DS18 KEQ20 6-Way Graphic Equalizer User Manual

DS18 KEQ20 6-Way Graphic Equalizer User Manual

Contents

Introduction

The KEQ20 is a Six Channel Pre-Amp Equalizer Network with which you can install various types of multi-amplifier systems in a car. TheKEQ20 is to be used with high quality power amplifiers and speakers in a multi-amplifier system for hi-fi (high fidelity) sound reproduction. You will be satisfied with the KEQ20 provides maximum flexibility to configure every possible multiamplifier car stereo system. Before designing and installing your system, please read this manual thoroughly so that you can set up the system that practically suits you. Having theKEQ20 in the center of your multi-amplifier car stereo system, your car stereo system will provide you with the ultimate in hi-fi reproduction.

Precautions

This unit is designed for 12V DC operation only.
Avoid Installing the unit where:

- It would be subject to high temperatures, such as direct sunlight or from hot air from the heater.
- It would be exposed to rain or moisture
- It would be subject to dust or dirt

If your car is parked in direct sunlight and there is a considerable rise in temperature inside the car, allow the unit to cool off before operating. If this unit is placed too close to the car radio or any vehicle wires, an interference may occur, in this case, separate the unit from the car radio and power wires.

Key Features

Dual-bandwidth Equalization:

Car interiors vary widely in size and acoustic make-up. The addition interior design don’t make the best location for speaker placement causing your high performance speaker system to sound not as good as it could be. TheKEQ20provide a maximum equalization control for each area of the audio spectrum. One-third octave bass equalization combined with one-half and full octave high frequency equalization offers an ideal level control.

Volts Pre-Amp Line Driver:

The KEQ20offers a high quality line driver that takes the low output voltage of a source unit and increases it up to 18dB (13 volts peak). This allows you to maximize the signal to-noise of your system and drive your amplifiers to their maximum output without clipping. No hiss, clicks, or pops plus maximum sound quality.

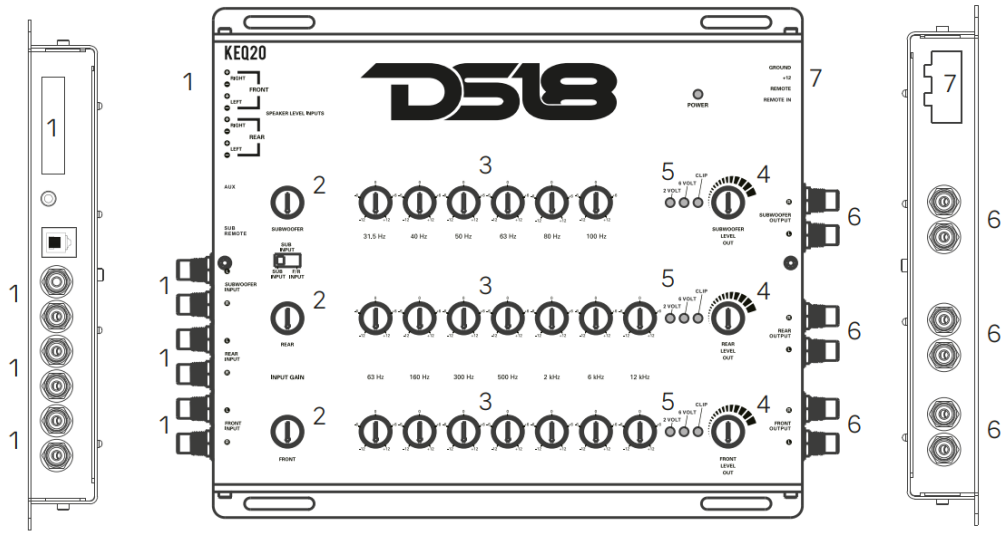
Speaker Level Inputs:

The KEQ20 has a unique high impedance speaker level input that will interface with most head units and let you add amplifiers and speakers to your audio system.

