Huawei AR1200 Series Enterprise Routers Datasheet

HUAWEI TECHNOLOGIES CO., LTD.

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AR1200 Series Enterprise Routers

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Huawei AR1200 Series routers are designed to provide secure and scalable unified voice and data communications for small enterprises or large enterprise branch offices.

Product Overview

Huawei AR1200 series enterprise routers are next-generation enterprise-class routers based on the Huawei proprietary Versatile Routing Platform (VRP). They build on Huawei's record of leadership in data communication and networking to provide industry-leading system performance and scalability to meet current and future business needs.

The AR1200 series integrates routing, switching, 3G service, Wireless LAN (WLAN), voice, and security functions. The AR1200 uses an embedded hardware encryption technique and supports a voice-optimized Digital Signal Processor (DSP). The router supports firewall security, call processing, voice mail, and other applications. It supports wired and wireless access modes, including E1/T1, xDSL, xPON, WiFi, 3G, and more. The AR1220EV and AR1220EVW models provide Power over Ethernet (PoE) on fixed 100M/1G Ethernet interfaces.

The AR1220 series has been qualified with Microsoft Lync server, and can be seamlessly integrated into Microsoft unified communications solutions.

Table 1: AR1200 Models

AR1220C

- WAN speed with services(IMIX): 400Mbps
- Fixed port: 8xGE(can be configured as WAN interfaces), 4xGE + 1xGE SFP
- Slot: 2xSIC
- Dimensions (H x W x D): 44.5mm x 390 mm x 220mm(1.8 in. x 15.4 in. x 8.7 in)

AR1220E

- WAN speed with services(IMIX): 800Mbps
- Fixed port: 8xGE(can be configured as WAN interfaces), 2xGE Combo
- Slot: 2xSIC
- Dimensions (H x W x D): 44.5mm x 390 mm x 220 mm(1.8 in. x 15.4 in. x 8.7 in)

AR1220EV

- WAN speed with services(IMIX): 800Mbps
- Fixed port: 8xGE(four GE ports support PoE) (can be configured as WAN interfaces), 2XGE combo
- PoE: compliance with IEEE 802.3af and 802.3at
- DSP: 32 channels supported
- Slot: 2xSIC
- Dimensions (H x W x D): 44.5mm x 390 mm x 220 mm(1.8 in. x 15.4 in. x 8.7 in)

AR1220EVW

- WAN speed with services(IMIX): 800Mbps
- Fixed port: 8xGE(four GE ports support PoE) (can be configured as WAN interfaces), 2XGE combo
- PoE: compliance with IEEE 802.3af and 802.3at
- DSP: 32 channels supported
- Slot: 2xSIC
- WiFi: compliance with 802.11b/g/n
- Dimensions (H x W x D):44.5mm x 390 mm x 220 mm(1.8 in. x 15.4 in. x 8.7 in)

The AR1200 supports optional interface cards, including; Ethernet, E1/T1/PRI/VE, synchronous/asynchronous, ADSL2+, G.SHDSL, and VDSL, FXS and FXO, ISDN, EPON and GPON, 3G, LTE and E&M interface cards. These cards are classified into SIC (Smart Interface Card) cards and WSIC (Double-Width SIC) cards depending on slot type. The primary interface cards are shown and described in the table below.

Note: For more information about interface cards, please refer to Ordering Guide.

Features and Benefits

Applications in one box, Reduce TCO

The AR1200 reduces equipment and deployment costs via the integration of routing, switching, 3G service, wireless LAN (WLAN), voice, and security functions in a single device. At the same time, The AR1200 realizes enterprises flexible access with rich interfaces adapting to a variety of terminals.

Industry-Leading Voice Quality and User Experience

Enterprise-class voice communication is flexible and efficient, thanks to the AR1200 voice features that can easily be integrated within new or existing data networks.

- Basic voice functions are provided by the built-in PBX, SIP server, and SIP access gateway.
- Value-added voice services include multi-party communication, IVR automatic connection, ring-back-tone, parallel ringing, sequential ringing, “one number link to you” (ONLY), billing and subscriber management.
- Intelligent call routing means exceptional voice service reliability.
- Interconnection with the NGN/IMS/PBX/terminal of mainstream vendors
- The Quality of Experience (QoE) feature monitors voice service quality in real time.
- Jitter buffer, echo cancellation, and packet loss compensation all improve the user experience.

