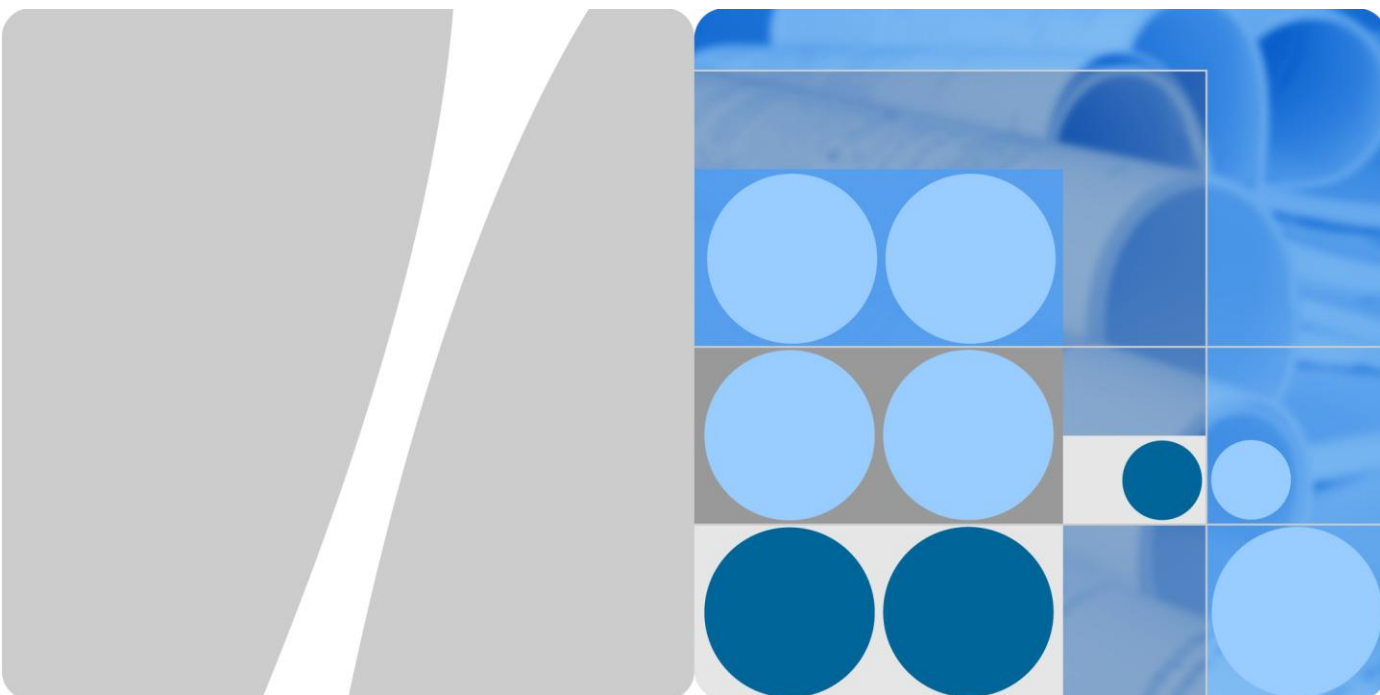


# Product Description



HUAWEI E5786s-62a Mobile WiFi  
V200R001

**Issue**        02  
**Date**         2014-04-08

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# About This Document

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## Summary

This document provides information about the major functions, supported services and system architecture.

The following table lists the contents of this document.

Chapter	Details
1 Overview	The supported network modes, basic services and functions, and the appearance of the product.
2 Features	The supported features and technical specifications of the product.
3 Services and Applications	The services and applications of the product.
4 System Architecture	The architecture of the product.
5 Packing List	The items contained in the package of the product.

