

# Multi-Drop (String) Fiber Optic Modem

## Model TC2200

- Bus or String Topologies
- Fault Tolerant "Double" Master (optional)
- Async Data Rates up to 38.4 Kbps
- RS-232, RS-422 or RS-485
- Multimode & Single Mode (850/1300/1550)
- Hardened Temperature Version (optional)
- Test Signal generator
- Anti-Streaming (Anti-Jabber)
- Local Dry Contact Alarm Relay



Bus End Unit, Single Pair Optics



Bus Intermediate Unit, Dual Pair Optics

**A**vailable for either Bus or String topologies, the TC2200 Multi-Drop Fiber Optic Modem links monitoring devices (RTUs or PLCs) to a Host controller or CPU.

Electrical interfaces can be RS-232, RS-422 or RS-485. The RS-485 electrical port can be multi-dropped. Asynchronous data rates can be up to 38.4 Kbps. A hardened temperature version ( $-40^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ ), Model TC2200T, is also available.

Each unit comes standard with two RS-232 channels or one channel RS-422/RS-485. The second RS-232 channel can be used for data or RTS/CTS control. The second RS-232 channel can also be used as a dial-up telephone extension with the "Quick-Talk" Telephone Extender.

Diagnostics include Local and Remote Loopback, a Test Signal Generator for verifying link integrity and a dry contact alarm relay. Sixteen LEDs provide visual indicators for System, Optical and Electrical system status. "Anti-Streaming" capability is standard. (Anti-Streaming prevents a single node failure (e.g. "babbling") from bringing down the entire network).

For applications requiring maximum reliability, the TC2200 is also available in a "Dual Master" fault tolerant version. In the event of cable breakage or a defective Remote unit, the backup Master will start polling the Remote units from the opposite direction. The primary and secondary Master units can be located anywhere on the fiber bus network. Remote units can be daisy-chained.

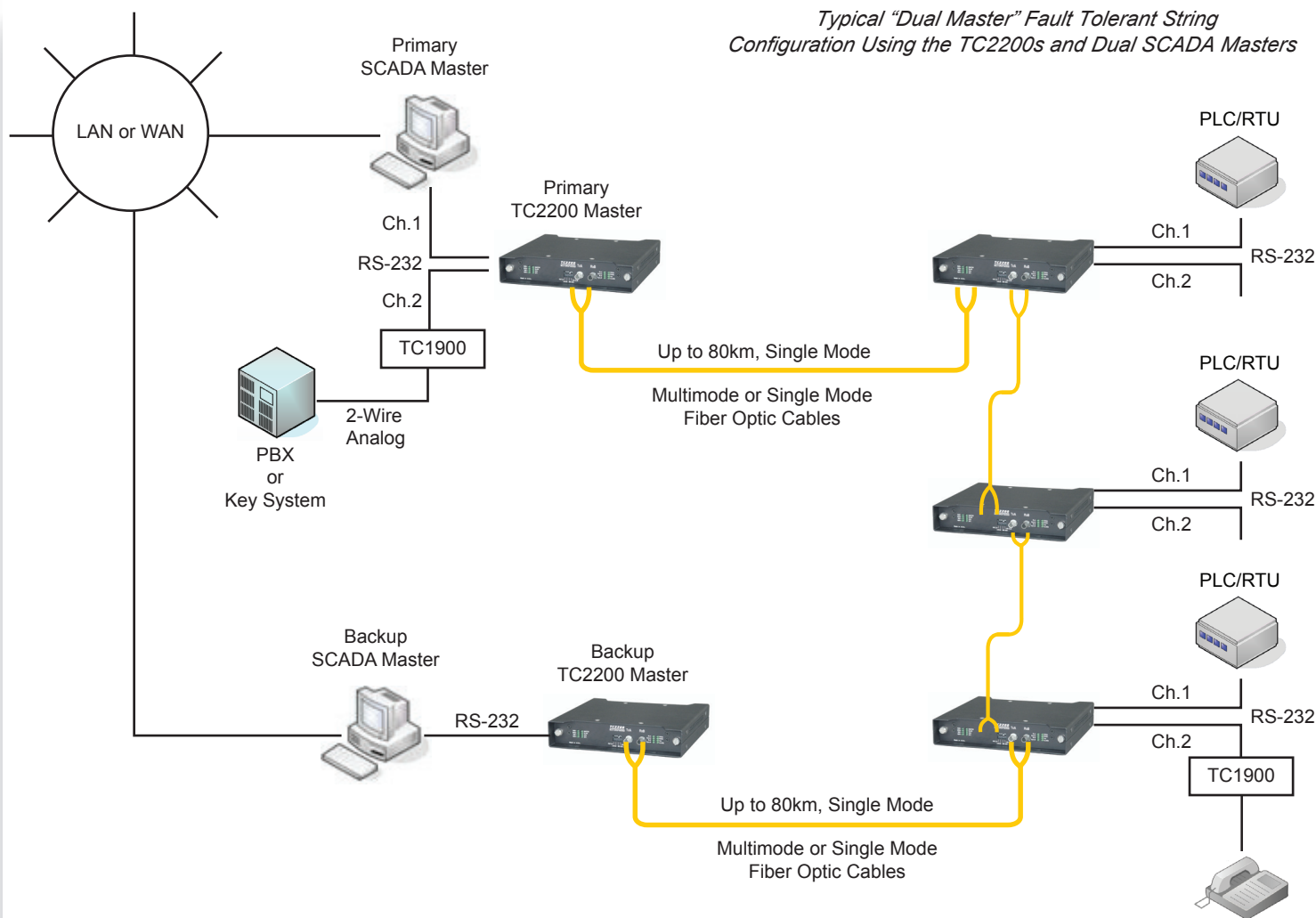
The TC2200 is compatible with all popular types and sizes of fiber optic cable and is available multimode (850/1300nm) or single mode (1300/1550nm). Fiber optic connectors are ST or FC. Electrical connectors are DB25 female. Power is 12VDC; optional 24VDC, -48VDC, or 115/230VAC with an external power cube.



