

VTR Simplified Maintenance Manual

V1.2

Prepared By		Date	2016-11-10
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Approved By	Service representative	Date	2016-11-10



HUAWEI

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Change History

Date	Version	Change Reason	Changed Section	Description	Written By
2016-11-10	V1.0	Released the first version.			
2017-04-17	V1.1	Changed some parts.			
2017-05-16	V1.2	Changed some parts.	6.3	Added the maintenance part in the disassembly and assembly guides.	



Contents

1 Introduction	5
1.1 Applicable Scope	5
1.2 Introduction	5
1.3 How to Obtain Product and Maintenance Information	5
2 Product Introduction	6
2.1 Product Appearance	6
2.2 Specifications	6
2.3 Product Models	14
2.4 Exploded View	15
3 Spare Parts	15
3.1 Commonly Used Parts	15
3.2 How to Obtain BOM Codes	20
4 Software Update	22
4.1 Update Preparation	22
4.2 Checking the Software Version	24
4.3 How to Distinguish Between Software Versions	24
4.3.1 Software Types	24
4.3.2 Software Naming Rules (Using H60 as an Example)	24
4.4 How to Obtain the Version Software	25
4.5 Using a microSD Card to Update the Phone	26
4.5.1 Normal Update	26
4.5.2 Forcible Update	28
4.6 Installing the USB Driver	28
4.7 Troubleshooting Update Failures	29
5 Maintenance Tools	30
6 Disassembly and Assembly Procedures	31
6.1 Disassembly Procedure	31
6.2 Assembly Procedure	32
6.3 Disassembly and Assembly Guides for Commonly Used Parts	32
6.3.1 Maintenance for Power Buttons with Poor Elasticity	32
6.3.2 Maintenance for Volume Buttons with Poor Elasticity	36
6.3.3 Maintenance for Cracking Rear Camera Lens	44
6.3.4 Guide for Installing a Proximity Sensor Sub-board Missing in a Front Cover	47
6.3.5 Guide for Using the Thermal Gel in Front Cover Maintenance	50
7 FAQs	53



7.1 My phone sometimes stops responding or automatically powers off after running for a period of time. What can I do?	53
7.2 I forgot the screen lock password. What can I do?	53
7.3 My phone responds slowly after it has been used for a period of time. What can I do?	53
7.4 How do I check my phone's Wi-Fi/Bluetooth/SN address information?	54
8 Troubleshooting	55
8.1 Startup Failure	55
8.2 Repeated Restarts and Screen Freezing	58
8.3 Overheat and Short Standby Time	59
8.4 The phone cannot be charged.	59
8.5 No Ringtone.	61
8.6 Receiver Failure	61
8.7 Microphone Failure	62
8.8 Weak or No Reception	63
8.9 SIM Card Detection Failure	63
8.10 Camera Failure	64
8.11 Touchscreen Failure	64
9 Quality Inspection Procedure and Methods	64
9.1 Inspection Procedure	64
9.2 Quality Inspection Tools	65
9.3 Inspection Instructions	67
9.3.1 Battery Functionality Test	67
9.3.2 Current Test	67
9.3.3 Charging Test	68
9.3.4 Optical Image Stabilization Test	69



1 Introduction

1.1 Applicable Scope

The LON Maintenance Manual is available in the simplified and advanced versions. The two versions are respectively applicable to common service centers and high-level repair centers (HLRCs) authorized by Huawei. The simplified version (this document) provides maintenance and repair instructions for technicians at authorized Huawei service centers to conduct services of level 1 and level 2. Being Huawei proprietary, this document is accessible only for authorized service centers. Although every effort was made to ensure the accuracy of the document, errors may still exist. If you find any errors or have any suggestions, report them through Huawei service platform ComPartner.

1.2 Introduction

This document introduces the product features, mechanical parts, assembly and disassembly procedures, and common troubleshooting methods. You will be able to rectify common faults in the product after you learn this document.

1.3 How to Obtain Product and Maintenance Information

To obtain product and maintenance information, visit Huawei's service website. You are recommended to install the ComPartner platform to download maintenance-required tools and software. For details about the Huawei Device Knowledge Base website and how to obtain the ComPartner tool and account, consult the local service manager.

To obtain the ComPartner installation package, log in to the Huawei device knowledge base website (http://app.huawei.com/tkb/tskb_index.html#!tservice/resource/document/documentList.html?kfLag=P1515), and search for **ComPartner**. You will then find the installation package.

2 Product Introduction

2.1 Product Appearance



2.2 Specifications

Item	Description
Form factor	Bar type
Display	<ul style="list-style-type: none"> • Size: 5.1 inches • Type: negative LCD • Color: 16 M colors • Solution: FHD 1920 x 1080 pixels (373 PPI)
Touchscreen	Multi-touch screen with AR coating
Fingerprint sensor	<ul style="list-style-type: none"> • Pressure-sensitive fingerprint sensor with a pressing angle of 360 degrees and a chip-level security solution • Screen unlock, answering calls, stopping the alarm clock, taking photos, and Alipay quick paying by touching and holding the fingerprint sensor, swiping on the fingerprint sensor to view pictures, file encryption, and application lock.
Colors	Confidential
Dimensions (H x W x D)	Confidential
Weight	Approx. 190 g (including battery)



Network standard	<p>Primary SIM card:</p> <ul style="list-style-type: none">• 4G network standards: China Mobile 4G (TD-LTE), China Unicom 4G (TD-LTE and LTE FDD), and China Telecom 4G (TD-LTE and LTE FDD)• 3G network standards: China Mobile 3G (TD-SCDMA), China Unicom 3G (WCDMA), and China Telecom 3G (CDMA)• 2G network standards: China Mobile 2G (GSM), China Unicom 2G (GSM), and China Telecom 2G (CDMA) <p>Secondary SIM card:</p> <ul style="list-style-type: none">• 3G network standard (WCDMA)• 2G network standard (GSM) <p>Note:</p> <ul style="list-style-type: none">• Either card slot can be set to accommodate the primary or secondary SIM card.• The phone does not support two China Telecom SIM cards at the same time.
Network bands	<p>Primary SIM card:</p> <ul style="list-style-type: none">• LTE FDD: B1/2/3/4/5/7/8/9/12/17/18/19/20/26/28/29 (FDD B1, B3, and B26 are China Telecom primary frequency bands, while the others are China Telecom roaming frequency bands.) (FDD B3 is a China Unicom primary frequency band, while the others are China Unicom roaming frequency bands.) (LTE FDD frequency bands are China Mobile roaming frequency bands.)• TD-LTE: Band38/39/40/41(100M 2555-2655MHz)• UMTS(WCDMA)/HSPA+/DC-HSDPA: 850/900/AWS/1900/2100(Band5/8/4/2/1/6/19) (WCDMA B1 and B8 are China Unicom primary frequency bands, while the others are roaming frequency bands.) (WCDMA frequency bands are China Mobile and China Telecom roaming frequency bands.) DC-HSDPA is supported, but its implementation on the live network depends on the carrier networks.• CDMA (either the primary or secondary SIM card): BC0 (800 MHz); (only applicable to China Telecom in mainland China and Macau China)• GSM and EDGE: 850/900/1800/1900 MHz• CA: CA_1C/ CA_2C/ CA_3C/CA_7C/ CA_12C/CA_38C/CA_39C/CA_40C/ CA_41C CA_1-3/CA_39-41 <p>Secondary SIM card:</p> <ul style="list-style-type: none">• GSM and EDGE: 850/900/1800/1900 MHz• CDMA (either the primary or secondary SIM card):



	BC0 (800 MHz) <ul style="list-style-type: none"> • UMTS(WCDMA), HSPA+, and DC-HSDPA: 850/900/AWS/1900/2100 (B5/8/4/2/1/6/19)
Working bands	SIM 1 4G TD-LTE: <ul style="list-style-type: none"> • TD-LTE Band 38: 2570–2620 MHz • TD-LTE Band 39: 1880–1920 MHz • TD-LTE Band 40: 2300–2400 MHz • TD-LTE Band 41: 2555–2655 MHz 4G LTE FDD: <ul style="list-style-type: none"> • LTE FDD Band 1: 1920–1980 MHz (UL), 2110–2170 MHz (DL) • LTE FDD Band 2: 1850–1910 MHz (UL), 1930–1990 MHz (DL) • LTE FDD Band 3: 1710–1785 MHz (UL), 1805–1880 MHz (DL) • LTE FDD Band 4: 1710–1755 MHz (UL), 2110–2155 MHz (DL) • LTE FDD Band 5: 824–849 MHz (UL), 869–894 MHz (DL) • LTE FDD Band 6: 830–840 MHz (UL), 875–885 MHz (DL) • LTE FDD Band 7: 2500–2570 MHz (UL), 2620–2690 MHz (DL) • LTE FDD Band 8: 880–915 MHz (UL), 925–960 MHz (DL) • LTE FDD Band 12: 699–716 MHz (UL), 729–746 MHz (DL) • LTE FDD Band 17: 704–716 MHz (UL), 734–746 MHz (DL) • LTE FDD Band 18: 815–830 MHz (UL), 860–875 MHz (DL) • LTE FDD Band 19: 830–845 MHz (UL), 875–890 MHz (DL) • LTE FDD Band 20: 832–862 MHz (UL), 791–821 MHz (DL) • LTE FDD Band 26: 814–849 MHz (UL), 859–894 MHz (DL) 3G CDMA/WCDMA/TD-SCDMA: <ul style="list-style-type: none"> • CDMA CELL (CDMA 800): 824–849 MHz (UL), 869–894 MHz (DL) • WCDMA Band 1 (WCDMA 2100): 1920–1980 MHz (UL), 2110–2170 MHz (DL) • WCDMA Band 2 (WCDMA 1900): 1850–1910 MHz (UL), 1930–1990 MHz (DL) • WCDMA Band 4 (WCDMA 1700): 1710–1755 MHz (UL), 2110–2155 MHz (DL) • WCDMA Band 5 (WCDMA 850): 824–849 MHz (UL), 869–894 MHz (DL) • WCDMA Band 6 (WCDMA 850): 830–840 MHz (UL), 875–885 MHz (DL) • WCDMA Band 8 (WCDMA 900): 880–915 MHz (UL), 925–960 MHz • WCDMA Band 19 (WCDMA 850): 830–845 MHz (UL), 875–890 MHz (DL) • TD-SCDMA Band34 (TDS2100): 2010–2025 MHz • TD-SCDMA Band39 (TDS1900): 1880–1920 MHz 2G GSM: <ul style="list-style-type: none"> • GSM (GSM 850): 824–849 MHz (UL), 869–894 MHz (DL) • EGSM (GSM 900): 880–915 MHz (UL), 925–960 MHz (DL) • DCS (GSM 1800): 1710–1785 MHz (UL), 1805–1880 MHz (DL) • PCS (GSM 1900): 1850–1910 MHz (UL), 1930–1990 MHz (DL)

	<p>SIM 2</p> <p>3G CDMA/WCDMA:</p> <ul style="list-style-type: none"> CDMA CELL (CDMA 800): 824–849 MHz (UL), 869–894 MHz (DL) WCDMA Band 1 (WCDMA 2100): 1920–1980 MHz (UL), 2110–2170 MHz (DL) WCDMA Band 2 (WCDMA 1900): 1850–1910 MHz (UL), 1930–1990 MHz (DL) WCDMA Band 4 (WCDMA 1700): 1710–1755 MHz (UL), 2110–2155 MHz (DL) WCDMA Band 5 (WCDMA 850): 824–849 MHz (UL), 869–894 MHz (DL) WCDMA Band 6 (WCDMA 850): 830–840 MHz (UL), 875–885 MHz (DL) WCDMA Band 8 (WCDMA 900): 880–915 MHz (UL), 925–960 MHz WCDMA Band 19 (WCDMA 850): 830–845 MHz (UL), 875–890 MHz (DL) <p>2G GSM:</p> <ul style="list-style-type: none"> GSM (GSM 850): 824–849 MHz (UL), 869–894 MHz (DL) EGSM (GSM 900): 880–915 MHz (UL), 925–960 MHz (DL) DCS (GSM 1800): 1710–1785 MHz (UL), 1805–1880 MHz (DL) PCS (GSM 1900): 1850–1910 MHz (UL), 1930–1990 MHz (DL)
Maximum Maximum transmit power	<p>4G TD-LTE:</p> <ul style="list-style-type: none"> TD-LTE Band 38: 21–25 dBm (Power Class 3) TD-LTE Band 39: 21–25 dBm (Power Class 3) TD-LTE Band 40: 21–25 dBm (Power Class 3) TD-LTE Band 41: 21–25 dBm (Power Class 3) <p>4G LTE FDD:</p> <ul style="list-style-type: none"> LTE FDD Band 1: 21–25 dBm (Power Class 3) LTE FDD Band 2: 21–25 dBm (Power Class 3) LTE FDD Band 3: 21–25 dBm (Power Class 3) LTE FDD Band 4: 21–25 dBm (Power Class 3) LTE FDD Band 5: 21–25 dBm (Power Class 3) LTE FDD Band 6: 21–25 dBm (Power Class 3) LTE FDD Band 7: 21–25 dBm (Power Class 3) LTE FDD Band 8: 21–25 dBm (Power Class 3) LTE FDD Band 12: 21–25 dBm (Power Class 3) LTE FDD Band 17: 21–25 dBm (Power Class 3) LTE FDD Band 18: 21–25 dBm (Power Class 3) LTE FDD Band 19: 21–25 dBm (Power Class 3) LTE FDD Band 20: 21–25 dBm (Power Class 3) LTE FDD Band 26: 21–25 dBm (Power Class 3) <p>3G CDMA/WCDMA/TD-SCDMA:</p> <ul style="list-style-type: none"> CDMACELL (CDMA 800): 23–26 dBm (Power Class 3) WCDMA: 21–25 dBm (Power Class 3) TD-SCDMA: 21–25 dBm (Power Class 3) <p>2G GSM:</p>

	<ul style="list-style-type: none"> • GSM/EGSM (GSM/GPRS 850/900): 31–34 dBm (Power Class 4) • DCS/PCS (GSM/GPRS 1800/1900): 28–31 dBm (Power Class 1)
Static sensitivity	<p>4G TD-LTE:</p> <ul style="list-style-type: none"> • TD-LTE Band 38: better than –100 dBm/5 MHz • TD-LTE Band 39: better than –100 dBm/5 MHz • TD-LTE Band 40: better than –100 dBm/5 MHz • TD LTE Band 41: better than –98 dBm/5 MHz <p>4G LTE FDD:</p> <ul style="list-style-type: none"> • LTE FDD Band 1: better than –100 dBm/5 MHz • LTE FDD Band 2: better than -101.7 dBm/1.4 MHz • LTE FDD Band 3: better than -101.7 dBm/1.4 MHz • LTE FDD Band 4: better than -104.7 dBm/1.4 MHz • LTE FDD Band 5: better than -103.2 dBm/1.4 MHz • LTE FDD Band 6: better than –100 dBm/5 MHz • LTE FDD Band 7: better than -98 dBm/5 MHz • LTE FDD Band 8: better than -102.2 dBm/1.4 MHz • LTE FDD Band 12: better than -101.7 dBm/1.4 MHz • LTE FDD Band 17: better than -97 dBm/5 MHz • LTE FDD Band 18: better than -100 dBm/5 MHz • LTE FDD Band 19: better than -100 dBm/5 MHz • LTE FDD Band 20: better than -97 dBm/5 MHz • LTE FDD Band 26: better than -102.7 dBm/1.4 MHz <p>3G CDMA/WCDMA/TD-SCDMA:</p> <ul style="list-style-type: none"> • CDMA2000 1X: better than –104 dBm/1.23 MHz • CDMA2000 EVDO Rev.A: better than –105.5 dBm/1.23 MHz • WCDMA Band 1 (WCDMA 2100): better than –106.7 dBm/3.84 MHz • WCDMA Band 2 (WCDMA 1900): better than –104.7 dBm/3.84 MHz • WCDMA Band 4 (WCDMA 1700): better than –106.7 dBm/3.84 MHz • WCDMA Band 5 (WCDMA 850): better than –104.7 dBm/3.84 MHz • WCDMA Band 6 (WCDMA 850): better than –104.7 dBm/3.84 MHz • WCDMA Band 8 (WCDMA 900): better than –103.7 dBm/3.84 MHz • WCDMA Band 19 (WCDMA 850): better than –104.7 dBm/3.84 MHz • TDSCDMA Band 34: better than –108 dBm/1.28 MHz • TDSCDMA Band 39: better than –108 dBm/1.28 MHz <p>2G GSM:</p> <p>GSM/EGSM/DCS/PCS (GSM 850/900/1800/1900): better than –102 dBm/200 kHz</p>
Data services	<p>4G:</p> <ul style="list-style-type: none"> • TD-LTE: Cat4 (1:7, 19 Mbit/s UL, 82 Mbit/s DL); (2:7, 9 Mbit/s UL, 112 Mbit/s DL) Cat6 (1:7, 19 Mbit/s UL, 164 Mbit/s DL); (2:7, 9 Mbit/s UL, 224 Mbit/s DL)



