

SX1

Level 2.5

Repair Documentation

V 1.0

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1 Introduction

SX1 product family, consists of 1 tripleband (GSM900, GSM1800 and GSM1900) handset

Partnumber on IMEI label:

SX1: S36880-S6500-#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

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2 I/O Connector (Slim Lumberg)

2.1. Affected Units

- 2.1.1. Type: SX1
- 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. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

2.4. Repair Documentation:**2.4.1. Description of procedure:****2.4.1.1. Diagnosis:**

Visually check the bottom connector. Watch for oxidation and dry solder joints.

2.4.1.2. 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.

2.4.1.3. Repair by Software booting:

Not possible!

2.4.1.4. Test:

Retest handset after repair.

2.4.2. List of needed material:**2.4.2.1. Components:**

I/O Connector SX1

Placement: X2500

Part-Number: L36334-Z93-C303

2.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

2.4.2.3. Special tools:

None

2.4.2.4. Working materials

Desolder Wick / Braid
Solder

2.4.3. Drawings

Figure 1: SX1 board I/O connector

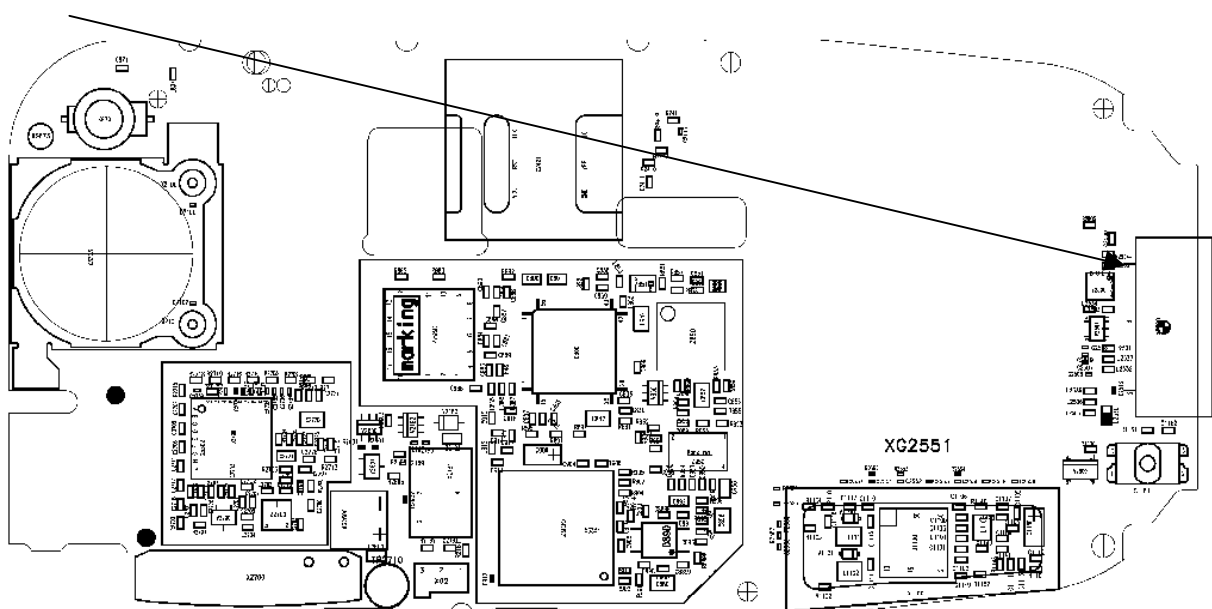


Figure 2: SX1 I/O connector placement (top view)

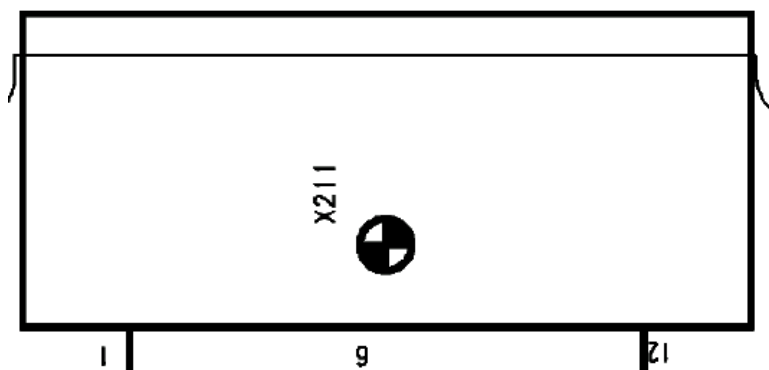


Table 1: SX1 Bottom Connector Pin Description

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	USB/Serial interface
4	RX_1	I	USB/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_L	O	External loudspeaker
9	AUDIO GND		Audio Ref Stereo
10	AUDIO_R	OI	External loudspeaker
11	GND_MIC	I	External microphone
12	EPP1	O	External microphone

3 Battery Connector

3.1. Affected Units

- 3.1.1. Type: SX1
- 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. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

3.4. Repair Documentation:**3.4.1. Description of procedure:****3.4.1.1. Diagnosis:**

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

3.4.1.2. Repair by component change:

Use hot air blower remove defective Battery connector.

Avoid excessive heat!

Watch surrounding components!

Resolder new Battery connector afterwards.

3.4.1.3. Repair by Software booting:

Not possible!

3.4.1.4. Test:

Retest handset after repair.

