

Huawei AR Series Agile Gateways Brochures



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Product Overview

Rapid development of Internet of Things (IoT) technologies brings in profound revolution of networks. More terminals want to connect to networks, and more IoT data will be processed at the network edge. Huawei AR series agile gateway is designed for the IoT. It provides diversified interface types, conversion of multiple industry protocols, integrates functions such as routing, switching, and computing and storage, connects to various terminals, and supports local intelligence. It can be widely applied in various industry IoT scenarios, such as electrical meter data reading, intelligent vehicle-mounted scenarios, smart education, and building energy efficiency management.

AR series agile gateways fall into three series: industrial switching series, industrial routing series, and ICT convergence series.

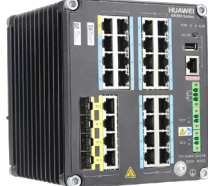



Industrial Switching Series

AR2500 Series



AR2504-HAR2504E-HAR2504-D-H


AR2500 Series



AR550C-4GEAR550C-2C6GEAR550-8FE-D-HAR550-24FE-D-H

Industrial Routing Series

AR530 Series



AR531-2C-HAR531GPe-U-HAR532


AR500 Series



AR502CaG-LAR502EG-LAR502EGW-LAR503EQGW-LAR503EGW-LcAR503EWAR503GW-LM7AR509G-L-D-HAR509GW-L-D-H




ICT Convergence Series

AR3600 Series






AR3670

AR160-M Series



AR161FW-P-M5AR169W-P-M9AR169RW-P-M9

AR510 Series



AR513W-V3M8AR511GW-LAV2M3AR515GW-LM9-D

Product Characteristics

1. Comprehensive Access Types

- Provides diversified access interfaces to adapt to various terminals.
- Supports various wireless protocols including ZigBee, Bluetooth, and RF, and allows flexible networking.
- Supports conversion of multiple industry protocols and builds a unified network platform.

2. Strongest Environment Adaptability

- Uses the industrial design, meeting waterproof, dustproof, and wide temperature requirements.
- Works properly even in an environment with strong electromagnetic interference, meets requirements of IEEE1613.
- Complies with anti-vibration standards in vehicle-mounted scenarios.

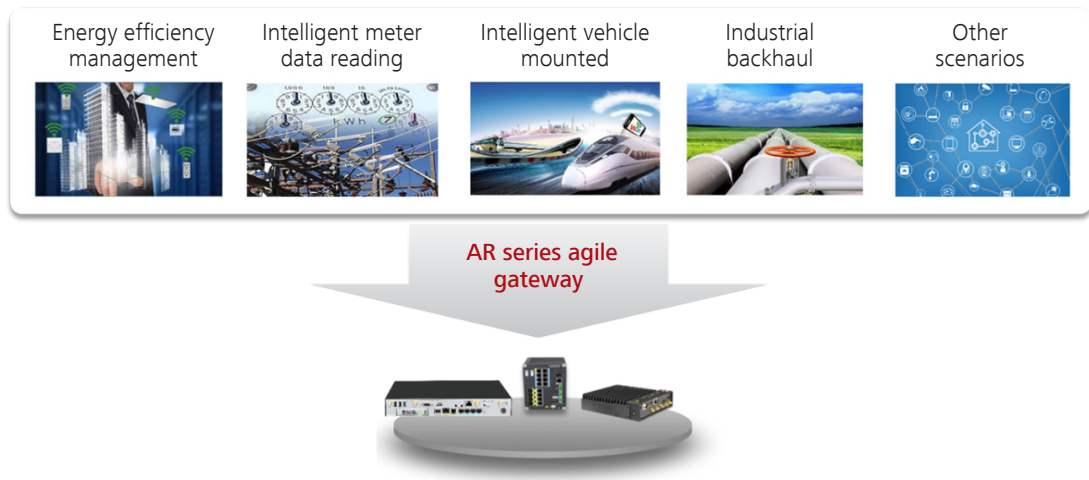
3. Highest Intelligence

- Provides a high-performance computing and large-capacity storage system, without deploying a standalone server.
- Provides local survival, improving system reliability.
- Supports virtualization and provides a flexible and scalable application integration capability, shortening service deployment.
- Implements full lifecycle management of ICT resources such as the application deployment, monitoring, and deletion through the Agile Controller.

4. Most Convenient Management

- Provides integrated management of terminals, gateways, calculation, applications, and data.
- Is deployed by scanning the device ESN and goes online rapidly.
- Provides unified NMS, management of massive devices, and visualized O&M.
- Supports USB-based deployment and plug-and-play.

Typical Applications



The AR series agile gateway supports various access interfaces. It can be applied to various harsh environments, and provides IoT solution for industries such as electric power, transportation, and energy.

Product Specifications

Specifications of the AR3600 series agile gateway

Item	AR3670
Service forwarding performance	4.5 Gbit/s
SIC slot	2
WSIC slot (default/maximum**)	7/8
XSIC slot (default/maximum**)	0/6
Management port	One Ethernet port
USB 2.0 port	2
Mini USB port	1
Auxiliary or console port	1
Hard disk	1TB
Memory(default/maximum)	8GB/24GB
Flash	8GB
Virtual Machines	8 (Based on VM, the customers can install Windows OS or Linux OS.)
Maximum power	700 W per power supply (dual power supplies supported)
AC power supply	100 V to 240 V
Power frequency	50/60 Hz
Dimensions (W x D x H)	442 mm x 470 mm x 130.5 mm
Weight	17.8 kg (without power modules and cards)
Ambient temperature	0°C to 45°C
Environment relative humidity	5% to 95% (non-condensing)
Basic functions	ARP,DHCP, NAT, and sub-interface management
WLAN (AC)	AP management (AC discovery/AP access/AP management), CAPWAP, WLAN user management, WLAN radio management (802.11a/b/g/n), WLAN QoS (WMM), and WLAN security (WEP/WPA/WPA2/key management)
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, and so on
IPv4 unicast routing	Routing policy, static route, RIP, OSPF, IS-IS, BGP
IPv6 unicast routing	Routing policy, static route, RIPng, OSPFv3, IS-ISv6, and BGP4+

