CROSSCALL

CORE-M5

Repair guide

Version 2.1

CONTENT

INTRODUCTION

Crosscall was founded more than 10 years ago on a commitment: to manufacture durable mobile phones, even under the most difficult conditions of use.
It is thanks to its years of experience and the special attention of its teams to design, industrialization and quality control that Crosscall offers its users a **5-year manufacturer's warranty** and spare parts available for 10 years. on all products from the new CORE range, which is exceptional in the world of telephony.

This document is a disassembly and reassembly guide for the **Crosscall CORE-M5** smartphone.

It also explains what operations must be carried out when changing a part.

It is organized as follows:

- **Warnings and precautions to be taken before disassembling the device.**
- **Necessary equipment: List of essential tools for the disassembly/reassembly of the parts**
- **Change of parts:**

  Structured as follows for each main room:
  - Disassembly of the part.
  - Exchange of the part : concerns the preparation of the new part.
  - Reassembly of the part.

WARNINGS

Beyond the impact on the warranty (see box below), opening the device and replacing parts can have an impact on the water resistance, resistance and autonomy of your product. , if this is not carried out in a center approved by CROSSCALL.

Before having a repair carried out, check whether or not it is guaranteed by referring to the general after-sales service conditions on our website and read the elements below.

WARRANTY IMPACT

Any modification or change made to your device outside of an authorized CROSSCALL repair center will void the warranty. If your device needs to be repaired, we advise you to entrust it to the CROSSCALL after-sales service
(contact available on our website https://crosscall.com/sav/).

WATERPROOFING

Please note that telephones repaired outside an approved CROSSCALL center are no longer waterproof.

BATTERY

The dangers of handling batteries.

To ensure your safety, CROSSCALL batteries and devices are tested according to international standards. The design of our devices also contributes to your safety: the battery is confined in a metal frame.

The battery is a part that can present risks for the person carrying out the repair if the latter does not have the required qualifications. Failure to remove the battery correctly may damage the device and cause personal injury.

A lithium battery is characterized by its **high energy density**. Before handling a battery, you should be aware of the following risks (non-exhaustive list).

The main risk is related to **poor handling** (shocks, blows, deterioration) which can pose a **significant security risk.**

Mechanical damage can lead to deformation of the cells inside the battery and cause internal shorts and **battery runaway**. The lithium battery then releases the energy it has stored in an uncontrolled manner.

Thermal runaway, with temperatures above 250°C, will lead to a strong generation of flammable gases inside the battery concerned and these gases will trigger the explosion of the battery casing. The metals then merge and burn.

The fumes given off are **toxic** and **highly corrosive**.

Contact with moisture can also cause short circuit.

Safety instructions

- Switch off the device before any intervention.
- Do not turn it back on before complete reassembly.
- Turn off the device before removing the battery. If you remove the battery while the device is on, the device may malfunction.
- Do not disassemble or puncture the battery, as this may cause an explosion or fire.
- Do not cause a short circuit.
- Do not reuse the battery if you have any doubts about its integrity following dismantling.
- Recycle the battery according to the standards in force.
- Do not throw it into fire

Please observe the waste disposal rules when disposing of the packaging, battery, device and its electronic parts. Drop them off at a collection point so that they can be properly recycled. Do not dispose of used electrical and electronic devices or batteries in an ordinary trash can. Please deposit the used lithium batteries in a place designed for this purpose.

ELECTROSTATIC DISCHARGES, WORKING ENVIRONMENT

During the disassembly / reassembly operation, it is advisable to wear an antistatic bracelet connected to the ground. If this is not possible, it is essential to wash your hands and discharge yourself of any static electricity build-up by touching a grounded metal object (ex. radiator) before proceeding with the disassembly / reassembly of the device.
Electrostatic discharge can permanently damage the electronics of the device.

Any work on the device must be carried out in a bright, clean and dust-free environment. The latter can deposit on parts related to photography and video and distort the focus. Metallic dust can also cause short circuits.

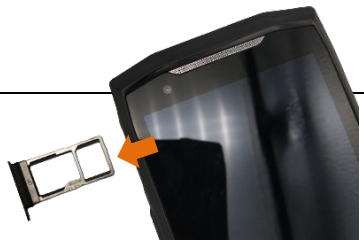
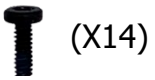
REQUIRED EQUIPMENT

Description	Picture	Description	Picture
ESD equipment		LOCTUO RTV165 silicone syringe	
Antistatic tools for dismantling: nylon pointer, pick, etc.		SIM extractor	
Antistatic tweezers		Glue applicator gun	
Cutter		Tape screen protector	
Philips screwdriver PH00		Isopropylic alcohol	
Torque screwdriver PH00		Rag	

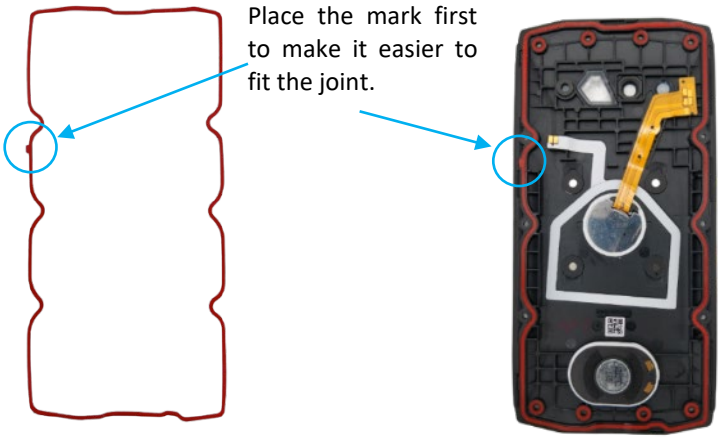
DISASSEMBLY, ASSEMBLY AND EXCHANGE OF PARTS

Back cover

Removing the back cover

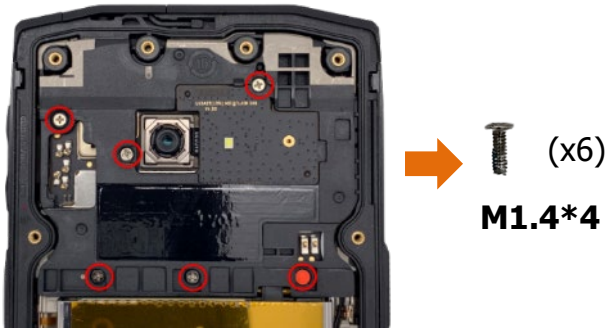
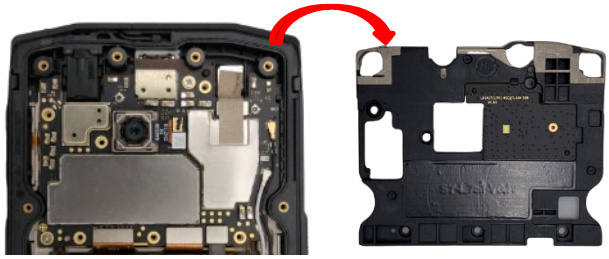
 	Remove the SIM card drawer using an extractor by inserting it into the hole provided.
  (X14) **M1.5*5F**	Unscrew the 14 M1.5*5F hexagonal screws.
	Use a pick to separate the 2 cosmetics.
	The rear cosmetic can be removed.

