

HUAWEI B535-232a LTE CPE  
V100R001

## Product Description

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# 1 Product Overview

The HUAWEI LTE CPE B535-232a is a Long Term Evolution (LTE) wireless gateway for multiple users in household or small office environments. It enables users to access the Internet.

The B535-232a supports 3GPP Release 11 with LTE CAT 7. The supported service functions are as follows:

- Data service up to DL 300 Mbps and UL 100 Mbps
- Working band: LTE: B1/B3/B7/B8/B20/B28/B32/B38, UMTS: B1/B8;  
DL:  
CA\_1C/CA\_3C/CA\_7C/CA\_38C/CA\_3A-3A/CA\_1A-3A/CA\_1A-7A/CA\_1A-8A/  
CA\_1A-20A/CA\_1A-28A/CA\_3A-7A/CA\_3A-8A(B8 only SCC)/  
CA\_3A-20A/CA\_3A-28A/CA\_7A-8A(B8 only SCC)/  
CA\_7A-20A/CA\_7A-28A/CA\_8A-32A(B32 only SCC)/CA\_8A-38A(B38 only SCC)/  
CA\_20A-32A(B32 only SCC)/CA\_20A-38A/CA\_28A-38A  
UL: CA\_3C/CA\_7C/CA\_38C
- Wi-Fi: 802.11 a/b/g/n/ac. 802.11b/g/n 2.4GHz Wi-Fi 2x2 MIMO up to 400Mbps, 802.11a/n/ac 5GHz Wi-Fi 2x2 MIMO up to 867Mbps. Maximum Users: 64
- 1 GE port for LAN/WAN, 3 GE ports for LAN
- Multi APN function (Optional) for Data, TR-069 services
- Routing mode: NAT enable (Default) / IP pass-through (Optional)
- VPN client service (L2TP, PPTP)
- Customer management via WebUI or HUAWEI AI Life app
- Operator maintenance via TR-069 (Optional) and TR-143 (Optional)
- Huawei Firmware Over the Air (HOTA)

**Figure 1-1** B535-232a appearance




# 2 Technical Specifications

## 2.1 Hardware Specifications

**Table 2-1** Technical specifications of the B535-232a main unit

Item	Description	
Technical standard	WAN	3GPP Release 11
	LAN	IEEE 802.3/802.3u
	Wi-Fi	IEEE 802.11a/b/g/n/ac
Working band/frequency	LTE	B1/B3/B7/B8/B20/B28/B32/B38
	UMTS	B1/B8
	Wi-Fi	2.4 GHz: 2401-2483MHz, 5 GHz: 5170-5350MHz&5490-5710MHz
External port	<ul style="list-style-type: none"> <li>• One power adapter port</li> <li>• One LAN/WAN port (RJ45), three LAN ports (RJ45)</li> <li>• Two external LTE antenna ports (SMA)</li> <li>• One SIM card slot (Nano-SIM)</li> </ul>	
Antennas	<ul style="list-style-type: none"> <li>• Built-in LTE/UMTS primary antenna</li> <li>• Built-in LTE/UMTS secondary antenna</li> <li>• Built-in Wi-Fi 2.4 GHz antenna</li> <li>• Built-in Wi-Fi 5.0 GHz antenna</li> </ul>	

Item	Description			
LED Indicators	<ul style="list-style-type: none"> <li>• One Internet status indicator White: Connected to the Internet. Red: No SIM card is inserted or detected, or the SIM card has insufficient balance.</li> <li>• One Wi-Fi indicator On: Wi-Fi is enabled. Flash slowly: A pairable HiLink device is detected. Flash quickly: HiLink pairing is in progress/WPS connection is in progress. Off: Wi-Fi is disabled.</li> </ul> <p> <b>NOTE</b></p> <ul style="list-style-type: none"> <li>• The indicator starts to flash slowly only when B535-232a detects a new HiLink device.</li> <li>• One group of signal strength indicators Signal reception available (more indicators mean better reception).</li> </ul>			
Buttons	<ul style="list-style-type: none"> <li>• One Power ON/OFF switch</li> <li>• One H button <ul style="list-style-type: none"> <li>• The Wi-Fi indicator flashes slowly when the router detects a HiLink device. Press the H button to connect the HiLink device to the router's Wi-Fi.</li> <li>• When the Wi-Fi indicator is steady on, press the H button to enable WPS.</li> </ul> </li> <li>• One Reset button</li> </ul>			
Maximum transmit power	LTE	<ul style="list-style-type: none"> <li>• B1/B3/B38: 22.5 dBm±1.5 dB</li> <li>• B7: 22 dBm±1.5 dB</li> <li>• B8/B28: 23 dBm±1.5 dB</li> <li>• B20: 23 dBm±1.5 dB</li> </ul>		
	UMTS	<ul style="list-style-type: none"> <li>• B1: 22.5 dBm±1 dB</li> <li>• B8: 23 dBm±1 dB</li> </ul>		
	Wi-Fi	2.4G	802.11b	SISO Ant0/Ant1 13.5/14 dBm(±1.5dB)
			802.11g	SISO Ant0/Ant1 15.5/16 dBm(±1.5dB)
			802.11n-20M	SISO Ant0/Ant1 15.5/16 dBm(±1.5dB)

