INSTRUCTIONS MANUAL

academy

DRAGSTER

ADSP 8

DIGITAL SOUND PROCESSOR

8 CHANNEL DSP EQ OUTPUT (31 BAND)

2. WELCOME TO THE ADSP 8

Thank you for your purchase of the Academy-Dragster **ADSP 8 Car Audio - Digital Sound Processor** - and welcome to the Academy-Dragster family of Sound Quality for car audio.

The ADSP 8 is the best combination of the highest quality analog and digital components available giving all levels of enthusiast the finest product available.

This user manual will help you to be confident with the most advanced car audio processor on the market having focused its entire development on placing the power of tuning back into the possibilities of installer, user and listener.

3. ADSP 8 PACKAGE CONTENTS

- ADSP 8 digital car audio processor
- Connector to Processor
- DSP Controller
- USP 3.0 Interface cable (4m)
- Bluetooth antenna
- WiFi Antenna

4. PRODUCT FEATURES

Main functions and characteristics are described in the following paragraphs.

4.1 Audio Speciality

This unit adopts 192kHz High Sampling rate, and the resolution is 32-bit which is the industry outstanding DA/AD conversion technology. The core processor is a high-performance 48 double-precision floating point digital processor (DSP). Digital audio processing includes gain control, signal phase, 31-band parametric equalizer or graphic equalizer, time delay and frequency divider (low cut and high cut filter, frequency division professional types include: Butterworth/Bessel/NingKe, 6 kinds of slope, noise and limiter device and so on.

4.2. Audio Decoder

This unit includes 5.1 acoustic space decoding function, access digital audio output of the digital signal (fiber optic or coaxial), decoding in US digital professional audio decoder chip and resolving power extremely strong.

4.3. Wireless Connection

Bluetooth: built-in version 4.0 Bluetooth, hand-free call with functions of automatic switch telephone. Can be reached directly with Bluetooth transmission during audio playback of music files.

WiFi: built-in module, realizes wireless connection and debugs the music sound effect in the car.

4.4. Unit Interface Connection

Input Connections:

- 2 digital input: Coaxial input or Optical input
- 6 channel low-level signal RCA input, which can be set up in 3 input modes.
- a double row 10 feet socket: including 1 set of power supply, 2 REMIN groupes, 4 REMOUT sets, 4 high level sets.
- a 3.5mm microphone interface; the mic (not included), signal via Bluetooth hand-free calls.
- output connections: 8 channels RCA output terminals
- external Control Interface: 1 pc USB3.0 interface (compatible with USB1.1/2.0 interface), computer connection, wire control device or external WiFi
- power indicator:

4.5. DSP Controller Introduction

2 USB3.0 interface: one used to connect the unit (side), the other one used to connect to computer (front panel)

1 knob: adjusts the volume function

6 pcs buttons with light: switches the EQ mode and function, status display

4.6. DSP Software Introduction

ADSP 8: Exe control software: the PC control software can connect to the unit by USB, WiFi, etc, which can configure the unit with flexibility and conveniently, download the configuration already set to the machine or to save the existing configuration from the device to the computer.

Computer configuration requirements: minimum 1.5 GHz processor having at least 1 GB of RAM memory; suitable for Windows XP, Windows Vista, Windows 7, Windows 8 operation system.

5. TECHNICAL PARAMETERS

5.1 Specifications

Dynamic Range	≥126dB
S/N	≥110dB
TDH+N	≤0.004%
IMD	≤0.02%
Frequency Responce	10Hz-20kHz
Input Impedance	20k Ohm
Output Impedance	100 Ohm
Channel Gain Margin	≤0.1dB
CMRR	≥80dB (1kHz)
Input Range	RCA low level: 6.5V peak value high level: 14.4V peak
Output Range	RCA output level: 6.5V peak value
Temperaturae Range	-40°C~85°C
Power Supply	9DVC~15DVC
Start	REM1-REM2 (9~14.4 DVC) / High-level input signal
Start Output	+12DVC start voltage input (0.1A)
Power Consumption	≤10W
Nett Weight	2.2kgs
Gross Weight	2.8kgs
Dimensions	233(L) x 135(W) x 33(H)

5.2 Functions

Input Signal Type: this processor can be applied to many input devices, as below:

1. High level: 4 channel input
2. Low level: 6 channel RCA input
3. Digital input: Coaxial abd Optical
4. Bluetooth

AUX Low-level Input mode

Provided 3 types of low-level input mode:

1. 3 groups of stereo input mode
2. 1 group of stereo input mode add 4-channel input mode
3. 5.1 (6 channel) input mode

Input Signal Volume

Each input channel set up separate volume, adjustment range 59.9dB~0dB, shut off.

Input Equalizer

Each Input Channel set up with 31-band equalizers, parameter range:

1. Centre Frequency point:: 20Hz~20kHz, Accuracy: 1kHz.
2. Q (quality factor): 0.404~44.852, precision is 0.001.
3. Gain. 12.0dB~+ 12.0dB, accuracy of 0.1dB

Crossover: low-pass	Parameters: 1. Professional filter types: Butterworth (Butterworth), NingKe (Linkwitz – Riley), queque (Bessel). 2. Filter frequency division point: 20Hz~ 20kHz. 3. Filter slope setting: 12dB/Oct~ 48dB/Oct (step by 6dB/Oct).
Crossover: high-pass	Parameters: 1. Professional filter types: Butterworth (Butterworth), NingKe (Linkwitz – Riley), queque (Bessel). 2. Filter frequency division point: 20Hz~ 20kHz. 3. Filter slope setting: 12dB/Oct~ 48dB/Oct (step by 6dB/Oct).
Input Signal Phase	Each input channel phase can be adjusted, range of parameters: in phase or reverse phase (0°/180°).
Output Master Volume	Adjustment range: 60dB~6dB, shut down.
Output Signal Phase	Each output channel phase can be adjusted in phase or reverse phase (0°/180°)
Output Level Limiting	It is possible to set up the limit of output signals for each channel protecting the amplifier. Range of parameters: 1. Clipping level (Parameter range: da -30dBu ~+11.0dBu) 2. Response Time (parameters 0.3ms~200ms). 3. Release Time (parameters: 50ms~5000ms)
Output Equalizer	Each channel with 31-band equalizer engine, parameters range: 1. Central Frequency point: 20Hz~20kHz, accuracy of 1Hz. 2. Q value (quality factor): 0.404~44.852, precision is 0.001. 3. Gain: -12.0dB ~+12.0dB, accuracy of 0.1dB.
Time Delay and Space	Each output channel has separated delay to adjust sound field spatial orientation. Parameters range: 1. Milliseconds (0.000 to 20) 2. CM (0.00 to 692.00) 3. Inches (0.00 to 272.75)

Input Noise Threshold	Adjustment Range: -20dBu~-119dBu, shut down.
Mute	Each channel sets up with separated mute control.
Volume Output	Each channel sets up with separated volume control, adjustment range -59.9dB~0dB, shut down.
Configuration	Load, delete, save. It can support 6 scenarios depending on the personal preferences and size of the car.

6. ADSP 8 INSTALLATION PROCEDURE

The ADSP 8 has been designed for easy installation into your vehicle. Please follow the indications below to ensure good operation and long term reliability.

1. The ADSP 8 digital sound processor needs to be installed in the signal path between your signal source and your external amplifier(s).

2. The ADSP 8 digital sound processor must be installed to a solid surface. Please select a dry clean location in the trunk or passenger compartment only. Do not install the ADSP 8 to any area that may experience excessive vibrations. Position the ADSP 8 processor in a location that will allow for sufficient airflow with taking into mind an ease of service for subsequent accesses.

Notes:

We suggest to check the suitability of the installation before you begin. Do not cut any of the car's structure, take heed to what could be beyond the panel or carpet where you intend to operate. The manufacturer will hide wires, computers or other electronic devices in the exact areas you wish to install your product.

When installing your ADSP 8 to the floor of the vehicle, be sure to inspect underneath the vehicle to prevent damage to the vehicle's fuel delivery system or factory wiring, so as to prevent serious damages or hazardous conditions to your vehicle.

If you don't have experience with automotive electrical and mechanical systems, contact a professional installer. Paying a qualified installer is almost always cheaper than paying a dealership to repair your car.

7. INPUT PANEL CONNECTION FEATURES

Input Panel: Input Pin (Power Supply, REMIN, REMOUT, High-level), 5.1-channel, AUX Input, Digital InInput (coaxial and optical Input).

7.1 Power Supply, REM, High-Level Pin

B+	REM IN1	REM IN2	REM OUT4	FL+	FR+	RL+	RR+	--	--
GND	REM IN2	REM OUT1	REM OUT3	FL-	FR-	RL-	RR-	--	--
PWR Input	REM Input	REM Output Input	REM Output Input	Front Left	Front Right	Rear Left	Rear Right	--	--

Note:

"-" is negative or inverse (ground)
"+" is positive or positive phase

7.1.1. Power

B+: Connect to car Power Supply positive +12V.
(It is recommended the installation of a fuse by max. 15Ah)
GND: Car Power Supply Negative

Note:

Make sure that the power connection is closely compatible with the power of this unit. Otherwise the uni twill be damaged procuring risk of a short circuit, fire, etc.

7.1.2. REM IN

Provided 2 sets of processor switches and control signal input interface REM IN1 and REM IN2, by other devices (such as : source device vehicle, DVD, etc.) though the signal input to control the processor.

Note:

The REM IN input can be connected in parallel.

7.1.3. REM OUT

Provided 4 pcs "same time same voltage" output control interface REM OUT1 - REM OUT4 to control the car amplifier. You can also use only 1 pc and join-up in parallel of all the external car amplifier, then others as spare.

Note:

over 4 amplificators it is recommented the installation of a switch relais.

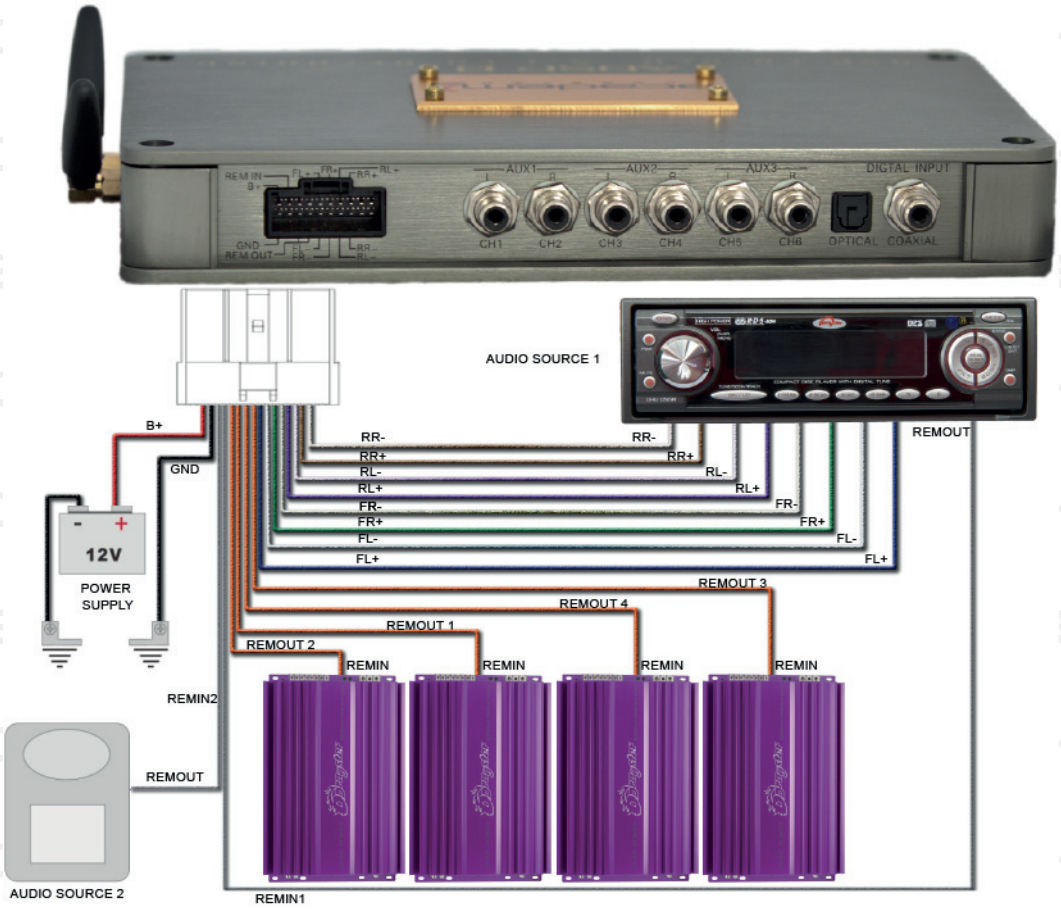
7.1.4. High-level Input

Provided left-front (FL+/FL-), righ-front (FR+/FR-), left-rear (RL+/RL-), right-rear (RR+/RR-), 4 groups.
This high-level analog signal input cannot exceed a voltage input of 14.4 VDC.