## History

Issue	Details	Date
01	First release.	2013-12-24
02	<ul style="list-style-type: none"><li>● Change the WLAN Operating frequency from “WLAN: 2.4GHz, 5GHz (indoor use only)” to “WLAN: 2.4GHz, 5GHz”;</li><li>● Modify the Weight from “&lt; 150 g (including the battery)” to “about 145 g (including the battery)”;</li><li>● Add the feature “Dynamic frequency selection (DFS) for 5 GHz Wi-Fi”;</li><li>● Change “Standard 6-pin SIM card interface” to “Standard Micro 6-pin SIM card interface”;</li></ul>	2014-04-08

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# 1 Overview

HUAWEI E5786s-62a Mobile WiFi (hereinafter referred to as the E5786s-62a) is a high-speed packet access mobile hotspot. It is a multi-mode wireless terminal for SOHO (Small Office and Home Office) and business professionals.

The E5786s-62a supports the following standards:

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

The E5786s-62a provides the following services:

- LTE CA packet data service
- LTE packet data service
- DC-HSPA+ packet data service
- HSPA+ packet data service
- HSPA/UMTS packet data service
- Short Message Service (SMS)

You can connect the E5786s-62a with the USB interface of a computer, or connect the E5786s-62a with the Wi-Fi. In the service area of the LTE/DC-HSPA+/HSPA+/HSPA/UMTS network, you can surf the Internet and send/receive messages/emails cordlessly. The E5786s-62a is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the E5786s-62a. These features and services will enable a large number of users to use the E5786s-62a and the average revenue per user (ARPU) of operators will increase substantially.

Figure 1-1 shows the profile of the E5786s-62a.

**Figure 1-1** E5786s-62a profile



# 2 Features

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## 2.1 Main Features

The E5786s-62a mainly supports the following features:

- LTE CA(DL) data service of up to 300 Mbit/s
- LTE (DL) data service of up to 150 Mbit/s
- LTE (UL) data service of up to 50 Mbit/s
- DC-HSPA+ (DL) data service of up to 43.2 Mbit/s
- HSPA+ (DL) data service of up to 21.6 Mbit/s
- HSDPA (DL) data service of up to 14.4 Mbit/s
- HSUPA (UL) data service of up to 5.76 Mbit/s
- UMTS data service of up to 384 kbit/s
- PS domain data service based on LTE/UMTS
- SMS based on UMTS
- Built-in LTE/UMTS and WLAN high gain antenna
- Micro Secure Digital Memory (microSD) Card
- SIM lock
- Dynamic frequency selection (DFS) for 5 GHz Wi-Fi
- Wi-Fi and WPS
- Menu-style LCD UI
- Five-second fast boot
- Supply power to devices
- Press and Play
- IPv6/IPv4 dual stack
- Display current SSID and Wi-Fi key on the screen
- Built-in DHCP Server, DNS RELAY and NAT
- Online software upgrade
- Traffic statistic
- Standard Micro USB interface
- TFT-LCD screen



- Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8 (does not support Windows RT), MAC OS X 10.6, 10.7 and 10.8 with latest upgrades

## 2.2 Technical Specifications

### 2.2.1 Hardware

Table 2-1 lists the hardware specifications.

**Table 2-1** Hardware specifications

Item	Specifications	
Technical standard	WAN: LTE/DC-HSPA+/HSPA+/HSPA/UMTS	
	WLAN: IEEE 802.11a/b/g/n	
Operating frequency	LTE CA: 1800 MHz+700 MHz (UL 703-733 MHz, DL 758-788 MHz)	
	LTE: 2100/1800/900/700 MHz (UL 703-733 MHz, DL 758-788 MHz)	
	DC-HSPA+/HSPA+/HSPA/UMTS: 2100/850 MHz	
	WLAN: 2.4GHz, 5GHz	
Internal memory	256 MB NAND flash and 128 MB DDR SDRAM	
Maximum transmitter power	LTE: Conform to Power Class 3 Definition	
	UMTS: Conform to Power Class 3 Definition	
	WLAN	802.11a: 8 dBm
		802.11b: 11 dBm
		802.11g: 10 dBm
802.11n: 10 dBm (2.4 GHz); 8 dBm (5 GHz)		
Receiver sensitivity	LTE: Confirm to 3GPP Requirements	
	UMTS: Confirm to 3GPP Requirements	
	WLAN	802.11a: -65 dBm@54 Mbit/s
		802.11b: -76 dBm@11 Mbit/s
		802.11g: -65 dBm@54 Mbit/s
		802.11n: -64 dBm@65 Mbit/s
WLAN speed	802.11a: Up to 54 Mbit/s	
	802.11b: Up to 11 Mbit/s	
	802.11g: Up to 54 Mbit/s	

