

Using AudioControl's "The Epicenter" with Kicker amps and woofers

A number of customers ask us about how to effectively add AudioControl's "The Epicenter" to a customer's system. Car audio was always meant to be fun. It's all about the music. Everyone knows that Kicker customers are fanatics about "Livin' Loud". We sell some of the best amplifiers and woofers in the business. So what's our take on The Epicenter? Since we're considered to be "the bass guys", I'll be happy to share some thoughts and suggestions.

The Epicenter from AudioControl is a "bass restoration processor". In this note we will be referring to information directly from The Epicenter owner's manual (courtesy of AudioControl). Everyone knows that you should always read the owner's manual of a product before using it, but we also know that most people don't. This is a sophisticated processor that when used properly can be lots of fun. It also includes features designed to maximize the performance of your particular system. If it included in a big system that is not properly tuned, bad things can happen. We can't help what happens to a system once it is handed over to the customer, but we *can* control the initial system tuning to allow the highest performance until delivery.

When using ported woofer enclosures, the port is tuned to a particular frequency to provide optimum enclosure performance down to that frequency. Too much musical information below the tuning frequency will cause the woofer to "unload" and go out of control. The enclosure will no longer be providing the best performance. The goal is to tune the system to provide best performance with the products we're using in that system.

Kicker loaded woofer enclosure ports are typically tuned between 35 and 40Hz (depending on woofer size). The restoration circuitry of The Epicenter is capable of providing bass information significantly below 35Hz. Improper use of this processor in a system with high powered amplifiers with excessive gain settings is a recipe for failure.

Having said all this, we bought a new version of The Epicenter from the guy's at AudioControl and did some testing on how to get the best results when using Kicker amps and speakers. Now here comes my disclaimer... **These are personal recommendations. Your mileage may vary.** Setting up the Epicenter per our recommendation will help prevent system damage while still allowing the customer to have a ton of bass fun.

Please read The Epicenter's owner's manual before making any setting changes.

The latest version of the Epicenter has some key features that are important to proper set up. They are listed below:

- "PFM" (subsonic) filter
- "Para-Bass Controls"
- "Bass output control jumpers"

The Epicenter is not a preamp or line driver, but it is capable of handling up to 15VRMS at its inputs, and will provide up to 13V peak at its outputs. The maximum output voltage is determined by the bass output control jumpers.

As examples, If you provide 10V of input and have the output jumpers set to 2.5V, you will get 2.5V of output. 5V of input will give you 2.5V of output. 0.5V of input will give you 0.5V of output. 10+V of input will provide 10+V of output with the jumpers set to 10+ and so on.

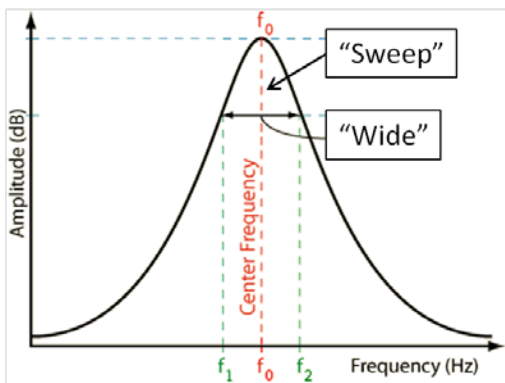
Setting recommendations will be made along with explanations of why they are suggested.

Two graphics from the owner's manual are shown below. Please refer to them. Additional graphics are also provided.

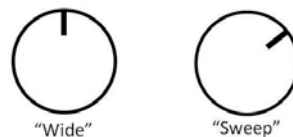
Suggested settings (as a starting point):

PFM filter: This is a subsonic filter. Set the internal PFM filter to the woofer enclosures port tuning frequency (or as close as possible). If using a Kicker pre-loaded enclosure, just use a 40Hz module and be done with it. This filter will roll off any program material below 40Hz at 18dB/octave. This is not a brick wall filter. It does not stop all music. There will be plenty of bass available. We're just tuning the processor to the woofer/enclosure. (A 33Hz filter is installed from the factory)

Para-Bass Controls: These controls allow you to fine tune the sound of The Epicenter. The two knobs are labeled "Wide" and "Sweep". The "Sweep" knob allows you to pick the center frequency that you want The Epicenter bass restoration circuit to "maximize". The "Wide" knob adjusts how wide a frequency range The Epicenter will effect. The effective range of the sweep control is 27Hz – 63Hz. The factory setting is detented at 40Hz. Our suggestion is to start out at around $\frac{3}{4}$ to full clockwise rotation. This centers the processing above 40Hz. This seems to work best with a 40Hz port tuning. The "Wide" control seems to give great results from the detented 12:00 location to fully counter-clockwise.