Secure Service Access Protects Networks and Users

While delivering enterprise-class network services, the AR1200 router provides robust network security. The complete security solution includes user access control, packet detection, and active attack defense.

- The built-in firewall is the first line of defense.
- Port authentication technologies include 802.1x authentication and MAC address authentication
- Device authentication methods include RADIUS, and HWTACACS
- VPN technologies include IPSec VPN, GRE VPN, DSVPN，L2TP VPN

Integration of wireless and wired Functions

Table 3: Wireless Access Modes

Access Mode	Description
WLAN	Compliance with 802.11n and compatible with 802.11b/g reduces equipment costs. Multiple-input and multiple-output (MIMO) increases bandwidth and improves the user experience. Authentication technologies such as WEP, WPA/WPA2, WAPI and 802.1x provide robust security. Built-in AC function, establish WLAN campus flexibly
3G	Compliance with 3G standards, including CDMA2000 EV-DO, and WCDMA, means flexible network access. Network Quality Analyzer (NQA) monitors the link real-time status to meet Service Level Agreements (SLAs). Security VPN over 3G links ensures reliable service transmission.
LTE	100M LTE enterprise access solutions, high bandwidth experience Support for transition from 3G networks to LTE networks protects customer investment.

Table 4: Wired Access Modes

Access Mode	Description
Fiber	Gigabit Ethernet optical interfaces allow flexible network access. 10Gbps bandwidth meets the transmission requirements of bandwidth-intensive services, for instance, voice services. EPON and GPON interface cards are supported.
Copper cable	Support for various interfaces, including xDSL interfaces, E1/T1 interfaces, serial ports, and ISDN interfaces, protects customer investment. Choice of uplink access rates from 64 kbps to 1 Gbps. PoE support on Ethernet interfaces facilitates installation of powered devices by providing power over twisted pair cables.

Better Experience, Business Continuity

Multi-cores architecture, Industry-Leading performance

The AR1200 uses a multi-core CPU and non-blocking switching structure to provide industry-leading system performance, meeting enterprise requirements for network expansion and service deployment.

- The multi-core CPU speeds up concurrent data and voice service processing so customers can deploy a large number of services.
- Achieves maximum traffic throughput with non-blocking switching.
- Delivers high performance and service reliability through independent protocol management, service processing, and data switching.
- Simplifies device configuration and maintenance by integrating routing and switching functions, improving data switching efficiency between interface cards.

Low cost, High reliability

To guarantee the reliability of the equipment layer and network layer, the AR1200 series support hot-swap technology, a series of fault detection and judgment mechanisms, which can shorten the service interruption time.

- Assure service reliability and network stability with hot-swappable interface cards and redundant components, such as fan modules.
- Link backup for enterprise services improves reliability.
- MS level Fault detection mechanisms, shorten the service interruption time
- Local survival, improve the voice reliability of branch network

Intelligent Service Deployment

As the enterprise grows, requirements for new service deployments increase. To meet the demands of a growing enterprise, the AR1200 provides convenient configuration options:

- Use the mini-USB port to configure the devices using a GUI.
- Use a USB drive to configure devices for plug-and-play.
- Use the auto-config feature to automatically distribute configurations to devices.

Cooperation platform, On Demand applications

Open Service Platform, Enterprise-level APP

The AR1200 provides a unified communication solution for enterprise customers. It uses the Open Service Platform (OSP) to interconnect with third-party IT systems. Customers, agents, third-party vendors, and manufacturers can develop and use the AR1200 as required.

- Integrate and customize services quickly.
- Reduces costs and simplifies management as service integration does not require dedicated servers.
- Services are synchronized with cloud-side services, and local services processed locally, which improves service quality and efficiency.