Item	Specifications	
	802.11n	HT20: Support MCS0–MCS7; Up to 72.2 Mbit/s. Support MCS8–MCS15; Up to 144.4 Mbit/s. HT40: Support MCS0–MCS7; Up to 150 Mbit/s. Support MCS8–MCS15; Up to 300 Mbit/s.
Maximum power consumption	4 W	
Power supply	AC: 100–240 V	
	DC: 5 V, 1 A	
Battery	Type: Li (rechargeable and irremovable)	
	Capacity: 3.7 V, 3000 mAh	
	Maximum working time: 10 hours (depending on the network)	
	Maximum standby time: 500 hours (depending on the network)	
External interfaces	Micro USB interface (supports USB 3.0; to be used with Huawei USB cables when available)	
	Standard microSD card interface	
	Standard Micro 6-pin SIM card interface	
	External main diversity antenna interface	
Screen	TFT-LCD	
key-press	Power switch, MENU switch, Reset switch	
Antenna	Built-in LTE/UMTS main antenna	
	Built-in LTE/UMTS diversity antenna	
	Built-in WLAN antenna	
Dimensions (W × D × H)	106.0 mm × 66.0 mm × 15.9 mm	
Weight	about 145 g (including the battery)	
Temperature	Operating: 0°C to +35°C	
	Storage: -20°C to +60°C	
Humidity	5% to 95% (non-condensing)	

## 2.2.2 Software

Table 2-2 lists the software specifications.

**Table 2-2** software specifications

Item	Description
SMS	<ul style="list-style-type: none"> <li>• Receiving</li> <li>• Receiving extra-long messages</li> <li>• Storage: Up to 500 messages can be saved in the internal memory of the E5786s-62a.</li> <li>• New message prompt</li> </ul>
Network connection setup	<ul style="list-style-type: none"> <li>• APN management: create, delete and edit</li> <li>• Set up network connection</li> </ul>
WLAN setup	<ul style="list-style-type: none"> <li>• SSID broadcasting and hiding</li> <li>• Open system and shared key authentication</li> <li>• ASCII and HEX keys</li> <li>• 64/128-bit WEP encryption</li> <li>• 256-bit WPA2-PSK encryption</li> <li>• WPA2-PSK integrated encryption</li> <li>• AES encryption algorithm</li> <li>• TKIP and AES integrated encryption algorithm</li> <li>• Automatic adjustment of ratios</li> <li>• Display STA status</li> <li>• Turn off Wi-Fi automatically</li> <li>• WLAN MAC filter</li> </ul>
Firewall setup	<ul style="list-style-type: none"> <li>• Firewall Switch</li> <li>• LAN IP Filter</li> <li>• Virtual Server</li> <li>• ACL Service</li> <li>• DMZ Service</li> <li>• UPnP Service</li> </ul>
NAT setup	<ul style="list-style-type: none"> <li>• CONE NAT</li> <li>• Symmetric NAT</li> <li>• ALG</li> <li>• VPN passthrough</li> </ul>
DHCP setup	<ul style="list-style-type: none"> <li>• DHCP server enabling and disabling</li> <li>• Address pool of the DHCP server setup</li> <li>• DHCP lease time setup</li> </ul>
Software installation	Automatic installation (Plug and Play)