Note:

switching on the built-in source, you will have automatically +12V from REM OUT.

PIN connection:



7.2. AUX Low-level RCA Input Interface Connection

CH1 – CH2 – CH3 – CH4 – CH5 – CH6

RCA cable connects to the low-level analog signal input. There are 3 different input modes according to the software operation setting.

7.2.1. 3 Groups Stereo Input Mode

7.2.2. 1 group Stereo, 4 Channels input Mode

AUDIO SOURCE 1 AUDIO SOURCE 2

7.2.3. 5.1 Channels (6-channel) Input Mode

AUDIO SOURCE

7.3. S/PDIF Digital Interface input

Digital signal input support stereo PCM format signal and 5.1 original signal source.

7.3.1. Optical

7.3.2. Coaxial

Note:

There is an optional input for optical input and coaxial input. The processor will give preference to optical input when the optical input and coaxial input are both plugged. If there is no optical input, it will be switched to coaxial input.

8. OUTPUT PANEL CONNECTION FEATURE

Output signal panel:

Output Signal Panel: 8ch output interface.
USB3.0 Interface. Power indicating light. Microphone.

8.1 RCA Output Interface

CH1 – CH2 – CH3 – CH4 – CH5 – CH6 – CH7 – CH8

Low-level analog output by RCA cable to be connected to car amplifier input.

8.2. Input, Output, Routing Connection Rules

Power amplifier output to the corresponding speakers, we define the six sound field locations: left-front, right-front, left-rear, right-rear, center and subwoofer. Specific output signal corresponds to the input of the routing rules defined as follows: (general rules: the left input signal is sent to the left speaker sound field, the right input signal is sent to the right speaker sound field, front input signal is sent to the front speaker sound field, front input signal is sent to the front speaker sound field, rear input signal is sent to the back speaker sound field.

(1) AUX, High-level, Bluetooth:

Signal Input	Send to output location
AUX Left input (stereo input mode) --- AUX Left-front (4 channel or 5.1 channel input mode) --- High-level left-front input --- Bluetooth left input	Left-front speaker sound field and left subwoofer sound field
AUX right input (stereo input mode) --- AUX right-front input (4 channel or 5.1 channel input mode) --- High-level right-front input --- Bluetooth left input	Right-front speaker sound field and right subwoofer sound field
AUX left input (stereo input mode) --- AUX left-rear input (4 channel or 5.1 channel Input mode) --- High-level right-rear input --- Bluetooth right input	Left-rear speaker sound field
AUX right input (stereo input mode) --- AUX right-rear input (4 channel or 5.1 channel Input mode) --- High-level right-rear input --- Bluetooth right input	Right-rear speaker sound field

AUX center input (6 channel or 5.1 channel Input mode)	Center sound field speaker
AUX left input and right input (4 channel input or stereo input mode)	
High level left-front and right-front input	
Bluetooth left input and right input	
AUX subwoofer input (6 channel or 5.1 channel input mode)	Subwoofer sound field
AUX left input and right input (4 channel or stereo input mode)	
High level left-front input and right-front input	
Bluetooth left input and right input	

(2) Digital signal Input:

5.1 channel audio input	Send tp 5.1 channel sound field output automatically
Stereo audio input	Left signal input to left-front, left-rear and left-subwoofer sound field speaker
	Right signal input to right-front, right-rear and right-subwoofer sound field speaker
	Left + right signal send to: center and subwoofer sound field speaker

8.3. USB3.0 interface

Interface compatible with standard USB1.1/2.0. Functions below:

8.3.1. Connecting to Computer

Connect devices to PC and configures the user processor program by PC software.

8.3.2. Connecting to Controller

Processors can be easily and conveniently controlled by wired DSP Controller.

(1) Connect the processor to USB interface controller, wire connection as below photos.

(2) Connect computer to USB interface controller and configurate the scenario by computer software. (The wired USB interface controller must be connected to the processor), see wire connection here below:

8.4 Phone Interface

Insert the receiver phone inteface and realize hand.free phone calls as seen below:

9. DSP CONTROLLER OPERATION INSTRUCTIONS

9.1 Controller Image:

9.2. Controller Operation Instructions

(1) Buttons (6 pcs)

“1” Button: call the preset scenario 1 saved in the processor, when the button light is selected.

“2” Button: call the preset scenario 1 saved in the processor, when the button light is selected..

“3” Button: call the preset scenario 1 saved in the processor, when the button light is selected.

“4” Button: call the preset scenario 1 saved in the processor, when the button light is selected.

“Phone” Button: set the output channel as phone, when the button light is selected.

“Mute” Button: set the output channel as mute, when the button light is selected.

(2) Volume button (1)

Volume knob: clockwise to increase the volume, anticlockwise to decrease volume.

(3) USB3.0 Inteface (2 pcs)2 pcs USB3.0 Interface (one in the face-panel, one in the right side of panel 1). Compatible USB1.1/2.0 Interface, the right side panel USB interface used to connect the processor, and the face-panel USB interface used to connect to the computer.

10. SOFTWARE OPERATIVE INSTRUCTIONS

10.1 How to Get the Software

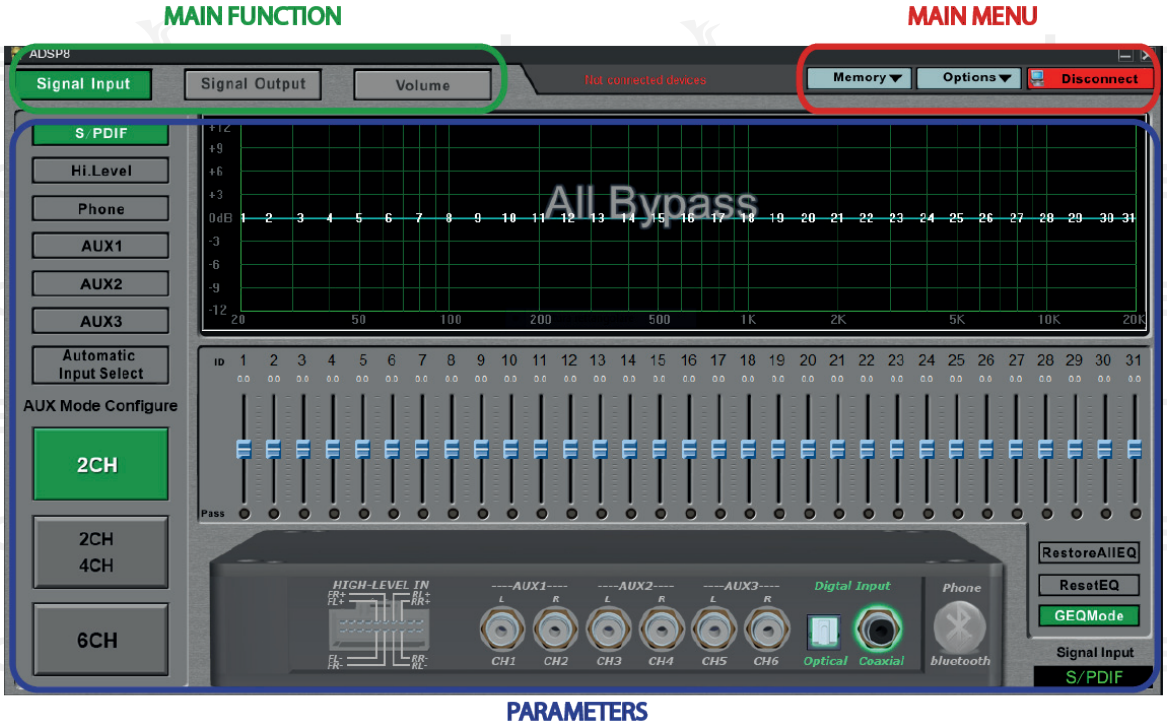
You can download the software from our website www.dragster.audio. At the same time you can download the latest version of the software, the most optimizing configuration file and the practical application cases.

10.2 Software Installation

Operating environement: suitable for Windows XP Vista / Windows 7/ Windows 8 operating systems. Our software is a standard WIN32 executable file-DCP680. Exe can run directly under any drive and path. Should you lose any data, please check the integrity of the operating system, download and install the relevant system's missing files.

10.3 Software Operation

Download the file "DCP680.exe" from our website, then copy to your computer (it is strongly suggested to create a new folder for exclusive use), then double-click on this file to open it (a file named "data file" will automatically be created at the software directory once you run this file to save user program files). Open the software and the Main GUI as below:



10.4. Software Online

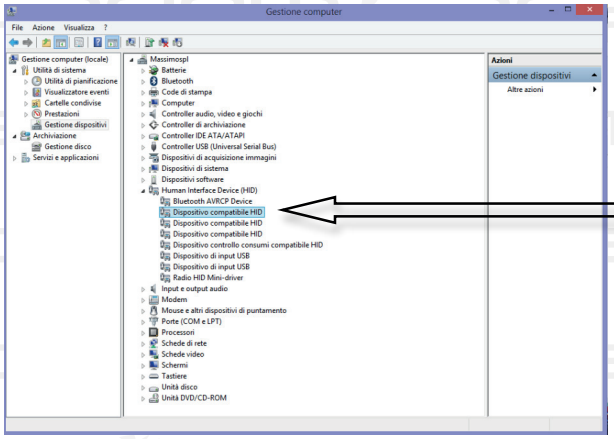
Be sure this processor is powered on before the connection to software.

Note:

before the first installation and setting it is recommended to switch off the amplifiers until the end of the setting procedure, then switch again the amplifier system to check the correct functioning.