Item	Description							
			802.11n-40M		SISO Ant0/Ant1 15.5/16 dBm(±1.5dB)			
	5G	5G LF (±2 dB) *Some edge band power is reduced		5G MF (±2 dB) *Some edge band power is reduced		5G HF (±2 dB) *Some edge band power is reduced		
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
	11a 6M	18	16.5	17.5	17	20	20	
	11a 54M	16.5	15	16	15.5	18.5	18.5	
	11n 20M MCS0	18	16.5	17.5	17	20	21	
	11n 20M MCS7	16.5	15	16	15.5	18.5	18.5	
	11n 40M MCS0	19	17.5	18.5	18	21	21	
	11n 40M MCS7	16.5	15	16	15.5	18.5	18.5	
	11ac 20M MCS0	18	16.5	17.5	17	20	20	
	11ac 20M MCS8	16	14.5	15.5	15	18	18	
	11ac 40M MCS0	19.5	17.5	18.5	18	21	21	
	11ac 40M MCS9	16	14.5	15.5	15	18	18	
	11ac 80M MCS0	19	17.5	18.5	18	21	21	
	11ac 80M MCS9	16	14.5	15.5	15	18	18	
Receiving sensitivity	LTE	Band	1.4MHz (dBm)	3MHz (dBm)	5MHz (dBm)	10MHz (dBm)	15MHz (dBm)	20MHz (dBm)
		B1	/	/	-100.3	-97.3	-95.5	-94.3
		B3	-102	-99	-97.3	-94.3	-92.5	-91.3
		B7	/	/	-98.3	-95.3	-93.5	-92.3
		B8	-102.5	-99.5	-97.3	-94.3	/	/
		B20	/	/	-97.3	-94.3	-91.5	-90.3
		B28	/	-100.5	-98.8	-95.8	-94	-91.3

Item	Description							
		B32	/	/	-100.8	-99.8	-96.8	-95.8
		B38	/	/	-100.3	-97.3	-95.5	-94.3
	UMTS	<ul style="list-style-type: none"> <li>• B1: -107.7 dBm</li> <li>• B8: -104.7 dBm</li> </ul>						
	Wi-Fi	<ul style="list-style-type: none"> <li>• 2.4G 802.11b: -87 dBm</li> <li>• 2.4G 802.11g: -75 dBm</li> <li>• 2.4G 802.11n 20M: -73.5 dBm</li> <li>• 2.4G 802.11n 40M: -70.5 dBm</li> <li>• 5G 802.11a: -77 dBm</li> <li>• 5G 802.11n 20M: -75.5 dBm</li> <li>• 5G 802.11n 40M: -73 dBm</li> <li>• 5G 802.11ac 20M: -71 dBm</li> <li>• 5G 802.11ac 40M: -66 dBm</li> <li>• 5G 802.11ac 80M: -62.5 dBm</li> </ul>						
Power consumption	< 12 W							
AC/DC power supply	<ul style="list-style-type: none"> <li>• AC (input): 100V-240V 50Hz/60Hz</li> <li>• DC (output): 12V/1A</li> </ul>							
Dimensions (Maximum)	219 mm (Width) x 138 mm (High) x 25.6 mm (Deep)(not included the socket) 219 mm (Width) x 138 mm (High) x 60.66 mm (Deep)( included the socket)							
Weight	< 330 g (excluding the power adapter)							
Temperature	<ul style="list-style-type: none"> <li>• Working temperature: 0°C to 40°C</li> <li>• Storage temperature: -20°C to +70°C</li> </ul>							
Humidity	5% – 95% (non-condensing)							

