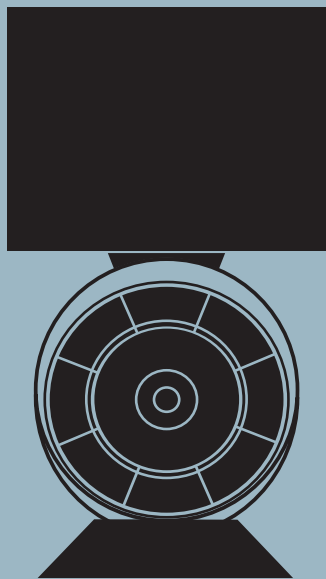


Beo5

Type 1682 – 1688, 1692

Service Manual
English

*German, French, Italian, Spanish, Danish, Dutch, Japanese and
Simplified Chinese versions are available in the Retail System*



*This Service Manual must be returned
with the defective parts/back-up suitcase !*

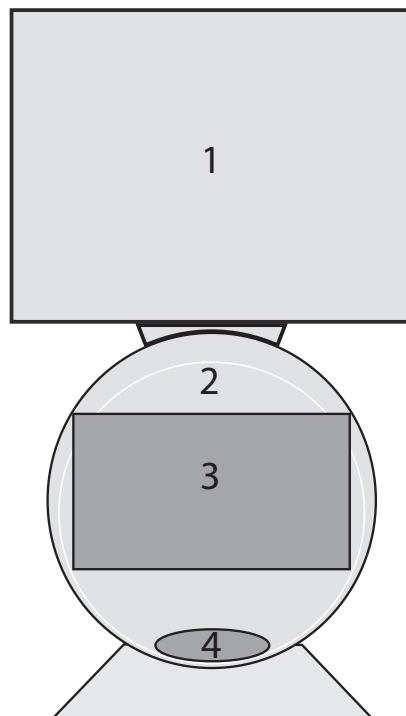
BANG & OLUFSEN



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| How to service | 1.2 |
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Survey of modules



- | | |
|----------|--------------------|
| Module 1 | Display |
| Module 2 | Keypad |
| Module 3 | Battery |
| Module 4 | Adaptor, interface |

How to service

Front line service

The overall service strategy is to service 95% of all products in the customer's home. The defective module must be exchanged and the Back-up suitcase must be sent to module service in Struer.

Beo5 will be serviced on module level only as described in the Service Manual. A Back-up suitcase will be offered for this product. The only way to repair the hardware (HW) is to order a Back-up suitcase and replace the defective module. Only the necessary information on how to dismantle/assemble, fault-find on module level, replace and adjust electronics/mechanics will be described.

As a simple stand-alone product, it is expected to be serviced for 12 years on vital parts after the last product has been produced and sold in the same season.

Service possibilities:

If the Beo5 software is to be updated, the Beo5 configuration tool must be used. It is important to bring a laptop to the customer's home in case of a service visit. Remember to store the specific customer profile locally on the laptop before making the visit.

Recommended assisting tools

Beo5 configuration tool.

Other service issues

This product does not have pincode protection.

Service documentation

Service documentation for Beo5 will be a Service Manual with part nos. for the Back-up suitcase, electrical and mechanical parts, user's guides, etc.

Variants of mains adaptors

The Beo5 has only one variant for all markets.

The mains adaptor has separate type nos. for each market, due to country approvals.

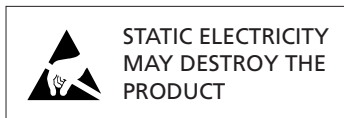
The only variant on the Beo5: 1682

The variants on the mains adaptors:

| Type number | Variants | Markets |
|-------------|----------|---|
| 1683 | EU | Austria, Azerbaijan, Belgium, Bulgaria, Chile, Croatia, Czech Repub., Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Greece, Greenland, Holland, Hungary, India, Indonesia, Iceland, Israel, Italy, Kazakhstan, Kuwait, Latvia, Liechtenstein, Lithuania, Lebanon, Luxembourg, Morocco, Norway, Oman, Pakistan, Peru, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovak Repub., Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, Uruguay, Uzbekistan |
| 1684 | GB | Bahrain, Botswana, Dubai, Ghana, Ireland, Hong Kong, Malaysia, Nigeria, Qatar, Saudi Arabia, South Africa, United Arab Emirates, United Kingdom |
| 1685 | US | Brazil, Caribbean Islands of the Dominican Republic, Canada, Japan, Mexico, Panama, St. Martin, Taiwan, USA |
| 1686 | AUS | Australia, New Zealand |
| 1687 | KOR | Korea |
| 1688 | CN | China |
| 1692 | AR | Argentina |

Warnings

ESD



When electrical replacements or disassembly is taking place, use an ESD-mat. The internal electronics are very sensitive to static electricity.

The core in the microprocessor is powered with only 1.8 Volts, so it is very important that handling of Beo5, when disassembled, is done with great care according to static electricity.

Lithium battery



Warning !

Short-circuit and overcharging of some types of lithium batteries may result in a violent explosion.

Cleaning

Clean the Beo5 surfaces using a lint-free cloth which you have wrung firmly in lukewarm water.

Never use alcohol or other solvents to clean any parts of the Beo5.

Service Menu

Service menu in general

The Menu Overview appendix provides an overview of the menus as they appear in the Software. The menu items are generally self-explanatory so you can gain a general overview by studying this page closely. For an overview of the menus please refer to page 2.2.



Access to service menu

The service menu must be activated while the setup menu is displayed. To access the 'Digits' press the '+' field on the screen. From this initial state, the service menu is activated by pressing **0 0 GO** within 3 s.

