# High-Density M13 Multiplexer

## MX2820 High-Density M13 Multiplexer

## Product Features

- Affordable DS3 bandwidth consolidation
- Up to nine redundant M13s in 2U of space
- Built-in 1:1 DS3 and DS1 redundancy
- System Controller Unit for centralized management
- Single IP address per shelf
- Backhaul multiple service types (T1/E1)
- TL1, SNMP, and Telnet management
- Local and network timing
- Locally powered –48 VDC
- Up to 81 M13s (using active cooling) or up to 63 M13s (using passive cooling) can be mounted in a 7-foot bay
- 19-inch or 23-inch versions available
- Industry-leading 10-year warranty

**M13 deployment, the technology that enables multiple T1 delivery from a single T3, is a fairly elementary yet important art for telecommunications carriers. Demand for T1s is affected by existing Remote Terminals (RTs) that are space constrained. Supplying a carrier-class multiplexer that can significantly increase T1 output while minimizing space has been the challenge for telecommunications equipment providers.** Carriers facing costs for IP addressing save money because M13 capability can be added yet each MX2820 uses only a single IP address.

In areas where multiple M13s are needed, the ADTRAN™ MX2820™ High-Density M13 Multiplexer frees up valuable rack space with a high-density chassis. The MX2820 houses up to 18 multiplexer cards to provide nine redundant M13 multiplexers in a 23-inch chassis and two rack units of space. Up to seven redundant M13 multiplexers can be based in a 19-inch chassis. In addition, the MX2820 can provide up to 81 M13s in a 7-foot bay using active cooling (fans and heat baffles) or up to 63 M13s in a 7-foot bay using passive cooling (heat baffles).

The MX2820 MUX cards are capable of combining independent T1s, E1s, or T1s and E1s on the same DS3. Each pair of MUX cards provides built-in 1:1 redundancy on the DS1 and DS3 signals. Advanced diagnostics include CSU loopbacks, NIU loopbacks, C-bit loopbacks, and built-in BERT (Bit Error Rate Testing) capabilities.

As with all ADTRAN products, the MX2820 offers comprehensive management options. It features a VT100 terminal interface for local configuration. To support SNMP and Telnet management, the MX2820 has an integrated 10/100Base-T Ethernet port. TL1 alarming and editing can be accessed via the 10/100Base-T Ethernet port, or the X.25 connection.

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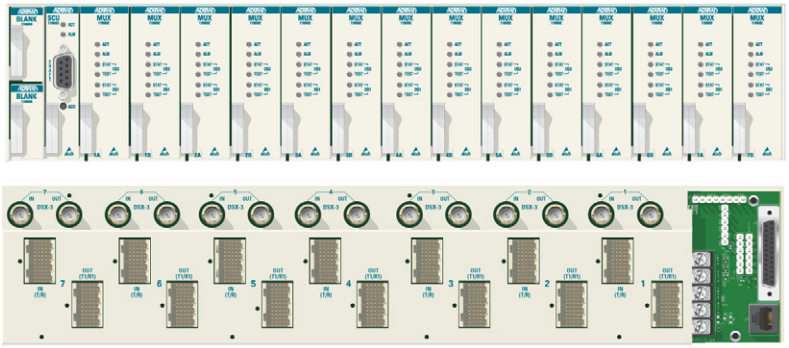

# Product Specifications

## Front Panel Features

### SCU

- **ACT:** Active
- **ALM:** Alarm
- **ACO Button:** Alarm cutoff

### MUX

- **ACT:** Active or standby
- **ALM:** Alarm
- **DS3:** DS3 status indicator and DS3 test indicator
- **DS1:** DS1 status indicator and DS1 test indicator

## Mechanical

- **Dimensions:**
  3.5 in. H X 17 in. W X 12 in. D (19-in. chassis)
  3.5 in. H X 21 in. W X 12 in. D (23-in. chassis)
- **Weight:** 5 lb. (without modules)

## Interfaces

- DS3 level signals with standard 75 ohm BNC connectors
- DSX-1 level signals with standard 60-pin Future Bus connectors

## Clocking

- Network
- Local

## Alarms

- External alarm inputs for Critical, Major, and Minor alarms
- Normally open and normally closed pinout
- Front panel alarm cutoff switch (ACO)

## Electrical

- **Power requirements:** –48 VDC, 15.5 W per redundant M13, 3.4 W SCU

## Regulatory Standards

- NEBS Level 3
- NRTL Safety Listed

## Management

- **VT100 terminal interface:** DB-9 interface
- **SNMP/Telnet:** Integrated 10/100Base-T Ethernet
- **TL1:** Alarming, via Ethernet or X.25 connection

## Environmental

- **Operating:** –40°C to +50°C
- **Storage:** –40°C to +85°C
- **Relative humidity:** Per GR-63; Up to 95 percent, noncondensing

# Ordering Information

| Equipment | Part # |
|---|---|
| MX2820 19-in. Chassis | 1186001L1 |
| MX2820 23-in. Chassis | 1186001L2 |
| MX2820 MUX Card | 1186002L1 |
| MX2820 SCU | 1186003L1 |
| MX2820 Clock Card | 1186004L1 |
| MX2820 STS-1 MUX Card | 1186005L1 |
| MX2820 MUX Blank Card | 1186010L1 |
| MX2820 Clock Blank Card | 1186011L1 |
| DS1 Connector to AMP Adapter Cable (3 ft.) | 1186020L1* |
| DS1 Connector to AMP Adapter Cable (6 ft.) | 1186021L1* |
| DS1 Connector to AMP Adapter Cable (15 ft.) | 1186022L1* |
| DS1 Connector to Stub Cable (25 ft.) | 1186025L1* |
| DS1 Connector to Stub Cable (50 ft.) | 1186050L1* |
| DS1 Connector to Stub Cable (100 ft.) | 1186100L1* |
| Total Access 3000 23-in. Heat Baffle/Fan/Filter | 1181003L1 |
| Total Access 3000 23-in. Front Filter Housing | 1181971L1 |
| 23-in. Rackmount Fan Module | 1181006L1 |
| Total Access 1500 Heat Baffle (1U-High) | 1180002L1 |

* Order L2 for overmolded, screwdown connector.


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