

# Bluetooth Audio Amplifier Board

## 2 x 20W 40hm Bluetooth Audio Amplifier Board

(OEM-05146)

### Key Features:

- Supporting Master Mode and Slave Mode
- Bluetooth Receiver
- Bluetooth V3.0 + HSP/HFP/A2DP
- Microphone Input
- 3.5mm Line Input (Slave Mode)
- Microphone Mute Function
- External Bluetooth Antenna included (I-PEX Micro RF Coax Connector)
- External Indicators
- Mono or Stereo Mode Configurable

### Distributors:

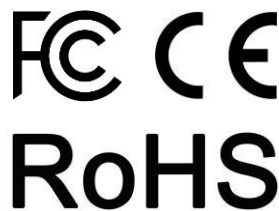


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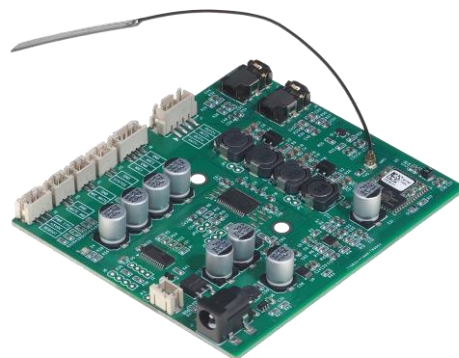
All these boards are per-tested with our power supply solution to comply with FCC and CE. For all customers who need those information, please contact our distributor or Sure Electronics. RoHS compliant will need an MOQ of 1000pcs per order.

Ready for:



### Contact info

- Email: [info@sure-electronics.com](mailto:info@sure-electronics.com)



### Electrical Specifications

Specifications typical @ +25°C, Powered by 12V DC, unless otherwise noted. Specifications subject to change without notice.

Parameter	Conditions	Min.	Typ.	Max.	Units
Power Supply	-	-	12	24	VDC
Input Current	@12V	-	3	-	A
	@24V	-	-	1.5	
BT Wireless Range(with BT Antenna)	-	10	-	-	m
Operating Temperature	-	0	20	55	°C
Storage Temperature	-	-40	20	105	°C

### Audio Performance

Specifications typical @ +25°C, Powered by 12V DC, unless otherwise noted. Specifications subject to change

Parameter	Conditions	Min.	Typ.	Max.	Units
Impedance	-	4	-	-	Ohm
Output Power	@12V, 40hm	2 x 20			W
Frequency Response	+/- 3dB, @40hm,	20	-	18k	Hz
Distortion	<0.1% @1 Watt, <1% @20W				

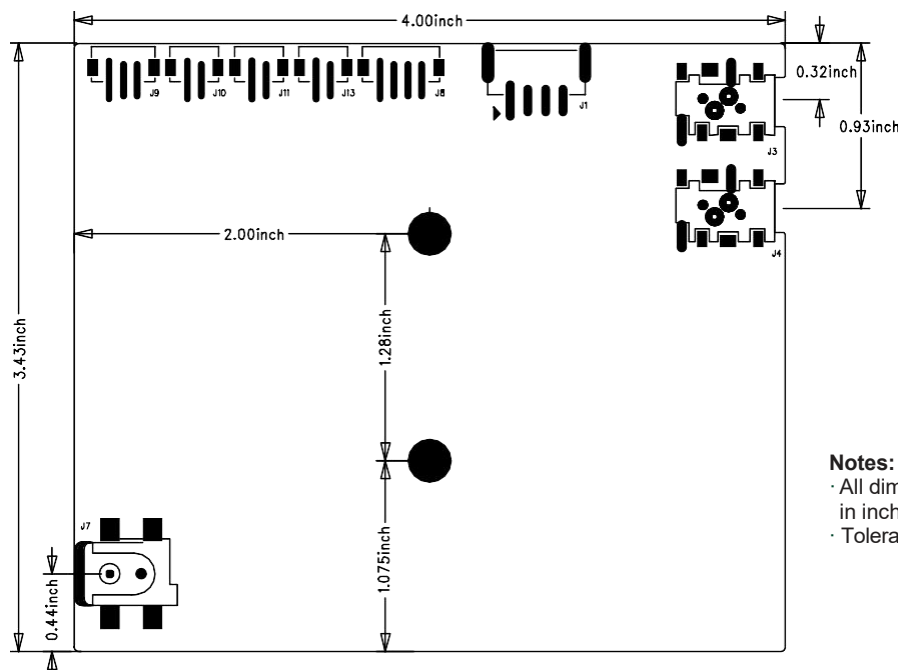
### Audio Input

Input Method	Function	AMP Mode
Bluetooth Input	For Audio Receiving	Master Mode
Microphone Input	For Phone Call	Master Mode
3.5mm Line Input	For Audio Input	Slave Mode

Note:

1. A built-in Microphone module is used for phone calls made or accepted from a connected mobile phone.
2. Bluetooth input and 3.5mm line input cannot be used at the same time.

