

AR7091G Industrial Edge Computing Gateway Specification

Water conservancy Video RTU/ Power Communication Management
Machine/Edge Computing Gateway /CPE



AR7091G is an industrial Internet of Things edge computing gateway /CPE/ water conservancy video RTU/ power communication management machine developed based on 5G/4G/3G/2G, WiFi, VPN technologies. The product adopts high-performance industrial 32-bit processor, with embedded operating system. It supports 1 Gigabit Ethernet WAN/1 Gigabit SFP optical port (optional), 4 Gigabit Ethernet LAN ports (PoE is optional for 2), 1 RS232 (2 for enhanced model), 4 isolated RS485 (7 for enhanced model), 1 USB2.0, 1 Micro SD card, 1 rainfall collection, 1 AI, 2 DI, 2 relay, 2 controllable power supplies, 1 CAN bus, 2.4G/5.8G WiFi interface that can conveniently connect one device to a cellular network. It can be connected to serial device, Ethernet device and WiFi device at the same time.

It has been widely used on M2M fields, such as intelligent transportation, smart grid, postal services, industrial automation, telemetry, finance, POS, water supply, environment protection, post, weather, and so on.

Product advantages

- ✓ High-performance industrial 32-bit processor
- ✓ High-performance industrial cellular module
- ✓ Wide Operating Temperature(-35~+75°C)
- ✓ Power range: DC 9~35V
- ✓ Support hardware and software WDT
- ✓ Support standard RS232(or RS485), Ethernet and WiFi port that can connect to serial, Ethernet and WiFi devices directly
- ✓ Support auto recovery mechanism, including online detect, auto redial when offline to make it always online
- ✓ Power port: reverse-voltage and over voltage protection
- ✓ Convenient configuration and maintenance interface

- ✓ Support TCP server
- ✓ WiFi support 802.11b/g/n/ac. support AP, client
- ✓ WiFi support 802.11ax (optional)
- ✓ Support Modbus RTU、Modbus TCP、OPC UA、Ntirtp、DTU
- ✓ Support Python secondary development platform (Python3)
- ✓ Support multi data centers and it can support 5 data centers at the same time
- ✓ Support local log storage
- ✓ Support dual 4G/5G module (optional)
- ✓ Support GPS positioning (optional)
- ✓ Support PoE (optional)
- ✓ Support 1 rainfall collection, 2 AI, 2 DI, 1 CAN, 2 relay, 2 controllable power supplies (enhanced model)
- ✓ Support NB-IoT, LoRa, Ultrashort wave communication
- ✓ The modular architecture of hardware and software
- ✓ Support customization of I/O interfaces board

Interface description

WAN: 1 Gigabit Ethernet port (RJ45)/1 Gigabit SFP optical port (optional, the Ethernet and SFP cannot be used at the same time)

LAN: 4 Gigabit Ethernet LAN ports (RJ45, PoE is optional for 2)

User serial: 1 RS232 (Shared with RS485, 3.5mm terminal, 2 for enhanced model) , 4 isolated RS485 (3.5mm terminal, 7 for enhanced model)

Micro SD card: Standard self-propelled Micro SD card interface (Max 128GB)

USB: Standard USB2.0 Type-A, support USB storage

Antenna: Standard SMA female interface, 50 ohm

SIM/UIM: Standard 3V/1.8V user card interface, 15KV ESD protection

Power: Standard 2-PIN 3.81mm terminal, reverse-voltage and over voltage protection

Ground terminal: M3 Screw terminal

Reset Button: Press this key for 8 seconds to restore the module to its original factory default settings

Udometer: 1 rainfall collection (enhanced model)

AI: 2 analog input ports, supports 4-20mA or 0-5V (enhanced model)

DI: 2 optical isolation digital input ports

GPS parameters (optional)

Receiver type(GPS): 72-channel GPS L1 (1575.42MHz) C/A code

Position: 2.5m

Max. Update Rate: 18Hz

Accuracy: 0.05m/s

Electrical parameters (standard model)

Power supply range: DC9~35V (12V DC recommended)

Communication current 1: <660mA @12V DC (One Module 4G)

Communication current 2: <680mA @12V DC (Dual Module 4G)

Max current: <1200mA @12V DC (Dual Module 5G)

Electrical parameters (enhanced model)

Power supply range: DC9~35V (12V DC recommended)

Communication current 1: <700mA @12V DC (One Module 4G)

Communication current 2: <740mA @12V DC (Dual Module 4G)

Max current: <1200mA @12V DC (Dual Module 5G)

Environmental parameters

Operating temperature: -35~+75°C(-31~+167°F)

Storage temperature: -40~+85°C(-40~+185°F)

Relative humidity: 95% (non-condensing)

(enhanced model)

Relay: 2 relay interfaces (enhanced model)

CAN: 1 CAN bus (compatible with ISO 11898 standard, enhanced model)

Power output: 2 controllable power supplies (single rated output current 1A, total rated output current 2A, built-in overcurrent protection, enhanced model)

LED: "PWR", "RUN", "SIM1", "SIM2", "Online", "LAN1", "LAN2", "LAN3", "LAN4", "WAN", "MOD1 Signal strength", "MOD2 Signal strength", "WiFi2.4", "WiFi5.8"

Mechanical parameters

Dimensions: 209x150x55mm (excluding accessories)

Weight: 1575g (excluding accessories)