3.4.2. List of needed material:**3.4.2.1. Components:**

Battery Connector SX1

Placement: X2181

Part-Number: L36334-Z97-C160

3.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

3.4.2.3. Special tools:

None

3.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

3.4.3. Drawings

Figure 1: SX1 board Battery connector

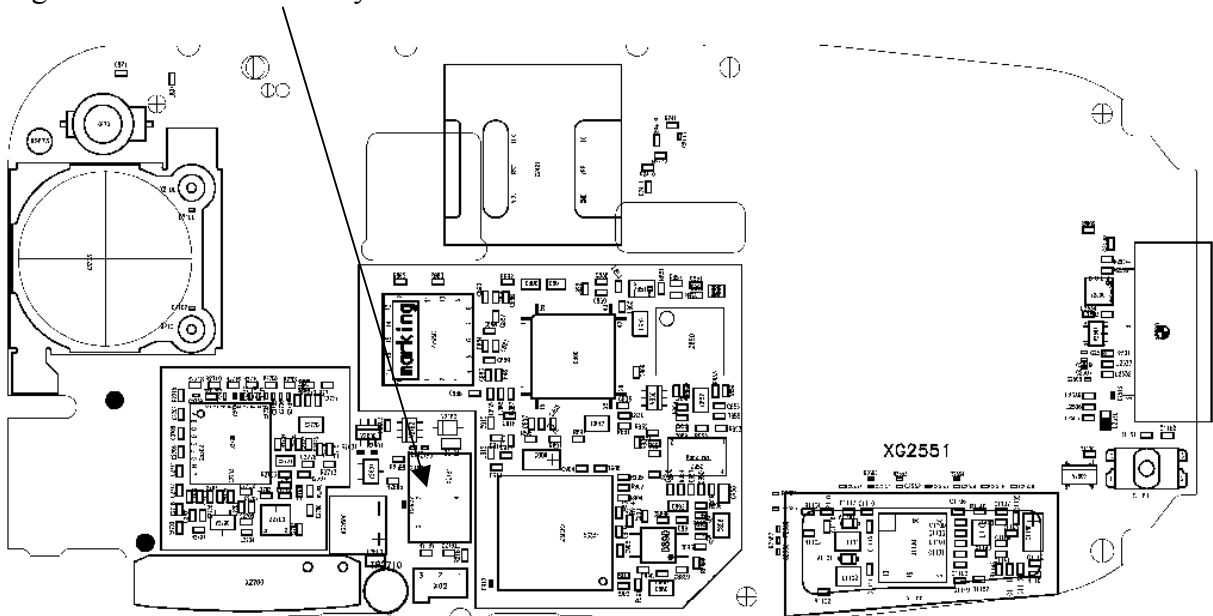
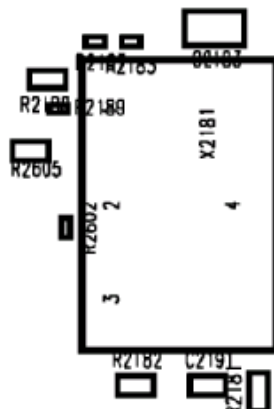


Figure 2: SX1 Battery connector placement (top view)



4 Connector spring for speaker

4.1. Affected Units

- 4.1.1. Type: SX1
- 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:

- Speaker malfunction

4.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM-Tester.

4.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

4.4. Repair Documentation:**4.4.2. Description of procedure:****4.4.2.1. Diagnosis:**

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

4.4.2.2. Repair by component change:

Use soldering iron to remove defective connector.
Avoid excessive heat!

Watch surrounding components!!

Resolder new connector afterwards.

4.4.2.3. Repair by Software booting:

Not possible!

4.4.2.4. Test:

Retest handset after repair.

4.4.3. List of needed material:**4.4.3.1. Components:**

Speaker connector SX1
Placement: X2100, X2101
Part-Number: L36334-Z97-C210

4.4.3.2. Jigs and Tools:

Hot Air Blower
Soldering Iron

4.4.3.3. Special tools:

None

4.4.3.4. Working materials

Desolder Wick / Braid
Soldering Iron

4.4.4. Drawings

Figure 1: SX1 board speaker connector side

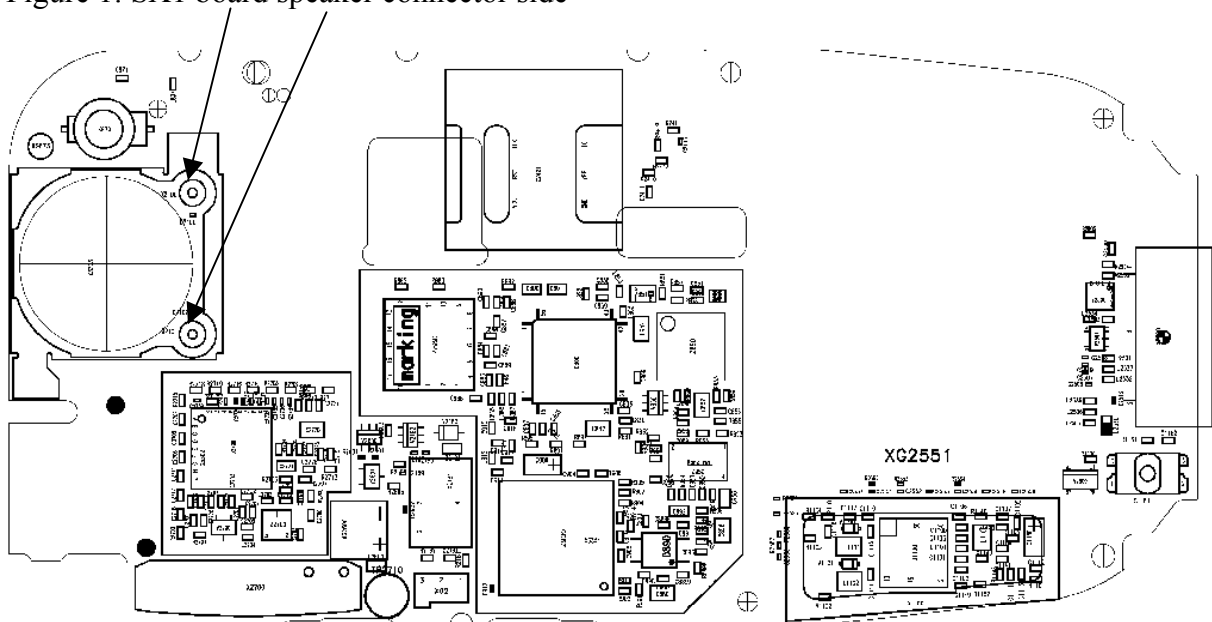
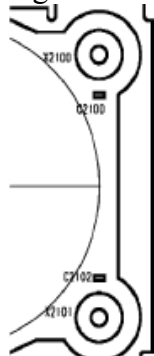


