Huawei AR2200 Series Enterprise Routers Datasheet

HUAWEI TECHNOLOGIES CO., LTD.

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AR2200 Series Enterprise Routers

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With industry-leading performance, Huawei AR2200 series enterprise routers provide secure and scalable unified voice and data communications for enterprise headquarters or branch offices.

Product Overview

The AR2200 routers are next-generation enterprise-class routers based on the Huawei proprietary Versatile Routing Platform (VRP). These modular-chassis routers integrate routing, switching, 3G service, LTE service, voice, and security functions. Users customize the routers by selecting the interface cards that meet their requirements.

The AR2200 use the embedded hardware encryption technique and support a voice-optimized Digital Signal Processor (DSP). They provide firewall security, call processing, voice mail, and other application programs.

The AR2200 routers support wired and wireless access modes, including E1/T1, xDSL, xPON, CPOS and 3G. Building on Huawei's leading data communication and networking technologies, they provide industry-leading system performance and scalability to meet current and future business needs.

Table 1: AR2200 Models

AR2204-27GE

- WAN speed with services(IMIX): 400Mbps
- Fixed port: 3xGE (one combo port), 24xGE
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2204-27GE-P

- WAN speed with services(IMIX): 400Mbps
- Fixed port: 3xGE (one combo port), 24xGE (8 GE ports support PoE)
- PoE: compliance with IEEE 802.3af and 802.3at
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2204-51GE-P

- WAN speed with services(IMIX): 400Mbps
- Fixed port: 3xGE (one combo port), 48xGE (8 GE ports support PoE)
- PoE: compliance with IEEE 802.3af and 802.3at
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2204E

- WAN speed with services(IMIX): 400Mbps
- Fixed port: 3xGE (one combo port)
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2204XE

- WAN speed with services(IMIX): 1.8 Gbps
- Fixed port: 2 x 10GE SFP+, 10 x GE SFP, 8 x GE RJ45 WAN (PoE supported)
- 2 x HDD
- PoE: compliance with IEEE 802.3af and 802.3at
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2204XE-DC

- WAN speed with services(IMIX): 1.8 Gbps
- Fixed port: 2 x 10GE SFP+, 10 x GE SFP, 8 x GE RJ45 WAN
- Slot: 4xSIC
- Dimensions (H x W x D): 44.5mm x 442mm x 420mm

AR2220E

- WAN speed with services(IMIX): 1.6 Gbps
- Fixed port: 3xGE (one combo port)
- Slot: 4xSIC + 2xWSIC
- Dimensions (H x W x D): 44.5 mm x 442 mm x 420mm

AR2240C

- WAN speed with services(IMIX): 2 Gbps
- Fixed port: 4 xGE + 4xGE SFP + 2 x GE Combo
- Slot: 4xSIC + 2xWSIC + 2xXSIC
- Dimensions (H x W x D): 88.1 mm x 442 mm x 470 mm

AR2240

- WAN speed with services(IMIX):
  - » 2Gbps (with SRU40*)
  - » 4Gbps (with SRU80*)
  - » 2Gbps (with SRU100E*)
  - » 9Gbps(with SRU200*)
- Hardware-based Traffic Management(with SRU80* and SRU200*)
- Hardware-based HQoS (with SRU80* and SRU200*)
- Fixed port:
  - » SRU40: 3 x GE(2 x Combo)
  - » SRU80: 3 x GE(2 x Combo)
  - » SRU100E: 4 x GE Combo+ 2 x GE SFP
  - » SRU200: 4 x GE Combo+ 2 x 10GE SFP+
- Slot: 4xSIC + 2xWSIC + 2xXSIC
- Dimensions (H x W x D): 88.1 mm x 442 mm x 470 mm

* Main control board model number

The AR2200 supports optional interface cards, including Ethernet, E1/T1/PRI/VE1, synchronous/asynchronous, ADSL2+/G.SHDSL, FXS/FXO, ISDN, CPOS, EPON/GPON, 3G, LTE and E&M interface cards. These cards are designated SIC (Smart Interface Card) cards, WSIC (Double-Width SIC) cards, or XSIC (Double-Height WSIC) cards, depending on the number of slots they occupy.

