BVS2300

2x300W Bluetooth v5.0 Audio Amplifier Board with PC UI Programming Port

BVS2300 is a high-power audio amplifier based on TI's TPA3255 IC, delivering 300W per channel into a 4Ohm load.
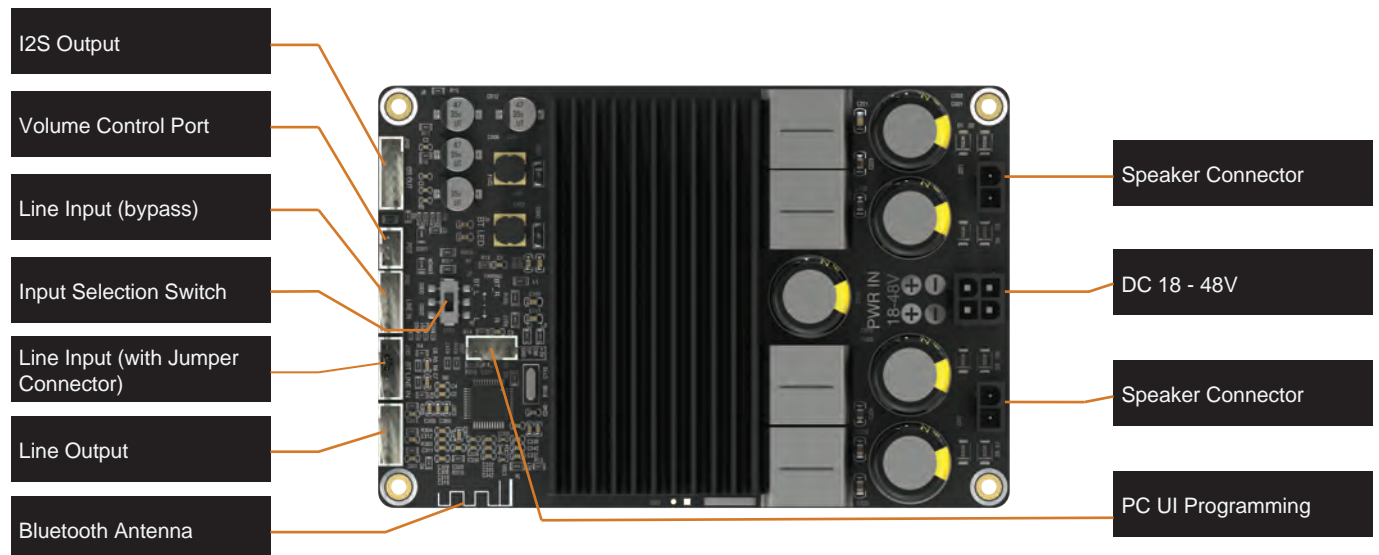
Features:
- External Potentiometer Port
- Bypass Mode (Direct Audio)
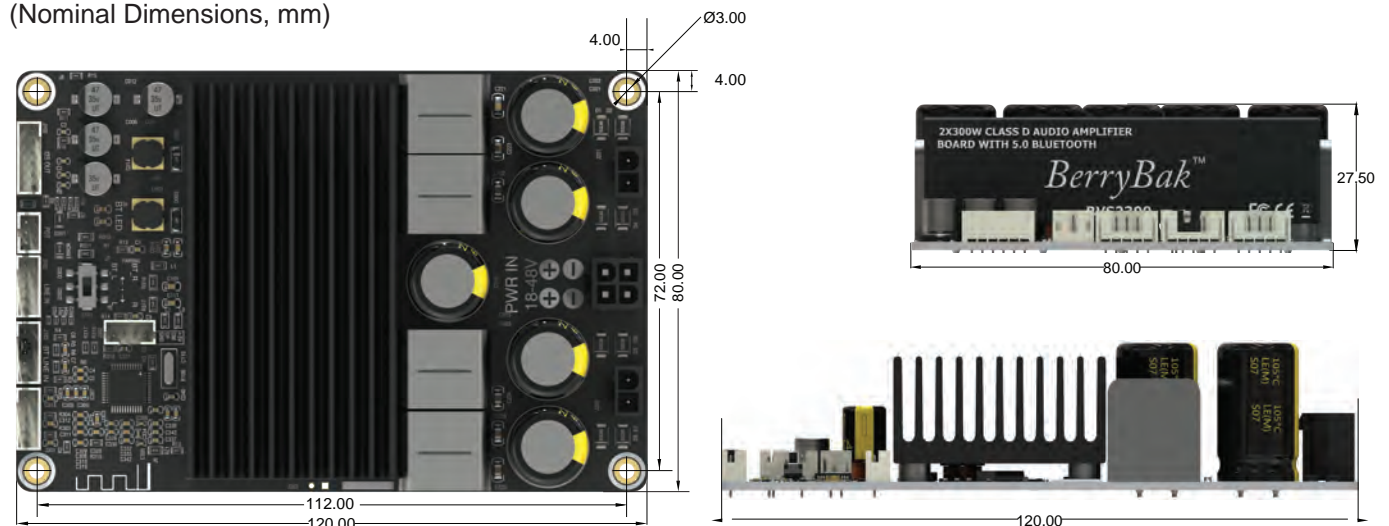- I2S Digital Output
- DSP-BP1048
- High-Quality Inductor

