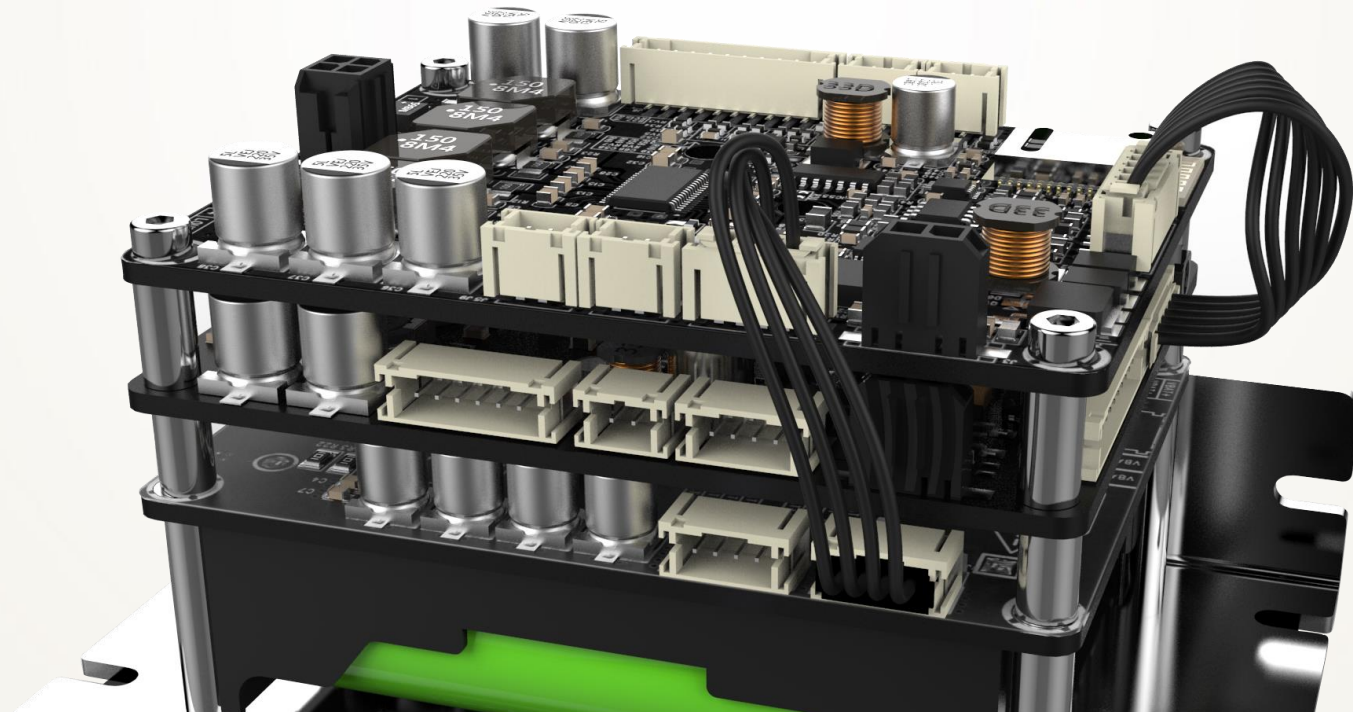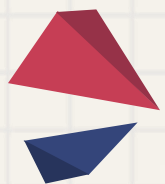# Installation Guide for JAB3 & JAB2 Connection

What is JAB3?

JAB3 are audio amplifier boards integrated with ADAU1701 DSP, covering four models as stereo 50W, stereo 30W, mono 100W and mono 60W. Four potentiometers are pre-mounted on JAB3 for easy control of the audio system, through which, customers can adjust volume, high-pass filter and gain. Please refer to the datasheet for detailed information.

In addition, with connection with stereo or mono JAB2, customers can get audio 4.0/2.1 system integrated with both DSP and Bluetooth.

It is recommended to use **MONO JAB3 as 0.1** when building audio 2.1 system.

Thanks to equipped DSP, JAB3 is suitable for active loudspeakers to achieve digital 3 way 3 unit, 2 way 2 unit crossover and bass enhancement, applicable to the studio.