Item	AR3670
Multicast	IGMP V1/V2/V3, IGMP snooping V1/V2/V3, PIM SM, PIM DM, and MSDP
MPLS	LDP, MPLS L3 VPN, static LSP, dynamic LSP, MPLS TE, IP FRR, LDP FRR, and TE FRR
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN, and smart VPN
QoS	DiffServ, MPLS QoS, priority mapping, CAR, traffic shaping, congestion avoidance (IP or DSCP priority-based WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), HQoS, FR QoS, SAC, and hardware QoS
Security	ACL, firewall, 802.1x authentication, MAC address authentication, web authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP anti-attack, URPF, IP source guard, DHCP snooping, CPCAR, blacklist, attack source tracing, and state-approved algorithms (SM1, SM2, SM3 SCB2 algorithms)
Management and maintenance	Upgrade management, device management, web NMS, GTL, SNMP (v1/v2c/v3), NTP, CWMP, Auto-Config, USB-based deployment, Barcode Scanning, and command line

**Note: The maximum number of slots includes the number of combined slots.

Specifications of the AR160-M series agile gateway

Item	AR161FW-P-M5	AR169W-P-M9	AR169RW-P-M9
WAN speed with services (IMIX)	150 Mbps	150 Mbps	150 Mbps
Fixed WAN ports	1x GE Combo	1x GE, 1 x VDSL2	1x GE, 1 x VDSL2
Fixed Ethernet switching ports	4 x GE(PoE)	4 x GE(PoE)	4 x GE(PoE)
Serial auxiliary/console ports	1	1	1
Video ports	1 x HDMI	1 x HDMI, 1 x VGA	1 x HDMI, 1 x VGA
Audio ports	1 x 3.5mm audio output (Earphone), 1 x 3.5mm audio input (MIC)	1 x 3.5mm audio output (Earphone), 1 x 3.5mm audio input (MIC)	1 x 3.5mm audio output (Earphone), 1 x 3.5mm audio input (MIC)
Bluetooth ports	1	1	1
Serial ports	1 x RS485/RS232/RS422	1 x RS485/RS232/RS422	1 x RS485/RS232/RS422
ZigBee ports	ZigBee 2.4 GHz	-	ZigBee 2.4 GHz
Wi-Fi	802.11 b/g/n	802.11b/g/n + 802.11ac	802.11b/g/n + 802.11ac
USB ports	4	4	4
Memory size (Main control system)	512 MB	512 MB	512 MB
Flash memory	512 MB	512 MB	512 MB

Item	AR161FW-P-M5	AR169W-P-M9	AR169RW-P-M9
OS	Android	Support 2 VMs, the customers can install Windows OS based on VMs. Support native operation system like Linux, Windows etc.	Support 2 VMs, the customers can install Windows OS based on VMs. Support native operation system like Linux, Windows etc.
Memory size (OSP System)	4GB	8GB	8GB
Flash (OSP System)	2GB	-	-
Hard Disk (OSP System)	32GB	64GB, build-in	64GB, build-in
Virtual Machine**	-	2	2
PoE power	External 100	External 100	External 100
Maximum power	60W	60W	60W
Power supply (AC)	100 V to 240 V	100 V to 240 V	100 V to 240 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Dimensions (H x W x D)	44.5 mm x 300 mm x 220 mm (1.75 in. x 11.8 in. x 8.66 in.)	44.5 mm x 300 mm x 220 mm (1.75 in. x 11.8 in. x 8.66 in.)	44.5 mm x 300 mm x 220 mm (1.75 in. x 11.8 in. x 8.66 in.)
Operating temperature	0°C to 40°C	0°C to 40°C	0°C to 40°C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Basic features	ARP, DHCP, NAT, Sub interface management		
WLAN(AP)	AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features)		
WLAN(AC)	AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management)		
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc.		
IPv4 unicast routing	Routing policy, static route, RIP, OSPF, IS-IS, BGP		
IPv6 unicast routing	Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+		
Multicast	IGMP version 1/2/3, PIM SM, PIM DM, MSDP		
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN, Smart VPN		
QoS	Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), Hierarchical QoS, Smart Application Control (SAC)		
Security	ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI,		
Management and maintenance	Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI		

Specifications of the AR510 series agile gateway

Item	AR511GW-LAV2M3	AR513W-V3M8
Device model	Metal box (external plastic shell can be used)	Metal box
Fixed Ethernet interface	2 x GE	2 x GE
Video interface	Two video interfaces (HDMI, CVBS, or YPbPr), which support playing 1080p HD video	2*HDMI, 1*VGA
Video Codec	MPEG4, H.264, H.263, Divx, Xvid, RV10	MPEG4、H.264、H.263、Divx、Xvid、RV10
Video file format	MP4, RM, DivX, 3GP, MOV, MKV	MP4、RM、DivX、3GP、MOV、MKV
Audio interface	Two stereo outputs (one output: audio power amplifier), one stereo input	Owo stereo outputs (L/R), 3.5mm 3.5mm headset jack
Audio Codec	MP3, AAC, AAC+, eAAC+, WMA, OGG, AC-3	MP3、AAC、AAC+、eAAC+、WMA、OGG、AC-3
Audio file format	MP3, WAV, WMA, OGG, AMR, AAC	MP3、WAV、WMA、OGG、AMR、AAC
Hard disk interface	-	1*eSATA
3G/LTE	FDD LTE, compatible with 3G(WCDMA/HSDPA/HSUPA/HSPA+) Dual SIM cards(one standby)	-
Wi-Fi	Dual-band AP (2.4 GHz and 5 GHz), 2x2 MIMO 802.11a/b/g/n	Dual-band AP (2.4 GHz and 5 GHz), 2x2 MIMO 802.11a/b/g/n
GPS	Supported	-
Console interface	1	1
USB2.0	1 USB HOST, 1 USB OTG	3*USB HOST,1*USB OTG
Memory	2 GB	2 GB
Storage*	Built-in Flash 4 GB	Built-in Flash 4 GB
Power supply	Dual DC inputs: 8V to 36V	DC: 12V
Maximum Power	30W	60W
Dimensions (W x D x H)	275 mm x 160 mm x 30 mm	275mm × 180mm × 40mm
Weight	1.3Kg	2.5Kg
Operating temperature	-10°C to +60°C	-10°C to +60°C
Storage temperature	-40°C to +85°C	-40°C to +85°C

