

**HUAWEI B618s-22d LTE CPE
V100R001**

Product Description

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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 | 2016-11-08 | Modify the product picture silk screen, consistent with the actual, the second release. |
| 01 | 2016-07-14 | Initial official release. |

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1 Product Overview

The HUAWEI B618s-22d LTE CPE (B618s-22d 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.

B618s-22d support:

- LTE: B1/3/7/8/20/38
FDD: 2100 MHz/1800 MHz/2600 MHz/ 900 MHz/800 MHz
TDD: 2600 MHz
Intra-band contiguous: CA_1C,CA_3C,CA_7C,CA_8B, CA_38C
Inter-band:
CA_1A-3A,CA_1A-20A,CA_3A-7A,CA_3A-20A,CA_7A-20A,CA_20A-38A
- DC-HSPA+/HSPA+/HSPA/UMTS: Band 1/8 2100MHz/900MHz
- EDGE/GPRS/GSM: Band 2/3/5/8 1900MHz/1800MHz/850MHz/900MHz

The B618s-22d supports the following standards:

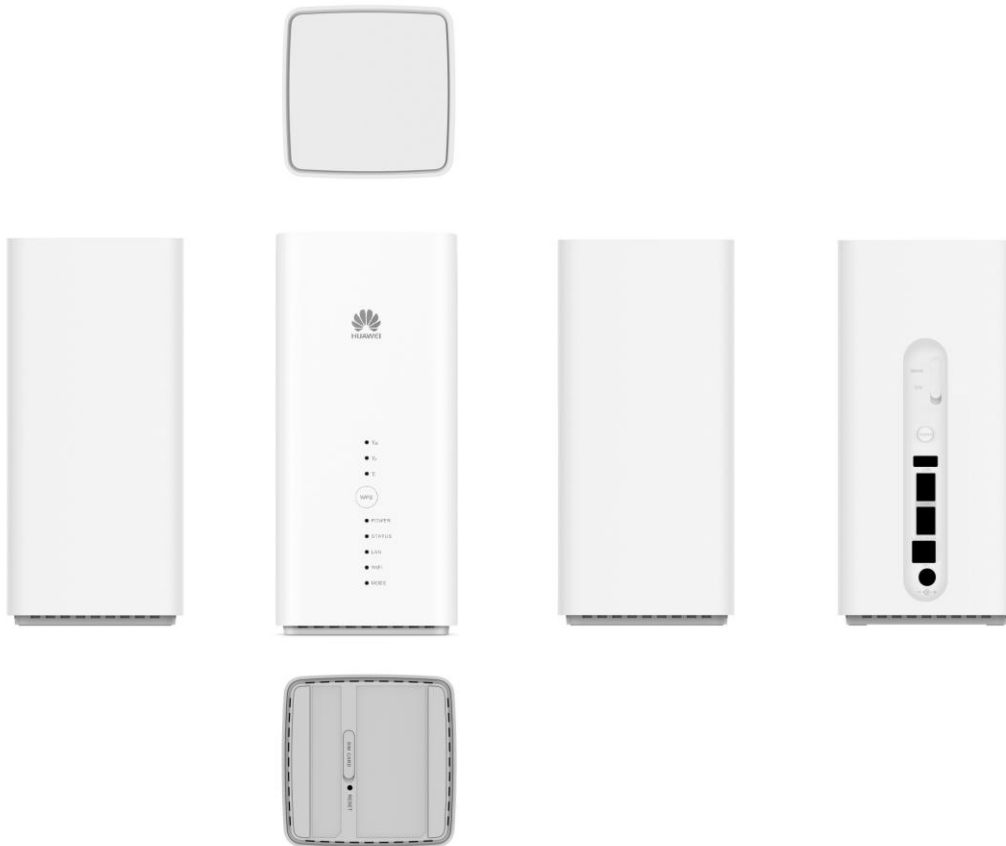
- LTE (Long Term Evolution)
- DC-HSPA+ (Dual Carrier High Speed Packet Access Plus)
- HSPA+ (High Speed Packet Access Plus)
- HSUPA (High Speed Uplink Packet Access)
- HSDPA (High Speed Downlink Packet Access)
- UMTS (Universal Mobile Telecommunications System)
- EDGE (Enhanced Data Rates for Global Evolution)
- GPRS (General Packet Radio Service)
- GSM (Global System for Mobile Communications)

The B618s-22d supports wired and wireless network access, and provides data routing service.