This document aims to provide connection guide for JAB3 and JAB2 by taking the example of building an audio 2.1 system.
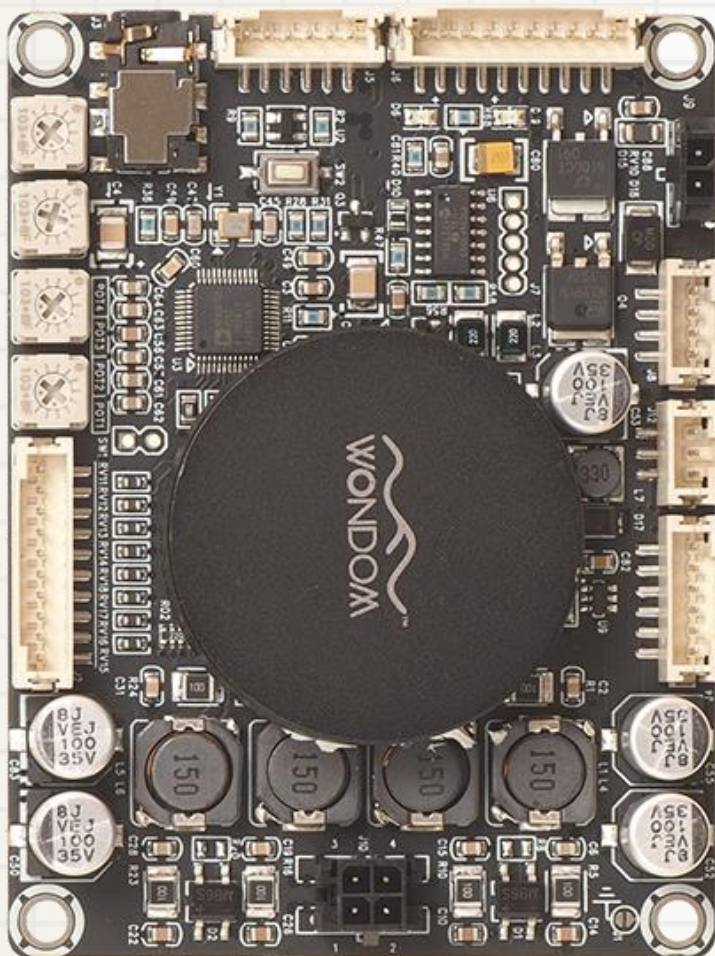
The steps for audio 4.0 system are the same.
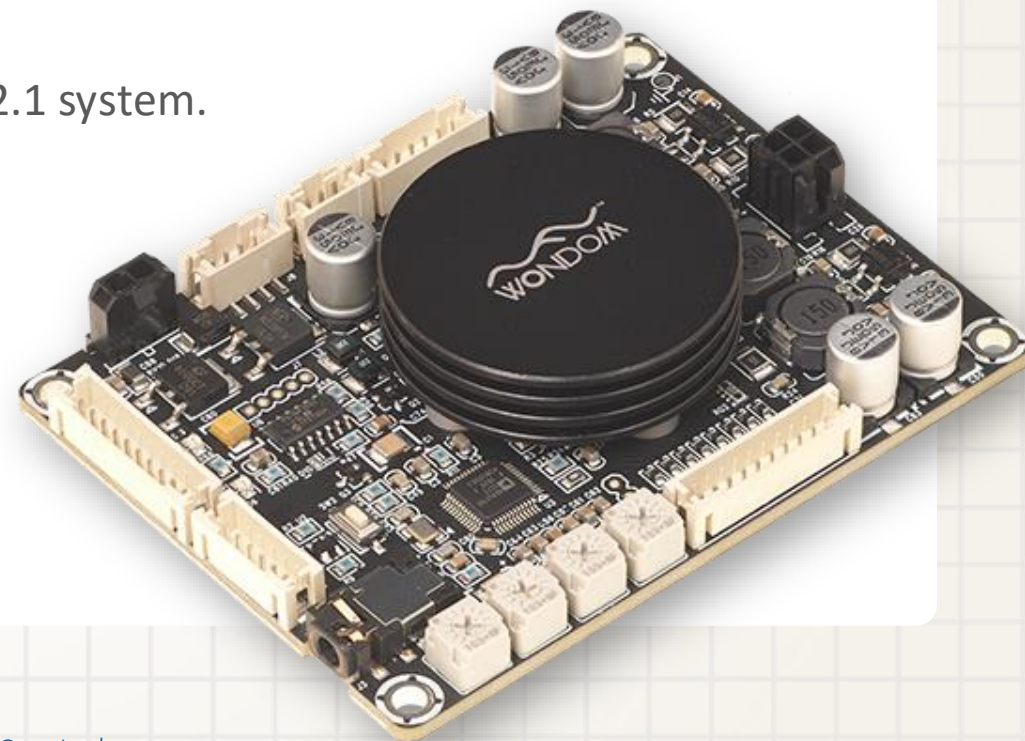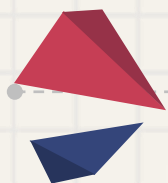
Connection Steps