规格名称	AR511GW-LAV2M3	AR513W-V3M8
Operating humidity	5% RH to 95% RH (non-condensing)	5% RH to 95% RH (non-condensing)
Installation method	Wall-mounted or horizontally	Wall-mounted
Shock and vibration standards	QC/T 413-2002, ISO 16750-3:2007	-
Basic features	DHCP server/client/relay, DNS client/proxy/relay, NAT, ARP, Port management	
WLAN	WLAN QoS, WLAN Security, WLAN radio management, WLAN VAP management, WLAN user management, WLAN anti-attack	
IPv4 unicast routing	Unicast routing management, routing policies, static routes, RIP, OSPF, IS-IS, BGP, MBGP	
Multicast	IGMPv1/v2/v3, PIM SM, PIM DM, PIM-SSM, MSDP	
VPN	L2TP VPN, GRE VPN, Efficient VPN	
QoS	ACL, QoS, MQC, SAC	
Security	Firewall, AAA authentication, RADIUS authentication, HWTACACS authentication, ICMP attack defense, Unicast Reverse Path Forwarding (URPF), CPCAR, blacklist, Public Key Infrastructure (PKI)	
Management and maintenance	Web Management, System management, Upgrade management, Device management, SNMPv1/v2c/v3, USB-based deployment	

** Note: The capacity can be extended through the external SD card. The SD card needs to be purchased separately.

Specifications	AR515GW-LM9-D
Device model	Metal box
Fixed Ethernet interface	8 x GE (M12 interface)
3G/LTE	FDD LTE, compatible with 3G(WCDMA/HSDPA/HSUPA/HSPA+) Dual SIM cards(one standby)
Wi-Fi	802.11b/g/n + 802.11ac
GPS	Supported
Console interface	1
USB2.0	1
Other interface	DB372
Memory	512 MB
Flash memory	512 MB
Serial interface (OSP System)	1*RS485/232
Video interface (OSP System)	1*HDMI, 1*VGA

Specifications	AR515GW-LM9-D
Audio interface (OSP System)	1*3.5mm audio output (Earphone), 1*3.5mm audio input (MIC)
Memory (OSP System)	8GB
Hard Disk (OSP System)	64GB mSATA, build-in 1*SATA
USB Ports (OSP System)	3
Power supply	DC input: 8V to 36V, ACC check Supported DC output: 30W
Maximum Power	72W
Dimensions (W x D x H)	406 mm x 270 mm x 68 mm
Weight	5Kg
Operating temperature	-25°C to +50°C
Storage temperature	-40°C to +85°C
Operating humidity	5% RH to 95% RH (non-condensing)
Installation method	horizontally
Shock and vibration standards	EN61373, Q/CT413, SAE J1455 Category
Basic features	DHCP server/client/relay, DNS client/proxy/relay, NAT, ARP, Port management
WLAN	WLAN QoS, WLAN Security, WLAN radio management, WLAN VAP management, WLAN user management, WLAN anti-attack
IPv4 unicast routing	Unicast routing management, routing policies, static routes, RIP, OSPF, IS-IS, BGP
Multicast	IGMPv1/v2/v3, PIM SM, PIM DM, PIM-SSM
VPN	IPSec, L2TP VPN, GRE VPN, Efficient VPN, DSVPN, A2A VPN(Any to Any VPN)
QoS	Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), Hierarchical QoS, Smart Application Control (SAC)
Security	Firewall, AAA authentication, RADIUS authentication, HWTACACS authentication, ICMP attack defense, Unicast Reverse Path Forwarding (URPF), CPCAR, Public Key Infrastructure (PKI)
Management and maintenance	Web Management, System management, Upgrade management, Device management, SNMPv1/v2c/v3, USB-based deployment

Note: DB37 interface is reserved

Specifications of the AR2500 series agile gateway

Specification	AR2504-H	AR2504E-H	AR2504-D-H
Fixed interfaces	4*GE combo and 4*GE RJ45	2*10GE, 4*GE combo, and 4*GE RJ45	4*GE combo and 4*GE RJ45
Slots	2*WSIC		
Alarm interface	1*DO (3-pin industrial terminal)		
USB2.0	1		
Auxiliary or console interface	1		
Management interface	1*FE RJ45		
DRAM	2 GB		
Flash memory	512 MB		
Forwarding performance	36Mpps	66Mpps	36Mpps
Switching capacity	144Gbps		
Power	Redundant power modules AC: 100V AC ~ 240V AC, 50 Hz/60 Hz (90 V AC to 264 V AC, 47 Hz to 63 Hz) DC: 110V DC ~ 250V DC (88 V DC to 300 V DC) Input undervoltage and overvoltage protection Output short-circuit protection Overheating protection Reverse connection protection		Redundant power modules DC: 24V DC ~ 48V DC (18V DC ~ 60V DC) Input undervoltage and overvoltage protection Output short-circuit protection Overheating protection Reverse connection protection
Maximum output power	One power module configured: 60 W Two power modules configured: 120 W		
Typical power consumption	20 W		
Maximum power consumption	25 W		
Weight	< 7 kg (interface module excluded)		
Dimensions (W x D x H)	442 mm x 420 mm x 44 mm (mounting ears excluded)		
Storage temperatures	-40°C ~ +85°C		
Operating temperatures	-40°C ~ +65°C In compliance with IEC60068-2-1-2007 and ETSI EN 300 019-2-3 V2.2.2:2003, the router can operate reliably for 24 hours in a temperature range of -40°C to +70°C		-40°C to +60°C
Operating humidity	5% to 95% (non-condensing)		

