

Product Specification

Product Name: Vehicle Intelligent DSP Amplifier

Model: CA136

Design Number: _____

Version : _____

Date: _____

Prepared by	
Reviewed by	
Approved by	

XIAMEN HARINE TECHNOLOGY CORPORATION LIMITED.

Record of Revision

No.	Content	Date	Revised by
1	Initial release		
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I. Scope of Application

This specification document applies to the CA136 model vehicle intelligent DSP amplifier developed and manufactured by Harine Company. Any modifications will not be communicated separately, and Harine Company reserves the final interpretation rights.

2. Reference Standards

The development of this specification document referred to the following standards

GB/T 26775-2011 General Technical Requirements for Vehicle Audio-Video Systems

GB 5296.2-2008 Instructions for Use of Consumer Goods Instructions for Use of Household and Similar Electrical Appliances

GB/T 9384-2011 Environmental Test Requirements and Test Methods for Radio Receivers, Television Receivers, Tape Recorders, and Audio Power Amplifiers (Speakers)

GB/T 13837-2012 Allowable Values and Measurement Methods for Interference Characteristics of Sound and Television Broadcast Receivers and Related Equipment

GB/T 413-2015 Basic Technical Conditions for Automotive Electrical Equipment

TB/T 3058-2016 Railway Applications, Electromechanical Vehicle Equipment, Impact and Vibration Testing

GB18655-2018 Vehicles, Ships and Internal Combustion Engines-Radio Interference Characteristics-Limits and Measurement Methods for Protection of Vehicle Receivers

GB/T17619-1998 Limits and Measurement Methods for Electromagnetic Radiation Interference Resistance of Electronic and Electrical Components in Motor Vehicles

GB18655-2018 Vehicles, Ships and Internal Combustion Engines-Radio Interference Characteristics-Limits and Measurement Methods for Protection of Vehicle Receivers

GB/T17619-1998 Limits and Measurement Methods for Electromagnetic Radiation Interference Resistance of Electronic and Electrical Components in Motor Vehicles

3. Product Overview

The CA136 Vehicle Intelligent DSP Amplifier is a DSP amplifier specifically developed for buses by our company. It includes a DSP amplifier unit, standard power cable, speaker cable, and audio cable.

The amplifier supports 8-channel speaker audio output, utilizing high-power digital amplifier chips and DSP processing chips to enable independent driver control for each audio channel in standard 8-speaker configurations.

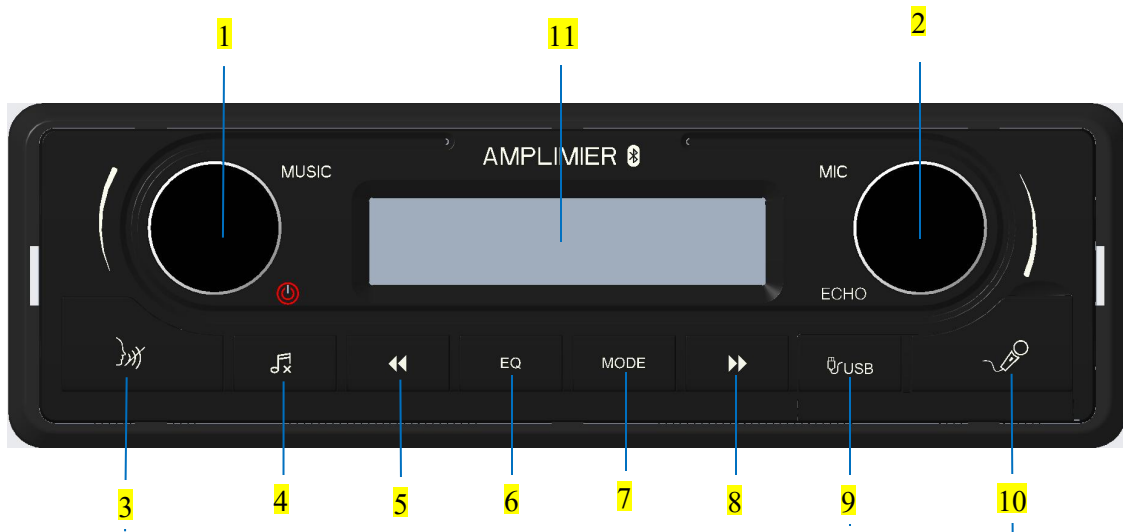
Audio effects for each channel can be adjusted through PC software or mobile apps, optimizing overall vehicle audio performance and enhancing user listening experience.

It supports USB music playback and built-in Bluetooth functionality (excluding voice calls). The amplifier incorporates a whistling suppression algorithm to effectively reduce microphone feedback when microphones are placed near speakers, along with an integrated acoustic cancellation algorithm for basic backing vocals reproduction. Supporting low-signal audio input/output, it ensures compatibility with various external devices.

