



# EQ901 USB User Guide

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## Introduction

The EQ901 USB is an upgrade replacement for existing BOSE 901 Equalizers. The EQ901 USB Series features four specifically designed equalization curve sets unique to each Series: I/II, III/IV or V/VI.

The EQ901 USB is also a high performance digital pre-amplifier (DAC) intended to drive high quality power amplifiers or integrated amplifiers/receivers. Analog, USB and TOSLINK digital audio inputs are provided.

When used in the digital input mode, the music stream is maintained in the digital domain all the way through the 901 equalization process. This is the purest and highest fidelity way to drive your 901s.

## 1. Features

- USB / TOSLINK Streaming Digital to Analog Converter (DAC) with built-in equalization curves for the 901 Series V/VI
- Precise BOSE 901 equalization is performed digitally before the DAC in an Analog Device 400 MHz SHARC DSP processor with 24 bit resolution
- The four BOSE 901 tone modes (EQ curves) are available on all four outputs. Two identical stereo pairs outputs are available, allowing for dual active stereo systems (two stereo power amps) or the addition of an active subwoofer(s)
- Remote selectable inputs:
  1. Analog
  2. TOSLINK
  3. USB
- Remote selectable tonal characteristics settings:
  1. Normal mode
  2. Enhanced mode
  3. Warm mode
  4. Low frequency reduction mode
- Remote volume control with 0.5 dB resolution and mute
- Ultra low distortion 2.0 Vrms output driver stage
- Selectable input sensitivity of 2.0 Vrms or 4.0 Vrms

## 2. What's Included

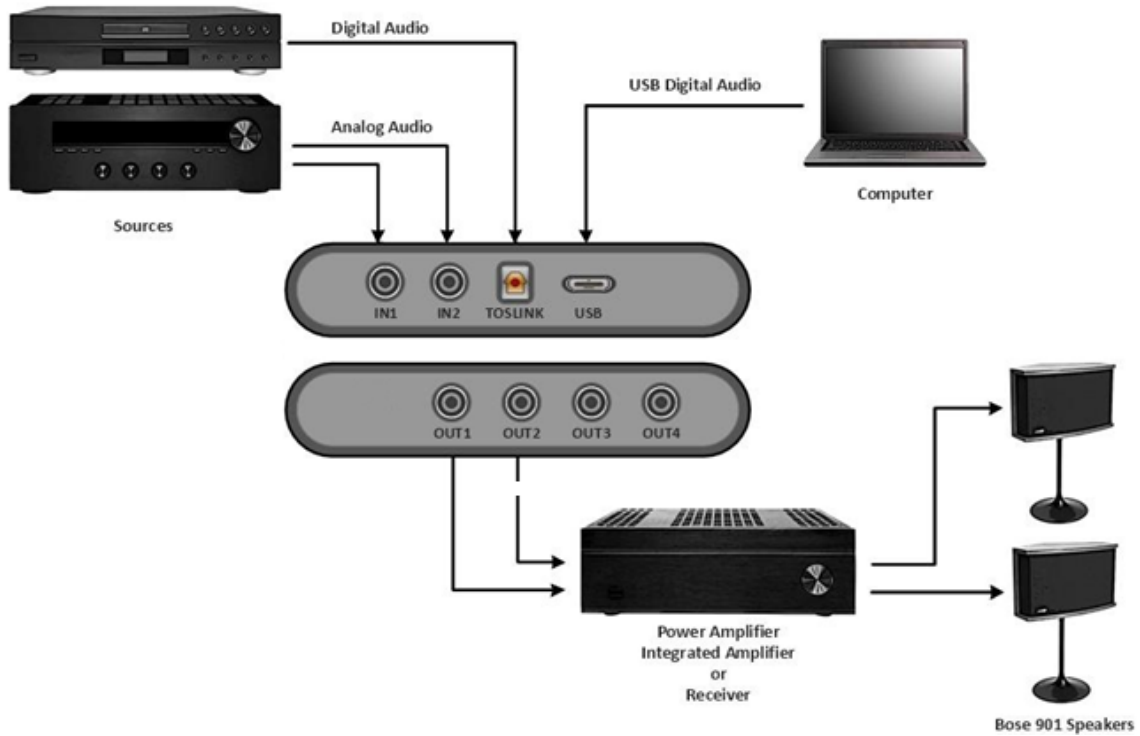
- EQ901 USB equalizer for your BOSE 901 Series I/II, III/IV or V/VI (series selected at order)
- Four precision engineered tone adjustment equalization curves
- Two identical stereo pairs outputs are available allowing for dual active stereo systems (two stereo power amps) or the addition of an active subwoofer(s)
- Deer Creek Audio USB drive with PC USB audio driver

