

C62  
LEVEL 2.5

REPAIR DOCUMENTATION

V 1.1

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## 1 Introduction

The C62 is a triple band (EGSM900/GSM1800/GSM1900) handportable phone with a Li-Ion battery. There are three different colour variants. The colours are Eagle White, Pigeon Blue and Cherry Red. For every colour, there are eight different keymat variants: Latin, Chinese Stroke, Hebrew, Cyrillic, Thai, Bopomofo, Arabic and Greek.

### **Partnumber on IMEI label:**

C62:           S30880-S9230-Axxx,

where 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. Failure highlights are documented and should be repaired in the local workshops.

It must be noted that 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 95 666  
Fax: +49 2842 95 4302  
E-mail: [st-support@siemens.com](mailto:st-support@siemens.com)

## 2 IO-Connector

### 2.1 Affected Units

2.1.1 Type: C62

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 system connector.  
Problems with SW booting.

#### 2.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-Tester.

### 2.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined


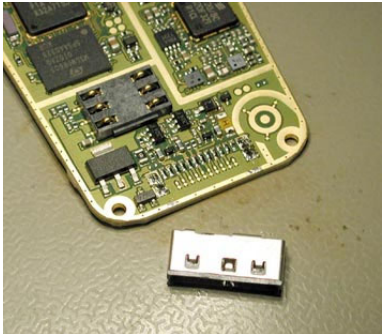

### 2.4 Repair Documentation


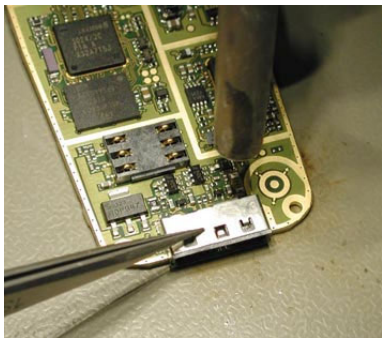
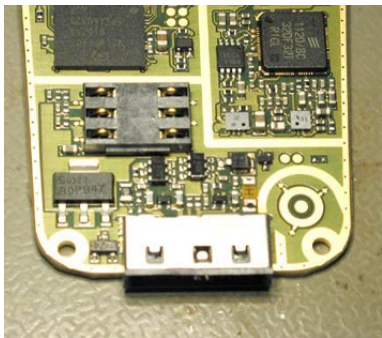
#### 2.4.1 Description of procedure:

**2.4.1.1 Diagnosis**

Check the system connector visually. Watch for oxidation and dry joints!

**2.4.1.2 Repair by component change**

#	Figure	Instruction	Note
1	 <p><b>Figure 2-1</b></p>	<p>Use a hot air blower to remove the defective system connector. Avoid excessive heat! Watch out for the surrounding components!!</p>	
2	 <p><b>Figure 2-2</b></p>	<p>Remove the defective connector.</p>	
3	 <p><b>Figure 2-3</b></p>	<p>Add solder on the pads.</p>	

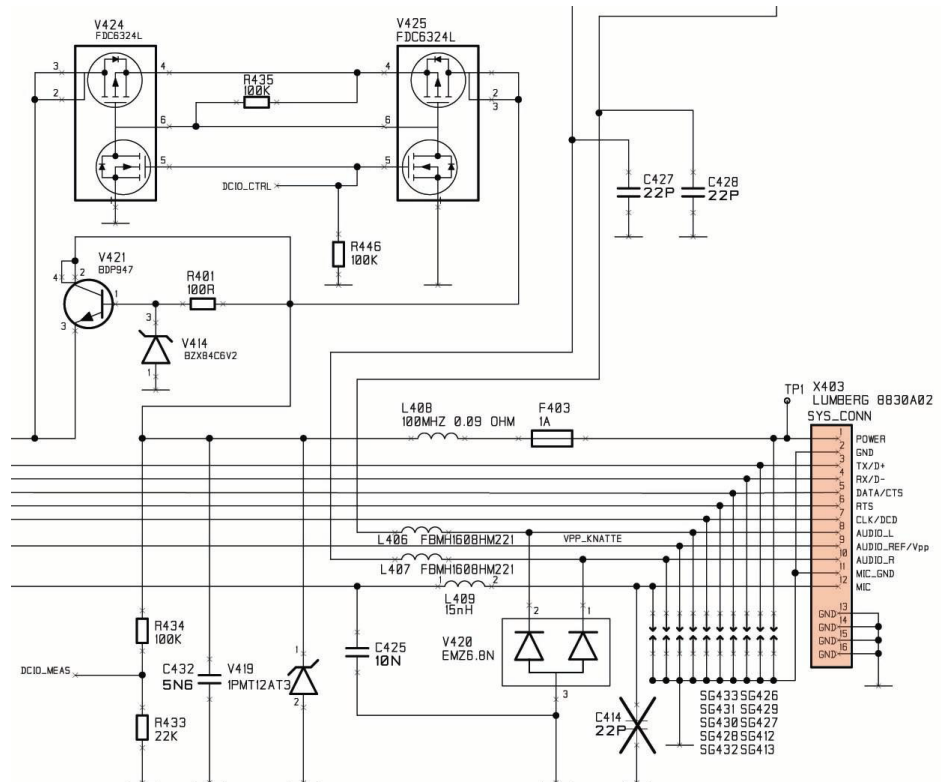
4	 <p style="text-align: center;"><b>Figure 2-4</b></p>	Add flux on the pads.	
5	 <p style="text-align: center;"><b>Figure 2-5</b></p>	Re-solder the new system connector by using a hot air blower. Check that the connector is straight and exactly in right place.	
6	 <p style="text-align: center;"><b>Figure 2-6</b></p>	New connector is in its place.	

### 2.4.1.3 Repair by SW-Bootng

Not possible!

### 2.4.1.4 Test

Charging problems can be discovered by measuring the voltage between pins 1 (Power) and 2 (GND). Voltage should be between 5V and 9,5V if system connector is working.



Circuit diagram of system connector

Test if accessories function well.

In order to detect an accessory when plugged into the system connector, the following pins on the connector are used in the detection scenario: POWER, TX/D+, RX/D-, DATA/CTS, CLK/DCD and RTS. Table 1 shows the pins and their possible use in a detection scenario.

**Table 1: Accessory coding options**

Pin No.	Signal name	Default level	Default direction	Possible coding options
1	POWER	L(Z)	Off	Open or charge source (Set by accessory)
2	GND	GND	-	
3	TX/D+	H(Z)	Out	High/Low (Set by Phone)
4	RX/D-	L(Z)	In	Open, Tx or high (Set by accessory)
5	DATA/CTS	H(Z)	In	Open, Tx or low (Set by accessory)
6	RTS	H(Z)	In	Open, Tx or low (Set by accessory)
7	CLK/DCD	H(Z)	In	Open, Tx or low (Set by accessory)

The different coding options for the supported accessories can be seen in Table 2.

**Table 2: Accessory coding table**

RX/D-	DATA/CTS	CLK/DCD	RTS	Description
OPEN	OPEN	OPEN	OPEN	Default: No accessory connected
TX/D+	GND	OPEN	TX/D+	Headset
TX/D+	GND	GND	TX/D+	Headset with PTT pressed
HIGH	OPEN	GND	OPEN	Car Kit portable