Item	Description
IPv6/IPv4 dual stack	<ul style="list-style-type: none"> <li>• DHCPv6/v4 server and client</li> <li>• DNSv6/v4 server and client</li> <li>• Display IPv6/v4 WAN address</li> </ul>
Other	Network connection settings: <ul style="list-style-type: none"> <li>• Automatic network selection and registration</li> <li>• Manual network selection and registration</li> </ul>
	Network status display: signal, operator name, system mode, and so on.
	Selection of network connection types, for example: <ul style="list-style-type: none"> <li>• LTE Only</li> <li>• 3G Only</li> <li>• Auto</li> </ul>
	PIN management: activate/deactivate PIN, PIN lock, changing PIN, unblocking by using the PUK.
System requirement	<ul style="list-style-type: none"> <li>• Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8 (does not support Windows RT)</li> <li>• Mac OS X 10.6, 10.7 and 10.8 with latest upgrades</li> <li>• Your computer's hardware system should meet or exceed the recommended system requirements for the installed version of OS</li> </ul>

# 3 Services and Applications

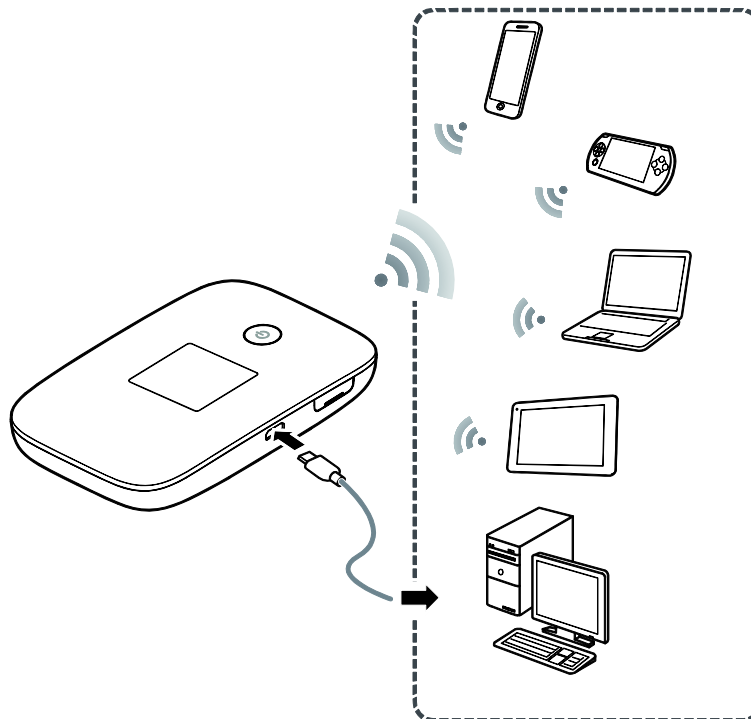
## 3.1 Data Service

### 3.1.1 Wireless Modem

The E5786s-62a can be used as a wireless modem when the Wi-Fi is enabled. You can directly use the default settings (or configure APN on the E5786s-62a Web page) and set up a wireless network connection. Then you can access the Internet.

A maximum of ten wireless users can access the E5786s-62a at the same time. You can set up the WLAN with the access point (AP) function.

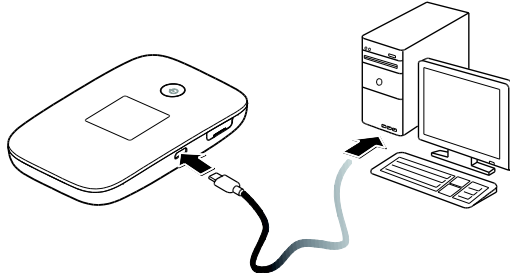
**Figure 3-1** Multi-device access via Wi-Fi and USB at the same time



### 3.1.2 USB Modem

After you connect the E5786s-62a and PC with a USB data cable, the E5786s-62a driver is installed on the PC automatically and the shortcut of the Web page is displayed on the PC desktops. You can directly use the default settings (or configure APN on the E5786s-62a Web page) and set up a network connection. Then you can send or receive E-mail, access the network through wireless connection, and download files through wireless data channels.

**Figure 3-2** One-device access via USB



## 3.2 SMS

The E5786s-62a supports message receiving. You can manage messages through the Web page, such as an inbox.