Supported frequency bands

5G NR SA/NSA:n1/2/3/5/7/8/12/20/28/41/66/71/77/78/79

TDD-LTE:B38/39/40/41

FDD-LTE:B1/2/3/4/5/7/8/13/17/20/25/28

WCDMA:850/900/1900/2100MHz

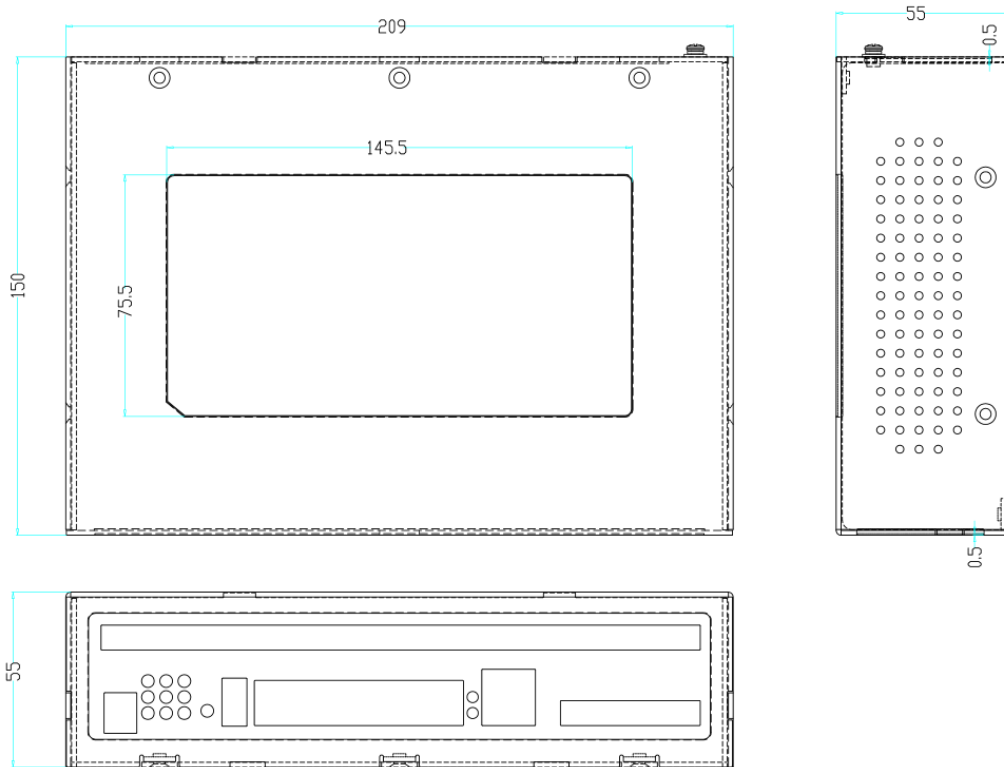
TD-SCDMA:1880-1920/2010-2025MHz(A/F)

CDMA2000 1x/ EVDO Rev. A:800/1900MHz

GSM/GPRS/EDGE:850/900/1800/1900MHz

CDMA:800/1900MHz

Dimension: (Unit: mm)



Applicable Models:

Product Type	Model	Product Name
Standard	AR7091G-FS	4G FDD Dual SIM Industrial Edge Computing Gateway
	AR7091G-FSP	GPS+4G FDD Dual SIM Industrial Edge Computing Gateway
	AR7091G-RS	5G Dual SIM Industrial Edge Computing Gateway
	AR7091G-RSP	GPS+5G Dual SIM Industrial Edge Computing Gateway
	AR7091G-QS	4G FDD/TDD Dual SIM Industrial Edge Computing Gateway
	AR7091G-QSP	GPS+4G FDD/TDD Dual SIM Industrial Edge Computing Gateway
	AR7091G-HS	4G Cat1 Dual SIM Industrial Edge Computing Gateway
	AR7091G-HSP	GPS+4G Cat1 Dual SIM Industrial Edge Computing Gateway

Standard+ Dual Module	AR7091GS-RF	5G&4G Dual Module Industrial Edge Computing Gateway
	AR7091GS-RFP	GPS+5G&4G Dual Module Industrial Edge Computing Gateway
	AR7091GS-FF	4G FDD Dual Module Industrial Edge Computing Gateway
	AR7091GS-FFP	GPS+4G FDD Dual Module Industrial Edge Computing Gateway
	AR7091GS-RR	5G Dual Module Industrial Edge Computing Gateway
	AR7091GS-RRP	GPS+5G Dual Module Industrial Edge Computing Gateway
	AR7091GS-QQ	4G FDD/TDD Dual Module Industrial Edge Computing Gateway
	AR7091GS-QQP	GPS+4G FDD/TDD Dual Module Industrial Edge Computing Gateway
	AR7091GS-HH	4G Cat1 Dual Module Industrial Edge Computing Gateway
	AR7091GS-HHP	GPS+4G Cat1 Dual Module Industrial Edge Computing Gateway
Enhanced	AR7091GK-FS	4G FDD Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-FSP	GPS+4G FDD Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-RS	5G Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-RSP	GPS+5G Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-QS	4G FDD/TDD Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-QSP	GPS+4G FDD/TDD Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-HS	4G Cat1 Dual SIM Enhanced Industrial Edge Computing Gateway
	AR7091GK-HSP	GPS+4G Cat1 Dual SIM Enhanced Industrial Edge Computing Gateway
Enhanced+ Dual Module	AR7091GKS-RF	5G&4G Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-RFP	GPS+5G&4G Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-FF	4G FDD Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-FFP	GPS+4G FDD Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-RR	5G Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-RRP	GPS+5G Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-QQ	4G FDD/TDD Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-QQP	GPS+4G FDD/TDD Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-HH	4G Cat1 Dual Module Enhanced Industrial Edge Computing Gateway
	AR7091GKS-HHP	GPS+4G Cat1 Dual Module Enhanced Industrial Edge Computing Gateway