SIEMENS mobile

Service Repair Documentation
Level 0-2 CFX 65

Release	Date	Department	Notes to change
1.0	25.11.2004	ICM MP CCQ GRM T	New document
1.1	24.01.2005	COM MD CC GRM T	Unlock sequence added Explode drawing modified

Introduction

This service repair documentation is intended to carry out repairs on Siemens repair level 0-2. The described failures shall be repaired in Siemens authorized local workshops only.

All repairs have to be carried out in an ESD protected environment and with ESD protected equipment/ tools. For all activities the international ESD regulations have to be considered.

Assembling/ disassembling has to be done according to the latest CFX65 Level 2 repair documentation. It has to be ensured that each repaired mobile phone is checked according to the latest released General Test Instruction document (both documents are available in the Technical Support section of the C-market).

If you have any questions regarding the repair procedures or technical questions do not hesitate to contact our technical support team in Kamp-Lintfort, Germany.

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Table of content

1. General information

1.1 Mobile features

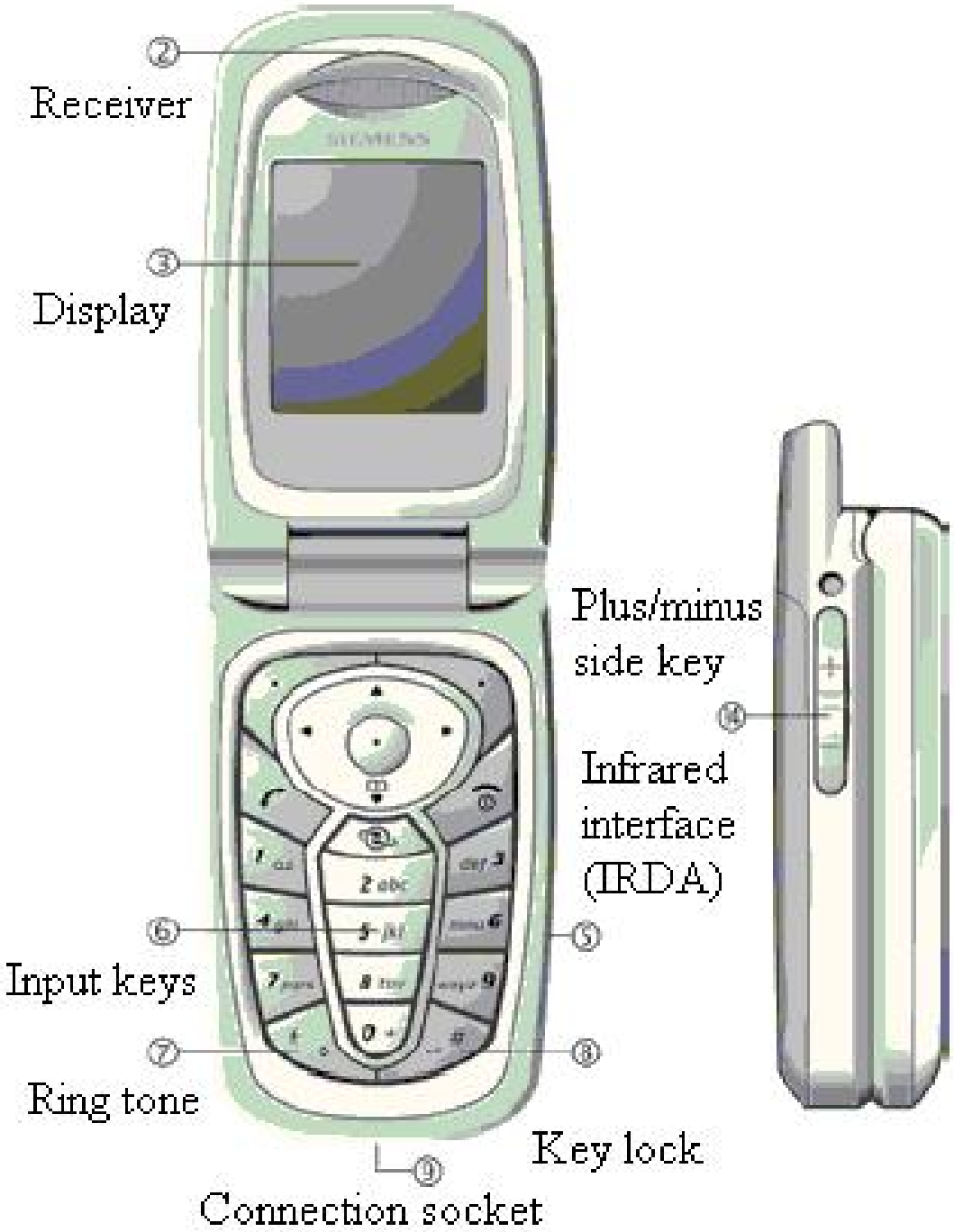
ITEM	Specification
Frequency bands:	Dual Band EGSM 900(33dBm:class 4)/ 1800(30dBm:class 1)
Screen:	Main:128x160 pixels; Sub:96x64 pixels
Battery:	Lithium Ion , 3.7V 600mAh
Weight	88 g
Size	97x48x23 mm
Talk time	200~300 minutes
Standby time	200~410 hours
Color	65K 1.8” CSTN / 96x64 Mono MSTN
Antenna	Integrated dual band antenna
Ring tones	40 polyphonic
Game	Java game
EMS/MMS	support
Languages	English/ Latin/ Chinese/ German
Charging time	Maximum charge time for an empty battery (0-5% capacity) is 3.0 hours for standard - and travel charger.
SIM card	3V
Hinge	Opening angle is 150 degrees
Temperature ranges	-10°C to +55°C for operation -40°C to +85°C for storage
SAR	1.0 w/kg
ESD	15kV
GPRS	Class 10
WAP	WAP 2.0
IrDA	115.2 kbits/sec
Memory	4M for download
Camera	VGA CMOS type/ digital zoom/ self timer

