19-1371; Rev 0; 11/07

MAX7453 Evaluation Kit

Evaluates: MAX7453

General Description

The MAX7453 evaluation kit (EV kit) evaluates the MAX7453, a low-cost, triple-channel video reconstruction filter for S-video and CVBS video-signal applications. The EV kit operates from a 5V single-supply voltage. The MAX7453 EV kit's video input signals are AC-coupled, while the video output signals can be AC- or DC-coupled.

Features

- **5V Single-Supply Voltage**
- **Compatible with Standard Video Test Equipment**
- **Standard 75Ω Input/Output Terminations**
- **AC-Coupled Inputs**
- **AC- or DC-Coupled Outputs**
- **Surface-Mount Construction**
- **Fully Assembled and Tested**

Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	1µF ±10%, 16V X7R ceramic capacitor (0603) Murata GRM188R71C105K
C2, C3, C4	3	0.1µF ±10%, 16V X7R ceramic capacitors (0603) Murata GRM188R71C104K
C5–C8	4	220µF ±20%, 6.3V aluminum electrolytic capacitors (6.3mm x 6mm) SANYO 6CV220AX
C_IN, C_OUT, CV_OUT1, CV_OUT2, Y_IN, Y_OUT	6	75Ω BNC PCB-mount connectors
CIN, COUT, CVOUT, YIN, YOUT	5	Mini test points (red)
GND	2	Mini test points (black)
JU1–JU4	4	2-pin headers, 0.1in centers
R1–R6	6	75Ω ±1% resistors (0603)
U1	**1**	Maxim triple-channel video reconstruction filter and buffer for composite and Y/C outputs **MAX7453CSA+** (8-pin SO)
—	4	Shunts
—	1	PCB: MAX7453 Evaluation Kit+

Ordering Information

PART	TYPE
MAX7453EVKIT+	EV Kit

+Denotes lead-free and RoHS-compliant.

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Murata Mfg. Co., Ltd.	770-436-1300	www.murata.com
SANYO NA Corp.	619-661-6835	www.sanyodevice.com

Note: *Indicate that you are using the MAX7453 when contacting these component suppliers.*

Quick Start

Recommended Equipment

Before beginning, the following equipment is needed:

- 5V DC power supply (VCC)
- Video signal generator (e.g., Tektronix TG2000 or similar)
- Video measurement equipment (e.g., Tektronix VM700A or similar)

Procedure

The MAX7453 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 no shunts are installed across jumpers JU1–JU4 (AC-coupled outputs).
2) Connect the luma output from the video signal generator to the Y_IN BNC connector on the EV kit.
3) Connect the chroma output from the video signal generator to the C_IN BNC connector on the EV kit.
4) Connect the input of the video measurement equipment to the Y_OUT, C_OUT, CV_OUT1, or CV_OUT2 BNC connectors on the EV kit.
5) Connect the 5V supply to the VCC pad on the EV kit. Connect the power-supply ground to the GND pad on the EV kit.
6) Set the signal generator for the desired video signal, such as multiburst.
7) Turn on the 5V DC power supply.
8) Analyze the video output signals with the video measurement equipment.

Detailed Description

The MAX7453 EV kit evaluates the MAX7453 triple-channel video reconstruction filter and buffer. The EV kit operates from a 5V single-supply voltage.

The MAX7453 EV kit uses 0.1µF ceramic capacitors to AC-couple the video input signals to the YIN and CIN input pins of the MAX7453. The input capacitor stores a DC level such that the outputs are clamped to the appropriate DC voltage level. Both video input terminals have a 75Ω termination to ground.

The MAX7453 EV kit video output signals can be DC- or AC-coupled. At default, all jumpers (JU1–JU4) have no shunts installed and each of the outputs are configured to drive AC-coupled video loads. As configured, YOUT and COUT each drive a 150Ω video (75Ω backmatch resistor plus a standard 75Ω video cable). The composite video output CVOUT drives two 150Ω video loads.

