



MAX9500 Evaluation Kit

Evaluates: MAX9500

General Description

The MAX9500 evaluation kit (EV kit) is a fully assembled and tested surface-mount circuit board that contains a MAX9500 IC. The MAX9500 is a triple video-reconstruction filter and buffer for high-definition television (HDTV) applications. The filter's passband is 30MHz. The MAX9500 includes a +6dB output buffer capable of driving a 2V_{p-p} video signal into a standard 150Ω load.

The video input signals on the EV kit are DC-coupled. The video output signals from the EV kit can be AC- or DC-coupled. However, AC-coupling may degrade the tilt and droop quality of the video signal. The MAX9500 video input terminals are terminated at 75Ω, and the output terminals are 75Ω back terminated. The EV kit operates from a single 5V power supply. For dual-power-supply applications, use the MAX9501 EV kit.

Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	10μF ±20%, 6.3V X5R ceramic capacitor (0805) TDK C2012X5R0J106M
C2, C3, C4	3	0.1μF ±10%, 25V X7R ceramic capacitors (0603) TDK C1608X7R1E104K
C5, C6, C7	0	Not installed, capacitors (8mm x 10.2mm)
C8, C9, C10	0	Not installed, capacitors (0603)
R1-R6	6	75Ω ±1% resistors (0805)
U1	1	MAX9500EEE (16-pin QSOP)
YIN, YOUT, PBIN, PBOUT, PRIN, PROUT	6	75Ω BNC PC board mount connectors
—	1	MAX9500 EV kit PC board

Component Supplier

SUPPLIER	PHONE	WEBSITE
TDK	847-803-6100	www.component.tdk.com

Note: Indicate that you are using the MAX9500 EV kit when contacting this supplier.

Features

- ◆ Single 5V Supply Operation
- ◆ Output Buffer Drives a 150Ω Standard Video Load with a +6dB Gain
- ◆ High-Definition Television 30MHz Filter
- ◆ DC-Coupled Inputs
- ◆ DC- or AC-Coupled Outputs
- ◆ Standard 75Ω Input/Output Terminations
- ◆ Surface-Mount Components
- ◆ Fully Assembled and Tested

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX9500EVKIT	0°C to +70°C*	16 QSOP

*This limited temperature range is for the EV kit PC board only. The MAX9500 IC temperature range is -40°C to +85°C.

Quick Start

Recommended Equipment:

- 5V, 1A DC power supply (VCC)
- Video signal generator (e.g., Tektronix TG2000)
- Video measurement equipment (e.g., Tektronix VM5000 or equivalent)

The MAX9500 EV kit is fully assembled and tested. Follow these steps to verify board operation. **Do not turn on the power supply until all connections are completed:**

- 1) Connect the output of the video signal generator to the YIN BNC connector on the MAX9500 EV kit.
- 2) Connect the YOUT BNC connector on the EV kit to the input of the video measurement equipment.
- 3) Connect the power-supply ground to the GND pad on the EV kit.
- 4) Connect the 5V supply to the VCC pad on the EV kit.
- 5) Set the video signal generator for the desired video input signal.
- 6) Turn on the power supply, and enable the video signal generator.
- 7) Analyze the video output signal with the video measurement equipment.

MAX9500 Evaluation Kit

Detailed Description

The MAX9500 evaluation kit (EV kit) is a fully assembled and tested surface-mount circuit board that contains a MAX9500 IC. The MAX9500 is a triple video-reconstruction filter and buffer for HDTV and anti-aliasing applications. All three channels have identical characteristics.

The MAX9500 filter's passband is 30MHz. The device includes a +6dB output buffer capable of driving 2V_{p-p}

video signal into a standard 150Ω load. All the input signals on the MAX9500 EV kit are DC-coupled. The video output signals from the EV kit can be AC- or DC-coupled. However, AC-coupling may degrade the tilt and droop quality of the video signal. To evaluate the AC-coupled outputs, remove the PC trace shorts across C5, C6, and C7, and install capacitors C5–C10. The EV kit's input terminals are 75Ω terminated. The MAX9500 video output terminals are each back terminated at 75Ω.