Figure 2: SX1 Speaker connector spring placement (top view)



5 Antenna Connector

5.1. Affected Units

5.1.1. Type: SX1

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 internal antenna
No location update possible

5.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

5.4. Repair Documentation:**5.4.1. Description of procedure:****5.4.1.1. Diagnosis:**

Check the output power of the handset with the LSO test program!

5.4.1.2. Repair by component change:

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

Resolder new antenna connector afterwards.

5.4.1.3. Repair by Software booting:

Not possible!

5.4.1.4. Test:

Retest handset after repair.

5.4.2. List of needed material:**5.4.2.1. Components:**

Antenna Connector SX1
Placement: X870
Part-Number: L36334-Z93-C261

5.4.2.2. Jigs and Tools:

Hot Air Blower
Soldering Iron

5.4.2.3. Special tools:

None

5.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

5.4.3. Drawings

Figure 1: SX1 board Antenna connector

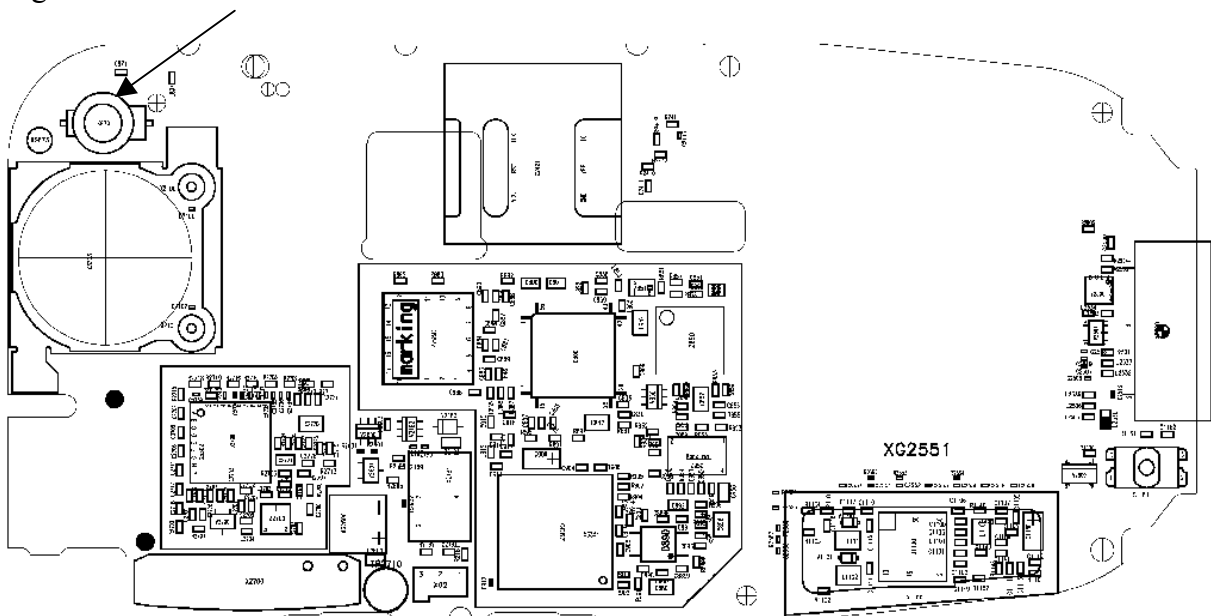
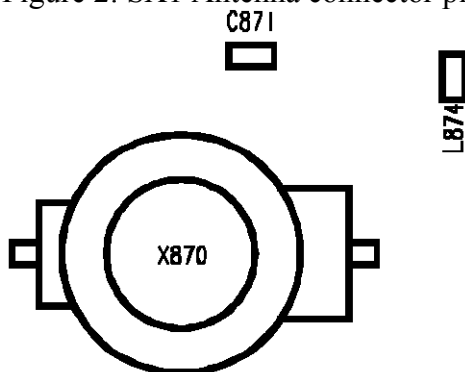


Figure 2: SX1 Antenna connector placement (top view)



6 Card Reader

6.1. Affected Units

6.1.1. Type: SX1

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. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

6.4. Repair Documentation:**6.4.1. Description of procedure:****6.4.1.1. Diagnosis:**

Visually check the Card Reader. Watch for dry joints:

6.4.1.2. Repair by component change:

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

Resolder new Card Reader afterwards.

6.4.1.3. Repair by Software booting:

Not possible!

6.4.1.4. Test:

Retest handset after repair.

