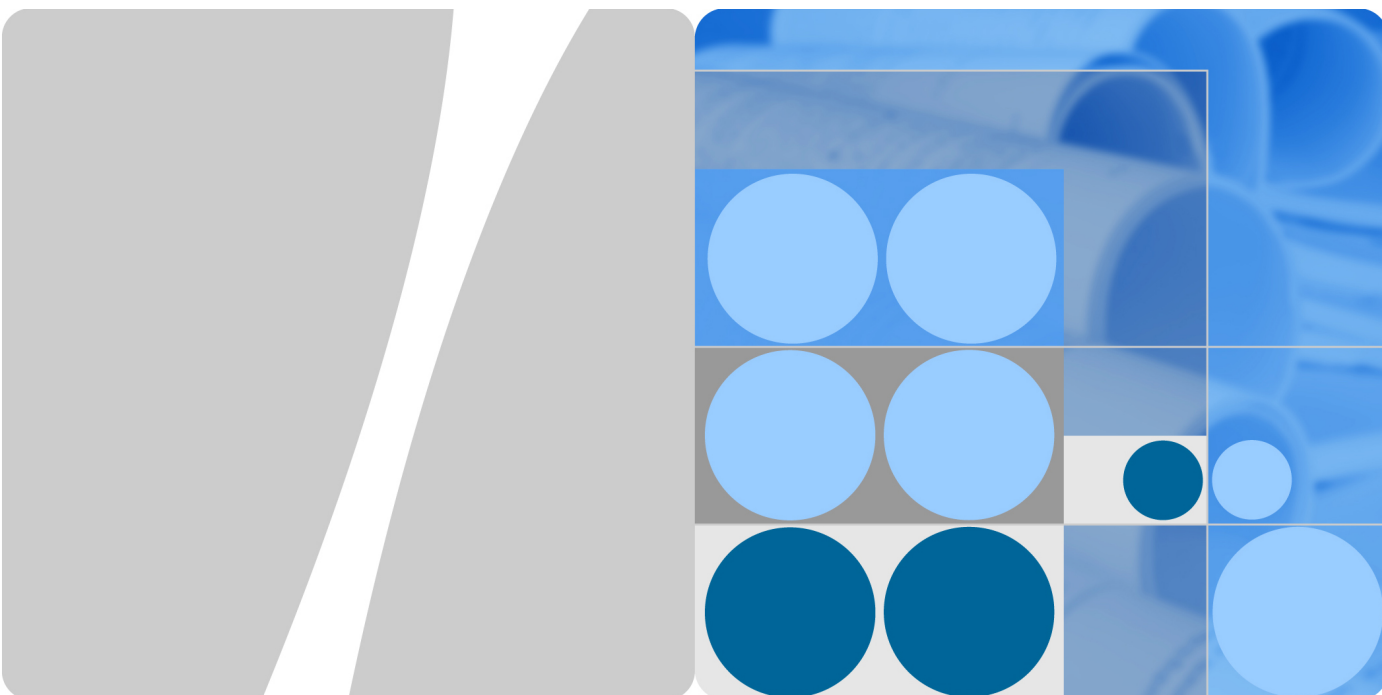


# Product Description



HUAWEI E3372 LTE USB Stick

**Issue** 02  
**Date** 2015-01-19

HUAWEI TECHNOLOGIES CO., LTD.



Huawei Technologies Co., Ltd. provides customers with comprehensive technical support and service. Please feel free to contact our local office or company headquarters.

## Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base  
Bantian, Longgang  
Shenzhen 518129  
People's Republic of China

Website: <http://consumer.huawei.com/en/>

### **Copyright © Huawei Technologies Co., Ltd. 2015. 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**



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 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 the warranty of any kind, express or implied.

---

## About This Document

---

### Summary

This document provides information about the major functions, supported services, system architecture, and technical references of HUAWEI E3372 LTE USB Stick (hereinafter referred to as the E3372).

