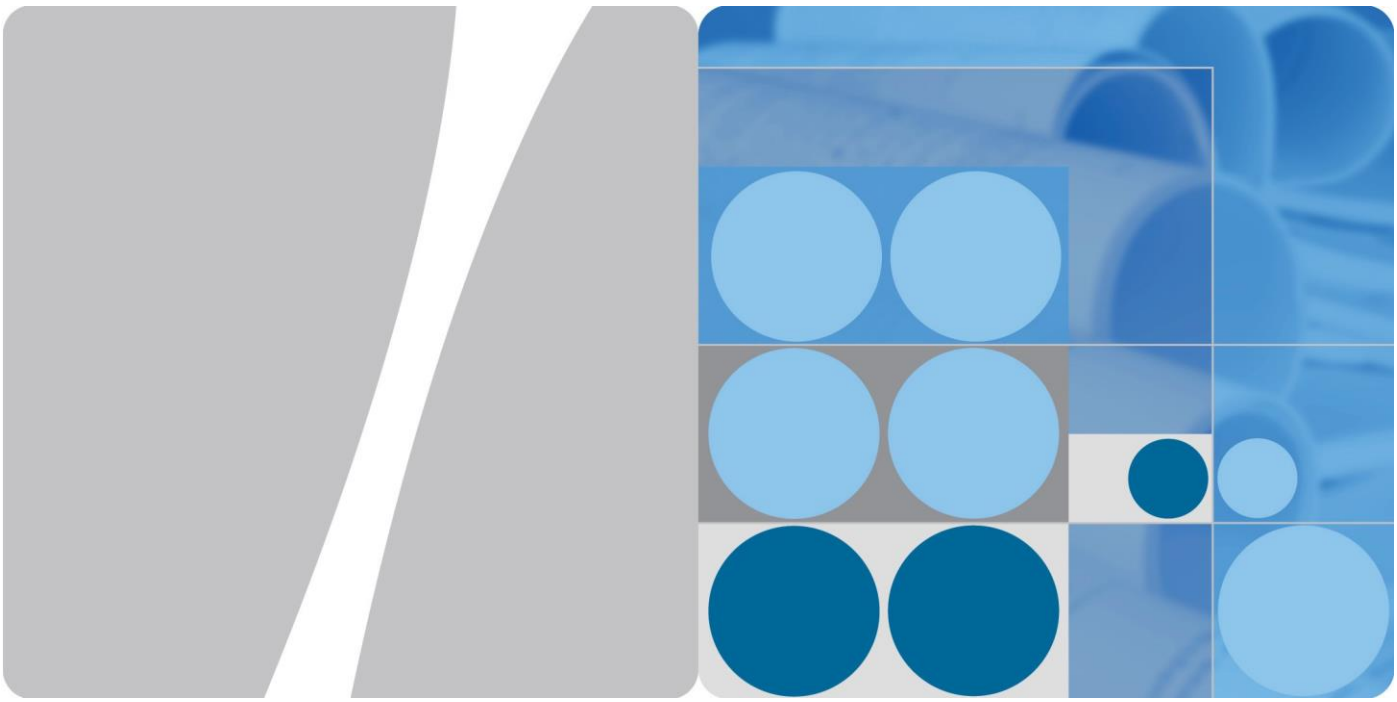


HUAWEI B525s-65a LTE CPE
V100R001

Product Description

Issue 02

Date 2017-03-21

HUAWEI TECHNOLOGIES CO., LTD.

Trademarks and Permissions

 and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: http://consumer.huawei.com/en/

Email: mobile@huawei.com

About This Document

Summary

This document provides information for product features, main functions and services, technical specifications and technical references.

This document includes:

Chapter	Details
1 Product Overview	Describes the appearance and main services of product
2 Features	Describes the product features
3 Technical Specifications	Describes the specifications of product hardware, software and user interface
4 Services and Applications	Describes the main functions and applications
5 System Structure	Describes the product system structure
6 Packing List	Describes the devices and accessories of the product

NOTE
The document is an invitation to offer but not an offer. It is intended to describe the general features and functions of products. The features and functions of certain products vary with requirements of customers.