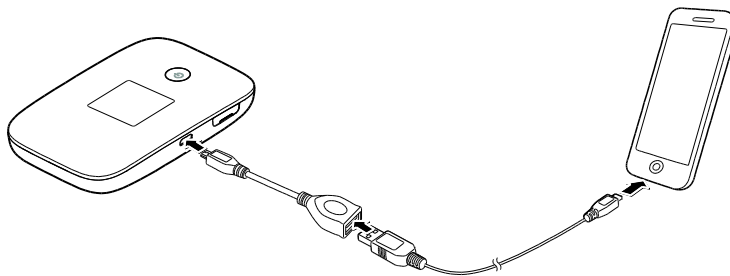
## 3.3 Sharing Data Stored on the microSD card

After the microSD card is inserted, you can store data on the card or use the Web management page to share data stored on the card.

## 3.4 Supplying power to devices

You can connect the Mobile WiFi that supports the function of acting as a charger to power supply cable to supply power to a mobile phone, music player, or Bluetooth headset.

**Figure 3-1** Charging other device using the power supply cable

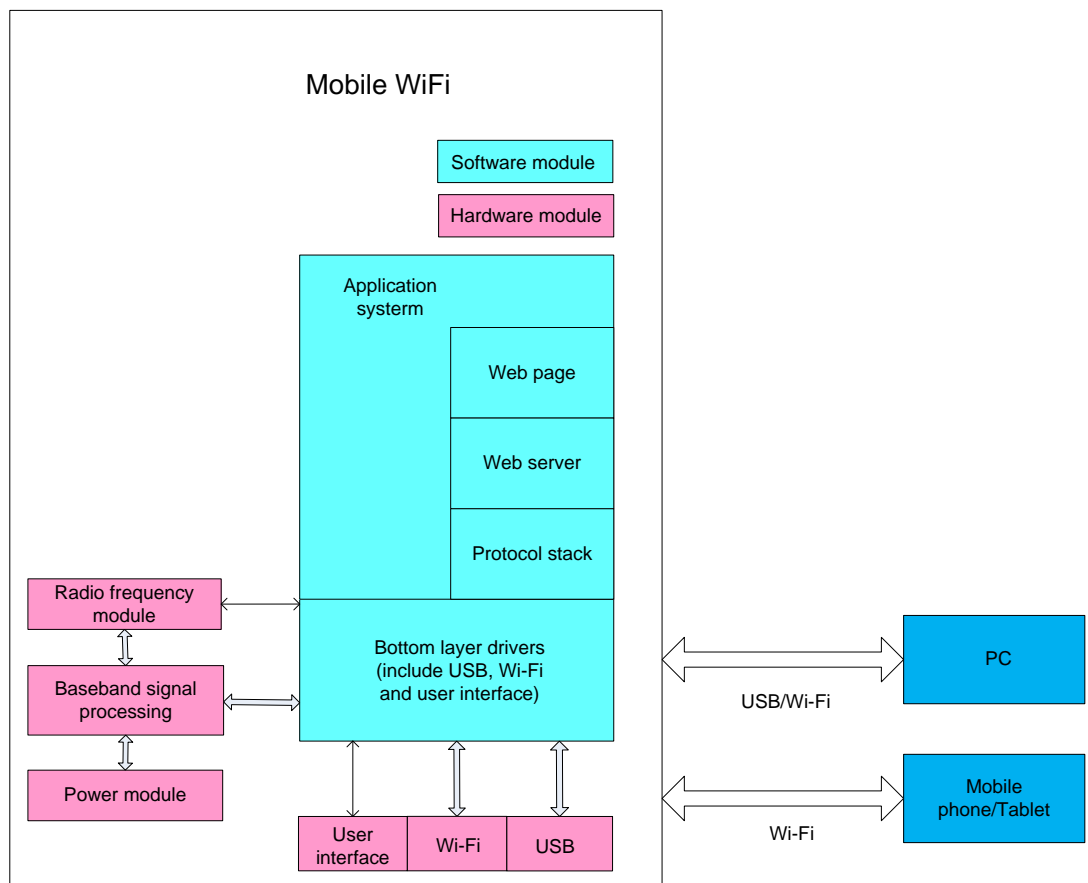


# 4 System Architecture

## 4.1 System Architecture

Figure 4-1 shows the system architecture.