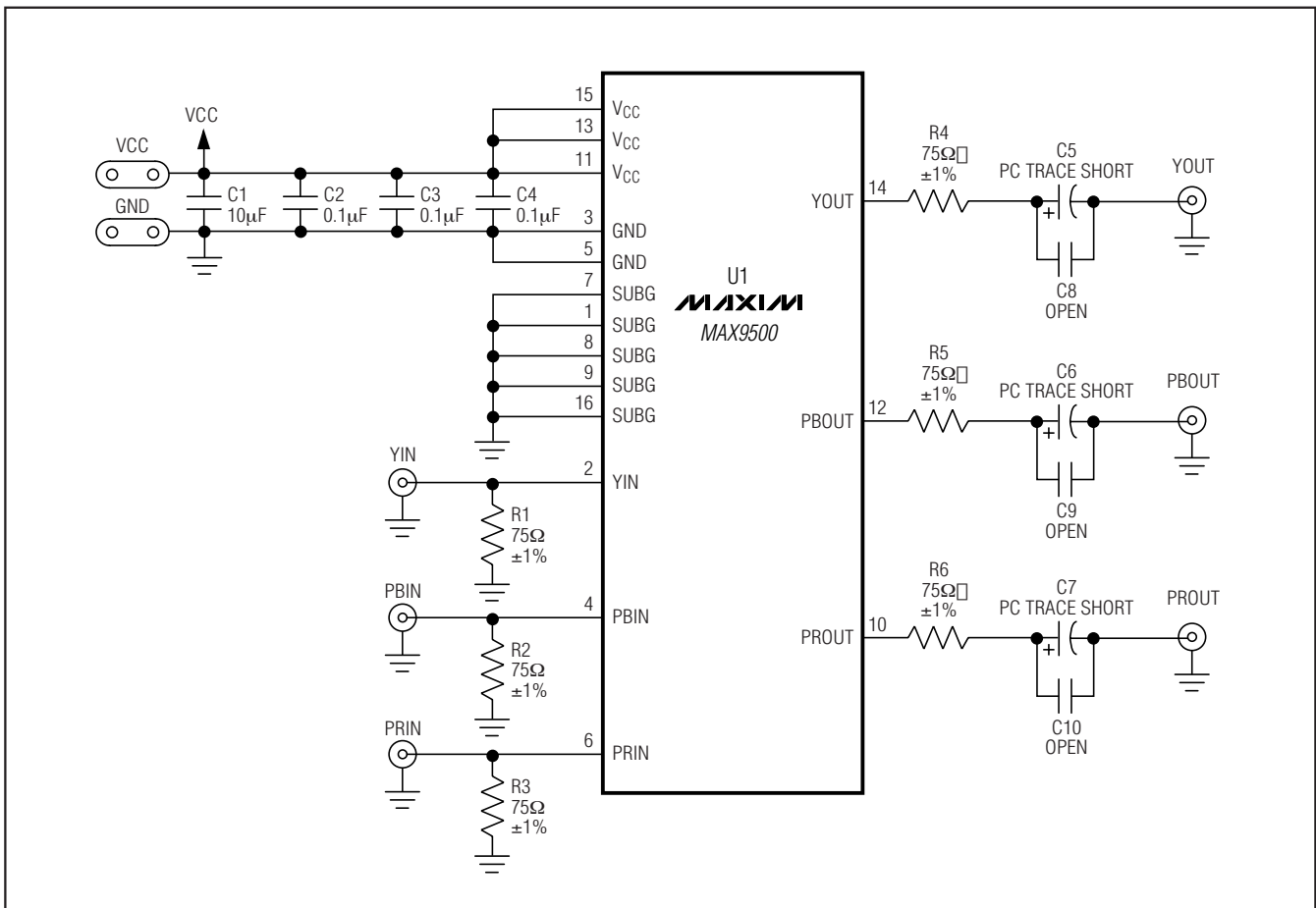


Figure 1. MAX9500 EV Kit Schematic