	<ul style="list-style-type: none">• LTE FDD: Cat4 (50 Mbit/s UL, 150 Mbit/s DL) Cat6 (50 Mbit/s UL, 300 Mbit/s DL) 3G: <ul style="list-style-type: none">• WCDMA (HSDPA/HSUPA/HSPA+/DC-HSPA+ 42 Mbit/s): 5.76 Mbit/s (UL), 42 Mbit/s (DL)• TD-SCDMA: 2.2 Mbit/s (UL), 2.8 Mbit/s (DL)• CDMA2000 EVDO Rev.A: 1.8 Mbit/s (UL), 3.1 Mbit/s (DL) 2G: <ul style="list-style-type: none">• EDGE: 236.8 Kbit/s (UL), 236.8 Kbit/s (DL)• GPRS: 40 Kbit/s (UL), 60 Kbit/s (DL)• CDMA2000 1X Rev.A: 307.2 Kbit/s (UL), 307.2 Kbit/s (DL)
Ports	Type C USB port, microSD card slot, and 3.5 mm headset jack
Processor	HUAWEI Kirin 960 octa-core CPU, 4 x Artermis 2.5 GHz+4 x Cortex-A53 1.8 GHz
GPU	Mimir G71MP8
Storage capacity	Standard edition (international and full frequency) <ul style="list-style-type: none">• ROM: 32 GB• RAM: 4 GB Advanced edition (full frequency) <ul style="list-style-type: none">• ROM: 64 GB• RAM: 6 GB Advanced edition (international) <ul style="list-style-type: none">• ROM: 64 GB• RAM: 4 GB
External storage	microSD card: up to 200 GB
Buttons	Power button and volume buttons
GPS	GPS, A-GPS, Glonass, BeiDou, and Galileo
Temperature	<ul style="list-style-type: none">• Operating: 0°C to 35°C• Storage: -20°C to 45°C
Battery	3200 mAh (typical)/3100 mAh (minimum) battery capacity
Working humidity	5% to 95%
Bluetooth	Bluetooth 4.2 BLE
Wi-Fi	802.11 a/b/g/n/ac, 2.4 GHz and 5 GHz, Wi-Fi Direct (Note: Wi-Fi Direct requires support on the other device.)
Wi-Fi hotspot	Support connections with eight devices



USB	USB 2.0, 480 Mbit/s, USB flash drive mode, USB tethering, USB charging, and OTG
NFC	Supported (3 cm card swiping distance)
Power supply	<ul style="list-style-type: none">• Input: 100–240 V, 50/60 Hz, 0.75 A• Output: 5 V 2 A, 4.5 V 5 A, and 5 V 4.5 A
Certification	Type Approval Certificate, Network Access License, China Compulsory Certification (CCC), BQB, and Wi-Fi
Sensors	Gravity sensor, proximity sensor, accelerometer, gyroscope, compass, ambient light sensor, fingerprint sensor, infrared sensor, and Hall sensor
Status indicator	Supported
SIM card type	<ul style="list-style-type: none">• Nano SIM card• Either card slot can be set to accommodate the primary SIM card. The user can set the 4G card slot from the dual card management screen.• The external card slot can accommodate a nano-SIM card or a microSD card.

Item	Description
Operating system	Huawei EMUI 5.0 (compatible with Android 7.0)
Input method	Huawei edition of the Baidu input method, Huawei Swype, and Android GMS input method (AOSP)
User interface	EMUI 5.0
Browser	Huawei EMUI 5.0 default browser
Audio codecs	<ul style="list-style-type: none">• TD-SCDMA/WCDMA: AMR-NB/AMR-WB• GSM/GPRS: FR/EFR/HR/AMR-NB/AMR-WB
Messaging	<ul style="list-style-type: none">• SMS• MMS Based on EMUI 5.0 features
Email	POP3/IMAP/Exchange
Multimedia	Decoding formats: <ul style="list-style-type: none">• Audio: MP3, MIDI, AMR-NB, AAC, AAC+, eAAC+, AMR-WB, WMA2-9, RA, PCM, OGG, and FLAC• Video: 4K playback, H.265, H.264, H.263, MPEG-4, MPEG-2, RV7-10, Xvid, VP8, and WMV9• Image: PNG, GIF (static), JPEG, BMP, WEBP, and WBMP
	File formats: <ul style="list-style-type: none">• Audio: MP3, MP4, 3GP, WMA, OGG, AMR, AAC, FLAC, WAV, MIDI, and RA



	<ul style="list-style-type: none">• Video: 3GP, MPEG-4, WMV, RM, RMVB, and ASF• Image: PNG, GIF (static), JPEG, BMP, WEBP, and WBMP• Audio effect: Hi6402 audio chip, with support for 24 bit Hi-Fi audio files, integrated speaker, and second generation smart PA
Streaming media	Decoding formats: <ul style="list-style-type: none">• Audio: AMR-NB, AMR-WB, AAC, AAC+, and eAAC+• Video: H.265 and MPEG-4
	File formats: MP4 and 3GP
Software update	Online update
Camera resolution	Dual-lens rear camera (autofocus): Leica certified camera, dual-tone flash, BSI CMOS sensor 12 MP+20 MP: <ul style="list-style-type: none">• Photo shooting: up to 3968 x 2976 pixels• Video recording: up to 3840 x 2160 pixels at 30 FPS• The rear camera supports 1080p at 120 FPS and 720p at 240 FPS video recording in slow motion and time-lapse modes.
	Front camera (fixed focus): 8 MP: <ul style="list-style-type: none">• Photo shooting: up to 3264 x 2448 pixels• Video recording: up to 1080p at 30 FPS
Camera feature	<ul style="list-style-type: none">• 1080p video playback• 1080p video recording
Flash	Perfect selfie, beauty mode, beauty mode in video recording, monochrome camera, panorama, wide aperture, HDR, super night, light painting, professional camera, watermarks, document readjustment, audio note, time-lapse, slow motion, object recognition, online translation, ultra snapshot, burst mode, capture smiles, audio control, timer, touch to capture, object tracking, panoramic selfies, and filters
Image and video	Dual-tone flash
Transmission	Image format: JPG Video format: MPEG-4
Security	Wi-Fi hotspot, Wi-Fi Direct, Bluetooth, and Type-C USB
Office	microSD card lock, phone finder, and phone encryption
Power-off alarm	Pre-installed WPS Office, with support for Office document viewing and editing, PDF document viewing, and ZIP compression and decompression
Tools	Supported
	Compass, flashlight, mirror, calendar, gallery, music, video, calculator, notepad,



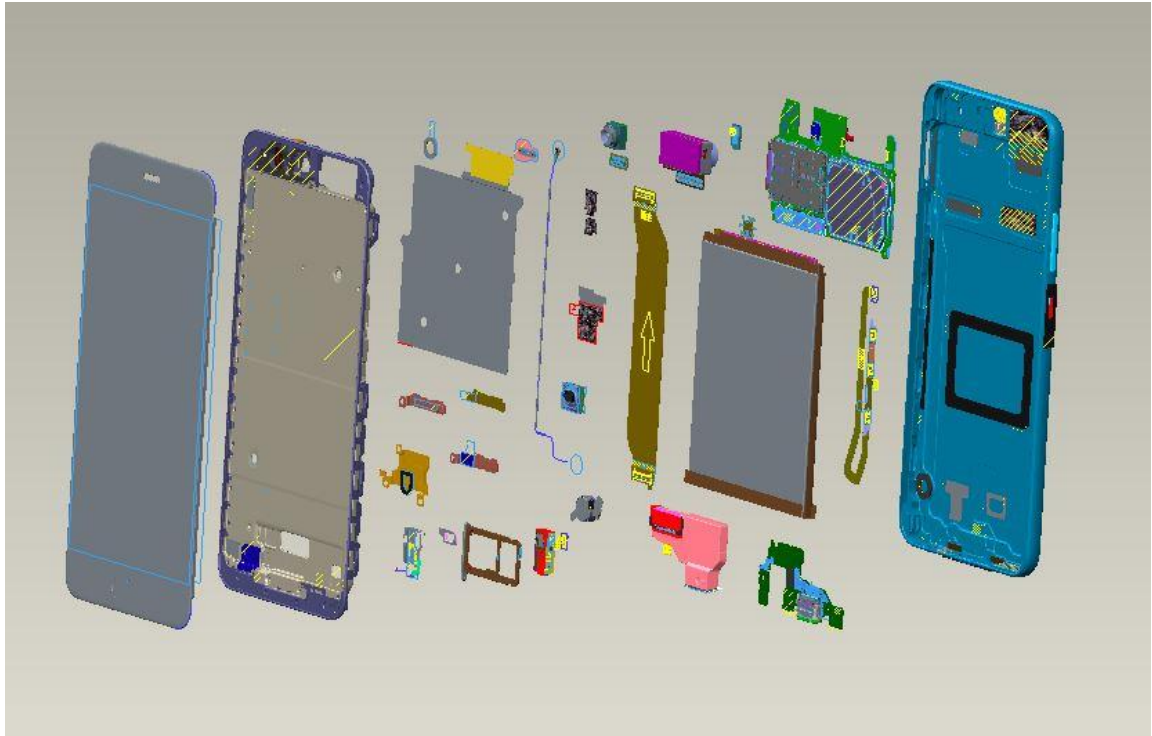
	recorder, weather, clock, file manager, and phone manager
Featured applications	Fast charging, infrared remote control, stereo in speaker mode, ANC, 3-times lossless zoom, knuckle gestures, voice control, smartcare, one-hand UI, smart cover mode, smart headset control, magazine unlock, phone finder, and phone encryption

2.3 Product Models

Item	4 GB+32 GB dual SIM card edition outside China	4 GB+64 GB dual SIM card edition outside China	4 GB+64 GB single SIM card edition outside China
External model	VTR-L29	VTR-L29	VTR-L09
Internal model	VTR-L29A	VTR-L29B	VTR-L09B
External Name (English)	LTE/WCDMA/TD-SCDMA /GSM Handset	LTE/WCDMA/TD-SCDMA /GSM Handset	LTE/WCDMA/TD-SCDMA A /GSM Handset
Carrier	Outside China	Outside China	Outside China
Single/Dual SIM card	Dual	Dual	Single SIM Card
Brand (battery cover)	HUAWEI	HUAWEI	HUAWEI

Item	4 GB+32 GB single SIM card edition outside China
External model	VTR-L09
Internal model	VTR-L09A
External Name (English)	LTE/WCDMA/TD-SCDMA /GSM Handset
Carrier	Outside China
Single/Dual SIM card	Single SIM Card
Brand (battery cover)	HUAWEI

2.4 Exploded View

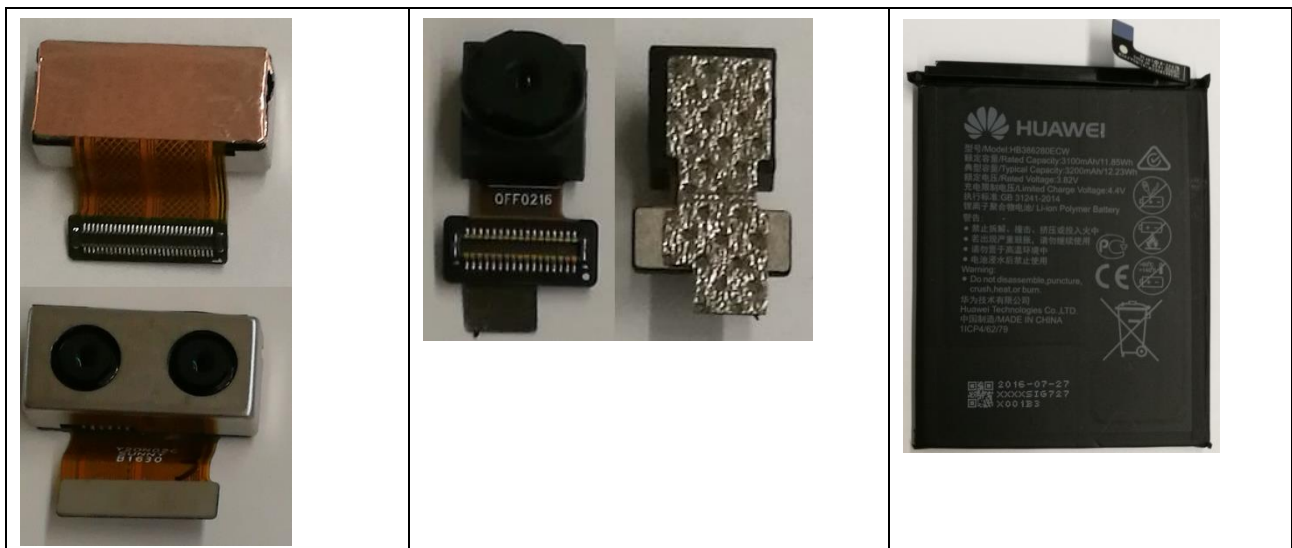


3 Spare Parts


3.1 Commonly Used Parts

The following tables are provided for your reference only. They are subject to changes without notice. Obtain the latest component information from the Huawei TCS. **If you have any questions, contact the local technical support center.**

If you have any questions, contact the local technical support center.





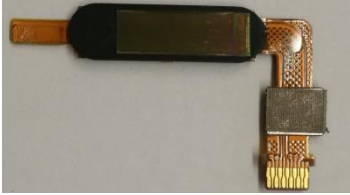
Material	Rear camera BOM code: 23060228	Material	Front camera BOM code: 23060229	Material	Battery BOM code: 24022182
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Material	Proximity sensor FPC BOM code: 03023VKU	Material	Side button FPC BOM code: 03023VLA	Material	Main FPC BOM code: 03023VXP




					
Material	Speaker BOM code:	Material	Receiver BOM code: 22030075	Material	Linear motor BOM code: 32050063




					
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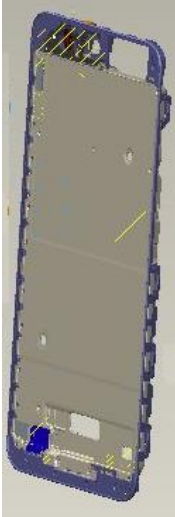


Material	BTB press-fitting support assembly for the main FPC BOM code: 99089RHU	Material	BTB press-fitting support assembly for the rear camera BOM code: 99089RHV	Material	LCD-BTB steel component BOM code: 99089RHW
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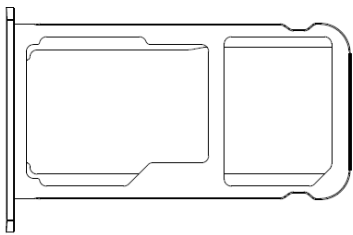
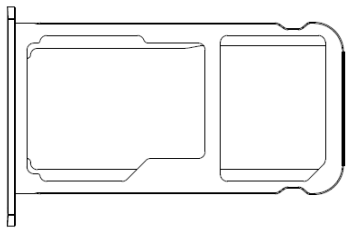
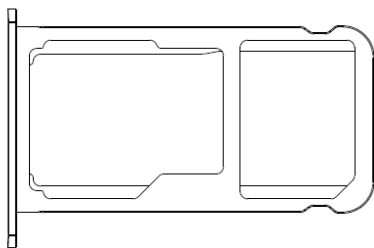
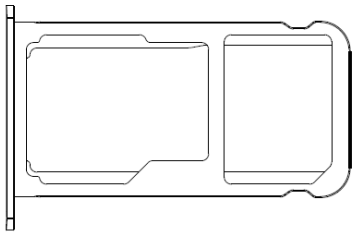
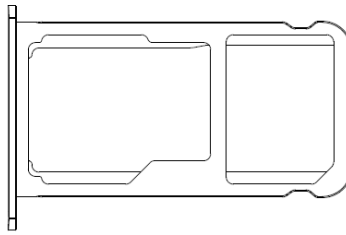
					
