

Mini-Mux™ 210 & Mini-Mux™ 280

Drop T1/E1 lines from T3/STS-1 feeds using the versatile Mini-Mux single rack unit shelf.



Charles Industries' Mini-Mux 210 (E1 version) and 280 (T1 version) are industry leading M13 multiplexer solutions. The Mini-Mux 210 multiplexes E1s into a T3, STS-1, or AU3 signal. Likewise, the Mini-Mux 280 multiplexes T1s into a T3 or STS-1. Both units feature low power consumption and a small 1 rack unit footprint ideal for co-location applications.

1:1 redundancy is provided on both the high-speed and drop ports for added reliability. Integrated T1/E1 testing makes fault isolation routine, and unlike most M13 muxes, T1/E1 framing information is included to provide additional performance statistics.

Features

- M13 Multiplexers optimized for smaller deployments
- Field configurable for T3, or STS-1 operation (Mini-Mux 210 is also AU3 configurable)
- Low power consumption: 17 Watts
- Convection cooled, no fans required
- 19", 1 RU shelf, flush or offset mounting
- Sophisticated T1/E1 testing with internal pattern generator and receiver
- Integral T1/E1 frame monitoring
- Terminal, Telnet, SNMP, TL-1, and Web management interfaces

Applications

- T1/E1 dropoff from a SONET/SDH network
- Consolidating T1s/E1s in wireless networks
- Provisioning Hi-Cap T1 services
- Transporting E1s over T3/STS-1
- Backhauling T1/E1 traffic between central offices



Specifications

T3 INTERFACE

Line Rate: 44.736 Mbps +/- 20ppm
Line Format: Bipolar B3ZS encoded
Framing: C-Bit Parity or M13
Line Build-Out: 0-900 feet of cable
Input Level: 35mV to 900mV
Clocking: Loop or Internal Timed

STS-1/AU3 INTERFACE

Line Rate: 51.84 Mbps +/- 20ppm
Line Format: Bipolar B3ZS encoded
Line Build-Out: 0-900 feet of cable
Input Level: 35mV to 900mV
Clocking: Loop or Internal Timed

E1 INTERFACE *(Mini-Mux 210 only)*

Line Rate: 2.048 Mbps +/- 50ppm
Line Code: AMI or HDB3
Line Framing: CCS, CAS, Unframed

T1 INTERFACE *(Mini-Mux 280 only)*

Line Rate: TX: 1.544 Mbps +/- 50 ppm
RX: 1.544 Mbps +/- 130 ppm
Line Code: AMI or B8ZS
Line Build-Out: 0 to 655 ft.
Line Framing: SF (D4), ESF, or Unframed

MECHANICAL

19" Shelf: 1.75" (4.45 cm.) high,
17.37" (44.12 cm.) wide,
10.03" (25.49 cm.) deep
Weight: Maximum of 10 lbs.
(fully loaded and redundant)

ENVIRONMENTAL

- Ambient operating temperature from -40° to +65° C
- Relative humidity to 95% (non-condensing)
- Altitude to 12,000 ft. (3660 m)

ALARMS

- External contacts for visual and audible alarms
- Major and Minor Alarms
- Normally open and normally closed pin-out
- Front panel alarm cutoff switch

PERFORMANCE MONITORING

Cumulative Errored Seconds:

- T1/E1 BPV
- T1/E1 Frame Bit or CRC errors
- STS-1 Section (B1) errors
- STS-1 Line (B2) errors
- T3 P-bit errors
- T3 CP-bit errors
- T3 FEBE errors
- VT1.5/VT2/TU-12 parity errors

POWER

- Separate A & B battery feeds
- -48VDC or +24VDC, 17 watts maximum

TIMING

- T3 loop-timed or internally timed
- STS-1 loop-timed or internally timed

TESTABILITY

- T3 and STS-1 Line Loopback
- T1/E1 Loopbacks (toward T1/E1 drop and/or T3/STS-1 line)
- Remote C-bit loopback (for T3)
- Manual and Automatic Protection switching for high and low speed ports
- T1/E1 Test Patterns (Gen & Rec)

SYSTEM MANAGEMENT

- VT100 terminal compatibility
- Telnet
- SNMP (Fully-compliant Charles Industries MIB)
- Web interface
- TL-1 interface
- Serial interface, 1200 baud to 115 kilobaud
- Ethernet 10BaseT, RJ45 Connector

CERTIFICATIONS

- UL/C-UL
- CE Mark *(Mini-Mux 210 only)*
- NEBS Level 3
- FCC Part 15 Class A



CUSTOMER SATISFACTION
CONTINUOUS IMPROVEMENT


With Charles, You Can Depend On:

- Field-proven and unequalled 24-hour technical support
- Individualized application consultation
- Training courses available

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