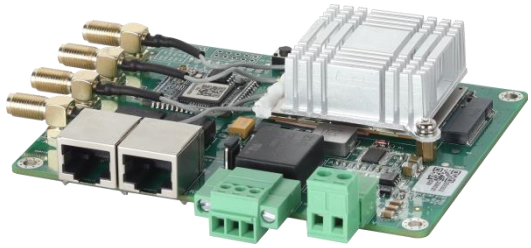
MIR682-Exi Series

Embedded Intrinsically-Safe Dual Network Port 5G Industrial Wireless Router



- Support 1 100M WAN port, 1 100M LAN port, 1 RS485 serial port, 4 5G antenna Interface, and 2 Nano SIM card slots
- Support 5G/4G/3G cellular wireless network and WAN port wired network backup
- Support serial port terminal device networking, can convert UDP, TCP, Modbus, HTTPD, WebSocket, MQTT and other protocols, and support virtual serial port
- Support the standard MQTT protocol and can connect to Alibaba Cloud, OneNet, Tencent Cloud, Huawei Cloud, Maiwe Cloud or other cloud platforms to realize the interconnection of everything between the device and the cloud
- Support Modbus slave pre-reading, JSON uploading and issuing functions
- Support firewall and service functions such as port mapping, DMZ, intranet penetration, IP/MAC speed limit/filtering, DDNS, VPN, SNMP, LLDP, etc.
- Support DC 9~24V power input, support anti-reverse connection, slow start, current limiting and voltage limiting protection, and complies with intrinsically safe circuit design standards
- Support -40~+70℃ operating temperature to meet the application needs of industrial environment

Product Description

The MIR682-Exi series is an embedded intrinsically safe 5G industrial router that meets intrinsically safe design requirements. It integrates serial device networking and supports WAN wired or 5G cellular wireless networks; it provides 1 100M WAN port, 1 100M LAN port, 1 channel RS485 serial port, 4 channels 5Gantenna Interface and 1 channel DC9~24V power input. The power supply Support anti-reverse connection, slow start, current limiting and voltage limiting protection; it adopts embedded Installation method to meet the needs of various network sites.

This product supports WEB configuration of various network management functions, such as WAN mode, PPPoE dial-up, DHCP server, 5G network standard, APN, IP/MAC binding, static routing, link check, network diagnosis, serial port to network, firewall, VPN, SNMP , LLDP, cloud services, NTP, etc.; the system provides user management with different permissions, Support local/remote log management, Support scheduled restart, configuration backup and recovery, firmware upgrade, and factory reset. It supports one-click restart or factory settings restoration, and the indicator signal pin can be externally referenced. The hardware adopts a fanless, intrinsically safe design, with selected industrial-grade components, supporting -40~+70℃ operating temperature. The power supply complies with intrinsically safe circuit design standards and has passed strict safety and EMC tests to meet the harsh industrial environment and application requirements. It can be widely used in industrial automation, integrated energy, intelligent transportation, smart cities, smart mines and other fields.

Features and Benefits

- Support 5G/4G/3G cellular wireless network and WAN port wired network, Support dual network backup
- Support MIMO multiple input and multiple output to increase data transmission rate, expand network capacity and wireless coverage, and reduce data packet loss
- The WAN port supports DHCP protocol, static address, PPPoE dial-up, etc. to connect to the external network, or can be used as a LAN port to connect to the intranet
- The LAN port supports DHCP server to centrally dynamically manage and configure user IP addresses.
- 5G network supports 5G NR NSA and SA dual-module networking, is compatible with 4G/3G, supports 5G/4G three-network universal, dual-SIM single standby, and APN
- Support link check, periodically check the 5G network link status, and perform link recovery
- Support IPv4/IPv6 Ping, IPv4/IPv6 Traceroute, Nslookup, and packet capture for network diagnosis or fault analysis
- The firewall supports SYN-flood defense, port mapping, IP/MAC/DNS address filtering, iptables command custom rules, DMZ isolation zone, UPnP, IP/MAC speed limit, QoS limit upload/download rate and other functions
- Support NTP client and server functions, can perform clock synchronization or provide clock source
- Log information records multiple levels of kernel, application and network information, and supports local downloading, scheduled saving, and remote monitoring.
- The serial port supports 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 and other serial port conversions mode to realize serial port to Ethernet
- Support Peanut Shell intranet penetration, and can use Peanut Shell dynamic domain name to remotely log in and manage equipment
- Support dynamic DNS function, and can remotely log in and manage the device through the specified domain name
- Support VPN client and server to build a private network. The client supports tunnel protocols such as PPTP, L2TP, IPSec, OpenVPN, GRE, and SSTP. The server Support protocols such as PPTP, L2TP, and IPSec.
- Support SNMPv1/v2c, and can conduct information query, information modification and troubleshooting through MIB to achieve centralized management
- Support LLDP, obtains LLDP neighbor device information, and monitors link status to facilitate topology management and fault location
- Support Maiwe cloud platform management to realize remote management of equipment and monitoring of on-site network status

