2 or 4 Channel RS-232 Sync -over-T1/E1 Multiplexer

TC8631-4

- **2 CH or 4 CH RS-232 Sync with Full Handshakes (CTS/RTS, DTR/DSR)**
- **Built-in Internal Clocks (TXC/RXC)**
- **RS-232 Status LEDs for 8 Signals: TXD/RXD, CTS/RTS, DTR/DSR, TXC/RXC**
- **Seven LEDs for T1/E1 Status BPV, LOS, SYNC, AMI, RAI, AIS, CRC**
- **ESF Framing Support for T1**
- **PCM31C Framing Support for E1**
- **Very Low Latency**
- **Optional Power Redundancy**
- **1U or 4U Rack Mount**
- **12VDC, 24VDC, -48VDC, 125VDC, 100-240VAC**
- **"R2" Push Button for Troubleshooting Local Or Remote Units**

2x TC8631-4 in 1U Chassis (Front)

2x TC8631-4 in 1U Chassis (Rear)

TC COMMUNICATIONS®
FIBER OPTIC CONNECTIVITY

The TC8631-4 is a 2 or 4 Channel RS-232 Sync-over-T1/E1 central directional multiplexer with built-in power redundancy. It is ideal for applications where RS-232 Sync serial data needs to be extended over a T1/E1 link.

TC8631-4 uses two DB9 female ports (Port 1 & Port 2) for RS-232 Sync signals and each channel supports up to 28.8 Kbps. It also features extensive diagnostics and includes DIP switches for Local & Remote Loopback, and are also used to configure other applications. This means no additional equipment is required for T1/E1 link and device verification.

Three different types of built-in loopbacks: local, remote, and T1/E1 loopback, assist in isolating whether an issue lies on your serial line or your T1/E1 line. CSU Loop Code Up/Down is also supported.

Each unit provides TXD/RXD, CTS/RTS, DTR/DSR, and TXC/RXC LEDs for verifying signals on each serial channel, Power LEDs for verifying power inputs, Alarm LEDs for verifying T1/E1 signal, and a Remote LED to monitor the remote unit.

All products part of the Mini Channel Bank series are equipped with the "R2" button. The "R2" button, was developed to isolate causes of disruptions, leveraging the Alarm LEDs and allows users to clear the history on the local unit and mirror and reset the Alarm LEDs on the remote unit. Each of the Alarm LEDs have the ability to show current T1/E1 errors and a history of up to 3 errors.

