

# BDM9

## 2 x 300W Audio Amplifier Board

BDM9 is a high-power audio amplifier based on TI's TPA3255 IC, delivering 300W per channel into a 4Ω load. Besides that, BDM9 offers line and I2S signal output for more possibility.

### Features:

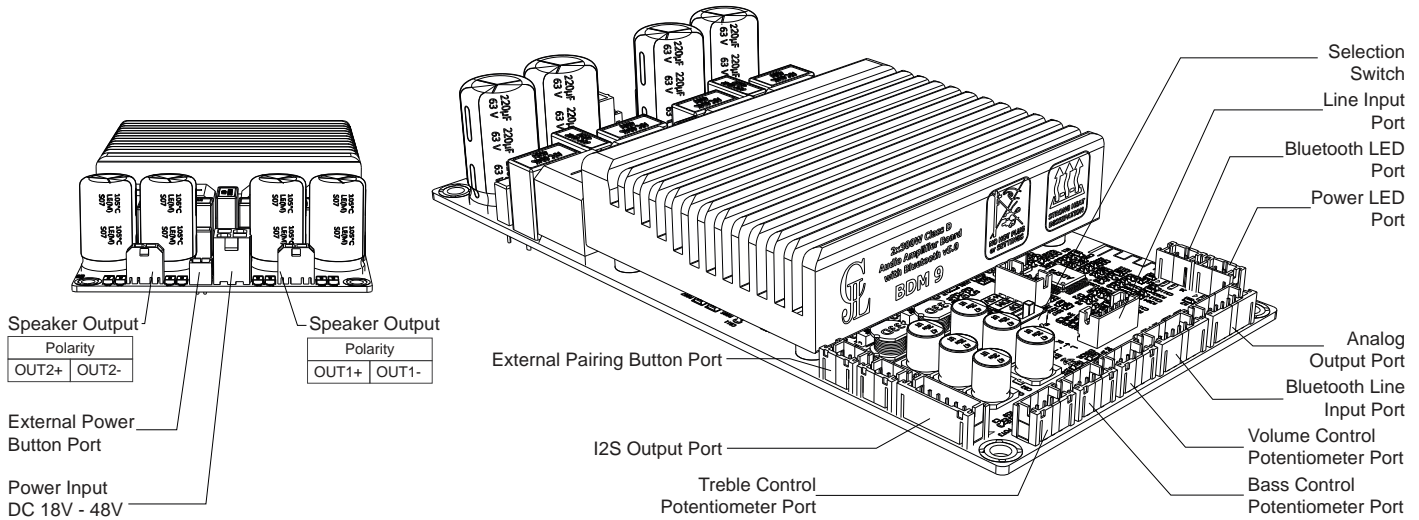
- |  |   |
|--|---|
| <p>High Power</p> <ul style="list-style-type: none"> <li>• Strong Driving Capacity</li> <li>• Robust Heatsink</li> <li>• High Reliability</li> </ul> | <p>High Performance</p> <ul style="list-style-type: none"> <li>• TPA3255 Amp IC, 2x300W</li> <li>• High Efficiency and Low Power Consumption</li> <li>• High Quality Component</li> </ul> |
|--|---|



Parameters:	
Bluetooth Version	v5.0
Bluetooth Name	CJL BDM9
Supply Voltage	DC 18V - 48V
Audio Input Source	Bluetooth & Line Input

