

X300 FE Self-Repair Manual

Contents

1 About this manual	2
1.1 Purpose.....	2
1.2 Caution.....	2
1.2.1 Repair notes.....	2
1.2.2 ESD precautions	3
2 Warranty.....	3
3 Tools	3
3.1 Hardware tools.....	3
3.2 Software update and software tools (to be confirmed after software release).....	5
Part 4: Repair Guide.....	8
4.1 Spare Part List (with Purchase Codes)	8
4.2 Product Exploded View	10
4.3 Removal and Installation Guide.....	10
4.3.1 Battery Cover Replacement	11
4.3.2 Removal and Installation of Mainboard Bracket	14
4.3.3 Lower Speaker Replacement	17
4.3.4 Sub-Board Replacement (Main MIC & Charging Port).....	19
4.3.5 Removal and Installation of Mainboard.....	21
4.3.6 Battery Replacement.....	24
4.3.7 Display Component Replacement	28
4.3.8 Side Button Replacement	30

1 About this manual

1.1 Purpose

This manual is intended to guide DIY hobbyists with certain hands-on skills and repair experience in replacing official components of vivo phones.

1.2 Caution

All features, characteristics, specifications, and other device information provided in this manual, including but not limited to device advantages, design, pricing, components, performance, availability, and functionality, are subject to change without prior notice. vivo reserves the right to modify this manual or any descriptions herein at any time without the obligation to give notice of such modifications. Please read through this manual carefully before repair. If you do not meet the repair conditions, do not disassemble the device. You may visit a vivo customer service center for repairs.

1.2.1 Repair notes

Warning: Failure to follow the instructions herein or the use of non-official vivo components or improper tools may damage the device, its components, or other property; impair device functionality and water resistance; and in severe cases, cause fires or other safety hazards, leading to personal injury or death.

(1) vivo assumes no liability for any damage or defects resulting from repairs made by unauthorized carriers, yourself, or other non-professionals. vivo is not responsible for any device damage, personal injury, or other safety consequences caused by failure to follow this manual.

(2) Any damage or defects resulting from attempts to repair the device by anyone other than a vivo-certified service provider are not covered by the warranty.

(3) We recommend that you use only official tools for repairing. Most electronic components are sensitive to electromagnetic forces, and low-quality tools may easily damage your device. For tool details, see Section 3.1.

(4) We recommend that you use only official spare parts. Third-party spare parts may not function properly and may cause fires or personal injury.

(5) Some components, such as laser focusing/proximity/fingerprint sensors, rear cameras, touchscreen panels, and speakers, may require calibration to ensure their performance after repair.

(6) The water and dust resistance of a device repaired by yourself or other non-professionals cannot be guaranteed.

(7) If you need to access device fault data or obtain more detailed diagnostics, please visit a vivo customer service center.

(8) If you need to replace components that are unavailable on the market, please visit a vivo customer service center for further assistance.

(9) Before making repairs, back up important data stored in the device.

(10) Before making repairs, wear proper safety gear. vivo is not responsible for any injury due to failure to wear proper safety gear. For details of the required disassembly and assembly tools, see Section 3.1.

(11) Make repairs in a safe location.

(12) Before making repairs, make sure that the device is powered off and its battery is fully discharged.

(13) If the device is damaged, emits smoke, or produces a burning smell, stop repairing it immediately and contact vivo customer service. If a fire is started, extinguish it with a carbon dioxide or dry powder fire extinguisher, specialized foam, sand, soil, gravel, or a dedicated lithium-ion battery fire suppressant.

(14) When repairing the device, wear protective gear such as safety goggles, gloves, and masks.

(15) When removing the back cover, take care not to damage the device. Before reassembling the device, make sure that no free screws or foreign objects are left around the battery.

(16) During reassembly, inspect the back cover for abnormalities before reinstalling it. Avoid impact or pressure on the battery to prevent damage. If the battery is damaged, please visit a vivo customer service center.

1.2.2 ESD precautions

Electrostatic discharge (ESD) is a sudden flow of electric current between two charged objects due to contact, a short circuit, or dielectric breakdown. ESD negatively affects mobile devices, particularly their electronic components.

(1) We recommend that you wear anti-static wrist straps and gloves, and use anti-static mats when you repair the device.

(2) Increase airflow in the work area to reduce the likelihood of accidental ESD. In an environment with low humidity, such as an air-conditioned room, ESD is more likely to happen.

2 Warranty


2.1 A 90-day warranty is provided for official spare parts. If any quality issues arise with them within that period, you may contact vivo for a replacement.

2.2 A device repaired by anyone other than a vivo-authorized service provider is not covered by the warranty, and you will bear the repair costs.

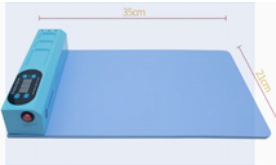
2.3 Any damage caused during self-service repairs will be your responsibility.

