

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 proper DIN-rail mounting for easy integration
 - 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



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.

The MRD-455 industrial cellular 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-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 countermeasures 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.

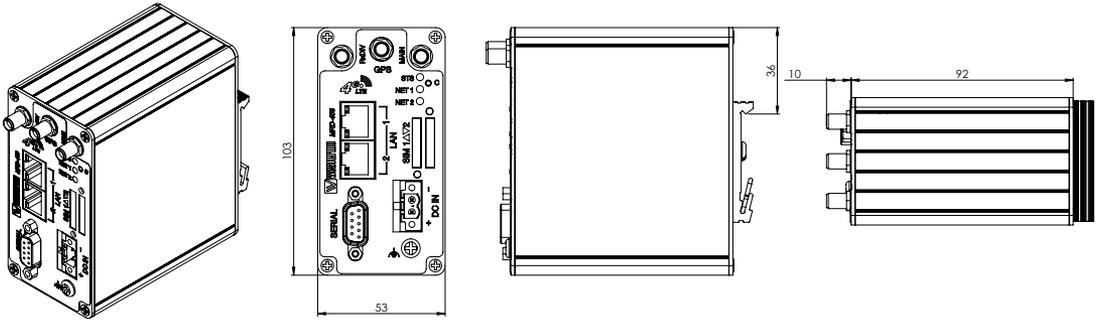
The MRD-455 with its built-in serial port offers a simple modem replacement solution with the benefit of not having to reprogram or change any other component.

Ordering Information

Art.no	Description
3623-0401	MRD-455 Industrial Cellular Router (4G LTE) with dual SIM support
3623-0601	MRD-455-NA Industrial Cellular Router (4G LTE) with dual SIM support for North America
3125-0001	PS-30 Power Supply (Accessories)

Specifications MRD-455

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
 Mounting DIN-rail mounting
 Degree of protection IP40

Environmental conditions

Operating temperature	-40 to +70°C (-40 to +158°F)	
Storage & Transport Temperature	-40 to +85°C (-40 to +185°F)	
MTBF	MRD-455	911.600 Hours
	MRD-455-NA	874.300 Hours

Power

Operating voltage	10 – 60 VDC
Rated voltage	12 – 48 VDC
Rated current	140 mA @ 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 (Tx/Rx), (Rx), GNSS)

Cellular Technologies

Technology	MRD-455 Frequency (MHz)	MRD-455-NA Frequency (MHz)
GSM: GPRS, EDGE	900 / 1800	
UMTS: DC_HSDPA, HSUPA, WCDMA	B1(2100), B5(850), B8(900)	B2(1900), B5(850)
LTE: FDD, TDD	B1(2100), B3(1800), B5(850), B7(2600), B8(900), B20(800), B38(2600), B40(2300), B41(2500)	B2(1900), B4(1700), B5(850), B13(700 upper), B17(700 lower)
Category	LTE Cat. 4	LTE Cat. 4

Agency approvals and standards compliance

Certifications	CE according to RED 2014/53/EU (MRD-455), RoHS
Safety	IEC/EN 60950-1:2006, EN 50385:2002, EN 62311:2008
EMC	EN 301489-1, EN 301489-19, EN 301489-52
Radio Spectrum usage	EN 301908-1, EN 301908-2, EN 301908-13
Shock & Vibration	EN 61373:2010

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) Modem 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 <ul style="list-style-type: none"> • RIPv1/v2 VRRP GRE Stateful inspection Firewall / ACL, NAT, Port Forwarding 25 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 <ul style="list-style-type: none"> • 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 & server DDNS (Dynamic DNS update client)

* 25 x Configurable IPsec VPNs, processing power in relation to traffic over VPN sets limitation on number of VPNs.