Specifications	AR2504-H	AR2504E-H	AR2504-D-H
Operating altitude	< 5000 m		
Installation mode	19-inch rack		
IP protection level	IP30		
Certification	North America: UL Germany: GS Global: CB European Union: CE (2004/108/EC, EN 55022, EN 55024, and EN 300386) United States: FCC (47CFR Part 15) Canada: IC (ICES-003) Australia: RCM (original C-Tick: AS/NZS CIPSR22) Electric Power: IEC61850-3/IEEE1613 (for transformer substations) State Grid: Class A		
Vibration and environment test	IEC61850-3 CLASS Cm		
Electromagnetic Compatibility (EMC) standards	IEC 61850-3:2013 IEEE 1613:2009 IEC/TS 61000-6-5:2001 EN 55022:2010 CISPR 22:2008 EN 55024:2010 CISPR 24:2010 ETSI EN 300 386 V1.6.1.2012 ETSI EN 201 468 V1.4.1.2014 VCCI V-3:2015 CAN/CSA-CISPR 22-10 AS/NZS CISPR 22:2009+A1:2010 IEC 61000-3-2:2014/EN 61000-3-2:2014 IEC 61000-3-3:2014/EN 61000-3-3:2013 IEC 61000-6-2:2014/EN 61000-6-2:2005 IEC 61000-6-4:2014+A1:2100/EN 61000-6-4:2007+A1:2011		
Safety standards	UL 60950-1 EN 60950-1 IEC 60950-1 BS EN 60950-1 CSA C22.2 No 60950-1 AS/NZS 60950.1 IS 13252 IEEE1613 IEC61850-3		
Warranty period	5 years		

Specifications	AR2504-H	AR2504E-H	AR2504-D-H
Basic functions	ARP, DHCP, DNS, and DDNS IPv6 ND, DHCPv6, and DNS6 UDP Helper and IP Accounting NAT, NAT, NAT ALG, NetStream, and NQA Policy Based Routing (PBR) and IP FRR		
LAN functions	IEEE 802.1P, IEEE 802.1Q, and IEEE 802.3 VLAN management, Guest VLAN, GVRP Static MAC address, dynamic MAC address, MAC address learning restriction, Sticky MAC, MAC address flapping prevention, and alarm for invalid MAC addresses Port aggregation and LACP		
Ring network protocol	SEP STP, RSTP, and MSTP		
IPv4 unicast routing	Static routing RIP, OSPF, ISIS, and BGP RIPng, OSPFv3, ISISv6, and BGP4+		
Multicast routing	IGMP v1/2/3 and IGMP snooping MLD and MLD snooping PIM DM, PIM SM, and PIM SSM IPv6 PIM		
VPN	IPSec VPN, IKEv1, and IKEv2 GRE VPN		
Quality of Service (QoS)	DiffServ mode, priority mapping, CAR, traffic shaping, congestion avoidance and congestion management, and HQoS Modular QoS (traffic class, traffic behavior, and traffic policy)		
Security	Zone-based stateful firewall Access Control List (ACL) 802.1X authentication, MAC address authentication, and web authentication AAA and RADIUS authentication and HWTACACS authentication Broadcast storm suppression ARP security and ICMP attack defense URPF, DHCP snooping, and DHCPv6 snooping CPCAR, blacklist, and attack source tracing PKI and KPM		
Reliability	GR, VRRP, BFD, interface backup, and Ethernet OAM		
Management and maintenance	CLI, web NMS, SNMP (v1/v2c/v3), RMON, NTP, and USB-based deployment		

Specifications of the AR550 series agile gateway

Specification	AR550C-4GE	AR550C-2C6GE	AR550-8FE-D-H	AR550-24FE-D-H
Fixed Ethernet interfaces	2 x 2.5G SFP(Compatible with GE), 4 x GE RJ45	2 x 2.5G SFP(Compatible with GE), 2 x GE combo, 6 x GE RJ45	8 x FE RJ45 + 4 x GE combo	24 x FE RJ45 + 4 x GE combo
Fixed Serial	-	1 x RS485	-	-
Alarm Relay interface	1 DI 1 DO (terminal block, support Normal Open and Normal Closed)	1 DI 1 DO (terminal block, support Normal Open and Normal Closed)	1 DO (terminal block, support Normal Open and Normal Closed)	
USB2.0	1	1	1	1
Serial auxiliary/console interface	1	1	1	1
Layer 2 forwarding performance	13.5 Mpps	19.5 Mpps	7.2 Mpps	9.6 Mpps
Switching capacity	54Gbps		24.8Gbps	
DRAM memory	256 MB		512 MB	
Flash memory	512 MB		128 MB	
Power supply	Dual DC power: 9.6 V to 60 V (terminal block)		Dual DC power: 9.6 V to 60 V (terminal block)	
PoE	-	Yes GE0/GE1 support POE++, Other 6GEs support PoE+	-	
Weight	1.1 kg	1.1 kg	1.6 kg	2.1 kg
Dimensions (W x D x H)	44 mm x 133 mm x 150 mm		97 mm x 133 mm x 150 mm	133 mm x 133 mm x 150 mm
Typical power consumption	13W	14W	21W	28W
Installation mode	Installation on a DIN rail			
Storage temperature	-40°C to +85°C			

Specification	AR550C-4GE	AR550C-2C6GE	AR550-8FE-D-H	AR550-24FE-D-H
Operating temperature	−40°C to +70°C The device is tested for 2 hours at temperatures in the range of +70°C to +85°C.		−40°C to +70°C	
Operating humidity	5% to 95% (non-condensing)			
IP protection Rating	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) EN50155 (railway)			
Vibration and environment test	IEEE1613 IEC61850-3 CLASS Cm EN50155		IEC61850-3 CLASS Cm IEC61373, CLASS B body mounted EN50155	
EMC	FCC 47 CFR PART15, CLASS A EN55022, CLASS A VCCI, CLASS A AS/NZS CISPAR 22 CLASS A, AN/NZS CISPR 24 ICES 003 CLASS A CE C-TICK (Australia) 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	UL 60950-1 EN 60950-1 IEC 60950-1 BS EN 60950-1 CSA C22.2 No 60950-1 AS/NZS 60950.1 IS 13252			
Warranty	5 years			