6.4.2. List of needed material:**6.4.2.1. Components:**

Card Reader SX1
Placement: X2421
Part-Number: L36334-Z97-C298

6.4.2.2. Jigs and Tools:

Hot Air Blower
Soldering Iron

6.4.2.3. Special tools:

None

6.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

6.4.3. Drawings

Figure 1: SX1 board Card Reader site

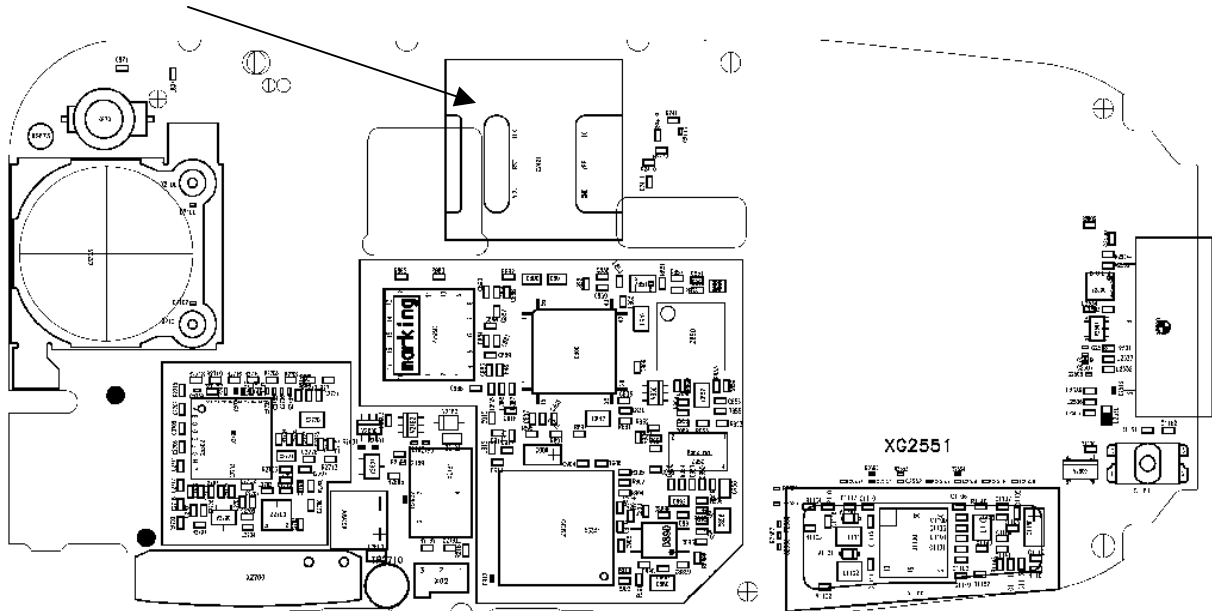
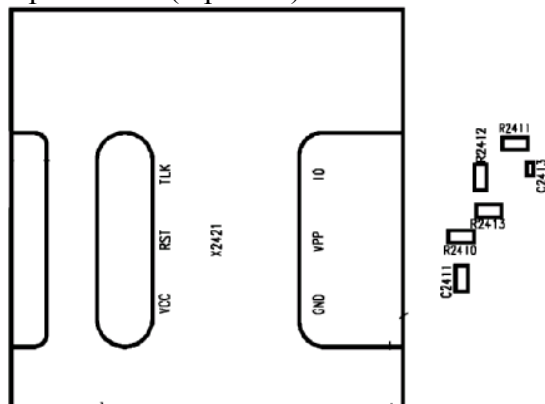


Figure 2: SX1 Card Reader placement (top view)



7 MMI Connector

7.1. Affected Units

7.1.1. Type: SX1

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 MMI function like:

- Keyboard malfunction
- Illumination problems
- Display problems

7.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

7.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

7.4. Repair Documentation:

7.4.1. Description of procedure:

7.4.1.1. Diagnosis:

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

7.4.1.2. Repair by component change:

Use soldering iron to remove defective connector.

Avoid excessive heat!

Watch surrounding components!!

Resolder new connector afterwards.

7.4.1.3. Repair by Software booting:

Not possible!

7.4.1.4. Test:

Retest handset after repair.

7.4.2. List of needed material:

7.4.2.1. Components:

Board connector SX1

Placement: X1000

Part-Number: L36334-Z97-C212

7.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

7.4.2.3. Special tools:

None

7.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

7.4.3. Drawings

Figure 1: SX1 board MMI connector side

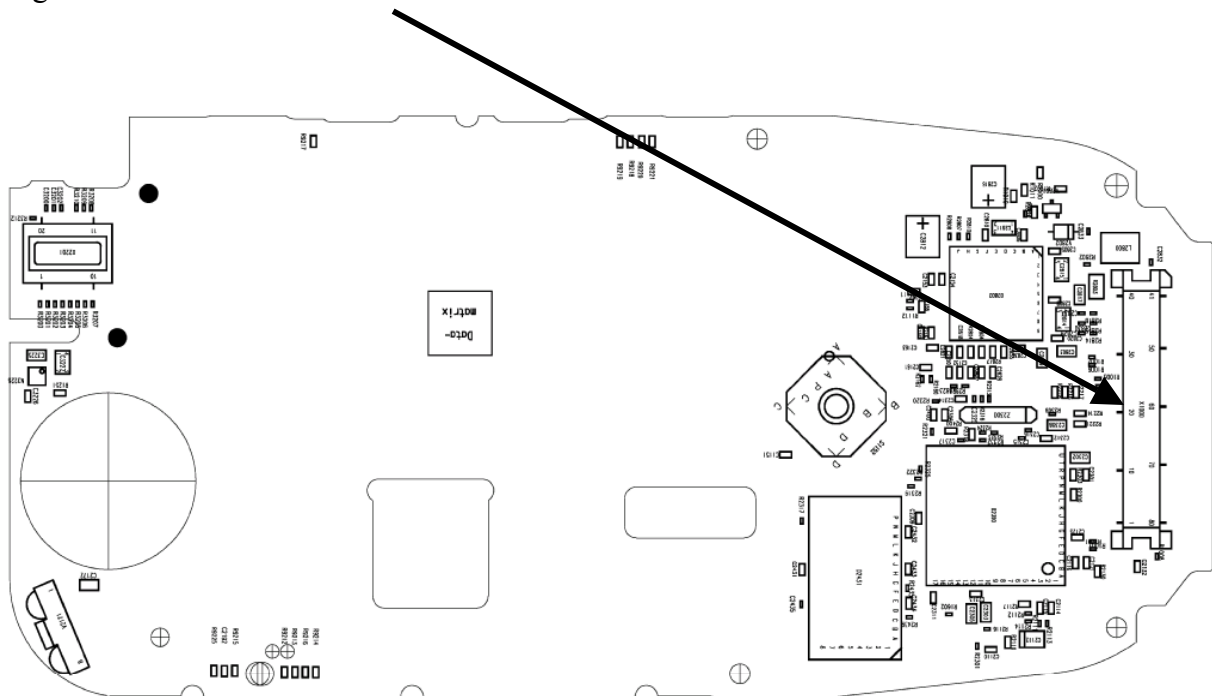
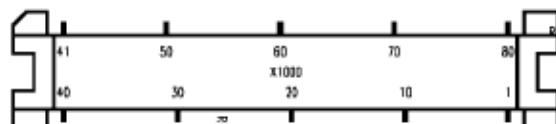


