

CONNECTION GUIDE

WONDOM JAB6

TPA3255 4x300W

Powerhouse

with Default MAT-BM83 & MAT-ADAU1701

High Flexibility & Expandability



WONDOM JAB6



Dual TPA3255

Delivering 1200W high output power

ADAU1701 DSP

Coming with ADAU1701 DSP module for audio processing

4.0/2.1/2.0 Output

Suitable for various audio projects

High Expandability

I2S input/output for connection with other devices

Bluetooth TWS

Coming with MAT-BM83, supporting TWS&Concert Mode

Efficient Cooling

Heavy-Duty Heatsink & 4-Speed Temp-Controlled Fan



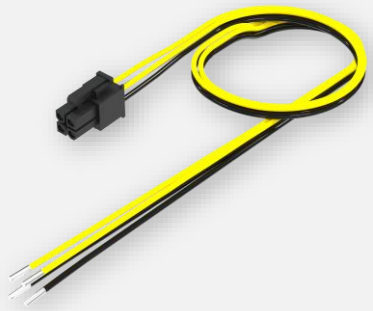
What's in the Box



WONDOM JAB6

Default Settings

- | Modules: MAT-BM83 & MAT-ADAU1701
- | PC UI Setting: 4.0 Mode (SW1 - "UI")
- | SigmaStudio Program: 2.1 Mode (SW1 - "S.S.")
- | I2S Input: Slave Mode (SW2 - "S")



1x Power Cable



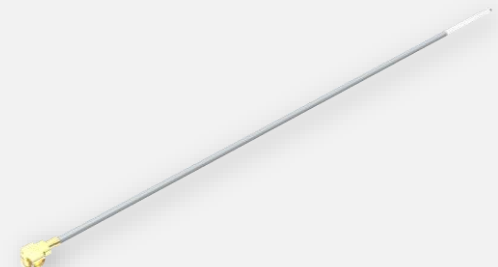
2x Speaker Cables



1x 3.5mm Line Input Cable



1x I2S Connection Cable



1x BT Antenna

Default Configurations



Both SigmaStudio projects and PC UI configurations can be stored directly on the JAB6 unit, with the two control schemes operating independently.

The JAB6 amplifier comes with two independent operating configurations as outlined below:

1) SigmaStudio Program Mode: 2.1 mode (2x300W + 1x600W)

2) Miumax Mode: 4.0 mode (4x 300W)

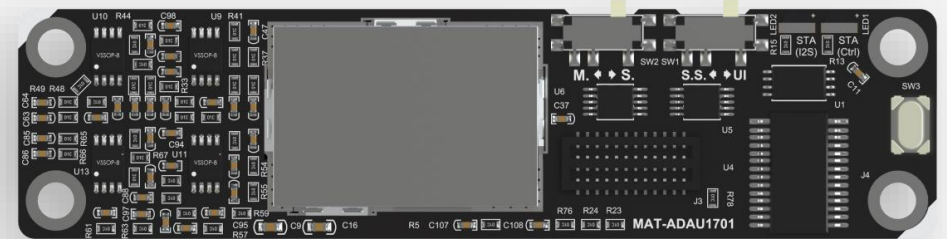
Mode switching is controlled via the SW1 switch on the MAT-ADAU1701 module.

For alternative output modes, flash the corresponding open-source project files or firmware via SigmaStudio.

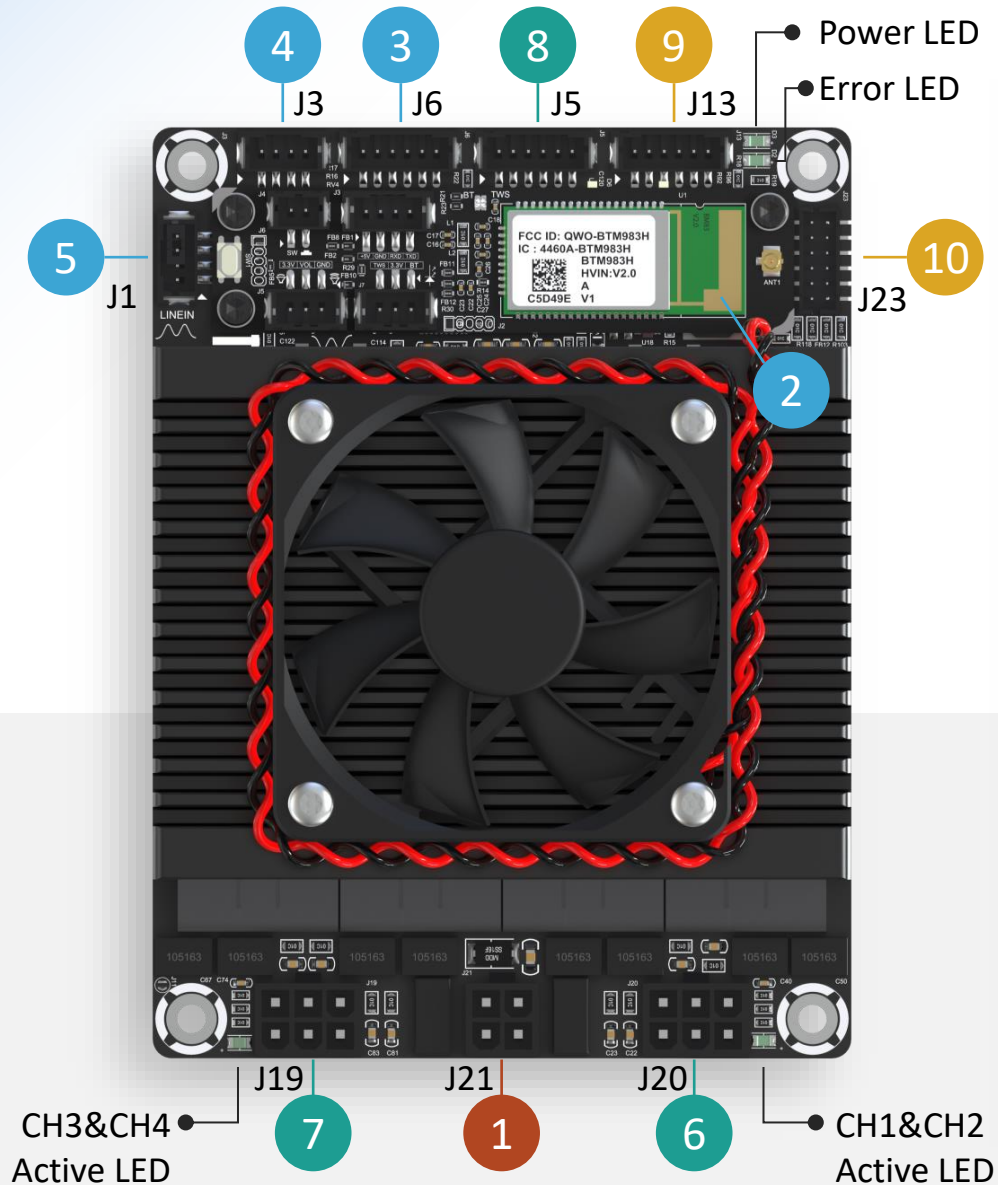
[Download here: JAB6_DemoProgram&Firmware](#)

