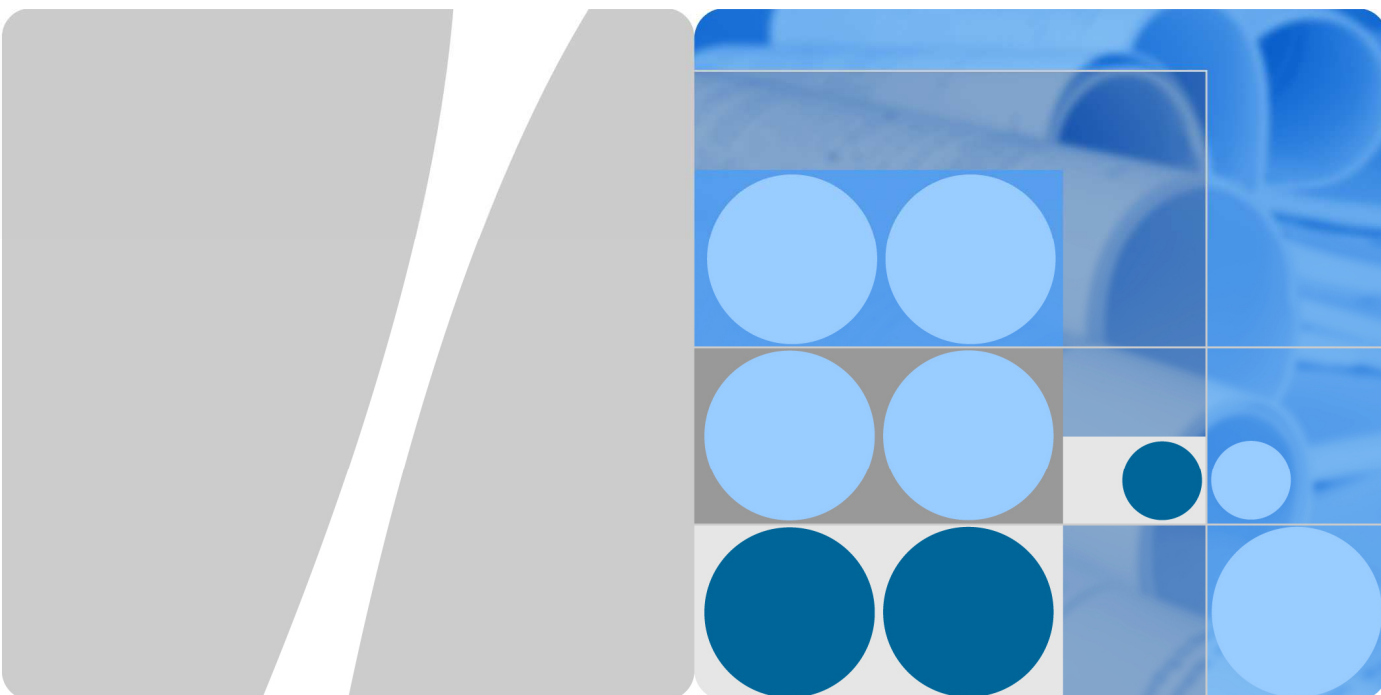


Product Description



HUAWEI E5783-230a Mobile WiFi
V100R001

Version 02
Date 2023-03-06

HUAWEI DEVICE CO., LTD.





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About This Document

Summary

This document introduces the major functions, supported services, and system architecture of the HUAWEI E5783-230a Mobile WiFi.

The following table lists the contents of this document.

Chapter	Details
1 Overview	Supported network modes, basic services and functions, and the appearance of the product
2 Features	Major features and technical specifications
3 Services and Applications	Supported services
4 System Architecture	System architecture
5 Packaging Box Items	Items contained in the packaging box
6 Appendix	Supported LTE bandwidths

History

Version	Details	Date
02	Added antenna gain information	2023-03-06
01	First release	2022-03-01

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1 Overview

1.1 Introduction

HUAWEI E5783-230a Mobile WiFi (hereinafter referred to as the E5783-230a) 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.