History

Issue	Date	Details
02	2017-03-21	Modified the CA information
01	2017-01-15	Initial official release.

Contents

1 Product Overview

The HUAWEI B525s-65a LTE CPE (B525s-65a for short) is a wireless gateway that integrates LTE and high-speed Ethernet uplink access, which provides users with flexible and diversified data access and voice services.

NOTE
The frequency bands of the product are as follows.

B525s-65a support:

- LTE: B1//B3//B7/B8/B28/B40/ 2CA(DL): CA_1A-3A,CA_1A-28A,CA_1C,CA _3A-3A,CA_3A-7A,CA_3A-8A,CA_3A-28A,CAA_3C,CA_4A-28A,CA_5A-7A,CA_5A-38A(SCC),CA_5A-40A(SCC),CA_7A-8A(SCC), CA_7A-28A,CA_7C,,CA_40A-40A,CA_40C,

  NOTE
  Default support bandwidth combination set 0, please refer to 3GPP 36.101 Table 5.6A.1-1 and Table 5.6A.1-2.
- DC-HSPA+/HSPA+/HSPA/UMTS：B1/B6

The B525s-65a supports the following standards:

- LTE（Long Term Evolution）
- DC-HSPA+（Dual Carrier High Speed Packet Access Plus）
- HSPA+（High Speed Packet Access Plus）
- HSUPA（High Speed Uplink Packet Access）
- HSDPA（High Speed Downlink Packet Access）
- UMTS（Universal Mobile Telecommunications System）

The B525s-65a supports wired and wireless network access, and provides data routing service.

The B525s-65a provides the following services:

- Data service
- Security service

- **Figure 1-1** B525s-65a **appearance**

2 F

The B525s-65a mainly supports the following features:

- Access to LTE wireless networks
- Access to Gigabit Ethernet networks
- High-speed data access
  - LTE FDD: DL 300 Mbit/s, UL 50 Mbit/s
  - LTE TDD: DL 220 Mbit/s, UL 10 Mbit/s
  - DC-HSPA+: DL 42 Mbit/s, UL 5.76 Mbit/s
  - HSPA+: DL 21 Mbit/s (64QAM), UL 5.76 Mbit/s
  - HSPA: DL 14.4 Mbit/s, UL 5.76 Mbit/s
  - WCDMA PS: 384 kbit/s
- Complies with wireless 802.11b/g/n standards with data rates up to 300 Mbit/s
- Complies with wireless 802.11a/ac standards with data rates up to 1300 Mbit/s
- IPv4 /IPv6 dual stack
- External LTE antenna port
- Support for HUAWEI HiLink App
- WPS 2.0
- HOTA updates
- Built-in DHCP Server, DNS RELAY and NAT
- Security services. Provides instant protection to block potential security risks and intrusion attempts
- Windows 7, Windows 8, Windows 8.1, Windows 10 (does not support Windows RT), MAC OS X 10.7, 10.8, 10.9 and 10.10 with latest upgrades
- User-friendly design of LED indicator. Easy to observe the status of equipment.

3 Technical Specifications

3.1 Hardware Specifications

Table 3-1 Technical specifications of the B525s-65a main unit implementation

Item	Description		
Technical standard	WAN	LTE/DC-HSPA+/HSPA+/HSPA/UMTS	
	LAN	IEEE 802.3/802.3u	
	WLAN	IEEE 802.11a/b/g/n/ac	
Working frequency band	LTE		B1/B3/B7/B8/B28/B40 2CA(DL): CA_1A-3A,CA_1A-28A,CA_1C,CA_3A-3 ,CA_3A-7A,CA_3A-8A,CA_3A-28A,CA_3C,CA_7A-8A(SCC),CA_7A-28A,CA_7C,CA_40A-40A,CA_40C NOTE Default support bandwidth combination set 0, please refer to 3GPP 36.101 Table 5.6A.1-1 and Table 5.6A.1-2
	DC-HSPA+/HSPA+/HSPA/UMTS		B1/B6

