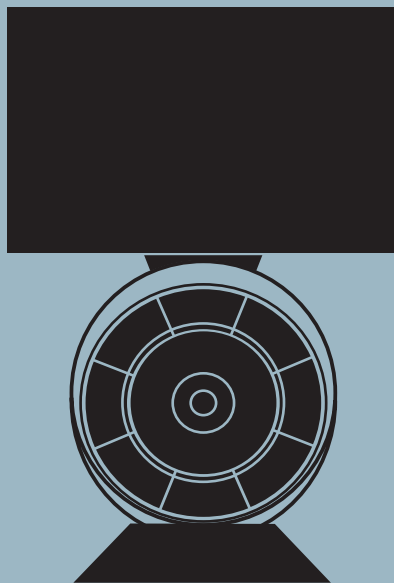


Beo6

Type 1711

Service Manual
English - version 1.0

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



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

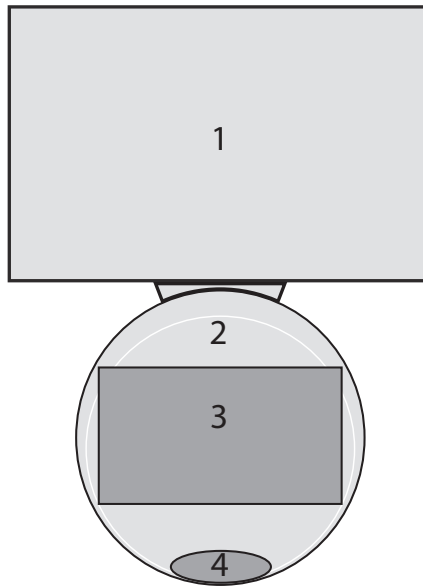
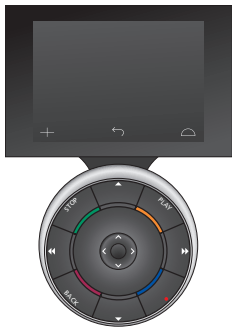
CONTENTS

Survey of modules	1.1
How to service	1.2
Warnings	1.3
Service Menu	2.1
Fault flow chart	3.1
Adjustment	4.1
Replacement of modules	5.1
Specification guidelines for service use	6.1
Overall block diagram	7.1
Wiring diagram	7.3
Available parts	8.1

Change log:

Ver. 1.0 Original release

Survey of modules



- Module 1 Display
- Module 2 Keypad
- Module 3 Battery pack
- 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, Denmark.

Beo6 will be serviced on module level only as described in the Service Manual. A Back-up suitcase will be offered for this product. Defective parts can also be ordered separately.

Only the necessary information on how to dismantle/assemble, fault-find on module level, replace and adjust electronics/mechanics will be described.

Service possibilities:

If the Beo6 software is to be updated, the Beo6 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.

Daily use

The product must be charged before programming or daily use. It is estimated that Beo6 must be recharged after 7 days normal use. However, we recommend that the product is placed in the charger when not in use.

Beo6 is both a one- and two-way remote control using infrared signals to send one-way IR commands to B&O products and dedicated 3rd party products, such as curtains, light controls and related home-automation systems. Two-way remote control is obtained by means of the built-in Wi-Fi module to control dedicated B&O products like e.g. BeoSound 5 when updated with Wi-Fi module (2011 version).

When you touch the ball-shaped part of Beo6, it lights the buttons and the display switches on. In order to optimize the time between charging, Beo6 hibernates again after 20 seconds without operation.

When you apply a 'long' touch on one of the buttons on the touch sensitive LCD display, a status field shows the function you are about to activate. A 'short' touch activates the function.

Recommended assisting tools

Beo6 configuration tool.

Other service issues

This product does not have pincode protection.

Service documentation

Service documentation for Beo6 will be a Service Manual with part nos. for the Back-up suitcase, electrical and mechanical parts, user's guides, etc.

Warnings

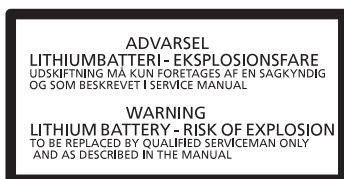
ESD



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 the product, when disassembled, is done with great care according to static electricity.

Lithium battery



Caution!

Danger of explosion if battery is incorrectly replaced. Replace only with the same type.

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

Waste of Electrical and Electronic Equipment (WEEE)



Electrical and electronic equipment, parts and batteries marked with this symbol must not be disposed of with normal household wastage; all electrical and electronic equipment, parts and batteries must be collected and disposed of separately.

Your Bang & Olufsen retailer will advise you of the correct way of disposal in your country.

Management methods for controlling pollution caused by Electronic Information Products



Component name:	Hazardous substance					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
Aluminum parts	×	○	○	○	○	○
PCBA	×	○	○	○	○	○

Symbols used in the charts:

- Indicates all homogeneous materials' hazardous substances content are below the ST/T 11363–2006 MCV limit.
 - ×
- Indicates that the hazardous substance content contained in any one of the homogeneous materials of the part exceeded the MCV limits specified in the standard SJ/T 11363-2006.

Cleaning

Clean the 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 product.

Variants of mains adaptors

The Beo6 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 product is: 1711

The variants on the mains adaptors with Table charger:

Type number	Variants	Markets
1683	EU	Albania, Austria, Azerbaijan, Belgium, Bulgaria, Chile, Croatia, Czech Republic, Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Greece, Greenland, Holland, Hungary, Iceland, India, Indonesia, Israel, Italy, Jordan, Kazakhstan, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Monaco, Morocco, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, Uruguay, Uzbekistan, Vietnam
1684	GB	Bahrain, Botswana, Dubai, Ghana, Ireland, Hong Kong, Kuwait, Malaysia, Nigeria, Oman, Qatar, Saudi Arabia, South Africa, United Arab Emirates, United Kingdom
1685	US	Brazil, Caribbean Islands of the Dominican Republic, Canada, Mexico, Panama, St. Martin, Taiwan, USA
1686	AUS	Australia, New Zealand
1687	KOR	Korea
1688	CN	China
1692	AR	Argentina
1693	J	Japan
1694	SG	Singapore

