HUAWEI AR530 Series Industrial IoT Gateway Datasheet

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The AR530 series industrial IoT gateways are designed to work in harsh environments of Internet of Things (IoT) applications. They integrate routing, switching, security, and Advanced Metering Infrastructure (AMI) functions and provide various capabilities.

Overview

Compared with Enterprise routers, industrial routers are more adaptable to harsh industrial environments because their components are more strictly selected. The AR530 handles a wider temperature range, a fanless design and provides Ingress Protection 51 (IP51). With these key technologies, the AR530 is high- and low-temperature resistant, dustproof, waterproof, and can resist electro-magnetic interference. The AR530 uses a modular design and integrates various types of interfaces, such as FE, GE, 3rd Generation (3G), Power Line Communication (Huawei PLC-IoT), Radio Frequency (RF) and RS485.

The AR530 provides AMI centralized meter reading services. It can automatically collect meter and status data, analyze and store data in a centralized manner, and send data to the management system. The AR530 provides uplink, downlink, and local networking, to meet the requirements for the Internet of Things (IoT) in the energy industry.

The AR530 is available in the following models: AR532, AR531-2C-H.

AR532

- Fixed interfaces: 1 x GE,1 x GE Combo,2 x DI,2 x DO,2 x RS485,1 x RS232,1 x USB2.0, 1 x Pulse out,1 x Infrared, 6 x Operation Keys
- Plastic, Float Equipment, Battery internal, AC 110/220V Power
- Support 1 SIM card for 3G/GPRS uplink
- Support Huawei PLC-IoT, Support 433M/915M RF(Optional)
- IP51, dustproof, waterproof
- Works at temperatures from -25°c to +70°c

AR531-2C-H

- Fixed interfaces: 6 x FE, 2 x FE combo, 2 x GE (SFP), 2 x RS485, 2 x DI
- IP51, dustproof, waterproof
- Fanless design, works at temperatures from -40°C to +70°C

Key Features and Values

Applications Integrated in One Device, Reducing Total Cost of Operation

- Integrates routing and data collection functions and provides various types of interfaces, such as FE, GE, 3G, PLC, RF and RS485.
- Switching and Smart Ethernet Protection (SEP), implementing millisecond-level protection switch-over.
- Has a built-in, zone-based firewall, ensuring production security.

Better Experience with Zero Service Interruption

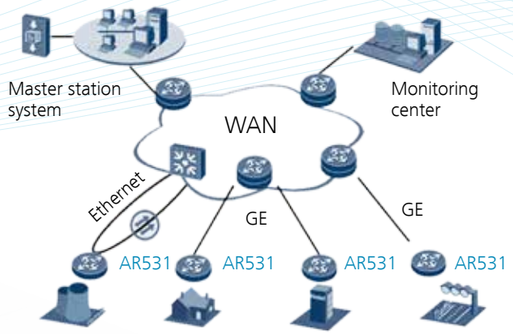
- Complies with substation environment standard IEC61850-3/IEEE1613.
- Provides IP51 and is dustproof and waterproof.
- Uses a fan-less design and works in a wide temperature range.
- Works normally in environments that have strong electro-magnetic interference.
- Huawei PLC-IoT with multi-carrier modulation of Orthogonal Frequency Division Multiplexing (OFDM), allowing Megabit-level transmission rate.

Open Interface to Improve IoT Applications Integration

- Open protocol standards: Complies with IEC 62056 (DLMS/COSEM), Modbus, and inter-operates easily with other devices.
- Flexible configuration and management: flexibility to configure data collection services of IoT terminals to meet customized user requirements.