Deactivating service menu

When you exit the service menu (by pressing 'Back' on keyboard or on the screen) to standard menu operation, the device is in normal mode.

Navigation

| Beo5 | Possible actions |
|---|--|
| Hard Keys: | |
| OK/Enter | Selects the submenu that a cursor is on - accepts a menu, which results in values entered being saved |
| ^ | Moves the cursor bar up |
| v | Moves the cursor bar down |
| < | Moves the cursor bar left |
| > | Moves the cursor bar right |
| BACK | Returns to previous menu step |
| Soft Keys: | |
| Digit ('+') | Opens the 'soft digit area' on the screen |
|  | Returns to previous menu step |
|  | Scene selection |

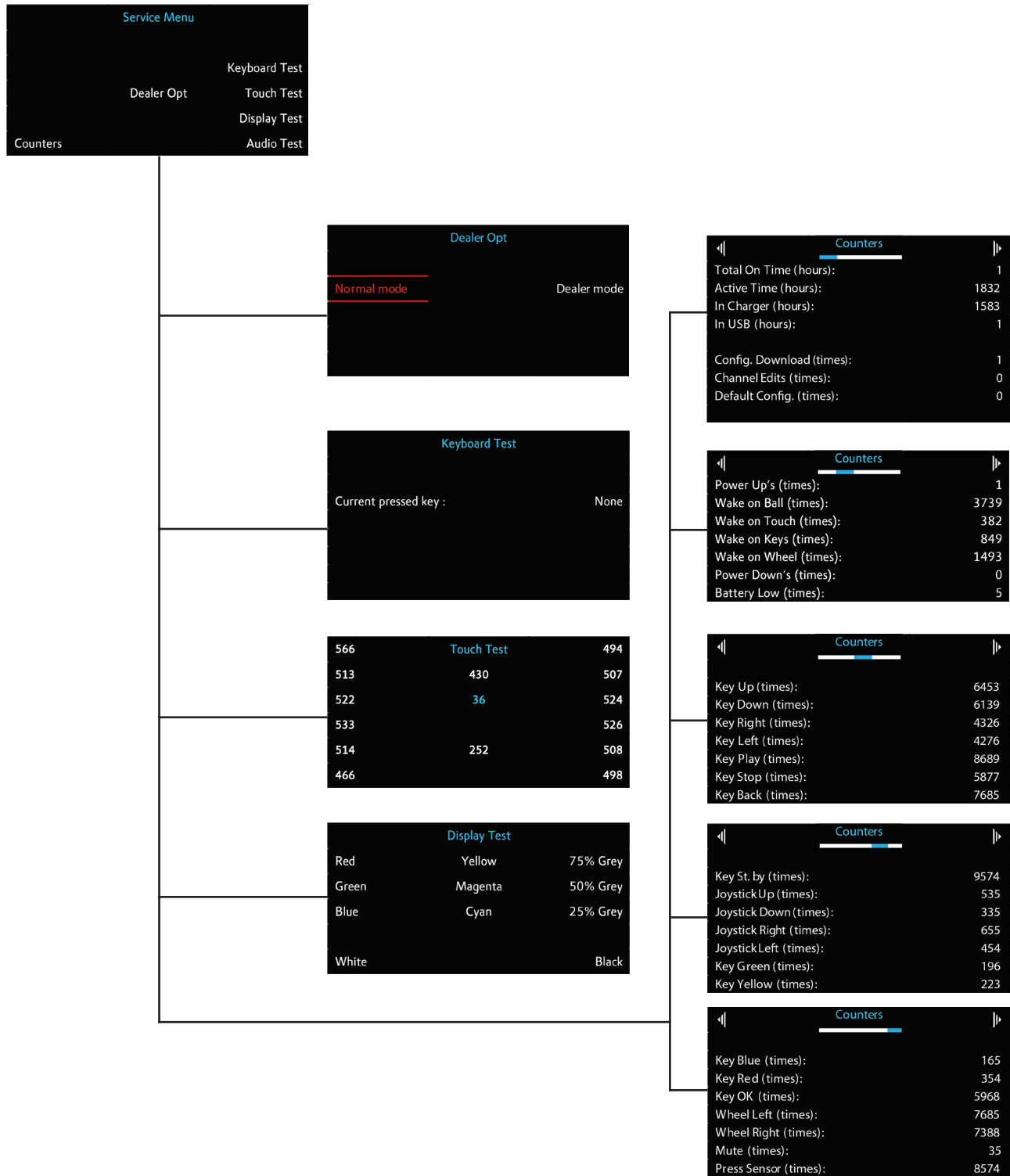
Service menu

This menu is used to select the device area in which service is to be carried out/ information is to be sought.
The contents of the menu depend on the sources installed.

Monitor service menu

Access to the monitor's underlying service menus.

Menu Overview



Dealer Opt

Dealer Option:

In this mode it is possible to determine the IR-transmission strength of the Beo5.

The two options are:

- Normal mode: All IR transmission will be done according to the configuration.
- Dealer mode: All IR transmission will only be with low range.

The choice is stored in the flash when pressing the 'BACK' key (3 times to reach normal mode).

Keyboard Test

In this test menu it is possible to perform a test for each of the 17 hard keys. The key pressed is displayed on the screen.

The test is cancelled by pressing the 'BACK' key (3 times to reach normal mode).

Touch Test

The Touch Test is developed to test the touch display area. The test is activated by pressing 'Touch Test' in the service menu and has to be performed without touching the display. When the test is activated, white decimal numbers are shown for each display area. As long as all numbers are white, the test is OK. Only if any of the values are displayed in red, the test is failed.

Note! The value turns red when you press the display harder than usual.

Note! The blue value in the centre of the screen presents the light sensor value and indicates the light intensity.