Figure 2: SX1 MMI board connector placement (top view)



8 IRDA

8.1. Affected Units

8.1.1. Type: SX1

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:

- No infrared connection possible

8.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

8.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

8.4. Repair Documentation:**8.4.1. Description of procedure:****8.4.1.1. Diagnosis:****8.4.1.2. Repair by component change:**

Use soldering iron to remove defective diode.

Avoid excessive heat!

Watch surrounding components!!

Resolder new diode afterwards.

8.4.1.3. Repair by Software booting:

Not possible!

8.4.1.4. Test:

Retest handset after repair.

8.4.2. List of needed material:**8.4.2.1. Components:**

IRDA SX1

Placement: V2171

Part-Number: L36810-U6030-D670

8.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

8.4.2.3. Special tools:

None

8.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

8.4.3. Drawings

Figure 1: SX1 IRDA side

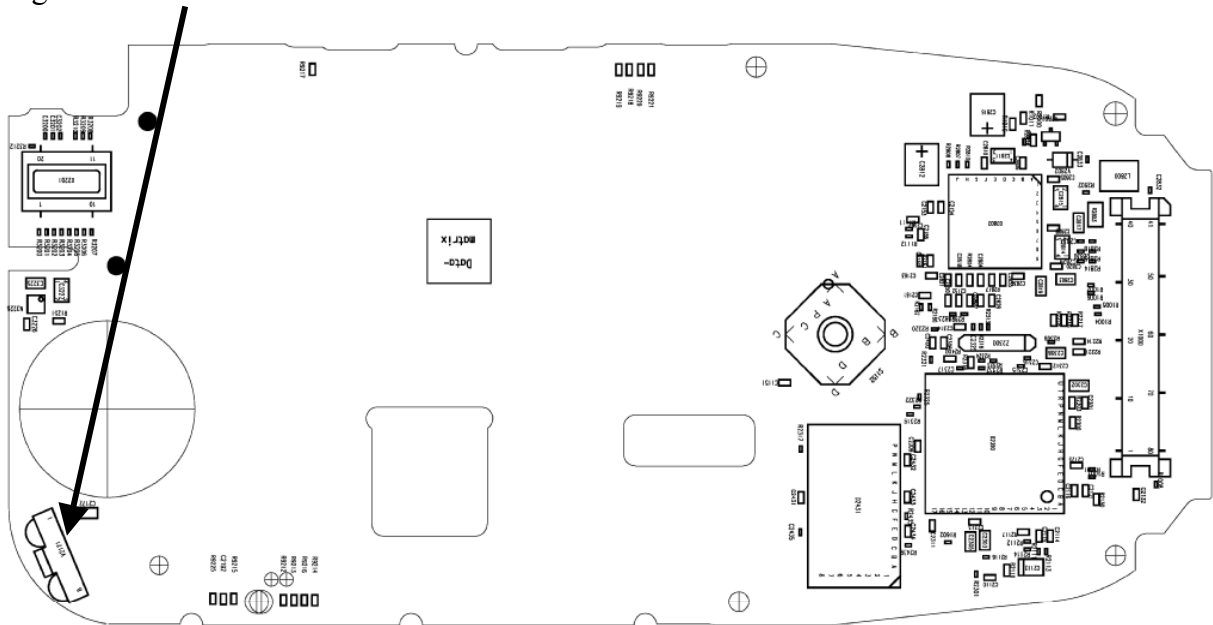
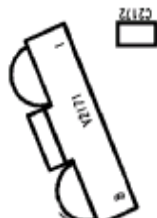


Figure 2: SX1 IRDA placement (top view)



9 Camera Connector

9.1. Affected Units

9.1.1. Type: SX1

9.1.2. Affected IMEIs / Date Codes: All / All

9.1.3. Affected SW Versions: All

9.2. Fault Description

9.2.1. Fault Symptoms for customers:

- Problems with camera function.

9.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

9.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

9.4. Repair Documentation:**9.4.1. Description of procedure:****9.4.1.1. Diagnosis:**

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

9.4.1.2. Repair by component change:

Use soldering iron to remove defective connector.

Avoid excessive heat!

Watch surrounding components!!

Resolder new connector afterwards.

9.4.1.3. Repair by Software booting:

Not possible!

9.4.1.4. Test:

Retest handset after repair.

