



# MAX97220A Evaluation Kit

## General Description

The MAX97220A evaluation kit (EV kit) is a fully assembled and tested circuit board that evaluates the MAX97220A differential input DirectDrive® line driver/headphone amplifier. The device is capable of driving 125mW into 32Ω, or 3VRMS into 600Ω load, with a 5V supply.

The EV kit provides an externally set gain, is powered from a 2.5V to 5.5V single power supply, and includes a shutdown input. The EV kit also evaluates the MAX97220B, MAX97220C, and MAX97220D devices. Request a free MAX97220B, MAX97220C, and/or MAX97220D IC sample from the factory when ordering the EV kit.

## Features

- ◆ 2.5V to 5.5V Single-Supply Operation
- ◆ 3VRMS Output Drive Into 600Ω Load
- ◆ 125mW Headphone Amplifier
- ◆ Fully Differential Inputs
- ◆ Externally Adjustable Gain
- ◆ Low-Power Shutdown Input
- ◆ Evaluates the MAX97220B, MAX97220C, and MAX97220D (with IC Replacement)
- ◆ Fully Assembled and Tested

## Ordering Information

PART	TYPE
MAX97220AEVKIT+	EV Kit

+Denotes lead(Pb)-free and RoHS compliant.

## Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2, C7	3	0.1μF ±10%, 25V X7R ceramic capacitors (0603) Murata GRM188R71E104K TDK C1608X7R1E104K
C3–C6	4	0.47μF ±10%, 25V X7R ceramic capacitors (0603) Murata GRM188R71E474K TDK C1608X5R1E474K
C8, C9	2	1μF ±10%, 10V X7R ceramic capacitors (0603) Murata GRM188R71C105K TDK C1608X7R1C105K
C10	1	10μF ±20%, 6.3V X5R ceramic capacitor (0603) Murata GRM188R60J106M TDK C1608X5R0J106M

DESIGNATION	QTY	DESCRIPTION
C11–C16	0	Not installed, ceramic capacitors (0603)
HP_OUT	1	3.5mm stereo headphone jack
JU1	1	2-pin header
OUTL, OUTR, GND	3	Test points
OUTL	1	White headphone jack
OUTR	1	Red headphone jack
R1–R8	8	10kΩ ±1% resistors (0603)
R9	1	100kΩ ±5% resistor (0603)
U1	1	Differential input headphone amplifier (16 TQFN) Maxim MAX97220AETE+
—	1	Shunts
—	1	PCB MAX97220A EVALUATION KIT+

## Component Suppliers

SUPPLIER	PHONE	WEBSITE
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com
TDK Corp.	847-803-6100	www.component.tdk.com

**Note:** Indicate that you are using the MAX97220\_ when contacting these component suppliers.

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**For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at [www.maxim-ic.com](http://www.maxim-ic.com).**

Evaluates: MAX97220A–MAX97220D

# MAX97220A Evaluation Kit

## Quick Start

### Recommended Equipment

- MAX97220A EV kit
- 2.5V to 5.5V DC supply
- Stereo audio signal source
- Pair of stereo headphones

### Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Caution: Do not turn on the power supply until all connections are completed.**

- 1) Verify that a shunt is installed across jumper JU1 (device enabled).
- 2) Set the power-supply output to 5V.
- 3) Disable the power-supply output.
- 4) Connect the power-supply ground to the GND pad and the power-supply positive output to the VDD pad on the EV kit.
- 5) Connect headphones to the stereo headphone jack (HP\_OUT) provided on the EV kit.
- 6) Verify that the audio source output is disabled.
- 7) Connect the left output of the audio source to the INL- pad.
- 8) Connect the ground of the audio source to the INL+ pad.
- 9) Connect the right output of the audio source to the INR- pad.
- 10) Connect the ground of the audio source to the INR+ pad.
- 11) Enable the stereo audio source.
- 12) Enable the power-supply output.
- 13) Verify that the headphones are playing the audio source signal.

## Detailed Description

The MAX97220A EV kit features the MAX97220A differential stereo headphone driver with DirectDrive, designed to directly drive a 125mW into a 32 $\Omega$  stereo headphone. The EV kit operates from a DC power supply that can provide 2.5V to 5.5V and accepts two sets of differential audio inputs.

### Headphone Amplifier Shutdown

Jumper JU1 enables or disables the headphone amplifier. See Table 1 for jumper JU1 configuration.

