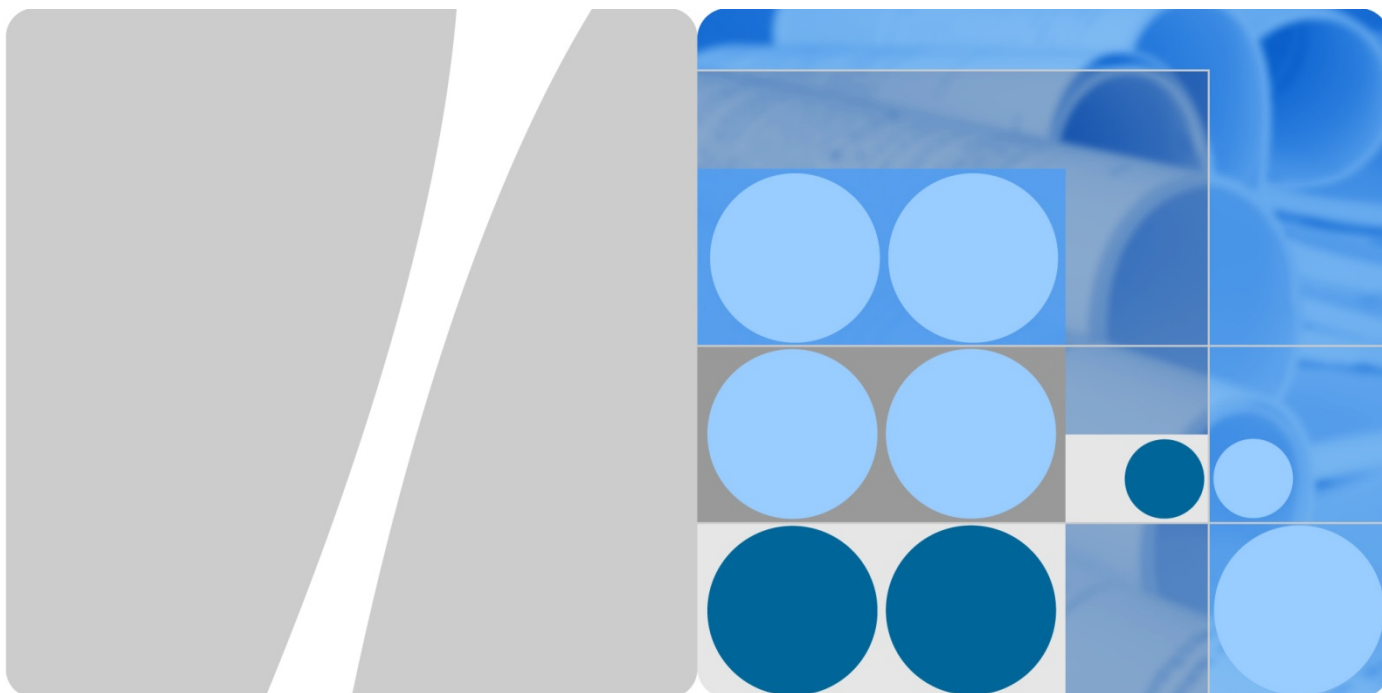


Product Description



HUAWEI CarFi
V100R001

Issue 05
Date 2015-06-10

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About This Document

Summary

This document provides information about the major functions, supported services, and technical references of HUAWEI CarFi.

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

History

Issue	Details	Date
01	Initial draft completed.	2014-7-29
02	Modified "Memory capability" on page 8	2014-9-1
03	change "Ouput: 5V/2A DC" to"Ouput: 5V/1A DC"	2014-09-29
04	<ol style="list-style-type: none">1. Change "HUAWEI HiLink CarFi ", ""HiLink CarFi ""to "HUAWEI CarFi";2. Change "HUAWEI Mobile WiFi App" to "HUAWEI HiLink APP"3. update the ID picture on page 5	2014-12-18
05	Modified HUAWEI CarFi's size and weight on page 9	2015-06-10

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1 Overview

HUAWEI CarFi is a high-speed network access terminal product.