Assembling the back cover

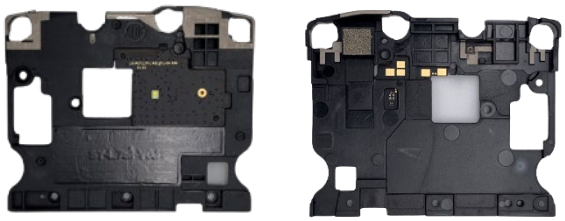
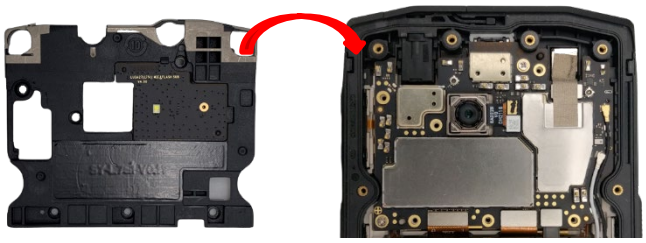
	
	Screw in the 14 M1.5x5F screws.

Antenna

Removing the antenna

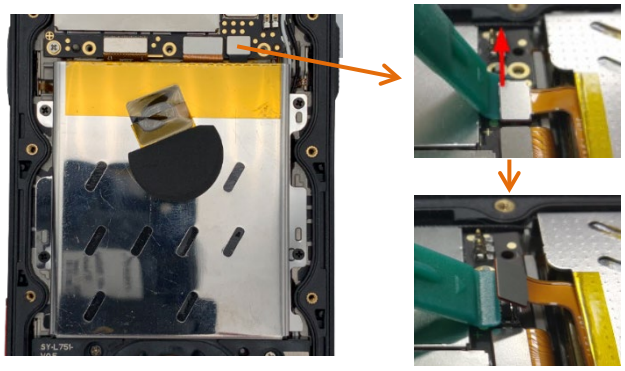
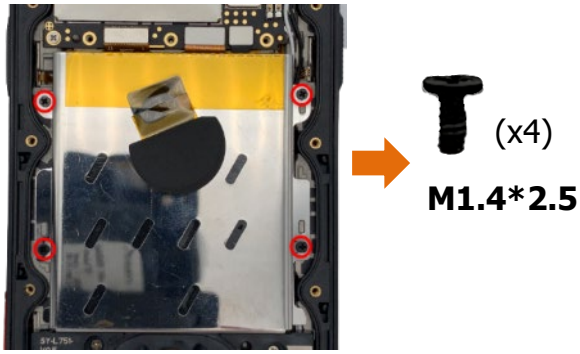
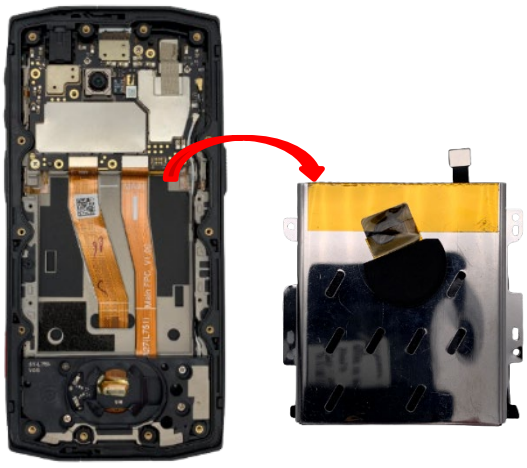
	Unscrew the 6 1.4 x 4 screws holding the antenna in place.
	The antenna can now be removed.

Changing the antenna

	No specific action is required when exchanging this part.
	Poser l'antenne sur la carte mère
	Tighten the 6 1.4x4 screws

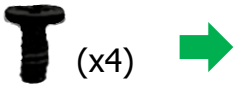
Battery

Removing the battery

	Unplug the battery connector by lifting it with a plastic tool.
	Unscrew the 4 M1.4x2.5 screws circled in red.
	The battery can now be removed.

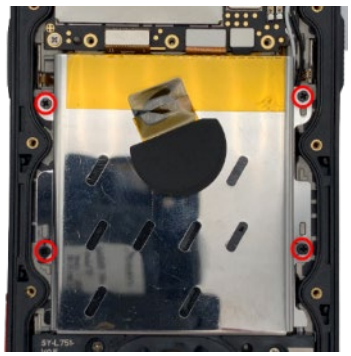
Changing the battery

The battery consists of 3 components:
The battery cell, the shield and the double-sided adhesive.
The shield and adhesive can be removed and reused on a new battery cell..



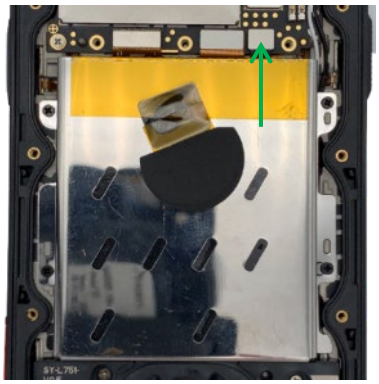
(x4)

M1.4*2.5



Before positioning the new battery, check that the location is perfectly clean and smooth (no folds in the adhesive, no foreign bodies such as screws).

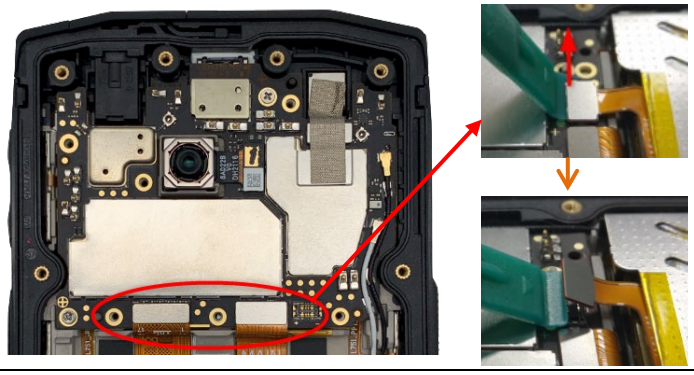
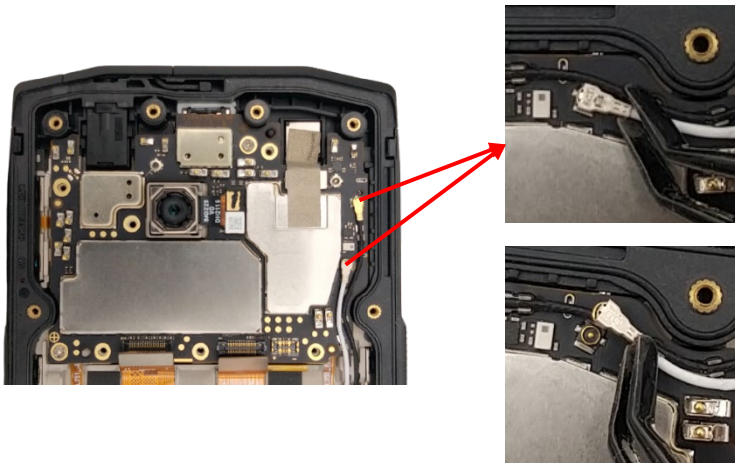
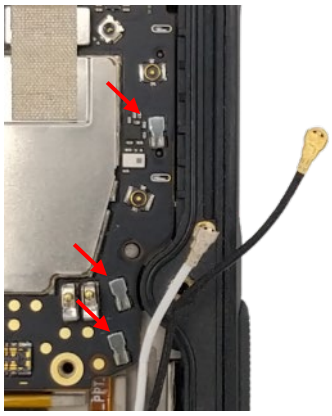
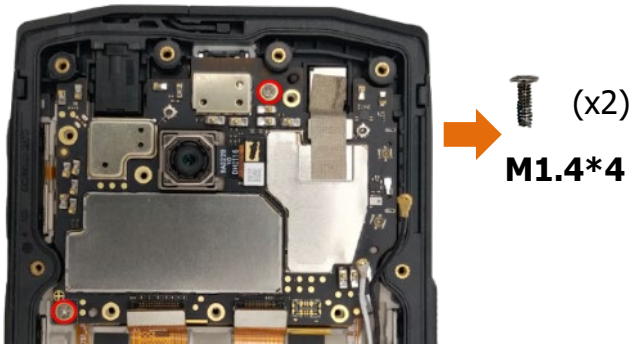
Place the battery in its slot and tighten the 4 M1.4x2.5 screws.