## Applications

Renowned for its high reliability, the TC2200 Multi-Drop Modem is ideal for Bus or String communication links in SCADA, Traffic Control, Industrial Process Control and security networks. It is frequently used to interconnect Remote Terminal Units (RTUs) or Programmable Logic Controllers (PLCs) in Utility substation SCADA Networks.

Typical "Dual Master" Fault Tolerant String Configuration Using the TC2200s and Dual SCADA Masters



## Data Rates

Async RS-232, RS-422, RS-485.....  
.....up to 38.4 Kbps

## Optical

Transmitter.....LED/ELED\*  
Receiver.....PIN Diode  
Wavelength  
..... 850/1300nm MM  
..... 1300/1550nm SM  
Fiber Optic Connectors  
.....ST, Optional FC  
Loss Budget\* - 850/1300/1550nm  
Multimode @62.5/125µm .....15dB  
Single Mode @9/125µm.....15dB

## Electrical

Connector .....DB25 Female  
Interface.....(DCE or DTE) RS-232,  
.....RS-422, or RS-485 (2 or 4-wire)

## System

Bit Error Rate .....1 in 10<sup>9</sup> or better

## Diagnostic Functions

.....Local & Remote Loopback,  
.....Signal Generator, Disable Alarm

## Visual Indicators

System.....MASTER, SLAVE, PWRA,  
.....PWRB, Vcc, ALARM  
Electrical.....BRD-1, BRD-2, RSP-1,  
.....RSP-2, DCE, DTE  
Optical .....Rx-A, Rx-B, Sync-A, Sync-B

## Alarm

Dry Contact.....Normal OPEN

## Power

Standard .....12VDC @400mA  
Optional.....24VDC, -48VDC, or  
.....115/230VAC (with power cube)

## Temperature

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

## Physical

Height.....(3.53 cm) 1.39"  
Width.....(18.14 cm) 7.14"  
Depth.....(16.59 cm) 6.53"  
Weight.....(544 gm) 1.2 lbs

\*Contact factory for higher requirements

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