Brief Introduction

○ **Step 1: Connect JAB3 & JAB2**

Audio connection
Control connection

○ **Step 2: Audio input**

JAB2 BT / 3.5mm AUX IN / Interface board
JAB3 3.5mm AUX IN

○ **Step 3: Audio output**

Speaker
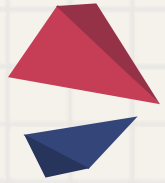
○ **Step 4: External LED and control**
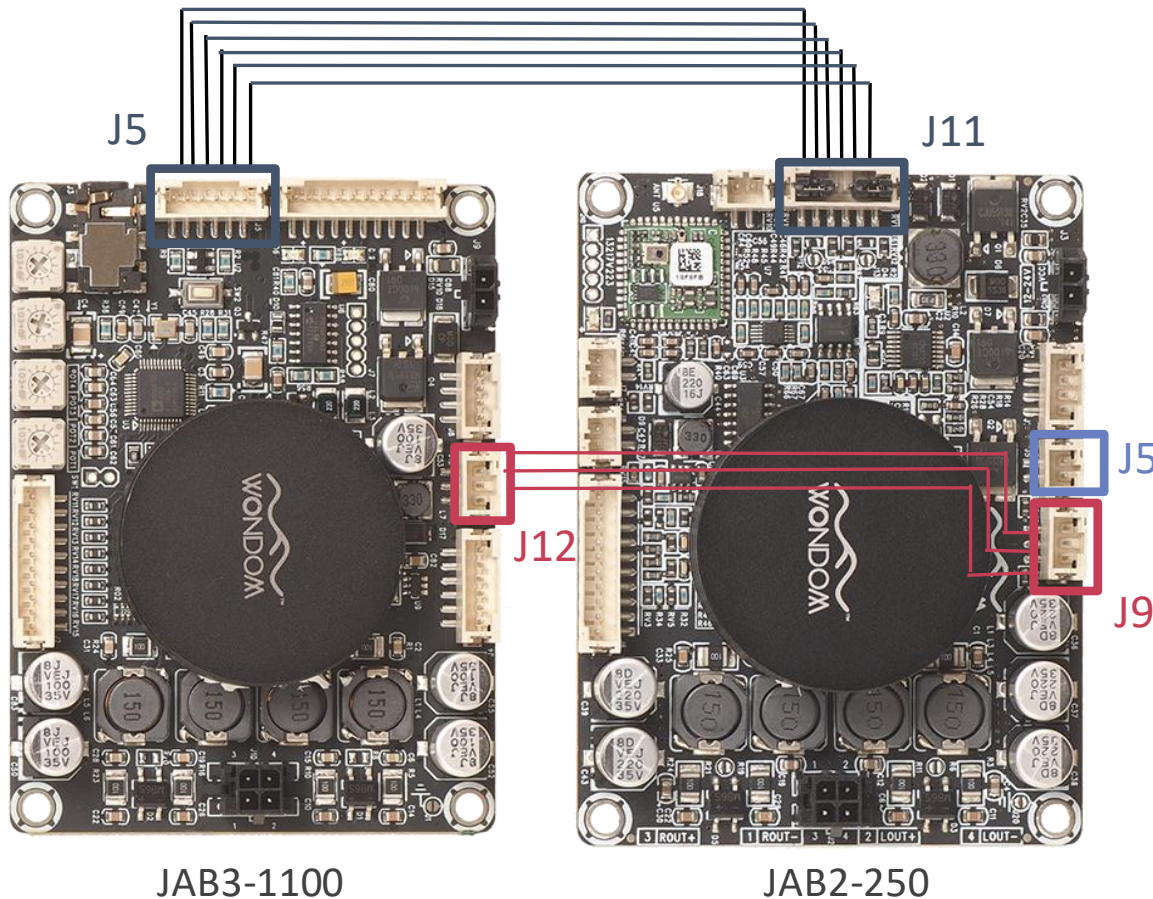
External LED
Control ports

○ **Step 5: Power supply**

Power Adapter
Battery board

Connect JAB3 & JAB2

Audio and control connection

J5

J11

J12

J5

J9

JAB3-1100

JAB2-250

**Audio connection**: connect J5 of JAB3 and J11 of JAB2 with a 6pin cable*;

Control connection: connect J12 of JAB3 and J9 of JAB2 with a 3pin cable*;

*Note:
1、When JAB2 is used separately, for normal playback, two jumpers are required if external volume potentiometer is not connected.
2、When JAB3 is used separately, J12 is for control cable. Please do not short circuit 'MUTE' and 'GND' under any circumstance.
3、When JAB3 is connected with JAB2, J5 of JAB2 is used as control port for audio system.
4、Sure Electronics provides matched Functional Cables Kit for JAB3 and JAB2 connection for customers' easy operation.

Audio Input

Bluetooth Input / AUX IN
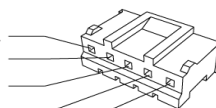
① JAB2 BT Input

