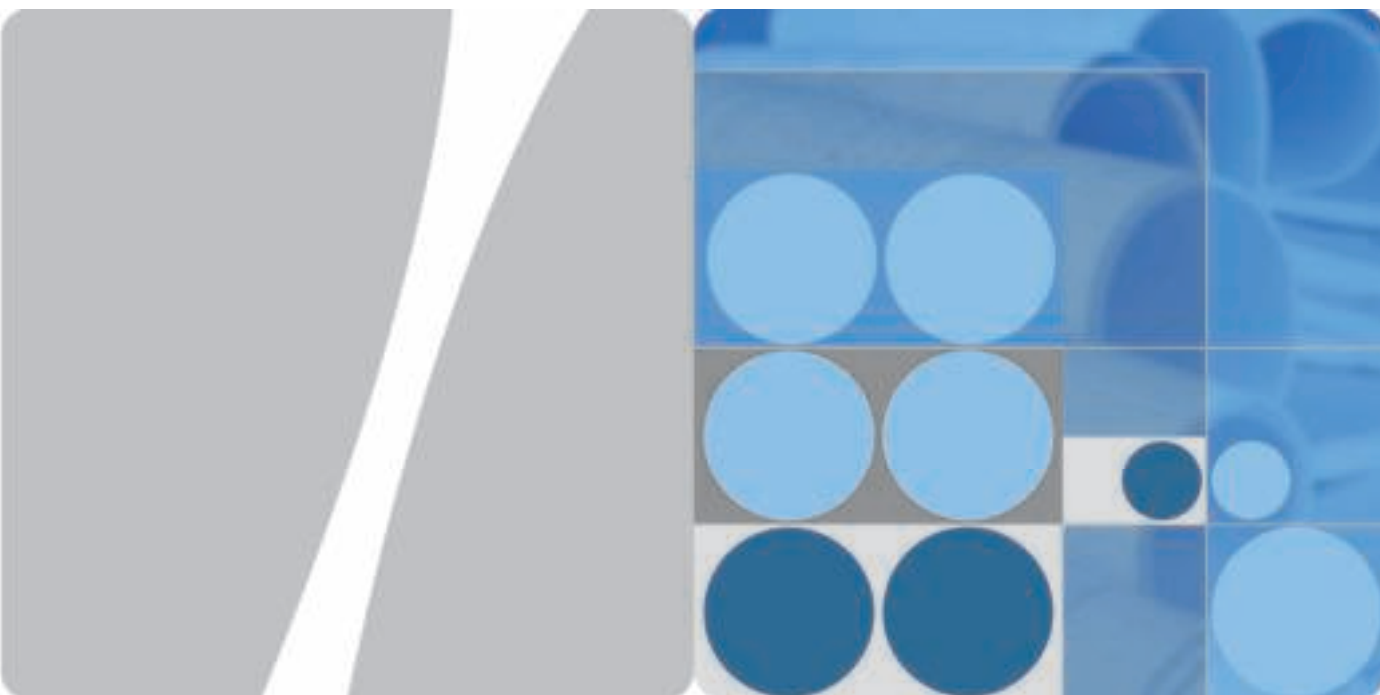


Product Description



HUAWEI E3372h-320 LTE USB Stick

Issue 03
Date 2020-05-22

HUAWEI TECHNOLOGIES CO., LTD.



Copyright © Huawei 2020. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

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 about the major functions, supported services, system architecture, and technical references of HUAWEI E3372h-320 LTE USB Stick

The following table lists the contents of this document.

Chapter	Describes
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 Technical Reference	The technical references of the product.
6 Packing List	The items contained in the package of the product.

DISCLAIMER

The document is an invitation to offer but not an offer. It is intended to describe the general features and functions of a product. The features and functions of certain products may vary with the requirements of customers.

History

Issue	Date	Details
01	2019-12-10	Initial official release.
02	2019-12-20	Second official release.
03	2020-05-22	Third official release.