The variants on the mains adaptors with Wall charger:

Type number	Variants	Markets
1592	EU	Albania, Austria, Azerbaijan, Belgium, Bulgaria, Chile, Croatia, Czech Republic, Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Greece, Greenland, Holland, Hungary, Iceland, India, Indonesia, Israel, Italy, Jordan, Kazakhstan, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Monaco, Morocco, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, Uruguay, Uzbekistan, Vietnam
1593	GB	Bahrain, Botswana, Dubai, Ghana, Ireland, Hong Kong, Kuwait, Malaysia, Nigeria, Oman, Qatar, Saudi Arabia, South Africa, United Arab Emirates, United Kingdom
1594	US	Brazil, Caribbean Islands of the Dominican Republic, Canada, Mexico, Panama, St. Martin, Taiwan, USA
1595	AUS	Australia, New Zealand
1596	KOR	Korea
1597	CN	China
1598	AR	Argentina
1599	J	Japan

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.

- > Press **STBY + Centre** simultaneously (activates the SETUP menu).
- > Access the 'Digits' (press the '+' field on the screen).
- > Press **0 0 Centre** within 3 seconds.

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

Beo6:	Possible actions:
Hard keys:	
Centre	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:	
'+'	Opens the 'soft digit area' on the screen
	Returns to previous screen
	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.

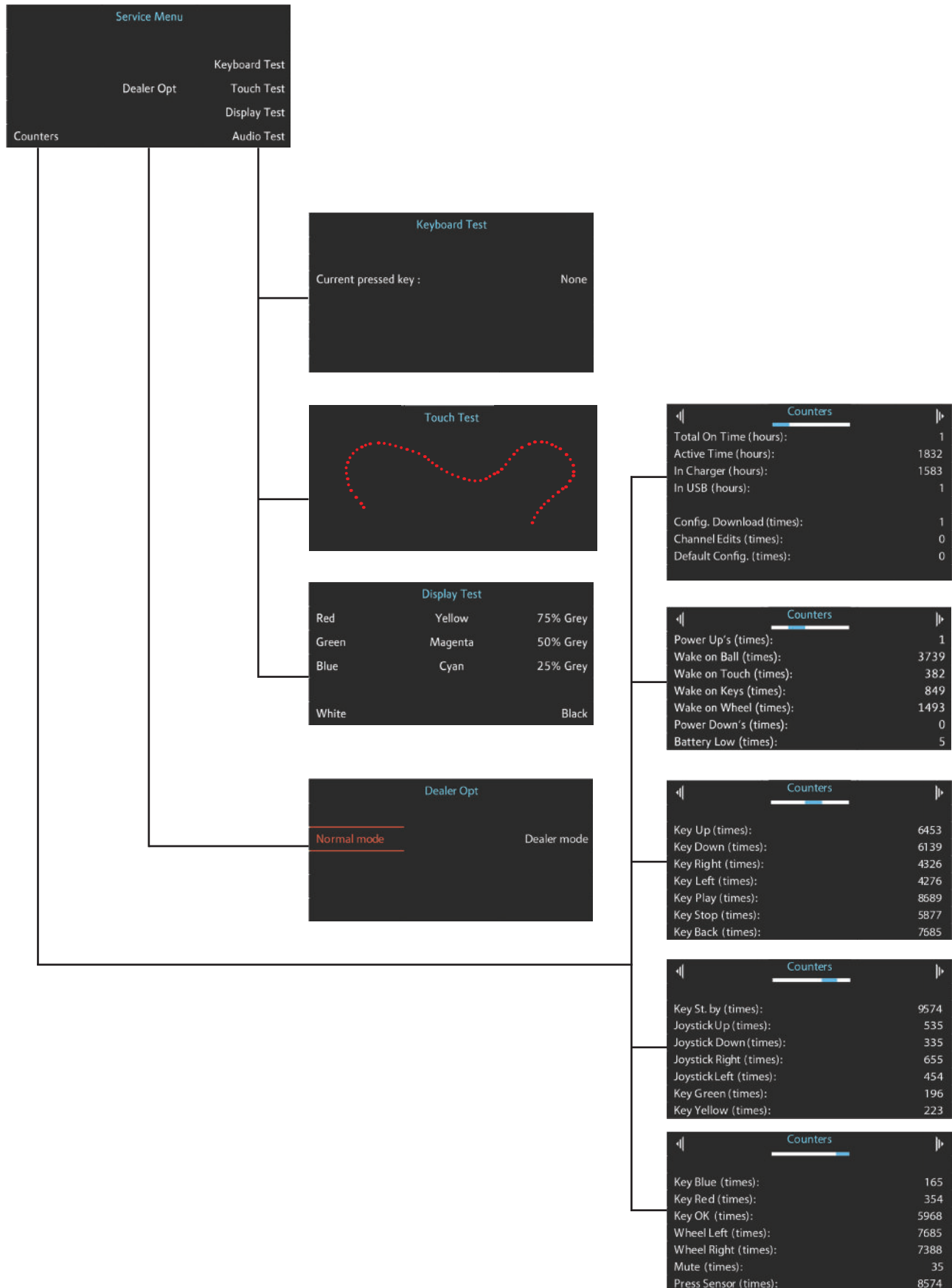
The contents of the menu depend on the sources installed.

Monitor service menu

Access to the monitor's underlying service menus.

Menu Overview

- > Pres **STBY + Centre** simultaneously
- > Acces the 'Digits' (press the '+' field on the screen).
- > Press **0 0 Centre** within 3 seconds.



Dealer Opt

Dealer Option:

In this mode it is possible to determine the IR-transmission strength of the Beo6.

The options are:

- **Normal mode:** All IR transmissions will be done according to the configuration.
- **Dealer mode:** All IR transmissions 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 the 'Keyboard Test' 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 ↶ key (and 2 times on **BACK** key to reach normal mode).

Touch Test

The 'Touch Test' is developed to test the touch display area. The test is activated by choosing 'Touch Test' in the service menu.