Recommended Para-Bass Initial Settings



Bass output control jumpers: These jumpers set the maximum output signal voltage of The Epicenter. This setting is important because it can potentially cause system performance issues and could easily contribute to amp/woofer failure. In our opinion, this setting depends on your customer. If your customer doesn't mess with the settings you made during the tuning process, set it for the highest available output voltage so you can then turn down the amplifier gains to match. If you have a customer that turns up all of the available gains as soon as he leaves your shop, then you should consider the following suggestion...

Set the Bass Output Control Jumpers to the 2.5V setting. This really isn't the proper setting if you have high (4-10V) signal voltage to work with. The fact is your customer will max the amp gains soon after they leave the store, so with the Epicenter output level set to 2.5V, it will probably cause less damage than if there was 10V of signal going to the amp inputs with the amp gains maxed out. Again...this is only a suggestion.

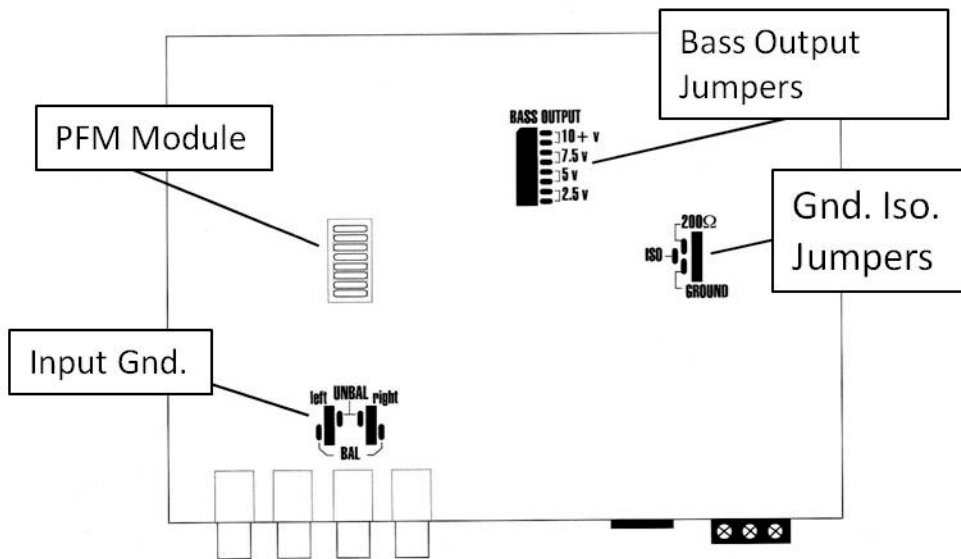


Figure 3: Inside view of The Epicenter

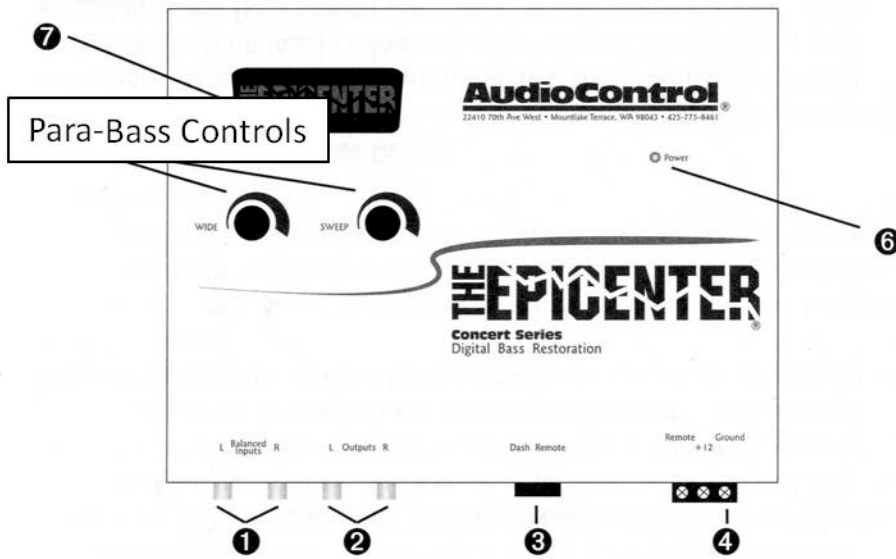


Figure 2: Outside View of The Epicenter

We suggest you fully explain this processor's capabilities to your customer and how it relates to his or her particular audio system. The Epicenter is a fun processor and that's what our business is about.

David E. Gumienny
 Global Training Manager
 Stillwater Designs/Kicker

