

# PULSE SUB

Wireless  
Powered  
Subwoofer

## Owner's Manual

The Bluesound PULSE SUB is a wireless powered subwoofer that adds heart-pounding bass to your music, shows, movies, games and more. Using point-to-point wireless technology, the PULSE SUB can easily be set up and connected with the PULSE SOUNDBAR for full control of its sound settings, including volume trim and delay, using the BluOS app for your smartphone, tablet, or laptop. You can also have a wired connection using a standard subwoofer interconnect cable if you choose.

- Slim compact design allows you to fit it beside, behind, or underneath any living room furniture
- Built with a custom-designed 165mm long-throw woofer for deep, accurate bass reproduction
- Connect with the PULSE SOUNDBAR to create a wireless 2.1 home theater system
- Uses the BluOS app for smartphone, tablet and desktop for quick and easy set up
- Flexible mounting options including wall mounting with the included wall mount bracket

Follow the steps outlined in the Quick Setup Guide, which is included in the package with your PULSE SUB. Need help? Visit [www.support.bluesound.com](http://www.support.bluesound.com) for helpful articles, setup assistance, and troubleshooting tips & tricks from the BluOS Support Crew.

## Included Accessories



120V AC Power Cord



230V AC Power Cord



Two Shorting Plugs



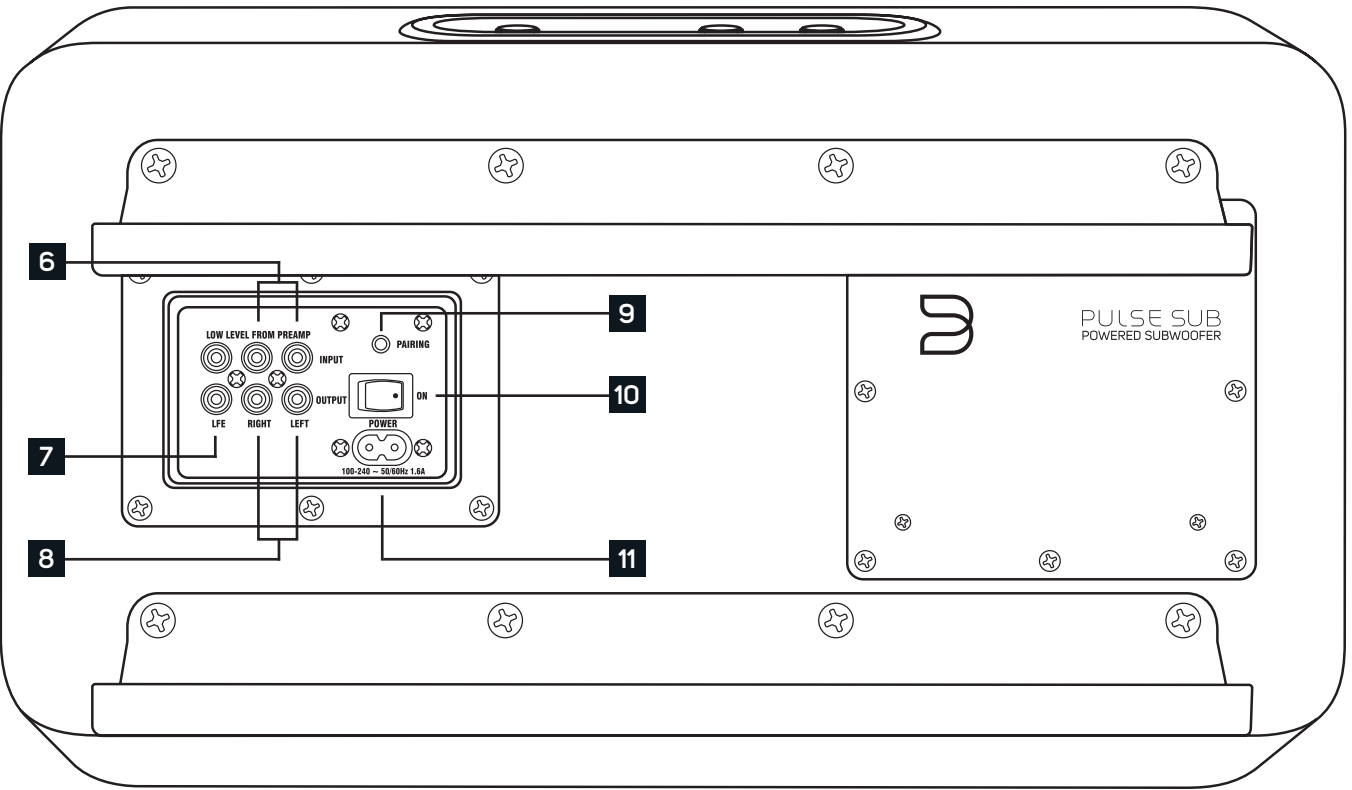
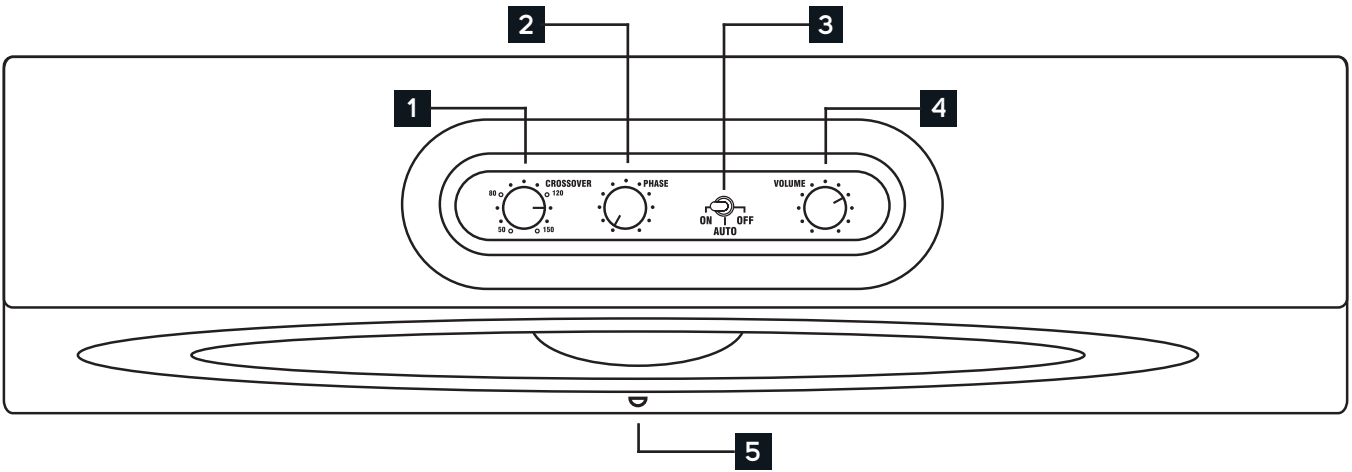
Two Rubber Feet



Wall Mount Bracket



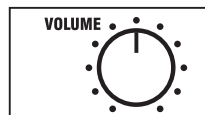
Cloth Grill



- 1 CROSSOVER FREQUENCY CONTROL :** Adjusts the upper limit of the subwoofer's frequency range. Continuously variable from 50Hz to 150Hz for precise matching of subwoofer bass reproduction with other speaker(s) in your system. The default crossover frequency is set at 130 Hz, for use with the PULSE SOUNDBAR.
- 2 PHASE CONTROL :** Selects the subwoofer output phase between in-phase (0°) and out-of-phase (180°) to compensate for the low to mid bass acoustic effects of different placement locations and listening rooms. The default phase setting is 0°. See "Subwoofer Placement" for more information.
- 3 POWER MODE SWITCH :** Selects the power mode for the PULSE SUB. Select "ON" and Standby Mode is disabled; the PULSE SUB is on all of the time. Select "AUTO" and the PULSE SUB will go to Standby Mode, automatically powering up when required and returning to standby after 20 minutes of inactivity. Select "OFF" and the PULSE SUB will not turn on. The default position for the power switch is AUTO.
- 4 VOLUME CONTROL :** Adjusts the output level of the PULSE SUB only: This is not intended as a day-to-day volume control.