PFM Subsonic Filter:

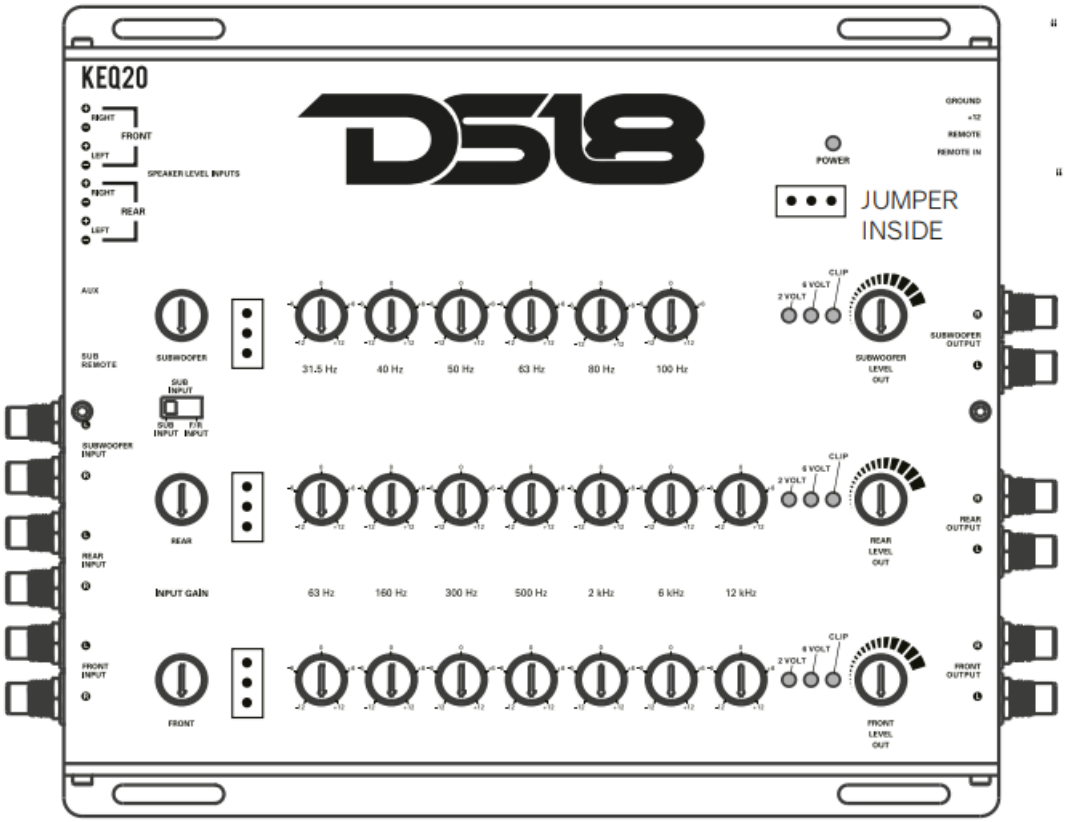
This unique feature is able to fine-tune the bass response of any system. Why waste power on nasty subsonic information when your Programmable Frequency Match (PFM) filter will help you clean things up.

Location and Function of Controls (outside)



1. Inputs: The KEQ20 has two types of inputs, Pre-Amp and Speaker Level. These inputs should get their signals from the main head unit and should attach to eitheRr CA jacks or speaker leads that are coming out of your source unit. If your source unit has a front, rear and subwoofer pre-amp output, connect them to identical inputs on youKr EQ20. If the source unit only has front and rear inputs, don’t worry about losing your bass equalization, theKEQ20 will automatically routes your subwoofer equalization controls to the rear channels.
2. Input Gain ControlsT: hese knobs allow you to increase or decrease the signal level from your source unit to the KEQ20. Most aftermarket source units will require an increase whereas radios installed by the automobile manufacturer will probably require you to decrease the signal level.
3. Equalization ControlsE:ach of these knobs control the audio spectrum. They can be adjusted the audio output to suit your personnel taste.
4. Output Level Controls: Although your KEQ20 has the ability to increase your signal voltage to 13 volts peak, your amplifiers may not necessarily accept that much signal. These controls allow you to regulate the proper amount of pre-amp signal from theKEQ20 to the amplifiers.
5. Output Voltage Indicators: These LED’s indicate the level of signal voltage that is coming out of the various outputs of your KEQ20.
6. Outputs:These RCA connectors should be connected to the next component after the KEQ20, such as a crossover or amplifier. Do not connect any speakers directly to yourKEQ20 or to any home appliances.
7. Power Connections:With this connector, you can wire up the power, ground and remote turnon from the convenience and then casually plug it in the back of your