Contents

1 Overview	4
2 Features	6
2.1 Main Features	6
2.2 Technical Specifications	7
2.2.1 Hardware	7
2.2.2 Software Specification	8
3 Services and Applications	9
3.1 Packet Data Service	9
3.2 SMS	9
4 System Architecture	10
4.1 System Architecture	10
4.2 Functional Modules	10
5 Technical Reference	12
5.1 Layer 1 Specifications (Physical)	12
5.2 Layer 2 Specifications (MAC/RLC)	12
5.3 Layer 3 Specifications (RRC)	13
5.4 Layer 3 NAS/Core Network (MM/CM)	13
5.5 GSM Protocol Specifications	13
5.6 GPRS Protocol Specifications	13
5.7 General Specifications	14
5.8 Performance/Test Specifications	14
5.9 SIM Specifications	14
5.10 Safety & Health Specifications	15
6 Packing List	16
7 Appendix	17

1 Overview

HUAWEI E3372h-320 LTE USB Stick as a high speed network access terminal product. It is a multi-mode wireless terminal for SOHO (Small Office and Home Office) and business professionals, in order to meet the requirement from different operators. The supported frequency bands as below:

The E3372h-320 supports the following frequency bands:

- LTE: B1/B3/B7/B8/B20/B28
- DC-HSPA+/HSPA+/HSPA/UMTS: B1/B8
- EDGE/GPRS/GSM: B2/B3/B5/B8

The E3372h-320 supports the following standards:

- Long Term Evolution (LTE)
- Dual Cell 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)
- Enhanced data rates for global evolution (EDGE)
- General packet radio service (GPRS)
- Global system for mobile communications (GSM)

The E3372h-320 provides the following services:

- LTE FDD packet data service
- DC-HSPA+ packet data service
- HSPA+ packet data service
- HSDPA packet data service
- HSUPA packet data service
- UMTS packet data service
- EDGE/GPRS packet data service
- LTE Short Message Service (SMS) over SGs

You can connect the E3372h-320 with the USB interface of a computer.

In the service area of the LTE/DC-HSPA+/HSPA+/UMTS/EDGE/GPRS/GSM network, you can surf the Internet and send/receive messages/emails cordlessly. The E3372h-320 is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the E3372h-320. These features and services will enable a large number of users to use the E3372h-320 and the average revenue per user (ARPU) of operators will increase substantially.

Figure 1-1 E3372h-320 appearance



2 Features

2.1 Main Features

The E3372h-320 mainly supports the following features:

- LTE FDD data service of up to DL150Mbit/s/UL50Mbit/s
- DC-HSPA+ data service of up to 42Mbit/s
- HSPA+ data service of up to 21Mbit/s (64QAM)
- HSDPA data service of up to 14.4Mbit/s
- HSUPA data service of up to 5.76Mbit/s
- WCDMA data service of up to 384kbit/s
- EDGE packet data service of up to 236.8kbit/s
- GPRS packet data service of up to 85.6kbit/s
- LTE/UMTS/GSM SMS over SGs service
- Support PnP, Plug and Play
- There are two versions for the product software to suit different service scenarios:
 - ✓ WebUI: This version is designed for the use on PCs, targeted at regular customers. Device management is performed via the WebUI screen in this case. All of the preceding features are supported.
 - ✓ Stick: This version is designed for the embedded Linux host devices (such as gateways) for business customers, supporting interface specifications designed in this document. The PnP feature in the preceding list is applicable only when the USB stick is used on a PC running Windows (for software updates via WebUI). When being applied to an embedded Linux host device, the corresponding driver must be installed on the device in advance.

2.2 Technical Specifications

2.2.1 Hardware

Table 2-1 Hardware specifications

Item	Specifications	
Technical standard	LTE/WCDMA/HSDPA/HSUPA/HSPA+/DC-HSPA+/GSM/GPRS/EDGE	
Operating frequency	LTE: B1/B3/B7/B8/B20/B28 DC-HSPA+/HSPA+/HSPA/UMTS: B1/B8 EDGE/GPRS/GSM: B2/B3/B5/B8	
External interfaces	One USB 2.0 High Speed (Type A)	
	One mini-SIM card interface	
	Five TS-5 External antenna interface	
LED	Indicating the status of the 2G/3G/4G	
Maximum transmitter power	LTE	+23dBm (Power Class 3)
	WCDMA/HSPA/HSPA+/DC-HSPA+	+24dBm (Power Class 3)
	GSM/GPRS	B5/B8 +33dBm (Power Class 4)
		B2/B3 +30dBm (Power Class 1)
	EDGE	B5/B8 +27dBm (Power Class E2)
		B2/B3 +26dBm (Power Class E2)
Static receiver sensitivity	LTE FDD: Accorded with 3GPP TS 36.101(R9)	
	WCDMA/HSPA/HSPA+/DC-HSPA+: Compliant with 3GPP TS 25.101(R9)	
	GSM/GPRS/EDGE: Compliant with 3GPP TS 05.05 (R6)	
Maximum power consumption	<3.5W	
Dimensions (D × W × H)	88mm x 28mm x 11.5mm	
Weight	< 35g	
Temperature	<ul style="list-style-type: none"> • Operating: -10°C to +40°C • Storage: -20°C to +70°C 	
Humidity	5% to 95%	

2.2.2 Software Specification

Table 2-2 software specifications(WEBUI)

Item	Description
Basic specifications	<ul style="list-style-type: none">• WebUI• Auto connect, auto reconnect• Display the device information by website
PIN management	PIN unlock
SMS	Support SMS read and send
Device information display	<ul style="list-style-type: none">• Connection status• Signal• Operator name• Network mode• Roam status
System requirement	<ul style="list-style-type: none">• Windows 7, Windows 8, Windows 8.1, Win10. Does not support Windows RT. Mac OS x 10.12, 10.13, 10.14 and 10.15.• Your computer's hardware system should meet or exceed the recommended system requirements for the installed version of OS• Display resolution: 800 × 600 or above
Notes: PIN = personal identification number PUK = PIN unblocking key	

3 Services and Applications

3.1 Packet Data Service

The E3372h-320 supports the PS domain data service based on LTE/DC-HSPA+/HSPA+/UMTS/EDGE/GPRS. After you connect the E3372 to a PC with the USB interface, the E3372h-320 will connect the network automatically, the users can send or receive E-mail, access the network through wireless connection, and download files through wireless data channels.

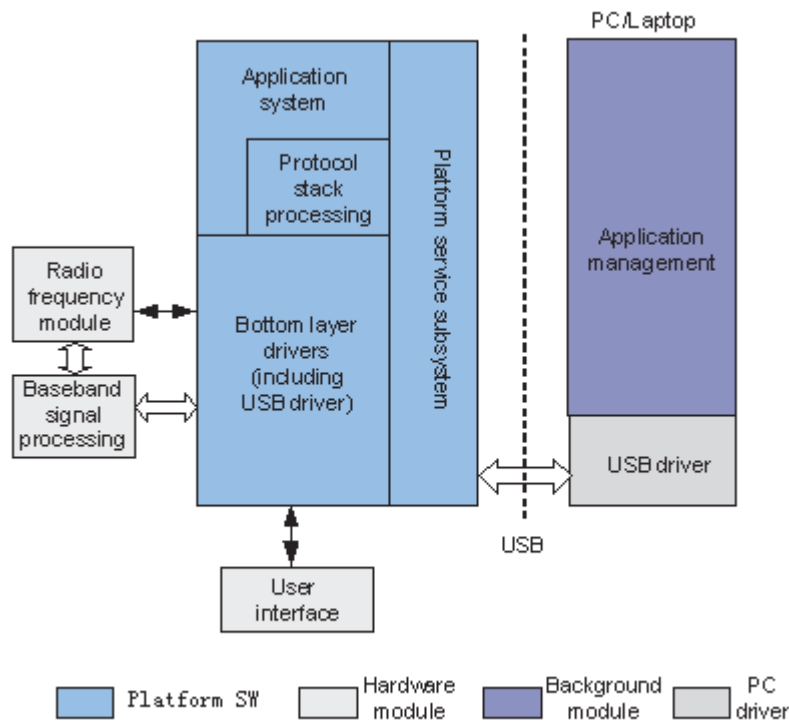
3.2 SMS

The E3372h-320 supports message writing/sending/receiving and group sending on GSM/EGDE/UMTS network. In LTE network supporting SMS over SGs, you can also send/receive messages on LTE. You can manage messages through the WEBUI management page.

4 System Architecture

4.1 System Architecture

Figure 4-1 System architecture



4.2 Functional Modules

Radio Frequency Module

It sends/receives radio signals and modulates/demodulates the radio frequency (RF) signals and baseband signals.

Baseband Signal Processing

It processes LTE/ DC-HSPA+/HSPA+/UMTS/EDGE/GPRS/GSM baseband digital signals, including:

- Modulating/Demodulating LTE baseband signals
- Modulating/Demodulating HSPA+/UMTS baseband signals
- Modulating/Demodulating EDGE/GPRS/GSM baseband signals
- Encoding/Decoding HSPA+/UMTS channel
- Encoding/Decoding EDGE/GPRS/GSM channel

Bottom Layer Driver

It drives peripherals, including USB, LED and SIM/USIM.

