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Communication Expert of

Industrial IOT

USR-G809 Specification



Product description

The G809/G807 series is a new generation of flagship routers for industrial applications. Equipped with high-end Qualcomm main control, it offers two series: 5 Gigabit Ethernet ports and Gigabit（2*SFP+8*RJ45）. It supports optional 4G cellular network boards, with 1GB RAM, 8GB storage, and Python secondary development capabilities. Featuring Qualcomm dual-band Wi-Fi 6 and rich hardware interfaces, it includes: 1*RS232 + 1*RS485 dual serial ports, 1*DI/DO, dual SIM redundancy, GNSS positioning, OLED display, USB port, and SD interface.

Designed to industrial standards, the product operates in -40°C~75°C temperatures, accepts DC 9-60V power, and has robust hardware protection. Tested in harsh environments, it features dual hardware/software watchdogs and self-recovery for reliable performance across industries.

The product features standard DIN-rail mounting and a compact design. It applies to smart factories, intelligent manufacturing, industrial robotics, smart warehousing, drones, smart healthcare, vehicle networking, industrial automation, smart transportation, smart cities, smart industries, security & criminal investigation, and driverless scenarios.

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Product features

Stable and reliable

- Aluminum alloy shell, IP40 protection: reduce the impact of dust;
- Industrial wide temperature : -40℃~+75℃ design;
- The voltage input is DC 9-60V, and the power supply reverse protection is available;
- EMC National standard 3B hardware high protection level, specially designed for harsh industrial environment;
- Built-in hardware and software watchdog, self-detection and self-repair of faults to ensure system stability;
- Standard rail installation method Standard rail installation method;

Rich in interfaces

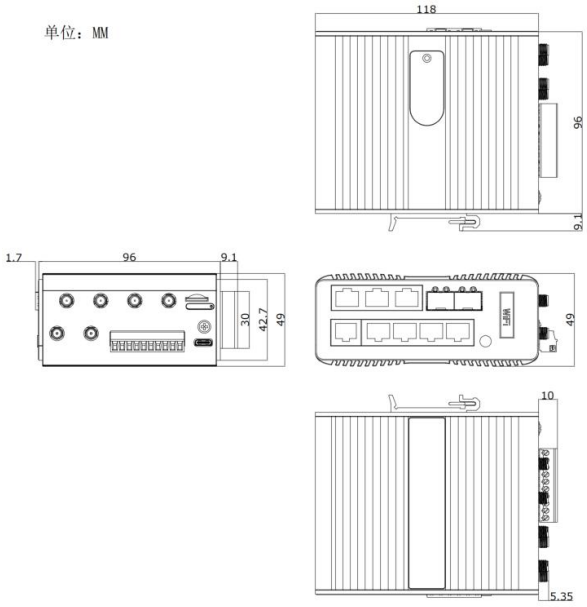
- Support Gigabit （2*SFP+8*RJ45）;
- Support 4G Global Band;
- Support TF and USB peripheral access;
- Link redundancy design, dual SIM card slots;
- 1*RS232/RS485+1*RS485;
- 1*DI+1*DO;
- Supports Qualcomm dual-band Wi-Fi6 (AP/STA/Relay/Bridge);

Powerful

- 1GB memory +8GB large storage, Python;
- Support PPTP/L2TP/IPSec/OpenVPN/GRE/VXLAN/DMVPN/Wireguard;
- Support cellular network to lock frequency band and frequency point、PCI;
- Supports TCP/UDP/Modbus/MQTT/HTTP protocol serial port transmission;
- Support edge collection computing and report through MQTT+JSON format;
- Support cloud services such as PUSR Cloud Monitoring/Alibaba Cloud;
- Support SNMP/ SMS/alarm/monitor/DDNS and other network services;
- Support key service information of OLED display, and support two open custom OLED display content;
- Supports failover, dual SIM/dual WAN/wireless WIFI mutual backup capability, and always keeps the network offline;
- Supports GPS positioning, and supports displaying location information on the cloud and reporting to private servers;
- Supports static routing, policy routing, and dynamic routing protocols;
- Supports IPV6;
- Support ICMP keep-alive detection, heartbeat packet detection and other functions to ensure stable operation of the equipment;
- Supports security firewall, DNAT, SNAT, DMZ, port forwarding, access restriction, etc;
- Supports remote networking and boundaryless remote access terminal capability;
- Supports opening the built-in web page of the router through the PUSR Cloud, so that you can easily access the router without a dedicated network or public IP;
- Support network IO management and remote control of switches;
- Supports APP installation;
- Support RTC clock;
- Supports data acquisition breakpoint continuation and GNSS breakpoint continuation.

