

invebo BC20-NFC

Instructions

Installation of the Bluetooth BC20

Upgrade KIT in Bose SoundDock

Original Series 1

The installation of the board can be carried out without any previous experience.

Overview:

Fitting the BC20 kit Replacement is relatively straight forward but like everything the first time is more difficult and some may find it extremely fiddly. These instructions are to show the method of replacing the BC20 in a detailed step by step procedure.

The SoundDock is still the best sounding compact iPod dock around and one of the few things that can't be upgraded by going out and buying a better sounding unit at reasonable cost.

Note the BC20 does have a docking connector.

Which docks are compatible?

The BC20 kit is designed to work with all Bose SoundDock Series 1. If your dock serial number does not start in digits 0357 or 0402 or 0498 or 052398 then the BC20 is not compatible.

Before your Start: It is a good idea to watch the detailed 'how to' videos on YouTube. A full step-by-step video version of these BC20 instructions is available in the technical guide section of our

website. See the Technical Guides section at www.invebo.com

For a problem free installation watch the full BC20 Instruction procedure on YouTube: <https://www.youtube.com/watch?v=hwA8buY7qSc>

General:

1. The full kit contains the T8 Torx Screw driver, BC20 Main Board and BC20 LED and NFC Fascia board. Note: The fascia is available in both black and white colour matched to the enclosure of the dock. If you did not specify a colour when ordering then we will match the supplied colour to the serial number of your dock. (Starting in 0357 are white. All others have black enclosures).
2. Initially it is not necessary to remove the four larger cross-head screws holding the base moulding on. The half moon moulding can be removed whilst all of these four screws are tight.
3. Three T8 screws hold the dock assembly in place. These are found on the underside of the half-round front moulding where the iPod plugs in. Once removed the assembly can be pulled out from underneath. You do this by gently carefully pulling the ribbon cable which is tucked under the lower cover. Pull it out so that about 1.5 to 2 inches (3 to 5cm) of ribbon is showing. Then hold onto the cable to prevent it coming out any further and pull it from the plug on the docking board.
4. You should now have the docking assembly, including the board and the

plastic moulding, free in your hand. Put the body of the dock to one side.

5. Separation of the dock board from the base moulding requires some sharp flush side cutters or a sharp craft knife and a great deal of care. Carefully peel off the black plastic overlay and put it aside.
6. You should now see the docking board and the tops of the plastic pegs that hold the board in position. These are small pegs that have been heat-staked. This means that at the Bose factory the tops of the pegs have been melted into a mushroom shape.
7. The head of the mushroom is what holds the board in place. It is necessary to carefully cut the tops of the mushrooms with your sharp craft knife or flush-cutting side cutters. Trim the mushroom heads back until the smaller diameter of the body of the peg is visible, equivalent to roughly the diameter of the hole in the PCB.
8. Check that you have done all the pegs. Then docking PCB can now be gently levered away from the moulding.
9. One of the mounting pegs will prevent the board sitting down onto the base moulding. Therefore it is necessary to cut this peg off flush at the base. The peg to be removed is the third one from the right-hand side of the half moon plastic part when looking from the top. Locate and cut it off flush at the base with the craft knife or the side cutters.
10. Take the BC20 controller board in your hand and have a look at it. Notice the ribbon connector at the edge of the board. See that

there is a small darker section at each end that can be moved back and forth. This is the locking mechanism.