Plug in the battery connector.

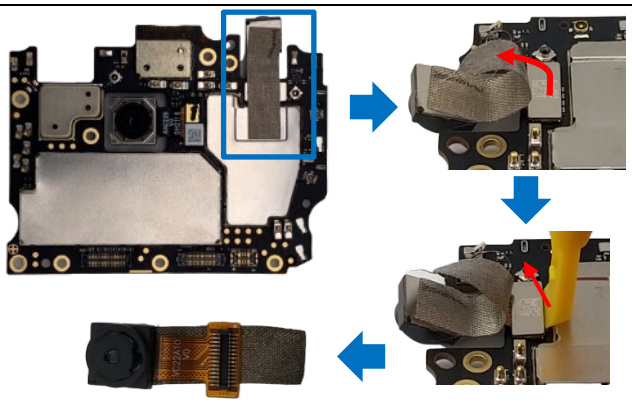
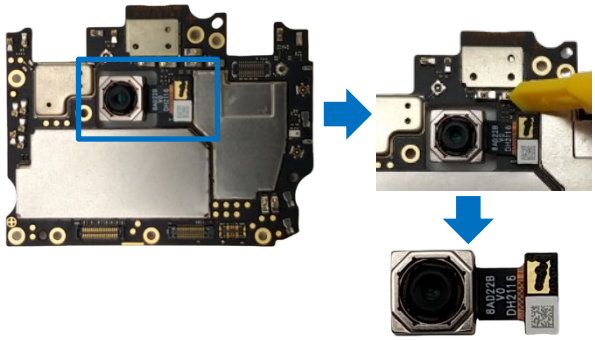
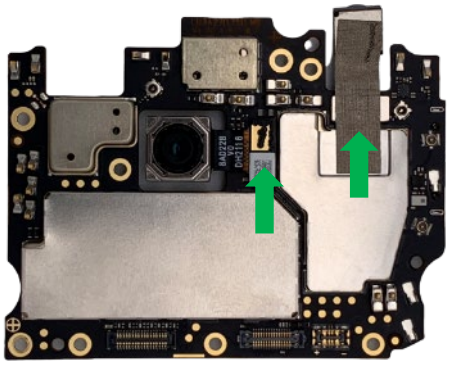
Main board

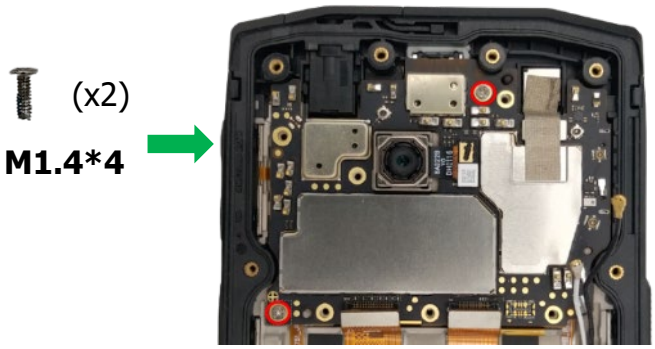
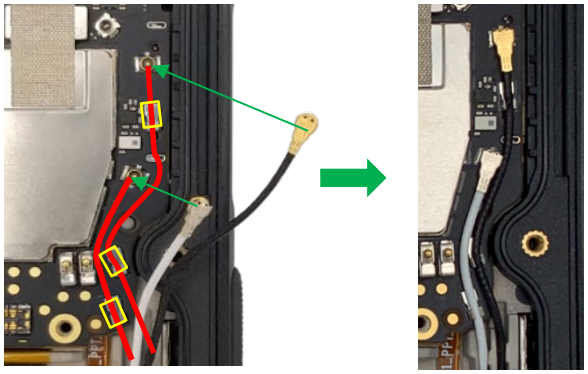
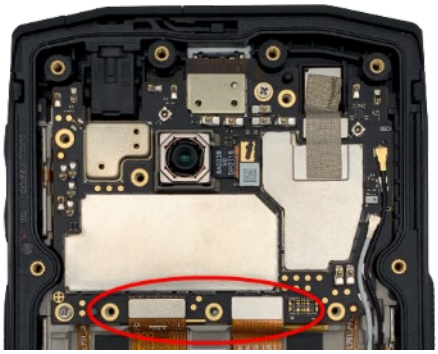
Removing the main board

	Disconnect the LCD flex and the main flex.
	Unplug the 2 coaxial cables using flat nose pliers.
	Remove the 2 cables from their guides, 2 for the black cable and 1 for the white. Also use the flat-nose pliers to extract them.
	Unscrew the 2 screws circled in red.

	The main board can be removed.

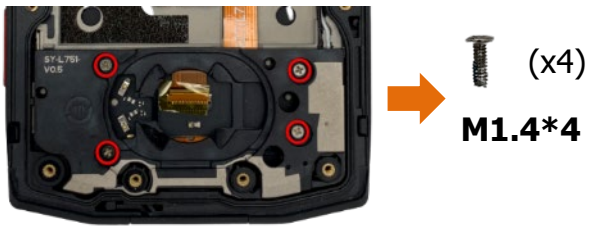
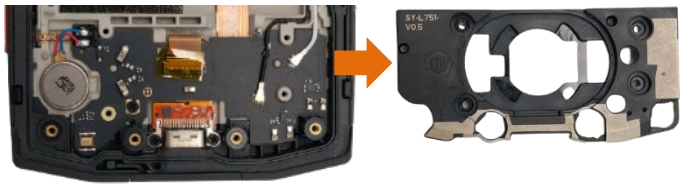
Changing the main board

	Take the front camera with its conductive foam from the old motherboard. Peel off the foam and disconnect the camera using an anti-static tool.
	Also remove the rear camera using the same tool.
	Connect the cameras to the new motherboard.

