



MAX9653 Evaluation Kit

Evaluates: MAX9653

General Description

The MAX9653 evaluation kit (EV kit) is a fully assembled and tested surface-mount PCB that contains the MAX9653 triple-channel video-filter amplifier for high-definition television (HDTV) applications. The filter's passband is typically 42MHz. The MAX9653 EV kit also has shutdown control. The video inputs on the EV kit are AC-coupled; the video outputs can be AC- or DC-coupled. In addition, the MAX9653 video inputs are terminated with 75Ω and the video outputs have a 75Ω back termination resistor. The EV kit operates from a single 3.3V DC power supply.

Features

- ◆ Jumper-Selectable Enable/Shutdown
- ◆ Single 3.3V Supply Operation
- ◆ Output Buffer with a 2V/V Gain
- ◆ High-Definition Television Video Filter
- ◆ AC-Coupled Inputs
- ◆ Standard 75Ω Input/Output Terminations
- ◆ Surface-Mount Components
- ◆ Fully Assembled and Tested

Ordering Information

PART	TYPE
MAX9653EVKIT+	EV Kit

+Denotes lead-free and RoHS compliant.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2, C3, C9	4	0.1μF ±10%, 16V X7R ceramic capacitors (0603) Murata GRM188R71C104K
C4, C7, C8	0	Not installed, ceramic capacitors (0603)
C10	1	10μF ±10%, 6.3V X5R ceramic capacitor (0603) Murata GRM21BR60J106K
JU1	1	3-pin header

DESIGNATION	QTY	DESCRIPTION
PB_INPUT, PB_OUTPUT, PR_INPUT, PR_OUTPUT, Y_INPUT, Y_OUTPUT	6	75Ω BNC PCB vertical-mount connectors
R1–R6	6	75Ω ±5% resistors (0603)
R7, R8, R9	3	0Ω ±5% resistors (0603)
U1	1	3-channel high-definition video filter (10 μMAX [®]) Maxim MAX9653AUB+
—	1	PCB: MAX9653 Evaluation Kit+

Component Supplier

SUPPLIER	PHONE	WEBSITE
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com

Note: Indicate that you are using the MAX9653 when contacting this component supplier.

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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.

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Quick Start

Recommended Equipment

Before beginning, the following equipment is needed:

- 3.3V DC power supply (VDD) capable of 50mA
- Video signal generator (e.g., Tektronix TG-700 or similar)
- The appropriate video measurement equipment (e.g., Tektronix VM5000)

Procedure

The MAX9653 EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- 1) Verify that a shunt is placed on pins 1-2 of JU1 to enable the MAX9653.
- 2) Connect the outputs of the video signal generator to the Y_INPUT, PB_INPUT, and PR_INPUT BNC connectors on the MAX9653 EV kit.
- 3) Connect the Y_OUTPUT, PB_OUTPUT, and PR_OUTPUT BNC connectors on the EV kit to the input of the video measurement equipment.
- 4) Connect the power-supply ground to the GND pad on the EV kit.
- 5) Connect the 3.3V supply to the VDD pad on the EV kit.
- 6) Set the video signal generator for the desired video input signals.
- 7) Turn on the power supply and enable the video signal generator.
- 8) Analyze the video output signal.

Detailed Description of Hardware

The MAX9653 EV kit is a fully assembled and tested surface-mount PCB that contains the MAX9653 triple-channel video-filter amplifier and buffer for HDTV applications. The MAX9653 filter has ± 1 dB passband out to 42MHz and 50dB attenuation at 109MHz. The MAX9653 EV kit has three input channels to accept a full set of component video input signals.

The MAX9653 EV kit uses 0.1 μ F ceramic capacitors to AC-couple the video input signals to the MAX9653. The input capacitor stores a DC level such that the outputs are clamped to the appropriate DC voltage level. All video input terminals have a 75 Ω termination to ground. The MAX9653 EV kit video outputs can be DC- or AC-coupled. By default, 0 Ω resistors are installed on R7, R8, R9, and C4, C7, and C8 are open; each of the video outputs are configured to drive DC-coupled video loads. To configure the video outputs to drive the AC-coupled video loads, remove R7, R8, and R9, and install the 220 μ F capacitors on C4, C7, and C8.