	External flash light support

1.2 Accessories

Basic	Li-ION Battery (600mAh)	EBA-630
	Travel Charger (100~240V)	ETC-500 (Euro) ETC-510 (UK)
Basic Car Pack	Allows hands-free talking and simultaneous charging of CFX65	HKB500
Car Charger	Charger for the cigarette lighter socket	EEC-500
Car Kit Portable	Handsfree kit with integrated loudspeaker and microphone and auto-answer feature. Includes charging of CFX 65	HKP-500
Headset PTT	It includes a PTT button in the microphone to handle calls	HHS-510

1.3 Venus visual parts list




Integrated antenna
Loudspeaker
Sub.
Lens
Flash
Light
Camera
Light
Microphone

2. Test equipment

2.1 Tool list

Level 0 / Level1 / Level 2:

1.) Test SIM
2.) Torque screwdriver
3.) Pair of tweezers
4.) Equipment defined in GRT specifications

2.2 Software download equipment

1.) Bootadapter 2000/ 2002 with accessories
2.) Flash Tool
3.) SW file (CFX65_vx.xxx for Service Tool.zip)
4.) PC with Microsoft Windows NT, 2000 or XP

2.3 Service tool

Please refer to document *CFX 65 Service Tool* for download of software, mapping file, customization and FFS (up- and download).

3. Water indicator

On the PCB, beside the SIM reader, is a water indicator sticked on.

This indicator becomes completely red if it is exposed to liquid.
A phone with a red water indicator is out of warranty and a repair is charged to the customer.

4. Repair definition

Level 0: Phone is NOT disassembled. SW update, exchange of accessories, battery and battery cover.
Level 1: Change of non-soldered components, e.g. parts of housing, antenna, keys or keypads.
Level 2: Change of complete boards, no adjustment necessary

Repair equipment compliance requirements:

Level 0: The device must support a SW update and configuration functionality via the SIEMENS bootadapter.

Level 2: No special equipment is required for this level. The SIEMENS service process is using a standard GSM system tester and a coupler board for a GoNoGo test.

L0: Phone is NOT disassembled.