Equipped with CAN communication capabilities, it enables speed-based volume compensation and automatic volume adjustment during air conditioning modes.

The system supports simultaneous operation of 3 wired microphones and 2 wireless microphones, facilitating multi-microphone setups to better meet operational needs for both drivers and passengers.

4. Product Appearance



Panel feature description:

4.1 MUSIC VOL knob — Rotate left/right to adjust main volume, with dual power control: short press to turn on, long press to turn off. If the amplifier remains powered on during power loss, it requires memory retention for automatic activation upon power restoration. The maximum volume setting should not exceed the displayed value of 30.

4.2 MIC VOL knob — Rotate left/right to adjust microphone volume. Features integrated ECHO microphone reverb control. Press briefly to enter adjustment mode; rotate left/right to adjust reverb level. The ECHO state will exit if no action is taken within 5 seconds.

4.3  Button – Music track removal function. Short press this button to remove vocals and keep only the instrumental track. Press again to restore.

4.4  Button – Mute background audio. Short press this button to play only microphone audio. Press again to cancel background mute and resume both microphone and background audio.

4.5  Button – Use to play the previous track and control Bluetooth music and MP3 playback.

4.6 EQ (Effect Control) – presets multiple sound effects: Standard, Retro, Rock, Jazz, etc. Short press to cycle through preset effects; long press to switch between them.

4.7 MODE — Mode switching. Press and hold this button to cycle between USB, BT, and AUX IN.

4.8  Button – Next track for music playback, controls Bluetooth and MP3 music.

4.9 USB port*1 — Supports MP3 playback and charging (for phones and wireless microphones)

4.10 6.35mm microphone jack*1

4.11 The display screen shows all operational statuses of the product.

5. Functional Characteristics

5.1 Wide voltage input range of 18-36V,12V power output

5.2 Equipped with a high-power digital amplifier and 8 high-level audio outputs, capable of independently driving at least 8 speakers.

5.3 Equipped with an integrated DSP audio processing chip, supporting tuning via PC software and mobile apps. Note: Tuning is primarily available for factory debugging of new vehicle models.

Once parameters are validated, they can be permanently programmed into the amplifier unit. During mass production, these settings remain unchanged without speaker replacement or positional adjustments. To prevent configuration errors, end-users are generally not permitted to modify the parameters.

5.4 Supports 3 wired microphone inputs (1 front and 2 rear) and 2 wireless microphone inputs.

5.5 Supports standard configuration with one small signal input and one output channel each.

5.6 Supports USB music playback with previous and next track features.

5.7 Supports Bluetooth music playback and previous/next track functions.

5.8 The built-in feedback suppression algorithm effectively reduces feedback when the microphone is positioned close to the speaker.

