Magnum DX1000-IR

Industrial Router

Features

- Secure network access to remote sites and industrial devices
- Electronic Security Perimeter via stateful firewall and VPN services
- Integrated serial device server and Ethernet switch
- T1/E1 and DDS with CSU/DSU for IP TDM, frame relay and MPLS-based services
- Hardened to substation EMI/ESD specs and -40° C to +85°C with no fans

The Magnum DX1000-IR Industrial Router provides a secure integrated networking solution for power utility substations and other rugged environments. SCADA, remote device access, physical surveillance, metering and other applications can effectively share a single DX1000-IR-based network.

The DX1000-IR provides IP routing services in both LAN and WAN applications. Ethernet ports operate in switched and/or routed mode. IP routing is provided on any combination of physical and virtual interfaces, including per VLAN. WAN interfaces include dual T1/E1 or dual DDS ports with integral CSU/DSU for access to public or private IP, TDM, frame relay or MPLS-based services. IP/PPP/async is also supported on serial interfaces, which provides a dial-up WAN option when combined with external AT-compatible modems. Other IP services include dynamic routing (RIP, OSPF, BGP), virtual router redundancy (VRRP), DHCP server, and many security features.

Cyber security capabilities cover both electronic perimeter protection for remote sites and management security for the DX1000-IR itself. The DX1000-IR provides a stateful IP firewall, IP address translation (NAT/PAT) and encryption options via IPsec, SSH port forwarding and serial port SSL VPNs. Combined with the CrossBow™ Secure Access Manager, the DX1000-IR provides for authentication, authorization., logging and compliance reporting for remote user access to local devices. DX management security includes encrypted interfaces (HTTPS, SSH, S-FTP and SNMPv3), multi-level user IDs with strong form passwords, authentication via RADIUS, and extensive local and/or remote logging and alerting. A flexible integrated protocol analyzer provides remote trouble shooting and detailed traffic analysis.

Serial-IP terminal services support diverse serial interfaces and protocols including DNP, telnet, raw mode, and Modbus-ASCII/RTU to Modbus-TCP internetworking. GarrettCom's SCADA Frame Forwarding feature also provides a low-overhead, "non-routable" solution for SCADA protocols over a Digital TDM or Frame Relay WAN.

The DX1000-IR is purpose-built for extremely harsh environments such as power utility substations. The DX1000-IR meets IEEE1613 and IEC 61850-3 specifications for EMI/ ESD protection and operates at -40°C to +85°C without open vent holes or fans. The DX1000-IR has both single and dual wide-ranging power supply options.

Specifications

Ethernet Interfaces
- 5 ports, all 10/100TX auto-sensing or 3 TX + 2 100FX via SFPs
- Wire speed switching
- VLANs per 802.1Q
- Prioritization via 802.1p
- STP/RSTP per 802.1d/802.1w (<5msec/hop on rings)
- Port security

IP Routing Services
- Routing per interface
- Routing Per VLAN
- Static and dynamic routing
- RIP, RIP-II, OSPF, BGP
- Prioritization with Diffserv
- VRRP router redundancy
- DHCP Server

WAN Interface
- WAN ports optional
- DDS: 56/64 kbps
- T1/E1: 1.544 Mbps / 2.048 Mbps G.703;
- Full rate and fractional (N*56/64kbps)
- Integral CSU/DSU
- Frame relay, IP
- SCADA Frame Forwarding (non-routable serial/FR)

Serial Interfaces
- 12 ports, RS232 or RS485, software selectable
- 2- or 4+ wire w/ Data Set Signaling
- 300 bps to 230.4 kbps
- Serial-IP terminal server
- Multicast, multi-master
- DNP, Modbus, Telnet, Raw
- Modbus-ASCII/RTU to Modbus/TCP
- PPP/async w/ AT modem controls

IP Firewall/ Perimeter Security
- Stateful firewall w/ logging
- IP address and port filtering
- NAT/PAT IP address translation
- IPsec VPNs
- SSH port forwarding
- Serial port SSL VPNs
- 3DES, AES, PSK, X.509

Management Security
- HTTPS, SSH, S-FTP, SNMPv3
- Multilevel passwords
- RADIUS
- Management activity logging

Management and Diagnostics
- Web–based Graphical User Interface (GUI)
- CLI access via TELNET/SSH
- Built–in protocol analyzer
- SNMP MIB and traps
- Syslog Event Logging
- XML–based config file
- Multiple on-board software and config files
- Relay contact alarm

Operating Temperature
- –40°C to +85°C, no fans

Storage Temperature
- –40°C to +85°C

Humidity
- 95% non–condensing

Power Options
High Voltage (H)
- 90–250 Vac or Vdc, 50–60Hz
- 1A, 85 watts

Low Voltage DC (L)
- 24–48 Vdc
- 4.5A, 81 watts

Single or dual PS, same or mixed HV/LV

Dimensions
17.25" W x 11.13" D x 2.6" H
(43.82 cm x 28.45 cm x 6.6 cm)
Optional 19 inch Rack Mount, 1.5U

Weight
Single PS: 11 lbs (5 kg)
Dual PS: 12 lbs (5.44 kg)

Industrial
- IEEE1613
- IEC 61850–3
- IEC 61000–6–5

Emissions:
- EN55022A, FCC Part 15A

Immunity
- EN55024
- EN61000–6–2
- EN61000–6–5
- EN61000–4–2 (ESD)
- EN61000–4–3 (RF)
- EN61000–4–4 (EFT)
- EN61000–4–5 (SURGE)
- EN61000–4–6 (CRF)
- EN61000–4–10 (MAG FIELD)
- EN61000–4–11 (VDI)
- EN61000–4–12 (OSCILLATORY)
- EN61000–4–16 (CCM)
- EN61000–4–17 (RIPPLE)
- EN61000–4–29 (VDI)

Safety
- UL60950–1
- EN60950–1
- CSA C22.2

Telecom
- UACTA TIA/EIA IS-968A (FCC part 68)
- IC CS03
- EN55022: 1998 Telco Port Emisssions

Mounting
19" rack mount standard - 1.5 RU
Panel mount optional