

The logo features the word "ZAPCO" in a bold, white, sans-serif font. Behind the text is a stylized, 3D-rendered stack of several rectangular panels or sheets, shown in a perspective view. The panels are light gray and have a slightly textured appearance. The entire logo is centered on a dark gray background.

ZAPCO

ST-B
Owner's Manual

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

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 thirty 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.

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Zapco

Studio-B Amplifiers

Zapco has a reputation for sound reproduction and quality that is unsurpassed. It is our dedication to sonic purity and our passion for performance that built Zapco's reputation. With all the new amps coming into the market, not one has been any threat to Zapco's standing as the premium amp and processor line. Just check the audio competition scene and the audio forums. The pros know what to use to win.

But not everyone wants to compete. The question was this: Could Zapco put its 40-years of audio experience to work to develop an amp for every-day use? An amp that all can afford but that will stay true to the Zapco heritage for sound and reliability?

Absolutely! We can and we have! The new Studio-B amps are a testament to the fact that you can build a quality product with great sound in an amplifier for every-day use.

With the Studio-B amplifiers Zapco brings the sound quality and reliability that built the Zapco legend to an amplifier that everyone can afford.

While sound quality is always the number one factor in a Zapco design, there are other factors in the Studio design that make them "every-day" amps. The extruded aluminum chassis is more compact and lighter to make the studio series an easier fit in today's smaller cars.

The feature set of the Studio amps provides you with all the system versatility you need without adding additional components, with everything from crossovers to preamp outputs, so multiple amps don't require extra signal cables.

How about power? The Studio series Class A/B amps may not have the power of our bigger competition amps, but these little powerhouses are certainly not shy. The Studio-B are Class A/B Full range amps and have over 50 watts RMS/ch at 4Ω and about 65 watts RMS/ch at 2Ω. The Studio-XM Class D bass amps are 1Ω stable with power from 500W to as much as 2,000W.

Power, price, size, and performance. No it's not designed specifically for competition. This is an amp designed to knock your socks of ... in your car, for your daily use, every day.

So go ahead...Pop in your favorite disk, grab the volume, and see if you don't agree that dedication to sonic purity is definitely a good thing.

What's next? Only time will tell. But here's one thing you can count on.

As ZAPCO finds new ways to improve the state of the art, we will bring them to you immediately, in all our products.

So! Enjoy this manual. We hope you will read it thoroughly. We have tried to include all the necessary information for proper installation and set up so that you can enjoy the full potential of your ZAPCO Studio-B amplifier.

Warnings

ZAPCO highly recommends that a fuse or circuit breaker be placed within 18" of the battery. Although products have adequate internal protection, it is possible that a pinched power wire between the component and the battery may result in a fire. The protection device should be placed where it can be accessed easily and all wiring should be routed safely and correctly according to the following guidelines:

- > Do not run wiring close to hot or spinning objects.
- > Always use wire grommets when routing wire through the firewall or any other metal panels.
- > Make sure that the potential for pinched wiring is avoided by routing all

Install Sense

As a manufacturer, Zapco has taken great pains to produce a product that will give you many years of superior performance and reliability. However, certain basic rules need to be followed if you want to achieve the product's potential in your vehicle

It Takes Power to Make Power

The gauge of the power and ground wire is critical to your system. If the wire gauge is too small your amp will never produce its rated power. Even worse... Straining to produce power from insufficient current can over-tax the power supply of your amp and cause amp failure. See the chart below when choosing wire size:

Recommended Wire Gauge

	4Ft	7Ft	10Ft	13Ft	16Ft	19Ft	22Ft	28Ft
Up to								
20 A	14	12	12	10	10	8	8	8
35 A	12	10	8	8	4	4	4	4
50 A	10	8	8	4	4	4	4	4
60 A	8	8	4	4	4	4	4	2
85 A	4	4	4	4	2	2	2	0
105 A	4	4	4	2	2	2	2	0
125 A	4	4	4	2	2	0	0	0
150 A	2	2	2	2	0	0	0	0

Be Safe: 1) Add up the fuse recommendations of all the amps in your system. 2) Then see how long a run you will have from the battery to the amplifiers. 3) Now locate the wire gauge on the chart above.

i.e. If all your amps need a total of 125 amps and your wire run will be 16ft long you will need to use at least a 2 gauge wire. Anything less and your car won't go boom. ... It'll just go Blap! And ... you can damage your new amplifier.