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 E3372. |
| 2 Features                  | The supported features and technical specifications of the E3372.                           |
| 3 Services and Applications | The services and applications of the E3372.   |
| 4 System Architecture       | The architecture of the E3372.  |
| 5 Technical Reference       | The technical references of the E3372.  |
| 6 Packing List              | The items contained in the package of the E3372.  |

## History

| Issue | Details                          | Date       |
|-------|----------------------------------|------------|
| 01    | Initial draft completed.         | 2014-08-05 |
| 02    | Revised the ID picture on page 6 | 2015-01-19 |

# Contents

---

|   |           |
|---|-----------|
| <b>1 Overview</b> .....                     | <b>6</b>  |
| <b>2 Features</b> .....                     | <b>8</b>  |
| 2.1 Main Features .....                     | 8         |
| 2.2 Technical Specifications .....          | 9         |
| 2.2.1 Hardware .....                        | 9         |
| 2.2.2 Software Specification .....          | 10        |
| <b>3 Services and Applications</b> .....    | <b>13</b> |
| 3.1 Packet Data Service .....               | 13        |
| 3.2 SMS .....                               | 13        |
| <b>4 System Architecture</b> .....          | <b>14</b> |
| 4.1 System Architecture .....               | 14        |
| 4.2 Functional Modules .....                | 14        |
| <b>5 Technical Reference</b> .....          | <b>16</b> |
| 5.1 Layer 1 Specifications (Physical) ..... | 16        |
| 5.2 Layer 2 Specifications (MAC/RLC) .....  | 16        |
| 5.3 Layer 3 Specifications (RRC) .....      | 17        |
| 5.4 Layer 3 NAS/Core Network (MM/CM) .....  | 17        |
| 5.5 GSM Protocol Specifications .....       | 17        |
| 5.6 GPRS Protocol Specifications .....      | 17        |
| 5.7 General Specifications .....            | 18        |
| 5.8 Performance/Test Specifications .....   | 18        |
| 5.9 SIM Specifications .....                | 18        |
| 5.10 Safety & Health Specifications .....   | 19        |
| <b>6 Packing List</b> .....                 | <b>20</b> |

# 1 Overview

HUAWEI E3372 LTE USB Stick (hereinafter referred to as the E3372) 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 sub-products E3372h-153, E3372h-210, E3372h-510 and E3372h-607 are included, which support different frequency bands, the detailed as below:

## E3372h-153:

- LTE FDD: Band1(2100MHz)/Band3(1800MHz)/Band7(2600MHz)/Band8(900MHz)/Band20(800MHz)
- DC-HSPA+/HSPA+/HSPA/UMTS: Band1(2100MHz)/Band8(900MHz)
- EDGE/GPRS/GSM: 850MHz/900MHz/1800MHz/1900MHz

## E3372h-210:

- LTE FDD: Band1(2100MHz)/Band3(1800MHz)/Band7(2600MHz)/Band8(900MHz)/Band20(800MHz)
- LTE TDD: Band38(2600MHz)
- DC-HSPA+/HSPA+/HSPA/UMTS: Band1(2100MHz)/Band8(900MHz)
- EDGE/GPRS/GSM: 850MHz/900MHz/1800MHz/1900MHz

## E3372h-510:

- LTE FDD: Band1(2100MHz)/Band2(1900MHz)/Band4(AWS)/Band5(850MHz)/Band7(2600MHz)/Band28(700MHz)
- DC-HSPA+/HSPA+/HSPA/UMTS: Band1(2100MHz)/Band2(1900MHz)/Band4(AWS)/Band5(850MHz)
- EDGE/GPRS/GSM: 850MHz/900MHz/1800MHz/1900MHz

## E3372h-607:

- LTE FDD: Band1(2100MHz)/Band3(1800MHz)/Band7(2600MHz)/Band8(900MHz)/Band28(700MHz)
- LTE TDD: Band40/(2300MHz)
- DC-HSPA+/HSPA+/HSPA/UMTS: Band1(2100MHz)/Band8(900MHz)
- EDGE/GPRS/GSM: 850MHz/900MHz/1800MHz/1900MHz

The E3372 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 E3372 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 E3372 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 E3372 is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the E3372. These features and services will enable a large number of users to use the E3372 and the average revenue per user (ARPU) of operators will increase substantially.

