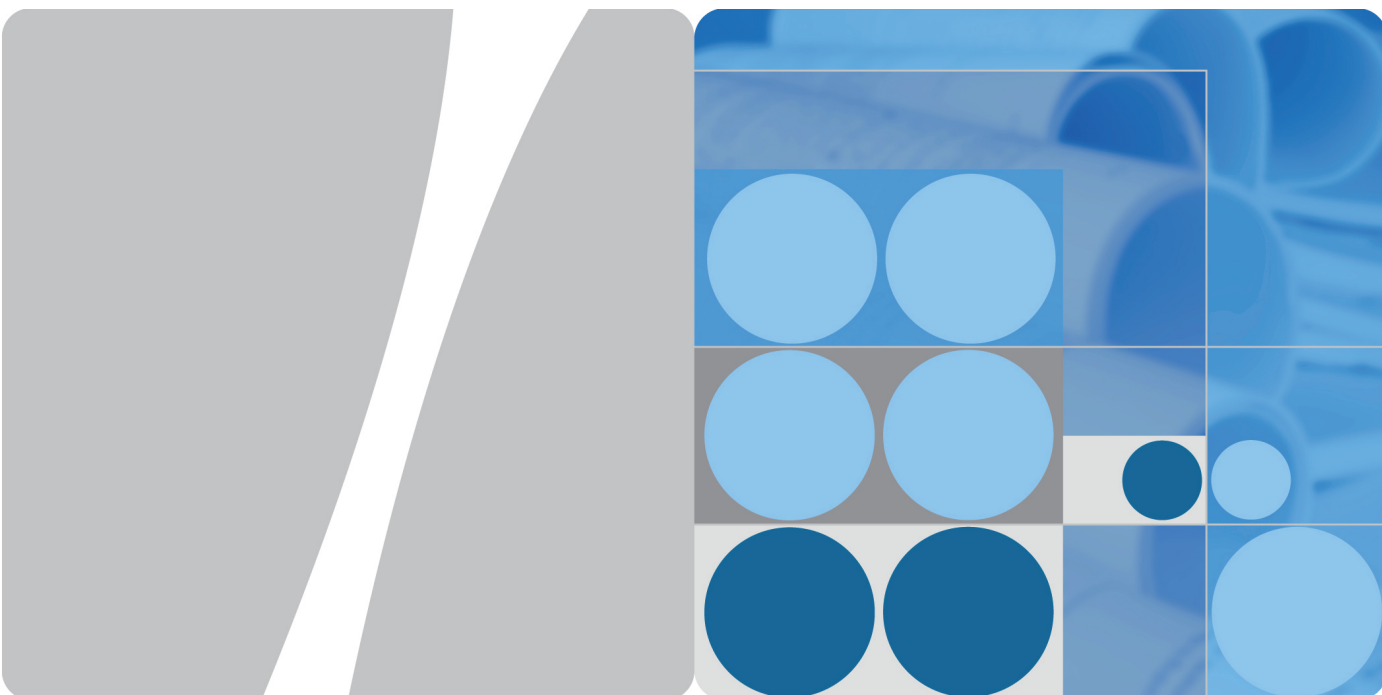


Product Description



HUAWEI B68L Wireless Gateway
V100R001

Issue 02
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Some features of the product and its accessories described herein rely on the software installed, capacities and settings of local network, and may not be activated or may be limited by local network operators or network service providers, thus the descriptions herein may not exactly match the product or its accessories you purchase.

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	Details	Date
01	Initial official release.	2013-11-30
02	<ul style="list-style-type: none">• Remove <i>Windows 2000</i>• Modify maximum WLAN rate to <i>150Mbps</i>• Remove support for <i>TKIP ciphering algorithm</i> only• Remove <i>LAN MAC Filter</i> (not a separate feature now, included into LAN access control function)• Add <i>One Power port</i> and <i>One Telephone port</i>• Modify storage temperature to <i>-30 °C to +60 °C</i>	2014-04-10

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1 Product Overview

The B68L wireless gateway (hereinafter referred to as the B68L) is a wireless 3G gateway, which provides users with flexible and diversified 3G/2G data access services and voice services.

 **NOTE**

The frequency bands of the product are optional. The service provider can customize the bands according to user requirements.