Ground matters just as much as power. Electricity travels in a circuit. The ground wire needs to be the same size as the power wire or your current (and power) will be reduced. A weak ground connection will also limit the current flow. You need a good solid ground connection to the vehicle frame. Remember: A body panel is not a frame. Many metal body panels never even make contact with the frame. Make sure you have a solid ground to the frame, to guaranty you get full performance from your system.

Fusing: In addition to the fuses at the amplifiers, always fuse the main power lead at the battery to protect the vehicle in case of amp or wiring failure. Contact an installation professional for further advice.

Basic Installation Guidelines

Mounting your Studio Series Amplifier is easy. Just keep in mind the following guidelines:

- The amplifier may be mounted in any direction, on wood, metal or carpet.
- The metal case of the amplifier may be grounded or left isolated.
- The amplifier requires adequate ventilation. Position the amplifier with sufficient surrounding area for proper cooling.
- Keep any fan and vent end plates clear for proper internal cooling.
- Keep the amplifier out of the engine compartment and other locations that may cause excessive heat or moisture.
- Do not mount the amplifier to a sub-woofer enclosure or any other place that may have excessive vibration!

System Gain Setting

Proper gain setting is one of the most important factors in setting up a stereo system. At the same time, gain setting is most often done wrong. Turning up the gain of an amp is the very last thing you should ever do to a system. An amplifier is a step up transformer. Period. Any signal you put in is boosted by a fixed factor. Music, hiss, or any other noise, it doesn't matter. A large number of noise problems are simply a matter of improper gain settings.

The goal of gain setting is to achieve the maximum amount of musical output from the amplifier while getting the least amount of hiss or noise from the system. Your Studio Series amplifier accepts an extremely wide range of input levels. As little as .25 volts to as much as 8 volts at the RCA inputs. The basic gain setting is very simple and requires no special tools. Whether you have a simple system with a deck and an amp, or a system with a deck, line driver, equalizer, crossover, and amp, the procedure is always the same. First, hook up the system with all gain controls at minimum (turn the gain pots fully counter-clockwise with a small screwdriver). Then turn on the head unit and turn up the volume. If you achieve clean sound, and, more volume than you want, you don't need to make any adjustments.

However, if you turn up the volume and begin to hear distorted sound before it becomes loud, you are clipping (distorting) the deck (probably a little over $\frac{3}{4}$ volume). Turn the deck down just enough to hear clean sound again, and then move to the next component in your system. With the deck playing at "maximum clean volume" adjust the gain of the next component to its "maximum clean volume". If you adjust your gains this way, always starting at the head unit and working down the line to the amplifier, you will get the most performance out of your amplifier(s) with the least amount of unwanted distortion and noise.

Safe Sound

A quick word about very serious safety issue..

Continuous exposure to excessive sound pressure levels may cause permanent hearing loss. It is not unusual for customers new to high-end sound quality to complain that their Zapco amps sound wonderful, but they just don't get "loud".

NOTE: A clean undistorted system simply will not sound loud. Distortion is what makes a system "sound loud", *not sound pressure*.

Here's the problem: Having properly set gains will allow you to comfortably play your Zapco system at a much higher SPL without sounding "loud". However, the fact that it is now more comfortable to play at a higher SPL does not mean it is safer. The functioning devices in your ear do not have very good pain receptors. So even if it does not "feel" like it hurts, excessively high SPL absolutely will damage your hearing.