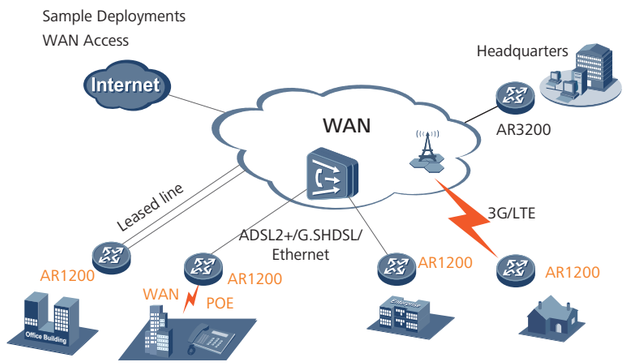
Standard MIB provided by VRP, Simplified Network and Device Management

The AR1200 makes network and device management simple:

- Manage devices easily with the Huawei eSight network management system.
- Monitor links in real time using the NQA feature.
- View traffic characteristics and statistics to maintain peak network performance using the NetStream feature.

Sample Deployments

WAN Access



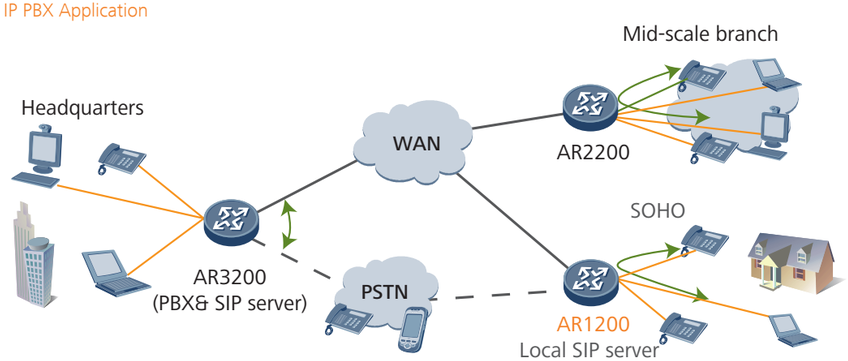
AR1200 routers deployed at the edge of enterprise branches provide flexible access to remote network connections. They meet most access requirements, including leased line, Ethernet, xDSL, LTE, 3G service, and WLAN. This flexibility adds compelling value to customers by reducing deployment and maintenance costs. Router models with fixed 100 M Ethernet interfaces support PoE and PoE+, and can provide power for powered devices (PDs), such as IP phones. Each PoE+ interface provides more than 30 W of power to support high-power PDs.

AR routers support LTE which can increase the wireless speed greatly and improve the spectral efficiency. The end-to-end LTE QoS mechanism and the AR routers' bandwidth monitoring and dynamic adjustment of QOS policy can guarantee high priority services.

High-Quality Voice Service

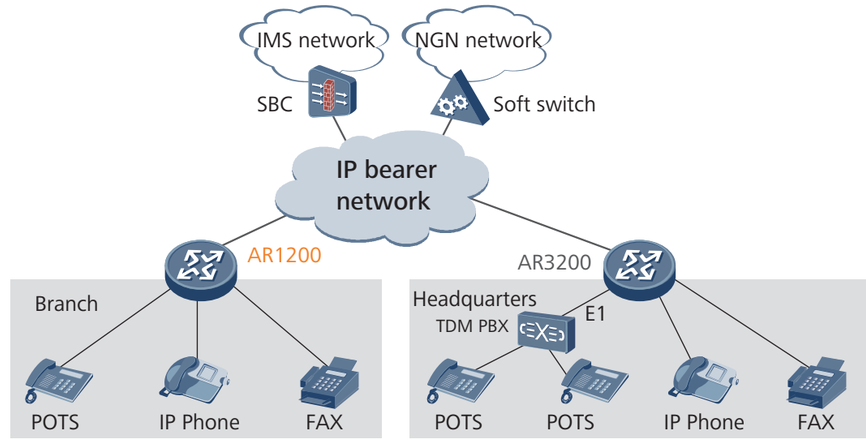
The AR1200 can function as an IP PBX or SIP gateway for enterprise networks.

IP PBX Application



To enhance the corporate image and improve communication efficiency, all AR routers include a built-in PBX. This feature supports the enterprise main number, Interactive Voice Response (IVR), and bill query functions. The AR1200 can also be located in a branch office to provide intelligent dialing.

