MaIwe

MIR785R Series

Gigabit Din-Rail 5G Industrial Router

- Support 1*Gigabit WAN port, 4*Gigabit LAN ports, 2*RS232/RS485 ports, 4*5G antenna connectors, and 1*dual Nano SIM card slot

- Support backup between 5G/4G/3G cellular wireless networks and wired WAN network

- Support stable local area network (LAN) communication using 5G LAN

- Enable networking of serial port terminal devices, with the capability to convert between UDP, TCP, Modbus, HTTPD, WebSocket, MQTT, and other protocols, and supports virtual serial ports

- Offer firewall and service features such as port mapping, DMZ, IP/MAC/domain name filtering, DDNS, VPN, SNMP, LLDP, cloud services, and more

- Support DC9~60V power input with non-polarity support

- Features a high-strength aluminum alloy casing with IP40 protection rating, fanless cooling design, working from -20°C to +70°C

CE   FC   RoHS   IP40

Product Description

The MIR785R series is a 5-port full Gigabit din-rail 5G industrial router specifically designed for industrial communication network applications. It integrates serial port device connectivity and supports both wired WAN and 5G cellular wireless network connections. It adopts an openwrt open architecture, allowing for user customization and development. This series of products provides 1*Gigabit WAN port, 4*Gigabit LAN ports, 2 optional RS232 or RS485 serial ports, 4*5G antenna connectors, and 1*DC9~60V power supply. It is designed for standard DIN rail, meeting the requirements of various network environments.

This series of products supports various network management functions through web configuration, including WAN modes, PPPoE dial-up, DHCP server, 5G network standards, 5G LAN, frequency and cell locking, APN configuration, IP/MAC binding, static routing, link checking, network diagnostics, serial-to-network conversion, firewall settings, VPN, SNMP, LLDP, cloud services, NTP, and more. The system offers user management with different permission levels, supports local and remote log management, allows for scheduled restarts, configuration backup and restore, firmware upgrades, and factory reset. It also supports dip switch-based restart or factory reset.

The hardware is designed with high-standard industrial protection in mind, featuring industrial-grade components and a robust high-strength aluminum alloy casing. It is durable, low power consumption, and designed for wide temperature operation. The fanless cooling design ensures reliable performance in harsh industrial environments, with an operating temperature range of -20°C to +70°C (expandable to -40°C to +75°C). The product has undergone rigorous safety and EMC testing to meet the demands of challenging industrial environments. It finds applications in various fields, including industrial automation, integrated energy systems, smart cities, intelligent transportation, smart mining, and smart factories.

Features and Benefits

- Support 5G/4G/3G cellular wireless networks and wired WAN network, with dual-network backup
- Support MIMO (Multiple-Input Multiple-Output) for improved data transmission rates, increased network capacity, extended wireless coverage, and reduced data packet loss
- WAN port supports connection to the external network via DHCP, static IP, or PPPoE dial-up, or it can be used as a LAN port for internal network connection
- LAN port supports DHCP server functionality for centralized dynamic IP address management and configuration
- Support 5G NR NSA (Non-Standalone) and SA (Standalone) dual-mode networking, with compatibility for 5G/4G networks, dual SIM card dual standby, 5G LAN, frequency and cell locking, and APN (Access Point Name) configuration
- Support static routing, enabling manual addition of routing rules for routing selection and packet forwarding
- Offers link checking, with periodic checks of the 5G network link status and the ability to perform link recovery
- Support IPv4/IPv6 Ping, IPv4/IPv6 Traceroute, Nslookup, packet capture, allowing for network diagnostics and fault analysis
- Firewall features include SYN-flood defense, port mapping, IP/MAC/domain name filtering, custom iptables rules, DMZ isolation, UPnP, IP/MAC rate limiting, QoS for upload/download rate limiting, and more
- Support NTP (Network Time Protocol) client and server functionality for clock synchronization or time source provisioning
- Log information at multiple levels, including kernel, application, and network data, with support for local download, scheduled storage, and remote monitoring
- Serial port supports various serial-to-Ethernet conversion modes, including UDP, TCP Client/Server, UDP Multicast, Modbus RTU Master/Slave, Modbus ASCII Master/Slave, Realcom MCP/CCP/MW, Pair Connection Master/Slave, Httpd Client, WebSocket Client, MQTT, facilitating serial port to Ethernet conversion
- Dynamic DNS functionality for remote login and device management via specified domain names
- Support VPN client and server functionality, with client support for PPTP, L2TP, IPSec, OpenVPN, GRE, and server support for PPTP, L2TP, and IPSec
- Support SNMPv1/v2c, allowing information query, modification, and troubleshooting through MIB (Management Information Base) for centralized management
- Support LLDP (Link Layer Discovery Protocol) for obtaining neighbor device information, monitoring link status, and aiding in topology management and fault localization
- Enable remote management of devices and monitoring of on-site network status via the Maiwee cloud platform
- Utilize an openwrt open architecture, supporting user customization and development
- Support M.2 interface 5G communication modules, facilitating user replacement

