Repair/recycle manual
Doro Leva L20/L21
V3.0

Table of content

1 Repair disclaimer

Self-service repair is not recommended unless you have the necessary technical knowledge and experience to safely handle electronic components. Attempting repairs without proper expertise can result in damage to the device, personal injury, or voiding of any applicable warranty.

By choosing to proceed with a self-repair, you acknowledge and accept all risks and responsibilities associated with the process.

2 About this document

This document provides step-by-step instructions for repairing and maintaining this device. It is designed to support both professional technicians and private individuals who wish to perform their own repairs.

2.1 Scope

This guide covers:

- Safe recycle, disassembly and reassembly procedures

This guide does not cover:

- Advanced electrical diagnostics
- Software-level repairs or firmware issues
- Modifications outside manufacturer specifications

2.2 Who Can Use This Document

This guide is intended for:

• Technicians and repair professionals

• End customers interested in do-it-yourself repairs, as encouraged by the EcoDesign directive

• Recycling workers for safe disassembly of components before disposal or material recovery

2.3 How the Guide Is Structured

The document is divided into the following main sections:

• Precautions

• Required tools and materials

• Exploded view

• Disassembly Procedures

• Assembly Instructions

3 General precautions

Before you service the product, read the full set of precautions in this document.

3.1 Use caution before you start to repair.

CAUTION!

Opening or repairing a device could cause electric shock, device damage, fire, personal injury risks, and other hazards.

- Make sure that the work surface is clean and free of debris to prevent contamination of internal components.
- Wear an ESD wrist strap to prevent electrostatic discharge damage to sensitive electronic components.
- Always perform repairs in a clean, dry space with good ventilation and no combustible materials.
- Make sure no cables or components are damaged during removal. Damaged cables and components must be replaced.
- Ensure that there are no additional screws or small parts left in the device after assembly.
- Always ensure that screws are securely fastened.
- Disconnect the device from all power sources before any disassembly.

3.2 Batteries

Batteries should be handled with care, and could be dangerous if not in normal condition

CAUTION!

- Discharge the battery before you attempt repair.
- Never bend, dent, puncture, or use tools to pry the battery.
- To prevent damage, store replaced batteries in the replacement packaging directly after being replaced.
- If the battery shows signs of swelling or damage, or if the device feels hot or emits a strong odour, don't attempt disassembly. Please reach out to Doro support.
- If a battery starts to vent, cover it in sand or use gloves and pliers to dispose the battery in a fire safe container as soon as possible.
- Be careful with the following unacceptable battery conditions: pouch damage, line protrusion, scratch, contamination mark, dot protrusion, dent, bubbling, imprinted line, swelling or electrolyte leakage.
- Do not shortcut the battery terminals or damage the battery, as it could result in fire or overheating.
- Do not throw the old battery in regular trash. Dispose of the battery according to local regulations.

3.3 Glass handling

CAUTION!

- Wear protective gloves and safety glasses when you handle broken glass parts.
- Apply protective film when you remove damaged glass parts.
- Place the damaged glass part in the spare part packaging directly after replacement to prevent injury.

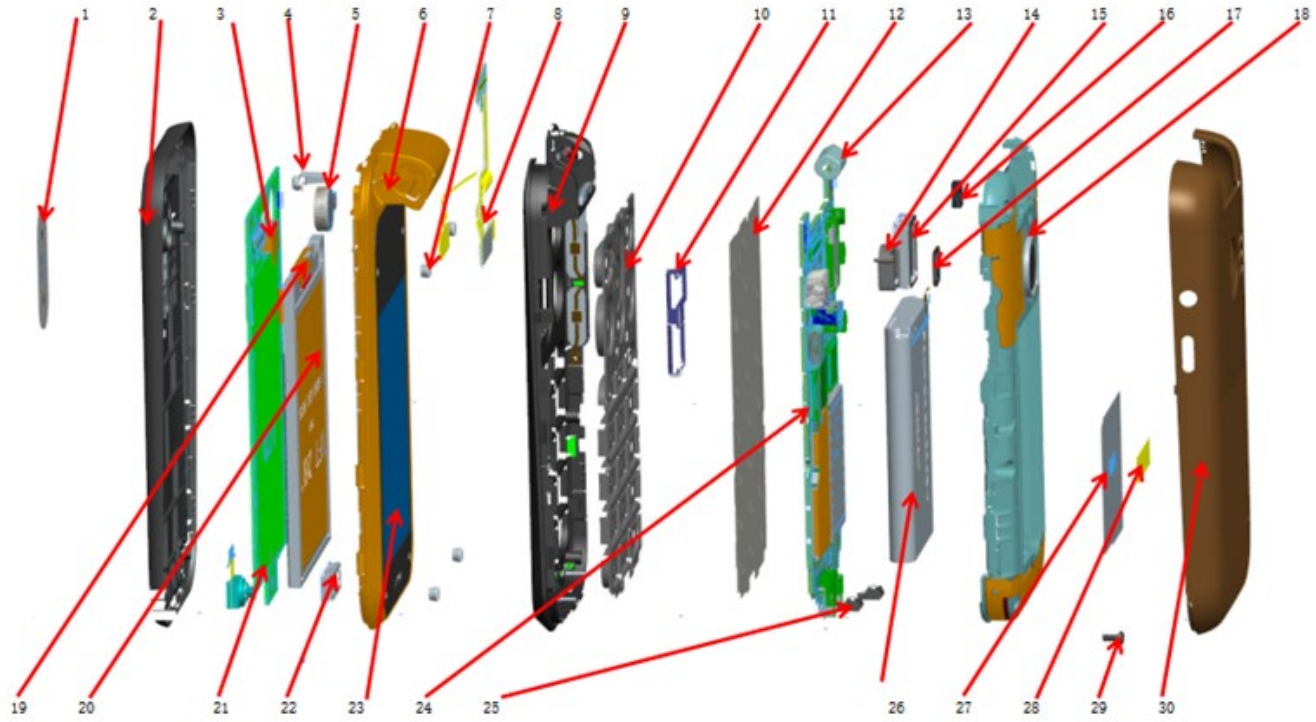
3.4 Tools and fixtures

The use of correct tools and fixtures is strongly recommended for all device repairs.

