

Product Overview

Programmable IoT Gateway with Rich I/O

MR351W is an OpenWrt based Linux OS industrial IoT gateway, which provides C/C++, Python programmable embedded environment for IoT developers and programmers to implement their industrial applications in a flexible and easy way.

MR351W has rich I/O like RJ45, RS232/RS485, DI/DO, USB, WIFI, GPS, and protocols such as MQTT, Modbus RTU/TCP, Modbus to Json, TCP/UDP, to collect and transfer the data from diverse sensors and controllers to the cloud, and remotely control the industrial equipment. Besides, its captive portal feature is ideal for WIFI advertisement applications of transportation.

MR351W has option of dual sim or dual module for failover or load balance, provides secure, robust and reliable wireless and wired connectivity for your mission-critical industrial applications, and it has been widely used for air compressor monitor and control, bus WIFI advertisement, water pump control, electricity substation monitor, etc.



Key Features

- Global 4G LTE/3G/2G cellular network supported
- Dual SIM or dual module supports failover or load balance mode1, auto switchover between wireless and wired WAN
- Rich interfaces: 4-LAN, 1-WAN, 1-USB, 2-DI, 2-Relay, 1-RS232, 1-RS485, WIFI(802.11b/g/n), GPS(Optional)
- LTE/3G/PPPoE DHCP and static address connection
- Captive portal for WIFI advertisement solution of transportation2
- APN/VPDN, and multiple VPN protocols, IPsec, L2TP, PPTP, GRE and OpenVPN, to ensure secure data transmission
- DHCP server, DHCP binding MAC address, DDNS, firewall, NAT, DMZ host, QoS, traffic analysis
- MQTT, Modbus RTU/TCP, TCP/UDP, HTTP, SNMP protocols
- SPI Firewall, Access Control, Port Mapping, DMZ Mapping, Access Control List (ACL), IP-MAC binding and Clone function
- Web UI, telnet & SSH CLI, AT Command configuration
- Web upgrade, local and remote syslog, serial port output log
- SMS commands and DMP(Device Management Platform)3 for remote configuration and management
- OpenWrt based Linux OS, provides programmable environment via C/C++, Python, LUA, SDK

Applications

Different applications with different scenarios.



Specifications

Cellular Interfaces

Antenna Connector	2x500hm - SMA Female
SIM Slot	1 or 2 (DSSM or DSDM)
ESD Protection	15KV

Ethernet Interfaces

Ports	5xRJ45 (1xWAN, 4xLAN – 5th ETH LAN/WAN Configurable)
Data Rates	10/100Mbps (Auto-Sensing), Auto MDI/MDIX
ESD Protection	1.5KV

Serial Interfaces

Connector	Terminal Block, 3.5mm Female Socket with Lock
Ports	1xRS232, 1xRS485
Baud Rate	300bps to 230400bps
ESD Protection	8KV for RS232, 15KV for RS485

Wireless

Antenna Connector	1x500hm SMA Male
Standards	IEEE 802.11/b/g/n - AP and CLIENT Modes
Transmission Rate	IEEE 802.11/b/g : Up to 54Mbps IEEE 802.11/n : Up to 300Mbps
Security	Open, WPA, WPA2, WPA/WPA2 Enterprise, RADIUS
TX Power	18dBm (11g), 21dBm (11b)
RX Sensivity	<-72dBm@54Mbps

I/O

Connector	Terminal Block, 3.5mm Female Socket with Lock
DI	2xDI (0-30V Input) Status "0"=0-3V - "1"=5-30V
DO	2xRelay (Up to 5A and 30VDC/250VAC Output)

External Storage

USB Port	1xUSB 2.0
SD (Optional)	1xMicro SD Interface, Supports up to 32G
Usage	User Program, Data Storage and Firmware Upgrade

GPS (Optional)

Module	Built-in independent GPS Module
Antenna Connector	1x500hm SMA Female

Power Supply and Consumption

Connector	2-Pin with 3.5mm Terminal Block
Standard Power	DC 12V/1.5A
Input Voltage	5-35VDC
Working Mode	280 - 330mA@12VDC
Idle Mode	190 - 240mA@12VDC

Software

Network Protocols	PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNTP, Telnet, SSH, MQTT, Transparent (TCP Client/Server, UDP Client/Server) Modbus Gateway (Modbus RTU to Modbus TCP)
Serial Port	
VPN Tunnel	IPSec/PPTP/L2TP/GRE/OpenVPN
Firewall Management	ACL/DMZ/Port Mapping/MAC Binding Web, CLI, SMS, Cloud, DMP (Device Management Platform)
Reliability	WWAN and WAN Failover, Dual SIM backup and Load Balance, Hardware & Software WatchDog
Secondary Development	OpenWRT based Linux OS, support C/C++, Python, LUA and SDK

Physical Characteristics

Ingress Protection	IP30
Housing & Weight	Metal, 630g(1.39lbs), without accessories
Dimensions	145x114x45mm (5.71x4.49x1.77inch)
Mounting	Desktop, DIN Rail

Environmental

Operating Temperature	-35C to +75C (-31F to +167F)
Storage Temperature	-40C to +80C (-40F to +176F)
Relative Humidity	5% to 95% (non-condensing)
Ethernet Isolation	1.5kV RMS

Others

Reset Button	1
LED Indicators	Power, WiFi, System, Alarm, Online, Signal Strenght
Built-In	WatchDog, RTC, Timer
Approvals	CE, RCM, FCC, NBTC
Warranty Period	Standard : 12Month Extended : 2Years

Standard Package Content

1pcs	MR351W Gateway
1pcs	Power Adapter (DC 12V/1.5A, EU/US/UK/AU plug optional)
1pcs	RP-SMA WiFi Antenna (19.5cm, 5dBi)
2pcs	Mag-Mount Cellular Antenna (SMA Male, 1 Meter, 5dBi)
1pcs	RS232 Cable (DB9 Female, 1 Meter)
1pcs	Ethernet Cable (1Meter)
2pcs	6-Pin Terminal Block
1pcs	2-Pin Terminal Block
1pcs	DIN-Rail Mount Kit

Dimensions