So, please practice safe sound!

Following are the Zapco Studio-B Amplifiers

Zapco ST-2B

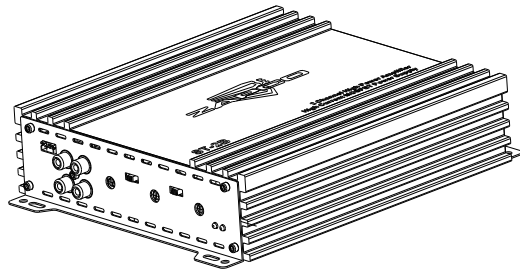
2 Channel, Class A/B, Compact Chassis Amplifier

The ST-2B is Zapco's basic 2 channel car audio amplifier. But in the end it is absolutely a **Zapco** amplifier. So, you may need to redefine "basic".

The ST-2B has all the features you expect, and then some. It has crossovers, bass boost, speaker level input and a preamp output so you won't have to run extra RCA' cables from the front if you add another amplifier to the system.

And power: the ST-2B has 65 watts RMS, both channels driven at 4 ohms with less then 0.5% THD+Noise. If you want to talk total power ...

... The ST-2B puts out 280 watts max power!

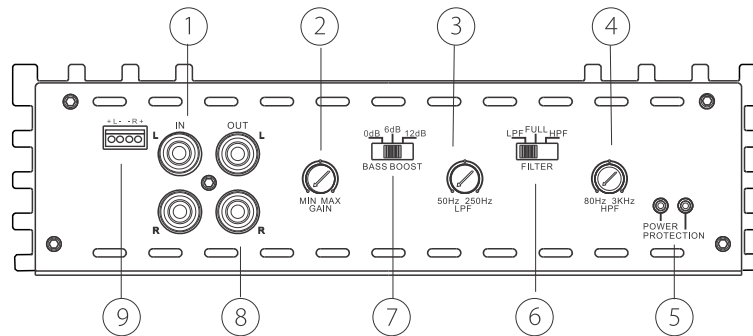


- 2 Channel
- Compact Chassis
- Class A/B
- 200 Watts RMS

ST-2B Features

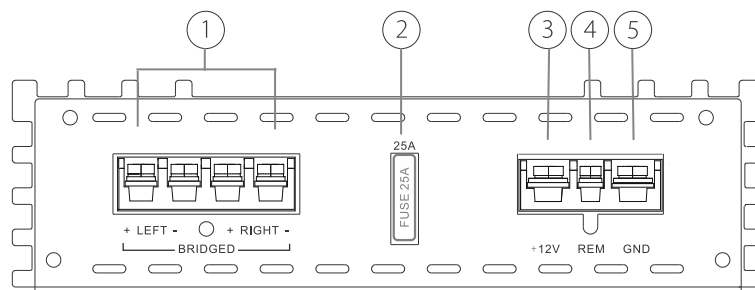
- Variable LP/HP/Full Electronic Crossover
- Variable bass boost
- RCA pass through outputs
- Hi level inputs
- High current MOSFET Power supply
- Zapco sound and reliability

ST-2B Control End



1. RCA IN connectors are to connect the ST-2B to an aftermarket head unit
2. Gain (Input Sensitivity) sets input to match head unit output level
3. LPF If you use low pass, this control determines crossover frequency
4. HPF If you use high pass, this control determines crossover frequency
5. Power/Protect LEDs monitor the amplifier status.
6. Crossover selector determines high pass, low pass, or full range
7. Boost allows 0dB, 6dB or 12dB boost of bass frequencies
8. RCA Out connects to another amp to "daisy chain" two amplifiers from a single RCA head unit output.
9. High Level input plug for speaker level OEM inputs