- When the test function is activated, the screen first becomes completely black. Now the user has the opportunity to touch the screen area, and then get a graphical feedback in the form of red dots where the touch occurred. The screen area can be cleared by pressing **PLAY** on the keyboard.

- Press the blue button to activate the sweep test: Here the user has the opportunity to test sweeping movements. Arrows on the screen indicates the captured movements.

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

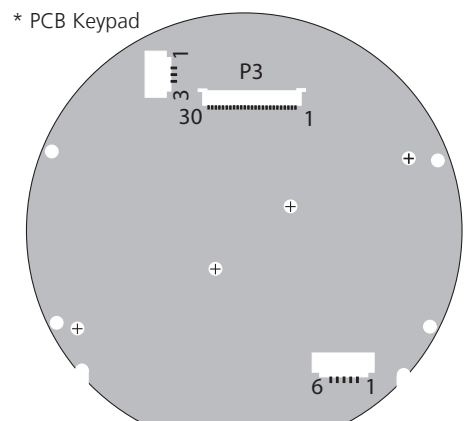
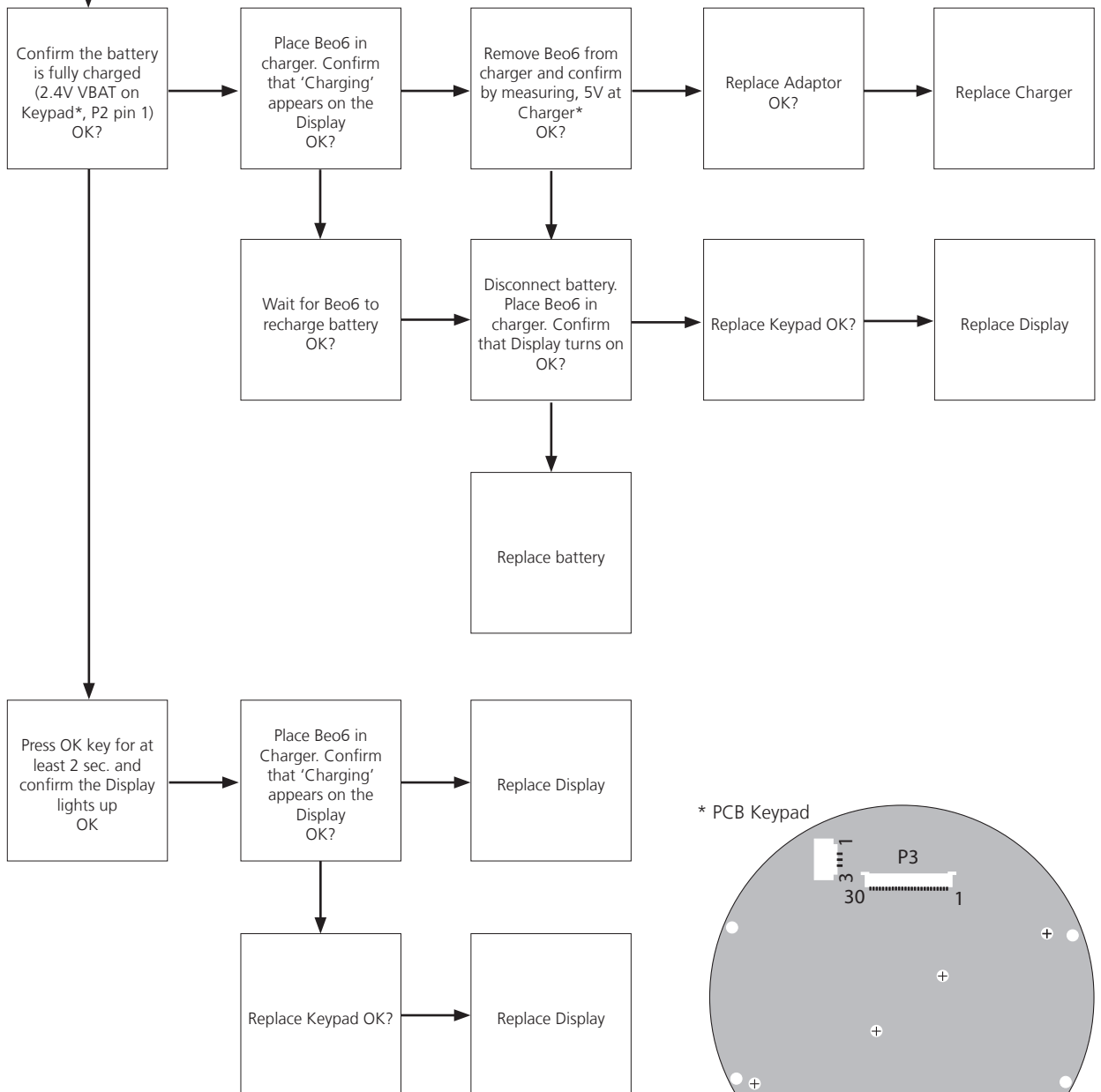
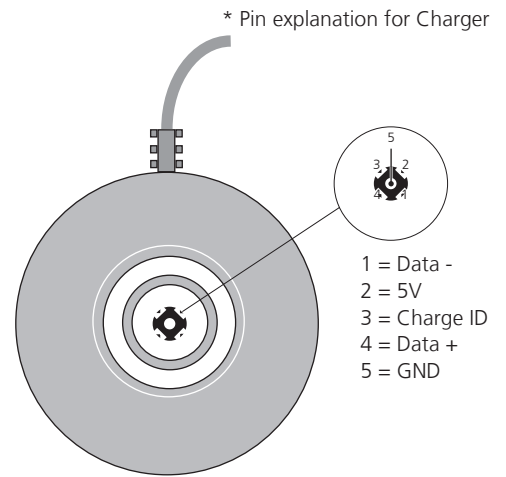
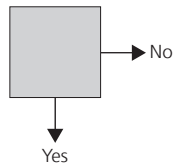
The 'Counters' menu contains information referring to the usage pattern of Beo6. The information is displayed on 5 pages, to navigate between page 1-5 use the ◀ or ▶ softkey on the screen.