☑ Specification

Software	
Network Management	Support traffic statistics, operational status, network status, and local device address information.
	Support static IP address, DHCP, and PPPoE for external network connections, with support for WAN/LAN modes.
	Feature a built-in DHCP server and IP/MAC binding functionality.
	Support 5G/4G/3G networks, dual SIM card management, multiple network card settings, frequency and cell locking, APN configuration, and link checking.
	Enable static routing.
	Provide serial-to-network conversion, dynamic DNS, SNMP, LLDP, and cloud services.
	Support VPN client functionality for PPTP, L2TP, GRE, TUN, and TAP protocols. Offer VPN server functionality for PPTP, L2TP, and IPSec protocols.
Firewall	Support SYN-flood defense, IP dynamic masquerading, and MSS (Maximum Segment Size) control, with inbound and outbound data control.
	Provide WAN/LAN port TCP/UDP port mapping.
	Offer IP/MAC/domain name filtering, iptables configuration, DMZ (Demilitarized Zone), UPnP (Universal Plug and Play), and IP/MAC/QoS rate limiting.
System Management	Support IPv4/IPv6 Ping, IPv4/IPv6 Traceroute, Nslookup, and network packet capturing.
	Feature time zone settings, NTP (Network Time Protocol) client and server functionality, management ports, scheduled tasks, and remote/local logging.
	Offer user privilege management and SSH (Secure Shell) access for secure remote administration.
	Support online restart, scheduled restart, configuration backup/restore, firmware flashing, and factory reset.

5G Cellular Network	
Network Format	5G NR SA/NSA, LTE-FDD, LTE-TDD, WCDMA
Working Frequency	5G NR SA: n1/41/77/78/79 5G NR NSA: n41/78/79 LTE-FDD: B1/2/3/5/7/8/20/28 LTE-TDD: B34/38/39/40/41 WCDMA: B1/2/5/8
MIMO	DL 4×4: n1/41/77/78/79 UL 2×2: n41/77/78/79 DL 2 × 2: LTE
Theoretical Transfer Rate	5G SA Sub-6: DL 2Gbps/ UL 1Gbps 5G NSA Sub-6: DL 2.2Gbps/ UL 575Mbps LTE: DL 600Mbps/ UL 150Mbps UMTS (DC-HSDPA/HSUPA): DL 42.2Mbps/ UL 11Mbps WCDMA: DL/UL 384 kbps

☑☰ Specification

TX Power	5G NR n1/41: 23dBm±2dB 5G NR n77/78/79: 23dBm+2/-3dB LTE: 23dBm±2dB WCDMA: 24dBm+1/-3dB
RX Sensitivity	LTE-FDD: -96.3dBm(B1)/ -94.3dBm(B2)/ -93.3dBm(B3)/ -94.3dBm(B5/7)/ -93.3dBm(B8/20)/ -94.8dBm(B28) LTE-TDD: -96.3dBm(B34/38/39/40)/ -94.3dBm(B41) WCDMA: -106.7dBm(B1)/ -104.7dBm(B2/5)/ -103.7dBm(B8)
Interface	
1G WAN Port	1*10/100/1000Base-T(X) auto-sensing RJ45 WAN port (supports LAN mode). Support full/half-duplex operation and auto MDI/MDI-X . Support 1.5kV electromagnetic isolation.
1G LAN Port	1 *10/100/1000Base-T(X) auto-sensing RJ45 LAN (Local Area Network) port. Support full/half-duplex operation and auto MDI/MDI-X connection. Support 1.5kV electromagnetic isolation.
Serial Port	Serial Port: 2 ports of RS232/RS485 Connection Method: 6-pin terminal blocks with a 3.81mm pitch and locking mechanism Baud Rate: 300bps-115200bps Data Bits: 5-bit, 6-bit, 7-bit, 8-bit Stop Bits: 1-bit, 2-bit Parity: None, Odd, Even Isolation Voltage: 2kVAC/3kVDC
Antenna Connector	4 *SMA-K (external thread and inner hole) antenna connectors for connecting 5G cellular antennas
SIM Card Slot	1 slot for dual Nano SIM cards, with dual SIM card standby support for 5G/4G networks and 3G
CONSOLE Port	1 CONSOLE port, compliant with USB2.0 standards, using a Micro-B USB2.0 socket
DIP Switch	RS485 terminal resistance, restart or factory reset
Status LED	Power indicator, status indicator, alarm indicator, serial port indicator, NET indicator, signal strength indicator, Ethernet port rate and connection/activity indicator
Power Supply	
Input Voltage	DC 9~60V
Power Consumption	<12.2W at DC 12V (full load)
Connection	5.08mm pitch 5-pin terminal block
Protection	No polarity protection
Physical Characteristics	