9.4.2. List of needed material:**9.4.2.1. Components:**

Camera board connector SX1

Placement: X2201

Part-Number: L36197-F5008-F341

9.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

9.4.2.3. Special tools:

None

9.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

9.4.3. Drawings

Figure 1: SX1 board camera connector side

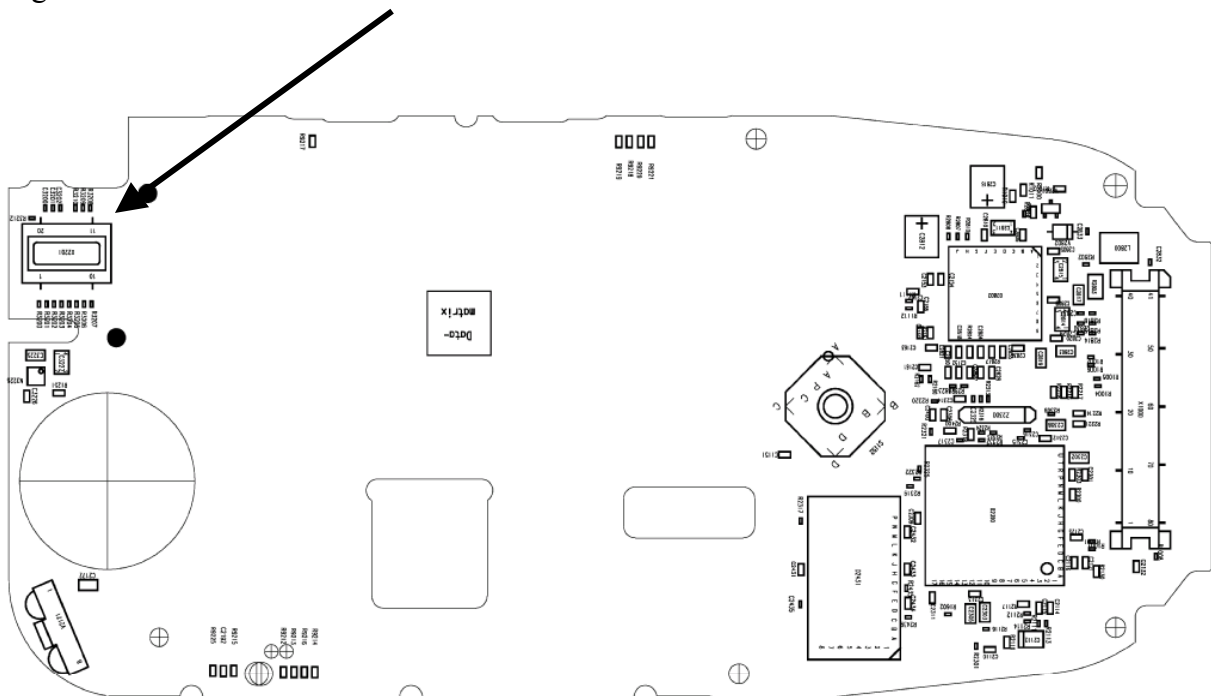
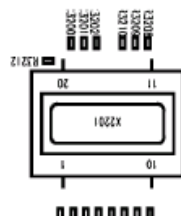


Figure 2: SX1 camera connector placement (top view)



10 Joystick Switch

10.1. Affected Units

- 10.1.1. Type:** SX1
- 10.1.2. Affected IMEIs / Date Codes:** All / All
- 10.1.3. Affected SW Versions:** All

10.2. Fault Description

10.2.1. Fault Symptoms for customers:

- Problem with joystick function.

10.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

10.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

10.4. Repair Documentation:**10.4.1. Description of procedure:****10.4.1.1. Diagnosis:**

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

10.4.1.2. Repair by component change:

Use soldering iron to remove defective joystick.

Avoid excessive heat!

Watch surrounding components!!

Resolder new joystick afterwards.

10.4.1.3. Repair by Software booting:

Not possible!

10.4.1.4. Test:

Retest handset after repair.

10.4.2. List of needed material:**10.4.2.1. Components:**

Joystick SX1

Placement: S1152

Part-Number: L36315-Z77-C218

10.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

10.4.2.3. Special tools:

None

10.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

10.4.3. Drawings

Figure 1: SX1 joystick side

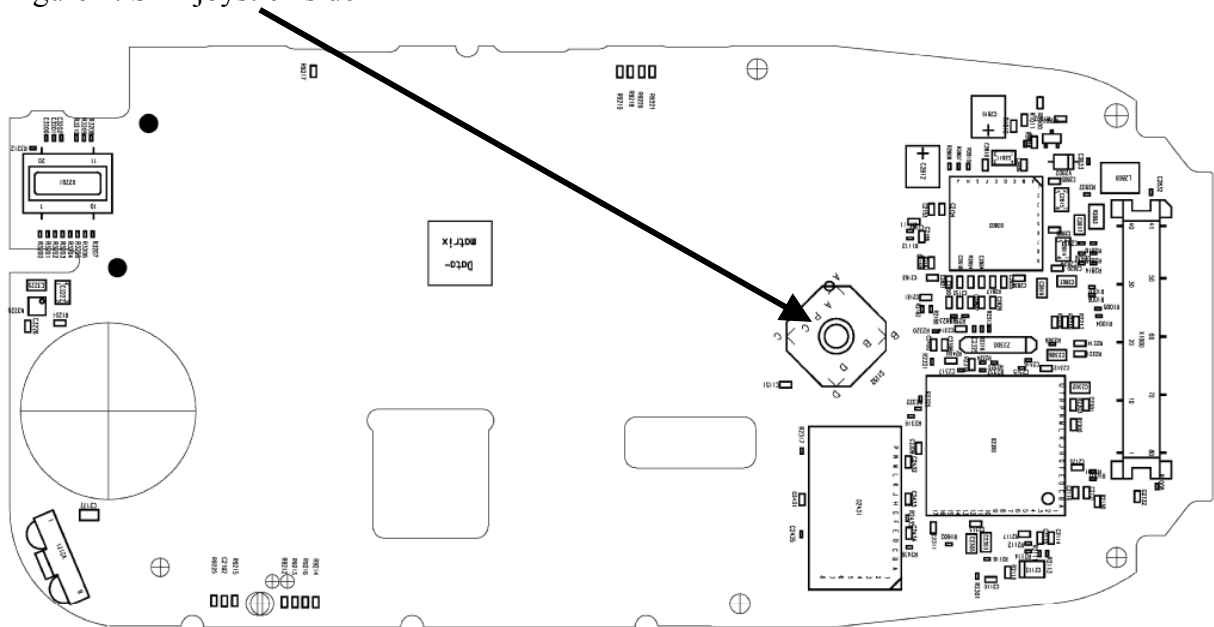
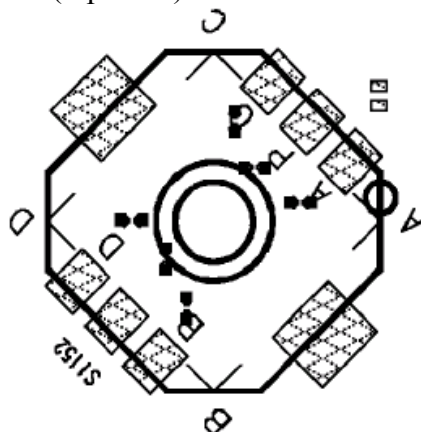