## 2.4.2 List of needed material

### 2.4.2.1 Components

System connector female 12pin SMD  
Part Number: L36197-F5121-F730

### 2.4.2.2 Jigs and Tools

Hot air blower  
Tweezers  
Inspection lamp

### 2.4.2.3 Special Tools

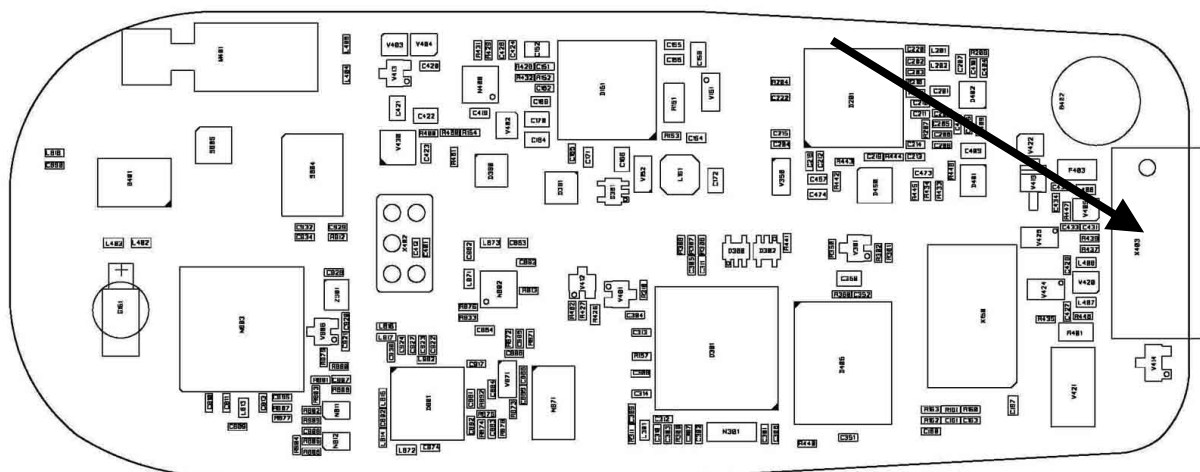
None

### 2.4.2.4 Working materials

Flux  
Solder

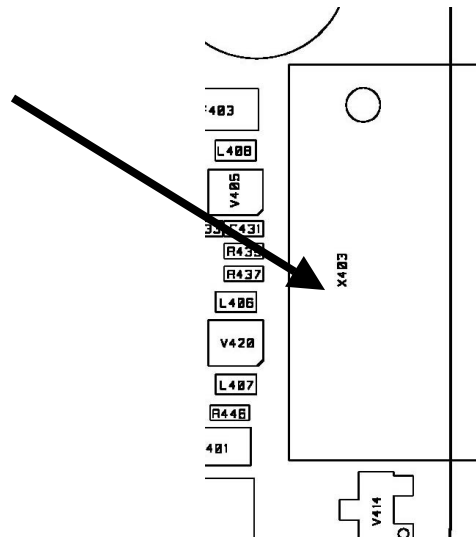
## 2.4.3 Drawings

**Figure 1: C62 board, system connector side**

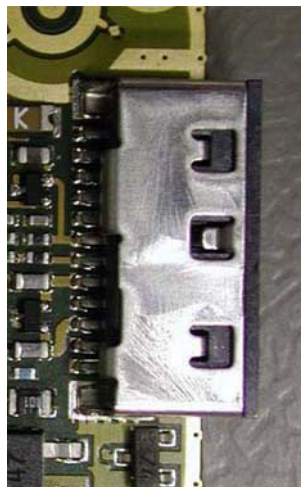




**Figure 2: C62 system connector placement (top view)**

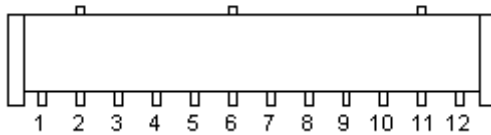


**Figure 3: C62 system connector**



**Table 3: Siemens C62 system connector pin description**

Lumberg plug, 12 pole, front view



Pin	Name	IN/OUT	Notes
1	POWER	I	Charging Current
2	GND		Common GND
3	TX	O	Serial interface, used for Flash programming and ITP commands
4	RX	I	Serial interface, used for Flash programming and ITP commands
5	DATA/CTS	I/O	Serial interface, used for AT-commands. Data line for accessory bus. Use as CTS in data operation. Used for accessory detection
6	RTS	I	Used for accessory detection
7	CLK/DCD	I/O	Serial interface, used for AT-commands. Used for accessory detection
8	Audio L	O	Dual -ended (other end is Audio R) output for external receiver (mono)
9	Audio_Ref/V PP	I	Used for 12V flash programming voltage
10	Audio R	O	Dual -ended (other end is Audio L) output for external receiver (mono)
11	Gnd_Micro		GND external microphone
12	Micro	I	Input for external microphone

**Table 4: Lumberg signal levels**

Pin no.	Signal name	Level	Min [V]	Max [V]
3	TX/D+	$V_{OH} V_{OL}$	2.17 0	3.00 0.20
4	RX/D-	$V_{IH} V_{IL}$	2.10 0	3.60 0.48
5	DATA/CTS	$V_{IH} V_{IL}$ $V_{OH} V_{OL}$	2.10 0 2.17 0	3.30 0.46 3.00 0.42
6	RTS	$V_{IH} V_{IL}$	2.10 0	3.30 0.46
7	CLK/DCD	$V_{IH} V_{IL}$	2.10 0	3.30 0.46

### 3 RTC battery

#### 3.1 Affected Units

3.1.1 Type: C62

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:

The clock is reset when battery is switched off and on.

##### 3.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

#### 3.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined

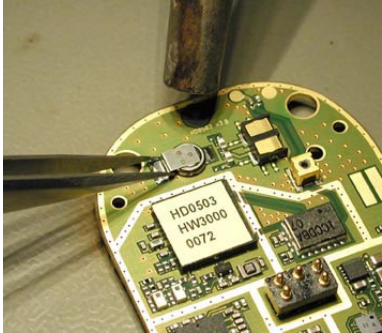
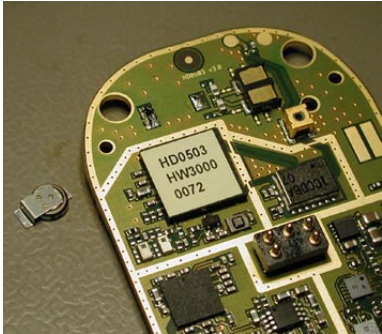
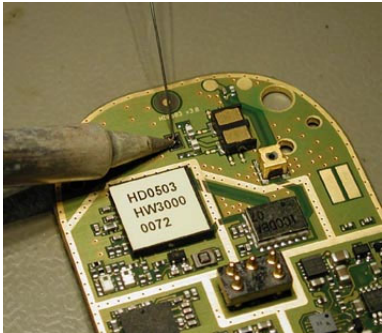
#### 3.4 Repair Documentation

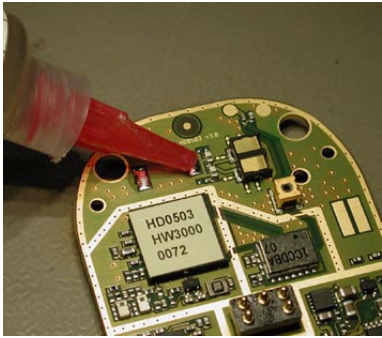
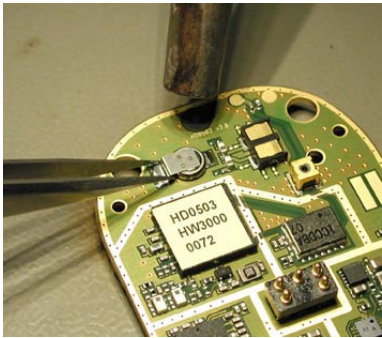
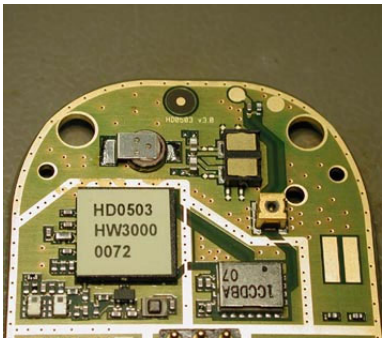
##### 3.4.1 Description of procedure:

###### 3.4.1.1 Diagnosis

Check the RTC battery visually. Watch for dry joints!

**3.4.1.2 Repair by component change**

#	Figure	Instruction	Note
1	 <p><b>Figure 3-1</b></p>	<p>Use a hot air blower to remove the defective RTC battery. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 3-2</b></p>	<p>The defective RTC battery is removed.</p>	
3	 <p><b>Figure 3-3</b></p>	<p>Add solder on the pads.</p>	

4	 <p style="text-align: center;"><b>Figure 3-4</b></p>	Add flux on the pads.	
5	 <p style="text-align: center;"><b>Figure 3-5</b></p>	Re-solder the new RTC battery by using a hot air blower and a soldering iron if necessary. Check that the RTC battery is exactly in right place. Watch surrounding components!	
6	 <p style="text-align: center;"><b>Figure 3-6</b></p>	New RTC battery is in its place.	

### 3.4.1.3 Repair by SW-Booting

Not possible!

### 3.4.1.4 Test

Retest the handset after the repair.

If clock resets when battery is removed, RTC battery is faulty.

Measurement with voltage meter, the voltage should be 1.8V.

Note! If battery is empty, wait that it charges and voltage raises up to 1.8V.

### 3.4.2 List of needed material

#### 3.4.2.1 Components

RTC-battery SMD VA6  
Part Number: L36145-K1310-X293

#### 3.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

#### 3.4.2.3 Special Tools

None

#### 3.4.2.4 Working materials

Flux  
Solder

### 3.4.3 Drawings

Figure 1: C62 board, RTC battery side

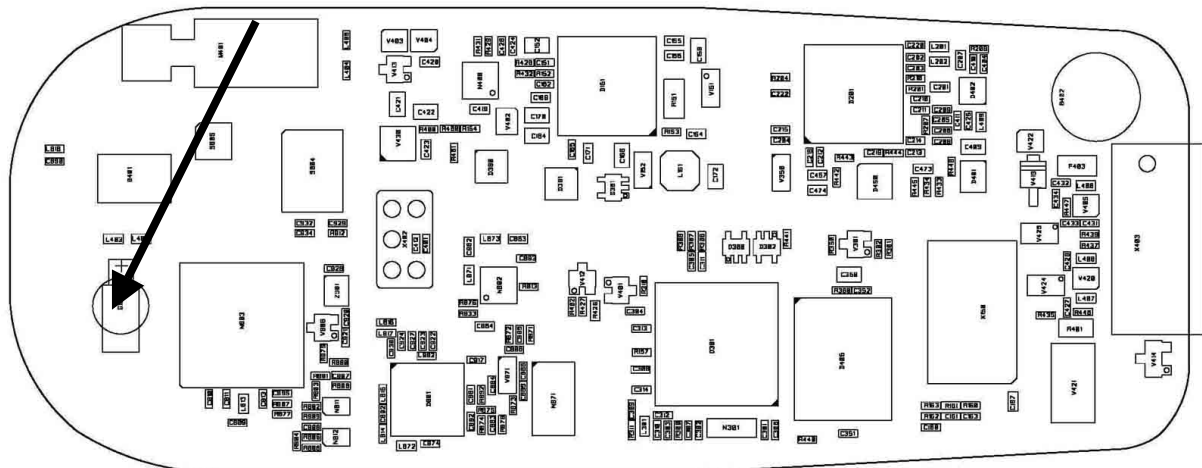


Figure 2: C62 RTC battery placement (top view)

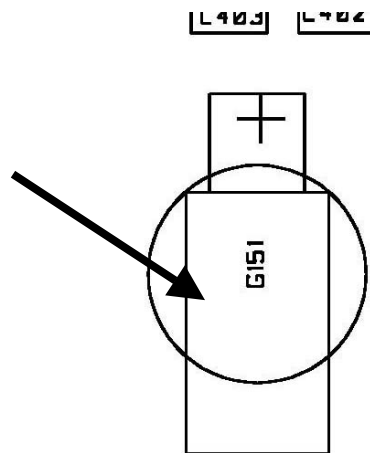
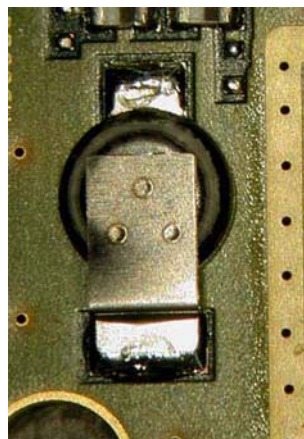


Figure 3: C62 RTC battery



## 4 Transistor SOT-323 (for LEDs)

### 4.1 Affected Units

4.1.1 Type: C62

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 light does not work.