CAUTION!

- We don't recommend you perform repairs without the correct tools and fixtures.
- Improper use of tools and fixtures may result in injury, damage to the product, tools, fixtures, or spare parts.

4 Exploded view

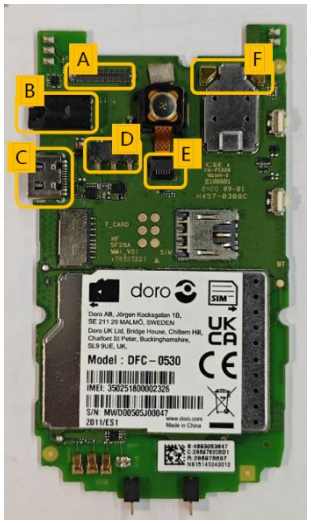


#	Part name	Qty	#	Part name	Qty
1	B_CAM WIN GF28A1 PMMA BK DORO RoHS	1	**16**	Main FPC wrap foam	1
2	Assembly Clamshell Up	1	**17**	SOS FPC	1
3	SUB PCB	1	**18**	Assembly Lower housing	1
4	Sealing rubber Hinge	1	**19**	Magnet X282 7*1,6*(1,2) N45 RoHS	1
5	Motor	1	**20**	Main LCD 2.8	1
6	B Assembly Clamshell	1	**21**	Camera	1
7	Screw rubber cover	1	**22**	Receiver	1
8	Main FPC	1	**23**	Main LCD glass window	1
9	C cabinet	1	**24**	Assembly PCBA HW3011	1
10	Keypad	1	**25**	Sealing rubber cradle connectors	1
11	Sealing rubber USB jack	1	**26**	Battery LEVA DBAE-1150A	1
12	Dome foil	1	**27**	IMEI label 31*31.3mm	1
13	Hinge ϕ5.8	1	**28**	Waterproof label D=2,5mm SKD RoHS	1
14	SOS Key Frame	1	**29**	Screw T1.4*3.5	11
15	Speaker	1	**30**	Battery Cover	1

5 Parts location

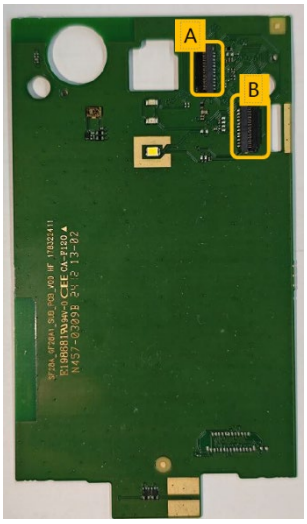
5.1 Connectors main PCB

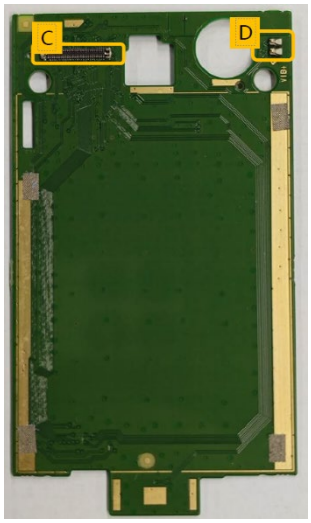
#	Description
A	Link Fpc Connector
B	Headset Port
C	USB Port
D	Battery Connector
E	SOS Fpc Connector
F	Speaker Pad



