SIEMENS mobile

MC60

Level 2.5

Repair Documentation

V 1.0

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1 Introduction

MC60 product is a tripleband (GSM900, GSM1800 and GSM1900) handset which a internal CIF Camera.

Partnumber on IMEI label:

MC60: S30880-S5760-#xxx

, while # may be any letter (A-Z) and xxx may be any number from 100, 101, 102....

This manual is intended to help you carry out repairs on level 2.5, meaning limited component repairs. The documented failure highlights should be repaired in the local workshops.

All repairs have to be carried out in an environment set up according to the ESD (Electrostatic Discharge Sensitive Devices) regulations defined in international standards.

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

Tel.: +49 2842 95 4666
Fax: +49 2842 95 4302
e-mail: st-support@klf.siemens.de

2 I/O Connector (Slim Lumberg)

2.1 Affected Units

2.1.1 Type: MC60

2.1.2 Affected IMEIs / Date Codes: All / All

2.1.3 Affected SW Versions: All

2.2 Fault Description

2.2.1 Fault Symptoms for customers:

- Charging problems.
- Problems with external loudspeaker or microphone when using a car kit.
- Problems with accessories connected at the I/O - connector.
- Problems with SW booting

2.2.2 Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM-Tester

2.3 Repair Documentation:

2.3.1 Description of procedure:

2.3.1.1 Diagnosis:

Visually check the bottom connector. Watch for dry joints:

2.3.1.2 Repair by component change:

Use hot air blower remove defective I/O connector.
Avoid excessive heat!
Watch surrounding components!

Resolder new I/O connector afterwards.

2.3.1.3 Repair by Software booting:

Not possible!

2.3.1.4 Test:

Retest handset after repair.

2.3.2 List of needed material:

2.3.2.1 Components:

I/O Connector MC60
Part-Number: L36334-Z93-C303

2.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

2.3.2.3 Special tools:

None

2.3.2.4 Working materials

Desolder Wick / Braid
Solder

2.3.3 Drawings

Figure 1: MC60 board I/O connector

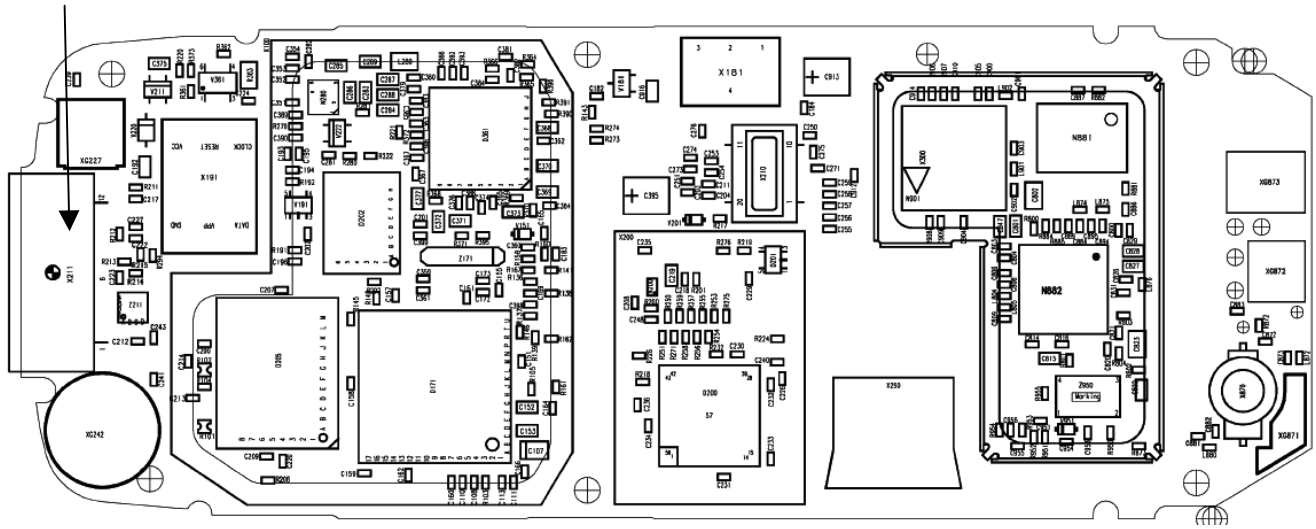


Figure 2: MC60 I/O connector placement (top view)