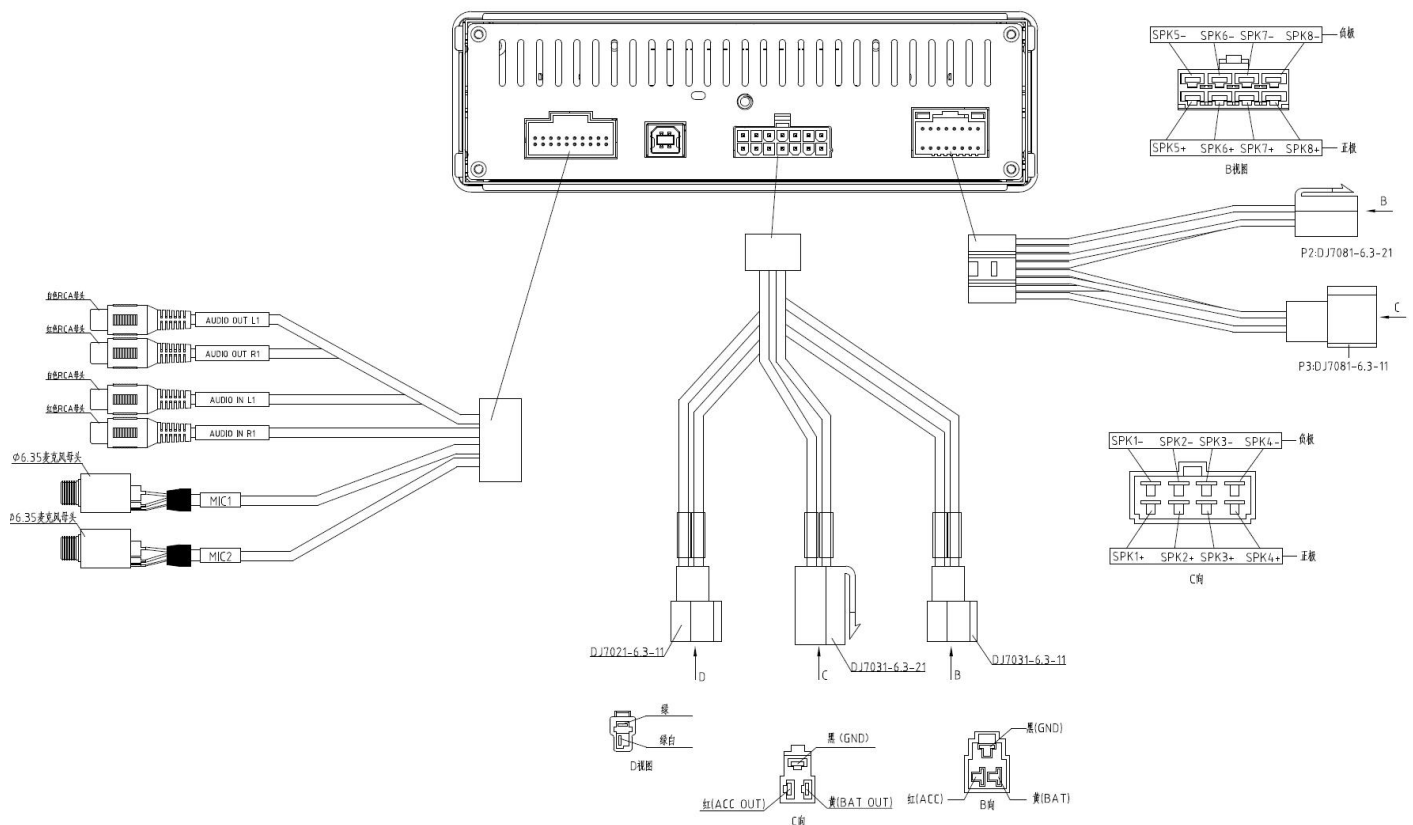
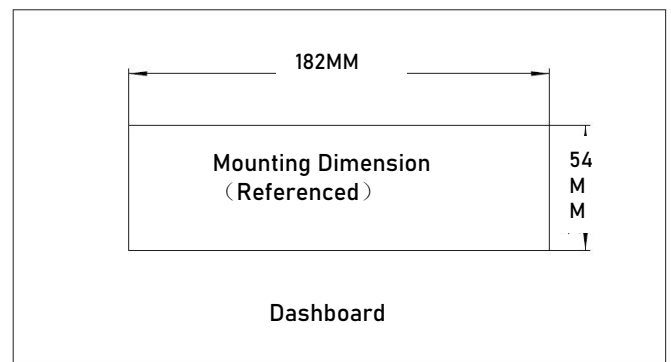
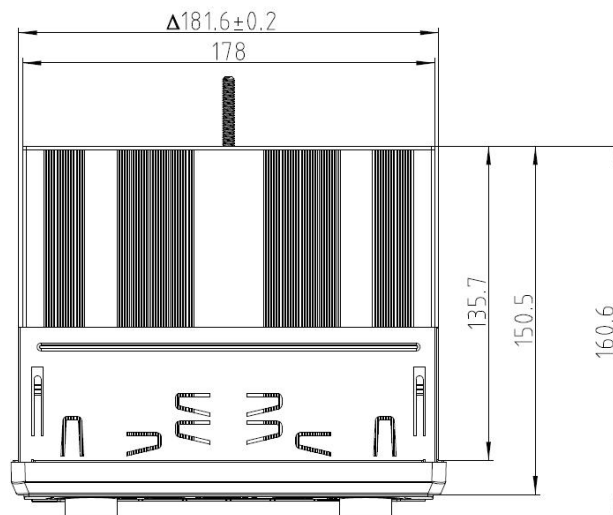
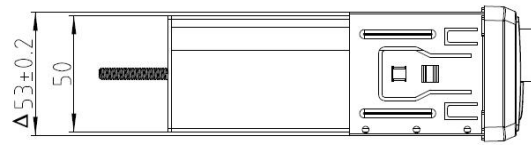
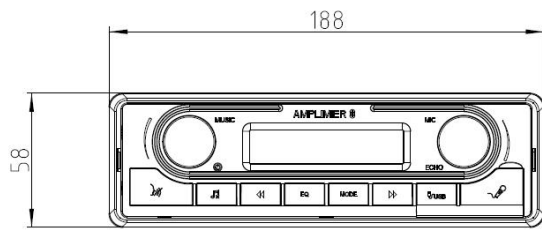
5.9 Built-in original sound cancellation algorithm enables basic backing vocals functionality.

5.10 The reserved CAN communication interface enables vehicle-to-vehicle CAN bus integration, allowing automatic volume compensation during vehicle speed changes and air conditioning modes.