	Insert the motherboard into its slot and screw in the 2 M1.4x4 screws circled in red.
	Replace the coaxial cables in their guides. The photo on the left shows the position of the cables in red and the 3 guides in yellow. Then reconnect the 2 connectors.
	Connect the LCD flex and the main flex.

Speaker support

Removing the speaker

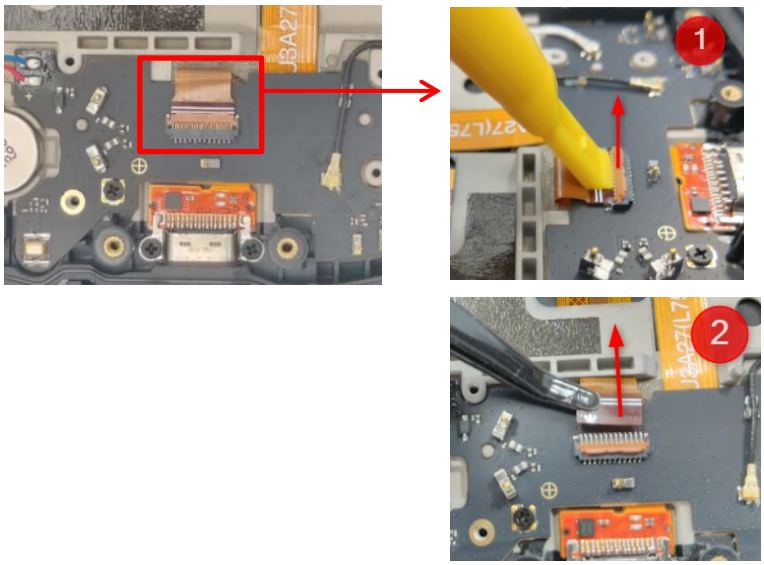
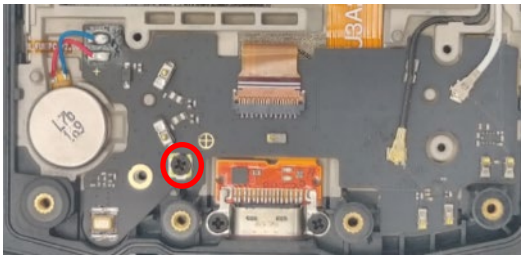
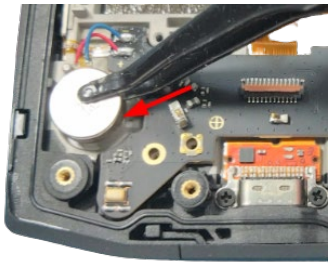
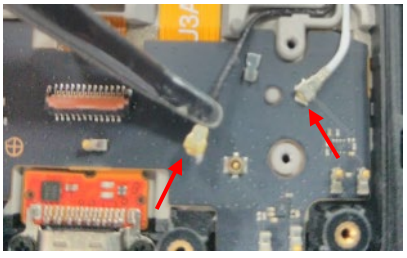
	Unscrew the 4 M1.4x4 screws.
	The loudspeaker support can be removed.

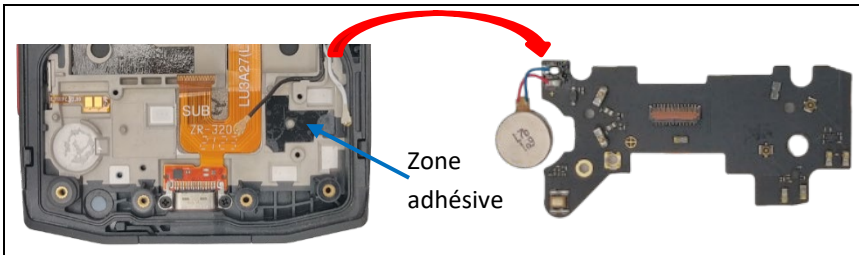
Replacing the speaker

	No specific action required when changing this part.
	Place the speaker bracket in its position and screw in the 4 M1.4x4 screws.

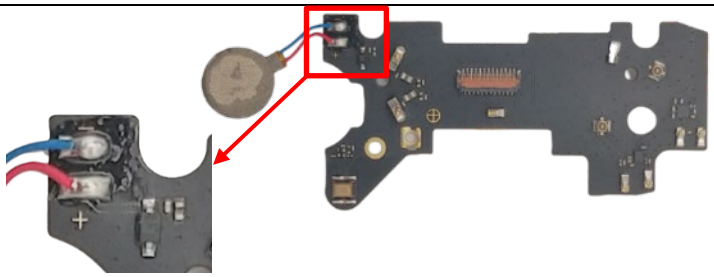
Main daughterboard

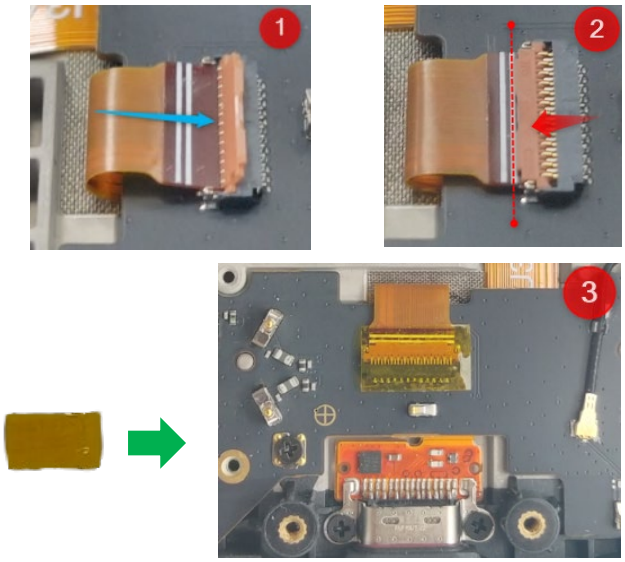
Removing the board

	Remove the insulation from the flex connector on the daughterboard.
	1> Release the flex by lifting the brown plastic lock. 2> Extract the flex from the connector.
  (x1) **M1.4*2.5**	Unscrew the M1.4x2.5 screw holding the daughter board.
 	Remove the vibrator by inserting a flat-nose pliers through the right-hand side and disconnect the 2 coaxial cables.

	Lift the daughterboard to unstick it and extract it.

