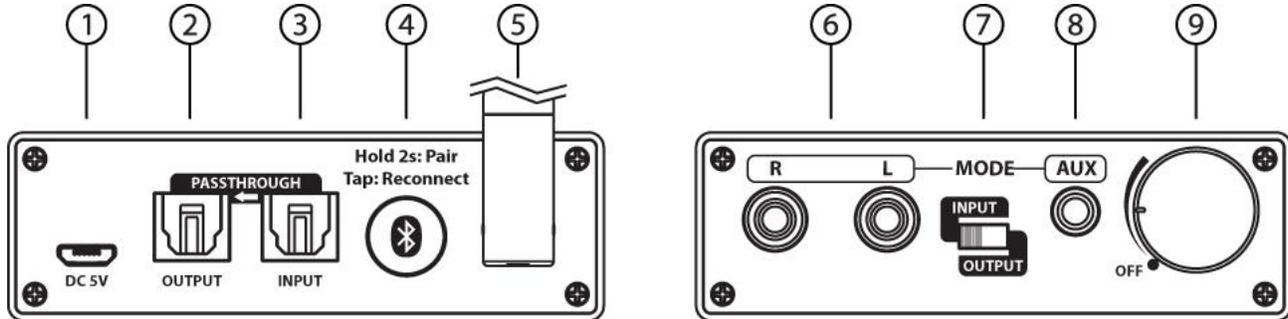


# BT-DAC Bluetooth Transmitter and Optical Digital Audio DAC Owner's Manual



# 1 Product Overview

## 1.1 Connections and Ports



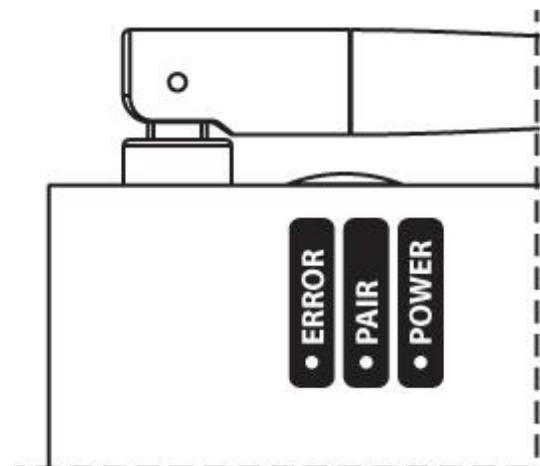
	Name	Description
1	DC 5V	USB DC power input, 5V/0.5A nominal. Use any USB power adapter (not included) or battery power bank (not included).
2	Optical Output	Optical audio output jack, used for pass-through of optical audio input only. Analog audio input will not be converted.
3	Optical Input	Optical audio input jack. Supports PCM audio up to 192kHz/24-bit. Does not support DTS or Dolby audio.
4	Bluetooth Button	Press and hold for 2 seconds to initiate pairing. Quick press to reconnect to last connected device.
5	Antenna	Bluetooth antenna. Use vertical orientation for best range.
6	RCA Jacks	Analog audio jacks for connecting a stereo system. Works as output jacks in Output Mode, and input jacks in Input Mode.
7	Mode Switch	Sets the operation mode to either Input or Output Mode.
8	AUX Jack	3.5mm analog audio jacks for connecting wired headphones in Output Mode; for phones, tablets, and PCs in Input Mode.
9	Power Switch and Volume Knob	Turns the BT-DAC on or off, and controls volume of decoded audio in Output mode. Does not control volume of analog audio input in Input Mode.

There are three indicator lights on the BT-DAC that indicate the current operating status:

**Green/Power** – Indicates power status.

**Blue/Pair** –Bluetooth status. This light will flash quickly in pairing mode, and turn solid when connected to a Bluetooth headphone or speaker.

**Red/Error** – Turns on when incompatible optical digital audio is detected, or if errors have been detected in the audio data stream.



## 2 Setup and Usage

The BT-DAC is an optical digital audio decoder and Bluetooth transmitter that can remember up to eight Bluetooth headphones or speakers, and can transmit to up to two devices at the same time. Follow the steps below for setup and configuration of the BT-DAC.

### 2.1 Bluetooth Pairing

#### 2.1.1 To pair the BT-DAC with a Bluetooth headphone or speaker:

- Turn on the BT-DAC.
- Place the headphone or speaker into pairing mode.
- Press and hold the BT-DAC Bluetooth button for 2 seconds to enter pairing mode. The blue “Pair” indicator light on the BT-DAC will flash quickly.
- Wait up to 60 seconds for the pairing to complete. Blue “Pair” indicator light on the BT-DAC will become solid when paired and connected.