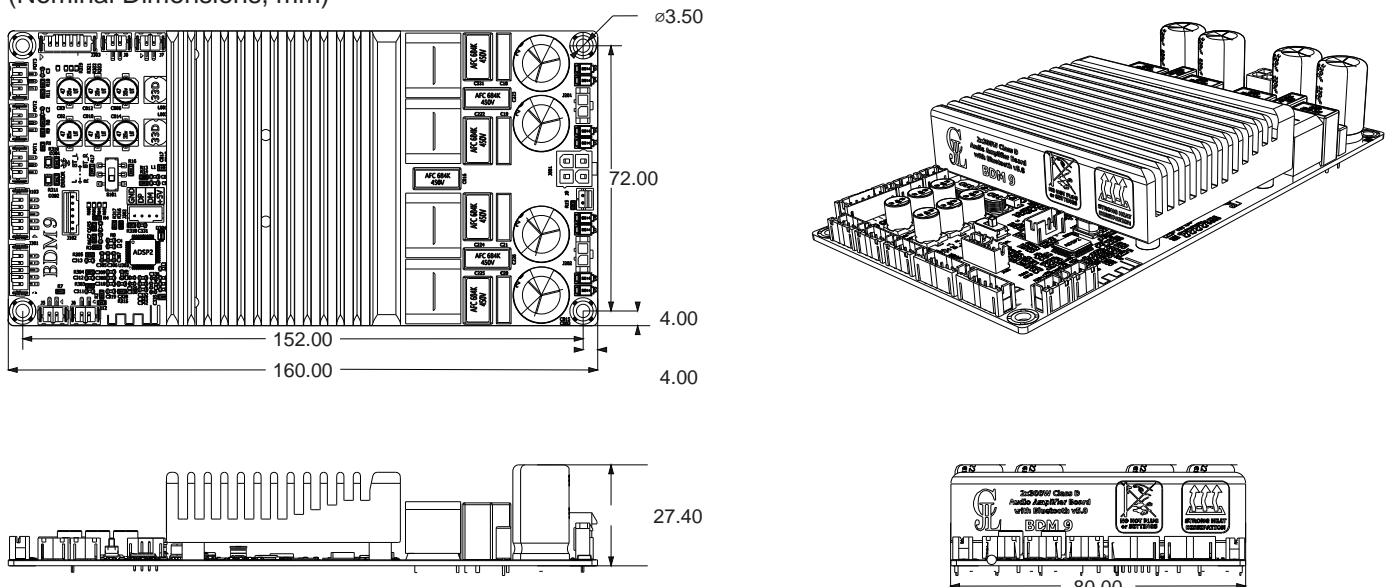
Output Channel	2.0 Channel
Output Power	300W + 300W
Product Size	160mm x 80mm x 27.40mm
Weight	420g

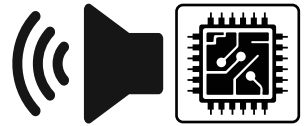
## Port Introduction



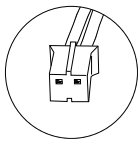
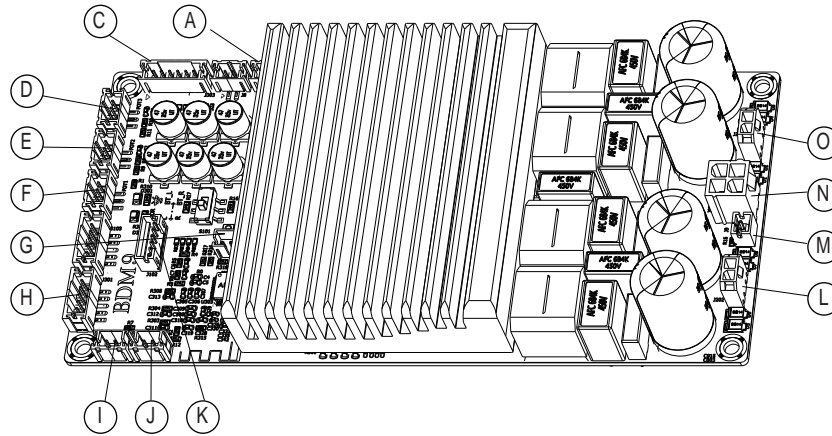
## Mechanical Drawing

(Nominal Dimensions, mm)



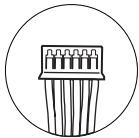


## Layout Ports and Control



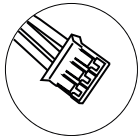
### 2-pin JST PH cable

**Port A:** This cable is used to connect pairing button to the amplifier.  
**Port I & J:** This cable is used to connect power and Bluetooth external LED to the amplifier.  
**Port M:** This cable is used to connect power external button to the amplifier.



