WESTERMO

Industrial Cellular Router

MRD-455

- **Industrial remote access using the Internet**
  - Economic and environmental benefits
  - Access SCADA systems, HMI and PLCs remotely
  - Wireless 2G/3G/4G connections
- **Designed for industrial applications**
  - Compact casing with DIN-rail mounting
  - Supports serial to IP conversion and DNP3
  - All LEDs and interfaces on the front of the unit for easy access
  - Isolated power supply 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 RED Radio equipment directive

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

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-455 protects against issues caused by ground loops and electrical surges.

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 counter-measures towards cyber threats. The MRD-455 offers protection of transmissions from malicious eavesdroppers via encrypted communication tunnels (VPN), and features a simple, yet powerful, packet inspection firewall.

The MRD-455 with its built-in serial port offers a simple modern replacement solution with the benefit of not having to reprogram or change any other component.

Ordering information	
Art. no.	Description
3623-0401	MRD-455, Industrial Cellular Router (4G LTE) with dual SIM support
3623-0421	MRD-455-AU, Industrial Cellular Router (4G LTE) with dual SIM support for Australia
3623-0601	MRD-455-NA, Industrial Cellular Router (4G LTE) with dual SIM support for North America
3125-0001	PS-30, power supply, DIN-mounted (Accessories)

Specifications - MRD-455

Dimensional drawing
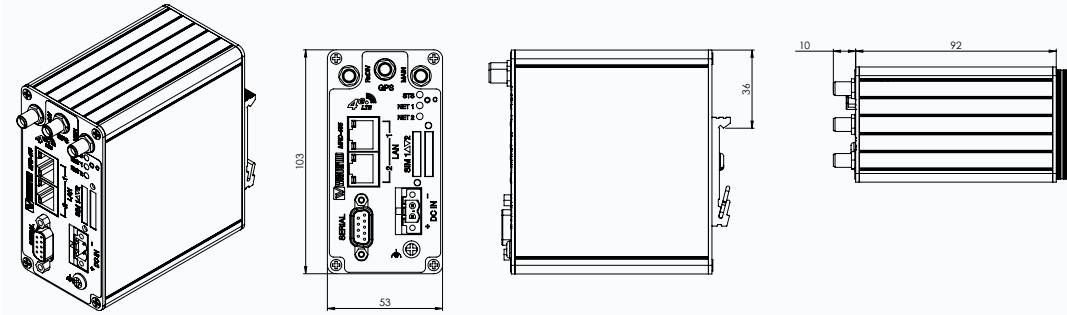
Technical data

Dimensions (W x H x D)	53 x 103 x 103 mm (2.09 x 4.06 x 4.06 inches)
Weight	0.4 kg
Operating temperature	-40 to +70°C (-40 to +158°F)
Storage and transport temperatures	-40 to +85°C (-40 to +185°F)
Ingress protection	IP40
MTBF	MRD-455: 911.600 hours MRD-455-AU: 1.139.500 hours MRD-455-NA: 874.300 hours

Power

Rated voltage	12 to 48 VDC
Operating voltage	10 to 60 VDC
Rated current	140 mA at 24 VDC, isolated power supply from all interfaces. Reverse polarity protection.

Interfaces

RS-232	1 x 9-pin D-sub, 300 bit/s - 115.2 kbit/s
Ethernet	2 x RJ-45, 10 Mbit/s or 100 Mbit/s
SIM	2 x mini-SIM (3 volt SIM supported)
Antennas	3 x SMA female (Main, RxDiv, GPS)

Cellular Technologies

Technology	MRD-455 Frequency (MHz)	MRD-455-AU Frequency (MHz)	MRD-455-NA Frequency (MHz)
2G	900/1800	900/1800	850/900/1800/1900
3G	B1 (2100), B5 (850), B8 (900)	B2 (1900), B5 (850)	B1 (2100), B2 (1900), B5 (850), B8 (900
4G	FDD: B1 (2100), B3 (1800), B5 (850), B7 (2600), B8 (900), B20 (800) TDD: B38 (2600), B40 (2300), B41 (2500)	FDD: B1 (2100), B2 (1900),B3 (1800), B4 (1700), B5 (850), B7 (2600), B8 (900), B28 (700) TDD: B40 (2300)	FDD: B2 (1900), B4 (1700), B5 (850), B13 (700 upper), B17 (700 lower)
Category	LTE Cat. 4	LTE Cat. 4	LTE Cat. 4

Type	Approval/Compliance
Certifications	CE according to RED 2014/53/EU, RoHS, ACMA/RCM
EMC	EN 301489-1, EN 301489-19, EN 301489-52
Safety	EN/IEC 60950-1, EN 50385, EN 62311
Radio spectrum usage	EN 301908-1, EN 301908-2, EN 301908-13
Shock and vibration	EN 61373 Rail Class A - Bodymounted

Protocols and Functionality

Ethernet Technologies	-IEEE 802.3 for 10BaseT -IEEE 802.3u for 100BaseTX
Serial Port Technologies	-RS-232 -Serial Over IP (Serial Extender and Virtual Serial Port) -Modern emulation -AT command interpreter -MODBUS -DNP3 SMS
Layer-2 QoS	-IEEE 802.1p Class of Service
Positioning (GNSS)	-Passive and Active antenna -GPS/GLONASS/BeiDou/Galileo/QZSS
IP Routing, Firewall, VPN and Cyber Security	-Static IP routing -Dynamic IP routing: RIPv1/v2 -VRRP -GRE -Stateful inspection Firewall / ACL, NAT, Port Forwarding 25 x IPsec VPN[a], PSK & X.509, Fail-over, SHA-2 and Xauth Server/Client -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 and server -DDNS (Dynamic DNS update client)
Network Connectivity	-Dual SIM - SIM rotation on failed network connection -Private APN compatible -Supports Roaming SIM -Connection management (passive and active)

[a]25 x Configurable IPsec VPNs, processing power in relation to traffic over VPN sets limitation on number of VPNs