<table>
<tr><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td>WLAN</td><td colspan="2">• 2.4GHz 2.422 GHz～2.472 GHz
• 5GHz 5.150GHz～5.350GHz & 5.470GHz～5.725GHz</td></tr>
<tr><td>External port</td><td colspan="3">• One power adapter port
• Three LAN port (RJ45)
• One LAN/WAN port (RJ45)
• One phone port (RJ11) - Not Functional
• Two external LTE antenna ports (SMA-J1.5)
• One micro-SIM card slot
• One USB 2.0 port (Supports a maximum of 500mA current)</td></tr>
<tr><td>Antenna</td><td colspan="3">• Built-in LTE/UMTS/GSM primary antenna
• Built-in LTE/UMTS secondary antenna
• Built-in WLAN 2.4G antenna
• Built-in WLAN 5G antenna</td></tr>
<tr><td>Indicator</td><td colspan="3">• One power indicator
• One Internet status indicator
• One WLAN/WPS indicator
• One LAN indicator
• One group of signal strength indicators</td></tr>
<tr><td>Button</td><td colspan="3">• One Power ON or OFF switch
• One WPS button
• One Reset button</td></tr>
<tr><td rowspan="5">Maximum transmit power</td><td>LTE</td><td colspan="2">Conform to 3GPP Power Class 3 Definition</td></tr>
<tr><td rowspan="4">WLAN</td><td rowspan="3">2.4G</td><td>802.11b 16 dBm</td></tr>
<tr><td>802.11g 17 dBm</td></tr>
<tr><td>802.11n 17 dBm</td></tr>
<tr><td rowspan="2">5G</td><td>Low band
802.11a 17 dBm
802.11n 16 dBm
802.11ac 16 dBm</td></tr>
<tr><td>Middle band
802.11a 17 dBm
802.11n 16 dBm
802.11ac 16 dBm</td></tr>
</table>

Item	Description		
			High band 802.11a 21 dBm 802.11n 21 dBm 802.11ac 21 dBm
Receiving sensitivity	LTE	Conform to 3GPP Definition	
	UMTS	Conform to 3GPP Definition	
	WLAN	802.11a：-71 dBm（54 Mbit/s）	
		802.11b：-85 dBm（11 Mbit/s）	
		802.11g：-71 dBm（54 Mbit/s）	
		802.11n：-69 dBm（65 Mbit/s）	
		802.11ac：-65 dBm（78 Mbit/s）	
Power consumption	< 20W		
AC/DC power supply	• AC: 100 V - 240 V • DC: 12 V/2 A		
Dimensions (Maximum)	226mm × 163mm × 52mm		
Weight	About 370g (excluding the power adapter)		
Temperature	• Working temperature: 0°C to 40°C • Storage temperature: -20°C to +70°C		
Humidity	5% - 95%		

3.2 Antenna and Radio Frequency

Table 3-2 LTE main diversity antenna specifications

Item	Description
Frequency	703 MHz~960 MHz /1452 MHz~1496 MHz /1710 MHz~2690 MHz
Input impedance	50 Ω
Standing wave ratio	< 3
Efficiency	≥ -4dB@703MHz~960MHz ≥-4 dB@1452 MHz~1496 MHz

Item	Description
H side gain	≥ 1dBi
Polarization	Linear polarization

Table 3-3 WLAN 2.4 GHz antenna specifications

Item	Description
Frequency	2.401 GHz～2.495 GHz
Input impedance	50 Ω
Standing wave ratio	< 2
Efficiency	≥ -3dB
H side gain	≥ 1dBi
Polarization	Linear polarization

Table 3-4 WLAN 5 GHz antenna specifications

Item	Description
Frequency	5.15-5.35GHz / 5.47-5.725GHz
Input impedance	50 Ω
Standing wave ratio	<2
Efficiency	≥ -3dB
H side gain	≥ 1dBi
Polarization	Linear polarization

Table 3-5 External antenna specifications

NOTE

- The external antenna is an optional accessory. Signals may be weak in some areas; thus, you can choose whether to use the external antenna.
- The external antenna can be used indoor only. Put it near the window when using to get better signal.
- Avoid thunderstorms when using.

