Wide Bank 28/DS3

Release 2.30
Carrier-class M13 Multiplexer

New in Release 2.30:
- Additional TL1 commands
  - Assignable TL1 severity
  - Inhibit reporting of alarms and events
  - Autonomous TL1 alarm issued on three failed log-ins
- Auto Discovery

Key Benefits :
- Supports low-cost DS3-to-DS1 or DS3-to-E1 service delivery
- Provides high-density DS3-to-DS1 or DS3-to-E1 solution
- Offers dual redundant DS3 option
- Supplies hitless protection and hitless maintenance options
- Carrier-quality NEBS Level-3-compliant design
- OSMINE-compliant w/TL1 provisioning and management

Cost-effective DS3 to DS1/E1 Multiplexer

Build ultra-reliable networks without breaking the bank The Wide Bank® 28/DS3 offers carrier-quality, standards-based M13 multiplexing at a dramatically lower price point and higher port density than traditional M13 solutions. The Wide Bank 28's modular approach to sparing and redundancy reduces downtime and service interruptions. Its unique architecture permits both hitless protection of DS3 and T1/E1 ports and hitless maintenance options for 24/7 service reliability. OSMINE compliance with TL1 provisioning and management capabilities and NEBS Level-3 design make the Wide Bank 28/DS3 a true carrier-quality solution.

Minimal 1RU footprint, maximum DS3/DS1 or E1 port density

The Wide Bank 28/DS3 solution can be deployed in conjunction with Class 5 switch, DCS, SONET ADM, Frame Relay, and ATM platforms. With central office (CO) or collocation (COLO) space at a premium, the Wide Bank 28's small space requirements make it cost-effective to deploy DS1/E1 ports to support growing requirements in a variety of applications. Its compact, single rack-unit footprint solves space problems that

often limit the number of DS1 or E1 connections that can be supported in equipment racks or cabinets. Using convection cooling, up to 24 Wide Bank 28/DS3s can deliver 672 DS1s (or 504 E1s) per standard 23-inch telco rack. When equipped with forced-air cooling fan faceplates, an astounding 40 Wide Bank 28/DS3s and 1,120 DS1s (or 840 E1s) can be mounted in a single 19-inch or 23-inch telco (seven foot) equipment rack.

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System Architecture:
- 1+1 or 1:1 protected DS3 controller cards
- 1:7 protected Quad DS1 service cards (or 1:7 protected 3-port E1 service cards)
  - Maintenance Service Option (MSO) for hitless service protection
- Fan Faceplate Option (FFO) forced air cooling
- Dual -48VDC power inputs

High-Speed Interface:
- DS3:
  - Line rate: 44.736 Mbps
  - Line code: B3ZS
  - Framing format: M23 and C Bit parity
  - 2 BNC coaxial connectors (4 for 1+1 redundant system)
  - Impedance: 75 Ω ±5%, unbalanced
  - Line build out: 0 to 450 ft (0 to 137.2 m)
  - Transmit jitter: Meets ANSI T1.102 requirements
  - Transmit amplitude: 0.36 to 0.85 Vp as per ANSI T1.102 pulse mask requirements for all line build outs (LBOs) up to 450 ft (137.2m)
  - Receive sensitivity: 0.24 Vp to 0.95 Vp input

Low-Speed Interface:
- DS1
  - Line rate: 1.544 Mbps ±32 ppm
  - Line code: AMI or B8ZS selectable
  - Line framing: transparent to DS1 framing or lack of framing
  - Two 64-pin female Champ connectors
  - Impedance: 100 Ω ±5%, balanced
  - Line build out: 0 to 655 ft (0 to 199.6 m)
  - Transmit jitter: as per ANSI T1.403, T1.102 and AT&T 62411 requirements
  - Transmit amplitude: pulse curve amplitude, 2.7 to 3.3 Vp per ANSI (T1.102 and T1.403)
  - Receive sensitivity: 0.6 Vp to 3.6 Vp input (-13 dBdsx to $+3.3$ dBdsx)
- E1
  - Line rate: 2.048 Mbps. ±50bps (32 ppm)
  - Line code: HDB3
  - Line framing: transparent to E1 framing or lack of framing
  - Two 64-pin female Champ connectors
  - Impedance: 120 Ω, balanced, as per ITU-T/G.703
  - Line build out: 0 to 655 ft (0 to 199.6 m)
  - Transmit jitter: as per ITU-T/G.823 recommendations
  - Transmit amplitude: 3.0 V (nominal), pulse shape as per ITU-T/G.703
  - Receive sensitivity: 0.6 Vp to 3.3 Vp input (-13 dB to 2.7 dB with respect to 3 Vp)
  - Meets lightning surge protection and power induction protection in accordance with FCC part 68 and GR-1089-CORE

Clocking:
- Network: recovered from DS3 network receive signal
- Local: on-board Stratum 4E (20 ppm) clock source
- External: 44.736 MHz (DS3) BNC clock input

Network Standards:
- ANSI
  - T1.102-1993; T1.107-1995
  - T1.403-1996; 404a-1994
  - T1.404a-1996; T1.105
- CCITT Recommendation V.11
- Telcordia™ GR-499-CORE
- AT&T 62411 (Stratum 4 enhanced T1 CPE)

Management:
- RS-232/V.24 async craft port for Command Line Interface
- 10Base-T Ethernet port for SNMP and Telnet sessions
- TL1 alarming and provisioning
- Support through Carrier Access' NetworkValet, a separate, full-featured Enhanced Management System product including software upgrade and configuration backup/restore capability

Performance Monitoring and Alarms:
- Telcordia GR-474-CORE, GR-820-CORE

Alarms:
- 4-pin major/minor alarm connector
- External alarm relay contacts for critical and non-critical alarms
- Front panel alarm cutoff switch (ACO)

Testing & Diagnostics:
- CSU Loopback/Loop-up
- C Bit Loopback/Loop-up
- Network Interface Unit (NIU) Loopback/Loop-up
- Internal BERT
- Integrated NIU
- Startup and self-test

Power:
- Dual -48 VDC inputs (-42 to -60 VDC)
- Optional battery unit and power converter/battery charger
- Internal fuseless overvoltage and overcurrent protection
- Power consumption: 32 W for fully redundant system; 36 W w/FFO

Regulatory and certifications:
- NEBS Level-3 certified – type 2 and 4 (earthquake zone 4) CSA
  - Telcordia GR-63-CORE, GR-1089-CORE
- FCC Part 15 Class A, Part 68
- NRTL safety listed: UL 1950
- National Electrical Code 1996 safety requirements
- Canadian Safety Association (CSA) Compliant
  - Industry Canada CS-03
- Japanese Approvals Institute for Telecommunications Equipment (JATE)

Physical:
- Dimensions:
  - 1.75 in (H) x 17 in (W) x 10 in (D)
  - 4.45 cm (H) x 43.2 cm (W) x 25.4 cm (D)
- Weight: 10 lb (4.5 kg) fully loaded
- Rackmount: 19 in (48.26 cm) or 23 in (58.42 cm)

Environment:
- Operating temperature: 23 °F to 131 °F (-5 °C to 55 °C)
- Relative humidity (non-condensing) range: 0% to 98%
- Maximum operating altitude: 15,000 ft (4,572 m)

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