Service Repair Documentation
Level 3 (Basic) – ME75

Release	Date	Department	Notes to change
R 1.0	13.10.2005	BenQ Mobile CC S CES	New document

Table of Content

1 Introduction

1.1 Purpose

This Service Repair Documentation is intended to support Service partners to carry out repairs on BenQ repair level 3. The described failures shall only be repaired in BenQ authorized local workshops.

The level 3 (former Level 2.5light) partners are obliged to repair level 3 classified boards, up to their repair level, under consideration of this repair instruction.

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 ME75 Level 1-2 repair documentation. It has to be ensured that every 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).

Check at least weekly C-market for updates and consider all ME75 related Customer Care Information

ME75 Partnumber on IMEI label: S30880-S6980-#xxx

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

Scrap Handling: All Scrap information given in this manual are related to the SCRAP-Rules and instructions.

Attention: Consider the new "LEAD-FREE" soldering rules (available in the communication market), avoid excessive heat.

1.2 Scope

This document is the reference document for all BenQ mobile authorised Service Partners which are released to repair BenQ mobile phones up to level 2.5 light.

1.3 Terms and Abbreviations

2 List of available level 2.5light parts

(according to Component Matrix V1.09 - check C-market for updates)

Product	ID	Order Number	Description CM
ME75	S2931	L36315-Z77-C218	JOYSTICK
ME75	V2650	L36197-F5008-F492	IRDA 115.2 KBIT
ME75	X1400	L36334-Z97-C336	CONNECTOR BATTERY 3-POL R65
ME75	X1504	L36334-Z93-C303	IO-JACK SLIM 12-POL
ME75	X1604	L50634-Z97-C406	CONNECTOR SIM CARD READER R65 (B)
ME75	X2202	L36334-Z97-C205	CONNECTOR DISPLAY 10POL
ME75	X2705	L50634-Z97-C383	CONNECTOR BOARD TO BOARD 12-POL. X75
ME75	X3651	L50634-Z97-C379	CONNECTOR CAMERA-SOCKET
ME75	X3800	L36334-Z93-C297	CONNECTOR ANTENNA 6mm

3 Hardware requirements

(according to L2.5L-L2.5 General soldering information V1.3 - check C-market for updates)

Jigs, Tools and working materials for all described repairs:
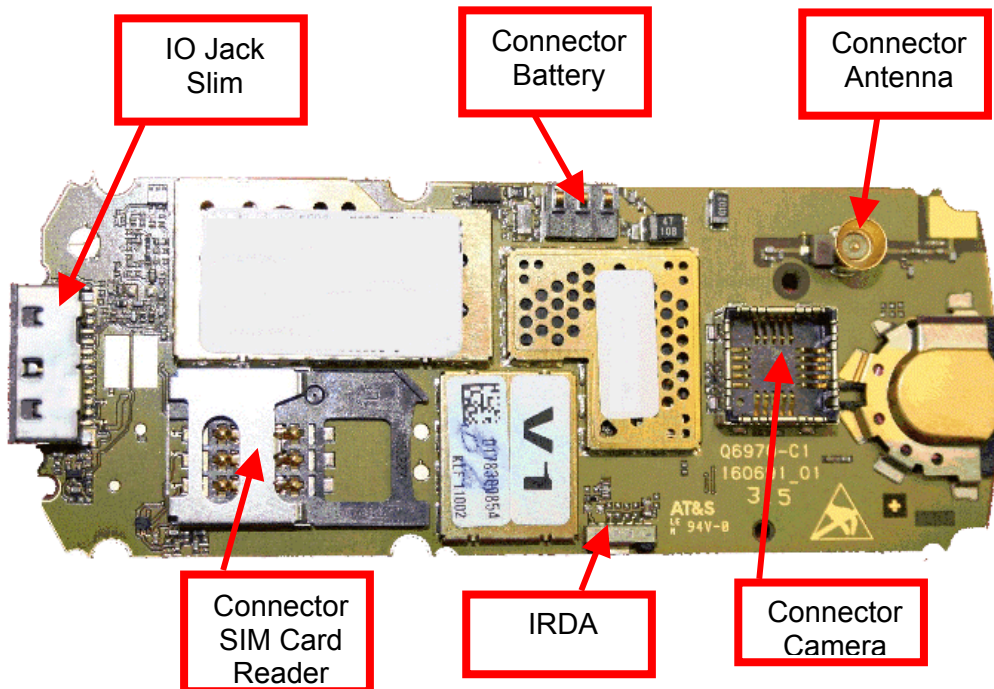- hot air blower
- soldering gun
- tweezers
- flux
- solder
- ME75 dome sheet jig