It provides users with packet data services and SMS through multiple network modes. You can connect the micro USB port on the E5783-230a to a computer using a micro USB data cable, or connect multiple devices to the E5783-230a over Wi-Fi. In the service area of the network, the E5783-230a allows you to surf the Internet and send/receive messages/emails, providing you with a fast, reliable, and convenient user experience. It also helps carriers improve their average revenue per user (ARPU).

1.2 Optional Features

Optional features refer to features that are not supported on the standard version. These features can be customized according to carrier or customer requirements. The E5783-230a's optional features include the following:

- SIM lock

2 Features

2.1 Main Features

The E5783-230a features:

- LTE Category 7
- LTE FDD CA (DL) packet data service of up to 300 Mbps
- LTE FDD (DL) packet data service of up to 150 Mbps
- LTE FDD CA (UL) packet data service of up to 100 Mbps
- LTE FDD (UL) packet data service of up to 50 Mbps
- LTE TDD CA (DL) packet data service of up to 224 Mbps
- LTE TDD (DL) packet data service of up to 112 Mbps
- LTE TDD CA(UL) packet data service of up to 20 Mbps
- LTE TDD (UL) packet data service of up to 10 Mbps
- DC-HSPA+ (DL) packet data service of up to 42 Mbps
- HSUPA packet data service of up to 5.76 Mbps
- HSPA+ (DL) packet data service of up to 21 Mbps
- HSDPA (DL) packet data service of up to 14.4 Mbps
- UMTS (UL/DL) packet data service of up to 384 Kbps
- SMS based on LTE/UMTS
- Built-in LTE/UMTS and Wi-Fi/WLAN antenna
- 2.4 GHz and 5 GHz Wi-Fi
- LTE/3G/Wi-Fi auto offload
- Compatible with HUAWEI AI Life app
- Plug and Play
- IPv4v6 dual stack
- Built-in DHCP Server, DNS RELAY, and NAT
- Online software upgrade

- Traffic statistics
- WPS
- Standard Micro USB port

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+/HSUPA/HSDPA/UMTS
	Wi-Fi/WLAN: IEEE 802.11a/b/g/n/ac
Operating frequency	LTE : B1/B3/B5/B7/B8/B20/B28/B32/B38/B40/B41 UMTS : B1/B5/B8 LTE UL CA: Intra-Band continuous CA: 3C, 7C, 38C, 40C, 41C LTE DL CA: Inter-Band CA: 1A-3A, 1A-5A, 1A-7A, 1A-8A, 1A-20A, 1A-28A, 3A-5A, 3A-7A, 3A-8A(B3 as PCC), 3A-20A, 3A-28A, 7A-8A(B7 as PCC), 7A-20A, 7A-28A, 8A-38A(B8 as PCC), 20A-32A(B20 as PCC), 20A-38A(B20 as PCC) Intra-Band continuous CA: 1C, 3C, 7C, 38C, 40C, 41C Intra-Band non-continuous CA: 3A-3A, 41A-41A See Appendix for supported LTE channel bandwidths
	Wi-Fi/WLAN: 2.4 GHz AP: 5-13 STA: 5-13
	Wi-Fi/WLAN: 5 GHz AP: W52, W56 STA: W52, W53, W56
Memory	RAM: 256MB DDR