Item	Description	Chapter
1	Battery	5
2	Battery cover	5
3	SW update	5

L1 : Change of non-soldered components

Item	Description	Chapter
1	LCM/B	6
2	Camera module	6
3	Top_lower cover/ top_upper cover	6
4	Bottom_lower case and keypad	6
5	Keypad and dome	6
6	Antenna/ vibrator/ microphone	6
7	Speaker	6

L2 : Change of complete boards, no adjustment necessary.
PCB module

Item	Description	Chapter
1	PCB	7

5. Level 0 trouble shooting guide

1. Battery

If the phone can`t be powered on, check the battery first.

1.1 Make sure it is a SIEMENS brand battery.

1.2 If the battery is dead, replace the battery (the battery voltage should be in 3.2~4.2 V).

1.3 Clean the battery connector if any dirt on it, such as oxide.

(Also the battery connector in the phone should be cleaned)

1.4 The standby current is <2.5mA

1. Remove battery cover	2. Remove battery	3. Battery pack
		

2. Battery cover

Remove the bad cover and install a new one. Check the gap which should be less than 0.2mm.

1. Remove battery cover	2. Battery cover
	

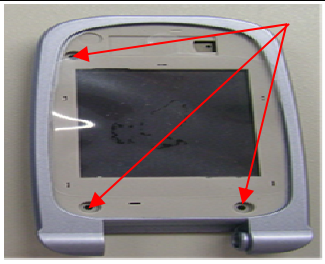
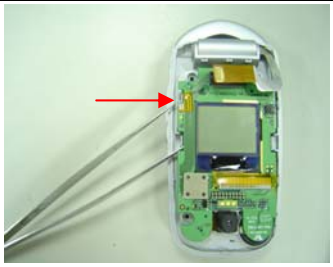
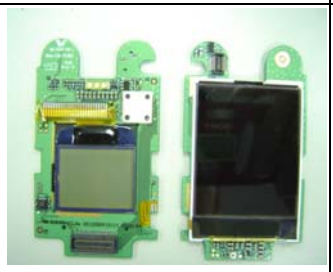
4. Charging voltage, power consumption :

TW09			
Item	Idle mode		Unit
	GSM900	GSM1800	
Current consumption	15.42	15.24	mA
Battery life time	39	39	Hours
TW09			
Item	Talk mode		Unit
	GSM900	GSM1800	
Current consumption	282.08	257.91	mA
Battery life time	127	139	Minutes
Siemens best case			
Item	Idle mode		Unit
	GSM900	GSM1800	
Current consumption	13.60	13.66	mA
Battery life time	44	44	Hours
Siemens best case			
Item	Talk mode		Unit
	GSM900	GSM1800	
Current consumption	105.82	107.8	mA
Battery life time	340	336	Minutes
Siemens worst case			
Item	Idle mode		Unit
	GSM900	GSM1800	
Current consumption	24.96	25.08	mA
Battery life time	24	24	Hours
Siemens worst case			
Item	Talk mode		Unit
	GSM900	GSM1800	
Current consumption	298.75	275.50	mA
Battery life time	120	130	Minutes

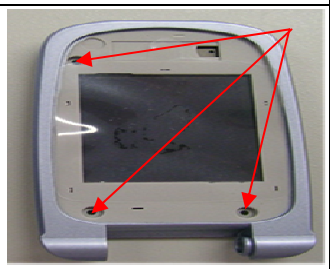
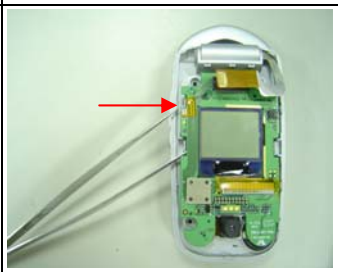
Travel charger: 5V, 620mA **Standard charger: 5V, 400mA**