SW1 on MAT-ADAU1701

SW1	Configuration
S.S.	SigmaStudio Program – 2.1 Mode
UI	PC UI Settings – 4.0 Mode



Connection Diagram - Powerhouse



This guide will focus on the connection of the JAB6 with default MAT-BM83 & MAT-ADAU1701 modules.

Power Supply

- 1 DC 32V-48V Power Supply

Audio Input

- 2 Bluetooth Input
- 3 I2S Input
- 4 Line Input (J3)
- 5 Line Input (J1)

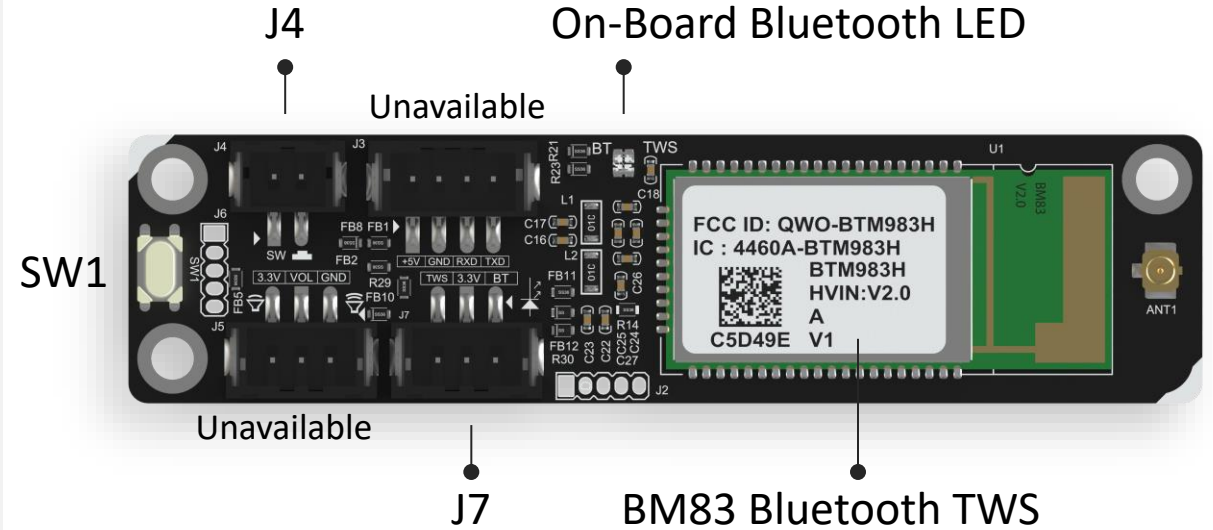
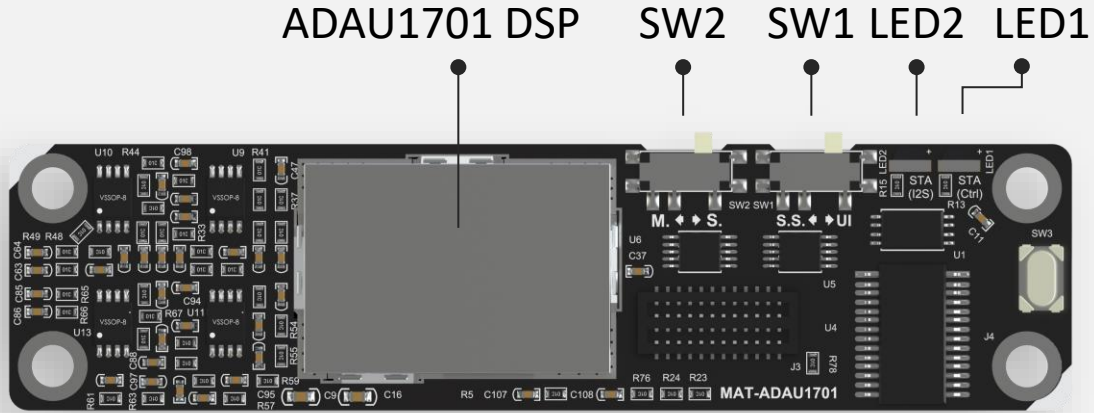
Audio Output

- 6 7 Speaker Output
- 8 I2S Output

Control

- 9 Programming Port
- 10 External Control Port

Connection Diagram - MATs



MAT - ADAU1701 DSP Module

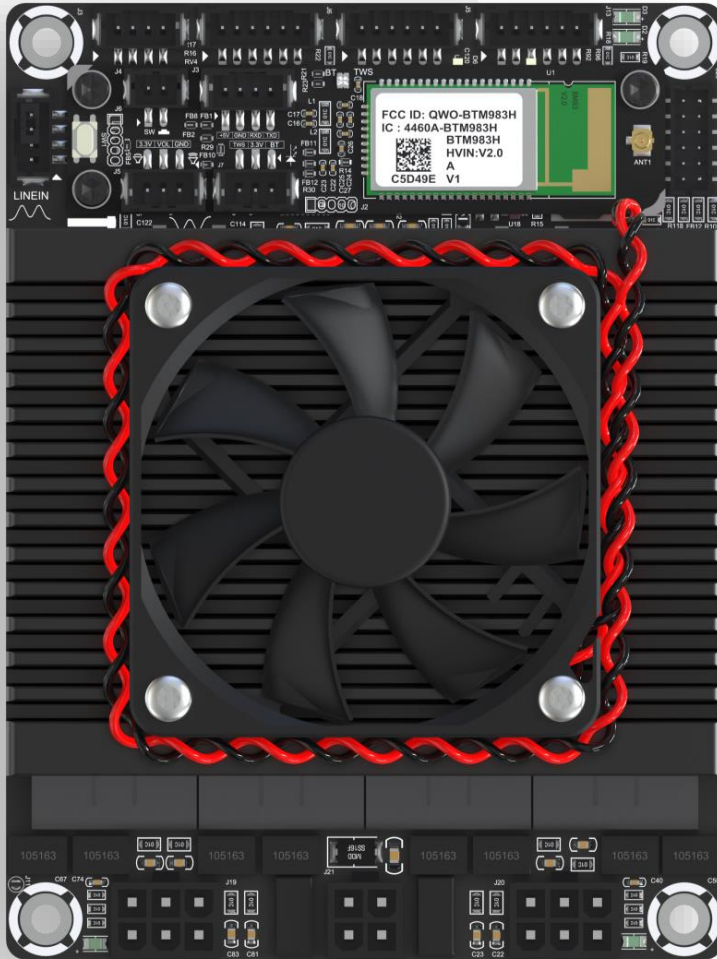
- **SW1:** Control Method Switch
- **SW2:** I2S Input Mode Switch
- **LED1:** Control Method Indicator
- **LED2:** I2S Input Mode Indicator