Item	Specifications	
	ROM: 256MB NAND Flash	
Transmit power	LTE: Conforms to Power Class 3 Definition	
	WCDMA/HSPA/HSPA+: Conforms to Power Class 3 Definition	
	Wi-Fi/WLAN 2.4 GHz	802.11b: 14dBm@SISO
		802.11g 6M: 16dBm@SISO
		802.11g 54M: 15.5dBm@SISO
		802.11n MCS0: 16dBm (20MHz) @SISO
		802.11n MCS7: 14.5 dBm (20MHz) @SISO
		802.11n MCS0: 16dBm (40MHz) @SISO
		802.11n MCS7: 14.5 dBm (40MHz) @SISO
	Wi-Fi/WLAN 5 GHz	802.11a 6M: 14.5dBm @SISO
		802.11a 54M: 14.5dBm @SISO
		802.11n MCS0: 14.5dBm(20MHz) 15dBm(40MHz) @SISO
		802.11n MCS7: 14dBm (20/40MHz) @SISO
		802.11ac MCS0: 14.5 dBm (20MHz) 15 dBm (40/80MHz) @SISO
		802.11ac MCS8: 13 dBm (20/40MHz) @SISO
		802.11ac MCS9: 12.5 dBm (80MHz) @SISO
	Note: The value above represents a typical transmit power in Wi-Fi/WLAN mode, and may vary slightly by device.	
Receiver sensitivity	LTE: Conforms to 3GPP	
	WCDMA/HSPA/HSPA+: Conforms to 3GPP	
	Wi-Fi/WLAN 2.4 GHz	802.11b: -87.5dBm@11Mbps
		802.11g: -74dBm@54Mbps
		802.11n20M: -72dBm@mcs7
		802.11n40M: -69dBm@mcs7
	Wi-Fi/WLAN 5 GHz	802.11a: -77dBm@54Mbps
802.11n 20M: -75.5dBm@mcs7		

Item	Specifications		
		802.11n 40M: -72.5dBm@mcs7	
		802.11ac 20M: -71dBm@mcs8	
		802.11ac 40M: -66.5dBm@mcs9	
		802.11ac: -68dBm@65Mbps	
Wi-Fi/WLAN MIMO	2*2 MIMO		
Wi-Fi/WLAN speed	802.11a: Up to 54 Mbps		
	802.11b: Up to 11 Mbps		
	802.11g: Up to 54 Mbps		
	802.11n:	HT20: Supports MCS0–MCS7; Up to 72.2 Mbps. Supports MCS8–MCS15; Up to 144.4 Mbps. HT40: Supports MCS0–MCS7; Up to 150 Mbps. Supports MCS8–MCS15; Up to 300 Mbps.	
	802.11ac: Up to 867 Mbps		
Power consumption	< 4.5W		
Charger (Optional)	AC: 100–240 V		
	DC: 5 V, 1 A		
Battery	Type: Rechargeable lithium battery (removable)		
	Capacity: 3.8 V, 1500 mAh		
	Maximum working hours: 6 (depending on the network)		
	Maximum standby hours: 350 (depending on the network)		
External ports	Micro USB port		
	Micro-SIM card slot (3FF)		
Buttons	Power button, RESET button		
Indicators	LED indicators: Signal, Battery		
Antenna	Built-in LTE/UMTS main antenna		
	Built-in LTE/UMTS diversity antenna		

Item	Specifications
	Built-in Wi-Fi/WLAN antenna
Antenna Gain	WCDMA B1 2.3dBi WCDMA B5 -0.8dBi WCDMA B8 -0.6dBi LTE B1 2.3dBi LTE B3 2.5dBi LTE B5 -0.8dBi LTE B7 2.5dBi LTE B8 -0.6dBi LTE B20 -0.5dBi LTE B28 -2.4dBi LTE B38 2.7dBi LTE B40 2.2dBi LTE B41 2.7dBi LTE B42 2.1dBi
Dimensions (W × D × H)	108 mm x 62 mm x 15.6 mm
Weight	Approximately 87g (including the battery)
Temperature	Operating temperature: 0°C to 35°C
	Storage temperature: -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">• Write/send/receive short messages• Send/receive extra-long messages• Storage: Up to 500 messages can be saved in the internal memory of the E5783-230a
Network connection setup	<ul style="list-style-type: none">• Create, delete, or edit APN• Set up network connection
Maximum number of Wi-Fi users connected at the same time	<ul style="list-style-type: none">• When only the 2.4 GHz or 5 GHz Wi-Fi network is enabled, the E5783-230a supports the connection of up to 32 wireless devices at the same time
Wi-Fi/WLAN setup	<ul style="list-style-type: none">• SSID broadcasting and hiding• None (Open), WPA2-PSK, and WPA/WPA2-PSK encryption• Automatic adjustment of Wi-Fi speed• Display STA status• Turn off Wi-Fi automatically• MAC address filtering• Guest SSID
Firewall setup	<ul style="list-style-type: none">• Enable and disable firewall• LAN IP Filtering• Virtual Server• DMZ• UPnP
NAT setup	<ul style="list-style-type: none">• Cone NAT• Symmetric NAT• ALG
DHCP setup	<ul style="list-style-type: none">• Enable and disable DHCP server• Configure DHCP server address pool• Set DHCP lease time
LTE/3G/Wi-Fi auto offload (Wi-Fi Extender)	<ul style="list-style-type: none">• Access WAN via LTE/3G/Wi-Fi