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

Features and Benefits

Applications in one box, Reduce TCO

The AR2200 routers reduce equipment and deployment costs due to the integrated routing, switching, 3G, voice, and security functions into a single device. At the same time, The AR2200 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, as the AR2200 voice features integrate with 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 you (ONLY), bill management, and subscriber management.
- Intelligent call routing enables exceptional voice service reliability.
- The AR2200 routers can be connected with the NGN/IMS/PBX/terminal of major vendors.
- The Quality of Experience (QoE) feature monitors voice service quality in real time.
- Jitter buffer, echo cancellation, and packet loss compensation combine to deliver a superior user experience

Secure Service Access Protects Networks and Users

While delivering enterprise-class network services, the AR2200 router provides robust network security. Comprehensive security solutions include user access control, packet detection, and active attack defense.

- Features a built-in firewall and IPS, which acts as the first line of defense.
- Port authentication technologies include 802.1x authentication, MAC address authentication, and portal authentication.
- User and device authentication methods include RADIUS and HWTACACS(Huawei Terminal Access Controller Access Control System).
- Smart Application Control (SAC) identifies 1600+ applications, and the identified applications can be applied fine-grained policies. SAC ensures bandwidth for key services, and limits traffic of non-key service traffic to ensure stable and high-efficient transmission of key services.
- Flexible bandwidth management based on interfaces, different services, users, user groups and applications.
- VPN technologies include IPSec VPN, GRE VPN, DSVPN, A2A VPN, L2TP VPN

Integration of wireless and wired Functions

Table 2: Wireless Access Modes

Access Mode	Description
WLAN	• Built-in AC function, establish WLAN campus flexibly
3G	• Provides flexible network access by supporting 3G standards, including CDMA2000 EV-DO, and WCDMA • Assures compliance with service level agreements (SLAs) with the Huawei Network Quality Analyzer (NQA) that monitors the real-time status of network links • Ensures reliable service transmission with Security VPN over 3G links
LTE	• 100M LTE enterprise access solutions, high bandwidth experience • Supports transition from 3G networks to LTE networks, preserving customers' investments

Table 3: Wired Access Modes

Access Mode	Description
Fiber	• Allows flexible network access by supporting Gigabit Ethernet and Channelized Packet Over SONET (CPOS) optical interfaces • Meets transmission requirements of bandwidth-intensive services such as voice services, by providing 1 Gbps or 10 Gbps bandwidth • Supports EPON/GPON interface cards
Copper cable	• Preserves customers' investments by supporting legacy interfaces, including xDSL, E1/T1, serial ports, and ISDN interfaces, • Configurable uplink access rates from 64 kbps to 1 Gbps

Better Experience, Business Continuity

Multi-cores architecture, Industry-Leading performance

The AR2200 routers use a multi-core CPU and non-blocking switching structure to provide industry-leading system performance.

- The multi-core CPU speeds up concurrent data and voice service processing, supporting a large number of services.
- Achieves maximum traffic throughput with non-blocking switching.
- The bus channel bandwidth of a single slot is up to 10 Gbps.
- Delivers high performance and service reliability through independent protocol management, service processing, and data switching.

To meet enterprise requirements for network expansion and rapid service deployment, the AR2200 routers:

- Integrates routing and switching functions to simplify device configuration and maintenance by improving data switching efficiency between interface cards.

Low cost, High reliability

To guarantee the reliability of the equipment layer and network layer, the AR2200 series support hot-swap technology and redundant components design, a series of fault detection and judgment mechanisms, which can shorten the service interruption time.

- Assures service reliability and network stability with hot-swappable interface cards and redundant components, including 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 service deployment increase. To meet these growing demands, the AR2200 routers provide convenient configuration options:

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

Cooperation platform, On Demand applications

Open Service Platform, Enterprise-level APP

The AR2200 routers provide 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 unified communication systems by using the AR2200 routers.

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

Standard MIB provided by VRP, Simplified Network and Device Management

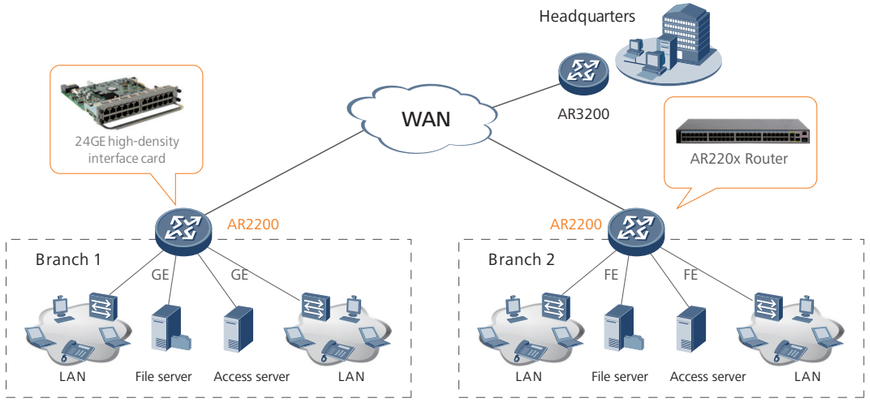
The AR2200 routers make network and device management simple:

- Manage devices easily with the eSight network management system.
- Monitor links in real time using the NQA feature.
- Maintain peak network performance by using the NetStream feature to view traffic characteristics and statistics, as well as optimization according to usage.

Sample Deployments

High-Density Ethernet Access

High-Density GE Access application



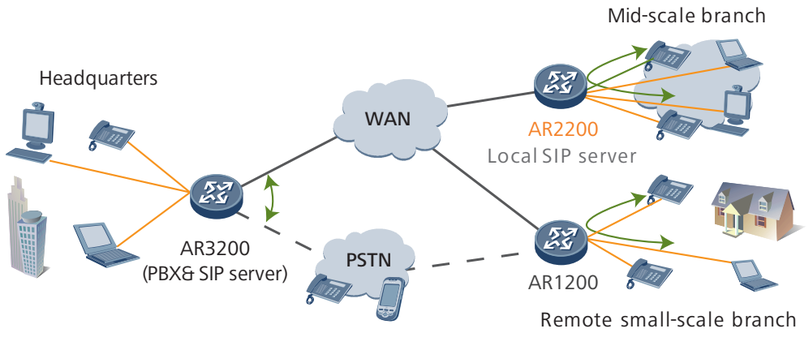
For investment protection, the AR2200 features a highly modular design. In the example above, a high-density GE access interface card is deployed to provide Gigabit speed access at a branch office.

AR2204-27GE, AR2204-27GE-P and AR2204-51GE-P are the routing and switching integrated products of AR2200 series routers. These models integrate high density Gigabit Ethernet ports which can greatly meet the branch high-density Ethernet access requirements. The routing and switching integration device can simultaneously achieve the functionality of the access switches and branch egress router combination. To reduce customer acquisition costs. At the same time can reduce device failure point and network maintenance difficulty.

High-Quality Voice Service

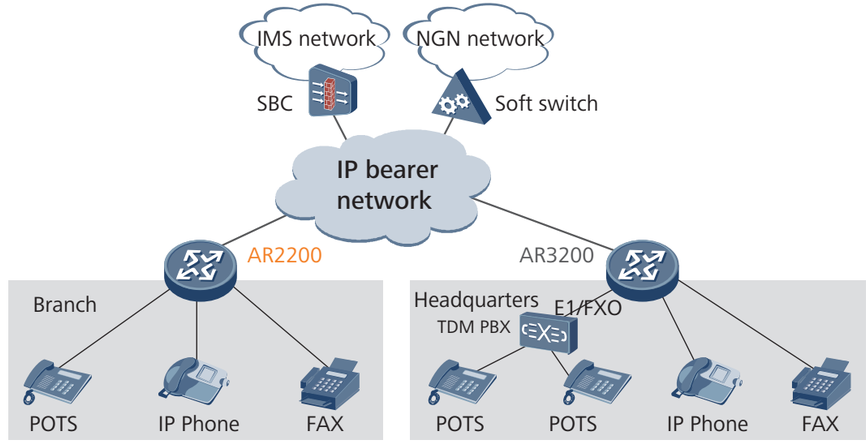
Enterprise customers can use the AR2200 as an IP PBX or SIP voice gateway.

IP PBX Application



To improve communication efficiency, all AR routers include built-in PBX. This feature supports the enterprise main number, Interactive Voice Response (IVR), and bill query functions. An AR1200 router can provide intelligent dialing in a smaller branch office.