③ JAB3 AUX IN

② JAB2 AUX IN

J6

J6
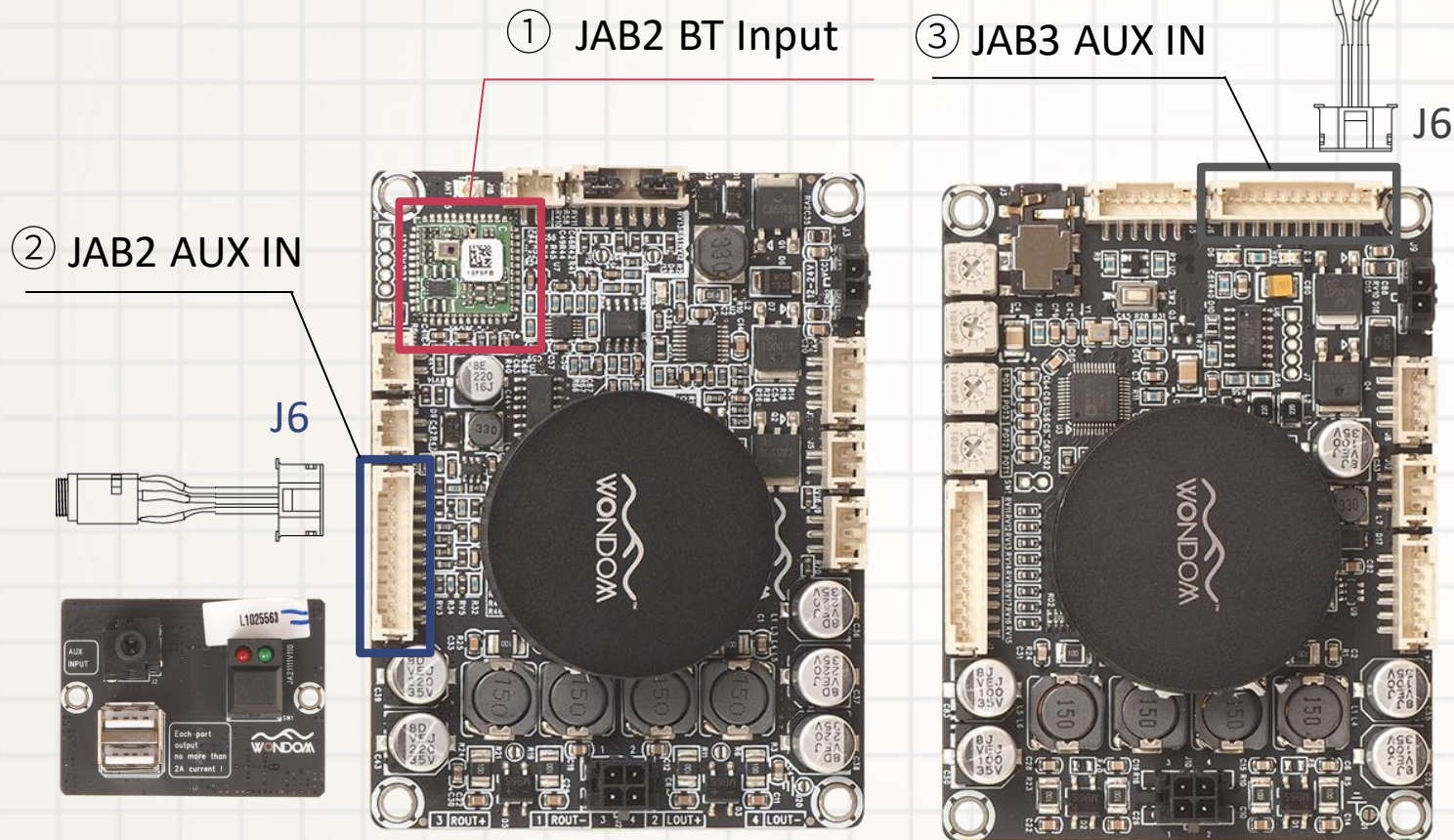
This audio system supports Bluetooth or AUX input.

If customers want AUX IN, there are two ways:

- 3.5mm AUX IN

Connect 5pin AUX IN cable to J6 of JAB3 / JAB2

Extension Connector:
J6 PH-10PIN-2MM

PIN 1 LED2
PIN 2 KEY2
PIN 3 RIN
PIN 4 GND
PIN 5 LIN

Pin	Definition
1	VCC
2	VCC
3	GND
4	LED1
5	KEY1
6	LIN
7	GND
8	RIN
9	KEY2
10	LED2

- AUX IN port of Interface board

Connect Interface board to J6 of JAB2 with a 10pin cable.

Note: Interface board can only be connected with JAB2.
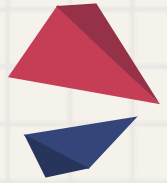
Audio Output