6. Level 1 trouble shooting guide

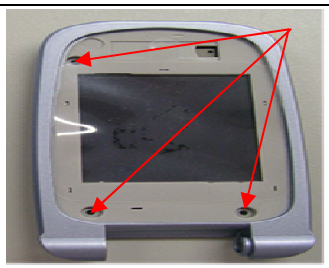
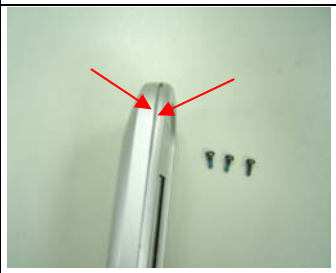
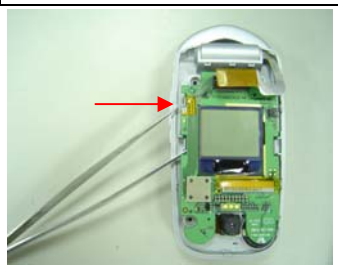
1. LCM

1. Pry the lens slowly and carefully	2. Remove the 3 screws	3. Pry the LCM off upper case with a pair of tweezers
		
4. Remove LCM/B.	5. Install a new LCM/B.	6. Do the function test
		Refer to section 10 “Test mode”

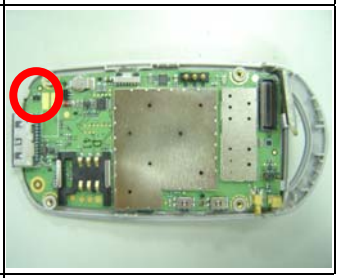
2. Camera module

1. Pry the lens slowly and carefully	2. Remove the 3 screws	3. Pry the LCM off upper case with a pair of tweezers
		
4. Remove LCM/B	5. Replace camera module	
		

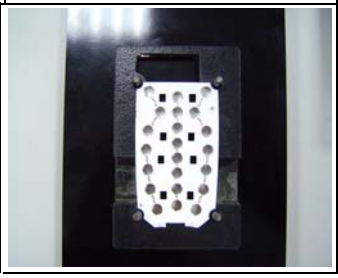
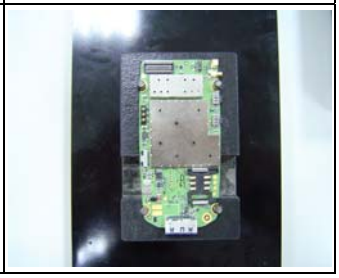
3. Top_lower cover / Top_upper cover

1. Pry the lens slowly and carefully	2. Remove the 3 screws	3. Separate top_upper cover & top_lower cover
		
4. Remove top_upper cover	5. Remove LCM/B	6. Press spring bolt in the hinge
		
7. Separate top_lower case from hinge slowly	8. Install a new top_lower case	
		

4. Bottom_lower case and keypad

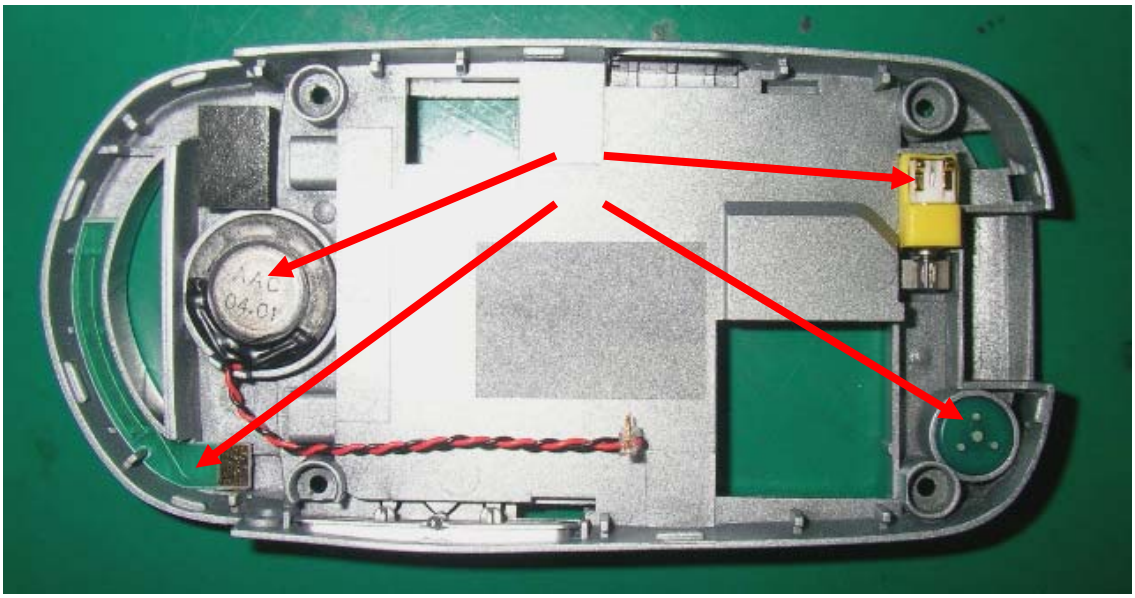
1. Remove battery cover	2. Remove battery	3. Remove 4 screws
		