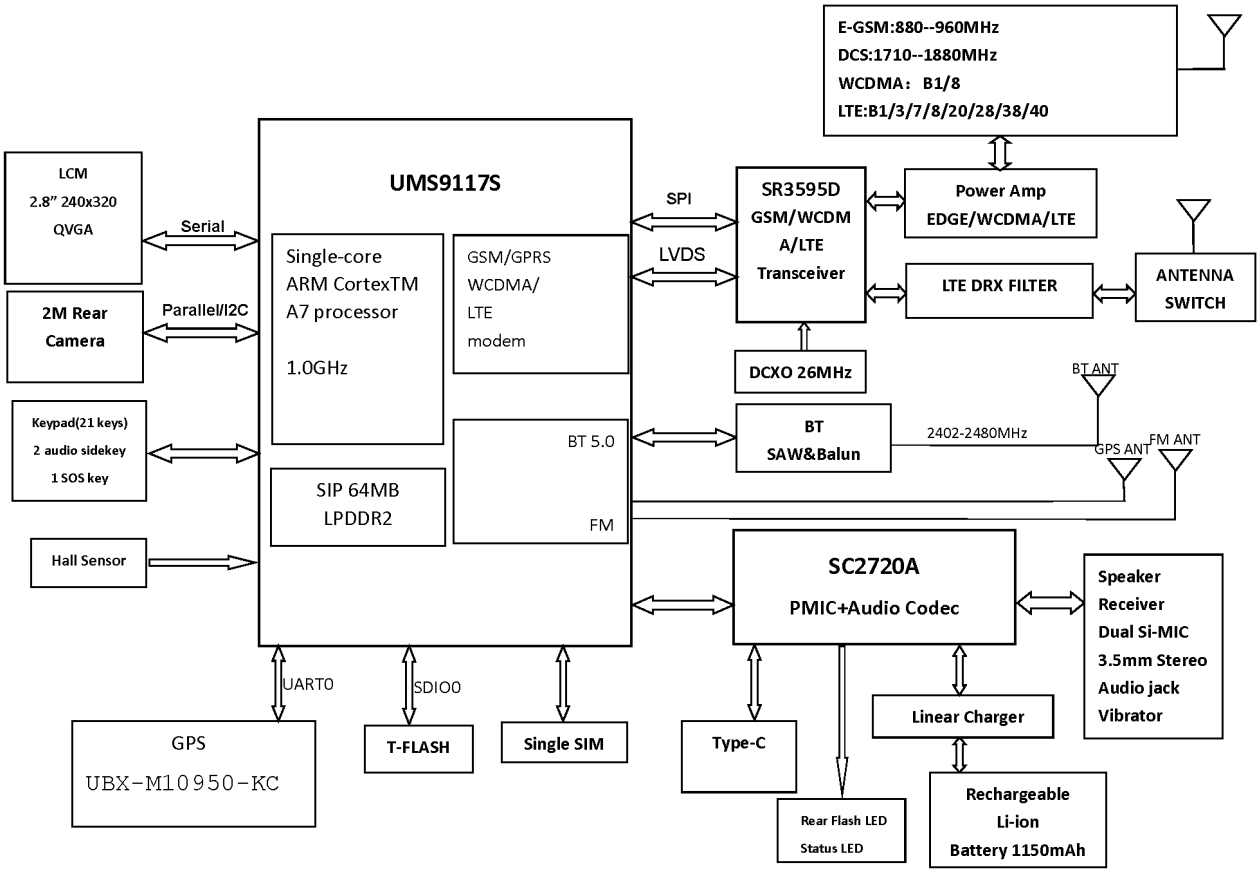
5.2 Connectors sub PCB

#	Description
A	Camera Connector
B	LCD Connector
C	Link Fpc Connector
D	Vibrator Pad





6 Block diagram



7 Tooling definition

Forceps

Screwdriver

Plastic Card

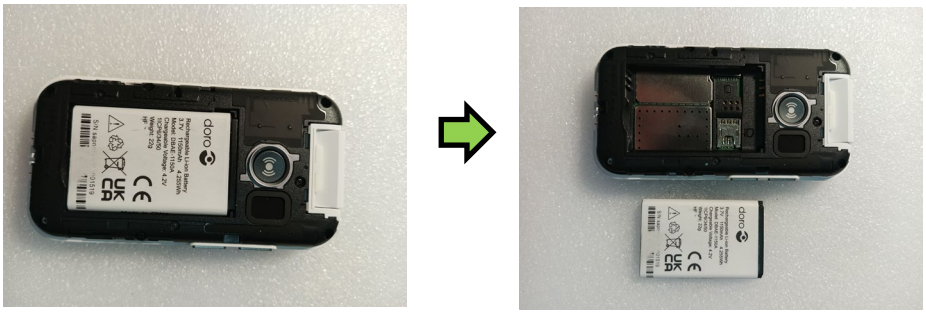
Hot Gun

8 Disassembling procedure

8.1 Remove the battery cover

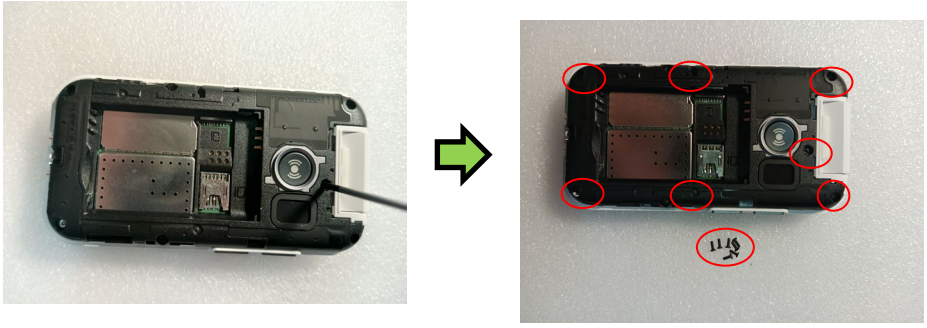
Remove the battery cover by opening the special slot.

8.2 Remove the battery



Remove the battery by opening the special slot.

8.3 Remove the screws



Remove the screws (qty=7) by using the screwdriver carefully.

8.4 Remove the lower housing assembly

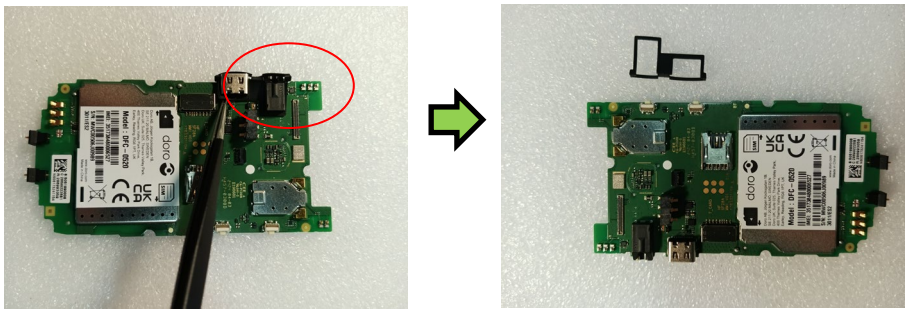
Remove the lower housing from the upper housing assembly by plastic card and please start from the bottom of the product and then along the sides to open the lower housing assembly carefully.