Specifications

Software	
Network Management Function	Support traffic statistics, running status, network status, local address and other status information Support static address, DHCP, PPPoE external network connection, support WAN/LAN mode Support DHCP server, IP/MAC binding Support 5G/4G/3G network, dual-SIM management, APN, link check Support static routing Support serial port to network, peanut shell intranet penetration, dynamic DNS, SNMP, LLDP, cloud services Support PPTP/L2TP/GRE/TUN/TAP/SSTP protocol VPN client Support PPTP/L2TP/IPSec protocol VPN server
Firewall	Support SYN-flood defense, IP dynamic camouflage, MSS clamping, inbound/outbound data control Support WAN/LAN port TCP/UDP port mapping Support IP/MAC/domain name filtering, iptables, DMZ, UPnP, IP/MAC/QoS rate limiting
System Management	Support IPv4/IPv6 Ping, IPv4/IPv6 Traceroute, Nslookup, and capture network packets Support time zone, NTP client/server, management port, Crontab, remote/local log Support user rights management and SSH access Support online restart, scheduled restart, configuration backup/restore, firmware flash, and factory settings restore

	MIR682-Exi-QG	MIR682-Exi-UC
Network Format	5G NR SA/NSA、LTE-FDD、LTE-TDD、WCDMA	
Working Frequency	5G NR SA：n77/78/79 5G NR NSA：n41/77/78/79 LTE-FDD： B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71 LTE-TDD： B34/38/39/40/41/42/43/48 WCDMA：B1/2/3/4/5/8/19	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： n41/n77/n78/n79，B1/2/3/4/7/25/30/38/39/40/41/42/43/48/66 UL 2 × 2：n41/n77/n78/n79	DL 4 × 4：n1/41/77/78/79 UL 2 × 2：n41/77/78/79 DL 2 × 2：LTE

Specifications

Maximum Transmission Rate (Theoretical Value)	5G SA Sub-6： DL 2.1Gbps/ UL 900Mbps 5G NSA Sub-6： DL 2.5Gbps/ UL 650Mbps LTE：DL 1.0Gbps/ UL 200Mbps UMTS（DC-HSDPA/HSUPA）：DL 42Mbps/ UL 5.76Mbps WCDMA：DL / UL 384 kbps	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
Maximum Transmit Power	5G NR：23dBm±2dB LTE：23dBm±2dB WCDMA：24dBm+1/-3dB	5G NR n1/41：23dBm±2dB 5G NR n77/78/79：23dBm+2/-3dB LTE：23dBm±2dB WCDMA：24dBm+1/-3dB
Receive Sensitivity	5G NR-TDD： -92dBm(n41)/ -92.9dBm(n77)/ -92.9dBm(n78)/ -89.7dBm(n79) LTE-FDD： -96.3dBm(B1)/ -94.3dBm(B2)/ -93.3dBm(B3)/ -96.3dBm(B4)/ -94.3dBm(B5/7)/ -93.3dBm(B8)/ -95.3dBm(B9)/ -93.3dBm(B12/13/14/17)/ -96.3dBm(B18/19)/ -93.3dBm(B20)/-92.8dBm(B25)/ -93.8dBm(B26)/-94.8dBm(B28)/ -95.3dBm(B30/32) LTE-TDD： -96.3dBm(B34/38/39/40)/ -94.3dBm(B41)/ -95dBm(B42/43/48) WCDMA： -106.7dBm(B1)/-104.7dBm(B2)/ -103.7dBm(B3)/-106.7dBm(B4)/ -104.7dBm(B5)/-103.7dBm(B8)/ -104.7dBm(B19)	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

100M Wan	1 x10/100Base-T(X) auto-sensing 100M RJ45 WAN port (Support LAN mode), Support full/half duplex, auto MDI/MDI-X, and support 1.5kV electromagnetic isolation
100M Lan	1 x10/100Base-T(X) auto-sensing 100M RJ45 LAN port, Support full/half duplex, auto MDI/MDI-X, Support 1.5kV electromagnetic isolation