Item	Description
Technical standard	LTE/DC-HSPA+/HSPA+/HSPA/WCDMA/EDGE/GPRS/GSM
Frequency	• 703 MHz - 960 MHz • 1452 MHz~1496 MHz • 1710 MHz - 2690 MHz

Item	Description
Input impedance	50 Ω
Standing wave ratio	< 3
H side gain	≥ 3 dBi (horizontal level)
Polarization	Linear polarization
Interface standard	SMA-J1.5

3.3 Software Specifications

Table 3-6 Software specifications

Item	Description	
Gateway	Supports the default route: 0.0.0.0.	
	Supports the default gateway address: 192.168.8.1.	
	Supports the Address Resolution Protocol (ARP).	
	Supports the Internet Control Message Protocol (ICMP).	
	Supports the domain name service (DNS).	
	NAT	Supports NAT and Network Address and Port Translation (NAPT), which complies with RFC2663, RFC3022, and RFC3027.
		Supports CONE NAT.
		Supports fragmented message identification during common NAT.
	DHCP server	Enables and disables the DHCP server.
		Configures DHCP server address pools.
		Sets the lease time.
VPN client	Support L2TP VPN client (When L2TP vpn client function is enabled, the throughput performance will slow down, the maximum speed can up to 50Mbps (dependent on network environment).)	
Firewall	Enables and disables the firewall.	
	Filters LAN MAC addresses.	

Item	Description	
	Filters LAN IP addresses.	
	Filters URLs.	
	Supports demilitarized zone (DMZ).	
	Supports Universal Plug and Play (UPnP).	
	Supports Application Level Gateway (ALG).	
WLAN	Broadcasts and hides service set identifiers (SSIDs).	
	Complies with IEEE 802.11 a/b/g/n/ac.	
	Supports WPS	
	Authentication	Supports OpenSystem authentication.
		Supports encryption using wired equivalent privacy (WEP), Wi-Fi protected access preshared key (WPA /WPA2-PSK), and WPA2-PSK authentication.
		Supports the Advanced Encryption Standard (AES) encryption algorithm.
		Supports the TKIP and AES hybrid encryption algorithm.
	MAC address authentication	Supports the MAC address authentication whitelist.
		Supports the MAC address authentication blacklist.
		Supports a maximum of 10 MAC address entries.
	Supports automatic transmission rate adjustment.	
	Station management	Supports station status queries.
		Supports a maximum of 32+32 connected stations.
IPv6/IPv4 dual stack	DHCPv6/v4 server and client	
	DNSv6/v4 server and client	
	Display IPv6/v4 WAN address	
HUAWEI HiLink App	View the data traffic usage and SMS.	
	Manage the connected devices.	
	Change CPE's SSID and password.	

Item	Description
System requirements	Operating system: Windows 7, Windows 8, Windows 8.1, Windows 10 (does not support Windows RT), MAC OS X 10.7, 10.8, 10.9 and 10.10 with latest upgrades
	Hardware configuration: meets the configuration requirements of the operating system.

