



NÜVIFONE M20

Service Manual (L1&L2)



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1 Equipment Need

NO#	Equipment Description	Garmin ASUS Part#	Supplier	Quantity	Remarks
1	Computer	None	None	1	
2	Enabled SIM Card	None	None	1	
3	NÜVIFONE M20	80AM-S01500	Garmin Asus	1	
4	Battery	07G01679345	Garmin Asus	1	
5	USB download cable	14G000502010	Garmin Asus	1	
6	Screwdriver (T5)	None	None	1	
7	Tweezers	None	None	1	
8	Plastic Blade	None	None	1	
9	ESD Static Strap	None	None	1	
10	ADAPTER	04G267016301	Garmin Asus	1	

2 Introduction

2.1 About This Service Manual

Using this service manual and the suggestions contained in it assures proper installation, operation, and maintenance of the NÜVIFONE M20. This manual aids service personnel in testing and repairing NÜVIFONE M20. Service personnel should be familiar with electronic assembly, testing, and troubleshooting methods.

2.2 Overview

M20 is designed for the young generation who enjoys fun interaction and social connections.

The asymmetrical shape is emphasized by bright, youthful color. The main body is a simple black, with only matte finish texture for the hand to recognize navigation and keys.

All function keys are incorporated on the opposite side in a metallic strip in order not to interfere with the general image.



2.3 Product Specification

garmin asus



Dimension 95.3 x 52.5 x 12.8 mm

Color Black, Green, Red, Blue

Form factor Bar

Key Selling Points

Extremely small device with full function

Best navigation/UI experience- UI 2.0

Brilliant, cheery colors for the youths of today

Supported Applications

PIM

Address Parsing

Contacts

Word, Excel (editor),

Power Point (viewer),

Windows Live, MSN,

Push Email (Exchange Server)

Connected Services

Google Local Search

Ciao

UI 2.0 Call

UI 2.0 Search

UI2.0 View Map

UI 2.0 Media Gallery

UI 2.0 Music

Other

Networks	HSPA DL:7.2MbpsUL:2Mbps, UMTS 900/2100 or 850/1900 EDGE/GPRS/GSM 900/1800/1900, or EDGE/GPRS/GSM 850/1800/1900, Class 10
Operating System	Microsoft Windows® Mobile™ 6.1 Professional
CPU	Qualcomm T200A 528MHz
Memory	4GB or 8GB Storage +256MB Flash/ 288 MB SDRAM
Connectivity	WLAN 802.11b+g, USB v2.0, Bluetooth 2.0+EDR
GPS	Qualcomm GPSOne (AGPS supported)
Display	2.8", VGA 480 x 640, 65K, TFT with touch lens
Camera	3 Mega-Pixel, Auto Focus + VGA*
Others	Built-in Motion sensor
Battery	920mAh Lithium
Weight	99g
Standby Time	150-200 hours
Talk Time	3G: 2-3 hours / 2G: 4 -5 hours
Browser	HTTP / WAP 1.2.1/2.0
Messaging	SMS / MMS / Email / MSN / Push E-mail
Video	Video Playback: MPEG4/H.264/H.263/WMV @ 30fps VGA Video Recording: MPEG4/H.263 @ 24fps QVGA
Picture	JPEG / PNG / GIF / BMP
Audio	MP3 / WMA / 3GP / AAC / AAC+
Ringtone	MP3 / MIDI
JAVA	J2ME (CLDC 1.1 + MIDP2.0)

3 Disassembly / Assembly Procedure

3.1 Introduction

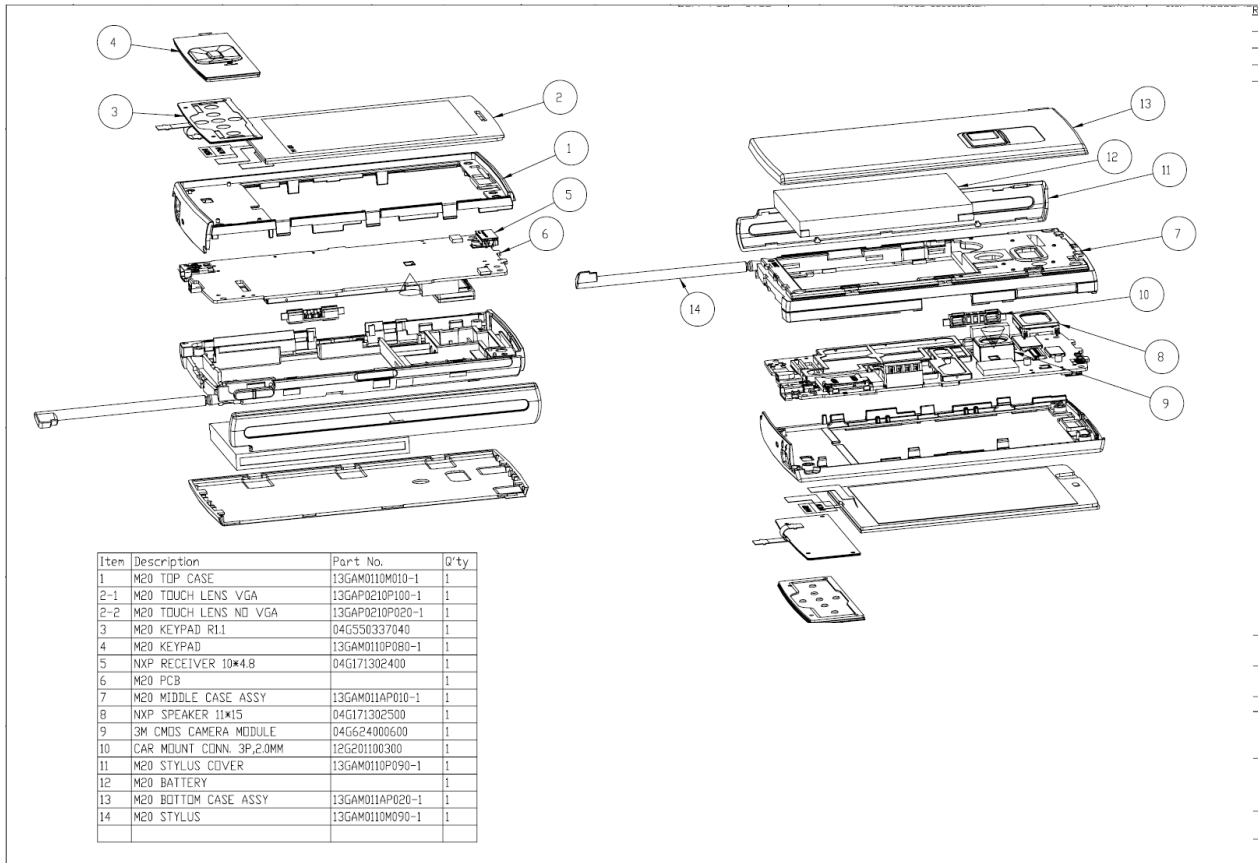
This section describes how to disassemble NÜVIFONE M20. Many of the electronic components used in this phone are vulnerable to damage due to static discharge. Ensure adequate static protection is in place when handling, shipping, and servicing any internal components.

