

System Description of Huawei E220 USB Modem



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Chapter 1 Product Overview

The HUAWEI E220 USB Modem is a terminal available for high-speed wireless network access, with which the users can access the Internet in the wireless way at home, office, outdoor sites and so on. It is designed in compliance with the HSDPA/UMTS (3GPP R99 & R5) and EDGE/GPRS (3GPP R99) specifications. It senses the signal strength of the HSDPA/UMTS and EDGE/GPRS network on a real-time basis, and allows users to choose the network freely. The HUAWEI E220 USB Modem delivers an access rate up to 3.6Mbps on the HSDPA, or 384kbps on the UMTS, or 236.8kbps on the EDGE, or 85.6kbps on the GPRS network. At the same time, it supports short message services.

The HUAWEI E220 USB Modem is connected to a portable computer or PC by a USB interface. In the service areas or hotspots of HSDPA/UMTS, the Huawei E220 USB Modem may access the Internet over the network to transfer and download files or data. You can also browse web-site, send and receive messages and emails at any time and place. Even when out of the HSDPA/UMTS coverage, you can still enjoy services on the Internet with an alternative access through the EDGE/GPRS/GSM network in your country. The users can enjoy much more in experiencing the wireless network due to the higher speed, the more dependable features and the more convenient operations of the HUAWEI E220 USB Modem. Thus, more users will be attracted, and at the same time the ARPU of the operators will be increased greatly.



Chapter 2 Product Features

2.1 Main Features

The main features of the HUAWEI E220 USB Modem include:

- | HSDPA/UMTS 2100MHz and GSM/GPRS/EDGE 900/1800/1900 MHz
- | HSDPA packet data service with a maximum transmission rate of 3.6Mbps
- | UMTS packet domain data service with a maximum transmission rate of 384kbps
- | EDGE packet data service with a maximum transmission rate of 236.8kbps
- | GPRS packet data service with a maximum transmission rate of 85.6kbps
- | Circuit switched(CS) data service based on UMTS and GSM
- | SMS service based on CS and PS domain of GSM and UMTS: supporting group transmission of messages
- | Standard Mini USB interface, convenient for use
- | Operating system: supporting Windows 2000 and Windows XP

2.2 Main Technical Specifications

2.2.1 Software and Hardware Specifications

Table 2-1 Main software and hardware specifications of the HUAWEI E220 USB Modem

Item	Description
Technical standard	HSDPA/UMTS: 3GPP R99, R5 GSM/GPRS/EDGE: 3GPP R99
Operating frequency	HSDPA/UMTS 2100MHz: 1920MHz~1980 MHz/2110MHz~2170 MHz(Uplink/Downlink) GSM/GPRS/EDGE 900MHz: 880MHz~915MHz/925MHz~960 MHz(Uplink /Downlink) GSM/GPRS/EDGE 1800MHz: 1710MHz~1785MHz/1805MHz~1880MHz (Uplink/Downlink) GSM/GPRS/EDGE 1900MHz: 1850MHz~1910MHz/1930MHz~1990MHz(Uplink/Downlink)
Data service	GSM CS: UL 9.6kbps/DL 9.6kbps GPRS: UL 42.8kbps/DL 85.6kbps EDGE: UL 118.4kbps/DL 236.8kbps UMTS CS: UL 64kbps/DL 64kbps UMTS PS: UL 384kbps/DL 384kbps UL UMTS/DL HSDPA: UL 384kbps/DL 3.6Mbps

SMS	Supporting SMS based on CS domain of GSM and UMTS Supporting SMS based on PS domain of UMTS and GPRS
Software Installation	Auto download installation and driver
External interface	Mini USB interface: supports USB1.1
	LED indicator: indicates the running status of the USB Modem
	Antenna: Internal antenna
	SIM/USIM card: standard 6 PIN SIM card interface
Max. transmitter power	UMTS/HSDPA 2100MHz: +24dBm (Power Class 3)
	GSM/GPRS 900MHz: +33dBm (Power Class 4)
	GSM/GPRS 1800MHz/1900MHz: +30dBm (Power Class 1)
	EDGE 900MHz: +27dBm (Power Class E2)
	EDGE 1800MHz/1900MHz: +26dBm (Power Class E2)
Maximum power consumption	≤ 2.5W
Power supply	5V
Dimensions	89 mm (D) x 43 mm (W) x 14.5 mm (H)
Weight	< 50g
Temperature	Operating temperature: -5°C ~ +45°C
	Warehouse temperature: -15°C ~ +60°C
Humidity	5%~ 95%
System requirement	Supporting Windows 2000 and Windows XP operating systems
	Standard USB interface Pentium 500MHz CPU or above 128MB RAM or above Computer resolution of 800*600 pixels or above; however, resolution of 1024*768 is recommended