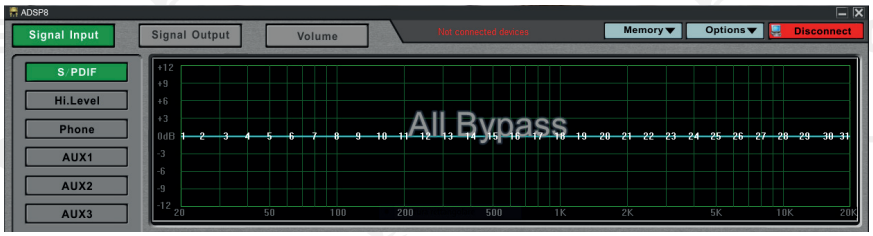
10.4.1. USB Interface Connection

(1) Connect the USB interface to computer by USB cable (such as 8.3. USB Interface), the computer will find and install the updated processing automatically. A few seconds after the installation is completed, you will find an indication named “HID-compliant device” machine in the computer device manager, which means the hardware is already online, as photo here below:

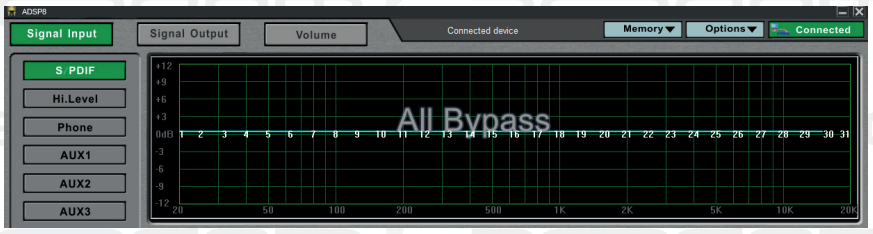


This device means the computer has identified the DSP processor and the software on line can be processed.

(2) Operation software (see: 10.3 Operated Software). The button color is red if “offline”. After a few seconds the software can detect the connected DSP processor automatically and connect the DSP processor by itself. Immediately after, a pop up message box will be displayed informing that the data is connected. A few seconds later the “offline” button color will change to “online” green on successful button, loading the preset scene data.



“offline”: red color buttons

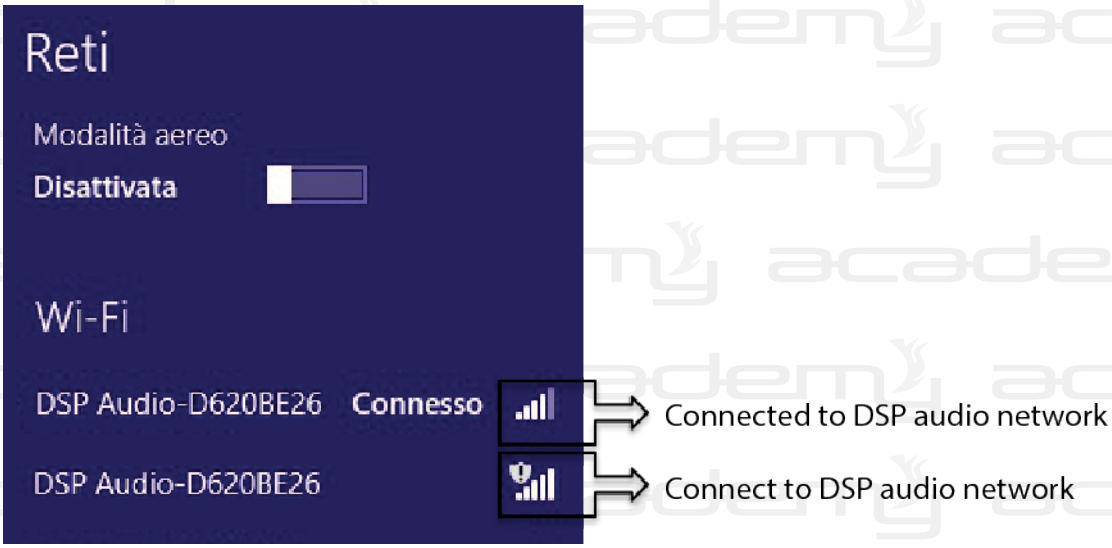


“online”: green color, and successful connection buttons, and load the present scene date

10.4.2 . WiFi Connection

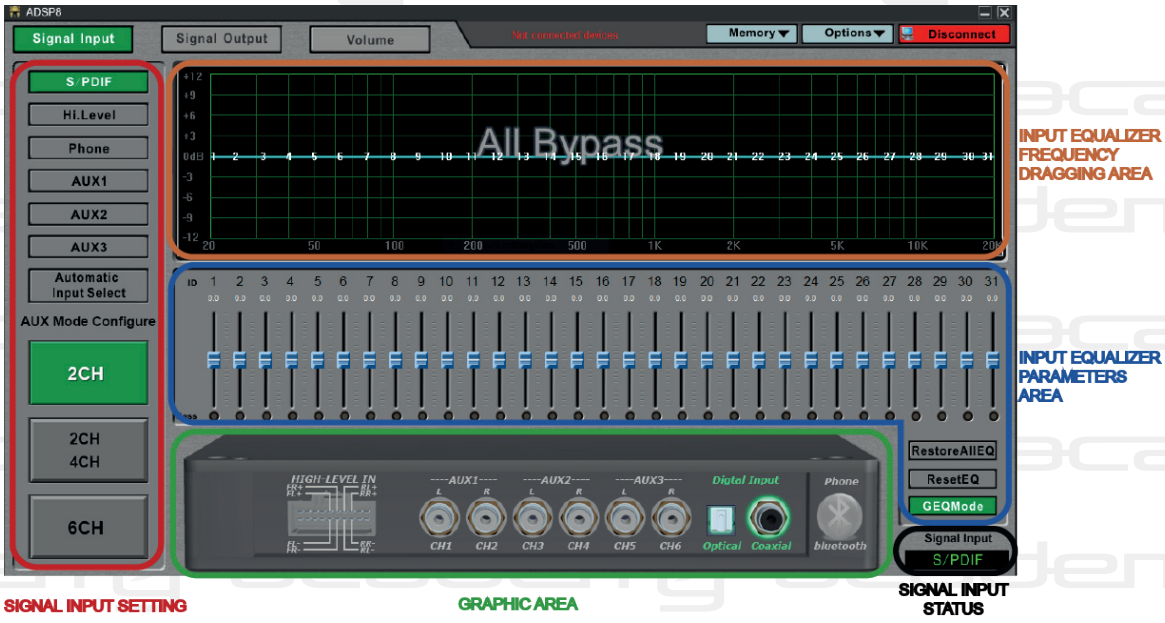
WiFi: Built-in-WiFi and external WiFi. Insert the external WiFi to DSP processor USB3.0 interface (such as item 8.3. USB3.0 interface).

(1) Search the wireless network, and double-click “DSP Audio-D428B726” wireless network by computer, then set up wireless connection with the DSP processor.



(2) Running software: (such as 10.3. Operartion Software). The software will be connected automatically by WiFi (if without direct USB connection). The connection same with the USB connection.

10.5. Software Input Signal Interface



10.5.1. Signal Input Setting Area

(1) Signal input selection and edit

Select the input signal among “High-level”, “Bluetooth”, “AUX1”, AUX2”, “AUX3”, “Digital”, “Coaxial”. Switching the signal input channel accordingly, the parameters of the corresponding channel equalizer will be displayed. Select the “automatic input selection” button, the DSP processor will detect and lock the signal input channel automatically.

Note:

selecting the “automatic input selection” the processor automatically identifies the kind of signal input recalling the selected signal setting previously used.

(2) AUX mode setting (Low-level mode setting)

Left.click the “2 channels”, “2 channels/4 channels“, “6 channels” buttons, that can configurate the Low-level mode.

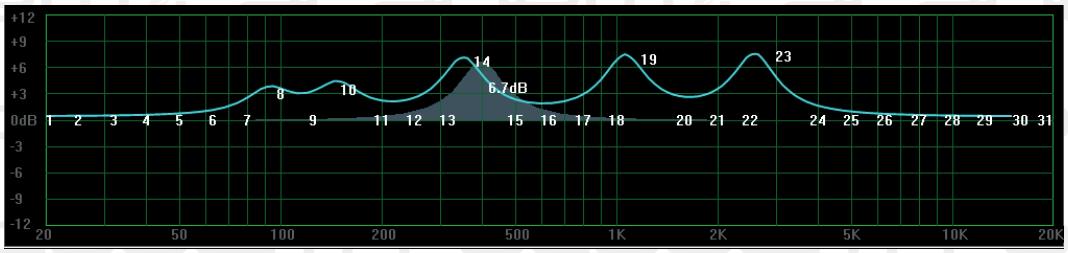
A. 2 channels: 3 groups stereo input mode
B. 2 channel/4 channels: 1 group stereo input mode and 4 channels input mode 1.
C. 6 channels: 5.1 channels input mode.

Refer the 4.2, AUX level-input pin for connection method.

10.5.2. Graphic Area Input Signal

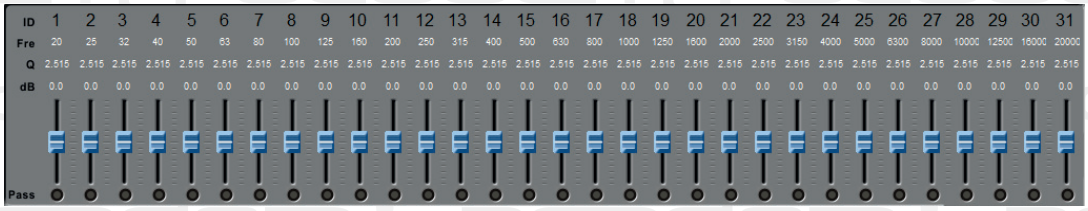
The signal input graphic area displays the input options intuitively and clearly in the screen. When moving the mouse to the displayed audio source terminal area, the pattern color will change, at this time left-click and select this entry, you will find the input terminal color change to green light, that indicates this audio input mode has been selected.

10.5.3. Equalizer Frequency Dragging Area Input



The input equalizer area shows the input signal 31-band parameters and frequency parameters intuitively and clearly. You can drag the mouse to change the parameters in the area. When the mouse cursor changes to arrow cross at the displayed numbers 1-31 bands of equalizer area, left-click and drag the mouse to adjust the equalizer. When the mouse cursor changes to arrow cross at the displayed area H (HP or Low cut) or L (LP or High cut), left click and drag the mouse to adjust the frequency of High cut (LP) or Low cut (HP).

10.5.4. Equalizer Parameters Area Input



Frequency:

Parametric EQ mode, you can input values, scroll the mouse wheel and up-down buttons of the keyboard, etc and other ways to adjust the frequency (range: 20HZ – 20000Hz) directly; graphic equilibrium model, the frequency is the 1/3 octave frequency of the default allocation.

Q value:

Parametric EQ mode, you can input values, scroll the mouse wheel and up-down buttons of the keyboard, etc and other ways to adjust the Q value (range: 0.404 -28.85) directly. Graphics equilibrium model, the Q value is the 1/3 octave frequency of the default allocation.

Gain:

You can input values, scroll the mouse wheel and up-down buttons of the keyboard, etc and other ways to adjust the gain (adjustment range: -12.0dB – 12.0dB). Or drag the pusher directly to adjust the gain.

Pass:

There are 31-band pass buttons, click EQ “pass” buttons to pss this period of EQ..

Bypass all EQ buttons (recover all the EQ buttons):

Click this button, then choose “YES” on the pop-up prompt dialog box and all the 31-band will be balanced (only change the gain value, don’t change the frequency and Q value of distribution value. The button will turn to “restore all balance” once gain through all the equalizers, and all the equalizer parameters you can return to the previous data. Click “restore all balance” and turn back to the previous without going through the equalization state.

Reset EQ:

Click this button, the pop-up confirmation dialog box, press “YES” button and reset all 31-b1nd equalizer. (frequency Rate, Q value and gain vakues are reset to the preset state, which is a third time frequency distribution).

Note:

after resetting it isn’t possible to go back!