### Mechanical Dimensions

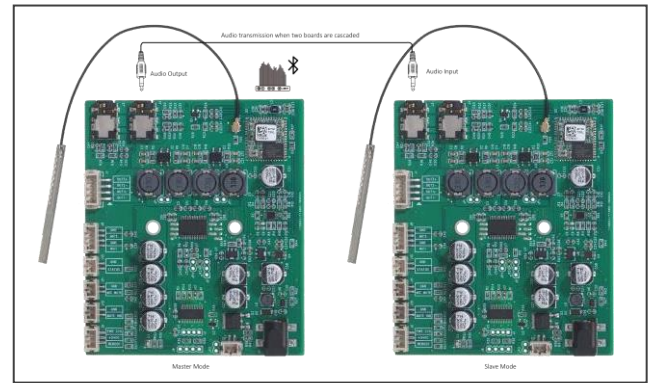
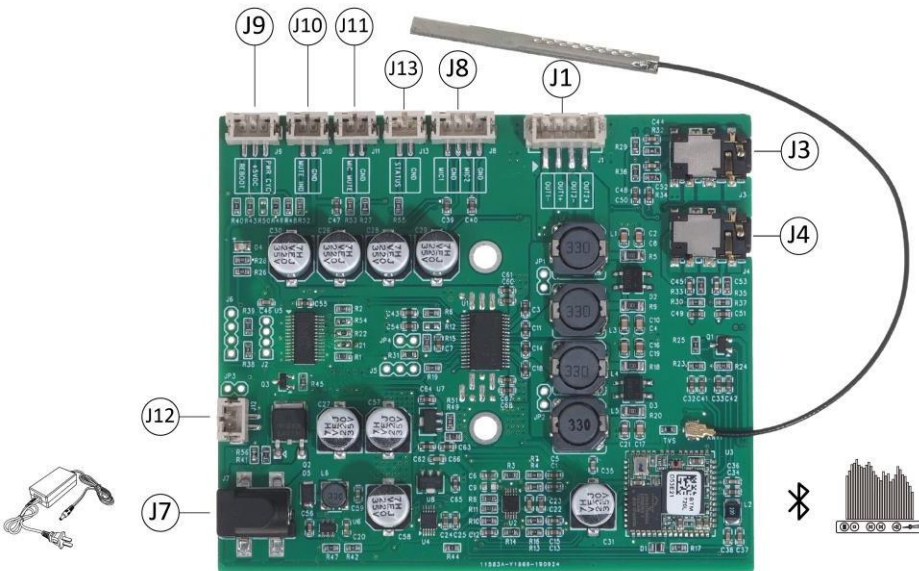


Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)

All parameters were tested with Rohde & Schwarz UPV audio analyzer (AES17 filter enabled) and Audio Precision AUX0025 filter. For authorized distributors and OEM customers who need more detailed performance graphs and parameter settings, please send an inquiry e-mail to us. (Not available for retail customers)

## Connection



## POWER

### Power Adapter Connector:

- J7 DC Jack ID 2.1mm x OD 5.5mm

Inner  Outer 

Power Supply Range: DC12V-24V

## MODE

The OEM-05146 can be cascaded with another OEM-05146 amplifier board. The recommended maximum cascading number of boards is 3pcs on account of audio performance.

Therefore, it supports master mode and slave mode, which is recognized by the inserting of the 3.5mm line input cable.

### Master Mode (The 3.5mm line input cable not inserted)

When in master mode, Bluetooth is used as the audio input method to receive audio from connected device.

### Slave Mode (The 3.5mm line input cable inserted)

Once the 3.5mm line input cable is inserted (J3), the Bluetooth will be disabled and the amplifier board will enter into slave mode and receiving audio signal from the OEM-05146 in master mode.

## INPUT

### Bluetooth Input

The Bluetooth connectivity range is 10m with the antenna. It is suggested to connect the antenna for stable connection and longer range.

### Microphone Input

- J8 PH-2mm-4Pos-Connector

Pin	Definition	Pin	Definition
1	MIC1	3	MIC2
2	GND	4	GND

This is a built-in Microphone module of the Bluetooth for making or answering the phone calls.

### Line Input

- J3 3.5mm Jack

Line input is used in slave mode as audio input.

## OUTPUT

### Speaker Output

- J1 PH-2mm-4Pos-Connector

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

### Cascade Output

- J4 3.5mm Jack

J4 is used to output audio to cascaded amplifier boards. It cannot be connected with speakers.

### High/Low Level Voltage Output

- J12 PH-2mm-2Pos-Connector

Pin	Definition
1	SIG
2	GND

When the Bluetooth is connected, J12 will provide high level output voltage.

When the Bluetooth is connected, J12 will provide low level output voltage.

## INDICATORS

### Bluetooth Connection Indicator

- J13 PH-2mm-2Pos-Connector

Pin	Definition
1	STATUS
2	GND

### Microphone Mute Indicator

- J10 PH-2mm-2Pos-Connector

Pin	Definition
1	MUTE IND
2	GND

### Indicators State:

Indicator State	Bluetooth Connection	Microphone Mute
ON	Connected	Mute
OFF	Disconnected	Unmute

## CONTROL

### Microphone Mute

- J11 PH-2mm-2Pos-Connector

Pin	Definition
1	MIC MUTE
2	GND

### AMP Power OFF

- J9 PH-2mm-3Pos-Connector

Pin	Definition
1	+5V
2	PWR CYC

## **FCC Notice:**

*This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:*

- (1) This device may not cause harmful interference, and*
- (2) This device must accept any interference received, including interference that may cause undesired operation.*

*Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

*NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.*

*This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- Consult the dealer or an experienced radio/TV technician for help.*

## **RF exposure warning**

*This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.*

## **IC Caution:**

*This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:*

- (1) This device may not cause interference, and*
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.*

*Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.*

*L'exploitation est autorisée aux deux conditions suivantes:*

- (1) l'appareil ne doit pas produire de brouillage, et*
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

## **RF exposure warning**

*This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.*

*Cet équipement est conforme aux limites d'exposition aux radiations de la IC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.*