#### 4.2.2 Fault Symptom 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

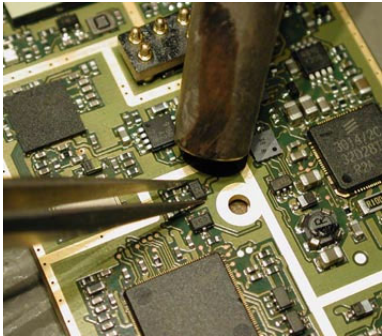
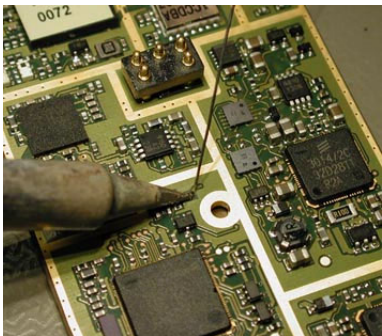
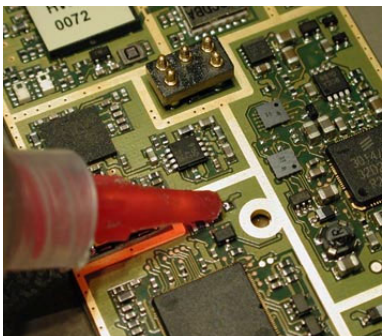
#### 4.4.1 Description of procedure:

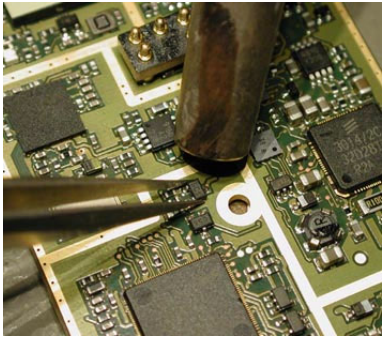
##### 4.4.1.1 Diagnosis

Check the transistor visually. Watch for dry joints!



4.4.1.2 Repair by component change

#	Figure	Instruction	Note
1	 <p><b>Figure 4-1</b></p>	<p>Use a hot air blower to remove the defective transistor. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 4-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p><b>Figure 4-3</b></p>	<p>Add flux on the pads.</p>	

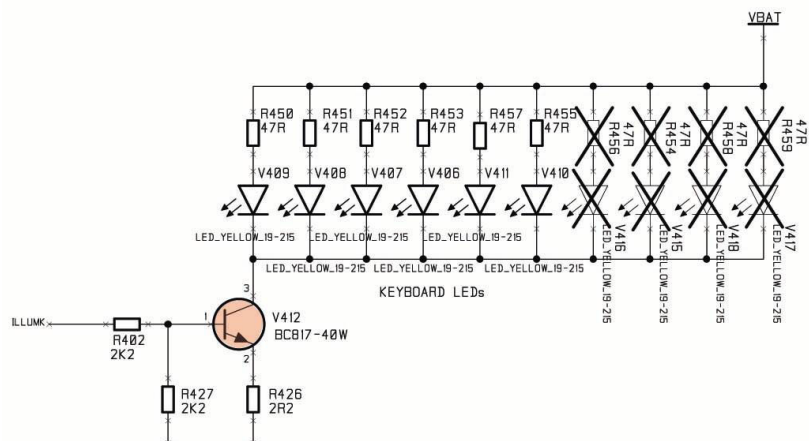
4		<p>Re-solder the new transistor by using a hot air blower and a soldering iron if necessary. Watch surrounding components!</p>
	<p><b>Figure 4-4</b></p>	

#### 4.4.1.3 Repair by SW-Booting

Not possible!

#### 4.4.1.4 Test

Retest the handset after the repair.



*The circuit diagram of Transistor SOT-323 (for LEDs)*

### 4.4.2 List of needed material

#### 4.4.2.1 Components

TR NPN SOT323 SMD  
Part number: L36197-F5122-F76

#### 4.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

**4.4.2.3 Special Tools**

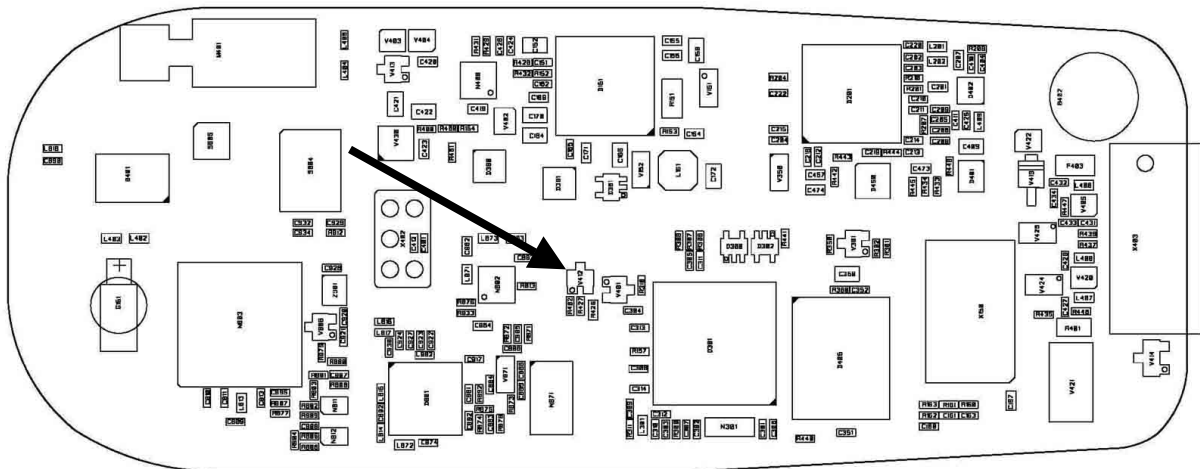
None

**4.4.2.4 Working materials**

Flux  
Solder

**4.4.3 Drawings**

**Figure 1: C62 board, transistor SOT323 (for LEDs) side**



**Figure 2: C62 transistor SOT323 (for LEDs) placement (top view)**

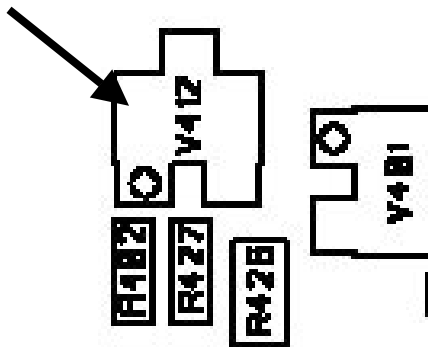
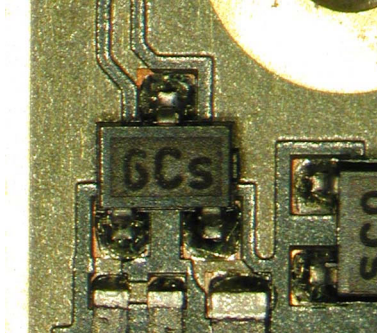


Figure 3: C62 transistor SOT323 (for LEDs)



## 5 Transistor SOT-323 (for Vibra)

### 5.1 Affected Units

5.1.1 Type: C62

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:

Vibrator does not work.

#### 5.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

### 5.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined


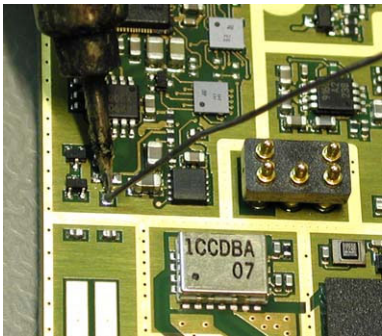
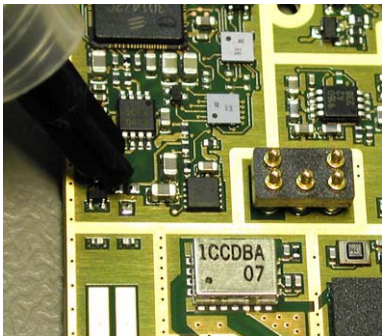
### 5.4 Repair Documentation

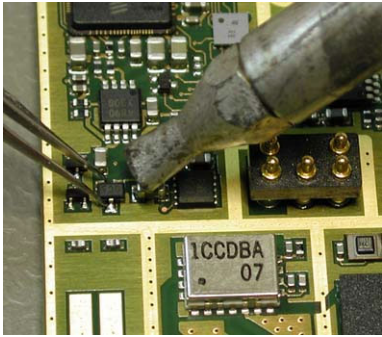
#### 5.4.1 Description of procedure:

##### 5.4.1.1 Diagnosis

Check the transistor visually. Watch for dry joints!