6.Specifications and Parameters

Module	Name	Parameters
Amplifier unit	Power input	18-36V
	Power output	12V,5A (not standard, available upon request)
	Amplifier output power	8*50W
	Output impedance	4-8Ω
	Frequency response range	20Hz-20KHz
	Degree of distortion	< 0.1%
	Noise-signal ratio	> 90dB
	Working temperature	-20℃-+70℃
	Storage temperature	-30℃-+80℃
	Outline dimension	188*58*150mm (refer to installation dimension diagram)
	Way to install	Standard single-rod embedded installation
	Weight	Approximately 1.4 kg

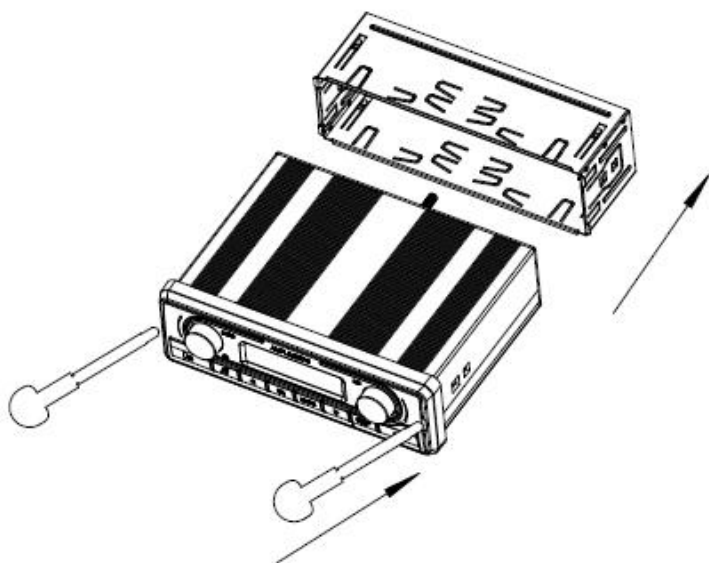
7. Dimensions & Wire Diagram



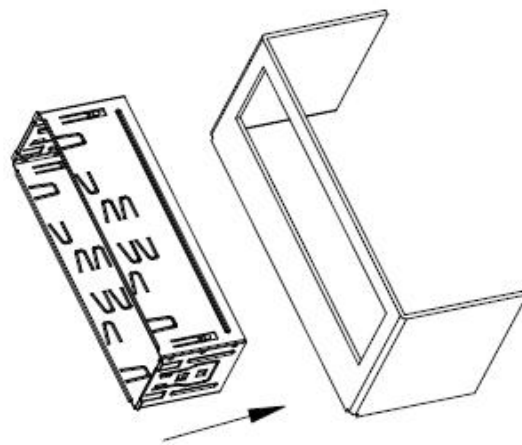
8. System List

Attachment 1	DSP power amplifier host x1	
Attachment 2	X1 Connector	
Attachment 3	Power cable x1	
Appendix 4	Audio input x1	
Appendix 5	Plastic frame x1	
Attachment 6	Hardware accessories x1	
Attachment 7	Instruction manual, warranty card, certificate of conformity x1	

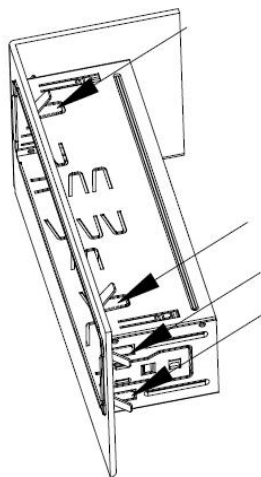
9. Installation Instructions



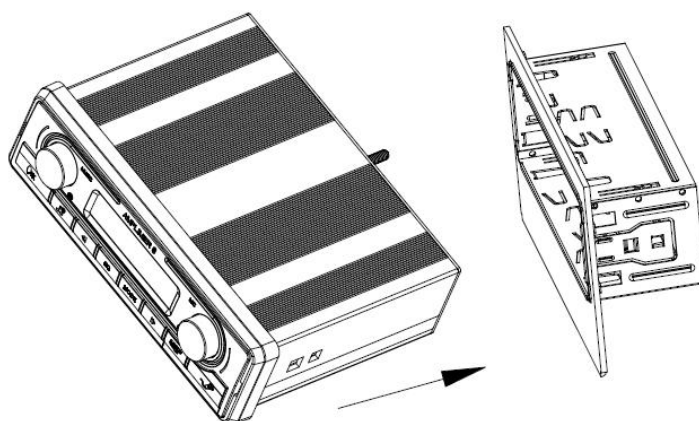
1. Use the tool to remove the frame



2. Insert the frame on dashboard



3. Position the frame properly and fold up the clips to stick the frame tightly



4. Insert in amplifier till it gets stuck.

10. Software Description

Note: The tuning software interface is displayed. For the installation package of the tuning software, please contact our relevant personnel.

PC audio mixing software:

