HUAWEI AR550 Series
Agile Gateway Datasheet

Product Overview

AR550 series agile gateways,named industrial switching routers, are specially designed for network communication in challenging environments such as extreme temperature, high humidity, and electromagnetic interference. The AR550 series integrates routing, switching, IPSec VPN, and other functions, provides powerful application scalability, and widely applies to various industrial automation fields, such as electric power automation and transportation automation.

The AR550 series is available in two models: AR550-8FE-D-H and AR550-24FE-D-H.

AR550-8FE-D-H

- Fixed interfaces: 4 x GE combo, 8 x FE RJ45, 1 x USB2.0, and 1 x digital output (DO)
- Working temperature: −40°C to +70°C
- Dimensions (W x D x H): 97 mm x 133 mm x 150 mm
- Redundant power supplies: 9.6 V to 60 V DC
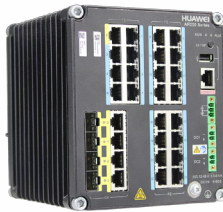
AR550-24FE-D-H

- Fixed interfaces: 4 x GE combo, 24 x FE RJ45, 1 x USB2.0, and 1 x DO
- Working temperature: −40°C to +70°C
- Dimensions (W x D x H): 133 mm x 133 mm x 150 mm
- Redundant power supplies: 9.6 V to 60 V DC

Key Features and Values

Industrial Design, Premium Quality

- Adopts a fan-free design and works in a wide temperature range of −40°C to +70°C.
- Works properly in environments with strong electromagnetic interference and complies with IEEE1613 standards.
- Complies with environment standards of substations: IEC61850-3/IEEE1613.
- Complies with transportation standards: EN50121, EN50155, and IEC61373.
- Supports a Mean Time Between Failures (MTBF) of more than 50 years.
- Supports dual-input DC power supply, DO (Digit Output) alarm relays.

Flexible Networking, Secure and Reliable Services

- Provides 28 interfaces to connect a variety of terminals.
- Supports various networking modes, such as closed ring, open ring, multi-ring, and dual-ring.
- Supports Smart Ethernet Protection (SEP), which can implement fast protection switching within 50 ms.
- Uses multiple technologies to guarantee data security, such as IPSec VPN data encryption, 802.1x, and port locking.

Easy Deployment, Convenient O&M

- Web-based visualized configuration and user-friendly UI
- Remote topology management and batch configuration or upgrade
- USB-based deployment and plug-and-play
- One-click configuration backup and simplified device replacement

Typical Application

Electric Power
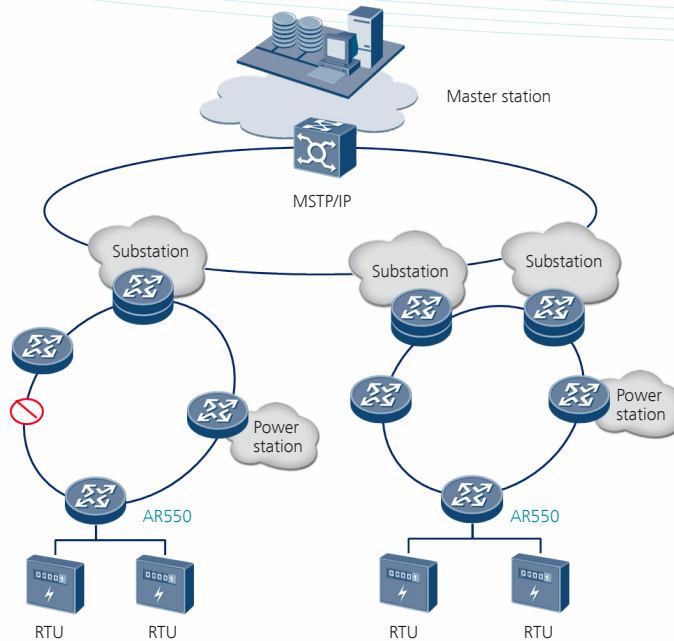
The AR550 supports the SEP protocol to ensure highly reliable network communication by implementing fast protection switching within 50 ms. With 28 Ethernet interfaces, the AR550 provides access to a large number of densely deployed electric terminals. It complies with IEEE1613 and IEC61850-3 substation environment standards and can be used in power distribution automation and automatic substation access scenarios, boosting digital and smart development of the electric power industry.