3.1.1 Recommended Tools

- ☐ Torque Screw Driver (T5 type, torque is set to 1.2kg-cm)
- ☐ Tweezers
- ☐ Plastic blade
- ☐ ESD Static Strap



3.2 Exploded Diagram



(If this picture cannot be viewed clearly, please zoom in this page.)

3.3 Disassembly Procedure

The following set of diagrams will demonstrate the correct sequence and action to disassemble NÜVIFONE M20.

■ Step 1

Remove the stylus (PN: 13GAM0110M090-1).



■ Step 2

Push and remove the bottom case away (PN: 13GAM012AP010-1).



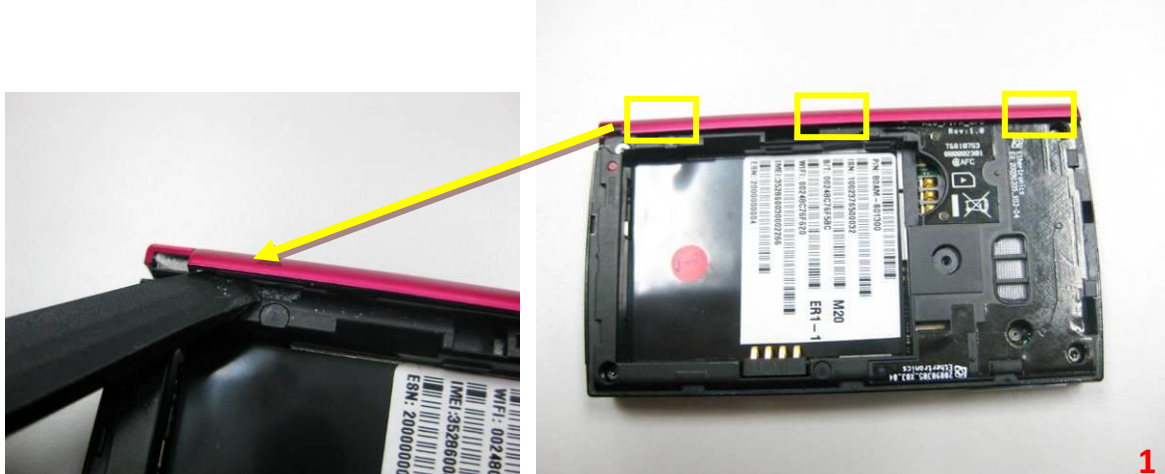
■ Step 3

Take away the battery (PN: 07G016793450).



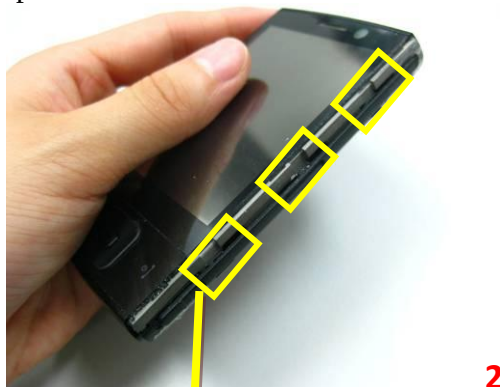
■ Step 4

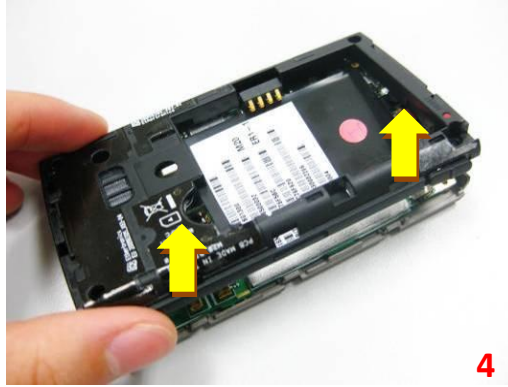
Pry the hooks on the stylus cover (PN: 13GAM0120P020-1) and remove it.



■ Step 5

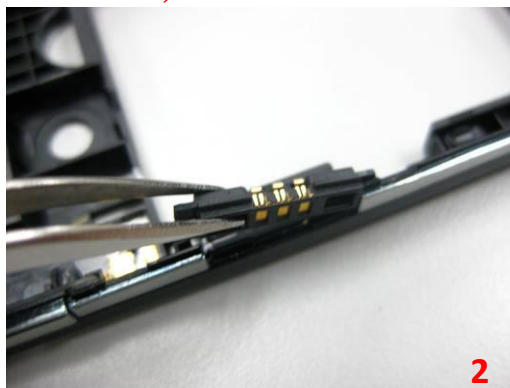
Remove 4 screws (PN: 13GMBK0K060B SCREW M1.6*6L X 3, T5Screw Driver; 13GMBK0K050W SCREW M1.6*5L X 1, T5 Screw Driver) on the middle case assy (13GAM011AP010-1). Pry the right side and the top side of the middle case assy to release it from the hooks by a plastic blade. Then separate the middle case from the module.