Material	Fingerprint module (silver) BOM code:	Material	Fingerprint module (gray) BOM code:	Material	Fingerprint module (champagne) BOM code:

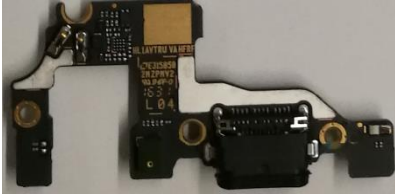

					
Material	Fingerprint module (mocha brown) BOM code:	Material	Fingerprint module (white) BOM code:		

					
Material	Main microphone rubber (manufactured by Foxconn)	Material	Main microphone rubber (manufactured by BYD)	Material	Main microphone rubber (manufactured by Tongda)

					
Material	Proximity sensor rubber (manufactured by Foxconn)	Material	Proximity sensor rubber (manufactured by BYD)	Material	Proximity sensor rubber (manufactured by Tongda)

					
Material	Front cover assembly (gold)–Foxconn	Material	Front cover assembly (white)–Foxconn 99089QRT	Material	Front cover assembly (black)–manufactured by Foxconn

					
Material	Rear cover assembly (gold)—manufactured by Foxconn 99089QRU	Material	Rear cover assembly (silver)—manufactured by Foxconn	Material	Rear cover assembly (gray)—manufactured by Foxconn
					
Material	Dual nano-SIM card tray (gold)	Material	Dual nano-SIM card tray (silver)	Material	Dual nano-SIM card tray (gray)
					
Material	Dual nano-SIM card tray (mocha brown)	Material	Dual nano-SIM card tray (white)		

			
Material	USB sub-board BOM code: 03024CBY	Material	Coaxial cable BOM code: 14241091

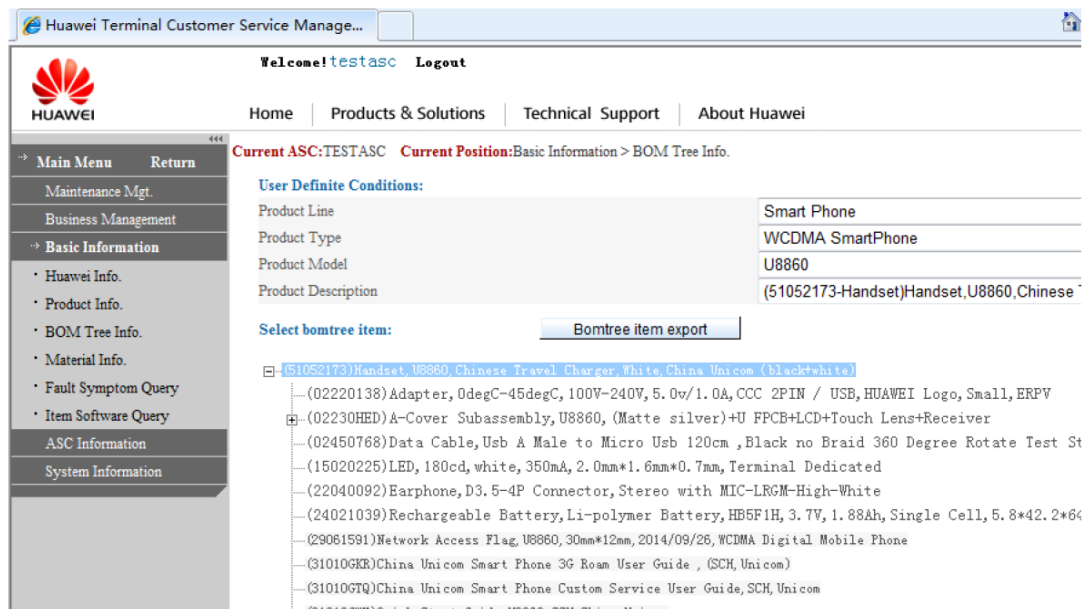
3.2 How to Obtain BOM Codes

The part number may change with time. To ensure the correctness of a part number, query the latest BOM information from <https://tcs.huawei.com> before you apply for a spare part.

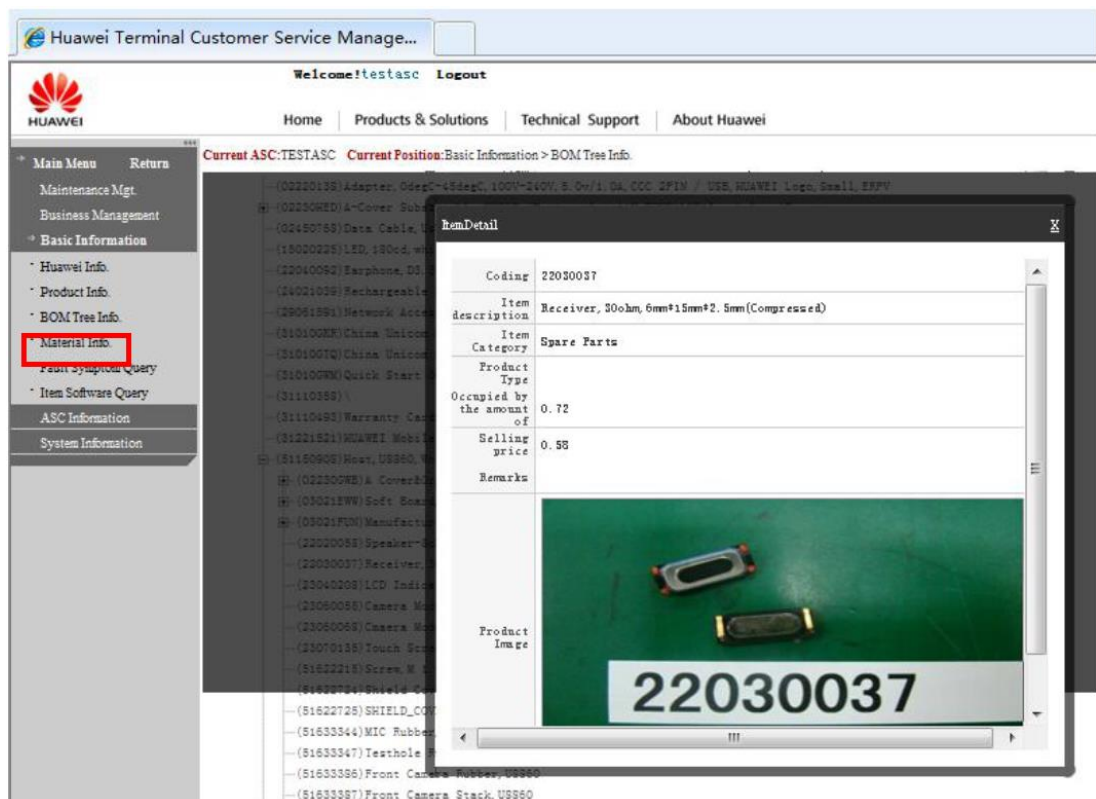
To check a BOM code: Visit <https://tcs.huawei.com> using the authorized service center (ASC) account and password.



1. **To query the BOM information** about a mobile phone and pictures corresponding to the BOM codes:
 - (1) Choose **Basic Information > BOM Tree Info**. Define the values for **Product Line**, **Product Type**, **Product Model**, and **Product Description**. The system then displays the comprehensive BOM information of the phone in the form of BOM tree structure.

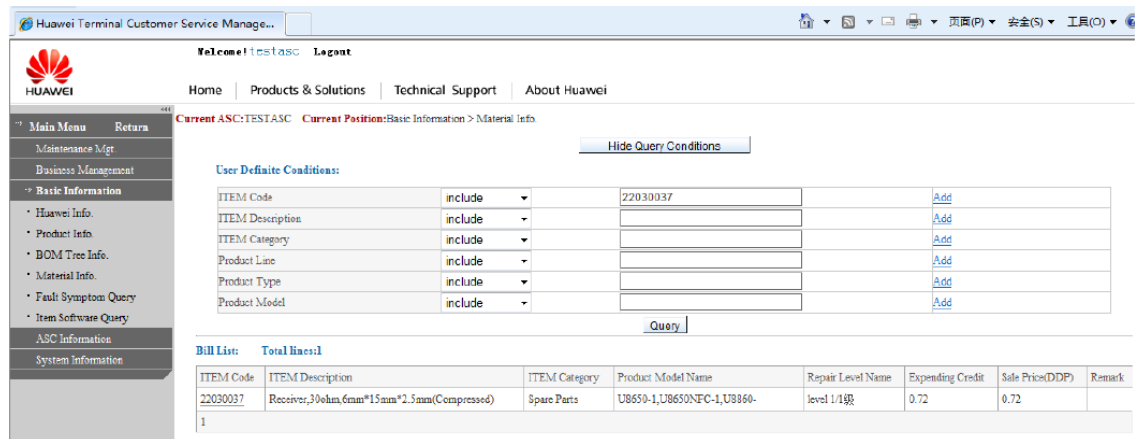


- (2) Click the desired BOM code. The system displays the picture of the part. Use the picture to confirm whether the part is what you want.

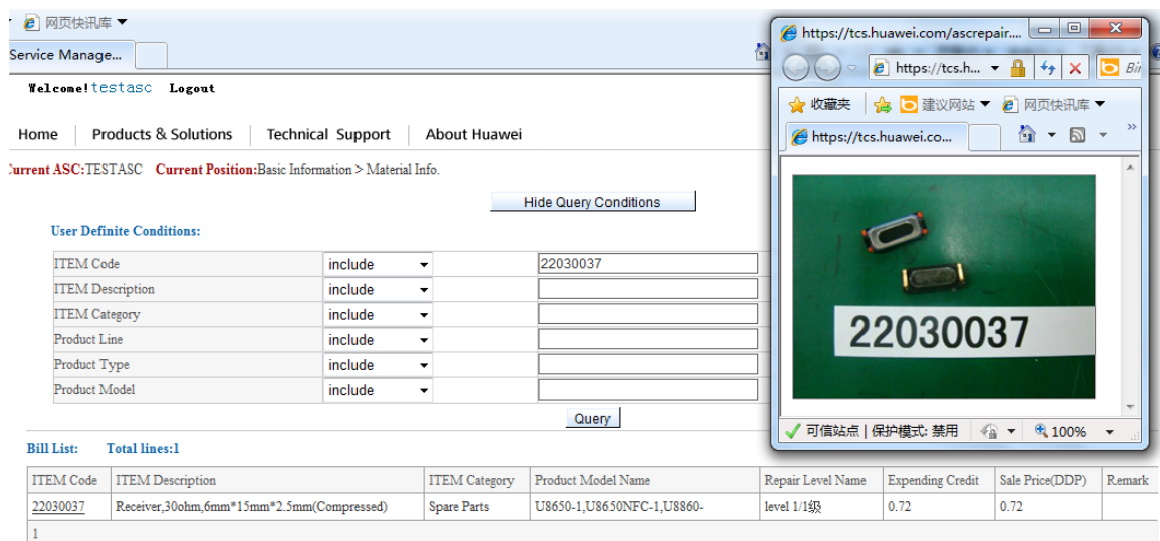


2. To query the maintenance level of a part:

- (1) Choose **Basic Information > Material Info**, enter the BOM code or description, and click **Query** to query the maintenance level, maintenance price, and product on which the part is used.



(2) Click the BOM code. The system then displays the part picture.



4 Software Update

4.1 Update Preparation

Item	Content	Remarks
Update environment	Computer	Operating system: Windows 7
	microSD card	Available memory space larger than 4 GB
	Battery	With at least 15% power remaining
	TypeC-USB cable	TypeC-USB cable; BOM: 04071289
	USB update driver	01_K3 platform USB driver
	Upgrade tool	Multiple update tools-

		_WH62406270ML01Ver1009_05010BXJ
Update file	UPDATE.APP	Use the latest version for your update.
Update methods	Using a microSD card	Normal update
		Forcible update
	Using a USB cable	Normal update
		Forcible update
	Online update	When a Wi-Fi network is available, the phone downloads the update package and automatically carries out the update.

Before the update, ensure that:

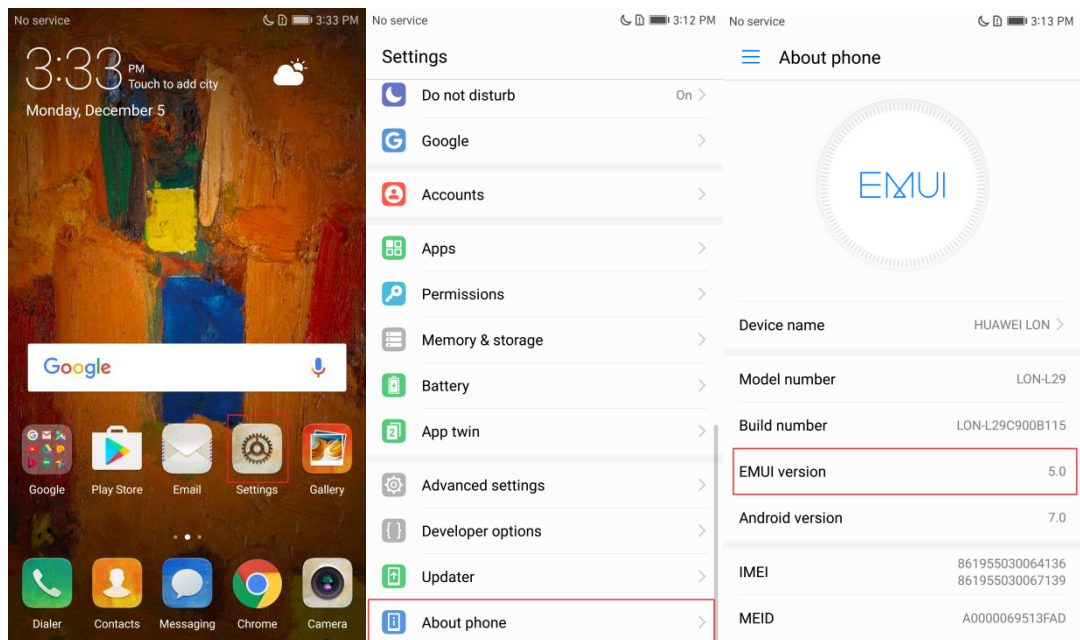
1. You have backed up important data on the phone because software updates will erase important data.
2. The remaining power of the battery is more than 15%. It is recommended that you connect the phone to its power adapter for power supply and do not remove its battery during the update.
3. The update can only be made from a lower version to its higher version. Cross-version or cross-nation updates are not supported. For details about how to distinguish between versions, see section 4.3.2 "Software Naming Rules (Using H60 as an Example)".
4. If a normal update fails, use the forcible update method to update the phone again.
5. The normal update is preferred for devices that can be powered on. The forcible update method may lead to information loss and is not recommended.

Back up important user data as follows:

- (1) To back up contacts, messages, and third-party applications, it is recommended that you insert a microSD card, and use the backup application on the phone (All Backup, for example) to back up all the data to the microSD card. After the update, recover the data using the backup application.
- (2) To back up photos, videos, music, and personal files in the internal storage, manually back them up to a microSD card using **Files** of the phone.

4.2 Checking the Software Version

To check the software version, touch **Settings > About phone > Build number**.



4.3 How to Distinguish Between Software Versions

4.3.1 Software Types

Factory-level software: This type of software is used to update the phone by uploading BOOT during production, maintenance, or replacement, or after the flash memory is erased.

You can perform the RF test or other functional tests on a phone after you load the software on the phone. This software should not be used to perform normal updates for customers. The software will not be updated. You can log in to the ComPartner or Huawei Knowledge Base to download the software.

Board software: This type of software is used to update client software. The software updates from time to time. You can log in to the ComPartner or Huawei Knowledge Base to download the latest version.

4.3.2 Software Naming Rules (Using H60 as an Example)

1. Name: Board Software, HDH60L03M, HDH60L03M00, H60-L03 Handset Software, Program, China General TL(KIRIN930+V7R2), Loading Type.

Description: This software is applicable to the H60-L03. The software part number is 05021MRL. There are several folders in this software package: When you need to load and erase factory-level software, select **HDH60L03M00A131.XML**. Do not select the configuration files in other folders. **Sec_fastboot1.img** and **sec_srb_fastboot2.img** in the **Bootloaderimage** folder are used to used for port mapping file selection when you load the factory-level software.

