

Huawei AR502H Data Sheet(Edge Computing Scenario)

The AR502H is purpose-built for edge computing and industrial gateway scenarios. This data sheet focuses merely on the edge computing scenario.

Overview

Huawei AR502H is an EC-IoT gateway designed for communication on large-scale edge computing and IoT networks with challenging environments such as extreme temperature, humidity, and electromagnetic interference.

The AR502H is purpose-built for edge computing and industrial gateway scenarios. This data sheet focuses merely on the edge computing scenario. For details about the industrial gateway scenario, see the data sheet for the industrial gateway scenario.

Appearance of Huawei AR502H

Product Name	Overview	Application Scenario
 AR502H	AR502H router: - Industry-grade and high-performance edge computing - Fan-free and dual-power supply redundancy design - ARM quad-core A53, 2 GB memory, 2 GB flash	Industry-grade edge computing scenarios
 NetEngine AR502H-5G	NetEngine AR502H-5G router: - Industry-grade and high-performance edge computing - Fan-free and dual-power supply redundancy design - ARM quad-core A53, 2 GB memory, 2 GB flash 5G, LTE TDD, LTE FDD, WCDMA	Industry-grade edge computing scenarios

Features and Highlights

Edge IoT, Enhancing Security and Reliability

- Edge computing architecture, open software and hardware resources, support for multi-container management, and on-demand app deployment
- Standard Debian-based development environment, and a wide variety of SDKs for flexibly invoking compute, storage, and network resources
- Mainstream IoT communication protocols, such as MQTT and CoAP
- Data encryption, non-privileged containers, and dual-partition backup, enhancing device security and reliability

High-Quality, Industrial-Grade Design

- Fan-free design, wide operating temperature range, from -40°C to $+70^{\circ}\text{C}$
- Resilient to strong magnetic interference
- IEC 61850-3/IEEE 1613 compliant
- Dual power supplies for redundancy, DI/DO alarm

Extensive Interfaces, Enabling Flexible Expansion

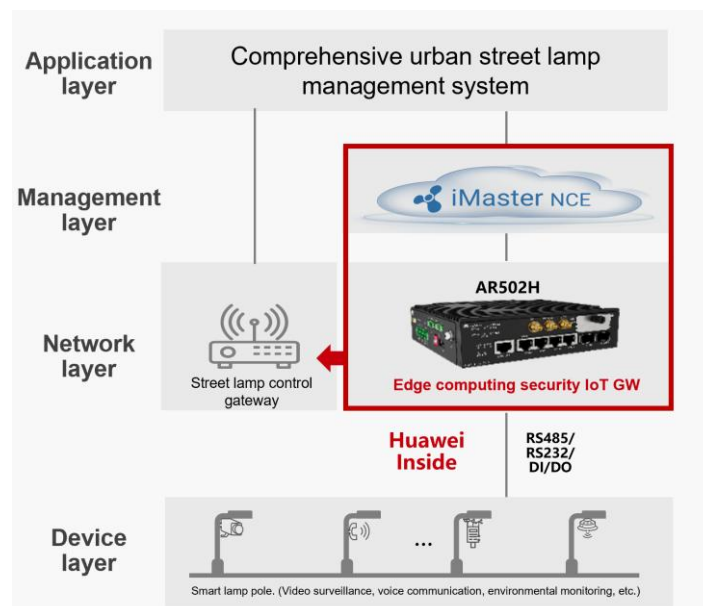
- LTE FDD and LTE TDD, compatibility with WCDMA, GPRS, and GSM
- 5G NR SA and NSA, LTE FDD and LTE TDD, compatibility with WCDMA/GPRS
- Multiple interfaces, including GE, RS232, RS485, and DI/DO
- M.2 hard drive interface, scalability to up to 256 GB (provided by customers)
- Support for all global positioning systems: BeiDou, GPS, Galileo, and GLONASS

Simple Deployment and Easy O&M

- Cloud-based management through Agile Controller-IoT
- Visualized configuration, user-friendly GUI
- Remote container and app management, batch configuration and upgrade

Application Scenarios

IoT Pole



Huawei AR502H, as a smart pole IoT gateway, integrates remote control, local management, computing, and communication functions. Service applications such as video surveillance, voice communication, and environment monitoring can be deployed in smart city and smart water conservancy scenarios. Through real-time service data collection, edge computing, and flexible wired/wireless backhaul, remote visualized O&M implements security monitoring and improves O&M efficiency.

Product Specifications

Specification	AR502H			NetEngine AR502H-5G		
Hardware parameters						
Case	Die-casting					
Processor	ARM quad-core A53, 1 GHz					
DDR	2 GB, DDR4					
Flash	2 GB, SLC NAND					
Fixed Ethernet port	3 x GE electrical ports, 10/100/1000 Mbit/s auto-sensing 2 x GE combo					
Fixed serial interface	2 x RS485 or RS232 (isolated; switching between RS485 and RS232 is controlled through software)					
Alarm port	- One DI port (passive contact input) - One DO port (industrial terminal, supporting normally open and normally closed)					
USB 3.0	1					
Console port	1					
SIM card	Micro-SIM					
RTC/Overtemperature alarm	Supported					
Global positioning system	BeiDou, GPS, Galileo, and GLONASS					
Reset/Configuration	Reset/Configuration button: used to manually restore factory default settings (hold down for at least 5 seconds) or to reset the router (hold down for less than 5 seconds).					
M.2 hard drive interface	Supported M.2 2242 SSD (using a SATA bus; industrial-grade SSDs provided by customers), scalable up to 256 GB					
LED indicators	2 x PWR, 1 x SSD, 1 x SIM, 1 x GPS, 1 x 2G, 1 x 3G			2 x PWR, 1 x SSD, 1 x SIM, 1 x GPS, 1 x 3G		
		2G LED	3G LED		3G/4G LED	NR LED
	2G	√	-	3G	√	-
	3G	-	√	4G/LTE	√	-
	4G/LTE	√	√	5G SA	-	√
				5G NSA	√	√

Specification	AR502H	NetEngine AR502H-5G
Power supply	Dual DC power supplies: 9.6 V to 60 V (industrial terminal)	
Dimensions (H x W x D)	44 mm x 150 mm x 133 mm (1.73 in. x 5.91 in. x 5.24 in.)	
Net weight	1.1 kg	
Typical power consumption	< 8.5 W (excluding optical modules)	
Installation mode	DIN/wall-mounted	
Storage temperature	−40°C to +85°C	
Operating temperature	−40°C to +70°C	
Operating humidity	5% to 95% (non-condensing)	
IP rating	IP40	
EMC standards compliance	• IEEE 1613 • IEC 61850-3 • EN 61000-6-5 (2009+2013)	
Safety regulations	• IEC 60950-1 • IEC 61850-3	
Certification mark	Conformite Europeenne (CE)	
EC-IoT parameters		
Maximum built-in flash for containers	1 GB	
Scalable storage	Up to 256 GB (M.2 hard drive interface)	
Maximum built-in memory for containers	1.5 GB	
Basic functions	• Supports LXC and Docker • Installing, uninstalling, starting, and stopping apps • Installing, uninstalling, starting, and stopping containers • Upgrading apps in overwrite mode and incremental mode	
Advanced functions	• Allocating CPU cores to containers • Adjusting container storage and memory resources • Deploying multiple containers interconnected through message buses	
Security functions	• Container disk encryption • Container and app signature verification	
IoT protocols	• MQTT • CoAP	

Specification	AR502H	NetEngine AR502H-5G
Support for secondary development	- Standard Debian-based development environment, support for secondary development - Mainstream programming languages: C/C++, etc.	
Software parameters		
Basic features	- IPv4/IPv6(LTE&GE) - TCP/UDP - Socket - ARP - ICMP - DHCP - NAT - NETCONF	
Unicast routing	Static route	
Security and reliability	- Non-privileged container - Protocol packet protection - ACL - CPU attack defense - Blacklist/Whitelist - Packet filtering firewall - Key component management - Hardware random number - Dual-partition backup - Hard drive data encryption	
Configuration maintenance	- CLI, SSH v2 terminal - User operation logs - System status monitoring - Remote management through Agile Controller-IoT - USB-based deployment	
Firmware management	Local and remote firmware upgrade	
Event alarm	System log	

Power Specifications

60 W power supply



Specification	Power Adapter
Power specifications	Power input (integrated high-voltage AC/DC): 88 V DC to 300 V DC (industrial terminal) 90 V AC to 264 V AC (industrial terminal) Power output: 12 V DC (industrial terminal)
Power	60 W
Weight	0.9 kg
Dimensions (H x W x D)	40 mm x 150 mm x 133 mm (1.57 in. x 5.91 in. x 5.24 in.)
Storage temperature	−40°C to +85°C
Operating temperature	−40°C to +70°C
Installation mode	Installed on the DIN rail
Operating humidity	5% to 95% (non-condensing)

Ordering Information

Code	Ordering Information
Device	
AR502H	Router,AR502H 2*RS485(or 2*RS232),1*DI/DO,3*GE (10/100/1000M RJ45),2*GE COMBO,1*LTE (dual SIM),1*USB3.0,GPS/GLONASS/BDS,9.6-60VDC
AR502H-5G	Router,AR502H-5G 2*RS485(or 2*RS232),1*DI/DO,3*GE (10/100/1000M RJ45),2*GE COMBO,1*5G(dual SIM),1*USB3.0,GPS/GLONASS/BDS,9.6-60VDC
Power supply	
PAC-60WB	Function Module,AC Adapter,PAC-60WB,60W AC Power Module(No Fan)
4G Antennas	
ASMAM0006	Omni-directional Antenna,698MHz-960MHz/1710MHz-2690MHz,1.0dBi(698MHz-960MHz)&3dBi(1710MHz-2690MHz),10W,SMA-J
5G Antennas	
ASMBF5G00	Omni-directional Antenna,698-960MHz/1710-2690MHz/3300-5000Mhz,2.0dBi(698-821MHz)&3dBi(824MHz-5000MHz),Vertical polarization,omnidirectional,5W,SMB-K,No bracket
A00NF5G00	Omni-directional Antenna,698MHz-960MHz/1710MHz-2700MHz/3400MHz~5000MHz,2dBi/3dBi/3dBi,linear polarization,Isotropic,20W,N/Female-4 Ports,with bracket,IP65
GPS Antennas	
ASMAM0015	Omni-directional Antenna,1555~1610 MHz,38+/-2 dB,right-handed circular polarization,Omni-directional,N/Female,No rack
WM1NANTENN07	Omni-directional Antenna,1555~1610 MHz,38+/-2 dB,right-handed circular polarization,Omni-directional,N/Female,No rack
Installation materials	
DINRAIL002	metals,DKBA61542001.ASM,mounting base,machining

More Information

For more information, visit <https://e.huawei.com/en/> or contact us in the following ways:

- Global service hotline: <https://e.huawei.com/en/service-hotline-query>
- Logging in to the Huawei Enterprise technical support website: <https://support.huawei.com/enterprise/en/index.html>
- Sending an email to the customer service mailbox: Support_e@huawei.com

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