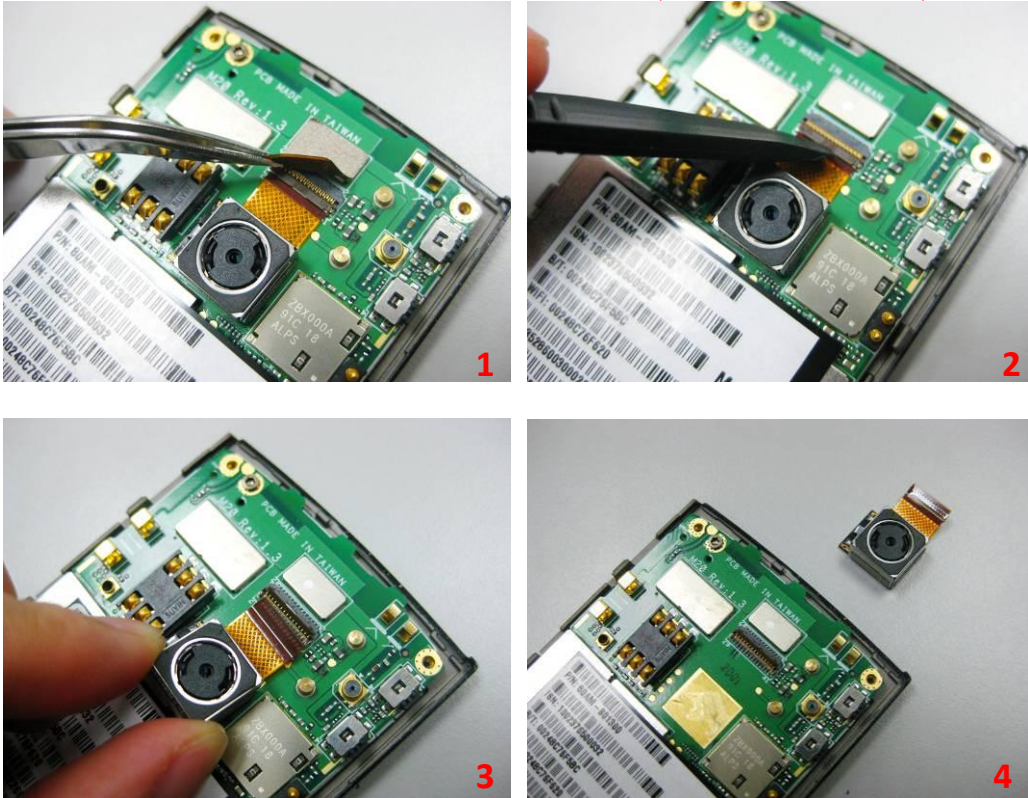
■ Step 6

Remove the speaker (PN: 04G171302500) in the middle case assy by a plastic blade. Then remove the car mount connector (PN: 12G201100300).



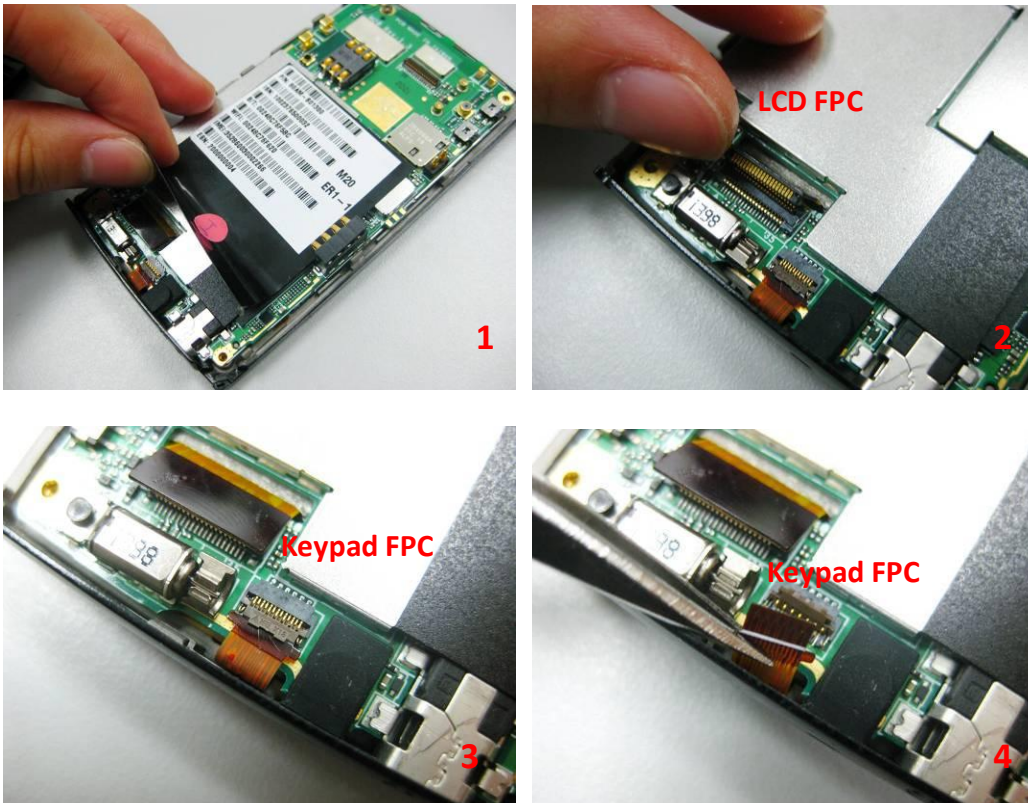
■ Step 7

Tear off the camera mylar (PN: 13GAM0110L040-1). Open the camera connector and disconnect the camera FPC. Then remove the camera module (PN: 04G624000600).



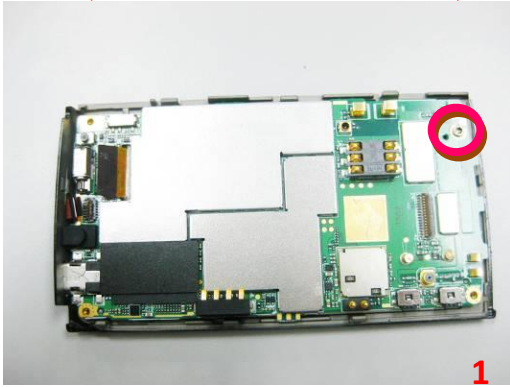
■ Step 8

Tear off the PCB mylar (PN: 13GAM0110L130-1). Disconnect the LCD FPC and the keypad FPC.



