

# Telephone, Ethernet & Data Fiber Optic Multiplexer

Model  
TC8520

- Multiplexes 10/100 Ethernet, 2-Wire Analog POTS and Optional RS-232, RS-422, TTL, Dry Contact
- Network Management (Web, Telnet)
- Two-Way "One Fiber" Option
- Multimode or Single Mode (1300/1550nm)
- Power Redundancy, Optical Redundancy Optional
- 12VDC, Optional 24VDC, -48VDC, 125VDC or 115/230VAC
- Industrial Hardened (optional)
- Hi-Temp2 Version Exceeds NEMA & Caltrans Traffic Control Specs



TC8520S Standalone/Wallmount Version



TC8520P 19" Wide, 1U High Rackmount Version

The TC8520 Telephone, Ethernet & Data Fiber Multiplexer multiplexes various combinations of 2-wire Analog POTS, 1 Ch. 10/100 Ethernet or Serial Data channels over single mode (1300/1550nm) or multimode fiber (1300/1550nm).

The TC8520 supports distances to more than 100 km and offers a two-way, "one fiber" communication option to maximize fiber cable usage. Optional redundant power and optics include automatic switchover for maximum reliability.

Setup, diagnostics and control is accessed via Serial Terminal, Telnet management ports. Diagnostics include LED indicators, dry contact alarms and local and remote loopback.

The Ethernet port auto-negotiates at 10/100 with full 10Mbps throughput and rate control in increments of 32Kbps. It is IEEE 802.3/802.3u/802.3x compliant.

The TC8520 converts 2-wire FXS to fiber optics on the telephone side with ring down capability and FXO on the PBX side. Because the TC8520 digitizes the analog signals (PCM), voice quality does not degrade over extended distances. Serial interface options are RS-232, RS-422, TTL, Dry Contact.

The TC8520 is available as standalone unit or 1U high "pizza box". Fiber optic connectors are ST, FC or SC. Standard power is 12VDC and includes built-in redundancy. Optional power sources include 24VDC, -48VDC, 125VDC or 115/230VAC with an external power cube. High temperature (-20°C to 70°C) and extreme temperature (-40°C to 80°C) versions are also available.



## Applications

Typical applications include extending SDH/SONET backbones and adding Telephone Voice, Ethernet and Serial service to existing fiber optic links. Service Providers use the TC8520 as an efficient, cost effective method to provide their customers with Telephone Voice, Ethernet and Serial connections. The two-way "one fiber," option can double usage of existing fiber optic cable plants.

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Typical Application Using TC8520 Telephone, 10/100 Ethernet & Serial Data Fiber Optic Multiplexers.

#### Data Rates

Telephone.....300Hz to 3.4 KHz  
 Ethernet.....10/100 Mbps  
 .....(10 Mbps throughput)  
 RS-232 Async w/RTS CTS.....  
 .....Up to 19.2 Kbps  
 RS-422, TTL.....Up to 19.2Kbps

#### Channel Capacity

Telephone.....4  
 Ethernet.....1  
 RS-232, RS-422, TTL.....4

#### Optical

Transmitter.....ELED/LASER\*  
 Receiver.....PIN Diode

#### Wavelength

.....1300nm Multimode  
 .....1300/1550nm Single Mode

#### Optical Connectors.....ST , FC, SC

#### Loss Budgets\* - .....

LED/ELED....15dB MM @62.5/125µm

LASER.....20dB SM @9/125µm

#### Electrical

Interface.....2-wire Analog POTS

.....IEEE 802.3 Ethernet

.....RS-232, RS-422, TTL

Ethernet Connector.....RJ45F

2-wire Analog Connector.....RJ11F

RS-232, RS-422, TTL.....RJ11F

#### System

Bit Error Rate...1 in 10<sup>10</sup> or Better

#### Visual Indicators

System LEDs.....PWR A, PWR B, Vcc  
 Channel Status (each port).....RXD,  
 .....RLOS, LOS, RLPB, BPV, Alarm  
 Optical Signal Status .....SyncB  
 .....Optic in Use, RXA, RXB, VLIN

#### Diagnostic Functions

Local and Remote Loopback

#### Power

Standard .....12VDC @ 1.2A

Optional .....24VDC, -48VDC,

.....125VDC, 115/230VAC

#### Temperature

Operating.....-10°C to 50°C

Hi-Temp1 (optional) ....-20°C to 70°C

Hi-Temp2 (optional) ....-40°C to 80°C

Storage.....-40°C to 90°C

Humidity.....95% non-condensing

#### Physical (Standalone Unit)

Height.....(6.70 cm) 2.6"

Width.....(18.14 cm) 7.1"

Depth.....(24.8 cm) 9.8"

Weight.....(1.36 kg) 3.0 lbs

\*Contact factory for higher requirements

\*\* Future release



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