Location and Function of Controls



1. **Input GroundingF:** or most systems you can leave this jumper set in the BALANCED position. In some systems, the source unit may look for a ground through the RCA connection to the amplifier and create a ground loop, which can cause a whine. In this case, you should change the four jumpers to the UNBALANCED position.
2. **Ground Isolation Selector:** Occasionally alternator hiss noise may appear in a system because the source unit and amplifier are using different grounding schemes. To help in this situation, we have provided alternative grounding connections. Make sure your system is turned OFF before you move these jumpers.

Installation

A:-Placement & Mounting of the KEQ20

Placement: The KEQ20 needs to be installed in the signal path after your source unit but definitely before your amplifiers and or any active crossovers. The chassis is usually mounted in the rear of the vehicle close to the amplifiers as possible.

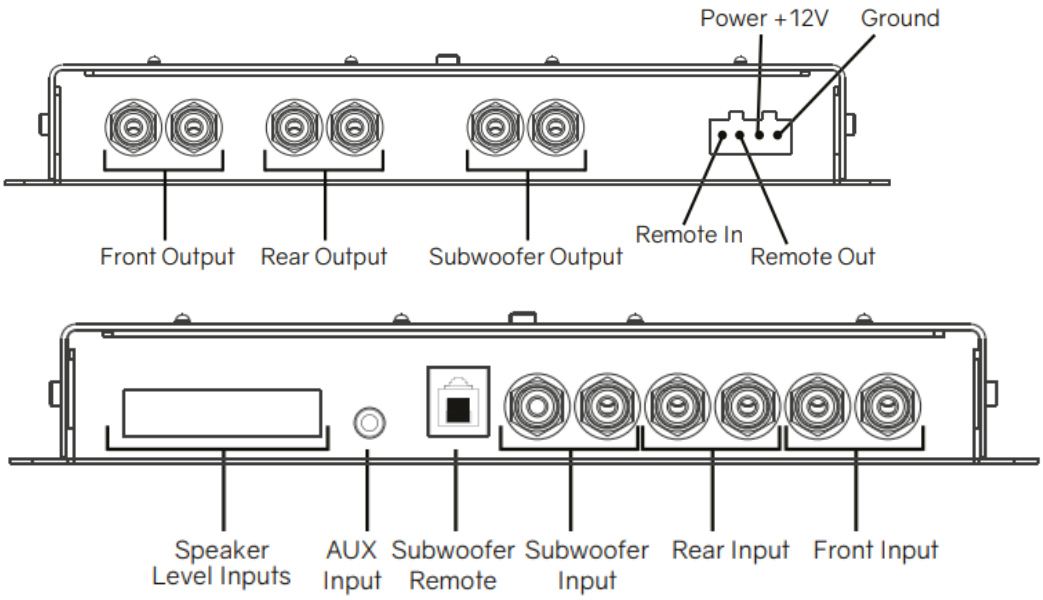
Mounting : Once you have selected a permanent mounting location, position the unit and mark the appropriate mounting holes with a felt-tip pin or scratch awl. Before doing anything else, make sure you are not about to drill a hole in a gas tank or piercing any existing wiring. Nothing ruins your day more than an expensive repair bill. Drill a few small pilot holes and secure the chassis of the KEQ20 with self tapping screws.