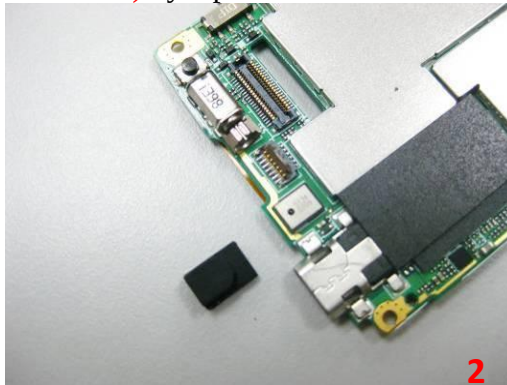
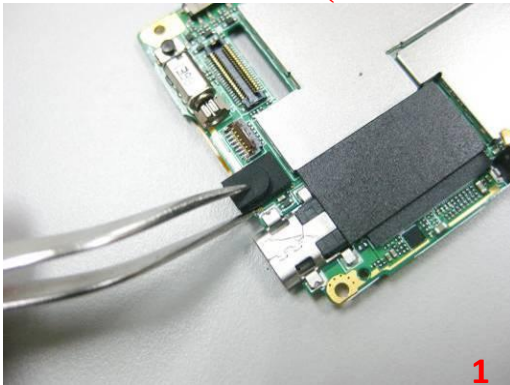
■ Step 9

Remove 1 screw (PN: 13GMBK0K030B-2 M1.6*3L X 1) on the main board. Remove the main board (PN: 60-AM01MB1000-B01) from the top case assy.



■ Step 10

Remove the MIC rubber (PN: 13GAM0110L120-1) by a pair of tweezers.



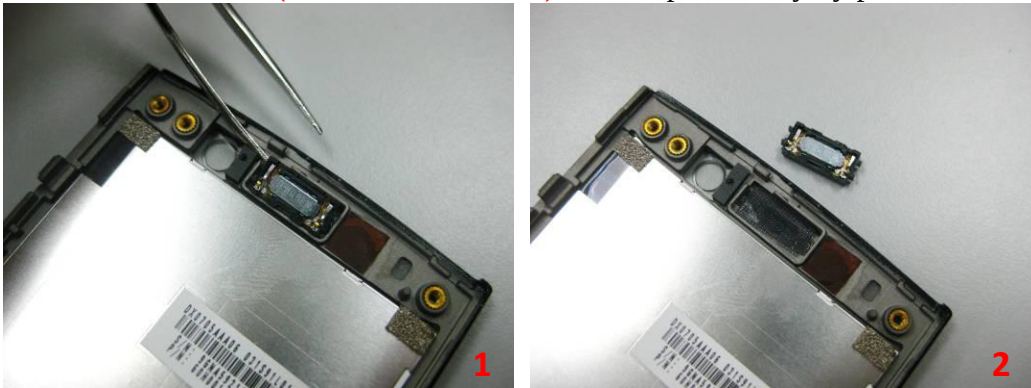
■ Step 11

Remove the EMMC spacer (PN: 13GAM0110L080-1).



■ Step 12

Remove the receiver (PN: 04G171302400) in the top case assy by pair of tweezers.



■ Step 13

Separate the LCD panel and touch panel (90R) from the top case.



Push the LCD panel here by order 1, 2, 3

Pay attention to the FPC here. Pls do not press it too hard. Fold it gently when push the panel.

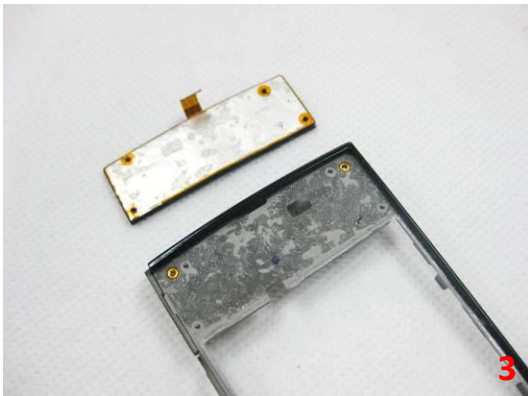


Top Case and LCD panel & touch panel separated



■ Step 14

Pry the keypad (90R) module by plastic blade and remove the keypad from the top case.

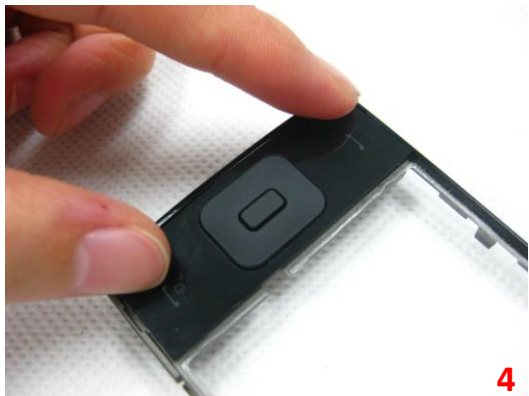
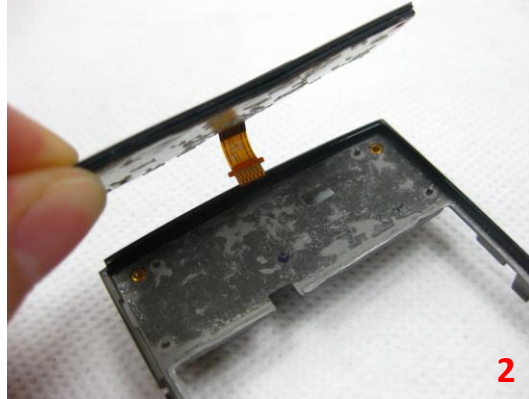
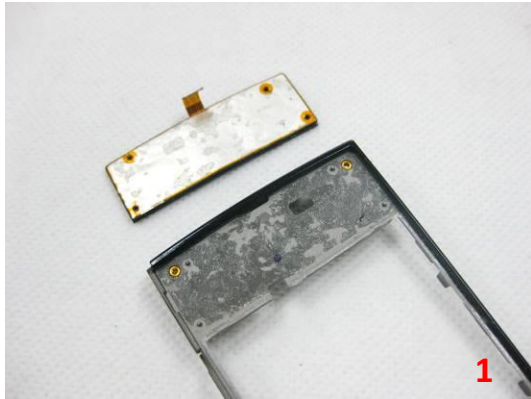


3.4 Assembly Procedure

Assembly is carried out in the exact reverse sequence as the disassembly.

