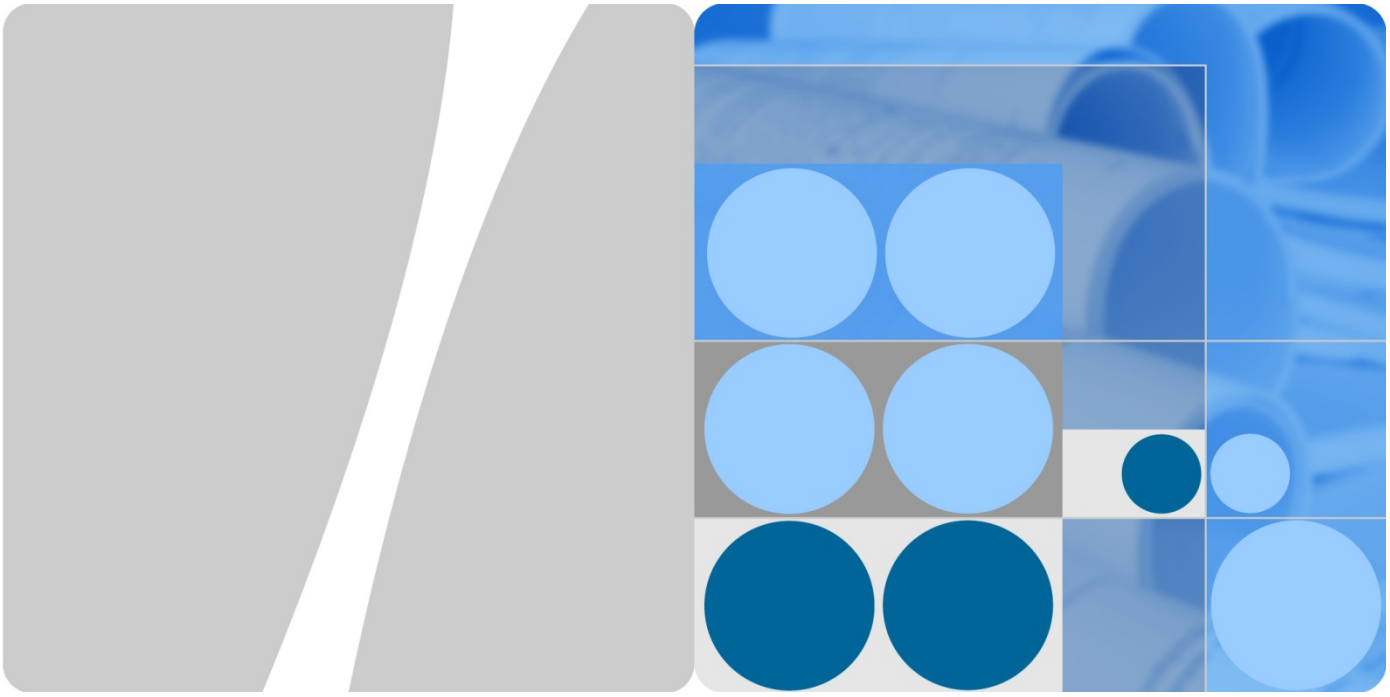
# Product Description



HUAWEI E8372 LTE Wingle
V100R001

**Issue** 03

**Date** 2014-12-04

**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/

# About This Document

## Summary

This document provides information about the major functions, supported services, and technical references of HUAWEI E8372 LTE Wingle (hereinafter referred to as the E8372).

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 E8372. |
| 2 Features | The supported features and technical specifications of the E8372. |
| 3 Services and Applications | The services and applications of the E8372. |
| 4 Technical Reference | The technical references of the E8372. |
| 5 Packing List | The items contained in the package of the E8372. |
| 6 Acronyms and Abbreviations | The acronyms and abbreviations mentioned in this document. |

# History

| Issue | Details | Date |
|---|---|---|
| 01 | Initial draft completed. | 2014-08-20 |
| 02 | Revised edition | 2014-09-19 |
| 03 | Add 2G and LTE B5 Band, delete E8372h-608 customized picture | 2014-12-04 |

# Contents

# 1 Overview

HUAWEI E8372 LTE Wingle (hereinafter referred to as the E8372) is a high-speed packet access product. E8372 supports 10 Wi-Fi users to connect to the wireless network at the same time. 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 E8372h-153 and E8372h-608 are included, which support different frequency bands, the detailed as below:

E8372h-153 support:

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

E8372h-608 support:

- LTE FDD: Band1(2100 MHz)/Band3(1800 MHz)/Band5(850 MHz)/Band7(2600 MHz)/Band28(700 MHz)
- DC-HSPA+/HSPA+/UMTS: Band1(2100 MHz)/Band5(850 MHz)
- EDGE/GPRS/GSM: 850 MHz/900 MHz/1800 MHz/1900 MHz

The E8372 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)
- Wireless Local Area Network as WiFi AP(WLAN)

The E8372 provides the following services:

- LTE packet data service;
- DC-HSPA+ packet data service;
- HSPA+ packet data service;
- HSPA (HSUPA/HSDPA)/UMTS packet data service ;
- EDGE/GPRS packet data service;
- LTE/UMTS/GSM Short Message Service (SMS).

You can connect the E8372 with the USB interface of a computer, or with the power adapter/in-car charger also by USB interface.

In the service area of the LTE/DC-HSPA+/HSPA+/HSPA/UMTS/EDGE/GPRS/GSM network, you can surf the Internet and send/receive messages/emails cordlessly. The E8372 is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the E8372. These features and services will enable a large number of users to use the E8372.

Figure 1-1 shows the profile of the E8372.

**Figure 1-1** E8372 profile

# 2 Features

## 2.1 Main Features

The E8372 mainly supports the following features:

- LTE FDD cat.4, data service of up to DL 150 Mbit/s/UL:50 Mbit/s
- DC-HSPA+ downlink data service of up to 43.2 Mbit/s
- HSPA+ downlink data service of up to 21.6 Mbit/s
- HSDPA data service of up to 14.4 Mbit/s
- HSUPA data service of up to 5.76 Mbit/s
- WCDMA data service of up to 384 kbit/s
- EDGE packet data service of up to DL 296 kbit/s, UL 236.8 kbit/s
- GPRS packet data service of up to 85.6 kbit/s
- LTE/UMTS/GSM Short Message Service (SMS).
- LTE: DL 2*2 MIMO
- RNDIS
- Wi-Fi AP, supports up to 10 Wi-Fi users
- microSD Card
- Support Firewall, UPnP，ALG and NAT function；
- Plug and Play
- Receive diversity
- Inner antenna
- manage and settings your E8372 via WebUI
- Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8, Windows 8.1(Note: Does not support windows RT), Mac OS X10.7, 10.8 and 10.9 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 | 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<br>Wi-Fi: 802.11 b/g/n |
| Operating frequency | LTE FDD 2600 MHz:<br>2500 MHz~2570 MHz(Uplink)/2620 MHz~2690 MHz(Downlink)<br>LTE FDD 1800 MHz:<br>1710 MHz~1785 MHz(Uplink)/1805 MHz~1880 MHz(Downlink)<br>LTE FDD 800 MHz:<br>832 MHz~862 MHz(Uplink)/791 MHz~821 MHz(Downlink)<br>LTE FDD 700 MHz<br>703MHz~748 MHz(Uplink)/758 MHz~803 MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 2100 MHz:<br>1920 MHz~1980 MHz(Uplink)/2110 MHz~2170 MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 900MHz:<br>880 MHz ~915 MHz(Uplink)/925 MHz~960 MHz(Downlink)<br>LTE FDD/DC-HSPA+/HSPA+/HSPA/UMTS 850 MHz:<br>824 MHz~849 MHz(Uplink)/869 MHz~894 MHz(Downlink）<br>GSM/GPRS/EDGE 850 MHz:<br>824 MHz~849 MHz(Uplink)/869 MHz~894 MHz(Downlink)<br>GSM/GPRS/EDGE 900 MHz:<br>880 MHz~915 MHz(Uplink)/925 MHz~960 MHz(Downlink)<br>GSM/GPRS/EDGE 1800 MHz:<br>1710 MHz~1785 MHz(Uplink)/1805 MHz~1880 MHz (Downlink)<br>GSM/GPRS/EDGE 1900 MHz:<br>1850 MHz~1910 MHz(Uplink)/1930 MHz~1990 MHz(Downlink) |
| | WLAN: 2.4 GHz |
| Memory capability | 128MB Flash, 128MB RAM |
| Maximum transmitter power | LTE: +23 dBm (Power Class 3) |
| | WCDMA/HSPA/HSPA+/DC-HSPA+: +24 dBm (Power Class 3) |