SIP Gateway Application

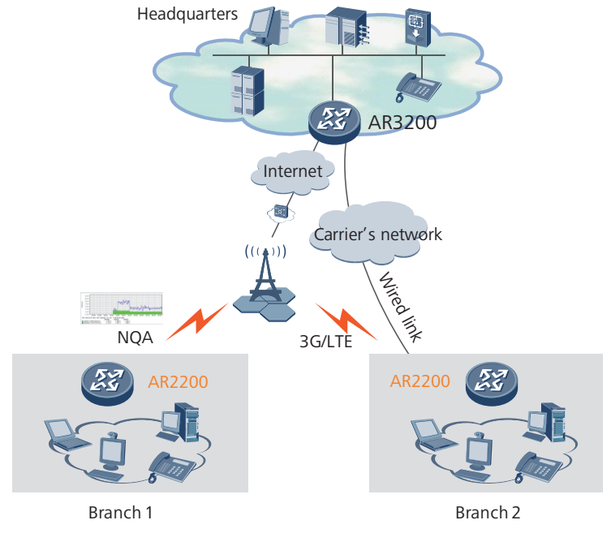


The AR2200 integrates voice, fax, and IP services. For enterprise users, the AR2200 serves as the SIP access gateway for a branch office, transforming phone signals into VoIP signals. The AR2200 uplink interfaces connect to the IP Multimedia Subsystem (IMS) or Next Generation Network (NGN) to allow any media, including phones, handsets, and computers to communicate at any time.

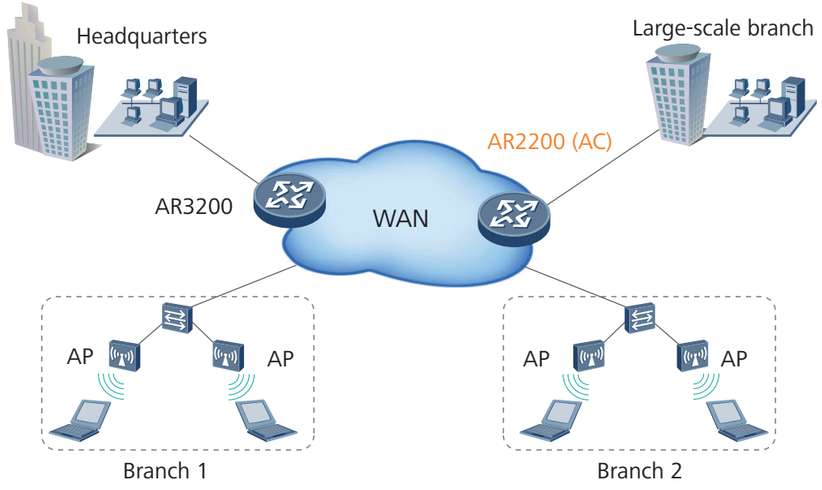
Wireless Access in Branch Offices

3G/LTE Wireless Access Deployment

The AR2200 complies with 3G and LTE standards including CDMA2000 EV-DO, WCDMA and FDD LTE. This can meet the requirements of wireless communication between enterprise branch offices and headquarters. 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 build-out costs. The Network Quality Analyzer (NQA) monitors 3G link quality, ensuring the network meets Service Level Agreements (SLAs).



Wi-Fi Wireless Access Deployment



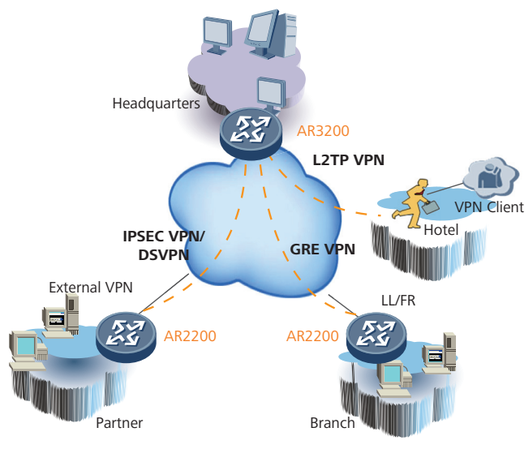
The AR2200 routers integrate AC (Access Controller) functionality, which can manage the wireless AP (Access Point) in wireless LAN. AR2200 supports rich certification and flexible user access control, which can provide security access guarantee for Wi-Fi users. The rich wireless capabilities integrated in one device, this can realize centralized management of wired and wireless networks, to meet the requirements of different scale enterprises networks.

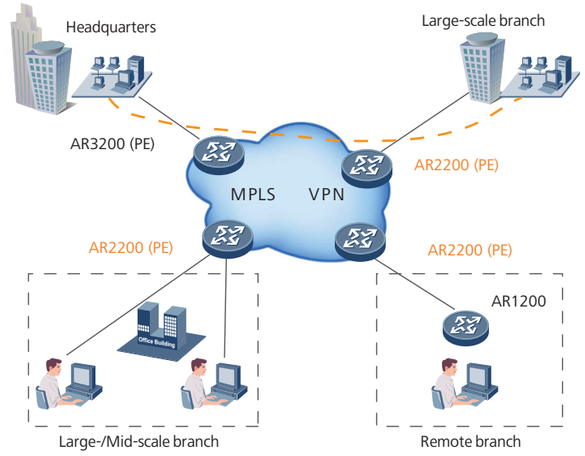
VPNs in Branch Offices and Partner Locations

The AR220 supports many types of VPN tunnels, including GRE VPN, IPSEC VPN, DSVPN, L2TP VPN.