ST-2B Power end



1. Speaker connections - The heavy duty terminal block provides positive speaker connections. Simple insert the wire and cinch down the set screw. Note that the Mono bridge positions here are L - to R +
2. Fuse - The fuse protects the car should a catastrophic problem occur in the amp. Always replace with the same size fuse
3. +12V - The main 12 volt must be connected directly to the vehicle's battery using wire of the proper gauge. * See section "Install Sense"
4. REM - The remote terminal connects to the head unit remote out, or to some other switched 12 volt source to turn on the amplifier
5. GND The amp should have a firm connection the car frame.
* See section "Install Sense"

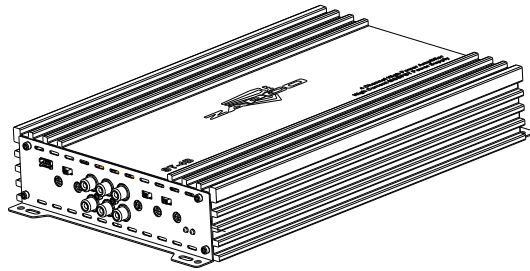
Zapco ST-4B

The ST-4B is Zapco's basic 4channel car audio amplifier. But, like the ST-2B, in the end it is absolutely a **Zapco** amplifier. It has Zapco sound quality and Zapco reliability. So, you may need to redefine "basic".

The ST-4B has all the features. It has front and rear variable electronic cross-overs, rear bass boost, 4-ch speaker level input and a preamp output so you can add another amp without running more RCA cables..

And power: the ST-4B has 65 watts RMS/Channel, both channels driven at 4 ohms with less then 0.5% THD+Noise. If you want to talk total power ...

...The ST-4B puts out 280WX2 watts max power!

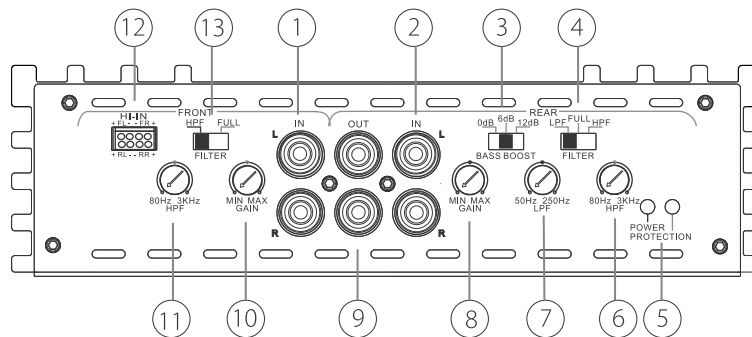


- 4-Channel
- Compact Chassis
- Class A/B
- 200WX2 Watts RMS
- 560 Watts Total Power

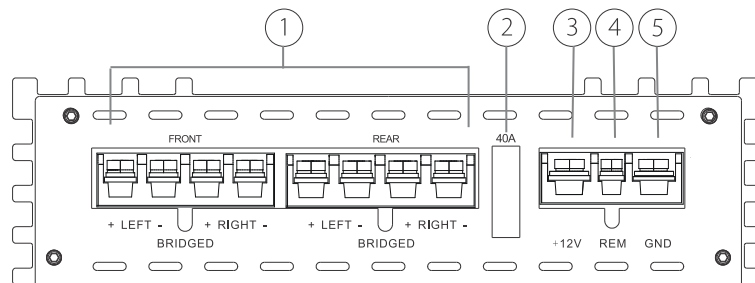
ST-4B Features

- Variable LP/HP/Full Electronic Crossover
- RCA pass through outputs
- High current MOSFET Power supply
- Variable bass boost
- Hi level inputs
- Zapco sound and reliability