4. Separate bottom_upper cover & bottom_lower cover carefully		5. Separate PCBA & bottom_upper cover
		
6. Remove PCBA	7. Separate keypad & bottom_upper cover	
		

5. Keypad dome (with fixture)

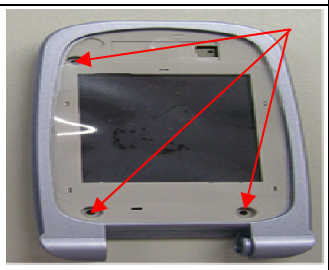
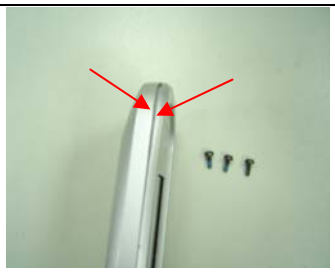
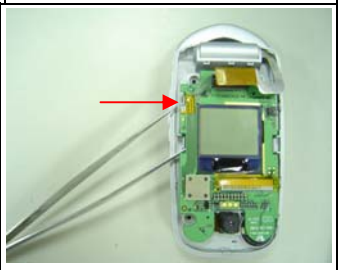
1. Dome fixture	2. Put the metal dome sticker on the fixture	3. Put the PCBA on it
		

6. Antenna, speaker, vibrator and microphone

Use a pair of tweezers to remove the certain part.

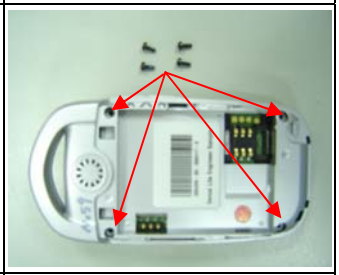
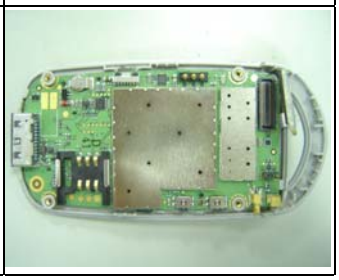


7. Speaker

1. Pry the lens slowly and carefully	2. Remove the 3 screws	3. Separate top_upper cover & top_lower cover
		
4. Remove top_upper cover	5. Remove LCM/B	6. Change speaker
		

7. Level 2 trouble shooting guide

1. PCBA

1. Remove battery cover	2. Remove battery	3. Remove 4 screws
		
4. Separate bottom_upper cover & bottom_lower cover carefully		5. Separate PCBA & bottom_upper cover
		
6. Install a new PCBA		
		

2. IMEI ranges:

Linkou: **353934-00-000001 to 353934-00-999999**

Guanzhou: **353935-00-000001 to 353935-00-999999**

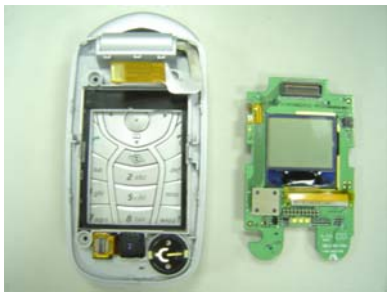
SSMC: **354457-00-000001 to 354457-00-999999**

8. Disassembly

Note: ESD concept; the internal circuits will be more susceptible to ESD during the housing exchange. The construction of the internal block is designed, in the best possible way, to protect the circuit against sparks.
The keypad must be completely closed to prevent any occurrence of an ESD disruptive discharge.