VPN Over the Internet

The AR2200 provides secure access for communication among enterprise branch offices as well as between headquarters and branch offices, and headquarters and business partners. Tunnels between the headquarters and branch offices ensure secure data access and transmission. The AR2200 implements fast tunnel deployment and authentication so branch offices and partners can promptly access and share enterprise resources.





VPN Over an MPLS Network

The AR2200 routers are well-suited to serve as PEs in the branch offices of an enterprise. The MPLS L3 VPN segregates services by type. The AR2200 features flexible deployment, fast distribution, and secure transmission of VPN services, and supports enterprise service operation over networks.

Technical Specifications

Table 4: Technical Specifications

Item	AR2204-27GE	AR2204-27GE-P	AR2204-51GE-P
System Parameters			
Processor	Dual-core	Dual-core	Dual-core
Maximum WAN speed with services***	Up to 400Mbps	Up to 400Mbps	Up to 400Mbps
Maximum firewall performance (large packets)	Up to 1.2Gbps	Up to 1.2Gbps	Up to 1.2Gbps
Maximum device switching capacity	Up to 30Gbps	Up to 30Gbps	Up to 30Gbps
Number of recommended users*****	150		
Fixed WAN ports	3xGE (1xcombo port)	3xGE (1xcombo port)	3xGE (1xcombo port)
Fixed LAN ports	24xGE	24xGE	48xGE
SIC slots	4	4	4
WSIC slots (default/ max**)	0	0	0
XSIC slots (default/ max**)	0	0	0

Item	AR2204-27GE	AR2204-27GE-P	AR2204-51GE-P
USB 2.0 ports	1	1	1
Console port	1	1	1
Memory	512 MB	512 MB	512 MB
Flash	512 MB	512 MB	512 MB
Dimensions and Weight			
Dimensions (W x D x H)	With no mounting bracket installed: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.75 in.) With mounting brackets installed: 482.6 mm x 420.0 mm x 44.4 mm (19.0 in. x 16.5 in. x 1.75 in.)		
Weight	5 kg(11.02 lb)	5 kg(11.02 lb)	5 kg(11.02 lb)
Rack height	1U	1U	1U
Power Specifications			
Rated input voltage range (AC)	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
Maximum input voltage range (AC)	90 V to 264 V	90 V to 264 V	90 V to 264 V
Maximum input current	2 A	2 A	2 A
Maximum output power	60 W	60 W	60 W
PoE power supply	-	Supported (GE3 to GE10)	Supported (GE3 to GE10)
Redundant power supply	-	Supported	Supported
Power Consumption & Heat Dissipation			
Typical power consumption	25W	25W	25W
Maximum power consumption	30W	30W	35W
Fans	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
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)
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)

Item	AR2204-27GE	AR2204-27GE-P	AR2204-51GE-P
Operating relative humidity	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.)
Software Features and Protocols			
Basic features	DHCP server/client, PPPoE server/client, PPPoA client, PPPoEoA client, NAT, Subinterface management		
3G	3G Interface card(WCDMA)		
LTE	LTE Interface card(FDD LTE: Uplink: 50Mbit/s Downlink: 100Mbit/s)		
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		
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, IGMP-Snooping 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, A2A VPN, L2TP VPN		
QoS	DiffServ mode, MPLS QoS, priority mapping, traffic policing with Committed Access Rate (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP-based WRED), congestion management (LAN interface: SP, WRR, SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), Hierarchical QoS, FR QoS, Smart Application Control (SAC), Hard QoS(SRU80 Main Boards support)		
Security	ACL, firewall, 802.1x authentication, MAC address authentication, Web Authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, IP Source Guard, DHCP snooping, 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)		

Item	AR2204-27GE	AR2204-27GE-P	AR2204-51GE-P
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		

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
System Parameters						
Processor	Dual-core	8-core	8-core	Quad-core	6-core, 1.2 GHz	8-core(With SRU40) 12-core(With SRU80) 12-core(With SRU100E) 32-core(With SRU200)