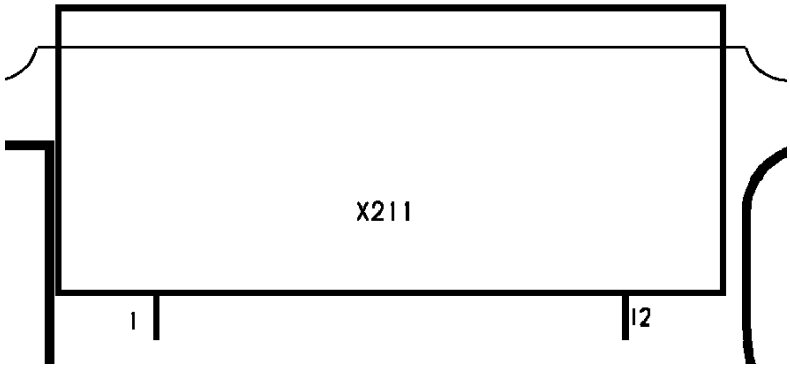


Table 1: MC60 Bottom Connector Pin Description

Pin	Name	IN/OUT	Notes
1	POWER	I/O	POWER is needed for charging batteries and for supplying the accessories
2	GND		
3	TX_1	O	Serial interface
4	RX_1	I	Serial interface
5	CTS_1	I/O	Data line for accessory bus
6	RTS_1	I/O	Use as RTS in data operation
7	DCD_1	I/O	Clock line for accessory bus Use as DTC In data operation
8	AUDIO_P	O	External loudspeaker
9			
10	AUDIO_N	OI	External loudspeaker
11	GND_MIC	I	External microphone
12	MICP2	O	External microphone

3 Battery Connector

3.1 Affected Units

3.1.1 Type: MC60

3.1.2 Affected IMEIs / Date Codes: All / All

3.1.3 Affected SW Versions: All

3.2 Fault Description

3.2.1 Fault Symptoms for customers:

Mobile does not switch on.
Error message “WRONG BATTERY” on display.

3.2.2 Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM-Tester.

3.3 Repair Documentation:

3.3.1 Description of procedure:

3.3.1.1 Diagnosis:

Visually check the status of the Battery connector. Watch for oxidation and dry solder joints.

3.3.1.2 Repair by component change:

Use hot air blower remove defective Battery connector.
Avoid excessive heat!
Watch surrounding components!

Resolder new Battery connector afterwards.

3.3.1.3 Repair by Software booting:

Not possible!

3.3.1.4 Test:

Retest handset after repair.