Applications

The TC8631-4 2-Channel RS-232 Sync-over-T1/E1 multiplexer provides an inexpensive method for connecting terminals such as relays, and status collecting devices. It is also used in harsh environments where EMI/RFI interference, ground loops and lightning conditions may exist.
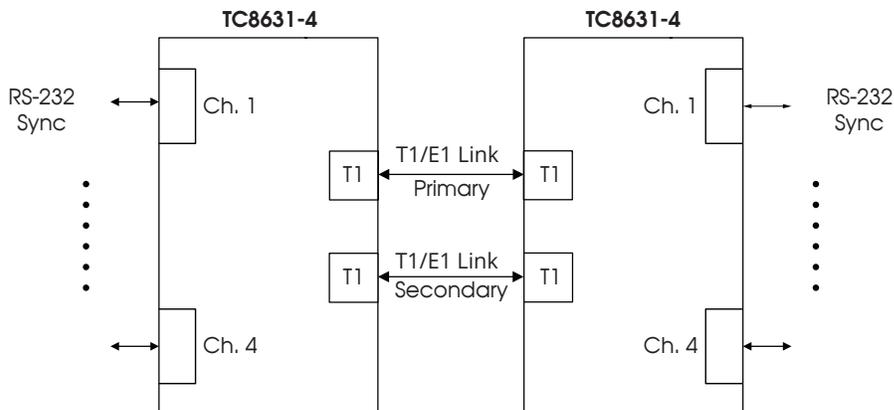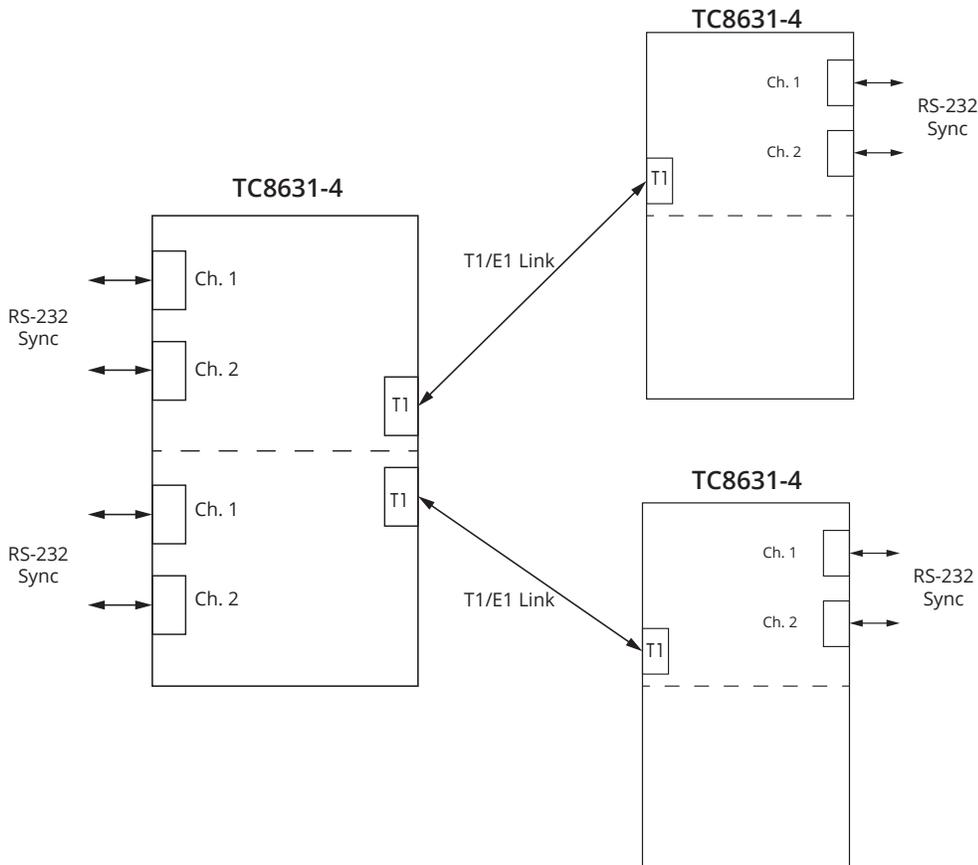
The TC8631-4 is compatible with standard 100Ω T1 for copper line lengths up to 6000ft and up to 2.5km for 75Ω / 120Ω E1 (copper line length is the distance between the TC8631-4 and the T1/E1 cross-connect). The T1/E1 uses an RJ48 connector and the serial channels use RJ-11 connectors. Optional BNC adapter cable is available for 75 Ohm E1. Power is 12VDC standard or optional 24VDC, -48VDC, 125VDC, or 100/240VAC with an external power cube. Optionally, a high temperature version (-20°C to 70°C) and extreme temperature version (-40°C to 80°C) are also available.

With two TC8631-4 cards in one 1U chassis, there are two T1/E1 connections available for following configurations:

- Two 2 channel serial RS-232 multiplexer, each having their own T1/E1 connection
- One 4 channel serial RS-232 multiplexer, T1/E1 primary link and T1/E1 secondary link

TC8631-4 Redundant Block Diagram

TC8631-4 Independent Block Diagram

Serial
Standard RS-232
Ports 2
Data Rate .... 9.6 Kbps, 14.4 Kbps, 19.2 Kbps, 28.8 Kbps

T1/E1
T1
Receiver sensitivity ....0dB to -36dB
Line Code .... AMI / B8ZS
Framing...ESF
E1
Receiver sensitivity ....0dB to -43dB
Line Code ....AMI / HDB3
Framing... PCM31C

Visual Indicators
Channel Status (each ch.)..........................TXC, RXC, TXD, RXD,
....CTS, RTS, DTR, DSR
System ....PWR A, PWR B, Vcc, ALM, RMT
T1/E1.................................BPV, LOS, SYNC, AMI, RAI, AIS, CRC

Electrical
Connector DB9F
Interface...RS-232

System
Bit Error Rate .... 1 in 10^9 or better

Alarm
Dry Contact...Normal Open/Closed

Power
Standard .... 12VDC @500mA
Optional...24VDC, –48VDC, 125VDC,
....or 100/240VAC w/ power cube

Temperature
Operating .... –10°C to 50°C
Hi-Temp (optional) .... –20°C to 70°C
Extreme (optional) .... –40°C to 80°C
Storage... –40°C to 90°C
Humidity ....95% non-condensing

Physical
Single Card
Height .... (3.53 cm) 1.40”
Width .... (18.14 cm) 7.20”
Depth .... (24.89 cm) 9.80”
Weight .... (907 g) 2.0 lbs
1U Chassis
Height .... (4.3 cm) 1.70”
Width .... (48.3 cm) 19.0”
Depth .... (26.7 cm) 10.5”

TC COMMUNICATIONS®
FIBER OPTIC CONNECTIVITY

Certified System ™

SAI GLOBAL
ISO 9001
Quality

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