Figure 4-1 Factory-level software file









	bootloaderimage	2014-11-11 10:10	文件夹	
	fastbootimage	2014-11-11 10:11	文件夹	
	modemimage	2014-11-11 10:10	文件夹	
	ddr_check	2014-08-28 10:45	XML 文档	1 KB
	HDH60L03M00053	2014-08-28 10:45	XML 文档	7 KB

Figure 4-2 Bootloaderimage folder

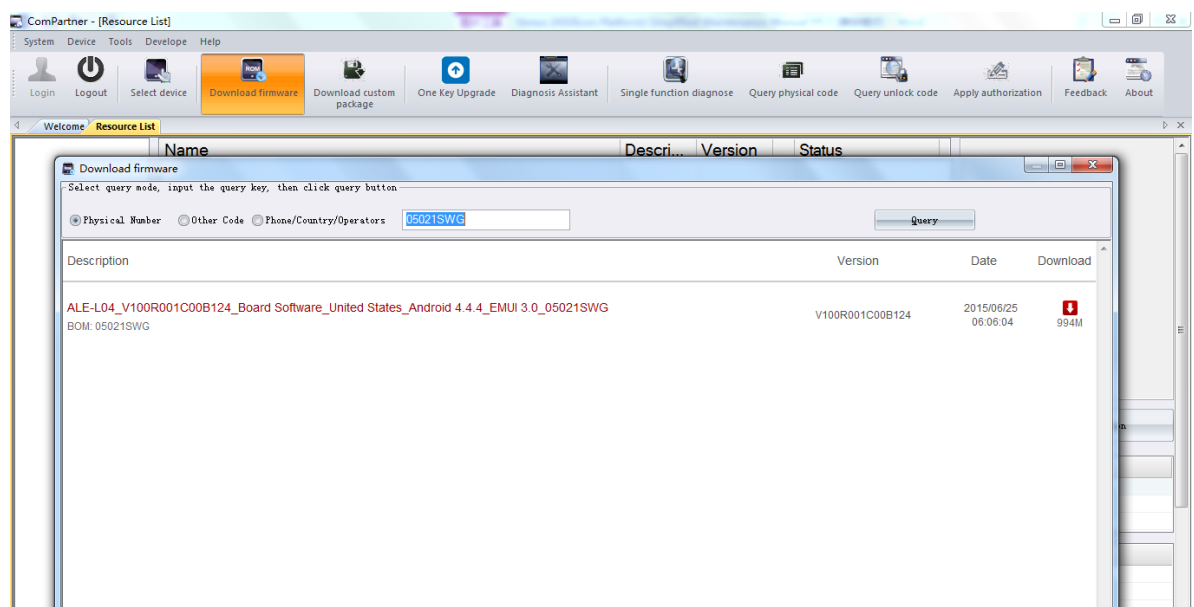
	sec_fastboot	2014-08-28 10:45	光盘映像文件	422 KB
	sec_xloader	2014-08-28 10:45	光盘映像文件	46 KB
	sec_xloader_ddr_test	2014-08-28 10:45	光盘映像文件	32 KB

2. Name: 05012FBF-terminal software-H60-L03-HDH60L03M00A-H60-L03-update software-program-China channel TL(KIRIN930+V7R2)

Description: board software version for H60-L03 updates

4.4 How to Obtain the Version Software

Method 1: Log in to the ComPartner platform and click **Download firmware**. In the displayed dialog box, enter the IMEI of the phone, select **Physical Number**, and click **Query**. You can also enter the part number of the phone software, select **Other Code**, and click **Query**. Click **Download** to download the software. The following screenshot is an example.



Method 2: Log in to the Huawei Knowledge Base website, select the desired phone model, enter the software version, and search for and download the latest software version.

The screenshot shows the Huawei Knowledge Base website. The top navigation bar includes tabs for FAQ, TS, Document, Case, Simulator, **Software**, Video, Bulletin, and All. A search bar is present with the text 'please input keywords' and a 'Search' button. The sidebar on the left lists various categories under 'Knowledge Base Home', 'Common Data Query', 'Knowledge Creation', and 'My knowledge'. The main content area features a 'Frequent Used Tab' and two sections: 'New Knowledge' and 'Hot Knowledge'. Each section contains a table of technical announcements with columns for title, date, and a numerical value.

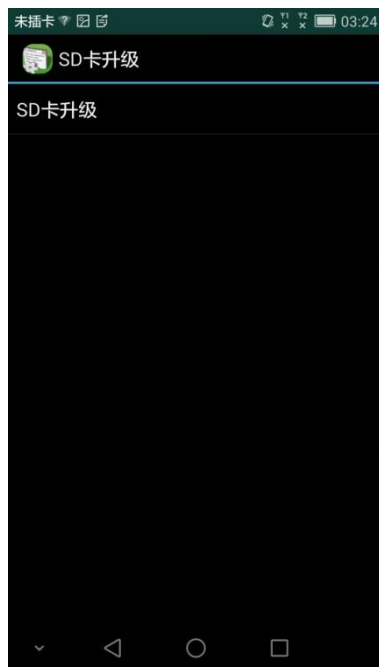
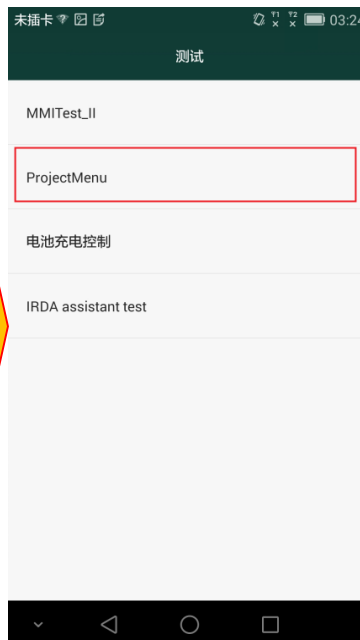
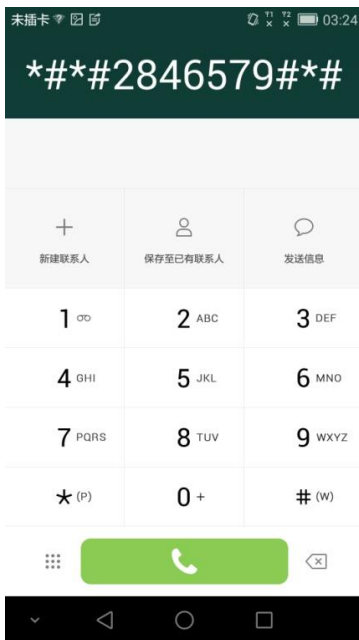
4.5 Using a microSD Card to Update the Phone

4.5.1 Normal Update

1. Format the microSD card using FAT32.
2. Create a **dload** folder in the microSD card's root directory.



3. Copy the update file **UPDATE.APP** to the **dload** folder.
4. Insert the microSD card into the phone and power on the phone. On the dialer screen, enter *****2846579*****. Choose **ProjectMenu > Software Upgrade > SDCard Upgrade** and touch **OK**.



5. The update progress is displayed on the screen.



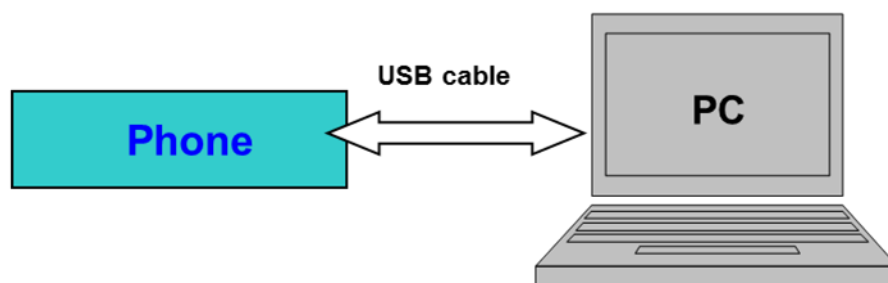
6. After the update is complete, restart the phone and check whether the software version is correct. For details about how to query the software version, see section 4.4 "How to Obtain the Version Software".

4.5.2 Forcible Update

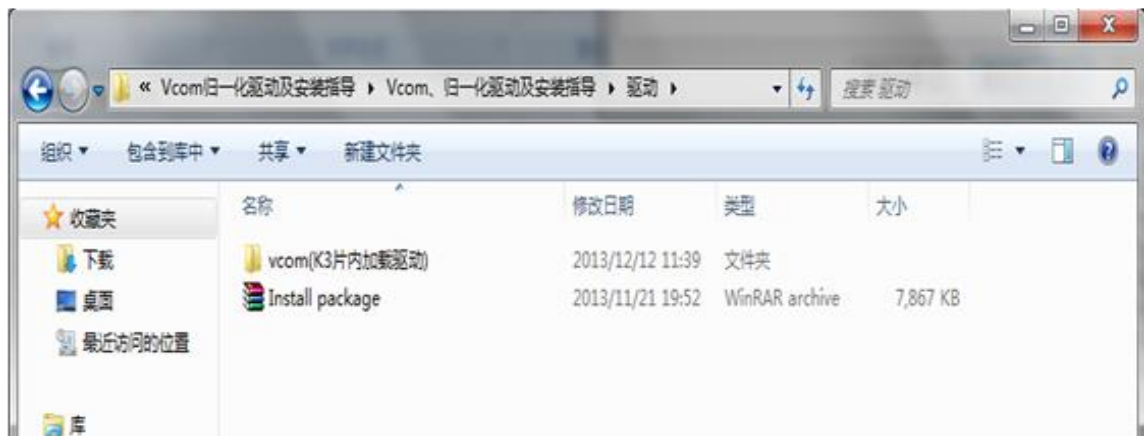
If the phone cannot be powered on, forcibly update the phone.

1. Press and hold the volume up, volume down, and power buttons at the same time. The phone then enters microSD card forcible update mode. The information displayed on the screen is the same as that displayed during a normal update.
2. If the forcible update fails and the phone cannot be detected by the computer, see the solution to the startup failure in the advanced maintenance manual.

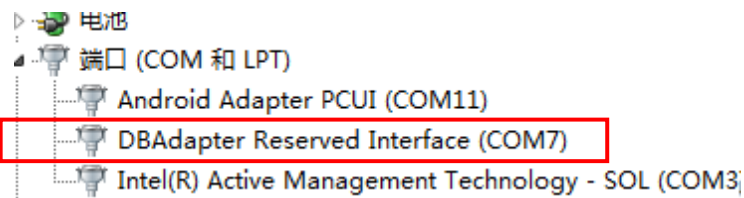
4.6 Installing the USB Driver



1. Download the USB driver for the K3 platform (USB drivers have been normalized. Although the H60 uses the KIRIN930 platform, the USB driver for the K3 platform can still be used.) from the ComPartner Platform. Then install the driver on the computer used for the update.



2. After installing the USB driver, power on the phone, and connect it to the computer using a USB cable. Go to **Device Manager** to check whether the phone is detected by the computer and the corresponding port is properly displayed. If the phone port is not detected, switch the phone to normal mode as follows: On the phone dialer screen, enter *****2846579***** and choose **ProjectMenu > Background Settings > USB Port Settings > Normal Mode**, as shown in the following figure.



4.7 Troubleshooting Update Failures

Failure	Solution
The computer fails to detect the phone.	<ol style="list-style-type: none"> 1. Check that there is no other driver conflicting with the USB update driver. 2. Check that the USB update driver has been installed properly. 3. Check that the USB cable has been properly connected. 4. Check that the serial port settings are correct. 5. Check whether the PCBA can be properly powered on. Forcibly short-circuit the test points to check whether the HUAWEI VCOM 1.0 port can be detected. If the port mapping is abnormal, consider the issue as a situation whether loading fails and no port is mapped and repair the phone.
The phone fails to be updated using a USB cable.	<ol style="list-style-type: none"> 1. Check that the USB cable has been properly connected. 2. Check that the target version is later than the original one. Perform the update again.
The phone fails to be updated using a microSD card.	<ol style="list-style-type: none"> 1. Check that the update file is correct. 2. Check that the update procedure is correct.

	<p>3. Check that the microSD card functions properly.</p> <p>4. Perform the update again.</p>
--	---

5 Maintenance Tools

	<p>Name: constant-temperature heat gun</p> <p>Usage: to heat components</p>
	<p>Name: constant-temperature heat gun</p> <p>Usage: to heat components</p>
	<p>Name: soldering iron</p> <p>Usage: to solder components</p>
	<p>Name: direct current (DC) power supply</p> <p>Usage: to supply DC currents</p>
	<p>Name: soldering fixture</p> <p>Usage: to secure PCBAs</p>
	<p>Name: lead-free tin solder wire</p> <p>Usage: to solder components</p>

	<p>Name: digital multimeter</p> <p>Usage: to measure parameters during maintenance</p>
	<p>Name: tool kit</p> <p>Usage: to assemble and disassemble components</p>
	<p>Name: electric screwdriver</p> <p>Usage: to fasten and remove screws</p> <p>Note: Use a T2 Torx screwdriver (specifications: $\phi 4 \times 40 \times \phi 1.4 \times 15 \times T2$) to remove the screws at the bottom</p>
	<p>Name: RF head wrench</p> <p>Usage: to remove RF heads</p>
	<p>Name: suction cup</p> <p>Usage: to remove the battery cover</p> <p>BOM code: 02435020</p>

6 Disassembly and Assembly Procedures

6.1 Disassembly Procedure

For details, see the attachment below.



Victoria项目整机
拆机指导书_201611

6.2 Assembly Procedure



Victoria系列初级
维修手册-装机指导

6.3 Disassembly and Assembly Guides for Commonly Used Parts

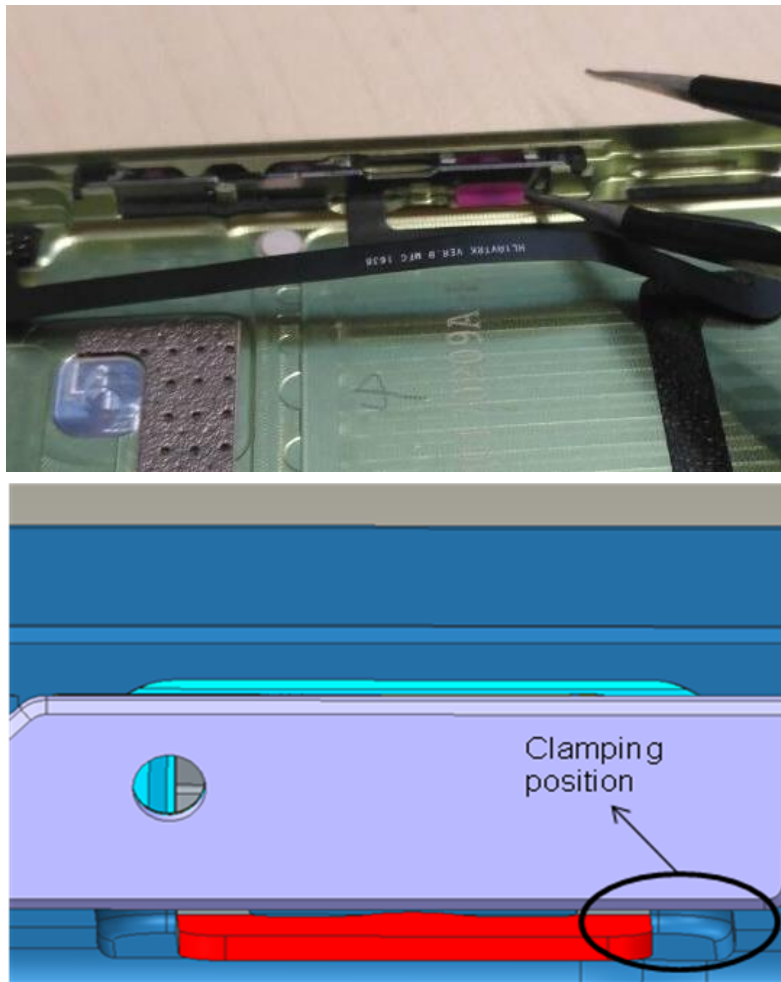
6.3.1 Maintenance for Power Buttons with Poor Elasticity

To repair poor elasticity of the power button:

1. Remove the rear cover of the defective phone.



2. Remove the power button FPC: Use tweezers to remove the power button FPC from the rear cover by the bottom of FPC and the supporting steel sheet.



