

Industrial 3G Router

MRD-330

Wireless 3G Router

The MRD-330 is a robust 3G router designed to provide remote connectivity across mobile networks. The unit features an on-board two port switch, three serial ports, and four digital I/O providing the unit with versatile connection options. Together with the rugged enclosure, DIN-rail mounting and an operating voltage range spanning from 10VDC to 60VDC, the unit is designed for industrial applications in harsh environments.



Connectivity

The MRD-330 supports a wide variety of wireless standards, GSM, GPRS, 3G UMTS, HSDPA, and HSUPA, thus providing connectivity in as many applications as possible. Using High Speed Uplink Packet Access (HSUPA) the uplink capacity is 2 Mbit/s, together with the 7.2 Mbit/s downlink data making the unit suitable for even high data rate applications.

With the built-in two port 10/100 Ethernet switch and the RS-232 ports the MRD-330 easily allows devices to seamlessly connect over a vast geographical distance. Typical applications include video surveillance, SCADA/DNP3 telemetry systems and remote access to machines and devices.

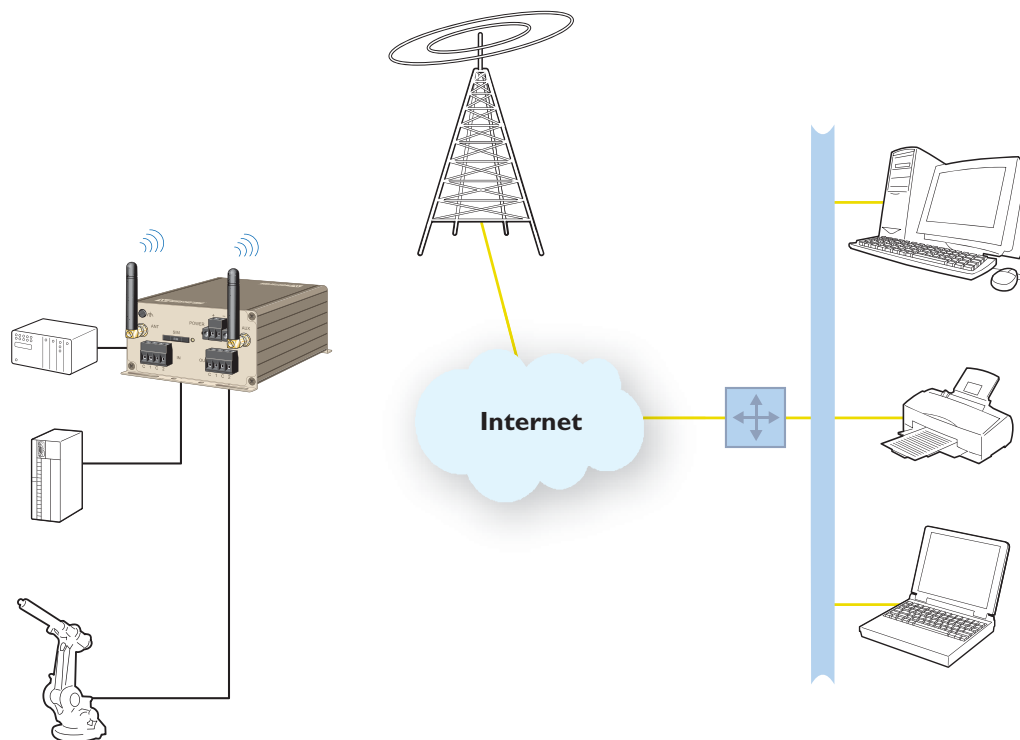
To extend the life of legacy equipment there are a number of tools included in the product that will ensure connectivity with PLCs and other RS-232-based devices. The unit supports both packet and circuit switched mode, Serial to IP conversion, Modbus Gateway, DNP3 Level 1 Outstation, and Dial-Up modem emulation. The MRD-330 features two extra RS-232 ports which, will allow up to a total of three RS-232 devices to be directly connected to the network. Also included in the unit are two Digital I/O port pairs, 2 x Digital Input, 2 x Digital Output, for controlling many kinds of I/O devices.

Securely connect everywhere using a Virtual Private Network (VPN)