Display Test

The display test provides 11 test pictures to be shown on the display. In this way, it is possible to determine if there are any pixel errors on the TFT panel. There may not be any pixel errors at all (constantly illuminated or constantly off pixels)

The test pictures are:

- Red
- Green
- Blue
- White
- Yellow
- Magenta
- Cyan
- 75% Grey
- 50% Grey
- 25% Grey
- Black

The test page is cancelled by pressing the 'BACK' key (3 times to reach normal mode).

Counters

The counters menu contains information referring to the usage pattern of Beo5.

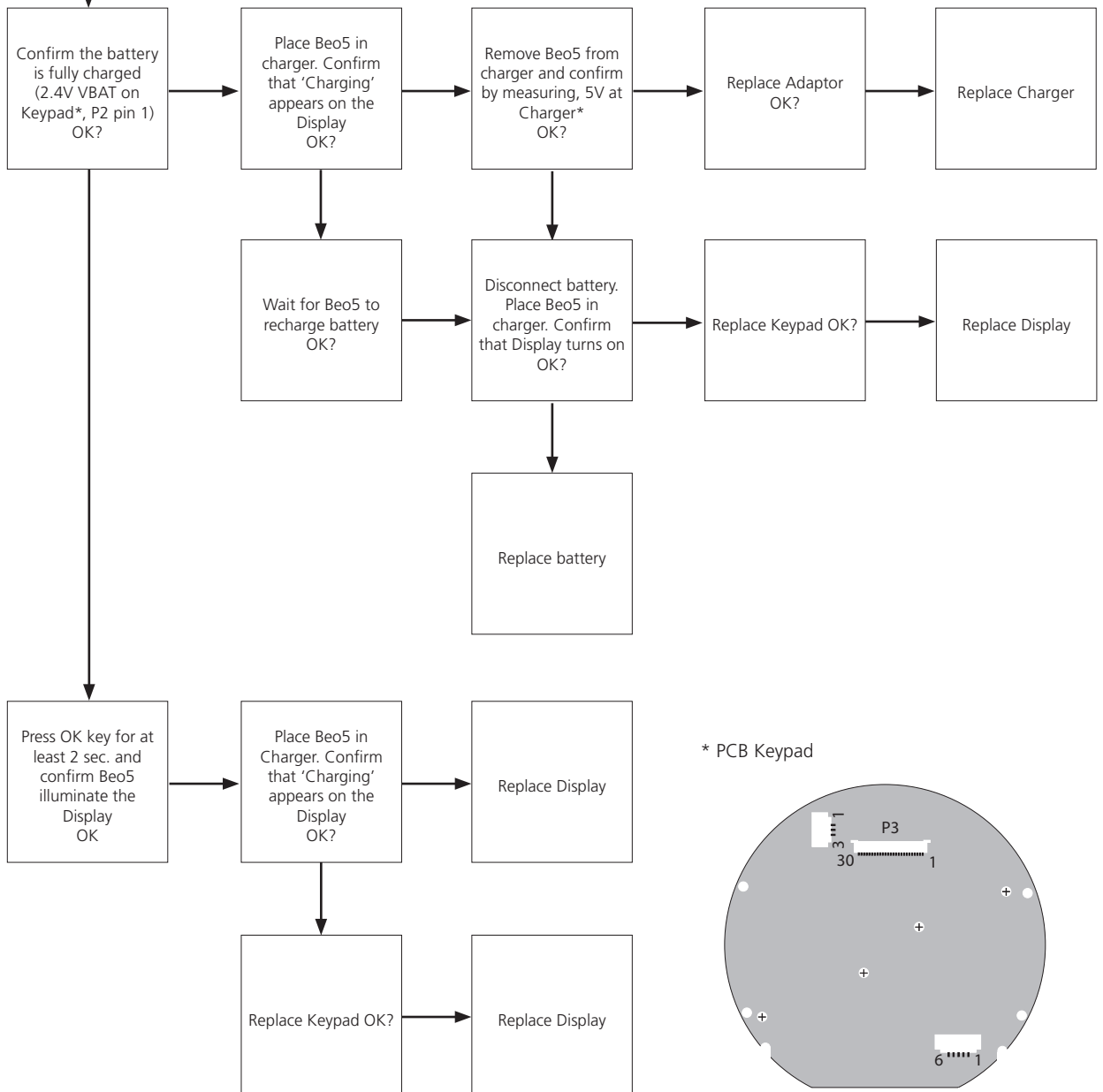
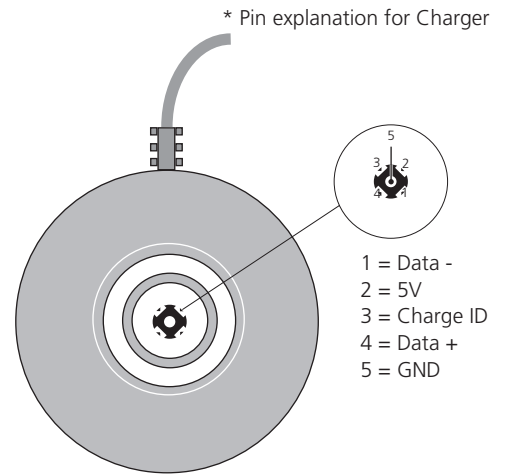
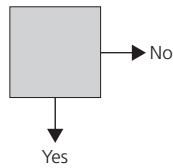
The information is displayed on 5 pages, to navigate between page 1-5 use the ◀ or ▶ softkey on the screen.

The counters page is cancelled by pressing the 'BACK' key (3 times to reach normal mode).