Transportation
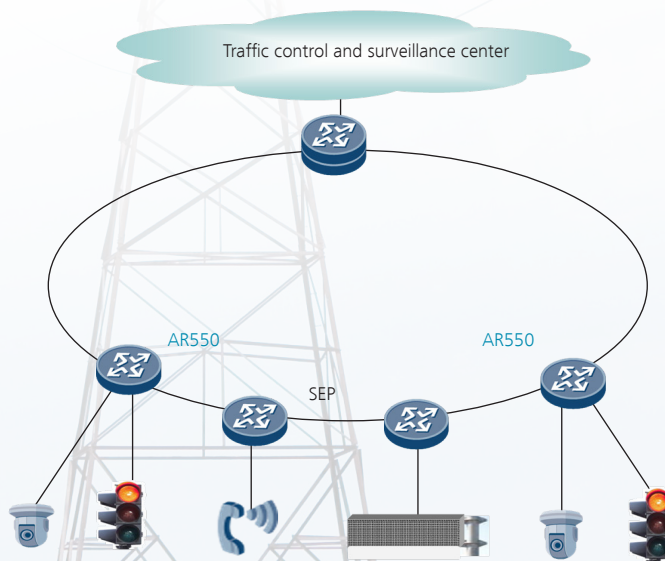
In addition to offering reliable, instant, and secure communication, the AR550 meets electromagnetic interference and anti-vibration requirements defined by EN50121 and EN50155 standards of the transportation industry. The AR550 therefore can be used to construct the smart transportation system for traffic and vehicle control, such as express way monitoring, vehicle-mounted Passenger Information System (PIS), and vehicle-ground communication. After the AR550 is installed, services can be deployed using the USB drive, which is suitable for scenarios where there are many sparsely distributed stations.

Video Backhaul
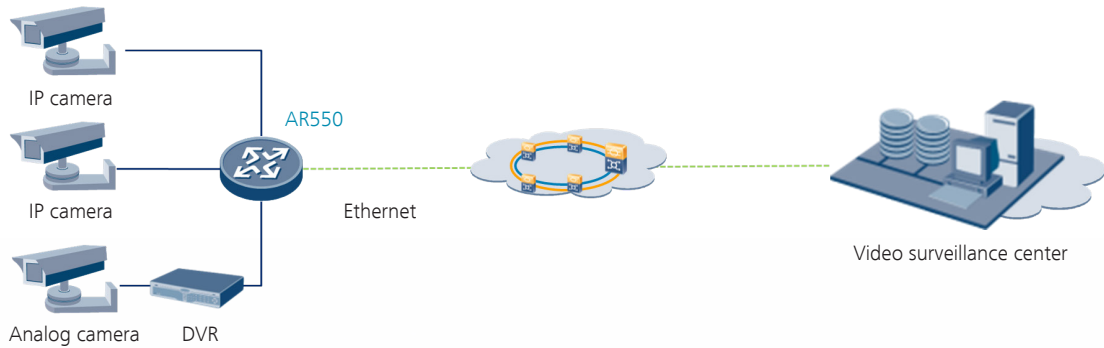
Video surveillance is popular in various industries. Different access conditions pose higher requirements on the installation space and mode, operating temperature and humidity of video backhaul devices. The AR550 uses a compact design and has a small size. It can be installed on guide rails and supports a wide operating temperature, meeting outdoor video backhauling requirements in harsh environments.

Ethernet Access in Other Industries or Harsh Environments

The industrial Ethernet is one major component of the industrial control field. Huawei AR550 adopts an industrial design and integrates abundant features, such as routing and IPSec VPN. It can be widely used for industrial Ethernet access in harsh environments, such as high temperature, low temperature, and strong electromagnetic interference. Additional, it provides end-to-end security guarantee for production data transmission.

Product Specifications

The following table describes major specifications of the AR550.

Specification	AR550-8FE-D-H	AR550-24FE-D-H
Hardware Specifications		
Fixed Ethernet interfaces	8 x FE RJ45 + 4 x GE combo	24 x FE RJ45 + 4 x GE combo
Alarm Relay interface	1 DO (terminal block, support Normal Open and Normal Closed)	1 DO (terminal block, support Normal Open and Normal Closed)
USB2.0	1	1
Serial auxiliary/console interface	1	1
Layer 2 switching capacity	9.6 Gbps	12.8 Gbps
Layer 2 forwarding performance	7.2 Mpps	9.6 Mpps
Switching attributes	Switching performance: line-speed forwarding on interfaces Priority queue: 8 MAC addresses: 16K Number of VLANs: 4K Number of multicast group: 256	
Layer 3 service forwarding performance	350 kpps	350 kpps
Flash memory	128 MB	128 MB