GEQ / PEQ Mode:
This is a switch button for parametric equalizer mode and graphic equalizer mode, cllick and pop-up a dialog. Press “YES” button switch to equalizer pattern. The difference between Graphic (GEP) and parametric equalizer (PEQ) is as follows:

(1) Graphic Equalizer: also called graphic equalizer, the distribution of the push-pull button on the panel, can intuitively reflect the adjusted isostatic compensation curve, the ascension of each frequency and attenuation condition that must be clear at a glance, which adopts the technology of the constant Q, each frequency point is equipped with a push-pull potentiometer, regardless of ascension or a frequency attenuation, the fulted band width is always the same. The commonly used professional graphic equalized is 20Hz to 20 kHz signal which is divided into 10-band, 15-band, 27-band, 31-band to adjust. So you can choose different bands frequency equalizer according to your different requirements. Generally 10-band equalizer fequency points to octave interval distribution, used in general cases, 15-band equalizer is 2/3 octave equalizer. For professional amplification, 31-band equalizer is 1/3 octave equalizer. Usually at the most important fine compensation cases are, the ghaphic equalizer structure is simple, intuitive and clear, therefore, it is widely used in professional audio.

(2) Parametric Equalizer: also called parametric equalizer. It can adjust various parameters with precision. Mostly attached on the tuning table, but it also has an independent parametric equalizer. The adjusting parameters include frequency, gain and quality and quality factor Q value, etc., that can make the voice prettier or uglier, changing it, make a sound or music style fresher. Colorful and bright highlights to meet with the artist’s needs.

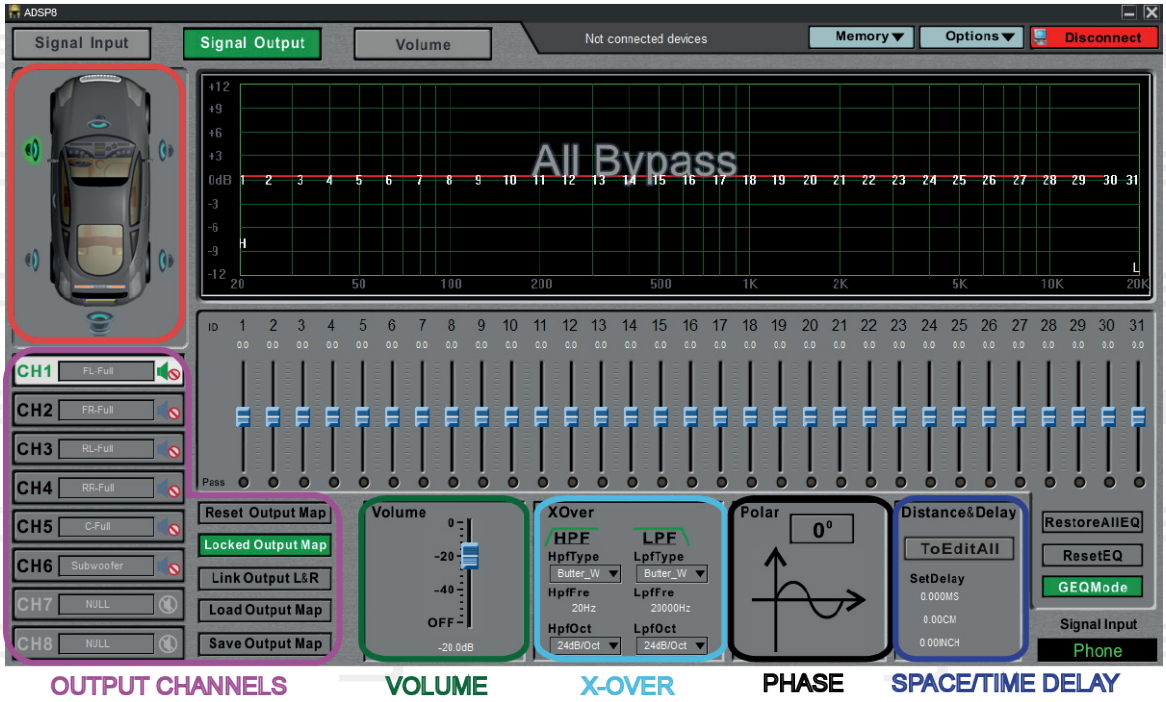
10.5.5. Status Bar Signal Input

The audio source status bar displays the current signal input source.

10.6. Signal Output GUI

OUTPUT CHANNELS CORRESPONDING TO SOUND FIELD POSITION CHART AREA

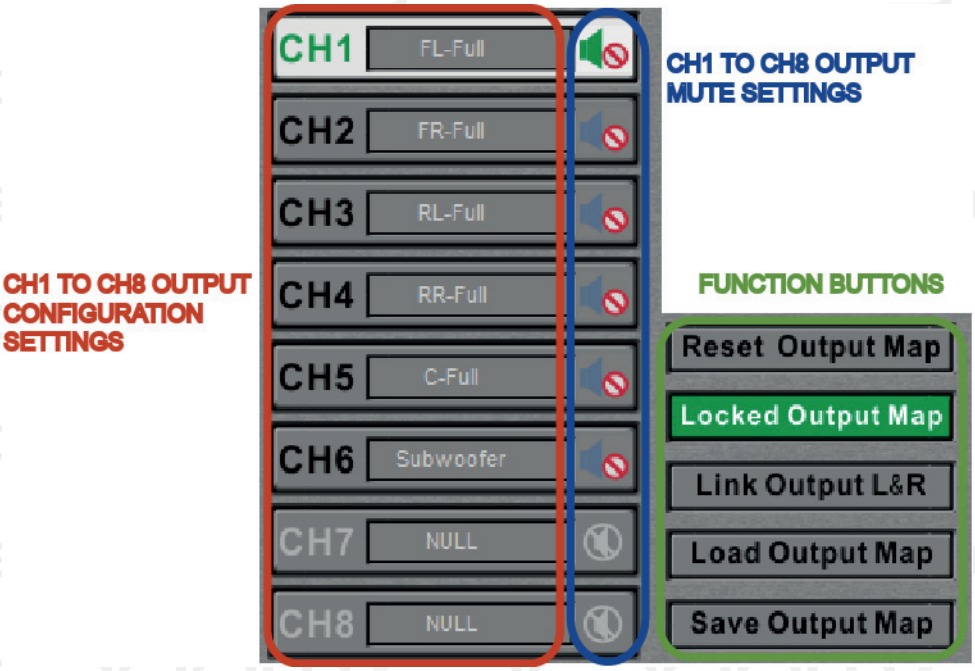
OUTPUT CHANNELS CORRESPONDING SOUND FIELD POSITION CHART AREA



10.6.1. Output Channels' Correspondence with the Position on the Chart Area

Display CH1 to CH8 output channel configuration, and set-up the speaker parameters directly in the graphic area. Click on the corresponding output channels of the speaker, and the color changes to green, then you can edit current output channel parameters.

10.6.2. Output Channel Setting Area



CH1 to CH8 Output Configuration:

In the unlocked state, click the middle of CH1 and CN8 and a menu will pop-up to configure the output speaker's location. You can select the output channel configuration intuitively, and the configuration up to 24. The elected channel will be displayed in green and at the same time, the system will be automatically blocked until further changes.

Output Channels Mute Setting:

Left click  icon, then change  as mute state, and click gain to cancel mute.

Reset Output Setting Buttons:
(Reset Output Map button)

To empty or restore the default settings. Left click and pop-up hint dialog, according to the prompt dialog, "empty" button to set the CH1 to CH8 channel for empty; "default" button set output channel as default setting. Press "cancel" button to exit the dialog.

End of Setting Procedure:
(Lock output setting button)

Click the button "Lock output map" then OK to lock or unlock from CH1 to CH8 setting.

Left-right channel output alignement buttons:

Click on this button and a prompt dialog box will pop-up, select synchronously (option to “copy from left to right” or “copy from right to left” radio button), press “OK” to confirm. Click this button again to cancel the left-right channel output alignement function.

Note:

on left channel or right channel alignment, the software will automatically lock output channel. After releasing the alignment, the output channels will unlock automatically.

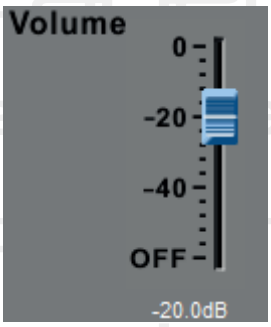
Save the output setting buttons:

Clicking on this button, save the current output sound field setting style into computer for future use.

Load output setting buttons:

Clicking on this button, the saved files will be recalled, select one and open.

10.6.3. Output Volume

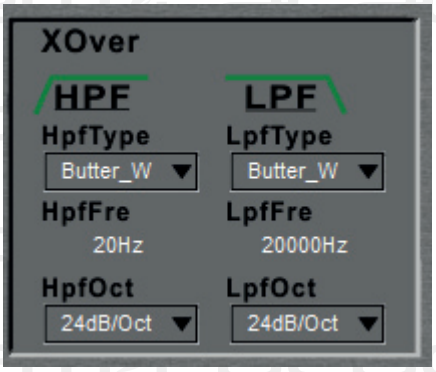


With the spider “volume” you can ad just the volume in the range 59.9dB ~ 0dB of all the audio system.

Note:

This function will be useful to have the gain of amplificator at 0.

10.6.4. Crossing Setting Area



In the x-over section it is possible to fix the crossover points.

1. Setting Type

Click cut low (HPF) or high-cut (LPF9 filter type options dropdown and choose, including:

A, Butterworth (Butterworth)

B, NikKe (Linkwitz – Riley)

C, The queue (Bessel)

2. Frequency Settings

You can put values directly, rolling the mouse wheel and use the keyboard up-down buttons to adjust the Low-cut or High-cut frequency.

Adjusting range:

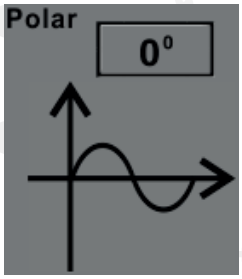
A. High-cut frequency: 20Hz ~ 20kHz

B. Low-cut frequency: 20kHz ~ 20Hz

3. Slope Settings

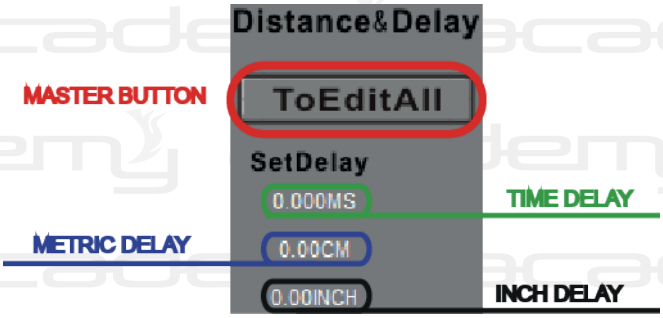
Click Low-cut (HPF) or High-cut (LPF) filter slope options dropdown button and choose, thereare 12dB/Oct, 24dB/Oct, 36dB/Oct, 42dB/Oct, 48dB/Oct, OFF and other options.

10.6.5. Output Phase Area



Click the “polar” button and switch the phase from 0 to 180°.

10.6.6. Space and Time Delay Area



You can set time delay and space for all the channels putting the data calculated by you. When edit current channel time delay and distance, only input values in the white text area of the selected output channel time delay setting area for time delay, metric distance and inch distance delay.