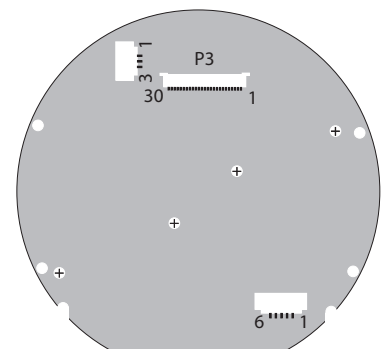
Fault flow chart

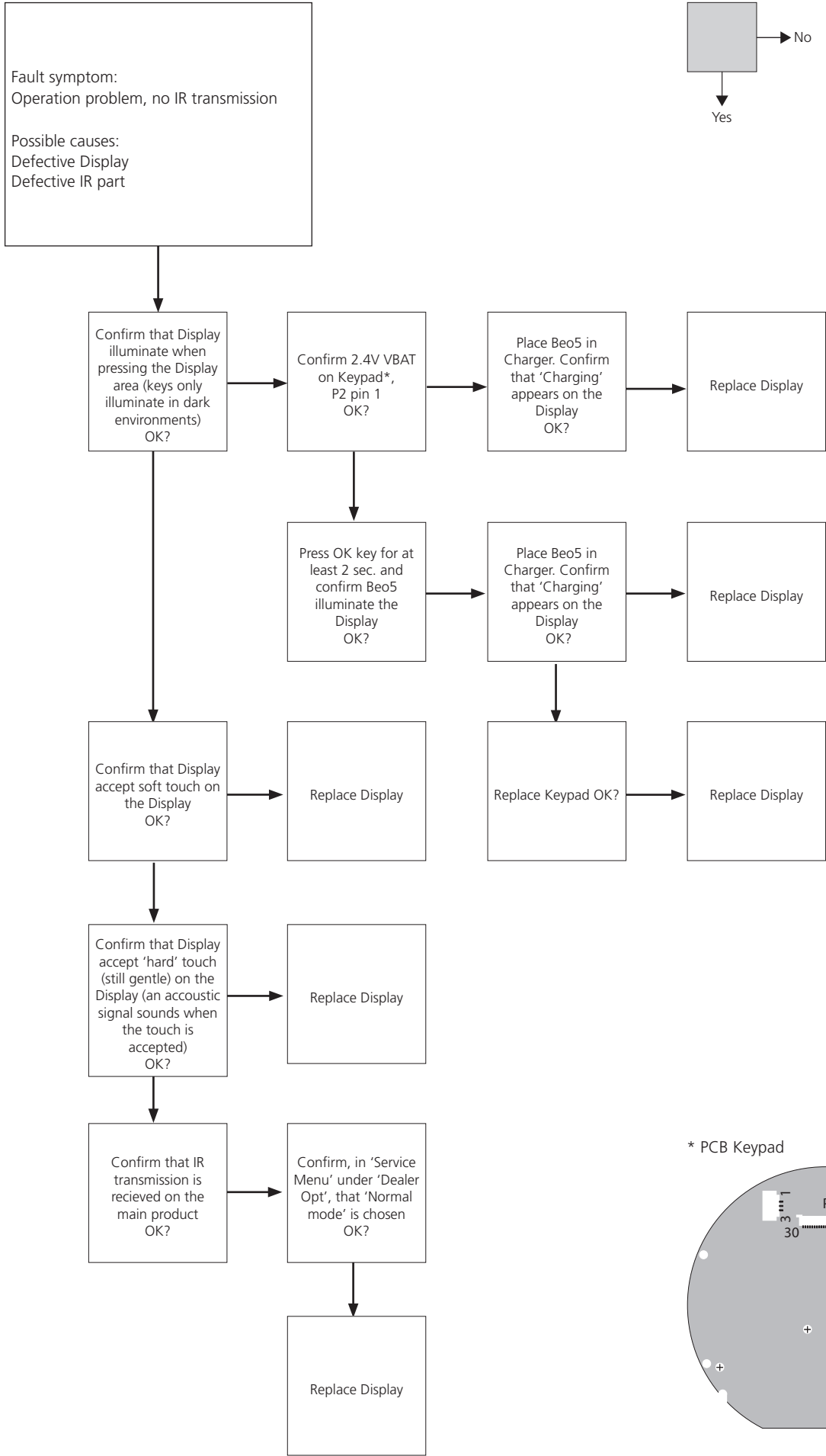
Fault symptom:
 No operation
 No back light
 No key illumination

Possible causes:
 Defective battery
 Defective Charger -> low battery
 Defective keypad
 Defective Display



* PCB Keypad





Adjustment

Back light settings

It is possible to determine the time-out period for the back light. There are two back light settings, one for the 'dimming period' and one for the 'off period'. To access the setting, press 'standby' and 'ok/enter' simultaneously to invoke 'SETUP' menu, and then press 'SETTINGS' and 'BACKLIGHT' on the screen.

The settings are:

- Dim: 5 sec. 10 sec. 20 sec.
- Off: 15 sec. 30 sec. 60 sec.

Press 'Store' on the screen to save the setting

The SETUP page is cancelled by pressing the 'BACK' key (3 times to reach normal mode).