Figure 1-1 shows the profile of the E3372.

**Figure 1-1** E3372 profile



# 2 Features

## 2.1 Main Features

The E3372 mainly supports the following features:

- LTE FDD bandwidth: Band1(2100MHz)/Band2(1900MHz)/Band3(1800MHz)/Band4 AWS/Band7(2600MHz)/Band20(800MHz)/Band28(700MHz): 5MHz/10MHz/15MHz/20MHz, Band5(850MHz)/Band8(900MHz): 5MHz/10MHz
- LTE FDD: DL 150Mbit/s/UL 50Mbit/s @20MHz bandwidth Cat.4
- LTE TDD bandwidth: Band38(2600MHz)/Band40/(2300MHz) 5MHz/10MHz/15MHz/20MHz
- LTE TDD DL 82Mbit/s /UL 20Mbit/s @20MHz bandwidth (Uplink-downlink configuration 1, 2:2)
- LTE TDD DL 112Mbit/s /UL 10Mbit/s @20MHz bandwidth (Uplink-downlink configuration 2, 1:3)
- DC-HSPA+ data service of up to 43.2Mbit/s
- HSPA+ data service of up to 21.6Mbit/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 on downlink with MSC12
- GPRS packet data service of up to 85.6kbit/s on downlink with MSC12
- LTE 2\*2 MIMO
- LTE/UMTS/GSM SMS over SGs service
- Support PnP, Plug and Play
- Automatic installation
- microSD card Slot
- Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8, Windows 8.1 (Does not support Windows RT), Mac OS x 10.7, 10.8 and 10.9 with latest upgrades
- HiLink Version of E3372 support the following features:Driverfree, WebUI, Auto connect



# Technical Specifications

## 2.1.1 Hardware

**Table 2-1** Hardware specifications

| Item                | Specifications  |
|---------------------|---|
| Technical standard  | LTE Rel 9<br>WCDMA Rel '99 plus Rel 5 HSDPA, Rel 6 HSUPA, Rel 7 HSPA+(cat 14), Rel 8 DC-HSPA+(cat 24)<br>GSM/GPRS/EDGE Rel 99   |
| Operating frequency | LTE FDD 700MHz<br>703MHz~748MHz(Uplink)/758MHz~803MHz(Downlink)<br>LTE FDD DD800MHz:<br>832MHz~862MHz(Uplink)/791MHz~821MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 850MHz:<br>824MHz~849MHz(Uplink)/869MHz~894MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS AWS<br>1710MHz~1755MHz(Uplink)/2110MHz~2155MHz(Downlink)<br>LTE FDD 1800MHz:<br>1710MHz~1785 MHz(Uplink)/1805MHz~1880MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 1900MHz:<br>1850MHz~1910MHz(Uplink)/1930MHz~1990MHz(Downlink)<br>LTE FDD 2600MHz:<br>2500MHz~2570MHz(Uplink)/2620MHz~2690MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 2100MHz:<br>1920MHz~1980MHz(Uplink)/2110MHz~2170MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 900MHz:<br>880~915MHz(Uplink)/925~960MHz(Downlink)<br>LTE TDD 2300MHz:<br>2300MHz~2400MHz(Uplink/Downlink)<br>LTE TDD 2600MHz:<br>2570MHz~2620MHz(Uplink/Downlink)<br>GSM/GPRS/EDGE 850MHz:<br>824MHz~849MHz(Uplink)/869MHz~894MHz(Downlink)<br>GSM/GPRS/EDGE 900MHz:<br>880MHz~915MHz(Uplink)/925MHz~960MHz(Downlink)<br>GSM/GPRS/EDGE 1800MHz:<br>1710MHz~1785MHz(Uplink)/1805MHz~1880MHz(Downlink)<br>GSM/GPRS/EDGE 1900MHz:<br>1850MHz~1910MHz(Uplink)/1930MHz~1990MHz(Downlink) |
| External interfaces | USB 2.0 High Speed (Type A)<br>standard 6-pin SIM card interface  |

| Item   | Specifications   |
|--|--|
|  | microSD card Slot  |
|  | External antenna interface   |
| LED  | Indicating the status of the E3372   |
| Maximum transmitter power  | LTE FDD: Power Class 3 (23dBm)   |
|  | WCDMA/HSPA/HSPA+/DC-HSPA+: Power Class 3 (24dBm)   |
|  | GSM/GPRS 850/900MHz: +33dBm (Power Class 4)  |
|  | GSM/GPRS 1800/1900MHz: +30dBm (Power Class 1)  |
|  | EDGE 850/900MHz: +27dBm (Power Class E2)   |
|  | EDGE 1800/1900MHz: +26 dBm (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(R8)   |
|  | GSM/GPRS/EDGE: Compliant with 3GPP TS 05.05 (R99)  |
| Maximum power consumption  | <3.5W  |
| Power supply   | 5V/500mA   |
| Dimensions (D × W × H)   | 88mm x 28mm x 11.5mm   |
| Weight   | < 50g  |
| Temperature  | <ul style="list-style-type: none"> <li>• Operating: -10°C to +40°C</li> <li>• Storage: -20°C to +70°C</li> </ul> |
| Humidity   | 5% to 95%  |
| Notes:<br>LTE = Long Term Evolution<br>3GPP = The 3rd Generation Partnership Project<br>EGPRS = enhanced GPRS<br>LED = light-emitting diode<br>MSC = mobile switching center<br>SIM = subscriber identity module<br>TS = technical specification<br>USIM = UMTS subscriber identity module |  |

## 2.1.2 Software Specification

The HiLink version of E3372 does not need dashboard and all interaction with user are through WebUI.

**Table 2-2** HiLink version software specifications

| Item  | Description  |
|---|--|
| Basic specifications  | <ul style="list-style-type: none"> <li>• Driverfree</li> <li>• WebUI</li> <li>• Auto connect, auto reconnect</li> <li>• Display the device information by website</li> </ul>   |
| PIN management  | PIN unlock   |
| SMS   | Support SMS read and send  |
| Device information display  | <ul style="list-style-type: none"> <li>• Connection status</li> <li>• Signal</li> <li>• Operator name</li> <li>• Network mode</li> <li>• Roam status</li> </ul>  |
| System requirement  | <ul style="list-style-type: none"> <li>• Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8, Windows 8.1 (Does not support Windows RT), Mac OS x 10.7, 10.8 and 10.9 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> <li>• Display resolution: 800 × 600 or above</li> </ul> |
| <b>Notes:</b><br>PIN = personal identification number<br>PUK = PIN unblocking key |  |

The normal version of E3372 need dashboard on PC. The following table takes Windows dashboard as an example.

**Table 2-3** Dashboard specifications

| Item | Description                                     |
|------|---|
| SMS  | Writing/Sending/Receiving                       |
|      | Sending/Receiving extra-long messages           |
|      | Group sending                                   |
|      | Storage   |
|      | Sorting   |
|      | New message prompt (visual prompt/audio prompt) |