#### 2.1.2 To pair with additional Bluetooth headphones or speakers:

- Turn off any headphones or speakers that were previously paired with the BT-DAC
- Turn on the BT-DAC.
- Place the additional pair of Bluetooth headphones or speakers into pairing mode.
- Press and hold the BT-DAC Bluetooth button for 2 seconds to enter pairing mode. The blue “Pair” indicator light on the BT-DAC will flash quickly.
- Wait up to 60 seconds for the pairing to complete. Blue “Pair” indicator light on the BT-DAC will become solid when paired and connected.

#### 2.1.3 To listen to two pairs of Bluetooth headphones at the same time:

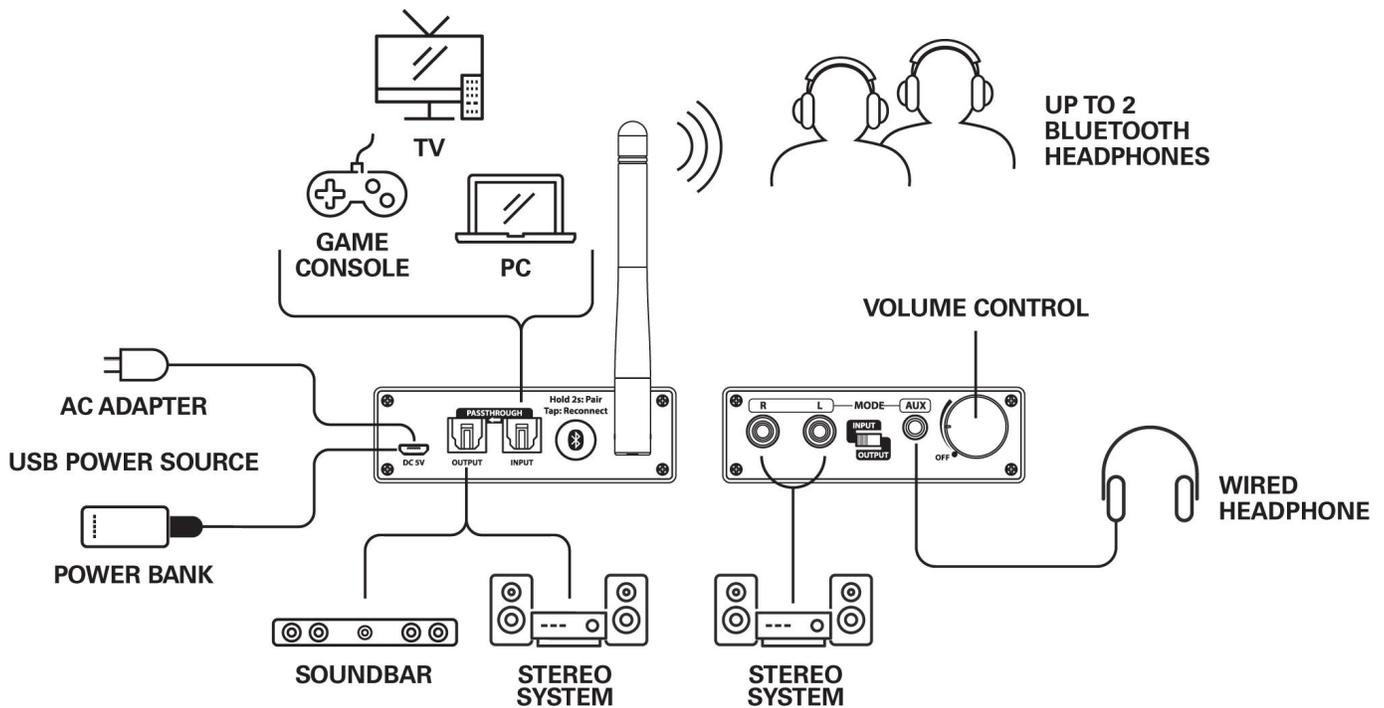
- Ensure that both headphones have been previously paired with the BT-DAC.
- Turn on the BT-DAC.
- Turn on both headphones, and wait for up to 60 seconds for both headphones to connect.
- If the BT-DAC has previously been paired with more than two pairs of headphones, make sure that no more than two headphones are turned on at any time.

#### 2.1.4 To clear the paired device memory:

- Turn on the BT-DAC
- Press and hold the BT-DAC Bluetooth button for 7 seconds. The blue “Pair” indicator light will flash quickly and then turn solid for 1 second.
- The paired device memory has now been cleared.