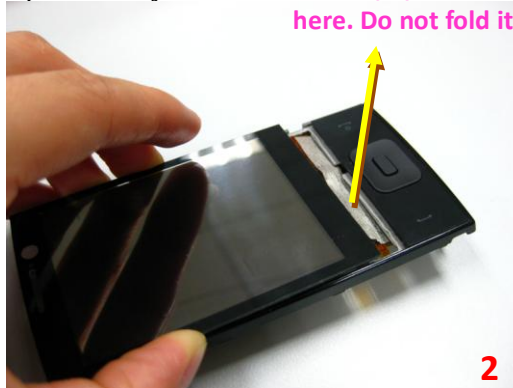
■ Step 1

Install the keypad module (90R, Adhesive should be on keypad FPC.) on the top case.

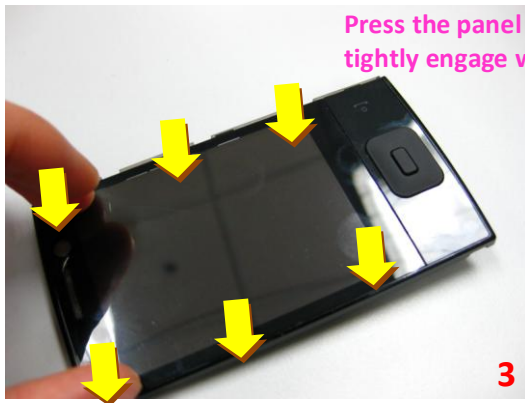


■ Step 2

Engage the LCD module (90R) with the top case assy.



Please pay attention to the FPC here. Do not fold it too hard.



■ Step 3

Install the receiver (PN: 04G171302400) in the top case.



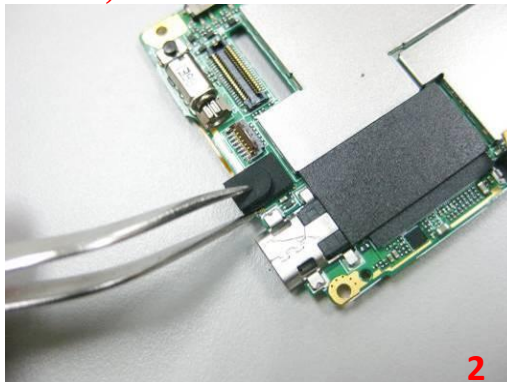
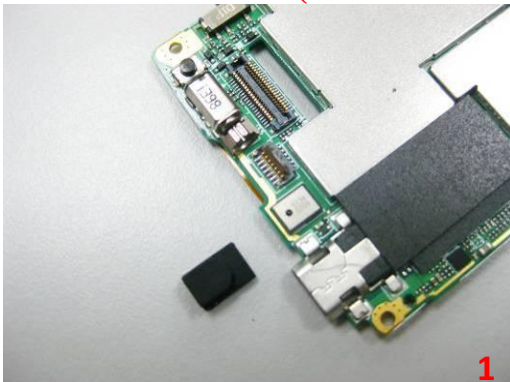
■ Step 4

Paste the EMMC spacer (PN: 13GAM0110L080-1).



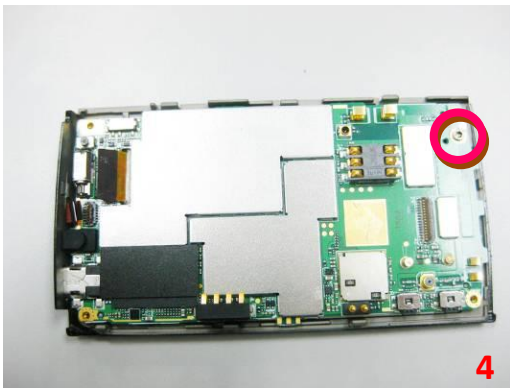
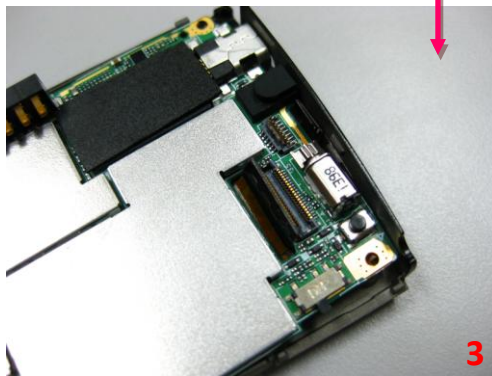
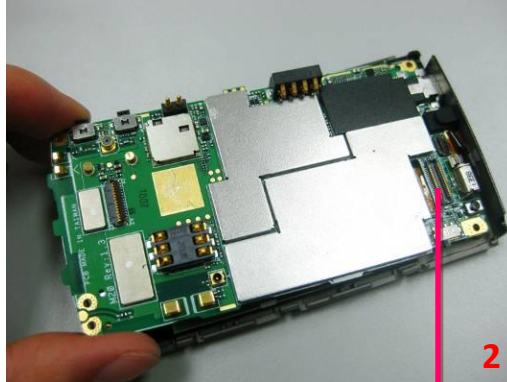
■ Step 5

Install the MIC rubber (PN: 13GAM0110L120-1) on the main board.