3.3.2 List of needed material:

3.3.2.1 Components:

Battery Connector MC60
Part-Number: L36334-Z97-C213

3.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

3.3.2.3 Special tools:

None

3.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

3.3.3 Drawings

Figure 1: MC60 board Battery connector

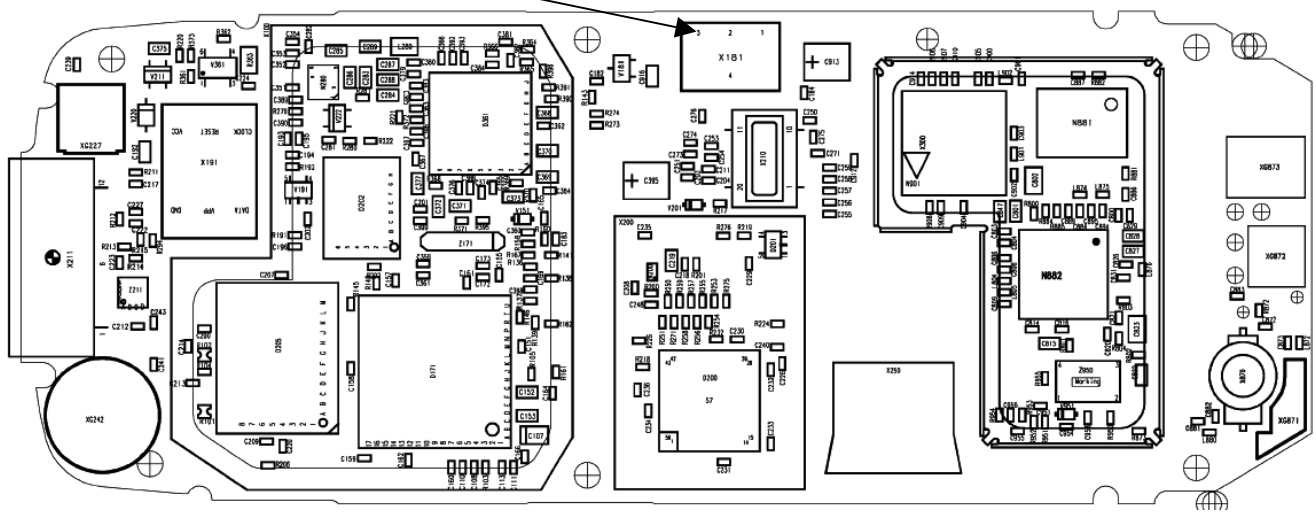
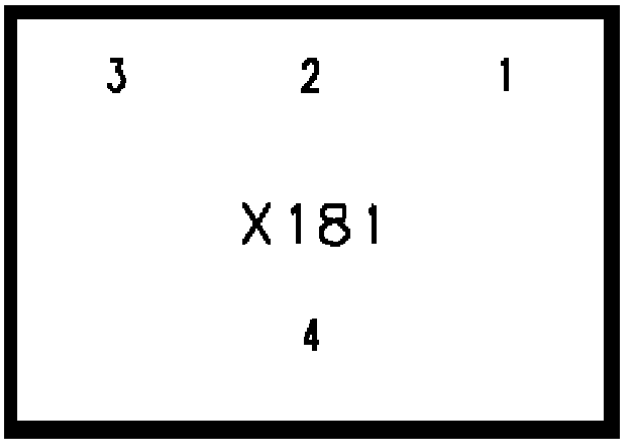


Figure 2: MC60 Battery connector placement (top view)



4 Display Connector

4.1 Affected Units

4.1.1 Type: MC60

4.1.2 Affected IMEIs / Date Codes: All / All

4.1.3 Affected SW Versions: All

4.2 Fault Description

4.2.1 Fault Symptoms for customers:

Display problems, like missing lines or columns on the LCD or display contrast problems.

4.2.2 Fault Symptoms on GSM Tester:

Display tests failed.

4.3 Repair Documentation:

4.3.1 Description of procedure:

4.3.1.1 Diagnosis:

Visually check the status of the Display connector. Watch for oxidation

4.3.1.2 Repair by component change:

Use hot air blower remove defective Display connector.
Avoid excessive heat!
Watch surrounding components!

Resolder new Display connector afterwards.

4.3.1.3 Repair by Software booting:

Not possible!

4.3.1.4 Test:

Retest handset after repair.

