

Features

- Configurable Router Terminal Server with dual T1/E1 WAN port and up to eight Ethernet ports or 28 serial ports
- Dual hot-swappable power supplies in a 1U rack-mount package
- Configurable IRIG-B Timing Modules available for precision timing to Protection & SCADA devices
- MNS-DX Software Supports Switching or Routing on all Ethernet Ports
- Substation-hardened, IEC 61850-3 compliant, no fans



The Magnum™ 10XTS Router Terminal Server offers T1/E1 routing as well as advanced serial and Ethernet port configurability for heavy duty industrial applications where maximum port count and diversity are required. The Magnum 10XTS is ideal for large substation installations with large numbers of serial and Ethernet instruments and the need for high-speed WAN access. The Magnum 10XTS offers two WAN ports via a T1/E1 card, as well as up to eight Ethernet ports or up to 28 serial ports for protection and SCADA devices and IRIG-B time coding. The 10XTS provides configurability, reliability and functionality in a 1U hardened rack-mount package. The 10XTS also offers the flexibility of switching or routing on all of the Ethernet ports. Each 10XTS Router Terminal Server includes advanced thermal design techniques that result in cooler operation of internal electronic components, leading to longer life-time and increased reliability.

The Magnum 10XTS offers next-generation reliability and redundancy with configurable Dual Hot-Swappable power supplies. Both high voltage AC/DC and low voltage DC hot-swappable power supplies are configurable in the Magnum 10XTS. Software monitors each power supply, and can detect power supply faults and signal when a power supply module swap is needed. The swap-out can readily be done while the 10XTS continues in operation.

Next Generation industrial terminal server features, for mission-critical control devices such as those found in power utility facilities in the Smart Grid, importantly include IRIG-B timing synchronization. Each Magnum 10XTS may be configured with an IRIG-B Timing Card and a selection of IRIG-B port modules to provide time synchronization for Protection, SCADA and other devices.

The ten configuration slots in the Magnum 10XTS provide the flexibility for network designers to configure up to eight 100Mb Ethernet ports in different fiber and copper combinations and up to 28 serial ports. Both DB-9 and RJ45 serial connector types are available. Modules may be configured for regular port types, IRIG-B timing, or combinations.

The configurability of Magnum 10XTS extends to MNS-DX software features as well. A licensed software key unlocks additional features for extra security. Extra security features such as IPSec/VPN, firewall, RADIUS, syslog and other security capabilities can be added to MNS-DX via MNS-DX-SECURE, which also provides IP firewall features including address/port inspection/filtering; VPN connectivity over IPsec with strong 3DES and AES encryption and both shared key (PSK) and X.509 certificates. VPNs comply to various IPSec/VPN standards and have proven interoperability with other industry standard VPN devices. Cyber security capabilities cover both electronic perimeter protection for remote sites and management security for the 10XTS. Advanced statistics and event recording are available with downloadable local logs, SNMP MIBs and traps, and syslog remote logging. Advanced routing capability for OSPF and BGP networks is enabled using the MNS-DX-ADVVAR software license key.

Magnum 10XTS Managed Terminal Servers have rugged metal cases for regular or "Reverse" rack-mounting, and auto-ranging power supplies for operation with standard AC power worldwide, or internal DC power supply choices. Moisture- and corrosion-protecting Conformal Coating is optional. The Magnum 10XTS unit is designed and manufactured in the USA and has a three year warranty.



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SERIAL PROTOCOLS

Async to TCP/IP – including Modbus gateway for connectivity to serial Modbus devices and to other Modbus Ethernet devices; TCP/IP to serial/reverse terminal server, Serial Multipoint & Multimaster Topologies; PPP with authentication

PERFORMANCE:

WAN Ports T1/E1: 1.544 Mbps / 2.048 Mbps G.703

Serial DB9 ports RS232/RS485 software selectable DB9 interface. Serial data rate from 300 bps to 230.4 kbps.

Serial RJ45 ports Same functionality as DB-9 ports (RJ45 pinout conforms to EIA-561 DTE standard)

RJ-45 Ports: 100 or 10 Mb speed, full- or half-duplex mode, per port, individually determined. 10/100 auto-negotiating & auto-cross

Fiber Ports, 100 Mb (multi-mode and sgl-mode): Configurable in modules. at 2/module, or SFF (Small Form Factor) for high fiber port density, 4 per module. Each FDx or HDx, default is FDx mode

NETWORK STANDARDS

IEEE 802.3z, 802.3ab, 802.1p: 100BASE-TX, -FX, 1000BASE-SX, -LX,

IEEE 802.3u: Auto-negotiation on TP

IEEE 802.3x, 802.1p: flow control and prioritization

IEEE 802.1Q: VLANs, maximum 32 VLANs

IEEE 802.1d, 802.1w: Spanning Tree, Rapid Spanning Tree including

RSTP 2004 extensions providing sub-second hop on rings

IEEE 802.1p: DiffServ, traffic prioritization for routed IP flows/ports

SOFTWARE

MNS-DX and MNS-DX-SECURE licensed software

MANAGEMENT & DIAGNOSTICS

Ease of use: Web-based Graphical User Interface (GUI) or CLI access remote SSH or TELNET connection

Powerful built-in protocol analyzer to assist with trouble shooting

Other: Comprehensive statistics, SNMP MIB II and SNMP Traps, Routing Information, DHCP, ARP and other tables.