Platform Service Subsystem

It initializes programs, diagnoses the running of the system, downloads data and serves as a watchdog.

Protocol Stack System

It processes protocols of LTE/ DC-HSPA+/HSPA+/UMTS/EDGE/GPRS/GSM.

Application System

It sends laptop commands to the bottom layer protocol for processing and returns the value to the laptop.

Existing applications include the following:

- Call management
- Message management
- CS/PS domain service management

User Interface

It provides interfaces to connect peripherals. Interfaces are for LED indicator and SIM/USIM.

Application Management

Through the application window, you can set the parameters of the E3372h-320 and operate the E3372h-320.

5 Technical Reference

5.1 Layer 1 Specifications (Physical)

- Examples of Channel Coding and Multiplexing TR 25.944
- Physical Layer–General Description TS 25.201
- Physical Channels and Mapping of Transport Channels onto Physical Channels (FDD) TS 25.211
- Multiplexing and Channel Coding (FDD) TS 25.212
- Spreading and Modulation (FDD) TS 25.213
- Physical Layer–Procedures (FDD) TS 25.214
- Physical Layer–Measurements (FDD) TS 25.215
- 3GPP HSDPA overall description 25.308
- 3GPP UE radio access capabilities 25.306
- LTE Physical Layer - General Description 36.201
- E-UTRAN Physical Channels and Modulation 36.211
- E-UTRAN Multiplexing and channel coding 36.212
- E-UTRAN Physical layer procedures 36.213
- E-UTRAN Physical layer – Measurements 36.214
- E-UTRAN Services provided by the physical layer 36.302

5.2 Layer 2 Specifications (MAC/RLC)

- MAC Protocol Specification TS 25.321
- RLC Protocol Specification TS 25.322
- E-UTRAN Layer 2 – Measurements 36.314
- E-UTRAN Medium Access Control (MAC) protocol specification 36.321
- E-UTRAN Radio Link Control (RLC) protocol specification 36.322
- E-UTRAN Packet Data Convergence Protocol (PDCP) specification 36.323

5.3 Layer 3 Specifications (RRC)

- UE Interlayer Procedures in Connected Mode TS 25.303
- UE Procedures in Idle Mode TS 25.304
- RRC Protocol Specification TS 25.331
- E-UTRAN Radio Resource Control (RRC) Protocol specification 36.331
- E-UTRAN User Equipment (UE) procedures in idle mode 36.304

5.4 Layer 3 NAS/Core Network (MM/CM)

- Architectural Requirements for Release 1999 TS 23.121
- NAS Functions Related to Mobile Station (MS) in Idle Mode TS 23.122
- Mobile Radio Interface Signaling Layer 3–General Aspects TS 24.007
- Mobile Radio Interface Layer 3 Specification–Core Network TS 24.008
- PP SMS Support on Mobile Radio Interface TS24.011
- Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS) 24.301

5.5 GSM Protocol Specifications

- Mobile Radio Interface Layer 3 Specification, Radio Resource Control Protocol TS 04.18
- Mobile Station–Base Station System (MS–BSS) interface; Data Link (DL) Layer Specification TS 04.06
- Digital Cellular Telecommunications System (Phase 2+); Multiplexing and Multiple Access on the Radio Path TS 05.02
- Technical Specification Group GERAN; Channel coding TS 05.03
- Digital Cellular Telecommunications System (Phase 2+); Radio Subsystem Link Control TS 05.08
- Digital Cellular Telecommunications System (Phase 2+); Radio Subsystem Synchronization TS 05.10

5.6 GPRS Protocol Specifications

- Overall Description of the GPRS Radio Interface; stage 2 TS 3.64
- Mobile Radio Interface Layer 3 Specification TS 04.08
- Mobile Radio Interface Layer 3 Specification: Radio Resource Control Protocol TS 04.18
- General Packet Radio Service (GPRS): Mobile Station (MS)–Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol TS 04.60
- Mobile Station–Serving GPRS Support Node (MS–SGSN) Logical Link Control (LLC) Layer Specification TS 04.64