It is a requirement for the service personnel to observe ESD protection rules while performing service on the CFX65.

<table>
<tr><td> 
Front view of the CFX 65</td><td> 
Back View of the CFX 65</td></tr>
<tr><td>Step 1
Remove the battery and cover
  </td><td>Step 2
Pry the lens and remove it
  </td></tr>
</table>

Step 3 Remove 3 screws and pry the upper case to open   	**Step 4** Remove the upper cover and remove the LCM   

Step 5 Press the spring bolt in the hinge and remove upper case  	**Step 6** Separate upper and lower case  

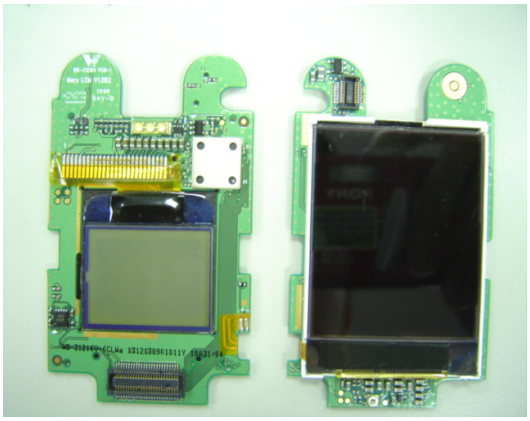
Step 7

Pry to open the cover

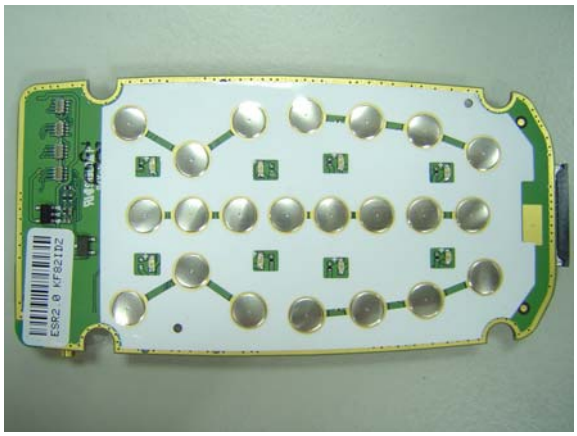
Step 8

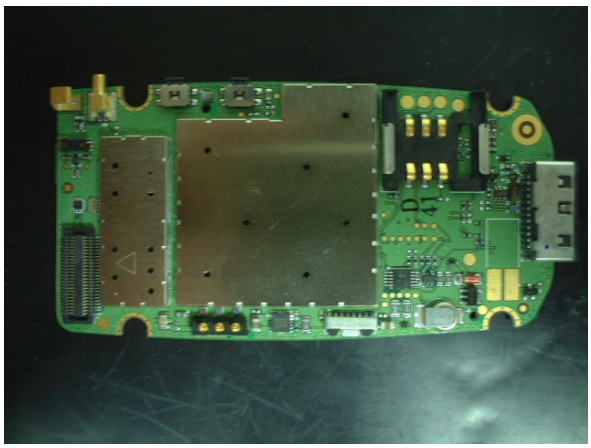
Separate PCBA from the back cover and remove the keypad