Parameters:	
Bluetooth Version	v5.0
Bluetooth Name	BVS2300
Supply Voltage	DC 18V - 48V
Audio Input Source	Bluetooth & Line Input

Parameters:	
Output Channel	2.0CH
Output Power	300W per Channel
Product Size	120(w) x 80(d) x 27.50(h) mm
Weight	232.9g

I2S Output

Volume Control Port

Line Input (bypass)

Input Selection Switch

Line Input (with Jumper Connector)

Line Output

Bluetooth Antenna

Speaker Connector

DC 18 - 48V

Speaker Connector

PC UI Programming

Mechanical Drawing
(Nominal Dimensions, mm)

Ø3.00
4.00
4.00
72.00
80.00
112.00
120.00

27.50
80.00
120.00

Layout Ports and Control
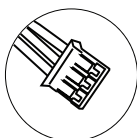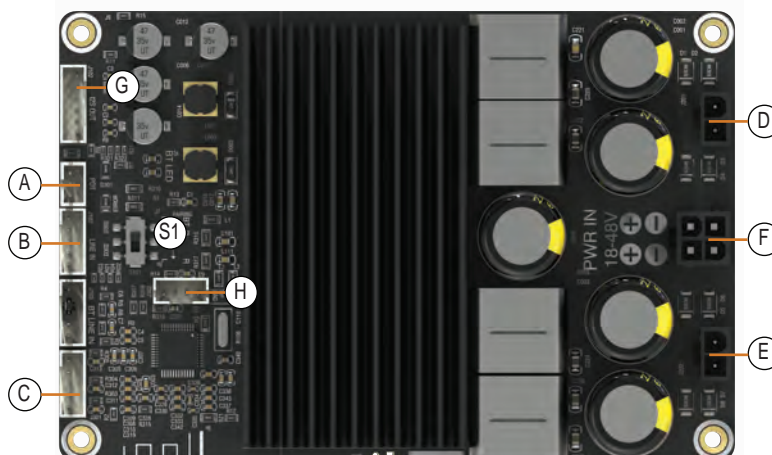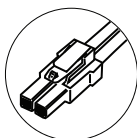

3-pin JST PH cable
Port A: This cable is used to connect an external volume control potentiometer to the amplifier.
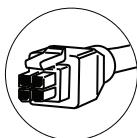
5-pin JST PH cable
Port B: This cable is used to input audio signals from external audio sources, such as music players or other audio devices, into the amplifier.
Port C: This cable is used to output the audio signal from the amplifier to external speakers.
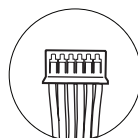
2-pin Mini-fit cable
Port D & E: This cable is used to connect the audio amplifier to the speakers.

4-pin Mini-fit cable
Port F: This cable is used to provide power (DC voltage ranging from 18V to 48V) to the device.
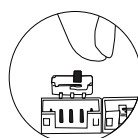
6-pin JST PH cable
Port G: This cable is used to connect a BVS2300 amplifier board to another amplifier board that has an I2S port (board with 12S input) for I2S output.