4.3.2 List of needed material:

4.3.2.1 Components:

Display Connector MC60
Part-Number: L36334-Z97-C205

4.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

4.3.2.3 Special tools:

None

4.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

4.3.3 Drawings

Figure 1: MC60 board Display connector

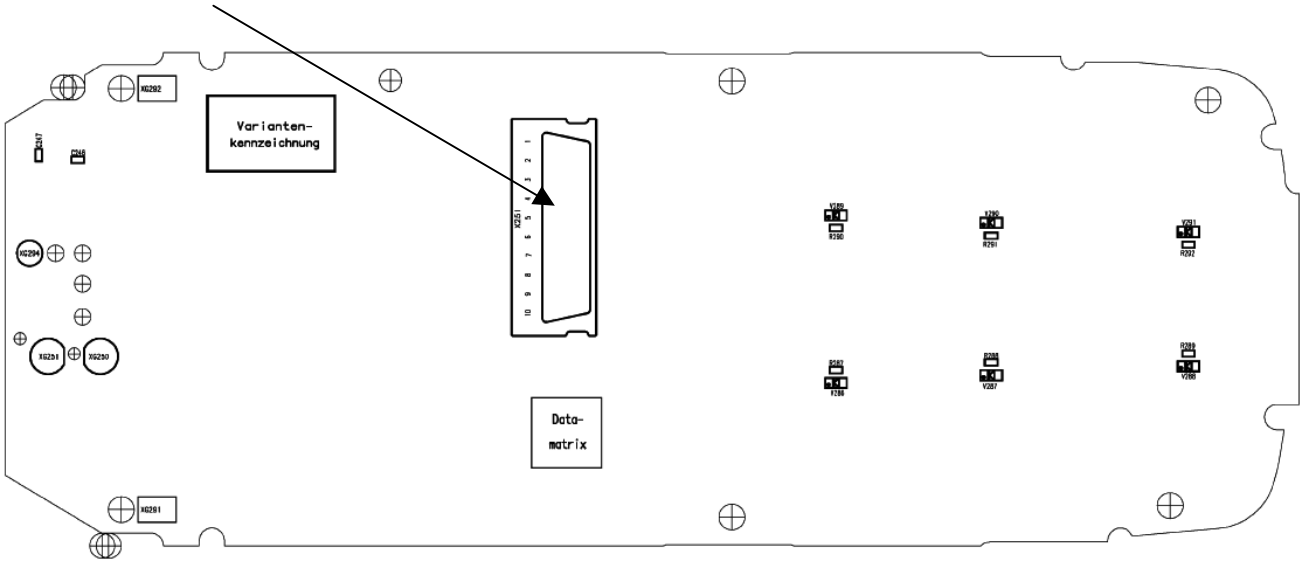
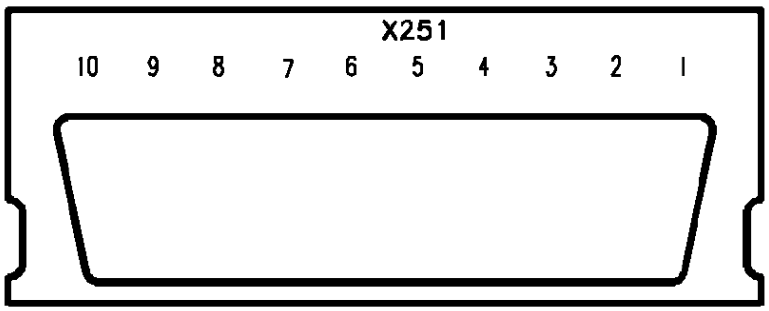


Figure 2: MC60 Display connector placement (top view)



5 Antenna Connector

5.1 Affected Units

5.1.1 Type: MC60

5.1.2 Affected IMEIs / Date Codes: All / All

5.1.3 Affected SW Versions: All

5.2 Fault Description

5.2.1 Fault Symptoms for customers:

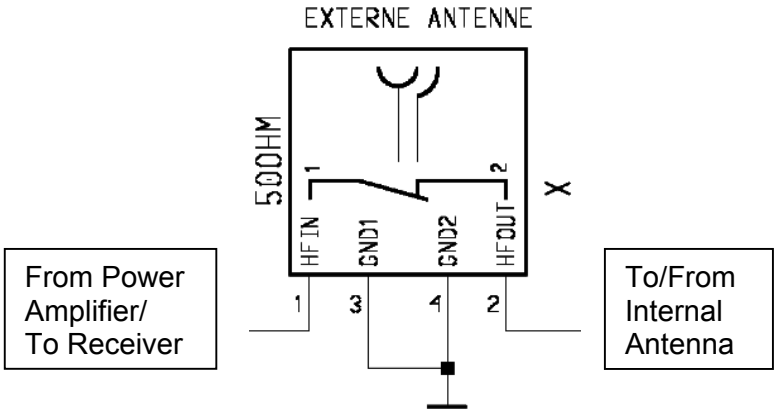
Network Search
No location update possible

5.2.2 Fault Symptoms on GSM Tester:

Output power problems on the external and internal antenna
No location update possible

5.2.3 Component Information:

The Antenna Connector is a mechanical switch operated by the RF plug of a car kit.
Normally the RF signal goes to and comes from the internal antenna. Whenever an RF plug is plugged into the antenna connector the connection to the internal antenna is opened and the connection to the external antenna socket is made. When the antenna connector is blocked without RF plug the connection to the internal antenna is also opened. See drawing below.