Specification	AR550C-4GE	AR550C-2C6GE	AR550-8FE-D-H	AR550-24FE-D-H
LAN functions	IEEE 802.1P, IEEE 802.1Q, and IEEE 802.3 VLAN Static MAC address, dynamic MAC address, MAC address learning restriction Port aggregation and LACP	IEEE 802.1P, IEEE 802.1Q, and IEEE 802.3 VLAN Static MAC address, dynamic MAC address, MAC address learning restriction, MAC address flapping prevention, and alarm for invalid MAC addresses Port aggregation and LACP		
IP Applications	ARP, DHCP, DNS, and DDNS IPv6 ND, DHCPv6, and DNS6 NAT, NQA		ARP, DHCP, DNS, and DDNS IPv6 ND, DHCPv6, and DNS6	
Ring network protocol	SEP STP, RSTP, and MSTP			
Unicast	Static routing RIP RIPng		Static routing RIP RIPng	
Multicast	-		PIM-DM、PIM-SM、PIM-SSM MSDP IGMP、IGMP Snooping MLD、MLD Snooping	
VPN	IPSec VPN, IKEv1, and IKEv2		IPSec VPN、IKEv1、IKEv2	
Quality of Service (QoS)	DiffServ mode, priority mapping, CAR, traffic shaping, congestion avoidance and congestion management, and HQoS Modular QoS (traffic class, traffic behavior, and traffic policy)			
Security	Access Control List (ACL) 802.1X authentication, AAA and RADIUS authentication and HWTACACS authentication ARP security and ICMP attack defense URPF, CPCAR, PKI and KPM		Access Control List (ACL) 802.1X authentication, MAC address authentication AAA and RADIUS authentication and HWTACACS authentication Broadcast storm suppression ARP security and ICMP attack defense URPF, DHCP snooping, and DHCPv6 snooping CPCAR, blacklist, and attack source tracing PKI and KPM	
Reliability	BFD, Ethernet OAM		-	
Management and maintenance	CLI, web NMS, SNMP (v1/v2c/v3), NTP, and USB-based deployment		CLI, web NMS, SNMP (v1/v2c/v3), NTP, and USB-based deployment, One-button Setup	

Specifications of the AR530 series agile gateway

Item	AR531-2C-H	AR531GPe-U-H
L2 Switching Capacity	5.6Gbps	5.2Gbps
L2 Forwarding Performance	4.2Mpps	3.9Mpps
WAN Speed With Services	150 Mbps	150 Mbps
Fixed Ethernet Interface	2 x GE SFP + 6 x FE RJ45 + 2 x FE combo	2 x GE SFP + 6 x FE RJ45
RS485 Interface	2-channel	2-channel
DI Interface	2-channel	2-channel
3G/2G Support	-	WCDMA: • UMTS/HSDPA (2100/900MHz) • GSM/GPRS/EDGE (850/900/1800/1900MHz) Dual SIM slots, main and backup
PLC Interface	-	Hi-PLC (OFDM) S-FSK PLC
USB 2.0	1	1
Serial console interface	1	1
Memory	512 MB	512 MB
Flash	512 MB	512 MB
Maximum Power	44.5 W	44.5 W
Power Supply	AC: 100 V to 240 V (single-phase); 173 V to 415 V (three-phase)	AC: 100 V to 240 V (single-phase); 173 V to 415 V (three-phase)
Power Frequency	50/60 Hz	50/60 Hz
Weight	≤5 kg	≤5 kg
Dimensions (H x W x D)	88 mm x 220 mm x 250 mm	
Storage Temperature	-40°C to +85°C	

Item	AR531-2C-H		AR531GPe-U-H
Installation method	Wall-mounted, DIN rail mount		
Operating temperature	-40°C to +70°C		-40°C to +70°C
Relative humidity	5% RH to 95% RH (non-condensing)		
Protection level	IP51		
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, OSPFv3, IS-ISv6, BGP4+		
Multicast	IGMP v1/v2/v3, PIM SM, PIM DM, MSDP		
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP 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, Public Key Infrastructure (PKI)		
Management and Maintenance	Upgrade management, device management, SNMP (v1/v2c/v3), RMON, NTP, USB-based deployment, network configuration, CLI		

Specifications	AR532
Industrial Communication Protocol	IEC62056

Specifications	AR502EGRc-Lc
Uplink:3G	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 Interface	Hi-PLC/433M/915M RF (Optional)
DI/DO Interface	2-channel DI/2-channel DO
Fixed Interface	RS485*2
Other interface	1 USB2.0, 1 Pulse out,1 Infrared, 6 Operation Keys, WLAN(Management Interface)
USB 2.0	1
Serial Console Interface	1
Memory	256 MB
Flash	512 MB
Maximum Power Consumption	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	2.5 kg
Installation Method	Wall-mounted
Operating Temperature	-25°C to +70°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% RH to 95% RH
Protection Level	IP51 (IP54 with outdoor cabinet)
AMI Service	Meter Reading, 3G/RF/Hi-PLC Communication management, Monitoring and maintenance, Version management, Fault management, Time-synchronization of meter clock