8.5 Remove the PCBA

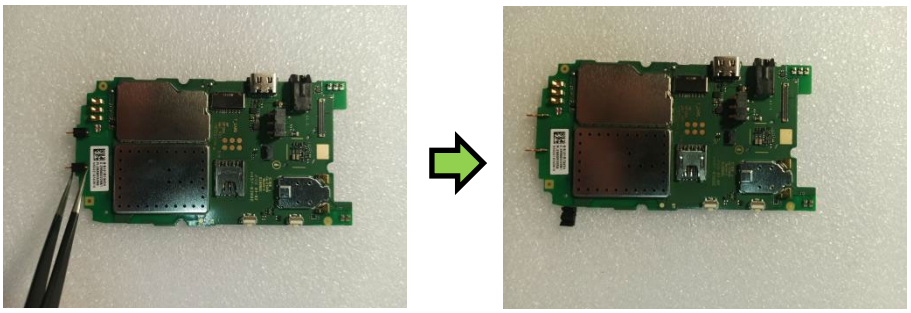
Disconnect LINK FPC from the PCBA and remove the FPC by forceps.

8.6 Disassemble the PCBA module

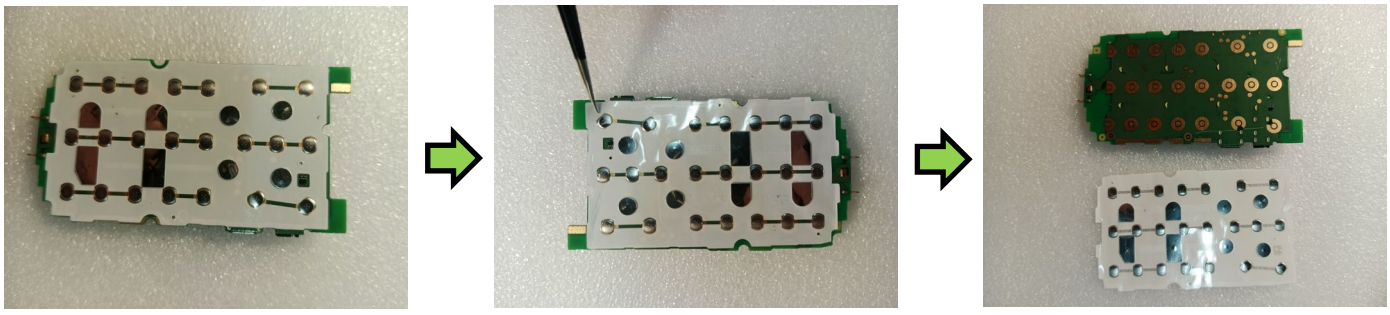
Remove SOS FPC and SOS holder from PCBA by forceps.



Remove USB Rubber and MIC Rubber from PCBA by forceps.



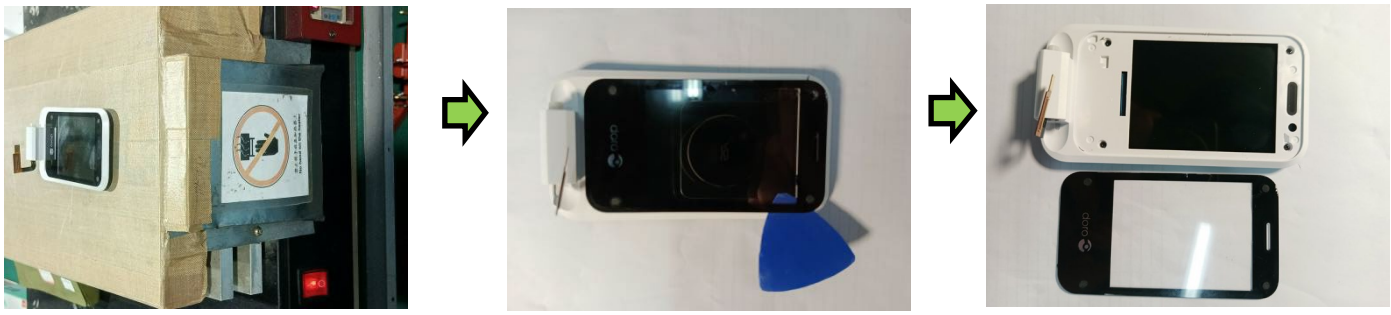
Remove Charger spring clip cover from PCBA by forceps.



Remove the metal dome from PCBA by forceps.

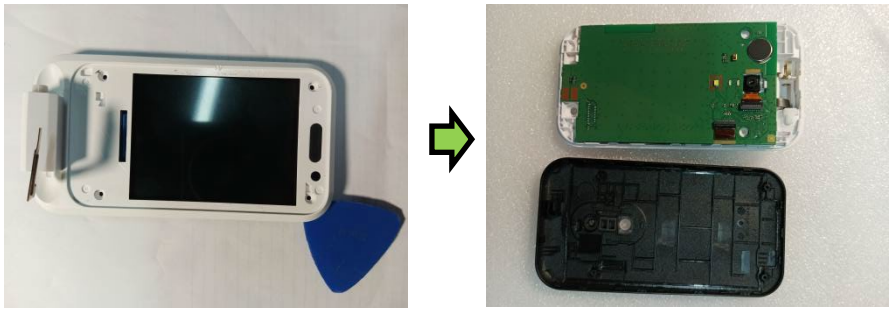
8.7 Disassemble the B Assembly

Remove the Flap B from upper housing by using forceps to push in FLAP Hinge Unit carefully.