- 11.** Using your fingernail ensure that the locking mechanism is out at both ends of the connector. In the out position the tabs are about 0.08" (2mm) out from the home position.
- 12.** If the locking mechanism isn't in the open position then the ribbon won't go in. The insertion force is near to zero when it is correct. If you have to push to get the ribbon into the connector then check the lock mechanism is out at both ends.
- 13.** Place the BC20 board over the pegs and push down onto the half-moon moulding. Usually the mushroom heads are an interference fit which will hold the board in position. You might even feel it click into place.
- 14. IMPORTANT:** Make sure that the board is sitting flush with the supporting ribs on the base moulding. If the board is suspended on the mushroom heads of the pins then you could have problems with the volume controls buttons as they will sit too high and may spontaneously alter the volume. Look at it from the side and make sure that there is no gap between the board and the supporting parts of the moulding. If there are small gaps then simply make sure that the board moves freely down onto the moulding with little finger pressure.
- 15.** Ensure that the board is sitting down flat.
- 16.** Hold the dock so that the base is horizontal and uppermost. Loosen the four cross head screws about one turn each. **DO NOT REMOVE** the screws completely.
- 17.** Bend the ribbon cable backwards so that the end is parallel to and lying over the flat base moulding.
- 18.** Hold the half moon dock assembly with the base flat on the lower base of the dock. You will see that when plugged in the half moon will flip 180 degrees and be in the correct orientation to be refitted.
- 19.** Feed the end of the ribbon cable into the connector and when fully engaged and it is exiting perpendicular to the connector, push the locking tabs into the engaged position. You can use your fingernail. Note that moderate force is required to do this and it is necessary engage each side more than once. Sometimes the other end pops out slightly when you push one end in.
- 20.** When the locking mechanism is fully engaged, give the ribbon cable a gentle tug to ensure that the ribbon is securely held in the connector. You should see a line of 24 bright tin contacts protruding an equal distance of approximately 1 millimetre out of the connector. If you can see more at one end than the other then the ribbon is not correctly inserted.
- 21.** Note that if for any reason you want to unplug the ribbon, you must first disengage the locking mechanism to let the ribbon slide out with zero force.
- 22.** It is necessary to cut off the lowest centre-right right peg that sits under the Bluetooth module. Slice with knife or cutters level with the top of the support rib.
- 23.** Test fit the BC20 on the support moulding by placing over the pegs. Look between the underside of the board and the support ribs to ensure that there is no gap. i.e. The board is sitting right down on the support webs of the half moon base moulding. See above. One peg must be removed.
- 24.** During the next operation you must ensure that the BC20 controller PCB stays located on the pegs. Be careful. If you have cut the mushrooms just right then it will snap on and hold in place nicely. If not it may be a little loose and you have to make sure that when the three Torx screws are put back in the board is sandwiched between the upper and lower half moon mouldings and held in place by pressure from the fascia LED NFC PCB. A piece of double-sided tape applied to the back of the board may make it easier.
- 25.** Gently feed the ribbon cable under the flat base moulding until the half moon moulding is in back in place.
- 26.** Refit the three Torx screws and tighten them down all the while checking that the board is engaged on the mushroom pegs.
- 27.** Inspect your work.
- 28.** Now tighten down the four cross head screws in the base moulding.

29. Check that the BC20 controller is located over the pegs and that all pegs are present in the holes in the BC20 board.

30. Check that both volume buttons move and you can feel them depress. If they do not depress then the BC20 is not sitting down correctly over the pegs so you have to investigate the cause and rectify.

31. With the BC20 is correctly located, it is time to fit the button panel / LED/ NFC board. If you take a look at the underside of the button panel you can see a 4-pin connector vertically standing next to the hole for the Auxiliary input socket. Check all 4 pins are vertical and in line. If any of the pins are bent then it will not be possible to complete the next step.

32. Peel of the self-adhesive backing from the underside of the Button Panel. Do not lower further than instructed below. **DO NOT PUSH FULLY HOME AT THIS STAGE**. Carefully lower the button panel into the docking aperture of the dock until the turret of the Aux in connector is just engaged in the hole.

33. Align the back edge of the Button board with the edge of the aperture in the dock cradle moulding. **Gently** lower the button panel ensuring that the 4 pins on the connector engage properly in the connector. It may be necessary to gently jiggle the button panel until you feel the pins slide in.

34. When you are confident that all four pins are engaged, push the button panel down and press to attach the adhesive.

35. Apply power to the dock. You should hear a series of beeps and the left hand power LED (Red) should illuminate after about a three second delay.

BC20 User Instructions

The BC20 is certified to be compliant with Bluetooth 5.0. It also supports any source device that complies with Bluetooth version 2.0 and above.

Power on Auto Power Up: When the mains power is applied the dock will power up with a series of tones and the RED power LED will illuminate.

Manually Powering Up the Dock: Press and hold the Power button until you hear a tone and the Red power LED illuminates.

Auto Power-Down: The dock will automatically power-down if no audio has been played for 10 minutes.

Amazon Alexa Support: When connected to Amazon Echo the auto power down feature is disabled. This is to ensure reliable operation with the Amazon devices. Instead the unit maintains the connection and puts the hardware into standby mode when no sound is streaming.

Bass Boost: Press and hold the skip back button until you hear the bass boost. The system will remember the setting when in standby.

Turn of Bass Boost: Press and hold the skip back button until you hear the bass decrease.

Bluetooth Operations:

To stream audio: Your Bluetooth device must be paired and connected to the BC20. Refer to the instruction for your phone or tablet. The playback volume can be adjusted to the desired setting using the dock's + and – buttons and on your mobile device.

Pairing

Traditional Bluetooth pairing: When the dock is powered up (Red LED is on), press and release the power/pairing button. The dock will emit a tone and the Blue Status LED will rapid flash. The BC20 will remain discoverable for 150 seconds after which, if no device has been paired it will exit pairing mode and emit a low tone and the Blue LED will go off.

When will the BC20 Pair? You can pair with the BC20 providing another device is not streaming. If another device is connected it is necessary to disconnect the Bluetooth connection to that device.

NFC Pairing: NFC pairing is easy and very convenient. The first time you attempt NFC pairing your device may ask for permission. Previously paired devices will re-connect straight away when presented to the NFC antenna without your intervention.

Does your Phone Support NFC Pairing? Most Android based phones equipped with NFC support NFC pairing. It is not necessary to load an app. Apple phones and devices do not support NFC pairing.

How to NFC Pair/Connect: It is not necessary to power up the dock before pairing by NFC. To pair with NFC your Phone's NFC function must be enabled AND your phone must be unlocked. When your phone is locked, for reasons of power and security, the NFC function is disabled. Simply

present the NFC antenna area of your phone to the NFC logo on the control panel. When the dock detects the NFC signal it will power up and emit a beep and initiate a pairing request. It takes 1 to 2 seconds to complete the negotiation with the NFC tag so it is best to keep the phone and control panel in contact for 1 to 2 seconds after you hear the NFC beep.

Force Bluetooth To Disconnect: Press and release the pairing button. The BC20 can pair and remember 8 devices but can only connect to one device at a time. It is important to remember to disconnect or switch off the Bluetooth on paired devices that aren't required to operate the dock. You will be unable to connect one device to the dock whilst another is still connected by Bluetooth. This situation can happen when several people have phones and have paired with the dock and they are still in range and they have not disconnected their Bluetooth connection. If this happens you can force disconnection by following the procedure below.

To simplify:

Only **ONE** device can be connected to the innexxis-BC20 at any time.

If you have paired more than one device with the BC20 and you are if you are unable to connect to the innexxis-BC20 then force disconnection of other devices by pressing the pairing button. **Note:** Turning off the Bluetooth on the other devices will also force disconnection.

Pairing Trouble Shooting

- Ensure that you have turned on Bluetooth on your phone or Tablet and, if necessary scan f devices while the BC20 is in pairing mode (see above).

- If you are unable to connect then press and release the pairing button on the dock.
- If you are unable to pair by NFC, ensure that both Bluetooth and NFC are enabled on your device.
- You may receive a message 'innexxis BC20 wants to pair' or something similar. (The exact message depends on the version and manufacturer of your phone or tablet).
- Confirm any requests that appear on your phone/tablet display.
- The device should now be paired with your innexis-BC6 and 'connected' should be displayed.