## 2.2 Output Mode

Set the “Input/Output” mode switch on the BT-DAC to “Output”. In this mode, the BT-DAC serves as an optical audio decoder and Bluetooth transmitter. It can be used to convert the optical digital audio from a TV, Game Console, or PC into analog stereo and send it to stereo systems, wired headphones, or transmit it wirelessly to Bluetooth headphones or speakers. The possible connections are as shown below:

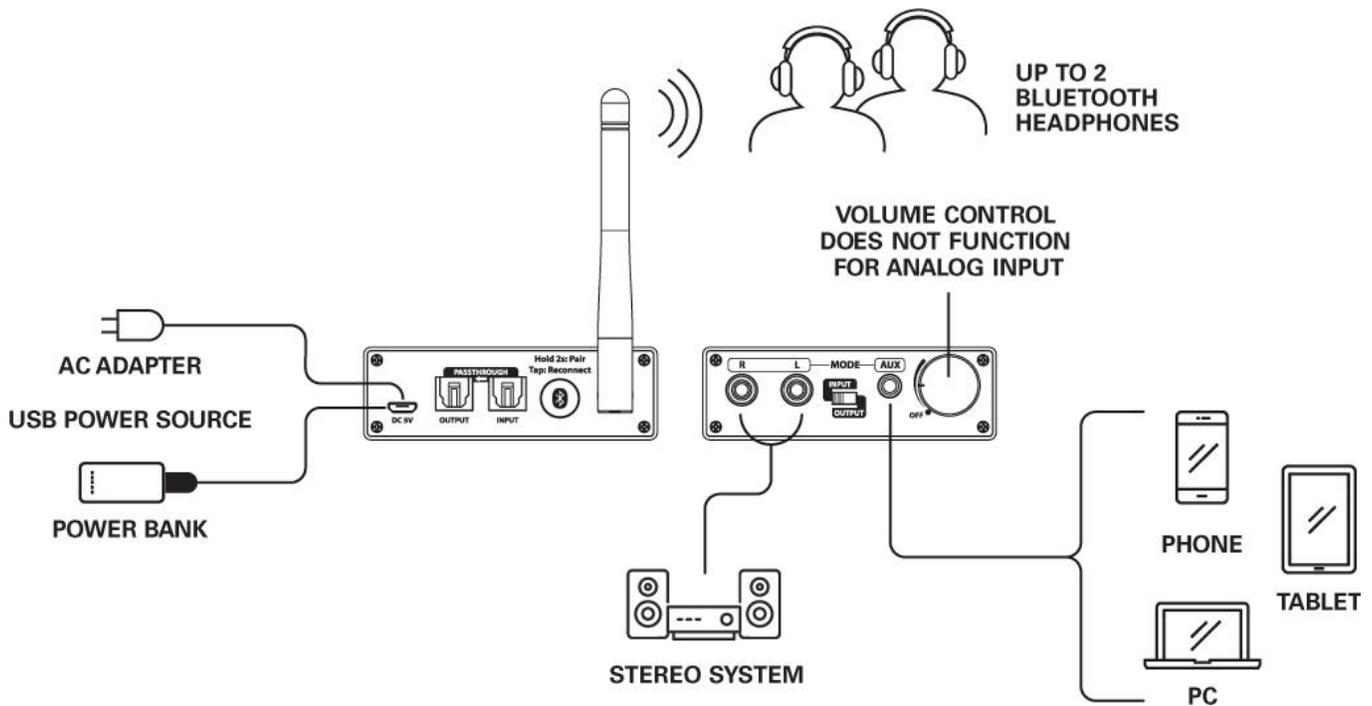


In this mode of operation, the BT-DAC input and output flow is as follows:

1. Optical digital audio input from a source such as a TV, Game Console.
2. The optical digital audio is decoded into analog audio and output over the RCA analog stereo output as well as the 3.5mm AUX audio jack for use by a stereo system or wired headphones.
3. The audio is transmitted wirelessly using Bluetooth to headphones or speakers.
4. The optical digital audio is passed through to the Optical output jack, and can be sent to a stereo system or sound bar for playback.
5. The decoded analog audio is also output over the RCA analog stereo output as well as the 3.5mm AUX audio jack for use by a stereo system or wired headphones.
6. Audio playback volume can be adjusted using the volume control knob.

## 2.3 Input Mode

Set the “Input/Output” mode switch on the BT-DAC to “Input”. In this mode, the BT-DAC serves as a Bluetooth transmitter that accepts analog audio from a stereo system, phone, tablet, or PC, and transmits the audio wirelessly to Bluetooth headphones or speakers. The possible connections are as shown below:



In this mode of operation, the BT-DAC input and output flow is as follows:

1. Analog audio input from a source such as a stereo system, phone, tablet, or PC.
2. Analog audio input can be connected to the RCA or 3.5mm AUX jacks.
3. The audio is transmitted wirelessly using Bluetooth to headphones or speakers.
4. Audio volume for the analog audio input **cannot** be adjusted using the BT-DAC's volume control knob, and can only be controlled from the analog audio source.
5. The optical audio decoder continues to function in this mode, and any optical digital audio will be decoded and mixed together with the analog audio input.
6. The optical digital audio is passed through to the Optical output jack, and can be sent to a stereo system or sound bar for playback.