The speaker of the audio 2.1 system is shown right.
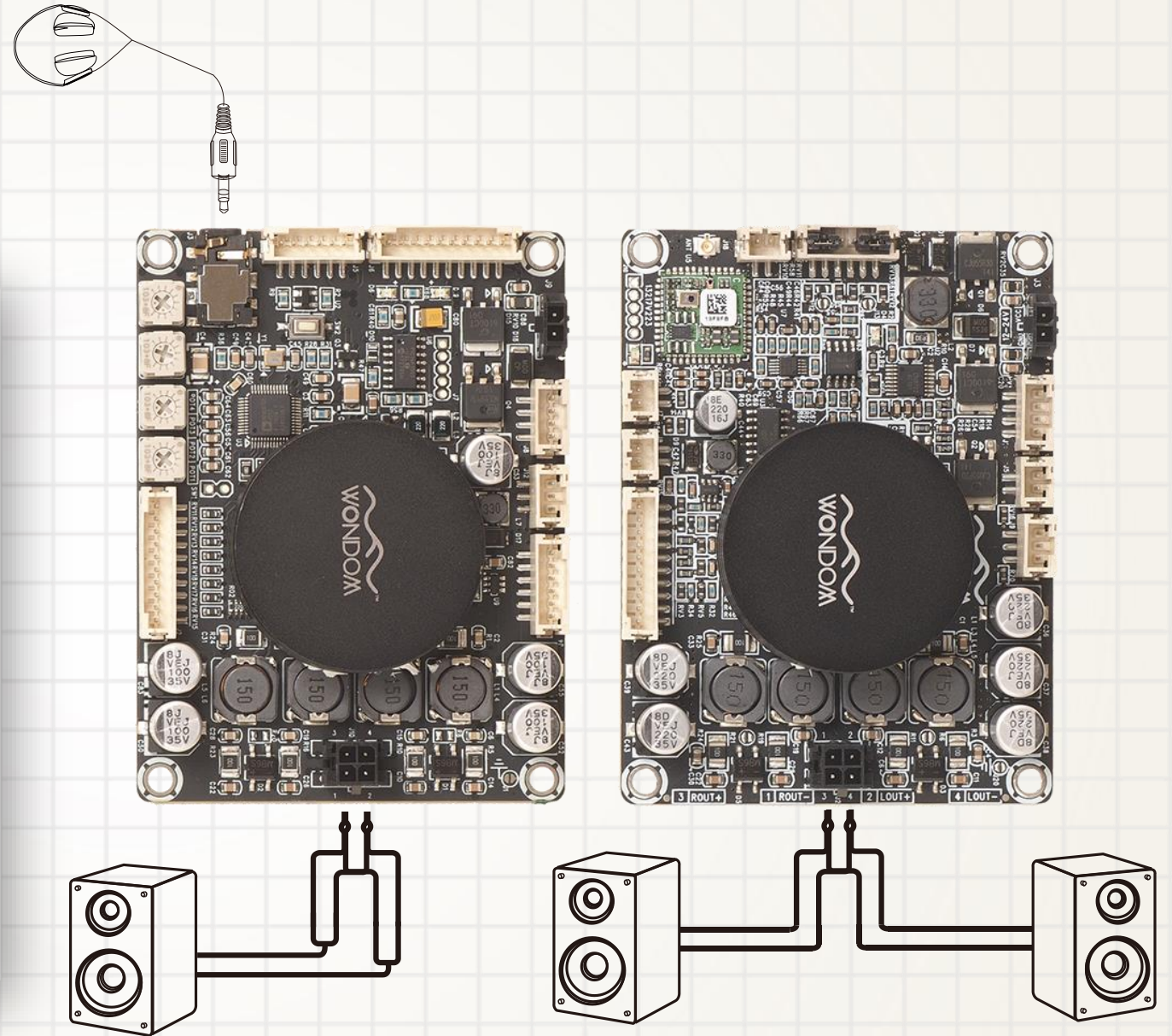
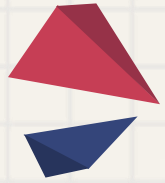**Stereo:**

Take speaker output of JAB2 as stereo;

Subwoofer:

Take speaker output of JAB3 as subwoofer;

Headphone Output:
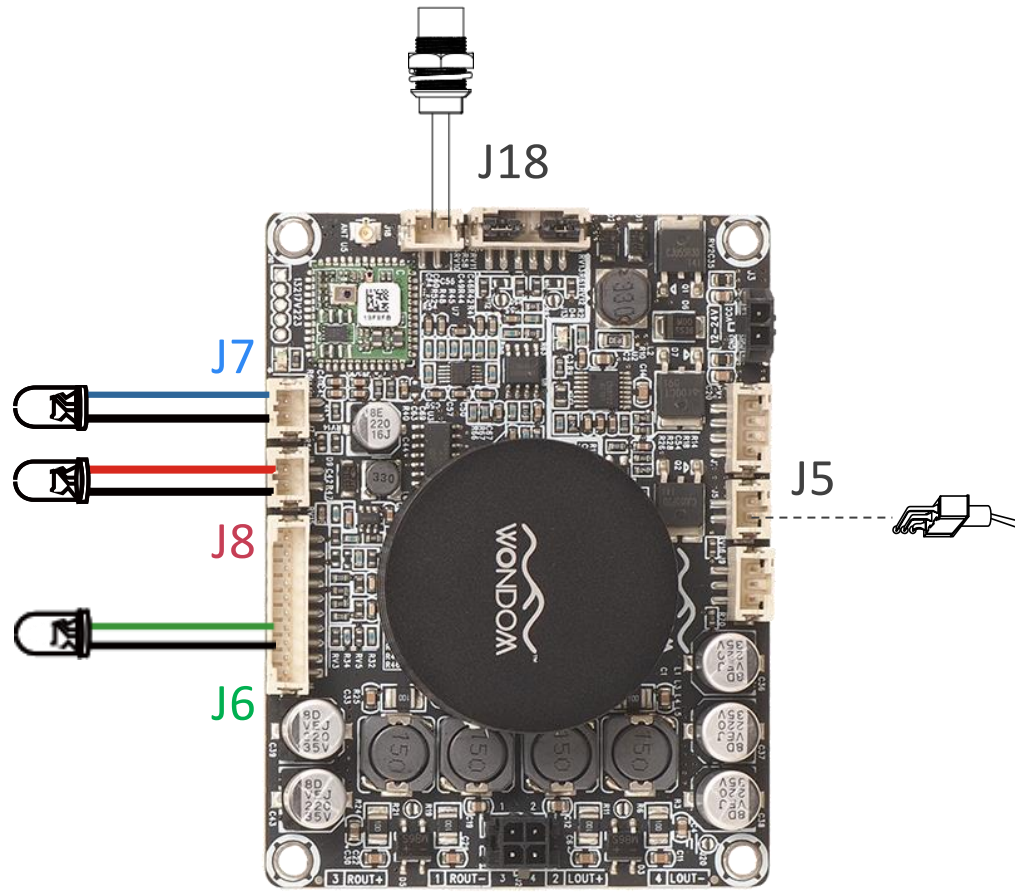
Take J3 of JAB3 as headphone output.
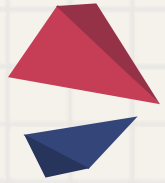
External LED and Control