Step 9 LCM

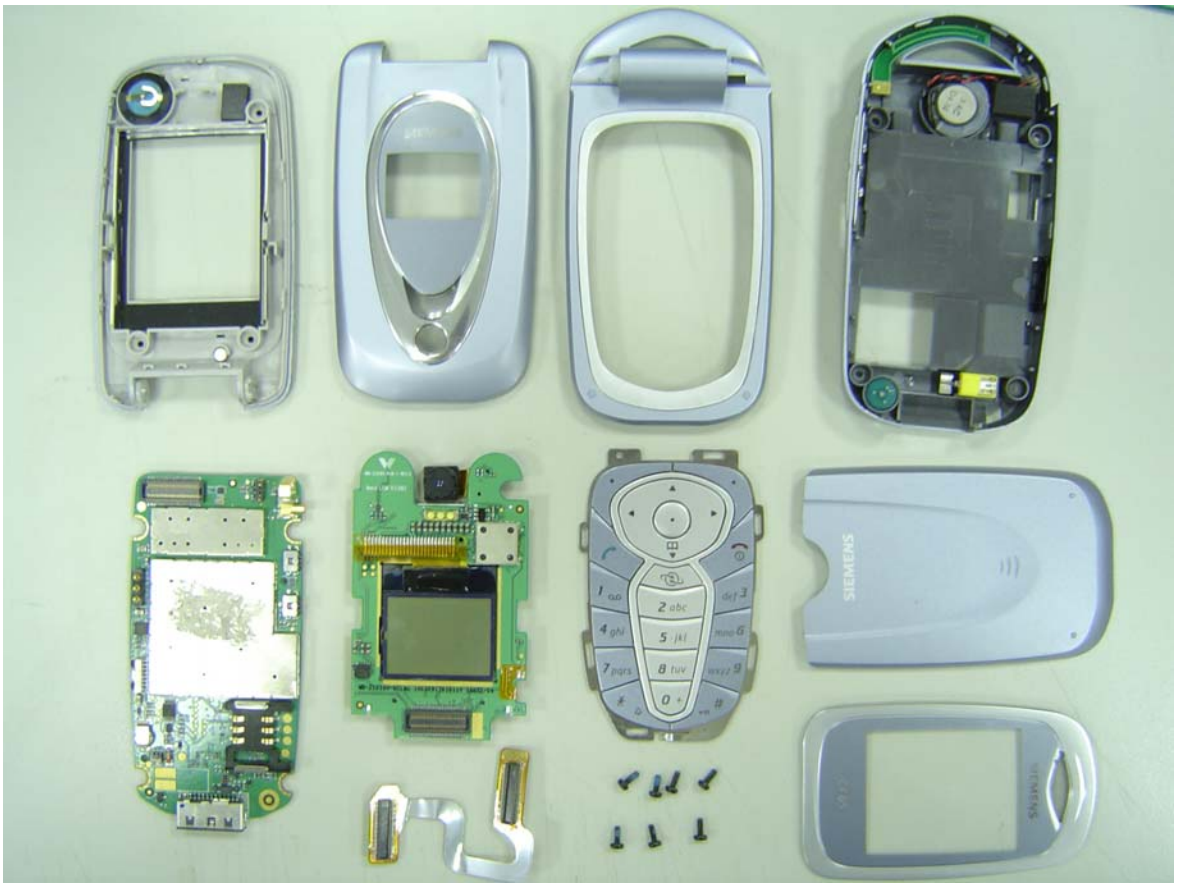


Step 10 PCBA –A



	PCBA -B 

Disassembled CFX 65



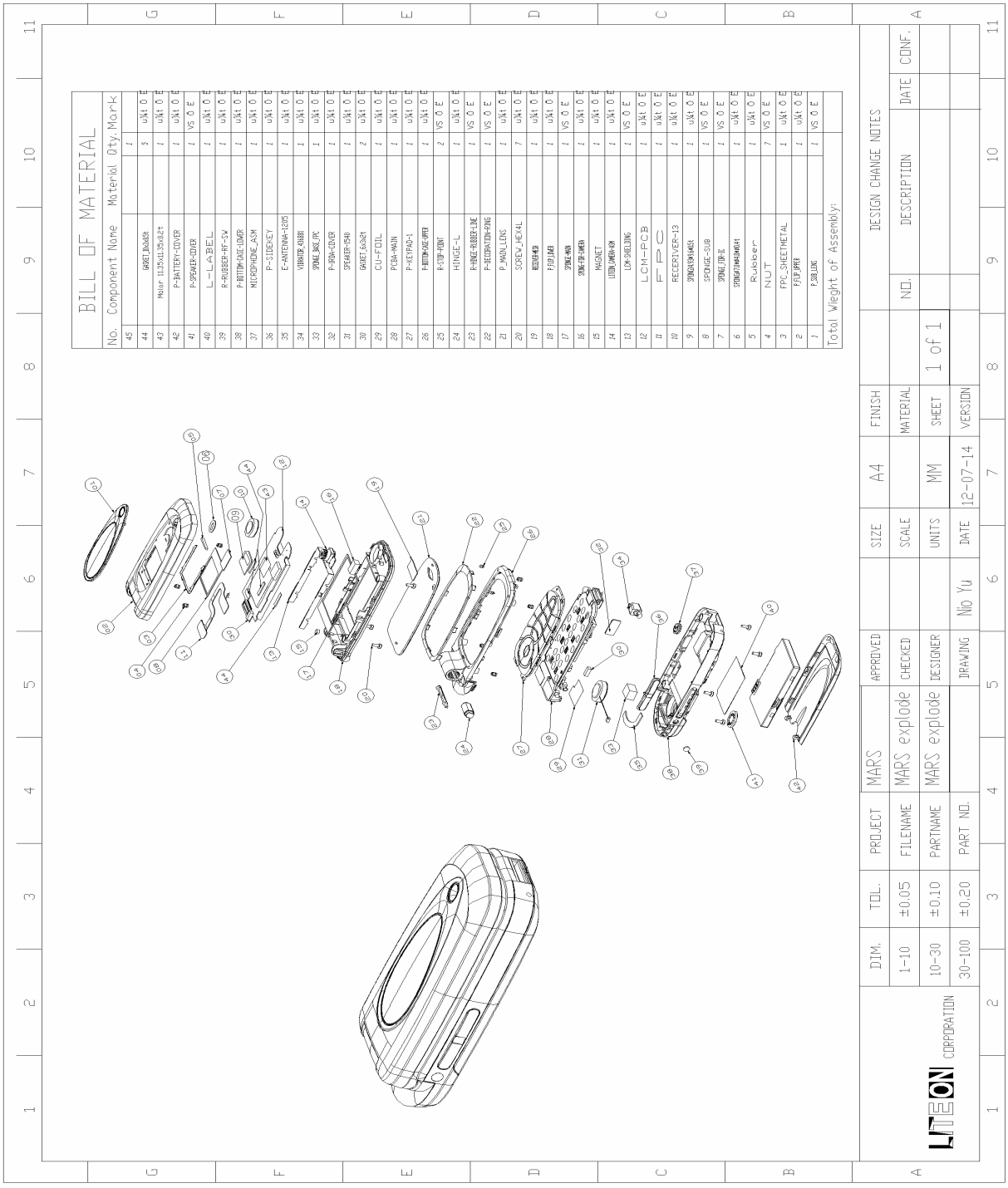
9. Reassembly

Step 1 Put the B to B Connector on to the lower case and press the hinge. Assemble the upper case with lower case.  	**Step 2** Put the keypad on the lower case, then put the PCBA on the lower case . Connect the B to B board to the PCBA.  

Step 3 Put the lower case and upper case together and connect the speaker connector to the PCBA 	**Step 4** Insert and tighten the 4 screws (11 ± 2 cNm) 
Step 5 Connect the Camera to the LCM 	**Step 6** Put the LCM on the upper case and connect the B to B connector to LCM 

Step 7 Put the upper case to lower case 	**Step 8** Insert and tighten the 3 screws (11 ±2 cNm) 

10. Explode drawing



11. Test mode

How to enter the test mode:

1. Type ***#06#***
2. Press ***More*** three times
3. Scroll to desired test option with the up/ down arrow buttons
4. Press ***OK*** to enter test option

12. Unlock sequence

The unlock sequence is: ***#2211*xxxxxxxx#**

Remark:
The unlock sequence only works if the phone is locked.
An invalid phone code has to be entered until the phone is locked, if the sequence above does not work at the first attempt.

In future SW releases also the standard Siemens sequence (*#0003#) will be supported.