4 ME75 Board layout

Upper board side

Joystick

Connector
Bord to Bord

Connector
Display

Lower board side

IO Jack
Slim

Connector
Battery

Connector
Antenna

Connector
SIM Card
Reader

IRDA
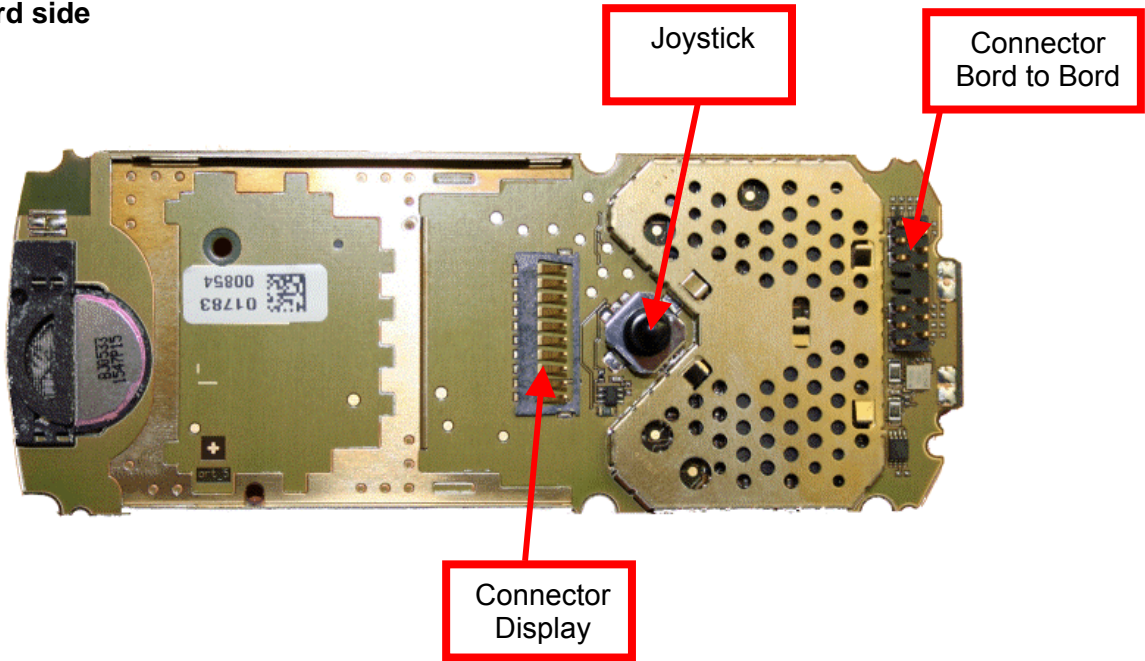
Connector
Camera

5 SIM Card Problems

Fault Symptoms	
Customer: Handset does not accept SIM card	GRT: SIM Card Problems

```
                    ┌──────────────────┐              ┌──────────────────┐
                    │ SIM Card Problems │              │ Back to customer │
                    └──────────────────┘              │ without repair   │
                             │                        └──────────────────┘
                             ▼                                 ▲
              ┌──────────────────────┐    not okay    ┌──────────────────┐
              │ Watch for oxidation  │───────────────▶│ caused by        │
              │ and damaged pads of  │                │ customer         │
              │ the SIM Card reader  │                └──────────────────┘
              └──────────────────────┘                         │
                             │ okay          not okay          ▼
              ┌──────────────────────┐     ┌──────────────────┐
              │ Check the status of  │────▶│ SCRAP - has to be│
              │ the EMI Filter       │     │ send separately  │
              │ visually             │     │ to WSC           │
              └──────────────────────┘     └──────────────────┘

              ┌──────────────────────┐    not okay    ┌──────────────────┐
              │ Check the status of  │───────────────▶│ Exchange the     │
              │ the EMI Filter       │                │ damaged Filter   │
              │ visually             │                └──────────────────┘
              └──────────────────────┘
                             │ okay
     not okay ┌──────────────────────┐              ┌──────────────────┐
   ◀──────────│ Check the status of  │─────────────▶│ - check for      │
              │ the SIM Card reader  │              │   twisted or     │
              │ visually             │              │   bent contacts  │
              └──────────────────────┘              │ - check for dry  │
                             │ okay                 │   joints         │
                             ▼                      └──────────────────┘
  ┌──────────────┐ not okay ┌──────────────────────┐  okay  ┌──────────────────┐
  │ Exchange     │◀─────────│ Use the resistor test│───────▶│ Continue with    │
  │ SIM Card     │          │ function of a        │        │ higher repair    │
  │ reader       │          │ multimeter to check  │        │ level            │
  └──────────────┘          │ connection between   │        └──────────────────┘
                            │ spring contacts and  │
                            │ soldering contacts.  │
                            │ The value must be ~0Ω│
                            └──────────────────────┘
```

Connector SIM Card Reader
Use soldering iron to remove defective component. Avoid excessive heat! Watch surrounding components!
Resolder new component afterwards.
E-commerce order number: L50634-Z97-C406
E-commerce order name: CONNECTOR SIM CARD READER R65 (B)
Soldering temperature: ~ 360°C TIP Temp.

