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KICKER KEY2004

KICKER KEY2004 4-Channel Smart Amplifier User Manual

Model: KEY2004 (47KEY2004)

1. INTRODUCTION

This manual provides detailed instructions for the installation, setup, operation, and maintenance of your KICKER KEY2004 4-Channel Smart Amplifier. The KEY2004 integrates an amplifier with an AI-driven Digital Signal Processor (DSP) to optimize your vehicle's audio system. This product is designed to enhance your listening experience by automatically correcting sound characteristics specific to your vehicle's interior.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the product and vehicle:

- Disconnect the vehicle's battery negative terminal before beginning any installation.
- Ensure all wiring is properly routed and secured to prevent pinching or damage.
- Use appropriate gauge wiring and fuses as specified. Incorrect fusing can lead to fire or equipment damage.
- Consult a professional installer if you are unsure about any part of the installation process.
- Do not operate the amplifier in wet or damp conditions.
- Avoid mounting the amplifier in locations exposed to direct sunlight or excessive heat.

Important Fuse Note: The KICKER KEY2004 amplifier requires a 20A fuse for proper protection. If using an aftermarket wiring kit, verify the included fuse matches this requirement. A 60A fuse, for example, is oversized and will not adequately protect the amplifier.

3. PACKAGE CONTENTS

Your KICKER KEY2004 package includes the following items:

- KICKER KEY2004 4-Channel Smart Amplifier
- Auto-EQ Microphone with Selector Switch
- Wiring Harnesses (Power, Speaker, RCA inputs)
- Mounting Hardware

If purchased as a bundle, the Rockville RWK82 8 Gauge 4 Channel Car Amplifier Wiring Installation Kit includes:

- (2) 17 ft High Grade Twisted Pair 100% Copper RCA Cables
- 17 ft 8 Gauge Translucent Blue SuperFlex Power Cable
- 17 ft 18 Gauge Blue Remote Cable
- 17 ft 16 Gauge Clear Speaker Wire
- 3 ft 8 Gauge SuperFlex Ground Wire
- Gold Plated AGU Heat Resistant Fuse Holder
- 60 Amp AGU Gold Plated Fuse (Note: Replace with 20A fuse for KEY2004)
- 7 ft Split Tube Loom
- Accessories: Wire Ties, Ring Terminals, Butt Connectors, Spades, Grommets



Image: Kicker KEY2004 Smart Amplifier shown alongside the components of the Rockville RWK82 wiring installation kit.



Image: The Kicker KEY2004 amplifier unit with its included Auto-EQ microphone and remote switch.



Image: Various components of the Rockville RWK82 wiring kit, including power cables, RCA cables, fuse holder, and terminals.

4. PRODUCT OVERVIEW: KICKER KEY2004 SMART AMPLIFIER

The KICKER KEY2004 is a compact 4-channel amplifier designed to deliver 50 watts RMS per channel. Its primary innovation is the integrated AI-driven Digital Signal Processor (DSP) with Auto-EQ functionality, which automatically analyzes and corrects your vehicle's acoustic environment for optimal sound quality.

Key Features:

- **Auto-EQ:** Utilizes a microphone to analyze and automatically correct the vehicle's acoustic response.
- **AI-driven DSP:** Advanced digital signal processing for sound optimization.
- **FIT2 Technology:** Kicker's Fail-Safe Integration Technology for superior input signal compatibility.
- **Start/Stop Vehicle Technology Compatible:** Designed to work seamlessly with modern vehicle start/stop systems.
- **Auto 40-Band Equalizer:** Automatically adjusts 40 frequency bands for precise sound tuning.
- **Bi-Amp Capability:** Allows for bi-amplification setups (defeasible).
- **Auto Compressor:** Dynamic range compression (defeasible).
- **Kicker EQ Preset:** Pre-programmed Kicker sound signature (defeasible).
- **Auto Time Alignment:** Automatically corrects speaker timing for improved sound staging (defeasible).
- **Auto Level Adjustment:** Adjusts levels in Bi-Amp mode only.
- **Auto Speaker Size Detection:** Automatically identifies connected speaker sizes.
- **24dB Crossovers:** Selectable high-pass filters at 60, 80, or 120Hz (defeasible).

Controls and Connections:



Image: Close-up view of the Kicker KEY2004 amplifier's input and control panel, showing gain adjustments, input selectors, and various switches.

The amplifier features input terminals for both high-level (speaker level) and low-level (RCA) signals, gain controls for each channel pair, and switches for crossover settings and other DSP functions. The included microphone connects to a dedicated port for the Auto-EQ process.



Image: The various wiring harnesses provided with the Kicker KEY2004, including the main power/speaker harness and the microphone cable.

5. INSTALLATION

Proper installation is crucial for optimal performance and safety. If you are not comfortable with electrical wiring, seek professional assistance.

5.1 Mounting the Amplifier

- Choose a dry, stable location away from heat sources and direct sunlight.
- Ensure adequate ventilation around the amplifier.
- Securely mount the amplifier using the provided hardware to prevent movement during vehicle operation.

5.2 Wiring Connections

Before making any connections, disconnect the vehicle's negative battery terminal.