Specification

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Dimensions	140×54×110 mm (excluding the DIN rail mounting clip)
Installations	35mm standard DIN rail
IP Code	IP40
Weight	0.65 kg (excluding antennas)
Working Environment	
Operating Temp	-20℃~+70℃ (Extended Temperature: -40°C to +75°C).
Storage Temp	-40℃~+85℃
Relative Humidity	5%~95% (non-condensing)
Industry Standard	
EMC	IEC 61000-4-2 (ESD - Electrostatic Discharge) IEC 61000-4-5 (Surge) IEC 61000-4-4 (EFT - Electrical Fast Transient)
Certifications	CE, FCC, RoHS

Dimensions

Unit: mm

MIR785R-2D232   MIR785R-2D485
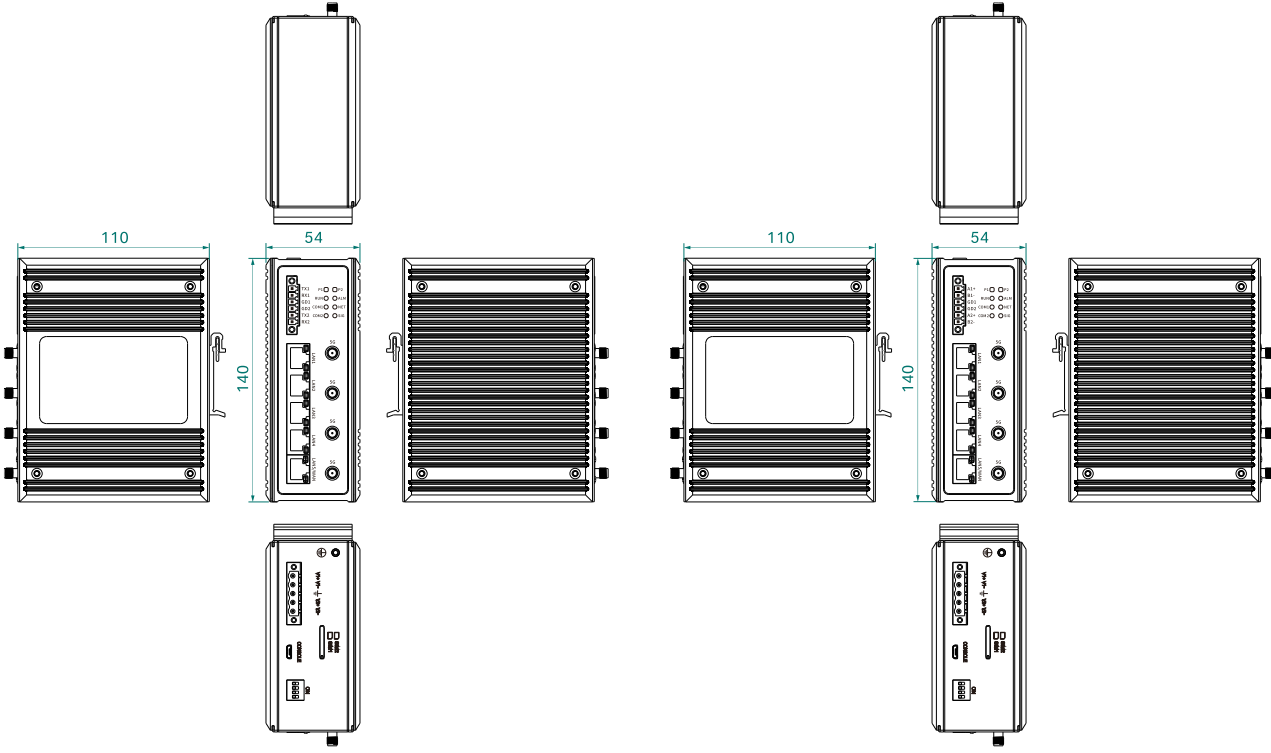
Ordering Information

Standard Model	Gigabit WAN	Gigabit LAN	RS232	RS485	5G Antenna	Input Voltage
MIR785R-2D232	1	4	3	/	4	DC9~36V
MIR785R-2D485	1	4	/	2	4	

Contact Us

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