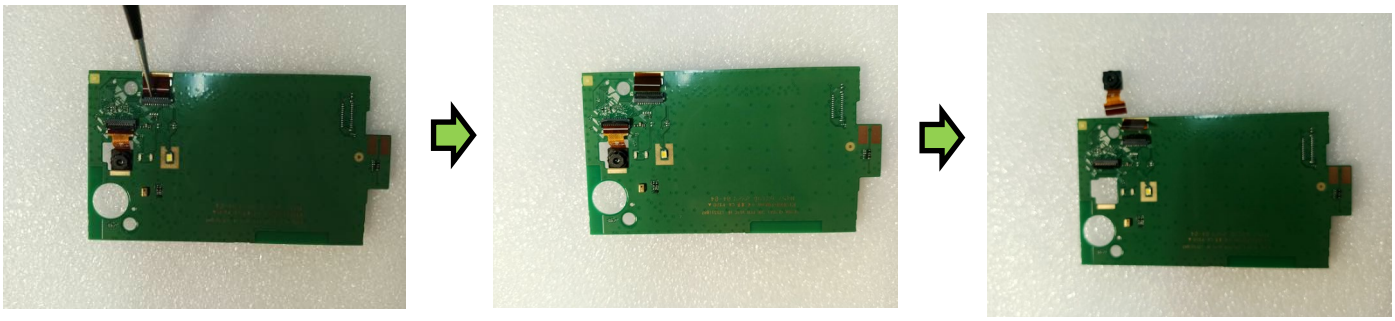
Not necessary unless the LCD Window needs to be replaced. Preheat (85℃) for about five minutes (hot air gun/heating table) and carefully remove the LCD Window with a hard plastic plectrum/card.

Remove screws (qty=4) on the Flap B by screwdriver.



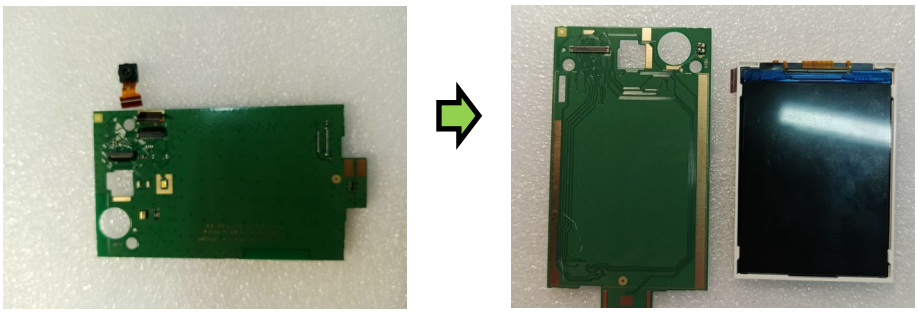
Carefully separate the Flap B along the edge with a hard plastic plate。

Disconnect LINK FPC.Remove ref Sub PCB from the Flap B by forceps.



Remove the back Camera from Flap B by using the forceps.

8.8 Remove the 2.8 LCD

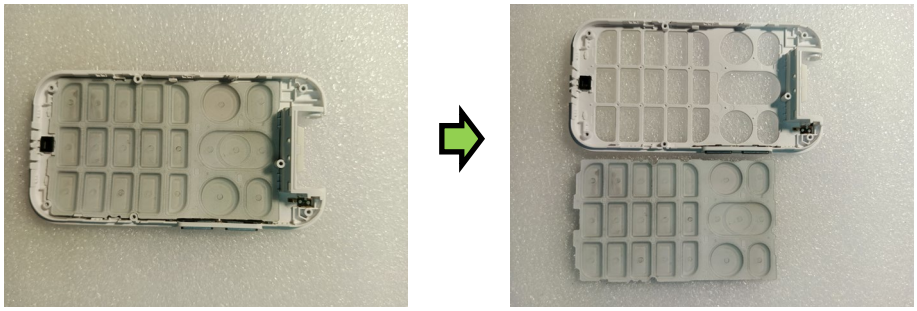


Remove 2.8 LCD from Sub PCB by using the forceps.

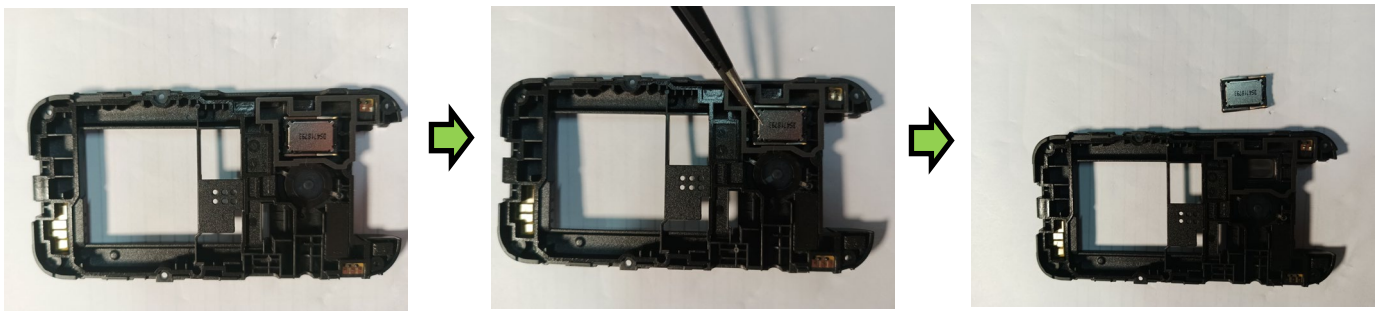
8.9 Remove the receiver and motor

Remove the motor and receive from the front housing by using the forceps. Remove the LINK FPC from the front housing.

