



# DSP-Z8 IV

## Installation and Quick Start Guide

Before operating the unit, please read this manual thoroughly and retain it for future reference.

# **The Zapco Mission Statement**

## **Committed to Excellence**

ZAPCO is dedicated to the pursuit of audio fidelity. Our prime objectives are to design and manufacture audio products of unsurpassed quality, to provide unparalleled support and service for these products, and to conduct business in a manner that will enhance the quality of life for all involved.

## **Experience**

### **Knowledge from doing**

There is absolutely no substitute for experience; that is a simple fact of life. Another simple fact is that ZAPCO has, for over forty years, been the leader in defining quality standards for the car audio industry. These years of experience have led to a thorough understanding of the challenges that are unique to the world of car audio. ZAPCO's relentless quest for sonic purity consistently yields imaginative designs that utilize the most innovative technologies. The resulting products set the criteria by which all others in the industry are judged.

Congratulations on your purchase of the new Zapco DSP-Z8 IV, the first of the new 4th generation of Zapco processing that started back in 2004 with the DSP6. The DSP-Z8 IV is a 6-ch in 8-ch out processor with the latest technology in A/D processing for superior signal to noise ratio and low distortion, a top-end Digital processor and D/A convertor, and a custom GUI (computer interface) designed to be easy for even beginning tuners to use right from the start.

This installation manual will take you through the installation of the DSP and the functions available in the Zapco DPN Programming Software as well as the functions of the Z8 IV Dash Remote.

The DSP-Z8 IV DPN Programming Software itself is on the supplied disk and available to download directly from our website at [www.zapco.com](http://www.zapco.com). The download will give you the GUI program and full operating instructions to take you through the initial set-up and tuning of a system with the DSP-Z8 IV.

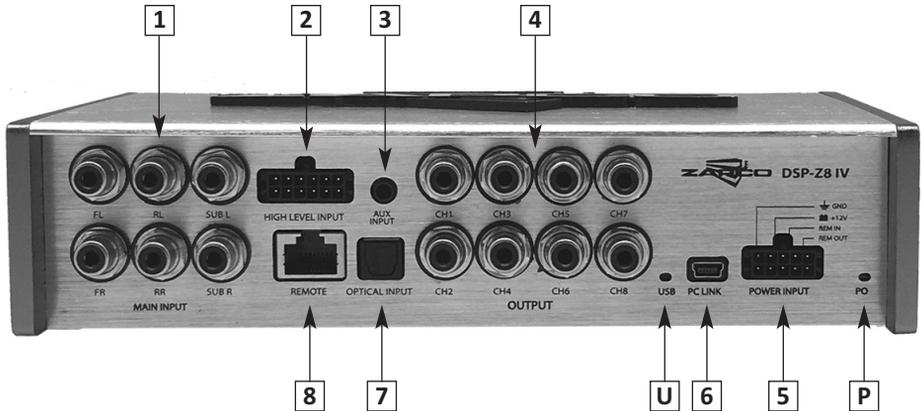
**Getting Started:** The very first thing you want to do when installing any electronic device into the car is to disconnect the negative battery terminal to prevent any accidents (dropping a live hot wire on a component that has been mounted to the metal of the car can destroy that expensive piece of gear you just bought).

Please read the entire installation manual through before you proceed with the installation, so you will know what needs to be done at various electrical connection points. This can save a lot of time and avoid having to do things twice.

Proper installation protects your equipment and your vehicle.

Next you need to find a secure mounting location for the DSP-Z8 IV. You need to avoid sources of heat and moisture, and provide adequate ventilation for cooling. Check around and under the location for any wires, hoses, etc. Also avoid mounting the unit too close to any main electronic control modules as they can be bad noise sources. Plan out the power and signal wiring to the DSP and then out to the amps. The Dash Remote wire needs to be run to the mounting location also, as well as any optical or auxiliary input cables. Depending on your installation, you will probably want to run all the wires and cables to the DSP mounting location before mounting. Once the area is prepared, mount the unit securely using the proper hardware.