4 Services and Applications

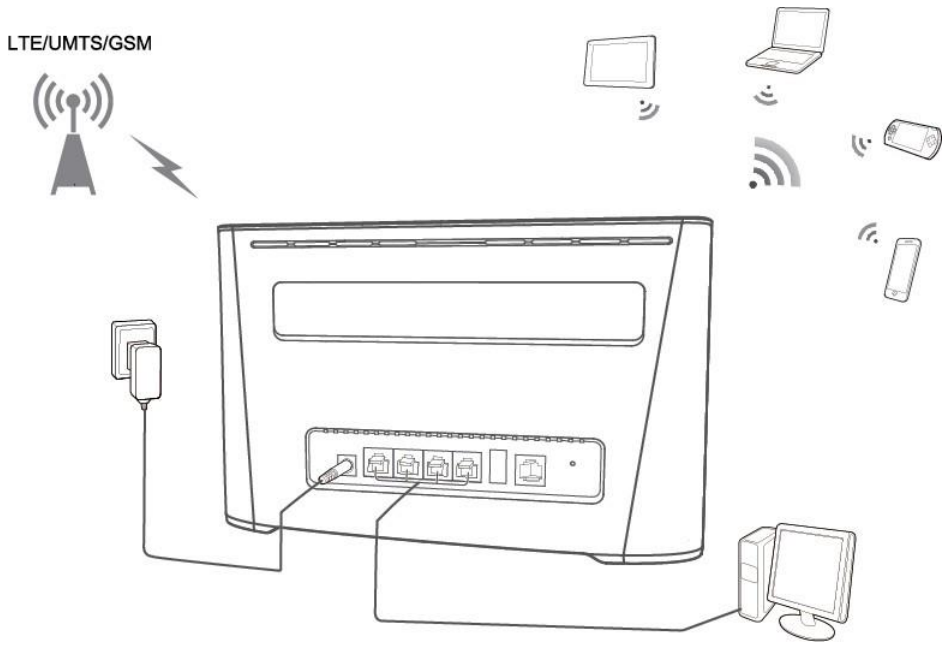
4.1 Data Services

The B525s-65a can access the Internet through mobile networks, and Ethernet networks. By connecting to the B525s-65a using Wi-Fi or a network cable, users can get access to high-speed Internet services and establish a local area network (LAN).

4.1.1 Accessing the Internet through a Mobile Network (LTE/UMTS)

The B525s-65a can access the Internet through mobile networks.

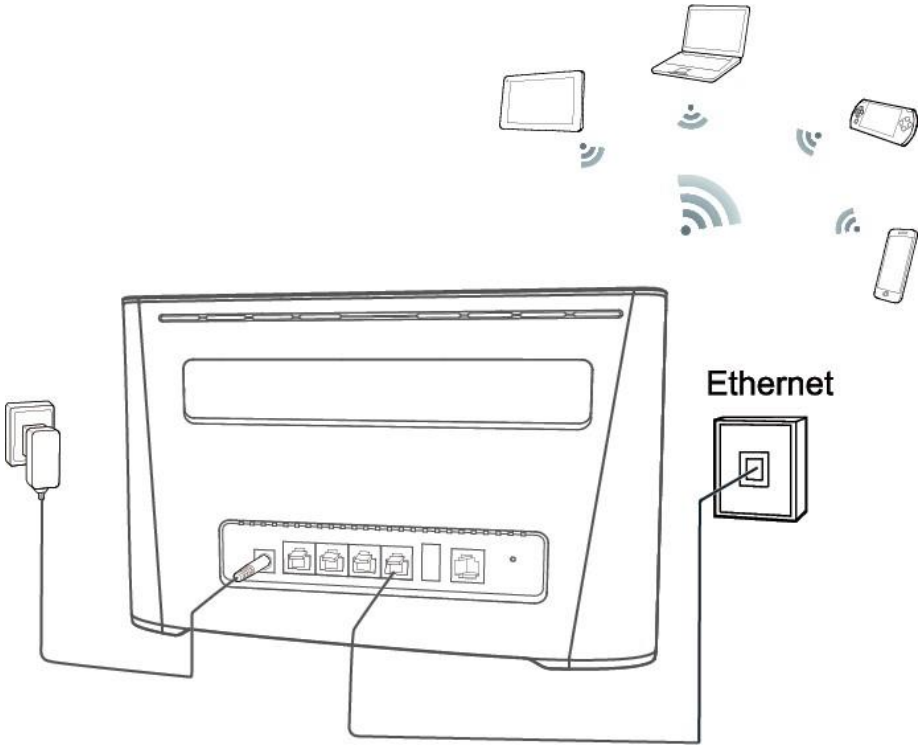
Figure 4-1 Accessing the Internet through a mobile network



4.1.2 Accessing the Internet Through an Ethernet Network

Connect the B525s-65a's LAN/WAN port to a wall-mounted Ethernet port using a network cable.

Figure 4-2 Accessing the Internet through an Ethernet network



4.2 Security Service

The B525s-65a supports various security features, such as the firewall, user authentication, and PIN protection, protect users against security threats from the Internet when users are using network services.

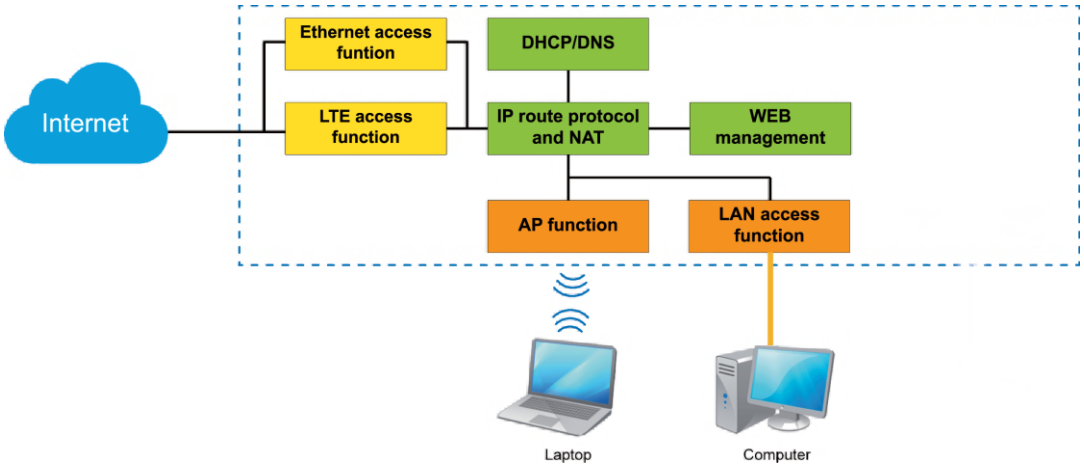
4.3 Local management and

The B525s-65a supports local configuration through the Web page. You can accomplish device management, network configuration and ensure normal and stable performance.

5 System Structure

5.1 System Architecture

Figure 5-1 System architecture



5.2 Functional Modules

- Mobile network access: The B525s-65a adopts the LTE/UMTS access technology at the WAN side, can access the wireless broadband packet-based.
- WLAN AP function: 802.11 a/b/g/n/ac compliant WLAN AP interface is provided, used for wireless networking at home. The interface is compliant with the IEEE 802.11 a/b/g/n/ac standard and the WPA/WPA2-PSK/WPA2-PSK/WEP security authentication.
- DHCP/DNS: The DHCP server dynamically allocates IP addresses to PCs. The DNS parses domain names.
- Web management: You can configure, modify and query the configuration information of the B525s-65a.
- Routing and NAT: High-speed routing capability. With the built-in NAT, the B525s-65a, together with wireless broadband packet-based network devices, can provide flexible broadband access solutions and networking schemes.

6 Packing List

Table 6-1 Packing list

Description	Quantity	Remarks
Wireless Gateway	1	Standard
Power supply adapter	1	Standard
Quick Start	1	Standard
Ethernet cable	1	Standard

A Acronyms and Abbreviations

A	
AC	Alternating Current
ARP	Address Resolution Protocol
AP	Access Point
APN	Access Point Name
C	
CPE	Customer Premises Equipment
CS	Circuit Switch
CSFB	Circuit Switched Fallback
D	
DHCP	Dynamic Host Configuration Protocol
DL	Downlink
DNS	Domain Name Server
G	
GE	Gigabit Ethernet
H	
HSPA	High Speed Packet Access
HSPA+	High Speed Packet Access Plus
HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
I	
IP	Internet Protocol
ICMP	Internet Control Message Protocol

A	
L	
LAN	Local Area Network
LED	Light Emitting Diode
LTE	Long Term Evolution
M	
MCS	Modulation and Coding Scheme
N	
NAT	Network Address Translation
T	
TKIP	Temporal Key Integrity Protocol
U	
UMTS	Universal Mobile Telecommunications System
UL	Uplink
W	
WAN	Wide Area Network
WLAN	Wireless Local Area Network
WCDMA	Wideband Code Division Multiple Access
Wi-Fi	Wireless Fidelity