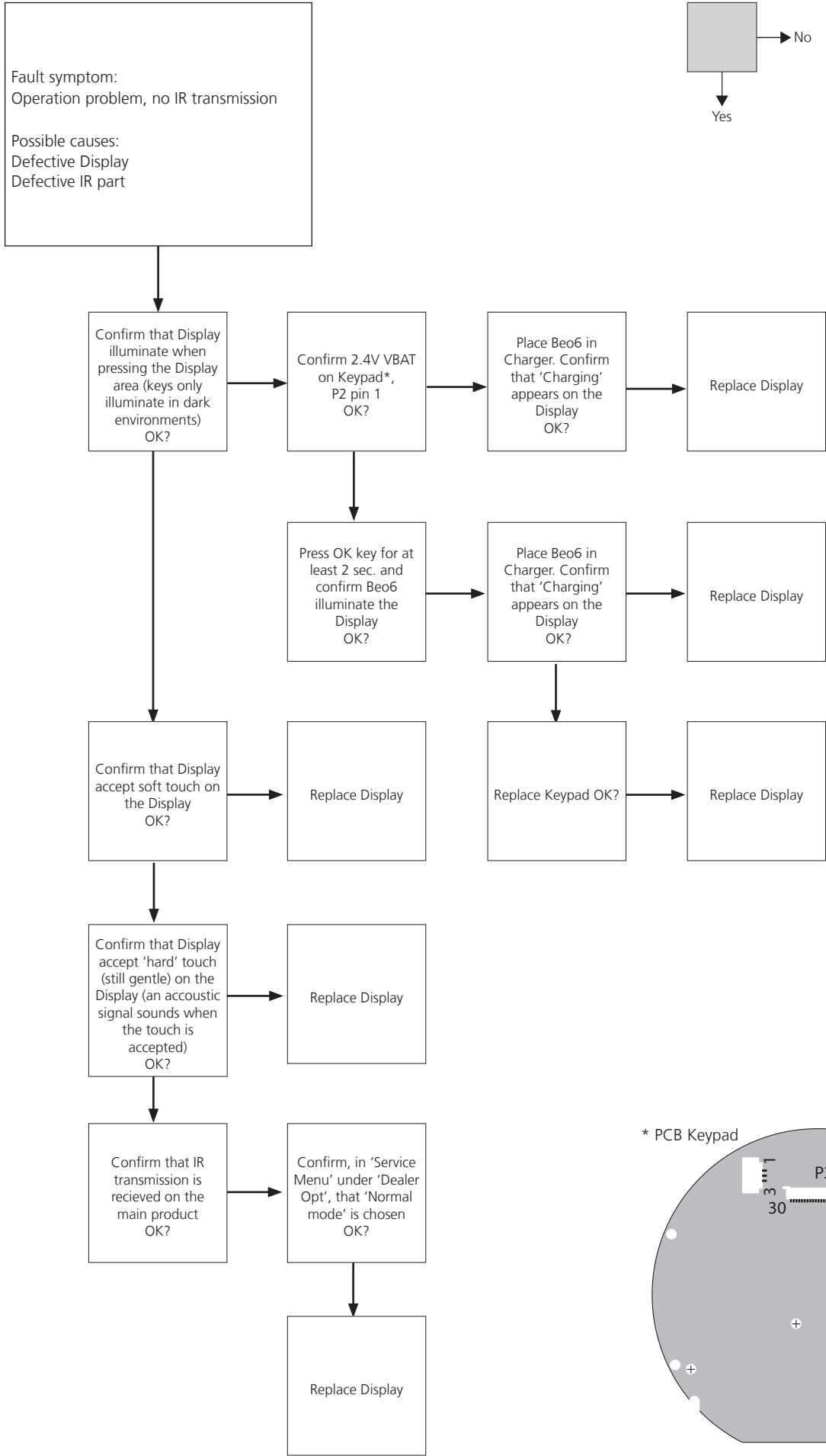
The counters page is cancelled by pressing the **BACK** key (3 times to reach normal mode).

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





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'.

Setup Menu access

To access the setting, press **Standby** and **Centre** button 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** and then **RESTORE** on the screen.

IR transmission strength

To adjust the IS transmission strength, enter Service Mode and navigate to Dealer Opt (Dealer Option).

Service Mode access

- > Pres **STBY + Centre** simultaneously.
- > Acces the 'Digits' (press the '+' field on the screen).
- > Press **0 0 Centre** within 3 seconds.

The two options are:

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

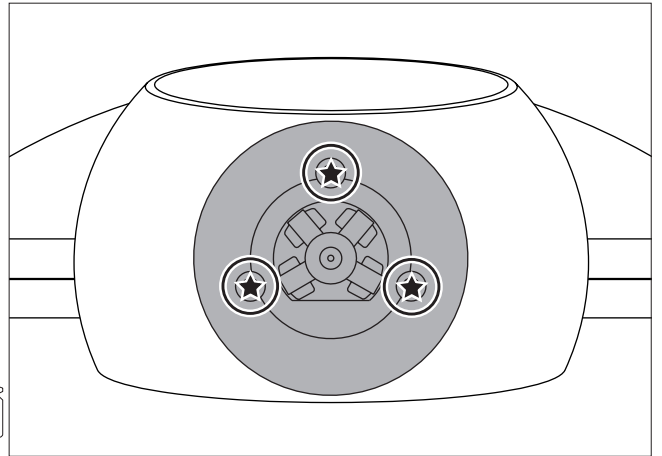
The selected setting is highlighted with red text.