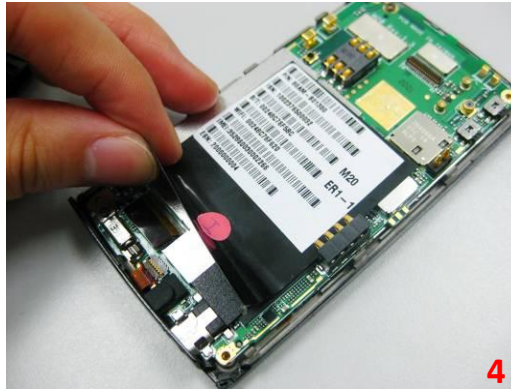
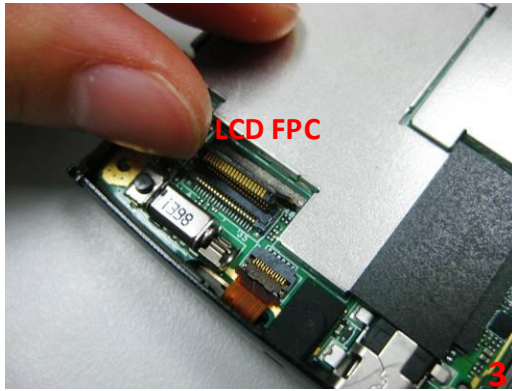
■ Step 6

Install the main board (PN: 60-AM01MB1000-B01) in the top case module. Pay attention to the LCD FPC, please thread the FPC as Fig3. from the main board. Secure 1 screw (PN: 13GMBK0K030B-2 M1.6*3L X 1) on the main board.

**■ Step 7**

Connect the keypad FPC and close its connector. Connect the LCD FPC with the main board. Then paste the PCB mylar (PN: 13GAM0110L130-1).





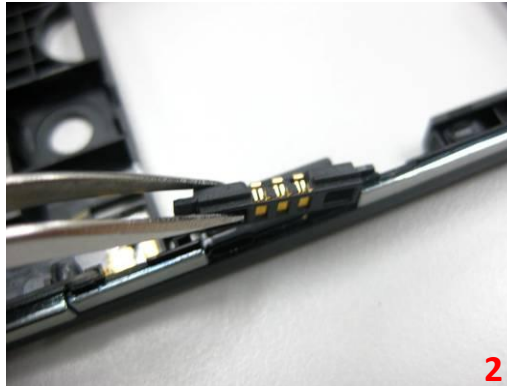
■ Step 8

Install the camera module (PN: 04G624000600) on the main board, close its connector. Paste the camera mylar (PN: 13GAM0110L040-1).

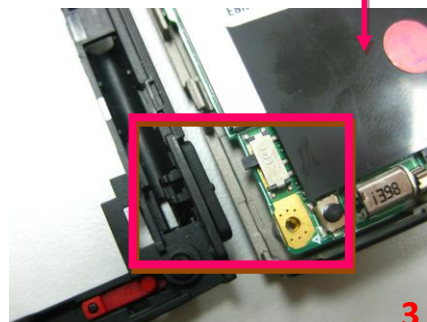


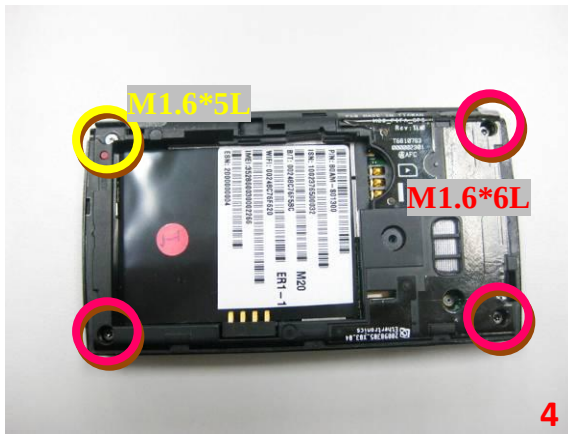
■ Step 9

Install the car mount connector (PN: 12G201100300). Then place the speaker (PN: 04G171302500) in the middle case assy.

**■ Step 10**

Install the middle case assy (PN: 13GAM011AP010-1) and press four side to fix it in the latches. Pay attention to the hold key as Fig3. on the main board and middle case. Please push them softly to the same direction. Secure 4 screws (PN: 13GMBK0K060B SCREW M1.6*6L X 3, T5Screw Driver; 13GMBK0K050W SCREW M1.6*5L X 1, T5 Screw Driver) on the middle case assy.





- Step 11
Install the stylus cover (PN: 13GAM0120P020-1).



- Step 12
Install the battery (PN: 07G016793450).



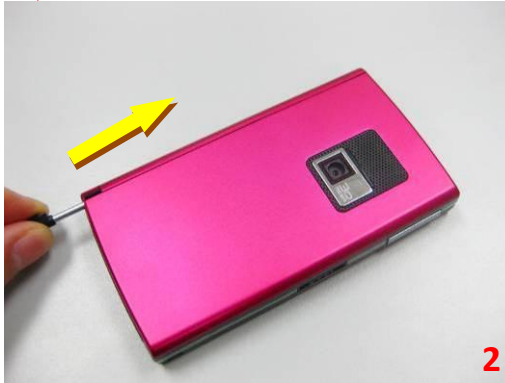
■ Step 13

Install the bottom case (PN: 13GAM012AP010-1).



■ Step 14

Insert the stylus (PN: 13GAM0110M090-1).



Notice: All parts numbers in the manual are just for reference. Please use the part numbers in order book to order the spare parts.

4 MMI Testing

1. Please install Microsoft ActiveSync on the test PC.



2. Insert the SIM card and USB cable to the M20 before boot.

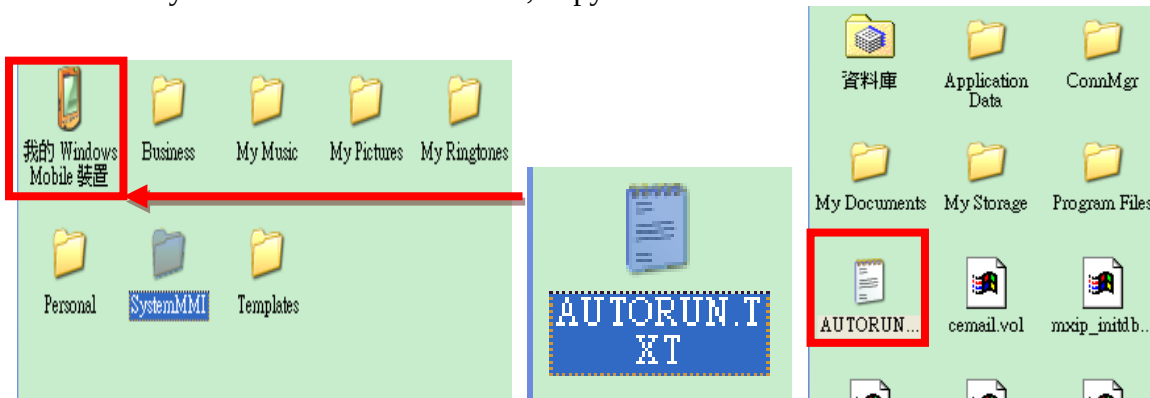


Insert the SIM Card here.