Figure 2: SX1 joystick placement (top view)



11 Keyboard LEDs

11.1. Affected Units

- 11.1.1. Type: SX1
- 11.1.2. Affected IMEIs / Date Codes: All / All
- 11.1.3. Affected SW Versions: All

11.2. Fault Description

11.2.1. Fault Symptoms for customers:

- Keyboard Illumination does not work

11.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM-Tester.

11.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

11.4. Repair Documentation:**11.4.1. Description of procedure:****11.4.1.1. Diagnosis:**

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

11.4.1.2. Repair by component change:

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

Watch surrounding components!!

Resolder new diode afterwards.

11.4.1.3. Resolder new diode afterwards. Repair by Software booting:

Not possible!

11.4.1.4. Test:

Retest handset after repair.

11.4.2. List of needed material:**11.4.2.1. Components:**

Keyboard LEDs SX1
Placement: V1200. V1201. V1202. V1203
Part-Number: L36840-L2082-D670

11.4.2.2. Jigs and Tools:

Hot Air Blower
Soldering Iron

11.4.2.3. Special tools:

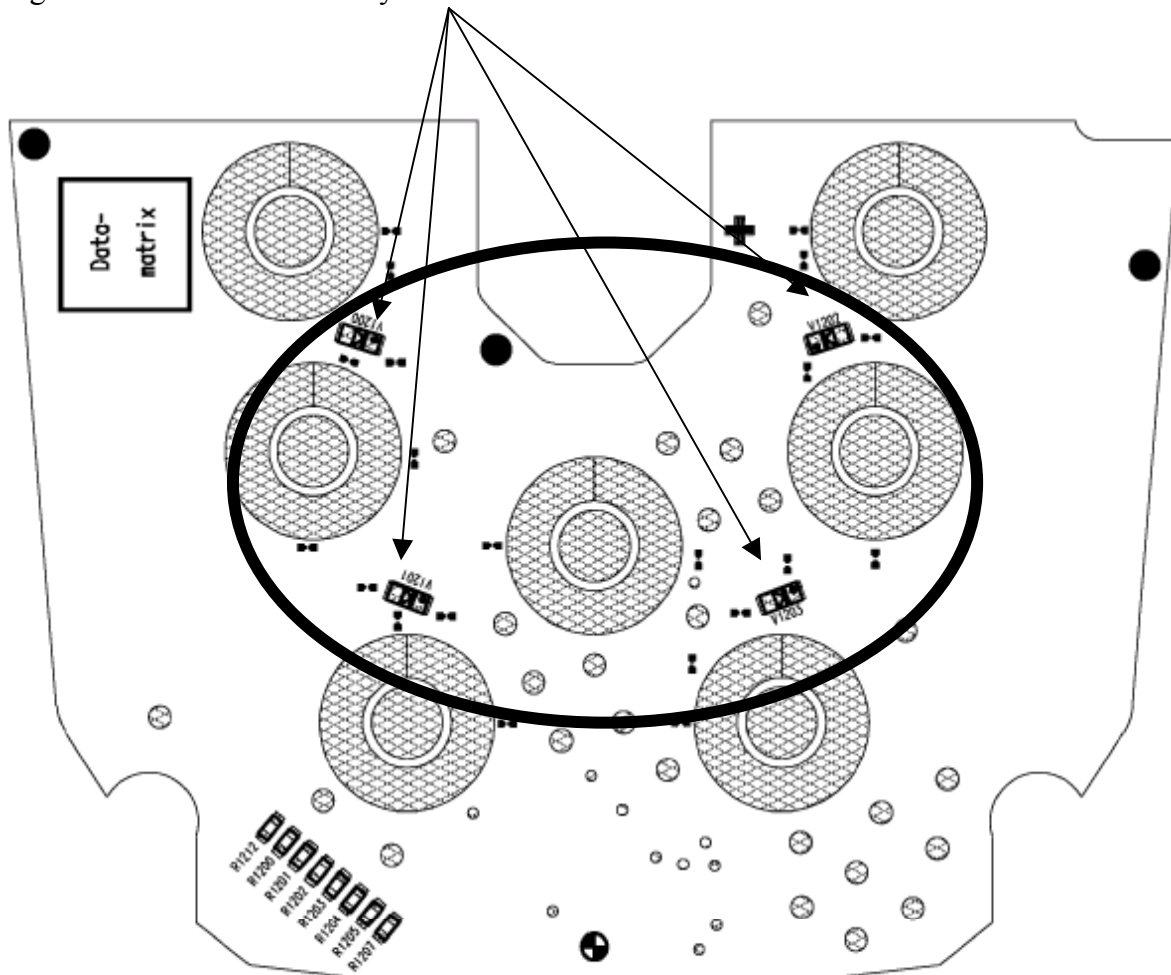
None

11.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

11.4.3. Drawings

Figure 1: SX1 MMI board keyboard LEDs side



12 MMI Connector

12.1. Affected Units

- 12.1.1. Type:** SX1
- 12.1.2. Affected IMEIs / Date Codes:** All / All
- 12.1.3. Affected SW Versions:** All

12.2. Fault Description

12.2.1. Fault Symptoms for customers:

Problems with MMI function like:

- Keyboard malfunction
- Illumination problems
- Display problems

12.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

12.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

12.4. Repair Documentation:**12.4.1. Description of procedure:****12.4.1.1. Diagnosis:**

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

12.4.1.2. Repair by component change:

Use soldering iron to remove defective connector.

