



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.



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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 0.1 μ F 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 75 Ω 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 150 Ω video (75 Ω backmatch resistor plus a standard 75 Ω video cable). The composite video output CVOUT drives two 150 Ω 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 220 μ F 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.

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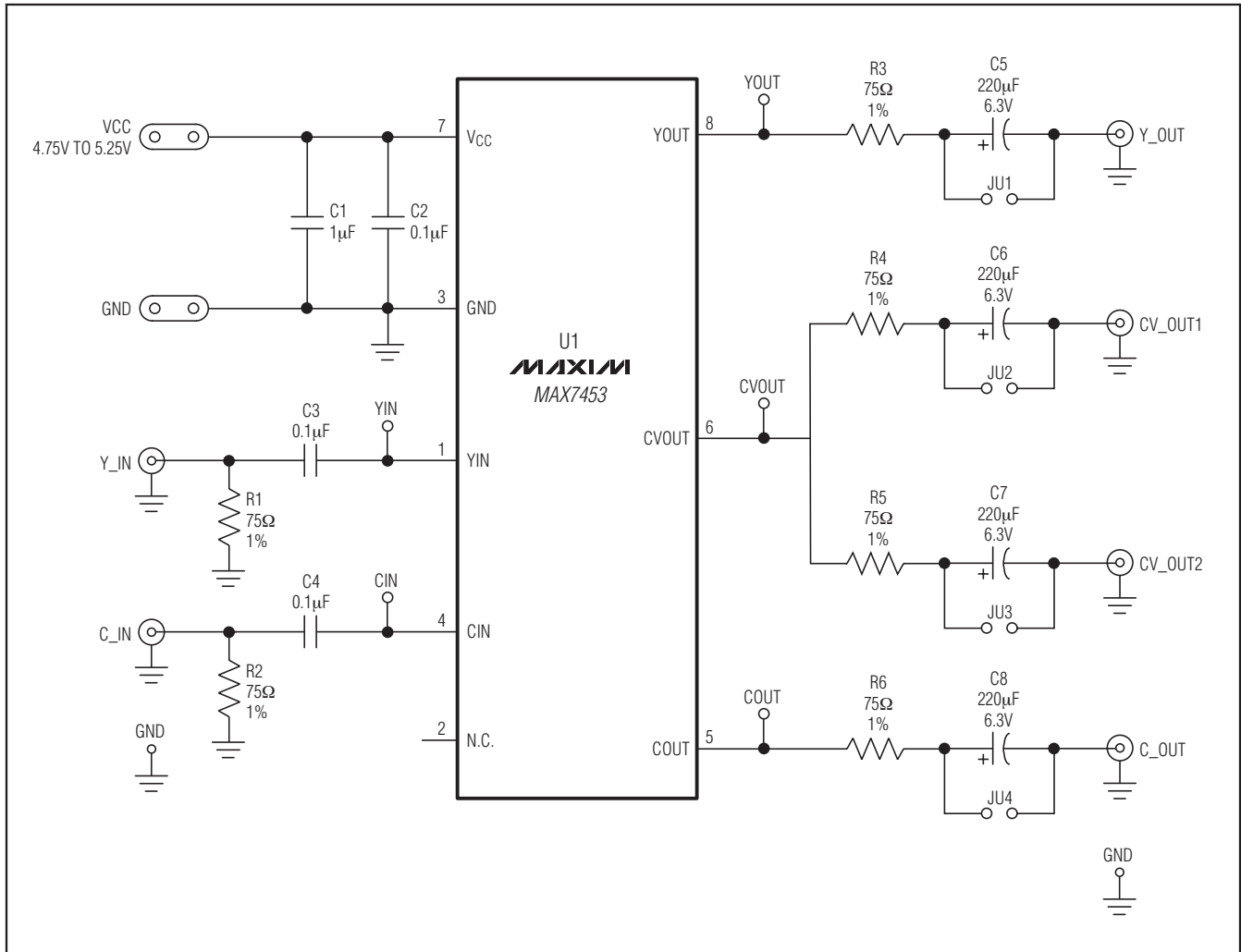