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

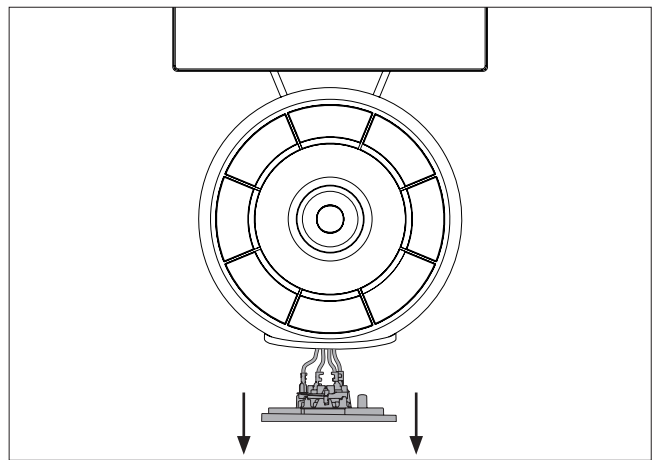
Replacement of keypad

- Remove screws

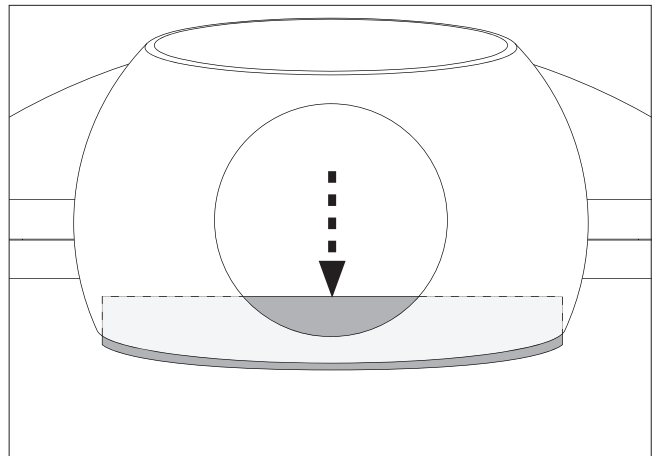
3x
TX5



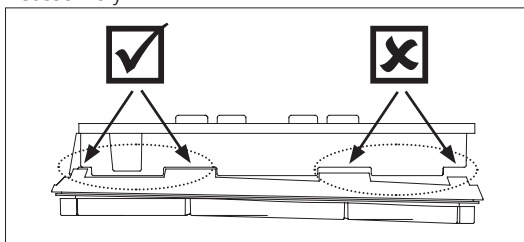
- Pull down Adaptor, interface



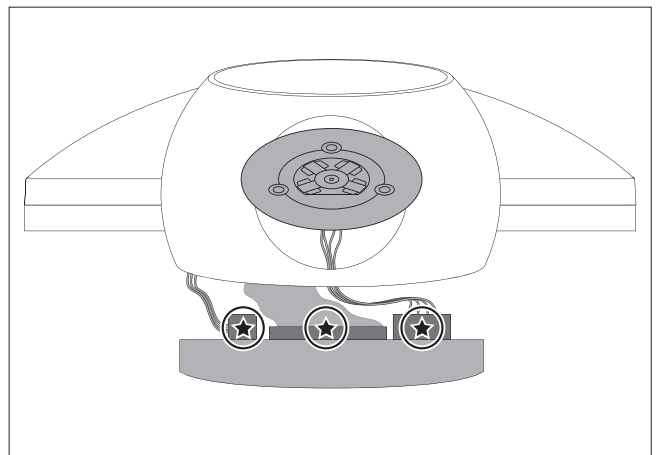
- Gently push down keypad



Reassembly!



- Disconnect cables (x3) and remove keypad

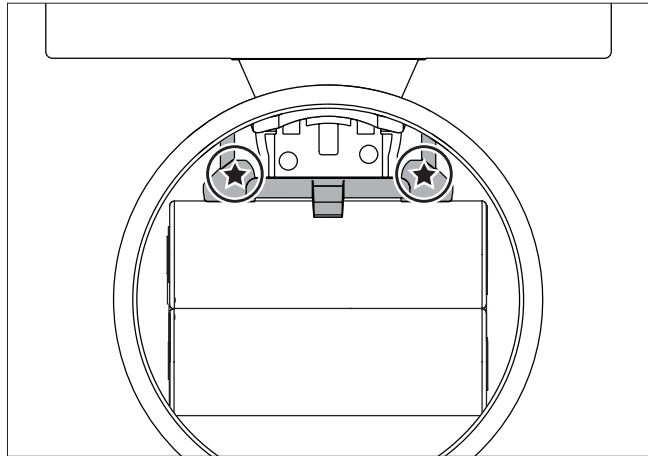


Replacement of battery pack

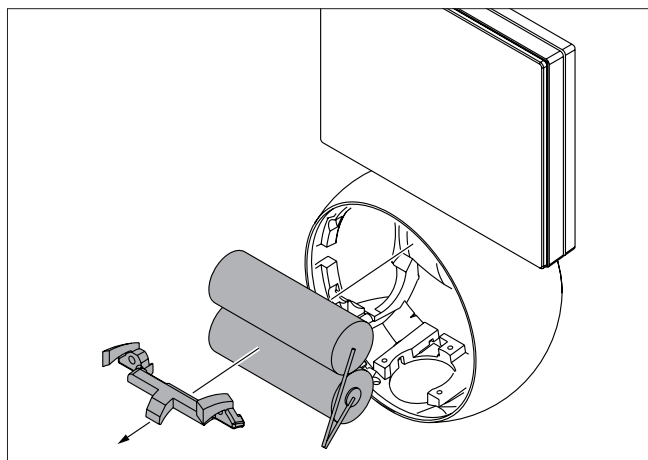
5.1 Remove keypad

- Remove screws for battery holder

2x
TX5



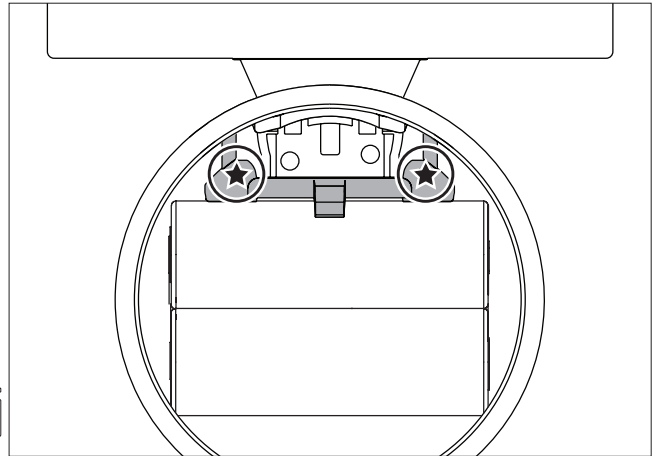
- Remove battery holder and battery pack