5.3 Repair Documentation:

5.3.1 Description of procedure:

5.3.1.1 Diagnosis:

Check the output power of the handset with the LSO test program. Especially watch the external antenna power!

5.3.1.2 Repair by component change:

Use hot air to remove defective antenna connector.
Avoid excessive heat!
Watch surrounding components!!

Resolder new module afterwards

5.3.1.3 Repair by Software booting:

Not possible!

5.3.1.4 Test:

Retest handset after repair.

5.3.2 List of needed material:

5.3.2.1 Components:

Antenna Connector MC60
Part-Number: L36334-Z93-C272

5.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

5.3.2.3 Special tools:

None

5.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

5.3.3 Drawings

Figure 1: MC60 board Antenna connector

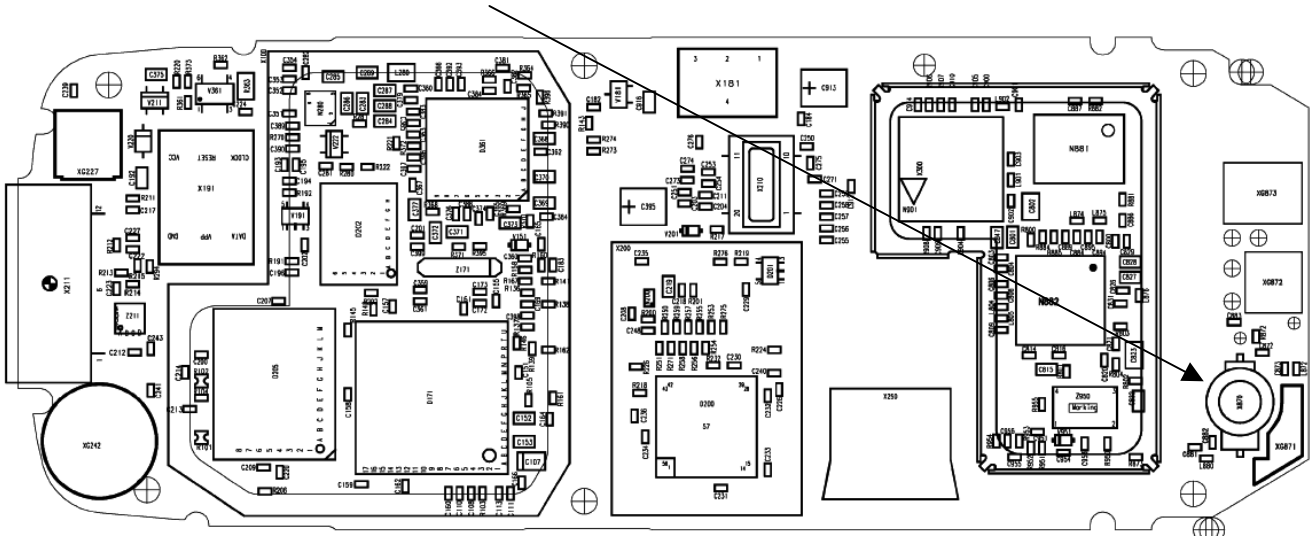
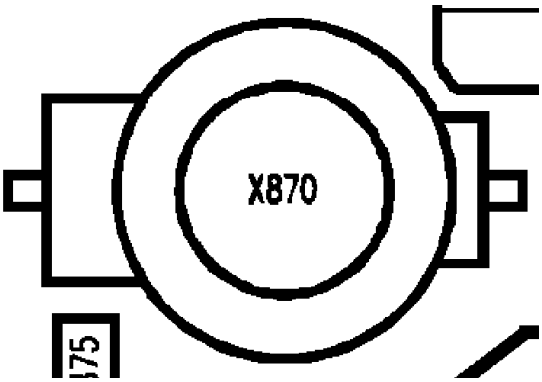


Figure 2: MC60 Antenna connector placement (top view)



6 Card Reader

6.1 Affected Units

6.1.1 Type: MC60

6.1.2 Affected IMEIs / Date Codes: All / All

6.1.3 Affected SW Versions: All

6.2 Fault Description

6.2.1 Fault Symptoms for customers:

Handset does not accept SIM.