The default volume is set at level 7, for use with the PULSE SOUNDBAR using a wireless connection.



The recommended volume for a wired connection to the PULSE SOUNDBAR is level 5.

- 5 INDICATOR LIGHT :** Located on the front of the PULSE SUB. The light indicates power-on and wireless connectivity status.
- 6 LOW/LINE LEVEL INPUT :** For connecting the PULSE SUB to a separate component preamplifier, or to an integrated amplifier or receiver with preamplifier-out/main-in connections, at line level.
- 7 LFE :** For connecting the PULSE SUB to a separate component preamplifier, or to an integrated amplifier or receiver with LFE/Subwoofer output connections. Not recommended for use with Bluesound Players.
- 8 LOW/LINE LEVEL OUTPUT :** For connecting the PULSE SUB to a separate component preamplifier, or to an integrated amplifier or receiver with preamplifier-out/main-in connections, at line level.
- 9 PAIRING BUTTON :** To put the PULSE SUB into wireless pairing mode, press and hold the pairing button for 5 seconds, then release. The front indicator light will blink GREEN for approximately 6 seconds, indicating the PULSE SUB is in pairing mode. The PULSE SUB will remain in pairing mode for approximately 60 seconds.
- 10 POWER SWITCH :** The Power Switch turns off the subwoofer's internal amplifier.
- 11 AC MAINS INPUT :** The PULSE SUB comes supplied with two separate AC power cords. Select the AC power cord appropriate for your region. Before connecting the plug to the wall outlet, firmly connect the other end of the AC power cord to the AC Mains input socket. Never force the plug into the wall outlet. An adapter may be necessary in certain regions. Always disconnect the plug from the wall outlet first, before disconnecting the cable from the PULSE SUB's AC Mains input socket.

## **CHOOSE PLACEMENT**

### **Room Acoustics**

If you are critical about low-frequency response, there's quite a bit of useful experimentation you can do, especially in combination with the crossover, level, and phase controls of the PULSE SUB.

Begin by considering the size of the listening room. The larger the volume of air a speaker must move, the more acoustic output is required to achieve the sound levels you want. In smaller rooms, sound attenuation tends to be offset by reinforcement from wall reflections. In larger spaces, sound has to travel to reach the reflecting surfaces and then to your ears, which means it has to be louder to begin with.

After size, the most important aspect of a listening room is its shape. In any room, sound reflects off the walls, ceiling, and floor. If the distance between two opposite parallel surfaces is a simple fraction of the wavelength of a particular frequency, notes of that frequency will bounce back and forth in perfect phase—an effect called a standing wave or room mode. At some point in the room, this note will be reinforced substantially; at others it will cancel out almost entirely. If the prime listening seat is placed at either of these locations, the note will be a horrible boom or virtually non-existent. Almost all rooms are susceptible to some standing waves at low frequencies, but careful positioning of the speakers and the listening seat can minimize the effects. The only way to find out what works best is by experimentation. Positioning of a bass speaker has almost no impact on imaging, so the PULSE SUB can be positioned almost anywhere.

### **Subwoofer Placement**

The loudest bass output from a subwoofer comes from corner placement. The outward flaring of walls from a corner focuses low frequencies, giving them no place to go but toward the listener.

If you are seated in a null spot where sound from the PULSE SUB is cancelled or diminished by out-of-phase reflections, you will have to move either the subwoofer or your listening position until you get the desired bass. Adjusting the phase control 180 degrees may make a difference, especially if the null is a product of cancellations caused by interaction with low frequencies from your main speaker(s). If the opposite is happening, where direct and reflected bass waves converge in phase and produce too strong a peak at your listening position, you can change position or change your sub's level control (or possibly the crossover frequency chosen).

The best method for positioning the PULSE SUB is to put the PULSE SUB in your listening chair, then play music with lots of bass through the system (something with steady low frequencies or continuous test tones). Move around the room and note where the bass sounds best; if you place the PULSE SUB in that location, you should get the same bass performance. This test only works if you have your ears at the same height as where the PULSE SUB will be, so you may have to get down low. A recommended starting point for the placement of the PULSE SUB would be in either of the front corners of the room.

### **Multiple Subwoofers—Why Two Subs Are Better Than One**

Sometimes the listening room is not conducive to achieving satisfying amounts or quality of bass. There are rooms with troublesome dimensions, especially those that are more cubical. In such a case, two subwoofers placed carefully to work with each other are recommended to handle acoustical anomalies. This can also be applied when the problem is too much, or too uneven, bass. The overall system benefits from each subwoofer correcting the acoustic problems caused by the other.

A very good starting point for positioning two subwoofers is to place one each on the centre of opposing walls. Experimenting with positioning as previously described should be used for determining the location of the second subwoofer, except in this instance one is listening for the minimum amount of bass output.

When adding a second subwoofer you need to reduce the volume on both models by 3DB or "1" position in the volume slider.

## **CONNECT FOR SOUND**

There are several ways to connect the PULSE SUB to your audio system.

### **Wireless Connection**

The PULSE SUB is designed first and foremost to be a wireless subwoofer solution for the Bluesound PULSE SOUNDBAR. To use the PULSE SUB wirelessly, there is a simple pairing process to connect it directly with the PULSE SOUNDBAR. Press and hold the Pairing Button on the rear panel of the PULSE SUB for approximately 5 seconds, then release. The LED indicator on the front of the subwoofer will blink GREEN, indicating the subwoofer is in pairing mode. At this point, press the pairing button within the BluOS Controller App.

Once paired, the LED indicator will go SOLID GREEN to show that the pairing process was successful. After a short duration, the LED will turn off. The wireless connection is still active at this point.

The BluOS Controller App contains Setup Guides that will guide you through the pairing process with a PULSE SOUNDBAR.

### **Low/Line Level**

If you are using your PULSE SUB with a receiver or integrated amplifier with preamplifier outputs, or if you are using a separate preamplifier, the preferred connection is from the Preamplifier Output of the electronics to the Low Level Input of the subwoofer. Use a dual RCA audio cable. Additionally, you may need to use Y-connectors at the Preamplifier Output to also send signals to the Power Amplifier/Main Input.

Connecting the Low/Line Level Outputs from the PULSE SUB back to the Power Amplifier Inputs is an important option. The Low/Line Level Inputs of the subwoofer are internally processed through an active high pass filter (at 12dB/octave below 80Hz) to the Low/Line Level Outputs of the subwoofer. Connecting the Low/Line Level Outputs from the subwoofer back to the Power Amplifier Inputs delivers the processed signal, with reduced low frequency content, to the main speaker(s). With less low frequency demands, the main speaker(s) can play louder. Particularly with smaller and/or less efficient main speaker(s), relieving of the demands of reproducing low frequencies will allow greater sound output and dynamic capabilities from the system overall.

### **LFE Connection**

Note: Not recommended for use with Bluesound players.

You can use a single RCA cable to connect the LFE/Subwoofer Output of your receiver, integrated amplifier, or preamplifier to the LFE Input on the PULSE SUB.

Home Theatre receivers, integrated amplifiers, surround sound processors, and preamplifiers usually have a special Subwoofer Output to provide the optional Dolby Digital or DTS Low Frequency Effects (LFE) Channel present on many movie and other programming sources. To reproduce these deep-bass effects (when they are present), supplementing the bass information in the main channels, this output must be connected to the subwoofer.

The LFE or Subwoofer Output is filtered by most receivers/processors. The PULSE SUB's variable low pass filter is bypassed when using the LFE input, so sources that do not filter the subwoofer output should be connected to the PULSE SUB via a wireless or low/line level connection.