To stream audio from your phone or table it is necessary to select media to be routed to Bluetooth audio option. Refer to the instruction for your phone or tablet.

When streaming starts the innexxis-BC20 will power up the main dock electronics dock and begin to play. The playback volume can be adjusted on the dock and on your mobile device.

For best streaming quality set the volume control on your mobile device >50% and set the volume control on the dock to a comfortable listening level.

If you are Unable to connect then try one or more of the following:

1. Ensure no other Bluetooth devices are in range and connected.
2. Reset the Bluetooth on your phone by turning the Bluetooth off and back on again.
3. Follow the pairing procedure.

4. Instruct your phone to forget the BC20 and then follow the pairing procedure.
5. Turn the dock power off, wait 20 seconds and power up the dock.

If you can connect and stream but hear no audio:

1. Try another mobile device.
2. Ensure that the audio is routed to Bluetooth streaming on your device.
3. Press the dock + volume button (Turn up the volume on the dock).
4. Check the video on the website that shows how to check and re-plug your sound processor amplifier ribbon.

LED Indicator Modes

Power LED

Red LED illuminates when powered up and ready to play/pair

Bluetooth Status LED

Blue LED Off: BC20 is not in pairing mode and not connected to another Bluetooth Device.

Blue LED Fast Flash: BC20 is ready to pair and waiting for a connection request

Blue LED Short flash every 3 seconds: A source device is connected but is not streaming

Blue LED Permanently Illuminated: A Bluetooth device is connected and is currently streaming audio.

Technical Support

If you have installation issues then please refer to the video and check each step carefully.

I can connect by Bluetooth but No Sound:

- Check that all ribbon cables are correctly plugged in, as detailed in procedure then please see YouTube video on checking and re-plugging sound processor ribbon.
- If your dock serial number begins with 0498 or 052398 then disconnect BC20 and power up the dock. You should hear two beeps. If you do not hear the beeps then your sound processor in the base of the dock is faulty. Contact Invebo.
- If your dock serial starts in 0357 or 0402 and you can connect by Bluetooth your sound processor required the reliability modification. Contact Invebo.

I can't see or hear any signs of life BC20 not illuminate LEDs:

- Check that your power adaptor is plugged into the sound processor correctly. (Correct orientation).
- Watch the power adaptor/supply diagnostic video listed in the Invebo Tech Guide on the website.

Contacting Invebo Support:

Please email details of your issues to support@invebo.com. Please include as much information and description of the problem. Describe what working and what is not working and if possible send photographs of your sound processor and the BC20 so we can spot any issues. If you supply comprehensive information then our support will be faster and more effective. We endeavour to answer all queries within one working day of receipt.

CERTIFICATION NOTICES

Bluetooth Module has received the regulatory approval for the following:

BT SIG/QDID: 121137•
United States: FCC ID: A8TBM20SPKXYNBZ•
Canada– IC: 12246A-BM20SPKS1– HVIN: BM20SPKS1•
Europe/CE•
Japan/MIC: 202-SMD048•
Taiwan/NCC: CCAN15LP0460T2• China/SRRC: CMIIT ID: 2015DJ7134• Brazil/ANATEL: 01888-19-08759•
Mexico/IFT: RCPMIBM19-0454• Argentina/CNC ID: C-22800

EU – Declaration of Conformity: Button Brand Designs Limited declares that innexis-BC20 complies with the applicable requirements and other relevant provisions of Directive 1999/5/EC. Button Brand Designs Limited, Unit 1, Blounts Farm, Blounts Court Road, Sonning Common, Oxon, RG4 9PA. UK

ROHS Compliance Statement: On 6 July 2006, the European Union adopted the “Restriction on Use of Hazardous Substances in Electrical and Electronic Equipment” (RoHS) EU Directive 2002/95/CE. Button Brand Designs Limited achieved and maintains full compliance with RoHS directives for all electronic devices sold in Europe in the winter of 2007

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