Industrial Mobile Broadband Router
MRD-350

⊞ Industrial remote access using the Internet
- Economic and environmental benefits
- Access SCADA systems, HMI and PLCs remotely
- Wireless mobile broadband GPRS / EDGE / 3G / HSPA connection

⊞ Designed for industrial applications
- Compact casing with proper DIN-rail mounting for easy integration
- All LEDs and interfaces on the front of the unit for easy access
- Enhanced isolation to protect against transients and ground loops

⊞ Secured resilient Internet access
- Dual SIMs to remove carrier dependency
- Easy to use firewall prevents unauthorized access
- Encrypted and secure data transmission with VPN-tunnels

⊞ A wide-variety of solutions to common communication issues
- Connection manager monitors and ensures constant connectivity
- Simple replacements of analogue leased lines
- Ability to control and receive status changes via SMS

CE   FC Part 15   [Australia C-tick]   **R&TTE** Radio and telecommunications terminal equipment   **EN 61000-6-2** Industrial Immunity   **EN 61000-6-3** Residential Emission   **EN 61000-6-4** Industrial Emission

Remote access removes boundaries, eliminates the need for time consuming site visits and provide a network infrastructure suitable for today's "always-on" society.

The MRD-350 industrial mobile broadband GPRS / EDGE / 3G router uses the Internet to cost effectively inter-connect systems, allowing HMI, PLCs, sensors etc to communicate with each other.

A compact design bundled with all interfaces and LEDs in the front make the unit extremely well suited for industrial applications. With isolation between the PSU and the Ethernet and serial ports the MRD-350 protects against issues caused by ground loops.

The dual SIM support in the device ensures that site connectivity is not dependent on a single carrier, should something happen the unit just switches to the other SIM.

Devices connected to the Internet require countermeasures towards cyber threats. The MRD-350 offers protection of transmissions from malicious eavesdroppers via encrypted communication tunnels (VPN), and features a simple, yet powerful, packet inspection firewall.

For solar powered applications energy efficiency is vital and the MRD-350 has a special low-power mode to only be fully powered when needed. The MRD-350 with its built-in serial port offers a simple modem replacement solution with the benefit of not having to reprogram or change any other component.

Ordering Information

Art.no	Description
3623-0201	MRD-350 Industrial Mobile Broadband 3G Router (GSM / GPRS / EDGE / 3G (UMTS) / HSDPA / HSUPA) 2 × RJ-45 Ethernet ports, 1 × RS-232 port, 2 × SIM slots, Cyber security (VPN/Firewall)
3125-0001	PS-30 Power Supply (Accessories)

Specifications MRD-350

Dimensional drawing
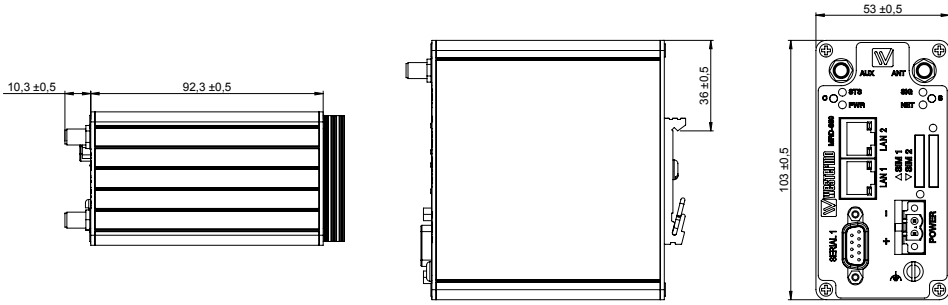
Dimension W x H x D   53 x 103 x 103 mm (2.08 x 4.05 x 4.05 in)
Weight   0.4 kg
Degree of protection   IP 40

Power	
Operating voltage	10 – 60 VDC
Rated voltage	12 – 48 VDC
Rated current	370 mA @ 12 VDC 100 mA @ 48 VDC

Interfaces					
RS-232	1 x 300 bit/s – 115.2 kbit/s				
Ethernet TX	2 x 10 Mbit/s or 100 Mbit/s				
SIM	1 x SIM slot (3 volts SIM supported) (from 2 to just 1)				
Mobile/Cellular Technology	Max Connectivity Speed			Frequency (MHz)	
	Downlink	Uplink	Note		
GSM	14.4 kbit/s	14.4 kbit/s	–	850/900/1800/1900	
GPRS	85.6 kbit/s	85.6 kbit/s	Class 12		
EDGE	236.8 kbit/s	236.8 kbit/s	Class 12		
3G UMTS	384 kbit/s	384 kbit/s	–	850/900/1900/2100	
HSDPA	14.4 Mbit/s	–	Cat 10		
HSUPA	–	5.7 Mbit/s	Cat 6		
Antennas	Transmit (TX)	Receive (RX)	Required	Label	Connector
Main Antenna	YES	YES	YES	ANT	SMA
Optional Antenna*	NO	YES	NO	AUX	SMA

Antenna connector labeled AUX is optional and used for receive diversity.

Temperature	
Operating	–20 to +60°C (–4 to +140°F) (–30 to +70°C (–22 to +158°F) restricted operation)
Storage & Transport	–40 to +85°C (–40 to +185°F)

Agency approvals and standards compliance	
EMC	EN 55024, EN 55024 A1, EN 55024 A2, Electromagnetic compatibility – Immunity IT equipment
	EN 55022, EN 55022 A1, Information technology equipment.
	Radio disturbance characteristics. Limits and methods of measurement
Safety	EC/EN 60950-1, IT equipment

Protocols and Functionality

Ethernet Technologies	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseTX
Cellular Technologies	Circuit Switched Data mode (CSD) GSM GPRS Multi-slot class 12, mobile station class B, PBCCH support, coding schemes CS 1-4 EDGE Multi-slot class 12 (max 236.8 kbit/s), mobile station class B, modulation and coding scheme MCS 1-9 3G (WCDMA / UMTS) 384 kbit/s downlink / uplink HSDPA up to 14.4 Mbit/s downlink HSUPA up to 5.7 Mbit/s uplink
Serial Port Technologies	RS-232 Serial Over IP (Serial Extender and Virtual Serial Port) Modem emulation AT command interpreter MODBUS DNP3 SMS
Layer-2 QoS	IEEE 802.1p Class of Service
IP Routing, Firewall, VPN and Cyber Security	Static IP routing Dynamic IP routing • RIPv1/v2 VRRP GRE Stateful inspection Firewall / ACL, NAT, Port Forwarding 3 x IPsec VPN, PSK & X.509, Fail-over 1 x L2TP client 1 x PPTP client 1 x OpenVPN / SSL VPN client Simple Certificate Enrollment Protocol (SCEP) RADIUS PPP Dial in/Dial out

Manageability	Management tools
	  • Web interface (HTTP and HTTPS)
	  • Command Line Interface (CLI) via SSHv2 and TELNET
	  • SNMPv1/v2c/v3
	  • SMS Control
	Flexible alarm/event handling system
	Syslog (log files and remote syslog server)
	SNTP (NTP client)
	DHCP client
	DHCP server
	DDNS (Dynamic DNS update client)