The HUAWEI CarFi 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 Wi-Fi AP(WLAN)

The HUAWEI CarFi provides the following services:

- LTE FDD 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 over SGS Short Message Service (SMS)

You can insert the HUAWEI CarFi into your car's cigarette lighter socket, and then the HUAWEI CarFi allows your portable devices to connect to a Wi-Fi network while you're in a moving vehicle.

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 HUAWEI CarFi is fast, reliable, and easy to operate. Thus, mobile users can experience many new features and services with the HUAWEI CarFi. These features and services will enable a large number of users to use the HUAWEI CarFi.

Figure 1-1 shows the profile of the HUAWEI CarFi.

Figure 1-1 HUAWEI CarFi profile



2 Features

2.1 Main Features

The HUAWEI CarFi mainly supports the following features:

- LTE FDD: Band 1(2100 MHz)/Band 3(1800 MHz)/Band 7(2600 MHz)/Band 8(900 MHz)/Band 20(800 MHz)
- DC-HSPA+/HSPA+/UMTS: Band1(2100 MHz), Band8(900 MHz)
- GSM/GPRS/EDGE 850/900/1800/1900 MHz
- 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 236.8 kbit/s
- GPRS packet data service of up to 85.6 kbit/s
- Support 12V car's cigarette lighter socket interface
- Supply power to devices via the USB port(rated output: 5V, 1A)
- LTE over SGS Short Message Service (SMS)
- Receive diversity
- Inner antenna
- IPv6
- LTE DL 2x2 MIMO
- Wi-Fi AP, supports up to 10 users
- Support HUAWEI HiLink APP

2.2 Technical Specifications

2.2.1 Hardware

Table 2-1 Hardware specifications

Item	Specifications
Technical standard	LTE Rel 9 WCDMA Rel '99 plus Rel 5 HSDPA, Rel 6 HSUPA, Rel 7 HSPA+(cat 14), Rel 8 DC-HSPA+(cat 24) GSM/GPRS/EDGE Rel 99 WLAN 802.11 b/g/n
Operating frequency	LTE FDD 800 MHz: 832 MHz~862 MHz(Uplink)/791 MHz~821 MHz(Downlink) LTE FDD 1800 MHz: 1710 MHz~1785 MHz(Uplink)/1805 MHz~1880 MHz(Downlink) LTE FDD 2600 MHz: 2500 MHz~2570 MHz(Uplink)/2620 MHz~2690 MHz(Downlink) LTE FDD/UMTS/HSPA+ 2100 MHz: 1920 MHz~1980 MHz(Uplink)/2110 MHz~2170 MHz(Downlink) LTE FDD/UMTS/HSPA+ 900 MHz: 880~915 MHz(Uplink)/925~960 MHz(Downlink) GSM/GPRS/EDGE 850 MHz: 824 MHz~849 MHz(Uplink)/869 MHz~894 MHz(Downlink) GSM/GPRS/EDGE 900 MHz: 880 MHz~915 MHz(Uplink)/925 MHz~960 MHz(Downlink) GSM/GPRS/EDGE 1800 MHz: 1710 MHz~1785 MHz(Uplink)/1805 MHz~1880MHz(Downlink) GSM/GPRS/EDGE 1900 MHz: 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) GSM/GPRS 850/900MHz: +33 dBm (Power Class 4) GSM/GPRS 1800/1900MHz: +30 dBm (Power Class 1) EDGE 850/900MHz: +27 dBm (Power Class E2)