Restore

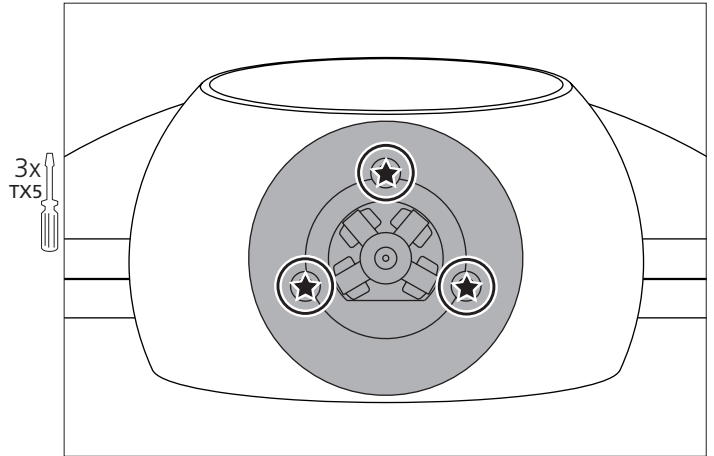
To restore back light settings to default, invoke SETUP menu and press SETTINGS RESTORE on the screen.

IR transmission strength

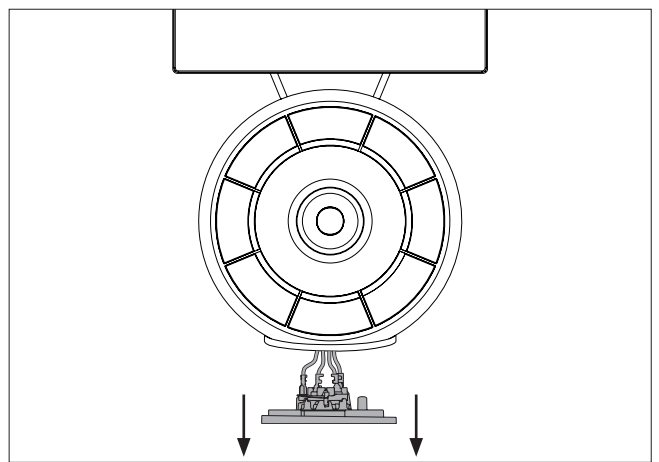
For this adjustment, please refer to 'Dealer Opt', see page 2.3.

Replacement of Keypad

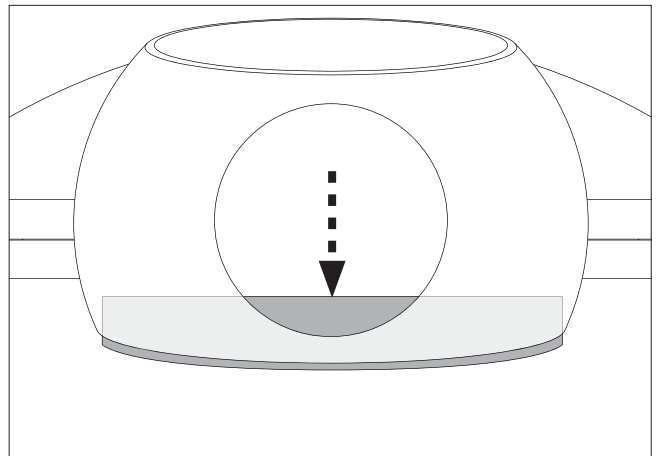
- Remove screws



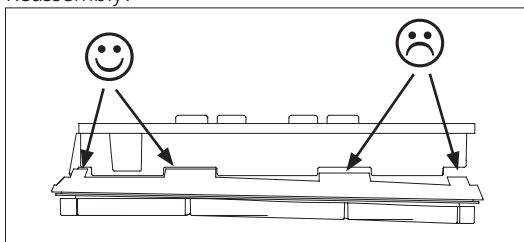
- Pull down Adaptor, interface



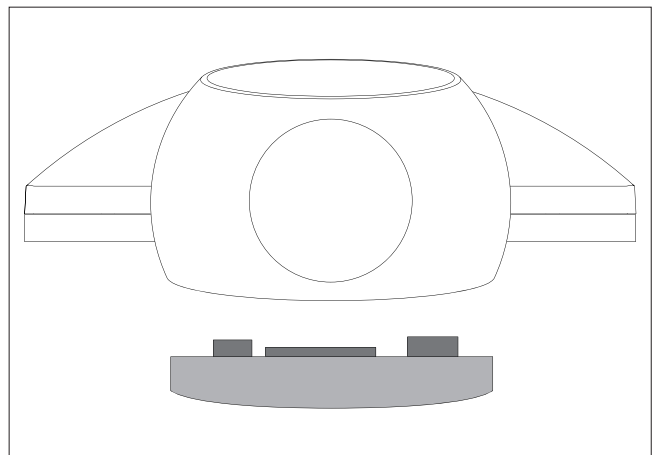
- Gently push down Keypad



Reassembly!