| Item | Specifications | |
|---|---|---|
| | GSM/GPRS 850/900MHz：+33 dBm (Power Class 4) | |
| | GSM/GPRS 1800/1900MHz：+30dBm (Power Class 1) | |
| | EDGE 850/900MHz：+27dBm (Power Class E2) | |
| | EDGE 1800/1900MHz：+26dBm (Power Class E2) | |
| | WLAN： | 802.11b: 13 dBm |
| | | 802.11g: 11 dBm |
| | | 802.11n: 9 dBm |
| Static receiver sensitivity | LTE: Compliant with 3GPP TS 36.101(R8) | |
| | WCDMA/HSPA/HSPA+/DC-HSPA+: Compliant with 3GPP TS 25.101(R7) | |
| | GSM/GPRS/EDGE: Compliant with 3GPP TS 05.05 (R99) | |
| WLAN speed | 802.11b: Up to 11 Mbit/s | |
| | 802.11g: Up to 54 Mbit/s | |
| | 802.11n | HT20: Support MCS0–MCS7; Up to 72.2 Mbit/s.<br>Support MCS8–MCS15; Up to 144.4 Mbit/s.<br>HT40: Support MCS0–MCS7; Up to 150 Mbit/s.<br>Support MCS8–MCS15; Up to 300 Mbit/s. |
| Power supply | 5V/750mA | |
| External interfaces | USB 2.0 High Speed | |
| | microSD Card Slot | |
| | standard USIM/SIM card interface | |
| | External antenna interface | |
| Key | Reset key | |
| LED | Indicates the status of the E8372 | |
| Size | 94 mm x 30 mm x 14 mm | |
| Weight | < 50g | |
| Temperature | • Operating: –10℃ to +40℃<br>• Storage: –20℃ to +70℃ | |
| Humidity | 5% to 95% | |

## 2.2.2 Software Specifications

Table 2-2 lists the dashboard specifications.

**Table 2-2** Software specifications

| Item | Description |
|---|---|
| SMS | • Writing/Sending/Receiving<br>• Sending/Receiving extra-long messages<br>• Group sending<br>• Storage<br>• Sorting |
| Network connection setup | • Profile management (Create/Delete/Edit)<br>• Set up network connection |
| WLAN setup | • SSID broadcast and conceal<br>• Open System<br>• Support ASCII or HEX password<br>• 64/128bits WEP Encryption<br>• WPA2-PSK, AES Encryption<br>• WPA/WPA2, TKIP/AES mixed Encryption Algorithm<br>• auto speed adjustment<br>• STA management<br>• MAC Filter |
| Firewall setup | • supporting firewall activation and deactivation<br>• supporting LAN IP address filtering<br>• supporting DMZ<br>• supporting UPnP<br>• supporting WAN Ping block |
| DHCP setup | • supporting DHCP Server deactivation and activation<br>• supporting DHCP Server address configuration<br>• supporting DHCP lease configuration |
| Software installation | Automatic installation for Plug and Play |
| Other | Network connection settings |
| | 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. |

| Item | Description |
| --- | --- |
| System requirement | • Windows XP SP3, Windows Vista SP1/SP2, Windows 7, Windows 8, Windows 8.1(Note: Does not support windows RT), Mac OS X10.7, 10.8 and 10.9 with latest upgrades.<br>• Your computer's hardware system should meet or exceed the recommended system requirements for the installed version of OS<br>• Display resolution: 800 × 600 or above |
| **Notes:**<br>PIN = personal identification number<br>PUK = PIN unblocking key | |

# 3 Services and Applications

## 3.1 Packet Data Service

### 3.1.1 USB Modem

After you connect the E8372 to a PC with the USB interface, you can send or receive E-mail, access the network through wireless connection, and download files through wireless data channels.

**Figure 3-1** shows the device connecting to the network by USB.


### 3.1.2 Wireless Router (Wi-Fi AP)

As Wi-Fi AP, after the device accesses the LTE network, user can enjoy the wireless network through the connection between Wi-Fi and E8372.