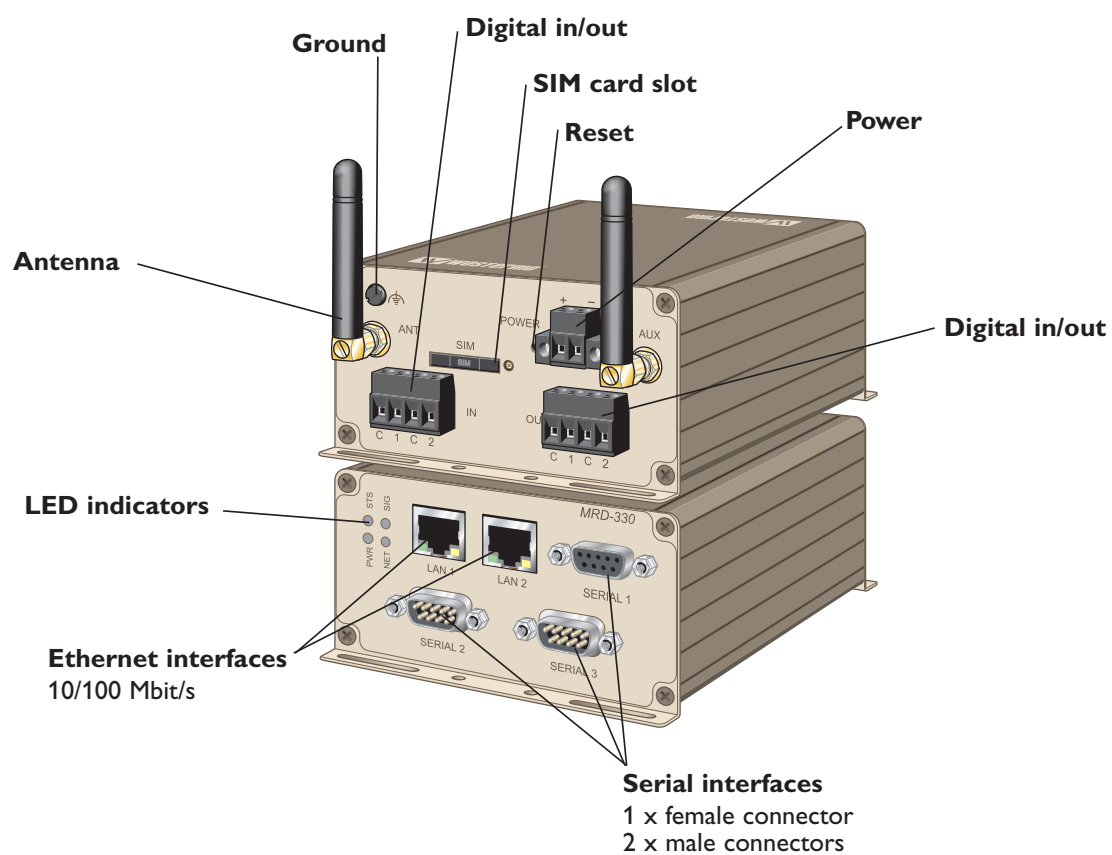
VPNs creates secure tunnels over insecure networks, such as the Internet. With the straightforward on board web interface, setting up a VPN tunnel running between sites is easy. The unit supports IPSec, SSL, PPTP and L2TP encryption and certificate management to secure the tunnel.

- ⌘ Tri-Band UMTS/HSDPA/HSUPA: 900/2100 MHz
- ⌘ Quad-Band GSM/GPRS/EDGE: 850/900/1800/1900 MHz
- ⌘ HSUPA/HSDPA downlink data rates of up to 7.2 Mbit/s, uplink data rates currently at 2 Mbit/s
- ⌘ Operating voltage range of 10 VDC – 60 VDC
- ⌘ Two 10/100 Ethernet switch ports with a built-in DHCP server
- ⌘ Three RS-232 ports
- ⌘ Two digital input & two digital output ports
- ⌘ Stateful packet inspection Firewall
- ⌘ Virtual Private Network (VPN) with IPSec, SSL, PPTP or L2TP encryption
- ⌘ Web and SNMP based configuration

Application



Interfaces



Technical Data

Power	
Rated voltage	10 to 60 VDC
Operating voltage	10 to 60 VDC
Rated current (Max)	800 mA
Inrush current	1.0 A
Polarity	Polarity dependant, reverse polarity protection
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24-12)
Shielded cable	Not required

RS-232	
Electrical specification	EIA/TIA-232
Data rate	300 bit/s – 230400 bit/s
Data format	Data bits: 5, 6, 7 or 8 Stop bits: 1 or 2 Parity: None, Odd or Even Flow control: None, Software, Hardware or Both
Protocol	Transparent, DNP3, Modbus, and Modem emulation
Retiming	Yes
Transmission range	≤ 3 m
Connection	9-pin D-sub female (DCE) and 9-pin D-sub male (DTE)
Shielded cable	Not required

Antenna	
Frequency bands	850 MHz – 2100 MHz
Connection	SMA

SIM	
Electrical specification	UICC/SIM 3V and 1.8V

Ethernet	
Electrical specification	IEEE std 802.3 2000 Edition
Data rate	10 Mbit/s, 100 Mbit/s, manual or auto
Duplex	Full or half
Transmission range	100 m / 328 ft
Connection	RJ-45

Generic I/O interface Input	
Electrical specification	Closed contact (Voltage free)
Input voltage range	12 VDC
Input current (Max)	250 mA
Input inactive	Open Contact
Input active	Closed contact
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24 – 12)

Generic I/O interface Transistor Output	
Electrical specification	Open drain (Common ground)
Switching voltage (Max)	12 VDC
Current (Max)	100 mA
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24 – 12)

Type tests and environmental conditions

Electromagnetic Compability			
Phenomena	Test	Description	Test levels
ESD	EN 61000-4-2	Enclosure contact	± 4 kV (crit A)
		Enclosure air	± 8 kV (crit A)
RF field AM modulated	IEC 61000-4-3	Enclosure	10 V/m (crit A) (80 – 2700 MHz)
Fast transient	EN 61000-4-4	Signal ports	± 1 kV (crit A)
		Power ports	± 2 kV (crit A)
Surge	EN 61000-4-5	Ethernet ports	± 1 kV (direct) (crit A)
		Power ports	± 0.5 kV (line to earth) (crit A)
			± 0.5 kV (line to line) (crit A)
RF conducted	EN 61000-4-6	All ports	10 V/m, (crit A) (0.15 – 80 MHz)
Radiated emission	EN 55022	Enclosure	Class B
Conducted emission	EN 55022	AC power ports	Class B
	EN 55022	Ethernet ports	Class B
Environmental			
Temperature		Operating	–20 to +60°C (–30 to +70°C restricted operation)
		Storage & Transport	–40 to +85°C
Humidity		Operating	0 to 90% relative humidity non condensing.
		Storage & Transport	0 to 90% relative humidity non condensing.
Altitude		Operating	2000 m / 70 kPa
Service life		Operating	10 year
Packaging			
Dimension W x H x D			103 x 55 x 156 mm
Weight			0.43 kg
Degree of protection	IEC 529	Enclosure	IP 40
Cooling			Convection
Mounting			Horizontal on 35 mm DIN-rail

Approvals