The B618s-22d provides the following services:

- Data service
- Voice service
- SMS
- Security service
- Local maintenance management function

Figure 1-1 B618s-22d appearance



Z

2 Features

The B618s-22d mainly supports the following features:

- Access to LTE wireless networks
- Access to Gigabit Ethernet networks
- High-speed data access
 - LTE FDD: 4*4MIMO+2CA 582Mbps
 - LTE TDD: 4*4MIMO+2CA 426Mbps
 - DC-HSPA+: DL 42 Mbit/s, UL 5.76 Mbit/s
 - HSPA+: DL 21 Mbit/s (64QAM) / 28 Mbit/s (MIMO), UL 5.76 Mbit/s
 - HSPA: DL 14.4 Mbit/s, UL 5.76 Mbit/s
 - WCDMA PS: 384 kbit/s
 - EDGE: DL 296 kbit/s, UL 236.8 kbit/s
 - GPRS: 85.6 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
- SMS
- IPv4 /IPv6 dual stack
- Compatibility with RJ11 telephone ports; support VoLTE voice(customizable function), can be set to Voice over Internet Protocol (VoIP) voice mode or Circuit Switch (CS) voice mode
- 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 B618s-22d main unit

| Item | Description | |
|------------------------|--------------------------|--|
| Technical standard | WAN | LTE/DC-HSPA+/HSPA+/HSPA/UMTS/EDGE/GPRS/GSM |
| | LAN | IEEE 802.3/802.3u |
| | WLAN | IEEE 802.11a/b/g/n/ac |
| Working frequency band | LTE | B618s-22d support: LTE: B1/3/7/8/20/38 FDD: 2100 MHz/1800 MHz/2600 MHz/900 MHz/800 MHz TDD: 2600 MHz Intra-band contiguous: CA_1C,CA_3C,CA_7C,CA_8B, CA_38C Inter-band: CA_1A-3A,CA_1A-20A,CA_3A-7A,CA_3A-20A,CA_7A-20A,CA_20A-38A |
| | DC-HSPA+/HSPA+/HSPA/UMTS | Band 1/8 2100 MHz /900 MHz |
| | EDGE/GPRS/GSM | Band 2/3/5/8 1900 MHz/1800 MHz/850 MHz/900 MHz |
| | WLAN | <ul style="list-style-type: none"> • 2.4GHz 2.400 GHz~2.474 GHz • 5GHz 5.150GHz~5.350GHz&5.470GHz~5.725GHz |

| Item | Description | | | |
|------------------------|---|--|--|--|
| External port | <ul style="list-style-type: none"> • One power adapter port • One LAN port (RJ45) • One LAN/WAN port (RJ45) • One phone port (RJ11) • Two external LTE antenna ports (TS-9) • One micro-SIM card slot • One USB 2.0 port (Supports a maximum of 500mA current) | | | |
| Antenna | <ul style="list-style-type: none"> • Built-in LTE/UMTS/GSM primary antenna • Built-in LTE/UMTS secondary antenna • Built-in WLAN 2.4G antenna • Built-in WLAN 5G antenna | | | |
| Indicator | <ul style="list-style-type: none"> • One power indicator • One Internet status indicator • One Mode indicator • One WLAN/WPS indicator • One LAN indicator • One group of signal strength indicators | | | |
| Button | <ul style="list-style-type: none"> • One Power ON or OFF switch • One WPS button • One Reset button | | | |
| Maximum transmit power | LTE | Conform to 3GPP Power Class 3 Definition | | |
| | WLAN | 2.4G | 802.11b 16 dBm | |
| | | | 802.11g 17 dBm | |
| | | | 802.11n 17 dBm | |
| | WLAN | 5G | Low band 802.11a 16 dBm 802.11n 16 dBm 802.11ac 16 dBm | |
| | | | Middle band 802.11a 16 dBm 802.11n 16 dBm 802.11ac 16 dBm | |
| | | | High band 802.11a 20 dBm 802.11n 20 dBm 802.11ac 20 dBm | |

| Item | Description | | |
|-----------------------|---|----------------------------|---------------------|
| Receiving sensitivity | LTE | Conform to 3GPP Definition | |
| | UMTS | Conform to 3GPP Definition | |
| | GSM | -104 dBm | |
| | 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 | < 24W | | |
| AC/DC power supply | <ul style="list-style-type: none"> AC: 100 V - 240 V DC: 12 V/2 A | | |
| Dimensions (Maximum) | 95mm × 95mm × 208mm | | |
| Weight | About 700g (excluding the power adapter) | | |
| Temperature | <ul style="list-style-type: none"> Working temperature: 0 °C to 40 °C Storage temperature: -20 °C to +70 °C | | |
| Humidity | 5% - 95% | | |