– B68L-54: HSPA/WCDMA	850MHz/1900MHz/2100MHz
EDGE/GPRS/GSM	850MHz/900MHz/1800MHz/1900MHz
– B68L-25: HSPA/WCDMA	900MHz/1900MHz/2100MHz
EDGE/GPRS/GSM	900MHz/1800MHz/1900MHz

B68L supports the following standards:

- HSPA+ (High Speed Packet Access Plus)
- HSUPA (High Speed Uplink Packet Access)
- HSDPA (High Speed Downlink Packet Access)
- WCDMA (Wideband Code Division Multiple Access)
- GSM(Global System for Mobile Communications)
- GPRS(General Packet Radio Service (System))
- EDGE(Enhanced Data Rates for Global Evolution)

B68L supports wired and wireless network access, and provides data routing service.

B68L provides the following services:

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



B68L appearance

2 Features

The B68L mainly supports the following features:

- Multiple network environments, Supports HSPA+/HSUPA/HSDPA/WCDMA/GSM/GPRS/EDGE.
- High speed experience. Supports data services of maximum rate of HSPA+(DL 21Mbit/s, UL 5.76Mbit/s), HSPA(DL 7.2Mbit/s, UL 5.76Mbit/s), 384kbit/s WCDMA PS, 236.8kbit/s EDGE, 85.6kbit/s GPRS.
- Supports maximum rate of 150Mbps 802.11b/g/n.
- AP function
- WPS 2.0
- Intuitionistic and convenient Web-based management.
- Built-in DHCP Server, DNS RELAY and NAT.
- Security services. Provides instant protection to block potential security risks and intrusion attempts.
- FOTA
- Windows XP/Windows Vista/Windows 7/Windows 8/Mac OS.
- User-friendly design of LED indicator. Easy to observe the status of equipment.
- Receiving diversity and load equalizer.
- Built-in WCDMA/GSM and WLAN antenna.
- External main diversity antenna interface.

3 Technical Specifications

3.1 Hardware Specifications

Table 3-1 Technical specifications of the B68L main unit

Item	Description
Technical standard	<ul style="list-style-type: none"> • WAN: HSPA+/HSUPA/HSDPA/WCDMA/GSM/GPRS/EDGE • LAN: IEEE 802.3/802.3u • WLAN: IEEE 802.11b/g/n
Working frequency band	HSPA/WCDMA: <ul style="list-style-type: none"> • B68L-54: 850MHz/1900MHz/2100MHz • B68L-25: 900MHz/1900MHz/2100MHz
	GSM/GPRS/EDGE: <ul style="list-style-type: none"> • B68L-54: 850MHz/900MHz/1800MHz/1900MHz • B68L-25: 900MHz/1800MHz/1900MHz
	WLAN: 2.401 GHz - 2.495 GHz
External interface/ Indicators	<ul style="list-style-type: none"> • One Power indicator • One Network indicator • One Wi-Fi/WPS indicator • Two LAN indicators • One Power ON or OFF switch • One WPS button • One Reset button • One external antenna port • One Telephone port • One Power port • Two LAN interfaces

Item	Description	
Maximum transmit power	WCDMA	24dBm(+1dB/-3dB)
	GSM	<ul style="list-style-type: none"> • 850MHz/900MHz: 33dBm(+2dB/-2dB) • 1800MHz/1900MHz: 30dBm(+2dB/-2dB)
	WLAN	<ul style="list-style-type: none"> • 802.11b: 16dbm (+2dB /-2dB) • 802.11g: 13dbm (+2dB /-2dB) • 802.11n: 13dbm (+2dB /-2dB)
Receiving sensitivity	WCDMA	≤ -109dBm@3.84MHz
	GSM	≤ -107dBm
	WLAN	<ul style="list-style-type: none"> • 802.11b: ≤ -83dBm@11Mbps ≤ -92dBm@1Mbps • 802.11g: ≤ -70dBm@54Mbps • 802.11n: ≤ -68dBm@MCS7 (BW=20MHz) ≤ -65dBm@MCS7 (BW=40MHz)
Power consumption	< 12W	
AC/DC power supply	<ul style="list-style-type: none"> • AC: 100V - 240V • DC: 12V/1A 	
Dimensions (Maximum)	180mm (Width) x 123mm (Height) x 32.5mm (Depth)	
Weight	≤ 400g (excluding the power adapter)	
Temperature	<ul style="list-style-type: none"> • Working temperature: 0°C to 45°C • Storage temperature: -30°C to +60°C 	
Humidity	5% - 95%	