3 Tools

3.1 Hardware tools

Tool name	Photo	Usage
Metal pry pick (with a scale)		Disassembling the display module

<p>Screwdriver kit (rubber-grip dual-purpose screwdriver, 6 × 100 mm)</p>		<p>Removing and installing screws</p>
<p>PET pry sheet</p>		<p>Removing the back cover and display module</p>
<p>Suction cup</p>		<p>Removing the back cover</p>
<p>Anti-static carbon fiber tweezers (with pointed tips)</p>		<p>Removing board-to-board (BTB) and coaxial cable connectors</p>
<p>Metal flat-head tweezers</p>		<p>Removing the M board and ANA board, or cleaning adhesive</p>
<p>Anti-shatter film</p>		<p>Preventing glass shattering on screen / back cover</p>
<p>Universal pressure fixture</p>		<p>Securing the screen or back cover</p>
<p>Electrical insulation tape, 3M, black, 17 mm</p>		<p>Optical calibration</p>
<p>False finger, flesh-colored, 20 × 20 × 12 mm</p>		<p>Testing electro-optical fingerprint recognition</p>
<p>False finger, black, 22 × 22 × 12 mm</p>		<p>Testing electro-optical fingerprint recognition</p>

Heating pad (default temperature: 65°C)		Heating the back cover and screen
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3.1.1 Tool purchase

Official purchase link:

<https://www.vivo.com/eu/view/support/aboutSelfServiceRepair?code=selfServiceRepair>

3.2 Software update and software tools (to be confirmed after software release)

3.2.1 Software update via FOTA

- To update software, go to Settings > System Update.
- If the system is already of the latest version, no update is needed.
- If a software update is available, you can set the time for automatic update.

Note:

1. Updating software via mobile data may incur additional fees.
2. If the latest software has been downloaded to the device, these options do not take effect.

3.2.2 Self-diagnosis

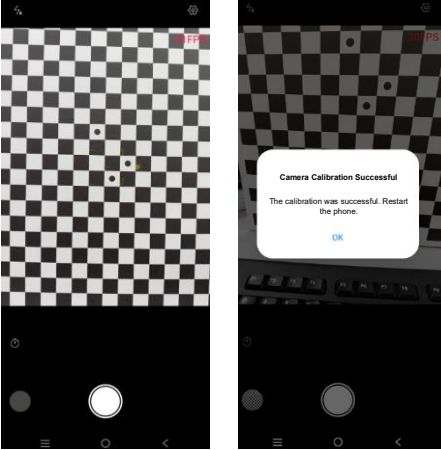
Before and after repair, perform a self-diagnosis to check if the device functions properly.

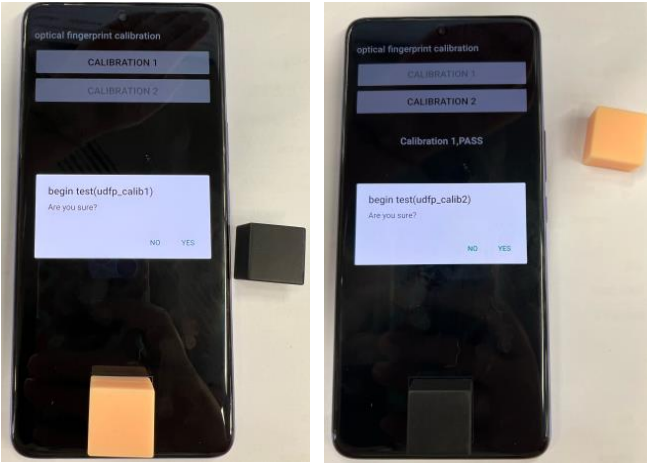
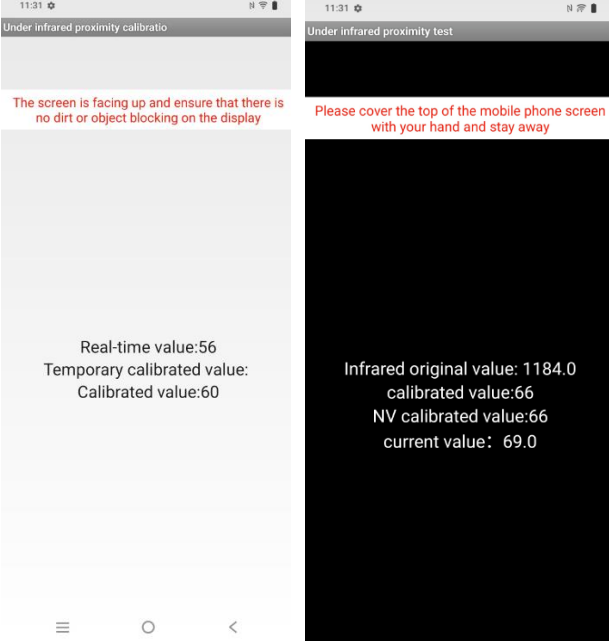
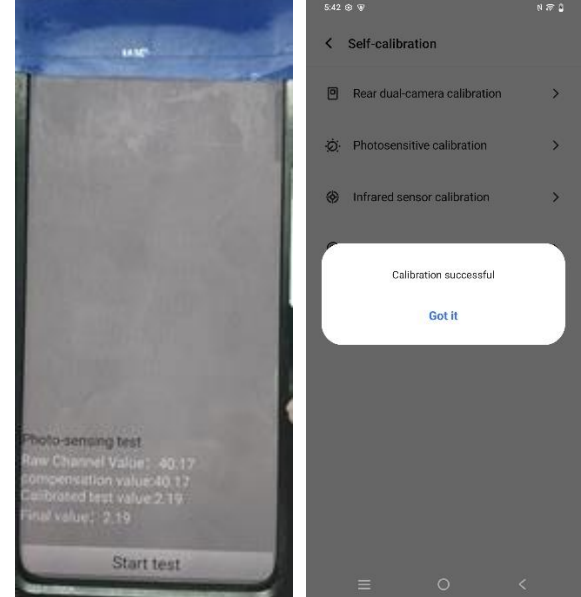
Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, and enter the calibration code "SELFREPAIR" to perform the check.