OPERATING ENVIRONMENT:

IEC 60068 Operating temp. per "Type Test" -40° to 185°F (-40° to 85°C)

UL 60950 "Component Parts" temperature rating: 140°F (60°C)

Storage: -40° to 185°F (-40° to 85°C),

Ambient relative humidity: 5% to 95% (non-condensing)

Altitude: -200 to 13000ft (-60 to 4000m)

Conformal coating (humidity protection) option: Request quote

MECHANICAL:

Enclosure: Rugged high-strength sheet metal. 1U rack-mounting

Rack-mounting brackets: 19" included; ETSI and 23" Telco optional

Cooling Method: convection

Dimensions: 1.7in H x 17.5in W x 12.in D (4.3cm H x 44.5cm W x 30.7cm D)

Weight: rack-mount 10.6 lbs. (4.8 kg)

Magnum 10XTS-HSPHH

Magnum 10XTS Configurable Router Terminal Server, base unit with dual T1/E1 WAN adapter. Provides 10 modular slots for configuration flexibility of up to 8 Ethernet ports or 28 serial ports.

Includes 2 "H" (90-250VDC) slots for Hot-Swap Power Supplies. Optional IRIG-B module

"Reverse" model, same as Model 10ETS except user ports & the power input connectors are in the rear. Two sets of LEDs (both rear and front) provide duplicate status data for viewing.

Front mount w/1 "H" AC/DC (90-250V) and 1 "L" 24/48VDC slot

Reverse mount w/1 "H" AC/DC (90-250V) and 1 "L" 24/48VDC slot

Front mount w/2 "L" 24/48VDC slot

Reverse mount w/2 "L" 24/48VDC slot

Front mount with AC/DC power (90-250V)

Reverse mount with AC/DC power (90-250V)

Front mount with 24/48V DC Power

Reverse mount with 24/48V DC Power

Front mount with AC Power

Reverse mount with AC Power

Front mount with 2 "L" 24/48VDC power; Supports PoE

Front mount with 24/48VDC power; Supports PoE

Front mount with 2 "L" 24/48VDC power; Supports PoE

Reverse mount with 24/48VDC power; Supports PoE

Configuration Options: Magnum 10XTS base unit has ten port module slots, each of which may be configured with a module from below, maximum configurations of 28 serial and 4 Ethernet, or 8 Ethernet and 24 serial

IRIG-B-ETS Module w/IRIG-B; coaxial port

10K4-RJ45 Module w/four 10/100 RJ-45 ports

10K4P-RJ45 Module w/four 10/100 RJ-45 PoE ports

10K4-MLC Module w/four 100Mb multi-mode fiber LC ports

10K4-SLC Module w/four 100Mb single-mode fiber LC ports (20km)

10K4-SLCL Module w/four 100Mb "long-haul" single-mode fiber LC ports (40km)

10K4-MTRJ Module w/four 100Mb multi-mode fiber MTRJ ports

10TS2-RJ45 Module w/two 10/100 RJ45 ports

10TS2-HSFP Module w/two 100Mb SFP open ports

10K2-MST Module w/two 100Mb multi-mode ST fiber ports

HOT SWAPPABLE POWER SUPPLY OPTIONS

Magnum 10XTS may be ordered with hot swappable power supplies.

Up to two of the following supplies in matching pairs may be chosen:

High (H) nominal: Input 90 to 250V AC/DC

-48VDC: Input 36 to 60VDC

24VDC: Input 18 to 36VDC

Terminal Block: "-", GND, "+",

Power Consumption: 20 watts (for fully populated unit)

SINGLE POWER SUPPLY OPTIONS

AC/DC: 90-250V AC/DC; Terminal Block: "-", GND, "+",

24/48DC: Input 22VDC to 60VDC

AC: IEC-type, male recessed

Power Input, AC: 100 to 240 VAC, 47 to 63 Hz (auto ranging)

DC DUAL POWER SOURCE (OPTIONAL)

When non-Hot-Swappable power supplies are ordered, the Magnum 10XTS may be ordered with optional Dual DC power input, for continuity of operation when either one of the DC input sources is interrupted. Available for -48VDC and 24VDC.

SERIAL LED INDICATORS PER DB-9 or RJ45 PORT: One LED/port indicating active connection

ETHERNET LED INDICATORS PER RJ45 or FIBER PORT:

L/A: One LED/port indicating Link (solid green) and Activity (blinks to indicate activity)

RELAY CONTACTS FOR ALARMS (except PoE version):

Two alarm contact: HW & SW alarms are normally open until the unit is powered & software started. Under normal operation they are closed.

Form C HW alarm will be opened with either:

1) any power supply loss, 2) fan failures

Form C SW alarm will be opened when any pre-defined SW event occurs

AGENCY APPROVALS AND STANDARDS COMPLIANCE:

UL/cUL 60950 Approved; CE, Emissions meet FCC Part 15, Class A

IEC61850-3 EMC & Operating Conditions Class C for Power Substations

IEEE 1613 Class 2 Environmental Std for Electric Power Substations

NEMA TS-2 for Traffic Control

WARRANTY:

Three years Made in USA



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10K2-MSC Module w/two 100Mb multi-mode SC fiber ports

10K2-SSC Module w/two 100Mb single-mode SC fiber ports

10K2-SSCL Module w/two 100Mb sgl-mode "long-haul" 40km SC fiber

10K2-MTRJ Module w/two 100Mb multi-mode MTRJ fiber ports

10K2-F10ST Module w/two 10 Mb multi-mode ST fiber ports

10TS2-DB9 Module w/two female DB-9 serial ports

10ES2-DB9-IRIGB Module w/two female DB-9 serial ports with IRIG-B

10TS4-RJ45 Module w/four RJ45 serial ports

10TS4-RJ45-IRIGB Module w/four RJ45 serial ports with IRIG-B