JAB Series

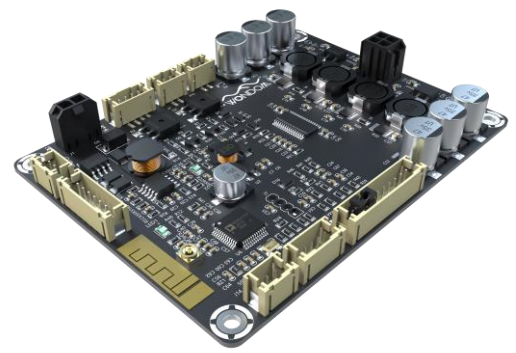## 2 x 15 Watt Class D Audio Amplifier Board – JAB1
(AA-JA32151)

Key Features

- 3.6 x 2.7 Inches PCB Size
- Bluetooth V5.0
- Power Management
- Lithium Battery Board Supported
- Higher Output Power with Power Adapter
- PBTL Configurable
- LED Indicators Ports (Power, Battery Charging& Bluetooth)
- 3.5mm AUX IN Port
- Volume Control Port (Potentiometer)
- Power Switch Port

Distributors

AXIOMEDIA

Electrical Specifications

Specifications typical @ +20℃, powered by 19V DC, unless otherwise noted. Specifications subject to change without notice.

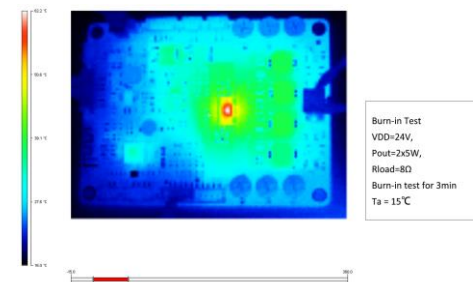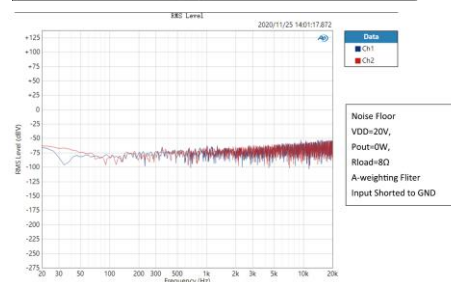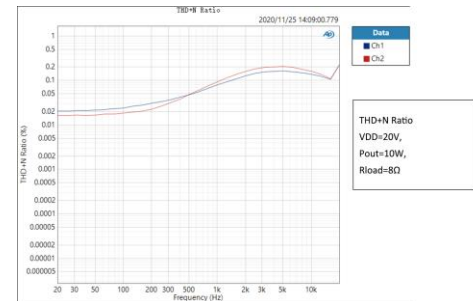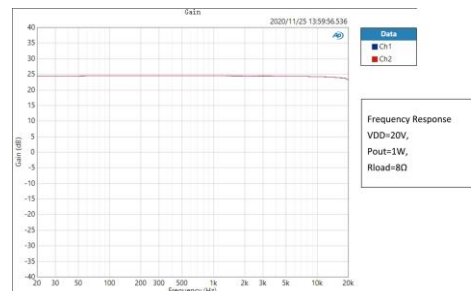| Parameter	Conditions	Min.	Typ.	Max.	Units
Power Supply Range	-	12	19	24	VDC
Idle Power/Current	SD short to GND, BT Disconnected	-	81.4	91.6	mA
	BT Connected	-	82.7	92.5	mA
Standby Power/Current	SD short to GND, only when low power module available	-	12.3	12.6	mA
Battery Undervoltage Protection*	-	-	10.4	10.5	V
Constant Charging Voltage	-	-	12.3	12.5	V
Charge Current	-	-	0.5	0.9	A

*Battery Undervoltage Protection point is preset to 10.4V in order to protect Lithium-Ion battery, LiFePo4 battery is strictly prohibited and not supported by default. For any change to this battery protection setting, an MOQ of 500pcs will be applied.

Audio Performance

Specifications typical @ +20℃, powered by 19V DC, unless otherwise noted. Specifications subject to change without notice.

Parameter		Conditions	Min.	Typ.	Max.	Units
Gain		-	22	24	26	dB
Output Power		19V @ 8Ω		2 x 15		W
THD		Bluetooth, 19V @ 8Ω,10W, 1KHz	-	0.03	-	%
Output Noise Level	3.5mm Line input	A-weighting, Input Connected to GND	-	352.0	-	µV
	Bluetooth input		-	87.0	-	
SNR	3.5mm Line input	19V, 10W @ 8Ω, THD+N=1%	-	90.0	-	dB
	Bluetooth input			99.1		

Typical Performance Graphs

Frequency Response
VDD=20V, Pout=1W, Rload=8Ω

THD+N Ratio
VDD=20V, Pout=10W, Rload=8Ω

Noise Floor
VDD=20V, Pout=0W, Rload=8Ω
A-weighting Filter
Input Shorted to GND

Burn-in Test
VDD=24V, Pout=2x5W, Rload=8Ω
Burn-in test for 3min
Ta = 15℃

Ready for:

FCC CE

Contact Info

- Email: ordini@axiomedia.it

Notes:

1. JAB1 supports both Bluetooth input and 3.5mm line input. Please note that the two input methods cannot be used at the same time. When no 3.5mm AUX IN cable is plugged in, Bluetooth input is available. Please make sure the provided jumper on J15 (Pin 8 & Pin 9) is inserted so that you can search and pair with the Bluetooth. Based on the plug-in detection circuit, once the 3.5mm AUX IN cable is inserted in J15, it will switch to 3.5mm line input.

2. The on/off switch and the two LED lights on interface extension board (AA-JA11112) cannot work with JAB1. You can use the 2pin switch cable in the Functional cables kit (AA-JA11114) to shutdown JAB1 through shutdown port (J2).

3. Sure Electronics could modify the JAB series cutoff frequency by first order crossover filter according to customers' requirements. 500 pieces MOQ will be applied. Please feel free to contact with store@sure-electronics.com for more detailed information.

LED lights for JAB1

	LED status		Function
	LED1 (Bluetooth)	**LED2 (MPPT)**	
On Board	● ○	/	Bluetooth not connected
	●	/	Bluetooth connected
	/	●	MPPT charging
	/	○	MPPT charging finished

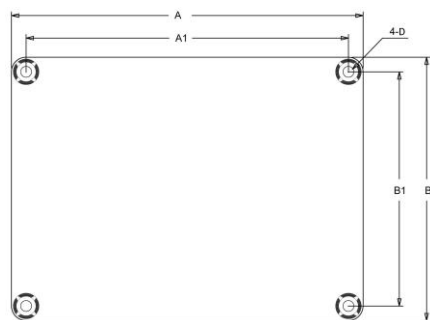|	**J14 (Bluetooth)**	**J5 (MPPT)**	**J3 (Power)**	**Function**
Ports Extended	/	●	/	MPPT charging
	/	○	/	MPPT charging finished
	● ○	/	/	Bluetooth not connected
	●	/	/	Bluetooth connected
	/	/	●	Power on
	/	/	○	Power off

Diagram 1

Notes:
1. The LED lights for extended ports have three colors, which are red, green and blue. The LED color for each port is at random.
2. The color of on board LED indicators is green. The indication of LED1 and LED2 can be changed. MOQ is 1000pcs.

Notes:
1. The output power is rated at the condition THD+N 10%,1kHz sine wave.

2. This amplifier board employs power supply reverse polarity protection. Stresses beyond the power supply range maximum ratings may cause permanent damage.

3. None typical load may cause rated power reduction.

4. Dimensions mean length and width of PCB only, excluding excessive part out of the PCB outline.

5. All parameters were tested with Rohde & Schwarz UPV audio analyzer (AES17 filter enabled) and AP AUX0025 filter. Linear Power Supply units were used for testing.

6. Sure Electronics promises all standard products life cycle more than 5 years. Sure Electronics reserves the right to update the version without notice. All the products sent to retail customers are the latest version. We will provide back-to-order service (100 Pieces MOQ needed) for our distributors in 5 years.

7. If you need to know more details about how to connect the cables, please refer to the JAB Connectors for further information.

If you have any power supply requirements, please feel free to contact us.

● ○ stands for blinking, ● stands for ON, and ○ stands for OFF.

Mechanical Dimensions

Dimensions	**A (inch/mm)**	**A1 (inch/mm)**	**B (inch/mm)**	**B1 (inch/mm)**	**D (inch/mm)**
	3.60/91.44	3.30/83.8	2.70/68.6	2.40/61.0	0.14/3.6

Notes:
· All dimensions are typical in inches/mm
· Tolerance x.xx = ±0.02(±0.50)
Height: (Tolerance x.xx = ±0.2inch/ 5mm
AA-JA32151:0.59inch/15mm
· The height of the boards is measured from the bottom of the boards to the top of the components.

Connections

Upgrade

Upgrade Port:
· J11, PH-4Pos-2mm
This port is used for future upgrade.

Power Supply

Power Adapter Connector:
· J1, Molex-2Pos-3mm

Pin	Definition
1	VCC
2	GND

Battery Power Connector:
· J6, PH-2Pos-2mm

Pin	Definition
1	VBAT
2	VBAT
3	GND
4	GND

Control

Shutdown Control:
· J2, PH-2Pos-2mm

Pin	Definition
1	GND
2	EN

Volume Control:
· J10, PH-2Pos-2mm

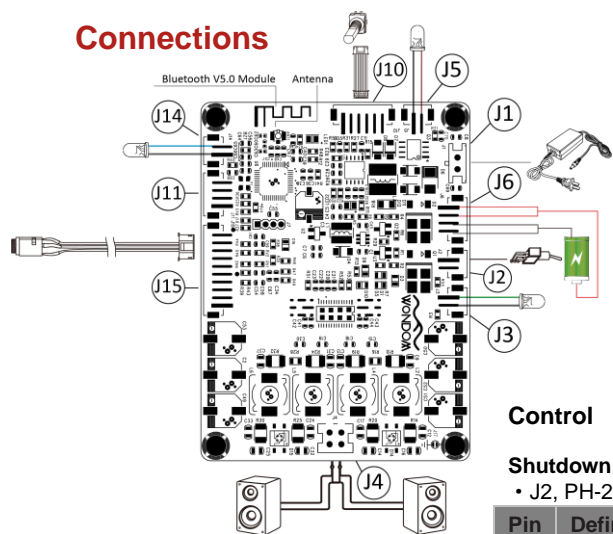| Pin	Definition	Pin	Definition	Pin	Definition
1	+3.3v	3	GND	5	VOL
2	VOL	4	GND	6	+3.3V

Extension Port: J15, PH-10Pos-2mm
You can connect with Interface extension board (AA-JA11112) through J15 to get 3.5mm line input and USB discharging ports.

Audio Input

Bluetooth Input:
· Bluetooth V5.0 Module

3.5mm Line Input:
· J15, PH-10Pos-2mm

Pin	Definition
6	LIN
7	GND
8	RIN

Pin 6,7,8 of J15 is used for 3.5mm line input. You can find the cable in the Functional Cables Kit (AA-JA11114). Or you can connect JAB1 with the Interface board (AA-JA11112) through J15 to get 3.5mm line input.

Audio Output

Speaker Output Connector:
· J4, Molex-4Pos-3mm

Pin	Definition
1	OUT2+
2	OUT1-
3	OUT1+
4	OUT2-

LED Indicator

On board LED Indicator:
LED1, Bluetooth indicator
LED2, Charging indicator

External LED Indicator Connector:
· J5, J3, J14
Molex-4Pos-3mm
J5, Charging Indicator
J3, Power Indicator
J14, Bluetooth Indicator

Pin	Definition
1	LED-
2	LED+