Specifications

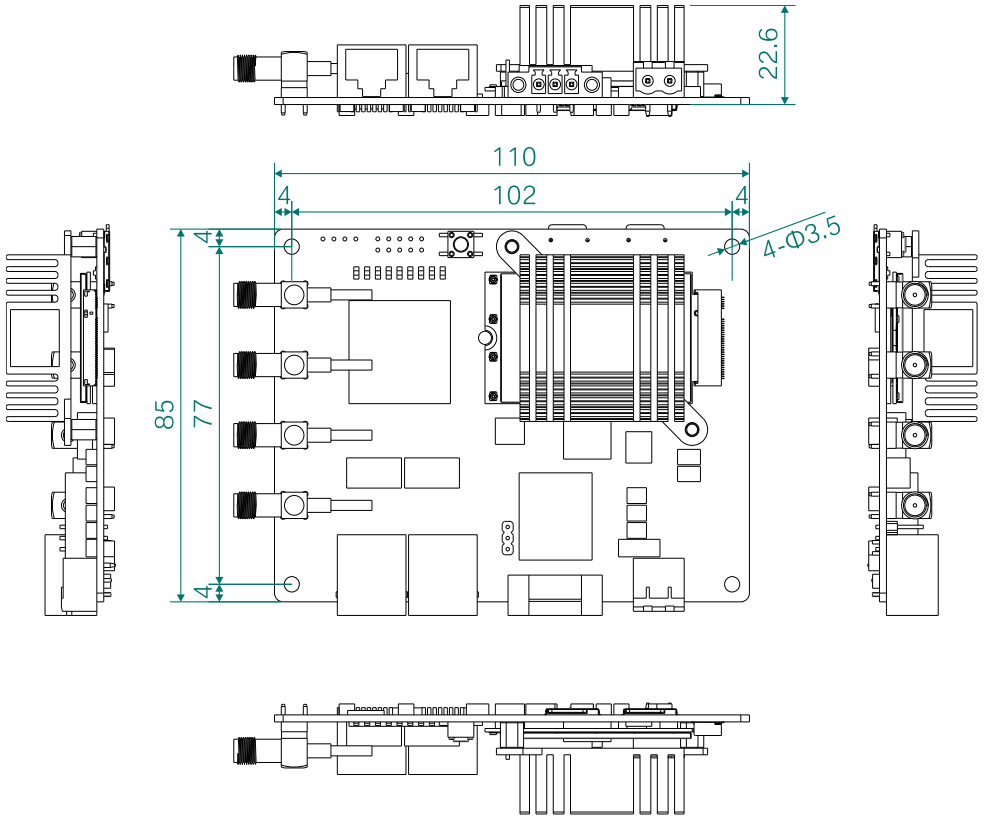
Serial Port	Serial port type: 1 channel RS485 Connection method: 3.81mm pitch 3-PIN terminal block Baud rate: 300bps-230400bps Data bits: 5bit, 6bit, 7bit, 8bit Stop bit: 1bit, 2bit Check digit: None, Odd, Even Terminal resistor: Built-in 120Ω terminal resistor, set through jumper cap Serial port isolation: 2.5kVDC
Antenna Interface	4-way SMA-K (external thread internal hole) antenna Interface for connecting 5G cellular antennas
Sim Card Interface	2-way Nano SIM card slot, dual SIM card single standby, Support 5G/4G triple network and 3G China Unicom
Indicator Light	Power indicator light, operation indicator light, LAN port indicator light, WAN port indicator light, serial port indicator light, mobile network indicator light, mobile signal strength indicator light, support external indicator light pins
Power Supply	
Power Input	DC 9~24V
Power Consumption	<5.5W@DC12V (full load) MIR682-Exi-QG (Qualcomm module) can be used with 900mA@18V intrinsically safe power supply MIR682-Exi-UC can be used with 1.5A@12V intrinsically safe power supply and meets the intrinsically safe ib certification requirements
Connection Method	5.08mm pitch 2-PIN terminal block
Power Protection	Anti-reverse connection, slow start, current limiting protection, voltage limiting protection
Physical Characteristics	
Dimension	110x85x22.6 mm (excluding interface)
Installation Method	Embedded installation
Weight	About 0.13kg (excluding antenna)
Working Environment	
Operating Temperature	-40℃~+70℃
Storage Temperature	-40℃~+85℃

Specifications

Relative Humidity	5%~95% (non-condensing)
Industry Standard	
EMC	IEC61000-4-5 (Surge): Level 3 (power supply: common mode ±2kV, differential mode ±1kV; Network port, serial port: common mode ±4kV, differential mode ±2kV) IEC61000-4-4 (EFT): Level 4 (power supply: ±4kV; network port, serial port: ±2kV)
Certification	CE, FCC, RoHS

Installation Dimensions

Unit:mm(first angle projection)



Ordering Information

Standard model	100M WAN Port	100M LAN Port	RS485	5G Antenna Interface	Input Voltage
MIR682-Exi-QG (Qualcomm module)	1	1	1	4	DC 9~24V
MIR682-Exi-UC	1	1	1	4	DC 9~24V

Contact Us

Wuhan Maiwe Communication Co., Ltd

Address: No.52 Liufang Avenue, East lake High-tech Development Zone, Wuhan, China.

Tel: 027-87170217

Mail: enquiry@maiwe.com

Official site: www.maiwe.com