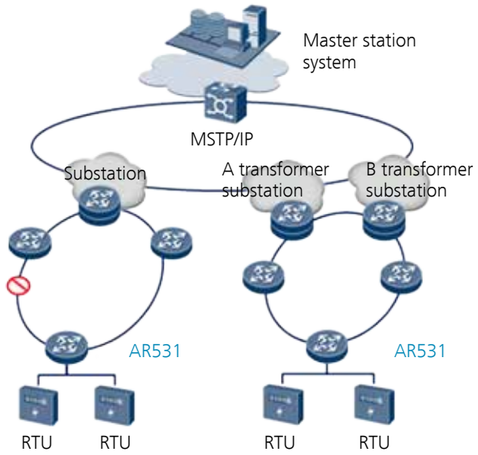
Typical Applications

AR531s as Industrial Routers



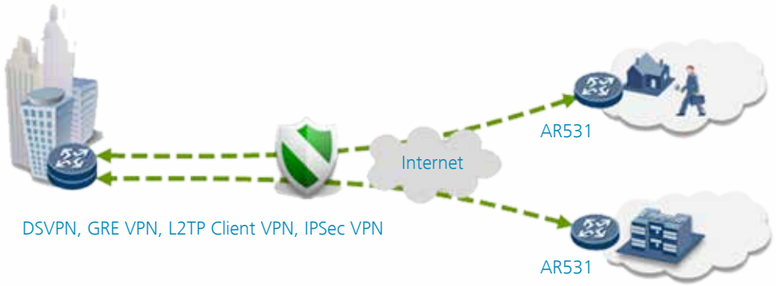
As industrial routers, AR531s provide flexible WAN access modes for remote network connections. They can provide FE, GE, interfaces to meet networking requirements in different industries. This helps save deployment and maintenance costs to maximize a customer's ROI.

AR531s as Industrial Switches



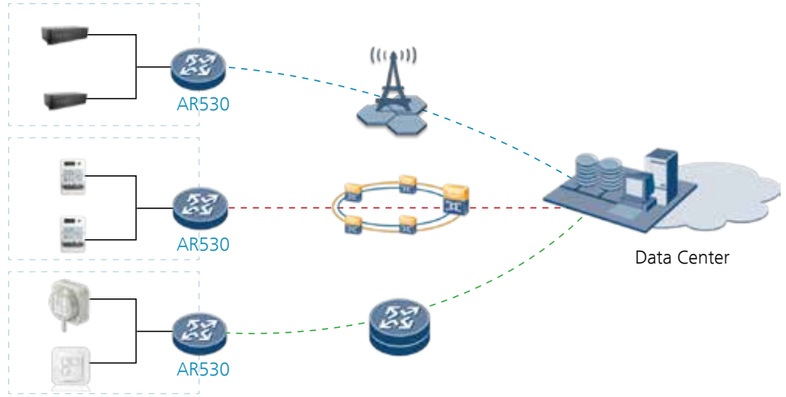
The AR531s support SEP and can be rapidly and easily deployed on a complex network. STP, RSTP, and MSTP can run the network simultaneously. The AR531s have a convergence time of less than 50 ms, and when a fault occurs, it is easy to locate. The AR531s provide a reliable system operational environment, which improves network reliability.

AR531s as Industrial VPN Gateway



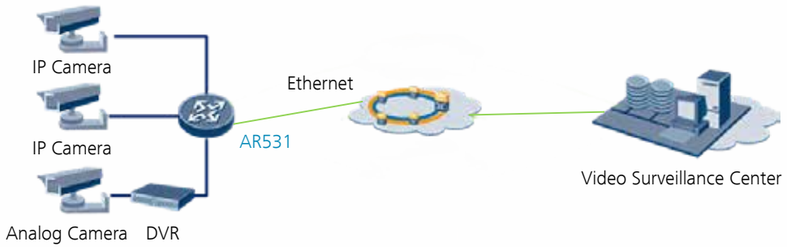
The AR531s support various secure access functions to secure data transmission between terminals and master stations. Secure tunnels such as GRE VPN, IPSec VPN, DSVPN and L2TP Client VPN are established between AR531s and master stations to implement secure data access and transmission.

AR530s as Gateways for Internet of Things



As IoT gateways, AR530s integrate the functionality of both data concentrators and routers. AR530s can be used extensively throughout the energy AMI solution, smart Building Energy-efficiency Management System (BEMS) Solution, simplifying installation and reducing investment costs For example, in AMI solution, AR530s connect to terminals through standard Ethernet interfaces, PLC, RF and RS485 industrial interfaces. AR530s collect and store meter data and upload data to the management platform.

AR531s as Video Surveillance Backhaul Access



AR531s offer rich interfaces and 100M/1,000M link for flexible video surveillance backhaul access and high bandwidth requirements. In addition, they are also designed to work in harsh environments that are suitable for video surveillance applications in various industries.

Product Specifications

The following table lists the specifications of the AR530.