JU1–JU4 Jumper Selection (Output Coupling)

The MAX7453 EV kit provides jumpers JU1–JU4 to configure the video outputs to AC- or DC-coupling. At default, each of the MAX7453's AC-coupled outputs include a 220µF series capacitor. To drive the output video load directly, short the AC-coupling capacitor by placing a shunt across the provided jumper. See Table 1 for shunt positions.

Table 1. JU1–JU4 Jumper Selection (C_OUT, CV_OUT1, CV_OUT2, Y_OUT)

SHUNT POSITION	VIDEO OUTPUT'S COUPLING CONFIGURATION
Installed	DC-coupling
Not installed*	AC-coupling

**Default position.*

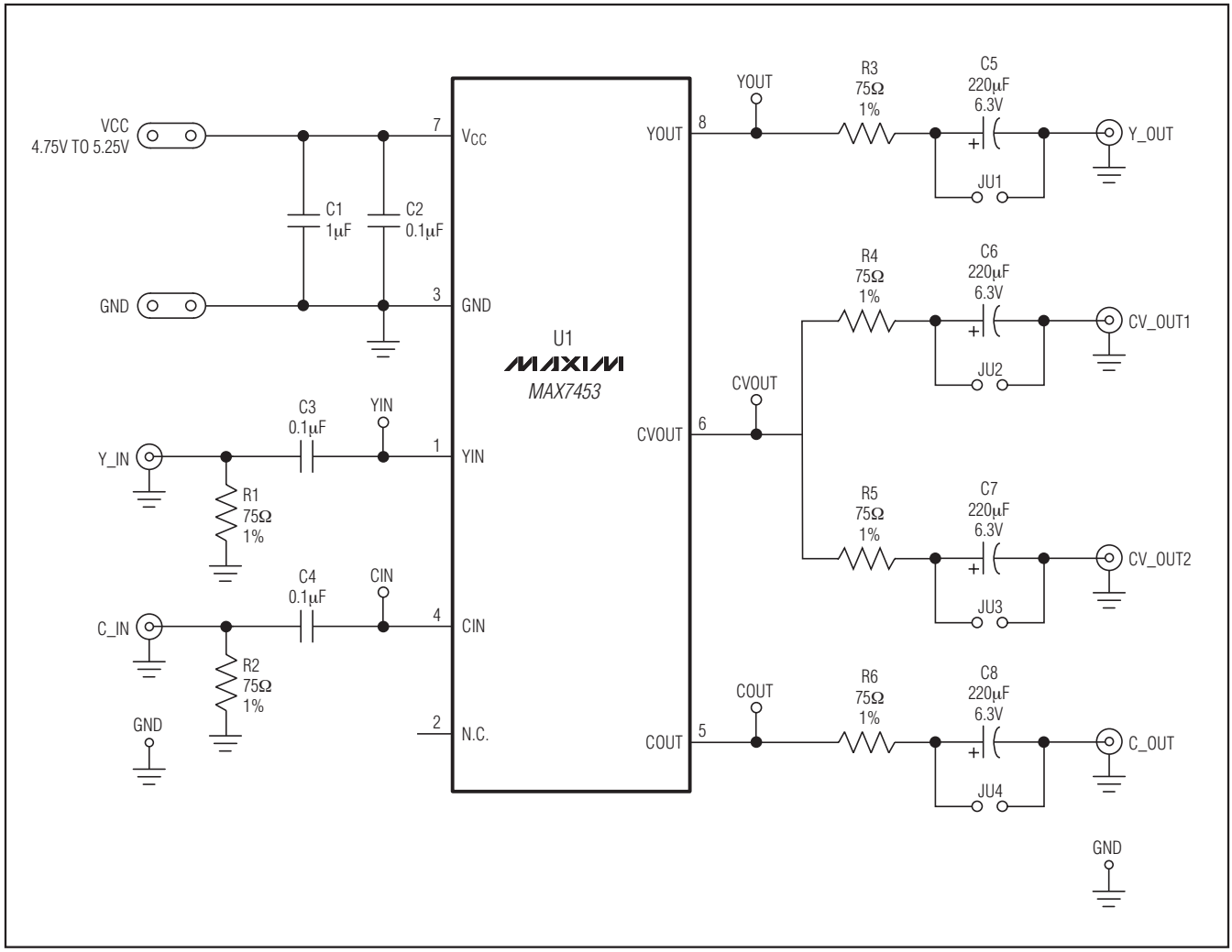

Figure 1. MAX7453 EV Kit Schematic

MAX7453 Evaluation Kit

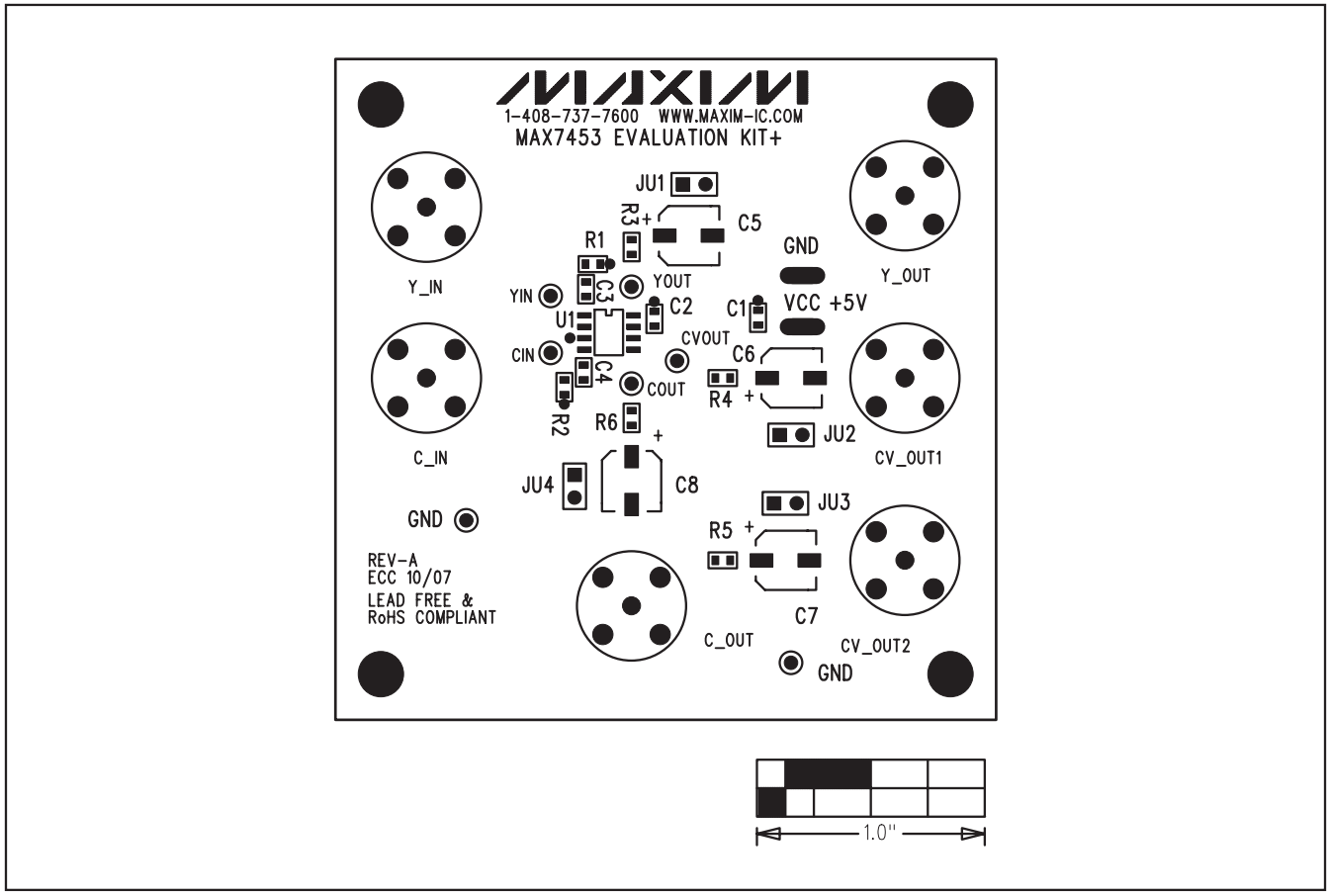

