



DSPA24D

OWNER MANUAL DSP CAR POWER AMPLIFIERS



- Please read this quick guide before using the product
- For detailed tuning operations and settings, please refer to the DSPA24D user manual on the website
- <https://www.awaveaudio.com>



Warning

This symbol indicates important instructions. Failure to pay attention may result in serious injury or death to persons.

If a problem occurs, stop using it immediately

Failure to do so may result in personal injury or damage to this product. Please return the product to an authorised dealer or to the nearest service centre for repair.

This product is only suitable for use in vehicles with a negative 12V ground

Failure to do so may cause a fire or other accident.

Wiring and installation by professionals

Wiring and installation of this product requires specialist skills and experience. For safety reasons, please contact the dealer from whom you purchased the product for installation.

Do not disassemble or modify

Failure to do so may result in an accident, fire or electric shock.

Small objects such as bolts or screws should be kept out of the reach of children

Swallowing small objects can lead to serious injury. If swallowed, seek immediate medical attention.

Do not use any function that will distract you while driving

Any function that interferes with your concentration should only be used when the car is fully stopped. If you wish to use these functions, park the vehicle in a safe place first. Failure to do so may result in an accident.

It is important to keep the volume at a level where you can still hear the noise outside the vehicle while driving.

Not being able to hear emergency vehicle sirens and road warnings (train crossings etc.) is very dangerous and can lead to accidents. In addition, excessive noise levels can lead to hearing damage.



Note

This symbol indicates important instructions. Failure to pay attention may result in serious injury or death to persons.

Product cleaning

Please use a dry, soft cloth to clean the product regularly. If the pollution is difficult to remove, please use water to wet the soft cloth. Other electronics cleaners can also be used.

Temperature

Make sure the temperature in the car is between +60 and -20°C before switching on the machine.

Repairs

If you encounter a problem, do not repair it yourself. Please take the product to your authorized dealer or a nearby service centre for repair.

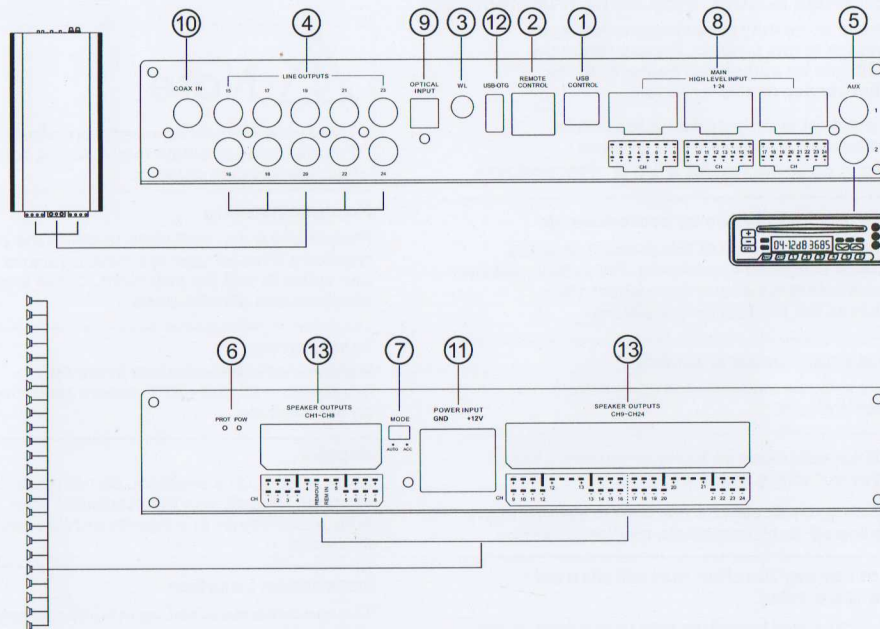
Installation Location

The machine must not be installed in any of the following locations.