8.10Remove the keypad and speaker



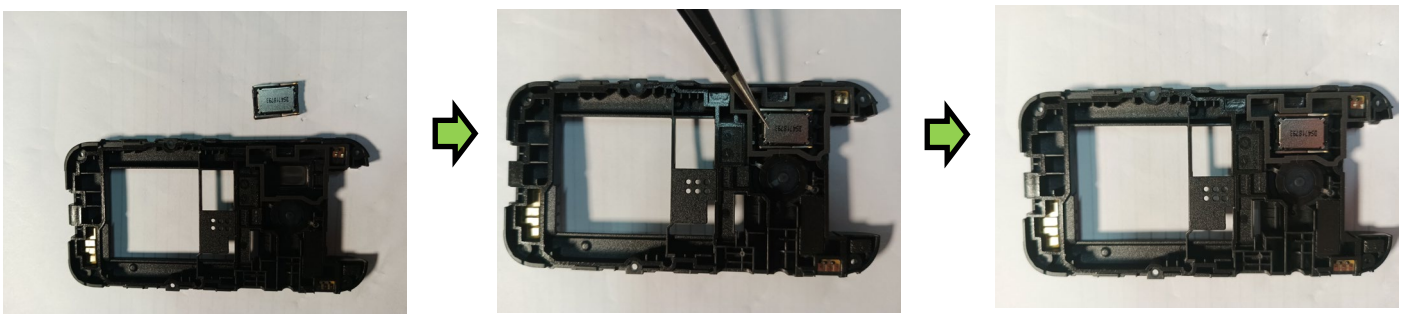
Remove Keypad from the front housing.



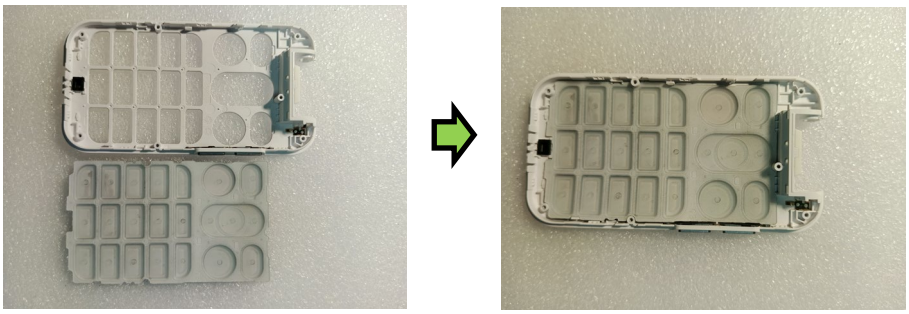
Remove Speaker from ref lower housing by forceps.

9 Assembling procedure

9.1 Assemble the keypad and speaker



Assemble the Speaker to the corresponding position in lower housing.

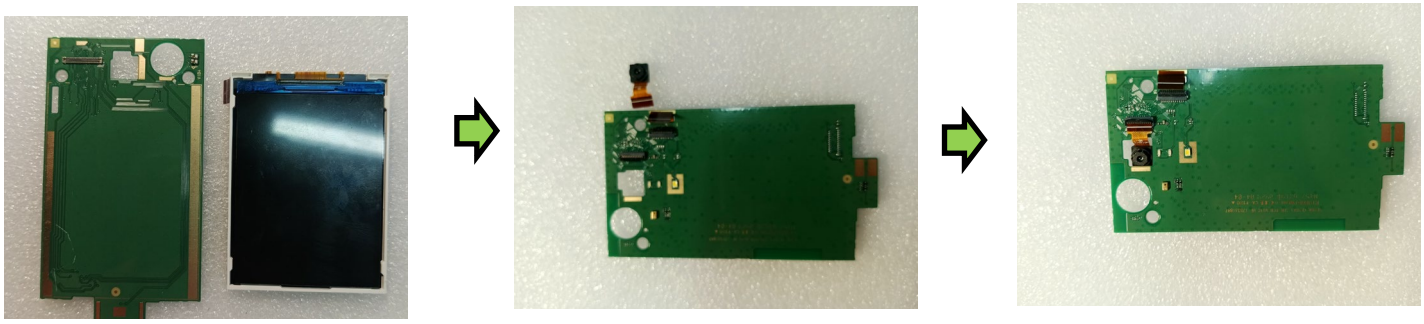


Assemble the keypad to the corresponding position in front housing.

9.2 Assemble the receiver and motor

Assemble the motor and receive from the front housing by using the forceps. Remove the LINK FPC in the front housing.

