



**EN** Instructions in English are available at the link below.

**ES** Las instrucciones de instalación en el español se encuentran disponibles en el enlace que se indica a continuación.

**FR** Les instructions d'installation en français sont disponibles au lien suivant.

**DE** Eine Anleitung in englischer Sprache ist unter dem unten stehenden Link verfügbar.

**NL** Instructies in het Nederlands zijn beschikbaar via onderstaande link.

**ZH** 安裝說明請詳見下列網址連結。

**JA** 日本語 のインストールガイドは下記リンク先でご覧いただけます。

**KO** 한국어로 작성된 설치 지침은 아래 링크에서 볼 수 있습니다.

**RU** Инструкции по установке на русском языке можно найти по ссылке ниже.

**IT** Le istruzioni per l'installazione in italiano sono disponibili nel link indicato in basso.

**PT** Pode encontrar as instruções de instalação em português através do link em baixo.

**PL** Instrukcja w języku polskim są dostępne w linku poniżej.

**TH** คำแนะนำในการติดตั้งไทยมีจัดไว้ให้ผ่านลิงค์ด้านล่างนี้

 <https://www.audioquest.com/jitterbug/manual>

# JitterBug – Flight Manual

## AudioQuest JitterBug USB Filter

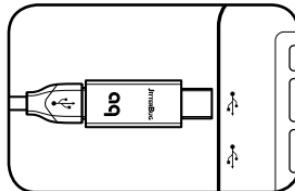
JitterBug is designed to remove unwanted noise currents and parasitic resonances from both the data (communication) and Vbus (power) lines of USB ports. JitterBug meets all USB 2.0 speed specifications. JitterBug's excellent performance is the result of careful design and craftsmanship, comprehensive technical measurements, and thorough listening tests.

JitterBug is extremely easy to use and will offer reliable results for many years to come. It can be used with external USB digital-to-analog converters (DACs), mobile phones and portable media devices, and network streaming/storage devices. AudioQuest offers the following recommendations:

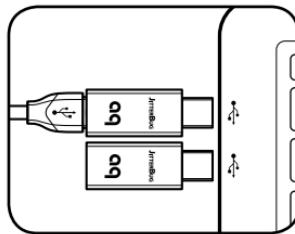
## Using with External USB DACs (excluding DragonFly)

1. Shut down all audio applications (such as iTunes, JRiver, Qobuz, Tidal, Spotify, Windows Media Player, or any other application you currently use to play music).

2. Insert JitterBug into any one of your computer's available USB ports. Next, use a USB cable to connect JitterBug to your DAC. Open your computer's Preferences/Configurations to make sure that communication between the DAC and computer is exactly as you left it.



3. Many computers include more than one USB port. A second JitterBug filter can be used in parallel, but not in series with the first filter. Plugging a second JitterBug filter into an additional port will offer an incremental improvement to your system's overall sonic performance. That said, we do not recommend more than two JitterBug filters per computer.\*

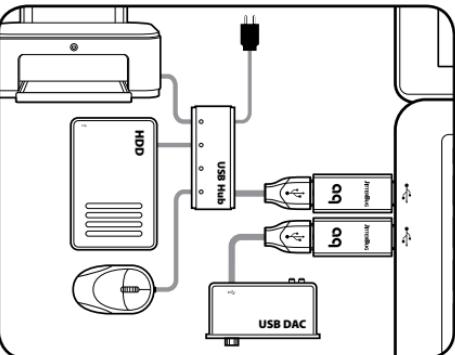


**(Footnote:** In certain instances, your computer may have more than one dedicated USB bus. For instance, an express card such as the Sonnet USB 3.0 ExpressCard/34 adaptor (<http://www.sonnettech.com/product/usb3expresscard34.html>) adds a second bus to your computer. In such situations, where there are additional [and independent] USB bus systems, each bus can support and will benefit from up to two JitterBug filters. If you do not know how many USB buses exist on your computer, we recommend that you err on the side of caution: Presume that your computer has only one bus.)

## Using with External USB Peripherals

■ When listening to music, USB DAC users should avoid connecting additional USB devices (such as printers, cameras, and hard drives) to the computer. The reason for this is simple: Each additional device requires valuable resources, and, as greater demands are placed on the bus, the computer's overall sonic performance is diminished. However, we realize that limiting your computer's peripherals to a single external USB device may be impractical. You may, for instance, have to use an external USB hard drive for media storage. In such cases, we recommend using a JitterBug in series with the additional USB device, remembering that no more than two JitterBug filters should be used on any given bus.