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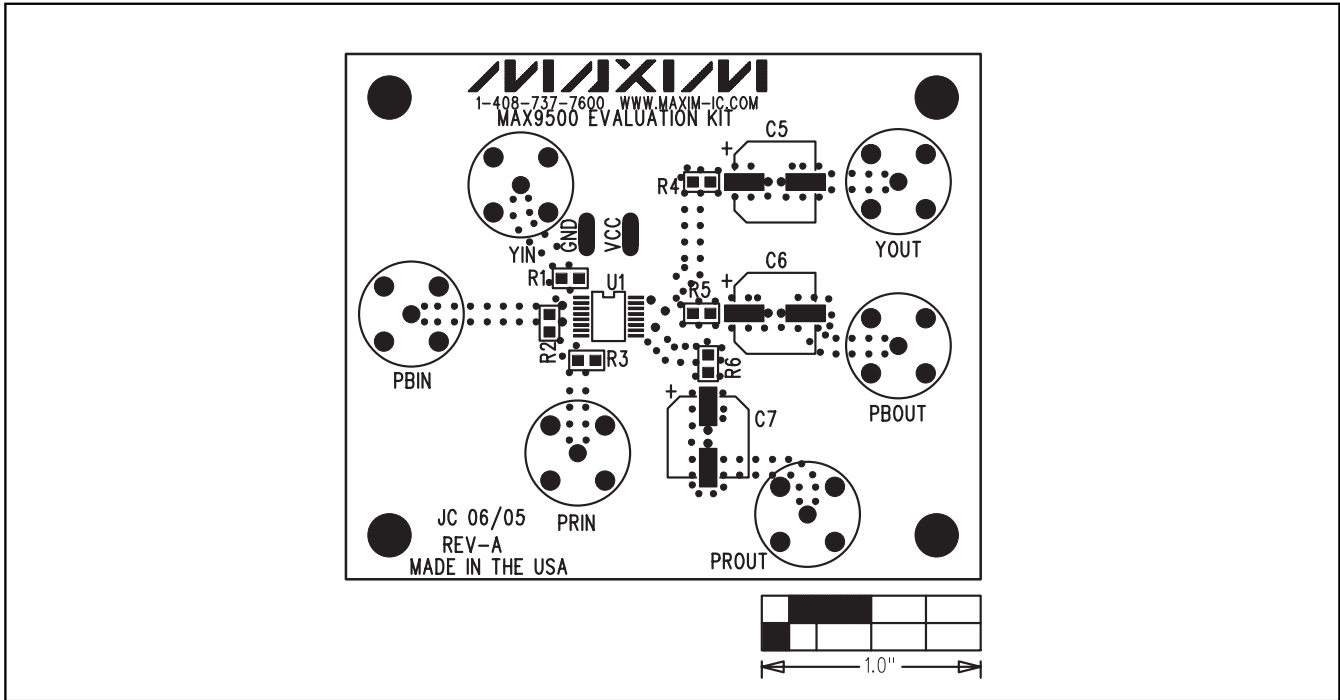