SIP Gateway Application

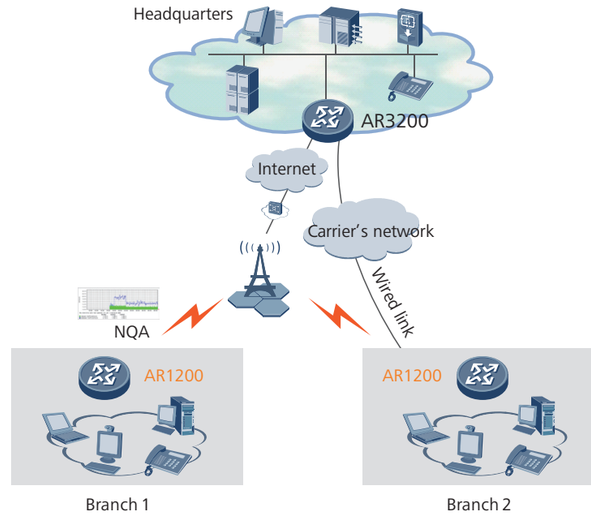


The AR1200 integrates voice, fax, and IP services. For enterprise users, the AR1200 serves as the SIP access gateway for a branch office, transforming phone signals into VoIP signals. The AR1200 uplink interfaces connect to the IP Multimedia Subsystem (IMS) or Next Generation Network (NGN) to allow any media, including phones, handsets, and computers, to communicate at any time.

Wireless Access and Management in a Branch Office

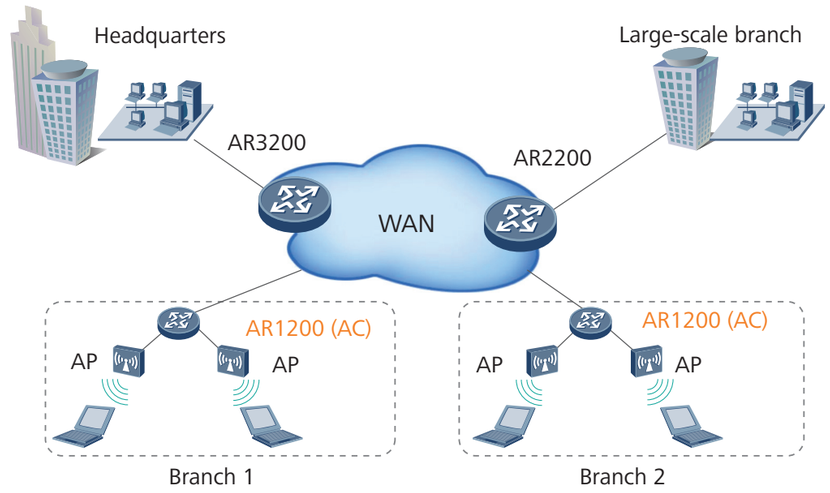
3G/LTE Wireless Access Application

The AR1200 complies with 3G/LTE function, 3G standards including CDMA2000 EV-DO, and WCDMA, LTE supporting FDD LTE, meeting the requirements for wireless communication between enterprise branch offices and headquarters. AR1200 supports 3G and LTE interfaces cards. In addition, the 3G/LTE data link can be used to back up a wired link to protect the xDSL, FE/GE, and ISDN uplinks. The backup link improves network stability and reduces network construction costs. The Network Quality Analyzer (NQA) monitors 3G/LTE link quality, ensuring the network meets Service Level Agreements (SLAs).



Wireless AC Management Application

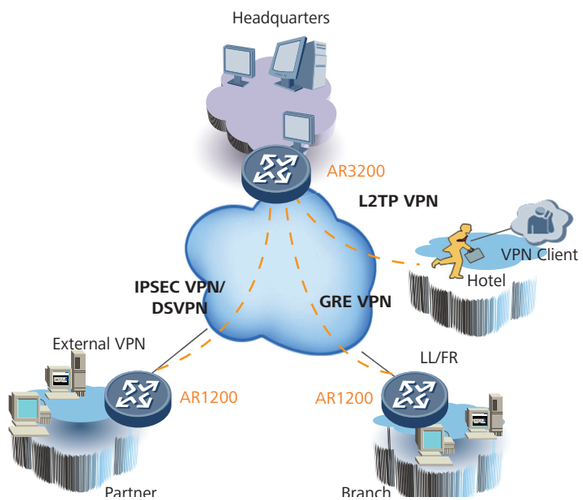
The AR1200 routers integrated AC (Access Controller, a wireless controller) functionality, which can manage the wireless AP (Access Point, Access Point) in wireless LAN. AR supported rich certification and flexible user access control, which can provide security access guarantee for Wi-Fi users. The rich wireless capabilities integrated in one device, this can realize centralized management of wired and wireless networks; meet the customers' requirements of building different scale enterprises networks.