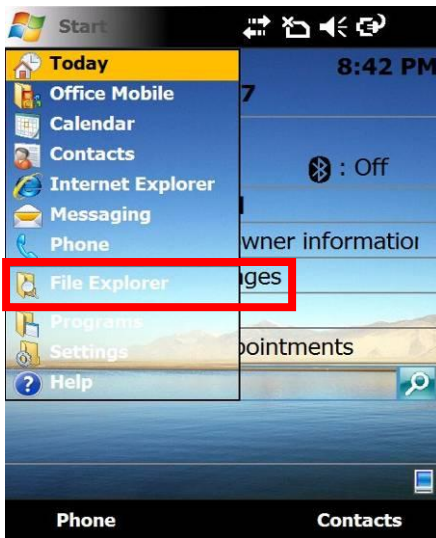
3. Copy the System MMI to the Mobile Device.



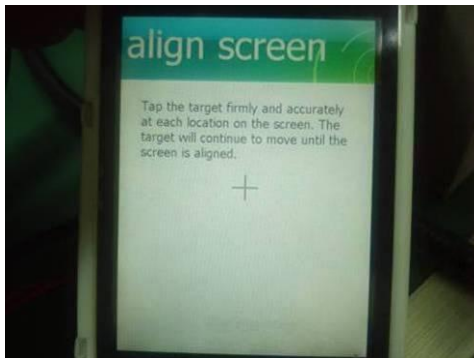
4. Enter "My Windows Mobile Device", copy the AUTORUN.TXT into it.



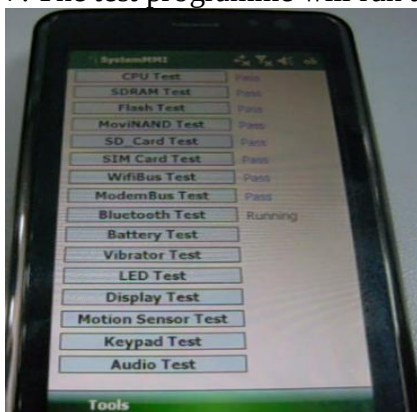
5. Click on the File Explorer and enter the My Documents, run the AUTORUN.exe in System MMI.



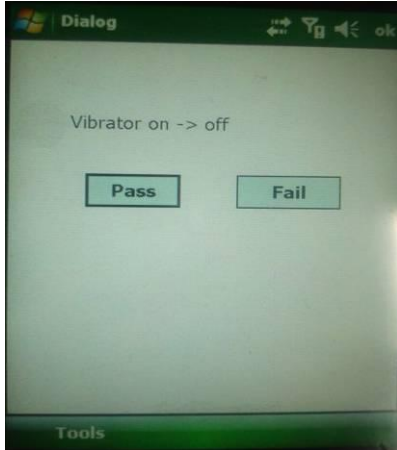
6. Align Screen appears and click on the + on the screen. “PASS” will appear if test ok, or “FAIL” showed.



7. The test programme will run automatically from “CPU Test” to “Bluetooth Test”.

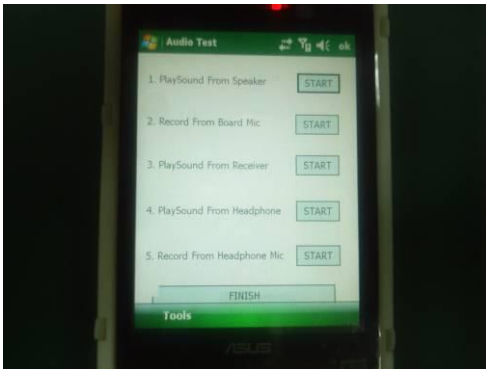


8. Vibrator Test: if device vibrates, test PASS, or FAIL.



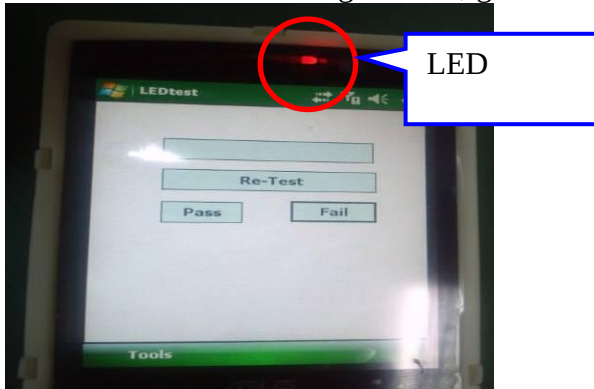
9. Audio Test:

- Check if the device sounds.
- Check if the MIC can record and play.
- Check if the receiver can sound.
- Insert the headphone, check if the headphone sounds
- Check if the headphone MIC can record and play. Test done and pull out the headphone.
Press "FINISH".

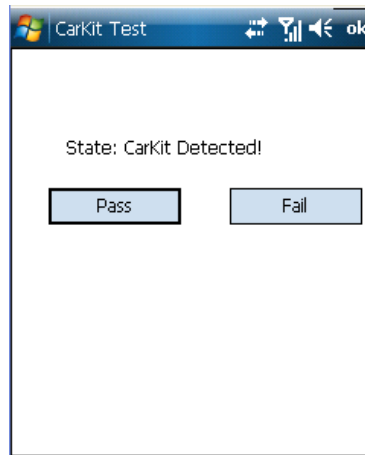


Notice: Please insert the headphone when do Step d and Step e. Then pull out the headphone after Step e finished.