**5.4.1.2 Repair by component change**

#	Figure	Instruction	Note
1	 <p><b>Figure 5-1</b></p>	<p>Use a hot air blower to remove the defective transistor. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 5-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p><b>Figure 5-3</b></p>	<p>Add flux on the pads.</p>	

4	 <p><b>Figure 5-4</b></p>	<p>Re-solder the new transistor by using a hot air blower and a soldering iron if necessary. Watch surrounding components!</p>	
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#### 5.4.1.3 Repair by SW-Booting

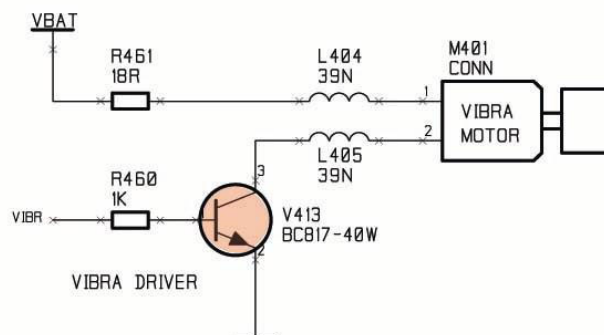
Not possible!

#### 5.4.1.4 Test

Retest the handset after the repair.

- GROUND+LEFT VIBRA PAD should have VBATT (4.2V).
- COILS L404, L405 should have resistance of 1.0 Ohm.

Change V413 if vibrator does not work after replacement.



*The circuit diagram of Transistor SOT-323 (for vibra)*

#### 5.4.2 List of needed material

##### 5.4.2.1 Components

TR NPN SOT323 SMD  
Part number: L36197-F5122-F76

##### 5.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers



**5.4.2.3 Special Tools**

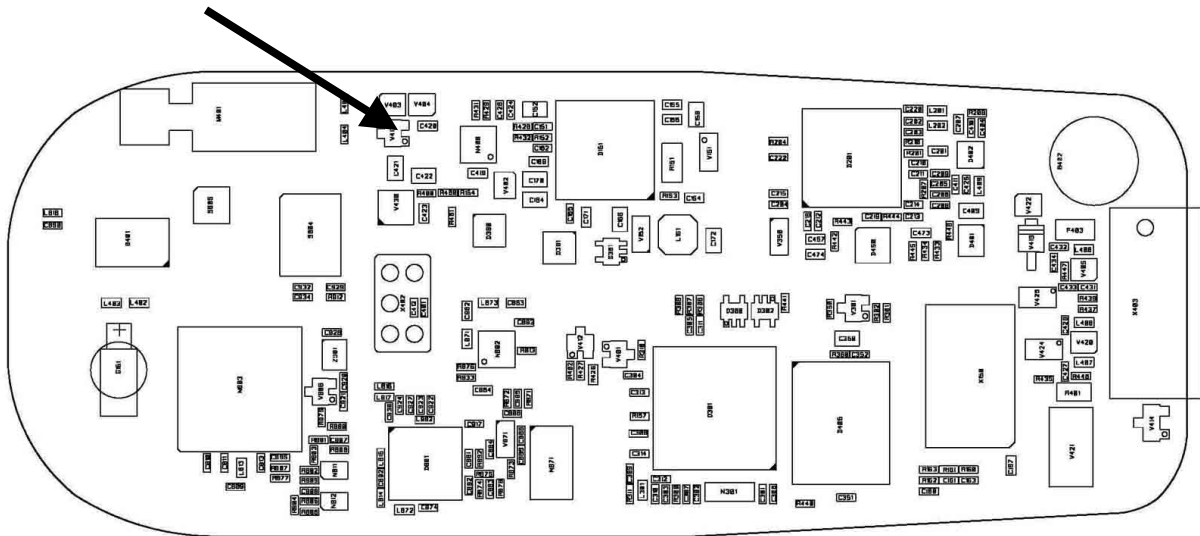
None

**5.4.2.4 Working materials**

Flux  
Solder

**5.4.3 Drawings**

**Figure 1: C62 board, transistor SOT323 (for vibra) side**



**Figure 2: C62 transistor SOT323 (for vibra) placement (top view)**

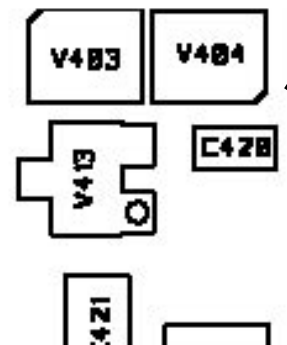
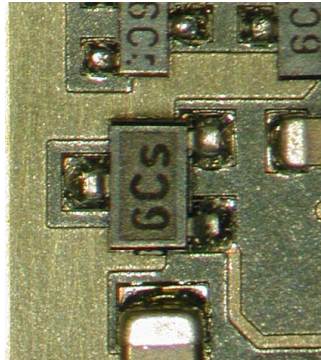




Figure 3: C62 transistor SOT323 (for Vibra)



## 6 Fuse

### 6.1 Affected Units

6.1.1 Type: C62

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:

Charging does not work.  
Accessories do not work.

#### 6.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

### 6.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined

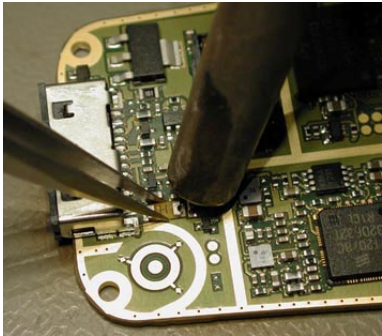
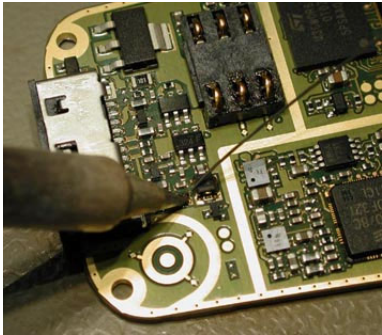
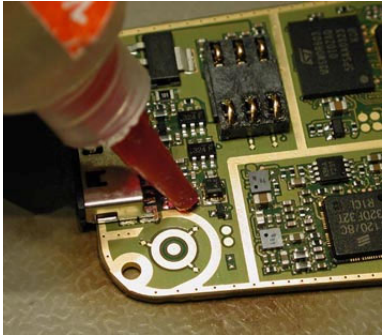
### 6.4 Repair Documentation

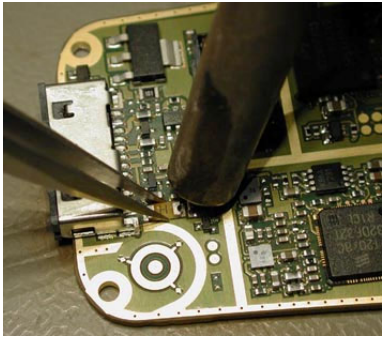
#### 6.4.1 Description of procedure:

##### 6.4.1.1 Diagnosis

Check the fuse visually. Watch for dry joints!

**6.4.1.2 Repair by component change**

#	Figure	Instruction	Note
1	 <p><b>Figure 6-1</b></p>	<p>Use a hot air blower to remove the defective fuse. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 6-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p><b>Figure 6-3</b></p>	<p>Add flux on the pads.</p>	

4		<p>Re-solder the new fuse by using a hot air blower and a soldering iron if necessary. Watch surrounding components!</p>
	<p><b>Figure 6-4</b></p>	

### 6.4.1.3 Repair by SW-Booting

Not possible!

### 6.4.1.4 Test

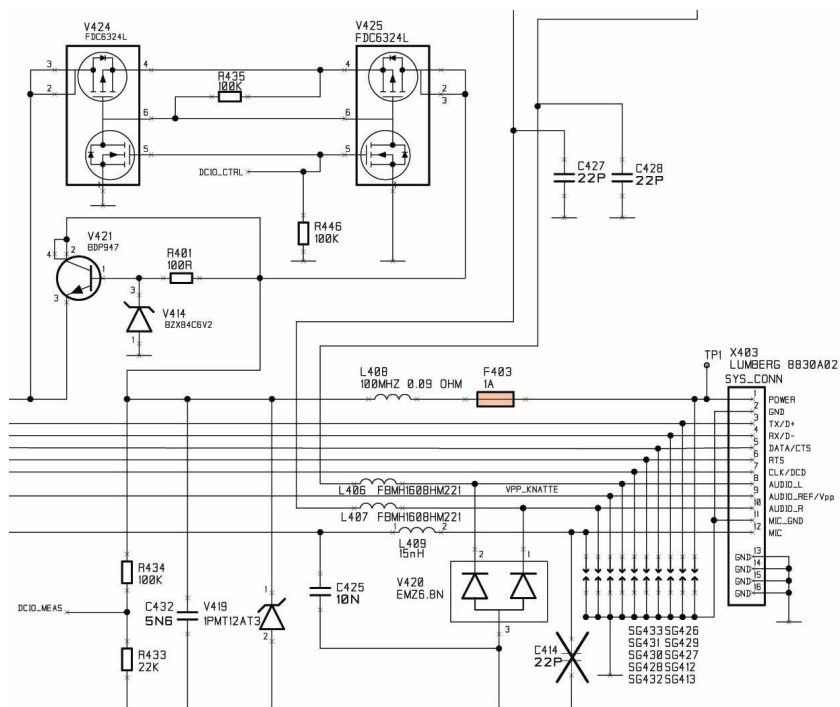
Retest the handset after the repair.

Measure resistance over fuse (F403), it should be 0 Ohm.

Measure transistor SOT-223 (V421) PIN1+GROUND, it should be 6.2V (zener voltage), if it's not, then the zener diode (V414) is faulty.