MAT – BM83 Bluetooth Module

- **SW1:** On-Board Bluetooth Control Button
- **J4:** External Bluetooth Control
- **J7:** External Bluetooth LED



Power Supply



J21

1

Power Supply – J21 (Mini-Fit Dual Row 4 Circuits)

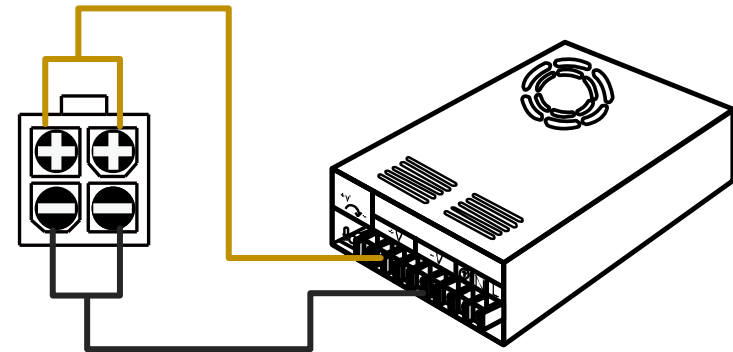
Power supply range: DC 32-48V

Please do not exceed the recommended voltage; otherwise, power amplifier damage may occur.

Recommended Power Supply Model: Mean Well LRS-600-48



Accessory:
1x Power Cable



Given the high current, please connect the two "+" pins in parallel to the positive pole of the power supply. Likewise, connect the two "-" pins in parallel to the negative pole of the power supply.



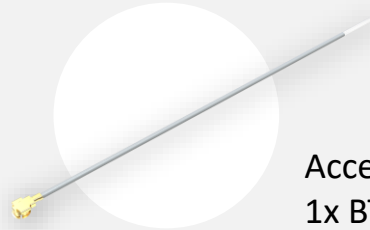
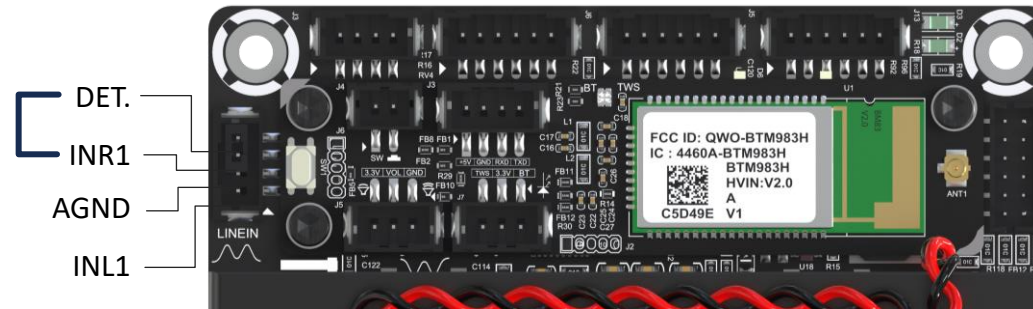
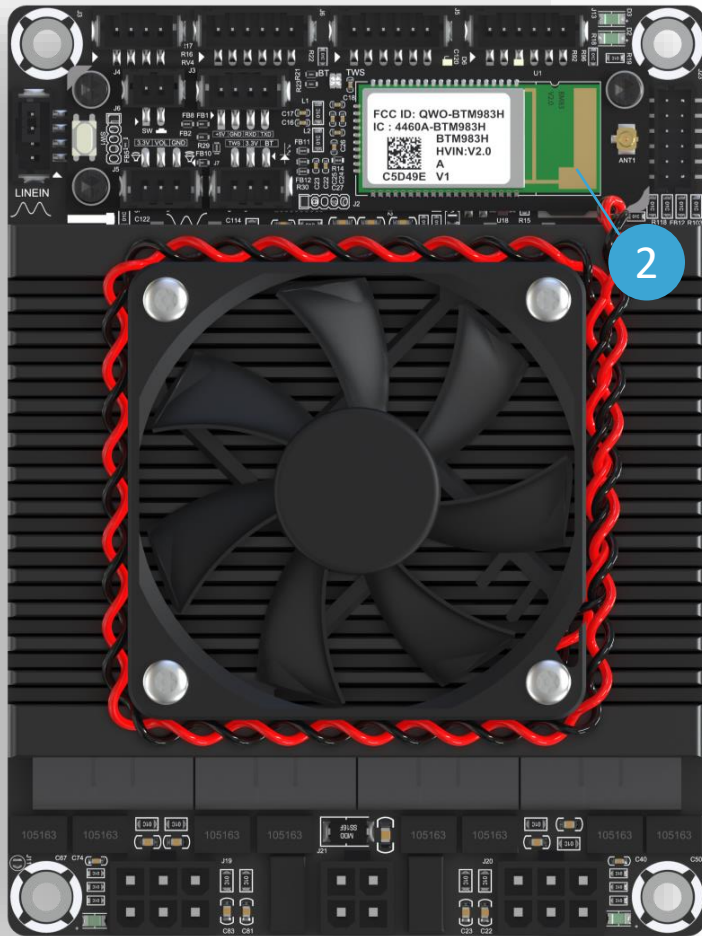
Audio Input – Bluetooth Wireless



Bluetooth Input

BM83 Bluetooth Wireless Streaming

To activate Bluetooth input, please make sure the “DET.” and “INR1” pins of J1 is shorted circuited.