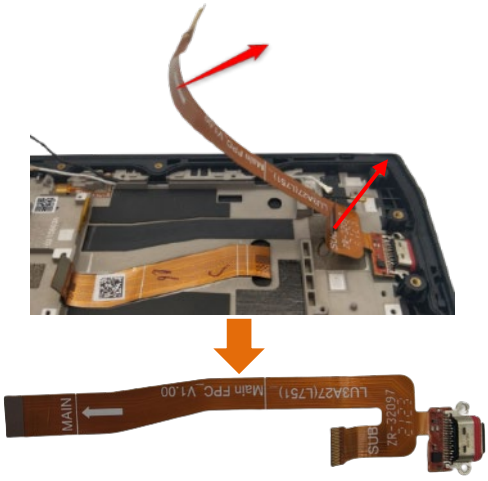
Changing the board

	Recover the vibrator from the old daughterboard or use a new vibrator if necessary. Reattach it to the new card, making sure the polarity is correct (red +, blue -).
	Place the daughterboard and vibrator in their respective slots, aligning the 2 guide pins (marked with a green arrow) with the holes on the daughterboard.
	1. Screw in the M1.4x2.5 screw to hold the daughterboard in place. 2. Connect the 2 coaxial connectors and insert the black cable into its guide (marked in yellow).

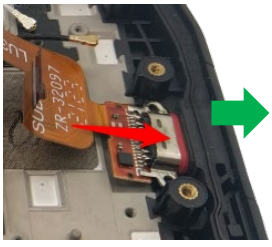
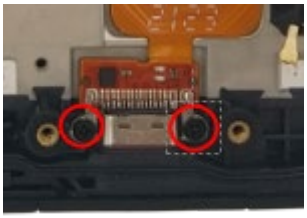
	1> Insert the main flex into the connector, the second white line (dotted line in fig. 2) must be flush with the closed connector. 2> Fold back the brown plastic lock to secure the flex. 3> Glue the insulator to the connector.

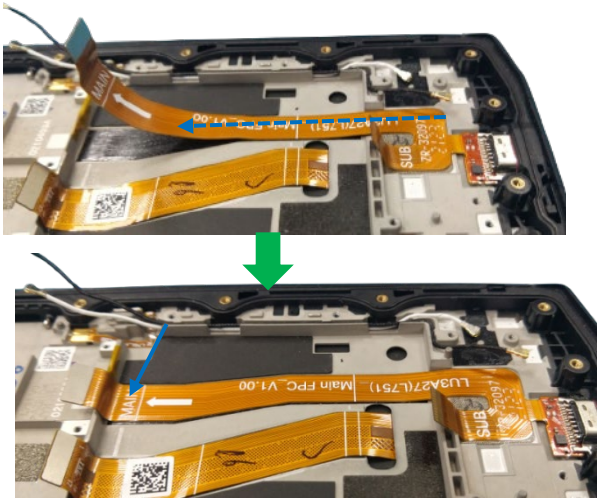
Main flex

Removing the flex

 (x2) **M1.4*2.5**	Unscrew the 2 M1.4x2.5 Phillips head screws circled in red.
	Remove the flex by carefully pulling on it.
	Continue to unstick it by gently pulling along its entire length. The flex can now be removed completely.

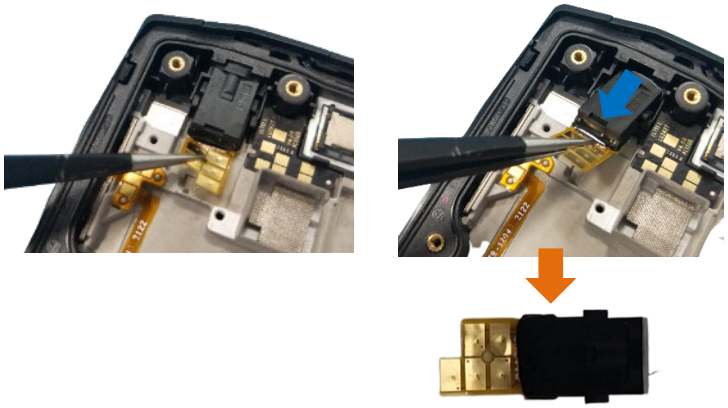
Changing the flex

   (x2) **M1.4*2.5**	Insert the USB connector into its slot, then screw in the 2 M1.4x2.5F Phillips head screws circled in red. Tighten until the screws lock.

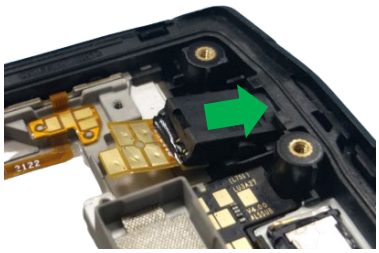
	Then glue the flex back together along its entire length. It must be fitted precisely so that there is no stress when the connectors are plugged in. Place the flex from the USB connector towards the motherboard connector (blue dotted line).

Audio Jack connector

Removing the connector

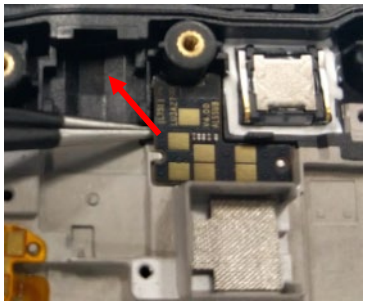
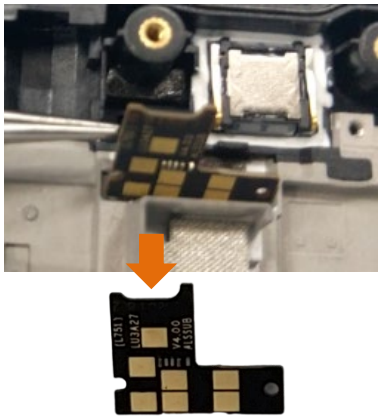
	Use pliers to lift the connector contacts and pull back to release the module.

Changing the connector

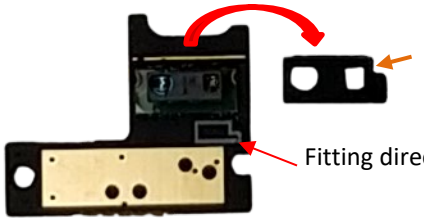
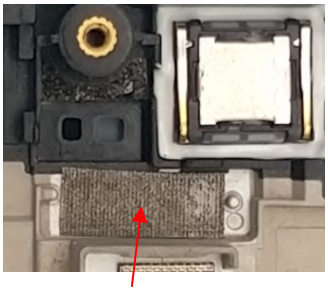
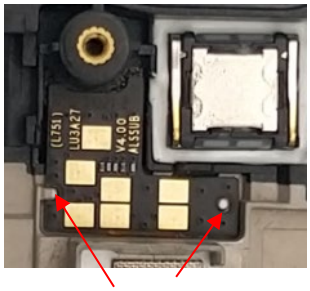
	
 	Insert the jack connector in the direction indicated by the green arrow. Press the connector and contacts together. Check that the pin is aligned with the hole in the flex (blue arrow).

