraSmart Network Management Compatible
- Local LED Status Indicators to Monitor Critical System Diagnostics and Performance Parameters
- ST, FC Optical Connector
- Hot Swappable Rack Cards
- Back - Biased Photo Detector Circuitry for Stable Optical Laser Output Over Full Temperature Range
- Meets NEMA TS1 / TS2 & CALTRANS Specifications Utilizes Internal Switching Power Supplies
- Automatically Resettable Solid-State Current Limiters on All Power Lines: Provides Equipment Protection
- DB9 Type Connector for Data
- Wide Optical Dynamic Range: Optical Attenuators are Never Needed

DESCRIPTION:

The HXA/HXB-1F-x and HX-1F-x series products incorporate a new digital encoding technology. This fiber optic system transmits One Bi-directional High-speed RS-422 data signal with a maximum data rate of 4Mb/s.

Both, multimode or singlemode, one and two fibers versions are available (See "Part Numbers" section).

The functionality this system is further enhanced by its compatibility with Meridian's PC based SpectraSmart™ Network Management & Diagnostic Software system. SpectraSmart™ supervises the operating parameters of the transmission system such as the status on Digital carrier detect, voltages, temperatures, optical levels etc. See SpectraSmart™ brochure for further details.

CONFIGURATIONS:

The HXA/HXB-1F-x products are available as rack mount cards that can be installed in Meridian's card chassis, desk chassis and 19" racking frames. This system can be configured in either star (module to rack) or trunking (rack to rack) configurations. These systems can be made a standalone system by using the SR-500/s, 1 slot desk / wall mount chassis (87VAC-264VAC).

MARKETS:

- ✓ Security and surveillance
- ✓ Access control systems
- ✓ Intelligent transportation systems (ITS)
- ✓ SCADA

SPECIFICATIONS:

Data

Formats	RS-422 Data
Rate	DC to 4Mb/s
Bit Error Rate	10 ^{-9*}
PWD	10%

Connectors

Data	Screw Terminals (default), DB-9 Female
Optical	ST - MM(default), FC - SM(default)
Power	See SR-500 Spec. Sheet

Optical

Fiber Data Rate	100 Mb/s
-----------------	----------

Environmental

Operating Temperature	-34°C to +74°C
Storage Temperature	-55°C to +85°C
Relative Humidity	0 to 95% Non-condensing

Power

Card	3 Watts**
------	-----------

Indicators (LEDs)

1 - Green	Power On
1 - Bi-color	TX Carrier/ Laser Over Current
1 - Bi-color	RX optical signal - Present / Error
1 - Green	TX Data Present
1 - Green	RX Data Present
1 - Bi-color (Optional)	Card Diagnostics

Physical

Dimensions (Card)	20 (W) x 127 (H) x 160 (D) mm (0.8 x 5.0 x 6.3 inch)
Weight (Card)	450 gms (16 Oz)
No. of Slots	1
Module	See SR-500 Brochure

Quality

MTBF	>200,000 hours, @ 35°C Ground Fix as per MIL 217F
------	--

* measured @ max. optical budget

** Due to variations of drivers and diagnostic options, power shown @ max value

Part Numbers:

CWDM LASER GUIDE	
REFERENCE NUMBER	WAVELENGTH
27	CWDM, 1270 nm DFB Laser
29	CWDM, 1290 nm DFB Laser
31	CWDM, 1310 nm DFB Laser
33	CWDM, 1330 nm DFB Laser
35	CWDM, 1350 nm DFB Laser
37	CWDM, 1370 nm DFB Laser
39	CWDM, 1390 nm DFB Laser
41	CWDM, 1410 nm DFB Laser
47	CWDM, 1470 nm DFB Laser
49	CWDM, 1490 nm DFB Laser
51	CWDM, 1510 nm DFB Laser
53	CWDM, 1530 nm DFB Laser
55	CWDM, 1550 nm DFB Laser
57	CWDM, 1570 nm DFB Laser
59	CWDM, 1590 nm DFB Laser
61	CWDM, 1610 nm DFB Laser