A. Time delay: 0.00 to 20.00 ms.

B. Metric distance delay: 0.00 to 692.00 CM.

C. Inch distance delay: 0.00 to 272.75 inch.

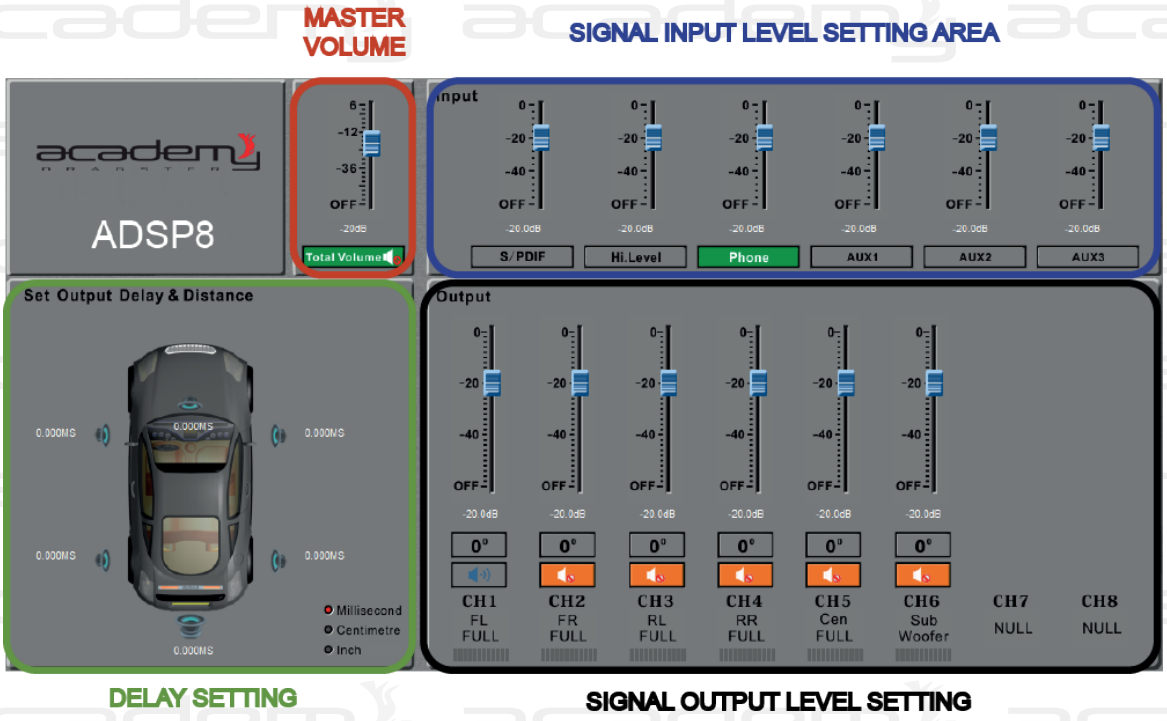
It is possible to handle this configuration also through a bigger panel clicking the button ***ToEditAll***.

Note:

using this function be careful to input logical data in order to not get a distorted and unnatural output audio.

10.7. Main Control Panel

Having terminated the rough setting this big panel offers the possibility to better adjust the output signal with the small necessary corrections.



10.7.1. Master Volume Setting Area

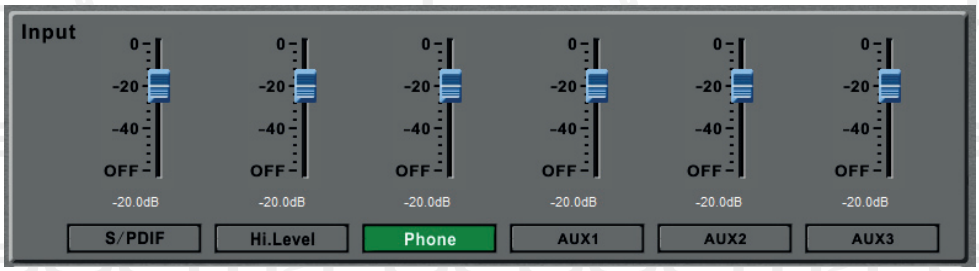
(1) Master volume setting: you can drag the master volume fader by mouse to adjust the master volume, or you can input volume, or roll the mousewheel to adjust the master volume. Adjusting area:
-59.9dB ~12.0dB or shut down.

(2) Master Volume Mute Buttons: with this button, you can insert or switch off the mute function of the system.

10.7.2. Signal Input Level Setting Area

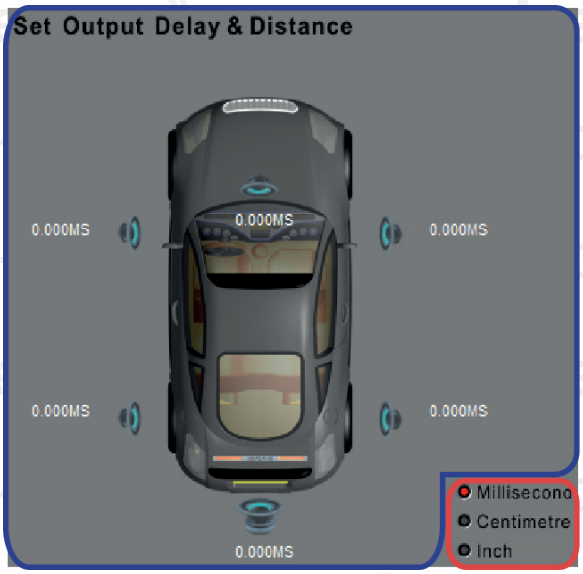
(1) Signal input level setting: you can set an independent volume level for each signal source. Adjusting range: -59.9dB ~ 0.0dB or shut down.

(2) Single input Choice Buttons: when the the signal button is displayed in green, it corresponds to the current source.



10.7.3. Time Delay and Distance Setting Area

In this setting area, left click milliseconds, cm and inch buttons to set the unit of time delay and distance. Click the corresponding output channel time delay on the white letters in the setting area: when change to cursor, input values to adjust the time delay and distance parameters. The parameters range as below:



INPUT VALUE CAN ADJUST THE TIME DELAY AND DISTANCE PARAMETERS

UNIT OPTIONS BUTTONS

A. Millisecond: 0.000MS – 20.000MS
B. CM: 0.00CM – 692.00CM
C. Inch: 0.00 – 272.37 inches

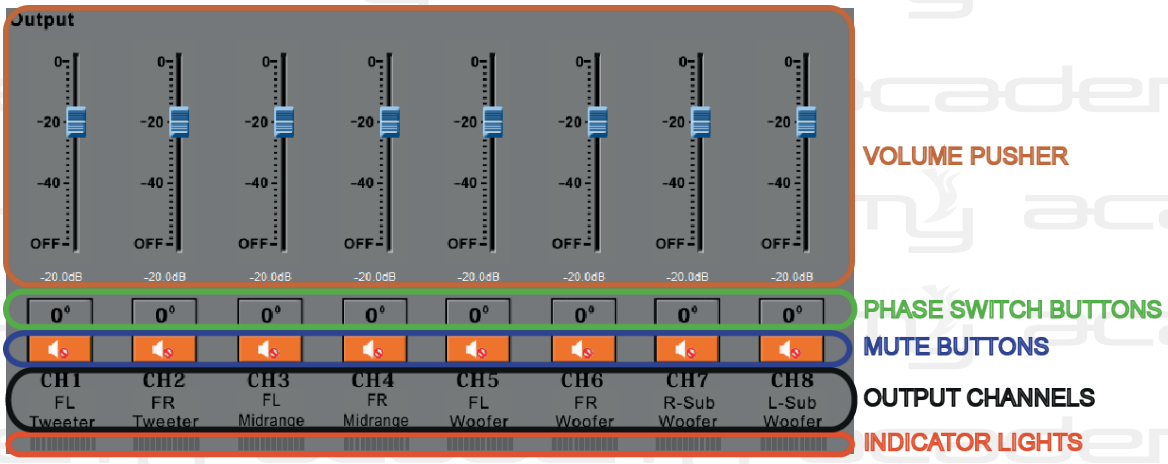
10.7.4. Signal Output Level Setting Area

Output Volume: Can set up independent volume level for each output channel. Adjusting range: -59.9dB~0.0dB, shut down.

Output Phase: Can set independent phase for each output channel. Adjustable “positive phase” or “reserve phase”.

Output Mute: Can set independent mute for each output channel.

Output Level Instruction: Display the size of output channel level. Green indicates the strength of output signal level. When the level indicator light is bright yellow, it means the current output signal has been compressed. When the level indicator is red, it means the current channel output is overloaded.



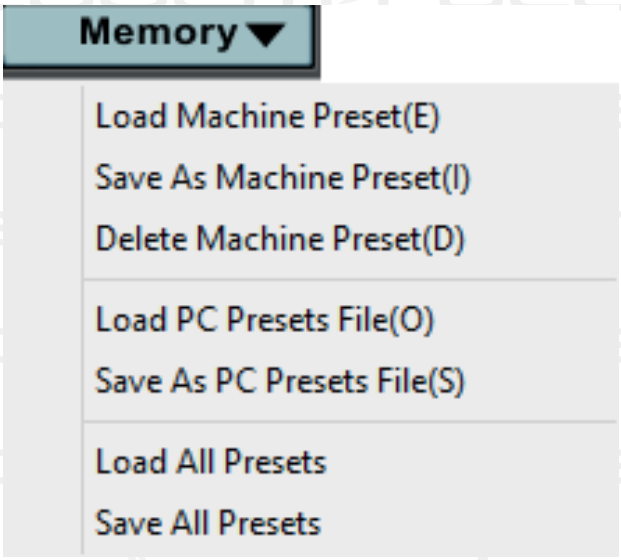
10.8. Main Menu

Memory Menu: to open, save, delete memory operation and etc.

Options Menu: to hardware and software upgrades, advanced setting, help operation and etc.

Online Button: Connection and disconnection buttons for device to PC control software.

10.8.1. Memory Menu



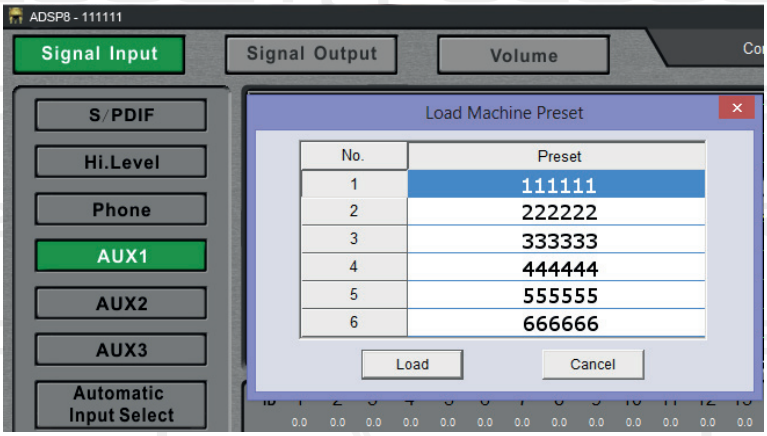
MEMORY OPERATION RELATED SPECIAL INSTRUCTIONS

1. The input mode, input channel choice and output channel configuration data won't change without the machine loading operation.

2. Loading the presets, all the previous settings will be activated.

(1) Loading Presets from Processor

Recall the preset data (total 6 types) saved previously on this machine at work. Click and pop-up dialog box as follows:

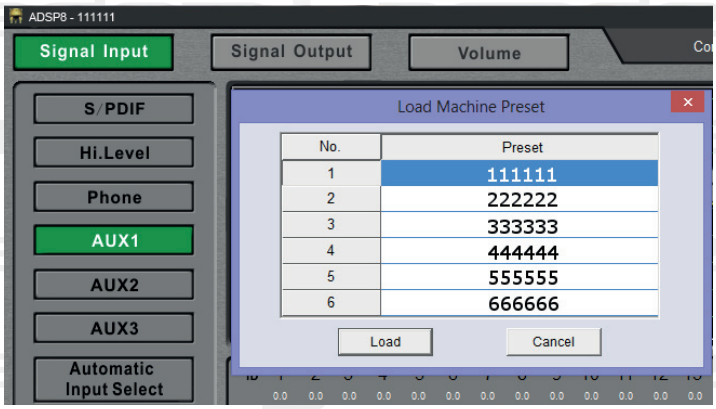


This dialog box shows the 6 group presets data saved previously on this machine. The matched DSP controller has 4 recalling buttons which correspond to the first four presets.

