T1/E1 Fiber Optic Modem   TC1631

- **Distances up to 80km**
- **Local & Remote Loopback**
- **Extensive trouble-shooting LED Indicators**
- **No Jitter**
- **Multimode & Single Mode (1300/1550nm)**
- **Optical Redundancy (Optional)**
- **One Fiber Bi-Directional (Optional)**
- **Low Current Consumption**
- **Replaceable Line Interface Module**
- **Local Dry Contact Alarm Relay**
- **RJ45 (RJ48C) and Detachable Terminal Block Connectors**

TC1631 Front & Rear View

The Model TC1631R/S is a T1/E1 Fiber Optic Modem that converts analog T1 or E1 signals to digital fiber optic signal and vice versa. TC1631R is for 19" rack mount and TC1631S is for standalone unit. Both have the same functions and features, the only difference is power connectors.

TC1631 offers advanced features such as digital transmission, jitter removal and a field replaceable Line Interface Module. Because it is based on modern FPGA (Field Programmable Gate Array) technology, the IC chip counts are reduced to a minimum, hence offering extremely low power consumption (less than 3 watts) and higher reliability.

Transparent to the framing format, the TC1631R/S's T1/E1 interface shapes the transmit pulse to support CCITT G.703, or, for connecting to DSX-1 cross connects, copper line distances are from 0 to 655 feet. The internal elastic buffer removes jitter from transmit data.

The TC1631R/S has multiple LED indicators to ease installation and troubleshooting. These LEDs indicate power, operating voltage, alarm status, local and remote T1/E1 signal loss, bipolar violations, all ones warning, Optic signal sync active and more. Four DIP switches, accessible from the front panel, control settings for Line Code, Local Loopback, Remote Loopback, and Disable Alarm. The internal SW2 DIP switches, control the settings for the Line Length. The dry contact alarm relay switch provides remote alarm monitoring capability.

The TC1631R/S is compatible with all types and sizes of fiber optic cable. Fiber optic connectors are SC (optional ST or FC). The T1 or E1 signal connects to two pairs of feed-thru detachable terminal block or RJ-48 connectors at the rear panel. Standard input power is 12V DC. Alternate power sources are available as an option.
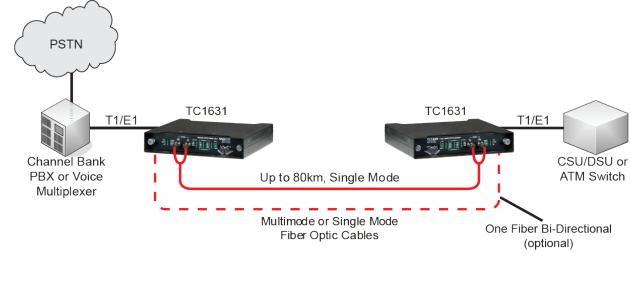
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Applications

The TC1631 Fiber Optic T1/E1 Modem is typically used to link Channel Banks, PBX's, and M13 Multiplexers to DSX-1 Cross Connects. It is also used to link Customer Premises Equipment to CSU/DSUs and with metallic medium T1/E1 multiplexers to transmit over fiber optic cable.

Typical Point-to-Point Application Using TC1631 in a Local Loop

Data Rates
T1....................................... 1.544 Mbps
E1....................................... 2.048 Mbps

Optical
Transmitter .... LED/ELED/LASER*
Receiver...............................PIN Diode
Wavelength .... 1300nm MM
...................................1300/1550nm SM
Fiber Optic Connectors
.... SC, Optional ST or FC
Loss Budget* - 1300/1550nm
Multimode @62.5/125µm............ 15dB
Single Mode @9/125µm 20dB

Electrical
Connector ....T1 or E1 (G.703)
T1/E1 (100/120 ohm) Connector
..................Detachable Terminal Block
.... RJ-48C (RJ-45 Female)
E1 Connector (75 ohm)
.... Det. Term. Block & BNC Cable

System
Bit Error Rate ....1 in 10^{10} or better

Alarm
Dry Contact....................Normal OPEN

Visual Indicators
System Status...... PWR A, PWR B, Vcc,
............ALM, Rx-A, Rx-B, USE-B, SYNC
T1/E1 Status ....LOCRD, LAIS, BPV
......LOCLB, RMTRD, RAIS, RMTLB, LEN

Diagnostic Functions
....................Local & Remote Loopback

Power
Standard .... 12VDC @300mA
Optional................ 24VDC, -48VDC, or
.... 115/230VAC w/ power cube

Temperature
Operating .... –10°C to 50°C
Hi-Temp (optional) .... –20°C to 70°C
Storage.......................... –40°C to 90°C
Humidity ....95% non-condensing

Physical (Standalone Unit)
Height .... (3.53 cm) 1.4"
Width .... (18.14 cm) 7.2"
Depth .... (16.57 cm) 6.6"
Weight ....(635gm) 1.4 lbs

Contact factory for higher requirements

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Certified System ™

SAI GLOBAL

ISO 9001
Quality

Note: Information contained in this data sheet is subject to change without prior notice.