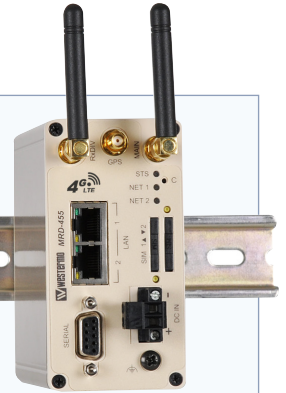


# Industrial Cellular Router

## MRD-355/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-x55 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-x55 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-x55 offers protection of transmissions from malicious eavesdroppers via encrypted communication tunnels (VPN), and features a simple, yet powerful, packet inspection firewall.

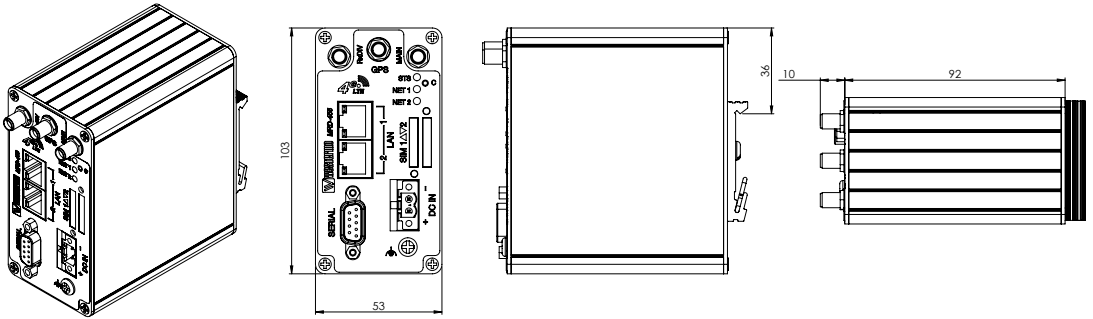
The MRD-x55 with its built-in serial port offers a simple modem replacement solution with the benefit of not having to reprogram or change any other component.

### Ordering Information

Art.no	Description
3623-0250	MRD-355 Industrial Cellular Router (3G) with dual SIM support
3623-0401	MRD-455 Industrial Cellular Router (4G LTE) with dual SIM support
3125-0001	PS-30 Power Supply (Accessories)

# Specifications MRD-355/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	911.600 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-355 Frequency (MHz)	MRD-455 Frequency (MHz)
GSM: GPRS, EDGE	850 / 900 / 1800 / 1900	900 / 1800
UMTS: DC_HSDPA, HSUPA, WCDMA	800 / 850 / 900 / AWS 1700 / 1900 / 2100	850 / 900 / 2100
LTE: FDD, TDD	-	800 / 850 / 900 / 1800 / 2100 / 2300 / 2500 / 2600
Category	HSPA Cat. 14/6	LTE Cat. 4

### Agency approvals and standards compliance

Certifications	CE according to RED 2014/53/EU (MRD-455), RoHS
Safety	EC/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

<b>Ethernet Technologies</b>	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseTX
<b>Serial Port Technologies</b>	RS-232 Serial Over IP (Serial Extender and Virtual Serial Port) Modem emulation AT command interpreter MODBUS DNP3 SMS
<b>Layer-2 QoS</b>	IEEE 802.1p Class of Service
<b>Positioning (GNSS)</b>	Passive and Active antenna MRD-455: GPS / GLONASS / BeiDou / Galileo / QZSS MRD-355: GPS
<b>IP Routing, Firewall, VPN and Cyber Security</b>	Static IP routing Dynamic IP routing <ul style="list-style-type: none"> <li>• RIPv1/v2</li> </ul> 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
<b>Manageability</b>	Management tools <ul style="list-style-type: none"> <li>• Web interface (HTTP and HTTPS)</li> <li>• Command Line Interface (CLI) via SSHv2 and TELNET</li> <li>• SNMPv1/v2c/v3</li> <li>• SMS Control</li> </ul> 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.