TX/Communications Canada Inc.

T1 / E1 to Fibre Optic Converter

Two models available

Long Haul model

Short Haul model

1. Product Definition

- Provides a simple way to connect the Infinity system or other products to fibre optic cabling.
- Able to replace the T1/E1 cables with a pair of fiber optic cables for linking TX products in long distance.
- A terminal block hooks up two pairs of wire, which connect to the connector on the back panel.
- Modulate T1/E1 signal to optical pulses and transmits through a pair of fibre optic cables. The signal demodulate back to T1/E1 signal with minimal delay.
- Low cost
- Easy to use and compact.

2. Product Specification

- 2 ST receptacle connectors for fibre optical connection.
- Link distance up to 2.5 Km at 62.5/125 um fibre, 850 nm wavelength up to 12 Km at 62.5/125 um fibre, 1300 nm wavelength.
- Jumpers selectable for T1 or E1 interface.
- Transmit and receive 820 nm wavelength, optional with 1300 nm wavelength transmitter/receiver.
- Transmit and receive on 50/125um, 62.5/125um, 100/140um and 200um optical fibre sizes.
- Synchronous communications of T1 and E1 in half/full duplex.
- LEDs indicators,
    - LF - Line fault.
    - LOCK - receiver frequency lock.
    - RCL - receive carrier loss.
    - BL - Buffer Limit, indicates jittering on transmit clock is greater than 120UIpp.
- Blue alarm, send all 1's to T1/E1 when receiving fibre signal loss.
- Input power from -48 volts main supply.

- Decode/encode AMI, BPV, B8ZS and HDB3.
- Power consumption current is about 200mA.
- FM (frequency modulation) signal is used for optical Signal transmission, it does not compatible with other Products if they are not using the same scheme.

3. Functional Description

The T1/E1 is a synchronous communication, clock and data must be in phase all the time. Fibre optic cable can only carry a single signal and transmitting in one direction at a time. The data pulses must be modulated into the clock pulses to form a single signal before transmitting through the fibre optic cable. There are few ways to modulate the data component into clock signal.

There are seven LED indicators in the circuit design;

POWER - D7, (yellow) power on indicator, turns on when +5V is present.

LF - D1, (red) Line Fault, turns on during output driver fault and/or failure.

LOCK - D2, (green) Frequency Lock, turns on to indicate that internal circuit is in phase and is locked to the incoming signal at RRING and RTIP of DS2187.

RCL - D3, (red) Receive Carrier Lost, turns on when 192 zeros appear at RPOS and RNEG or T1/CEPT signal is lost.

BL - D4, (yellow) Buffer Low, when transmitting clock is greater then 120UIpp jittering, the clock

For additional detail technical info please contact TX communications.