

## EdgeLink® EXchange Mux® II

Flexible, scalable multiplexing of T1/E1 signals into T3, STS-1, AU3, AU4, OC-3 or STM-1

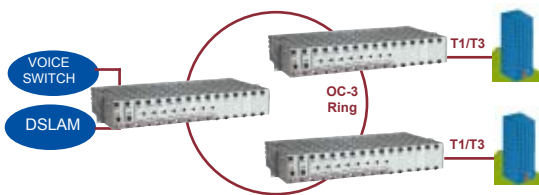


The EXchange Mux II Advanced Multiplexer takes multiplexing to a new level. Connect your T1s or E1s into an EXchange Mux II and transport them in an OC-3 or an STM-1. Universal modules slots provide maximum flexibility to meet any application.

The low power consumption and small footprint make it ideal for collocation applications. Redundancy for all modules provide 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.

- Mix T1 and E1 versions in the same shelf
- High Density: 7 fully redundant muxes in a 2 RU shelf (23" shelf)
- 3RU shelf available with standard telco connectors and optional integrated fan tray
- All modules are hot-swappable
- High Reliability: optional module redundancy, including common control module
- Lowest Power: 14 watts per redundant M13 Mux
- Advanced Diagnostics: Integrated T1/E1 BERT testing and T1/E1 frame monitoring

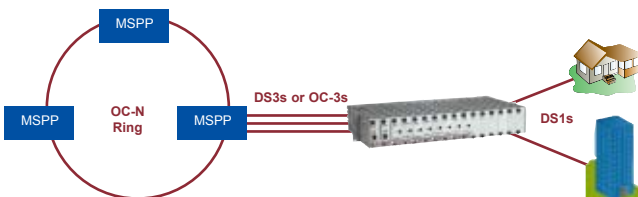
### T1/T3 Dropoff from SONET (OC-3) Rings



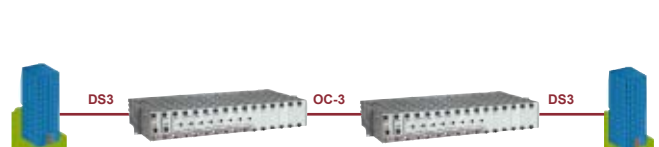
### High Density M13 Multiplexing



### Feeder Mux from MSPP



### DS3 Range Extension



# EXchange Mux II

Multiplexing of T1/E1 signals

## Key Applications

- High density / low power M13 multiplexing in co-location deployments
- Consolidating T1s and E1s
- T1/T3 dropoff from SONET/SDH (OC-3/STM-1) rings
- DS3 range extension
- Interface to voice mail server in wireless networks
- Feeder mux for MSPPs

## 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

### 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
- 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
- Payload Mapping: Asynchronous T1/E1/T3
- Line Build-Out: 0-900 feet of cable
- Input Level: 35mV to 900mV
- Clocking: Loop or Internal Timed

### T1 INTERFACE

- 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

### E1 INTERFACE

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

## PHYSICAL LINE INTERFACES

### M13/PM13/PM13E Modules

- 2RU: T1/E1: Dual 68-pin SCSI  
STS-1/DS3: Dual BNC
- 3RU: T1/E1: Dual 64-pin Champ  
STS-1/DS3: Dual BNC

### OMX3/OMXT3/OMUX3 Modules

- 2RU: Optical Connector: LC  
STS-1/DS3: 6 SMA
- 3RU: Optical Connector: LC  
STS-1/DS3: 6 BNC

## PERFORMANCE MONITORING

### Cumulative Errored Seconds:

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

## ALARMS

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

## TESTABILITY

- T3, STS-1, AU3 and OC-3 Loopbacks
- Remote C-bit loopback (for T3)
- T1/E1 Loopbacks (toward T1/E1 drop and/or T3/STS-1/AU3 line)
- T1 Inband Loopbacks (Gen & Rec)
- Manual and Automatic Protection switching for high and low speed circuits
- T1/E1 Test Patterns (Gen & Rec)
- T1/E1 Front Panel Monitor

## SYSTEM MANAGEMENT

- VT100 terminal
- Telnet
- SNMP (fully-compliant MIB)
- Web Browser
- TL-1
- Serial interface, 1200 baud to 115 kilobaud
- Ethernet 10Base-T, RJ45 connector
- Remote management via SONET DCC

## CERTIFICATIONS

- UL/C-UL
- FCC Part 15
- NEBS Level 3
- CE Mark

## MECHANICAL

- 19" Shelf: 10 service module slots (5 pairs)  
2RU: 3.5" H x 17.37" W x 12" D  
3RU: 5.25" H x 17.37" W x 12" D  
Maximum of 20 lbs.  
(fully loaded and redundant)
- 23" Shelf: 14 service module slots (7 pairs)  
2RU: 3.5" H x 21" W x 12" D  
3RU: 5.25" H x 21" W x 12" D  
Maximum of 25 lbs.  
(fully loaded and redundant)

## ENVIRONMENTAL

- Ambient operating temperature from 0° to 45° C
- Relative humidity to 95% (non-condensing)

## POWER

- Separate A & B battery feeds
- -48VDC or +24VDC, 118 watts (23" shelf) or 90 watts (19" shelf) maximum

## Ordering Information

Part Number	Description
700-00052-003	EXMII 2RU, 23" Starter Kit Includes Chassis and 2 MPU
700-00053-001	EXMII 2 RU, 19" Starter Kit Includes Chassis and 2 MPU
700-00059-xxx*	EXMII 2RU, 23" Kit Includes Chassis and 2 MPU, M13T3 and RIMS
700-00060-xxx*	EXMII 2RU, 23" Kit Includes Chassis, 2 MPU, PM13+, and RIMS
700-00068-xxx*	EXMII 2RU, 19" Kit Includes Chassis and 2 MPU, M13T3 and RIMS
700-00069-xxx*	EXMII 2RU, 23" Kit Includes Chassis, 2 MPU, PM13+, and RIMS
700-00152-001	EXMII 3RU, 23" Starter Kit Includes Chassis and 2 MPU
700-00153-001	EXMII 3RU, 19" Starter Kit Includes Chassis and 2 MPU
700-00159-xxx*	EXMII 23" Kit includes Chassis, 2 MPU, M13T3, and RIMS
700-00160-xxx*	EXMII 23" Kit includes Chassis, 2 MPU, PM13+ and RIMS
700-00168-xxx*	EXMII 19" Kit includes Chassis, 2 MPU, M13T3, and RIMS
700-00169-xxx*	EXMII 19" Kit includes Chassis, 2 MPU, PM13+ and RIMS

\* call for options

MODULES	SUPPORTED MAPPINGS
PM13+	T1 → T3 T1 → VT1.5 → STS-1
M13T3	T1 → T3
PM13E	E1 → G.747 → T3 E1 → TU12 → TUG-2 → AU3 E1 → VT2 → STS-1
OMX3	T3 → STS-1 → STS-3 → OC-3 STS-1 → STS-3 → OC-3 T3 → AU3 → STM-1 AU3 → STM-1
OMXT3	T3 → STS-1 → STS-3 → OC-3 T3 → AU3 → STM-1
OMUX3	T3 → STS-1 → STS-3 → OC-3 STS-1 → STS-3 → OC-3 T3 → TUG-3 → AU4 → STM-1 AU3 → TUG-2* → TUG-3 → AU4 → STM-1

\* AU3 remapped through TUG-2



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