ST-4B Control End



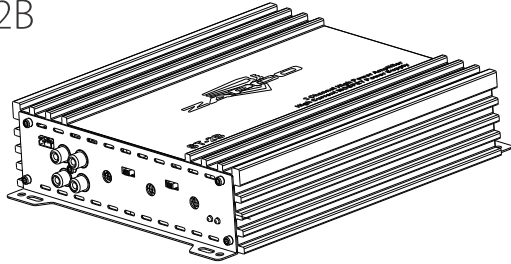
1. Front RCA IN connectors are to connect the ST-4B to an aftermarket head unit front outputs
2. Rear RCA IN connectors are to connect the ST-4B to an aftermarket head unit rear outputs
3. Bass Boost - allows 0dB, 6dB or 12dB boost of bass frequencies in the rear channels
4. Rear Crossover Selector - determines high pass, low pass, or full range for the rear channels
5. Power and protection LEDs show the operating condition
6. Rear HPF frequency control - Set the high pass frequency
7. Rear LPF Frequency control - Sets the low pass frequency
8. Rear Gain - This control balances output of the head unit to the Rear input of the amp
9. Rear Pass-through Outputs - These provide an RCA output to drive another amp or the without running extra RCA cables
10. Front Gain - This control balances output of the head unit to the rear input of the amp
11. Front HPF - If you use High Pass crossover, this control determines frequency of the front crossover .
12. Speaker Level input - the ST-4B has a Hi-level input plug for front and rear speaker level inputs.
13. Front Crossover selector for Full Range or High Pass.



1. Speaker connections - The heavy duty terminal block provides positive speaker connections. Simple insert the wire and cinch down the set screw. Note that the Mono bridge positions here are L - to R +
2. Fuse - The fuse protects the car should a catastrophic problem occur in the amp. Always replace with the same size fuse
3. +12V - The main 12 volt must be connected directly to the vehicle's battery using wire of the proper gauge. * See section "Install Sense"
4. REM - The remote terminal connects to the head unit remote out, or to some other switched 12 volt source to turn on the amplifier
5. GND The amp should have a firm connection the car frame.
* See section "Install Sense"

Specifications

ST-2B

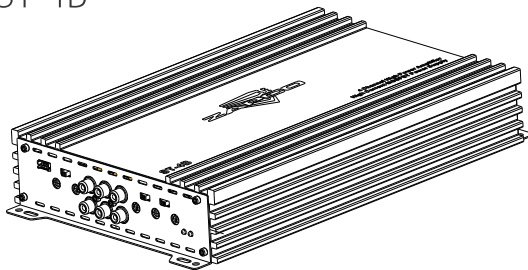


- 2 Channels
- MOSFET Power supply
- High Current bi-polar outputs
- Class A/B Design
- Pass through Preamp output
- Extruded Aluminum Chassis
- High voltage speaker level inputs
- 3-Channel Bridgeable

Total Music Power

Total Continuous RMS Power	135WX2 Watts
Continuous RMS Power Each Channel at 4 ohms all channels driven	65WX2 Watts
Total Harmonic Distortion + Noise	65W/Ch
Signal to Noise Ratio	<0.2%
Stereo Separation	>83dB
Dimensions (cm) Chassis L x W x H	>-45dB
Dimensions (cm) Inc Mounting feet and Terminals	19.96cmX18.2cmX5.1cm
	22.20cmX18.2cmX5.1cm

ST-4B



- 4 Channels
- MOSFET Power supply
- High Current bi-polar outputs
- Class A/B Design
- Pass through Preamp output
- Extruded Aluminum Chassis
- High voltage speaker level inputs
- 6-Channel bridgeable

Total Music Power

Total Continuous RMS Power	280WX2 Watts
Continuous RMS Power Each Channel at 4 ohms all channels driven	65WX4 Watts
Total Harmonic Distortion + Noise	65W/Ch
Signal to Noise Ratio	<0.3%
Stereo Separation	>82dB
Dimensions (cm) Chassis L x W x H	>-45dB
Dimensions (cm) Inc Mounting feet and Terminals	27.96cmX18.2cmX5.1cm
	30.20cmX18.2cmX5.1cm

Modesto, California USA
Since 1974

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