9.3 Assemble the LCD and back camera

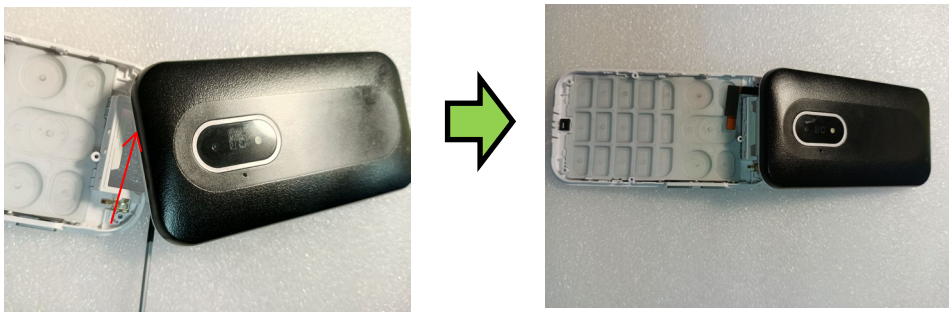


Assemble 2.8 LCD in Sub PCB by using the forceps. Assemble the back camera in the SUB PCB by using the forceps.

9.4 Assemble the B Assembly

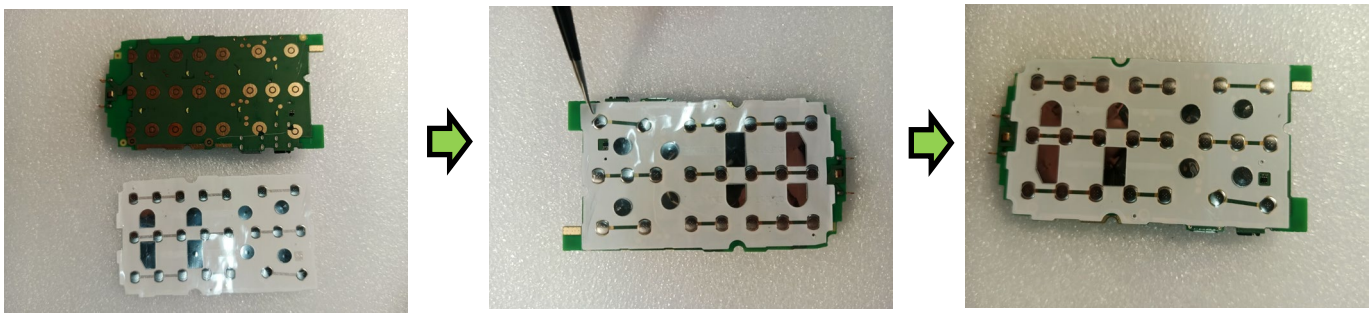
Assemble the SUB PCB to the front housing. Assemble the screws to the Flap B by screwdriver. Assemble the screen to the front housing.

9.5 Assemble components on the upper housing



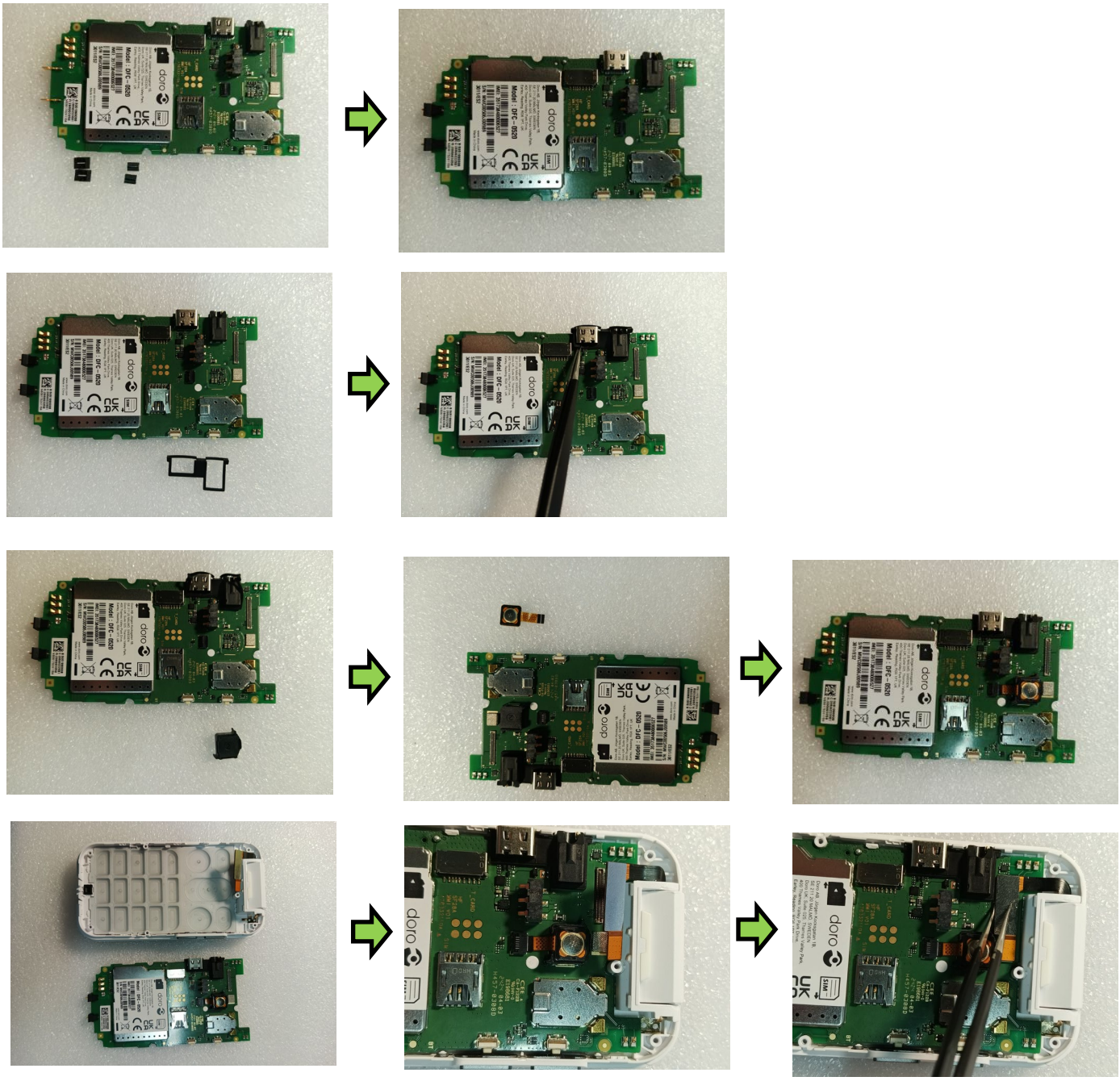
Assemble the Flap B from upper housing by using forceps to push in the special slot carefully.