3.2.3 Self-calibration on the vivo Store / vivo.com app

You can perform calibration after replacing the display or camera, such as the calibration of the rear cameras (for devices with two or more rear cameras), in-display fingerprint scanner, infrared proximity sensor, and ambient light sensor. The calibration ensures proper functionality of components after repairs.




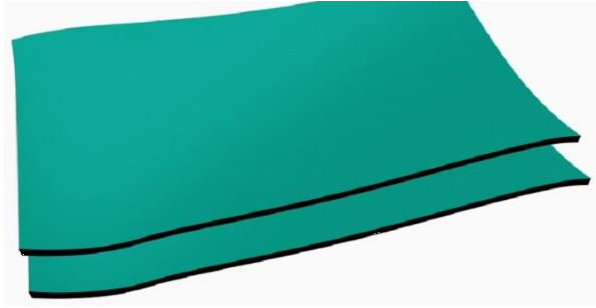
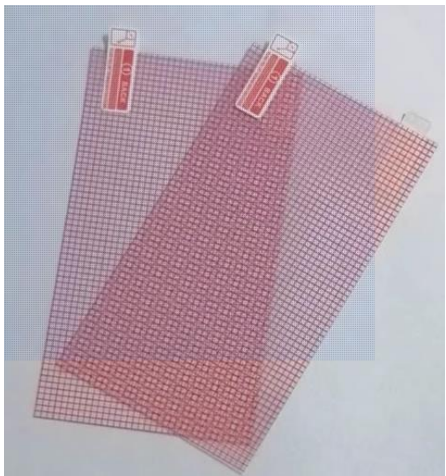
The following table describes calibration items and instructions.

Calibration item	Instruction	Illustration	Description
Rear cameras	Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Rear dual-camera calibration, and calibrate the cameras.		This calibration is required after M board disassembly or replacement of any rear camera.

<p>In-display fingerprint scanner</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Screen finger calibration, and calibrate the fingerprint scanner.</p>		<p>This calibration is required after replacement of the display assembly, display module, or fingerprint module.</p>
<p>Infrared proximity sensor</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Infrared proximity sensor calibration, and calibrate the infrared proximity sensor.</p>		<p>This calibration is required after M board disassembly or replacement of the display assembly or display module.</p>
<p>Ambient light sensor</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Photosensitive calibration, and calibrate the ambient light sensor.</p>		<p>This calibration is required after M board disassembly or replacement of the display assembly or display module.</p>

3.3 Protective tools

Tool name	Photo	Usage
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<p>Safety goggles</p>		<p>Preventing liquid/splinter splashes from hurting your eyes during repairs</p>
<p>Anti-static cut-resistant gloves</p>		<p>Preventing ESD damage and cuts during repairs</p>
<p>Anti-static wrist strap</p>		<p>Preventing ESD damage to the device during repairs</p>
<p>Anti-static mat</p>		<p>Preventing ESD damage to the device during repairs</p>
<p>Anti-shatter film</p>		<p>Preventing device damage or personal injury due to screen or back cover shattering</p>

Fire bucket		Containing a burning battery
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Note: vivo does not provide all protective tools. You need to purchase them from other sources.

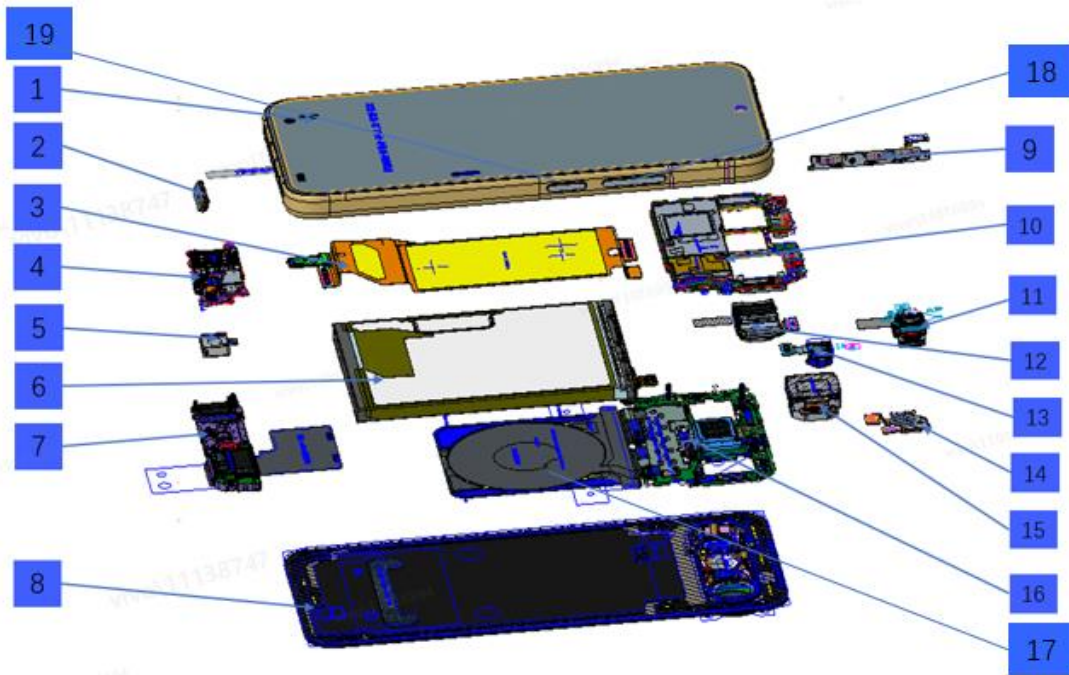
Part 4: Repair Guide

4.1 Spare Part List (with Purchase Codes)

No.	Material Name	Purchase Code	Illustration
1	Display Assembly	5438968 5438967 5438966 5438965	
2	Battery Cover	5438977 5438976	
3	Plastic-Coated Lithium Battery	5438975 5438974	
4	Wide-Angle Camera	5438972	