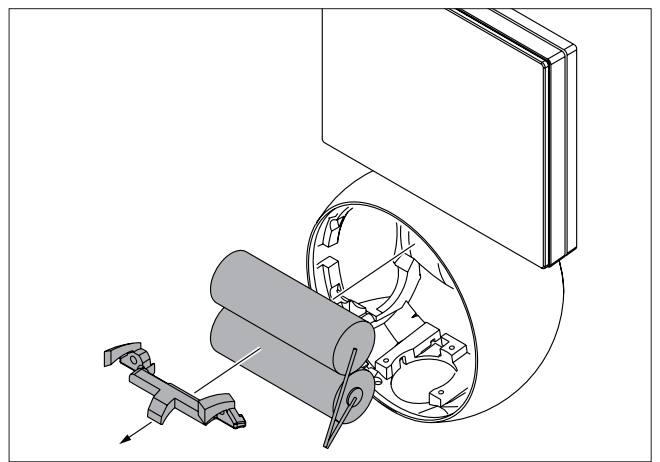
Replacement of display

5.1 Remove keypad

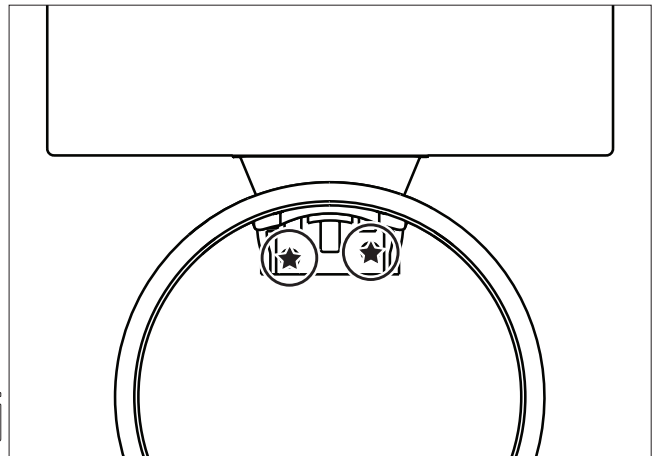
- Remove screws for battery holder



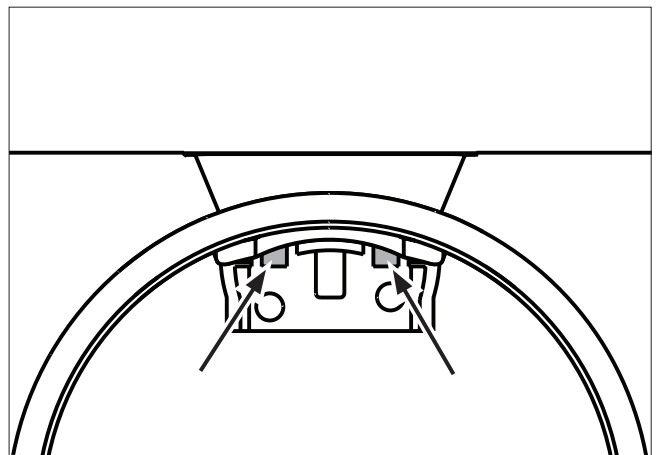
- Remove battery holder and battery pack



- Remove screws for display



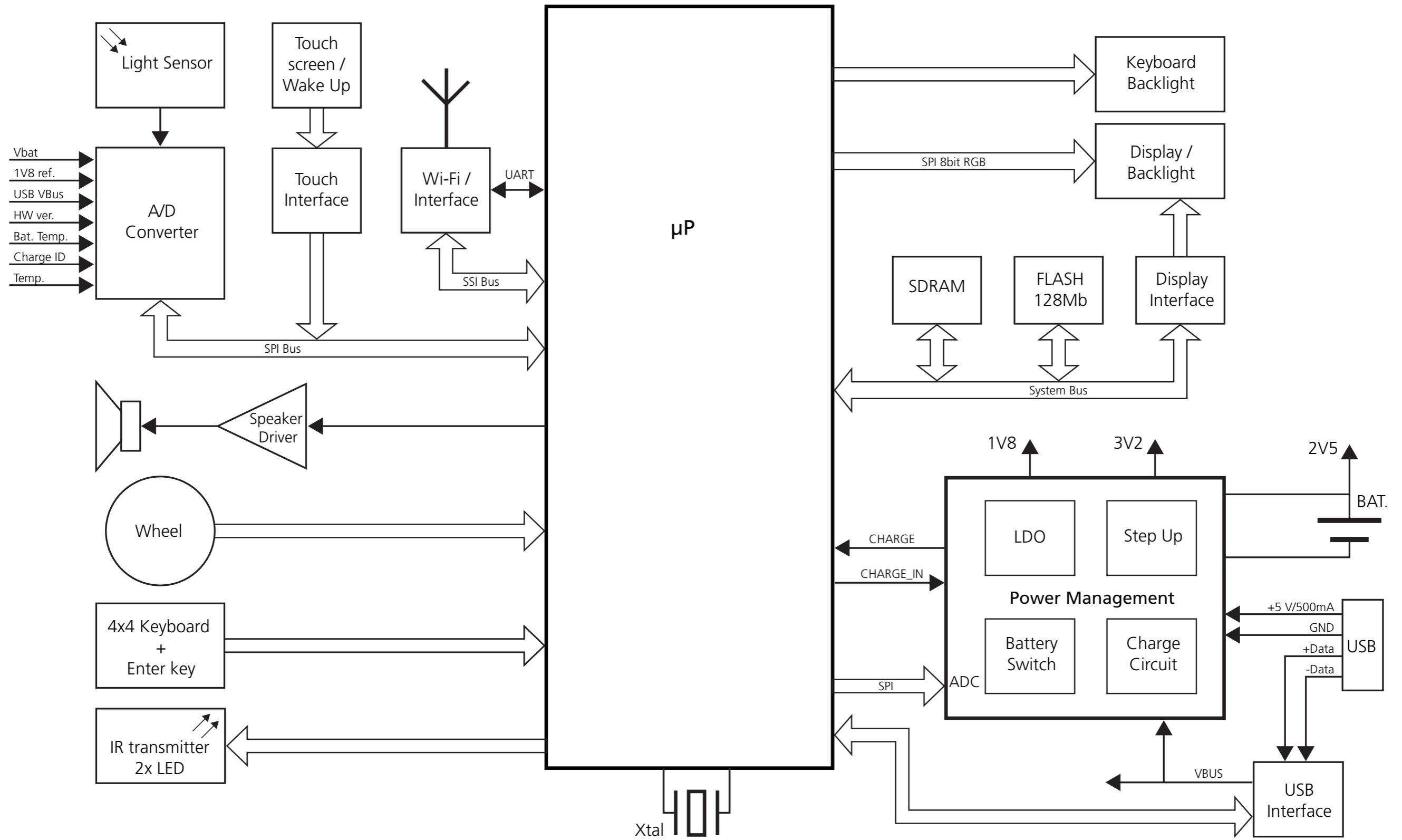
- Remove display by releasing the snaplocks