6.2.2 Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM-Tester

6.3 Repair Documentation:

6.3.1 Description of procedure:

6.3.1.1 Diagnosis:

Visually check the Card Reader. Watch for dry joints:

6.3.1.2 Repair by component change:

Use soldering iron to remove defective component.
Avoid excessive heat!
Watch surrounding components!

Resolder new Card Reader afterwards.

6.3.1.3 Repair by Software booting:

Not possible!

6.3.1.4 Test:

Retest handset after repair.

6.3.2 List of needed material:

6.3.2.1 Components:

Card Reader MC60
Part-Number: L36334-Z93-C204

6.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

6.3.2.3 Special tools:

None

6.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

6.3.3 Drawings

Figure 1: MC60 board Card Reader site

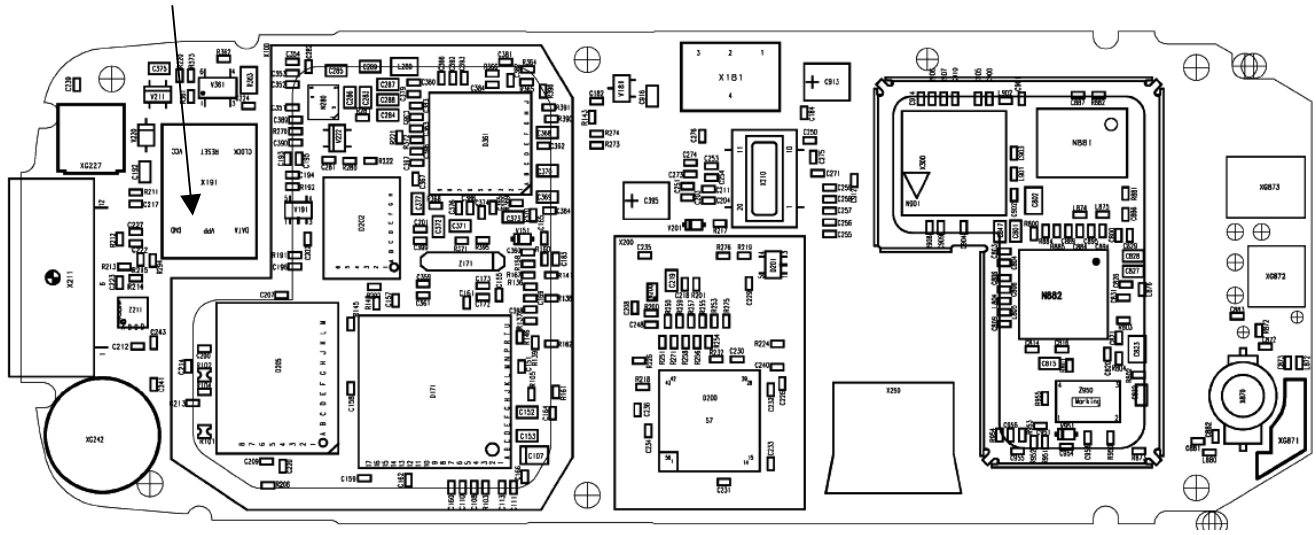
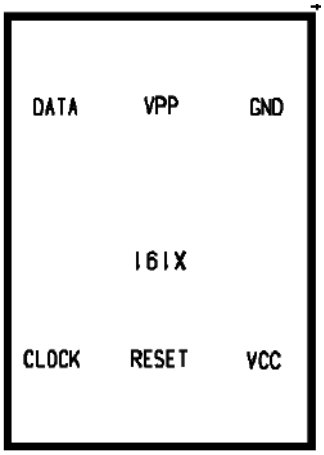


Figure 2: MC60 Card Reader placement (top view)



7 Camera Connector

7.1 Affected Units

7.1.1 Type: MC60

7.1.2 Affected IMEIs / Date Codes: All / All

7.1.3 Affected SW Versions: All

7.2 Fault Description

7.2.1 Fault Symptoms for customers:

Problems with Camera function

7.2.2 Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

7.3 Repair Documentation:

7.3.1 Description of procedure:

7.3.1.1 Diagnosis:

Visually check the status of the camera connector. Watch for oxidation and dry solder joints.