Item	Description
Certification/Compliance	WEEE CE Wi-Fi ERP ROHS REACH GCF

## 2.2 Antenna Specifications

### 2.2.1 Build-in LTE Antenna

**Table 2-2** LTE antenna specifications

Item	Description
Frequency	FDD LTE <ul style="list-style-type: none"> <li>• B1: 1920-1980 MHz 2110-2170 MHz</li> <li>• B3: 1710-1785 MHz 1805-1880 MHz</li> <li>• B7: 2500-2570 MHz 2620-2690 MHz</li> <li>• B8: 880-915 MHz 925-960 MHz</li> <li>• B20: 832-862 MHz 791-821 MHz</li> <li>• B28: 703-748 MHz 758-803 MHz</li> <li>• B32: NA 1452-1496 MHz</li> </ul> TDD LTE <ul style="list-style-type: none"> <li>• B38: 2570-2620 MHz 2570-2620 MHz</li> </ul> UMTS <ul style="list-style-type: none"> <li>• B1: 1920-1980 MHz 2110-2170 MHz</li> <li>• B8: 880-915 MHz 925-960 MHz</li> </ul>
Input impedance	50 Ω
Standing wave ratio	< 3
Main antenna efficiency	LTE <ul style="list-style-type: none"> <li>• B1: -1.5 dB</li> <li>• B3: -1.4 dB</li> <li>• B7: -1.7 dB</li> <li>• B8: -2.6 dB</li> </ul>



Item	Description
	<ul style="list-style-type: none"> <li>• B20: -2.1 dB</li> <li>• B28: -2.5 dB</li> <li>• B32: -2.6 dB</li> <li>• B38: -1 .8 dB</li> </ul> UMTS <ul style="list-style-type: none"> <li>• B1: -1.5 dB</li> <li>• B8: -2.6 dB</li> </ul>
Diversity antenna efficiency	LTE <ul style="list-style-type: none"> <li>• B1: -2.3 dB</li> <li>• B3: -2.2 dB</li> <li>• B7: -2.5 dB</li> <li>• B8: -3.1 dB</li> <li>• B20: -2.7 dB</li> <li>• B28: -3.2 dB</li> <li>• B32: -3.3 dB</li> <li>• B38: -2.3 dB</li> </ul> UMTS <ul style="list-style-type: none"> <li>• B1: -2.3 dB</li> <li>• B8: -3.1 dB</li> </ul>
Main antenna gain	LTE <ul style="list-style-type: none"> <li>• B1/B3/B7/B8/B20/B28/B32/B38: 1~2 dBi</li> </ul> UMTS <ul style="list-style-type: none"> <li>• B1: 2 dBi</li> <li>• B8: 0.8 dBi</li> </ul>
Diversity antenna gain	LTE B1/B3/B7/B8/B20/B28/B32/B38: 1~2 dBi
TX/RX	1T2R
Polarization	Linear polarization

## 2.2.2 Build-in Wi-Fi Antenna

**Table 2-3** Wi-Fi 2.4 GHz antenna specifications

Item	Description
Frequency	2401-2483MHz

Item	Description
Input impedance	50 Ω
Standing wave ratio	< 2
Efficiency	-3 dB
Gain	2.55 dBi
Polarization	Linear polarization


**Table 2-4** Wi-Fi 5.0 GHz antenna specifications

Item	Description
Frequency	5170-5350MHz&5490-5710MHz
Input impedance	50 Ω
Standing wave ratio	< 2
Efficiency	-3 dB
Gain	2.9 dBi
Polarization	Linear polarization

## 2.3 Software Specifications

**Table 2-5** Software specifications

Item	Description
LTE features	DL 2x2 MIMO
	DL 64QAM, UL 16QAM
Mobile network	APN management APN auto adapter
Gateway	Router <ul style="list-style-type: none"> <li>• Supports the default route: 0.0.0.0.</li> <li>• Supports manual configuration of LAN IP addresses.</li> <li>• Supports Address Resolution Protocol (ARP).</li> </ul>