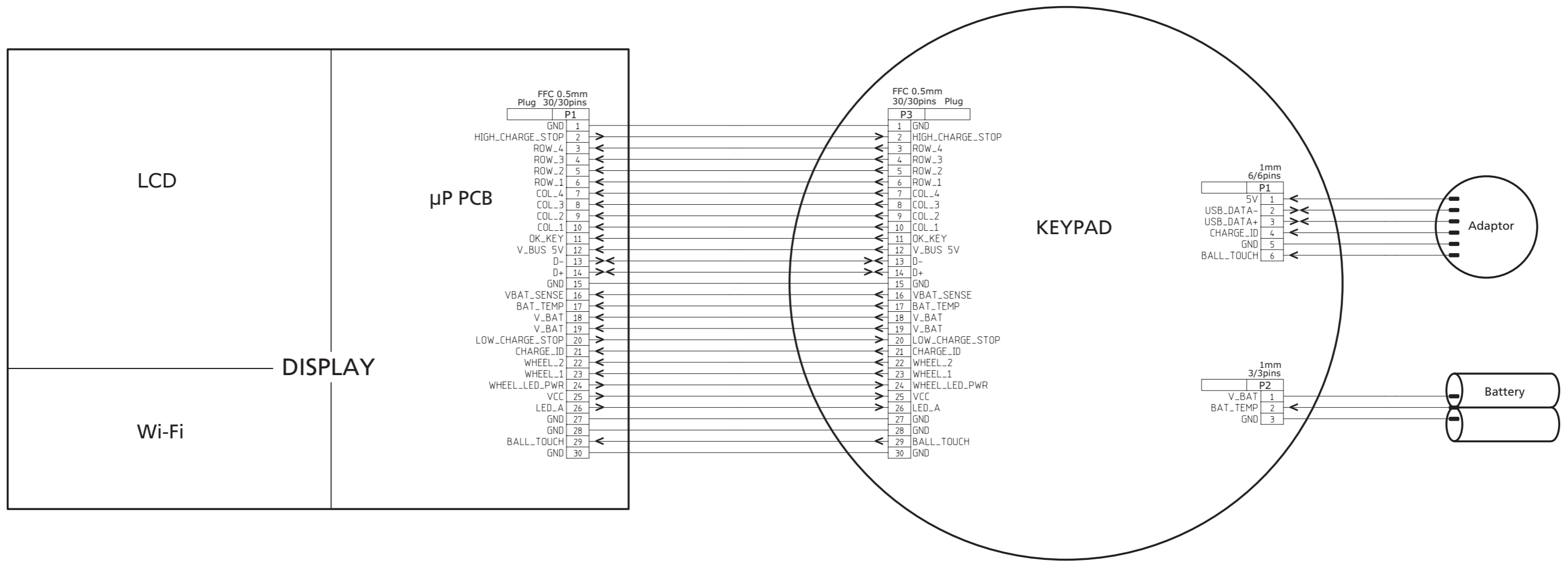
Specification guidelines for service use	Beo6
Design	David Lewis
Colour variants	Aluminium, Golden
Type	System Terminal (one-hand operated)
Beo6 – type no.	1711 (for all markets)
Table charger – type no. * see page 1.3 (how to service) for further info	1683 (EU), 1684 (GB), 1685 (US), 1686 (AUS), 1687 (KOR), 1688 (CN), 1692 (AR), 1693 (J), 1694 (SG)
Wall charger – type no. * see page 1.3 (how to service) for further info	1592 (EU), 1593 (GB), 1594 (US), 1595 (AUS), 1596 (KOR), 1597 (CN), 2598 (AR), 1599 (J)
Dimensions (W x H x D)	82mm x 118.1mm x 36.7mm (3.23" x 4.65" x 1.44")
Weight	215g +/- 5g (0.474Lbs.)
CPU	Freescale MC9328MXS
CPU speed	96 MHz, (16MHz in standby)
Memory size	FlashRAM=32 MB / SDRAM=8 MB
Battery capacity	1350 mAh - 2.4V (3240 mWh)
Standby	12 days
Active use time	18 hours (typically), 3 hours (continuously)
Charging time	< 5 hours (from empty)
Hard keys	17 + wheel
Soft keys	Soft touch display keys (3 dedicated and 3x4 interactive fields)
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 – 40 °C (32 °F – 104 °F)
Reduced performance is acceptable in range	0 °C – 10 °C (32 °F – 50 °F)
IR	
Range	455 KHz (for B&O products) and 20-80 KHz (for third party products)
Diodes	3
Transmitting	800mA (normal), 20mA (low power mode), 300mA (non-B&O mode)
Wi-Fi	IEEE 802.11 b/g - 2.4GHz (only compatible with B&O products)
Display	
Type	2.8" colour TFT, QVGA 320x240 pixels (RGB), Touch
Colour	262,144 colours, 18 bit resolution, TTL
Contrast ratio	500:1 @ 25C (typ)
Luminance	350 cd/m ²
Backlight	LED backlight (4 LEDs) Colour = White Intensity = Automatic adjusted to ambient light Timeout = 2 steps - dim and fadeout
Viewing angle	80° - 80° (Horizontally - Vertically)