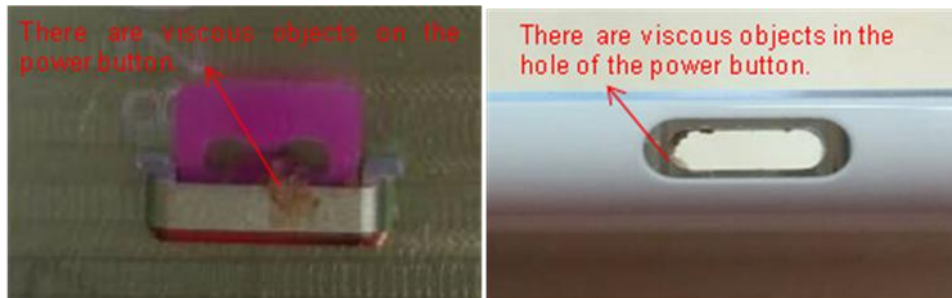
3. Use tweezers or a flat tool to remove the adhesive near the power button rubber.



4. Remove the power button from the rear cover: Use tweezers to push the power button from outside.



5. Check whether there are foreign objects on the power button or in the hole of the power button, as shown in the following figures.



Note: If there are viscous objects or other foreign objects on the buttons or in the hole of the buttons, the poor elasticity is caused by these objects and is a type of man-made damage.

6. If there are foreign objects on the power button or in the hole, remove the foreign objects using lint-free cloth and alcohol.



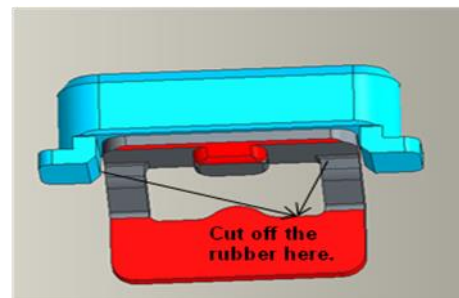
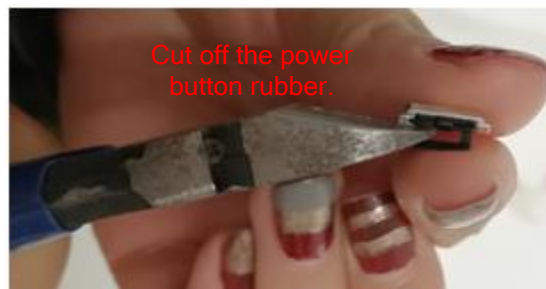
7. Take a new power button (the BOM codes for power buttons of different colors are listed in the following table).

Power button for maintenance – white spray	DKBA41418703	51661EED	BYD
Power button for maintenance – pink	DKBA41418703	51661EEE	Foxconn
Power button for maintenance – black	DKBA41418703	51661EEF	BYD
Power button for maintenance – gold	DKBA41418703	51661EEG	Foxconn

Power button for maintenance – blue	DKBA41418703	51661EEH	BYD
Power button for maintenance – silver	DKBA41418703	51661EEJ	Foxconn
Power button for maintenance – green	DKBA41418703	51661FJJ	BYD

Note: If there are no new power buttons, remove the foreign objects from the original power button and check that there are no cosmetic defects, and then reuse the power button.

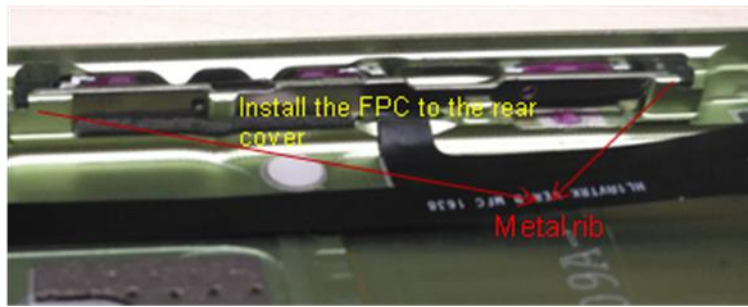
Use diagonal pliers or scissors to cut off the power button rubber at the junction of the vertical plane and horizontal plane, as shown in the following figures.



8. Install the power button with the rubber cut off to the rear cover, with the cut surface facing downwards, as shown in the right figure.



9. Install the power button FPC to the rear cover. Ensure that the power button FPC steel sheet is properly fastened with tweezers and the sides of the steel sheet do not raise beyond the upper surface of the metal rib on the rear cover, as shown in the following figure.



10. Following step 1, press the power button in the center with your finger pad and check whether the elasticity is good.

Note: If there are viscous objects or other foreign objects on the buttons or in the hole of the buttons, the poor elasticity is caused by these objects and is a type of man-made damage. You can replace the power button.

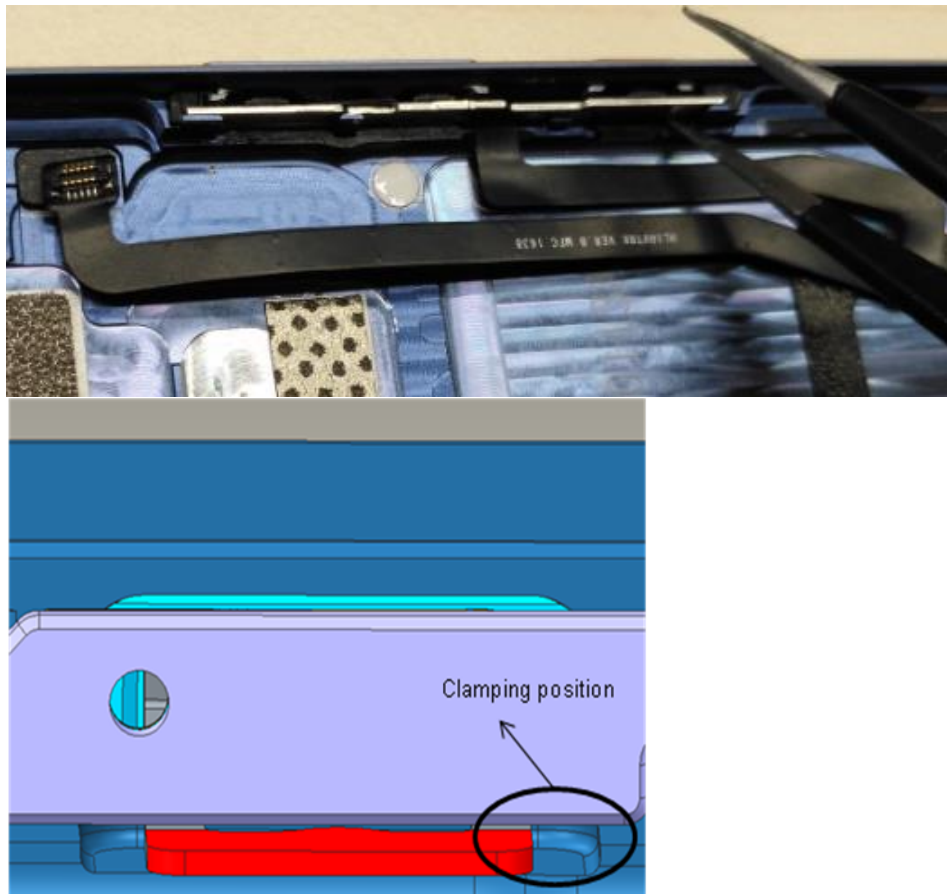
6.3.2 Maintenance for Volume Buttons with Poor Elasticity

To repair poor elasticity of the volume button:

1. Remove the rear cover of the defective phone.



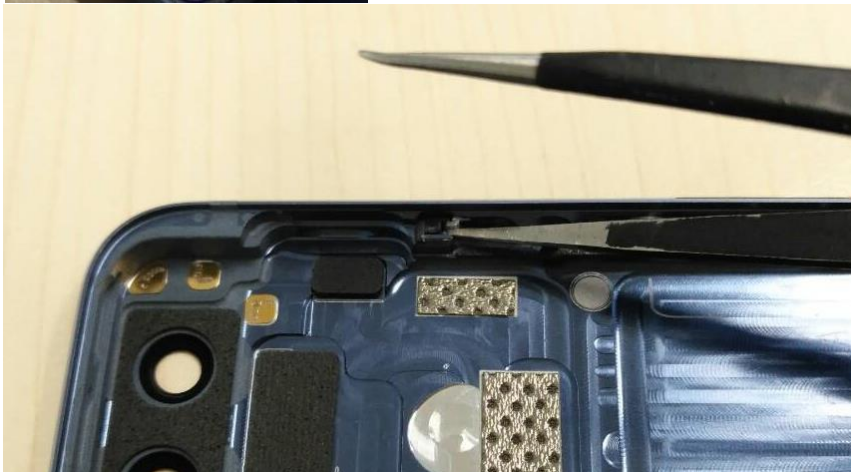
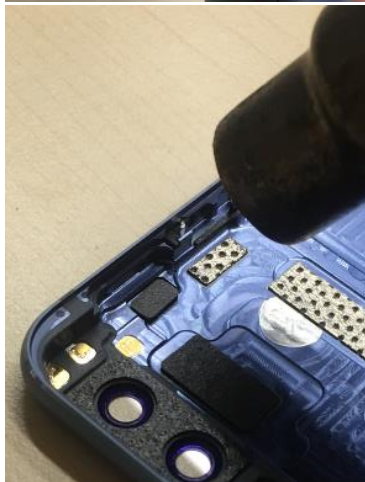
2. Remove the volume button FPC: Use tweezers to remove the volume button FPC from the rear cover by the bottom of FPC and the supporting steel sheet.



3. Remove the volume up button dowel pins as follows:

- (1) (Optional) Adjust the temperature of the heat gun to 300°C and use the heat gun to blow the pins for 30 seconds.
- (2) Insert the tweezers into the bottom of the dowel pin and pry up the tweezers to remove the pin.

Note: After removing the dowel pins, put the pins aside in a safe place.



4. Remove the volume button: Remove the volume up button and volume down button in sequence from the rear cover.



If the pin slot contains excessive adhesive, use the tweezers or a knife to remove it to ensure that the new pins can be fitted properly.

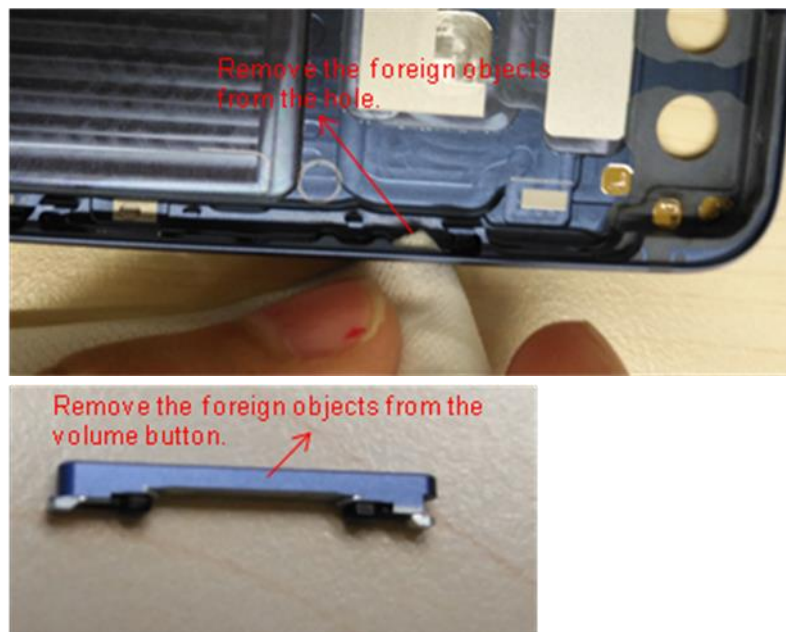


5. Check that there are no viscous objects or other foreign objects on the volume button or in the hole of the volume button, as shown in the following figures.



Note: If there are viscous objects or other foreign objects on the buttons or in the hole of the buttons, the poor elasticity is caused by these objects and is a type of man-made damage.

6. If there are foreign objects on the volume button or in the hole, remove the foreign objects using lint-free cloth and alcohol.



7. Install a new volume button with a new dowel pin to the rear cover.

Make sure the volume button and dowel pin are in the same color as the original ones. The following table lists the corresponding BOM codes.

Note: If there are no new volume buttons, remove the foreign objects from the original volume button and check that there are no cosmetic defects, and then reuse the volume button.

Volume button for maintenance – white spray	DKBA41418704	51661EDS
Volume button for maintenance – pink sandblast	DKBA41418704	51661EDT
Volume button for maintenance – gold sandblast	DKBA41418704	51661EDX
Volume button for maintenance – gold diamond-cut	DKBA41418704	51661EDY
Volume button for maintenance – blue diamond-cut	DKBA41418704	51661EEA
Volume button for maintenance – tarnish sandblast	DKBA41418704	51661EEB
Volume button for maintenance – silver sandblast	DKBA41418704	51661EEC
Volume button for maintenance – green sandblast	DKBA41418704	51661FJG
Volume button pin for maintenance	DKBA80980470	51661ESB

Pick up the volume up button end with a thumb and a forefinger and then feed the other end into the corresponding hole in the battery cover at an angle.



Install the volume up button completely into the corresponding hole.



8. Install the volume button pins: Install the volume button pin in place as shown in the following figure, in as deep a position as possible. Take the handle of the pin and push it against the internal side, rotating it anticlockwise to break the handle off the pin. Take care not to dislodge the pin.



Use the bottom of the tweezers to install the pin in place. Do not apply too much force to the volume button clip at the head of the pin, to prevent deformation, which may affect the button elasticity.



9. Install the volume button FPC to the rear cover. Ensure that the volume button FPC steel sheet is properly fastened with tweezers and the sides of the steel sheet do not raise beyond the upper surface of the metal rib on the rear cover, as shown in the following figure.

The volume button FPC aligns with the rear cover rib.



10. Press the volume up button and volume down button respectively in the center with your finger pad and check whether the elasticity is good.

Note: If there are viscous objects or other foreign objects on the buttons or in the hole of the buttons, the poor elasticity is caused by these objects and is a type of man-made damage. You can replace the volume button.

6.3.3 Maintenance for Cracking Rear Camera Lens



To replace rear cover glass:

1. Remove the damaged rear cover glass.

Adjust the temperature of the heat gun to about 120°C and use the gun to heat the rear cover glass for about 1 minute. Hold the battery cover with your left hand and push the glass from the camera hole side with a plastic crowbar. If the glass cracks, remove the remaining glass with tweezers. Wipe off the remaining adhesive in the slot with alcohol; otherwise, the glass may not be attached firmly, thereby inducing dust.

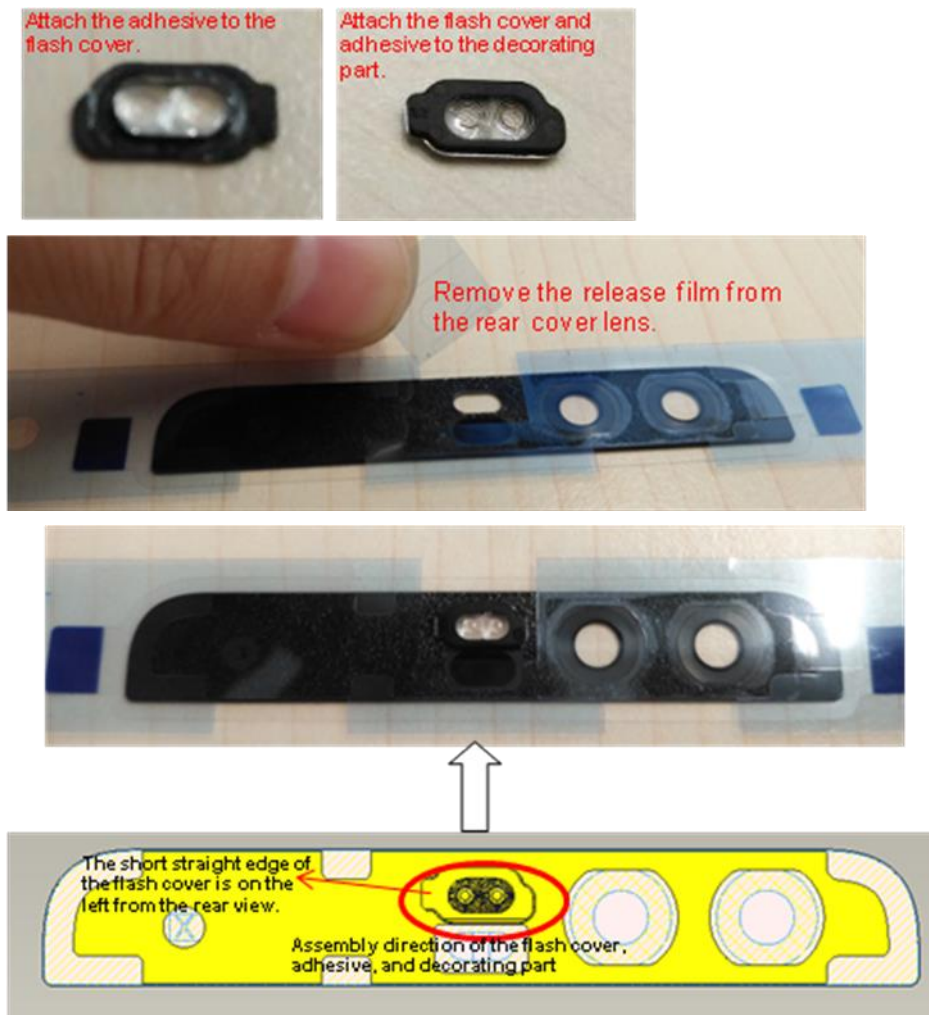




2. Remove the flash cover and metal decorating part from the original lens for reuse. (Remove the adhesive between the flash cover and the decorating part.)