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
Maximum WAN speed with services***	Up to 400 Mbps	Up to 1.8 Gbps	Up to 1.8 Gbps	Up to 1.6 Gbps	Up to 2 Gbps	Up to 2 Gbps (With SRU40) Up to 4 Gbps (With SRU80) Up to 2Gbps(With SRU100E) Up to 9 Gbps(With SRU200)
Maximum firewall performance (large packets)	Up to 1.2 Gbps	Up to 9.5 Gbps	Up to 9.5 Gbps	Up to 3 Gbps	Up to 6 Gbps	Up to 5.5 Gbps (With SRU40) Up to 9.5 Gbps (With SRU80) Up to 10Gbps(With SRU100E) Up to 15Gbps(With SRU200)
Number of recommended users*****	150	1000	1000	300	500	1000
Fixed WAN ports	3xGE (1xcombo port)	2 x 10GE SFP+, 10 x GE SFP, 8 x GE RJ45 WAN	2 x 10GE SFP+, 10 x GE SFP, 8 x GE RJ45 WAN	3xGE (1xcombo port)	4xGE + 4xGE SFP + 2 x GE Combo	SRU40: 3 x GE (2 x Combo) SRU80: 3 x GE (2 x Combo) SRU100E: 4 x GE Combo+ 2 x GE SFP SRU200: 4 x GE Combo+ 2 x 10GE SFP+
SIC slots	4	4	4	4	4	4
WSIC slots (default/ max**)	0/2	0/2	0/2	2/4	2/4	2/4
XSIC slots (default/ max**)	0	0/1	0/1	0/2	2/4	2/4

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
DSP slots	0	0	0	1	0	3 (with SRU40/SRU80) 0 (with SRU100E/ SRU200)
USB 2.0 ports	1	1	1	2	1	2 (with SRU40/SRU80) 1 (with SRU100E/ SRU200)
Mini-USB ports	0	0	0	1	1	1
Console port	1	1	1	1	1	1
Memory	512 MB	4 GB	2 GB	1 GB	2 GB	2 GB(with SRU40/SRU80) 4 GB(with SRU100E/ SRU200)
Flash(default/ max**)	512 MB	512 MB	512 MB	512 MB / 4 GB	2 GB/4 GB	2 GB/4 GB
Hard Disk	-	2 x HDD	-	-	-	-
Dimensions and Weight						
Dimensions (W x D x H)	With no mounting bracket installed: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.75 in.) With mounting brackets installed: 482.6 mm x 420.0 mm x 44.4 mm (19.0 in. x 16.5 in. x 1.75 in.)				Without rack-mounting bracket installed: 442.0 mm x 470.0 mm x 88.1 mm (17.40 in. x 18.50 in. x 3.47 in.) With rack-mounting brackets installed: 482.6 mm x 470.0 mm x 88.1 mm (19.0 in. x 18.50 in. x 3.47 in.)	
Weight	5 kg (11.02 lb)	5 kg (11.02 lb)	4.75 kg (10.47 lb)	6 kg (13.22 lb)	12 kg (26.46 lb)	8.85 kg (19.51 lb)
Rack height	1U	1U	1U	1U	2U	2U
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	100 V to 240 V
AC input frequency	50 Hz/60 Hz	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	90 V to 264 V

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
Maximum input current (AC)	2 A	2 A	-	3 A	5 A	5 A
Maximum output power (AC)	60 W	150 W	-	150 W	350 W	350 W
Rated input voltage (DC)	-	-	-48 V DC to -60 V DC	-	-48 V DC to -60 V DC	-48 V DC to -60 V DC
Maximum input voltage (DC)	-	-	-38.4 V DC to -72 V DC	-	-38.4 V DC to -72 V DC	-38.4 V DC to -72 V DC
Maximum input current(DC)	-	-	3.5 A	-	9.6 A	9.6 A
Maximum output power(DC)	-	-	100 W	-	350 W	350 W
PoE power supply	-	Supported (interfaces GE10 to GE17)	-	-	Supported	Supported
Power Consumption & Heat Dissipation						
Typical power consumption	25W	70W	33W	27W	110W (empty chassis)	•SRU40: 67 W •SRU60: 67 W •SRU80: 100 W •SRU200: 130 W •SRU100E: 62 W
Maximum power consumption	30W	85W	57W	29W	125W (empty chassis)	•SRU40: 97 W •SRU60: 97 W •SRU80: 129 W •SRU200: 185 W •SRU100E: 92 W
Fans	Built-in, unpluggable fans	Built-in, unpluggable fans	Built-in, unpluggable fans	Built-in, unpluggable fans	Built-in, unpluggable fans	Built-in, unpluggable fans