Measure V421 PIN2+GROUND, it should be 8.3 V (charging voltage, not charging mode), if it's not, then the Voltage suppressor (V419) is faulty.

Measure V421 PIN3+GROUND, it should be 5.7V (lowered voltage), if it's not, then the V421 is faulty.



The circuit diagram of Fuse

## 6.4.2 List of needed material

### 6.4.2.1 Components

Fuse low profile 1A 1206 SMD  
Part number: L36197-F5122-F79

### 6.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

### 6.4.2.3 Special Tools

None

### 6.4.2.4 Working materials

Flux  
Solder

## 6.4.3 Drawings

Figure 1: C62 board, fuse side

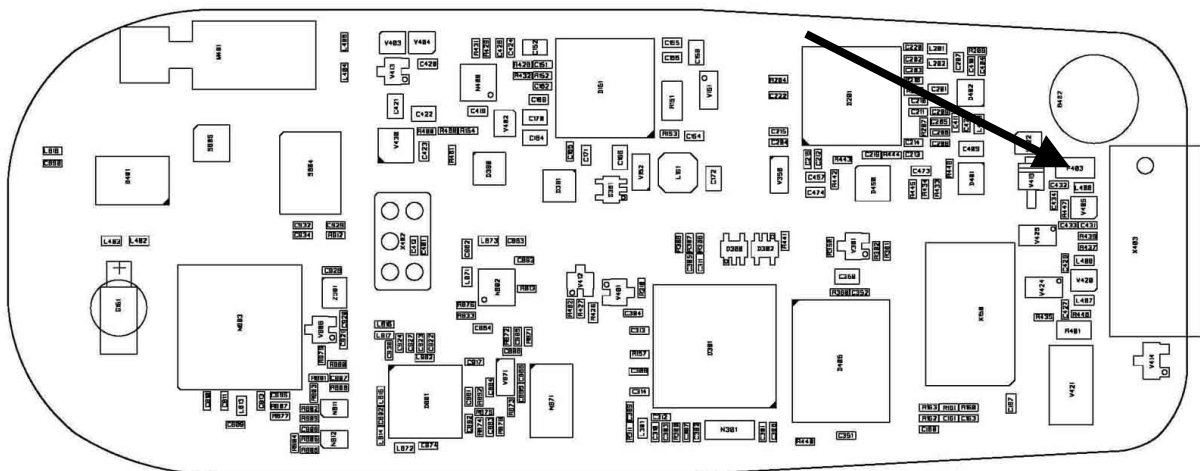


Figure 2: C62 fuse placement (top view)

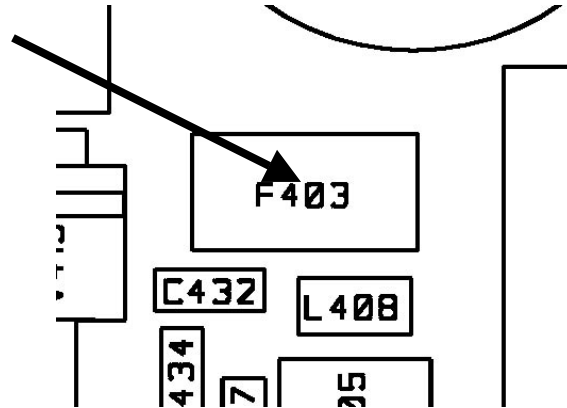


Figure 3: C62 fuse



## 7 Voltage supressor

### 7.1 Affected Units

7.1.1 Type: C62

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:

Charging does not work.  
Accessories do not work.

#### 7.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

### 7.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined

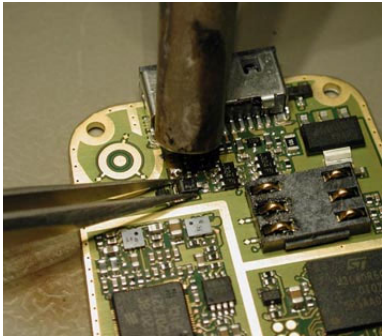
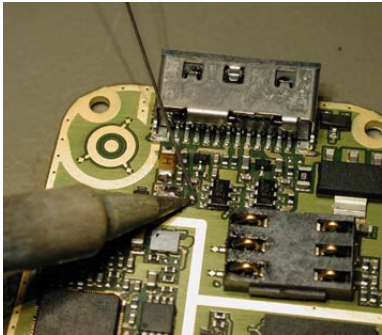
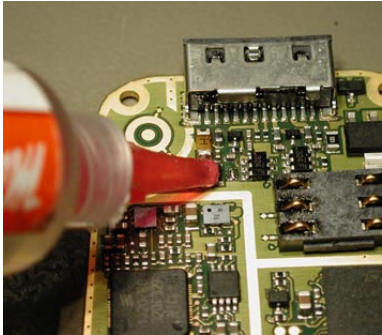
### 7.4 Repair Documentation

#### 7.4.1 Description of procedure:

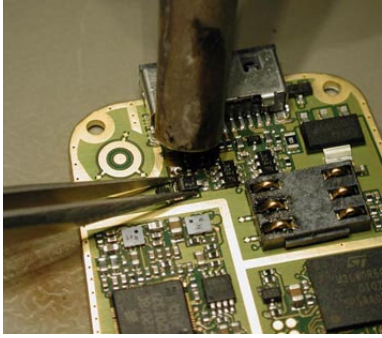
##### 7.4.1.1 Diagnosis

Check the voltage supressor visually. Watch for dry joints!

7.4.1.2 Repair by component change

#	Figure	Instruction	Note
1	 <p style="text-align: center;"><b>Figure 7-1</b></p>	<p>Use a hot air blower to remove the defective voltage suppressor. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p style="text-align: center;"><b>Figure 7-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p style="text-align: center;"><b>Figure 7-3</b></p>	<p>Add flux on the pads.</p>	



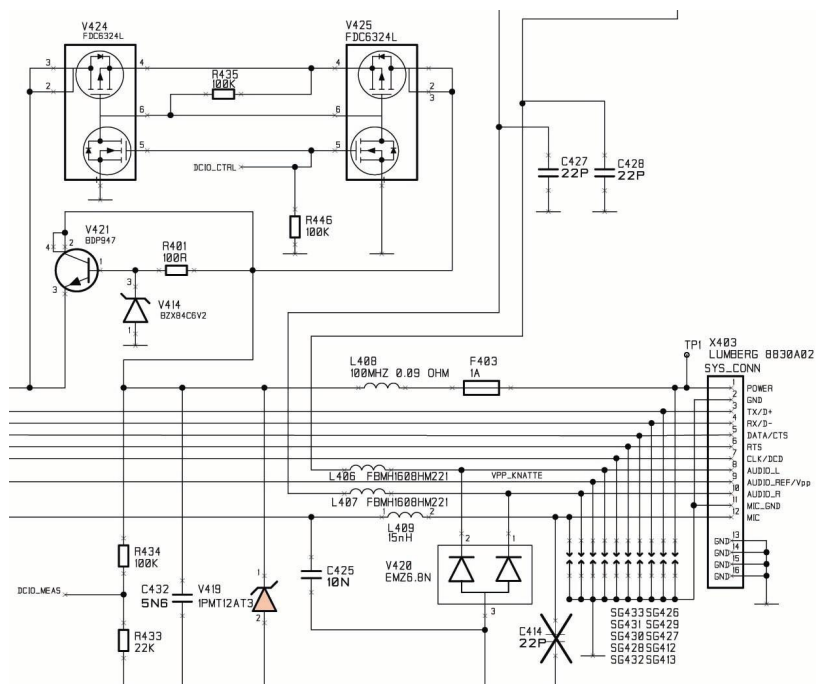
4		<p>Re-solder the new voltage suppressor by using a hot air blow and a soldering iron if necessary. Watch surrounding components!</p>
	<p><b>Figure 7-4</b></p>	

**7.4.1.3 Repair by SW-Booting**

Not possible!

**7.4.1.4 Test**

Retest the handset after the repair.  
 Measure resistance over fuse (F403), it should be 0 Ohm.  
 Measure transistor SOT-223 (V421) PIN1+GROUND, it should be 6.2V (zener voltage), if it's not, then the zener diode (V414) is faulty.  
 Measure V421 PIN2+GROUND, it should be 8.3 V (charging voltage, not charging mode), if it's not, then the Voltage suppressor (V419) is faulty.  
 Measure V421 PIN3+GROUND, it should be 5.7V (lowered voltage), if it's not, then the V421 is faulty.