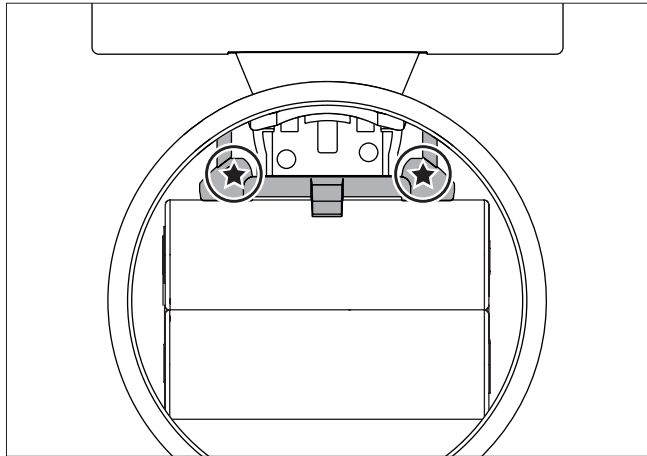
- Remove cables



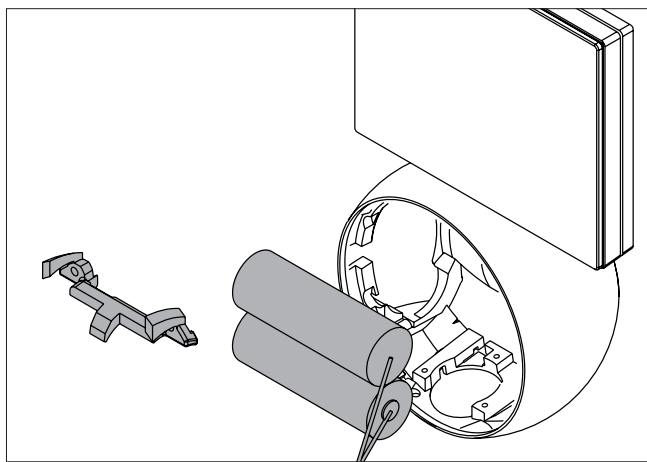
Replacement of display

- Remove screws for clips for battery

2x
TX5

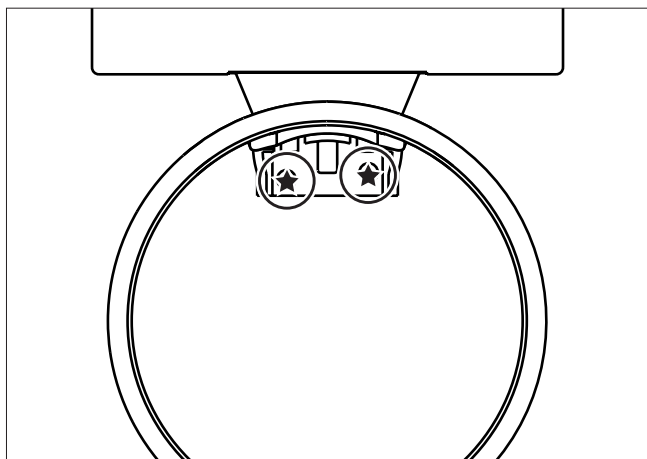


- Remove clips and battery

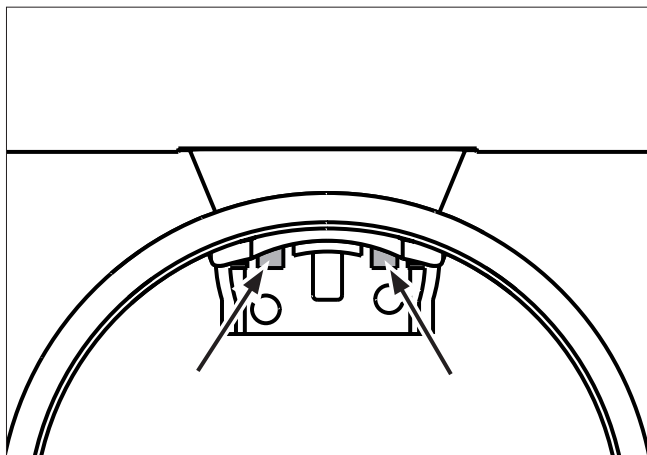


- Remove screws for display

2x
TX6



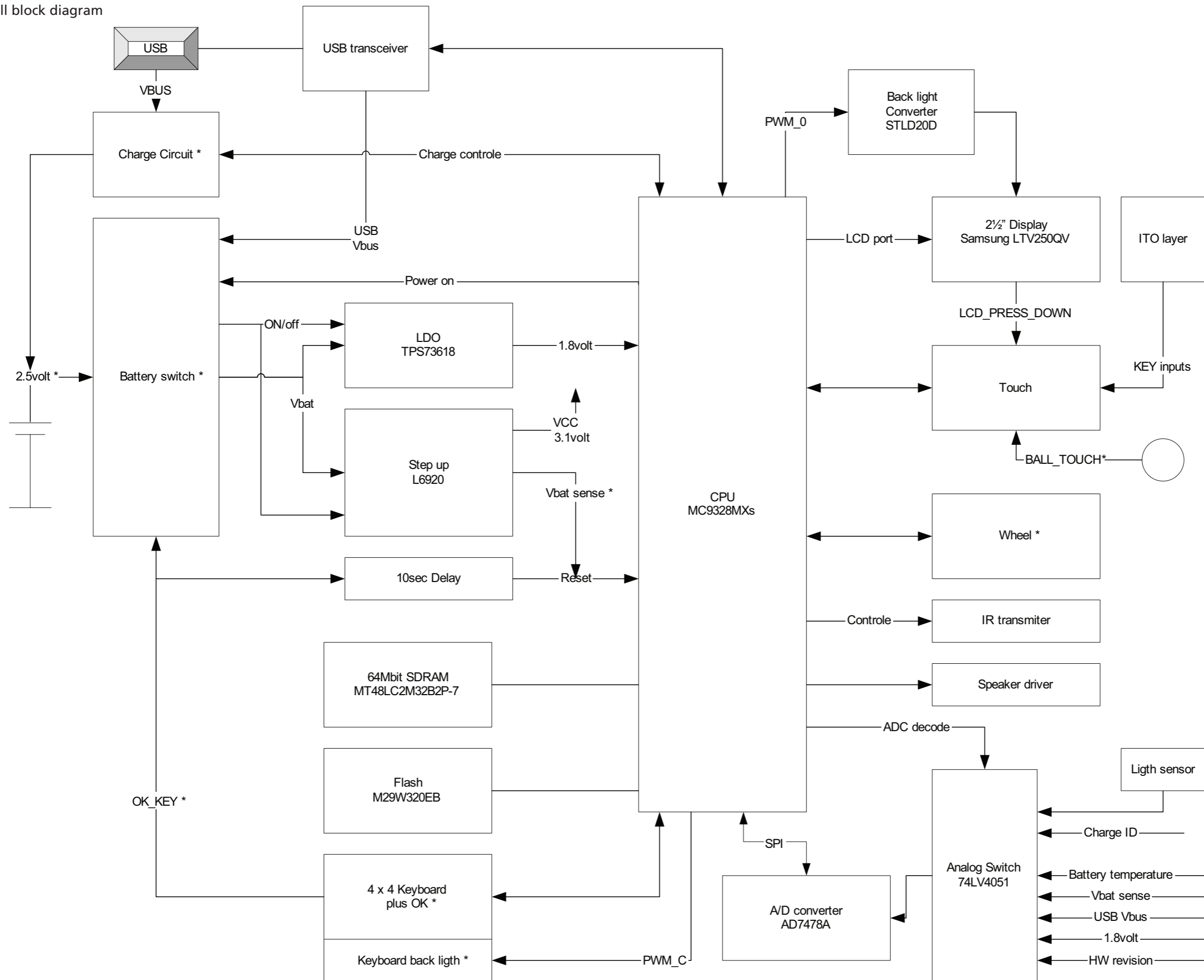
- Remove display by releasing snaplocks



| Specification guidelines for service use | Beo5 |
|--|---|
| Design | David Lewis |
| Type | System Terminal (one-hand operated) |
| Beo5 – type no. | 1682 (for all markets) |
| Table charger – type no. * see page 1.3 (how to service) for further info | 1683 (EU), 1684 (GB), 1685 (US), 1686 (AUS), 1687 (KOR), 1688 (CN), 1692 (AR) |
| Dimensions (W x H x D) / Weight | 69mm x 116mm x 32mm / 205g +/- 5g (0,452Lbs.) |
| CPU | Freescale MC9328MXS |
| CPU speed | 96 MHz, 16MHz (standby) |
| Battery capacity | 1350 mAh, 2.5V |
| Standby | 12 days |
| Active use time | 18 hours (typically), 3 hours (continuously) |
| Charging time | 5 hours |
| Hard keys | 17 + wheel |
| Soft keys | 17 |