Figure 2. MAX9500 EV Kit Component Placement Guide—Component Side

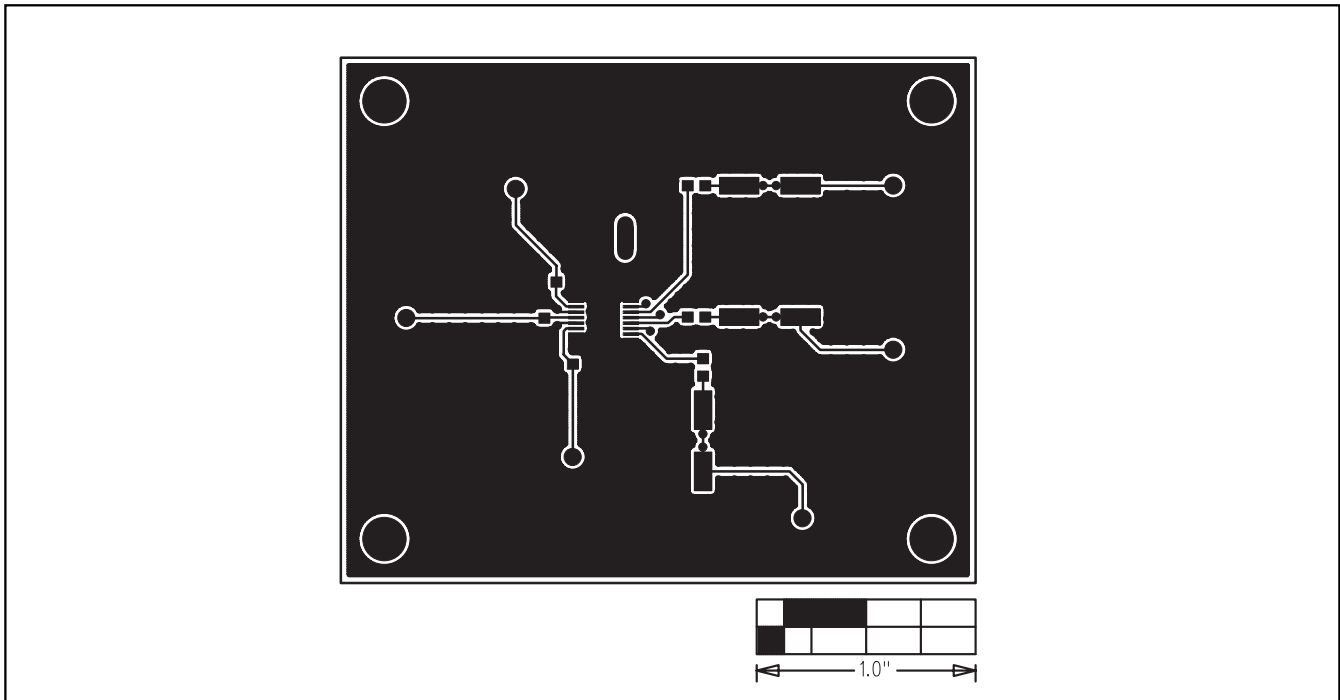


Figure 3. MAX9500 EV Kit PC Board Layout—Component Side

MAX9500 Evaluation Kit

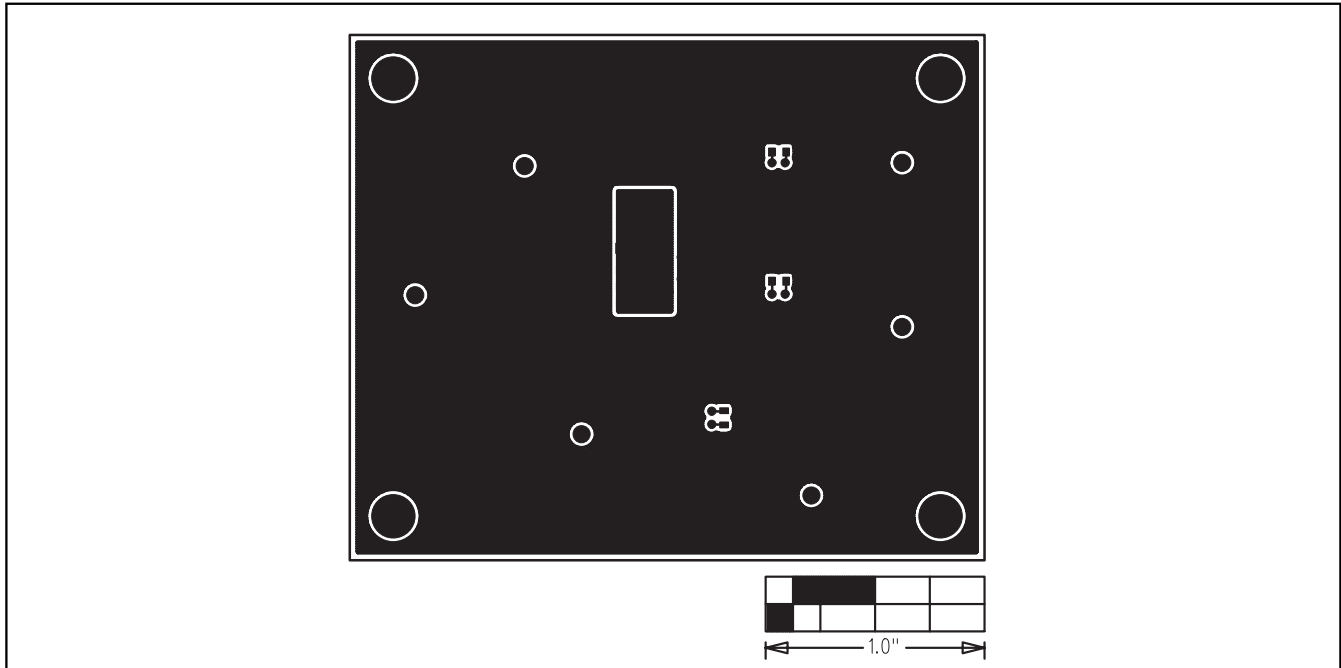