3.2 Antenna and Radio Frequency Specifications

Table 3-2 LTE main diversity antenna specifications

| Item | Description |
|---------------------|--|
| Frequency | 703 MHz~960 MHz/1710 MHz~2690 MHz |
| Input impedance | 50 Ω |
| Standing wave ratio | < 3 |
| Efficiency | ≥ -4.5dB@703MHz~960MHz ≥ -3.5dB@1710MHz~2690MHz |
| H side gain | ≥ 1dBi |
| Polarization | Linear polarization |

Table 3-3 LTE secondary antenna specifications

| Item | Description |
|---------------------|--|
| Frequency | 758MHz~960MHz/1710MHz~2690MHz |
| Input impedance | 50 Ω |
| Standing wave ratio | < 4 |
| Efficiency | ≥ -5.5dB@703MHz~960MHz ≥ -4dB@1710MHz~2690MHz |
| H side gain | ≥ 0dBi |
| Polarization | Linear polarization |

Table 3-4 WLAN 2.4 GHz antenna specifications

| Item | Description |
|---------------------|---------------------|
| Frequency | 2.400 GHz~2.474 GHz |
| Input impedance | 50 Ω |
| Standing wave ratio | < 2 |
| Efficiency | ≥ -3dB |
| H side gain | ≥ 1dBi |
| Polarization | Linear polarization |

Table 3-5 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 3-6 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 | <ul style="list-style-type: none">• 703 MHz - 960 MHz• 1710 MHz - 2690 MHz |
| Input impedance | 50 Ω |
| Standing wave ratio | < 3 |
| H side gain | \geq 1 dBi (horizontal level) |
| Polarization | Linear polarization |
| Interface standard | TS-9 |

3.3 Software Specifications

Table 3-7 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).) | | |
| SMS | Writing/Sending/Receiving | | |
| | Writing/Sending/Receiving extra-long messages | | |
| Voice | VoIP | Supports the Session Initiation Protocol (SIP). | |
| | | Supports G.711a/G.711u/G.726 (-24/-32)/G.722 for encoding and decoding. | |
| | CS voice | Supports CS voice communication over UMTS and GSM networks. | |
| | | Supports the circuit switched fallback (CSFB). | |
| | VoLTE voice | Customizable function | |
| Firewall | Enables and disables the firewall. | | |
| | Filters LAN MAC addresses. | | |
| | Filters LAN IP addresses. | | |

| Item | Description | |
|--|---|--|
| | 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. | |
| 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 | |

| Item | Description |
|------|---|
| | Hardware configuration: meets the configuration requirements of the operating system. |