IRIS Diagnose Code: 43300 Interface/SIM Card reader/Mechanical Damage

6 IO Connector Problems

Fault Symptoms	
Customer: Charging Problems Problems with external loudspeaker or microphone when using a car kit Problems with accessories connected at the IO connector	GRT: No connection to GRT

IO connector Problems

Back to customer without repair

Watch for oxidation and damaged pads of the IO connector → not okay → **caused by customer**

caused by customer → **SCRAP - has to be send separately to WSC**

okay → Check the dust inside the IO connector → not okay → Clean IO connector

okay → Check the status of the IO connector visually → (- check for twisted or bent contacts - check for dry joints)

not okay → **Exchange IO connector**

okay → Use the resistor test function of a multimeter to check connection between spring contacts and soldering contacts. The value must be ~0Ω

not okay → **Exchange IO connector**

okay → **Continue with higher repair level**

Connector IO Jack
Use soldering iron to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L36334-Z93-C303
E-commerce order name: IO-JACK SLIM 12-POL
Soldering temperature: ~ 360°C TIP Temp.

IRIS Diagnose Code: 46100 Interface/Charging Connector/Mechanical Damage
47300 Interface/Data Interface/Mechanical Damage
4B100 Interface/Headset Connector/Mechanical Damage

7 B to B connector Problems

Fault Symptoms	
Customer: Upper slider keyboard malfunction Upper slider keypad illumination does not work Display problems	GRT: Keyboard malfunction Current measured failed

Connector Board to Board

Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50634-Z97-C340
E-commerce order name: BOARD TO BOARD 30-POL
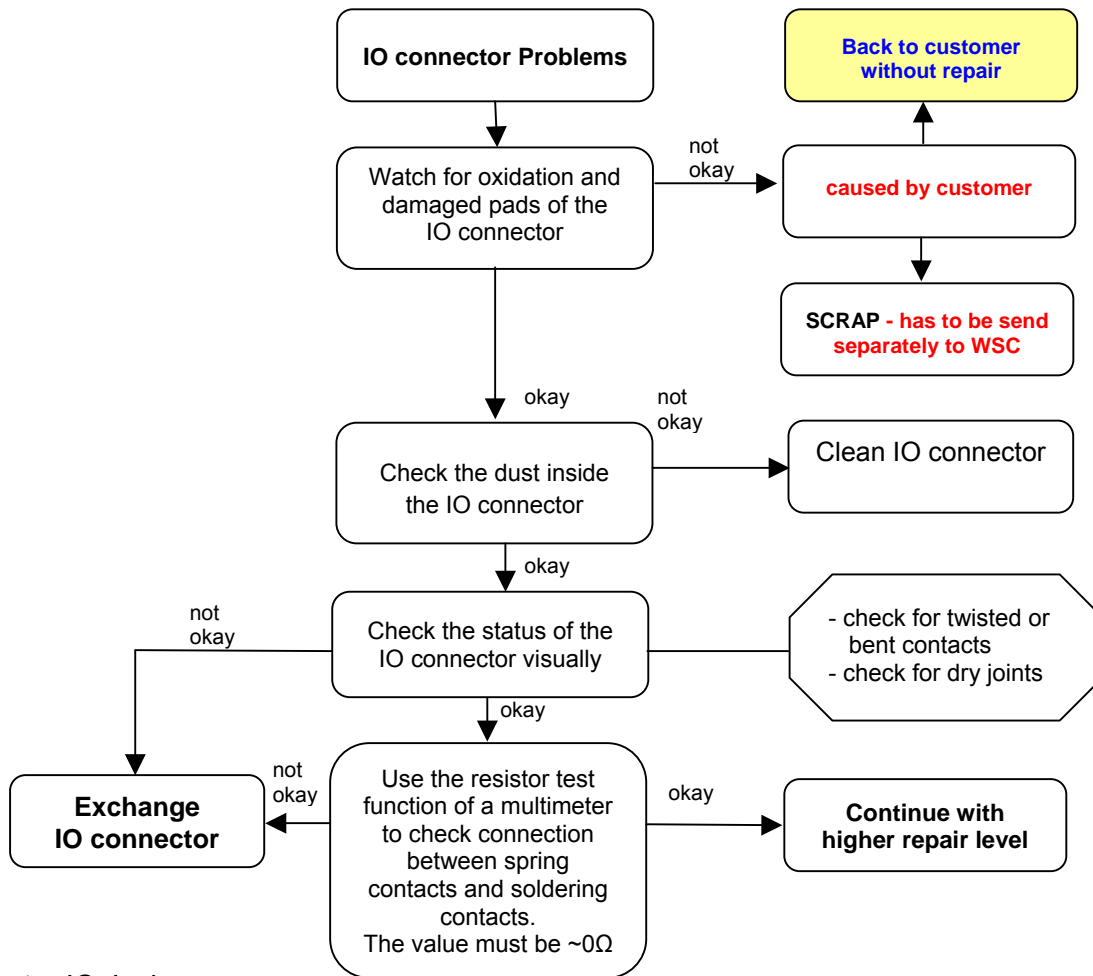Soldering temperature: ~ 360°C TIP Temp.