- Mobile Station–Serving GPRS Support Node (MS–SGSN); Subnetwork Dependent Convergence Protocol (SND CP) TS 04.65
- Multiplexing and Multiple Access on the Radio Path TS 05.02
- Channel Coding TS 05.03
- Modulation TS 05.04
- Radio Transmission and Reception TS 05.05
- General Packet Radio Service (GPRS); Stage 1 TS 22.060
- Mobile Execution Environment (MexE) TS 23.057
- General Packet Radio Service (GPRS) Service description; stage 2 TS 23.060

5.7 General Specifications

- UE Capability Requirements TR 21.904
- UE Radio Access Capabilities TR 25.926
- Vocabulary TR 25.990
- Radio Interface Protocol Architecture TS 25.301
- Services Provided by the Physical Layer TS 25.302
- Synchronization in UTRAN Stage 2 TS 25.402

5.8 Performance/Test Specifications

- User Equipment (UE) Conformance Specification; Radio transmission and reception TS 36.521
- User Equipment (UE) conformance specification; Part 1: Protocol conformance specification TS 36.523-1
- UE Radio Transmission and Reception (FDD) TS 25.101
- Common Test Environments for User Equipment (UE) TS 34.108
- Special Conformance Testing Functions TS 34.109
- Terminal Conformance Specification TS 34.121
- User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance TS 34.123-1
- User Equipment (UE) Conformance Specification; Part 2: Protocol Conformance TS 34.123-2

5.9 SIM Specifications

- SIM and IC Card Requirements TS 21.111
- 3rd Gen. Partnership Proj Tech. Spec. Group Terminals; SIM App.

3rd Generation Partnership Project . Technical Specification Group Core Network and Terminals ; Characteristics of the Universal Subscriber Identity Module (USIM) application TS 31.102

5.10 Safety & Health Specifications

- Safety Standards: EN 60950-1:2006+A11:2009
- Health Standards: EN 62311:2008 / EN 62209-2:2010
- RF spectrum Standards: EN 301 511,v9.0.2 / EN 301 908-1,v4.2.1 / EN 301 908-2,v4.2.1 / EN 301 908-13,v4.2.1

6 Packing List

Table 6-1 lists the items contained in the package of the E3372h-320.

Table 6-1 Packing list of the E3372h-320

Item	Quantity	Remarks
HUAWEI E3372 LTE USB Stick	1	Standard
HUAWEI E3372 LTE USB Stick Quick Start	1	Standard
USB cable	1	Optional
Strap	1	Optional

7 Appendix

Table 7-1 Shows the LTE bandwidths supported by the E3372h-320.

Band	Bandwidth					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
1			√	√	√	√
3	√	√	√	√	√	√
7			√	√	√	√
8	√	√	√	√		
20			√	√	√	√
28		√	√	√	√	√

A Acronyms and Abbreviations

3GPP	3rd Generation Partnership Project
APN	Access Point Name
ARPU	Average Revenue Per User
BSS	Base Station Subsystem
CM	Connection Management
CS domain	Circuit Switched domain
EDGE	Enhanced Data Rates for GSM Evolution
EGPRS	Enhanced GPRS
FDD	Frequency Division Duplex
GERAN	GSM/EDGE Radio Access Network
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
HSPA+	High-Speed Packet Access
HSUPA	High-Speed Uplink Packet Access
HSDPA	High-Speed Downlink Packet Access
LED	Light Emitting Diode
LTE	Long Term Evolution
MAC	Medium Access Control
MexE	Mobile Execution Environment
MM	Mobility Management
Modem	Modulator Demodulator
MS	Mobile Station
MSC	Mobile Switching Center
NAS	Non-Access Stratum

OS	Operating System
PC/SC	Personal Computer/Smart Card
PIN	Personal Identification Number
PnP	Plug and Play
PP	Point-to-Point
PS domain	Packet Switched domain
PUK	PIN Unblocking Key
RF	Radio Frequency
RLC	Radio Link Control
RRC	Radio Resource Control
SGSN	Serving GPRS Support Node
SIM	Subscriber Identity Module
SMS	Short Messaging Service
SNDCP	Subnetwork Dependent Convergence Protocol
TR	Technical Report
TS	Technical Specification
UE	User Equipment
UMTS	Universal Mobile Telecommunications System
USAT	USIM Application Toolkit
USB	Universal Serial Bus
USIM	UMTS Subscriber Identity Module
UTRAN	UMTS Terrestrial Radio Access Network
WCDMA	Wideband Code Division Multiple Access