HX **1F** **X** **ST**

ONE FIBER **A** **B** **TWO FIBERS** **C** **D** **N**

TRANSCEIVER (Side A)
TRANSCEIVER (Side B)

MULTIMODE - 1
SINGLEMODE - 3
SINGLEMODE - 7
SINGLEMODE - 9
SINGLEMODE - CWDM*

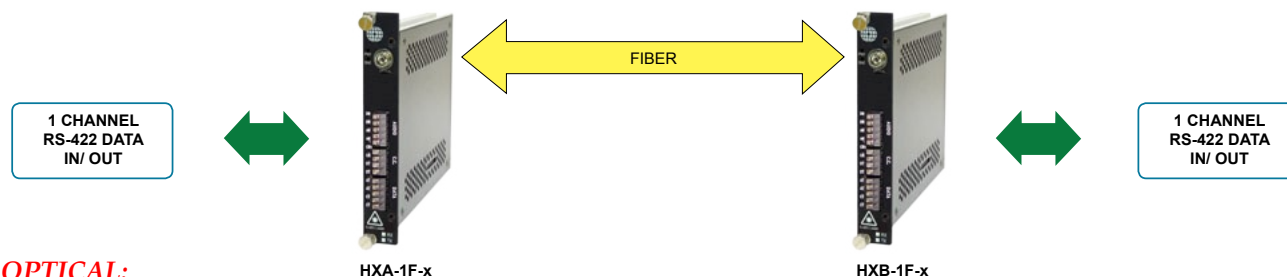
MULTIMODE - 2
SINGLEMODE - 5

C - CONFORMAL COATING
D - SpectraSmart™ DIAGNOSTIC
N - DB-9 type DATA CONNECTOR

ST - SINGLEMODE CONNECTOR (OPTIONAL)
! Do not include if using default connector.

STANDARD PART NUMBERS	
PART NUMBER	DESCRIPTION
HX-1F-1	Transceiver module, multimode, 1300 nm, 2 fibers
HX-1F-3	Transceiver module, singlemode, 1310 nm, FP laser, 2 fibers
HX-1F-7	Transceiver module, singlemode, 1550 nm, DFB laser, 2 fibers
HX-1F-9	Transceiver module, singlemode, 1310 nm, DFB laser, 2 fibers
HXA-1F-2	Transceiver module, multimode, 850/1310 nm laser, 1 fiber
HXB-1F-2	Transceiver module, multimode, 1310/850 nm laser, 1 fiber
HXA-1F-5	Transceiver module, singlemode, 1310/1550 nm FP laser, 1 fiber
HXB-1F-5	Transceiver module, singlemode, 1550/1310 nm FP laser, 1 fiber

* See CWDM Laser Guide table for CWDM Lasers selection



OPTICAL:

Meridian Optical Code	Fiber Type/Size (um)	Optical Output (dBm)	Receiver Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical Connector	Optical Dynamic Range (dB)	Max Distance (Km)
1	Multimode (Laser) 62.5 / 125	-5	-27	22	1300	ST	27	7
3	Singlemode (FP Laser) 9 / 125	-5	-27	22	1310	ST, FC	27	60
2	Multimode (Laser) 62.5 / 125	-5	-25	20	850/1300	ST	25	7
5	Singlemode (FP Laser) 9 / 125	-5	-25	20	1310/1550	ST, FC	25	55
7, 9, CWDM	Singlemode (DFB Laser) 9 / 125	+1	-27	28	CWDM	ST, FC	27	80

Meridian Technologies Inc.

700 Elmont Road. • Elmont, NY 11003 • 516. 285. 1000 • FAX 516. 285. 6300 • E-mail sales@meridian-tech.com
Visit our web side: www.meridian-tech.com

ver.04/2014 B