Double-click any group or click selecting single item, then click the loading button (such as te 5th group). The corresponding preset data as current working data in the machine will be loaded. Meantime the software title bar will show the name of the loading preset data, such as (111111).

Note:

to use the 6 memories in remote mode the ADSP 8 can support WiFi technology. Downloading the software from www.dragster.audio it is possible to create an application on a smartphone having in this way a remote control.



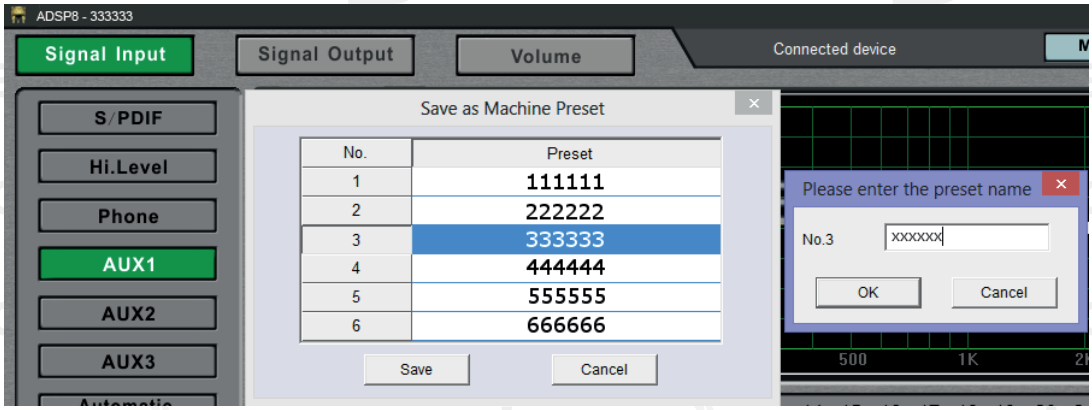
You can also right-click one of the preset data items in this table and select loading, save and delete this preset data. Click “cancel” to exit the dialog box.

Note:

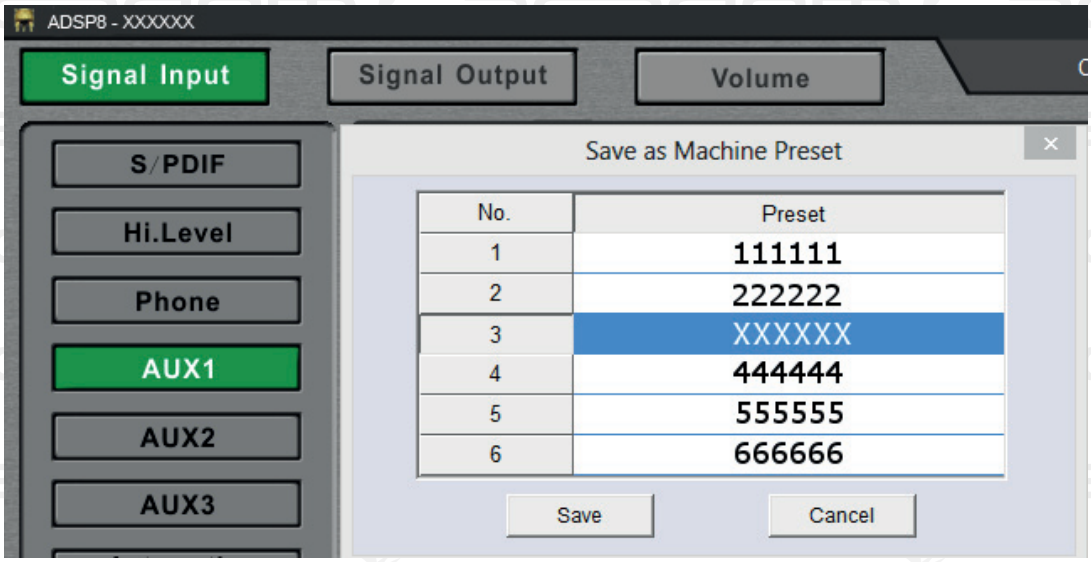
after exiting loading adjust again the parameter in the software again, won’t change the previous loaded preset data (such as the 5th group). Only by varying the current data, at the same time the title bar on the software will no longer indicate the area name (e.g. 111111) because the adjusted preset data is different from the previous preset data.

(2) Save as Machine Preset Data

This function saves the current working preset data to the machine (in total 6 styles can be saved). Click it and a dialog box as below in the left will appear. Save in your selected group, click “SAVE” on a dialog box on the right. Then you can put in a new name.



Input new name and click “SAVE”, the working preset data will be saved in the machine in the wanted group. At the same time, the title bar shows the preset name you saved, because the working preset data in the machine is the same to the one you saved. See below figure:

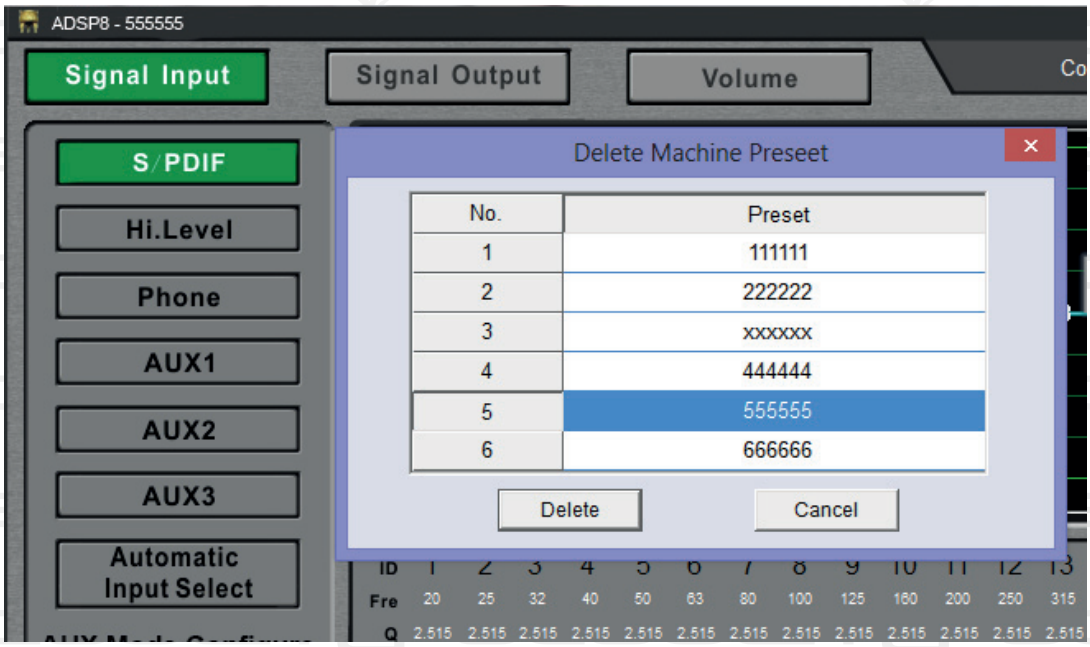


Note:

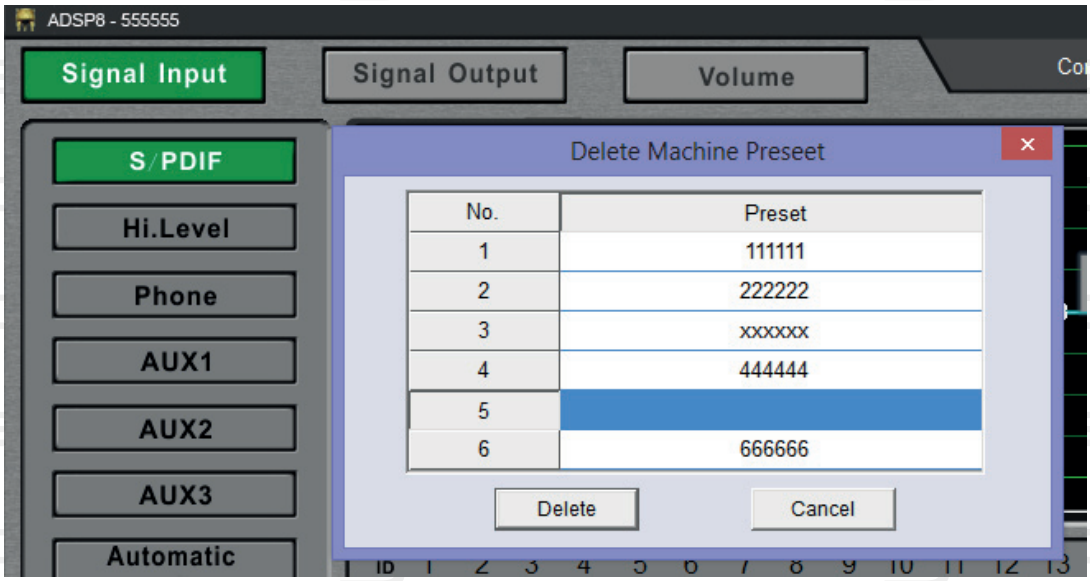
once saved, the parameters should be adjusted again, this won’t change the preset data you just saved (e.g. the 1st group), the current working preset data will be changed in this machine. At the same time, the name of the memory is not shown in the title bar of the software (e.g. the name of saves), because the adjusted preset data is already different from the one you just saved as preset data.

(3) Delete Preset from the Processor

This function deletes the preset data (total 6 styles) from the machine and restores to default data. Click and a dialog pops-up as follows:



Select the item to be deleted, click “delete”, the file is empt again.

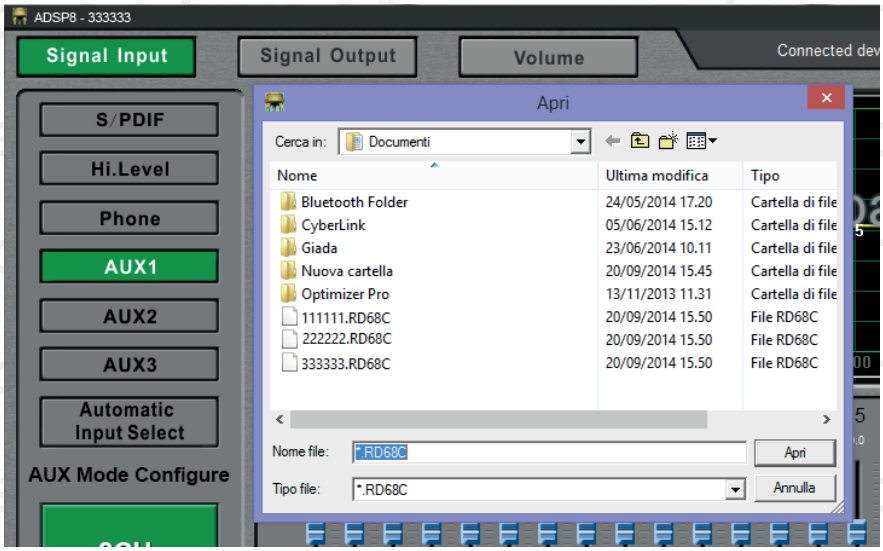


Note:

the function is only to delete the present data from this machine and restore to the default data, and this won’t change the current working preset data in the processor.