## 3 Troubleshooting

The following are some common questions and answers.

### **Optical digital audio has no sound or sounds like static**

The BT-DAC supports PCM audio up to 192kHz 24-bit, it does not support RAW/Bitstream, Dolby, or DTS audio formats. Most TVs, game consoles, PCs, DVR machines, and DVD/BD players have a setting for configuring the optical audio output format; refer to their user's manual for instructions on how to change the optical audio setting to PCM.

### **Optical digital audio has sound, but contains breaks and pops**

Check to see if the red "ERROR" light on the BT-DAC flashes when the breaks and pops in sound occur. If this happens, it's most likely that the optical audio cable is not making a good connection. Check the following:

- Make sure that the optical cable jack is securely inserted on both ends.
- Use a good quality cable that is no longer than 15 feet.
- Check to see if the connectors on the optical cable are damaged in any way.

### **Bluetooth does not pair with a device**

The BT-DAC is a Bluetooth transmitter and can only be paired with devices that receive sound, such as headphones and speakers. It cannot be paired with other transmitter devices such as a cellphone, tablet, or computer. The BT-DAC supports standard pairing passkeys of 0000, 1111, 1234, and 8888. Ensure that the Bluetooth headphone or speaker uses one of these passkeys.

Once the BT-DAC enters pairing mode, it takes up to 60 seconds for the pairing to complete. Please wait for at least 60 seconds before giving up. Try turning the BT-DAC off and back on and retry the pairing process. Make sure that no other Bluetooth device is turned on in the vicinity except for the BT-DAC and the headphone or speaker that it is attempting to pair with.

### **Bluetooth does not reconnect with a device**

The BT-DAC remembers up to 8 devices that it has been paired with, and can connect with any two at the same time. To reconnect a particular device with the BT-DAC, make sure that other Bluetooth headphones or speakers are turned off. Please also try the following steps:

- Short press the Bluetooth button on the BT-DAC to initiate reconnect attempt.
- Turn the BT-DAC off and back on.
- Initiate reconnect attempt on the Bluetooth headphone or speaker – please refer to the headphone or speaker's user manual on how to initiate a reconnection.
- If the reconnect still fails, try pairing the BT-DAC with the device again – this should not be necessary, but is the option of last resort if the previous steps have failed.

## **There is a noticeable audio delay using Bluetooth**

The BT-DAC supports aptX Low Latency operation, which requires that the receiving device also supports aptX Low Latency. Check to ensure that your Bluetooth headphone or speaker does in fact support aptX Low Latency operation.

The aptX Low Latency feature is only available when the BT-DAC is connected with one device. When it is connected with two devices at the same time, there will be more noticeable latency due to the limitations of the aptX technology.

In all cases, with or without aptX Low Latency, the audio delay can be minimized by ensuring that there is a clear and strong Bluetooth connection. Try to shorten the distance between the BT-DAC and the receiving device, and avoid any obstructions in the way.

## **The volume knob does not function**

When the BT-DAC is used in Input Mode, the volume knob does not control the analog audio volume that comes in through the RCA or AUX input jacks. Please use the volume control on the audio source to control the audio volume.

While in Input Mode, the optical digital audio input feature of the BT-DAC still functions, and the volume of the decoded audio is controllable using the volume knob. This decoded audio will be mixed together with the analog audio input and transmitted over Bluetooth.

# **4 Specifications**

Bluetooth Version: ..... V4.2, Class 1

Bluetooth Profile: ..... AD2P, Core, aptX, aptX-LL

Bluetooth Range (Ideal): ..... Up to ~330ft (100m) when used with Class 1 receiver  
Bluetooth Range (Typical): ..... 33ft to 164ft (10-50m), depending on environment

Analog Audio Output Level: ..... 2 Vrms

AUX Minimum Load Impedance: ..... 16 Ohm

Power Source: ..... 5V/0.5A DC, micro USB power jack

Dimensions (Main Unit): ..... 3.5 x 1 x 3.1 Inch (90mm x 25mm x 79mm)

Weight (Main Unit): ..... 4.2 Oz (119g)

**Note:** All the information contained in this manual was correct at the time of publication. However, as our engineers are always updating and improving the product, your device's software may have a slightly different appearance or modified functionality than presented in this manual.