5	Rear Main Camera	5438971	
6	Periscope Camera	5438973	
7	Front Camera	5438970	
8	Sub Board	4935945	
9	Lower Speaker	5438969	
10	Side Button	5438980 5438979	
11	SIM Card Tray	5438981 5438982	

4.2 Product Exploded View



No.	Term
1	Display Component
2	Speaker Dust Screen
3	FMA Board
4	ANA Board
5	Voice Coil Motor
6	Plastic-Coated Lithium Battery
7	Lower Speaker
8	Battery Cover
9	FK Board
10	M Board
11	Front Camera
12	Rear Periscope Camera
13	Rear Wide-Angle Camera
14	Camera Flash
15	Rear Main Camera
16	Mainboard Bracket
17	Wireless Charging Module
18	Volume Button
19	Power Button

4.3 Removal and Installation Guide

- Before starting repair, be sure to complete the following steps:
- Back up your data



- Fully discharge the battery
- Power off the device and disconnect all external USB cables
- Wear anti-static gloves
- If a cosmetic damage or adhesive overflow occurs after assembly, please visit an official vivo Service Center for inspection and support

4.3.1 Battery Cover Replacement

Repair Difficulty: Low

Estimated Time: 6 minutes–10 minutes

Required Spare Parts: Battery Cover Component

Removal		
Procedure	Illustration	Notes
<p>Step 1: Power off the device. Insert a SIM card tray eject tool into the eject hole to remove the card tray.</p>		
<p>Step 2: Use a heating pad set to 65°C to heat the phone for 5 minutes.</p>		

Step 3: Place the suction cup on the left edge of the back cover near the side buttons. Gently pull upward to create a gap, and use a prying pick to carefully separate the back cover. Do not pry all four sides at this stage—only insert the pick.



Note: Exercise caution when you use a handled suction cup to avoid injury, as the suction cup may detach during use.

Step 4: Apply protective film to the battery cover to prevent it from cracking. Use a prying pick to work around the edges. Do not insert deeper than 5 mm.



To avoid damaging internal circuits, never insert the pick deeper than 5 mm.

Step 5: Once the edges are cut open, gently lift the back cover starting from the right side. Apply force carefully to prevent the battery cover from cracking.



Step 6: Detach the battery cover.



Step 7: Use pointed anti-static tweezers or your fingers to remove all residual adhesive from the back cover and the back of the device.



Do not touch the rear cameras or the lens of the back cover with your fingers or any foreign objects, and avoid damaging nearby components.

Installation

Procedure

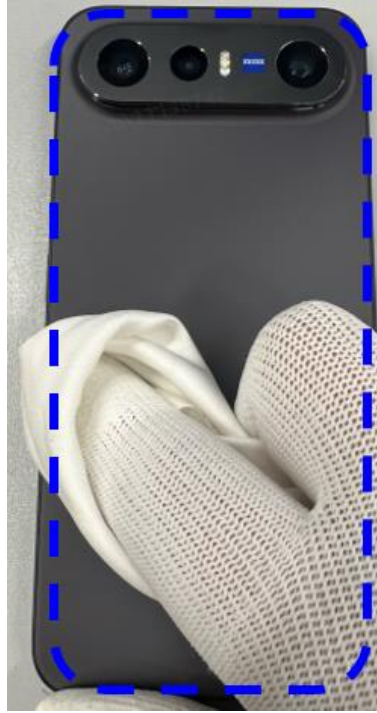
Illustration

Notes

Step 1: Peel off the release film from the battery cover's double-sided tape. Align the adhesive with the frame and attach it in place, as shown in Figure 2.



Step 2: Align the battery cover with the frame and press it into place. Wrap your fingers with lint-free cloth and press along the adhesive areas to activate bonding.



4.3.2 Removal and Installation of Mainboard Bracket

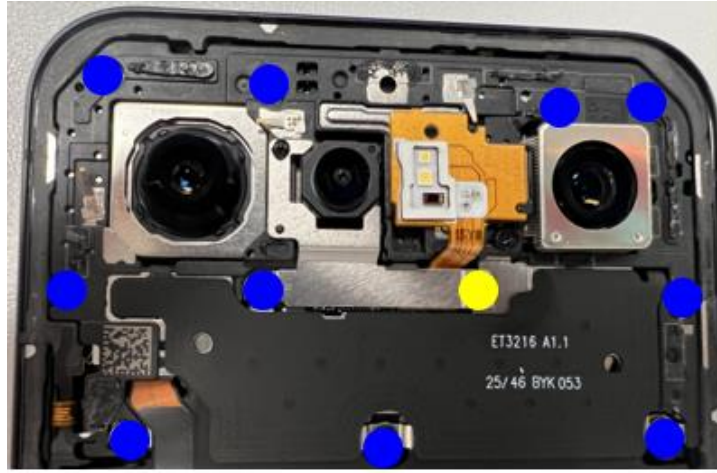
Repair Difficulty: Low

Estimated Time: 8 minutes–12 minutes

Required Spare Parts: Mainboard Bracket Component

Removal		
Procedure	Illustration	Notes
Step 1: Remove the battery cover (refer to the battery cover removal steps).	Refer to section 4.3.1	

Step 2: Use a Phillips screwdriver to remove the 11 screws securing the mainboard bracket. Note that the screws in the yellow-highlighted area are of different sizes, so make sure to distinguish them.