■ If you have multiple USB peripherals (such as printers, cameras, and hard drives) that must always be connected to the computer, we recommend that you install these devices into an external powered USB hub. The USB cable leading from the hub to the computer should be connected to the second JitterBug. This will ensure that noise from all devices is significantly reduced.



- The USB 3.0 standard includes *SuperSpeed* transfer mode, which permits data rates of up to 5Gbit/s—more than 10 times the speed of the previous USB 2.0 standard—offering an obvious advantage for those who are transferring large amounts of data. However, in terms of audio performance, there is no practical application for USB 3.0. In fact, hard drives and other devices running at the USB 3.0 specification are terribly noisy and only further pollute the bus.

When used with USB 3.0 devices, JitterBug purposely decelerates the device to USB 2.0 specifications. JitterBug's dual-circuitry works on both the data (communication) and vbus (power) lines of USB ports: The latter reduces noise and prevents EMI and RFI from contaminating the associated digital-to-analog converter (DAC) and/or cable. The former minimizes parasitic resonances created by the computer and USB bus, and is optimized to remove noise above the USB 2.0 frequency specification, making it ideal for audio playback.

When transferring large amounts of data, we suggest that you remove JitterBug from your device. Simply reinstall JitterBug prior to your next listening session.

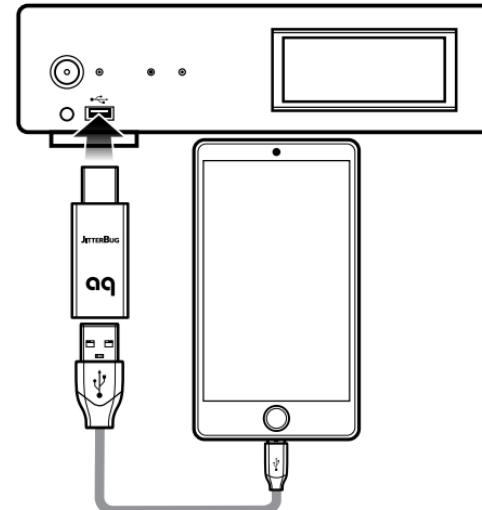
## Using with Mobile Phones and Media Devices

1. Many receivers, DACs, and automobiles include USB input ports that are compatible with iOS and Android-based devices. When mobile devices are connected to these inputs, users can play music from streaming services or from the mobile device's internal memory.

While this is extremely convenient, mobile phones and other portable media devices have the potential to create very noisy electrical environments. To improve the playback performance of your mobile phone or portable media device, first plug a JitterBug into the associated USB input port.

2. A USB memory stick can also function as a portable media device. If you play files from a USB memory stick, we recommend that you plug a JitterBug in between the memory stick and the associated USB input port.

- JitterBug draws no power from the source. It will not inhibit the mobile device's ability to charge its battery.

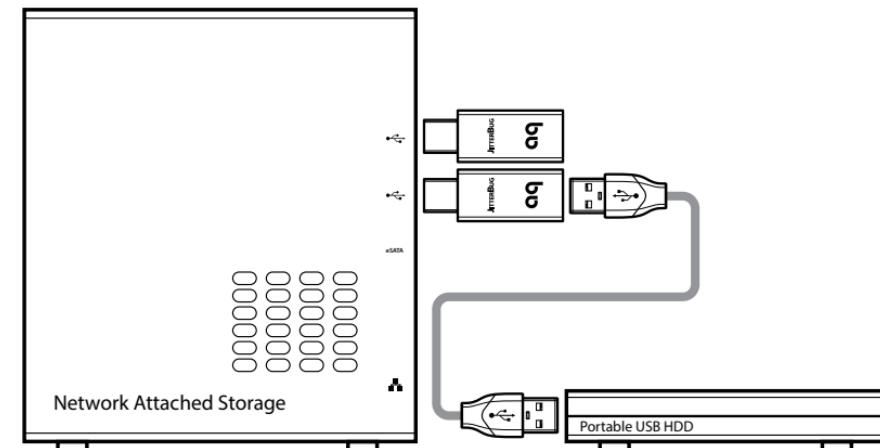


## Using with Network Streaming and Storage Devices

Network streaming devices primarily send and receive media files over an IP network. However, many of these devices include USB input ports. Here are some suggestions for improving the overall audio performance of a system that relies on network equipment:

1. Besides an Ethernet connection, many of today's streamers include one or more USB input ports. These ports can offer compatibility with mobile devices (such as iOS or Android), or they may be designed to work with mass storage devices (such as hard drives or memory sticks). In either circumstance, plugging a JitterBug into these ports can improve the overall sound of your streamer—even when nothing is connected to the port. Therefore, irrespective of the port being in use, the JitterBug filter(s) may significantly improve your system's overall performance—even when music is being played through a completely separate digital input. Typically, streamers will offer two USB ports—one on the front and one on the back. In these cases, you should feel free to use JitterBugs on both ports. However, we've encountered rare instances in which a streamer provides as many as six USB ports. In these rare cases, we again recommend using no more than two JitterBugs per USB bus system. If you are unsure of how many USB buses exist on your streamer, err on the side of caution: Presume that it has only one bus and that two JitterBugs will suffice.