Accessory:
1x BT Antenna

BT Connection Range: 80m

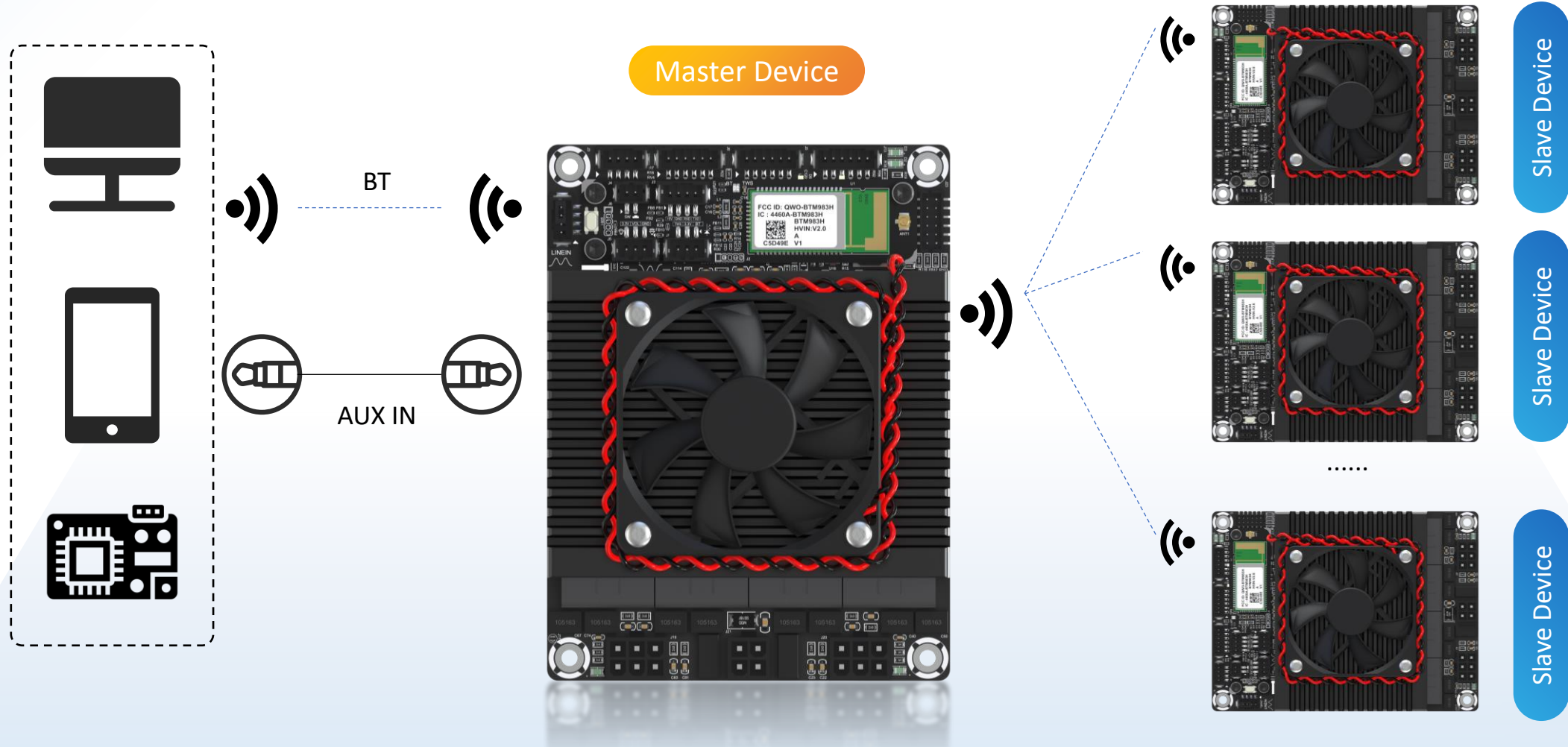
Tested using external BT antenna in open space.
Please keep the antenna away from metal.



Audio Input – Bluetooth TWS/Concert



It supports Bluetooth **TWS & Concert mode**, which means you can pair two or more JAB6 units through Bluetooth wirelessly. By factory default, TWS & Concert only works with audio sourced from Bluetooth or the J1 port.

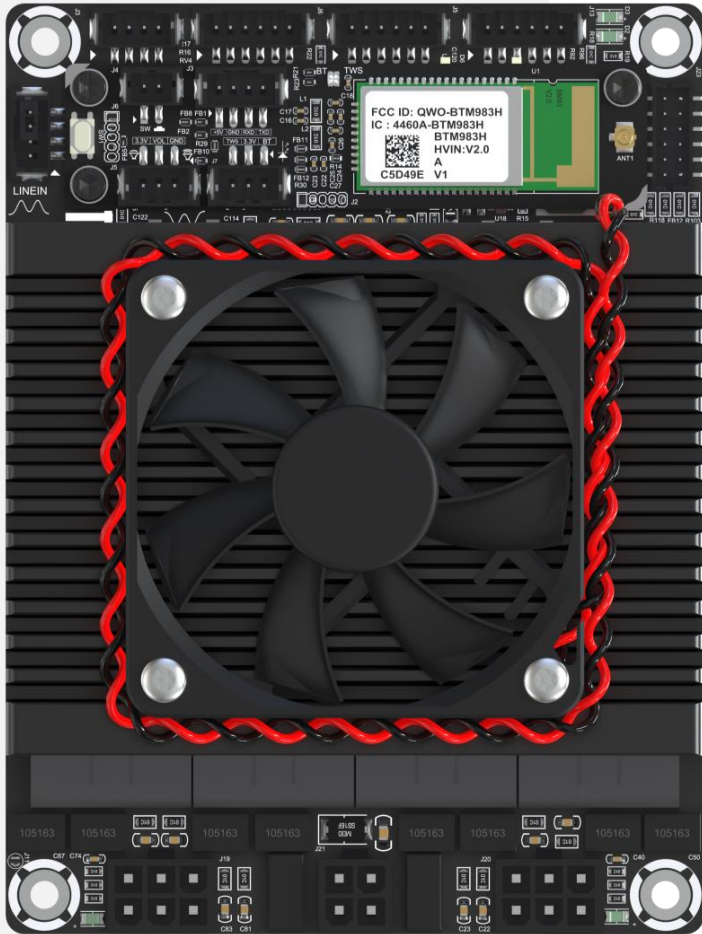




Audio Input – I2S Digital

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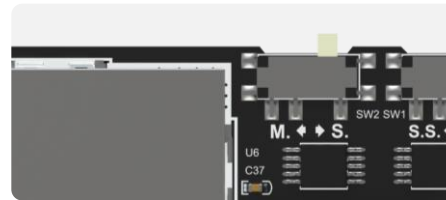
J6



I2S Input – J6 (PH-2mm-6POS)

JAB6 supports 24bit/48kHz I2S digital input.