IRIS Diagnose Code: 32100 Keys / Main / No Function
32200 Keys / Main / Reduced Functionality
36000 Keys / Illumination

8   Battery connector Problems

Fault Symptoms	
Customer: Mobile does not switch on	GRT: No connection to GRT

```
┌──────────────────────────┐                    ┌──────────────────────────┐
│ Battery connector problems│                    │   Back to customer       │
└──────────────────────────┘                    │   without repair         │
             │                                   └──────────────────────────┘
             ▼                        not okay                  ▲
┌──────────────────────────┐  ─────────────────▶ ┌──────────────────────────┐
│  Watch for oxidation and  │                     │    caused by customer     │
│  damaged pads of the      │                     └──────────────────────────┘
│  battery connector        │                                  │
└──────────────────────────┘                                  ▼
             │ okay                                ┌──────────────────────────┐
             ▼                                     │ SCRAP - has to be send    │
   not okay                                        │ separately to WSC         │
  ◀─────────┌──────────────────────────┐          └──────────────────────────┘
            │  Check the status of the  │  ┌─────────────────────────────┐
            │  battery connector        │──│ - check for twisted or      │
            │  visually                 │  │   bent contacts             │
            └──────────────────────────┘  │ - check for dry joints      │
             │ okay                        └─────────────────────────────┘
             ▼
┌──────────┐  not okay  ┌──────────────────────────┐   okay   ┌──────────────────┐
│ Exchange │ ◀────────  │ Use the resistor test     │ ───────▶ │ Continue with     │
│ battery  │            │ function of a multimeter  │          │ higher repair level│
│ connector│            │ to check connection       │          └──────────────────┘
└──────────┘            │ between spring            │
                        │ contacts and soldering    │
                        │ contacts. The value       │
                        │ must be ~ 0Ω.             │
                        └──────────────────────────┘
```

Connector BATTERY
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding
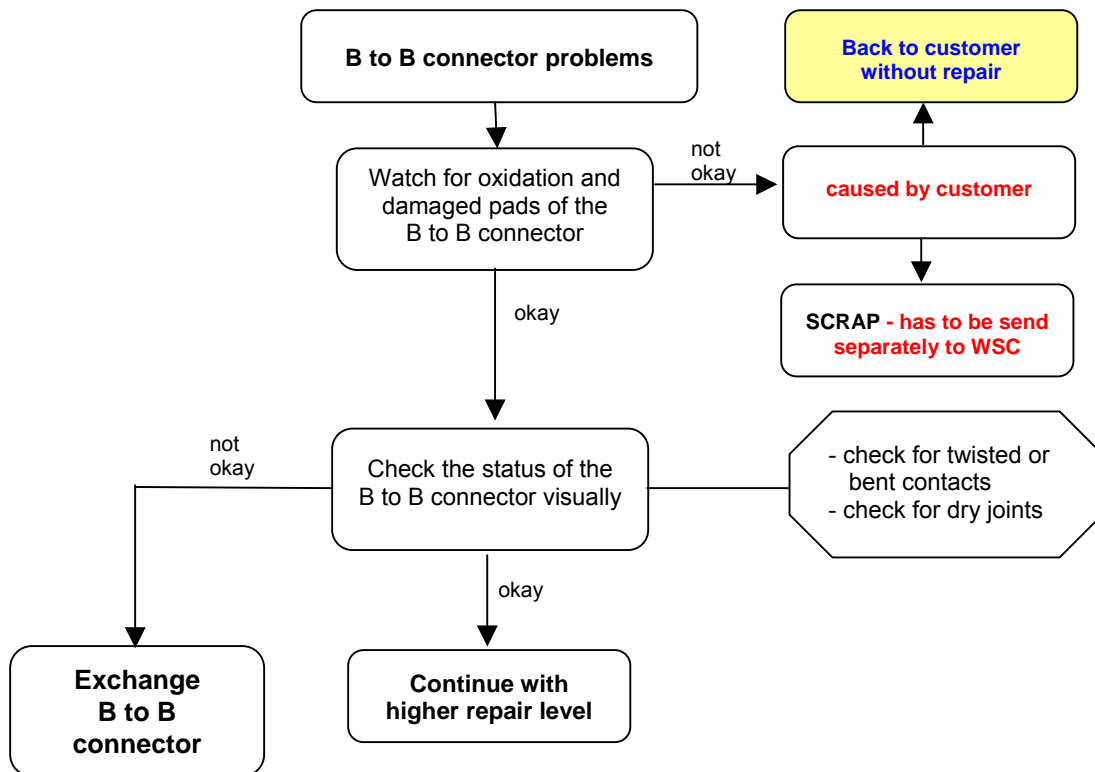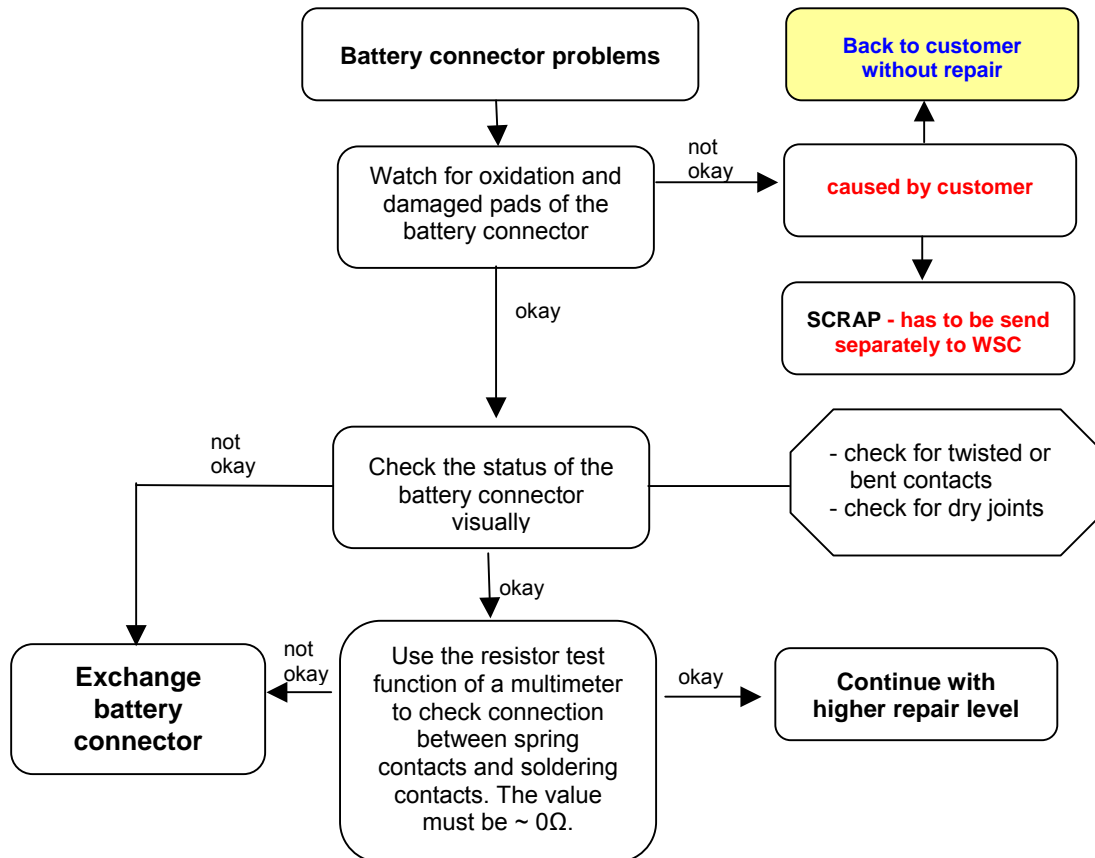components! Resolder new component afterwards.

