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#### Bi-amping the KSS369 and KSS365 with the KEY200.4 amplifier

#### Passive Crossover Points for KSS 3-way Component Systems

Kicker's 3-way component systems are designed to work with the output of almost any factory or aftermarket radio/amplifier. The balanced speaker system will provide full range output when using only the crossovers included with the set.

The passive crossover points for the 3-way components that have been set to give you the best sound quality with a full range input.

#### The passive crossover frequencies are as follows:

- Woofer: LPF 1.5kHz (6dB/octave)
- Midrange: BPF 1.33kHz to 4.1kHz (6dB/octave)
- Tweeter: HPF 13.26kHz (6dB/octave)

### KSS components with included passive crossovers (6dB/octave)



**Note:** A high pass crossover is suggested when running a dedicated subwoofer. This will improve Power handling and performance of the KSS components.

#### Things to Consider when Bi-amping 3-way speakers with a KEY

The KEY200.4 is a great option for bi-amping a 3-way front stage. The key factors to consider when using the KEY amplifier in this application are **power distribution** and **time alignment**.

#### **1. Power Distribution**

To maintain a balanced and dynamic sound, the **midbass drivers**—which typically require the most power—should each be powered by their **own dedicated channel**. Meanwhile, the **midrange and tweeter** can share a single channel per side, since they draw less power and don't require as much amplification.

This setup ensures the midbass is not underpowered, which is critical for maintaining the full-body impact of your sound system.

#### 2. Time Alignment Considerations

Time alignment plays a major role in imaging and staging. In most vehicles, **midbass drivers** are mounted lower (e.g., in the doors), while **midrange and tweeters** are located higher up (e.g., dash or A-pillars). This means:

- The path length from the listener to the **tweeter and midrange** is typically shorter.
- The **midbass drivers**, being farther away, require their signals to be delayed more to align with the rest of the system.

By keeping the **midrange and tweeter on the same amplifier channel**, you help ensure proper alignment since they are physically closer together. This gives the KEY200.4's built-in algorithm a better chance of achieving accurate time alignment, resulting in a more cohesive and natural soundstage.

#### Bi-Amping 3-way with KEY200.4 Amplifier

If you want to bi-amp your components using the KEY200.4 amplifier, begin by connecting the front output from your source unit to **Amp 1 Input** on the KEY200.4. Make sure the **Fader switch is set to "Off."** 

Next, connect the **woofers to Amp 2**, and wire the **midrange and tweeter in parallel to Amp 1**. Be sure to set the **Bi-Amp switch on the KEY200.4 to "On."** 

To allow the KEY200.4 to properly tune your system, you **must remove the passive crossover** connected to the **midrange and woofer**. However, **do not remove the passive crossover for the tweeter**—this is critical. A 320 Hz crossover point is **not sufficient** to protect a tweeter on its own.

With the midrange and woofer crossovers removed, the KEY200.4 will automatically apply the following crossover settings:

- Amp 1 (Midrange/Tweeter): 320 Hz high-pass filter
- Amp 2 (Woofers): 640 Hz and below low-pass filter

This configuration directs most audible frequencies to the midrange and tweeter, while the woofers focus primarily on mid-bass. The result is a more realistic and immersive soundstage, using the same speaker components.

Refer to the diagrams below for a visual representation of these crossover points and a helpful installation example.

## KEY2004 bi-amp mode with crossover only on tweeter



**Note:** A high pass crossover is suggested on Amp 2 when running a dedicated subwoofer. This will improve Power handling and performance of the KSS components.

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#### KEY2004 + KSS 3-way Component Systems Wiring Diagram