3.2 Antenna and Radiofrequency Specifications

Table 3-2 WCDMA/GSM main antenna specifications

Item	Description
Frequency	<ul style="list-style-type: none"> • B68L-54: 824MHz - 960MHz 1710MHz - 2170MHz • B68L-25: 880MHz - 960MHz 1710MHz - 2170MHz
Input impedance	50Ω
Standing wave ratio	< 2.5
H side gain	≥ 1dBi (Horizontal level)
Polarization	Linear polarization

Table 3-3 WCDMA/GSM sub diversity antenna specifications

Item	Description
Frequency	<ul style="list-style-type: none"> • B68L-54: 824MHz - 960MHz 1710MHz - 2170MHz • B68L-25: 880MHz - 960MHz 1710MHz - 2170MHz
Input impedance	50Ω
Standing wave ratio	< 2.5
H side gain	≥ 1dBi (Horizontal level)
Polarization	Linear polarization

Table 3-4 WLAN main diversity antenna specifications

Item	Description
Frequency	2.401 GHz - 2.495 GHz
Input impedance	50Ω

Standing wave ratio	< 2
H side gain	≥ 1.5dBi (Horizontal level)
Polarization	Linear polarization

Table 3-5 WLAN sub diversity antenna specifications

Item	Description
Frequency	2.401 GHz - 2.495 GHz
Input impedance	50Ω
Standing wave ratio	< 2
H side gain	≥ 1.5dBi (Horizontal level)
Polarization	Linear polarization

Table 3-6 External WCDMA/GSM 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	HSPA+/HSUPA/HSDPA/WCDMA/GSM/GPRS/EDGE
Frequency	<ul style="list-style-type: none"> • B68L-54: 824MHz - 960MHz 1710MHz - 2170MHz • B68L-25: 880MHz - 960MHz 1710MHz - 2170MHz
Input impedance	50Ω
Standing wave ratio	< 3 (after being matched, all frequency points)
H side gain	≥ 2dBi (horizontal level peak value)
Polarization	Linear polarization
Interface standard	SMA-C-J1.5

3.3 Software Specifications

Table 3-7 Software specifications

Item	Description
Gateway	Supports the default routing (the routing address is 0.0.0.0). You can set the WAN connection to the default routing to generate default routing table items
	Supports ARP
	Supports ICMP
	Supports DNS Relay
	NAT: <ul style="list-style-type: none"> • Supports NAT, NAPT (compliant with RFC2663, RFC3022 and RFC3027) • Supports fragment message identification for normal NAT • Supports ALG
Data service	DHCP Server: <ul style="list-style-type: none"> • The default IP addresses of the DHCP server is from 192.168.1.2 to 192.168.1.254. The default gateway address is 192.168.1.1 • The default DHCP lease is 24 hours • The DHCP Server can be enabled or disabled • The address pool of the DHCP server can be configured • The lease can be configured • The IP address status can be displayed, such as the host name, MAC address, IP address, and remaining lease
	<ul style="list-style-type: none"> • HSPA+: DL 21Mbit/s UL 5.76Mbit/s • HSPA: DL 7.2Mbit/s UL 5.76Mbit/s • WCDMA PS: DL 384kbit/s UL 384kbit/s • EDGE: DL 236.8kbit/s UL 236.8kbit/s • GPRS: DL85.6kbit/s UL 85.6kbit/s
	WLAN: <ul style="list-style-type: none"> • 802.11b: 11Mbit/s, 5.5Mbit/s, 2Mbit/s, 1Mbit/s • 802.11g: 54Mbit/s, 48Mbit/s, 36Mbit/s, 24Mbit/s, 18Mbit/s, 12Mbit/s, 9Mbit/s, 6Mbit/s • 802.11n: 150Mbit/s, 75Mbit/s