Set the I2S input master/slave mode via SW2 on the MAT-ADAU1701 module.



SW2 on MAT-ADAU1701

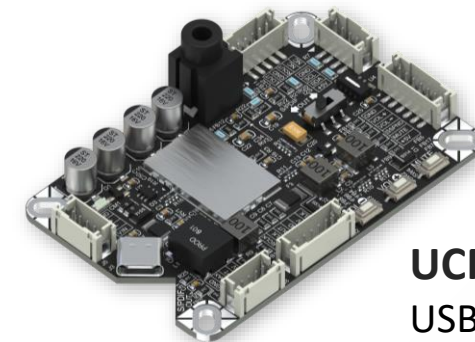
M. – Master Mode; S. – Slave Mode

When set as slave mode, it supports 3-wire I2S input with no need of MCLK, **allowing direct connection with Raspberry Pi.**

The I2S input is compatible with WONDOM ASCM signal converters for **SPDIF/USB/HDMI inputs.**



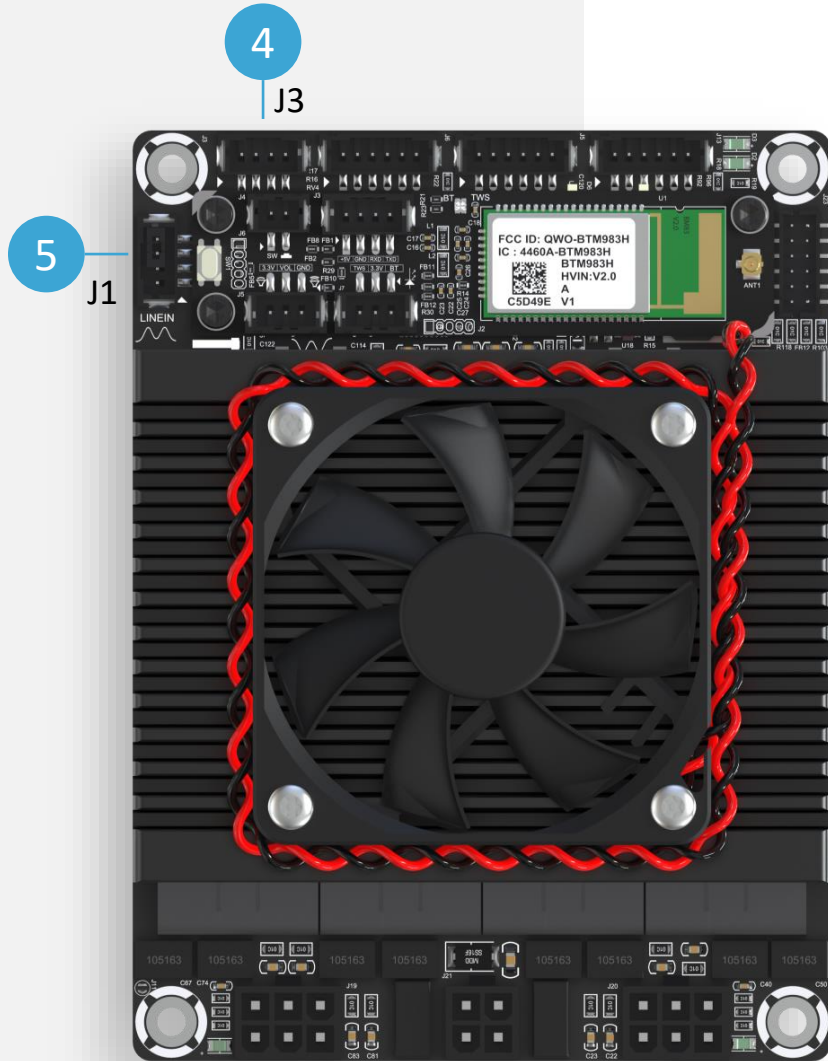
SBC
Raspberry Pi



UCM-PCM2706C
USB to I2S



Audio Input – Line Analog



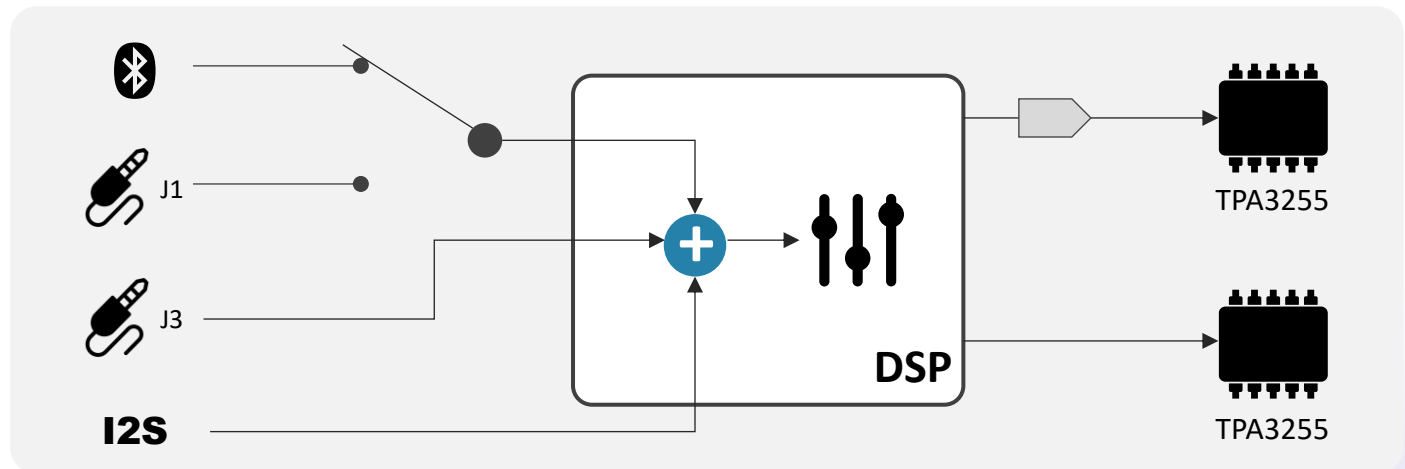
Line Input – J1 / J3 (PH-2mm-4POS)

The JAB6 offers two ports for line input.

Port	ADC	Relationship with BT Input	Output Channel
J1	Independent ES9018K2M	Switching	CH1 & CH2
J3	Built-in ADC of ADAU1701	Mixing	CH3 & CH4

J1 line input is only available with MAT-BM83 mounted.

For better performance, it's suggested to use J1 as it uses independent ADC. However, the Bluetooth will be disabled when J1 is active.





Audio Output – Speaker

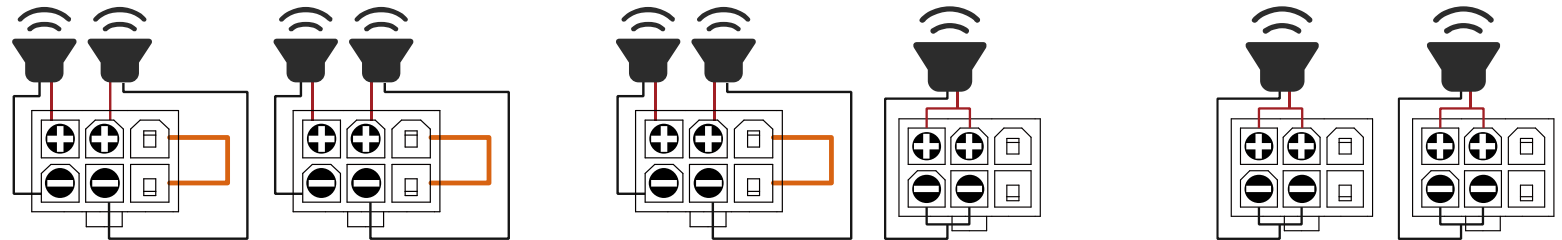
Speaker Output – J19 & J20 (Mini-Fit Dual Row 6 Circuits)

With the integrated dual TI TPA3255 AMP ICs, JAB6 delivers 4x300W into 40Ohm loads with a DC48V PSU.
Besides 4x300W, JAB6 supports configuration as 2x300W+1x600W or 2x600W.
The hardware configuration is achieved by cable detection circuit.

- 4x300W 4.0/2.2

- 2x300W+1x600W 2.1

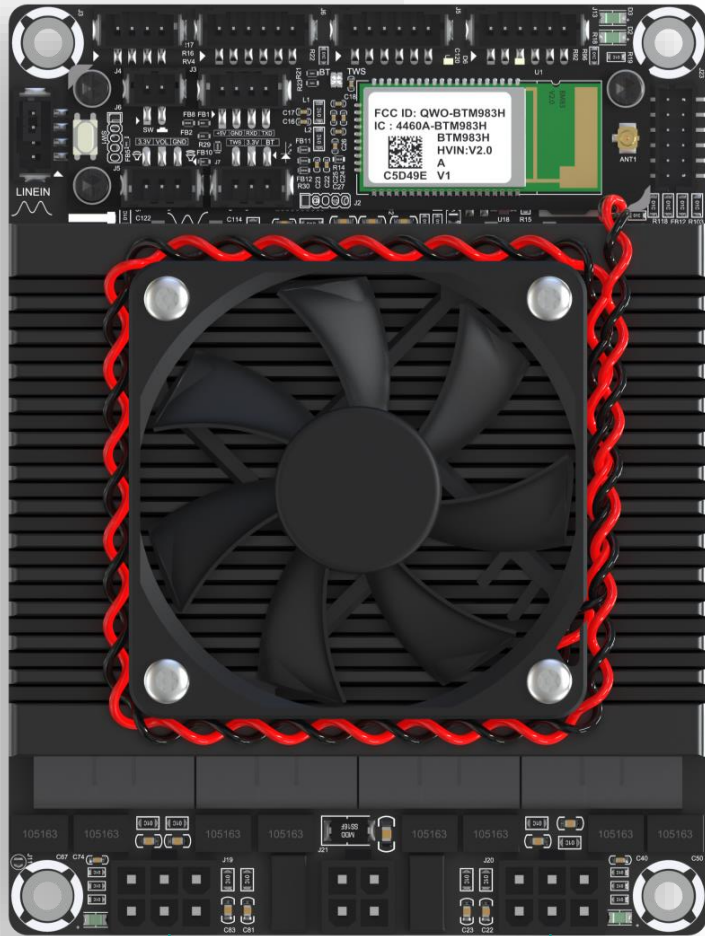
- 2x600W 2.0



The default program is 4.0 (SW1 - “UI”) /2.1 (SW1 - “S.S.”).

Due to ADAU1701 DSP resources limit, the program won't switch automatically. You can download demo program and firmware below.

[Download here: JAB6_DemoProgram&Firmware](#)