E-commerce order number: L36334-Z97-C213
E-commerce order name: CONNECTOR BATTERY 3-POL
Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: 13000 Battery/Mechanical Damage

9 Camera Connector Problems

Fault Symptoms	
Customer: Camera malfunction	GRT: Tbd.

```
┌─────────────────────────────┐                    ┌──────────────────────┐
│  Camera connector Problems  │                    │   Back to customer   │
└─────────────────────────────┘                    │    without repair    │
              │                                     └──────────────────────┘
              ▼                    not okay                    ▲
┌─────────────────────────────┐  ─────────────►   ┌──────────────────────┐
│   Watch for oxidation and   │                   │  caused by customer  │
│   damaged pads of the       │                   └──────────────────────┘
│   camera connector          │                              │
└─────────────────────────────┘                              ▼
              │                                    ┌──────────────────────┐
            okay                                   │ SCRAP - has to be send│
              │                                    │  separately to WSC   │
              ▼                                    └──────────────────────┘
  not      ┌─────────────────────────┐            ┌──────────────────────┐
  okay     │  Check the status of the│            │ - check for twisted or│
 ◄─────────│  camera connector       │ ──────────►│   bent contacts      │
           │  visually               │            │ - check for dry joints│
           └─────────────────────────┘            └──────────────────────┘
              │
              ▼
  not      ┌─────────────────────────┐    okay    ┌──────────────────────┐
  okay     │  Use the resistor test  │ ──────────►│   Continue with      │
┌────────┐ │  function of a multimeter│           │  higher repair level │
│Exchange│◄│  to check connection    │            └──────────────────────┘
│camera  │ │  between spring         │
│connector│ │  contacts and soldering │
└────────┘ │  contacts.              │
           │  The value must be ~0Ω  │
           └─────────────────────────┘
```
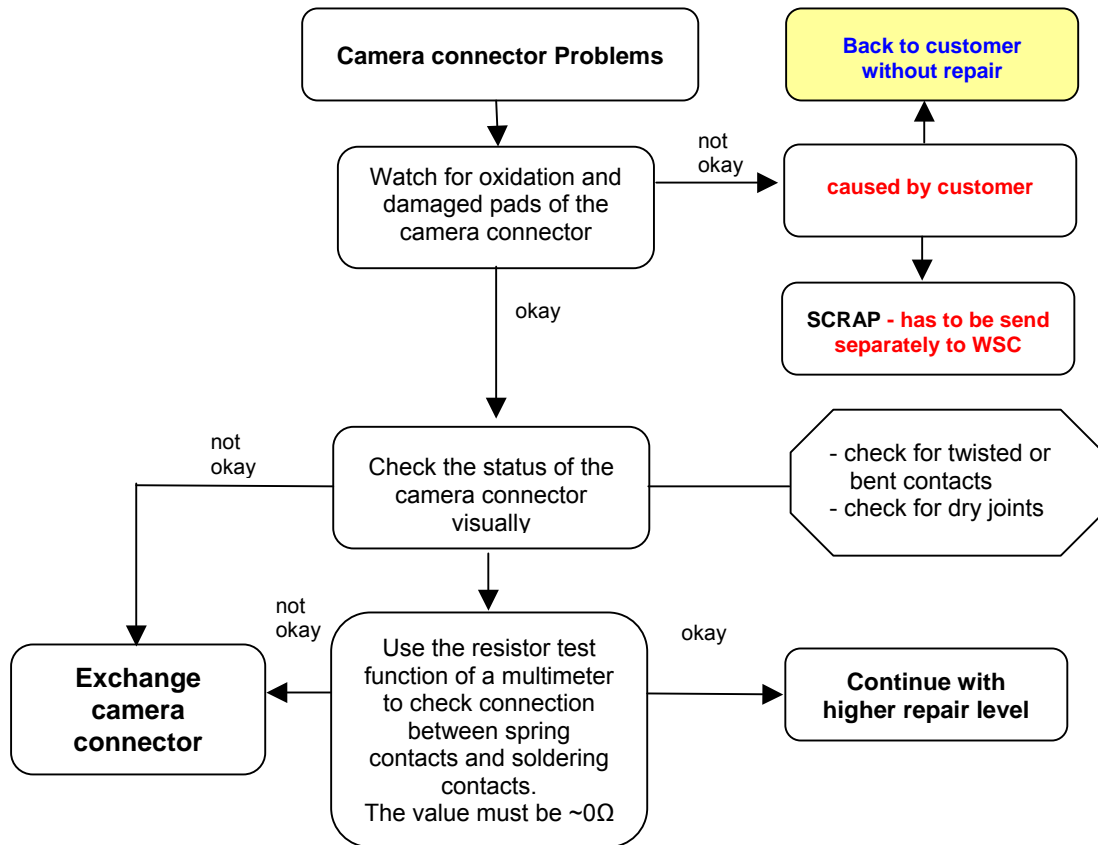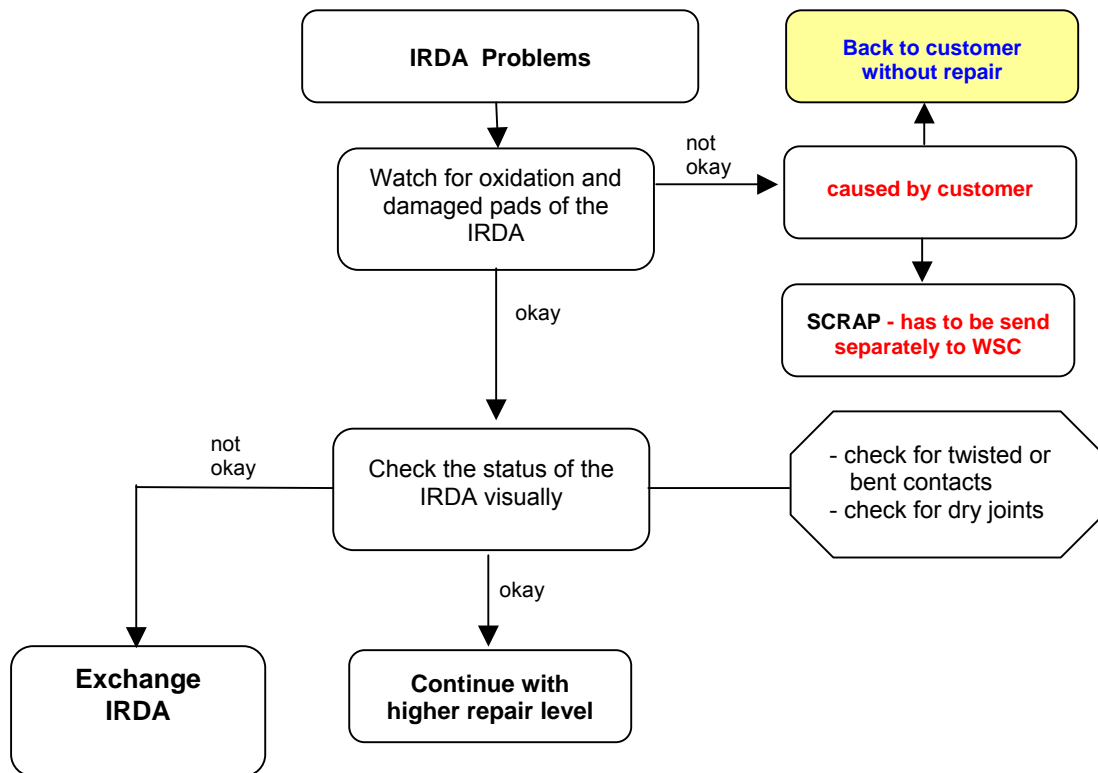
Connector CAMERA
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50634-Z97-C379
E-commerce order name: CONNECTOR CAMERA-SOCKET
Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: BA000 Accessories / Camera