Shutdown Mode

The MAX9653 EV kit provides an option to configure the MAX9653 into shutdown mode. See Table 1 for shunt positions.

Table 1. JU1 Jumper Selection

SHUNT POSITION	DESCRIPTION
1-2	Enable MAX9653
2-3	Shut down MAX9653

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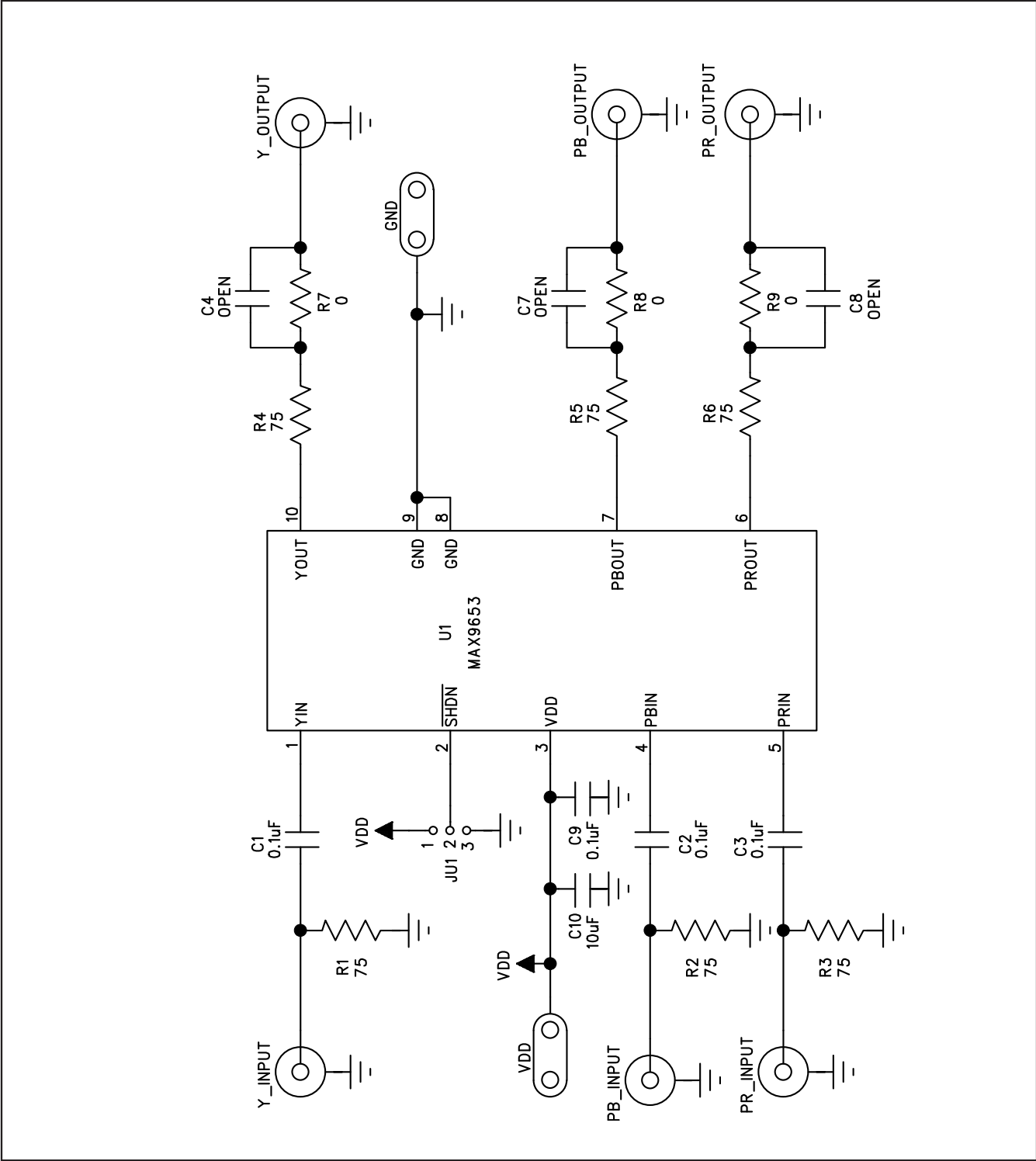