B:- KEQ20 Power Wiring

Remote In : Connect a 22 to 8 gauge wire from the head-unit's remote turn-on to the Remote connector on the KEQ20
Remote Out: Connect a 22 to 8 gauge wire to amplifiers
Power (+12V) Connection: Insert a 22 to 18 gauge wire into the connector labeled Power on the connector of your KEQ20 Connect it to a good constant source of 12 volts, fused at 2 amp.

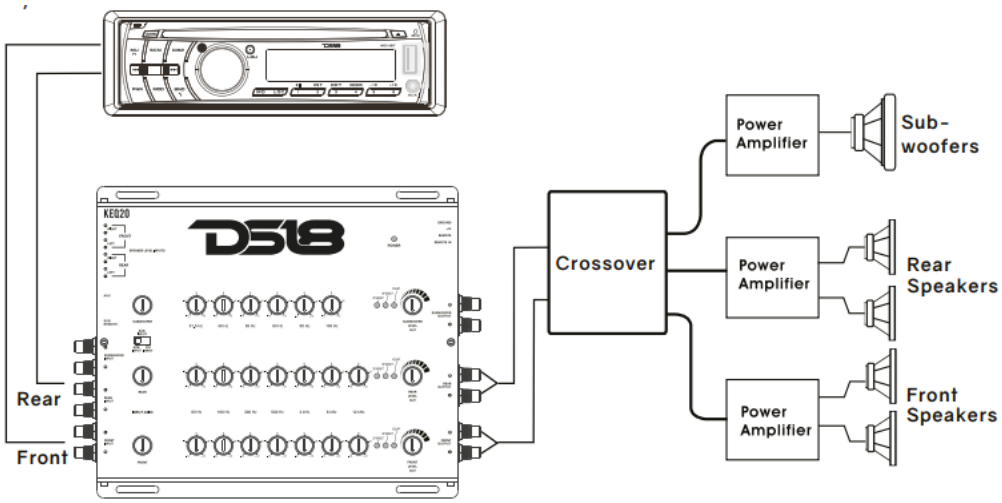
Ground Connection: Use the same gauge wire as you did for the positive connector and run it from the Ground connector on the KEQ20 to a chassis ground with the length be as short as possible to ensure a good ground connection.