E8372 supports up to 10 users to connect to the wireless network at the same time so as to achieve the wireless LAN establishment.

**Figure 3-2** shows multi-devices access the wireless work through Wi-Fi and USB.


**Figure 3-3** shows multi-devices access the wireless work through power adapter


**Figure 3-4** shows multi-devices access the wireless work through in-car charge

# 4 Technical Reference

## 4.1 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

## 4.2 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

## 4.3 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

## 4.4 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

## 4.5 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

## 4.6 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 (SNDCP) 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

## 4.7 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

## 4.8 Performance/Test Specifications

- 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
- Terminal Conformance Specification, Radio Transmission and Reception (FDD) TS 34.121
- User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance TS 34.123-1
- S48 User Equipment (UE) Conformance Specification; Part 2: Implementation Conformance Statement (ICS) Specification TS 34.123-2

## 4.9 USIM Specifications

- SIM and IC Card Requirements TS 21.111
- 3rd Gen. Partnership Proj Tech. Spec. Group Terminals; SIM App. Toolkit (USAT) TS 31.111

# 5 Packing List

This chapter describes the items contained in the package of the E8372.

Table 5-1 lists the items contained in the package of the E8372.

**Table 5-1** Packing list of the E8372

| Item | Quantity | Remarks |
|---|---|---|
| HUAWEI E8372 LTE Wingle | 1 | Standard |
| Quick start | 1 | Standard |
| Safety Information | 1 | Standard |
| App Advertising Card | 1 | Standard |
| microSD card | 1 | Optional |
| USB cable | 1 | Optional |
| Power adapter | 1 | Optional |
| In-car charge | 1 | Optional |

# 6 Acronyms and Abbreviations

| | |
|---|---|
| **Numerics** | |
| **3G** | The Third Generation |
| 3GPP | 3rd Generation Partnership Project |
| **A** | |
| APN | Access Point Name |
| ARPU | Average Revenue Per User |
| **B** | |
| BSS | Base Station Subsystem |
| **C** | |
| CM | Connection Management |
| CS domain | Circuit Switched Domain |
| **E** | |
| EDGE | Enhanced Data Rates for GSM Evolution |
| EGPRS | Enhanced GPRS |
| **F** | |
| FDD | Frequency Division Duplex |
| **G** | |
| GERAN | GSM/EDGE Radio Access Network |
| GPRS | General Packet Radio Service |
| GSM | Global System for Mobile Communications |
| **H** | |
| HSUPA | High Speed Uplink Packet Access |
| HSDPA | High Speed Downlink Packet Access |
| **I** | |
| **IC** | Integrated Circuit |
| **L** | |

| | |
|---|---|
| LED | Light Emitting Diode |
| LTE | Long Term Evolution |
| **M** | |
| MAC | Medium Access Control |
| MexE | Mobile Execution Environment |
| MM | Mobility Management |
| Modem | Modulator Demodulator |
| MS | Mobile Station |
| MSC | Mobile Switching Center |
| N | |
| NAS | Non-Access Stratum |
| **O** | |
| OS | Operating System |
| **P** | |
| PIN | Personal Identification Number |
| PnP | Plug and Play |
| PP | Point-to-Point |
| PS domain | Packet Switched Domain |
| PUK | PIN Unblocking Key |
| **R** | |
| RF | Radio Frequency |
| RLC | Radio Link Control |
| RRC | Radio Resource Control |
| **S** | |
| SGSN | Serving GPRS Support Node |
| SIM | Subscriber Identity Module |
| SMS | Short Message Service |
| SNDCP | Subnetwork Dependent Convergence Protocol |
| SOHO | Small Office and Home Office |
| **T** | |
| TDD | Time Division Duplexing |
| TR | Technical Report |
| TS | Technical Specification |

| | |
|---|---|
| **U** | |
| UE | User Equipment |
| UMTS | Universal Mobile Telecommunications System |
| USAT | USIM Application Toolkit |
| USB | Universal Serial Bus |
| USIM | UMTS Subscriber Identity Module |
| USSD | Unstructured Supplementary Service Data |
| UTRAN | UMTS Terrestrial Radio Access Network |
| **W** | |
| WCDMA | Wideband Code Division Multiple Access |