

### Features

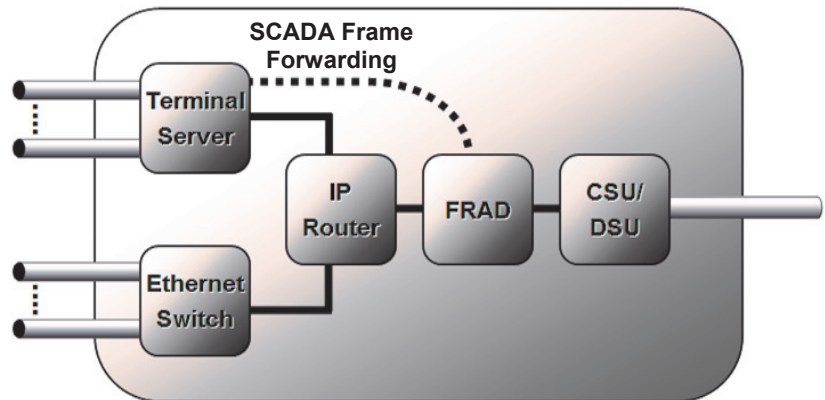
- Hardened for harsh environments
- Meets IEEE 1613 / IEC 61850-3 requirements for power utility substations
- Five networking functions integrated in one product
  - Terminal server
  - Ethernet switch
  - IP router
  - Frame Relay Access Device
  - DSU/CSU
- Eight serial ports, 300 bps to 230.4 kbps
- Five 10/100 Base TX Auto-sensing Ethernet ports
- DDS or T1/E1 WAN Port with integrated DSU/CSU
- Multi-Protocol support
  - Async, SCADA, Ethernet, TCP/IP, Frame Relay
  - Secure SCADA / Frame Relay transport
- Ethernet switching
  - Flow control
  - Prioritization
  - VLANs
  - Rapid Spanning Tree
- IP Routing, RIP, RIP II, RIP RX, OSPF, Static
- IP VPN using IPSec
- VLAN support
- IP address filtering
- DHCP & BootP services
- Menu-driven and SNMP management
- Port mirror on Ethernet switch ports
- Powerful built-in protocol analyzer
- No fans or moving parts
- Non-vented sealed steel enclosure
- AC & DC power options



### DS1500-IFR Industrial Frame Router

Supporting eight serial and five Ethernet interfaces, the DynaStar 1500 Industrial Frame Router (IFR) delivers reliable and secure WAN connectivity to multiple industrial automation devices at your site.

The DynaStar DS1500-IFR is the only integrated WAN device specifically designed for industrial monitoring and control networks operating in harsh environments. Combining 5 different networking functions (terminal server, Ethernet switch, IP router, frame relay access device and DSU/CSU), the DS1500-IFR is the only device available that can replace multiple WAN communication devices on your network, increasing operational reliability and significantly reducing hardware and deployment costs.



A "Hardened" product, the DS1500-IFR is built to thrive in the harshest environments and conditions, including: extreme temperatures, high humidity, power surges, ground potential rise, EMI/RFI interference as well as other tough environmental conditions often found in industrial and remote process sites.

The DS1500-IFR supports multiple application and device interfaces including legacy, bit-oriented protocols, Async/serial protocols and IP/Ethernet. The DS1500-IFR is ideally suited to enable IP conversion strategies for SCADA traffic, and other non-IP based process control, supervisory or monitoring communications traffic. The DynaStar 1500 IFR uses SCADA Frame Forwarding technology for low overhead, high performance support of delay sensitive serial SCADA applications.

The DS1500-IFR consolidates data from multiple devices on to a common platform, then on to a wide area network connection. The primary WAN interface is based on frame relay over private or carrier services. The platform can also function locally as both an Ethernet switch and an Async-TCP/IP terminal server.