- External Bluetooth LED: J7 of JAB2

- External Charge LED: J8 of JAB2

- External Power LED : Pin 3,4 of J6 of JAB2

- External Bluetooth Control: J18 of JAB2, long press to turn on/off BT, short press to cancel paring

- External Shutdown Control: J5 of JAB2, short circuit 'EN' and 'GND' to shutdown audio system

Power Supply

Power adapter
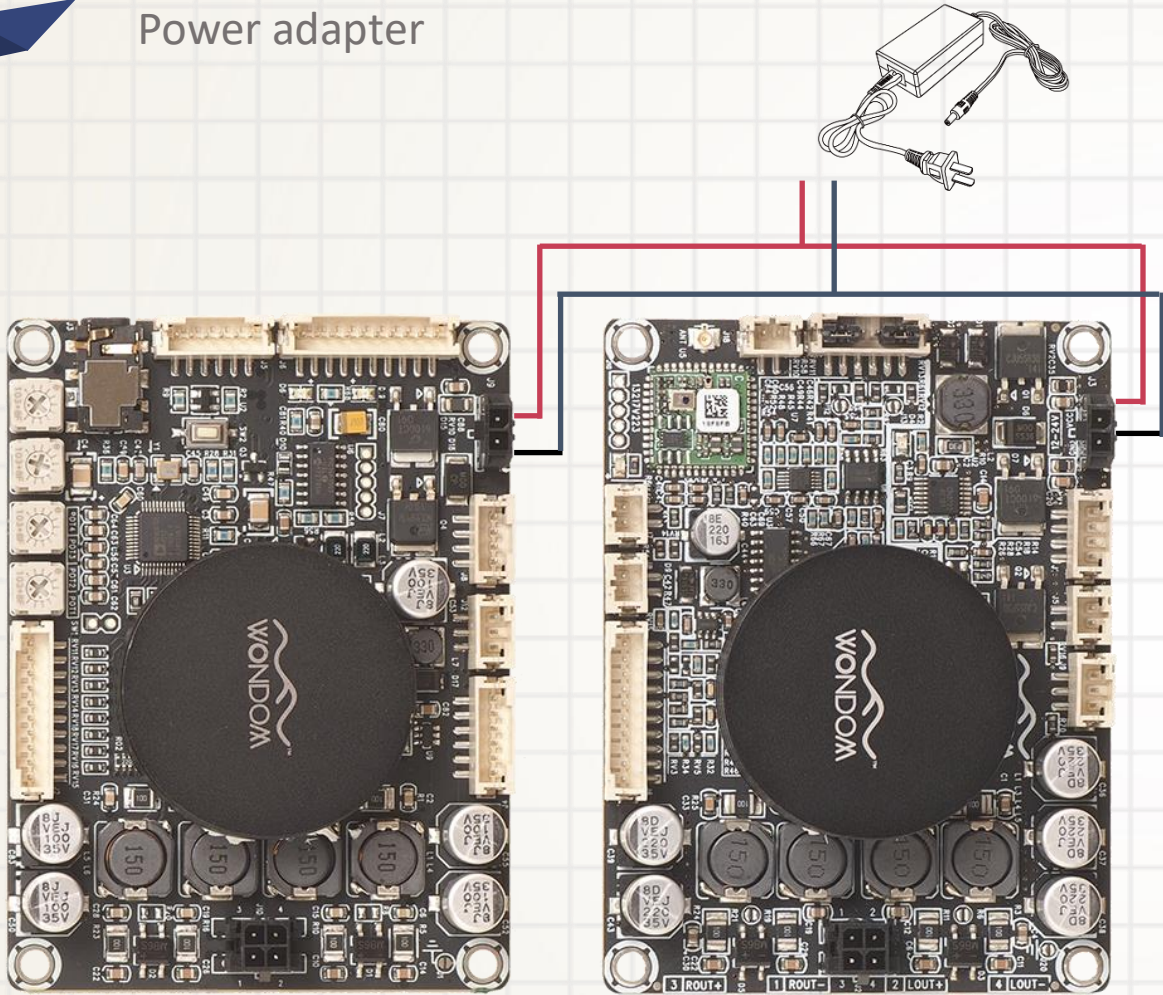
- Separate power: JAB3 and JAB2 can be powered by separate power adapter;

- **Power by one power adapter:** It is recommended to use one power adapter to power JAB3 and JAB2 and the connection is as follows.