Figure 2. MAX7453 EV Kit Component Placement Guide—Top Silkscreen

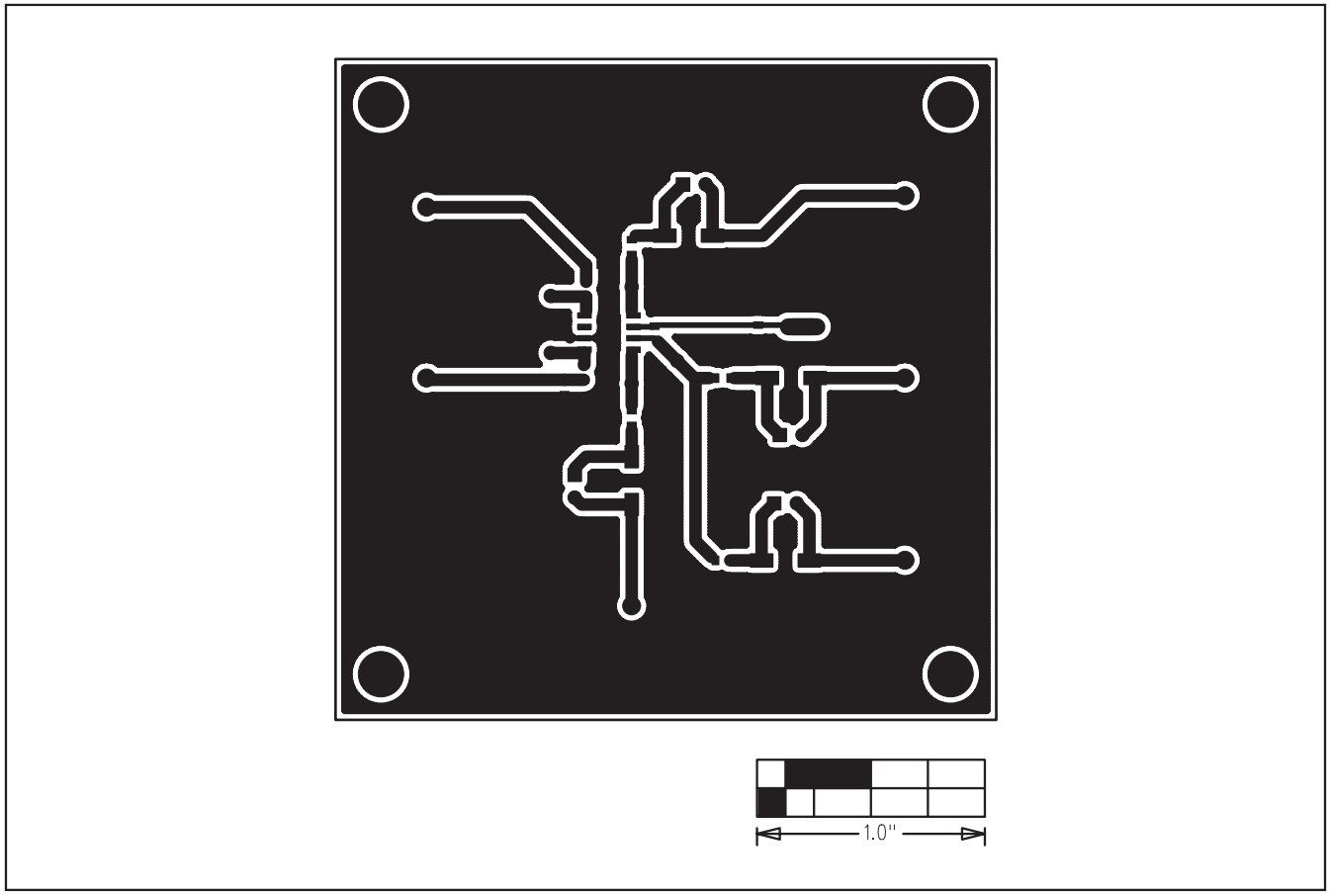

Figure 3. MAX7453 EV Kit PCB Layout—Component Side

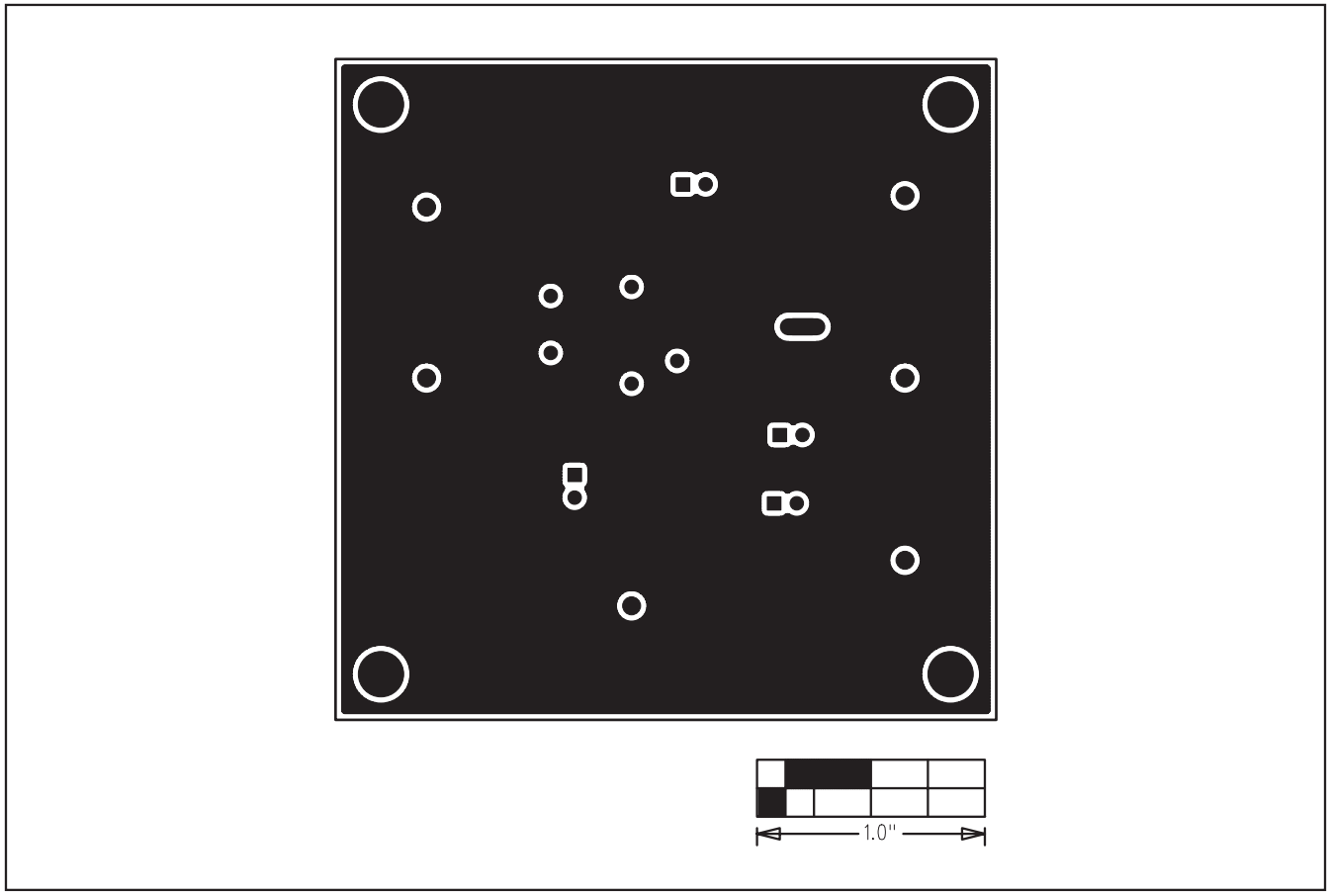

Figure 4. MAX7453 EV Kit PCB Layout—Solder Side