Take foolproof measures, attach one piece of flash cover adhesive (**BOM code: 51637449**) to the flash cover, remove the release film from the adhesive, and then attach the metal decorating part, as shown in the following figure. Install the assembled flash cover and decorating part to the new rear camera lens (the BOM codes for lens of different colors are listed in the following table), as shown in the following figures. Avoid reverse installation.

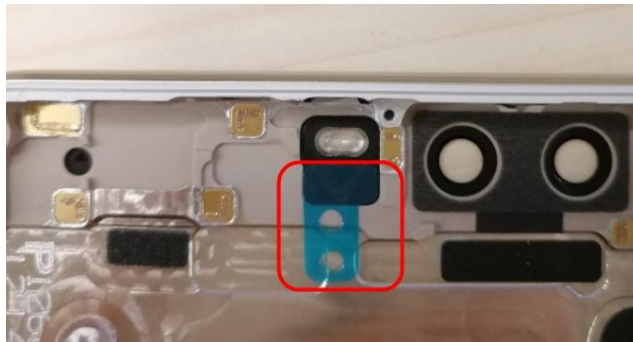

Table 6-1 Lens BOM codes

2.5D decorating part for maintenance – white	DKBA41418705	48021498
2.5D decorating part for maintenance – pink	DKBA41418705	48021499
2.5D decorating part for maintenance – black	DKBA41418705	48021500
2.5D decorating part for maintenance – gold	DKBA41418705	48021501
2D decorating part for maintenance – gold	DKBA41418708	48021504
2D decorating part for maintenance – blue	DKBA41418708	48021505
2.5D decorating part for maintenance – premium white	DKBA41418708	48021518

- Align the glass with the left edge of the slot in the battery cover and attach the glass to the slot from left to right without deviation. Then press the glass tightly. Secure the edges of the lens with a thumb.



4. Attach the anti-dust foam (BOM code: 51637450) in the center without deviation. Then remove the release film.



5. Check that there are no mismatches or gaps between the glass and the slot and there are no smudges or lint on the rear camera.

6.3.4 Guide for Installing a Proximity Sensor Sub-board Missing in a Front Cover

Problem Description:

When the phone screen is being replaced, missing of the proximity sensor sub-board (as shown in the following figure) is easy to occur, which lead to functional defects of the proximity sensor.

Figure 6-1 Proximity sensor sub-board



Requirements:

During the screen replacement, after the proximity sensor sub-board is removed from the original screen, remember to install it to the new screen to avoid functional defects of the proximity sensor.

Maintenance Procedure:

2. Remove the proximity sensor sub-board: As shown in Figure 6-1, remove the PCBA. Locate the proximity sensor sub-board, which is shown by the red circle in Figure 6-2. As shown in Figure 6-3, use the removal tool (eject pin or tweezers) to pry up the sub-board from **the position shown by the red arrow on the right side of Figure 6-4** and remove the sub-board in the direction vertical to the front cover.

Figure 6-1

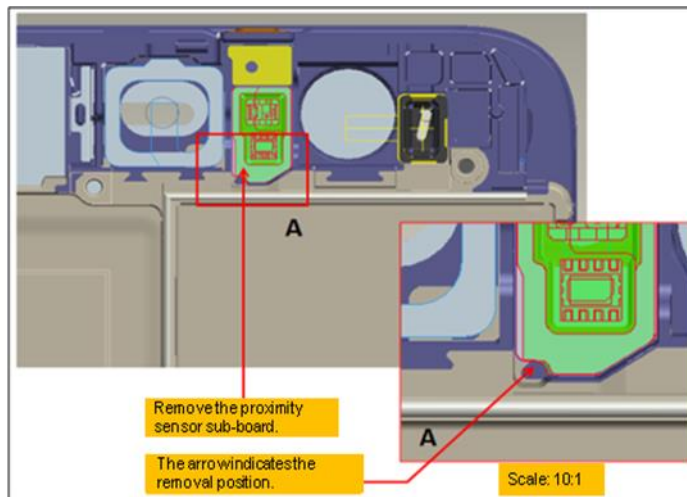


Figure 6-2



Figure 6-3



Figure 6-4


3. Remove the rubber cover and adhesive from the proximity sensor sub-board: Remove the rubber cover and **remaining adhesive from the proximity sensor sub-board**.

Figure 6-1


4. Install the proximity sensor sub-board to the new screen: **Remove the release film shown in Figure 6-1 to avoid functional defects**. Then install the clean proximity sensor sub-board to the front cover assembly (as shown in Figure 6-2) and fasten the sub-board with a silicon rubber bar or other tools that do not cause damage. Ensure that the sub-board does not tilt and the adhesive is activated.

Figure 6-1

Figure 6-2

Precautions:

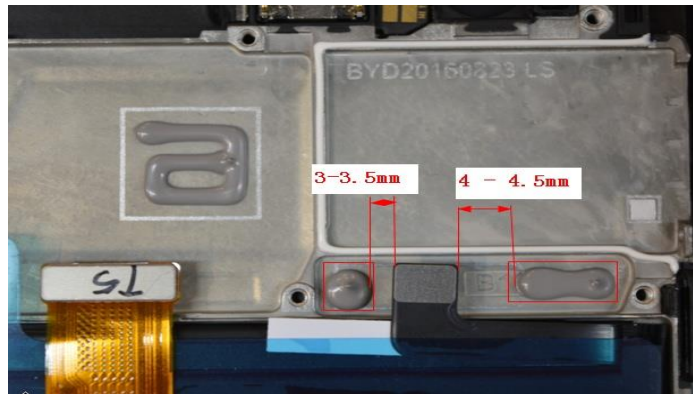
- Ensure that the release film is removed from the rubber cover of the new screen.
- When installing the sub-board, avoid touching the front cover to prevent the sub-board from damage.
- After the installation, press the sub-board to activate the adhesive.

6.3.5 Guide for Using the Thermal Gel in Front Cover Maintenance

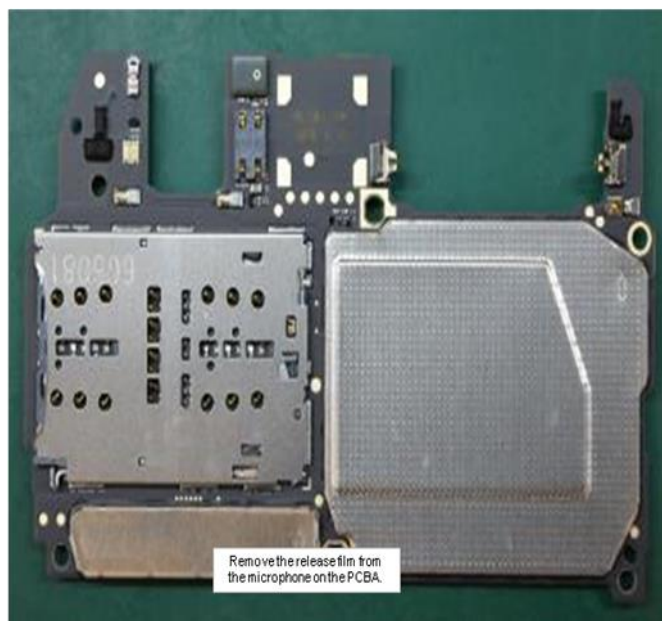
Procedure:

1. Incoming material inspection

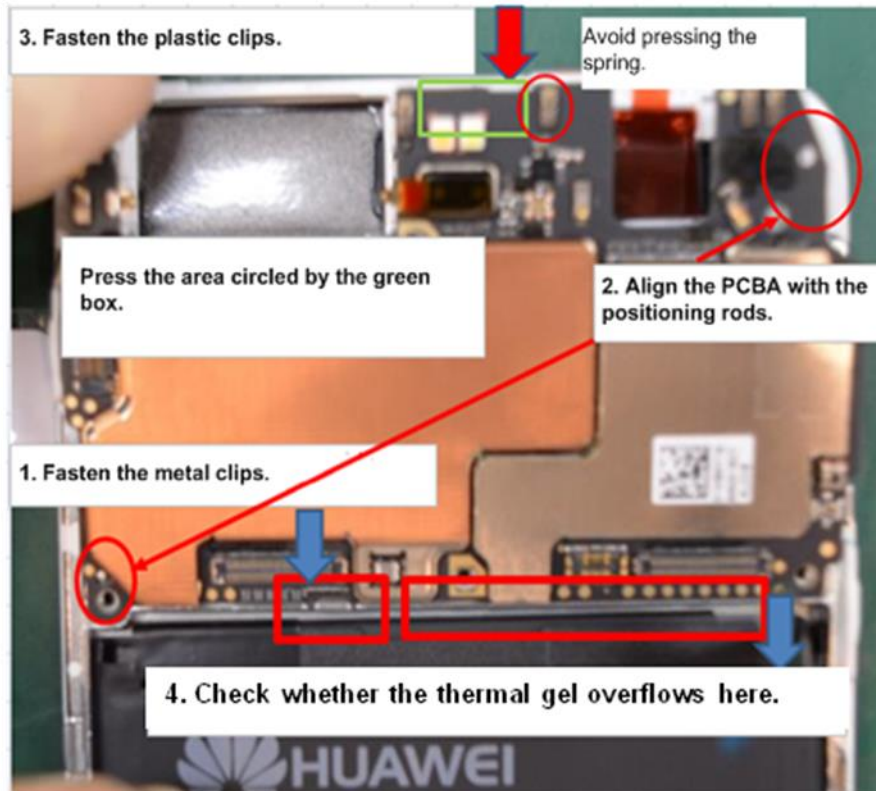
Check that the material part numbers are consistent with those in the BOM. The BOM code of the thermal gel for Victoria phones is **90010279**.
2. Operations
 - (1) Place the front cover assembly at a proper position, and then dispense thermal gel to the three specified positions, as shown in Figure 1. Gel volume is 60–80 mg.



(2) Remove the release film from the microphone on the PCBA.



- (3) Insert the PCBA into the clips on the front cover assembly at a certain angle, align the PCBA with the positioning rods, and then press the PCBA to secure it into place. Ensure that the PCBA is properly installed to the front cover assembly.



3. Checklist

- Ensure that the release film is removed from the microphone.
- The operation must be completed within 10 minutes after the thermal gel is dispensed; otherwise, re-dispense the gel.
- If the PCBA is assembled to the front cover assembly the first time, after the operation is complete, check whether the gel overflows. If yes, check whether the gel path deviates and whether the gel volume is within the standard range.

Precautions:

- Avoid colliding the components on the PCBA and scratching the spring.
- Prevent components on the PCBA from colliding with the front cover assembly.
- Place the TP or front cover assembly in a tray with the FPC facing upwards to prevent it from breaking the screen.

7 FAQs

7.1 My phone sometimes stops responding or automatically powers off after running for a period of time. What can I do?

Reason: A smartphone incorporates a complex operating system, just as a computer. Occasional breakdowns or automatic power-off may occur because of application running errors or compatibility issues with third-party applications.

Solutions: Restore the phone to its factory settings or update the phone to the latest version.

7.2 I forgot the screen lock password. What can I do?

Solution: Forcibly unlock the phone (The operation will delete all user data. Exercise caution when performing this operation). To forcibly unlock the phone, do as follows: Power off the phone. Press and hold the power and volume up buttons. When the startup screen is displayed, wait for 3s, release the power key. After the recovery screen is displayed, release the volume keys. Press the volume up and down buttons to scroll through the options. Choose the option to restore factory settings (shown in Figure 2) and press the power button for confirmation. Then scroll to choose the button shown in the following figure and press the power button.

Figure 1.

Figure 2.

7.3 My phone responds slowly after it has been used for a period of time. What can I do?

There are two reasons:

Too many applications are installed on the phone, and the phone does not have enough available space.
The phone suffers from virus attacks.

Solution: Restore the phone to its factory settings.

To restore the phone to its factory settings, choose **Settings > Backup & reset > Factory data reset > Reset phone**.



7.4 How do I check my phone's Wi-Fi/Bluetooth/SN address information?

Maintenance Methods

1. To check the Wi-Fi and Bluetooth address, enable Bluetooth and Wi-Fi on your phone. Choose **Settings > About Phone > Status**.
2. To check the phone IMEI and SN, on the dialer screen, enter *****2846579***** to access engineering mode and choose **ProjectMenu > Board basic information query > OtherQuery**.

Figure 1: check WIFI/ Bluetooth address



Figure 2: check IMEI, SN



8 Troubleshooting

Before you maintain the phone, restore it to its factory settings to ensure that the failure is not caused by environmental factors or incorrect functional settings. Before the restoration, back up important data. Faulty PCBAs removed from the phones at common service centers must be kept clean and complete to ensure for HLRCs to maintain them properly.

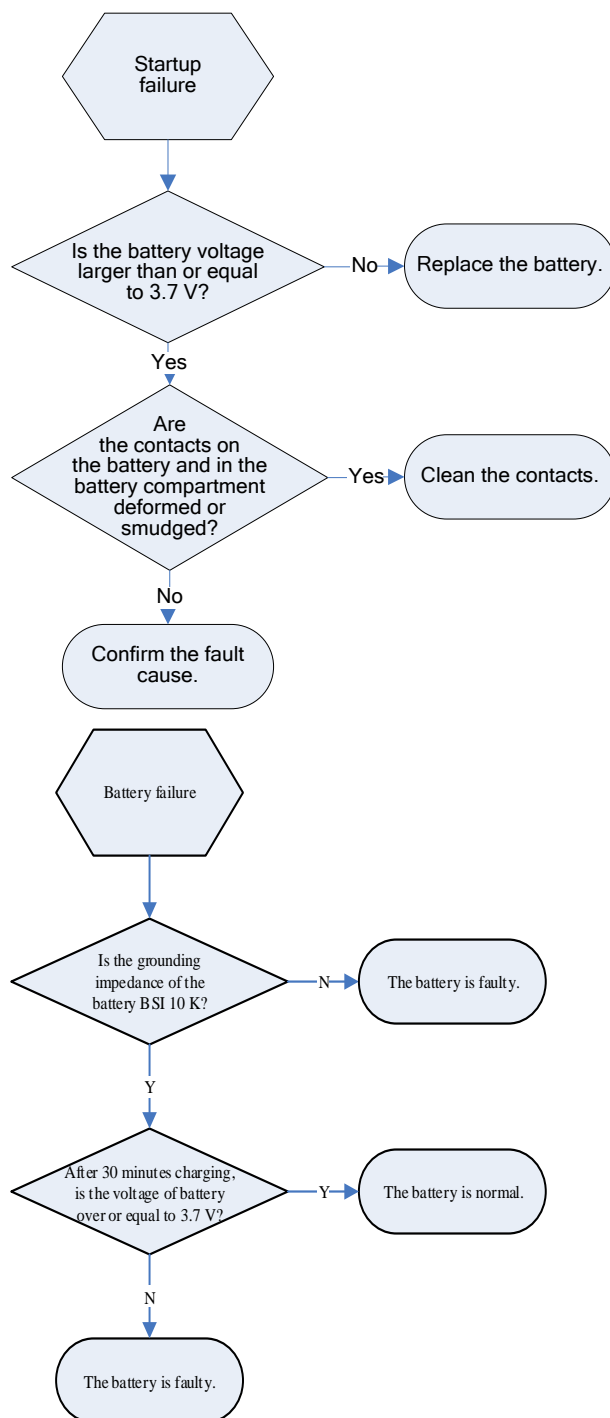
8.1 Startup Failure

Symptoms: After you install the battery and press the power button, the phone fails to start up and the standby screen cannot be displayed.