Specification	AR550-8FE-D-H	AR550-24FE-D-H
Power supply	Dual DC power: 9.6 V to 60 V (terminal block)	Dual DC power: 9.6 V to 60 V (terminal block)
Weight	1.6 kg	2.1 kg
Dimensions (W x D x H)	97 mm x 133 mm x 150 mm	133 mm x 133 mm x 150 mm
Typical power consumption	18 W	24 W
Storage temperature	−40°C to +85°C	
Installation mode	Installation on a DIN rail	
Operating temperature	−40°C to +70°C	
Operating humidity	5% to 95% (non-condensing)	
IP protection level	IP40	
Certification standards compliance	CB (IEC 60950) NRTL (UL60950-1) EU CE (EN 55022, EN 55024, and EN 300386) USA FCC (47CFR Part 15) Canada IC (ICES-003) Australia C-Tick (AS/NZS CIPSR22) Electric power IEC61850-3/IEEE1613 (substation) Transportation EN50121, EN50125-1, EN50125-3, and EN50155 (railway)	
Vibration and environment test	IEC60870-2-2, CLASS Cm IEC61373, CLASS Cm IEC60721-3-5	
EMC	FCC 47 CFR PART15, CLASS A EN55022, CLASS A VCCI, CLASS A AS/NZS CISPAR 22 CLASS A, AN/NZS CISPR 24 CISPR11 CLASS A, CISPR22 CLASS A ICES 003 CLASS A KCC-KOREA CE C-TICK (Australia) Russia Certification Brazil Certification ETSI EN 300386 IEC61000-4-2 (ESD): ± 8 kV contact discharge, ± 15 kV air discharge IEC61000-4-3 (RS): 20 V/m, 80 MHz-2700 MHz IEC61000-4-4 (EFT): Power cable: ± 4 kV; data cable: ± 4 kV IEC61000-4-5 (Surge): Power cable: ± 4 kV (CM)/ ± 2 kV (DM); data cable: ± 4 kV IEC61000-4-6 (Conducted Disturbances Immunity) IEC61000-4-8 (Power Frequency Magnetic Field Immunity) IEC61000-4-9 (Pulse Magnetic Field Immunity) IEC61000-4-10 (Damped Oscillatory Magnetic Field Immunity)	
Safety	IEC/UL/EN60950, CE	
Warranty	5 years	

Specification	AR550-8FE-D-H	AR550-24FE-D-H
	Software Specifications	
Basic functions	ARP, IPv6 ND, DHCP server/client/relay, DNS client/proxy/relay, DHCPv6 PD/server/client/relay, and DNS client/proxy/relay	
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, and MAC security	
Ring network protocol	SEP, STP, RSTP, and MSTP	
IPv4 unicast route	Static route, RIP, and OSPF	
Multicast	IGMP v1/2/3, IGMP snooping, PIM SM, PIM DM, and MSDP	
VPN	IPSec VPN	
Quality of Service (QoS)	Differentiated service (DiffServ), priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (IP-precedence-based/DSCP WRED), congestion management (LAN interfaces: SP/WRR/SP+WRR; WAN interfaces: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), and HQoS	
Security	Port security, Access Control List (ACL), 802.1x authentication, AAA authentication, RADIUS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, and PKI	
Management and maintenance	Upgrade management, device management, web-based GUI, GTL, SNMPv1/v2c/v3, RMON, NTP, USB-based deployment, network configuration, CLI-based configuration, and one-button backup	

The following table describes specifications of the high-voltage AC/DC power adapter used on the AR550.

Specification	Power Adapter
Power parameters	Power input (high-voltage AC/DC) • 88 V to 300 V DC (terminal block) • 90 V to 264 V AC (terminal block) Power output: • 12 V DC (terminal block)
Weight	0.9 kg
Dimensions (W x D x H)	40 x133 x 150 mm
Storage temperature	−40° C to +85° C
Installation mode	Installation on a DIN rail
Operating temperature	−40° C to +70° C
Operating humidity	5% to 95% (non-condensing)

Configuration

Before selecting the AR550, determine the device model, software configuration, and accessories.

Device model

Select the device model according to the interface type and service requirements.

Software

AR550 software is classified into basic software and the advanced routing value-added service package. The basic software contains basic features, including Layer 2 switching, device management, and static routes. The value-added service package contains Layer 3 dynamic routing, VPN, and other advanced features.

Accessories

Configure the types and quantity of the industrial 60 W power adapters, optical modules, and cables according to site environments.

Ordering Information

Ordering Information
Device model
AR550-8FE-D-H (8 x 100M RJ45, 4 x GE combo, 1 x DO, DC power supply)
AR550-24FE-D-H (24 x 100M RJ45, 4 x GE combo, 1 x DO, DC power supply)
Software
Advanced routing value-added service package, including dynamic routing and VPN
Accessories-power supply, cables
Industrial 60 W power supply, 12 V AC/DC to DC, DIN rail, 88 V to 300 V DC, and 90 V to 264 V AC
Accessories-storage device
USB flash drive (4 GB, USB 2.0)
Accessories-industrial optical module
eSFP optical module (FE, single-mode, 1310 nm, 15 km, LC)
eSFP optical module (GE, single-mode, 1310 nm, 10 km, LC)
eSFP optical module (GE, single-mode, 1310 nm, 40 km, LC)
eSFP optical module (GE, single-mode, 1550 nm, 80 km, LC)
eSFP optical module (GE, multimode, 850 nm, 0.55 km, LC)

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