| Languages | Multiple, 8 languages |
| Power consumption charger: | |
| - when Beo5 in charger | 2.7W |
| - when Beo5 in charger (Beo5 fully charged) | 1.3W |
| - charger without Beo5 | 0.2W |
| Adaptor charging | 5V, 400mA +/- 10% |
| USB charging | 5V, 90mA |
| Power management: | |
| Wake-up | Alu-ball touch, key-press, display press, wheel activation, placing in charger |
| Power down | Timeout - follows back light |
| Power on | Centre key activation, placing in charger |
| Power off | Long press on centre key, low battery capacity (<10%) |
| Operating temperature range | 0 °C – 50 °C (32 °F – 122 °F) |
| IR | |
| Range | 455 KHz and 2080 KHz |
| Diodes | 3 |
| Transmitting | 800mA (normal), 20mA (low power mode), 300mA (non-B&O mode) |
| Back light | |
| Colour | White |
| Intensity | Automatic adjusted to ambient light |
| Timeout | 2 steps - dim and fadeout |
| Display | |
| Type | 2.5" colour TFT, Delta-RGB, 234x960 pixels, normal black |
| Colour | 16,777,216 colours |
| Contrast ratio | 500 @ 25C (typ) |
| Back light | Adaptive |
| Viewing angle | 160° - 160° (Horizontally - Vertically) |