2.2.2 Dashboard specification

Table 2-2 Main specifications of the dashboard of Huawei E220 USB Modem

Item	Description
SMS	SMS writing

Item	Description
	<p>Sending and receiving SMS</p> <p>SMS division: if a message to be sent contains characters more than the allowed maximum English characters which can be included in each message, it will be broken into two or more messages for sending.</p> <p>SMS group transmission: 20 phone numbers for each time</p> <p>SMS storage: any of the Outbox/Inbox/Draft box/Trash box/Report box can be saved in USIM/SIM card and PC.</p> <p>SMS sorting: you can sort messages by sender's/receiver's name, sending/receiving time, phone number, etc.</p> <p>SMS import: you may import messages from the USIM/SIM card into the corresponding message boxes of the dashboard.</p> <p>SMS ring prompt: ring prompt on an incoming message (Rings can be customized)</p>
Flow display and statistics (Data service)	<p>Statistics of the flow of a current connection (including time, data flow, sending/receiving flow and rate, and max. sending/receiving rate)</p> <p>Statistics of the previous flow (including sending/receiving flow and connection duration)</p> <p>Statistics of the total flow (including total sending/receiving flow and total connection duration)</p>
Phone book	<p>Phone book capacity: the storage depends on the USIM/SIM card's capacity and PC hard disk.</p> <p>Phone book management: name, phone numbers (including mobile numbers, home numbers and office numbers), Email addresses, and remarks</p> <p>Sending SMS messages directly from the Phone book</p> <p>Phone book Import/Export: to import/export phone book information between the dashboard and a USIM/SIM card or to import/export files of a specified format</p>
Other modes	<p>Network connection settings: Auto/Manual network selection and registration</p> <p>Network status display (including signal strength, operator's name, system mode, etc.)</p> <p>Selection of network connection types (3G preferred, GPRS/ EDGE preferred, 3G only, GPRS/EDGE only)</p> <p>PIN management: PIN1 authentication and modification PUK1 unlock</p>

Chapter 3 Services and Applications

3.1 Packet Data Service

The HUAWEI E220 USB Modem supports circuit domain data service based on UMTS/GSM and packet domain data service based on HSDPA/UMTS/EDGE/GPRS. After connect the USB Modem and the computer with a USB cable; install E220 USB Modem drive and corresponding modem on the computer; config APN and set up link, a user may send/receive Emails, browse the Internet, and download files through an established wireless data channel.

Packet data service is usually launched by entering "*99#" or "*98#". A user may choose a network type (3G preferred, GPRS/EDGE preferred, 3G only, GPRS/EDGE only) on the "Choose Connection Type" of the dashboard. The operating procedure for the circuit data service and packet data service are almost the same with the exception of their access numbers. You should consult the local service provider for the access number.

3.2 SMS service

The HUAWEI E220 USB Modem supports SMS service based on CS and PS domain of GSM and UMTS. By SMS settings of the dashboard, a user may choose a bearing domain (packet domain or circuit domain) for sending messages.

The HUAWEI E220 USB Modem supports message writing, sending and receiving, and group transmission of messages to up to 20 phone numbers simultaneously. The dashboard provides powerful message management function, including setting Outbox, Inbox, Draft box, Trash box and Report box; sorting by phone number or by time; exchanging SMS information between the dashboard and a USIM/SIM card.

Chapter 4 Packing List

A HUAWEI E220 USB Modem package box contains the following items:

Table 4-1 Packing list for the HUAWEI E220 USB Modem

Item	Quantity	Remarks
HUAWEI E220 USB Modem	1	Standard
USB extension cable	1	Standard
CD-ROM disk (including the HUAWEI E220 USB Modem User Manual in PDF format, the Driver program and Dashboard)	1	Standard
HUAWEI E220 USB Modem Quick Start	1	Standard

Chapter 5 Terminology

A	
ARPU	Average Revenue Per User
C	
CS	Circuit Switched Domain
L	
LED	Light Emitting Diode
M	
MODEM	Modulator Demodulator
P	
PIN	Personal Identification Number
PS	Packet Switched Domain
PUK	PIN Unblocking Key
S	
SIM	Subscriber Identity Module
SMS	Short Message Service
U	
USB	Universal Serial Bus
USIM	UMTS Subscriber Identity Module
UMTS	Universal Mobile Telecommunications System