Subject to change without notice

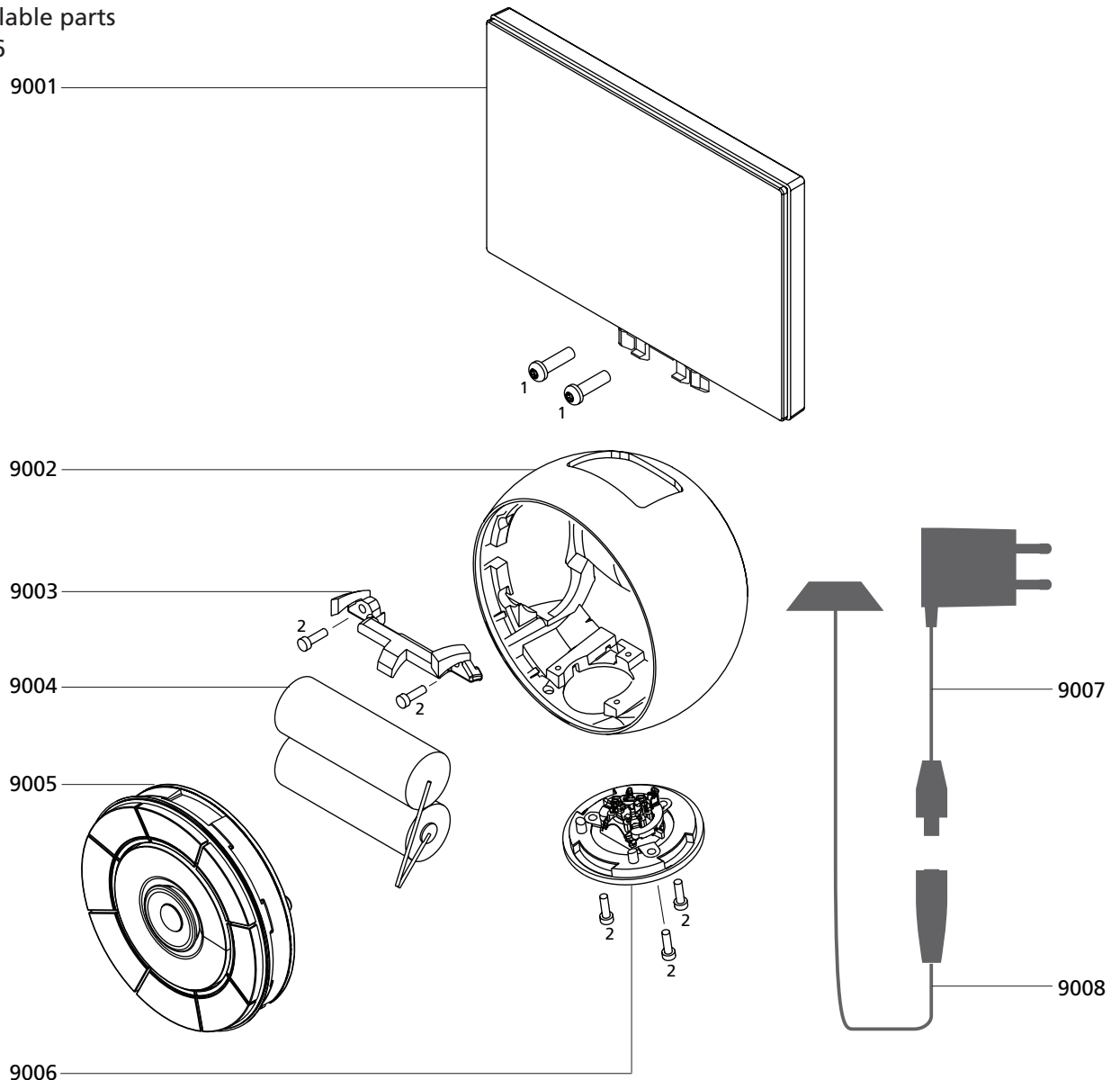
Overall block diagram



Wiring diagram



Available parts
Beo6



9001	8053223	Display, complete
9002	3160660	Cover, aluminium
	3160661	Cover, golden
9003	2311013	Clips f/battery
9004	8700091	Battery
9005	8003626	Keypad
9006	3152499	Adaptor, interface
9007	8040141	Mains adaptor, EU
	8040142	Mains adaptor, GB
	8040143	Mains adaptor, US
	8040144	Mains adaptor, CN
	8040145	Mains adaptor, AUS
	8040146	Mains adaptor, KOR
	8040147	Mains adaptor, AR
	8040111	Mains adaptor, J
	8040110	Mains adaptor, SG
9008	8003769	Charger
1	2013150	Screw 2.5 x 8mm
2	2052061	Screw 15 x 5mm
	3393387	Packing, complete
	3395324	Back-up suitcase

Parts not shown

6270848 Cable, USB A - USB B mini, 2M black
7229016 Converter, USB-A (p) to USB-B (5p)
3375094 Product cover
3376400 Cloth 1100 Tricotton single

Accessories

1168366 Table charger, EU
1168466 Table charger, GB
1168566 Table charger, US
1168666 Table charger, AUS
1168766 Table charger, KOR
1168866 Table charger, CN
1169266 Table charger, AR
1169366 Table charger, J
1169466 Table charger, SG

1159266 Wall charger, EU
1159366 Wall charger, GB
1159466 Wall charger, US
1159566 Wall charger, AUS
1159666 Wall charger, KOR
1159766 Wall charger, CN
1159866 Wall charger, AR
1159966 Wall charger, J

Available documentation

See Retail Ordering System

Bang & Olufsen
DK-7600 Struer
Denmark

3538135 12-10