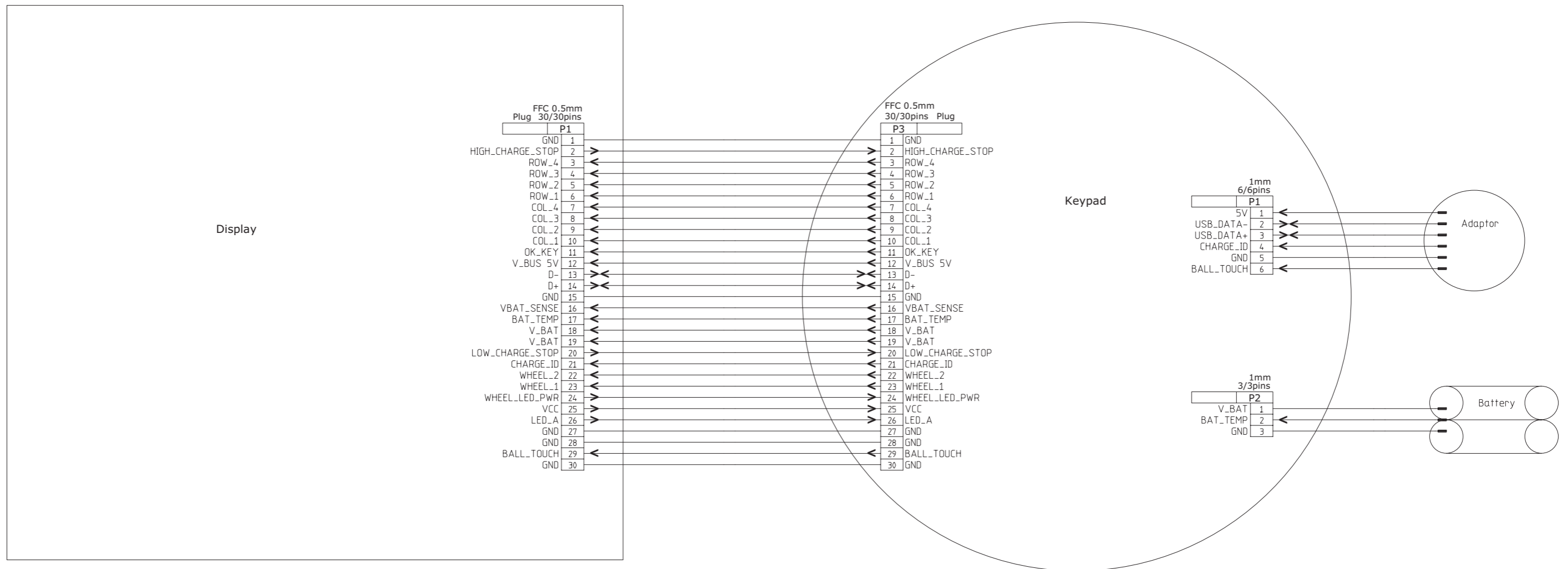
Subject to change without notice

Overall block diagram



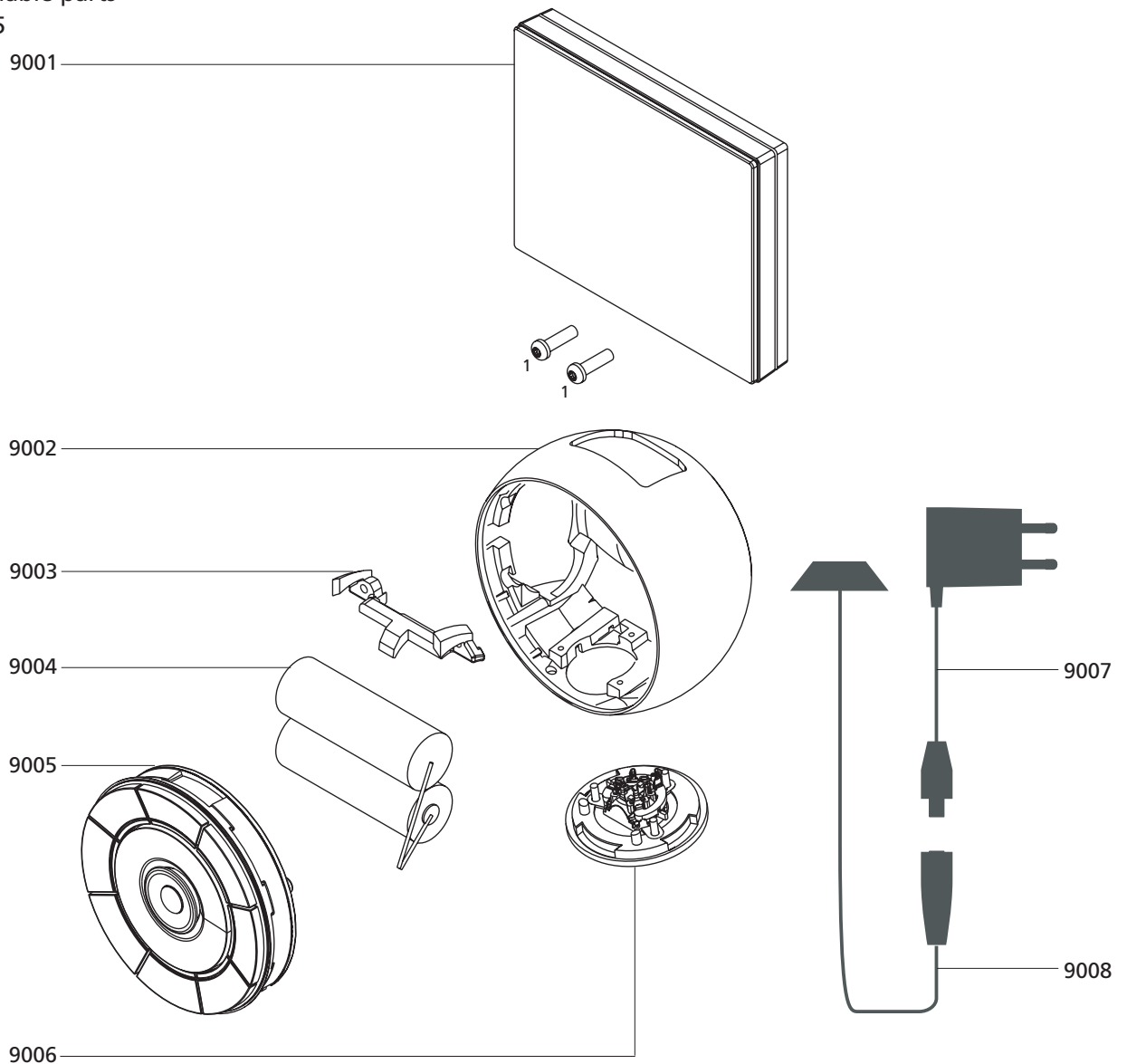
* Items placed on Keypad

Wiring diagram



Available parts

Beo5



| | | |
|------|---------|--------------------|
| 9001 | 8053177 | Display, complete |
| 9002 | 3160426 | Aluminium cover |
| 9003 | 2311013 | Clips f/battery |
| 9004 | 8700091 | Battery |
| 9005 | 8003626 | Keypad |
| 9006 | 3152499 | Adaptor, interface |
| 9007 | 8040141 | Mains adaptor, EU |
| | 8040142 | Mains adaptor, UK |
| | 8040143 | Mains adaptor, US |
| | 8040144 | Mains adaptor, CN |
| | 8040145 | Mains adaptor, AUS |
| | 8040146 | Mains adaptor, KOR |
| | 8040147 | Mains adaptor, AR |
| 9008 | 8003769 | Charger |
| 1 | 2011048 | Screw 2.5 x 8mm |
| | 3393072 | Packing, complete |
| | 3391125 | Outer carton |
| | 3395324 | Back-up suitcase |

Bang & Olufsen
DK-7600 Struer
Denmark

Phone +45 96 84 11 22*
Fax +45 97 85 39 11

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