Figure 4. MAX9500 EV Kit PC Board Layout—Solder Side

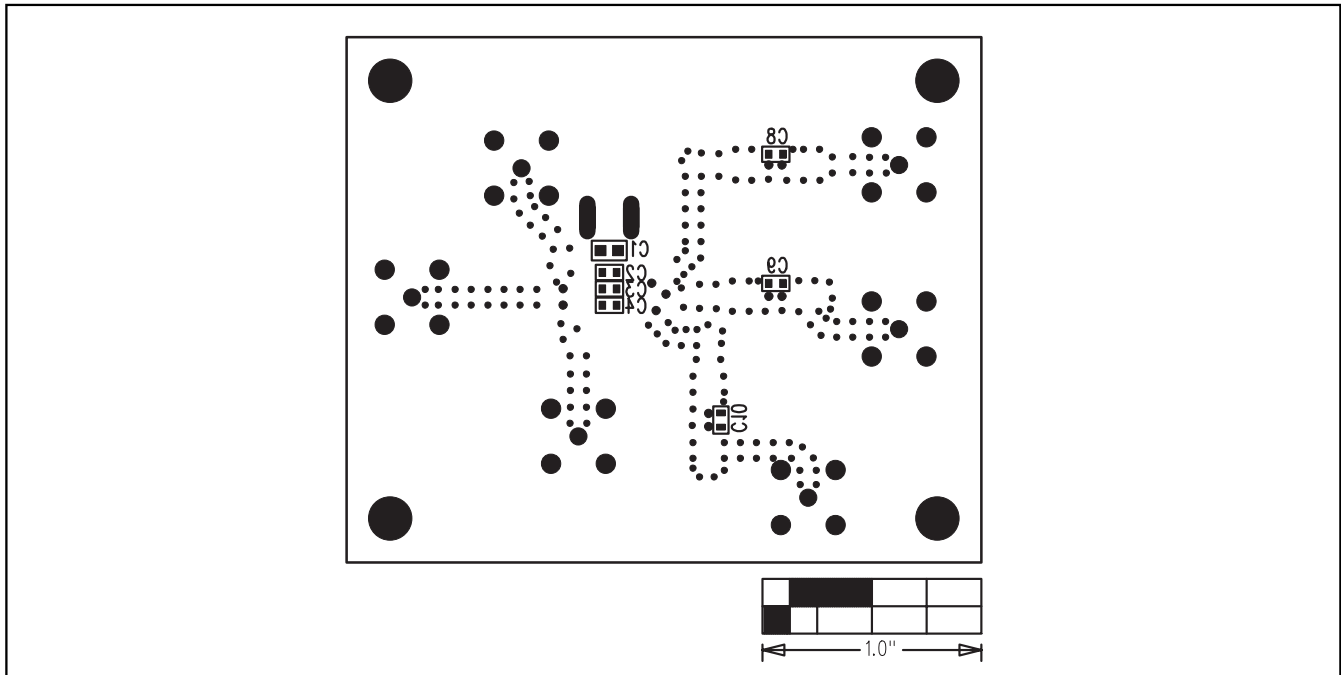


Figure 5. MAX9500 EV Kit Component Placement Guide—Solder Side

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