Step 3: At the position shown in Figure 1, loosen the double-sided tape at the bottom of the wide-angle camera bracket and remove the bracket. Be careful not to scratch the camera module. Remove the wide-angle camera, as shown in Figure 2.

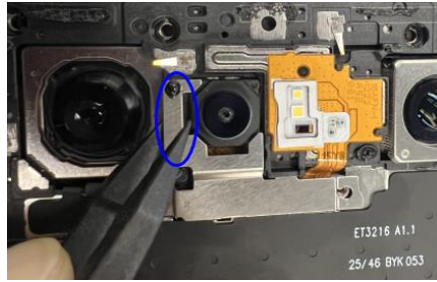


Figure 1



Figure 2

Step 3: From the bottom of the bracket, gently lift one corner at a small angle—do not lift too far—and then remove the bracket from the right side.





Installation

Procedure

Step 1: Insert the top end of the mainboard bracket into the frame first, and then snap it into place above the mainboard. Press the bracket firmly into position and ensure the flash connector is securely seated.

Illustration



Notes

Ensure the camera module is properly aligned.

Step 2: Install the wide-angle camera, taking care not to touch the lens surface, and then install the wide-angle camera bracket. Avoid touching the camera lens surface.



Step 3: First install the two screws of the wide-angle camera bracket. Note that the right screw has a different size. Install the remaining nine screws.






4.3.3 Lower Speaker Replacement

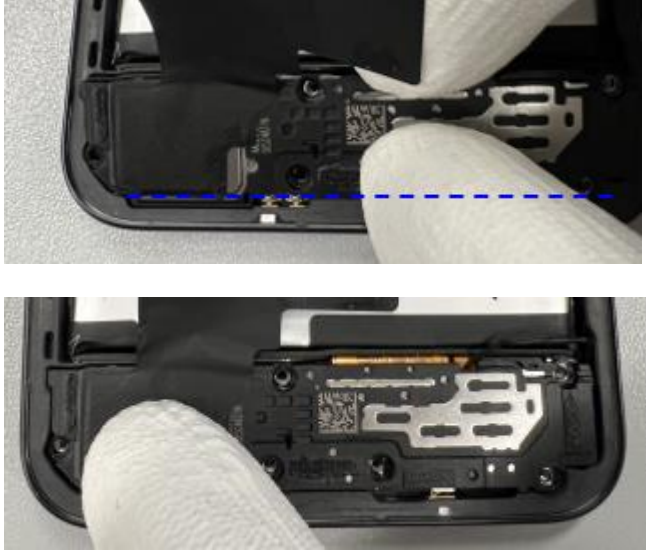


Repair Difficulty: Low

Estimated Time: 8 minutes–12 minutes

Required Spare Parts: Lower Speaker Component

Removal

Procedure	Illustration	Notes
Step 1: Remove the battery cover (refer to the battery cover removal steps).	Refer to section 4.3.1	
Step 2: Disconnect the coaxial cable.		Note: Do not puncture the battery.
Step 3: Remove the 6 screws from the speaker bracket.		
Step 4: From the position shown in the figure, lift the speaker along the upper edge.		

Installation		
Procedure	Illustration	Notes
<p>Step 1: Before installation, ensure the speaker is free of debris. First, insert the bottom end of the speaker into the main upper part, and then press the speaker firmly into place. Be careful not to press the speaker against the coaxial cable. Ensure the speaker lies flat without warping.</p>		
<p>Step 2: Install the screws. Note that the speaker-side screws differ in size from the mainboard bracket screws. Ensure they are not mixed up.</p>		
<p>Step 3: Position the coaxial cable neatly into the cable groove of the speaker bracket.</p>		


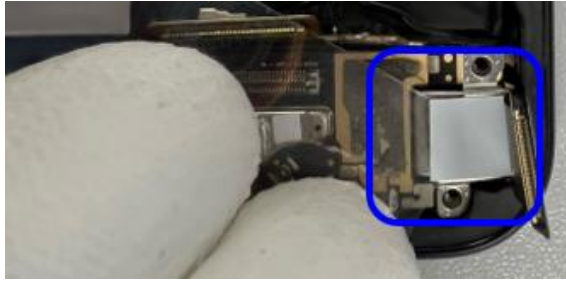

4.3.4 Sub-Board Replacement (Main MIC & Charging Port)

Repair Difficulty: Low




Estimated Time: 9 minutes–13 minutes

Required Spare Parts: Sub-board module

Removal		
Procedure	Illustration	Notes
<p>Step 1: Remove the battery cover (refer to the battery cover removal steps).</p>	<p>Refer to section 4.3.1</p>	
<p>Step 2: Remove the speaker (refer to the lower speaker removal steps).</p>	<p>Refer to section 4.3.3</p>	

<p>Step 3: Disconnect the component BTB connectors and coaxial cable at the indicated positions.</p>		
<p>Step 4: At the position shown in the figure, use a prying pick to separate the adhesive under the motor bracket, and then remove the motor bracket.</p>		
<p>Step 4: Use fine-tip tweezers to pry up the ANA board from the indicated location.</p>		