Specifications of the AR502 series agile gateway

Specifications	AR502EGW-L		
Box	Metal		
Processor	Powerful 700Mhz ARM Dual-Core Cortex A9		
DRAM (DDR3)	256 MB	512 MB	
Flash memory	512 MB		
Operating System	Wind River LINUX 6.0		
4G/LTE	FDD LTE: Band 1, Band 2, Band 3, Band 4, Band 5, Band 7, Band 8, Band 20, all bands with diversity UL 50 Mbit/s; DL 150 Mbit/s		
3G	WCDMA/HSDPA/HSUPA/HSPA+: Band 1, Band 2, Band 5, Band 8, all bands with diversity UL 5.76 Mbit/s; DL 42 Mbit/s		
GSM	GSM/GPRS/EDGE: 850/900/1,800/1,900 MHz EDGE throughput up to 236 kbps		
SIM card	Dual SIM card support Lockable SIM card holder Supports micro-SIM format(3FF)		
Serial	1 x RS232 (DB9 female connector, isolated) 1 x RS485/422 (5-pin terminal block connector, isolated)		
Configure button	Switch function between service and management for RS232 port when press button for no longer than 5s Restore to default configuration when press button for no less than 5s		
Ethernet	2 10/100/1000M base-T		
WLAN	-	802.11b/g/n	-
RF	-	-	915MHz/868MHz*
DI/DO	6 x DI/DO (RJ45 Connector) LVTTTL voltage level, the mode of DI/DO is configurable		
USB	1 x USB 2.0		
Antenna	2 external antennas for Main and Div		
LED indicators	PWR x 1 RUN x 1 ALM x 1 RSSI x 3 2G x 1 3G x 1		
		2G LED	3G LED
	2G mode	✓	-
	3G mode	-	✓
	4G/LTE mode	✓	✓
	SIM x 2		

Specifications	AR502EG-L	AR502EGW-L	AR502EGRb-L
Power supply	DC: 8 V to 36 V		
Maximum power consumption	10 W		
Dimensions (W x D x H)	150mm x 100mm x 44 mm		
Weight	0.653 kg	0.676 kg	0.85kg
Operating temperature	-25°C to +70°C		
Storage temperature	-40°C to +85°C		
Relative humidity	5% RH to 95% RH (non-condensing)		
IP protection Rating	IP30		
Installation mode	Wall mounted (Mounting brackets is included by default) DIN-Rail mounted (DIN mounting kit is optional)		
EMC	ETSI EN 300 386 V1.6.1(2012-09) EN 55022:2010 CLASS A EN 55024:2010 CISPR22:2010 CISPR24:2010 EN 301 489-1 V1.9.2(2011-09) EN 301 489-17 V2.2.1(2012-09) IEC61850-3 (2013) IEEE1613 (2009) EN61000-4-2:2009 EN61000-4-3:2006 + A1:2008 + A2:2010 EN61000-4-4:2012 EN61000-4-5:2014 EN61000-4-6:2014 EN61000-4-8:2010 EN61000-4-10:1993 + A1:2001 EN61000-4-11:2004 EN61000-4-16:1998 + A1:2004 + A2:2011 EN61000-4-17:2002 EN61000-4-18:2007 + A1:2010 EN61000-4-29:2000		
Safety	IEC60950-1:2005(Second Edition) + A 1:2009 + A 2 :2013		
Certifications	CE(Europe) RoHS(Europe) WEEE(Europe) REACH(Europe)	CE(Europe) RoHS(Europe) WEEE(Europe) REACH(Europe) RCM(Australia)	RoHS(Europe) WEEE(Europe) REACH(Europe) RCM(Australia)
Basic features	TCP, UDP, ICMP, IPv4, IPv6 PPP protocols: PPP, PAP, IPCP, CHAP, and BCP DHCP server/client/relay, DNS client/proxy/relay, Dynamic DNS NAT		

Specifications	AR502EG-L	AR502EGW-L	AR502EGRb-L
WLAN	-	WLAN radio management, WLAN VAP management WLAN user management WLAN anti-attack WLAN QoS WLAN Security	-
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3 VLAN management, MAC address management STP, etc.		
Unicast routing	Routing policy, static route RIP, BGP RIPng, BGP4+		
VPN	GRE tunnel IPSec tunnel L2TP Client VPN Smart VPN (SVPN)		
QoS	Traffic classification based on the Layer-2 header, Layer-3 information, Layer-4 information, and 802.1p priority Traffic policing (CAR) Traffic shaping Queue scheduling of PQ, WRR, DRR, PQ+WRR, and PQ+DRR Congestion avoidance, such as WRED and tail drop		
Security	AAA authentication, RADIUS authentication, HWTACACS authentication 802.1X/MAC/MAC bypass authentication Certificate authentication and PKI management Firewall, Packet filtering, and firewall log Anti-DoS attack, TCP SYN Flood attack defense, UDP Flood attack defense, broadcast storm suppression, heavy traffic attack defense Provides CPU protection Ping and Tracert functions		
WAN failover/fail back	Interface Backup : Business continuity guarantee for wired networks via instantaneous failover/failback to/from 4G/3G/2G networks Intelligent delay mechanism for controlling failover/failback procedure		
Configuration and maintenance	Web-GUI (HTTPS) CLI, Telnet, and SSH terminals SNMPv1/v2c/v3 including cellular specific MIB, config and firmware download FTP and TFTP Boot ROM upgrades and remote upgrades User operation logs TR-069 (CWMP) client for remote device configuration, configuration backup and restore, and firmware upgrade NQA monitor System status monitor NTP client support for network time sync of device's system clock		
Firmware management	Firmware upgrade locally via LAN or remotely over-the-air (HTTPS, SNMP, TR-069) Multiple firmware image storage on device and dynamic install		
Event Alert	SYSLOG Trap and Alarm by SNMP		