VPN in a Branch Office

VPN Application

The AR1200 provides secure access for communication among enterprise branch offices and between headquarters and branch offices and business partners. Tunnels between the headquarters and branch offices ensure secure data access and transmission. The AR1200 implements fast tunnel deployment and authentication so branch offices and partners can easily, quickly and securely access and share enterprise resources.



Technical Specifications

Table 5: Technical Specifications

Item	AR1220C	AR1220E	AR1220EV	AR1220EVW
System Parameters				
Processor	Dual-core	Dual-core	Dual-core	Dual-core
Maximum WAN speed with services***	Up to 400 Mbps	Up to 800 Mbps	Up to 800 Mbps	Up to 800 Mbps
Maximum firewall performance (large packet)	Up to 1000 Mbps	Up to 1800 Mbps	Up to 1800 Mbps	Up to 1800 Mbps
Maximum device switching capacity	Up to 8 Gbps	Up to 8 Gbps	Up to 8 Gbps	Up to 8 Gbps
Slot switching bandwidth	SIC & WSIC slots 2 Gbps			
Number of recommended users*****	100			
Fixed WAN ports	4 x GE+ 1 x GE SFP	2 x GE Combo	2 x GE Combo	2 x GE Combo
Fixed LAN ports	8 x GE(can be configured as WAN interfaces)	8 x GE(can be configured as WAN interfaces)	8 x GE(can be configured as WAN interfaces)	8 x GE(can be configured as WAN interfaces)
SIC slots	2	2	2	2
WSIC slots (default/max)	0/1	0/1	0/1	0/1
DSP slots	-	-	32 channels supported by default	32 channels supported by default
WiFi	-	-	-	802.11 b/g/n
USB 2.0 ports	2	2	2	2
Mini-USB ports	1	1	1	1
Console port	1	1	1	1
Memory	512 MB	1 GB	1 GB	1 GB
Flash	512 MB	512 MB	512 MB	512 MB
Dimensions and Weight				
Dimensions (W x D x H)	With no mounting bracket installed: 390.0 mm x 232.5 mm x 44.5 mm (15.35 in. x 9.2 in. x 1.75 in.) With mounting brackets installed: 482.6 mm x 232.5 mm x 44.5 mm (19.0 in. x 9.2 in. x 1.75 in.)			
Weight	2.9 kg (6.39 lb)	2.9 kg (6.39 lb)	2.9 kg (6.39 lb)	2.9 kg (6.39 lb)
Rack height	1 U	1 U	1 U	1 U

Item	AR1220C	AR1220E	AR1220EV	AR1220EVW
Power Specifications				
Rated input voltage range (AC)	100 V to 240 V	100 V to 240 V	100 V to 240 V	100 V to 240 V
AC input frequency	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz	50 Hz/60 Hz
Maximum input voltage range (AC)	90 V to 264 V	90 V to 264 V	90 V to 264 V	90 V to 264 V
Maximum input current	2 A	2 A	2 A	2 A
Maximum output power	60 W	60 W	60 W	60 W
PoE power supply	-	-	Supported (interfaces GE4 to GE7)	Supported (interfaces GE4 to GE7)
Power Consumption & Heat Dissipation				
Typical power consumption	27 W	18 W	21 W	22 W
Maximum power consumption	32 W	20 W	22 W	25 W
Fans	Built-in fans, not pluggable	Built-in fans, not pluggable	Built-in fans, not pluggable	Built-in fans, not pluggable
Airflow (facing the front panel)	Left to right	Left to right	Left to right	Left to right
Environment Parameters				
Operating temperature****	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)
Storage temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Operating relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Operating altitude	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)
Software Features and Protocols				
Basic feature	DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management			
Voice	RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP/conference call, BEST, DISA, SBC, (Only voice models support voice 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）			
3G	3G Interface card(WCDMA)			
LTE	LTE Interface card(FDD LTE: Uplink: 50Mbit/s Downlink: 100Mbit/s)			

