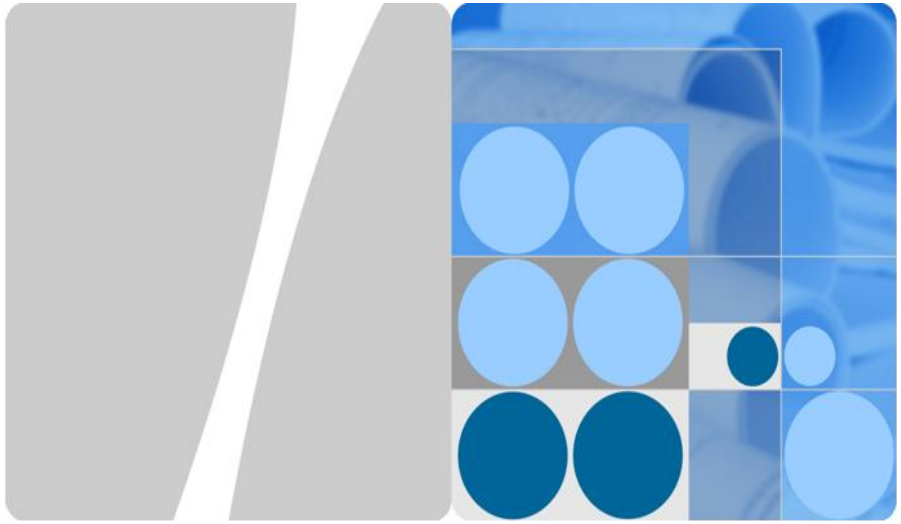

AR G3 Feature List

Version **V2.5.0**
Date **2013/7/31**

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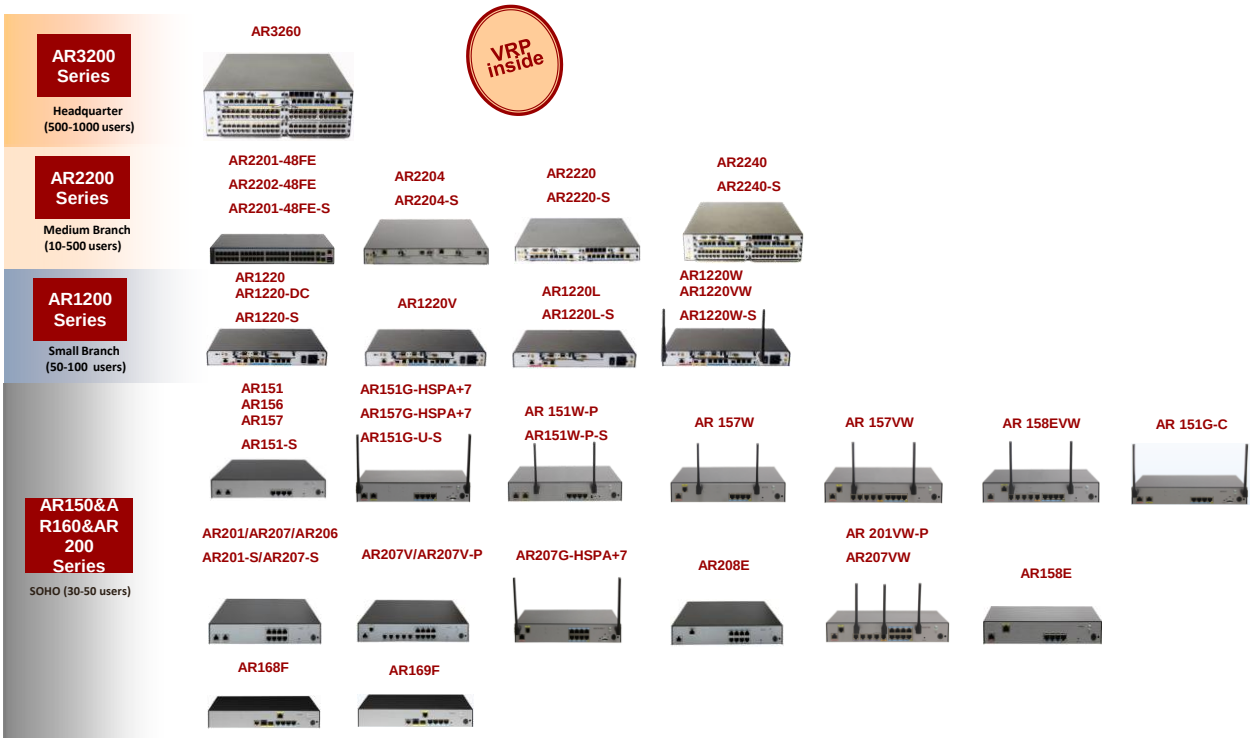
AR G3 Routers Portfolio



Sub-system	Item	Specification	Model																					
			AR151	AR151W-P	AR151G-HSPA+7	AR156	AR157	AR157W	AR157VW	AR157G-HSPA+7	AR158E	AR158EVW	AR151G-C	AR168F	AR169F	AR201	AR201VW-P	AR206	AR207	AR207V	AR207V-P	AR207VW	AR207G-HSPA+7	AR208E
System																								
	Main control system																							
		Processor	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core
		Switching capacity of the system	x	-	-	x	x	-	-	-	x	-	-	x	x	x	-	x	x	x	x	-	x	x
		Switching capacity of each slot	x	-	-	x	x	-	-	-	x	-	-	x	x	x	-	x	x	x	x	-	x	x
			x	-	-	x	x	-	-	-	x	-	-	x	x	x	-	x	x	x	x	-	x	x
		Real-time clock (RTC)	N	X	X	N	N	X	X	X	N	X	X	Y	Y	Y	√	Y	Y	Y	Y	√	Y	Y
		Memory (default/maximum)	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M
		Flash memory	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M	512M
		Micro SD card memory (default/maximum)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		SIC slot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		WSIC slot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		XSIC slot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		EXSIC slot (share with XSIC slot)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		DSP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	The 8-channel voice is supported by default	The 8-channel voice is supported by default	0	The 8-channel voice is supported by default	0
		DSP slot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fixed interfaces																							
		Fixed FE LAN port (LAN port)	4	4	4	4	4	4	4	4	4	4	4	4-Port Fixed GE LAN port (LAN port)	4-Port Fixed GE LAN port (LAN port)	8	8	8	8	8	8	8	8	8
		Fixed GE WAN port (WAN port)	1FE	1FE (10/100M auto-sensing RJ45 electrical interface)	1FE (10/100M auto-sensing RJ45 electrical interface)	1-port ADSL ANNEX B	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	8 Wire G.SHDSL	1-port 4-pair G.SHDSL	1FE (10/100M auto-sensing RJ45 electrical interface)	1 GE Combo and 1-port 4-pair G.SHDSL	1 GE Combo and 2-ports VDSL2	1FE	1FE (10/100M auto-sensing RJ45 electrical interface)	1-port ADSL ANNEX B	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	1-port ADSL ANNEX A/M	8 Wire G.SHDSL
		Wi-Fi port	N	802.11 B/G/N	X	N	N	802.11 B/G/N	802.11 B/G/N	X	N	802.11 B/G/N	X	N	N	N	802.11 A/B/G/N	N	N	N	N	802.11 A/B/G/N	N	N
		USB port (2.0)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		SD card port	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		USB console port	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		AUX/Console port	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3G port	Supported by USB	Supported by USB	Supporting HSPA+, WCDMA, GRPS, and EDGE; Supporting indoor remote	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supporting HSPA+, WCDMA, GRPS, and EDGE; Supporting indoor remote	Supported by USB	Supported by USB	Supporting CDMA, GRPS, and EDGE; Supporting indoor remote antennas	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supporting HSPA+, WCDMA, GRPS, and EDGE; Supporting indoor remote	Supported by USB
		KingSton lock	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		ESD wrist jack	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Power supply																							
		Rated input voltage (AC)	AC: 100-240V 50/60Hz	AC: 100-240V 50/61Hz	AC: 100-240V 50/62Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/65Hz	AC: 100-240V 50/66Hz	AC: 100-240V 50/67Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/69Hz	AC: 100-240V 50/62Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/70Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/74Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz
		Maximum input voltage (AC)	AC: 85-264V 47/63Hz	AC: 85-264V 47/64Hz	AC: 85-264V 47/65Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/68Hz	AC: 85-264V 47/69Hz	AC: 85-264V 47/70Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/72Hz	AC: 85-264V 47/65Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/73Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/77Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz
		Rated input voltage (DC)		-	-			-	-	-		-	-				-					-		
		Maximum input voltage (DC)		-	-			-	-	-		-	-				-					-		
		Maximum power capacity	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W	36 W
		PoE (W)	N	External power 100 W. Only four fixed ports (FE0-FE3) are	X	N	N	X	X	X	N	X	X	N	N	N	External power 100 W. Only eight fixed ports (FE0-FE7) are	N	N	N	External power 100 W. All the eight fixed LAN ports are supported.	X	External power 100 W. All the eight fixed LAN ports are supported.	N
		Power supply redundancy	N	X	X	N	N	X	X	X	N	X	X	N	N	N	X	N	N	N	N	X	N	N
	Physical specifications																							
		Dimensions (H x W x D)	300x216.4x44																					
		Weight	<3kg																					
		Environment temperature	0-40℃																					
		Humidity	5% to 90%, non-condensing																					
	Reliability																							
		Module hot swap	N	X	X	N	N	X	X	X	N	X	X	N	N	N	X	N	N	N	N	X	N	N
		Power module hot	N	X	X	N	N	X	X	X	N	X	X	N	N	N	X	N	N	N	N	X	N	N
		Fan module hot swap	N	X	X	N	N	X	X	X	N	X	X	N	N	N	X	N	N	N	N	X	N	N
		Main control board hot swap	N	X	X	N	N	X	X	X	N	X	X	N	N	N	X	N	N	N	N	X	N	N
		MTBF (year)	29.03967	30.35	30.35	29.03967	29.03967	30.35	30.35	30.35	29.03967	58.24	58.12	67.99	67.02	29.03967	77.27	29.03967	29.03967	29.03967	29.03967	60.23	29.03967	29.03967
		MTTR (hour)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Performance																							
		Basic forwarding performance (64-byte packets)	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	300kpps	350kpps	350kpps	450kpps	450kpps	450kpps	450kpps	450kpps	450kpps	450kpps	450kpps	450kpps
		NAT + ACL + QoS forwarding bandwidth (IMIX, bidirectional forwarding)	100M	100M	100M	100M	100M	100M	100M	100M	100M	100M	100M	150M	150M	150M	150M	150M	150M	150M	150M	150M	150M	150M
		IPSec forwarding bandwidth (bps, IMIX, unidirectional	80M	80M	80M	80M	80M	80M	80M	80M	80M	80M	80M	200M	200M	100M	100M	100M	100M	100M	100M	100M	100M	100M
		FW forwarding bandwidth (bps, IMIX, unidirectional	140M	140M	140M	140M	140M	140M	140M	140M	140M	140M	140M	700M	700M	180M	180M	180M	180M	180M	180M	180M	180M	180M
		MAC entry	256	256	256	256	256	256	256	256	256	256	256	256	256	2K	2K	2K	2K	2K	2K	2K	2K	2K
		ARP entry	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	2000	2000	2000	2000	2000	2000	2000	2000	2000
		Number of VLANs	64	64	64	64	64	64	64	64	64	64	64	64	64	128	128	128	128	128	128	128	128	128
		Number of IPv4 routes on a device	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K
		Number of FIB4 forwarding tables on a device	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K
		Number of IPv6 routes on a device	5K	5K	5K	5K	5K	5K	5K	5K	5K	5K	5K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
		Number of FIB6 forwarding tables on a device	5K	5K	5K	5K	5K	5K	5K	5K	5K	5K	5K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
		Maximum number of PPPoE users that access a local Ethernet network	32	32	32	32	32	32	32	32	32	32	32	32	32	128	128	128	128	128	128	128	128	128
		Maximum number of global address pools	16	16	16	16	16	16	16	16	16	16	16	16	16	64	64	64	64	64	64	64	64	64
		Maximum number of test instances that can be created on an NQA	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
		Number of concurrent responses (UDP and TCP responses) by an NQA server	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
		Maximum number of VRFs	4	4	4	4	4	4	4	4	4	4	4	4	4	32	32	32	32	32	32	32	32	32
		Number of VPN routes on a device	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	5000	5000	5000	5000	5000	5000	5000	5000	5000
		Maximum number of MPLS labels (sharing the public/private network label)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Number of IPSec	30	30	30	30	30	30	30	30	30	30	30	30	30	75	75	75	75	75	75	75	75	75
		Number of L2TP	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
		Number of L2TP	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
		Number GRE tunnels	32	32	32	32	32	32	32	32	32	32	32	32	32	128	128	128	128	128	128	128	128	128
		Maximum number of SSL VPN access	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		Maximum of concurrent SSL connections on a	128	128	128	128	128	128	128	128	128	128	128	128	128	256	256	256	256	256	256	256	256	256
		Maximum number of configured ACLs	256	256	256	256	256	256	256	256	256	256	256	2K	2K	2K	2K	2K	2K	2K	2K	2K	2K	2K
		Maximum number of configured IPv6 ACLs	256	256	256	256	256	256	256	256	256	256	256	512	512	512	512	512	512	512	512	512	512	512
		Maximum number of NAT address pools	4	4	4	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	8	8	8	8
		Number of IP addresses in each	16	16	16	16	16	16	16	16	16	16	16	16	16	255	255	255	255	255	255	255	255	255
		Maximum number of concurrent NAT connections	8K	8K	8K	8K	8K	8K	8K	8K	8K	8K	8K	16K	16K	16K	16K	16K	16K	16K	16K	16K	16K	16K
		Maximum number of concurrent connections to the	8K	8K	8K	8K	8K	8K	8K	8K	8K	8K	8K	16K	16K	16K	16K	16K	16K	16K	16K	16K	16K	16K
		Maximum number of concurrent calls (PBX)	-	-	-	-	-	-	20	-	-	20	-	-	-	-	30	-	-	30	30	30	-	-
		Maximum of DSP channels (PBX and AG)	-	-	-	-	-	-	8/8 channels	-	-	8/8 channels	-	-	-	-	8/8 channels	-	-	8/8 channels	8/8 channels	8/8 channels	-	-
		Maximum number of registered SIP UEs (PBX and AG BEST)	-	-	-	-	-	-	16	-	-	16	-	-	-	-	64	-	-	64	64	64	-	-
		Rule set of the voice blacklist and whitelist	-	-	-	-	-	-	18	-	-	18	-	-	-	-	18	-	-	18	18	18	-	-
		Maximum number of rules that can be configured for each blacklist and whitelist	-	-	-	-	-	-	64	-	-	64	-	-	-	-	64	-	-	64	64	64	-	-
		Number of MPLS LDP VCs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Maximum number of 6over4 tunnels	32	32	32	32	32	32	32	32	32	32	32	32	32	128	128	128	128	128	128	128	128	128
		Maximum number of 4over6 tunnels	32	32	32	32	32	32	32	32	32	32	32	32	32	128	128	128	128	128	128	128	128	128
		Recommended number of APs that the AC can manage	4	4	4	4	4	4	4	4	4	4	4	4/8	4/8	8	8	8	8	8	8	8	8	8
		Maximum number of concurrent users allowed by the AC	80	80	80	80	80	80	80	80	80	80	80	80	80	160	160	160	160	160	160	160	160	160
Feature																								
Ethernet port management																								
	Ethernet port	EthernetII packets(RFC 894), SNAP packets(802.3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Link aggregation	IEEE 802.3ad	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	LACP	Supports static LACP, M:N backup among member interfaces in an aggregation group	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
LAN access																								
VLAN management																								
	Basic VLAN	IEEE 802.1P, 802.1Q	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Interface link type	Access, trunk, and	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	VLAN aggregation	Super-VLAN and DHCP relay in a	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Guest VLAN		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Voice VLAN		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	GVRP		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	VLANIF interface		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
MAC address management																								
	Static MAC address and dynamic MAC		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MAC address limit		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Sticky MAC address		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MAC address flapping defense		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Invalid MAC address alarm	AR200/AR1200 with fixed 8FE interface does not support packets discarding.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
STP																								
	MSTP	IEEE 802.1d (STP), 802.1w (RSTP), 802.1s (MSTP)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MSTP security		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
LLDP			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WAN																								
Port management																								
	Port isolation																							
		Support port isolation modes: (1) Layer 2 and Layer 3 service isolated. (2) Layer 2 service isolation and Layer 3 services not isolated.	√ (Layer 3 isolation is not supported.)																					
		Port isolation group	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Unidirectional isolation	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WAN interface																								
	LAN interface	Supporting EthernetII, SNAP, and VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Synchronous serial		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring the serial port to work in synchronous/asynchronous mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		The synchronous serial port supports three link layer protocols: HDLC, FR, and PPP. The PPP protocol is used by	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		The asynchronous serial port support PPP encapsulation,	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting the maximum receive unit (MRU) The default value is 1500 bytes. The value ranges from 128 to	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CE1/PRI		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Working in E1, CE1, or PRI mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Timeslot binding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Timeslot binding on the PRI interface	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CT1 interface	ANSI T1.403, Timeslot binding on the CT1 interface	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	ADSL interface		X	X	X	√	√	√	√	√	X	X	X	X	X	X	X	√	√	√	√	√	√	√