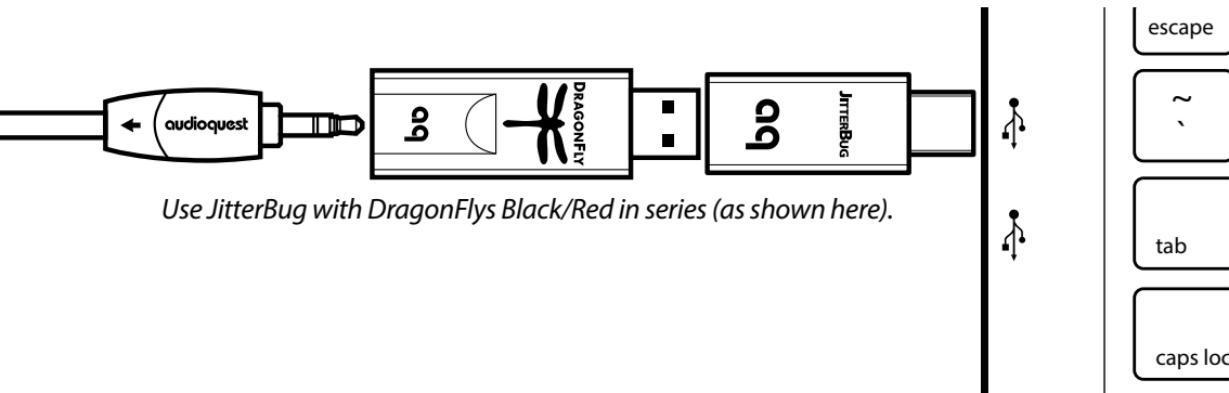
2. Networked Attached Storage (NAS) devices are very popular and attractive solutions for storing large media libraries. Many NAS devices include USB ports for connecting external devices, such as additional hard drives. Plugging JitterBug(s) into the USB port(s) on the NAS—again, irrespective of the port(s) being in use or not—may improve the overall sonic performance of your system.
3. Routers, such as an Apple Airport Express, may include a USB port. These ports are often intended for connecting USB printers or other such devices. Plugging a JitterBug into this port, regardless of whether the port has a device connected to it, can improve the sound of your network audio system.



## Partner JitterBug with DragonFly

Slightly larger than JitterBug, DragonFly is a USB DAC (digital-to-analog converter), preamplifier, and headphone amplifier. It bypasses the audio circuitry in laptops, computers, and smartphones to deliver cleaner, clearer, more naturally beautiful music to headphones, powered speakers, or complete audio systems. To further reduce noise and resonances, use JitterBug with DragonFlys Black and Red in series (with DragonFly plugged directly into JitterBug) and/or in parallel (with JitterBug plugged into a separate USB port within the host computer).

**Note:** Because some of JitterBug's filtering is included in DragonFly Cobalt, a JitterBug is not necessary and not recommended with mobile devices or when only one USB port is available. When using Cobalt, you can still optimize the digital audio from a computer, car stereo, or other hardware by adding a JitterBug (in parallel only) into a different USB port.



## Further Preventive Medicine

In addition to JitterBug, AudioQuest offers RCA and XLR Noise-Stopper Caps. Noise-Stopper Caps prevent radio-frequency interference—the archenemy of dynamics and clarity—from entering your system through unused inputs. Noise-Stopper Caps work just as well for analog connections (RCA and XLR) as they do for digital (S/PDIF and AES/EBU) connections. To reduce the amount of RF interference that enters your system, we recommend “capping” all unused RCA and XLR (analog and digital) inputs. You’ll be rewarded with a blacker background, deeper soundstage, and a richer, more satisfying overall listening experience.