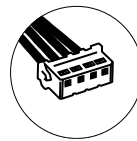
### 6-pin JST PH cable

**Port C:** This cable is used to connect a BDM9 amplifier board to another amplifier board that has an I2S port (board with 12S input) for I2S output.



### 3-pin JST PH cable

**Port D, E & F:** This cable is used to connect an external treble, bass and volume control potentiometer to the amplifier.



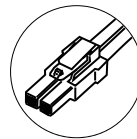
### 4-pin JST PH cable

**Port G:** This cable is used to connect a computer or laptop to the amplifier for PC UI programming purposes.



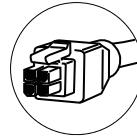
### 5-pin JST PH cable

**Port H:** This cable is used to output the audio signal from the amplifier to external speakers.  
**Port K:** This cable is used to input audio signals from external audio sources, such as music players or other audio devices, into the amplifier.



### 2-pin Mini-fit cable

**Port O & L:** This cable is used to connect the audio amplifier to the speakers.



### 4-pin Mini-fit cable

**Port N:** This cable is used to provide power (DC voltage ranging from 18V to 48V) to the device.

## PC UI Support (ACPWorkbench.exe)

When ACPWorkbench.exe is launched, it will automatically find and connect the BDM9 audio amplifier via the connected UART (serial) or USB (HID) port. Once connected, ACPWorkbench.exe will read all the configurations in the chip and update its GUI controls accordingly. Please ensure the BDM9 audio amplifier is connected to the PC and powered on. Whenever the BDM9 audio amplifier is powered on/off, ACPWorkbench will always try to re-connect it.



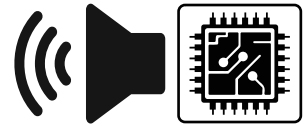
## Where can you get ACPWorkbench.exe?

You can download (ACPWorkbench.exe) at link below:

[http://files.sure-electronics.com/download/BDM&BRU\\_PCU1.zip](http://files.sure-electronics.com/download/BDM&BRU_PCU1.zip)

You can watch PC UI Control Tutorial Series at link below:

<https://www.youtube.com/watch?v=GRIUdU670HI>

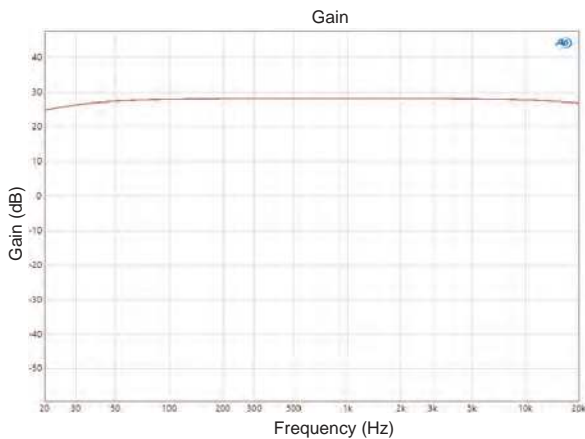


### Audio Performance

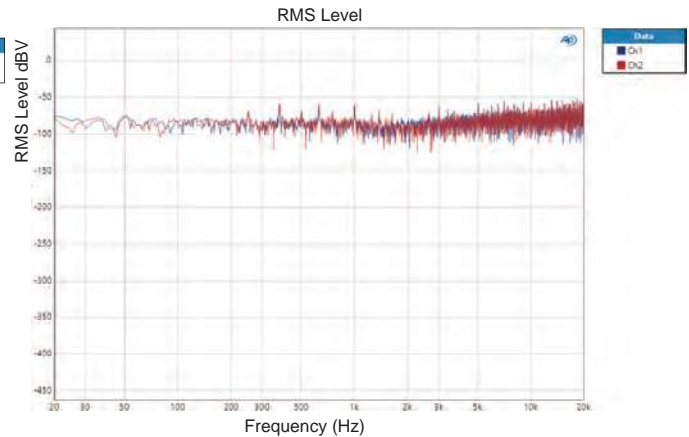
Specifications typical @ +25°C, Powered by 36V DC, unless otherwise noted. Specifications subject to change notice.