Item	Description
IPv4v6 dual stack	<ul style="list-style-type: none">• DHCPv4v6 server and client• DNSv4v6 server and client• Display IPv4v6 WAN address
Others	Network connection settings: Automatic/manual network selection and registration
	Display network status including signal strength, carrier name, system mode, and so on
	Select network mode
	PIN management: activate/deactivate PIN, verify PIN/PUK, and modify PIN
System requirements	<ul style="list-style-type: none">• Windows 7, Windows 8, Windows 8.1, Windows 10 (excluding Windows RT). Mac OS X 10.12, 10.13, 10.14, 10.15, 11.0 and 12.0• Your computer should also meet the recommended hardware requirements for the operating system installed

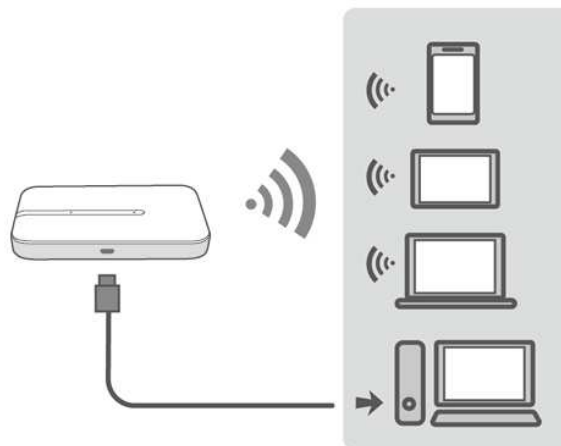
3 Services and Applications

3.1 Data Service

3.1.1 Wireless Modem

The E5783-230a 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 E5783-230a's web-based management page) to set up a wireless network, after which you will be able to access the Internet.

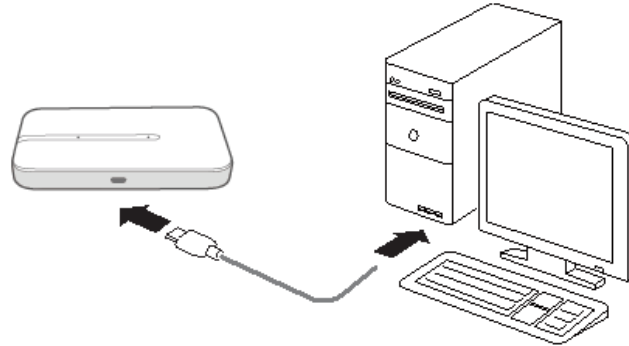
Figure 3-1 Multi-device access via Wi-Fi and micro USB port at the same time



3.1.2 USB Modem

After you connect the E5783-230a and a PC with a USB data cable, enter the IP address in the browser address bar to log in to the E5783-230a's web-based management page. You can directly use the default APN settings (or configure the APN on the page) to set up a network connection, after which you can access the Internet.

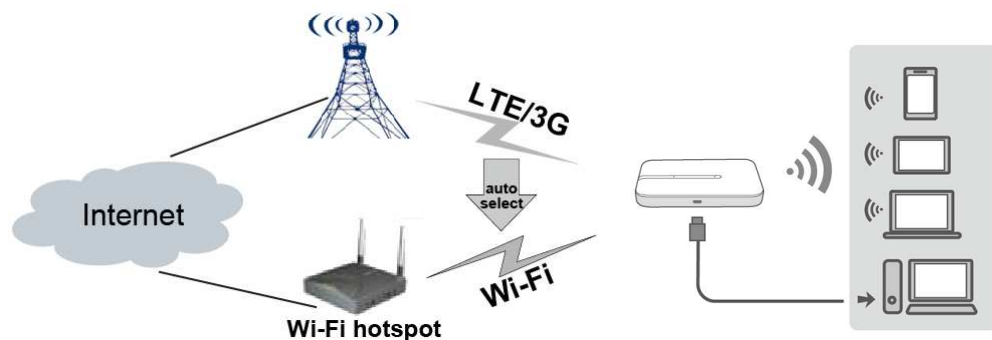
Figure 3-2 One-device access via micro USB port



