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FT2ER

Quad DS1 Fiber Optic Extension



Highlights

- Operates over single mode and multimode fiber
- 1300nm laser and detector
- Environmental hardening -40° to +167°F (-40° to +75°C)
- Operating range to 39 miles (63.3km) single mode fiber; 20 miles (33km) multimode fiber
- Four DS1s per FT2ER module
- Up to 20 protected DS1s on five fiber pairs
- Type ST fiber connectors
- Fully redundant configurations
- DS1equalization for up to 655 feet to DSX-1
- Fiber and/or route diversity
- Manual and automatic switchover to protection circuits and fiber
- Rack, wall, and desk mountings
- -48 VDC power

Advantages

- Cost effective T1 loop extensions
- Provides fully protected facilities
- Use in all environments, CO, CEV, outdoor pedestal
- Operates over single mode or multimode fiber
- Multiple service applications
- Eliminates expensive copper maintenance
- Low cost solution for capacity increases
- Eliminates span powering repeaters at customer premises
- Permits smooth DS1 to DS3 transition

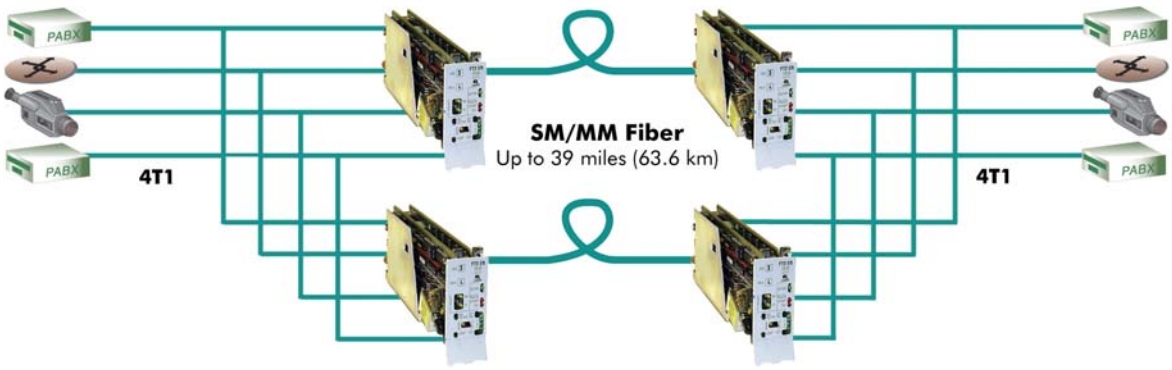
The **CXR/Larus FT2ER**™ local loop lightwave extension for metallic T1 is a four channel DS1 multiplexer/demultiplexer that operates over single mode or multimode fiber optic cable. The FT2ER has a 1300nm laser diode transmitter, and PIN diode receiver. The system can operate over 30dB of fiber, splice and connector loss, with a 3.0dB power margin, or up to 39 miles (63.3km) of single mode fiber or 20 miles (33km) of multimode fiber.

An end-to-end system comprises the FT2ER circuit pack and mounting shelf at each terminal end and the interconnecting fiber. A fully protected system requires two FT2ER circuit packs at each terminal end. The circuit packs provide four transmit and receive DS1ports for metallic connection to DSX-1and/or customer equipment. The four T1metallic inputs are multiplexed and output to a 1300nm fiber optic channel. The input from the fiber optic channel is demultiplexed and output to the four T1 metallic circuits.

A single FT2ER circuit pack provides power supply, fiber optic receiver/transmitter circuitry, four-DS1 interfaces, multiplexer/demultiplexer circuits and alarm interfaces. Front panel LEDs and pushbutton switches provide circuit status information. The FT2ER can be powered from central office battery, local -48 VDC power, or customer supplied optional 117 VAC to -48 VDC power converter.

The FT2ER circuit pack may be mounted in a 10 position 19-inch/23-inch rack shelf or a 14 position 23-inch shelf, for locating in a central office, controlled environment vault, outdoor pedestal, or customer equipment room. A two position shelf, providing four protected DS1s, is available for customer premises applications, in wall or desk top mounting. All shelves are configured for fully redundant protected service.

Application



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Specifications

DS1 INTERFACE

DATA FORMAT
Framed or unframed

DATA MODE
AMI or B8ZS

PORT IMPEDANCE
(Input & Output) 100 ohms nominal

INPUT BIT RATE
1.544Mbps, ±200bps

INPUT SIGNAL RANGE
-7.5dBV to +3dBV, DSX TPL

OUTPUT PULSE AMPLITUDE
6 V P-P (±3 V, ±0.3 V)

PRECOMPENSATION NETWORK
5 section, switch selectable

- 0 to 133 ft
- 134 to 266 ft
- 267 to 399 ft
- 400 to 533 ft
- 534 to 655 ft

LINE SIGNAL OUTPUT

- Pulse Width: 324nS ±30ns
- Pulse Width Imbalance: 15nS maximum
- Pulse Overshoot: 10% to 30% of pulse height 20% nominal
- Pulse Rise and Fall Time: 100nS maximum

FIBER OPTIC INTERFACE

RECEIVER DIODE

- Type: PIN detector
- Fiber Connector: Type ST
- Receive Sensitivity: -3.0dBm to -39.0dBm (typical)

TRANSMITTER LASER

- Wavelength: 1300nm Fiber
- Single mode: 9.0 ucron
- Multimode: 62.5 ucron
- Fiber Connector: Type ST
- Output Power (dBm after 1 meter of cable)

Single mode
High: -4.2 to -5.9dBm
Low: -10.9 to -12.6dBm

Multimode
High: 0.7 to -2.0dBm
Low: -4.9 to -9.9dBm

ENVIRONMENTAL

- Operating Temperature: -40° to +167°F (-40° to +75°C)
- Storage Temperature: -40° to +185°F (-40° to +85°C)

PHYSICAL
Power Requirements

- Voltage: -48 VDC
- Current: 0.14 A, max, per circuit pack

Dimensions (H x D x W)

- FT2ER Circuit Pack: 3.8 in x 10.25 in x 1.45 in
- 10 Position 19"/23" Rack Shelf: 7 in x 12 in x 19 in or 23 in
- 14 Position 23" Rack Shelf: 7 in x 12 in x 23 in
- 2 Position Shelf Wall Mount: 7.5 in x 15.5 in x 5.75 in

Weight

- FT2ER Circuit Pack: 15.0 oz.
- 10 Position Shelf: 18.1 lbs. fully equipped

PHYSICAL (CONTINUED)

- 14 Position Shelf: 32.0 lbs. fully equipped
- 2 Position Wall Mount: 10.8 lbs. fully equipped

RELATIVE HUMIDITY
0 to 95% noncondensing

Ordering Configurations

FT2ER

Quad DS1 Fiber Optic Extension

Model	Description	Bellcore Code Information
FT2ER-1	FT2ER Circuit Pack e/w 1300nm laser (card)	FNUMHAADAA

Accessories	Description	Bellcore Code Information
1187-1	10 Module Equipment Shelf, 19-in/23-in Rack	FNMLDBOBRA
1188-3	14 Module Equipment Shelf, 23-in Rack	FNMLECOBRA
1189-0	2 Module Equipment Shelf, Wall Mount	FNMLCAOBRA

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