- IR Remote Control
- USB cable
- U.S. regulated power supply (see option for global supply)

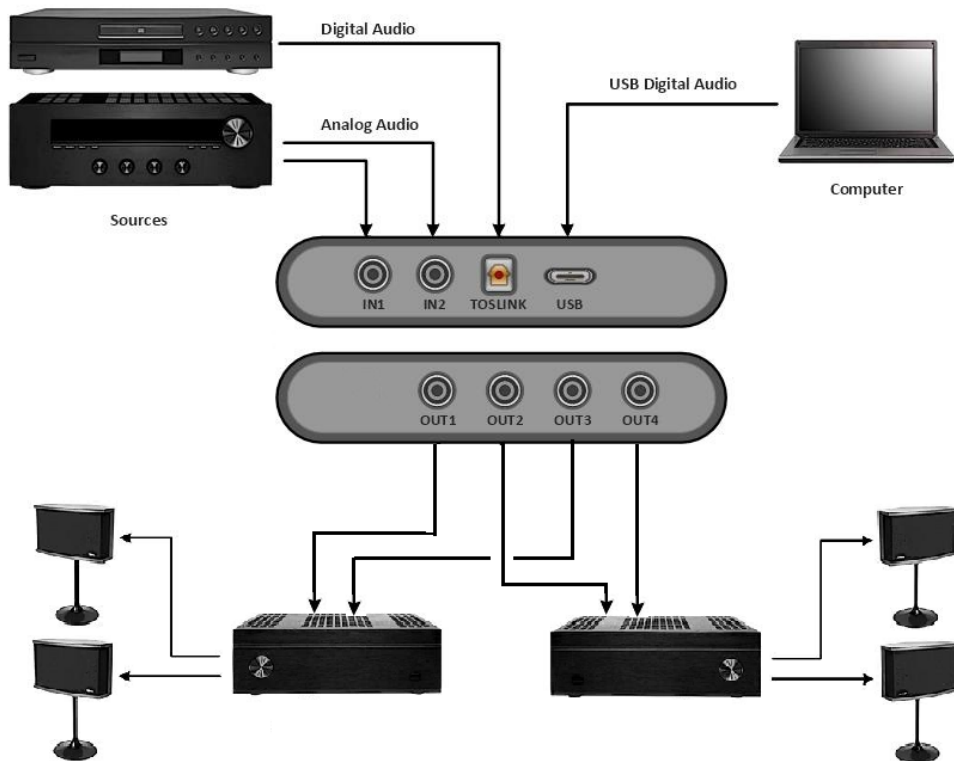
### 3. Typical Installation Examples

Analog audio input and output connections are made directly to the RCA input and output jacks. For RCA connections, #1 is Left (L) and #2 is Right (R). **When making these connections, make sure to power off the equipment being connected.**