		The ADSL line complies with ADSL2 (G992.3), ADSL2+ (G992.5), G.DMT (G992.1), and T1.413	X	X	X	√	√	√	√	√	X	X	X	X	X	X	X	√	√	√	√	√	√	√
		Compatible with Annex A, B, C, and M modes	X	X	X	√	√	√	√	√	X	X	X	X	X	X	X	√	√	√	√	√	√	√
		Supporting ATM packet mode	X	X	X	√	√	√	√	√	X	X	X	X	X	X	X	√	√	√	√	√	√	√
	G.SHDSL interface		X	X	X	X	X	X	X	X	√	√	X	√	X	X	X	X	X	X	X	X	X	√
		Setting the ATM/PTM working mode of the SHDSL board	X	X	X	X	X	X	X	X	√	√	X	√	X	X	X	X	X	X	X	X	X	√
		Setting the SHDSL standard: supporting G991.2 and G991.2 (Bis).	X	X	X	X	X	X	X	X	√	√	X	√	X	X	X	X	X	X	X	X	X	√
	E1-F interface		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Working in framed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Working in unframed mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring HDB3 as the encoding and decoding mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	E1-IMA	Complying with ITUT G.703 and HDB3 coding standards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	T1-F interface		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Working in framed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting transmission line attenuation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Timeslots binding on a T1-F interface	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring B8ZS as the encoding and decoding mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting the line clock mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring a T1-F interface to invert user data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	ISDN BRI interface		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting the maximum receive unit (MRU)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Supporting remote loopback	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Supporting local	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CPOS interface	Setting features of CPOS, E1, and T1 interfaces	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	POS	ITUT G.707 SONET OC-3/SDH STM-1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Asynchronous serial		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting the link-layer protocol	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring the stream working mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Configuring the protocol working mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Modem		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Setting the call-in and call-out permissions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Auto-reply mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	xPON		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		GPON	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		EPON	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	VDSL2	Compatible with ANNEX A/M	X	X	X	X	X	X	X	X	X	X	X	X	√	X	X	X	X	X	X	X	X	X
	3G interface (WCDMA)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
x86 card																								
	SAE220		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	SAE550		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Interface backup																								
	Interface backup	Configuring a dialer interface as a backup interface, Setting load balancing mode of backup interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Association test on interface backup	Configuring association between interface backup and	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Bridge management																								
	Transparent bridge																							
		Configuring a static MAC address for a bridge group	√ (VT or Dialer member interface cannot be configured.)																					
		Blackhole MAC address entries	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Type of packets that can be forwarded by bridge interfaces	EthernetII packets can be forwarded by bridge interfaces. Bridge interfaces do not support SNAP tagged packets or 802.3/802.2 IPX packets, or separately filter IP packets and non-IP packets.																					
		Link encapsulation protocol on the member interface	Non-Ethernet interfaces support HDLC, PPP, FR, and ATM, but do not support X.25.																					
		Member interface type: Serial interfaces (HDLC and PPP) FR interfaces and sub-interfaces ATM interfaces and sub-interfaces Eth interfaces and sub-interfaces VLANIF interfaces Dialer interfaces MFR interfaces and sub-interfaces MP interfaces VT interfaces (PPPoFR and PPPoE)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Physical interfaces: Eth, E1/T1, SA, xDSL and ISDN interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Logical interface		Support Dialer interface, loopback interface, NULL interface, VT interface, VE interface, MP-Group interface, MFR interface, tunnel interface, Bridge-if	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ATM																								
		Supporting P2P and P2MP sub-interfaces.	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		Carrying the IPoEoA service	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		Carrying the IPoA	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		PPP and PPPoE over PVC	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		InARP	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		CC, Loopback, AIS/RDI, and ATM ping	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
		PVC group	X	X	X	√	√	√	√	√	√	√	X	√	√	X	X	√	√	√	√	√	√	√
Frame relay		FRoISDN, PPPoFR/PPPoMFR, and MPoFR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HDLC			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DCC		Route backup, circular DCC, resource-shared DCC, DCC call, DCC dialer interface, and DCC dialer list	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PPPoE			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ISDN	DSS1	ITU-T Q.921, ITU-T Q.931	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PPP																								
	PPP	PPPoE, PPPoA, PPPoEoA, PPPoFR, and PPPoISDN	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MP	MPoFR and MPoISDN services	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3G	3G		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IP applications																								
NAT																								
	Basic NAT																							
		PAT address pool	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		NOPAT address pool mode (supporting TCP, UDP, and ICMP)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Easy IP mode (supporting TCP, UDP, and ICMP)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Overlapping NAT (supporting TCP, UDP, ICMP, and other special protocol	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	NAT ALG	DNS, DNS mapping, FTP, ICM, RTSP, and SIP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Log	Log recording mode, log recording format, and flow logs.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
NetStream		Original stream, flexible stream, aggregated stream, and stream collection	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ARP																								
	Basic ARP																							
		Static ARP entries for main interfaces Static ARP entries for VLANIF interfaces Static ARP entries for dot1q termination interfaces Static ARP entries in VPN-instance mode	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP-related functions of a Layer 3 VPN	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Layer 2 topology detection	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Address conflict detection	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Classification statistics of ARP packets	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	ARP proxy	ARP proxy anti-attack, route gateway proxy, intra-VLAN proxy, and inter-VLAN proxy	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	ARP ping	ARP ping IP address and ARP ping MAC	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IPv4 protocol stack																								
	IPv4 forwarding		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	IP options		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TCP, UDP, and ICMP		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Socket		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Ping	IP ping and VRF ping	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Source address verification	Authenticating the source address of the IP packets and discarding packets	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TRACERT	IP tracert and VRF	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Broadcast packet forwarding	Controlling whether to forward broadcast packets on a specified interface	√ (Only the host IP protocol stack forwarding is supported)																					
	Forwarding load balancing	Equal-cost multipath (ECMP)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Resetting the DF field	Configuring an outbound interface to fragment IP packets	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Policy-based routing	Local policy routes, loading balancing of policy routes	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IPv6 protocol stack																								
	IPv6 forwarding		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TCP6, UDP6, ICMP6		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Socket6		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	PING6		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TRACERT6		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	IPV6 PMTU		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	ND		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IPv6 transition technology																								
	6over4 tunnel	Supporting 6over4 manual tunnels, 6over4GRE tunnels, IPv4-compatible address automatic tunnels, 6to4 tunnels, 6to4 tunnel trunks, and	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	4over6 tunnel	Supporting 4over6 tunnels, and setting the traffic label value for a tunnel, the hop limit value for a tunnel, the traffic level for a tunnel, and the	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
DNS																								
	DNS Client	Configuring the DNS server statically and dynamically obtaining the DNS server	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS proxy/relay		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DDNS		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS6 Client		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS6 Proxy/Relay		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
VRRP																								
	IPv4 VRRP		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP backup and VRRP load balancing	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Supporting simple authentication /MD5 authentication	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP in an L3 VPN	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

		VRRP in a super-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP detect NQA detection status	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP detect attainability of single	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP6		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP6 association		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP association		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	BFD and BFD applications		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
NQA																								
	ICMP/UDP/TCP/SNMP/FTP/HTTP UDP jitter test/DHCP/Trace/DNS test	Supporting command line/MIB configuration	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	NQA server		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√
DHCP																								
	DHCP relay		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main interfaces and sub-interfaces (QinQ sub-interfaces are not supported). LAN-side Layer 3 interfaces: VLANIF interfaces and super-VLAN interfaces.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		DHCP servers in a	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP server		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main interfaces and sub-interfaces (QinQ sub-interfaces are not supported). LAN-side Layer 3 interfaces: VLANIF interfaces and super-VLAN interfaces.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP security	Restricting the rate of DHCP packets by entire equipment, by port, by VLAN, and restricting the rate of dynamic DHCP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP Client	WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main and sub-interfaces, and VE interfaces. (QinQ sub-interfaces are not	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
DHCPv6																								
	DHCPv6 Client		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCPv6 Relay		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCPv6 Server		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IP accounting		Supporting IP packet statistics, IP priority statistics, and IP packet statistics based on the filtering rule	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
UDP helper			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Unicast route																								
Unicast route management																								
	IPV4 and IPV6 routing table management	Route selection, limit of routing table capacity, load balancing, route selection, and priority-based route	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	FIB4 and FIB6	Supporting IPv4 FIB	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	IP FRR	Supporting manual IP FRR of the public network, manual IP FRR for the private network, and IP Auto FRR for the private network	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
route policy																								
	Routing policy filter	ACL, ip-prefix, community-filter, extcommunity-filter, as-path-filter, or rd-filter can be used as a route filter	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	route-policy	Route-policy configuration, if-match rule, actions of the apply policy, and universal match rule	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Static routes	Static IPv4 and IPV6 routes	Specified outbound interface, load balancing, and configuration of static routes on a private network	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
RIP		RIPv1/v2, RIPng	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
OSPF		OSPFv2, OSPFv3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Types of protocol interfaces: point-to-point, broadcast, NBMA, point-to-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Stub area and NSSA area	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IS-IS		ISIS, ISISv6	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Types of network interfaces: supports P2P networks and broadcast networks. NBMA networks are not supported and they can be supported only when NBMA networks are simulated as P2P networks. xDSL interfaces: IS-IS is not supported in PPPoA/IPoA links.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Load balancing	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Configuration of the three-way handshake negotiation mode	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Packet authentication: simple plain-text authentication mode, HMAC MD5 authentication mode and keychain authentication mode	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		IPv4 multi-instance	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		IGP-BGP association and IGP-LDP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
BGP		BGP-4	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		BGP4+	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		MP-BGP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
SPR		Smart Policy Route	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Multicast route																								
Multicast route			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
MBGP			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP		IGMPv1/v2/v3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP Proxy			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PIM																								
	PIM-DM		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	PIM-SM		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	PIM-SSM		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
MSDP			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP-snooping		IGMP-snooping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MLD snooping		IGMP-snooping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MPLS																								
MPLS-Stack																								
	MPLS on the public network		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Assignment of consecutive labels and assignment of specified labels	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Supporting dynamic assignment of LDP LSP labels, BGP LSP labels, and L3 VPN LSP labels. Dynamic assignment of RSVP LSP labels or L2VPN LSP labels or VPLS LSP labels are	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Static LSP	support L3 VPN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	MPLS QoS	Mapping in DiffServ mode on L3 VPNs (Supporting E-LSP, not supporting L-LSP)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LDP																								
	IPv4 LDP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	LDP FRR	Supporting manual LDP FRR and LDP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L3 VPN																								
	MPLS/BGP VPN	Hub-Spoke VPN HoVPN L3 VPN users accessing the Internet Mutual access between local VPNs Inter-area option A, B, C Load balancing Filtering policy for VPN import/export routes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	VPN FRR	Supporting manual VPN FRR and VPN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2 VPN																								
	VLL	Supporting local CCC, SVC VLL, Martini VLL, and inter-domain Martini VLL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	PWE3	Supporting the single-hop PW and ping and tracert detection	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MPLS TE																								
	MPLS TE base		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	MPLS TE reliability		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Security																								
Firewall																								
	Packet filtering firewall	Packet filtering based on basic ACLs, advanced ACLs, and time range ACLs.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	ASPF																							
		ASPF detection protocols: TCP/UDP/ICMP/FTP/HTTP/SIP/RTSP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Java blocking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		ActiveX blocking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		IP fragment packet detection	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		ACL-based PAM	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack defense																							
		Defense against ICMP redirection packets, ICMP unreachable packets, port scanning packets, Tracert attacks, land attacks, Smurf attacks, Fraggle attacks, WinNuke attacks, IP-fragment attacks, teardrop attacks, ping of death attacks, oversized ICMP packet attacks, malformed TCP packet attacks, and flood attacks.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Limit on global connections (TCP, ICMP, UDP, fragment, and half connections), interzone connections, connections to a destination IP address, and connections from a source IP address.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Static blacklist and static whitelist	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack logs																							
		Saving logs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Log format	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Blacklist logs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Traffic alarm and alarm clearance logs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Attack defense logs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Packet filtering logs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Active/Standby mechanism																							
		Supporting HSB service configuration and status	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Supporting HSB group configuration and status maintenance	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		Recording logs when HSB channel disconnection occurs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Active/Standby firewall																							

		Supporting firewall service information synchronization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access security																								
	802.1x authentication	IEEE 802.1x 2004	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Interface/MAC address-based 802.1x authentication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		EAPoL termination/relay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Guest VLAN and restrict VLAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		VLAN and ACL information delivered by the RADIUS server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		EAP-MD5 authentication and MAC address bypass authentication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MAC address authentication		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		User-based MAC address authentication	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Web authentication	Portal 2.0 and local Portal authentication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	User access management																							
		Supporting user group-based authorization	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Supporting user group bandwidth, VLAN, and user priority	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Supporting ACL, VLAN, UCL authorization by the	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Supporting the MIB function of user groups	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Attack log		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Storm suppression		Interface-based broadcast traffic suppression, multicast traffic suppression, and unknown unicast traffic suppression	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ARP security																								
	ARP packet suppression																							
		ARP packet suppression based on source IP addresses, global ARP packet suppression, and ARP packet suppression based on interfaces	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ARP Miss packet suppression based on source IP addresses and global ARP Miss packet suppression	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ARP packet rate limit based on the super	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Limit on dynamic ARP entries	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Strict ARP learning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ARP spoofing																							
		Sending gratuitous ARP packets	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ARP anti-spoofing mode: fixed-mac, fixed-all, and send-ack.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ARP gateway anti-collision	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DAI		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IP security																								
	ICMP attack defense	Global ICMP packet suppression, Interface-based ICMP packet suppression	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	uRPF		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	IPSG		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	DHCP snooping	Supporting global, interface-based, and VLAN-based DHCP snooping. Supporting dynamic and static DHCP snooping binding tables	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	DHCPv6 Snooping	Supporting DHCP snooping globally, on an interface, and in a VLAN, and supporting dynamic and static DHCP snooping binding tables	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CPU-defend																								
	CPCAR		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Blacklist		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Attack source tracing		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AAA			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Authentication	Supporting none authentication, local authentication, RADIUS authentication, HWTACACS authentication, PAP/CHAP authentication, EAP termination authentication, and EAP relay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Authorization	Supporting none authorization, local authorization, HWTACACS authorization, and authorization after successful RADIUS authentication. One or more authorization modes can be used together	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Accounting	Supporting none accounting, RADIUS accounting, and HWTACACS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Command line authorization	Supporting command line authorization for management users, command line authorization using the HWTACACS server, and command line authorization in local mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RADIUS			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HWTACACS			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PKI			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VPN																								
GRE																								
	GRE tunnel	Supporting MTU, GRE Checksum, tunnel status detection, GRE packet fragmentation and reassembly, interface name used as the source address of the tunnel interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Services on the GRE tunnel																							
		Unicast routing protocols: RIP, OSPF, IS-IS, and BGP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Multicast routing protocol: PIM-DM/SM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Redirecting packets to the GRE tunnel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IPSec VPN																								
	IKE	Supporting IKEv1/v2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	IPSec																							
		IPSec tunnel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		IPSec conversion protocols: AH, ESP, and AH+ESP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Encapsulation modes: transport mode and tunnel mode.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		GRE over IPSec	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NAT traversal		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DSVPN		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
L2TP VPN																								
	LAC		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	LNS		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SSLVPN			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QoS																								
ACL		Basic IPv4 ACLs, extended IPv4 ACLs, and Ethernet frame header-based Layer 2 ACLs and name ACLs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QoS																								
	Priority mapping		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Traffic policing	Supporting traffic rate limit on interfaces, sub-interfaces, Eth-Trunk interfaces, MFR interfaces, dialer interfaces, VE interfaces, and VT virtual interfaces, and supporting flow-based	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Traffic shaping	Supporting traffic shaping on interfaces, sub-interfaces, Eth-Trunk interfaces, MFR interfaces, dialer interfaces, VE interfaces, and traffic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Congestion avoidance	Supporting WRED based on DSCP or IP priorities and	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Congestion management	Supporting SP scheduling, WRR scheduling, and SP+WRR scheduling on LAN-side interfaces, and PQ/CBWFQ scheduling as well as	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	HQoS		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		3-Level scheduling and shaping for flows, services (sub-interfaces), and	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FR QoS		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	IPv6 QoS	Supporting IPv6 packet priority mapping, packet re-marking, queue scheduling, traffic policing, traffic shaping, traffic statistics, and traffic mirroring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ATM QoS	Configuring CBR, VBR-rt, VBR-nrt, and UBR on the PVC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MQC	Traffic classifier, traffic behavior, and traffic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAC	Smart Application Control	Supporting P2P, RTP, and enterprise applications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voice																								
Voice ports																								
	FXS ports	Supporting user-defined ringing mode, interface locking, and interface loopback. Supporting four access user types: DEL, ECPBX, LCPBX, and PAYPHONE	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	FXO ports																							
		P2P and P2MP working modes	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
		Remote power supplies on a port	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
		Loopback on BRA	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	ISDN S/T ports	Working mode, remote power supplies on the ports and alarm checking on the BRA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	E1 interfaces		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Voice media																								
	RTP		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	DSP		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
		Three-way conference, Multi-party	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
		DSP mode: Full rate mode and G.711 mode	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	DSP Standard																							
		G.723.1, G.728, G.729, G.729a, G.729ab, G.726, G.722, G.711	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
Voice signaling																								
	SIP protocol		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
		Supporting SIP over	X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
Diagnostics and Maintenance																								
	Signaling tracing and problems		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	Voice loading		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	VOSM		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X
	Remote packet		X	X	X	X	X	X	✓	X	X	✓	X	X	X	X	✓	X	X	✓	✓	✓	X	X