Specifications	AR531-2C-H
Hardware Specifications	
L2 Switching Capacity	5.6Gbps
L2 Forwarding Performance	4.2Mpps
WAN Speed With Services	150 Mbps
Fixed Ethernet Interface	2 x GE SFP + 6 x FE RJ45 + 2xFE combo
RS485 Interface	2-channel
DI Interface	2-channel
USB 2.0	1
Serial Console Interface	1
Memory	512 MB
Flash	512 MB
Maximum Power	44.5 W
Power Supply	AC: 100 V to 240 V(single-phase); 173 V to 415 V (three-phase)
Power Frequency	50/60 Hz
Weight	5 kg
Dimensions (H x W x D)	88 mm x 220 mm x 250 mm
Storage Temperature	-40°C to +85°C
Installation Method	Wall-mounted, DIN rail mount
Operating Temperature	-40°C to +70°C
Relative Humidity	5% RH to 95% RH (non-condensing)
Protection Level	IP51

Specifications	AR531-2C-H
Software Specifications	
Industrial Communication Protocol	IEC62056, Modbus
Basic Features	DHCP server/client/relay, PPPoE server/client, NAT, sub-interface management
LAN	IEEE 802.1p, IEEE 802.1q, IEEE 802.3, VLAN management, MAC address management
Ring Network Protocols	SEP, STP, RSTP, MSTP
IPv4 Routing	Routing policies, static routes, RIP, OSPF, IS-IS, BGP
IPv6 Routing	Routing policies, static routes, RIPng, IS-ISv6, BGP4+
Multicast	IGMP v1/v2/v3, PIM SM, PIM DM, MSDP
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP Client VPN
QoS	Differentiated service model, priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (IP-precedence/DSCP-based WRED), congestion management (LAN interfaces: SP/WRR/SP+WRR; WAN interfaces: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), HQoS, Smart Application Control (SAC)
Security	Access Control List (ACL), firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, Unicast Reverse Path Forwarding (URPF), CPCAR, blacklist, Public Key Infrastructure (PKI)
Management and Maintenance	Upgrade management, device management, GTL, SNMP (v1/v2c/v3), RMON, NTP, USB-based deployment, network configuration, CLI

Specifications	AR532
Hardware Specifications	
Industrial Communication Protocol	IEC62056
Uplink: 3G/GPRS	1* MiniSIM，SMA Interface, Support WCDMA/HSDPA/HSUPA/HSPA+: Band 1, Band 8 GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz
Fixed Ethernet Interface	1* GE/1*GE Combo
Downlink: PLC/RF	Huawei PLC-IoT/433M/915M RF (Optional)
DI/DO Interface	2-channel DI/2-channel DO
Fixed Interface	RS485*2
Other interface	1 Pulse out,1 Infrared, 6 Operation Keys, WLAN(Management Interface)
USB 2.0	1
Fixed Ethernet Interface	RS232, RS485*2
Other interface	infrared
USB 2.0	1
Serial Console Interface	1
Memory	256 MB
Flash	512 MB
Maximum Power	12.5 W
Power Supply	Rated input voltage range: Single-phase: 100 V to 240 V AC, Three-phase: 173 V to 415 V AC
Power Frequency	50/60 Hz
Dimensions (H x W x D)	290 mm x 180 mm x 95 mm (11.42 in. x 7.09 in. x 3.74 in.)
Weight	2.5kg
Installation Method	Wall-mounted, DIN rail mount
Operating Temperature	-25°C to +70°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% RH to 95% RH (non-condensing)
Protection Level	IP51 (IP54 with outdoor cabinet)
Software Specifications	
AMI Service	Meter Reading, 3G/RF/Huawei PLC-IoT Communication management, Monitoring and maintenance, Version management, Fault management, Time-synchronization of meter clock

Device Selection

To choose an AR53, determine the host model and then software configurations.

Host

Choose a host model based on the interface type and service requirements.

Software

Install Basic software and Value-Added Router Package software on an AR530. The Basic software includes Layer 2 switching, device management, collection functions and static routes. The Value-Added Router Package includes advanced IP features such as Layer 3 routing, security firewall and VPN.

Order Information

Order Information
Host
AR531-2C-H: 6 x FE (RJ45) + 2 x FE combo + 2 x GE (SFP) + 2 x RS485 + 2 x DI; AC power supply
Software
Value-Added Router Package for advanced IP features such as Layer 3 routing, security firewall
Accessories
Storage device USB flash drive (4 GB, USB2.0)
Optical module eSFP (FE, single mode, 1310 nm, 15 km, LC)
Optical module eSFP (GE, single mode, 1310 nm, 10 km, LC)
Optical module eSFP (GE, single mode, 1310 nm, 40 km, LC)
Optical module eSFP (GE, multi- mode, 850nm, 0.55km, LC)

For more information, visit http://enterprise.huawei.com/en/ or contact your local Huawei sales office.