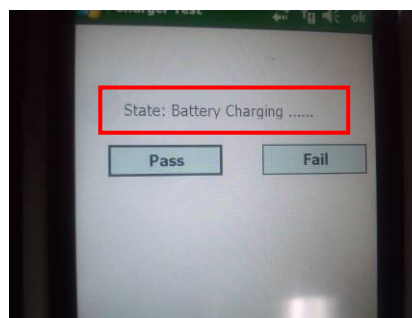
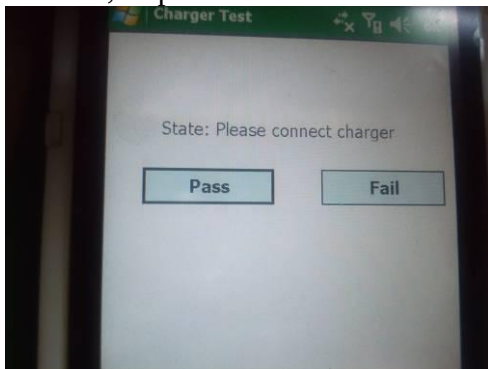
10. LED Test: LED will light in red, green and blue. Test ok to press "PASS", or "FAIL".



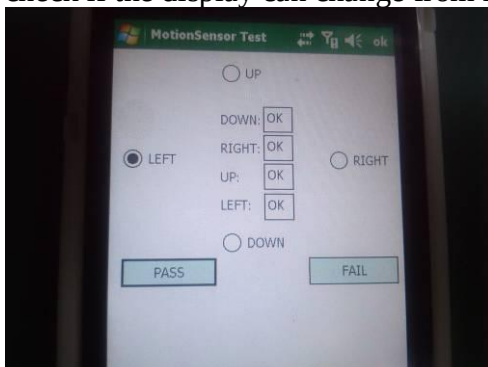
11. CarKit Test: Install the CarKit on the device and check if “CarKit Detected” displayed on the screen. If yes, press “PASS” or press “FAIL”.



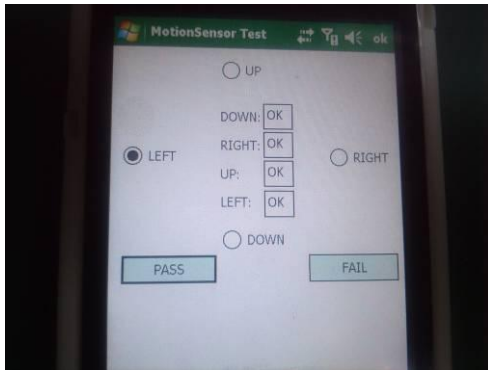
12. Charger Test: Insert the charger and check if “Battery Charging” displayed on the screen. Check if “Connect charger” was displayed on the screen after remove the charger. If yes, press “PASS”, or press “FAIL”.



13. Display Test: Check if the color of the screen would change and have no dot defect. Then check if the display can change from light to dark. If ok press “PASS” or press “FAIL”.



14. Motion Sensor Test: Please turn the device to the four directions: up/down/left/right. The test column will show the test results. If ok press “PASS” or press “FAIL”.



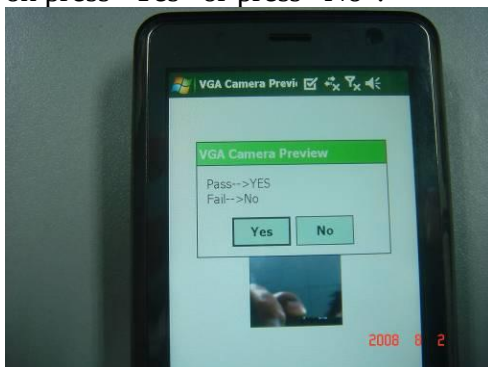
15. Keypad Test: Check if the keypad read right or not and the LED is light or not. If ok press “YES” or press “No”.



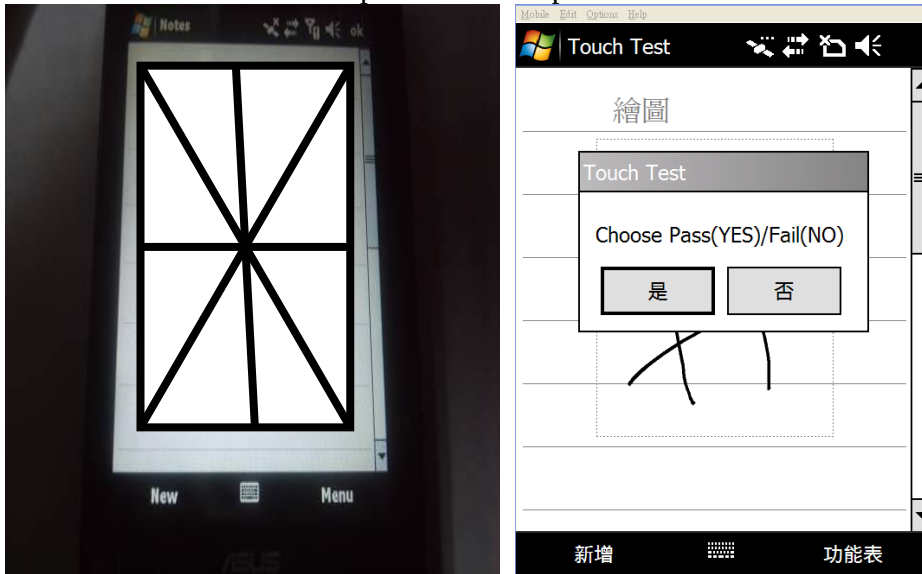
16. Camera Test: Check if the camera can take the photos and the color is ok or not. If ok press “Yes” or press “No”.



17. VGA Camera Test: Check if the VGA camera can take the photos and the color is ok or not. If ok press “Yes” or press “No”.



18. Touch Screen Test: Please draw 米 and 口 on the touch screen. Check if the lines show ok and do not be broken. If ok press “Yes” or press “No”.



19. All test programs should be tested ok and then USB cable can be removed. Then device can be shut down.