Proximity sensor daughterboard

Removing the sensor

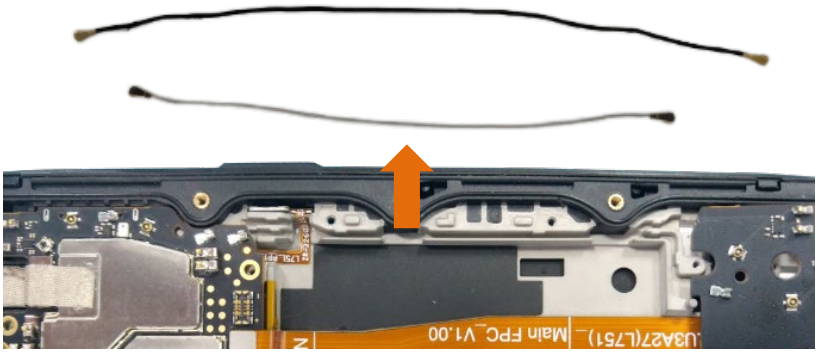
 	Lift the daughterboard using the pliers.

Changing the board

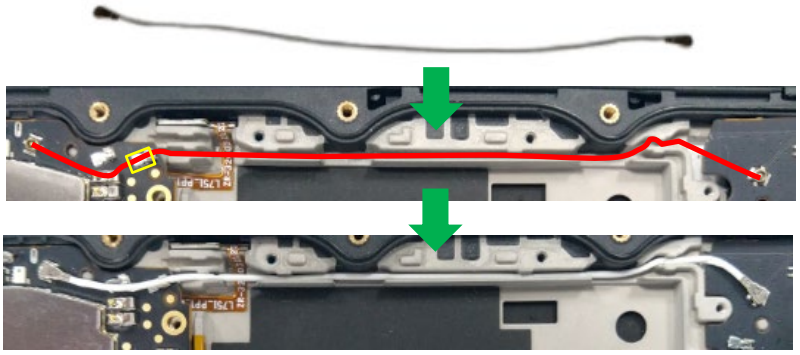
	Retrieve the rubber light guide from the old board component and replace it in the direction indicated by the white logo.
 	Check that the rubber light guide is in place, then replace the card in its slot. It is held in place by double-sided adhesive tape. Check that the 2 guide studs coincide with the holes on the card.

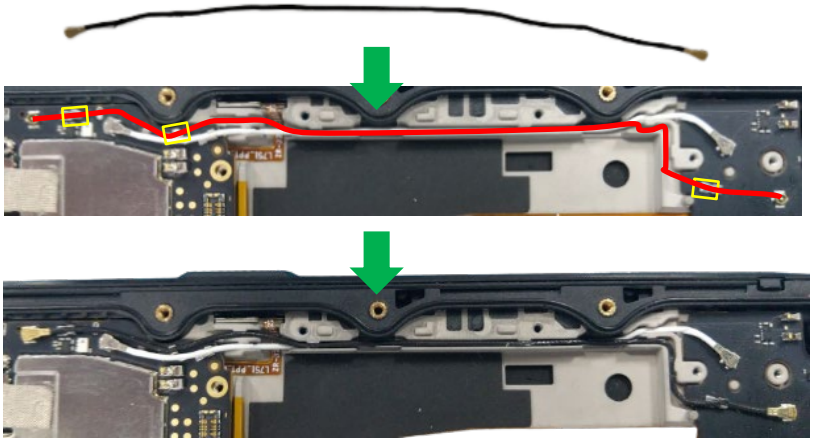
Coaxial cables

Removing the cable

	Disconnect the coaxial cable connectors from the motherboard and daughterboard. To do this, refer to the 'Removing the motherboard'.
	Remove the 2 cables from their housings.

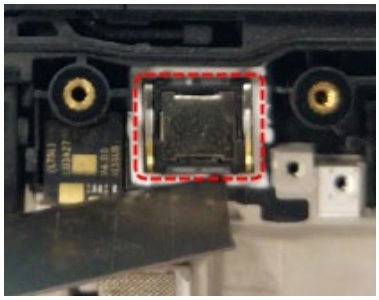
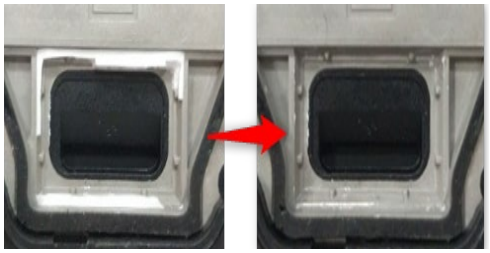
Changing the cables

	No specific action is required when changing this part.
	First insert and connect the white cable along the red line. The guides are shown in yellow.

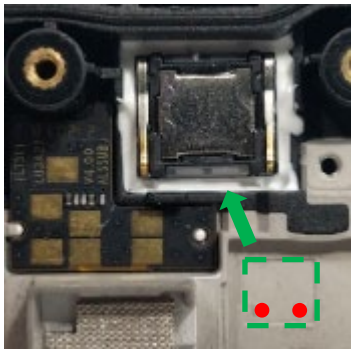
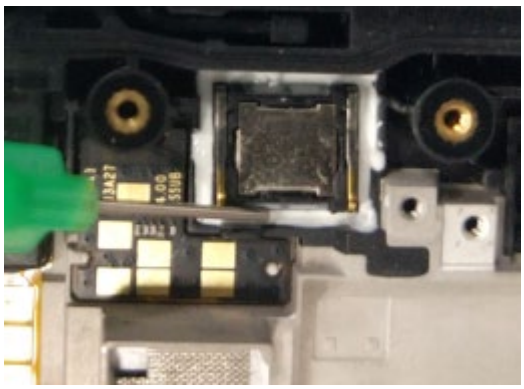
	Then insert the black cable in the same way.

Microphone

Removing the microphone

	Cut the silicone seal around the earpiece with a cutter.
	Use the flat-nose pliers to remove the earpiece. Be careful not to damage the membrane on the cosmetics during this operation.
	Clean the silicone seal remaining in the earphone compartment.

Changing the microphone

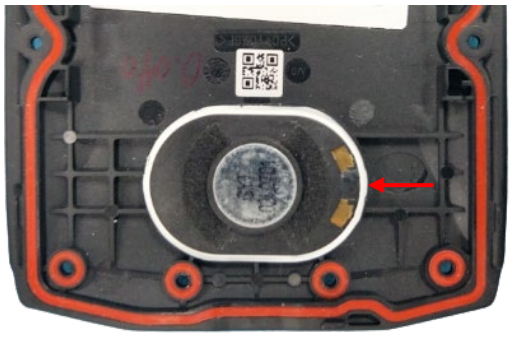
	Remove the protective film
	Place the microphone in its compartment, in the direction shown in the photo or the symbol engraved on the cosmetic (in green), with the contacts facing downwards.
 	Apply LOCTUO RTV165 silicone sealant (recommended product - not sold by CROSSCALL) around the earpiece and allow to dry for a few minutes before reassembling the product.