Item	Description
Firewall setup	<ul style="list-style-type: none"> • Firewall Switch • URL Filter • Virtual Server • Port Forwarding • Port triggering • DMZ Service • UPnP Service • ACL settings • ALG settings
(Optional) Remote management	TR069 & TR111
LAN	<ul style="list-style-type: none"> • 10Mbit/s and 100Mbit/s auto-negotiation • MDI/MDIX auto-sensing • IEEE802.3/802.3u is compatible
WLAN	4 SSID broadcast and hiding are supported in maximum.
	Supports Wi-Fi 802.11b/g/n
	Supports WPS 2.0
	<p>Authentication:</p> <ul style="list-style-type: none"> • Open System authentication • Shared Key authentication • 64/128-digit WEP encryption • WPA-PSK/WPA2-PSK encryption • AES ciphering algorithm • TKIP and AES ciphering algorithm synchronously
	<p>MAC address authentication:</p> <ul style="list-style-type: none"> • White list • Black list • The preceding two lists cannot coexist. • Up to 16 MAC address items.
	<p>Ratio adjustment:</p> <ul style="list-style-type: none"> • Automatically • Manually
<p>STA management:</p> <ul style="list-style-type: none"> • Supports inquiry of STA status • Supports limit of access users (up to 32 users) 	

Item	Description
WAN	<ul style="list-style-type: none">• Support APN management• Support multi-profile dial-up management
System requirement	<ul style="list-style-type: none">• Windows XP, Windows Vista, Windows 7, Windows 8, Mac OS• Display resolution: 1024*768 or above• Web browser:<ul style="list-style-type: none">> IE 7.0, IE 8.0 (Windows XP)> IE 8.0, IE 9.0, IE 10.0, IE 11.0 (Windows 7)> Firefox 21.0, 22.0, 23.0> Safari 5.1.7 (Windows), Safari 5.1.6 (Mac)> Opera 12.0, 15.0, 16.0> Chrome 27.0, 28.0, 29.0• Your computer's hardware system should meet or exceed the recommended system requirements for the installed version of OS

4 Services and Applications

4.1 Wireless Router

The B68L can be used as a wireless router when the Wi-Fi is enabled. You can access the Internet service through setting up the wireless network connection with the B68L.

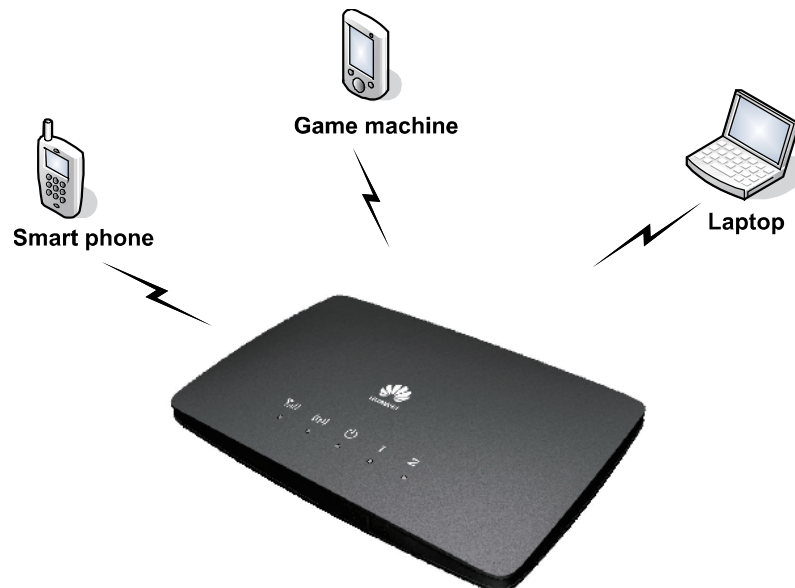


Figure 4-1 Connect wireless device to the B68L

4.2 Voice Service

The B68L provides a telephone interface, which can be used for connecting a telephone for the voice service. At most three extensions can be connected. When there is a new incoming call, all extensions play the ringtone. Only one extension can make a call simultaneously.



Figure 4-2 Connect telephone to the B68L

4.3 SMS

The B68L supports message writing/sending/receiving and group sending (up to 10 contacts at a time). You can manage messages through the Web page, such as inbox, outbox, draft.