1. **Power Wire:** Connect the 8-gauge power cable (from RWK82 kit) directly to the positive terminal of the vehicle's battery. Install the fuse holder within 18 inches (45 cm) of the battery.
2. **Fuse Installation:** Insert a **20A fuse** into the fuse holder. The 60A fuse included in the RWK82 kit is too large for the KEY2004 and must be replaced.
3. **Ground Wire:** Connect the 8-gauge ground wire (from RWK82 kit) from the amplifier to a clean, solid metal point on the vehicle chassis. The ground point should be free of paint and corrosion.
4. **Remote Turn-On Wire:** Connect the 18-gauge blue remote wire (from RWK82 kit) from the amplifier to the remote turn-on output of your head unit. If your head unit lacks a remote output, the KEY2004 can use DC offset sensing or audio signal sensing for turn-on.
5. **Input Signal:**
 - **RCA (Low-Level) Input:** Use the twisted pair RCA cables (from RWK82 kit) to connect the amplifier's RCA inputs to

the RCA outputs of your head unit.

- **Speaker Level (High-Level) Input:** If your head unit does not have RCA outputs, connect the speaker wires from your head unit directly to the amplifier's high-level input harness.

6. **Speaker Wires:** Connect the 16-gauge clear speaker wires (from RWK82 kit) from the amplifier's speaker outputs to your vehicle's speakers. Ensure correct polarity (+ to + and – to –).



Image: Top view of the Kicker KEY2004 amplifier, showing its compact design and heat sink fins.

6. SETUP: AUTO-EQ AND INITIAL CONFIGURATION

The KEY2004's primary feature is its Auto-EQ capability, which automatically tunes your system. Follow these steps for initial setup:

1. **Connect Microphone:** Plug the Auto-EQ microphone into the dedicated port on the amplifier.
2. **Microphone Placement:** Place the microphone at the primary listening position (e.g., driver's headrest).
3. **Set Head Unit Volume:** Turn your head unit volume to approximately 75% of its maximum.
4. **Start Auto-EQ:** Press and hold the Auto-EQ button on the amplifier (or the remote switch if applicable) until the LED indicator changes. The amplifier will play a series of test tones.
5. **Wait for Completion:** Allow the process to complete. This may take several minutes. The amplifier will indicate completion (refer to the specific LED patterns in the full manual).
6. **Adjust Gain:** After Auto-EQ, adjust the amplifier's gain controls to match the output of your head unit. Start with the gain at minimum and slowly increase until you hear distortion, then back off slightly.

- Crossover Settings:** Select the desired high-pass filter frequency (60Hz, 80Hz, or 120Hz) using the switches on the amplifier, depending on your speaker size and type.
- Optional Features:** Enable or disable Bi-Amp Capability, Auto Compressor, Kicker EQ Preset, Auto Time Alignment, and Auto Speaker Size Detection as desired. These are defeasible.

The Auto-EQ process should be performed in a quiet environment with the vehicle's engine off.

7. OPERATING THE AMPLIFIER

Once installed and set up, the KICKER KEY2004 operates automatically with your vehicle's audio system. The AI-driven DSP continuously works to maintain optimal sound quality based on the initial Auto-EQ calibration.

- Power On/Off:** The amplifier will turn on and off with your head unit (via remote wire or signal sensing).
- Volume Control:** Use your head unit's volume control for overall system volume.
- Sound Adjustments:** While the KEY2004 provides automatic optimization, minor adjustments can still be made via your head unit's tone controls if desired. However, significant changes may negate some benefits of the Auto-EQ.

8. MAINTENANCE

The KICKER KEY2004 amplifier requires minimal maintenance to ensure long-term performance.

- Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- Connections:** Occasionally check all wiring connections to ensure they are secure and free from corrosion.
- Ventilation:** Ensure that the amplifier's cooling fins are not obstructed to prevent overheating.
- Fuse Check:** If the amplifier stops working, check the fuse in the power line. Replace it only with a fuse of the correct rating (20A).

9. TROUBLESHOOTING

If you experience issues with your KICKER KEY2004 amplifier, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No Power	Blown fuse; loose power/ground wire; no remote turn-on signal.	Check and replace fuse (20A); verify all power and ground connections; check remote wire connection or ensure DC offset/audio sensing is active.
No Sound	No input signal; loose speaker wires; amplifier in protect mode.	Verify RCA/high-level input connections; check speaker wire connections; check amplifier status LED for protect mode indication.
Distorted Sound	Gain set too high; poor input signal; incorrect Auto-EQ.	Reduce amplifier gain; ensure head unit output is clean; re-run Auto-EQ process.
Amplifier Overheating	Insufficient ventilation; impedance mismatch.	Ensure amplifier is in a well-ventilated area; verify speaker impedance matches amplifier specifications.

10. SPECIFICATIONS

Feature	Specification
Power Output (RMS)	50 watts x 4 channels @ 4 Ohm stereo
Frequency Response	20Hz – 20kHz, +0/-1dB

Feature	Specification
Input Sensitivity (High Level)	250mV – 10V
Signal-to-Noise Ratio	>90dB, a-weighted, re: rated power
Active Crossover	24dB/octave, selectable high pass or all pass @ 60, 80, or 120Hz
Dimensions (H x W x L)	1-11/16" x 2-3/4" x 7-3/8" (4.3 x 7 x 18.7 cm)
Maximum Supply Voltage	10 Volts (Operating range typically 10-16V)
Mounting Type	Freestanding
Number of Channels	4

11. WARRANTY AND SUPPORT

KICKER products are designed for reliable performance. For specific warranty information, please refer to the warranty card included with your product or visit the official KICKER website. For technical support, contact KICKER customer service. For the most comprehensive and up-to-date information, including detailed wiring diagrams and advanced setup options, please refer to the official KICKER KEY2004 product manual:

[Download Official KICKER KEY2004 Manual \(PDF\)](#)



Image: Product packaging for the Kicker KEY2004, highlighting key features and a QR code linking to the official product manual.