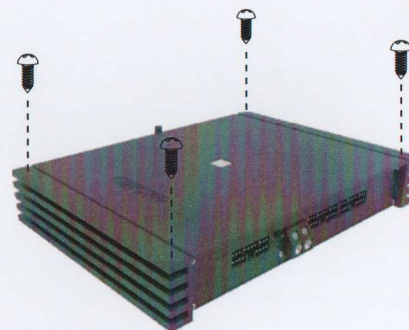
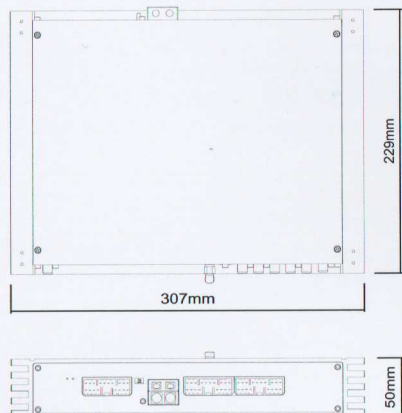
- near direct sunlight and heat sources
- Places with high temperatures and near water sources
- Dusty places
- places subject to severe vibrations

Machine Introduction

Machine interface illustration

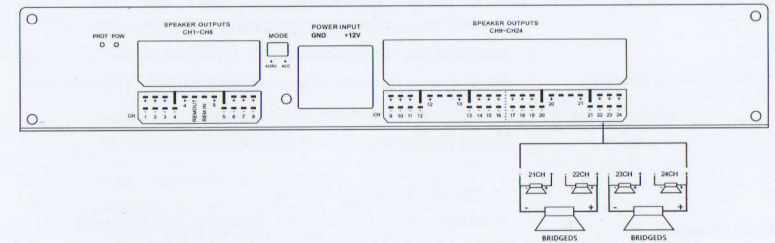


Dimension Installation instruction



Machine Introduction

Bridge diagram



Introduction to machine interfaces and functions

- ① **USB port**
It can be connected to a PC via USB cable for detailed tuning operations and settings.
- ② **DRC controller input**
- ③ **WL**
- ④ **RCA audio output connector**
24 sets of RCA audio signal outputs for connection to external amplifiers.
- ⑤ **AUX RCA input connector**
LINE INPUT audio signal inputs, can be connected to the LINE INPUT audio signal output of the car CD/DVD player.
- ⑥ **Power indicator**
- ⑦ **Input selector switch**
When the switch is set to "ACC", the machine is started by ACC; when the switch is set to "AUTO", the machine is started by the high level input signal FL-/FL+.
- ⑧ **High level input**
- ⑨ **OPTICAL INPUT**
- ⑩ **Coaxial input**
- ⑪ **GND +12V**
- ⑫ **OTG input interface**
- ⑬ **SPEAKER OUTPUT**

SPEAKER OUTPUTS CH1-CH8	
CH1 OUT+	CH1 OUT-
CH2 OUT+	CH2 OUT-
CH3 OUT+	CH3 OUT-
CH4 OUT+	CH4 OUT-
CH5 OUT+	CH5 OUT-
CH6 OUT+	CH6 OUT-
CH7 OUT+	CH7 OUT-
CH8 OUT+	CH8 OUT-

SPEAKER OUTPUTS CH9-CH16	
CH9 OUT+	CH9 OUT-
CH10 OUT+	CH10 OUT-
CH11 OUT+	CH11 OUT-
CH12 OUT+	CH12 OUT-
CH13 OUT+	CH13 OUT-
CH14 OUT+	CH14 OUT-
CH15 OUT+	CH15 OUT-
CH16 OUT+	CH16 OUT-

SPEAKER OUTPUTS CH17-CH24	
CH17 OUT+	CH17 OUT-
CH18 OUT+	CH18 OUT-
CH19 OUT+	CH19 OUT-
CH20 OUT+	CH20 OUT-
CH21 OUT+	CH21 OUT-
CH22 OUT+	CH22 OUT-
CH23 OUT+	CH23 OUT-
CH24 OUT+	CH24 OUT-

17 INPUT -	17 INPUT +
18 INPUT -	18 INPUT +
19 INPUT -	19 INPUT +
20 INPUT -	20 INPUT +
21 INPUT -	21 INPUT +
22 INPUT -	22 INPUT +
23 INPUT -	23 INPUT +
24 INPUT -	24 INPUT +

Accessory list

The following accessories should be included in the DSPA24D box. If there is any shortage, please contact the authorized supplier

Accessories	Quantity
Input output line	6 unit
USB cable 5M	1 unit
Fixing bracket	4 pcs
Instruction manual	2 books

Specification

HI-End level components	The DSP chip adopts ADI high-performance chip: ADAU1452 Analog to Digital Converter (ADC): AKM5538 HI End 768KHz/32-bitdigital signal ital to Analog Converter (DAC): AKM4458 HI End 768KHz/32-bit Professional audio operational amplifier Hi End Professional Audio Capacitor
Input channel	24 high-level inputs, 2 aux inputs Fiber optic input, coaxial input, Supports 192kHz/32-bit OTG input, Supports 192kHz/32-bit Bluetooth input
High level input combined frequency	Each channel supports up to 24 independent input combined frequencies
Bluetooth	Bluetooth 5.0 Bluetooth protocol: A2DP/AVRCP Bluetooth format: aptx/aptx HD/AAC/SBC
Output channel	24 high-level outputs, 10 RCA outputs
Amplifier output	D-class amplifier: 20CHx50W+4CHX100(4Ω,14.4V, 1kHz, 1%THD) (CH21-CH24) 4X150(2Ω,14.4V, 1kHz, 1%THD)
Signal to noise	≥100dB
Total ramp distortion	≤0.001%
Input sensitivity	RCA/Cinch : 1-8V High level: 8-32V
Input impedance	RCA/Cinch : 22k High level: 3.3-100Ω
RCA output voltage	1.5v
Operating Voltage	9~17V
Input channel equalizer	Each input channel has an independent 10-segment equalizer Filter type: PE (peak)/LS (low rack)/HS (high rack)/1st order, 2nd order ALLPASS (all pass filter) Center frequency point: 20Hz~20KHz Q value: 0.3~15 Gain: -15db~+15db
Dynamic Loudness (DLC)	High level, AUX, fiber optic, coaxial, Bluetooth, OTG and other input source (DLC) parameter settings
Intelligent audio mixing	Intelligent recognition and automatic switching of save modes for any multiple input audio sources
Spatial audio	8-channel input Each channel independently adjusts the output volume gain: -40dB~0dB Each channel independently adjusts polarity: positive/negative phase Each channel independently adjusts the delay, with a delay range of 0-20ms The spatial audio channels are: front sound field, rear sound field, center sound field, starry sky surround sound field, and subwoofer
Output signal divider	Each channel is independently adjustable Filter type: Butterworth/Nink-Rein/Bessel Filter frequency: 20Hz~20KHz Filter slope: 6dB/Oct~48dB/Oct
Output phase	Independent adjustment for each channel: 0°~360°

Output polarity	Each channel is independently adjustable: positive/negative
Output delay	Independent adjustment for each channel: 0~20ms
Output channel equalizer	Each channel has an independent 31 segment equalizer Filter type: PE (peak)/LS (low rack)/HS (elevated)/1st order, 2nd order ALLPASS (all pass filter) Center frequency point: 20Hz~20KHz Q value: 0.3~15 Gain: -15dB~+15dB
Equalizer joint debugging mode	Independent adjustment / absolute linkage adjustment / relative linkage adjustment / crossover point linkage adjustment
Output volume	Single channel output volume: mute, -40dB~0dB Single channel subwoofer: mute, -40dB~0dB Total volume of subwoofer: mute, -40dB~+12dB Total volume adjustment: mute, -40dB~+6dB
Line control extend	Mode selection, total volume control, bass total volume control
Computer tuning	Windows system, XP system, USB interface, no drive required

Harmful substance composition

Name and content of harmful substances or elements in the product.

Component name	Harmful substance or element					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
Circuit board components	X	O	O	O	O	O
Housing components	O	O	O	O	O	O
Display components ×	X	O	O	O	O	O
Accessories ×	X	O	O	O	O	O

This form is prepared in accordance with the requirements of SJ/T 11364

○: Indicates that the content of the hazardous substance in all homogeneous materials of the part is below the limit requirements specified in GB/T 26572

×: means that the content of the hazardous substance in at least one homogeneous material of the part exceeds the limit specified in GB/T 26572.

Components marked with an "x" have been found to exceed the limit because there is currently no proven alternative technology available to the industry.

Repair Station Information

- For inquiries regarding repairs, please refer to the "Repair Station Information" below.
- The name, telephone number and address of the repair station are subject to change.

No	Repair Station	Address	Contact person	Phone number
01	Foshan, China	602, 6th Floor, Building 1, Nanlian East U Valley Headquarters Economic Port, Guicheng Street, Nanhai District, Foshan City, Guangdong, China	Miss Deng	19866009958