Item	AR1220C	AR1220E	AR1220EV	AR1220EVW
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP			
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 V1/V2/V3, PIM SM, PIM DM, MSDP, MBGP			
MPLS	LDP, MPLS L3 VPN, VLL, PWE3, static LSP, dynamic LSP, MPLS TE, IP FRR, LDP FRR, TE FRR			
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN			
QoS	DiffServ mode, MPLS QoS, 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 classifier, traffic behavior, and traffic policy), Hierarchical QoS, WLAN QoS, FR 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			
Management and maintenance	Upgrade management, device management, web-based GUI, GTL, SNMP (v1/v2c/v3), NTP, CWMP, Auto-Config, deployment using USB disk, CLI, SSH (v1/v2)			
Safety and Regulatory Standards				
EMC standards	•CISPR32 Class A •EN 55032 Class A •CISPR24 •EN 55024 •ETSI EN 300 386 •AS/NZS CISPR32 Class A •FCC Part 15 Subpart B Class A •ICES 003 Class A •IEC 61000-3-2 •EN 61000-3-2 •IEC 61000-3-3 •EN 61000-3-3 •GB 9254 •VCCI-CISPR32 Class A			
Environmental standards	•RoHS •REACH •WEEE			
Safety standards	•IEC 60950-1 •EN 60950-1 •UL 60950-1 •CSA C22.2 No 60950-1 •GB 4943.1			

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*** Note: Service performance depending on specific feature configuration.

****Note: When the altitude is between 1800 m and 5000 m, the highest operating temperature reduces by 1° C every time the altitude increases by 220 m.

*****Note: Number of recommended users is measured according to the Maximum number of concurrent NAT connections.

How to Configure the Modular AR1200 Router

Before choosing an AR1200, determine the device model, interface cards, and software configurations.

Chassis Options

The device model is determined by the slot quantity, forwarding capacity and service features that you require.

Service cards

The interface cards, including SIC cards and WSIC cards, are inserted into service card slots. Two SIC slots can be combined into one WSIC slot by removing the guide rail.

Software

The basic software and licensed software are available. The basic software provides basic functions, such as routing, switching, voice, and security. The licensed software provides additional functions, such as AC.

Ordering Information

Begin by ordering the chassis. Then select interface modules, any special licenses, and any desired accessories (SD card or USB disk).

Tables 6-11 below list the part numbers to use when ordering components.

Table 6: Chassis Options

Chassis Configuration	Description
AR0M1200CC	AR1220,2GE WAN,8FE LAN,2 USB,2 SIC,DC -48V
AR1220C	AR1220C,8GE LAN,5GE WAN,2 USB,2 SIC
AR1220E	AR1220E,2GE COMBO,8GE LAN,2 USB,2 SIC
AR1220EV	AR1220EV,2GE COMBO,8GE LAN,2 USB,2 SIC,build-in 32-channel DSP,PoE Power Adapter
AR1220EVW	AR1220EVW,2GE COMBO,8GE LAN,802.11b/g/n AP,2 USB,2 SIC,build-in 32-channel DSP,PoE Power Adapter