Specifications	AR502CG-L		
Box	Plastics		
Processor	Powerful 700Mhz ARM Dual-Core Cortex A9		
DRAM (DDR3)	256 MB		
Flash memory	512 MB		
Operating System	Wind River LINUX 6.0		
4G/LTE	FDD LTE: Band 1, Band 2, Band 3, Band 4, Band 5, Band 7, Band 8, Band 20, all bands with diversity UL 50 Mbit/s; DL 150 Mbit/s		
3G	WCDMA/HSDPA/HSUPA/HSPA+: Band 1, Band 2, Band 5, Band 8, all bands with diversity UL 5.76 Mbit/s; DL 42 Mbit/s		
GSM	GSM/GPRS/EDGE: 850/900/1,800/1,900 MHz EDGE throughput up to 236 kbps		
SIM card	One SIM card support Lockable tray reader with push-button-to-release Supports mini-SIM format (2FF)		
Serial	1 x RS232 (RJ45 connector, non-isolated)		
Configure button	Switch function between service and management for RS232 port when press button for no longer than 5s Restore to default configuration when press button for no less than 5s		
Ethernet	2 x 10/100/1000M base-T		
WLAN	-		
DI/DO	1 alarm inputs to detect dry contact open or close, 9.6 to 60V input, State "0"/ "1" can be configured 1 relay output with current carrying capacity of 1 A @ 60 VDC, normally open/closed		
USB	1 x USB 2.0		
Antenna	2 internal antennas <ul style="list-style-type: none">2 x Internal antennas for Main and Div 1 external antenna(Optional) <ul style="list-style-type: none">1 x SMA connector for 3G/4G (1x Main)Replace internal main Antenna when external antenna is installed		
LED indicators	PWR x 1 RUN/ALM x 1 RSSI x 3 2G x 1 3G x 1		
		2G LED	3G LED
	2G mode	✓	-
	3G mode	-	✓
	4G/LTE mode	✓	✓
	SIM x 1		
Power supply	DC: 8 V to 36 V		

Specifications	AR502CG-L
Maximum power consumption	8W
Dimensions (W x D x H)	150 mm x 100 mm x 44 mm
Weight	0.38 kg
Operating temperature	−25°C to +60°C
Storage temperature	−40°C to +85°C
Relative humidity	5% RH to 95% RH (non-condensing)
IP protection Rating	IP30
Installation mode	Wall mounted (Mounting brackets is included by default) DIN-Rail mounted (Supported by default) horizontally
EMC	ETSI EN 300 386 V1.6.1(2012-09) EN 55022:2010 CLASS A EN 55024:2010 CISPR22:2010 CISPR24:2010 EN 301 489-1 V1.9.2(2011-09) EN 301 489-17 V2.2.1(2012-09) EN61000-4-2:2009 EN61000-4-3:2006 + A1:2008 + A2:2010 EN61000-4-4:2012 EN61000-4-5:2014 EN61000-4-6:2014 EN61000-4-8:2010 EN61000-4-10:1993 + A1:2001 EN61000-4-11:2004 EN61000-4-16:1998 + A1:2004 + A2:2011 EN61000-4-17:2002 EN61000-4-18:2007 + A1:2010 EN61000-4-29:2000
Safety	IEC60950-1:2005(Second Edition) + A 1:2009 + A 2 :2013
Certifications	CE(Europe) CB(International) RoHS(Europe) WEEE(Europe) REACH(Europe) GCF(Europe)
Basic features	TCP, UDP, ICMP, IPv4, IPv6 PPP protocols: PPP, PAP, IPCP, CHAP, and BCP DHCP server/client/relay, DNS client/proxy/relay, Dynamic DNS NAT

Specifications	AR502CG-L
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3 VLAN management, MAC address management STP, etc.
Unicast routing	Routing policy, static route RIP, BGP RIPng, BGP4+
VPN	GRE tunnel IPSec tunnel L2TP Client VPN Smart VPN (SVPN)
QoS	Traffic classification based on the Layer-2 header, Layer-3 information, Layer-4 information, and 802.1p priority Traffic policing (CAR) Traffic shaping Queue scheduling of PQ, WRR, DRR, PQ+WRR, and PQ+DRR Congestion avoidance, such as WRED and tail drop
Security	AAA authentication, RADIUS authentication, HWTACACS authentication 802.1X/MAC/MAC bypass authentication Certificate authentication and PKI management Firewall, Packet filtering, and firewall log Anti-DoS attack, TCP SYN Flood attack defense, UDP Flood attack defense, broadcast storm suppression, heavy traffic attack defense Provides CPU protection Ping and Tracert functions
WAN failover/fall back	Interface Backup : Business continuity guarantee for wired networks via instantaneous failover/failback to/from 4G/3G/2G networks Intelligent delay mechanism for controlling failover/failback procedure
Configuration and maintenance	Web-GUI (HTTPS) CLI, Telnet, and SSH terminals SNMPv1/v2c/v3 including cellular specific MIB, config and firmware download FTP and TFTP Boot ROM upgrades and remote upgrades User operation logs TR-069 (CWMP) client for remote device configuration, configuration backup and restore, and firmware upgrade NQA monitor System status monitor NTP client support for network time sync of device's system clock
Firmware management	Firmware upgrade locally via LAN or remotely over-the-air (HTTPS, SNMP, TR-069) Multiple firmware image storage on device and dynamic install
Event Alert	SYSLOG Trap and Alarm by SNMP

Specifications of the AR503 series agile gateway

Specification	AR503GW-LM7	AR503EDGW-Lc	AR503EQGW-L	AR503EW
Fixed Ethernet interface	1 x GE	4 x GE (M12 interface)	4 x GE (M12 interface)	4 x GE (M12 interface)
LTE	FDD LTE: B1/B2/B3/B4/B5/B7/B8/B20 WCDMA/HSPA+: B1/B2/B5/B8 GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz	2 x LTE modules supporting 4 SIM cards FDD LTE: B1/B3/B8 TDD LTE: B38/B39/B40/B41 UMTS: B1/B5/B8/B9 TD-SCDMA: B34/B39 GSM/GPRS/EDGE: 1800 MHz/900 MHz	4 x LTE modules supporting 8 SIM cards FDD LTE: B1/B2/B3/B4/B5/B7/B8/B20 WCDMA/HSPA+: B1/B2/B5/B8 GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz	-
Wi-Fi	Dual-band AP (2.4 GHz and 5 GHz), 2x2 MIMO 802.11a/b/g/n	Dual-Band APs including both 2.4 GHz and 5 GHz access; 3x3 MIMO 802.11ac and 802.11b/g/n	Dual-Band APs including both 2.4 GHz and 5 GHz access; 2x2 MIMO 802.11ac and 802.11b/g/n	aGHz and 5 GHz access; 3x3 MIMO 802.11ac and 802.11b/g/n
GPS	Supported	Supported	Supported	-
Console interface	1	1	1	1
USB	1 USB2.0	1 USB2.0	1 USB2.0	1 USB2.0
Memory	1GB	1 GB	1 GB	1 GB
Storage	Built-in Flash 512MB (expand storage through mSATA interface)	Built-in Flash 512MB and mSATA SSD 128GB (expand storage through mSATA interface)	-	Built-in Flash 512MB and mSATA SSD 128GB (expand storage through mSATA interface)
PoE	-	Supported GE0~GE3 support PoE, Max 20W	Supported GE0~GE3 support PoE and PoE+, Max 30W	Supported GE0~GE3 support PoE and PoE+, Max 30W
Power supply	DC inputs: 8V to 36V	DC inputs: 9V to 36V ACC check supported	100VDC/110VDC	100VDC/110VDC
Maximum Power	24W	30W (PoE disabled) 60W (PoE enabled)	30W (PoE disabled) 60W (PoE enabled)	25W (PoE disabled) 55W (PoE enabled)