Solution

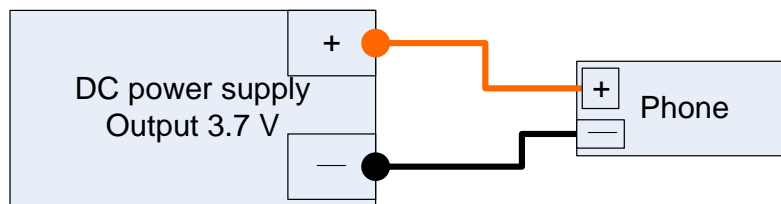
Step 1 Check whether the problem is caused by the battery failure.

1. Check that the battery is not deformed and properly fits in the battery compartment.
2. Check whether the contacts on the battery are smudged or rusted. If yes, clean the contacts.
3. Use the multimeter to test the ground resistance of the battery BSI. The normal resistance is 10 kohms. If the value on the multimeter is much larger or smaller than 10 kohms and the voltage between the battery's positive and negative terminals is 0 V, charge the battery for about 30 minutes. Install the charged battery into the phone and power on the phone. If the phone fails to start up, the phone fault is caused by the battery. Replace the faulty battery for the customer if the phone is still in its warranty period.



Step 2 Remove the battery from the phone and connect the phone to a DC power supply. Power on the phone and check whether the current on the phone changes.

Figure 8-1 Connecting the phone to a DC power supply

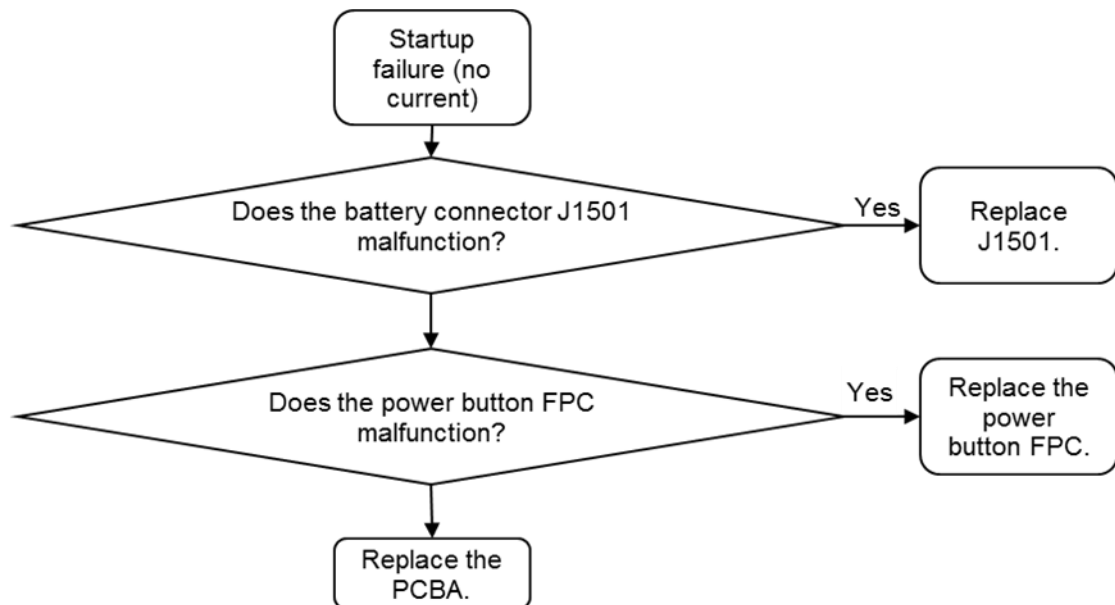


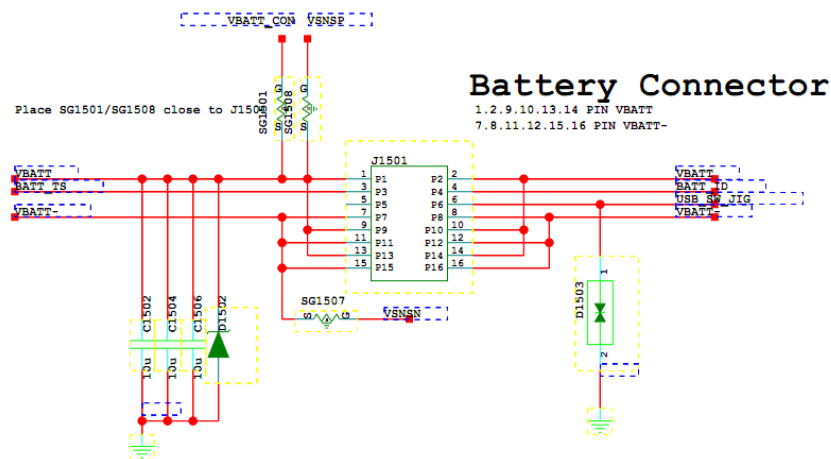
1. No current: Check whether the power button functions. Change the PCBA if the failure is not caused by the power button. Check whether the power button functions properly. Change the PCBA if the failure is not caused by the power button.
2. Weak current (25–80 mA): Forcibly update the phone software using a microSD card or USB cable. If the update fails, replace the PCBA.
3. Excessive current: If the current is above 800 mA, replace the PCBA.

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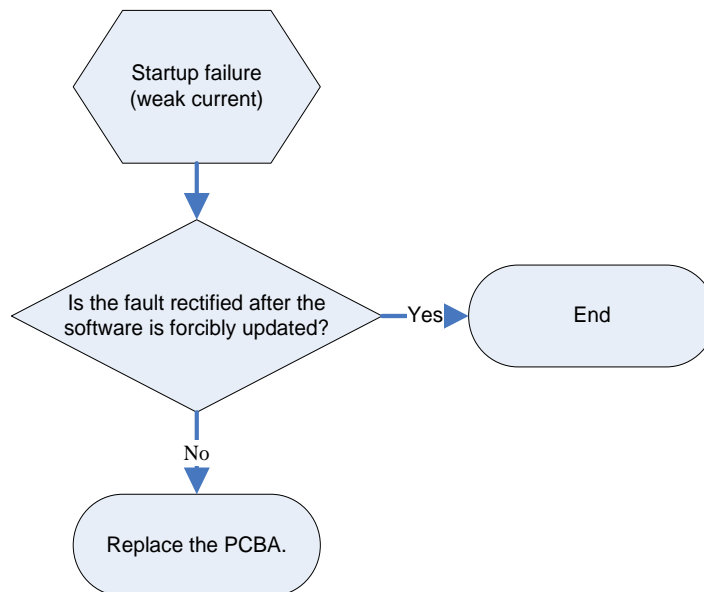
Maintenance process

1. No current (DC power supply)





2. Weak current (DC power supply)



3. Excessive current (DC power supply): Replace the PCBA directly. Replace the PCBA directly.

8.2 Repeated Restarts and Screen Freezing

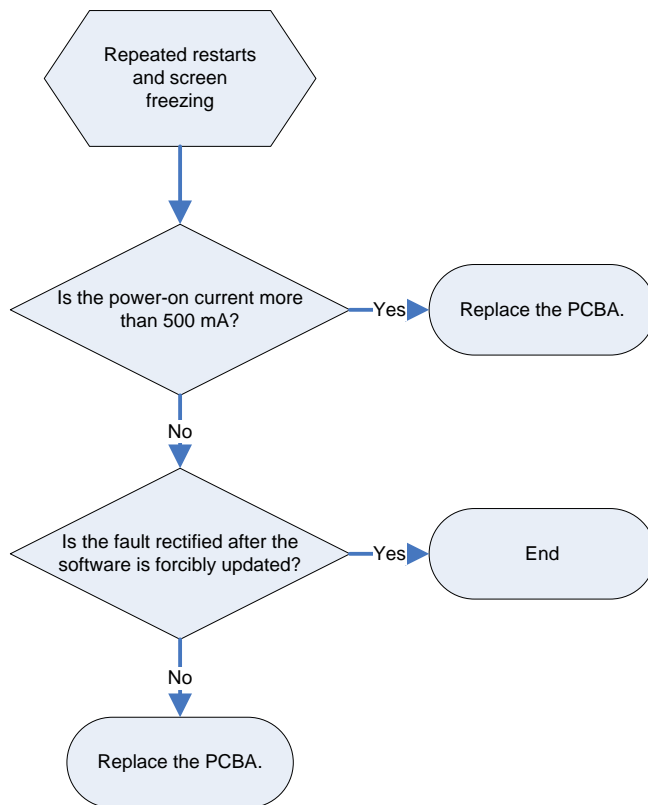
Symptoms:

- After you press the power button, the phone repeatedly starts and cannot display the standby screen.
- After you press the power button, the phone freezes at the Huawei logo screen and cannot display the standby screen.

Maintenance Methods

Check the power-on current of the phone. If the current ranges from 80 mA to 350 mA, forcibly update the phone. If the current exceeds 500 mA, replace the PCBA.

Maintenance process



8.3 Overheat and Short Standby Time

Symptoms: The phone got overheated after startup, and the standby time is short.

Check the following items. If no exception occurs, restore the phone to its factory settings and check again. If the problem persists, it may be caused by the battery. Replace the battery. Replace the PCBA if:

1. The VBAT's ground resistance is less than 5 kohms.
2. The power-off current is greater than 1 mA (normal value: 0 mA).
3. The power-on and standby currents are excessive.

8.4 The phone cannot be charged.

Symptoms: The phone fails to be charged using the USB cable.

Maintenance Methods

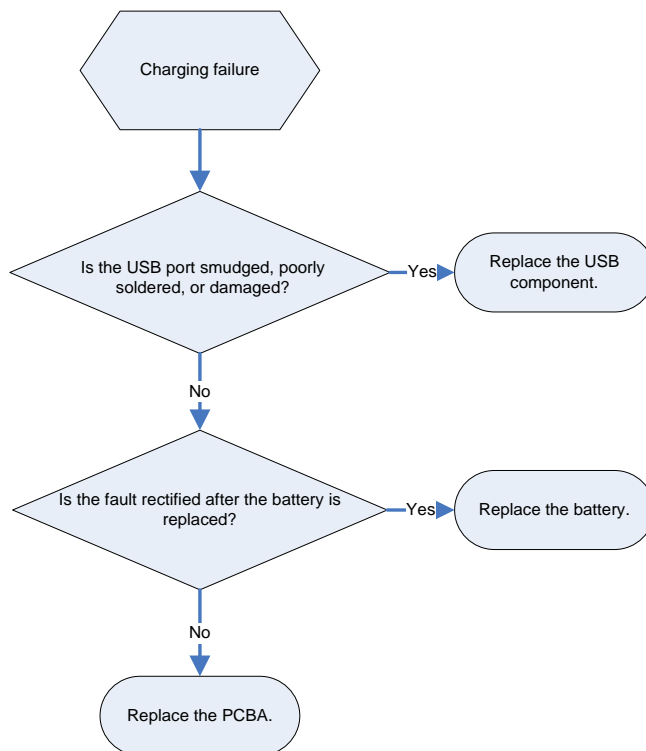
Charging failures commonly can be divided into two types: 1. No charging icon is displayed on the screen. 2. The charging icon is displayed on the screen. Maintain the phone using either of the following methods:

No charging icon is displayed on the screen: Check whether the USB port is in good condition. If yes, replace the PCBA. If not, replace the USB cable.

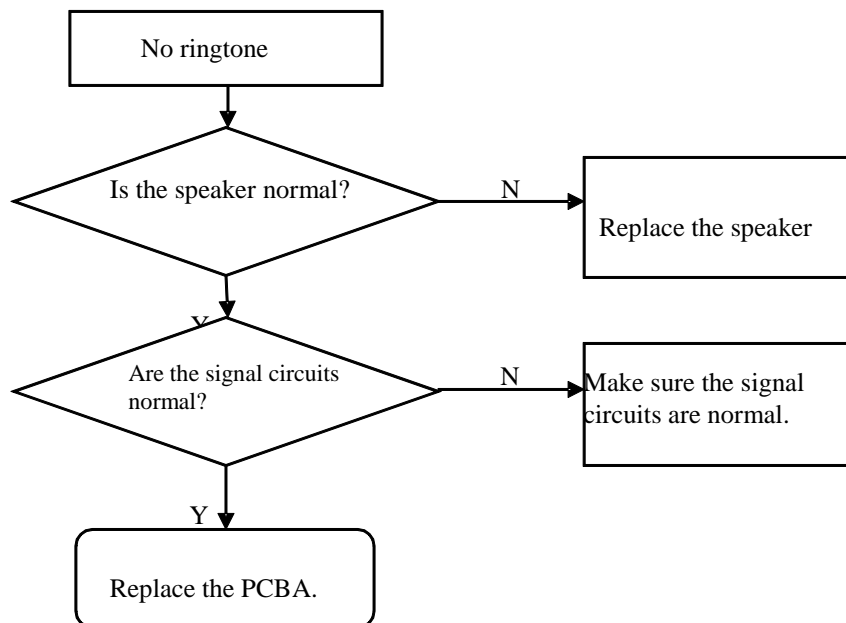
The charging icon is displayed on the screen: The charging icon is displayed on the screen: Test whether the BSI's ground resistance is 10 kohms and whether the voltage between the battery's positive and

negative terminals is 0 V. If the voltage is 0 V while the resistance is much larger or smaller than 10 kohms, the battery is faulty. Replace the battery and check whether the phone can be properly charged. If the problem persists, replace the PCBA.

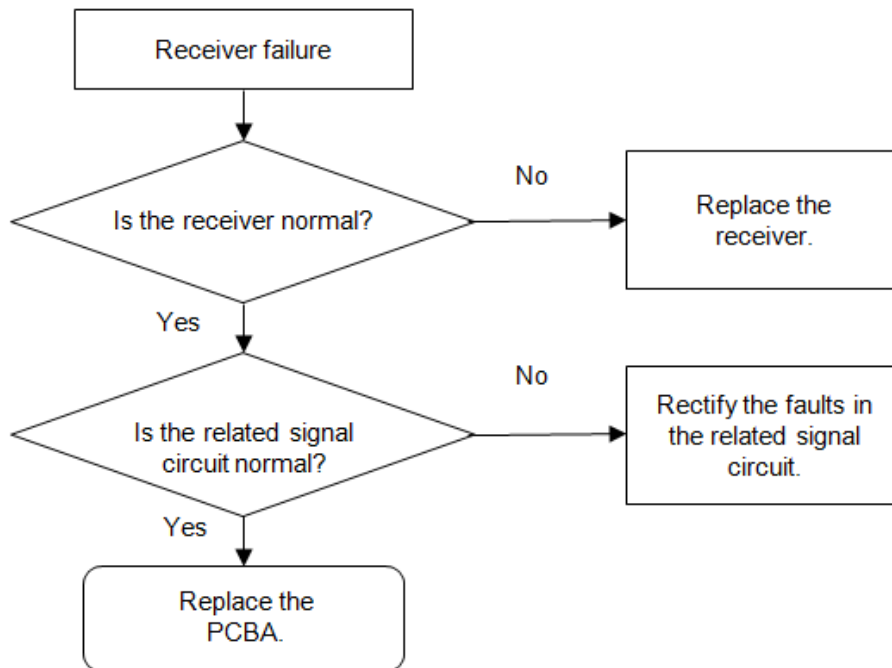
Maintenance process



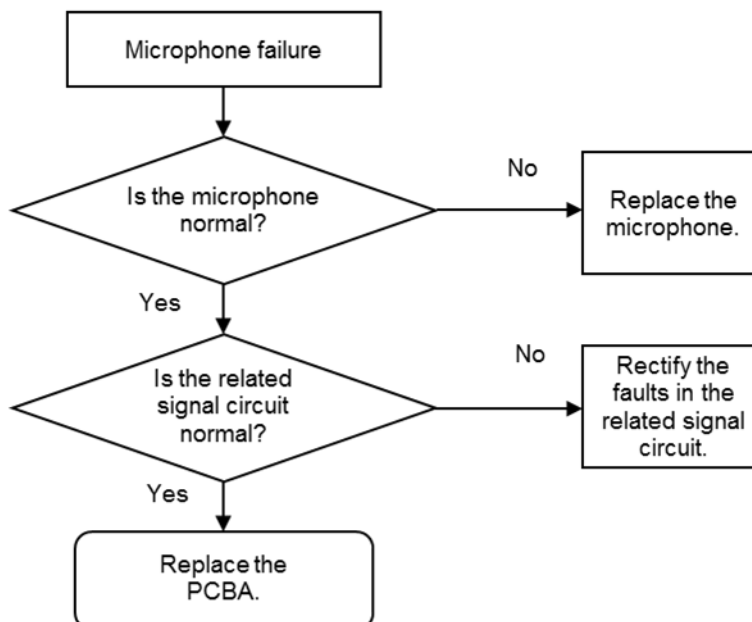
8.5 No Ringtone.