10 IRDA Problems

Fault Symptoms	
Customer: No infrared connection possible	GRT: Tbd.

```
        ┌─────────────────┐                    ┌──────────────────────┐
        │  IRDA  Problems │                    │  Back to customer    │
        └─────────────────┘                    │  without repair      │
                 │                              └──────────────────────┘
                 ▼                      not                 ▲
        ┌─────────────────┐            okay    ┌──────────────────────┐
        │ Watch for       │──────────────────▶ │  caused by customer  │
        │ oxidation and   │                    └──────────────────────┘
        │ damaged pads of │                                │
        │ the IRDA        │                                ▼
        └─────────────────┘                    ┌──────────────────────┐
                 │ okay                         │ SCRAP - has to be    │
                 ▼                              │ send separately to   │
        ┌─────────────────┐                     │ WSC                  │
  not   │ Check the       │                     └──────────────────────┘
  okay  │ status of the   │─────────  ┌──────────────────────────┐
  ◀─────│ IRDA visually   │           │ - check for twisted or   │
        └─────────────────┘           │   bent contacts          │
                 │ okay               │ - check for dry joints   │
                 ▼                    └──────────────────────────┘
   ┌──────────┐  ┌──────────────────┐
   │ Exchange │  │ Continue with    │
   │ IRDA     │  │ higher repair    │
   └──────────┘  │ level            │
                 └──────────────────┘
```

IRDA
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L36197-F5008-F492
E-commerce order name: IRDA 115.2 KBIT
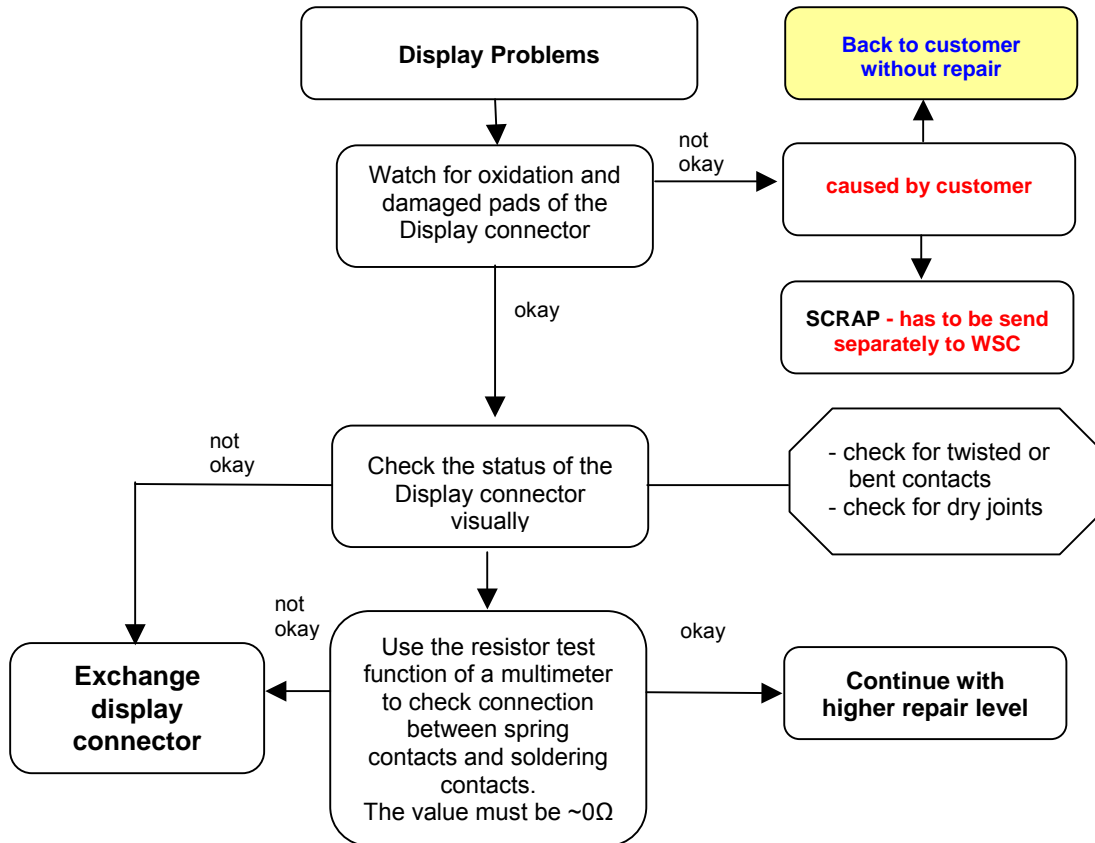Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: 41100 Interfaces / IRDA / No Function
                           41300 Interfaces / IRDA / Mechanical Damage