### MAX97220C/MAX97220D Usage

When replacing the MAX97220A with either the MAX97220C or MAX97220D, several external components must be changed. R1–R4 should be replaced with 0 $\Omega$  resistors. R5–R8 should be removed from the PCB. C11–C16 should be left uninstalled (same as the default EV kit setting).

**Table 1. Shutdown Input (JU1)**

SHUNT POSITION	SHDN PIN	AMPLIFIER
Installed*	Connected to VDD	Enabled
Not installed	Connected to GND through R9	Disabled

\*Default position.

# MAX97220A Evaluation Kit

Evaluates: MAX97220A-MAX97220D

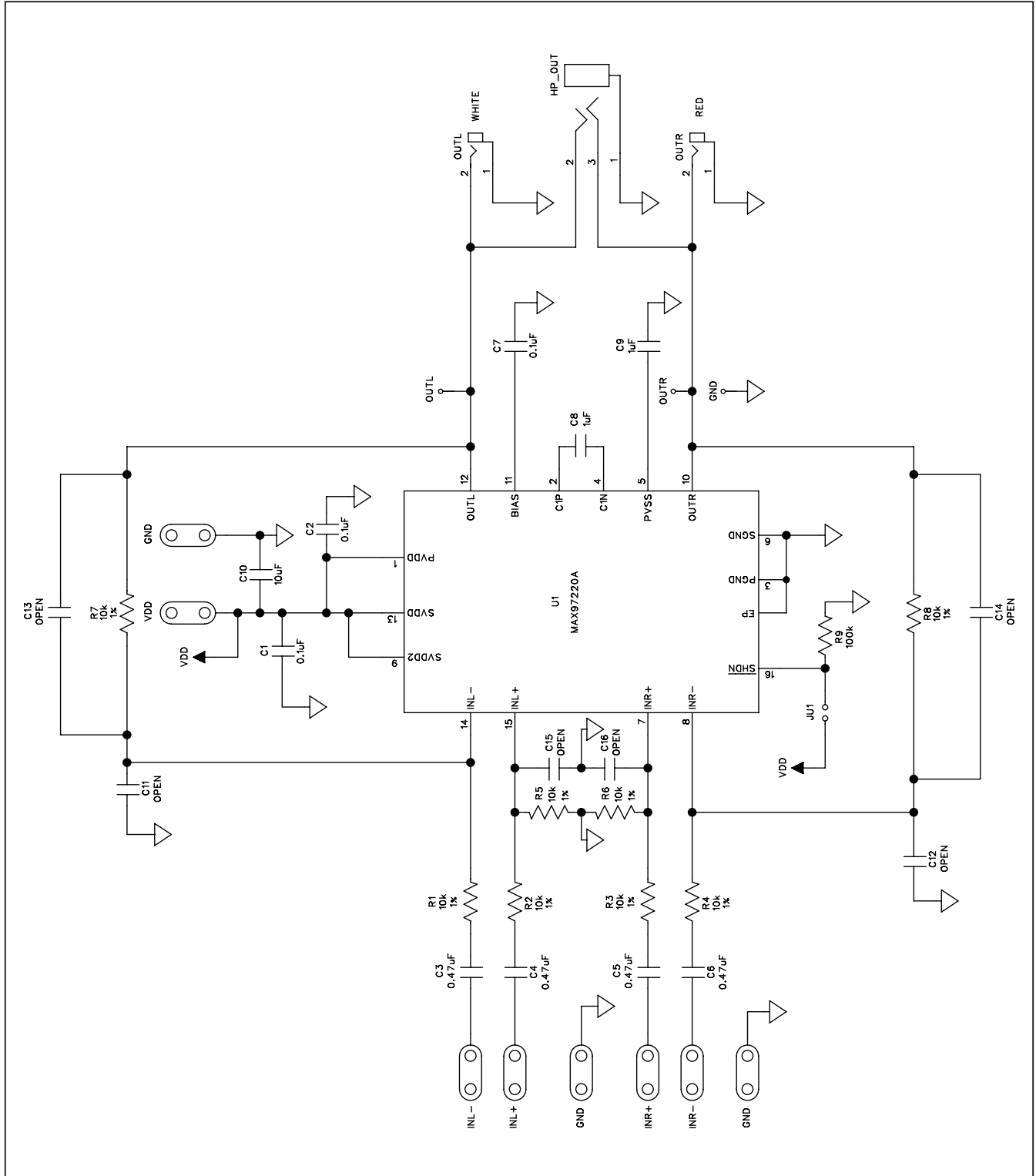