Installation

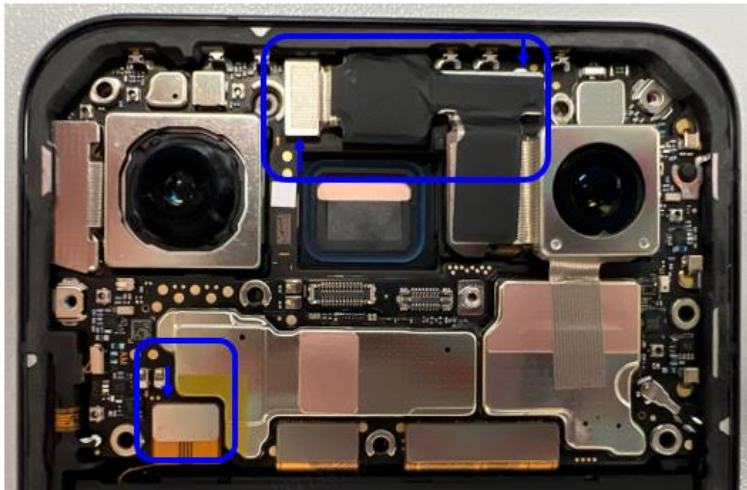
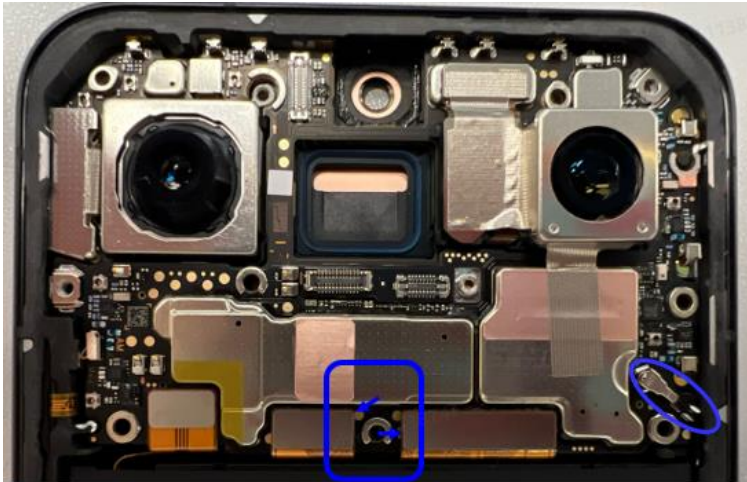
Procedure	Illustration	Notes
<p>Step 1: Align the bottom edge of the sub board against the frame, press it into place, and ensure it lies flat without warping.</p>		
<p>Step 2: Attach the FMA BTB connector to the ANA board, and install the motor bracket.</p>		
<p>Step 3: Connect the coaxial cable and all BTB connectors.</p>		

4.3.5 Removal and Installation of Mainboard

Repair Difficulty: Low

Estimated Time: 9 minutes–12 minutes

Required Spare Parts: Mainboard

Removal		
Procedure	Illustration	Notes
Step 1: Remove the battery cover (refer to the battery cover removal steps).	Refer to section 4.3.1	
Step 2: Remove the mainboard bracket (refer to the mainboard bracket removal steps)	Refer to section 4.3.2	
Step 3: Using fine-tip tweezers, disconnect the battery BTB connector first, and then disconnect the front camera BTB connector, and lift the protective cover of the periscope camera BTB, as shown in Figure 1. Disconnect all remaining BTB connectors and coaxial cables except the main camera, as shown in Figure 2.	 <p>Figure 1</p>  <p>Figure 2</p>	After removing the cameras, keep them free from dust and debris, and avoid direct contact to prevent any impact on image quality.

Step 4: Use fine-tip tweezers to lift the mainboard as shown in Figure 1. After removing the mainboard, remove the protective cover of the main camera connector (Figure 2), and then remove the main camera (Figure 3).



Figure 1

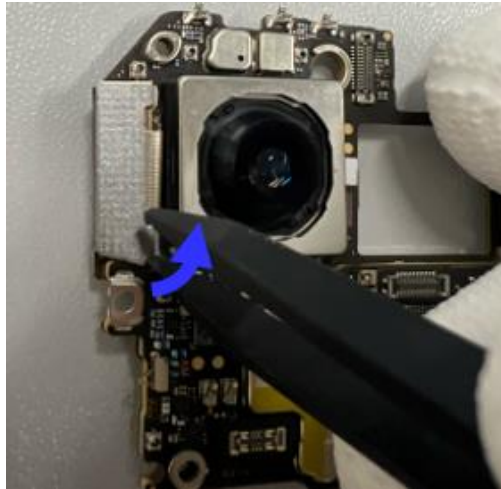


Figure 2

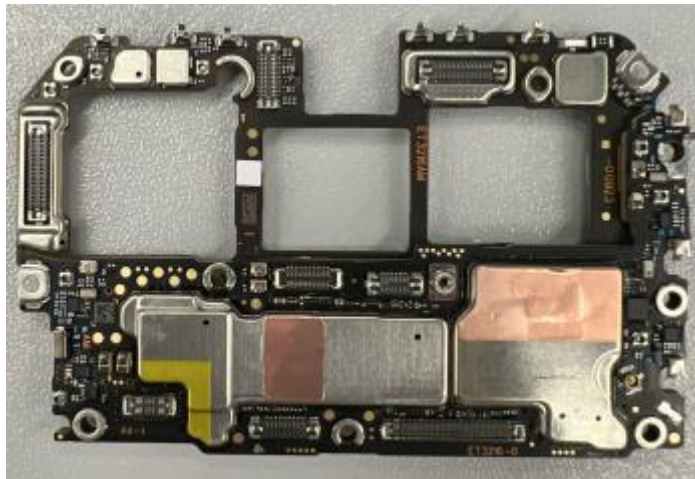


Figure 3

Installation

Procedure

Illustration

Notes

Step 1: First clean off the residual adhesive at the bottom of the periscope camera and any adhesive remaining on the mainboard upper cover, as shown in Figure 1. Apply the new double-sided tape in its original position, as shown in Figure 2.