Figure 1. MAX9653 EV Kit Schematic

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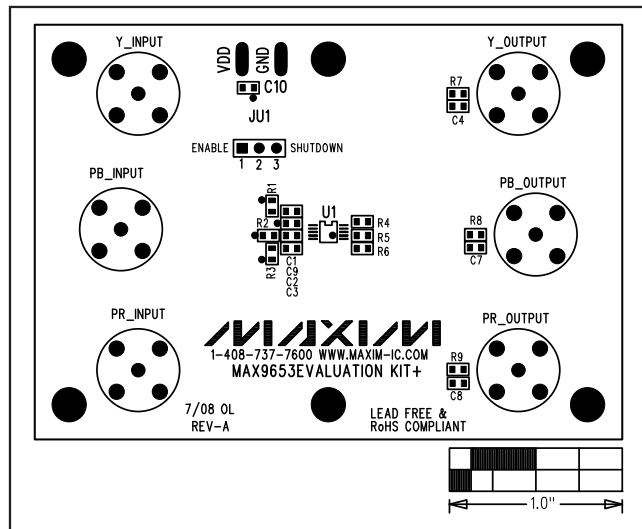


Figure 2. MAX9653 EV Kit Component Placement Guide—Component Side

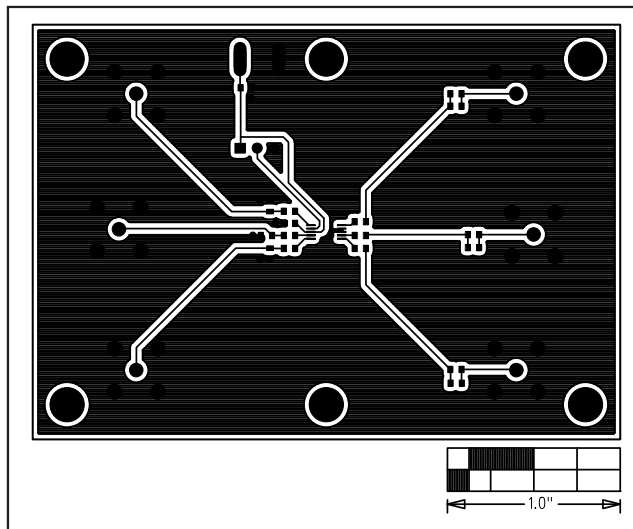


Figure 3. MAX9653 EV Kit PCB Layout—Component Side

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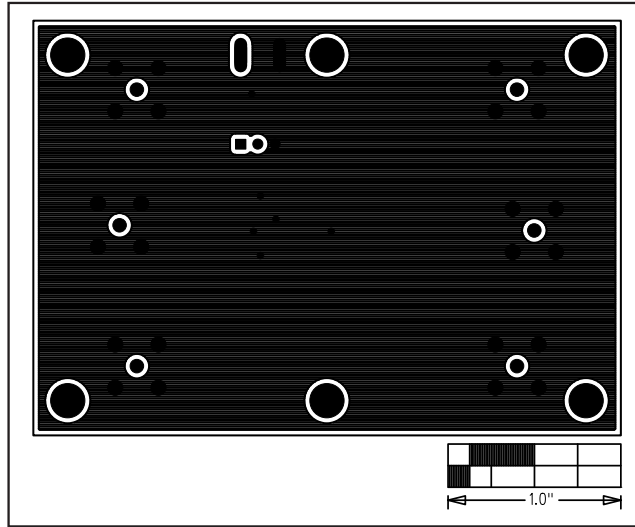


Figure 4. MAX9653 EV Kit PCB Layout—Solder Side

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