*The circuit diagram of Voltage suppressor*

## 7.4.2 List of needed material

### 7.4.2.1 Components

Zener transient voltage suppressor 12V max 1000W  
Part number: L36197-F5122-F81

### 7.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

### 7.4.2.3 Special Tools

None

### 7.4.2.4 Working materials

Flux  
Solder

## 7.4.3 Drawings

Figure 1: C62 board, Voltage suppressor side

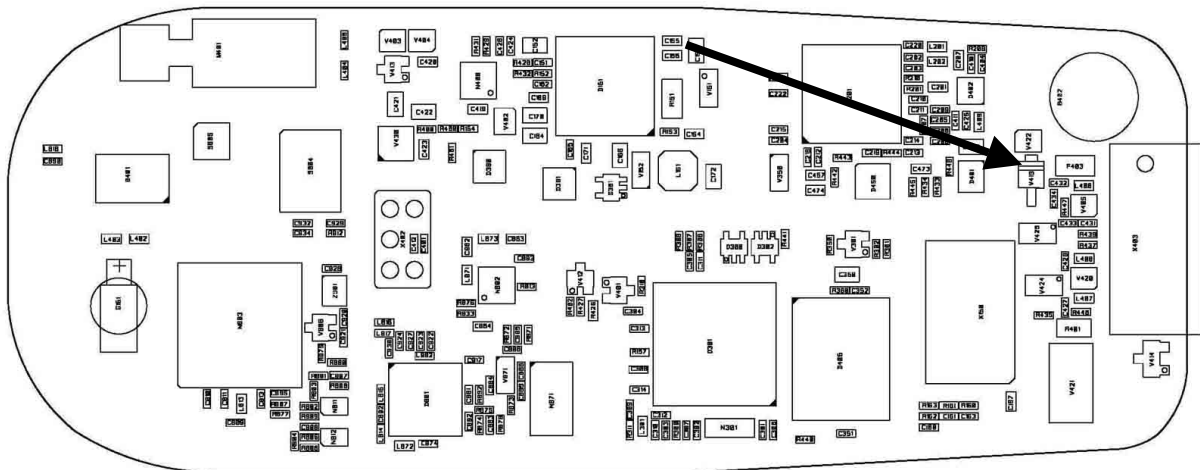


Figure 2: C62 Voltage supsressor placement (top view)

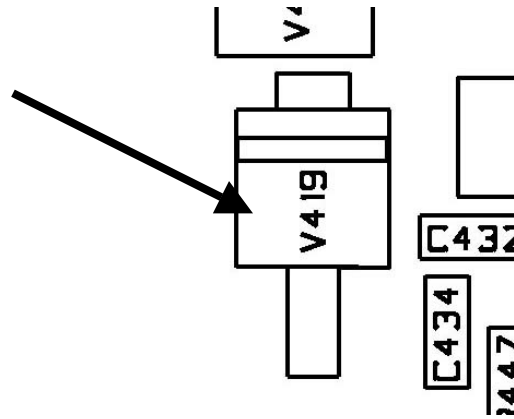
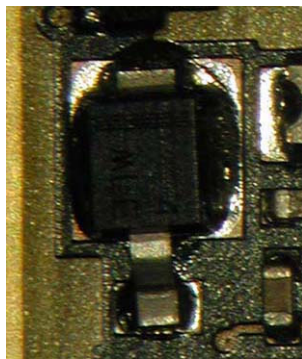


Figure 3: C62 voltage supsressor



## 8 Transistor SOT-223

### 8.1 Affected Units

8.1.1 Type: C62

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:

Charging does not work.

#### 8.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

### 8.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined

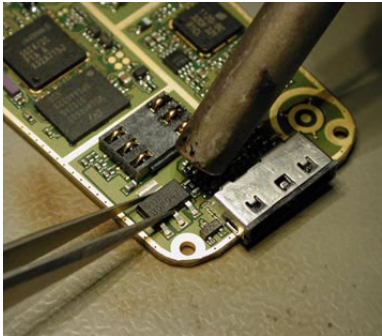
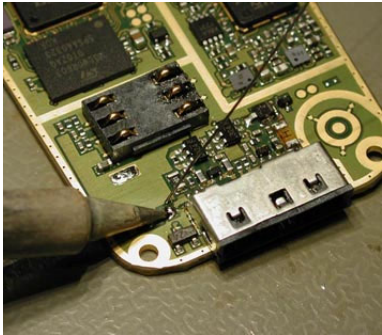
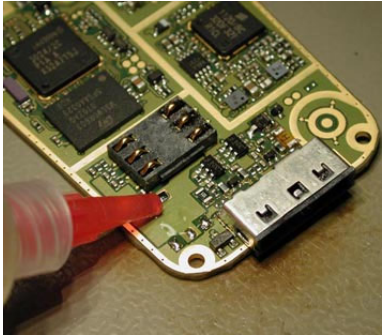
### 8.4 Repair Documentation

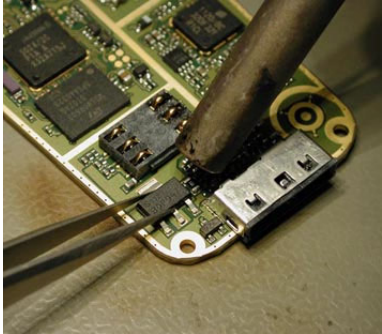
#### 8.4.1 Description of procedure:

##### 8.4.1.1 Diagnosis

Check the transistor visually. Watch for dry joints!

8.4.1.2 Repair by component change

#	Figure	Instruction	Note
1	 <p><b>Figure 8-1</b></p>	<p>Use a hot air blower to remove the defective transistor. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 8-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p><b>Figure 8-3</b></p>	<p>Add flux on the pads.</p>	

4		<p>Re-solder the new transistor by using a hot air blower and a soldering iron if necessary. Watch surrounding components!</p>
	<p><b>Figure 8-4</b></p>	

### 8.4.1.3 Repair by SW-Booting

Not possible!

### 8.4.1.4 Test

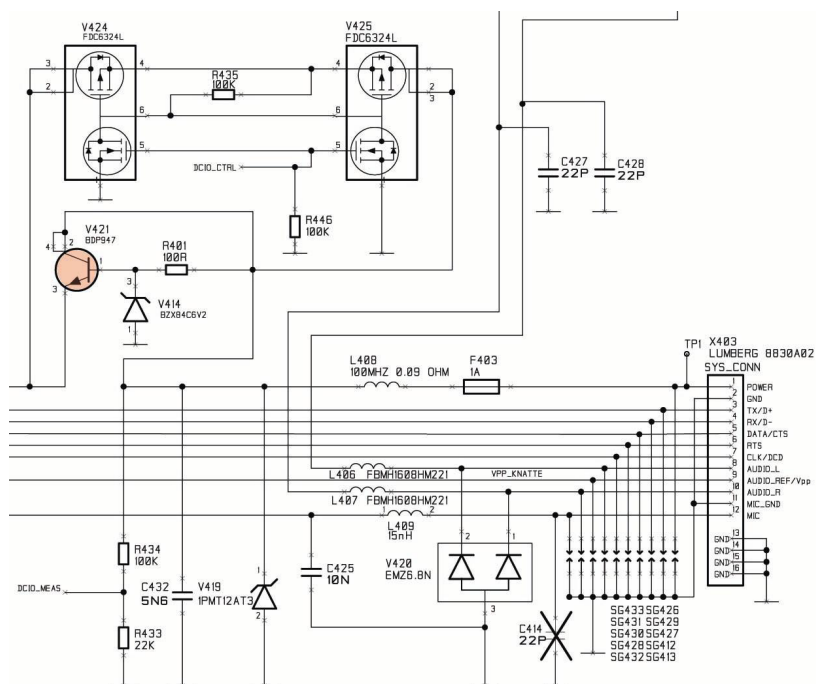
Retest the handset after the repair.

Measure resistance over fuse (F403), it should be 0 Ohm.

Measure transistor SOT-223 (V421) PIN1+GROUND, it should be 6.2V (zener voltage), if it's not, then the zener diode (V414) is faulty.

Measure V421 PIN2+GROUND, it should be 8.3 V (charging voltage, not charging mode), if it's not, then the Voltage suppressor (V419) is faulty.

Measure V421 PIN3+GROUND, it should be 5.7V (lowered voltage), if it's not, then the V421 is faulty.



The circuit diagram of Transistor SOT-223

## 8.4.2 List of needed material

### 8.4.2.1 Components

Transistor NPN SOT-223  
Part number: L36197-F5122-F77

### 8.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

### 8.4.2.3 Special Tools

None

### 8.4.2.4 Working materials

Flux  
Solder

## 8.4.3 Drawings

Figure 1: C62 board, transistor SOT-223 side

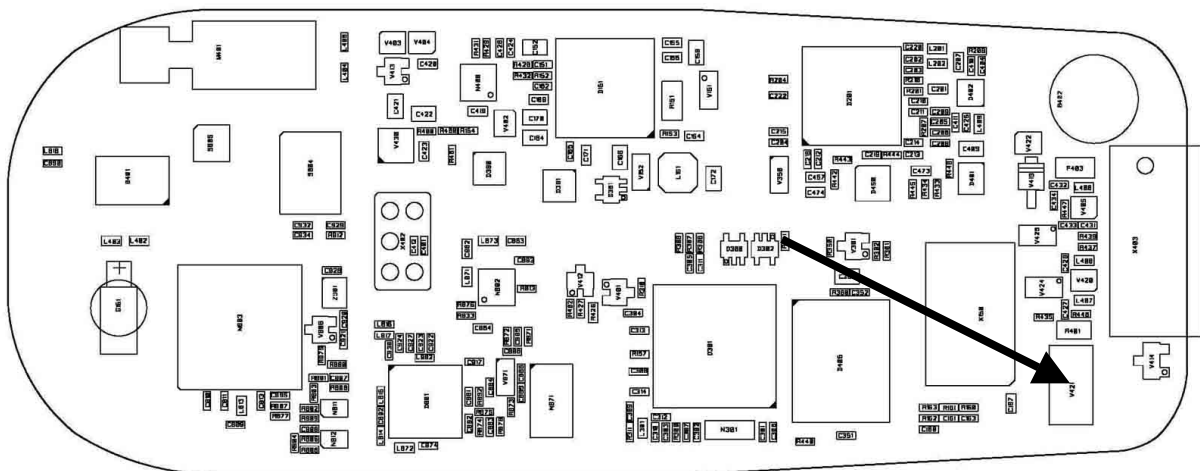


Figure 2: C62 transistor SOT-223 placement (top view)

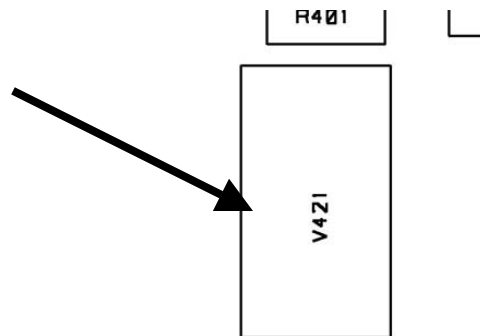
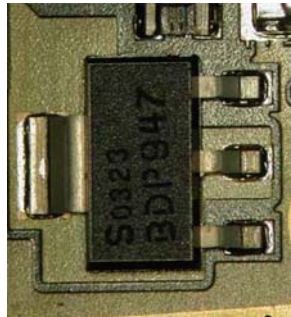


Figure 3: C62 transistor SOT-223





## 9 Zener diode

### 9.1 Affected Units

9.1.1 Type: C62

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:

Charging does not work.