CH3&CH4
Active LED

CH1&CH2
Active LED

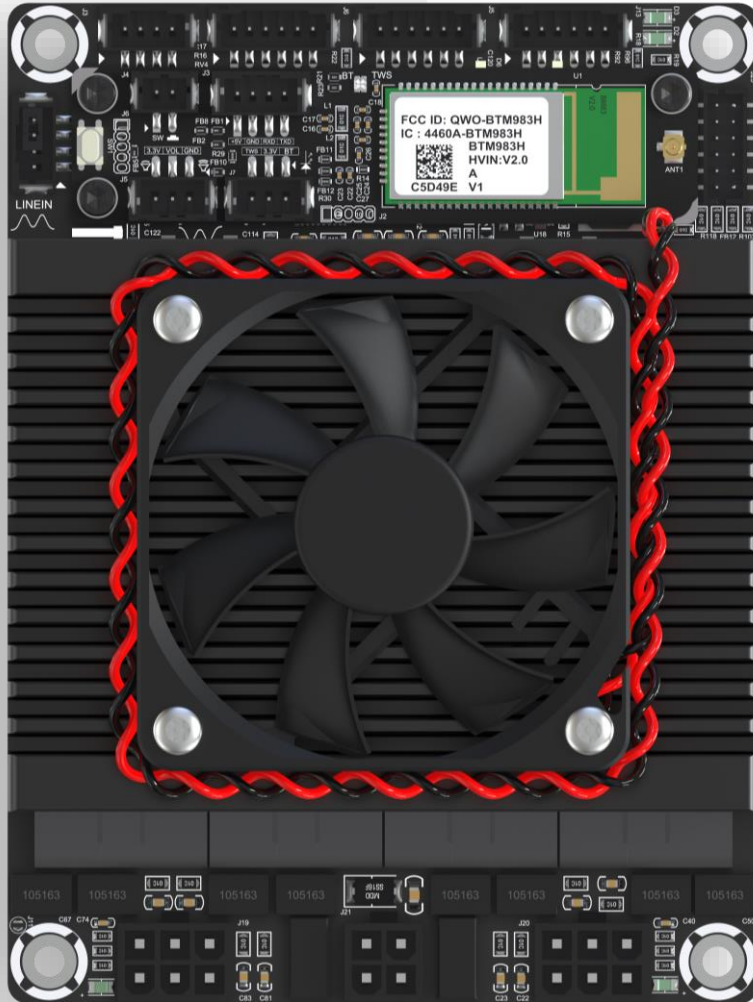


Audio Output – I2S Digital



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J5



I2S Digital Output – J5 (PH-2mm-6POS)

JAB6 offers I2S digital output for system expansion.

- **Master Mode**
- **24bit/48kHz**

It's compatible with devices supporting I2S input, like WONDOM DIPO I2S amplifier, JAB5, ASCM-D2A-PCM5122.

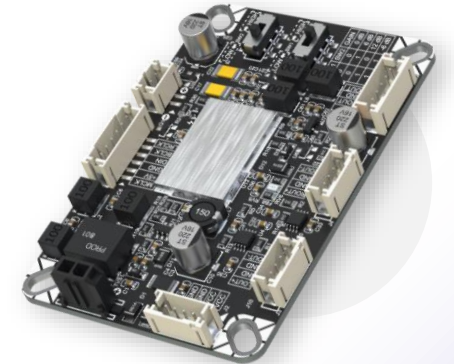
It's suggested to use the PH-6Pos ribbon cable for I2S connection.



DIPO I2S AMP



JAB5



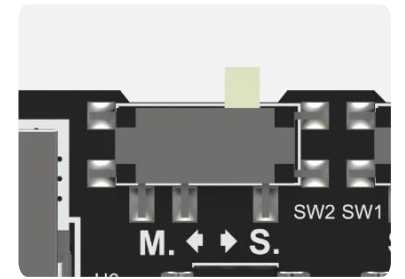
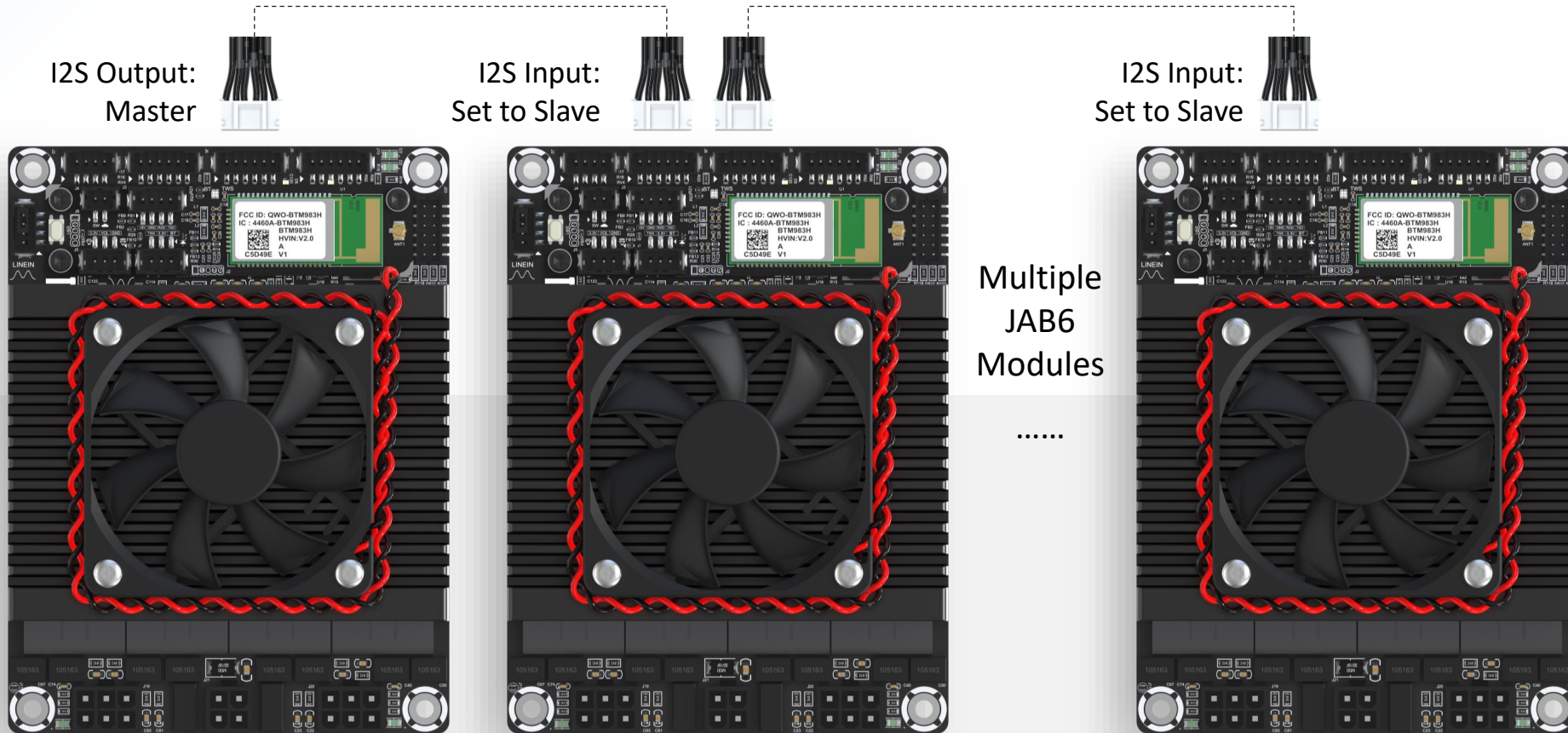
ASCM-D2A-PCM5122



Audio Output – I2S Digital



The I2S input and output of JAB6 can work simultaneously, that means you can cascade multiple JAB6 via I2S for high-power multi-speaker systems. The I2S signal is reshaped at every stage, eliminating cumulative waveform distortion and clock jitter, extending cascading quantity and transmission distance.