9.6 Assemble the metal dome on PCBA



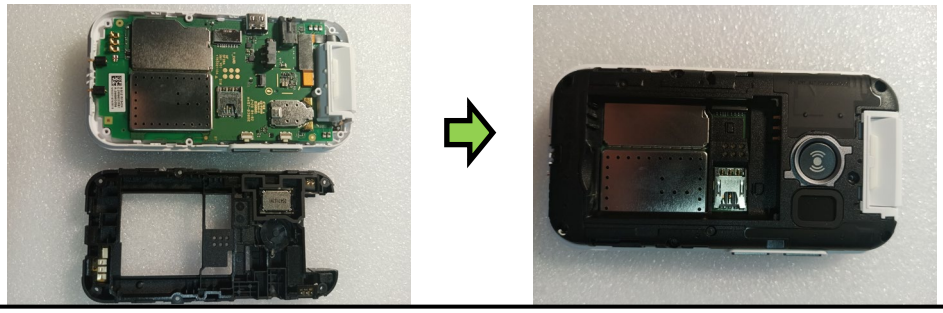
Assemble the metal dome to the corresponding position in PCBA.

9.7 Assemble the PCBA



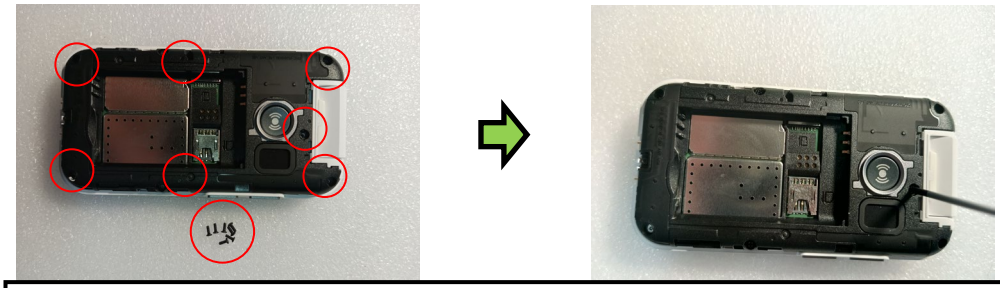
Assemble the charger spring clip cover, USB Rubber, MIC Rubber and SOS assembly from PCBA by forceps. Assemble the PCBA to the lower housing by using the forceps.

9.8 Assemble the lower housing assembly



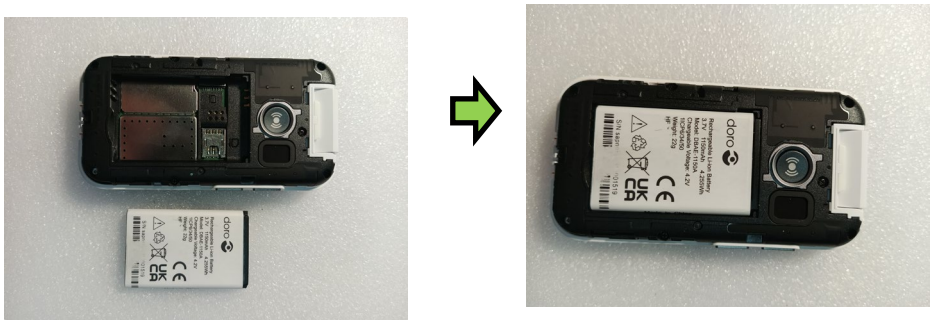
Assemble the lower housing to the corresponding position in upper housing.

9.9 Assemble the screw



Assemble the screws (qty=7) to the corresponding position by screwdriver carefully.

9.10Assemble the Battery



Assemble the Battery to the corresponding position.

9.11 Assemble the Battery cover

Assemble the Battery cover to the corresponding position.

10 Troubleshooting

Caution!

This section is for technicians and repair professionals only.

You can retrieve diagnostic information by running a failure analysis on the device. This process identifies faults and error codes that help determine the appropriate repair actions.

Enter ***#15963#** and select ”**Item test**” to test a specific function or component, then follow the on-screen instructions.

How to reboot and reset the device is described in the full manual.

11 Appendix

The full manual covers phone functions, settings, and instructions on how to update the software and firmware.

The manual is available at: https://www.doro.com/

Spare parts list, electronic board diagrams (spare parts location), wiring and connection diagrams, are available online at: https://www.doro.com/repair