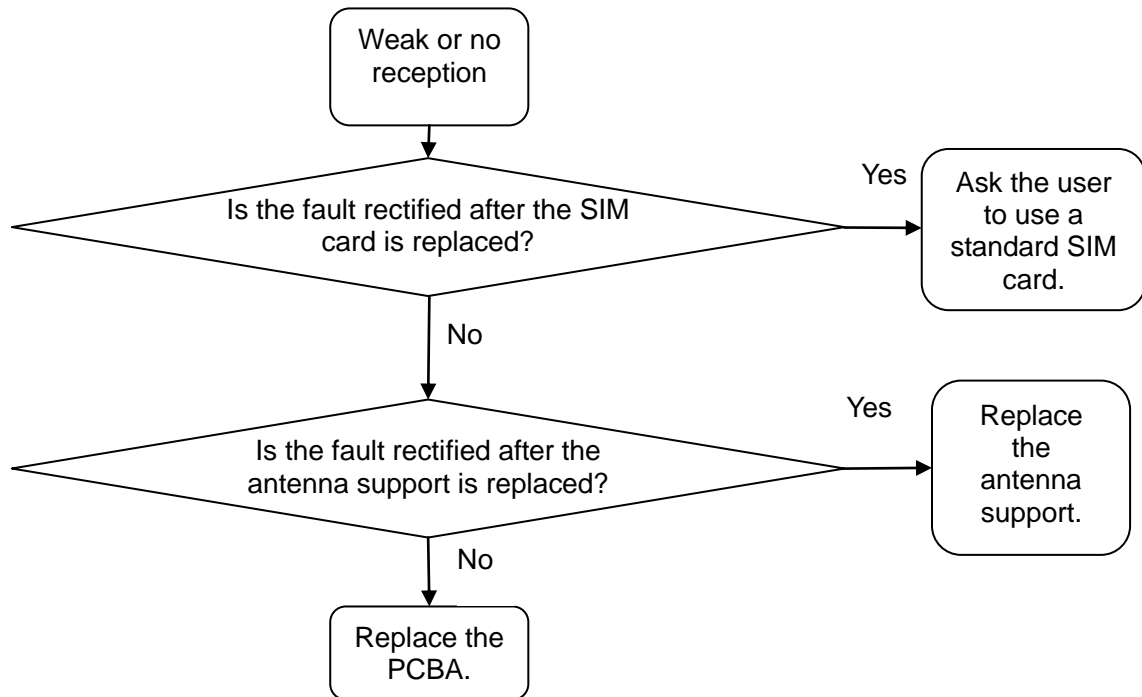
8.6 Receiver Failure



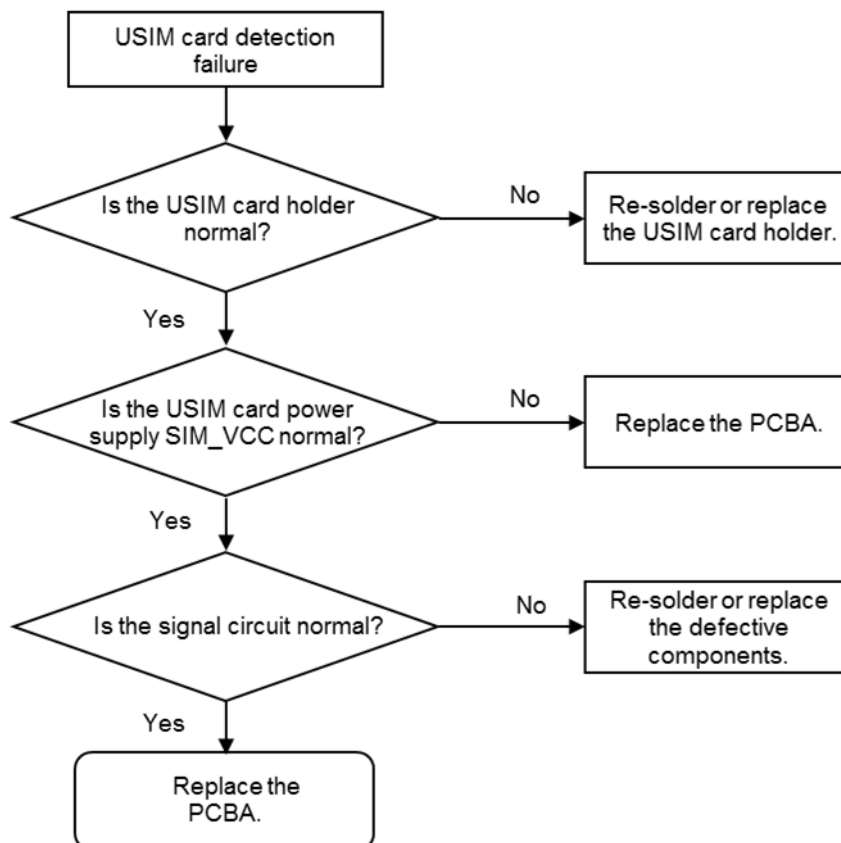
8.7 Microphone Failure



8.8 Weak or No Reception



8.9 SIM Card Detection Failure





8.10 Camera Failure

1. Use the software to identify whether it is a front camera failure or rear camera failure.
2. Currently, the camera components are connected to the PCBA using BTB connectors. The front and rear cameras share the same bus. If only one camera is abnormal, it is considered as a single component fault, replace the faulty camera and check whether the failure is cleared.
3. If both cameras are malfunctioning, check whether the software is able to detect the cameras and whether the power supply to the cameras is normal. If neither of the cameras is detected or the power supply is abnormal, replace the PCBA directly.

8.11 Touchscreen Failure

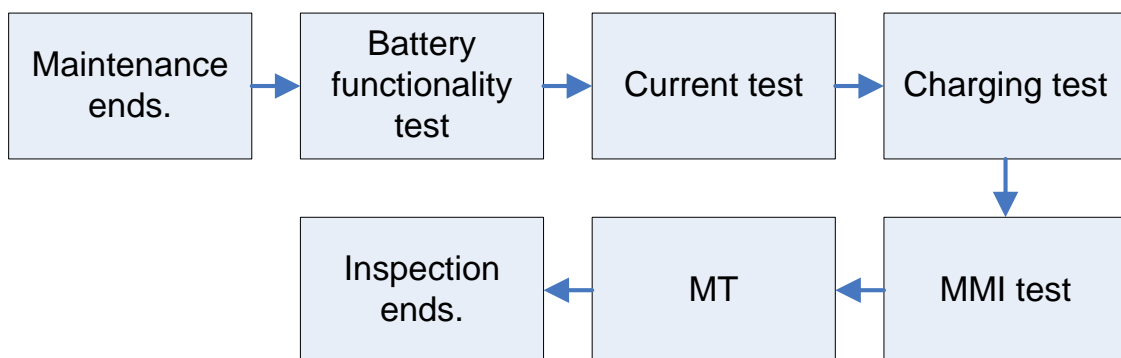
When a touchscreen failure occurs, the LCD is normal but you cannot unlock the screen.

The touchscreen assembly has a great independence and it shares multiplex power supply and communication interfaces with other circuits. Therefore, you can replace the front cover assembly to check whether the fault resides in the touchscreen or PCBA-related circuit.

9 Quality Inspection Procedure and Methods

After the maintenance, check the phone's basic functions. Perform the quality inspection according to the following flowchart to ensure that there are no potential faults. Currently, the MMI test, current test, charging test, and MT are used for the phone quality inspection.

9.1 Inspection Procedure














Inspection Description

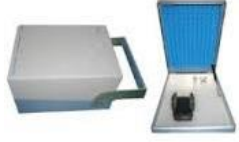
Item	Description	Reference Value
Battery Functionality Test	Test the battery voltage using a multimeter.	$0\text{ V} < X < 4.5\text{ V}$
	Connect the phone to a power adapter, charge the phone for 15 minutes, and test the voltage rise of the battery. (Ensure that the battery voltage is lower than 3.5 V before charging it.)	$> 0.5\text{ V}$
Current	Test the power-off current.	$< 250\text{ uA}$

Test	Test the power-on peak current.	< 2,500 mA
	Test the standby current.	< 6.5 mA
Charging Test	Connect the phone to a power adapter, charge the phone for 15 minutes, and check the power rise of the battery. (Ensure that the power remaining of the battery is lower than 50% before charging it.)	>3%
MMI test	Test the functions of the peripheral parts, such as the audio and display components.	All pass
MT	Test the phone's signal reception indexes on 2G and 3G networks.	All pass

9.2 Quality Inspection Tools

Tool	Function	Picture
Multimeter Used for the battery test	Tests the battery voltage.	
DC power supply Used for the current test	Tests the phone current.	
Connection cables Used for the current test	Connects the DC power supply to the phone.	
Nano-SIM card Used for the MMI test	Tests the nano-SIM card function.	
microSD card Used for the MMI test	Tests the microSD card function.	

Headset Circuit Used for the MMI test	Tests the headset and FM functions.	
Noise-cancellation headset Used for the MMI test	Tests the noise-cancellation functions.	
NFC card	Tests the NFC functions.	
Charger Used for the charging test and battery test	Charges the phone.	
USB cable Used for the charging test and battery test	Charges the phone.	
WILLTEK/CMU200 Used for the MT	Tests the phone's reception signals.	
Antenna coupler Used for the MT	Tests the phone's reception signals, and couples phone signals.	

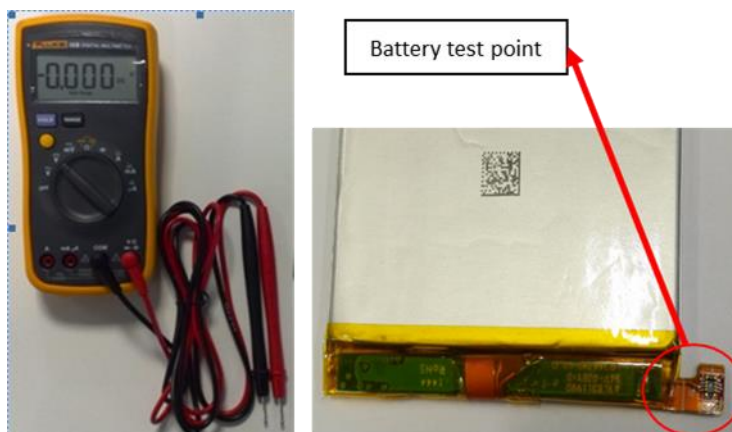
Shielding box Used for the MT	Tests the phone's reception signals, and shields the phone from interference signals.	
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9.3 Inspection Instructions

9.3.1 Battery Functionality Test

1. Test the voltage between the positive and negative terminals of the battery. If the voltage is 0 V, the battery is damaged.
2. Test the resistance between the battery's BSI (the touch spot in the middle) and negative terminal using a multimeter. If the resistance does not range from 7 kohms to 10 kohms, the battery is damaged.
3. After the maintenance, charge the phone till the power remaining of the battery reaches 50% before sending it for quality inspection.

Figure 9-1 Battery test



9.3.2 Current Test

To test the power-off current: Remove the battery from the phone, connect the phone to the DC power supply, power off the phone, and check the current. If the reading on the multimeter is not from 50 uA to 250 uA, current leakage occurs.

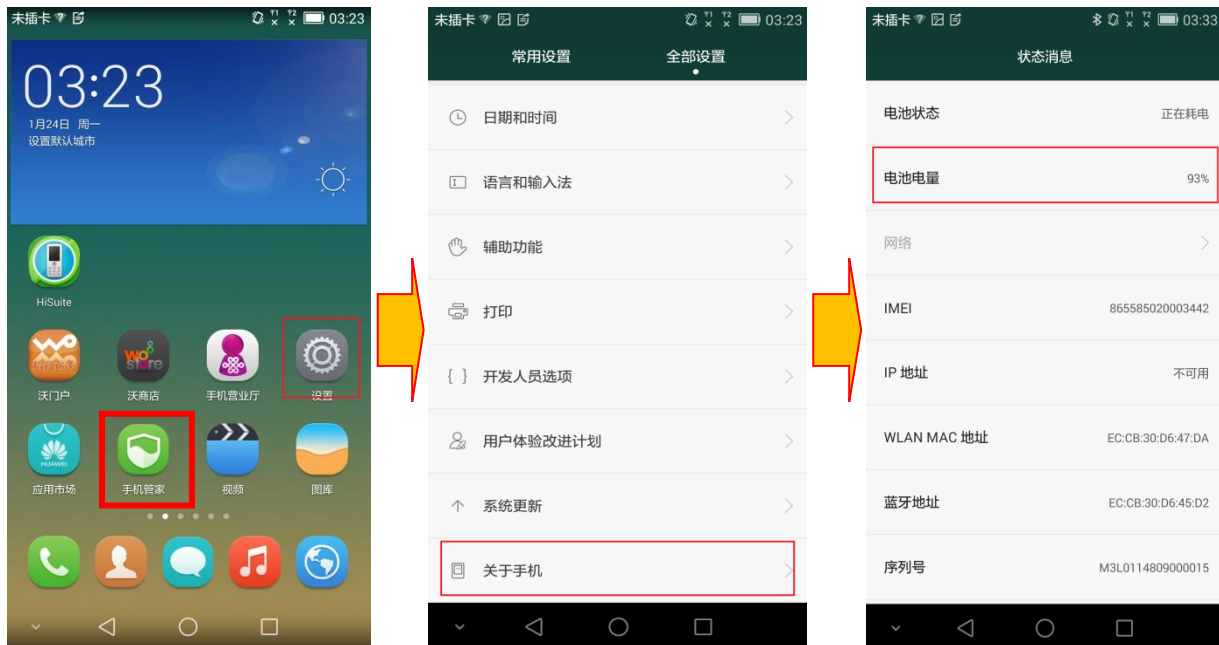
To test the power-on peak current: Remove the battery from the phone and connect the phone to the DC power supply using a current test cable. Power on the phone and check the peak current during the power-on process. If the peak value is within 2,000 mA to 2500 mA, the phone is normal. Otherwise, the phone is faulty.

To test the standby current: Remove the battery from the phone, connect the phone to the DC power supply using a current test cable, and power on the phone. When the phone display the home screen, press the power button to turn off the screen and then check the phone's standby current. If the reading on the multimeter exceeds 3.8 mA, current leakage occurs.

9.3.3 Charging Test

Step 1 Power on the phone. Choose **Settings** > **Battery** to view the battery level.

Step 2 Charge the phone using the power adapter for 10 minutes and check the battery level. If the battery level does not increase, a charging failure occurs. (Figures are only for your reference.)



----End

MMI test

After the maintenance, check the functions of the phone through the MMI test.

To enter MMI test mode, insert a microSD card and a SIM card into the phone, power on the phone, and on the dialer screen, enter ***#2846#**. Press the volume down button to start the test. You can touch the menu key to skip the current test or press the volume up button to return to the previous test.

Figure 9-1 MMI test preparation: noise reduction headset, NFC card, and more





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9.3.4 Optical Image Stabilization Test

On the dialer, enter *##*2846579159#*##*. Choose **ProjectMenu** > **machine credibilitytest** (the third item) > **camera ois test** (the fourth item), and click **Start check**.