| Item  | Description  |
|---|--|
| Flow display and statistics (data services)                                       | Current connection: <ul style="list-style-type: none"> <li>• Duration</li> <li>• Send/Receive flow</li> <li>• Send/Receive rate</li> </ul>   |
|   | Traffic statistics   |
| Phonebook   | Capacity: It depends on the SIM/USIM card capacity or the hard disk space.   |
|   | Messages can be sent from the phonebook.   |
|   | Importing/Exporting: Import/Export contacts between the SIM/USIM card and a laptop or a file of supported formats.   |
| Network connection setup  | <ul style="list-style-type: none"> <li>• APN management</li> <li>• Set up network connection</li> </ul>  |
| Software installation   | Automatic installation   |
| 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.   |
|   | 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, Windows 8.1 (Does not support Windows RT), Mac OS x 10.7, 10.8 and 10.9 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> <li>• Display resolution: 800 × 600 or above</li> </ul> |
| <b>Notes:</b><br>PIN = personal identification number<br>PUK = PIN unblocking key |  |

# 3 Services and Applications

---

## 3.1 Packet Data Service

The E3372 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 normal version of E3372 driver and the client software are installed on the PC automatically. Dual APN is supported in LTE mode. A default APN will be used at initial attach to LTE. The other APN is use like normal APN in 2G/3G. You can configure APN through the E3372 application (or directly use the default settings) and set up a network connection;
- The HiLink E3372 will connect the network automatically.

Then you can send or receive E-mail, access the network through wireless connection, and download files through wireless data channels.

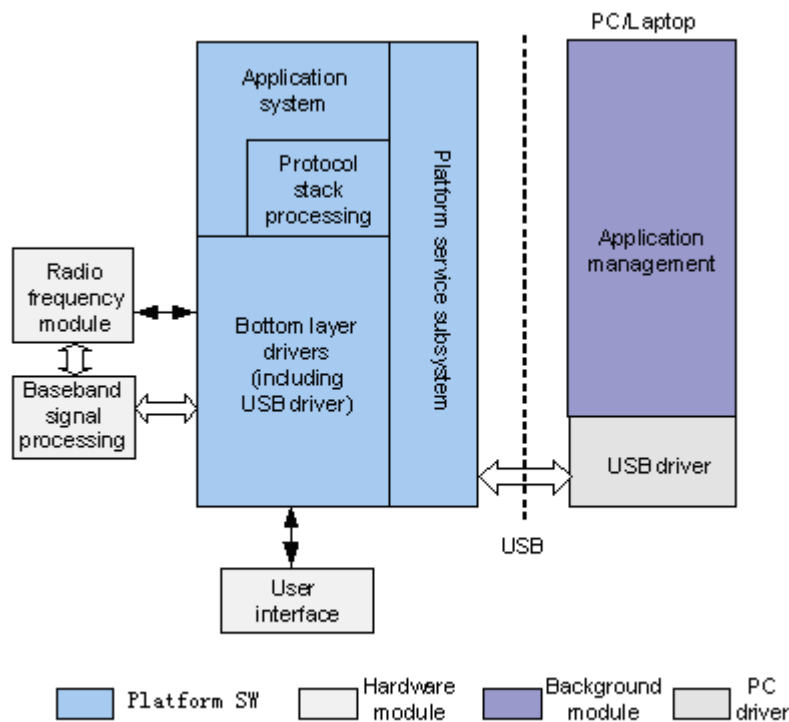
## 3.2 SMS

The E3372 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 dashboard, such as sorting the messages by telephone number or time.

# 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, microSD 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 microSD and SIM/USIM.

### **Application Management**

Through the application window, you can set the parameters of the E3372 and operate the E3372.

# 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 (SNDCCP) 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.

3<sup>rd</sup> 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

This chapter describes the items contained in the package of the E3372.

Table 6-1 lists the items contained in the package of the E3372.

**Table 6-1** Packing list of the E3372

| Item                                   | Quantity | Remarks  |
|--|----------|----------|
| HUAWEI E3372 LTE USB Stick             | 1        | Standard |
| HUAWEI E3372 LTE USB Stick Quick Start | 1        | Standard |
| Safety Information                     | 1        | Standard |
| USB external cable                     | 1        | Optional |
| microSD Card                           | 1        | Optional |

---

# A Acronyms and Abbreviations

---

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

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