4-pin JST PH cable
Port H: This cable is used to connect a computer or laptop to the amplifier for PC UI programming purposes.

Input Selection Switch
S1: By using this input selection switch, the user can easily switch between these two input sources as needed, providing flexibility in the way audio is input to the device or system. It's a convenient feature for users who want to choose between Bluetooth streaming and direct line input when using the device.

Accessories

| Power Cable	2-pin Mini-fit cable	JST PH 5 Pin to 3.5mm Socket Cable	JST PH 6 Pin to 3 Pin Cable	JST PH 6 Pin Cable	JST PH 4 Pin to USB Type-A Cable
Usage: Connect to compatible power source.	**Usage:** These cables are used to connect audio amplifiers to suitable speaker(s).	**Usage:** This cable is used to connect a source device (e.g., a smartphone, MP3 player, or computer) to the amplifier's line input and output.	**Usage:** External potentiometer for volume control.	**Usage:** I2S output for digital audio signal.	**Usage:** PC UI Programming for online real-time configuration.

Supplied Accessories   **Optional Accessories**
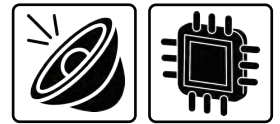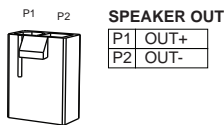
Pin Definition

Line Input (J102)
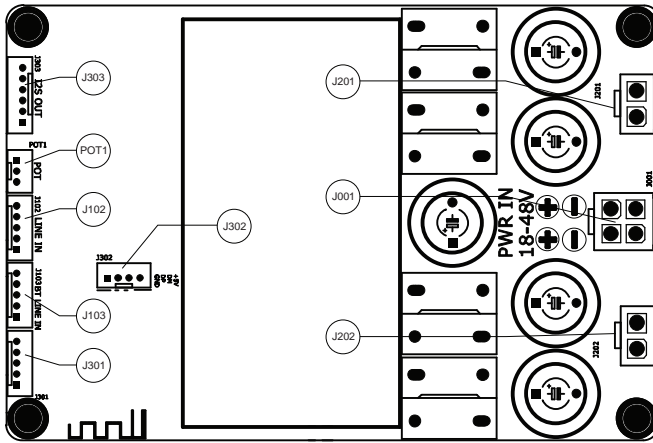
	LINE IN
P1	NC
P2	NC
P3	RIN
P4	GND
P5	LIN
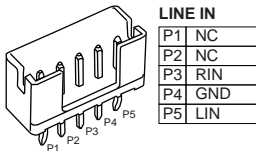
Circuit	Definition	Description
P1	NC	No Connection
P2	NC	No Connection
P3	RIN	Analog Input for Right Channel
P4	GND	Ground
P5	LIN	Analog Input for Left Channel

I2S Output (J303)

	I2S OUT
P1	MCLK
P2	NC
P3	GND
P4	DATA_IN
P5	BCLK
P6	LRCLK
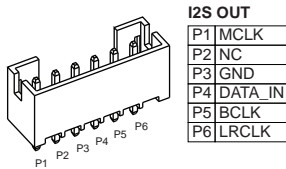
Circuit	Definition	Description
P1	MCLK	Master Clock Input
P2	NC	No Connection
P3	GND	Ground
P4	DATA_IN	Data Input
P5	BCLK	Bit Clock Line
P6	LRCLK	Left & Right Clock Line

Speaker Output (J201)

	SPEAKER OUT
P1	OUT+
P2	OUT-

Circuit	Definition	Description
P1	OUT+	(+ve) Output for Left Channel
P2	OUT-	(-ve) Output for Left Channel

Speaker Output (J202)

	SPEAKER OUT
P1	OUT+
P2	OUT-
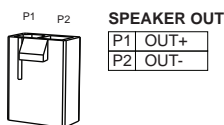
Circuit	Definition	Description
P1	OUT+	(+ve) Output for Right Channel
P2	OUT-	(-ve) Output for Left Channel

Volume Control (POT1)

	VOLUME
P1	GND
P2	VOL
P3	3.3V
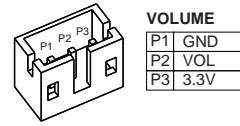
Circuit	Definition	Description
P1	GND	Ground
P2	VOL	Volume
P3	3.3V	Power (3.3V)

Bluetooth Line Input (J103)

	BT LINE_IN
P1	NC
P2	KEY
P3	BT_R
P4	GND
P5	BT_L
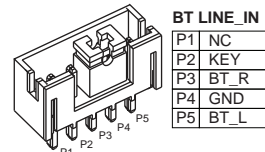
Circuit	Definition	Description
P1	NC	No Connection
P2	KEY	AUX Analog Input Detect
P3	BT_R	Bluetooth Input for Right Channel
P4	GND	Ground
P5	BT_L	Bluetooth Input for Left Channel

PC UI Programming (J302)

	PC UI
P1	+5V
P2	DM
P3	DP
P4	GND
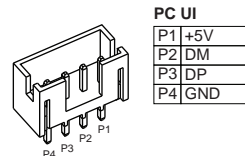
Circuit	Definition	Description
P1	+5V	Power (5V)
P2	DM	Data Minus
P3	DP	Data Plus
P4	GND	Ground

Line Output (J301)

	ANALOG OUT
P1	MIX
P2	NC
P3	ROUT
P4	GND
P5	LOUT
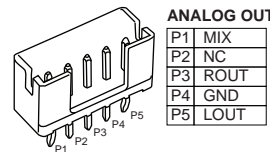
Circuit	Definition	Description
P1	MIX	Mix (Left & Right Channel)
P2	NC	No Connection
P3	ROUT	Analog Output for Right Channel
P4	GND	Ground
P5	LOUT	Analog Output for Left Channel

Power Input (J001)

	PWR IN
P1	VIN
P2	VIN
P3	GND
P4	GND
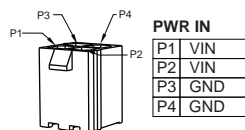
Circuit	Definition	Description
P1	VIN	Voltage Input
P2	VIN	Voltage Input
P3	GND	Ground
P4	GND	Ground
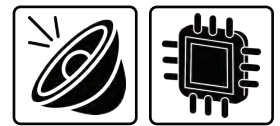
Launch ACP Workbench

Figure 1: Connect the BVS2300 to a personal computer or laptop and ensure that you have installed the ACP Workbench application.

When ACPWorkbench.exe is launched, it will automatically find and connect the BVS2300 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 BVS2300 audio amplifier is connected to the PC and powered on. Whenever the BVS2300 audio amplifier is powered on/off, ACPWorkbench will always try to re-connect it.
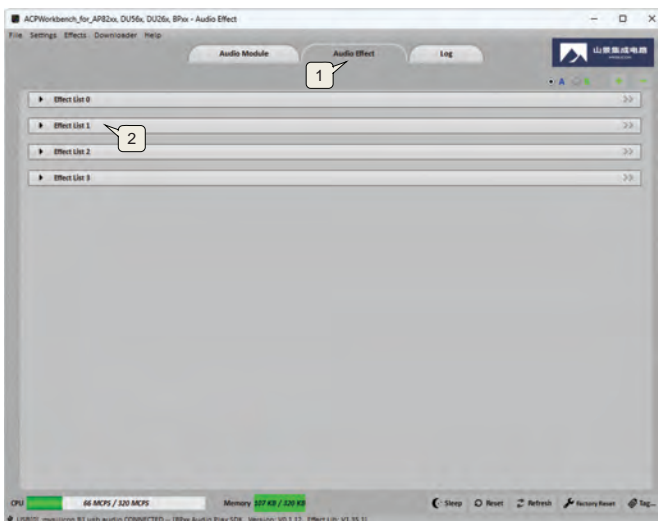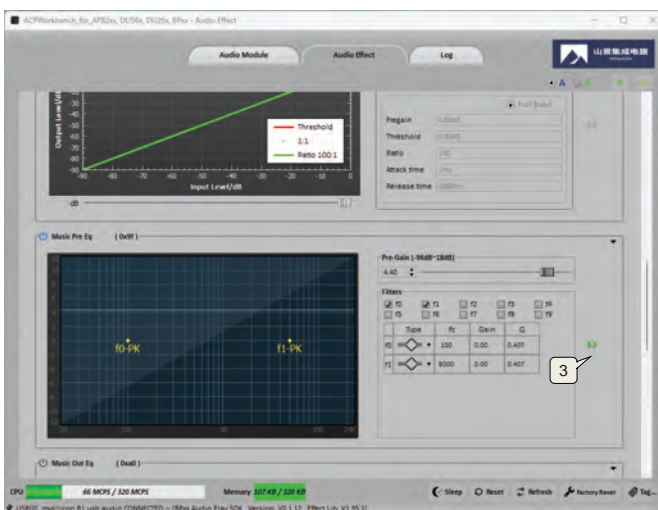

Figure 2: Audio effect page.

Figure 3: Effect list 1 for Music Pre EQ.
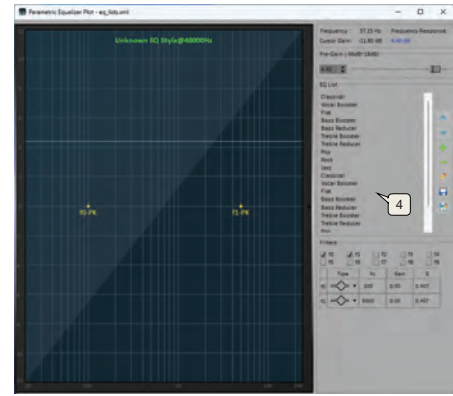

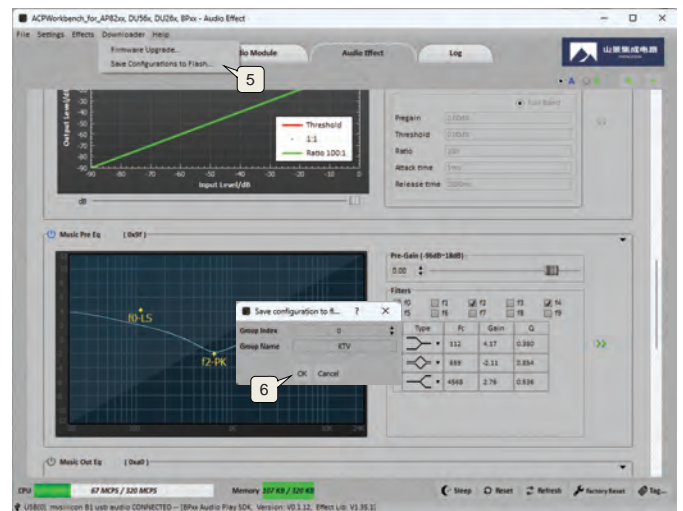**Figure 4:** Preset EQ list.

Figure 5: Save operation.

1. The audio effect page features four distinct Effect Lists, catering to various sources: Effect List 0 for Microphone, Effect List 1 for Music Pre EQ, Effect List 2 for Guitar Amplifier, and Effect List 3 for recorded audio.
2. Equalization (Pre-EQ) serves the purpose of shaping the overall frequency response of the music input.
3. To access more details about shaping the overall frequency response, click on the right arrow button.
4. Users have the option to select from a range of Preset EQ lists, including Classical, Jazz, Vocal Booster, and more, allowing for convenient customization of the audio experience.
5. To save your configurations, click on "Downloader" and then select "Save Configurations to Flash." This action ensures that your settings are stored for future use.
6. Click "OK" in the pop-up window. This action ensures that the process will continue to run even if the device is powered off.

Where can you get ACPWorkbench.exe?

You can download (ACPWorkbench.exe) at link below:
http://files.sure-electronics.com/download/BDM&BRU_PCUI_ACPWorkbench_V2.24.2(2).zip

You can watch PC UI Control Tutorial Series at link below:
*https://www.youtube.com/watch?v=GRlUdU670HI*
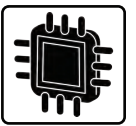
Audio Performance

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
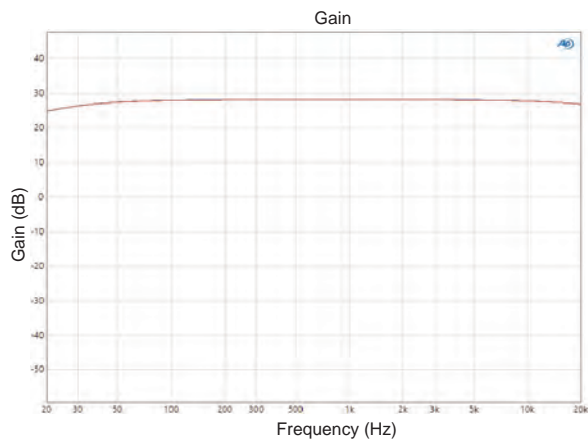
Noise Level
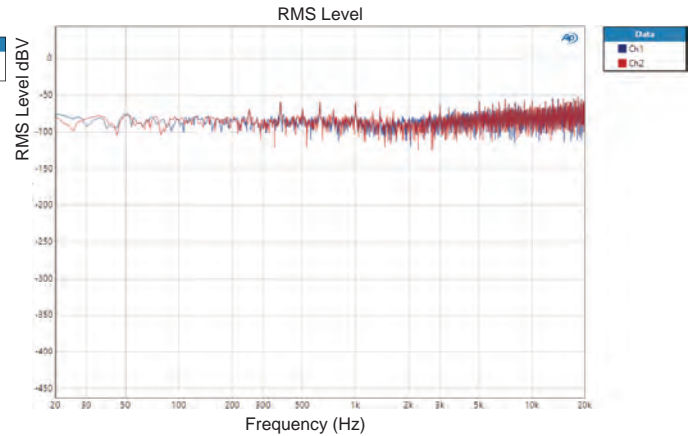
Test Condition

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.
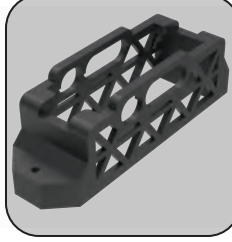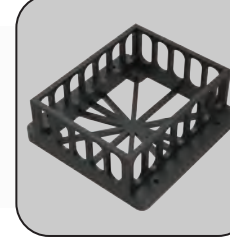

VVD = 40V Pout = 150W, Rload = 3Ω, Burn-in test for 3 minute, Ta = 25°C

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

Designed by:

BerryBak™
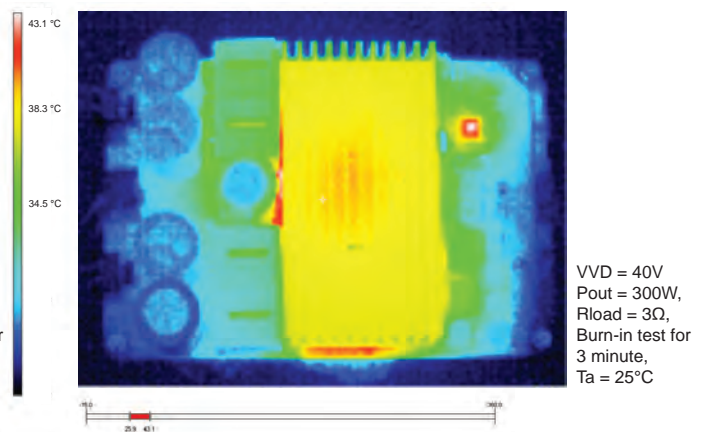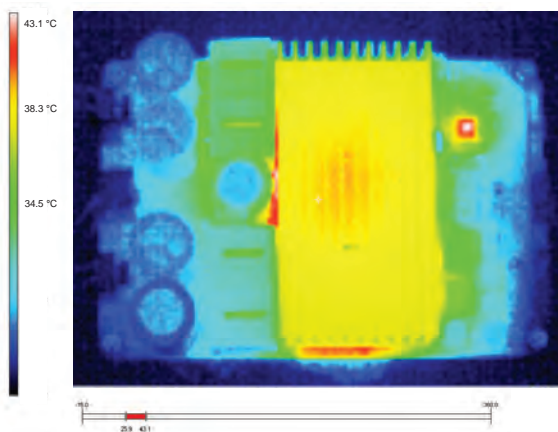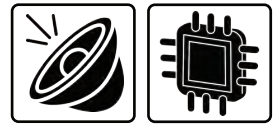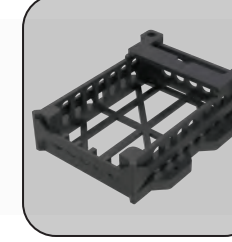
BVS Series Product Overview

BVS25	BVS26B	BVS250T	BVS255TB	BVS2150	BVS2300
Output Power 2x5W	**Output Power** 2x6W	**Output Power** 2x50W	**Output Power** 2x50W	**Output Power** 2x150W	**Output Power** 2x300W + 2x300W
Power Supply USB Type-C DC 5V	**Power Supply** USB Type-C DC 5V/Battery	**Power Supply** DC 12-19V	**Power Supply** DC 12-19V	**Power Supply** DC 15-36V	**Power Supply** DC 15-48V
BT V5.0 BT TWS	**BT V5.0** BT TWS	**BT V5.0**	**BT V5.0**	**BT V5.0**	**BT V5.0**
PC UI N	**PC UI** N	**PC UI** Y	**PC UI** N	**PC UI** Y	**PC UI** Y

BVS Series Product Accessories

Product accessories can be downloaded on our website. We provide STL files for the purpose of 3D printing. If you have a 3D printer, you can continue to print them on your own. Alternatively, if you don't have a printer, you can send the STL file we provided to a store that offers 3D printing services.

BVS25	BVS26B	BVS250T	BVS2150	BVS2300

Warranty Terms and Product Usage Restrictions

Berrybak products come with a one-year warranty starting from the date of purchase. Customers are responsible for the cost of returning the goods to the seller, and by making a purchase, you agree to this condition. Due to the nature of DIY products, visible damage or use on screw holes or tinning of solder pads directly invalidates the warranty. Damage caused by the use of incorrect power sources, such as exceeding the specified voltage range or reverse polarity, is not covered under warranty. All Berrybak products undergo through testing before shipment. We do not accept bulk returns after a bulk purchase. If you are unsure of the quantity you need, please purchase the appro-priate quantity as needed. All Berrybak products are intended for DIY use only and do not support any industrial applications. The rated operating temperature range is 0-40°C. Please refrain from using Berrybak products in industrial or anyspecial industrial environments. If you require products tested for industrial operating temperature ranges, we recommend seeking products clearly labeled to support operating ranges such as -20-65°C or -40-85°C.

Bulk Purchase Rights

All rights for bulk purchase are limited to the quantity acquired. For industrial customers seeking quantities below 100 units are welcome to make continuous purchases. Additionally, we offer the option to unlock special price rates, providing cost-effective solutions tailored to your needs. For distributors can follow our distribution pricing arrangement. You can request to gain a better understanding of the terms and conditions associated with our special price rates and distribution pricing by reaching out to our customer support at: **service@berrybak.com.**

Retail Purchases: Retail purchases can exclusively be made through our official website platforms only at **Berrybak Audio Store (Ali Express)**. The listed prices visible on the platform are the retail prices and subject to change.

Customization for 500 Units or More: For purchases meeting the minimum quantity of 500 units, customers can have their brand logo placed on the PCB or panel. However, please note that Berrybak does not provide customization services such as changing PCB dimensions or adding/removing ports. We offer customization with options like adding your brand logo with silkscreen, offering various surface finishing options, and adjusting panel thickness.

Pricing Information: We offer a three-tier pricing structure: the retail price for single units, discounted rates for purchase above 100 Units, and further discounts for purchase above 500 units contact us for specific pricing details customized to your needs.If your purchase doesn't meet our standard pricing requirements, you can request a custom quote by reaching out to our email at: **service@berrybak.com.**

Origin and Design Location

All Berrybak products are designed, manufactured, assembled, and shipped from Malaysia. The products' country of origin is Malaysia. We do not provide any services for sales, shipping, or manufacturing from other regions.

Designed by:

BerryBak™

To view our products and purchase, please check the Taobao or Aliexpress website by searching for the product name (example: BVS25).