

V.35/RS-232/RS-530/X.21/RS-449 to Fiber Converter Family

FIB1-DATA



The FIB1 Family of converters are standalone fiber media converters available in a number of different models that also act as line cards for placement in the FRM301 Platform Media Converter Chassis. The FIB1-DATA is a media converter for V.35, RS-232, RS-530, X.21 or RS-449 high-speed synchronous or low-speed synchronous and asynchronous data transmission over optical fiber media.

All media converters are available with either multi-mode or single-mode optical transceivers and with connectors for SC, ST, or FC. In single mode, WDM (Wave Division Multiplexing with SC connector) is also available in 20 or 40KM reach, which will provide the ability to transmit and receive data using only a single optical fiber.

When the FIB1-DATA card is placed in the FRM301 rack with SNMP management, the card status, type, version, fiber link status, data link status and alarms can all be displayed. Configuration is also available to enable or disable the port, reset the port, set the data rate, modify the clock mode, and initiate local or far end loop back tests.

Features:

- ▶ 1 port data communication on HDB26 female (adapter cable required)
- ▶ Supports multimode, single-mode, or single fiber with ST, SC, or FC connectors
- ▶ User selectable nx64Kbps data rate, clock mode setting, asynchronous baudrate, Loop back test
- ▶ LED indicators - Power, Fiber Link, TD, RD, RTS, CTS, DCD and Test mode
- ▶ Network Management via Terminal or SNMP card (when used in FRM301 platform rack)
- ▶ Optical Bit Error Rate less than 10^{-11}

Specifications

| | |
|-------------------|--|
| • Ports | 1 port V.35/RS232/RS530/X.21/RS449 |
| • Connector | HDB26F (adapter cable to DB15, 25, 37 or MB34) |
| • Line Code | NRZ |
| • Data rate | n x 64Kbps where n=1 to 32 (64 ~ 2048Kbps), Low Speed Synchronous & Asynchronous 75 ~ 115.2k baud rate |
| • Clock modes | Transparent, Recovery, External, Internal RC, TC, ETC normal or inverted |
| • Control Signals | CTS constantly ON or follows RTS DSR constantly ON, except during tests DCD constantly ON, except during signal loss |
| • Test Loops | LLB (Local Loop Back) RLB (Remote Loop Back) ITU-T V.54 |

All specifications and features are subject to change without notice.

Optical interface

Optical Specifications

| | | Standard Types | | | | | WDM Types* | | | |
|-----------------|----|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Type | | M-M | S-M | S-M | S-M | S-M | S-M | S-M | S-M | S-M |
| Distance (Km) | | 2 | 15 | 30 | 50 | 120 | 20(A)* | 20(B)* | 40(A)* | 40(B)* |
| Wavelength (nm) | | 1310 | 1310 | 1310 | 1310 | 1550 | Tx:1310 | Tx:1550 | Tx:1310 | Tx:1550 |
| | | | | | | | Rx:1550 | Rx:1310 | Rx:1550 | Rx:1310 |
| BER | | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ | <10 ⁻¹⁰ |
| Sensitivity | | -31dBm | -32dBm | -35dBm | -36dBm | -35dBm | -32dBm | -32dBm | -32dBm | -32dBm |
| Output Power | | -20dBm | -20dBm | -15dBm | -8dBm | 0dBm | -15dBm | -18dBm | -7dBm | -10dBm |
| Power Margin | | 11dB | 12dB | 20dB | 28dB | 35dB | 17dB | 14dB | 25dB | 22dB |
| Return Loss | | -12dBm | -12dBm | -12dBm | -12dBm | -12dBm | -14dBm | -14dBm | -14dBm | -14dBm |
| Conn. Types | ST | v | v | v | v | v | | | | |
| | SC | v | v | v | v | v | v | v | v | v |
| | FC | v | v | v | v | v | | | | |

M-M: multi-mode S-M: single-mode

* WDM types must match (A) with (B) in pairs

(All fiber transceivers Class A)

General Specification

Power supply

- **AC Power Adapter** Input: 110 VAC +/- 10%
Frequency: 57~63 Hz
Output: DC 9V, 1A
- **Power consumption** <4W
- **EMI** FCC Class A,
CE (EN55022), (EN60950)

Physical

- **Height** 122.6 mm
- **Width** 85.6 mm
- **Depth** 20 mm
- **Weight** 11 Oz (340g)
- **Temperature** 0 - 50 C (Operating)
0 - 70 C (Storage)
- **Humidity** 20 - 80 % non-condensing (Operating)
10 - 90 % (Storage)

Ordering Information

FIB1-XXX-XX-XXX

| Copper Interface Type | Fiber Connector Type | Distance Connectivity |
|-----------------------|----------------------|---------------------------------|
| V35 V.35 MB34 | SC SC Type | 002: 2Km [multi-mode only] |
| 232 RS-232 DB25 | ST ST Type | 015: 15Km |
| 530 RS-530 DB25 | FC FC Type | 030: 30Km |
| X21 X.21 DB15 | | 050: 50Km |
| 449 RS-449 DB37 | | 120: 120Km |
| | | *20A: 20Km [WDM only] |
| | | *20B: 20Km [WDM only] |
| | | *40A: 40Km [WDM only] |
| | | *40B: 40Km [WDM only] |
| | | *020A must be coupled with 020B |
| | | *040A must be coupled with 040B |

Examples

FIB1-V35-SC-120

FIB1-DATA features with V.35 I/F, with MB34 Male cable adapter, single mode 120 Km, SC type connector optical interface

FIB1-X21-SC-40A

FIB1-DATA features with X.21, with DB15 Female cable adapter, WDM 40 Km, SC type connector optical interface (Must be coupled with FIB1-X21-X-SC-40B)

*Special note for WDM : Because WDM utilizes different wave lengths on the same physical fiber cable, the WDM units must be matched in pairs (which we designate as A and B). Failure to match in pairs (A unit to B unit) will not allow any transmission on the fiber link as the transmit wavelength of one unit in the pair must match the receive wavelength of the other unit in the pair.