Specification	AR503GW-LM7	AR503EDGW-Lc	AR503EQGW-L	AR503EW
Dimensions (W x D x H)	200 mm x 160 mm x 44 mm	280 mm x 200 mm x 44 mm	280 mm x 200 mm x 44 mm	280 mm x 200 mm x 44 mm
Weight	1.4Kg	2.6 kg	2.6 kg	2.6 kg
Operating temperature	-10°C to +50°C	-10°C to +70°C (PoE disabled) -10°C to +60°C (PoE enabled)		-10°C to +70°C (PoE disabled) -10°C to +65°C (PoE enabled)
Storage temperature	-40°C to +85°C	-40°C to +85°C		
Operating humidity	5% RH to 95% RH (non-condensing)	5% to 95% relative humidity (non-condensing)		
IP protection Rating	IP41	IP54 (optional protective caps available for unused ports)		
Installation method	Wall-mounted or horizontally	Wall-mounting or horizontal		
Shock and vibration standards	QC/T 413-2002, ISO 16750-3:2007	EN50155/ EN61373 QC/T 413-2002 SAE J1455 Category 3		
Basic features	DHCP server/client/relay, DNS client/proxy/relay, NAT, ARP, Port management			
WLAN	WLAN QoS, WLAN Security, WLAN radio management, WLAN VAP management, WLAN user management, WLAN anti-attack			
IPv4 unicast routing	Unicast routing management, routing policies, static routes, RIP, OSPF, IS-IS, BGP, MBGP			
Multicast	IGMPv1/v2/v3, PIM SM, PIM DM, PIM-SSM, MSDP			
VPN	L2TP VPN, GRE VPN, Efficient VPN,IPSec VPN			
QoS	ACL, QoS, MQC, SAC			
Security	Firewall, AAA authentication, RADIUS authentication, HWTACACS authentication, ICMP attack defense, Unicast Reverse Path Forwarding (URPF), CPCAR, blacklist, Public Key Infrastructure (PKI)			
Management and maintenance	Web Management, System management, Upgrade management, Device management, SNMPv1/v2c/v3, USB-based deployment			

Specifications of the AR509 series agile gateway

Specifications	AR509G-L-D-H		AR509GW-L-D-H
Ethernet	4xGE RJ45 LAN + 1xGE RJ45 WAN		
VDSL2	1 Pair (ITUT G.993.5, G.993.2 over POTS/over ISDN, ADSL2+ compatible Annex A/B)		
LTE	LTE FDD: Band 1/2/3/4/5/7/8/20 WCDMA/HSDPA/HSUPA/HSPA+: Band 1/2/5/8 GSM/GPRS/EDGE: 850/900/1800/1900 MHz		
LTE antenna	2 Antennas (SMA), which support a 3m antenna extension cable		
WLAN	-	802.11a/b/g/n Dual-band, 2.4GHz+5GHz	
USB2.0	1		
SIM slot	Dual SIM slots, main/backup		
SIM slot	Dual SIM slots, main/backup		
USB 2.0	1		
Power supply	12 V DC		
High-voltage power supply	External industrial power adapter: <ul style="list-style-type: none">• 90 to 264 V AC(terminal block)• 88 to 300 V DC (terminal block)• −40°C to +70°C External plug-type power adapter: <ul style="list-style-type: none">• 90 V AC to 270 V AC• −5°C to +45°C		
Memory	512 MB		
Flash memory	512 MB		
Typical power consumption	9.3 W	13 W	
Dimensions (W x D x H)	190 mm x 220 mm x 44 mm (without antennas)		
Operating temperature	−25°C to +60°C (−35°C to 70°C, 24-hour)		
Storage temperature	−40vC to +85°C		

Specifications	AR509G-L-D-H	AR509GW-L-D-H
Relative humidity	5% to 95% RH (non-condensing)	
IP grade	IP41	
Installation	Wall-mounted or horizontally	
MTBF	73.84 yrs	
EMC	EN55022 (RE&CE): LASS A IEC61000-4-2(ESD): ± 6 kV contact discharge level B, ± 8 kV air discharge Level B IEC61000-4-3(RS): 10V/m, 80M-2700 MHz Level A IEC61000-4-4(EFT): Power cable, ± 2 kV Level B; data cable, ± 1 kV Level B IEC61000-4-5(Surge): Power DM 2 kV, CM4 kV; Data 4 KV; Criteria B IEC61000-4-6(Conducted Disturbances Immunity): Data cable: 0.15 MHz-80 MHz, 3 V, Criteria A Power cable: 0.15 MHz-80 MHz, 10 V, Criteria A IEC61000-4-11(DIP)	
Safety compliance	IEC 60950-1, UL 60950-1, EN 60950-1, GB4943	
Basic features	DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, sub interface management	
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP	
Unicast routing	Static IPv4/IPv6 route, RIP, OSPF, RIPng, OSPFv3	
Multicast	IGMP v1/2/3, PIM SM, PIM DM, MSDP	
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN, Smart VPN	
QoS	Diffserv mode, priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), Hierarchical QoS (HQoS), Smart Application Control (SAC)	
Security	ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing	
Management and maintenance	Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI	