## WAN INTERFACE

### Physical Interface:

- Connector: RJ-48
- DDS WAN option: 56/64k DDS
- T1/E1 WAN option: Line Rate 1.544 Mbps nx56/64k
- Integral CSU/DSU

### Protocols/Features:

- Frame Relay, IP

## SERIAL INTERFACE

### Physical Interface:

- 8 RS232 DTE ports  
or
- 4 RS232 and 4 RS485 ports
- DB9 female connector
- Serial data rates from 300 bps to 230.4 kbps
- Data length: 1-32 bits supporting legacy SCADA protocols

### Protocols/Features:

- Async to TCP/IP
- TCP/IP to serial terminal server, reverse terminal server
- Select SCADA bit oriented protocols CONITEL, PMS91, MCS-11, GETAC
- SCADA frame forwarding over Frame Relay

## ETHERNET INTERFACE

### Physical Interface:

- 5 RJ-45 modular connector ports
- 10/100 Base TX, auto-sensing or fixed speed
- Full Duplex, Half Duplex with auto MDIX

### Protocols/Features:

- Ethernet, TCP/IP
- Full wire speed switching between ports
- IEEE 802.3x flow control
- Prioritization per IEEE 802.1p
- Port based VLANs per 802.1Q
- Spanning Tree per IEEE 802.1d
- Rapid Spanning Tree per IEEE 802.1w
- Support for 4096 MAC Addresses

## IP ROUTING FUNCTIONS & FEATURES

- IP Routing, RIP, RIP II, RIP RX OSPF, Static Routes
- DHCP & BootP Services
- Block / Allow MAC / IP or PORT addresses
- Prioritize traffic streams over Frame Relay and/or DiffServ
- Secure SCADA / frame relay transport
- IP or frame relay single port to multicast for SCADA polling

## SECURITY

- Multilevel passwords with enforcement and aging
- Firewall with IP address filtering
- IP VPN using IPSec with DES/3DES encryption
- VLAN support on Ethernet LAN segments
- Static MAC address

## MANAGEMENT & DIAGNOSTICS

- Local console port to menu-driven system
- Remote access via telnet from WAN or Ethernet connection
- SNMP MIB and SNMP traps
- DDS CSU and DSU Loop-back features
- Ping and telnet diagnostic functions
- Port mirror on Ethernet switch ports
- Powerful built-in datacom analyzer to monitor traffic on any port
- Comprehensive layer 1 through 3 statistics
- Event logging

## ENVIRONMENTAL

### Operating Temperature:

- -40C to +75C, no fans

### Storage Temperature:

- -40C to +85C

### Humidity:

- 95% non-condensing

### Industrial:

- IEEE 1613
- IEC 61850-3

### Emissions:

- EN55022A, FCC Part 15A
- VCCI, AS/NZ-3548

### Safety:

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

### Immunity:

- EN55024
- EN61000-6-2
- EN61000-4-2 (ESD)
- EN61000-4-3 (RF)
- EN61000-4-4 (EFT)
- EN61000-4-5 (SURGE)
- EN61000-4-6 (CRF)
- EN61000-4-11 (VDI)

### Environmental Monitoring:

- Dry Contact Alarm, 1 output

### Telecom:

- ACTA TIA/EIA IS-968A (FCC part 68)
- IC CS03
- EN55022:1998 Telco Port Emissions

## POWER OPTIONS

### High Voltage (H)

- 90-250 Vac or Vdc, 50-60Hz
- 1A, 85 watts

### Low Voltage DC (L)

- 18-60 Vdc
- 4.5A, 81 watts

## MECHANICAL

### Dimensions:

19 inch Rack Mount, 1.5U  
17.5" W x 10" D x 2.6" H  
(44.5cm x 25.4cm x 6.35cm)

### Weight:

9.5 lbs (4.3 kg)

### Mounting:

- Front rack mount, Mid-mount, or Panel mount options



# GarrettCom™

GarrettCom, Inc.

47823 Westinghouse Drive

Fremont, CA 94539

PH: (510) 438-9071

FAX: (510) 438-9072

Email: [mktg@garrettcom.com](mailto:mktg@garrettcom.com)

Web: [www.GarrettCom.com](http://www.GarrettCom.com)

Specifications subject to change

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