JAB2   JAB3

Red to Red
Black to Black

Power Supply

Power by Sure Electronics Baord (AA-JA11113)

J8

J1

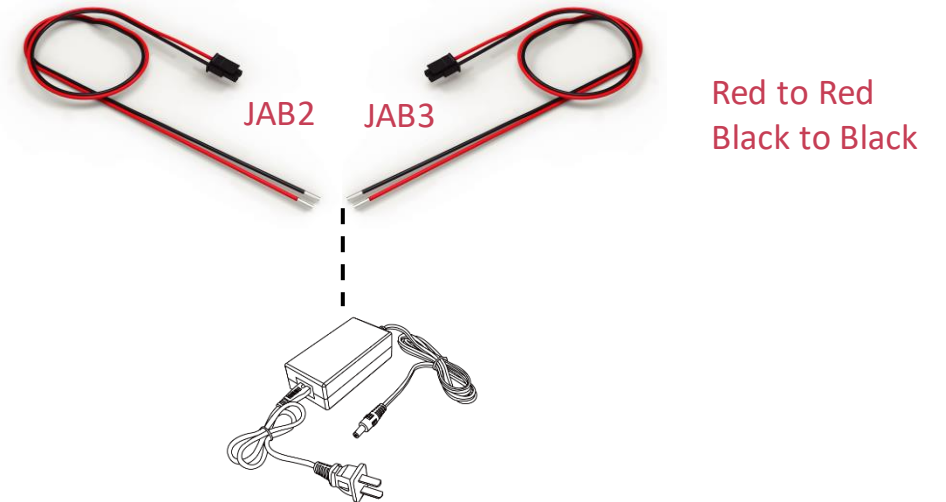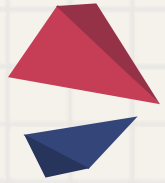Sure Electronics Battery Balance and Protection Board provides multiple discharging ports with same function. Customers can use AA-JA11113 to power JAB3 and JAB2 simultaneously. The connection is shown left.

Note:

1、 The charging circuit is equipped in JAB2 instead of AA-JA1113. If customers want to charge batteries with AA-JA11113, JAB2 is requisite. Please connect power adapter and battery board to JAB2 at the same time to charge batteries.

2、 Two or more pcs battery balance and protection boards can be connected in parallel for higher capacity, while the output voltage will not increase.

Functions of Potentiometers

Potentiometers of JAB3

Functions of potentiometers based on specific applications					
Port	Function	JAB3S	JAB3M	JAB3S+ JAB2	JAB3M+ JAB2
POT1	CH2 Gain	Gain of 3.5mm Headphone Output	Gain of 3.5mm Headphone Output	Gain of Stereo of JAB2	Gain of Stereo of JAB2
POT2	CH2 HPF	High-pass Filter of 3.5mm Headphone Output	High-pass Filter of 3.5mm Headphone Output	High-pass Filter of Stereo of JAB2	High-pass Filter of Stereo of JAB2
POT3	CH1 HPF or BPF	High-pass Filter of Speaker Output	Band-pass Filter of Speaker Output	High-pass Filter of Speaker Output of JAB3	Band-pass Filter of Speaker Output of JAB3
POT4	CH1 & CH2 Volume	Volume of Speaker & 3.5mm Headphone Output	Volume of Speaker & 3.5mm Headphone Output	Overall Volume of JAB3 & JAB2	Overall Volume of JAB3 & JAB2