For more information, visit:

<https://www.audioquest.com/accessories/audio-enhancements/noise-stopper-caps>



RCA Noise Stopper Caps



XLR Noise Stopper Caps



# DRAGONFLY®

USB DAC + Preamp + Headphone Amp

## Naturally Beautiful Sound is Right at Your Fingertips

Whatever music turns you on, wherever you are, an AudioQuest DragonFly USB DAC delivers inspiring, dynamic, and beautiful sound to earbuds, headphones, powered speakers, or complete audio systems.

With a DragonFly, music appreciation and exploration are limitless: Plug into an Apple or Windows® computer or connect to an iOS® or Android mobile device. Play YouTube or Vimeo videos. Go hunting on Bandcamp or SoundCloud. Explore playlists on Spotify or Pandora. Stream high-res audio from Tidal or Qobuz. No matter the choice of musical pleasure, DragonFly delivers beautiful sound, unraveling the emotional expression and nuance that makes music and movies so enjoyable. For more info, visit <https://www.audioquest.com/page/aq-dragonfly-series.html>.



## NightOwl Carbon

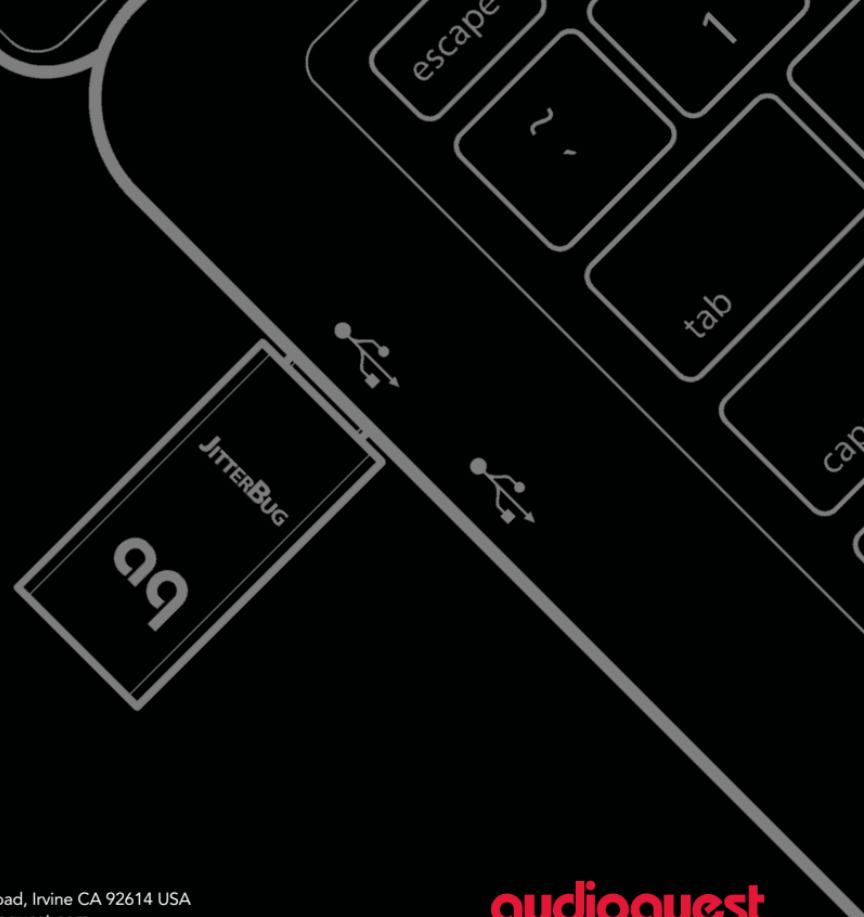
### Around-the-Ear Closed-Back Headphones

NightOwl Carbon represents a comprehensive rethinking of headphone design, featuring several materials and technologies never before applied to headphones.

- "Liquid Wood" earcups, made from sustainable materials, with a beautiful Carbon Grey metallic finish
- 50mm biocellulose pistonic drivers with a patented split-gap motor for an exceptionally smooth frequency response and uncommonly low distortion
- Closed-back design with aperiodic venting provides outstanding isolation from external noise
- Innovative suspension system minimizes harmful resonances while enabling an extraordinarily light, comfortable fit
- Low-distortion headphone cable uses materials and technologies derived from AudioQuest loudspeaker cables

Every aspect of NightOwl's design was carefully optimized for high levels of sonic, ergonomic, and aesthetic performance, while maintaining an unwavering focus on responsible engineering and manufacturing.

<http://personal.audioquest.com/nightowl-carbon>



©2019 AudioQuest 2621 White Road, Irvine CA 92614 USA  
info@audioquest.com | www.audioquest.com

**audioquest**<sup>®</sup>