

# Mini-Mux™ 840

Combines 84 T1 (63 E1) into an OC-3 (STM-1) within a one rack-unit shelf



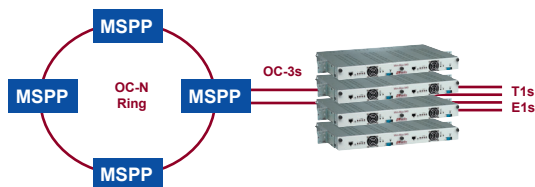
Charles Industries' Mini-Mux 840 combines the functionality of three complete M13 Multiplexers with an OC-3 (STM-1) Add/Drop Multiplexer. At only 1 rack mounting unit in height, the Mini-Mux 840 continues Charles Industries' tradition of providing the densest broadband multiplexing solutions available. Small size, simple installation and configuration, multiple power options, and a

temperature-hardened platform make the Mini-Mux 840 the industry's most flexible optical broadband multiplexer. The Mini-Mux 840 is ideal for mass termination of OC-3 (STM-1) into T1 (E1) signals, highly-efficient intra-office transport of T1 (E1) lines, wireless or DLC backhaul, or anywhere minimal space and low power consumption is a must. UPSR ring deployment is also supported.

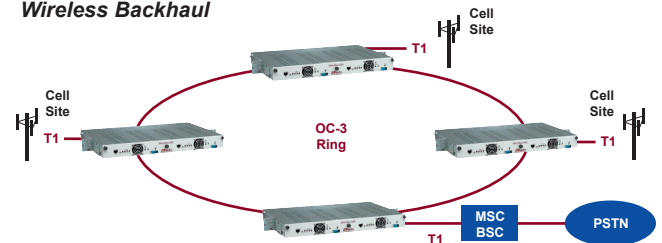
## Applications

- Mass termination of OC-3 signals for T1/E1 access
- UPSR feeder rings
- Wireless cell site interconnect and backhaul
- Backhaul of legacy DLCs
- Feeder mux for next generation MSPPs
- Delivery of T1 to businesses via fiber

### MSPP Feeder Mux



### Wireless Backhaul



### Legacy DLC Backhaul



## Features

- Combines up to 84 T1s (63 E1s) into an OC-3 (STM-1)
- Optical Interface: Intermediate and Long Reach
- Simple Management: SNMP, Telnet, VT100, Web Browser, TL1
- T1 (E1) grooming for flexible channel management
- Flexible Configuration: UPSR Ring or Terminal Mode
- Flexible Timing Support including internal, external, through, line and loop timing
- Extensive alarm statistics and diagnostic capabilities
- Available in a 28 T1 (21 E1) drop configuration option for small applications (Mini-Mux 840L)



Mini-Mux 840L



# Specifications

## OC-3/STM-1 INTERFACE

Line Rate: 155.52 Mbps +/- 20ppm  
Output Power (IR): -8 dbm to -15 dbm  
Input Sensitivity (IR): -29 dbm  
Output Power (LR): 0 dbm to -5 dbm  
Input Sensitivity (LR): -32 dbm  
Optical Connector: LC  
Optical Cable: Single-mode 1310 nm or 1550 nm

## T1 INTERFACE

Line Rate: TX: 1.544 Mbps +/- 50 ppm  
RX: 1.544 Mbps +/- 130 ppm  
Line Code: AMI or B8ZS  
LBO Settings: 0 to 655 ft.  
Line Framing: SF (D4), ESF, or Unframed  
Line Interface: Six 68-pin SCSI

## E1 INTERFACE

Line Rate: 2.048 Mbps +/- 50ppm  
Line Code: AMI or HDB3  
Line Framing: CCS, CAS, Unframed  
Line Interface: Six 68-pin SCSI

## SUPPORTED MAPPINGS

T1 → T3 → STS-1 → OC-3  
T1 → VT1.5 → STS-1 → OC-3  
E1 → VT2 → STS-1 → OC-3  
E1 → VC12 → TUG-2 → AU3 → STM-1  
E1 → VC12 → TUG-2 → TUG-3 → AU4 → STM-1

## MECHANICAL

19" Shelf: 1.75" H x 17.37" W x 12" D  
Weight: Maximum of 8 lbs.  
Mounting Ears: Reversible for 19" or 23" racks

## ENVIRONMENTAL

- Temperature hardened
- Operating temperature from -40° to 65° C (with fans)
- Relative humidity to 95% (non-condensing)

## POWER

- Separate A & B battery feeds
- -48VDC, 30 watts
- 24VDC, 30 watts

## PERFORMANCE MONITORING

- Cumulative and Severely Errored Seconds:
- OC-3 Section B1 errors
- OC-3 Line B2 errors
- STS-1 Path B3 errors
- T1/E1 BPV errors
- 24 Hr. Statistics

## ALARMS

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

OC-3 Alarms: LOS, LOF, LOP, SLM, AIS, RDI  
STS-1 Alarms: LOF, LOP, SLM, AIS, RDI  
T3 Alarms: OOF, AIS, RAI  
T2 Alarms: OOF, RAI  
VT1.5/VT2 Alarms: LOP, SLM, AIS, RDI  
T1/E1 Alarms: LOS, AIS

## SYSTEM MANAGEMENT

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

## CERTIFICATIONS

- UL/C-UL
- NEBS Level 3
- FCC Part 15 Class A



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