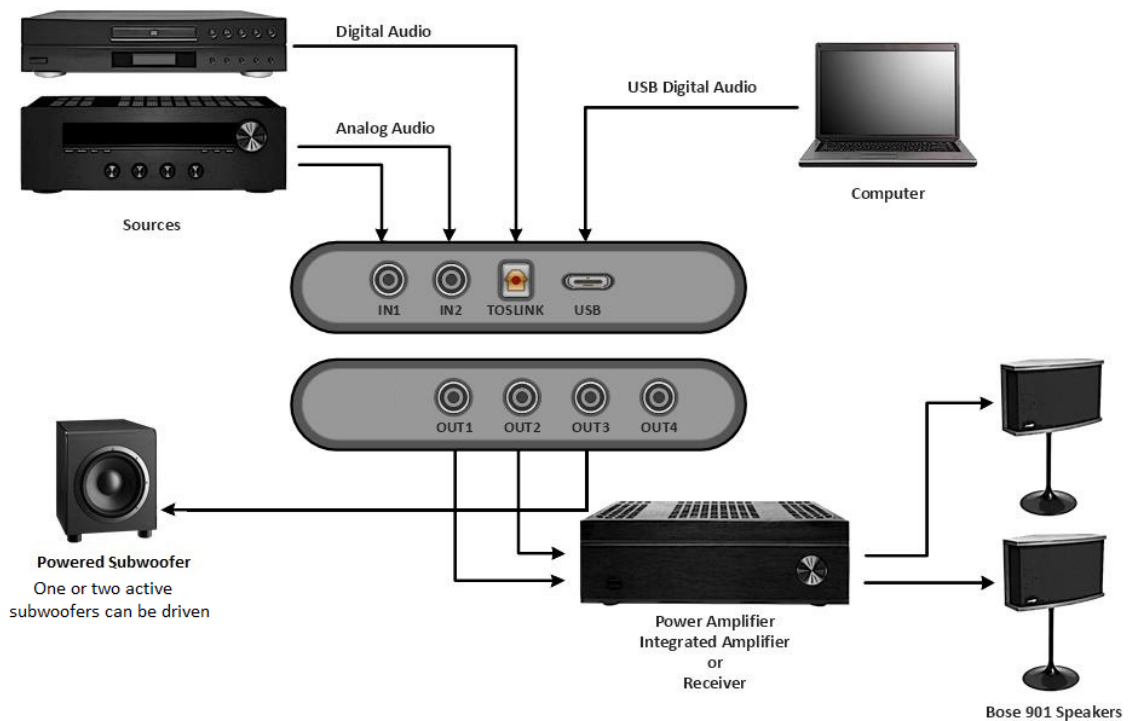
#### 3.1 Stereo Mode



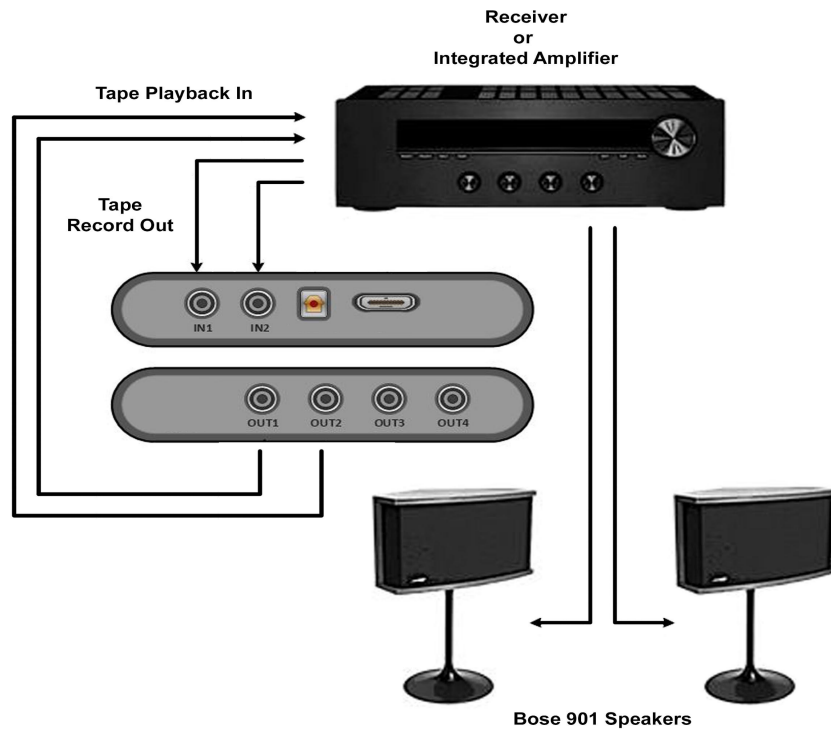
### 3.2 Dual Stereo (Quad) Mode



### 3.3 Active Subwoofer Mode

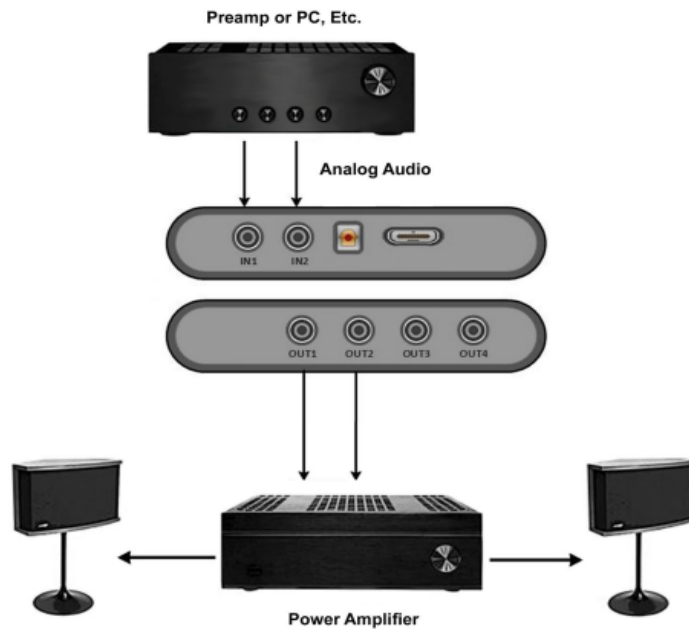


### 3.4 Tape / Processor Loop Setup

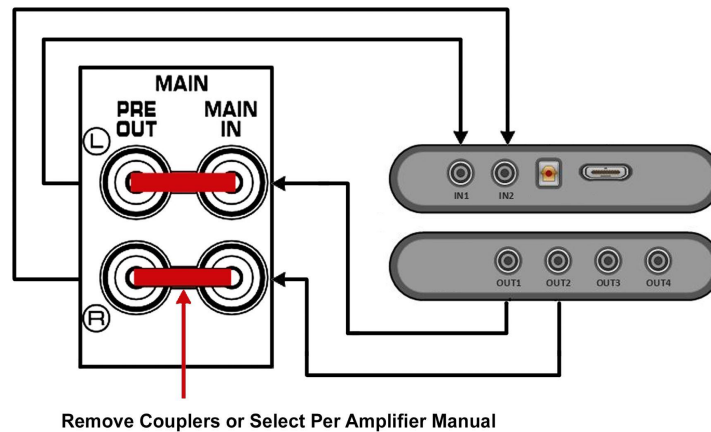


### 3.5 Analog Only Preamp / Power Amplifier Setup

This example shows a typical connection between a preamp and power amp.



If you have a receiver or integrated amplifier with a pre-out / main in loop, you can insert the EQ901B as shown below.



## 4. USB Streaming Music Driver Installation (PC only)

The driver enables USB streaming music from the computer to the EQ901 USB. Connect the processor to the computer using the supplied USB cable, and power it on. Navigate to the WinDrivers folder of the software download and double-click on the driver install.

- **miniDSP\_UAC2\_v4.82.0\_2020-06-09\_setup.exe for Windows 7, 8 and 10**

(The version number and date embedded in the filename may be different.) We recommend accepting the default installation location. Once driver installation completes, click Finish.