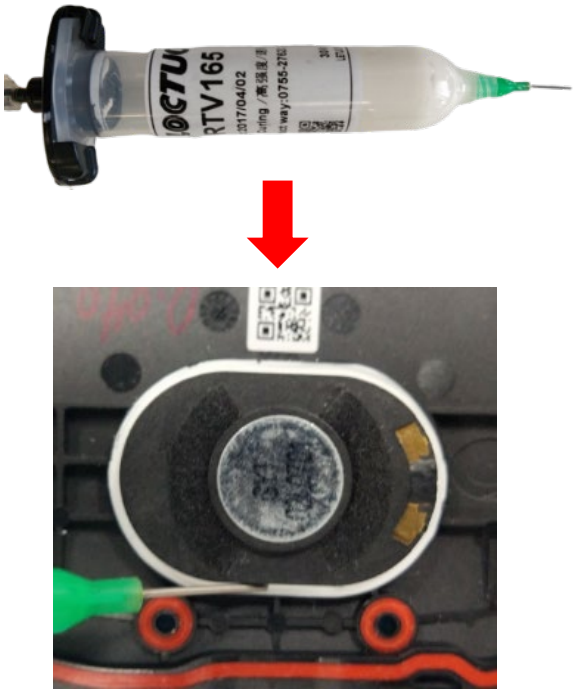
Speaker

Removing the speaker

	Cut the silicone seal around the loudspeaker with a cutter.
	Use the flat-nose pliers to remove the speaker. Be careful not to damage the membrane on the cosmetics during this operation. Clean any excess silicone remaining in the speaker compartment.

Changing the speaker

	Place the speaker in its compartment, in the direction shown in the photo. The contacts face to the right as indicated by the indicator on the cosmetic.

	Apply LOCTUO RTV165 silicone sealant (recommended product - not sold by CROSSCALL) around the speaker and allow to dry for a few minutes before reassembling the daughterboard.

Changing the NFC antenna

<table>
<tr><td>  </td><td></td></tr>
<tr><td>   </td><td>Glue the new antenna in place, starting by aligning the lower part marked with the green arrows.
Glue the antenna completely in place, followed by the magnetic connector flex (explained in the previous paragraph).</td></tr>
</table>

Front casing

Removing the front casing

Preliminary operations	- Remove the rear cosmetics - Remove the antenna - Remove the battery - Remove the motherboard - Remove the speaker support - Remove the main daughterboard - Remove main flex - Remove the proxy sensor daughterboard - Remove jack connector

No further action is required once all the preliminary operations have been carried out.

Changing the front casing

Refer to the relevant chapters for reassembly of the various components.

INFORMATION FOR RECYCLERS

MATERIAL / SUBSTANCE	CAS-NUMBER	WEIGHT (G)	% IN CORE-M5	COMPOSNENTS	% IN COMPONENT
ALUMINIUM	7429-90-5	45,59	**18%**	Frame	86%
				Battery	6%
				Camera decoration	83%
				Speaker	14%
				SIM slot	32%
				Customisable buttons	100%
SILVER	7440-22-4	0,14	**0,1%**	Screen	<1%
				Motherboard	<1%
				Battery	<1%
COBALT	7440-48-4	16,30	**7%**	Battery	40%
COPPER	7440-50-8	17,77	**7%**	Motherboard	49%
				Daughterboard	57%
				Chassis	2%
				Speaker	4%
				SIM drawer	14%
DYSPROSIUM	7429-91-6	0,0015	**0,0006%**	Vibrator	<1%
TAIN	7440-31-5	1,40	**0,6%**	Motherboard	10%
IRON	7439-89-6	13,75	**6%**	Screen	12%
				Speaker	56%
				Screws	79%
				Vibrator	52%
				USB-C	61%
INDIUM	7440-74-6	0,000030	**0,00001%**	Screen	<1%
				Cameras	<1%
				Motherboard	<1%
LITHIUM	12190-79-3 21324-40-3 12031-63-9 12031-66-2	1,96	**0,8%**	Battery	3%
MAGNESIUM	7439-95-4	0,35	**0,1%**	Screen	<1%
NEODYME	7440-00-8	0,48	**0,2%**	Speaker	7%
				Vibrator	1%
				Magnet	25%
NICKEL	7440-02-0	2,98	**1%**	Screen	1%
				Battery	0,5%
				Speaker	2%

GOLD	7440-50-5 13967-50-5	0,021	**0,009%**	Motherboard	<1%
				Battery	<1%
				Speaker	<1%
				Cameras	<1%
				USB-C	<1%
PALLADIUM	7440-05-3	0,0026	**0,001%**	USB-C	<1%
PET	25038-59-9	6,28	**3%**	Screen	12%
PLATINE	7440-06-4	0,000050	**0,00002%**	FPC	<1%
POLYAMIDE	25038-54-4	3,93	**2%**	Battery PCB cover	5%
POLYCARBONATE	24936-68-3	29,83	**12%**	Back cover	100%
				PCB Protection	100%
				Battery protection	100%
				Sidebar	100%
				Buttons	60%
POLYMERE	/	29,05	**12%**	Screen	14%
				Motherboard	14%
				Daughterboard	19%
PRASEODYME	7440-10-0	0,21	**0,1%**	Speaker	4%
				Vibrator	4,0%
				Magnet	4%
RHODIUM	7440-16-6	0,000090	**0,00004%**	X-Link	<1%
TANTALE	7440-25-7	0,000020	**0,00001%**	Motherboard	<1%
TITANE	7440-32-6	0,19	**0%**	Motherboard	<1%
				Screen	<1%
				Cameras	<1%
TUNGSTENE	7440-33-7	0,114050	**0,04580%**	Vibrator	14%
GLASS	65997-17-3	22,33	**9%**	Screen	29%
				Frame (plastic)	10%
				Motherboard	20%
ZINC	7440-66-6	1,745200	**0,70088%**	Speaker	<1%

BILL OF MATERIAL

- BATTERY COVER PANEL
- NFC ANTENNA
- SPEAKER

- TOP BACK PANEL
- SUB BOARD ASSEMBLY - SUB PCBA MIC AND FLASH

- FRONT HOUSING ASSEMBLY
- SUB BOARD ASSEMBLY – SENSOR
- RECEIVER
- EARPHONE FPC

- MAIN BOARD ASSEMBLY - PCBA (4 + 64GB)
- REAR CAMERA
- FRONT CAMERA
- BATTERY
- MAIN FPC
- COAXIAL CABLE (WHITE – 118 MM)
- COAXIAL CABLE (BLACK – 102.5 MM)
- SUB BOARD ASSEMBLY- SUB PCBA
- MOTOR