I2S Input Setting

Set slave JAB6 I2S input to slave mode by setting SW2 on MAT-ADAU1701 to “S” position.



Control – PC UI & Programming



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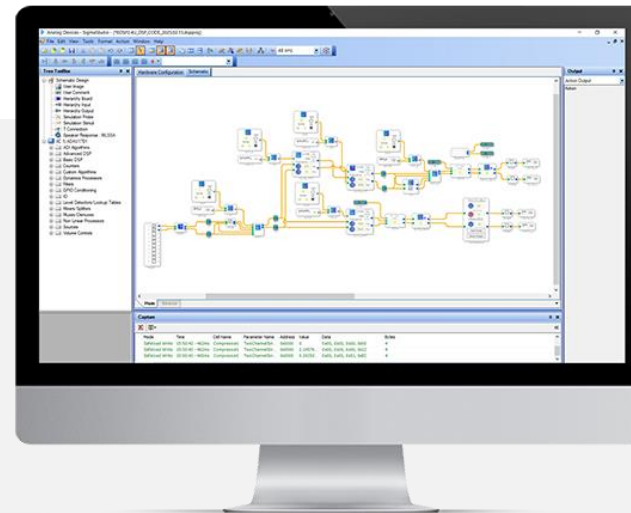
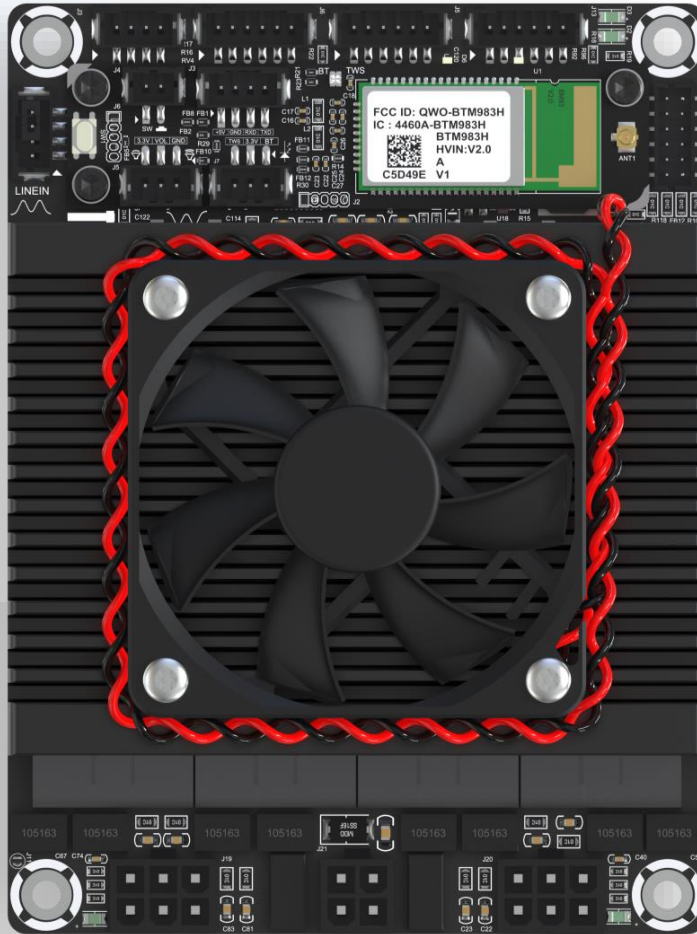
J13

Programming Port – J13 (PH-2mm-6POS)

For connection with ICP5 programmer

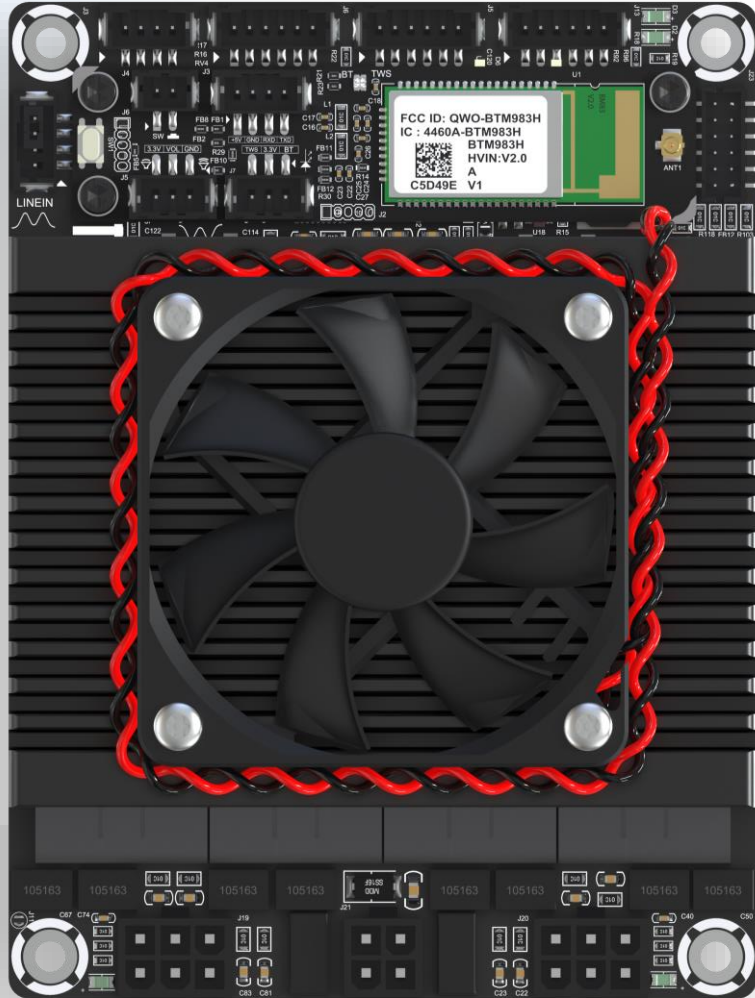
With the mounted ADAU1701 DSP module, the JAB6 supports PC UI tuning or SigmaStudio programming after connection with ICP5 programmer.

The settings will be saved to the DSP for offline running. That means, you can switch SigmaStudio program and PC UI settings with the SW1 on MAT-ADAU1701.





Control – External Control



External Control Port – J10 (PH-2mm-12POS)

For connection
with
WONDOM
ACP control
panel

ACP1H6TP



ACP26SP



ACP23SP





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