Figure 1. MAX7453 EV Kit Schematic

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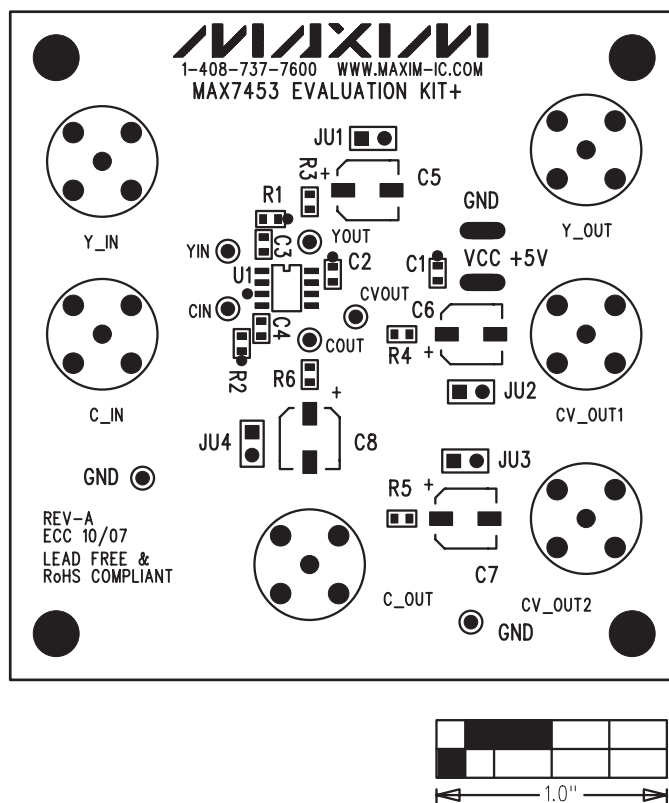


Figure 2. MAX7453 EV Kit Component Placement Guide—Top Silkscreen

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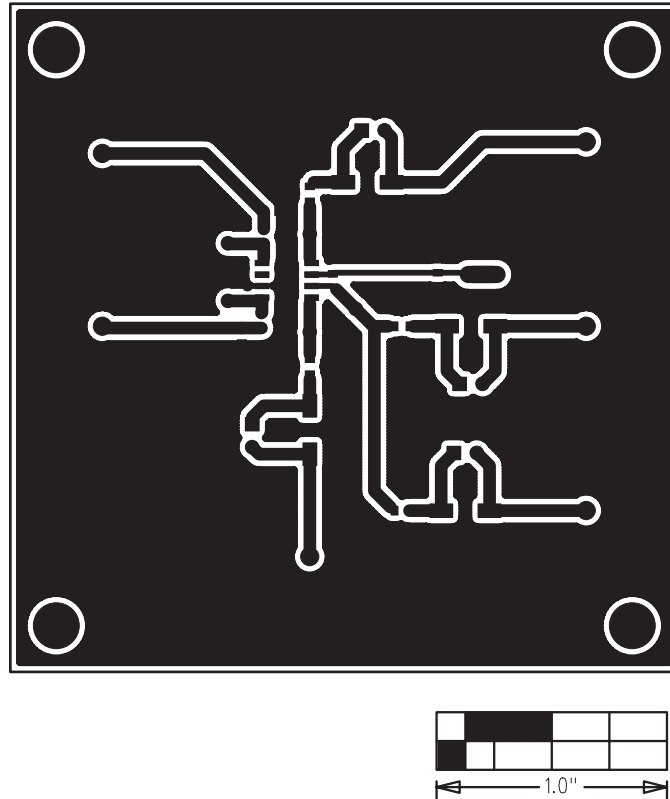