Figure 3: Side view of KEQ20 Connectors



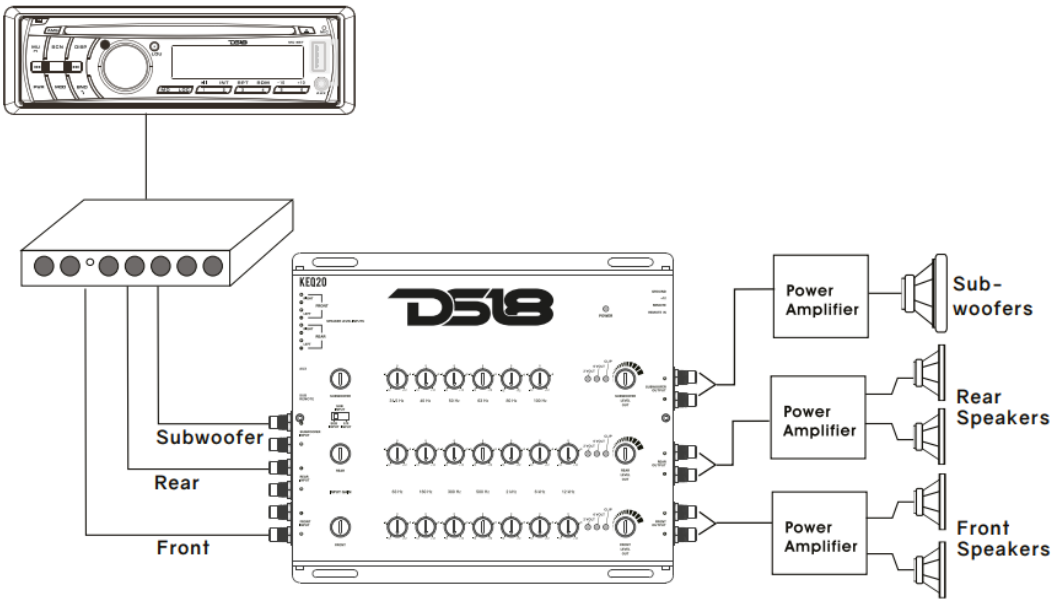
Some Example of System Configuration

System 1

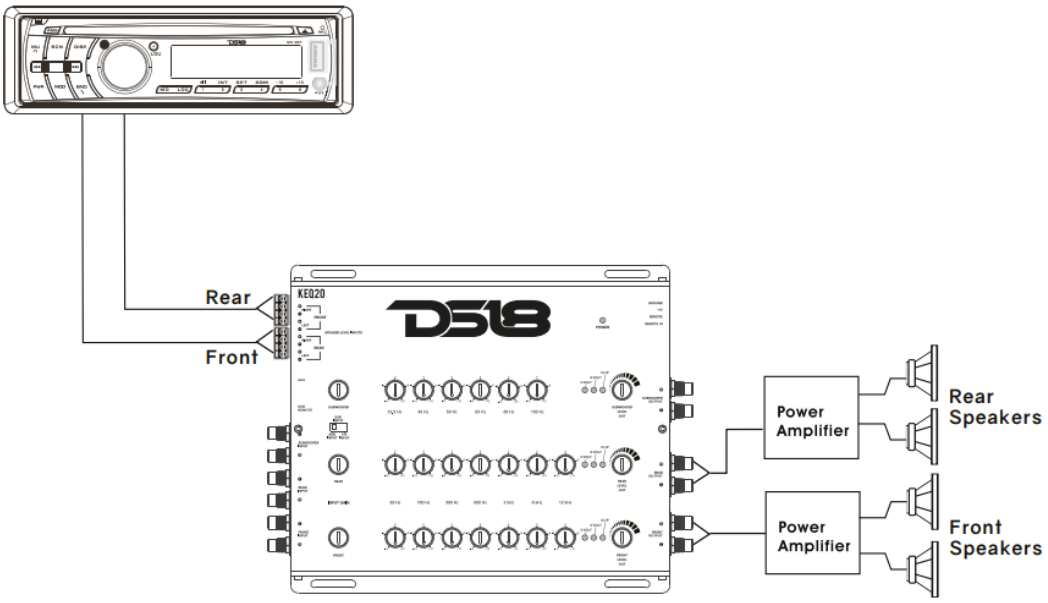


Some Example of System Configuration

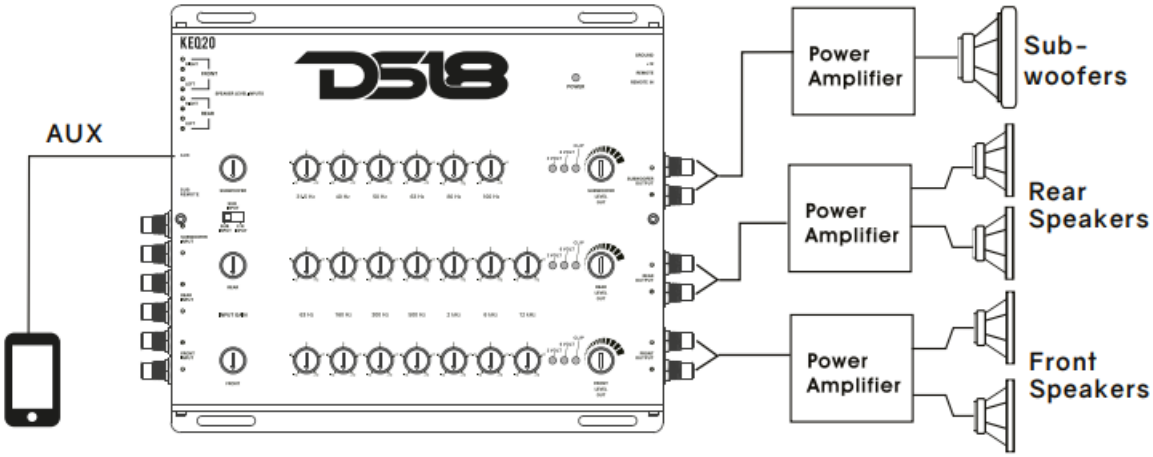
System 2



System 3



System 4



Level Matching

If you have ever listened to car audio system and heard lots of hiss, clicks or pops, then you have experienced and improperly level matched system. When a car audio system is properly level matched, you should get the maximum output from your source unit and amplifiers without any hiss, clicks or pops. The following steps will help you;

1. Set your source units fader and balance controls to their center positions. If your source unit has subwoofer output (and you are using it), set the output level at minimum.
2. Disconnect the connections between your KEQ20 and the amplifier(s).
3. Start playing some relatively dynamic music and set the volume on your source unit to about 3/4 of maximum. You should not be hearing anything at this point.
4. Starting with the KEQ20 Front Input gain control, increase or decrease the Input Gain control until the Overload LED begins to flicker steadily with the music. Do the same for the Rear Input and Subwoofer Input.
   Important Note: For Four Channel Or Speaker Level Input Users. If you are only using the Front or Rear or Speaker Level inputs, you will find that the subwoofer equalization now works on the rear channels. Therefore, the Rearinput gain is actually controlled by the Subwoofer input gain control.
5. Now adjust the output level control until the 2 volt or 5 volt light starts to flicker. You will set the output voltage to match up with your amplifiers input gain levels.
6. Double check that, the input gains on the amplifier(s) at minimum.