3.1.3 LTE/3G/Wi-Fi Auto Offload

The E5783-230a allows you to access the Internet via LTE, 3G or Wi-Fi. When you are using the E5783-230a in areas with a Wi-Fi hotspot, for example, an airport, a cafe, a hotel, or your home, the E5783-230a switches to the Wi-Fi network automatically to save your LTE/3G network data usage.

Figure 3-3 LTE/3G/Wi-Fi auto offload



3.2 SMS

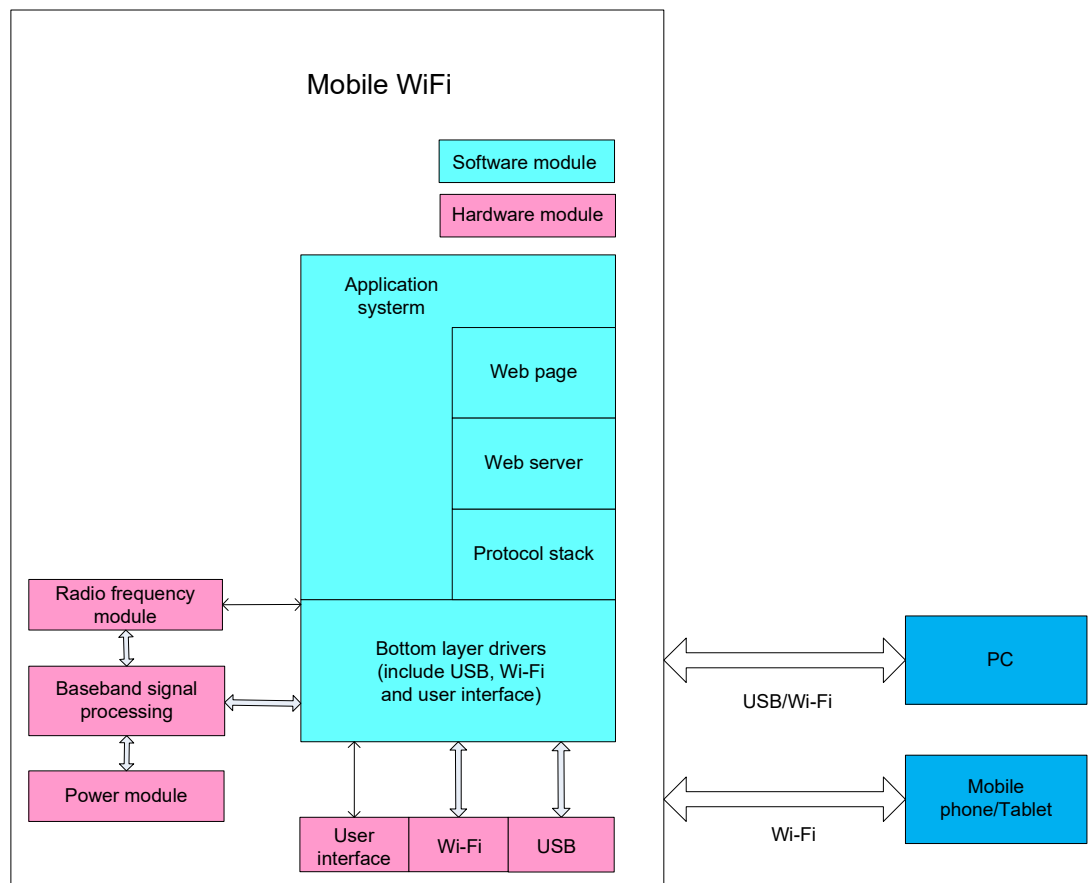
The E5783-230a supports message writing/sending/receiving. You can manage messages in the Inbox, Outbox, and Drafts on the E5783-230a's web-based management page.