Table 7: Power Module Options

Power Module	Description
100W POE Power Module	AR0MPSAP1000

Table 8: SIC Interface Module Options

SIC Interface Module	Description
AR0MSDME1A00	1-Port Channelized E1/T1/PRI/VE1 Multiflex Trunk Interface Card
AR0MSDE11A00	1-Port Fractional Channelized E1/T1 WAN Interface Card
AR0MSDME2A00	2-Port Channelized E1/T1/PRI/VE1 Multiflex Trunk Interface Card
AR0MSDE12A00	2-Port Fractional Channelized E1/T1 WAN Interface Card
AR0MSDSA1A00	1-Port Sync/Async Serial Port Interface Card
AR0MSDSA2A00	2-Port Sync/Async Serial Port Interface Card
AR0MSEG1CA00	1-Port GE Combo WAN Interface Card
AR0MSEF2TA00	2-Port FE WAN Interface Card
AR0MSVA4B1A0	4-Port FXS and 1-Port FXO Voice Interface Card
AR01SVB4XA	4-Port FXO Voice Interface Card
AR0MSLA1XA00	1-port ADSL2+ ANNEX A/M WAN Interface Module,Support Wetting Current,Only For Vodafone
AR0MSLA1XA01	1-Port ADSL2+ ANNEX A/M WAN Interface Module
AR0MSLB1XA01	1-Port ADSL2+ ANNEX B/J WAN Interface Module
AR01SLV1XA	1-Port VDSL2 over POTS WAN Interface Module
AR-2VDSL2-S	2-Port VDSL2 over POTS with bonding WAN Interface Card
AR0MSLS1XA00	1-Port 4 Pair G.SHDSL WAN Interface Module
AR0MSDS1XA00	1-Port ISDN S/T WAN Interface Card
AR0MSVS2XA00	2-Port ISDN S/T Voice Interface Module
AR0MSOPP2A00	1-Port GPON/EPON Dual-mode Interface Card
AR-4ES2G-S	4-Port 1000BASE-RJ45 L2 Ethernet Interface Card(SIC)
AR-1VE1-S	1-Port VE1 Interface card
AR-1LTE-L-S	WCDMA LTE Interface Card
AR-1LTE-LV-S	LTE FDD/DC-HSPA+(NA) Data Card
AR-1LTE-Lo-S	FDD/HSPA+ (700M)Interface Card

Table 9: WSIC Interface Module Options

WSIC Interface Module	Description
AR01WAE14A	4-port E1 Inverse Multiplexing for ATM Interface Card
AR01WDFE4A	4-Port Fractional E1 WAN Interface Card
AR01WDFE8A	8-Port Fractional E1 WAN Interface Card

WSIC Interface Module	Description
AR01WDCE8A	8-Port Channelized E1/PRI Multiflex Trunk Interface Card
AR01WEG4SA	4-Port 1000BASE-SFP-L3 Ethernet WAN Interface Card
AR01WEG4SB	4-Port 1000BASE-SFP-L2 Ethernet Interface Card
AR01WEG4TA	4-Port 1000BASE-RJ45-L3 Ethernet WAN Interface Card
AR0MWDAS8A01	8-Port Async Serial Port Interface Card
AR0MWMF9TT00	8-Port 10/100BASE(RJ45) and 1-Port 10/100/1000BASE(RJ45)-L3 Ethernet Switch Interface Card
AR01WVADXA	16-Port FXS Voice Interface Card
AR-1E3T3M-W	1-Port Channelized/Unchannelized E3/T3 WAN Interface Card
AR-9ES2-W	8 Port 100M-RJ45 and 1 Port 1000M- RJ45 L2 Ethernet Interface Card
AR-8SA-W	8-Port Sync/Async Serial WAN Interface Card
AR-4GECS-W	4-Port GE COMBO WAN Interface Card(support syncE)
AR01WSX220B	Industrial Computer,Celeron 847E,DDR3 4G,2.5inch 1TB HDD,CFAST 4G,NULL

Table 10: License Options

License	Description
LAR0DATAE02	AR1200 Value-Added Data Package
LAR0AC02	AR1200 AC Express License
LAR0VOICEE02	AR1200 Value-Added Voice Package
LAR0CMBEST01	AR CM&BEST License-5 telephones
LAR0CMBEST02	AR CM&BEST License-25 telephones
LAR0CMBEST03	AR CM&BEST License-100 telephones
LAR0CT01	AR CT(Call Trunk) License-5 sessions
LAR0CT02	AR CT(Call Trunk) License-25 sessions
LAR0CT03	AR CT(Call Trunk) License-100 sessions
LAR0IVR01	AR IVR(Interactive Voice Response) License-1 session
LAR0IVR02	AR IVR(Interactive Voice Response) License-12 sessions
LAR0SECE02	AR1200 Value-Added Security Package
LAR0DSVPN02	AR1200 DSVPN(Dynamic Smart VPN) Function
LAR0IPS02	AR1200 IPS Service Subscribe 1 Year

Table 11: SD Card and USB Disk Options

SD Cards & USB Disks	Description
NUSBDSK16	USB Flash Disk,72mmX21.9mmX13mm,16GB,USB2.0,Alcor Micro MCU

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

Professional Service and Support

Huawei Professional Services provides expert network design and service optimization tasks, helping customers design and deploy a high-performance network that is reliable and secure, maximizing return on investment as well as reducing operational expenses.

Company Addendum

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

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