



BLUESHIFT

OWNER'S MANUAL:
HELIUM & COPPER SPEAKER SYSTEMS

v1.0
MAY 1, 2014

WWW.BLUESHIFTPDX.COM
(571) FLUX-CAP

Thanks for purchasing a Blueshift speaker system!

Your speaker is ready to use. All you need to do is plug it in (Copper) or plug it in and wait for it to charge up (Helium).

IMPORTANT: When fully discharged (initial use or following a long period without charging) your Helium speaker will take two to three minutes of charging to do anything.

It will just sit there with no lights on. This is normal, after about two minutes the charge indicator lights will start to illuminate, beginning with the lowest light.

W A R N I N G !

Electronics can be dangerous. Inside your speaker box, there are exposed conductors charged at up to 30V DC. Additionally, the Helium speakers contain supercapacitors charged at up to 24V, which are capable of discharging completely in a few seconds. This could cause a severe burn or shock, other injury, and/or death. It could also start a fire.

The acoustical port in every cabinet allows direct access to the electronics. **DO NOT ALLOW CHILDREN TO PLAY WITH BLUESHIFT SPEAKER SYSTEMS! DO NOT INSERT ANY BODY PART OR OTHER OBJECT INSIDE THE SPEAKER!** Do not allow water or other liquids to contact the device or charging cable, and do not use this device around flammable materials that could be ignited by an electrical spark.

MAINTENANCE SHOULD ONLY BE PERFORMED BY A QUALIFIED TECHNICIAN! Blueshift, LLC is not responsible for any modifications or repairs to your speaker systems, the consequences of any such modifications or repairs, or any injury or damage resulting from accessing the inside of the cabinet in any way, be it through the acoustical port, the speaker mounting hole(s), or the control panel.

Your use of this product implies your acknowledgment of and compliance with these terms.

CONTROLS & OPERATION: POWER

The power switch turns the audio amplifier(s) on/off.

The Helium will continue to charge if plugged in, independent of the power switch. Charge time is between five and six minutes. The supercapacitors in the Helium can stay fully charged indefinitely without damage – they are rated for 10 years at full charge. So, **you can leave your system plugged in whenever you want**. Additionally, the longer the system remains fully charged before operating on stored power, the longer it will hold a charge. Supercapacitors self-discharge over time, but holding them at a steady voltage will decrease their self-discharge rate for up to 72 hours.

Helium is pre-configured to charge at 2.5A current, so it needs an adapter that can source that amount of power. Using a low-voltage source, the Helium will charge up to that voltage level, whatever it may be – you will not get a full charge, but may be able to operate your system. The Helium Mono's capacitor bank is limited to 15.3V, Helium Stereo is limited to 22.5V, even if a higher voltage adapter is used.

The blue LED charge indicator shows how much of the **usable range** of the speaker is available, **between 7V and full charge**. It will light multiple LEDs when plugged into a valid adapter, and a single LED when running on capacitor power (to conserve energy).

When all the indicator lights are off, your speaker may continue to operate for some time. It's like that extra 30-40 miles you can drive after your car's fuel gauge hits E.

The Helium contains a 4A fuse, which limits input current. The Helium Stereo contains a second 4A fuse, which limits current to/from the capacitor bank. If your speaker suddenly quits working, it may have blown a fuse, which is an easy fix.

If you plug in a center-negative DC source, the fuse will blow, hopefully protecting the rest of the circuitry from damage. **ONLY USE THE PROVIDED ADAPTER TO PREVENT THIS PROBLEM!**

A U D I O

All Blueshift speakers include a 3.5mm stereo audio input. Mono speakers mix that input down, so both channels are represented even on the Mono speakers.

The mono input is always on, even if Bluetooth is on.

All controls for playback (volume, track, etc.) are the controls on your phone or other device. There are no such controls on Blueshift products.

It may be possible to turn your device up loud enough that it starts to distort. **This can damage the driver(s) and/or the amplifier(s).** If it starts to sound crunchy and bad, turn it down! Blueshift is not responsible for blown drivers.

The hole in one end of your speaker is a tuning port ('bass port'). It tunes the enclosure to 105-110 Hz, increasing the loudness around that frequency. On Mono speakers, there is a tube to increase the length of this port. On Stereo speakers, the thickness of the bamboo is the correct length for the port and there is no tube.

Inside the cabinet, there is white acoustical damping material (stuffing). This is a part of your speaker system and should not be removed.

The grills that cover the drivers may be removed:

1. Use a Phillips screwdriver to remove the four mounting screws.
2. Remove grill and spacers
3. Re-install mounting screws BY HAND just until the driver is held flush to the cabinet, being careful not to overtighten. If you do strip a screw hole, you can fill it with wood glue to regain some holding power.

Your speaker uses one or more Fostex FE126En 4" full-range drivers. These are replaceable in the event of damage.

BLUETOOTH

Helium speakers include a Bluetooth audio input, which is controlled by the lower of the two switches on the control panel.

Copper speakers include a dummy switch in the same position, but this switch does nothing.

The Bluetooth module will automatically select the best quality CODEC available.

When watching video, there may be a noticeable delay between the picture and Bluetooth audio – this is best resolved by using the 3.5mm wired input when watching video.

To connect your device the first time:

1. Charge the speaker up until one or more indicator lights are on.
2. Confirm both the Bluetooth & power switches are in the 'ON' position.
3. Turn on Bluetooth on your phone, computer, etc. The Helium's Bluetooth input will show up as 'Blueshift' on other devices.
4. Select 'CONNECT' or similar option on your device.

To reconnect:

1. Turn off the Helium's power switch.
2. Turn on Bluetooth on your phone or other device
3. Turn Helium's power and Bluetooth switches. It will automatically find and connect to the most recent connection from a list of up to 10 previously paired devices.

Troubleshooting

Connecting a second device to the Helium for the first time works less consistently, because the Helium is searching for previously paired devices. The best method is to turn on your device, follow the instructions above for first-time connections, and wait up to two minutes for your device to 'see' the Helium. After two minutes, if connection is not successful, turn the Helium fully off and repeat. This has always worked in at most 3-4 attempts.

OPEN SOURCE

Source files are available at:

www.blueshiftPDX.com/open-source

and/or

www.github.com/blueshiftPDX

As of May 1, 2014, Helium speakers are released under the terms of the GNU General Public License V3. The design may be reused or used as the basis of new products as long as the resulting products & designs remain open source.

CABINET

The cabinets are CNC cut just south of Portland. They have a nice lacquer finish, which should be pretty durable – doesn't need any maintenance at all.

Each order includes some optional sticky felt feet, which are probably a good idea to protect both your furniture and your speaker.

PROBLEMS?

This is a new product! And you are an early customer. Which is great, but one or more of these will stop working over the next few months. When that happens, please get in touch! We want to know how and why these products fail, so we can fix them both in the immediate and long-term senses of the word.

You can reach us (ok, probably me, ha) via:

phone: 571-FLUX CAP
email: sam@blueshiftPDX.com
or through our website: www.blueshiftPDX.com

THANK YOU!

Thanks for supporting new technology, a new business, and me! Could not have done it without all of your orders & donations, plus all the time and effort that MANY people have put in, mostly as volunteers. So much help in designing the product, making the video, marketing the crowdfunding campaign, and actually building these speakers, mostly by hand, here in the back of a small shop in SE Portland. Thanks for everything! It's pretty crazy that this has worked!

Sincerely,
Sam Beck
Founder, Blueshift