7. Decrease the volume control on your source unit and re-connect the RCA's between the KEQ20 and the amplifier(s).
8. Now increase the volume on your source unit to your normal listening level.
9. At this point you may find yourself going back and adjusting the Output Level controls on your KEQ20 to balance the Front, Rear , and Subwoofer sections of your system to accommodate for the speaker placement and efficiency.

SPECIFICATIONS

Maximum input level: 15V rms
Maximum speaker level input: 100 watts
Maximum output level: 10V rms
Input gain: 18dB
Frequency response: 10Hz-20KHz; +/- 1dB
Total harmonic distortion: 0.003%
Signal to Noise ratio: < 110dB
Balanced input noise rejection: 60dB
InputImpedance: 20K Ohms
Output Impedance: 150 Ohms
Equalization Cut/ Boost: +/- 12dB
Power supply: High headroom PWM switching
Power draw: 500mA
Recommended fuse rating: 2 Amp
Size: 8.8 W x 9.3 D x 1.3 H
Weight: 3.25 lbs

TROUBLE SHOOTING GUIDE

1. NOT WORKING Check all fuses Check all power(positive,remote)wire connections Check that ground wire is properly connected
2. LED POWER ON INDICATOR NOT GOING ON:

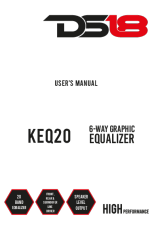
Same as sign 1 remedy

3. SOUND DISTORTION AT LOW VOLUME LEVEL Output level not set correctly
4. LEVEL OF SOUND IS LOW:
   Check the RCA patch cords for loose ormisconnected cable
5. A WHINING SOUND CAN BE HEARD THROUGH THE SPEAKERS AT LOW VOLUME LEVEL WITH RUNNING ENGINE:
   Check the power wire(red) with good connection directly to the battery and ground point must make good contact with chassis ground.
   Check the input grounding jumper or ground insolation selector inside.

FOR MORE INFORMATION PLEASE VISIT

WWW.DS18.COM

Documents / Resources

	DS18 KEQ20 6-Way Graphic Equalizer [pdf] User Manual KEQ20, 6-Way Graphic Equalizer, KEQ20 6-Way Graphic Equalizer