**Figure 4-1** System architecture



## 4.2 Functional Modules

1. **Radio frequency module:** It sends/receives radio signals and modulates/demodulates the radio frequency (RF) signals and baseband signals
2. **Baseband signal processing:** It processes LTE/DC-HSPA+/HSPA+/UMTS/baseband digital signals, including:
  - Modulating/Demodulating LTE/DC-HSPA+/HSPA+/UMTS baseband signals
  - Encoding/Decoding LTE/DC-HSPA+/HSPA+/UMTS channel
3. **Bottom layer driver:** It drives peripherals, including a USB device, Wi-Fi devices, a screen, buttons, a SIM card and a microSD card.
4. **Protocol stack system:** It processes protocols of LTE/DC-HSPA+/HSPA+/UMTS and TCP/IP.
5. **Application system:** It provides management system, including SMS, PS domain service, Wi-Fi configuration, network service, Web service and Web page. The user can set management parameters by Web page.
6. **User interface:** It provides human-computer interaction, including a screen and buttons.



# 5 Packing List

This chapter describes the items contained in the package of the E5786s-62a.

Table 5-1 lists the items contained in the package of the E5786s-62a.

**Table 5-1** Packing list of the E5786s-62a

Item	Quantity	Remarks
Mobile WiFi	1	Standard
Rechargeable Battery (irremovable, 3000 mAh)	1	Standard
USB 3.0 Cable (1 m)	1	Standard
Charger	1	Standard
Quick Start	1	Standard
Safety Information	1	Standard
Power Supply Cable	1	Optional
Warranty Card	1	Optional

# A Acronyms and Abbreviations

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<b>3G</b>	The Third Generation
<b>ACL</b>	access control list
<b>AES</b>	Advanced Encryption Standard
<b>ALG</b>	application level gateway
<b>APN</b>	access point name
<b>ARPU</b>	average revenue per user
<b>ASCII</b>	American Standard Code for Information Interchange
<b>DC-HSPA+</b>	Dual Carrier High Speed Packet Access Plus
<b>DHCP</b>	Dynamic Host Configuration Protocol
<b>DMZ</b>	demilitarized zone
<b>DNS</b>	Domain Name Server
<b>FDD</b>	frequency division duplex
<b>HSPA+</b>	High Speed Packet Access Plus
<b>HSUPA</b>	High Speed Uplink Packet Access
<b>HSDPA</b>	High Speed Downlink Packet Access
<b>IEEE</b>	Institute of Electrical and Electronics Engineers
<b>IP</b>	Internet Protocol
<b>LCD</b>	Liquid Crystal Display
<b>LTE</b>	Long Term Evolution
<b>MAC</b>	Medium Access Control
<b>Modem</b>	Modulator Demodulator
<b>NAT</b>	Network Address Translation
<b>OS</b>	Operating System

<b>PC</b>	personal computer
<b>PIN</b>	personal identification number
<b>PnP</b>	Plug and Play
<b>PS</b>	packet switched
<b>PUK</b>	PIN unblocking key
<b>SIM</b>	subscriber identity module
<b>SMS</b>	short messaging service
<b>SOHO</b>	small office home office
<b>SSID</b>	Service Set Identifier
<b>TFT</b>	Thin Film Transistor
<b>TKIP</b>	Temporal Key Integrity Protocol
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>UPnP</b>	Universal Plug and Play
<b>USB</b>	Universal Serial Bus
<b>WAN</b>	wireless area network
<b>WEP</b>	wired equivalent privacy
<b>Wi-Fi</b>	Wireless Fidelity
<b>WLAN</b>	wireless local area network
<b>WPA</b>	Wi-Fi Protected Access