Figure 1. MAX97220A EV Kit Schematic

# MAX97220A Evaluation Kit

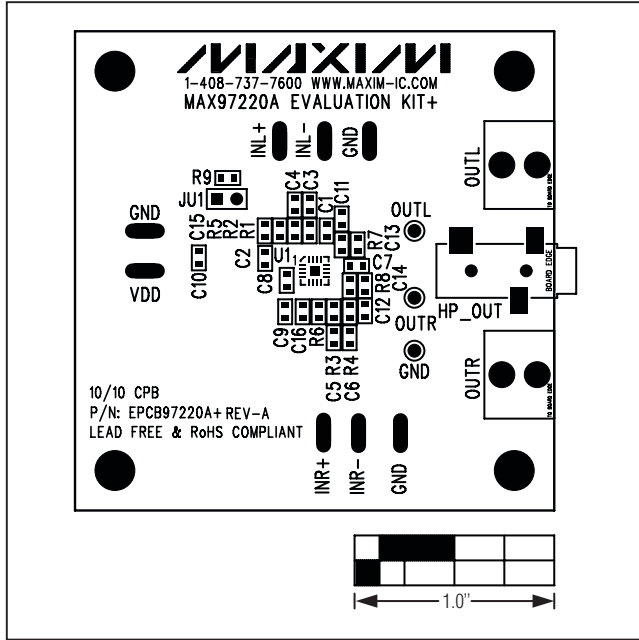


Figure 2. MAX97220A EV Kit Component Placement Guide—Component Side

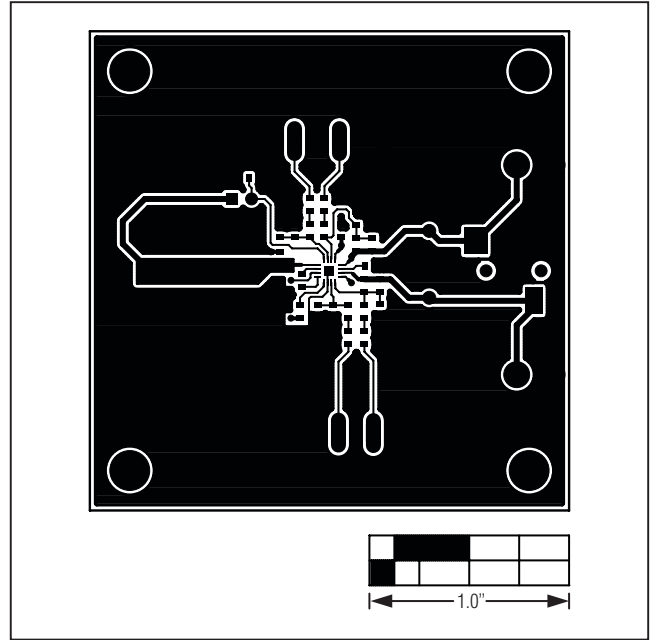


Figure 3. MAX97220A EV Kit PCB Layout—Component Side

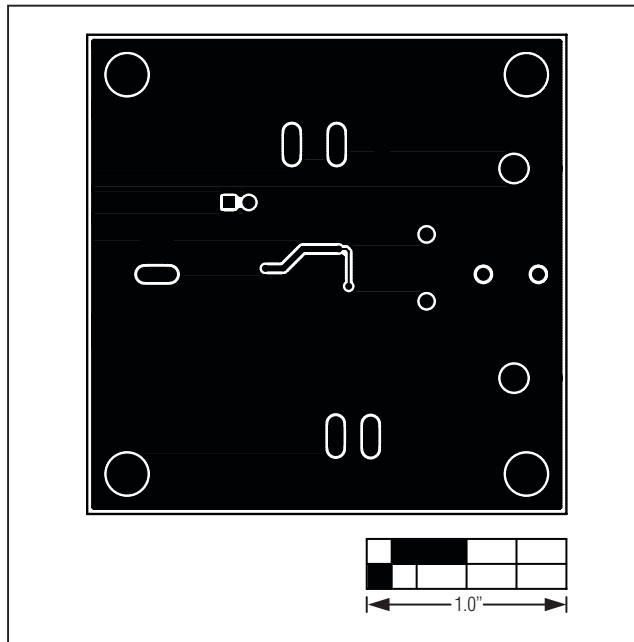


Figure 4. MAX97220A EV Kit PCB Layout—Solder Side

# MAX97220A Evaluation Kit

## Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	12/10	Initial release	—

**Evaluates: MAX97220A-MAX97220D**

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