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Product size



Hardware specifications

Hardware Specifications		
Cellular	4G Global frequency bands	TDD-LTE:Band 34/38/39/40/41 FDD-LTE：Band 1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 WCDMA:B1/2/4/5/6/8/19 GSM/GPRS/EDGE：B2/3/5/8
	Antenna interface	2* Standard SMA-K interface (outer screw and inner hole)
	SIM card slot	2 *None-SIM
Ethernet Interface	Number of network ports	Version with 10 LAN ports：2*WAN/LAN+6*LAN+2*SFP； SFP: 1*WAN/LAN+1*LAN
	Network port specifications	RJ45：10/100 /1000Mbps，IEEE 802.3 SFP：Gigabit optical port It has 1.5KV network isolation transformer protection
Connecting Terminal	V+，V-	Built-in power reverse protection
	GND	Ground terminal；
	Tx	RS232
	Rx	RS232
	A	RS485
	B	RS485
	DI1	Digital input port
	DO1	Digital output port
	Com	Common teminal

Wi-Fi6	Antenna interface	2 * Standard RP-SMA-K interface (External screw and internal pins)
	MIMO	2×2
	Standard and frequency band	Support IEEE802.11b/g/n/ac/ax，2.4GHz&5.8G
	Wireless functionality	AP / STA/ Relay / Bridge
	The rate of the theory	2976Mbps(5GHz:2402Mbps,2.4GHz:574Mbps)
	Secure encryption	No encryption/mixed-psk/psk/psk2/psk2+ccmp
	Transmission distance	Open outside / no obstruction, coverage radius up to 200 meters; Indoor office environment/barrier, coverage radius up to 40 meters Note: The measured rate is affected by the field environment, please take the measured rate as the standard
	Theoretical device capacity	2.4G+5.8G:256
Positioning Function	Antenna interface	1 * Standard SMA-K interface (external screw and internal hole)
	Positioning criteria	GPS
Power Supply Specifications	Adapter	DC 12V/2.5A
	Power supply interface	Power supply for industrial terminals with anti-polarity protection
	Scope of power supply	DC 9-60V
Serial Port	RS485/RS232	Industrial terminal
	Baud rate（bps）	1200,2400,4800,9600,19200,38400,57600,115200,230400
	Data bit	7,8
	Stop bit	1,2
	Check bit	NONE,ODD,EVEN
Software Functions	VPN	PPTP、L2TP、IPSec、OpenVPN、GRE、VXLAN、Wireguard
Physical Characteristics	Hull	Aluminum alloy shell, dustproof grade IP40
	Size;	118.0*96.0*48.7mm（L*W*H，Parts and antenna seats are not included）
	Way to install	Guide rail installation, horizontal desktop placement
	EMC	National standard 3B grade
	working temperature	-40℃ ~ +75℃
	Storage temperature	-40℃ ~ +85℃（No condensation）
	Working humidity	5%~95%（No condensation）
Other	Reset/Switch Screens	Long press for 5-15 seconds to restore factory settings, and short press for 1-3 seconds to switch screens.
	USB	Supports USB flash drives to expand storage space
	SD card slot	Support SD card to expand storage space
	RTC	RTC
	Ground protection	Grounding screws

	Built-in watchdog	Supports self-detection of equipment and self-recovery of faults
	OLED	Display the basic information of the router

Series selection

Various models			
Product Model	USR-G806p	USR-G809	USR-G816
Frequency Band	Global	Global	Global
Cellular Networks	4G Cat.4	4G Cat.4	5G
Gigabit Network Port (Quantity)	5	8	4
Gigabit Optical Port (Quantity)	——	2	——

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