11 Display Problems

Fault Symptoms	
Customer: Display problems	GRT: Current measured failed

```
                    ┌─────────────────────┐
                    │  Display Problems   │         ┌──────────────────────┐
                    └─────────────────────┘         │  Back to customer    │
                              │                      │  without repair      │
                              ▼              not     └──────────────────────┘
                    ┌─────────────────────┐ okay              ▲
                    │ Watch for oxidation │───────▶ ┌──────────────────────┐
                    │ and damaged pads of │         │  caused by customer  │
                    │ the Display connector│        └──────────────────────┘
                    └─────────────────────┘                   │
                              │ okay                           ▼
                              │                      ┌──────────────────────┐
                              │                      │ SCRAP - has to be send│
                              ▼                      │ separately to WSC    │
            not     ┌─────────────────────┐          └──────────────────────┘
            okay    │ Check the status of │        ┌──────────────────────┐
          ◀─────────│ the Display connector│───────│ - check for twisted or│
                    │ visually            │        │   bent contacts      │
                    └─────────────────────┘        │ - check for dry joints│
                              │                     └──────────────────────┘
            not               ▼              okay
            okay    ┌─────────────────────┐         ┌──────────────────────┐
  ┌──────────┐     │ Use the resistor test│───────▶ │  Continue with       │
  │ Exchange │◀────│ function of a multimeter│      │  higher repair level │
  │ display  │     │ to check connection │         └──────────────────────┘
  │ connector│     │ between spring       │
  └──────────┘     │ contacts and soldering│
                   │ contacts.           │
                   │ The value must be ~0Ω│
                   └─────────────────────┘
```

Connector DISPLAY
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number:	L50634-Z97-C380
E-commerce order name:	CONNECTOR DISPLAY 20POL
Soldering temperature:	~ 360°C TIP Temp.
IRIS Diagnose Code:	21000 Display / Performance
	22000 Display / Background Illumination

12 Joystick Problems

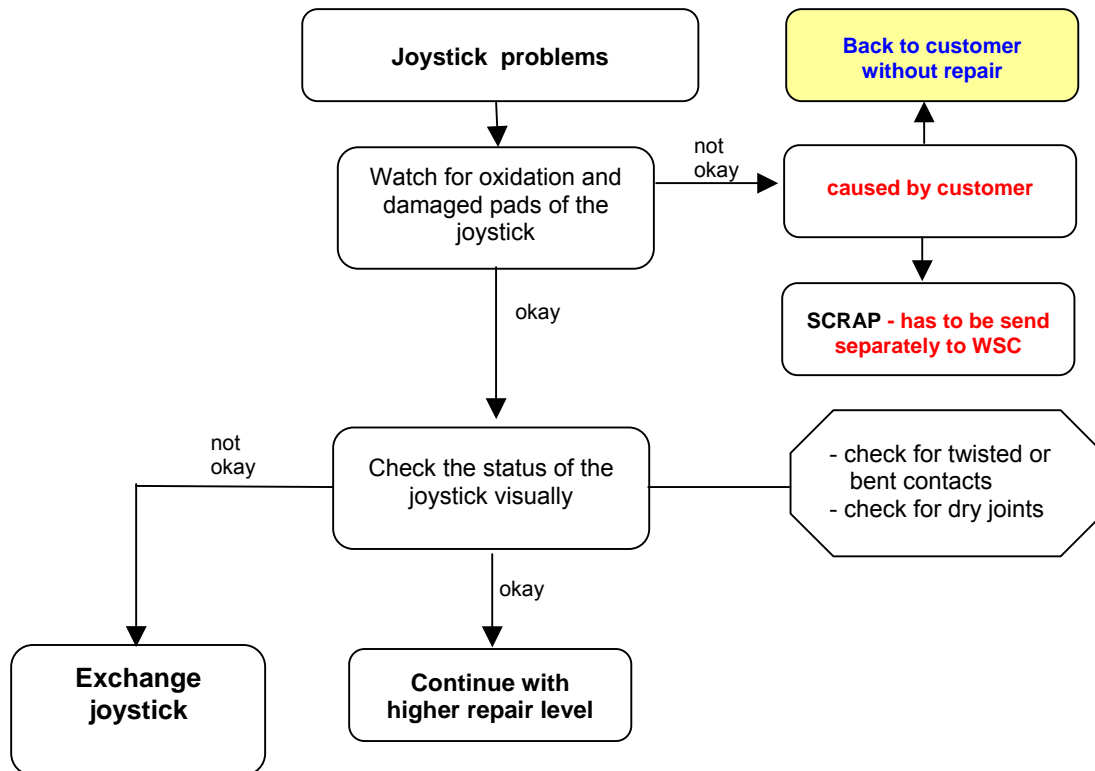| Fault Symptoms	
Customer: Joystick malfunction	GRT: Tbd.

Joystick
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L36315-Z77-C218
E-commerce order name: JOYSTICK
Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: 32100 Keys / Main / No Function
                           32200 Keys / Main / Reduced Functionality