

## T1 Access Module for IPD 12000E/4000E

- ✓ *Metro Ethernet Forum (MEF 9/14) Certified for EVPL and E-LAN services*
- ✓ *24-ports of industry-standard T1/Fractional T1 lines with integrated DSU/CSUs to save time, money and rack space*
- ✓ *Supports Ethernet over bonded-T1 facilities for delivery of high-speed, symmetric data services*
- ✓ *Simple, 'Plug & Play' operation, including automatic loop bonding of T1 lines with no configuration or complex set-up requirements*
- ✓ *MTM Traffic Management Support for traffic control, traffic steering, and packet prioritization*
- ✓ *Full 802.1Q VLAN support for easy to provision VPNs*
- ✓ *Embedded CLI, SNMP, and web-based management system for easy, platform-independent remote management*

Zhone's T1 Inverse Multiplexer provides high-speed, symmetrical data solutions over standard T1 lines for Zhone's Broadband Loop Carrier (BLC) 12000E and 4000E systems. Designed for ease-of-use, the TIM1500 modules are Metro Ethernet Forum (MEF 9/14) Certified for EVPL and E-LAN services, and offer the simplicity of 'Plug & Play', configuration-free installation and set-up.

The TIM1500's high-bandwidth backhaul aggregation is a field-proven solution, ideal for connectivity to remote DSLAMs, business end-users, and cellular backhaul. The TIM1500 provides 24 standard T1 interfaces with integrated DSU/CSUs, and supports native T1 signaling and clear-channel repeaters to ensure ready access to all of your customers, regardless of location or proximity to Telco Central Offices. Support for Fractional T1 facilities provides additional flexibility for providing a variety of bandwidth service offerings to the end-users.

The TIM1500 module supports a robust, T1 loop bonding technology, which provides the ability to bond multiple T1 lines together, incrementally increasing bandwidth to a remote location or customer premise. Using a compatible CPE, such as the TNE1500-S, TNE1520-S, TNE1544-S, or TNE1584-S, the TIM1500 will automatically bond T1 lines to form resilient and reliable high-bandwidth trunks. No configuration or loop bonding set-up is required. Automatic fail-over and recovery distinguishes Zhone's loop bonding solutions from legacy ATM and IP bonding technologies such as T1 IMA and MLPPP - if a T1 line is added or removed (or if one of the T1 circuits incurs a fault), the remaining lines stay active.

The TIM1500 access modules support Zhone's Multimedia Traffic Management (MTM) feature set, which includes packet QoS, rate limiting, traffic steering, and advanced packet filtering. MTM ensures that specific applications are given appropriate priority and bandwidth allocation throughout the system, while marking the packets for upstream network devices.

## Technical Specifications

### Dimensions

- 12.75" H x 1.15" W x 16.75" D
- 32.4cm H x 2.9cm W x 42.5cm D

### Weight

- 5.6 lbs (2.5 kg)

### Power

- 0.8A @ -48 VDC

### Interfaces

- 24 T1 Ports (2-RJ21 50-pin Telco connectors)
- Integrated DSU/CSUs

### Standards Support

- IEEE 802.3 Ethernet
- IEEE 802.1Q VLANs
- ANSI T1.403

### Protocol Support

- Framing: ESF; SF/D4
- Line Coding B8ZS; AMI
- TX Buildout: 0db; -7.5db; -15db; -22db
- Local or Loop Timing

### Bandwidth/Distance

- Selectable: 192Kbps, 384Kbps, 576Kbps, 768Kbps, 960Kbps, 1152Kbps, 1344Kbps, 1536Kbps
- Unlimited Distances (using clear-channel, T1 repeaters)

### Regulatory Compliance

- NEBS: GR-63-CORE, GR-1089-CORE
- EMC: FCC Part 15; CSA/C108.8; EN55022; EN55024; CE Marking
- Safety: UL1950, CSA C22.2 No. 950; EN60950; CE Marking

### Operating Requirements

- Temperature: 32°F to 122°F (0°C to 50°C)
- Non operating: -40°F to 158°F (-40°C to 70°C)
- Humidity: 5% to 95%, non-condensing
- Altitude: -200ft to 16,500ft (-60m to 5,000m)

## Ordering Information

TIM1500-24

24-port T1 Inverse Multiplexer module for the IPD 12000E/4000E

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