Avoid excessive heat!

Watch surrounding components!!

Resolder new connector afterwards.

12.4.1.3. Repair by Software booting:

Not possible!

12.4.1.4. Test:

Retest handset after repair.

12.4.2. List of needed material:**12.4.2.1. Components:**

Board connector SX1

Placement: X1100

Part-Number: L36334-Z97-C211

12.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

12.4.2.3. Special tools:

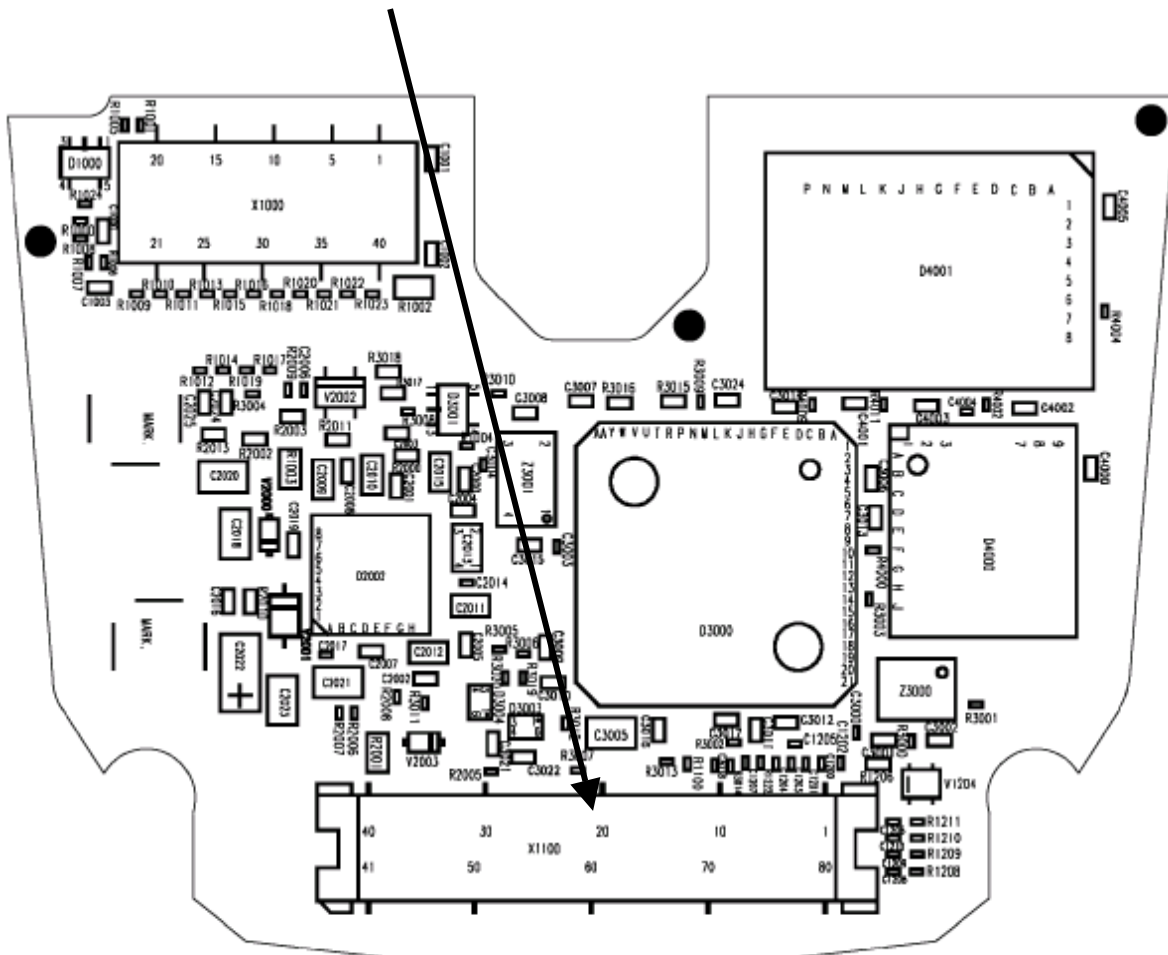
None

12.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

12.4.3. Drawings

Figure 1: SX1 board MMI connector side



13 Display Connector

13.1. Affected Units

- 13.1.1. Type:** SX1
- 13.1.2. Affected IMEIs / Date Codes:** All / All
- 13.1.3. Affected SW Versions:** All

13.2. Fault Description

13.2.1. Fault Symptoms for customers:

Problems with display function like:

- Display Illumination problems
- Display problems

13.2.2. Fault Symptoms on GSM Tester:

This fault cannot be detected with a GSM Tester

13.3. Priority:

- Mandatory
- Repair
- Optional
- Not Yet Defined

13.4. Repair Documentation:**13.4.1. Description of procedure:****13.4.1.1. Diagnosis:**

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

13.4.1.2. Repair by component change:

Use soldering iron to remove defective connector.

Avoid excessive heat!

Watch surrounding components!!

Resolder new connector afterwards.

13.4.1.3. Repair by Software booting:

Not possible!

13.4.1.4. Test:

Retest handset after repair.

13.4.2. List of needed material:**13.4.2.1. Components:**

Display connector SX1

Placement: X1000

Part-Number: L36197-F5004-F505

13.4.2.2. Jigs and Tools:

Hot Air Blower

Soldering Iron

13.4.2.3. Special tools:

None

13.4.2.4. Working materials

Desolder Wick / Braid
Soldering Iron

13.4.3. Drawings

Figure 1: SX1 board display connector side