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
Airflow (facing the front panel)	Left-to-right	Left-to-right	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)	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)	-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	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.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)
Software Features and Protocols						
SD-WAN	-	-	-	-	-	Supported
Basic features	DHCP server/client, PPPoE server/client, PPPoA client, PPPoEoA client, NAT, Subinterface management					
Voice	-			RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP/conference call, BEST, DISA, SBC	-	RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP/conference call, BEST, DISA, SBC
3G	3G Interface card(WCDMA)					
LTE	LTE Interface card(FDD LTE: Uplink: 50Mbit/s Downlink: 100Mbit/s)					
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					
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, IGMP-Snooping 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, A2A VPN, L2TP VPN					

Item	AR2204E	AR2204XE	AR2204XE-DC	AR2220E	AR2240C	AR2240
QoS	DiffServ mode, MPLS QoS, priority mapping, traffic policing with Committed Access Rate (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP-based WRED), congestion management (LAN interface: SP, WRR, SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), Hierarchical QoS, FR QoS, Smart Application Control (SAC), Hard QoS(SRU80 Main Boards support)					
Security	ACL, firewall, 802.1x authentication, MAC address authentication, Web Authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, IP Source Guard, DHCP snooping, 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					

The flash memory storage can be expanded by Micro SD card.

*** 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 AR2200 Router

The AR 2200 router series features a modular chassis with slots that can be configured to meet customer requirements. First, choose the model.

Chassis Options

The AR2240 model has eight chassis options:

- Main control board SRU 40 with AC power supply
- Main control board SRU 40 with DC power supply
- Main control board SRU 80 with AC power supply
- Main control board SRU 80 with DC power supply
- Main control board SRU 200 with AC power supply
- Main control board SRU 200 with DC power supply
- Main control board SRU 100E with AC power supply
- Main control board SRU 100E with DC power supply

See **Table 6** for a description of the three main control board options.

NOTE: A separate fan module is required for all AR2240 chassis.

Service cards

After selecting a chassis option, customers can provision the router chassis with one of the four available DSP cards and with interface cards that provide the required features.

The optional interface cards include SIC cards, WSIC cards, and XSIC cards. Two SIC slots can be used as one WSIC slot by removing the guide rail, and two WSIC slots can be used as one XSIC slot by removing the panel. The DSP card fits into the DSP slot and works with the FXO/FXS/ISDN/VE1 voice card.

Software

Basic software that supports routing, switching, voice service, and security is included with all models, along with product documentation. Licensed software is available to support optional features, such as AC.

Ordering Information

Begin by ordering the chassis, control board (AR2240), power supply, and fan module (AR2240). Then select a DSP card (if required), interface modules, any special licenses, and any desired accessories (SD card or USB disk).

Tables 5-13 below list the part numbers to use when ordering components

Table 5: Chassis Options and Fan Module

Chassis Configuration	Description
AR2204-27GE	AR2204-27GE,3GE WAN(1GE Combo),24 GE,1 USB,4 SIC,60W AC POWER
AR2204-27GE-P	AR2204-27GE-P,3GE WAN(1GE Combo),24 GE(8 POE),1 USB,4 SIC,60W AC POWER(1+1)
AR2204-51GE-P	AR2204-51GE-P,3GE WAN(1GE Combo),48 GE(8 POE),1 USB,4 SIC,60W AC POWER(1+1)
AR2204E	AR2204E,3GE WAN(1GE Combo),1 USB,4 SIC,60W AC POWER(1+1)
AR2204XE	AR2204XE, 2 x 10GE SFP+, 10 x GE SFP, 8 x GE WAN (8 POE), 1 USB,4 SIC,150W AC POWER (1+1)
AR2204XE-DC	AR2204XE-DC, 2 x 10GE SFP+, 10 x GE SFP, 8 x GE WAN, 1 x USB 2.0, 4xSIC
AR2204E-D	AR2204E-D,3GE WAN(1GE Combo),1 USB,4 SIC,DOUBLE DC POWER(1+1)
AR2220E	AR2220E,3GE WAN(1GE Combo),2 USB,4 SIC,2 WSIC,1 DSP DIMM,150W AC Power
AR0MNTEH10401	BT-NTE-H104 Bundle(Includes AR2220 Base Configuration,8-Port 10/100BASE(RJ45) and 1-Port 10/100/1000BASE(RJ45)-L2/L3 Ethernet Interface Card,3m Shielded Straight Through Ethernet Cable and Britain type Power Cable)
AR2240C	AR2240C,SRU40C,4 SIC,2 WSIC,2 XSIC,350W AC Power
AR2240-100E-AC	AR2240,Service and Router Unit 100E,4 SIC,2 WSIC,2 XSIC,350W AC Power
AR2240	AR2240 Integrated Chassis Components
AR2240-FAN	Fan Box For AR2240

Table 6: Main Control Board Options (AR2240 only)

Main Control Board	Description
AR01SRU2C	Service and Router Unit 40,3GE WAN(2GE Combo),2 USB,3 DSP Slots
AR01SRU3B	Service and Router Unit 80,3GE WAN(2GE Combo),2 USB,3 DSP Slots
AR-SRU200	Service and Router Unit 200
AR-SRU100EE	Service and Router unit 100EE

Table 7: Power Module Options

Power Module	Description
AR0MPSAP1500	150W AC Power Module
AR0MPSDP1500	150W DC Power Module
AR0MPSAR15A	150W RPS Power Module
PAC-350WB-L	350W AC Power Module
AR0MPSDP3500	350W DC Power Module
PAC-850WL- LE	850W AC power module

Table 8: Digital Signal Processor Module Options

DSP Module	Description
AR0MDD016A00	16-channel voice DSP module
AR0MDD032A00	32-channel voice DSP module
AR0MDD064A00	64-channel voice DSP module
AR0MDD128A00	128-channel voice DSP module

Table 9: 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 10: 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
AR01WDCE8A	8-Port Channelized E1/PRI Multiflex Trunk Interface Card
AR-2X10GL-W	2-Port 10GE Optical Ports 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
AR-1STM1-W	1-Port 155M Packet over SDH/Sonet Optical Interface Card
AR-4STM1-W	4-Port 155M Packet over SDH/Sonet Optical 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
AR01WVAHXA	32-Port FXS Voice Interface Card
AR-1STM4-W	1-Port 622M Packet over SDH/Sonet Optical Interface Card
AR-1CSTM1-W	1-Port 155M Channelized Packet over SDH/Sonet Interface Card(WSIC)
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)
AR-6EM-W	6-Port EM(RJ45) Interface Card
AR01WSX220B	Industrial Computer,Celeron 847E,DDR3 4G,2.5inch 1TB HDD,CFAST 4G,NULL

Table 11: XSIC Interface Module Options

XSIC Interface Module	Description
AR0MXEGFTA00	24-Port 10/100/1000 BASE (RJ45)-L2/L3 Ethernet Interface Card
AR01WSX165B	Industrial Computer, Ivy Bridge I5-3610, DDR3 16G, 2.5inch 1TB HDD, CFAST 4G, NULL
AR-24ES2GP-X	24-Port 1000/100/10BASE-L2 With POE Ethernet Interface Card(RJ45)*

* Note: The 850W power module is required for the 24-Port 1000/100/10BASE-L2 with POE Ethernet Interface Card.

Table 12: License Options

License	Description
LAR0DATAE03	AR2200 Value-Added Data Package
LAR0AC03	AR2200 AC Express License
LAR0VOICEE03	AR2200 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
LAR0SECE03	AR2200 Value-Added Security Package
LAR0DSVPN03	AR2200 DSVPN(Dynamic Smart VPN) Function
LAR0IPS03	AR2200 IPS Service Subscribe 1 Year

Table 13: SD Card and USB Disk Options

SD Cards & USB Disks	Description
N0MSD2G00	Storage Medium,Micro SD Card,2GB,2.7~3.6V,English SPEC,Support the Interface of the SD 1.1 Standard,11mm*15mm*1mm (L*W*T),No Adapter and Bar Code,Independence Box,for Datacom Enterprise Network AR production only
N0MSD4G01	Micro SD card,4GB, CLASS6,2.7~3.6V,English SPEC, Compatible with SD Specification Ver.2.0,11mm*15mm*1mm (L*W*T),No Adapter and Bar Code, Independence Box, Datacom Enterprise Network AR production only
NUSBDSK16	USB Flash Disk,72mmX21.9mmX13mm,16GB,USB2.0,Alcor Micro MCU