- BOTTOM BRACKET PANEL

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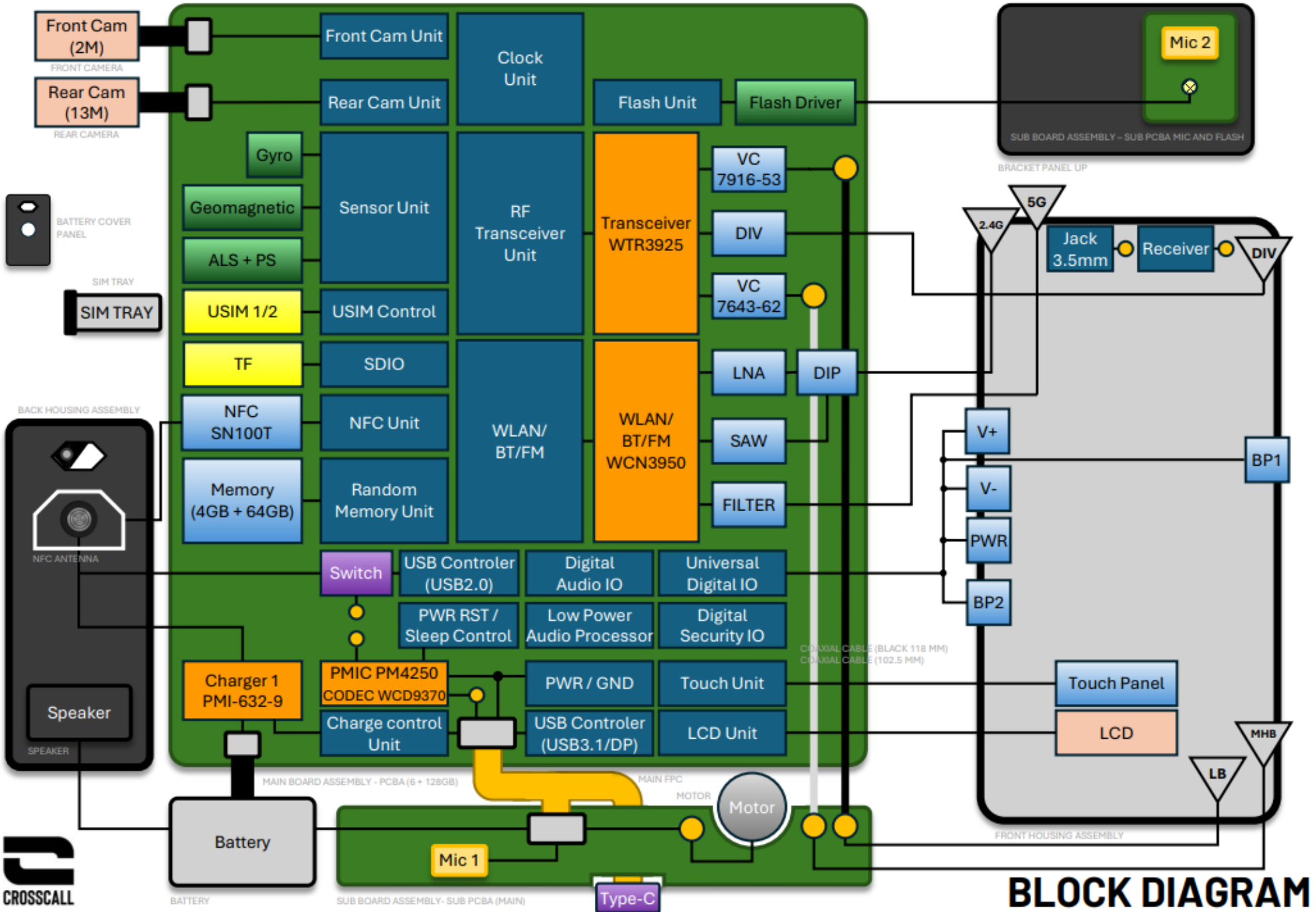
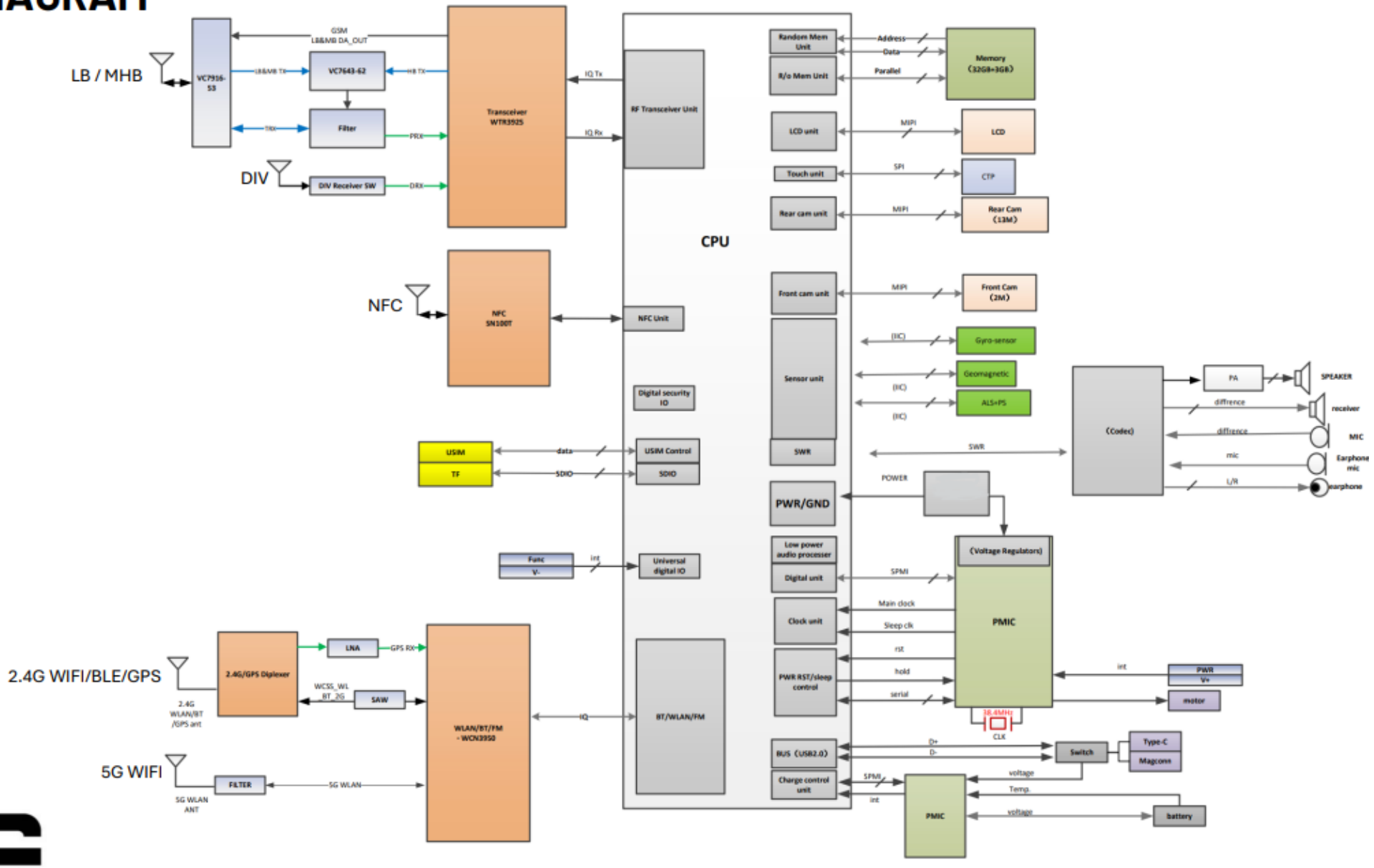


BLOCK DIAGRAM

BLOCK DIAGRAM



CROSSCALL

Any modification or change made to your appliance outside an approved centre will invalidate the warranty. If your appliance needs to be repaired, we advise you to take it to the CROSSCALL after-sales service (contact details available on our website https://crosscall.com/sav/).