#### 9.2.2 Fault Symptom on GSM-Tester:

This fault cannot be detected with a GSM-tester.

### 9.3 Priority:

- ..... Mandatory
- ..... Repair
- ..... Optional
- ..... Not Yet Defined

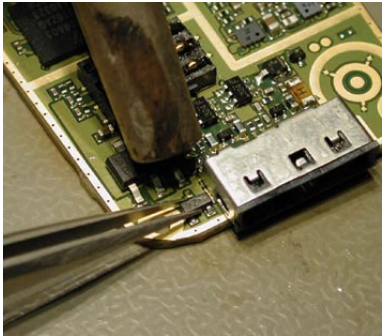
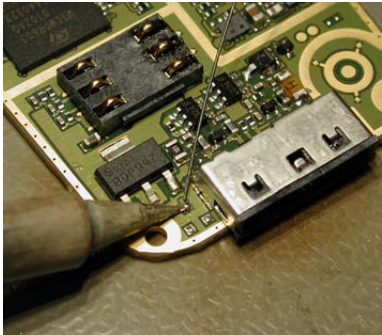
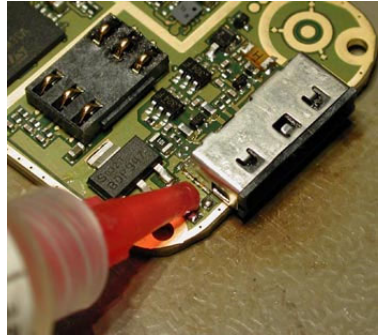
### 9.4 Repair Documentation

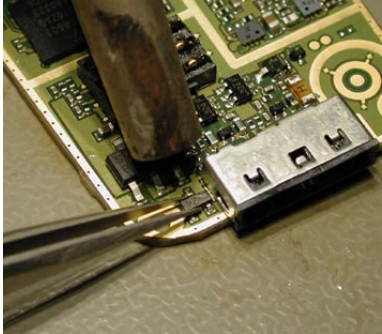
#### 9.4.1 Description of procedure:

##### 9.4.1.1 Diagnosis

Check the zener diode visually. Watch for dry joints!

9.4.1.2 Repair by component change

#	Figure	Instruction	Note
1	 <p><b>Figure 9-1</b></p>	<p>Use a hot air blower to remove the defective zener diode. Avoid excessive heat! Watch out for the surrounding components!</p>	
2	 <p><b>Figure 9-2</b></p>	<p>Add solder on the pads.</p>	
3	 <p><b>Figure 9-3</b></p>	<p>Add flux on the pads.</p>	

4		<p>Re-solder the new zener diode by using a hot air blower and a soldering iron if necessary. Watch surrounding components!</p>
	<p><b>Figure 9-4</b></p>	

### 9.4.1.3 Repair by SW-Booting

Not possible!

### 9.4.1.4 Test

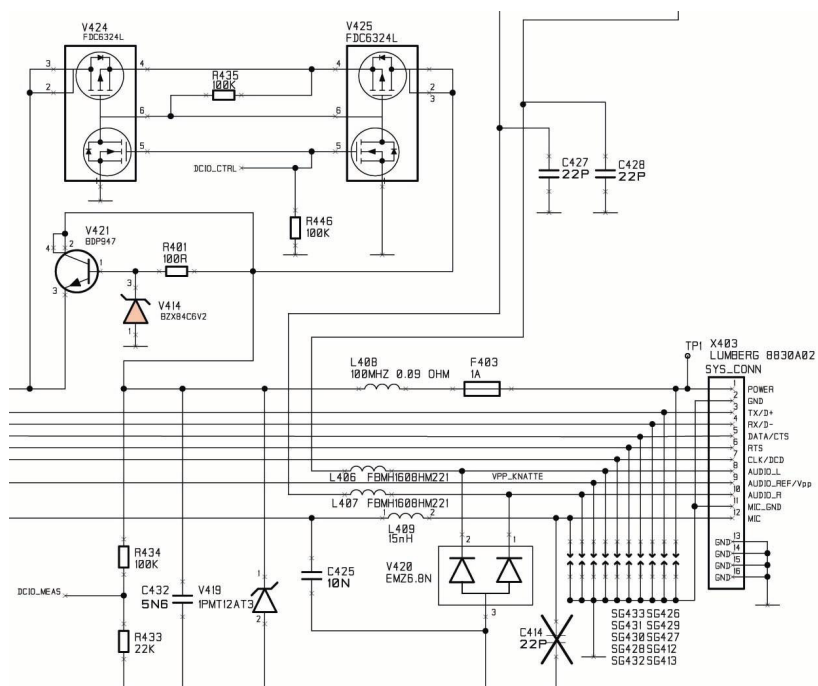
Retest the handset after the repair.

Measure resistance over fuse (F403), it should be 0 Ohm.

Measure transistor SOT-223 (V421) PIN1+GROUND, it should be 6.2V (zener voltage), if it's not, then the zener diode (V414) is faulty.

Measure V421 PIN2+GROUND, it should be 8.3 V (charging voltage, not charging mode), if it's not, then the Voltage suppressor (V419) is faulty.

Measure V421 PIN3+GROUND, it should be 5.7V (lowered voltage), if it's not, then the V421 is faulty.



The circuit diagram of Zener diode

## 9.4.2 List of needed material

### 9.4.2.1 Components

Zener diode 6.2V max 350mW SOT23 SMD  
Part number: L36197-F5122-F78

### 9.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

### 9.4.2.3 Special Tools

None

### 9.4.2.4 Working materials

Flux  
Solder

## 9.4.3 Drawings

Figure 1: C62 board, zener diode side

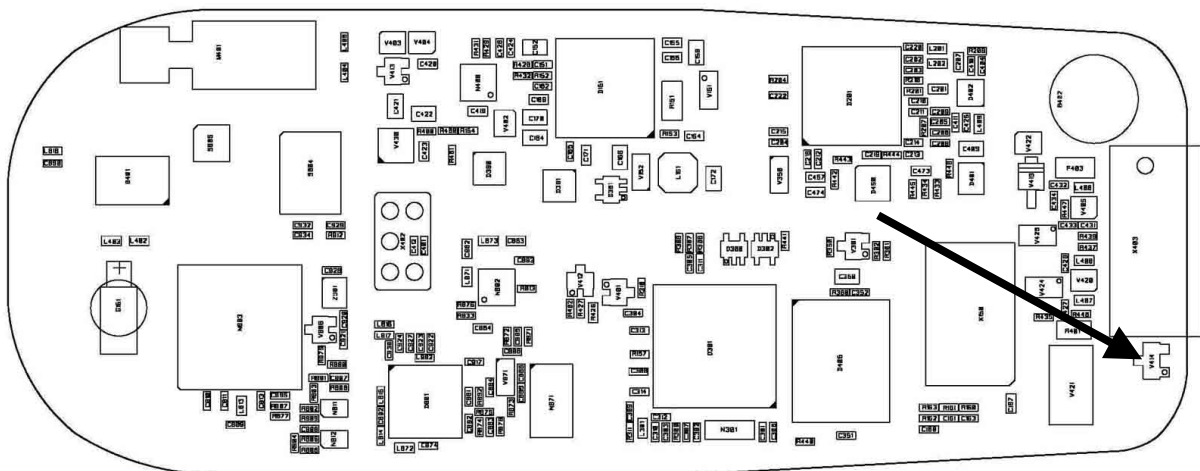


Figure 2: C62 zener diode placement (top view)

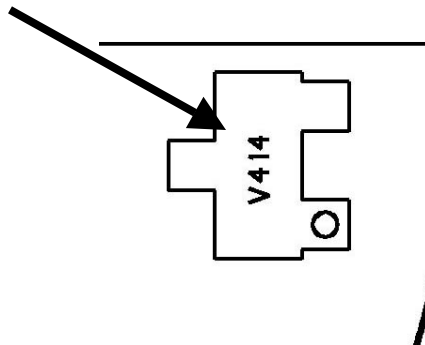
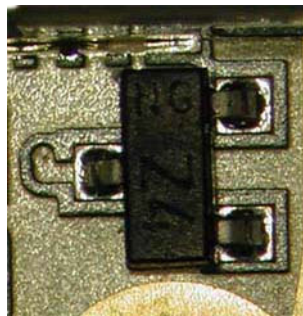


Figure 3: C62 zener diode



## 10 LED color yellow

### 10.1 Affected Units

10.1.1 Type: C62

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:

No even light in the keymat or dark area in the keymat.  
LEDs are not lit.