In 2-channel source material there is no information in the LFE channel. However, bass signal can be diverted to the subwoofer by selecting the appropriate AV receiver/processor surround mode.

## NEXT-LEVEL CALIBRATION

The settings on the PULSE SUB have been set to default levels in order to work well with the Bluesound PULSE SOUNDBAR in most listening environments. However, you may still require some adjustments to the settings based on placement and personal preference.

The following procedure assumes your PULSE SUB is installed and connected. If possible, work in a team with another person: one listening, one making subwoofer-control adjustments. Use the steps below to fine-tune your subwoofer setup.

1. Set Sub Volume to 0, Sub Cut-Off Frequency to 50Hz. Set any loudness, bass and treble, and/or equalizer controls on your preamplifier or integrated amplifier or receiver, or other components, to their nominal (midpoint or off) positions.
2. Play a familiar music source that includes substantial deep-bass content over an extended section.
3. Gradually turn the PULSE SUB Volume control clockwise until you achieve natural balance between the subwoofers deep-bass output and your speaker(s).
4. Slowly turn the Sub Cut-Off Frequency control clockwise to reach the best mid-bass blend with your speaker(s). This will be the point at which the upper bass retains solid impact and fullness. Boom or muddiness is the result if the control is too high. A thin, "reedy" quality to the mid-bass such as deep male voices (FM announcers; Darth Vader) is the result if the control is too low.
5. Adjust the Phase control between 0° and 180° several times, leaving it in the position that yields the fullest low to mid bass output. You will now probably want to repeat steps 3 & 4 to double-check the subwoofer blend.

Cycling through steps 3 & 4 several times with slightly different settings of both the Sub Volume and Sub Cut-Off Frequency controls will help you get the most musical performance from your PULSE SUB. The best combination is that which yields the most solid very-low-bass sounds, without mid-bass boom or a gap in response between the subwoofer and speaker(s).

The Sub Cut-Off Frequency and Sub Volume controls are interactive. Raising the latter while lowering the former can have the effect of extending deep-bass response somewhat, with a small sacrifice in overall loudness capability (this will still be well beyond the full-range loudness capability of most systems). In general, for well-recorded acoustic music the lowest Sub Cut-Off Frequency setting that yields a smooth transition between subwoofer and main speakers is often the best choice, and will promote deeper low-bass extension.

Note: The PULSE SUB Volume control is not a bass-boost or daily volume control. It is a set-and-forget adjustment, not intended for day-to-day usage.

## TROUBLESHOOTING

### Symptom

### Action

No sound

Ensure the main power switch is on. This switch is located at the back of the subwoofer.

Ensure the power cord is connected to the subwoofer and plugged into a live AC outlet.

The PULSE SUB utilizes signal sensing auto on/off circuitry. If no signal is sent to the subwoofer, it will not power up. When using the subwoofer output of a receiver or processor, no signal may be immediately present in this output. The subwoofer will only power up when bass signal appears at the subwoofer input.

If the wireless connection or low level cable is poor or has been severed, the subwoofer may not make a sound.

Change the Power Mode switch to Off, then to ON. (Return to AUTO after the test if you wish to return to standby).

Sounds distorted

Lower volume if the subwoofer begins to sound distorted to determine if playback at a lower level solves the problem. If a slight reduction in level solves the problem, then the subwoofer level was too high. If the distorted sound remains at a low level, driver(s) may be damaged.

Hum

Hum that appears when using the PULSE SUB's low level input(s) is usually caused by using an inferior, damaged, exceptionally long low level cable or cables routed near high current wiring/appliances. Replace/shorten the low level cable connecting the subwoofer to the source equipment (receiver or processor). Low level cable runs of longer than 20 feet may require the use of a line driver (not available from Bluesound).

See your dealer if you require service. Authorized Bluesound dealers are equipped to handle almost all problems. You may locate your nearest Bluesound authorized dealer online at [www.bluesound.com](http://www.bluesound.com). If the problem is not resolved, please contact us, providing the model name, serial number, date of purchase, dealer name, and a full description of the problem.

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