7.3.1.2 Repair by component change:

Use soldering iron to remove defective diode.
Avoid excessive heat!
Watch surrounding components!!

Resolder new connector afterwards.

7.3.1.3 Repair by Software booting:

Not possible!

7.3.1.4 Test:

Retest handset after repair.

7.3.2 List of needed material:

7.3.2.1 Components:

Camera connector MC60
Part-Number: L36197-F5008-F341

7.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

7.3.2.3 Special tools:

None

7.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

7.3.3 Drawings

Figure 1: MC60 camera connector side

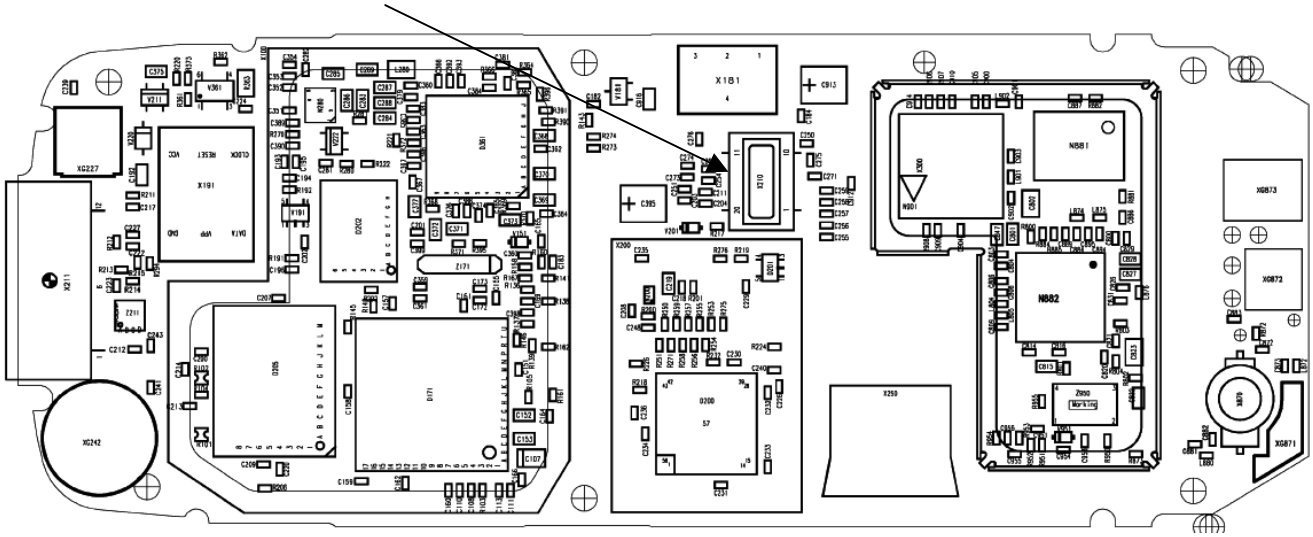
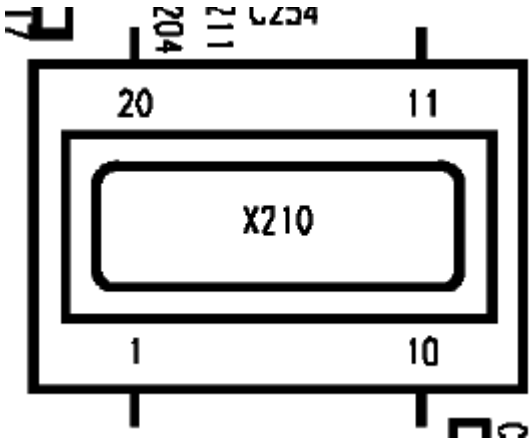


Figure 2: MC60 camera connector placement (top view)



8 Keypad LEDS

8.1 Affected Units

8.1.1 Type: MC60

8.1.2 Affected IMEIs / Date Codes: All / All

8.1.3 Affected SW Versions: All

8.2 Fault Description

8.2.1 Fault Symptoms for customers:

Keypad illumination does not work.