#### 10.2.2 Fault Symptom 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

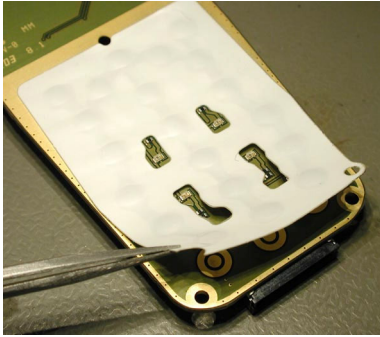
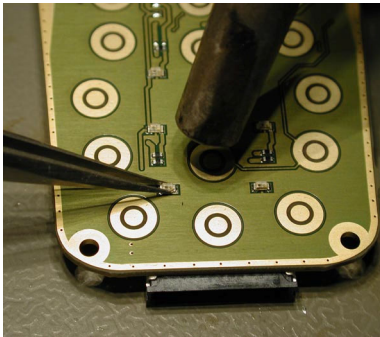
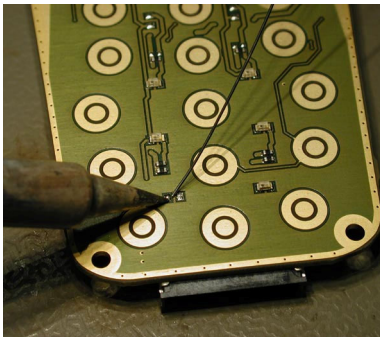
#### 10.4.1 Description of procedure:

##### 10.4.1.1 Diagnosis

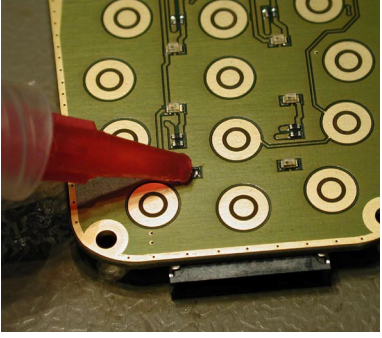
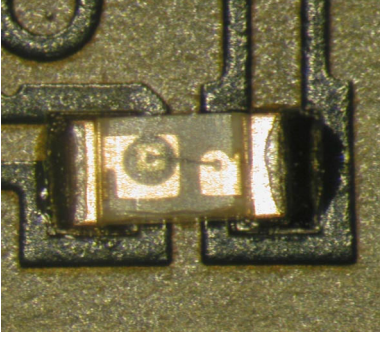
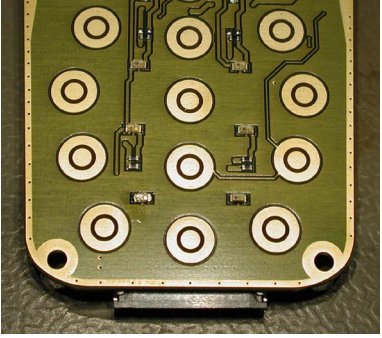
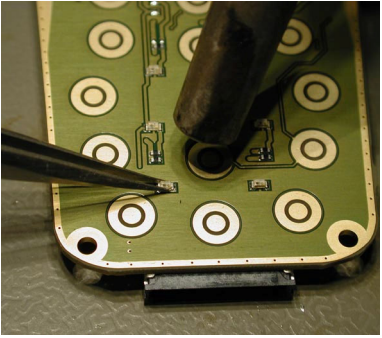
Check the yellow LED visually.  
Use the diode test function of a multimeter to check the status of the diode.

The typical voltage drop on the diode is 1.7V when testing the diode function with the multimeter.

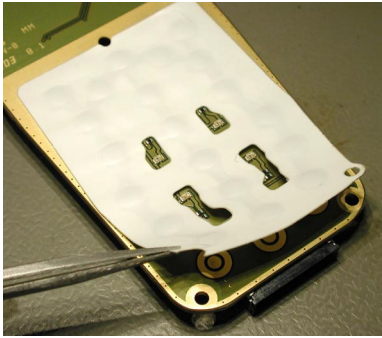
**10.4.1.2 Repair by component change**

#	Figure	Instruction	Note
1	 <p><b>Figure 10-1</b></p>	Remove the domesheet from the PWB.	
2	 <p><b>Figure 10-2</b></p>	Use a hot air blower to remove the defective yellow LED. Avoid excessive heat! Watch out for the surrounding components!	
3	 <p><b>Figure 10-3</b></p>	Add solder on the pads.	



4	 <p style="text-align: center;"><b>Figure 10-4</b></p>	Add flux on the pads.	
5	 <p style="text-align: center;"><b>Figure 10-5</b></p>	Place the LED according to Fig.13-5, anode on the right, cathode on the left.	Direction of the board in the picture: system connector is at the bottom (See Fig.13-6)
6	 <p style="text-align: center;"><b>Figure 10-6</b></p>		
7	 <p style="text-align: center;"><b>Figure 10-7</b></p>	Re-solder the new yellow LED by using a hot air blower and a soldering iron if necessary. Watch surrounding components!	



8	 <p><b>Figure 10-8</b></p>	<p>Mount the domesheet in its place. Use a new domesheet if the old one was damaged during removal.</p> <p>Use the the dome sheet Jig. F30032-P333-A1</p>
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**10.4.1.3 Repair by SW-Booting**

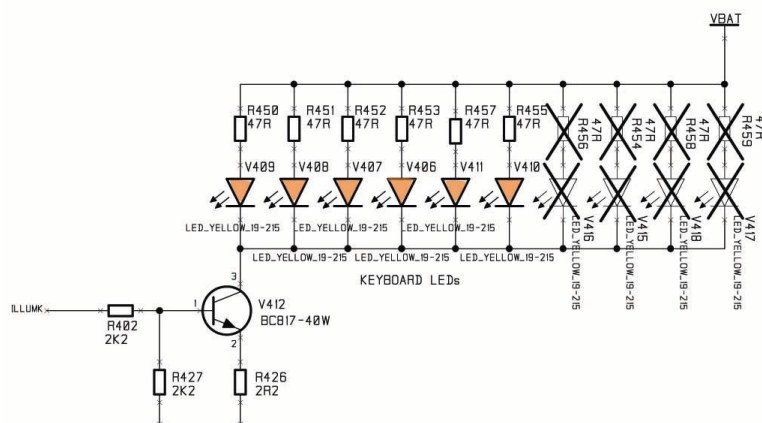
Not possible!

**10.4.1.4 Test**

Retest the handset after the repair.

Adding voltage (1.8V) on one of the LED, If LEDs work well, the light is lid.

- If single LED is empty, one can be changed (LEDs are in parallel connection).
- If all LEDs are empty, check TR SOT-323 (V412) with voltage meter.
  - Voltage over V412 should be over 0.5V.
  - PIN1+GROUND (when light is on) voltage should be 1.6V.
  - PIN3+GROUND (when light is on) voltage should be VBATT-1.8V (2.8V).



*The circuit diagram of the LED color yellow*

## 10.4.2 List of needed material

### 10.4.2.1 Components

LED yellow 1.60x0.8x0.6mm SMD  
Part number: L36197-F5122-F72

### 10.4.2.2 Jigs and Tools

Hot air blower  
Soldering iron  
Tweezers

### 10.4.2.3 Special Tools

None

### 10.4.2.4 Working materials

Flux  
Solder

## 10.4.3 Drawings

Figure 1: C62 board, LED colour yellow side

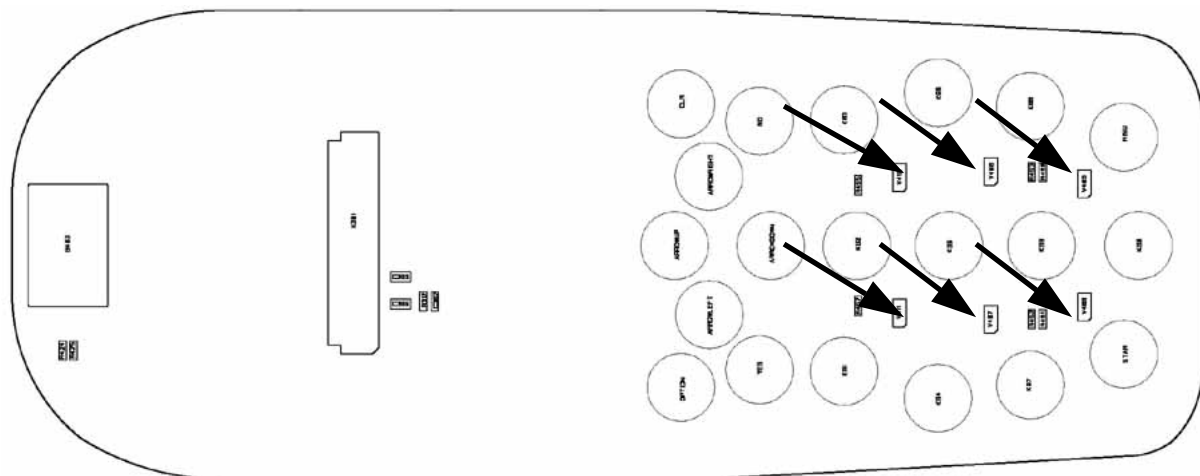


Figure 2: C62 LED colour yellow placement (top view)

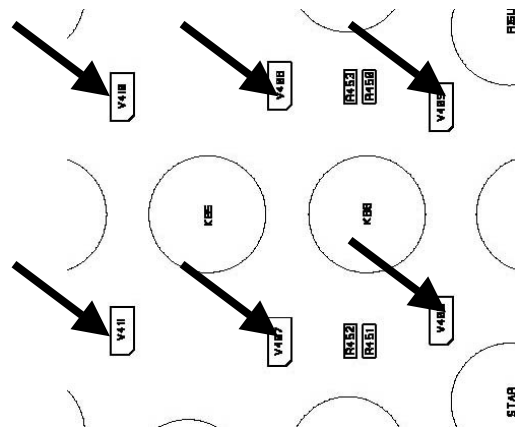


Figure 3: C62 LED colour yellow