## 5. Level Setting

Your EQ901 USB is being delivered with an internal level (gain) setting of 0db (max, no insertion loss) that you will adjust with the supplied remote control. It has been set with the analog inputs selected. Be sure to turn down your music source to protect your system at turn on. Once you have your inputs connected and all components on, you can adjust all the gain levels for optimal volume midposition control performance.

## 6. Analog Input Level

The analog audio input levels are switchable between 2.0 Vrms and 4.0 Vrms to accommodate use with most equipment. The EQ901 USB is shipped with the analog input level set to 2.0 Vrms.

## 7. Subwoofer Settings








You may drive an active subwoofer with outputs 3 and 4, however keep in mind these are an exact, full range, stereo match to outputs 1 and 2. To begin, your subwoofer should be set at mid-level gain, and the crossovers should be set at the mid-level setting. After you have the system up and running, adjust the subwoofer level, phase and crossover to get the best response.

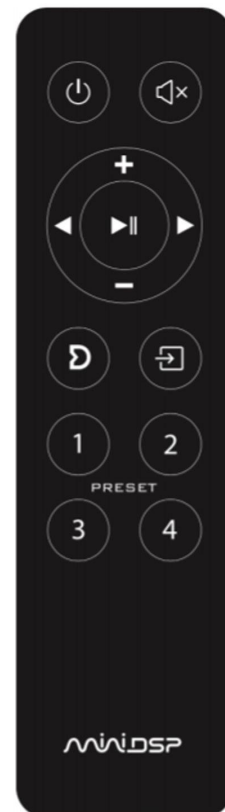
## 8. USB Music Server Volume Setting Warning

If you are streaming digital music via a server such as foobar2000, JRiver, Roon, etc., **begin with the server application level set low.**

## 9. Using the EQ901 USB Remote Control

The remote control provided with the processor controls all key runtime functions.

-  Not Used
-  **Mute**
-  **Volume**
-  Not Used
-  Not Used
-  **Source Selection**  
Analog, RCA, TOSLINK, USB
-  **Preset (1 through 4)**  
Switch between the four preset tone modes.



## 10. Setting Tone Modes

Selection of the tone mode is generally a subjective choice based on what sounds best to you. Specifically: Normal mode is the most neutral, Enhanced mode provides a tighter sound, Warm mode adds midrange with slight treble reduction, and Low frequency reduction mode is intended to control bass in smaller rooms or on “boomy” recordings.

## 11. Specifications

- EQ901 USB platform base: miniDSP 2x4 HD
- Digital Signal Processor Engine: Analog Devices Fixed point DSP SHARC ADSP-21489
- USB controller: XMOS xCORE-200
- Digital to Analog Converter (DAC): AK4626A
- Internal Processing resolution and sample rate: 32 bit / up to 192 kHz
- Audio Input Connectivity: RCA, TOSLINK (optical), USB Audio
- Audio Output Connectivity: Unbalanced output, RCA
- Input / Output Max Levels: In 2.0 Vrms / 4.0 Vrms (jumper-selectable), Out 2.0 Vrms
- Input Impedance: 10 k  $\Omega$
- Output Impedance: 560  $\Omega$
- Filtering Technology: FIR + IIR
- Dimensions: 27 h x 119 w x 107 d mm
- Power: 12V DC single supply, 2.1 mm round plug, 2.5 Watt
- IR Remote: miniDSP Remote

## 12. Warranty Terms

This product is warranted to be free from defects in materials and workmanship for a period of one year from the invoice date. Warranty does not cover failure of the product due to incorrect connection or installation, improper or undocumented use, unauthorized servicing, modification or alteration of the unit in any way, or any usage outside of that recommended in this manual. Return shipping is the responsibility of the customer.

### [Contact Deer Creek Audio](#)

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