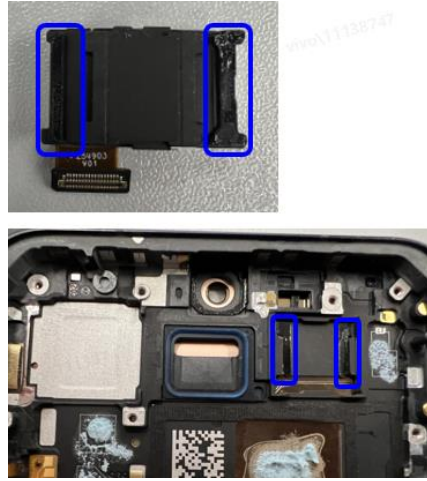
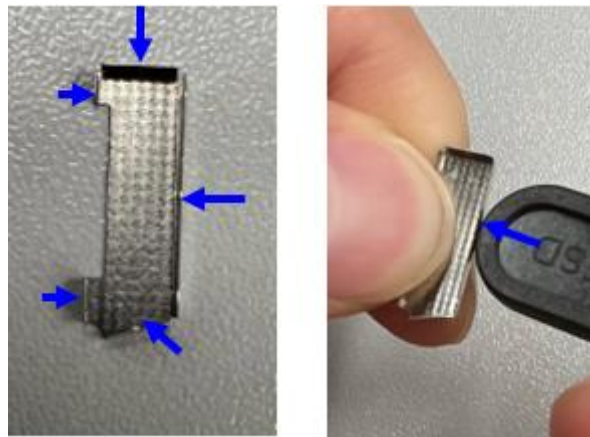


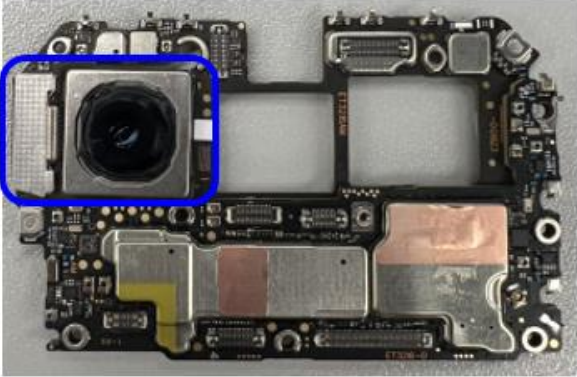
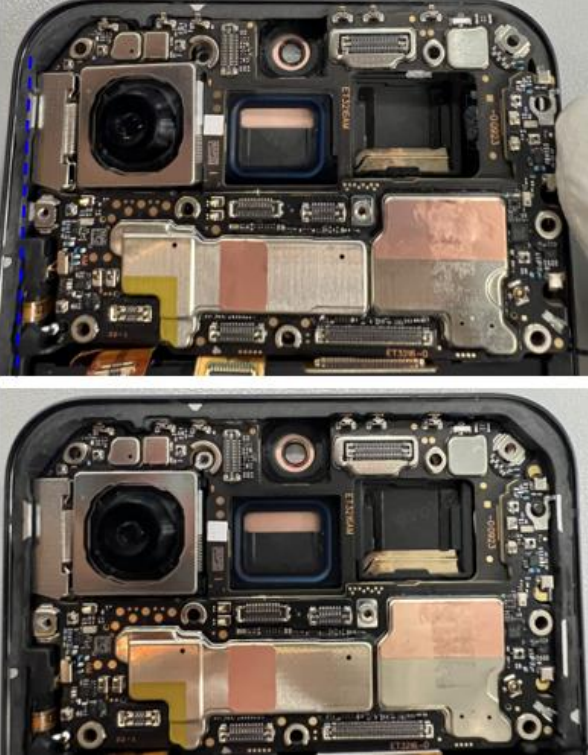

Figure 1



Figure 2.

Step 2: Install the main camera and its protective cover onto the mainboard. Before installing the main camera protective cover, use the tip of the tweezers to push the side wall of the cover inward so that it can securely snap onto the mainboard.



		
<p>Step 3: First align the left side of the mainboard with the positioning posts and install it into the frame, and then press the right side into place. Ensure the board sits flat without any lifting. Ensure the main camera is properly seated.</p>		
<p>Step 4: Install the cameras, connect all BTB connectors and coaxial cables, and apply all auxiliary materials.</p>		
<p>Step 5: Calibrate.</p>	<p>After reassembly, calibrate the rear dual cameras, light sensor, and infrared sensor as specified in section 3.2.3.</p>	

4.3.6 Battery Replacement



Repair Difficulty: Low

Estimated Time: 6 minutes–10 minutes


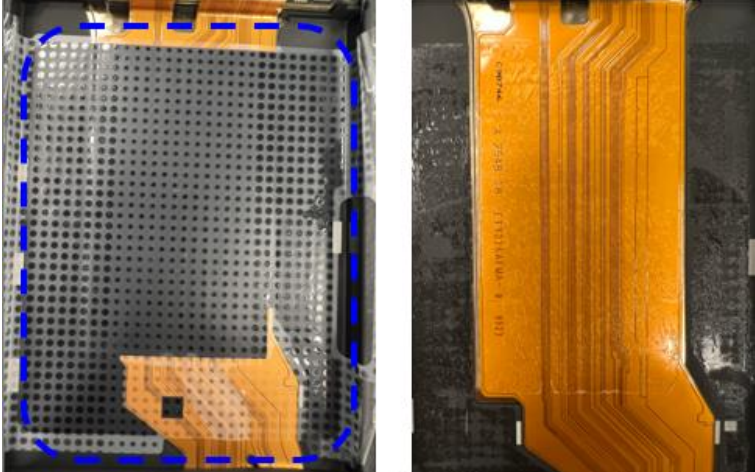
Required Spare Parts: Battery Component

Preparation before battery removal:

1. Ensure the battery is fully discharged.
2. Prepare a sand bucket to mitigate safety risks in case the battery ignites during removal.