4 Services and Applications

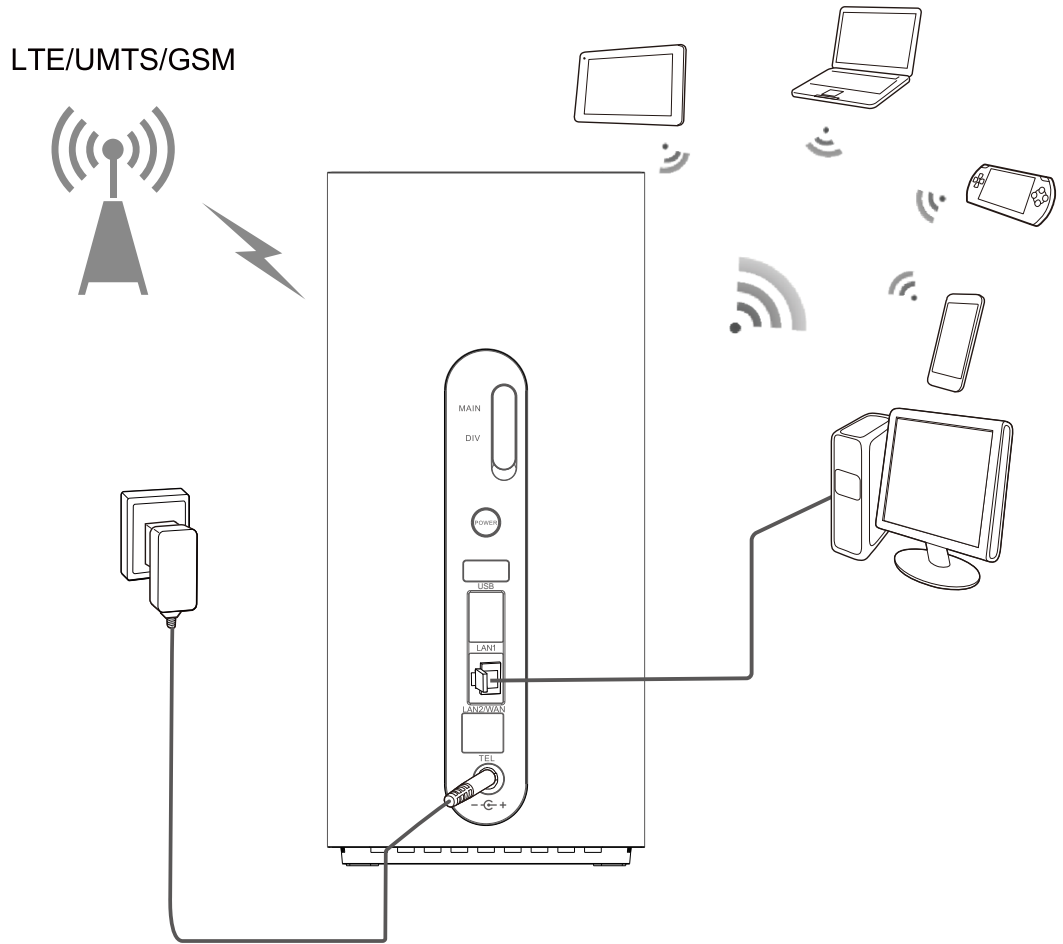
4.1 Data Services

The B618s-22d can access the Internet through mobile networks, and Ethernet networks. By connecting to the B618s-22d 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/GSM)

The B618s-22d can access the Internet through mobile networks.

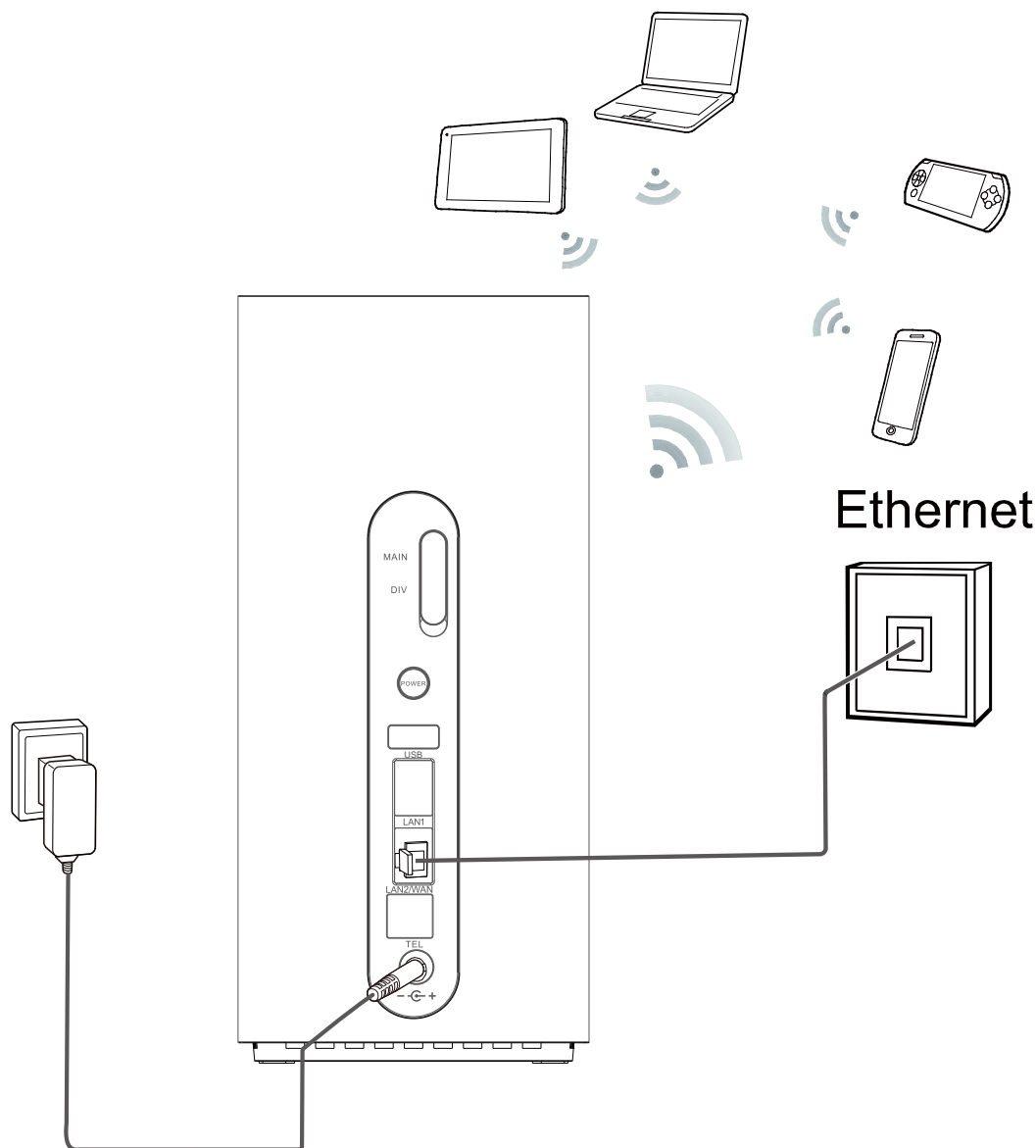
Figure 4-1 Accessing the Internet through a mobile network