Figure 3. MAX7453 EV Kit PCB Layout—Component Side

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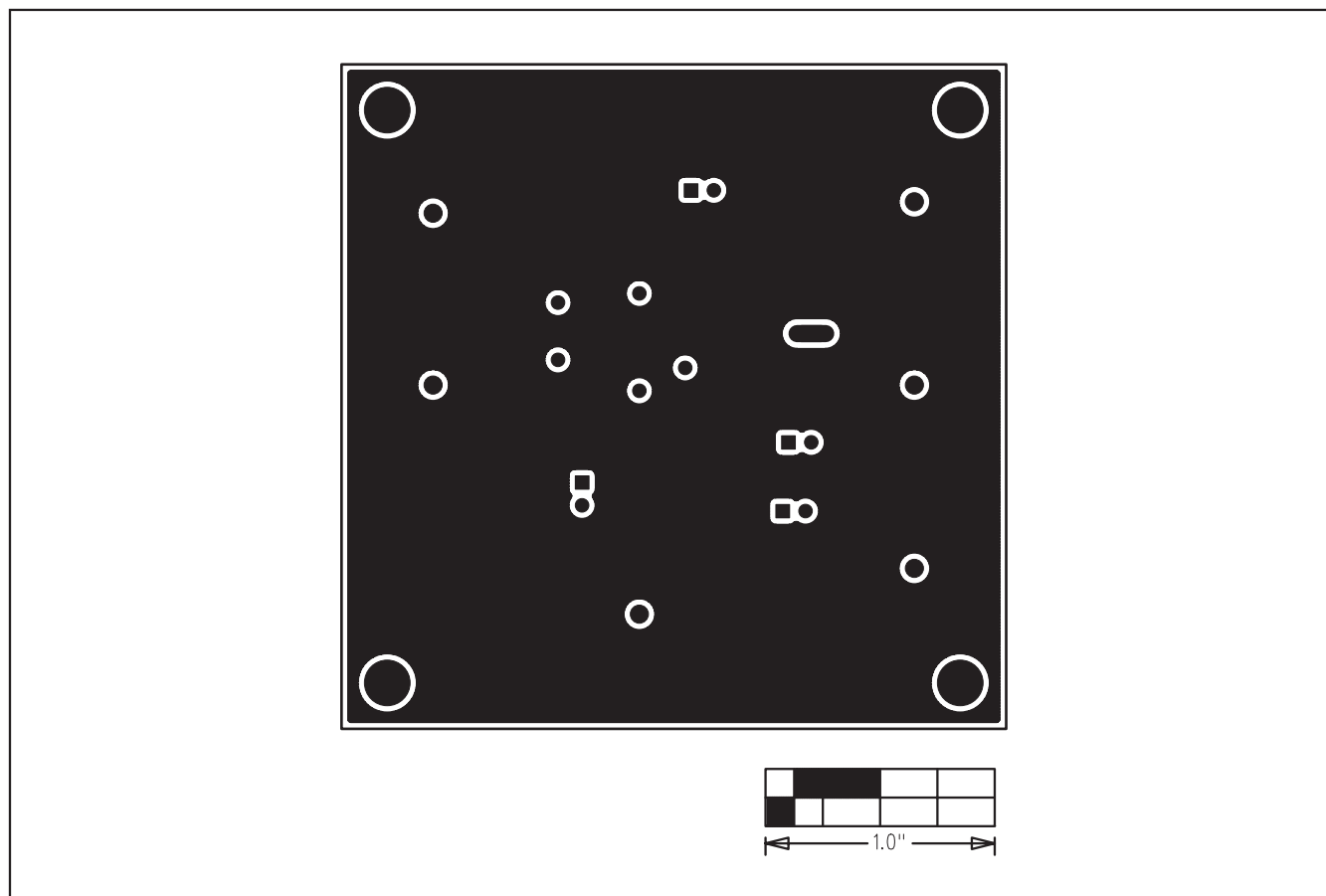


Figure 4. MAX7453 EV Kit PCB Layout—Solder Side

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