4.4 Security Service

Its 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 B68L supports local configuration through the Web page. You can accomplish device management, network configuration and ensure normal and stable performance.

5 System Structure

Figure 5-1 shows the system architecture.

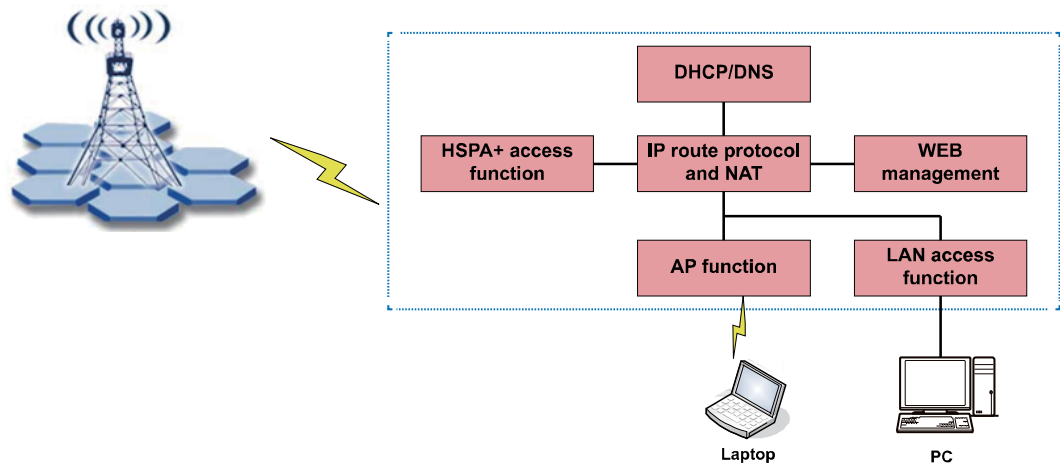


Figure 5-1 System architecture

The following describes modules shown in Figure 5-1.

- HSPA+ access: The B68L adopts the HSPA+ access technology at the WAN side. The B68L can access the wireless broadband packet-based network through 3G.
- WLAN AP function: An 802.11 b/g/n-compliant WLAN AP interface is provided, used for wireless networking at home. The interface is compliant with the IEEE802.11 b/g/n standard and the WPA-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 B68L.
- Routing and NAT: High-speed routing capability. With the built-in NAT, the B68L, together with wireless broadband packet-based network devices, can provide flexible broadband access solutions and networking schemes.

6 Packing List

Table 6-1 shows the devices and accessories of the B68L.

Table 6-1 Packing list

Description	Quantity	Remarks
Wireless Gateway	1	Standard
Quick Start	1	Standard
Power supply adapter	1	Standard
Warranty card	1	Optional
Ethernet cable	1	Optional
Phone cable	1	Optional

HUAWEI B68L wireless gateway also provide external antenna as optional for you to choose.

A Acronyms and Abbreviations

3G	The Third Generation
A	
AC	Alternating Current
ARP	Address Resolution Protocol
AP	Access Point
APN	Access Point Name
D	
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DL	Downlink
H	
HSPA	High Speed Packet Access
HSPA+	High Speed Packet Access Plus
HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
HLR	Home Location Register
I	
IP	Internet Protocol
ICMP	Internet Control Message Protocol
L	
LAN	Local Area Network
LED	Light Emitting Diode
L2TP	Layer 2 Tunneling Protocol

M	
MSC	Mobile Switching Center
N	
NAT	Network Address Translation
P	
PSTN	Public Switched Telephone Network
POTS	Plain Old Telephone Service
PPTP	Point to Point Tunneling Protocol
R	
RTT	Radio Transmission Technology
S	
SOHO	Small Office Home Office
SCP	Service Control Point
SGSN	Serving GPRS Support Node
SDRAM	Synchronous Dynamic Random Access Memory
T	
TKIP	Temporal Key Integrity Protocol
U	
UMTS	Universal Mobile Telecommunications System
UL	Uplink
V	
VLR	Visitor Location Register
VPN	Virtual Private Network
W	
WWAN	Wireless Wide Area Network
WAN	Wide Area Network
WLAN	Wireless Local Area Network
WCDMA	Wideband CDMA
Wi-Fi	Wireless Fidelity