## Connecting the DSP-Z8 IV



**1** - Connecting the DSP-Z8 IV is quite straight forward. There are 6 RCA Inputs. Ch. 1 and 2 are seen as (FL) front left and (FR) front right, Ch. 3 and 4 are the rear inputs, and Ch. 5 and 6 are Sub1 and Sub2. These labels are used to match the most often used setups. In the GUI you will tell the DSP which input setup you are using and it will automatically connect the inputs to the outputs internally.

**2** - The DSP-Z8 IV also has 6 channels of high level speaker input for use with factory stereo systems. You can connect the speaker outputs of your factory stereo system directly to the supplied plug. The plug is color coded to standard colors and each wire is also labeled. Just like with RCAs you can use 2, 4, or 6 channels for input. If your system has active crossovers you will use the MIX function in the GUI to sum them and get a full range signal.

**3** - The DSP-Z8 IV also has a 2-ch analog auxiliary input. This input uses a standard 3.5mm stereo plug for MP-3 players, smart phones and other low level input sources.

**4** - These are the 8 channels of RCA outputs to connect to the amplifiers. These gold plated Tiffany style connectors will assure that you get the best possible signal transfer.

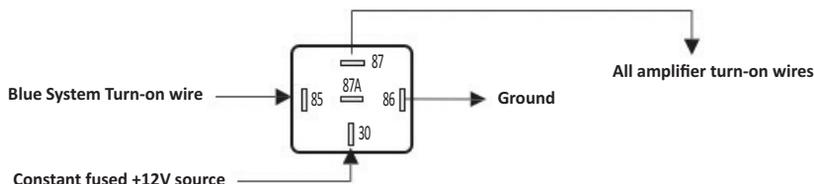
**5** - Power Connector: There are 4 connections here. The Yellow wire is the main +12V wire and should be connected to the battery positive. The Black wire is the ground for the DSP and must go to a good solid chassis ground. **NOTE:** *The biggest single cause of noises in the system is weak grounds.*

The Red wire is the turn-on wire for the DSP and should go to the blue turn-on wire coming from the head unit. **NOTE:** If you are using speaker level inputs the DSP-Z8 IV will automatically turn on when the factory stereo system turns on. You do not need the turn-on wire.

The Blue wire of the DSP-Z8 IV is the +12v output wire to turn on your amplifier.

**Important note:** To avoid noise caused by equipment turn-on it is important that you use only the blue wire from the DSP-Z8 IV to turn on your amplifiers. If you are using multiple amplifiers it is best to use a relay between the blue DSP +12v wire and the amplifiers.

\* For safety, when turning on multiple amplifiers and other products from a single turn-on wire you should use a Bosch relay as below

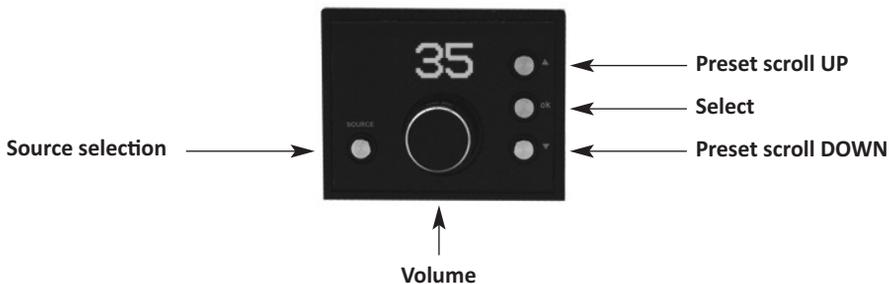


**6** - USB Connector: The MINI USB connector will connect to your laptop or other computer so you can use the GUI to control and tune your system.

**7** - The DSP-Z8 IV will accept an SPDIF digital input through the optical input connector.

**8** - Receptacle for the dash remote included with the DSP-Z8 IV. The remote (pictured below) will allow you to change presets, change the input source, and adjust the volume.