4.1.2 Accessing the Internet Through an Ethernet Network

Connect the B618s-22d's LAN/WAN port to a wall-mounted Ethernet port using a network cable.

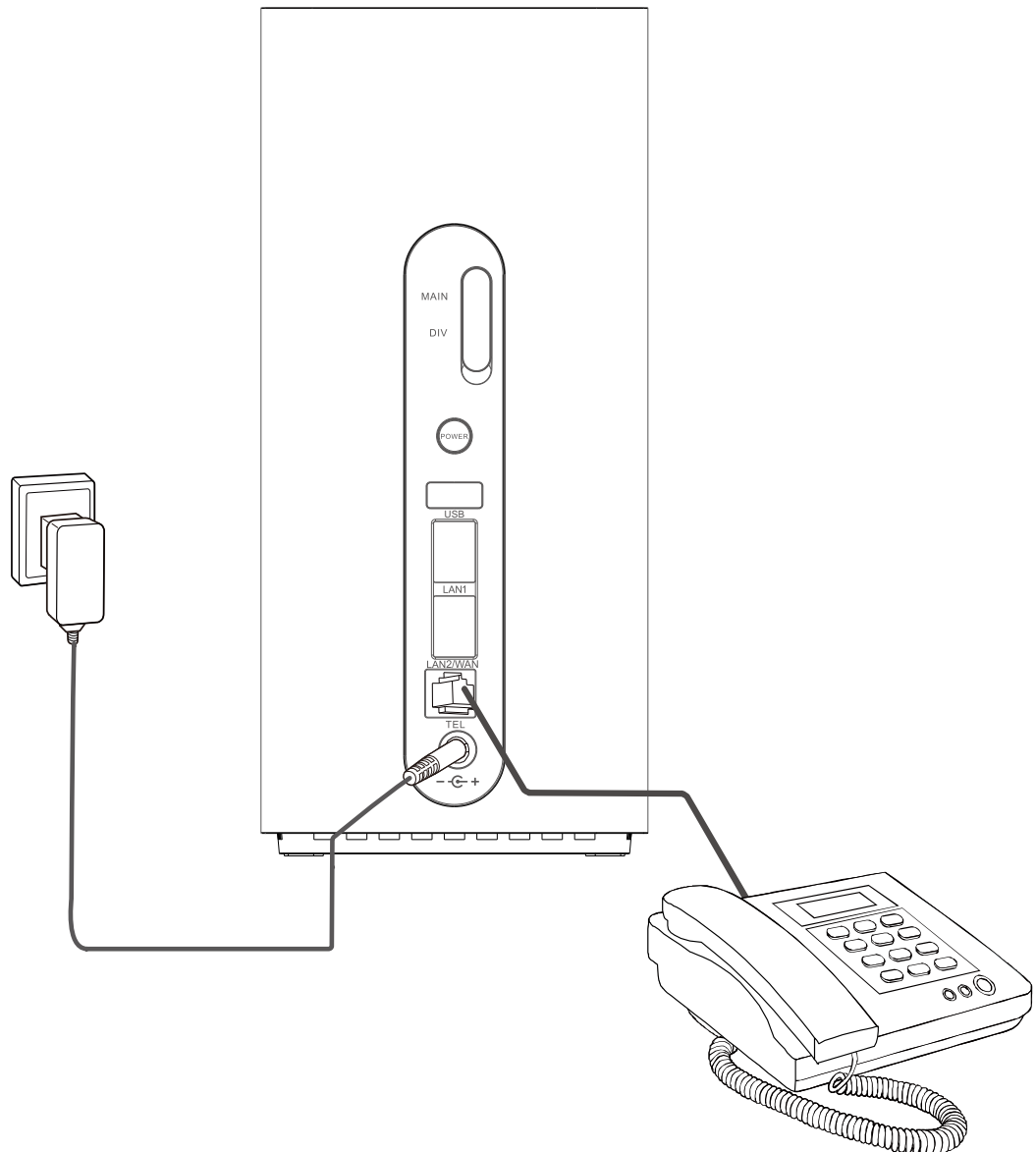
Figure 4-2 Accessing the Internet through an Ethernet network



4.2 Voice Services

The B618s-22d provides one telephone port that can be connected to telephones for calling.

Figure 4-3 Connecting telephones to the B618s-22d



4.3 SMS

The B618s-22d supports message writing/sending/receiving and group sending (up to 50 contacts at a time). You can manage messages through the Web page, such as inbox, outbox, draft.

4.4 Security Service

The B618s-22d 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.

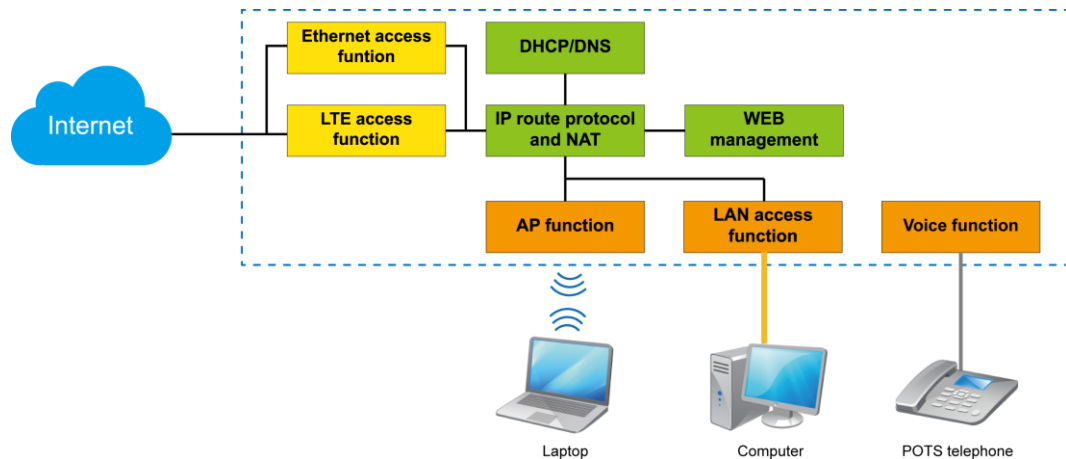
4.5 Local management and maintenance

The B618s-22d 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 Diagram

Figure 5-1 System architecture



5.2 Functional Modules

- Mobile network access: The B618s-22d adopts the LTE/UMTS/GSM 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 B618s-22d.
- Routing and NAT: High-speed routing capability. With the built-in NAT, the B618s-22d, 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 |
| Warranty card | 1 | Optional |
| Phone cable | 1 | Optional |

HUAWEI B618s-22d wireless gateway also provide external antenna as optional for you to choose.

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 |
| P | |
| POTS | Plain Old Telephone Service |
| T | |
| TKIP | Temporal Key Integrity Protocol |
| U | |
| UMTS | Universal Mobile Telecommunications System |
| UL | Uplink |
| V | |
| VoIP | Voice over Internet Protocol |
| W | |
| WAN | Wide Area Network |
| WLAN | Wireless Local Area Network |
| WCDMA | Wideband Code Division Multiple Access |
| Wi-Fi | Wireless Fidelity |