4 System Architecture

4.1 System Architecture

Figure 4-1 shows the system architecture of the E5783-230a

Figure 4-1 System architecture of the E5783-230a



4.2 Functional Modules

1. **Radio frequency module:** Sends/receives radio signals and modulates/demodulates radio signals and baseband signals.
2. **Baseband signal processing module:** Processes LTE FDD/LTE TDD/DC-HSPA+/HSPA+/HSUPA/HSDPA/UMTS baseband signals, including:
 - Modulating/demodulating LTE FDD/LTE TDD/DC-HSPA+/HSPA+/HSUPA/HSDPA/UMTS baseband signals
 - Encoding/decoding LTE FDD/LTE TDD/DC-HSPA+/HSPA+/HSUPA/HSDPA/UMTS channels
3. **Bottom layer driver:** Drives peripherals, including USB devices, Wi-Fi devices, display screen, buttons and SIM cards.
4. **Protocol stack system:** Processes protocols of LTE FDD/LTE TDD/DC-HSPA+/HSPA+/HSUPA/HSDPA/UMTS and TCP/IP.
5. **Application system:** Provides SMS, PS domain service, Wi-Fi configuration, network service, web service and web-based management page. Users can configure system settings on the web-based management page.
6. **User interface:** Provides man-machine interaction, including a display screen and buttons.

5 Packaging Box Items

This chapter describes the items contained in the packaging box of the E5783-230a.

Table 5-1 lists the items contained in the packaging box of the E5783-230a.

Table 5-1 Packaging box items of the E5783-230a

Item	Quantity	Remarks
Mobile WiFi	1	Standard
Rechargeable battery (removable)	1	Standard
USB Cable	1	Standard
Quick Start Guide (Including safety information)	1	Standard
Charger	1	Optional
Warranty Card	1	Optional

6 Appendix

Table 6-1 Shows the LTE bandwidths supported by the E5783-230a.

Band	Bandwidth					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
1			√	√	√	√
3	√	√	√	√	√	√
5	√	√	√	√		
7			√	√	√	√
8	√	√	√	√		
20			√	√	√	√
28		√	√	√	√	√
32			√	√	√	√
38			√	√	√	√
40			√	√	√	√
41			√	√	√	√

7 Acronyms and Abbreviations

Numerics

3G The Third Generation

A

AES Advanced Encryption Standard

ALG Application Level Gateway

APN Access Point Name

ARPU Average Revenue Per User

ASCII American Standard Code for Information Interchange

D

DHCP Dynamic Host Configuration Protocol

DMZ Demilitarized Zone

DNS Domain Name Server

E

EDGE Enhanced Data Rates for GSM Evolution

F

FDD Frequency Division Duplex

G

GPRS General Packet Radio Service

GSM Global System for Mobile Communications

H

HSPA+ High Speed Packet Access Plus

HSUPA High Speed Uplink Packet Access

HSDPA High Speed Downlink Packet Access

I	
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
L	
LCD	Liquid Crystal Display
LTE	Long Term Evolution
M	
MAC	Medium Access Control
Modem	Modulator Demodulator
N	
NAT	Network Address Translation
O	
OS	Operating System
P	
PC	Personal Computer
PIN	Personal Identification Number
PnP	Plug and Play
PS	Packet Switched
PUK	PIN unblocking key
S	
SIM	Subscriber Identity Module
SMS	Short Messaging Service
SOHO	Small Office Home Office
SSID	Service Set Identifier
T	
TDD	Time Division Duplex
TFT	Thin Film Transistor
U	
UMTS	Universal Mobile Telecommunications System
UPnP	Universal Plug and Play

USB	Universal Serial Bus
V	
VPN	Virtual Private Network
W	
WAN	Wireless Area Network
WEP	Wired Equivalent Privacy
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
WPA	Wi-Fi Protected Access