Removal		
Procedure	Illustration	Notes
Step 1: Remove the battery cover (refer to the battery cover removal steps).	Refer to section 4.3.1	
Step 2: Remove the mainboard bracket (refer to the mainboard bracket removal steps)	Refer to section 4.3.2	
Step 3: Disconnect the battery BTB connectors.		
Step 4: Lift the PET pull tab on the battery and slowly pull it at a 145° angle to detach the battery.		Ensure your hand do not obstruct the battery area during removal.

Installation

Procedure	Illustration	Notes
<p>Step 1: Inspect the battery for signs of swelling, deformation, or damage. If present, replace with a new battery.</p>		
<p>Step 2: Clean any residual adhesive on the main upper part and battery, especially any black adhesive in the indicated areas. Peel off also the PET disc for the old battery.</p>		

Step 3: Take a new battery PET disc, leave the backing film on to help position the black pull tab, and then attach the black pull tab to the battery. After attaching the black pull tab, apply the corresponding PET film. Apply the double-sided battery tape to the battery.



Step 4: Before installation, ensure the battery and battery compartment are free from any foreign objects. Peel off all release films, place the battery into the compartment, and press firmly on the adhesive areas indicated with blue frames to activate the adhesive.




4.3.7 Display Component Replacement

Repair Difficulty: Neutral

Estimated Time: 15 minutes–20 minutes

Required Spare Parts: Display Component


Removal		
Procedure	Illustration	Notes
Step 1: Remove the battery cover.	Refer to section 4.3.1	
Step 2: Remove the mainboard bracket.	Refer to section 4.3.2	
Step 3: Remove the lower speaker support.	Refer to section 4.3.3	
Step 4: Remove the mainboard and cameras.	Refer to section 4.3.5	
Step 5: Remove the battery.	Refer to section 4.3.6	
Step 6: Remove the sub-board.	Refer to section 4.3.4	
Step 7: Remove the motor.		
Installation		
Procedure	Illustration	Notes
Step 1: Install the mainboard, cameras, motor, and ANA board.	Refer to the installation steps in Sections 4.3.5 and 4.3.4	

Step 2: Install the FMA board. First, apply adhesive to the back of the FMA board. Then connect the first BTB connector on the FMA board to the M board, and attach the M board to the ANA board. Next, connect the remaining BTB connectors to the mainboard and sub board. Finally, align and secure the FMA board to the frame, and press it firmly onto the soft pad at the bottom of the battery compartment.



Step 3: Install the coaxial cable. First secure one end to the M board, and route the cable neatly into the cable groove. Place the PET disc and press it firmly, and then reconnect the black coaxial cable to the ANA board.



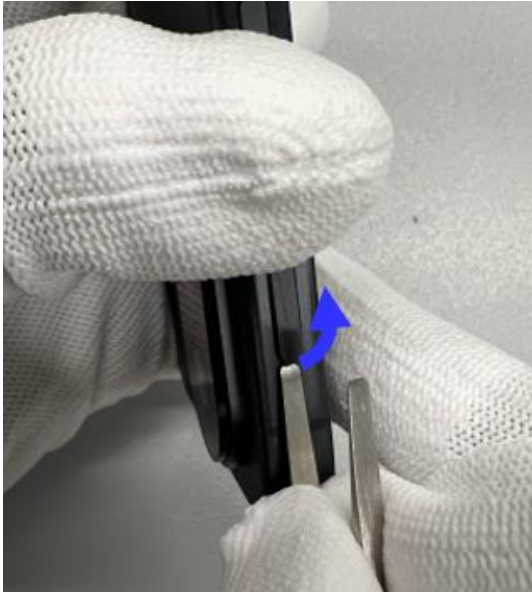

<p>Step 4: Install the battery, mainboard bracket, and battery cover.</p>	<p>Refer to the installation steps in Sections 4.3.6, 4.3.2, and 4.3.1.</p>	
<p>Step 5: Power on the device to verify that the screen lights up and functions correctly.</p>		
<p>Step 6: Calibrate.</p>	<p>After reassembly, calibrate the rear dual cameras, in-display fingerprint sensor, infrared sensor, and light sensor as specified in section 3.2.3.</p>	

4.3.8 Side Button Replacement

Repair Difficulty: Low

Estimated Time: 6 minutes–8 minutes

Required Spare Parts: Side Button

Removal		
Procedure	Illustration	Notes
<p>Step 1: Power off the device. Press and hold one end of the volume button, and then use metal flat-tip tweezers at the other end to carefully pry it up. Remove the power button using the same method.</p>		<p>Be careful not to injure yourself during the process.</p>
Installation		
Procedure	Illustration	Notes
<p>Step 1: Insert the new side button into the slot, keeping it approximately parallel to the frame as shown.</p>		
<p>Step 2: Press each end of the button in turn to push it fully into the slot.</p>	