Note:
1. The speaker output (J10) of the board with potentiometers is defined as CH1; 3.5mm headphone output (J3) or other integrated circuit output of the board with potentiometers is defined as CH2.
2. JAB3S refers to JAB3 in stereo mode, namely 2 x 50 Watt Class D Audio Amplifier Board w DSP - JAB3 (AA-JA32172) or 2 x 30 Watt Class D Audio Amplifier Board w DSP - JAB3 (AA-JA32473); JAB3M refers to JAB3 in mono mode, namely 1 x 100 Watt Class D Audio Amplifier Board w DSP - JAB3 (AA-JA31181) or 1 x 60 Watt Class D Audio Amplifier Board w DSP - JAB3 (AA-JA31211).
3. HPF refers to High-pass Filter; BPF refers to Band-pass Filter.
When CH1 is stereo output, the function of POT3 is HPF; when CH1 is mono output, the function of POT3 is BPF.
4. Four applications are exampled in this datasheet. For the functions of potentiometers when used in other applications, please contact us at store@sure-electronics.com.
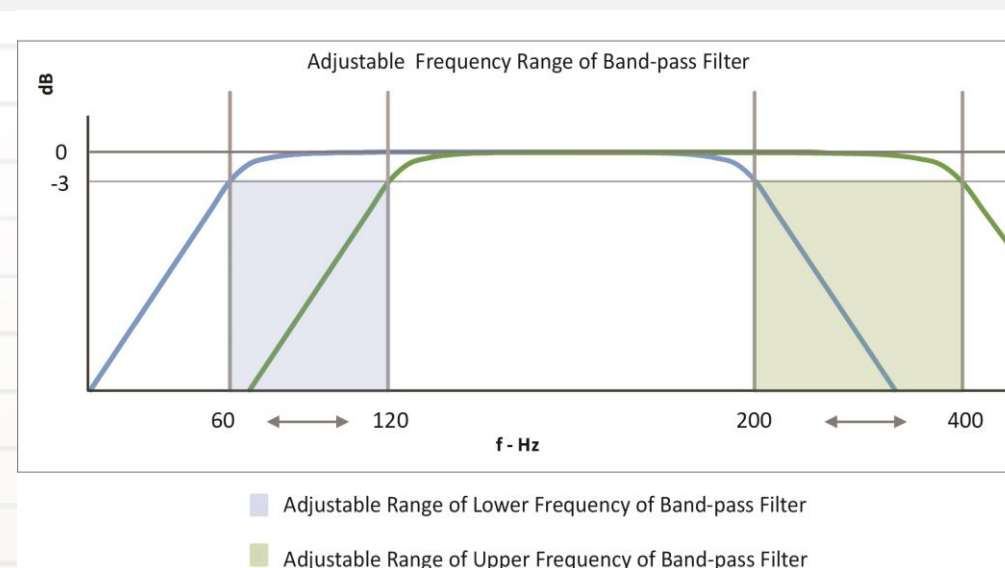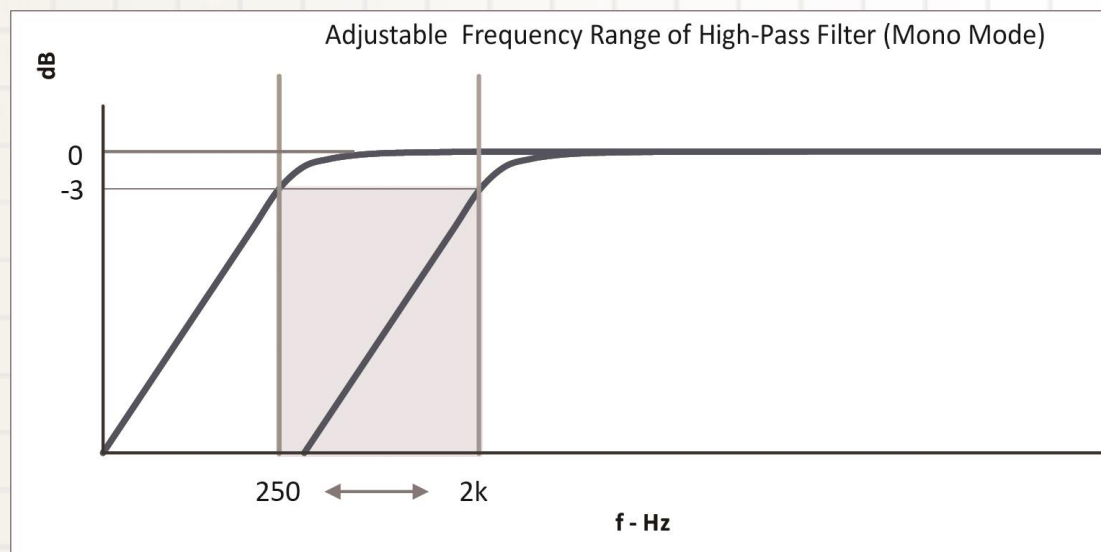
电位器功能

滤波器可调范围

Function	Range of Frequency
High-pass Filter (Stereo Mode)	20Hz- 2kHz
High-pass Filter (Mono Mode)	250Hz- 2kHz
Band-pass Filter	60HZ-120Hz (High-pass)
	200Hz-400Hz (Low-pass)

Adjustable Frequency Range of High-Pass Filter (Mono Mode)

Adjustable Frequency Range of Band-pass Filter

■ Adjustable Range of Lower Frequency of Band-pass Filter

■ Adjustable Range of Upper Frequency of Band-pass Filter

Sure Electronics Co., Ltd.

Professional Audio Solution Provider

3F, Building F6, No. 9, Weidi Road, Xianlin, Qixia Dist., Nanjing, China
Tel: +86-025-85260046
Web: store.sure-electronics.com
Email: info@sure-electronics.com
Skype: sureelectronics

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