(4) Upload the Preset Data from the Computer

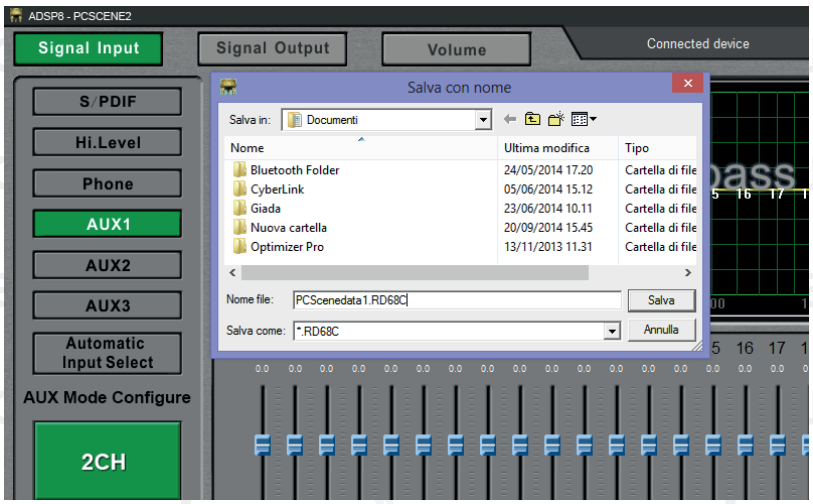
The function is to upload the preset data saved in the computer previously to the machine as current working preset data. Click and a dialog box will pop-up as follows:



Open the selected preset data files, the title bar also shows the name of the opened files. Of course also the parameters change and the file name won't be displayed on the title bar again because the changed preset data is different from the one you opened.

(5) Save as Present File in the Computer

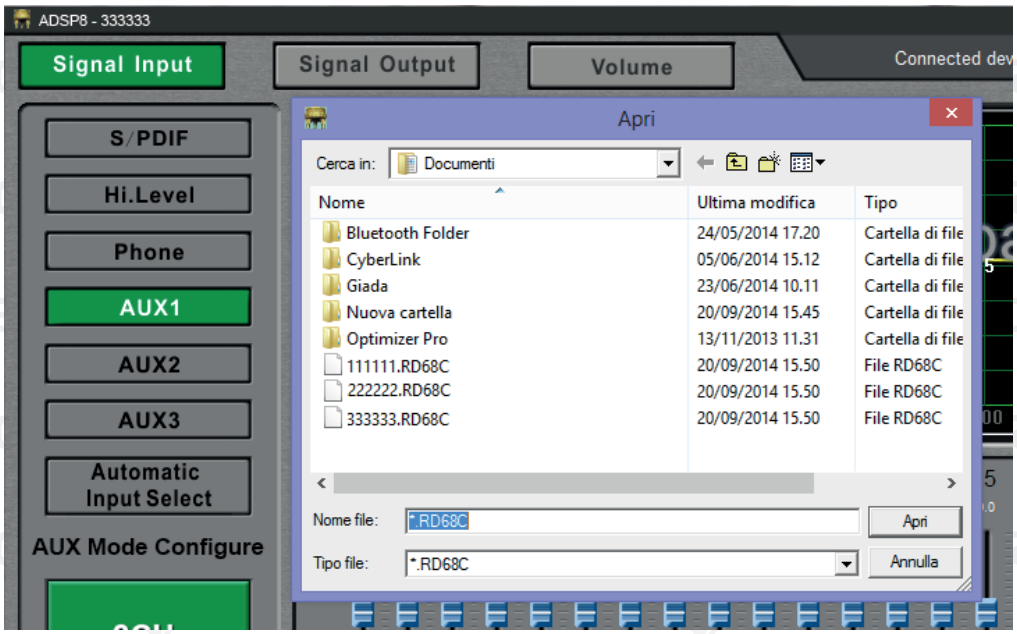
The function is to save the current working preset data from machine to computer for further use. Click and and the image below pops-up:



Input file name as you wanted in the pop-up windows, and click "save", the page below the main interface of the software in the title bar shows the name of the saved file. The name of your saved file will not be indicated again if the parameters are changed.

(6) Upload All the Processor Preset Data

The function is to save the complete preset data from the computer which were previously saved to the machine, and the complete data files include the current working preset data, 6 groups machine preset data, output channels preset data, 6 groups machine preset data, output channels preset data, etc. This means copy all the data previously configured on the current line. The use of the function of full replication is recommended if you use the same car audio systems. Click and see the following diagram:



Select and open the file name. If the previous saved to the preset unit indicates the same name on the title bar software when you open it, the same display will be reported. If the above did not have a name, then the name of your saved file will not be reported not even now.

Note:

important whenever you perform loading procedures or saving data, it is absolutely forbidden to remove the power supply voltage.

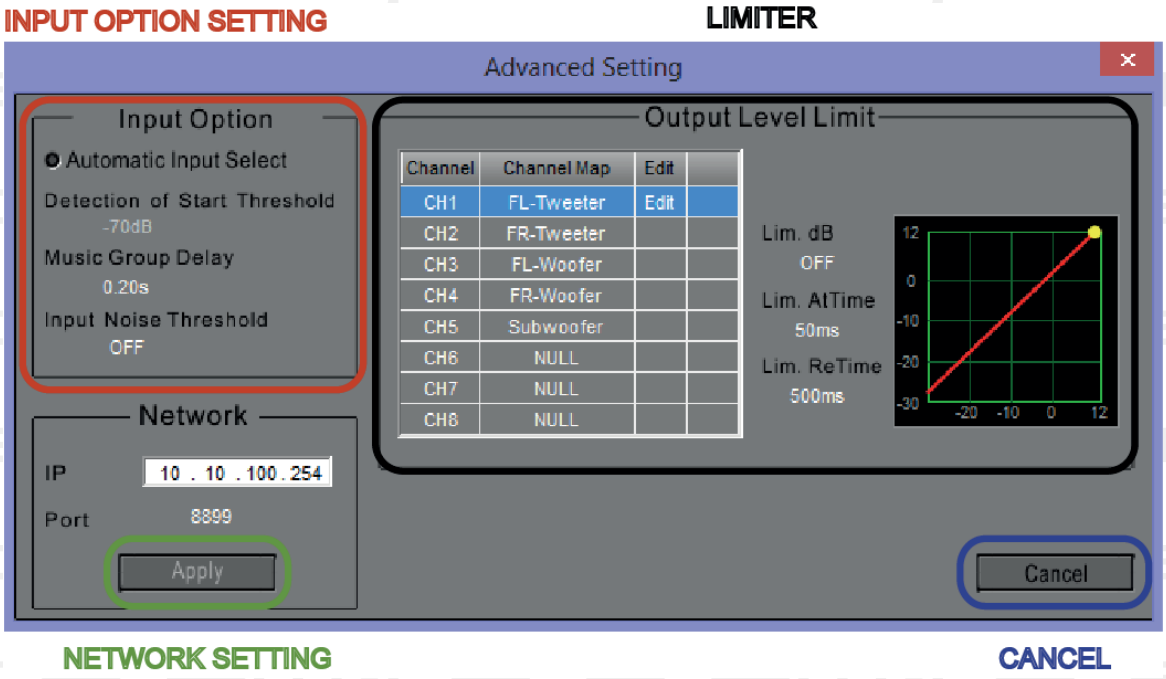
(7) Save Complete Processor Preset Data

This function saves all the data from current machine to computer for further complete machine scenes copy use (same with above function opration). This operation won't change any data of the current working machine.

10.8.2 Option Menu

(1) Advanced Setting

Click “Advanced” menu option in light blue getting the pop-up menu “Advanced setting” as following figure:



#1 Input Options Setting:

A. “Automatic input select”: click this item, the machine will detect the signal input channel automatically. The suggestion is to restart this function after removing all background noise.

B. Detect automatic threshold: this function is used to fix the determination of the level of the possible height of the imput signal. Select the “Automatic input”, when the input signal source level voltage is higher than the setting one, and the machine will lock this input signal as input signal source. Please click the white text area and input values when it changes to cursor that can adjust the automatic threshold value (adjusting range: -120dB-~0.0dB, OFF).

C. Delay of the music signal: this function is to fix the total delay of the music signal on the device, provided to prevent the impact of music caused by a lower signal REM when some sources are turned off (commonly referred to as “bum”). By setting this delay, the impact of music will be deferred to the lowering of the signal REM. This will avoid the impact of the shutdown. Click the white area to the left of the text, the imput values vary on the cursor (adjustment range: 0.00s~1.00s).

D. The input noise threshold: this function sets-up an input signal threshold. If the input signal is higher than the threshold value, there is output. If the input signal is lower than threshold, there is no output. If the setting is reasonable, that makes the system quieter even without the normal music input. Click the white text area and input values when it changes on cursors, then adjust the input value of the noise threshold. (Range of intervention: -119.0dB~ -20dB, OFF).

#2 Network Setting:

A. IP address: input values in the IP textbox, which can set the IP address of this machine built-in or external WiFi.

Note:

the default IP address is 10.10.100.254

B. Network port: left-click the white text area of the port and input values when it changes on cursor, then you can adjust the built-in or external WiFi network port.

Note:

the default network of the machine is 8899

#3 Limiter Setting:

A. Clipping level: this dimension of the signal output in use rises to the values of the level and when the limiter is activated and makes sure the level of the output signal, does not exceed the level of the limiter. The adjusting range: -30dB to 11.9dB, shut down. 0.1dB step per each adjustment. Choosing “OFF”, the limiter will turn off. The value of the limiter level normally can be set with an input sensitivity 2dB~4dB higher than the value of power amplifier. For example, it is possible to obtain a sensitivity of 0dB amplifier from the manual and you can set the level of the voltage limiter +3dB when you connect the processor channel to the amplifier. Also, the other much more precise setting method: connect the system, and increase the input signl music gradually, adjust the limiter level till the amplifier clipping light is blinking, listening that the sound from the speakers is very loud without stopping, which is the best situation.

B. Response time: it means when the output signal level over our setting limiter level, how long the limiter will start to work. If the response time is very short, this will affect the dynamics of the music sound head and strength. If the response time is very long, that will affect the degree of natural music and transient, also, it will cause certain delay and turbidity. So, it’s better to adjust the response time shorter. Adjusting range: 0.3mS to 200mS.
Setting advice: better bass signal response time: 60mS~80mS, better midrange and tweeter signal response time: 20mS~40mS.

C. Release time: it means when the level of the output signal is varied by the level of over limiter less than the level of the limiter, how long the limiter takes to shrink. Normally it is the best to adjust the time release longer than the response time adjusting range: 50mS~50000mS.
Setting advise: better bass signal release time is better in the range: 600mS~800mS, mid-high signal release time in the range 200mS~400mS.
Click “cancel” to exit.

(2) Firmware Upgrade

Click “firmware updates” and the pop-up dialog appears as below, click “browse the file dialog” button and find *hex Extension DCP680 upgrade files and click “update” button to upgrade the hardware. The upgrade progress begins with color that start to move, after around 60 seconds the progress bar is full that means the hardware upgrade was successful. Click the “exit” button to exit the hardware update. After the updates, the machine will restart automatically.

Note:

the upgrade files*. Extension DCP680 can be downloaded from our website, which is the latest version of the software update.
Please don’t turn the power off during the update!!!

(3) Help Menu:

Left-click the “help” and the machine’s help files pop-up including: operation instruction, the installation dimension, etc.

(4) About:

Display the version of the software, copyright info, etc.

11. BLUETOOTH CONNECTION

11.1 Bluetooth Connection

Supports the version 4.0 Bluetooth and the Bluetooth input as the highest priority. The machine will switch to Bluetooth input channel automatically as long as there is a Bluetooth transmission.