	TR069	Supporting TR104	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
SIP AG																								
	POTS subscriber management		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	BRA/PRA subscriber management		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Fax		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Modem		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	SIP	SIP over	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Overload control		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	BEST	Branch Exchange for Survivable Telephony	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	CAC bandwidth limit in static mode	Restricting incoming and outgoing calls when the bandwidth is	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
PBX																								
	User access	Accessing the POTS terminal, SIP UE terminal, and BRA terminal	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Trunk interworking		X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Accessing the PSTN network/traditional TDM PBX by using AT0 and PRA trunks	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Accessing the IMS network by using a SIP IP trunk (SIP PRA or SIP AT0)	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Connecting to other IP PBXs by using an SIP IP trunk (IP addresses cannot be obtained dynamically. And SIP IP trunk cannot be registered.)	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		R2 trunk	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		H323 Gateway	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Accessing the ISDN network using the ISDN BRA trunk	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Service function																							
		Fax/modem service in TDM/VOIP mode	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Connecting to the GSMBOX gateway (ZED-3 GSMBOX gateway) by using a	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Double communication (DC) service and three-party	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Multi-subscriber-number (MSN) service supporting both SIP UE and POTS	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Media proxy for NAT traversal	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Multi-party	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Blacklist and Whitelist	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		DISA	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
		Restricting calls by setting the bandwidth in static mode	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Operation and maintenance	PBX functions can be controlled by licenses.	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
	Reliability	Associating the SIP server status with the VRRP status, and associating the SIP IP trunk status with the VRRP status	X	X	X	X	X	X	√	X	X	√	X	X	X	X	√	X	X	√	√	√	X	X
Management and maintenance																								
Port mirroring		Mirror packets to Ethernet interfaces (LAN-side interfaces and WAN-side interfaces), including: Ethernet interfaces, serial ports, ATM interfaces, E1/T1 interfaces, ISDN interfaces, 3G interfaces, WLAN interfaces, and Eth-Trunk interfaces. Supporting port mirroring on both inbound and outbound interfaces. Supporting port	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Web Mangement			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System management		SYSLOG log information export	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TFTP		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Information center		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Command line		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Time management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	SSH		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	FTP		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	TELNET		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	User management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Multilingual resource file management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	File system		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Configuration file management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Configuration management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Terminal management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Supporting console interfaces and synchronous/asynchronous serial interfaces	Supporting console interfaces and synchronous/asynchronous serial interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Upgrade management			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Device management			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
GTL			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Diagnostics and Debugging			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
SNMP		SNMPv1/v2c/v3, supporting MIB files defined by SMIv1 and SMIv2	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PoE		Supporting 802.3af and 802.3at. The interface maximum	X	√	X	X	X	X	X	X	X	X	X	X	X	X	√	X	X	X	√	X	X	X
NTP		This module uses V3 that is compatible with V1 and V2.	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
RMON			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
RMON2			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CWMP			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Deployment		Downloading the configuration file, version file, and patch file from the TFTP/FTP server automatically Supporting USB-based deployment	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
External interfaces																								
TR069 node		Supporting TR111	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN																								
WLAN QoS																								
	WMM function		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Priority mapping		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Traffic control		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN security																								
	WEP security policy		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	WPA security policy		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	WAPI security policy		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Key management		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN radio management																								
	Wireless protocol		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Rate, channel, and bandwidth		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	MAC layer parameters		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Radio interfaces		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	802.11n parameters		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
AP management																								
	AP management		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Diagnosis and maintenance		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	VAP management		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN STA																								
	STA access		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	STA association		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	STA information statistics		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN anti-attack																								
	Blacklist and whitelist		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Access control		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	Anti-attack		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN services																								
	WLAN services		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
	TR-069-based WLAN service		X	√	X	X	X	√	√	X	X	√	X	X	X	X	√	X	X	X	X	√	X	X
WLAN (AC)																								
AP management																								
	Networking capability	Supporting the Layer 2/Layer 3 network and IPv4 network between APs and the AC	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	AC discovery	Discovering ACs using DHCP Option43, DNS, or CAPWAP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	AP access	Configuring the AP access control mode (automatic access based on the MAC address or serial	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	AP management	Querying AP software version update, configuration downloading, and status maintenance	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CAPWAP																								
	CAWAP tunnel	Supporting the CAPWAP control	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Networking capability	Supporting Layer2/Layer 3 network data direct	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
STA management																								
	STA access	Supporting 802.1x, Dot1x, Portal, EAP-PAP/EAP-MD5, EAP-PEAP/EAP-TLS, and MAC authentication	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	STA association	Supporting STA association and reassociation, and intra-VLAN or inter-VLAN roaming	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	AAA	Supporting AAA, VLAN and Layer 3 ACL delivery by the RADIUS server, and STA grouping and ACL authorization	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN radio management																								
	Radio management	Supporting 802.11 b/g/n	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	802.11n	Setting 802.11n parameters	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN security																								
	WEP security policy		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	WPA security policy		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	WAPI security policy		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Key management		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN attack defense																								
	Blacklist and whitelist	Supporting blacklist and whitelist, and viewing WLAN security feature logs and statistics	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Communication control	STA communication control on a virtual AP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN QoS																								
	WMM function	Supporting 802.11e	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Priority mapping		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	CAR and rate limit	Supporting rate limit on upstream traffic of the VAP/SAT-based air interface, AP traffic control, and radio-based multi-STA traffic balancing	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN service																								
	Service management	Supporting configurations and management of the WLAN service sets and VAP, automatic service delivery and management, and the	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Reliability	Supporting 1+1 cold backup, 1+1 load balancing, and N+1/N+N cold backup between ACs	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Sub-system	Item	Specification	AR1220	AR1220-DC	AR1220V	AR1220W	AR1220VW	AR1220L	AR2201-48FE	AR2202-48FE	AR2204	AR2220	AR2240(SRU40)	SRU60	AR3260(SRU80)
System specification															
	Main control system														
		Processor	500 MHz 2 Core	500 MHz 2 Core	500 MHz 2 Core	500 MHz 2 Core	500 MHz 2 Core	500 MHz 2 Core	533 MHz 2 Core	533 MHz 2 Core	800 MHz 2 Core	600 MHz 4 Core	600 MHz 8 Core		
		Switching capacity of the system	8 Gbit/s	8 Gbit/s	8 Gbit/s	8Gbit/s	8 Gbit/s	8 Gbit/s	10 Gbit/s	10 Gbit/s	10 Gbit/s	32 Gbit/s	80 Gbit/s	80 Gbit/s	
		Switching capacity of each slot	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	-	-	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card	2 Gbit/s for a SIC/WSIC card
			X	-	X	X	X	X	-	-	-	20 Gbit/s for an XSIC/ EXSIC slot	20 Gbit/s for an XSIC/ EXSIC slot	20 Gbit/s for an XSIC/ EXSIC	20 Gbit/s for an XSIC/ EXSIC slot
		Real-time clock (RTC)	Y	√	Y	Y	Y	Y	√	√	√	Y	Y	√	Y
		Memory (default/maximum)	512 M	512M	512M	512M	512M	512M	512M	512M	1G	2G	2G	2G	2G
		Flash memory	256 M	256M	256M	256M	256M	256M	512M	512M	512M	16M	16M	16M	16M
		Micro SD card memory (default/maximum)	0	0	0	0	0	0	0	0	0/4G	2/4G	2/4G	2/4G	2/4G
		SIC slot	2	2	2	2	2	2	0	0	4	4	4	4	4
		WSIC slot	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot.	0	0	There is no WSIC slot by default. Two SIC slots can be combined into one WSIC slot. The system supports a maximum of two WSIC slots.	There are two WSIC slots by default. SIC slots 1 and 2 can be combined into a WSIC slot, and SIC slots 3 and 4 can be combined into a WSIC slot. The system supports a maximum of four WSIC slots.	There are two WSIC slots by default. SIC slots 1 and 2 can be combined into a WSIC slot, and SIC slots 3 and 4 can be combined into a WSIC slot. The system supports a maximum of four WSIC slots.	-	2
		XSIC slot	0	0	0	0	0	0	0	0	0	There is no XSIC slot by default. The SIC slot and WSIC slot can be combined into two XSIC slots. The system supports a maximum of two XSIC slots.	There are two XSIC slots by default. The SIC slot and WSIC slot can be combined into two XSIC slots. The system supports a maximum of four XSIC slots.	-	There are four XSIC slots by default. The SIC slot and WSIC slot can be combined into two XSIC slots. The system supports a maximum of six XSIC slots.
		EXSIC slot (share with XSIC slot)	0	0	0	0	0	0	0	0	0	0	1	-	1
		DSP	0	0	The 32-channel voice is supported by default.	0	The 32-channel voice is supported by default.	0	0	0	The MAX 32-channel voice is supported.	The MAX 128-channel voice can be supported.	The MAX 384-channel voice can be supported.	The MAX 384-channel voice can be supported.	The MAX 384-channel voice can be supported.
		DSP slot	0	0	0	0	0	0	0	0	2	1	3	3	3
	Fixed interfaces														
		Fixed FE LAN port (LAN port)	8	8	8	8	8	0	48	48	8	0	0	0	0
		Fixed GE WAN port (WAN port)	2	2	2	2	2	2	2 (one Combo port included)	2 (one Combo port included)	3 (one Combo port included)	3 (one Combo port included)	3 (two Combo ports included)	3 (two Combo ports included)	3 (two Combo ports included)
		Wi-Fi port	N	X	N	802.11 b/g/n	802.11 b/g/n	N	X	X	X	N	N	X	N
		USB port (2.0)	2	2	2	2	2	2	1	1	2	2	2	2	2
		SD card port	0	0	0	0	0	0	0	0	1 (External)	2(Internal and external)	2(Internal and external)	2(Internal and external)	2(Internal and external)
		USB console port	1	1	1	1	1	1	1	1	1	1	1	1	1
		AUX/Console port	1	1	1	1	1	1	1	1	1	1	1	1	1
		3G port	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB	Supported by USB
		KingSton lock	√	√	√	√	√	√	X	X	X	X	X	X	X
		ESD wrist jack	√	√	√	√	√	√	√	√	√	√	√	√	√
	Power supply														
		Rated input voltage (AC)	AC: 100-240V 50/60Hz	-	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	AC: 100-240V 50/60Hz	-	AC: 100-240V 50-/60Hz
		Maximum input voltage (AC)	AC: 85-264V 47/63Hz	-	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63Hz	AC: 85-264V 47/63 Hz	-	AC: 85-264V 47/63Hz
		Rated input voltage (DC)	N	-42 to -53Vdc	N	N	N	N	-	-	-	–48 V to –60 V	–48 V to –61 V	-	–48 V to –62 V
		Maximum input voltage (DC)	N	-38.4 to -72Vdc	N	N	N	N	-	-	-	–38.4 V to –72 V	–38.4 V to –73 V	-	–38.4 V to –74 V
		Maximum power capacity	54 W	60 W	54 W	54 W	54 W	54 W	60 W	60 W	150 W	150 W	700 W for dual power supplies. Optionally, you can configure a single power supply 350	-	700 W for dual power supplies. Optionally, you can configure a single power supply 350
		PoE (W)	N	X	External power 100 W. Only four fixed ports (FE4-FE7) are supported.	External power 100 W. Only four fixed ports (FE4-FE7) are supported.	External power 100 W. Only four fixed ports (FE4-FE7) are supported.	N	X	X	X			-	
		Power supply redundancy	N	X	N	N	N	N	√ (RPS)	√ (RPS)	√ (RPS)	N	Y	-	Y
	Physical specifications														
		Dimensions (H x W x D)	With rack-mounting ear: 44.5 mm x 482.6 mm x 220 mm Without rack-mounting ear: 44.5 mm x 390 mm x 220 mm		With rack-mounting ear: 44.5 mm x 482.6 mm x 220 mm Without rack-mounting ear: 44.5 mm x 390 mm x 220 mm	With rack-mounting ear: 44.5 mm x 482.6 mm x 220 mm Without rack-mounting ear: 44.5 mm x 390 mm x 220 mm	With rack-mounting ear: 44.5 mm x 482.6 mm x 220 mm Without rack-mounting ear: 44.5 mm x 390 mm x 220 mm	With rack-mounting ear: 44.5 mm x 482.6 mm x 220 mm Without rack-mounting ear: 44.5 mm x 390 mm x 220 mm	With rack-mounting ear: 44.5 mm x 482.6 mm x 310 mm Without rack-mounting ear: 44.5 mm x 442 mm x 310 mm		With rack-mounting ear: 44.5 mm x 482.6 mm x 420 mm Without rack-mounting ear: 44.5 mm x 442 mm x 420 mm	With rack-mounting ear: 44.5 mm x 482.6 mm x 420 mm Without rack-mounting ear: 44.5 mm x 442 mm x 420 mm	With rack-mounting ear: 88.1 mm x 482.6 mm x 470 mm Without rack-mounting ear: 88.1 mm x 442 mm x 470 mm		With rack-mounting ear: 130.5 mm x 482.6 mm x 470 mm Without rack-mounting ear: 130.5 mm x 442 mm x 470 mm
		Weight	2.9KG	2.9KG	2.9 kg (54W power supply, no card)	2.9 kg (54W power supply, no card)	2.9 kg (54W power supply, no card)	2.9KG	4.8KG	4.8KG	6 kg (no card)	4.95 kg (without power supply or card)	8.85 kg (without power supply or card)	-	11 kg (without power supply or card)
		Environment temperature													
		Humidity													
	Reliability														
		Module hot swap	Y	√	Y	Y	Y	Y	X	X	√	Y	Y	√	Y
		Power module hot swap	N	X	N	N	N	N	X	X	X	Y	Y	√	Y
		Fan module hot swap	N	X	N	N	N	N	X	X	X	N	Y	√	Y
		Main control board hot swap	N	X	N	N	N	N	X	X	X	N	Y	√	Y
		MTBF (year)	29.03967	29.03967	29.03967	29.03967	29.03967	29.03967	62.34	62.34	59.17	25.34	30.004 (dual power supplies + one SRU + 24 GE + fan)	-	35.33 (dual power supplies + one SRU + 24 GE + fan)
		MTTR (hour)	2	2	2	2	2	2	2	2	2	0.5	0.5 (dual power supplies + one SRU + 24 GE + fan)		0.5 (dual power supplies + one SRU + 24 GE + fan)
	Performance														
		Basic forwarding performance (64-byte packets)	450kpps	450kpps	450kpps	450kpps	450kpps	450kpps	350Kpps	350Kpps	450Kpps	1Mpps	2Mpps	2.5Mpps	4Mpps
		NAT + ACL + QoS forwarding bandwidth (IMIX, bidirectional forwarding)	200M	200M	200M	200M	200M	200M	200M	200M	200M	400M	600M	800Mpps	1800M
		IPSec forwarding bandwidth (bps, IMIX, unidirectional forwarding)	200M	200M	200M	200M	200M	200M	200M	200M	200M	300M	1000M	1400M	2000M
		FW forwarding bandwidth (bps, IMIX, unidirectional forwarding)	800M	800M	800M	800M	800M	800M	600M	600M	600M	1200M	4500M	5000M	5500M
		MAC entry	2K	2K	2K	2K	2K	2K	2K	2K	2K	4K	4K	4K	8K
		ARP entry	2000	2000	2000	2000	2000	2000	2000	2000	2000	4000	4000	4000	4000
		Number of VLANs	128	128	128	128	128	128	128	128	128	4094	4094	4094	4094
		Number of IPv4 routes on a device	30000	30000	30000	30000	30000	30000	30000	30000	30000	80000	200000	400000	500000
		Number of FIB4 forwarding tables on a device	30000	30000	30000	30000	30000	30000	30000	30000	30000	80000	200000	400000	500000
		Number of IPv6 routes on a device	10000	10000	10000	10000	10000	10000	10000	10000	10000	30000	50K	80K	100K
		Number of FIB6 forwarding tables on a device	10000	10000	10000	10000	10000	10000	10000	10000	10000	30000	50K	80K	100K
		Maximum number of PPPoE users that access a local Ethernet network	128	128	128	128	128	128	128	128	128	512	512	512	1024
		Maximum number of global address pools	64	64	64	64	64	64	64	64	64	128	128	128	128
		Maximum number of test instances that can be created on an NQA client	64	64	64	64	64	64	64	64	64	128	128	128	256

		Number of concurrent responses (UDP and TCP responses) by an NQA	32	32	32	32	32	32	32	32	32	64	64	64	128
		Maximum number of VRFs	64	64	64	64	64	64	64	64	64	128	256	256	1000
		Number of VPN routes on a device	10000	10000	10000	10000	10000	10000	10000	10000	10000	30000	30000	30000	100000
		Maximum number of MPLS labels (sharing the public/private network	1000	1000	1000	1000	1000	1000	1000	1000	1000	2000	2000	2000	8000
		Number of IPSec tunnels	2000	2000	2000	2000	2000	2000	2000	2000	2000	4000	4000	4000	6000
		Number of L2TP tunnels	128	128	128	128	128	128	128	128	128	512	512	512	1024
		Number of L2TP sessions	128	128	128	128	128	128	128	128	128	512	512	512	1024
		Number GRE tunnels	256	256	256	256	256	256	256	256	256	512	512	512	1024
		Maximum number of SSL VPN access users	50	50	50	50	50	50	50	50	50	100	100	100	200
		Maximum of concurrent SSL connections on a device	1024	1024	1024	1024	1024	1024	512	512	512	1024	1024	1024	2048
		Maximum number of configured ACLs	4K	4K	4K	4K	4K	4K	4K	4K	4K	8K	8K	8K	16K
		Maximum number of configured IPv6	512	512	512	512	512	512	512	512	512	1024	1024	1024	2048
		Maximum number of NAT address	8	8	8	8	8	8	8	8	8	16	16	16	32
		Number of IP addresses in each NAT address pool	255	255	255	255	255	255	255	255	255	255	255	255	255
		Maximum number of concurrent NAT connections	64K	64K	64K	64K	64K	64K	32K	32K	32K	128K	300K	300K	400K
		Maximum number of concurrent connections to the firewall	32K	32K	32K	32K	32K	32K	16K	16K	16K	64K	64K	64K	200K
		Maximum number of concurrent calls (PBX)	-	-	125	-	125	-	-	-	125	250	1000	1000	2000
		Maximum of DSP channels (PBX and AG)	-	-	32/32 channels	-	32/32 channels	-	-	-	32	128/32 channels	128/32 channels x 3	128/32 channels x 4	128/32 channels x 3
		Maximum number of registered SIP UEs (PBX and AG BEST)	-	-	256	-	256	-	-	-	256	512	2048	2048	6144
		Rule set of the voice blacklist and	-	-	18	-	18	-	-	-	18	18	18	18	18
		Maximum number of rules that can be configured for each blacklist and whitelist	-	-	64	-	64	-	-	-	64	64	64	64	64
		Number of MPLS LDP VCs	64	64	64	64	64	64	64	64	64	128	256	256	512
		Maximum number of 6over4 tunnels	256	256	256	256	256	256	256	256	256	512	512	512	1024
		Maximum number of 4over6 tunnels	256	256	256	256	256	256	256	256	256	512	512	512	1024
		Recommended number of APs that the AC can manage	12	12	12	12	12	12	12	12	12	16	16	16	32
		Maximum number of concurrent users allowed by the AC	200	200	200	200	200	200	200	200	200	240	300	300	500
Feature															
Ethernet port management															
	Ethernet port	EthernetII packets(RFC 894), SNAP packets(802.3 SNAP)	√	√	√	√	√	√	√	√	√	√	√	√	√
	Link aggregation	IEEE 802.3ad	√	√	√	√	√	√	√	√	√	√	√	√	√
	LACP	Supports static LACP, M:N backup among member interfaces in an aggregation group	√	√	√	√	√	√	√	√	√	√	√	√	√
LAN access															
VLAN management															
	Basic VLAN	IEEE 802.1P, 802.1Q	√	√	√	√	√	√	√	√	√	√	√	√	√
	Interface link type	Access, trunk, and hybrid	√	√	√	√	√	√	√	√	√	√	√	√	√
	VLAN aggregation	Super-VLAN and DHCP relay in a Super-VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√
	Guest VLAN		√	√	√	√	√	√	√	√	√	√	√	√	√
	Voice VLAN		√	√	√	√	√	√	√	√	√	√	√	√	√
	GVRP		√	√	√	√	√	√	√	√	√	√	√	√	√
	VLANIF interface		√	√	√	√	√	√	√	√	√	√	√	√	√
MAC address management															
	Static MAC address and dynamic MAC address		√	√	√	√	√	√	√	√	√	√	√	√	√
	MAC address limit		√	√	√	√	√	√	√	√	√	√	√	√	√
	Sticky MAC address		√	√	√	√	√	√	√	√	√	√	√	√	√
	MAC address flapping defense		√	√	√	√	√	√	√	√	√	√	√	√	√
	Invalid MAC address alarm	AR200/AR1200 with fixed 8FE interface does not support packets discarding.	√	√	√	√	√	√	√	√	√	√	√	√	√
STP															
	MSTP	IEEE 802.1d (STP), 802.1w (RSTP), 802.1s (MSTP)	√	√	√	√	√	√	√	√	√	√	√	√	√
	MSTP security		√	√	√	√	√	√	√	√	√	√	√	√	√
LLDP			√	√	√	√	√	√	√	√	√	√	√	√	√
WAN															
Port management															
	Port isolation														
		Support port isolation modes: (1) Layer 2 and Layer 3 service isolated. (2) Layer 2 service isolation and Layer 3 services not isolated.													
		Port isolation group	√	√	√	√	√	√	√	√	√	√	√	√	√
		Unidirectional isolation	√	√	√	√	√	√	√	√	√	√	√	√	√
WAN															
	LAN interface	Supporting EthernetII, SNAP, and VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√
	Synchronous serial port		√	√	√	√	√	√	X	√	√	√	√	√	√
		Configuring the serial port to work in synchronous/asynchronous mode	√	√	√	√	√	√	X	√	√	√	√	√	√
		The synchronous serial port supports three link layer protocols: HDLC, FR, and PPP. The PPP protocol is used by default.	√	√	√	√	√	√	X	√	√	√	√	√	√
		The asynchronous serial port support PPP encapsulation,	√	√	√	√	√	√	X	√	√	√	√	√	√
		Setting the maximum receive unit (MRU) The default value is 1500 bytes. The value ranges from 128 to 1500.	√	√	√	√	√	√	X	√	√	√	√	√	√
	CE1/PRI		√	√	√	√	√	√	X	X	√	√	√	√	√
		Working in E1, CE1, or PRI mode	√	√	√	√	√	√	X	X	√	√	√	√	√
		Timeslot binding	√	√	√	√	√	√	X	X	√	√	√	√	√
		Timeslot binding on the PRI interface	√	√	√	√	√	√	X	X	√	√	√	√	√
	CT1 interface	ANSI T1.403, Timeslot binding on the CT1 interface	√	√	√	√	√	√	X	X	√	√	√	√	√
	ADSL interface		√	√	√	√	√	√	X	X	√	√	√	√	√

		The ADSL line complies with ADSL2 (G992.3), ADSL2+ (G992.5), G.DMT (G992.1), and T1.413 standards.	√	√	√	√	√	√	X	X	√	√	√	√	√
		Compatible with Annex A, B, C, and M modes	√	√	√	√	√	√	X	X	√	√	√	√	√
		Supporting ATM packet mode	√	√	√	√	√	√	X	X	√	√	√	√	√
	G.SHDSL interface		√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the ATM/PTM working mode of the SHDSL board	√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the SHDSL standard: supporting G991.2 and G991.2 (Bis).	√	√	√	√	√	√	X	X	√	√	√	√	√
	E1-F interface		√	√	√	√	√	√	X	√	√	√	√	√	√
		Working in framed mode	√	√	√	√	√	√	X	√	√	√	√	√	√
		Working in unframed mode	√	√	√	√	√	√	X	√	√	√	√	√	√
		Configuring HDB3 as the encoding and decoding mode	√	√	√	√	√	√	X	√	√	√	√	√	√
	E1-IMA	Complying with ITUT G.703 and HDB3 coding standards	√	√	√	√	√	√	X	X	√	√	√	√	√
	T1-F interface		√	√	√	√	√	√	X	X	√	√	√	√	√
		Working in framed mode	√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting transmission line attenuation	√	√	√	√	√	√	X	X	√	√	√	√	√
		Timeslots binding on a T1-F interface	√	√	√	√	√	√	X	X	√	√	√	√	√
		Configuring B8ZS as the encoding and decoding mode	√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the line clock mode	√	√	√	√	√	√	X	X	√	√	√	√	√
		Configuring a T1-F interface to invert user data	√	√	√	√	√	√	X	X	√	√	√	√	√
	ISDN BRI interface		√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the maximum receive unit (MRU)	√	√	√	√	√	√	X	X	√	√	√	√	√
		Supporting remote loopback	√	√	√	√	√	√	X	X	√	√	√	√	√
		Supporting local loopback	√	√	√	√	√	√	X	X	√	√	√	√	√
	CPOS interface	Setting features of CPOS, E1, and T1 interfaces	X	X	X	X	X	X	X	X	X	√	√	√	√
	POS	ITUT G.707 SONET OC-3/SDH STM-1	X	X	X	X	X	X	X	X	√	√	√	√	√
	Asynchronous serial port		√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the link-layer protocol	√	√	√	√	√	√	X	X	√	√	√	√	√
		Configuring the stream working mode	√	√	√	√	√	√	X	X	√	√	√	√	√
		Configuring the protocol working mode	√	√	√	√	√	√	X	X	√	√	√	√	√
	Modem		√	√	√	√	√	√	X	X	√	√	√	√	√
		Setting the call-in and call-out permissions	√	√	√	√	√	√	X	X	√	√	√	√	√
		Auto-reply mode	√	√	√	√	√	√	X	X	√	√	√	√	√
	xPON		√	√	√	√	√	√	X	X	√	√	√	√	√
		GPON	√	√	√	√	√	√	X	X	√	√	√	√	√
		EPON	√	√	√	√	√	√	X	X	√	√	√	√	√
	VDSL2	Compatible with ANNEX A/M	√	√	√	√	√	√	X	X	√	√	√	√	√
	3G interface (WCDMA)		√	√	√	√	√	√	X	X	√	√	√	√	√
x86 card															
	SAE220		√	√	√	√	√	√	X	X	√	√	√	√	√
	SAE550		X	X	X	X	X	X	X	X	X	√	√	√	√
Interface backup															
	Interface backup	Configuring a dialer interface as a backup interface, Setting load balancing mode of backup interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√
	Association test on interface backup	Configuring association between interface backup and routing	√	√	√	√	√	√	√	√	√	√	√	√	√
Bridge management															
	Transparent bridge														
		Configuring a static MAC address for a bridge group													
		Blackhole MAC address entries	√	√	√	√	√	√	√	√	√	√	√	√	√
		Type of packets that can be forwarded by bridge interfaces													
		Link encapsulation protocol on the member interface													
		Member interface type: Serial interfaces (HDLC and PPP) FR interfaces and sub-interfaces ATM interfaces and sub-interfaces Eth interfaces and sub-interfaces VLANIF interfaces Dialer interfaces MFR interfaces and sub-interfaces MP interfaces VT interfaces (PPPoFR and PPPoE)	√	√	√	√	√	√	√	√	√	√	√	√	√
		Physical interfaces: Eth, E1/T1, SA, xDSL and ISDN interfaces	√	√	√	√	√	√	√	√	√	√	√		√
Logical interface		Support Dialer interface, loopback interface, NULL interface, VT interface, VE interface, MP-Group interface, MFR interface, tunnel interface, Bridge-if interface, and Ethernet sub-interface	√	√	√	√	√	√	√	√	√	√	√	√	√
ATM															
		Supporting P2P and P2MP sub-interfaces.	√	√	√	√	√	√	X	X	√	√	√	√	√
		Carrying the IPoEoA service	√	√	√	√	√	√	X	X	√	√	√	√	√
		Carrying the IPoA service	√	√	√	√	√	√	X	X	√	√	√	√	√
		PPP and PPPoE over PVC	√	√	√	√	√	√	X	X	√	√	√	√	√
		InARP	√	√	√	√	√	√	X	X	√	√	√	√	√
		CC, Loopback, AIS/RDI, and ATM ping	√	√	√	√	√	√	X	X	√	√	√	√	√

		PVC group	√	√	√	√	√	√	X	X	√	√	√	√	√
Frame relay		FRoISDN, PPPoFR/PPPoMFR, and MPoFR	√	√	√	√	√	√	X	X	√	√	√	√	√
HDLC			√	√	√	√	√	√	X	X	√	√	√	√	√
DCC		Route backup, circular DCC, resource-shared DCC, DCC call, DCC dialer interface, and DCC dialer list	√	√	√	√	√	√	√	√	√	√	√	√	√
PPPoE			√	√	√	√	√	√	√	√	√	√	√	√	√
ISDN	DSS1	ITU-T Q.921, ITU-T Q.931 Supporting PRI interfaces	√	√	√	√	√	√	X	X	√	√	√	√	√
PPP															
	PPP	PPPoE, PPPoA, PPPoEoA, PPPoFR, and PPPoISDN services	√	√	√	√	√	√	√	√	√	√	√	√	√
	MP	MPoFR and MPoISDN services	√	√	√	√	√	√	√	√	√	√	√	√	√
3G	3G		√	√	√	√	√	√	√	√	√	√	√	√	√
IP applications															
NAT															
	Basic NAT														
		PAT address pool mode	√	√	√	√	√	√	√	√	√	√	√	√	√
		NOPAT address pool mode (supporting TCP, UDP, and ICMP)	√	√	√	√	√	√	√	√	√	√	√	√	√
		Easy IP mode (supporting TCP, UDP, and ICMP)	√	√	√	√	√	√	√	√	√	√	√	√	√
		Overlapping NAT (supporting TCP, UDP, ICMP, and other special protocol connections)	√	√	√	√	√	√	√	√	√	√	√	√	√
	NAT ALG	DNS, DNS mapping, FTP, ICM, RTSP, and SIP	√	√	√	√	√	√	√	√	√	√	√	√	√
	Log	Log recording mode, log recording format, and flow logs.	√	√	√	√	√	√	√	√	√	√	√	√	√
NetStream		Original stream, flexible stream, aggregated stream, and stream collection	√	√	√	√	√	√	√	√	√	√	√	√	√
ARP															
	Basic ARP														
		Static ARP entries for main interfaces Static ARP entries for VLANIF interfaces Static ARP entries for dot1q termination interfaces Static ARP entries in VPN-instance mode	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP-related functions of a Layer 3 VPN	√	√	√	√	√	√	√	√	√	√	√	√	√
		Layer 2 topology detection	√	√	√	√	√	√	√	√	√	√	√	√	√
		Address conflict detection	√	√	√	√	√	√	√	√	√	√	√	√	√
		Classification statistics of ARP packets	√	√	√	√	√	√	√	√	√	√	√	√	√
	ARP proxy	ARP proxy anti-attack, route gateway proxy, intra-VLAN proxy, and inter-VLAN proxy	√	√	√	√	√	√	√	√	√	√	√	√	√
	ARP ping	ARP ping IP address and ARP ping MAC address	√	√	√	√	√	√	√	√	√	√	√	√	√
IPv4 protocol stack															
	IPv4 forwarding		√	√	√	√	√	√	√	√	√	√	√	√	√
	IP options		√	√	√	√	√	√	√	√	√	√	√	√	√
	TCP, UDP, and ICMP		√	√	√	√	√	√	√	√	√	√	√	√	√
	Socket		√	√	√	√	√	√	√	√	√	√	√	√	√
	Ping	IP ping and VRF ping	√	√	√	√	√	√	√	√	√	√	√	√	√
	Source address verification	Authenticating the source address of the IP packets and discarding packets with invalid addresses	√	√	√	√	√	√	√	√	√	√	√	√	√
	TRACERT	IP tracert and VRF tracert	√	√	√	√	√	√	√	√	√	√	√	√	√
	Broadcast packet forwarding	Controlling whether to forward broadcast packets on a specified interface													
	Forwarding load balancing	Equal-cost multipath (ECMP)	√	√	√	√	√	√	√	√	√	√	√	√	√
	Resetting the DF field	Configuring an outbound interface to fragment IP packets	√	√	√	√	√	√	√	√	√	√	√	√	√
	Policy-based routing	Local policy routes, loading balancing of policy routes	√	√	√	√	√	√	√	√	√	√	√	√	√
IPv6 protocol stack															
	IPv6 forwarding		√	√	√	√	√	√	√	√	√	√	√	√	√
	TCP6, UDP6, ICMP6		√	√	√	√	√	√	√	√	√	√	√	√	√
	Socket6		√	√	√	√	√	√	√	√	√	√	√	√	√
	PING6		√	√	√	√	√	√	√	√	√	√	√	√	√
	TRACERT6		√	√	√	√	√	√	√	√	√	√	√	√	√
	IPV6 PMTU		√	√	√	√	√	√	√	√	√	√	√	√	√
	ND		√	√	√	√	√	√	√	√	√	√	√	√	√
IPv6 transition technology															
	6over4 tunnel	Supporting 6over4 manual tunnels, 6over4GRE tunnels, IPv4-compatible address automatic tunnels, 6to4 tunnels, 6to4 tunnel trunks, and ISATAP tunnels	√	√	√	√	√	√	√	√	√	√	√	√	√
	4over6 tunnel	Supporting 4over6 tunnels, and setting the traffic label value for a tunnel, the hop limit value for a tunnel, the traffic level for a tunnel, and the encapsulation limit value	√	√	√	√	√	√	√	√	√	√	√	√	√
DNS															
	DNS Client	Configuring the DNS server statically and dynamically obtaining the DNS server address	√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS proxy/relay		√	√	√	√	√	√	√	√	√	√	√	√	√
	DDNS		√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS6 Client		√	√	√	√	√	√	√	√	√	√	√	√	√
	DNS6 Proxy/Relay		√	√	√	√	√	√	√	√	√	√	√	√	√
VRRP															
	IPv4 VRRP		√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP backup and VRRP load balancing	√	√	√	√	√	√	√	√	√	√	√	√	√

		Supporting simple authentication /MD5 authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP in an L3 VPN	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP in a super-VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP detect NQA detection status	√	√	√	√	√	√	√	√	√	√	√	√	√
		VRRP detect attainability of single route	√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP6		√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP6 association		√	√	√	√	√	√	√	√	√	√	√	√	√
	VRRP association		√	√	√	√	√	√	√	√	√	√	√	√	√
	BFD and BFD applications		√	√	√	√	√	√	√	√	√	√	√	√	√
NQA															
	ICMP/UDP/TCP/SNMP/FTP/HTTP UDP jitter test/DHCP/Trace/DNS test	Supporting command line/MIB configuration	√	√	√	√	√	√	√	√	√	√	√	√	√
	NQA server		√	√	√	√	√	√	√	√	√	√	√	√	√
DHCP															
	DHCP relay		√	√	√	√	√	√	√	√	√	√	√	√	√
		WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main interfaces and sub-interfaces (QinQ sub-interfaces are not supported). LAN-side Layer 3 interfaces: VLANIF interfaces and super-VLAN interfaces.	√	√	√	√	√	√	√	√	√	√	√	√	√
		DHCP servers in a VPN	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP server		√	√	√	√	√	√	√	√	√	√	√	√	√
		WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main interfaces and sub-interfaces (QinQ sub-interfaces are not supported). LAN-side Layer 3 interfaces: VLANIF interfaces and super-VLAN interfaces.	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP security	Restricting the rate of DHCP packets by entire equipment, by port, by VLAN, and restricting the rate of dynamic DHCP packets	√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCP Client	WAN-side Layer 3 interfaces: Ethernet interfaces and sub-interfaces, Eth-Trunk main and sub-interfaces, and VE interfaces. (QinQ sub-interfaces are not supported)	√	√	√	√	√	√	√	√	√	√	√	√	√
DHCPv6															
	DHCPv6 Client		√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCPv6 Relay		√	√	√	√	√	√	√	√	√	√	√	√	√
	DHCPv6 Server		√	√	√	√	√	√	√	√	√	√	√	√	√
IP accounting		Supporting IP packet statistics, IP priority statistics, and IP packet statistics based on the filtering rule	√	√	√	√	√	√	√	√	√	√	√	√	√
UDP helper			√	√	√	√	√	√	√	√	√	√	√	√	√
Unicast route															
Unicast route management															
	IPV4 and IPV6 routing table management	Route selection, limit of routing table capacity, load balancing, route selection, and priority-based route convergence	√	√	√	√	√	√	√	√	√	√	√	√	√
	FIB4 and FIB6	Supporting IPv4 FIB	√	√	√	√	√	√	√	√	√	√	√	√	√
	IP FRR	Supporting manual IP FRR of the public network, manual IP FRR for the private network, and IP Auto FRR for the private network	√	√	√	√	√	√	√	√	√	√	√	√	√
route policy															
	Routing policy filter	ACL, ip-prefix, community-filter, extcommunity-filter, as-path-filter, or rd-filter can be used as a route filter.	√	√	√	√	√	√	√	√	√	√	√	√	√
	route-policy	Route-policy configuration, if-match rule, actions of the apply policy, and universal match rule	√	√	√	√	√	√	√	√	√	√	√	√	√
Static routes	Static IPv4 and IPV6 routes	Specified outbound interface, load balancing, and configuration of static routes on a private network	√	√	√	√	√	√	√	√	√	√	√	√	√
RIP		RIPv1/v2, RIPng	√	√	√	√	√	√	√	√	√	√	√	√	√
OSPF		OSPFv2, OSPFv3	√	√	√	√	√	√	√	√	√	√	√	√	√
		Types of protocol interfaces: point-to-point, broadcast, NBMA, point-to-multipoint	√	√	√	√	√	√	√	√	√	√	√	√	√
		Stub area and NSSA area	√	√	√	√	√	√	√	√	√	√	√	√	√
IS-IS		ISIS, ISISv6	√	√	√	√	√	√	√	√	√	√	√	√	√
		Types of network interfaces: supports P2P networks and broadcast networks. NBMA networks are not supported and they can be supported only when NBMA networks are simulated as P2P networks. xDSL interfaces: IS-IS is not supported in PPPoA/IPoA links.	√	√	√	√	√	√	√	√	√	√	√	√	√
		Load balancing	√	√	√	√	√	√	√	√	√	√	√	√	√
		Configuration of the three-way handshake negotiation mode	√	√	√	√	√	√	√	√	√	√	√	√	√

		Packet authentication: simple plain-text authentication mode, HMAC MD5 authentication mode and keychain authentication mode	√	√	√	√	√	√	√	√	√	√	√	√	√
		IPv4 multi-instance	√	√	√	√	√	√	√	√	√	√	√	√	√
		IGP-BGP association and IGP-LDP association	√	√	√	√	√	√	√	√	√	√	√	√	√
BGP		BGP-4	√	√	√	√	√	√	√	√	√	√	√	√	√
		BGP4+	√	√	√	√	√	√	√	√	√	√	√	√	√
		MP-BGP	√	√	√	√	√	√	√	√	√	√	√	√	√
SPR		Smart Policy Route	√	√	√	√	√	√	√	√	√	√	√	√	√
Multicast															
Multicast route			√	√	√	√	√	√	√	√	√	√	√	√	√
MBGP			√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP		IGMPv1/v2/v3	√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP Proxy			√	√	√	√	√	√	√	√	√	√	√	√	√
PIM															
	PIM-DM		√	√	√	√	√	√	√	√	√	√	√	√	√
	PIM-SM		√	√	√	√	√	√	√	√	√	√	√	√	√
	PIM-SSM		√	√	√	√	√	√	√	√	√	√	√	√	√
MSDP			√	√	√	√	√	√	√	√	√	√	√	√	√
IGMP-snooping		IGMP-snooping v1/v2/v3	X	X	X	X	X	X	√	√	√	√	√	√	√
MLD snooping		IGMP-snooping v1/v2/v3	X	X	X	X	X	X	√	√	√	√	√	√	√
MPLS															
MPLS-Stack															
	MPLS on the public network		√	√	√	√	√	√	√	√	√	√	√	√	√
		Assignment of consecutive labels and assignment of specified labels	√	√	√	√	√	√		√	√	√	√	√	√
		Supporting dynamic assignment of LDP LSP labels, BGP LSP labels, and L3 VPN LSP labels. Dynamic assignment of RSVP LSP labels or L2VPN LSP labels or VPLS LSP labels are not supported.	√	√	√	√	√	√	√	√	√	√	√	√	√
	Static LSP	support L3 VPN	√	√	√	√	√	√	√	√	√	√	√	√	√
	MPLS QoS	Mapping in DiffServ mode on L3 VPNs (Supporting E-LSP, not supporting L-LSP)	√	√	√	√	√	√	√	√	√	√	√	√	√
LDP															
	IPv4 LDP		√	√	√	√	√	√	√	√	√	√	√	√	√
	LDP FRR	Supporting manual LDP FRR and LDP Auto FRR	√	√	√	√	√	√	√	√	√	√	√	√	√
L3 VPN															
	MPLS/BGP VPN	Hub-Spoke VPN HoVPN L3 VPN users accessing the Internet Mutual access between local VPNs Inter-area option A, B, C Load balancing Filtering policy for VPN import/export routes MCE	√	√	√	√	√	√	√	√	√	√	√	√	√
	VPN FRR	Supporting manual VPN FRR and VPN Auto FRR	√	√	√	√	√	√	√	√	√	√	√	√	√
L2 VPN															
	VLL	Supporting local CCC, SVC VLL, Martini VLL, and inter-domain Martini VLL	√	√	√	√	√	√	√	√	√	√	√	√	√
	PWE3	Supporting the single-hop PW and ping and tracert detection modes	√	√	√	√	√	√	√	√	√	√	√	√	√
MPLS TE															
	MPLS TE base		√	√	√	√	√	√	√	√	√	√	√	√	√
	MPLS TE reliability		√	√	√	√	√	√	√	√	√	√	√	√	√
Security															
Firewall															
	Packet filtering firewall	Packet filtering based on basic ACLs, advanced ACLs, and time range ACLs.	√	√	√	√	√	√	√	√	√	√	√	√	√
	ASPF														
		ASPF detection protocols: TCP/UDP/ICMP/FTP/HTTP/SIP/RTSP	√	√	√	√	√	√	√	√	√	√	√	√	√
		Java blocking	√	√	√	√	√	√	√	√	√	√	√	√	√
		ActiveX blocking	√	√	√	√	√	√	√	√	√	√	√	√	√
		IP fragment packet detection	√	√	√	√	√	√	√	√	√	√	√	√	√
		ACL-based PAM	√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack defense														
		Defense against ICMP redirection packets, ICMP unreachable packets, port scanning packets, Tracert attacks, land attacks, Smurf attacks, Fraggle attacks, WinNuke attacks, IP-fragment attacks, teardrop attacks, ping of death attacks, oversized ICMP packet attacks, malformed TCP packet attacks, and flood attacks.	√	√	√	√	√	√	√	√	√	√	√	√	√
		Limit on global connections (TCP, ICMP, UDP, fragment, and half connections), interzone connections, connections to a destination IP address, and connections from a source IP address.	√	√	√	√	√	√	√	√	√	√	√	√	√
		Static blacklist and static whitelist	√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack logs														
		Saving logs	√	√	√	√	√	√	√	√	√	√	√	√	√
		Log format	√	√	√	√	√	√	√	√	√	√	√	√	√
		Blacklist logs	√	√	√	√	√	√	√	√	√	√	√	√	√
		Traffic alarm and alarm clearance logs	√	√	√	√	√	√	√	√	√	√	√	√	√
		Attack defense logs	√	√	√	√	√	√	√	√	√	√	√	√	√
		Packet filtering logs	√	√	√	√	√	√	√	√	√	√	√	√	√
	Active/Standby mechanism														
		Supporting HSB service configuration and status maintenance	√	√	√	√	√	√	√	√	√	√	√	√	√

		Supporting HSB group configuration and status maintenance	√	√	√	√	√	√	√	√	√	√	√	√	√
		Recording logs when HSB channel disconnection occurs	√	√	√	√	√	√	√	√	√	√	√	√	√
	Active/Standby firewall														
		Supporting firewall service information synchronization	√	√	√	√	√	√	√	√	√	√	√	√	√
Access security															
	802.1x authentication	IEEE 802.1x 2004	√	√	√	√	√	√	√	√	√	√	√	√	√
		Interface/MAC address-based 802.1x authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
		EAPoL termination/relay authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
		Guest VLAN and restrict VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√
		VLAN and ACL information delivered by the RADIUS server	√	√	√	√	√	√	√	√	√	√	√	√	√
		EAP-MD5 authentication and MAC address bypass authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
	MAC address authentication		√	√	√	√	√	√	√	√	√	√	√	√	√
		User-based MAC address authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
	Web authentication	Portal 2.0 and local Portal authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
	User access management														
		Supporting user group-based authorization	√	√	√	√	√	√	√	√	√	√	√	√	√
		Supporting user group bandwidth, VLAN, and user priority authorization	√	√	√	√	√	√	√	√	√	√	√	√	√
		Supporting ACL, VLAN, UCL authorization by the RADIUS server	√	√	√	√	√	√	√	√	√	√	√	√	√
		Supporting the MIB function of user groups	√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack log		√	√	√	√	√	√				√	√	√	√
Storm suppression		Interface-based broadcast traffic suppression, multicast traffic suppression, and unknown unicast traffic suppression	√	√	√	√	√	√	√	√	√	√	√	√	√
ARP security															
	ARP packet suppression														
		ARP packet suppression based on source IP addresses, global ARP packet suppression, and ARP packet suppression based on interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP Miss packet suppression based on source IP addresses and global ARP Miss packet suppression	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP packet rate limit based on the super VLAN	√	√	√	√	√	√	√	√	√	√	√	√	√
		Limit on dynamic ARP entries	√	√	√	√	√	√	√	√	√	√	√	√	√
		Strict ARP learning	√	√	√	√	√	√	√	√	√	√	√	√	√
	ARP spoofing														
		Sending gratuitous ARP packets	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP anti-spoofing mode: fixed-mac, fixed-all, and send-ack.	√	√	√	√	√	√	√	√	√	√	√	√	√
		ARP gateway anti-collision	√	√	√	√	√	√	√	√	√	√	√	√	√
	DAI		X	X	X	X	X	X	√	√	√	√	√	√	√
IP security															
	ICMP attack defense	Global ICMP packet suppression, Interface-based ICMP packet suppression	√	√	√	√	√	√	√	√	√	√	√	√	√
	uRPF		√	√	√	√	√	√	√	√	√	√	√	√	√
	IPSG		X	X	X	X	X	X	√	√	√	√	√	√	√
	DHCP snooping	Supporting global, interface-based, and VLAN-based DHCP snooping. Supporting dynamic and static DHCP snooping binding tables.	X	X	X	X	X	X	√	√	√	√	√	√	√
	DHCPv6 Snooping	Supporting DHCP snooping globally, on an interface, and in a VLAN, and supporting dynamic and static DHCP snooping binding tables	X	X	X	X	X	X	√	√	√	√	√	√	√
CPU-defend															
	CPCAR		√	√	√	√	√	√	√	√	√	√	√	√	√
	Blacklist		√	√	√	√	√	√	√	√	√	√	√	√	√
	Attack source tracing		√	√	√	√	√	√	√	√	√	√	√	√	√
AAA			√	√	√	√	√	√	√	√	√	√	√	√	√
	Authentication	Supporting none authentication, local authentication, RADIUS authentication, HWTACACS authentication, PAP/CHAP authentication, EAP termination authentication, and EAP relay authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
	Authorization	Supporting none authorization, local authorization, HWTACACS authorization, and authorization after successful RADIUS authentication. One or more authorization modes can be used together	√	√	√	√	√	√	√	√	√	√	√	√	√
	Accounting	Supporting none accounting, RADIUS accounting, and HWTACACS accounting	√	√	√	√	√	√	√	√	√	√	√	√	√
	Command line authorization	Supporting command line authorization for management users, command line authorization using the HWTACACS server, and command line authorization in local mode	√	√	√	√	√	√	√	√	√	√	√	√	√
RADIUS			√	√	√	√	√	√	√	√	√	√	√	√	√

HWTACACS			√	√	√	√	√	√	√	√	√	√	√	√	√
PKI			√	√	√	√	√	√	√	√	√	√	√	√	√
VPN															
GRE															
	GRE tunnel	Supporting MTU, GRE Checksum, tunnel status detection, GRE packet fragmentation and reassembly, interface name used as the source address of the tunnel interface	√	√	√	√	√	√	√	√	√	√	√	√	√
	Services on the GRE tunnel														
		Unicast routing protocols: RIP, OSPF, IS-IS, and BGP	√	√	√	√	√	√	√	√	√	√	√	√	√
		Multicast routing protocol: PIM-DM/SM	√	√	√	√	√	√	√	√	√	√	√	√	√
		Redirecting packets to the GRE tunnel	√	√	√	√	√	√	√	√	√	√	√	√	√
IPSec VPN															
	IKE	Supporting IKEv1/v2	√	√	√	√	√	√	√	√	√	√	√	√	√
	IPSec														
		IPSec tunnel	√	√	√	√	√	√	√	√	√	√	√	√	√
		IPSec conversion protocols: AH, ESP, and AH+ESP protocols.	√	√	√	√	√	√	√	√	√	√	√	√	√
		Encapsulation modes: transport mode and tunnel mode.	√	√	√	√	√	√	√	√	√	√	√	√	√
		GRE over IPSec	√	√	√	√	√	√	√	√	√	√	√	√	√
	NAT traversal		√	√	√	√	√	√	√	√	√	√	√	√	√
	DSVPN		√	√	√	√	√	√	√	√	√	√	√	√	√
L2TP VPN															
	LAC		√	√	√	√	√	√	√	√	√	√	√	√	√
	LNS		√	√	√	√	√	√	√	√	√	√	√	√	√
SSLVPN			√	√	√	√	√	√	√	√	√	√	√	√	√
QoS															
ACL		Basic IPv4 ACLs, extended IPv4 ACLs, and Ethernet frame header-based Layer 2 ACLs and name ACLs	√	√	√	√	√	√	√	√	√	√	√	√	√
QoS															
	Priority		√	√	√	√	√	√	√	√	√	√	√	√	√
	Traffic policing	Supporting traffic rate limit on interfaces, sub-interfaces, Eth-Trunk interfaces, MFR interfaces, dialer interfaces, VE interfaces, and VT virtual interfaces, and supporting flow-based traffic policing	√	√	√	√	√	√	√	√	√	√	√	√	√
	Traffic shaping	Supporting traffic shaping on interfaces, sub-interfaces, Eth-Trunk interfaces, MFR interfaces, dialer interfaces, VE interfaces, and traffic queues	√	√	√	√	√	√	√	√	√	√	√	√	√
	Congestion avoidance	Supporting WRED based on DSCP or IP priorities and supporting tail drop	√	√	√	√	√	√	√	√	√	√	√	√	√
	Congestion management	Supporting SP scheduling, WRR scheduling, and SP+WRR scheduling on LAN-side interfaces, and PQ/CBWFQ scheduling as well as 3-Level HQoS on WAN-side interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√
	HQoS		√	√	√	√	√	√	√	√	√	√	√	√	√
		3-Level scheduling and shaping for flows, services (sub-interfaces), and interfaces	√	√	√	√	√	√	√	√	√	√	√	√	√
	FR QoS		√	√	√	√	√	√	√	√	√	√	√	√	√
	IPv6 QoS	Supporting IPv6 packet priority mapping, packet re-marking, queue scheduling, traffic policing, traffic shaping, traffic statistics, and traffic mirroring	√	√	√	√	√	√	√	√	√	√	√	√	√
	ATM QoS	Configuring CBR, VBR-rt, VBR-nrt, and UBR on the PVC	√	√	√	√	√	√	√	√	√	√	√	√	√
MQC	Traffic classifier, traffic behavior, and traffic		√	√	√	√	√	√	√	√	√	√	√	√	√
SAC	Smart Application Control	Supporting P2P, RTP, and enterprise applications	√	√	√	√	√	√	√	√	√	√	√	√	√
Voice															
Voice ports															
	FXS ports	Supporting user-defined ringing mode, interface locking, and interface loopback. Supporting four access user types: DEL, ECPBX, LCPBX, and PAYPHONE	X	X	√	X	√	X	X	X	√	√	√	√	√
	FXO ports														
		P2P and P2MP working modes	X	X	√	X	√	X	X	X	√	√	√	√	√
		Remote power supplies on a port	X	X	√	X	√	X	X	X	√	√	√	√	√
		Loopback on BRA ports	X	X	√	X	√	X	X	X	√	√	√	√	√
	ISDN S/T ports	Working mode, remote power supplies on the ports and alarm checking on the BRA ports	X	X	√	X	√	X	X	X	√	√	√	√	√
	E1 interfaces		X	X	√	X	√	X	X	X	√	√	√	√	√
Voice media															
	RTP		X	X	√	X	√	X	X	X	√	√	√	√	√
	DSP		X	X	√	X	√	X	X	X	√	√	√	√	√
		Three-way conference, Multi-party conference	X	X	√	X	√	X	X	X	√	√	√	√	√
		DSP mode: Full rate mode and G.711 mode	X	X	√	X	√	X	X	X	√	√	√	√	√
	DSP Standard														
		G.723.1, G.728, G.729 G.729a, G.729ab, G.726, G.722, G.711	X	X	√	X	√	X	X	X	√	√	√	√	√
Voice signaling															
	SIP protocol		X	X	√	X	√	X	X	X	√	√	√	√	√
		Supporting SIP over TLS	X	X	√	X	√	X	X	X	√	√	√	√	√
Diagnostics and Maintenance															
	Signaling tracing and problems		X	X	√	X	√	X	X	X	√	√	√	√	√
	Voice loading		X	X	√	X	√	X	X	X	√	√	√	√	√
	VQSM		X	X	√	X	√	X	X	X	√	√	√	√	√

	Remote packet capturing		X	X	√	X	√	X	X	X	√	√	√	√	√
	TR069	Supporting TR104 node	X	X	√	X	√	X	X	X	√	√	√	√	√
SIP AG															
	POTS subscriber management		X	X	√	X	√	X	X	X	√	√	√	√	√
	BRA/PRA subscriber management		X	X	√	X	√	X	X	X	√	√	√	√	√
	Fax		X	X	√	X	√	X	X	X	√	√	√	√	√
	Modem		X	X	√	X	√	X	X	X	√	√	√	√	√
	SIP	SIP over UDP/TCP/SCTP	X	X	√	X	√	X	X	X	√	√	√	√	√
	Overload		X	X	√	X	√	X	X	X	√	√	√	√	√
	BEST	Branch Exchange for Survivable Telephony	X	X	√	X	√	X	X	X	√	√	√	√	√
	CAC bandwidth limit in static mode	Restricting incoming and outgoing calls when the bandwidth is insufficient	X	X	√	X	√	X	X	X	√	√	√	√	√
PBX															
	User access	Accessing the POTS terminal, SIP UE terminal, and BRA terminal	X	X	√	X	√	X	X	X	√	√	√	√	√
	Trunk interworking														
		Accessing the PSTN network/traditional TDM PBX by using AT0 and PRA trunks	X	X	√	X	√	X	X	X	√	√	√	√	√
		Accessing the IMS network by using a SIP IP trunk (SIP PRA or SIP AT0)	X	X	√	X	√	X	X	X	√	√	√	√	√
		Connecting to other IP PBXs by using an SIP IP trunk (IP addresses cannot be obtained dynamically. And SIP IP trunk cannot be registered.)	X	X	√	X	√	X	X	X	√	√	√	√	√
		R2 trunk	X	X	√	X	√	X	X	X	√	√	√	√	√
		H323 Gateway	X	X	√	X	√	X	X	X	√	√	√	√	√
		Accessing the ISDN network using the ISDN BRA trunk	X	X	√	X	√	X	X	X	√	√	√	√	√
	Service function														
		Fax/modem service in TDM/VOIP mode	X	X	√	X	√	X	X	X	√	√	√	√	√
		Connecting to the GSMBOX gateway (ZED-3 GSMBOX gateway) by using a SIP IP trunk	X	X	√	X	√	X	X	X	√	√	√	√	√
		Double communication (DC) service and three-party service	X	X	√	X	√	X	X	X	√	√	√	√	√
		Multi-subscriber-number (MSN) service supporting both SIP UE and POTS subscribers	X	X	√	X	√	X	X	X	√	√	√	√	√
		Media proxy for NAT traversal	X	X	√	X	√	X	X	X	√	√	√	√	√
		Multi-party conferencing	X	X	√	X	√	X	X	X	√	√	√	√	√
		Blacklist and Whitelist	X	X	√	X	√	X	X	X	√	√	√	√	√
		DISA	X	X	√	X	√	X	X	X	√	√	√	√	√
		Restricting calls by setting the bandwidth in static mode	X	X	√	X	√	X	X	X	√	√	√	√	√
	Operation and maintenance	PBX functions can be controlled by licenses.	X	X	√	X	√	X	X	X	√	√	√	√	√
	Reliability	Associating the SIP server status with the VRRP status, and associating the SIP IP trunk status with the VRRP status	X	X	√	X	√	X	X	X	√	√	√	√	√
Management and maintenance															
Port mirroring		Mirror packets to Ethernet interfaces (LAN-side interfaces and WAN-side interfaces), including: Ethernet interfaces, serial ports, ATM interfaces, E1/T1 interfaces, ISDN interfaces, 3G interfaces, WLAN interfaces, and Eth-Trunk interfaces. Supporting port mirroring on both inbound and outbound interfaces. Supporting port mirroring for traffic sent to the CPU.	√	√	√	√	√	√	√	√	√	√	√	√	√
Web Mangement			√	√	√	√	√	√	√	√	√	√	√	√	√
System management		SYSLOG log information export	√	√	√	√	√	√	√	√	√	√	√	√	√
	TFTP		√	√	√	√	√	√	√	√	√	√	√	√	√
	Information center		√	√	√	√	√	√	√	√	√	√	√	√	√
	Command line		√	√	√	√	√	√	√	√	√	√	√	√	√
	Time management		√	√	√	√	√	√	√	√	√	√	√	√	√
	SSH		√	√	√	√	√	√	√	√	√	√	√	√	√
	FTP		√	√	√	√	√	√	√	√	√	√	√	√	√
	TELNET		√	√	√	√	√	√	√	√	√	√	√	√	√
	User management		√	√	√	√	√	√	√	√	√	√	√	√	√
	Multilingual resource file management		√	√	√	√	√	√	√	√	√	√	√	√	√
	File system		√	√	√	√	√	√	√	√	√	√	√	√	√
	Configuration file		√	√	√	√	√	√	√	√	√	√	√	√	√
	Configuration management		√	√	√	√	√	√	√	√	√	√	√	√	√
	Terminal management		√	√	√	√	√	√	√	√	√	√	√	√	√
	Supporting console interfaces and synchronous/asynchronous serial interfaces	Supporting console interfaces and synchronous/asynchronous serial interfaces	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)	√(Console serial interfaces include RJ45 and miniUSB interfaces cannot be used together)
Upgrade management			√	√	√	√	√	√	√	√	√	√	√	√	√
Device management			√	√	√	√	√	√	√	√	√	√	√	√	√
GTL			√	√	√	√	√	√	√	√	√	√	√	√	√
Diagnostics and Debugging			√	√	√	√	√	√	√	√	√	√	√	√	√
SNMP		SNMPv1/v2c/v3, supporting MIB files defined by SMIv1 and SMIv2	√	√	√	√	√	√	√	√	√	√	√	√	√

PoE		Supporting 802.3af and 802.3at. The interface maximum power is 30 W.	X	X	√	√	√	X	√	√	√	X	X	X	X
NTP		This module uses V3 that is compatible with V1 and V2.	√	√	√	√	√	√	√	√	√	√	√	√	√
RMON			√	√	√	√	√	√	√	√	√	√	√	√	√
RMON2			√	√	√	√	√	√	√	√	√	√	√	√	√
CWMP			√	√	√	√	√	√	√	√	√	√	√	√	√
Deployment		Downloading the configuration file, version file, and patch file from the TFTP/FTP server automatically Supporting USB-based deployment	√	√	√	√	√	√	√	√	√	√	√	√	√
External interfaces															
TR069 node		Supporting TR111	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN															
WLAN QoS															
	WMM function		X	X	X	√	√	X	X	X	X	X	X	X	X
	Priority mapping		X	X	X	√	√	X	X	X	X	X	X	X	X
	Traffic control		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN security															
	WEP security policy		X	X	X	√	√	X	X	X	X	X	X	X	X
	WPA security policy		X	X	X	√	√	X	X	X	X	X	X	X	X
	WAPI security policy		X	X	X	√	√	X	X	X	X	X	X	X	X
	Key management		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN radio management															
	Wireless protocol		X	X	X	√	√	X	X	X	X	X	X	X	X
	Rate, channel, and bandwidth		X	X	X	√	√	X	X	X	X	X	X	X	X
	MAC layer parameters		X	X	X	√	√	X	X	X	X	X	X	X	X
	Radio interfaces		X	X	X	√	√	X	X	X	X	X	X	X	X
	802.11n parameters		X	X	X	√	√	X	X	X	X	X	X	X	X
AP															
	AP management		X	X	X	√	√	X	X	X	X	X	X	X	X
	Diagnosis and maintenance		X	X	X	√	√	X	X	X	X	X	X	X	X
	VAP management		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN STA management															
	STA access		X	X	X	√	√	X	X	X	X	X	X	X	X
	STA association		X	X	X	√	√	X	X	X	X	X	X	X	X
	STA information		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN anti-attack															
	Blacklist and whitelist		X	X	X	√	√	X	X	X	X	X	X	X	X
	Access control		X	X	X	√	√	X	X	X	X	X	X	X	X
	Anti-attack		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN services															
	WLAN services		X	X	X	√	√	X	X	X	X	X	X	X	X
	TR-069-based WLAN service		X	X	X	√	√	X	X	X	X	X	X	X	X
WLAN (AC)															
AP management															
	Networking capability	Supporting the Layer 2/Layer 3 network and IPv4 network between APs and the AC	√	√	√	√	√	√	√	√	√	√	√	√	√
	AC discovery	Discovering ACs using DHCP Option43, DNS, or CAPWAP	√	√	√	√	√	√	√	√	√	√	√	√	√
	AP access	Configuring the AP access control mode (automatic access based on the MAC address or serial number)	√	√	√	√	√	√	√	√	√	√	√	√	√
	AP management	Querying AP software version update, configuration downloading, and status maintenance	√	√	√	√	√	√	√	√	√	√	√	√	√
CAPWAP															
	CAWAP tunnel	Supporting the CAPWAP control tunnel	√	√	√	√	√	√	√	√	√	√	√	√	√
	Networking capability	Supporting Layer2/Layer 3 network data direct forwarding	√	√	√	√	√	√	√	√	√	√	√	√	√
STA management															
	STA access	Supporting 802.1x, Dot1x, Portal, EAP-PAP/EAP-MD5, EAP-PEAP/EAP-TLS, and MAC authentication	√	√	√	√	√	√	√	√	√	√	√	√	√
	STA association	Supporting STA association and reassociation, and intra-VLAN or inter-VLAN roaming	√	√	√	√	√	√	√	√	√	√	√	√	√
	AAA	Supporting AAA, VLAN and Layer 3 ACL delivery by the RADIUS server, and STA grouping and ACL authorization	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN radio management															
	Radio management	Supporting 802.11 b/g/n	√	√	√	√	√	√	√	√	√	√	√	√	√
	802.11n	Setting 802.11n parameters	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN security															
	WEP security policy		√	√	√	√	√	√	√	√	√	√	√	√	√
	WPA security policy		√	√	√	√	√	√	√	√	√	√	√	√	√
	WAPI security policy		√	√	√	√	√	√	√	√	√	√	√	√	√
	Key management		√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN attack defense															

	Blacklist and whitelist	Supporting blacklist and whitelist, and viewing WLAN security feature logs and statistics	√	√	√	√	√	√	√	√	√	√	√	√	√
	Communication control	STA communication control on a virtual AP	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN QoS															
	WMM function	Supporting 802.11e	√	√	√	√	√	√	√	√	√	√	√	√	√
	Priority mapping		√	√	√	√	√	√	√	√	√	√	√	√	√
	CAR and rate limit	Supporting rate limit on upstream traffic of the VAP/SAT-based air interface, AP traffic control, and radio-based multi-STA traffic balancing	√	√	√	√	√	√	√	√	√	√	√	√	√
WLAN service															
	Service management	Supporting configurations and management of the WLAN service sets and VAP, automatic service delivery and management, and the VDS bridge function	√	√	√	√	√	√	√	√	√	√	√	√	√
	Reliability	Supporting 1+1 cold backup, 1+1 load balancing, and N+1/N+N cold backup between ACs	√	√	√	√	√	√	√	√	√	√	√	√	√