Item	Specifications
	EDGE 1800/1900MHz: +26 dBm (Power Class E2)
	WLAN:
	802.11b: 11 dBm
	802.11g: 9 dBm
	802.11n: 7 dBm
Static receiver sensitivity	LTE: Compliant 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)
	WLAN 802.11b: -76dBm@11Mbps/-82dBm@1Mbps
	WLAN 802.11g: -65dBm@54Mbps
	WLAN 802.11n: -64dBm@65Mbps
Whole-system consumption	< 20W
Power supply	Input : 12V from the car's cigarette lighter socket Output: 5V/1A DC
External interfaces	12V car's cigarette lighter socket interface
	standard USB interface for output the DC
	External antenna interface
	microSIM(3FF) card
key	Reset key, Power key
LED	Indicates the status of the HUAWEI CarFi
Dimensions (D × W × H)	About 59.6×49.6×93.0 mm
Weight	about 70 g
Temperature	<ul style="list-style-type: none"> Operating: -10°C~+35°C Storage: -20°C~+70°C
Humidity	5% to 95%

2.2.2 Software Specifications

You can use the HUAWEI HiLink APP to manage your HUAWEI CarFi. The HUAWEI HiLink APP support Android and iOS version.

Table 2-2 Software specifications

Item	Description
SMS	<ul style="list-style-type: none">• Writing/Sending/Receiving• Sending/Receiving extra-long messages• Delete messages• Storage: Up to 500 SMS.• New message prompt (visual prompt/audio prompt)
Network connection setup	<ul style="list-style-type: none">• Profile management (Create/Delete/Edit)
WLAN setup	<ul style="list-style-type: none">• WLAN network name settings (SSID)• WLAN network key settings (Wi-Fi key.)
Other	Network connection settings: Automatic network selection and registration
	Network status display: signal, operator name, system mode, and so on.
	Selection of network connection types
	UICC PIN/PUK: activate/deactivate PIN, changing PIN, unblocking by using the PIN&PUK.

3 Services and Applications

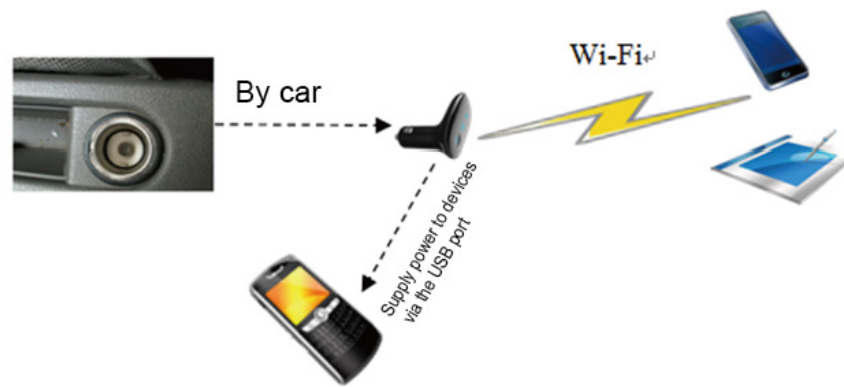
3.1 Packet Data Service

3.1.1 USB Modem

After you insert the HUAWEI CarFi into your car's cigarette lighter socket, you can access the network through wireless connection. HUAWEI CarFi supports up to 10 Wi-Fi users to connect to the wireless network at the same time so as to achieve the wireless LAN establishment.

Also you can connect the HUAWEI CarFi with the USB port achieved to output the power.

Figure 1-1 shows multi-devices access the wireless work



Note:

- HUAWEI CarFi: Input : 12V from the car's cigarette lighter socket, output: 5V/1A DC
- If no devices are connected to your HUAWEI CarFi within 30 minutes, it will disable its internet network. If no devices are connected for 2 hours, your HUAWEI CarFi will automatically shut down.

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 HUAWEI CarFi.

Table 5-1 Packing list of the HUAWEI CarFi

Item	Quantity	Remarks
HUAWEI CarFi	1	Standard
Quick Start	1	Standard
Safety Information	1	Standard
HUAWEI HiLink APP card	1	Standard
Warranty card	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