Parameters	Conditions		Min.	Typ.	Max.	Units
SNR	Line Input bypass Bluetooth module 2 x 300W @ 4Ω, A-weighting	OUT1	-	96.2	-	dB
		OUT2	-	95.9	-	dB
	Line Input through Bluetooth module 2 x 300W @ 4Ω, A-weighting	OUT1	-	95.2	-	dB
		OUT2	-	95.0	-	dB
THD + N	Line Input bypass Bluetooth module 5W @ 4Ω, 1kHz	OUT1	-	0.0083	-	%
		OUT2	-	0.0094	-	%
	Line Input through Bluetooth module 5W @ 4Ω, 1kHz	OUT1	-	0.0098	-	%
		OUT2	-	0.0125	-	%
Noise Floor	Line Input bypass Bluetooth module A-weighting, Input connected to GND	OUT1	-	210.5	-	uV
		OUT2	-	225.9	-	uV
	Line Input through Bluetooth module A-weighting, Input connected to GND	OUT1	-	234.5	-	uV
		OUT2	-	238.4	-	uV
Input Impedance	Line In & BT Line In @ 4Ω, 1kHz		-	20	-	kΩ
Sensitivity	Line Input bypass Bluetooth module 2 x 300W @ 4Ω, 1kHz	OUT1 & OUT2	-	4	-	V
	Line Input through Bluetooth module 2 x 300W @ 4Ω, 1kHz	OUT1 & OUT2	-	4	-	V
DC Bias	-		-	15	-	mV

### Frequency Response

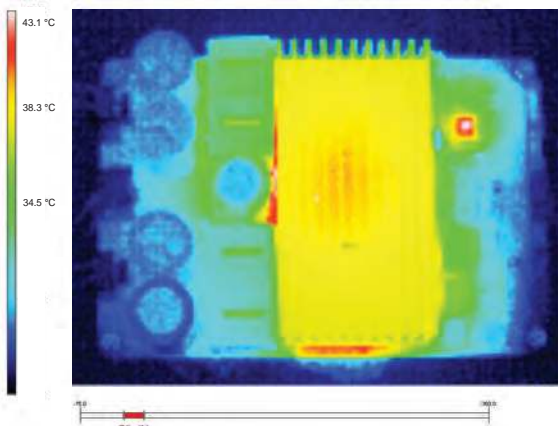


### Noise Level

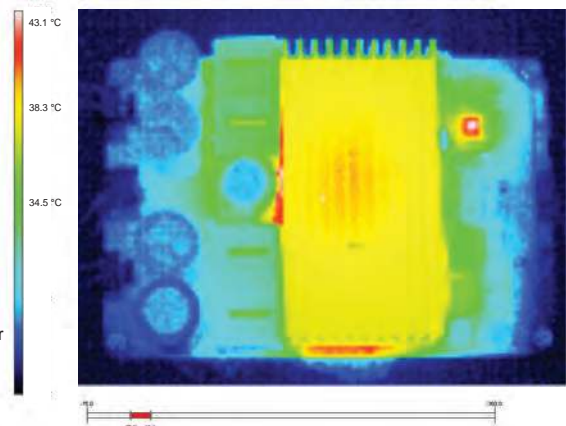


### Test Condition

Test conditions involve two different scenarios for power output and speaker impedance. The burn-in test is conducted for 3 minutes, and the impedance temperature should be maintained at 25°C for both conditions.



VVD = 40V  
Pout = 150W,  
Rload = 3Ω,  
Burn-in test for  
3 minute,  
Ta = 25°C



VVD = 40V  
Pout = 300W,  
Rload = 3Ω,  
Burn-in test for  
3 minute,  
Ta = 25°C