8.2.2 Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

8.3 Repair Documentation:

8.3.1 Description of procedure:

8.3.1.1 Diagnosis:

Use the diode test function of a multimeter to check the status of the diode. The typical voltage drop on the diode is 1.7 V when testing the diode function with the multimeter.

8.3.1.2 Repair by component change:

Use soldering iron to remove defective diode.
Avoid excessive heat!
Watch surrounding components!!

Resolder new connector afterwards.

8.3.1.3 Repair by Software booting:

Not possible!

8.3.1.4 Test:

Retest handset after repair.

8.3.2 List of needed material:

8.3.2.1 Components:

Keypad LEDS MC60
Part-Number: L36840-L2056-D670

8.3.2.2 Jigs and Tools:

Hot Air Blower
Soldering Iron

8.3.2.3 Special tools:

None

8.3.2.4 Working materials

Desolder Wick / Braid
Soldering Iron

8.3.3 Drawings

Figure 1: MC60 LIGHT NIGHT LEDS side

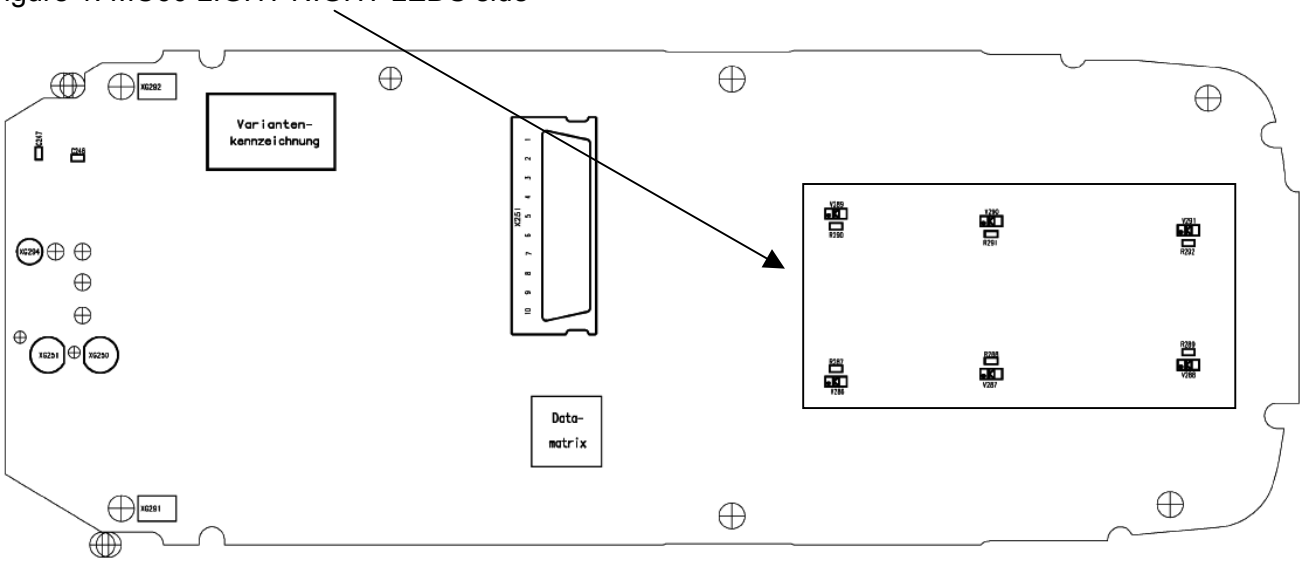


Figure 2: MC60 LIGHT NIGHT LEDS placement (top view)