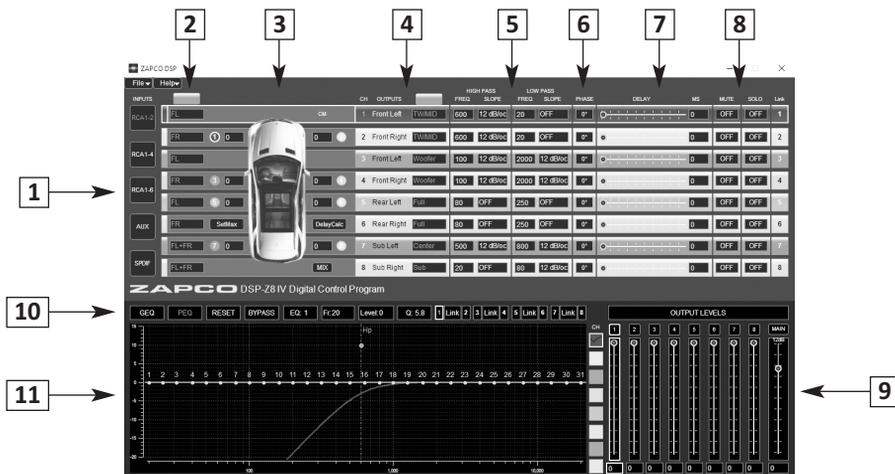
**UP** - There are two lights on the DSP-Z8 IV. The Power light lets you know when the unit is on and operational, while the USB light lets you know that the USB connection is plugged in and active.



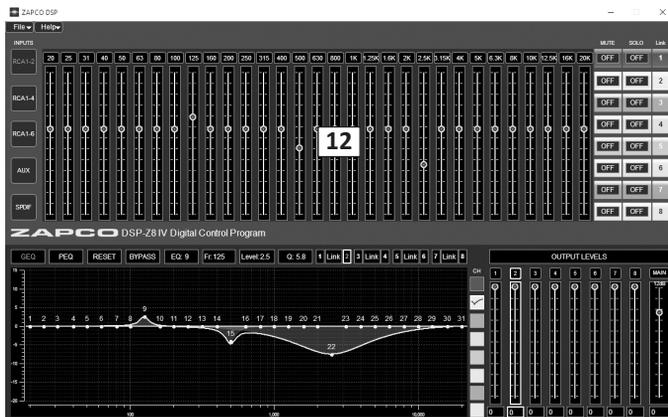
## The DSP-Z8 IV Control Screens

Use the supplied disk or download the DSP-Z8 IV GUI from [www.zapco.com](http://www.zapco.com) and install the program on your laptop. We highly recommend that you read the complete manual thoroughly before starting the set-up so you are familiar with the controls and how they work. Connect the DSP to the PC with the USB cable, turn the system on, and open the program. Choose the DSP-Z8 IV. Each time you open the program you will do a test of the USB system.

### Default screen with Paragraphic EQ



### Screen with Graphic EQ chosen



**1** - At the top left of the default screen you find the input selection for 2Ch, 4Ch, Aux and Opti (digital). The small 1 is the MIX button that will sum the speaker level inputs.

**2** - This row shows the input for each output channel, chosen from the drop-down.

**3** - Enter the distance in cm for each driver here so the DSP can figure the delay. Enter distances by cm > click SetMax > then click DelayCalc.

**4** - There you click the drop-down to choose the function of each speaker.

**5** - The crossover section lets you choose crossover points and slopes.

**6** - You can set the phase of each speaker to 0° or 180°.

**7** - The Signal delay is displayed here and you can make fine adjustments to the delay here as well.

**8** - The muting section allows to mute the channels you do not want to here. The solo function muted all channels except the one you have clicked. You can also link a group of channels to control them together for delay and output level.

**9** - Sliders control the relative output of each channel as well as overall gain.

**10** - The information bar tells what you are doing to the signal and also lets you link channel pairs for EQ and Crossover settings. You also choose the GEQ or PEQ here.

**11** - The graph section show as little or as much as you want. The boxes at the right can be checked or unchecked to show the crossover and EQ settings for each channel or for all channels. For the active channel you will always see the crossover points and EQ curve.

**12** - When you click on the GEQ button the 31-band EQ screen takes the top section of the GUI. The frequencies are listed at the top and you can make adjustments by dragging the sliders or by clicking a slider and using the keyboard arrows to move the sliders in .5dB steps. You can also adjust the Q of the filters. NOTE: EQ is set first by GEQ and can only be set once. All later equalization should be set with PEQ or GEQ will be reset.

Now you have a quick run-down of the DSP-Z8 IV functions. The accompanying manual will take you through the system complete set-up.



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