Bluetooth connection operation:
Firstly open the Bluetooth from one of your devices that support Bluetooth such as mobile phone, computer, etc. Search the Bluetooth devices and select the one named “CHS-DSP Audio” Bluetooth devices for matching connection. When the Bluetooth connection is successful, the software automatically determines Bluetooth as the input source. See illustration:

Nota:

the default name of Bluetooth of this machine is “CHS-DSPAudio”, and the maximum transmission distance is 10m. The machine will choose the Bluetooth as signal input automatically after the 1st time matching connection. But it will turn back to previous selected input signal source if it cannot find the Bluetooth music player or if there is a phone call coming in. Also you can change the input signal sourse by yourselIf in the software.

12. ANDROID APPLICATION

12.1 How to get the application

The software can be down loaded from our website www.dragster.audio in the section “download”.

12.2 How to Install the application

Operating settings: suitable for latest Android versions.

12.3 Android Connection

After the downloading and installation on your Android machine, go to the WiFi procedure for the connection to the processor.

Click “setting” 

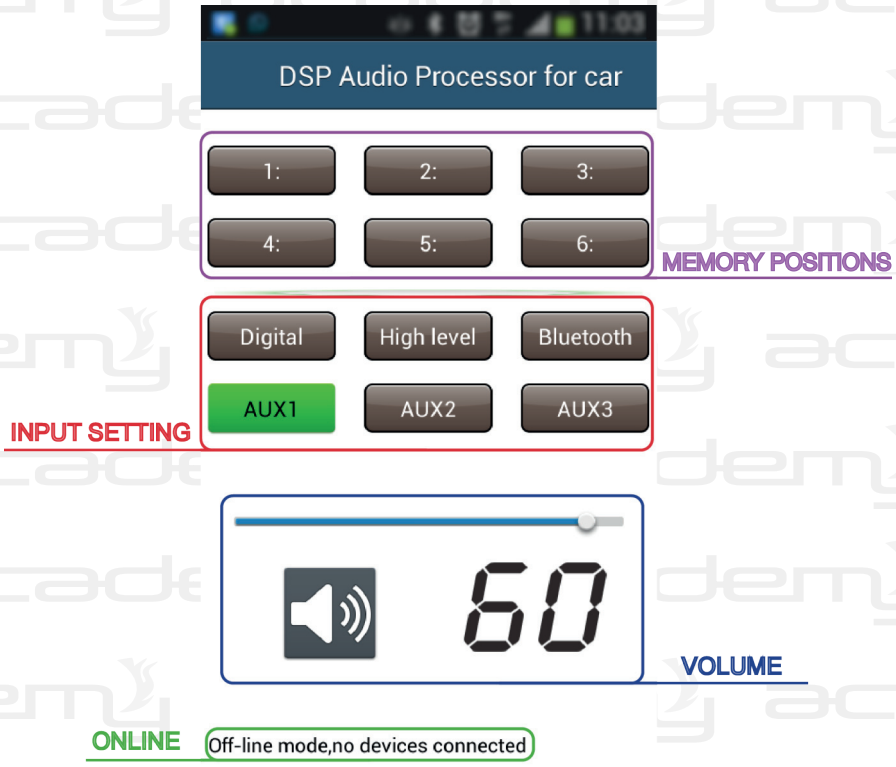
, go to wireless network 

, connect it, see the image here below:

Note:

be sure that the processor is powered on before connecting to Android machine.

12.4 Application Screenshot



12.5 Application Operating

(1) Recall Memory Position:
- buttons from 1 to 6, recall the setting saved in the machne corresponding to the number of the selected button.

(2) Input Setting Area:
- select the “input signal” among “High Level”, “Bluetooth”, “AUX1”, AUX2”, “AUX3”, “Digital”, Coaxial”.

(3) Volume:
- use the volume bar to increase or decrease it.

(4) Line:
- shows the connection status with the device.

13. TROUBLE SHOOTING GUIDE

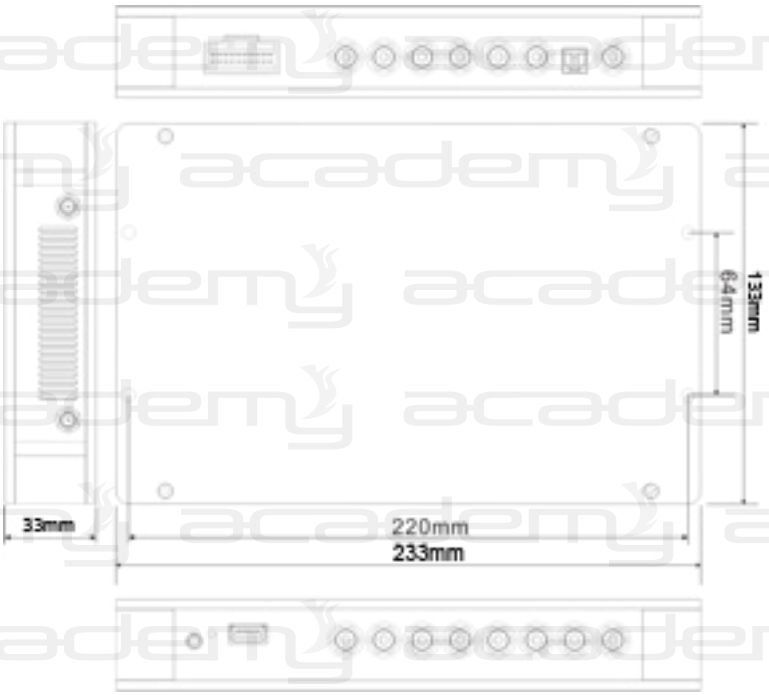
Check carefully that the wire connection and all the interface connections are correct before turning the power on. The common fault diagnosis and treatment as below:

With problems: Find the reasons referring to below table before sending to repair.	If you cannot repair after checking, please recover to initial value.	Still cannot repair: please ask help from the manufacture custumer Service Point.

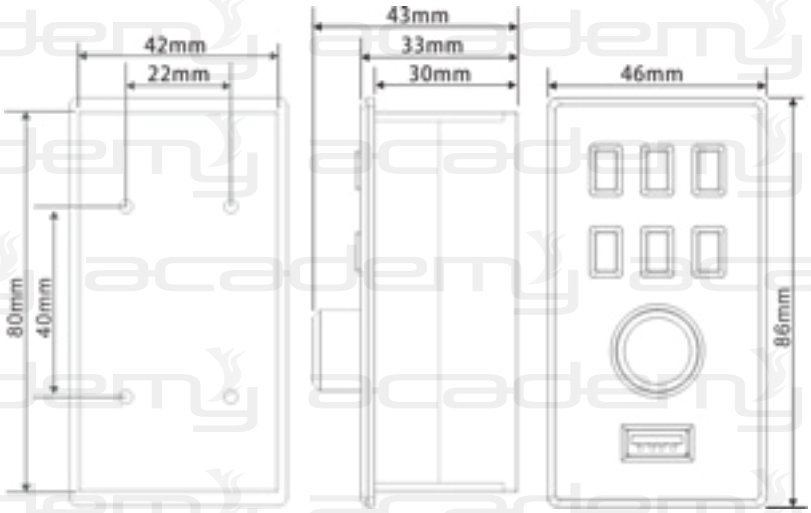
Trouble Shooting:

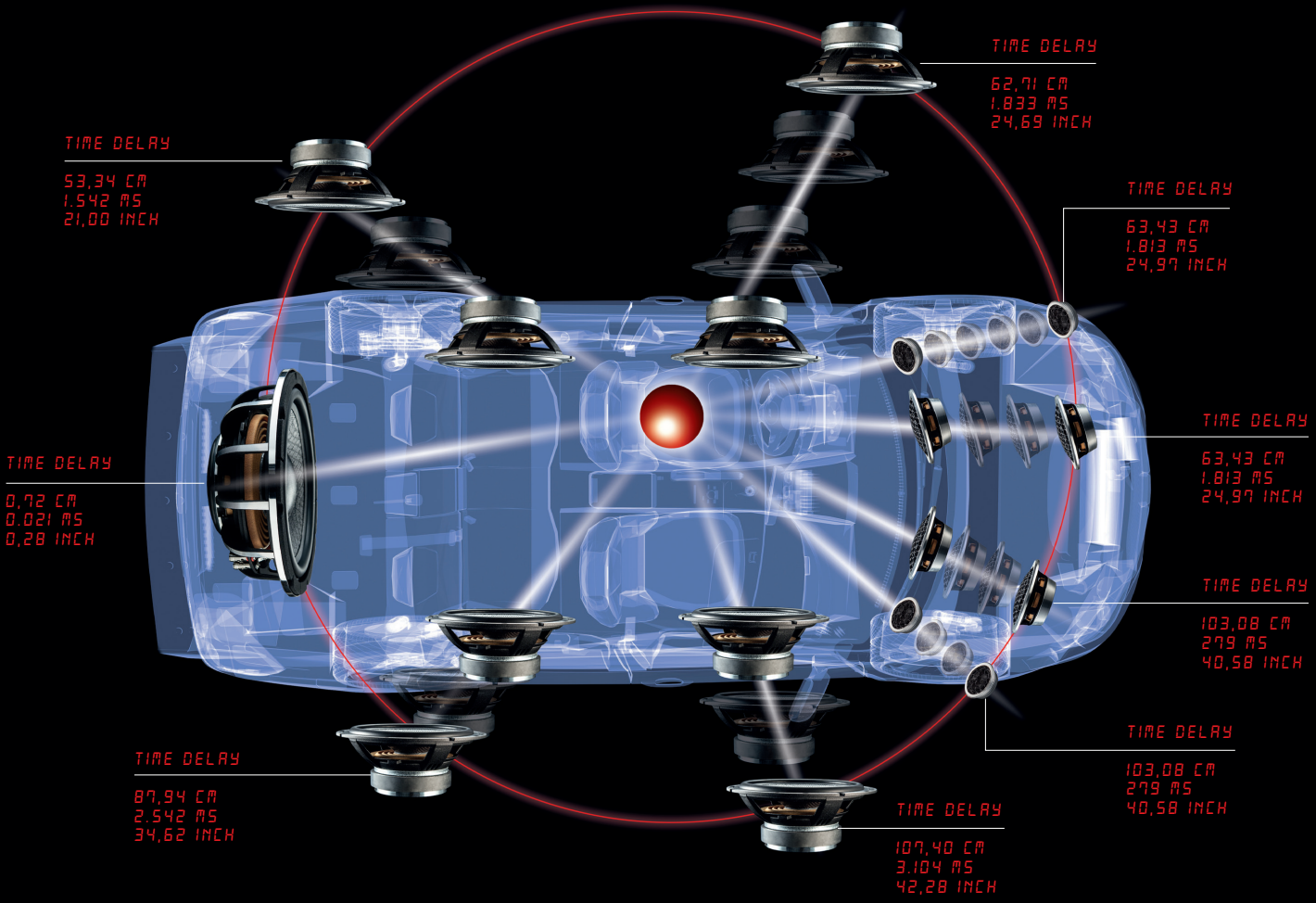
No.	FAULT	REASON AND SOLUTION
1	No power	1- Check if the power wire connection is correct 2- Does REM IN have a correct connection?
2	No sound	1- Is mute function open or not? 2- Is signal input channel correct?
3.	Cannot connect to Bluetooth?	1- Check if name “CHS-DSPAudio” can be searched from the Bluetooth machine (mobile, computer, etc.)
4.	No WiFi connection	1- Are WiFi network IP and network port settings correct? 2- Has WiFi equipment (mobile, computer. etc.) searched the WiFi network which begins with “DSP Audio” characters?
5.	USB cannot connect to computer?	1- Is USB cable in place or not’? 2- Have you found the link called “HID-compliant device” in the manager’s computer or on a device on someone?

14. ADSP 8 ASSEMBLY DIMENSIONS



15. CONTROLLER ASSEMBLY DIMENSIONS





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