Item	Description	
	DHCP server	<ul style="list-style-type: none"> <li>• The DHCP server can be enabled or disabled.</li> <li>• The address pool of the DHCP server can be configured.</li> <li>• The lease can be configured.</li> <li>• The DNS relay under the DHCP server can be enabled.</li> </ul>
	NAT	<ul style="list-style-type: none"> <li>• Supports NAT and NAPT (compliant with RFC2663, RFC3022, and RFC3027).</li> <li>• Supports cone NAT.</li> <li>• Supports Symmetric NAT.</li> </ul>
	ARP	
	ICMP	
	IPv4v6 dual stack IPv6 only (Optional , CLAT for LAN side IPv4 device access Internet) IPv4 only (Optional)  <b>NOTE</b> When the CLAT function is enabled, the IPv4 device Internet access service cannot reach the maximum throughput. Under IPv6 only, NAT-base service (such as port forwarding and port triggering) is not available.	
	VPN pass-through	
VPN client	<ul style="list-style-type: none"> <li>• Support L2TP VPN client</li> <li>• Support PPTP VPN client</li> </ul>	
SMS	<ul style="list-style-type: none"> <li>• Writing/sending/receiving</li> <li>• Writing/sending/receiving extra-long messages</li> </ul>	
Data service	LTE : DL 300 Mbps, UL 100 Mbps DC-HSPA+: DL 42 Mbps, UL 5.76 Mbps HSPA+: DL 21 Mbps (64QAM), UL 5.76 Mbps HSPA: DL 14.4 Mbps, UL 5.76 Mbps WCDMA PS: DL 384 Kbps, UL 384 Kbps	
	Wi-Fi 802.11b/g/n/a/ac	
	Supports multi APNs (Optional, one for data and one for TR-069).	

Item	Description	
Firewall setup	<ul style="list-style-type: none"> <li>• Firewall enable/disable</li> <li>• URL filtering</li> <li>• LAN IP filtering</li> <li>• Port forwarding (Virtual server)</li> <li>• Port triggering (Special Application)</li> <li>• DMZ service</li> <li>• UPnP service</li> <li>• ALG settings</li> </ul>	
LAN	<ul style="list-style-type: none"> <li>• 10/100/1000 Mbps auto-negotiation</li> <li>• MDI/MDIX auto-sensing</li> <li>• IEEE 802.3/802.3u-compatible</li> </ul>	
Wi-Fi	Broadcasts and hides service set identifiers (SSIDs)	
	Complies with IEEE 802.11b/g/n/a/ac	
	WPS	
	WMM	
	Encryption	AES, and TKIP + AES
	Security mode	<ul style="list-style-type: none"> <li>• Open</li> <li>• WPA2-PSK</li> <li>• WPA/WPA2-PSK</li> </ul>
	MAC address authentication	<ul style="list-style-type: none"> <li>• Supports the MAC address authentication whitelist.</li> <li>• Supports the MAC address authentication blacklist.</li> <li>• Supports a maximum of 32 MAC address entries.</li> </ul>
	STA	<ul style="list-style-type: none"> <li>• Supports inquiry of STA status.</li> <li>• Supports a maximum of 64 connected stations.</li> </ul>
Operator maintenance (Optional)	<ul style="list-style-type: none"> <li>• Supports TR-069 Amendment III</li> <li>• Supports TR-143 Amendment I</li> </ul>	
USIM	PIN management and USIM card authentication	
NTP	Supports daylight saving time (DST) (Optional).	
Maintenance	Supports export of current diagnosis results and operation logs.	

Item	Description	
HUAWEI AI Life APP	<ul style="list-style-type: none"> <li>• View data traffic usage and SMS.</li> <li>• Manage connected devices.</li> <li>• Change CPE's SSID and password.</li> </ul>	
System requirements	Operating system	Windows 8, Windows 8.1, Windows 10, Windows 11 (Not support Windows RT), MAC OS X 10.12, 10.13, 10.14 and 10.15.
	Web browser	<ul style="list-style-type: none"> <li>• Microsoft Internet Explorer 9.0 and Microsoft Edge 14.0 with latest updates.</li> <li>• Firefox 60.0 with latest updates.</li> <li>• Chrome 60.0 with latest updates.</li> <li>• Safari 10.0 with latest updates.</li> <li>• Opera 51.2 with latest upgrades.</li> </ul>
	Your computer's hardware system should meet or exceed the recommended system requirements for the installed OS version.	