

MAXIM

MAX7443 Evaluation Kit

General Description

The MAX7443 evaluation kit (EV kit) evaluates the MAX7443, a low-cost triple-channel video reconstruction filter for composite and S-video applications. The EV kit operates from a single +5V supply. The MAX7443 EV kit can also be used to evaluate the MAX7444, a similar device with a high-frequency boost option.

Component List

| DESIGNATION | QTY | DESCRIPTION |
|-----------------------------------|-----|--|
| C1 | 1 | 1 μ F \pm 20%, 6.3V X5R ceramic capacitor (0603) Taiyo Yuden JMK107BJ105MA |
| C2, C6, C7 | 3 | 0.1 μ F \pm 10%, 16V X7R ceramic capacitors (0603) Taiyo Yuden EMK107BJ104KA TDK C1608X7R1C104KT |
| C3, C4, C5 | 3 | 220 μ F \pm 20%, 6.3V aluminum electrolytic capacitors (6.3mm x 6.0mm) Sanyo 6CV220AX |
| JU1, JU2, JU3 | 3 | 3-pin headers |
| JU4, JU5 | 2 | 2-pin headers |
| R1–R5 | 5 | 75 Ω \pm 1% resistors (0603) |
| R6, R7 | 2 | 200 Ω \pm 1% resistors (0603) |
| R8, R9 | 2 | 162 Ω \pm 1% resistors (0603) |
| TB1 | 1 | Two-circuit terminal block |
| U1 | 1 | MAX7443ETA (8-pin thin QFN 3mm x 3mm) |
| YIN, CIN, YOUT, CVOUT, COUT | 5 | BNC PC board mount connectors |
| None | 5 | Shunts |
| None | 1 | MAX7443 PC board |

Features

- ◆ +5V Single Supply
- ◆ Compatible with Standard Video Test Equipment
- ◆ Surface-Mount Construction
- ◆ Fully Assembled and Tested

Ordering Information

| PART | TEMP RANGE | IC PACKAGE |
|--------------|--------------|------------|
| MAX7443EVKIT | 0°C to +70°C | 8 Thin QFN |

Note: To evaluate the other device in the family, the MAX7444, request a free MAX7444ETA sample with the MAX7443EVKIT.

Quick Start

Recommended equipment:

- Single 5.0VDC power supply
- Video signal generator (e.g., Tektronix TG 2000)
- Video measurement equipment (e.g., Tektronix VM 700A)

The MAX7443 EV kit is a fully assembled and tested surface-mount board. Utilize the following steps to verify the board operation. **Do not turn on the power supply until all connections are completed:**

- 1) Verify that there are shunts installed on JU1 and JU3 (pins 1 and 2) and JU2 (pins 2 and 3).
- 2) Verify that there are shunts across jumpers JU4 and JU5.
- 3) Connect the luma output from the video signal generator to the YIN BNC connector on the EV kit.
- 4) Connect the chroma output from the video signal generator to the CIN BNC connector on the EV kit.
- 5) Connect the input of the video measurement equipment to the YOUT, COUT, or CVOUT BNC connectors on the EV kit.

Component Suppliers

| SUPPLIER | PHONE | FAX | WEBSITE |
|-------------|--------------|--------------|-----------------------|
| Sanyo | 619-661-6322 | 619-661-1055 | www.sanyo.com |
| Taiyo Yuden | 800-348-2496 | 847-925-0899 | www.t-yuden.com |
| TDK | 847-803-6100 | 847-390-4405 | www.component.tdk.com |

Note: Please indicate that you are using the MAX7443/MAX7444 when contacting these suppliers.

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- 6) Connect the 5.0V supply to the terminal block labeled VCC. Connect the terminal labeled GND to the ground of the power supply.
- 7) Set the signal generator for the desired video signal, such as multiburst.
- 8) Turn on the 5.0VDC power supply.
- 9) Analyze any of the output signals with the VM700 video measurement.

Detailed Description

Jumper Selection

The MAX7443 EV kit provides options for evaluation with a video signal generator output or a current output video DAC (encoder). Table 1 lists the jumper settings

for selecting the input from either a video generator or a DAC (encoder). When interfacing to a video DAC or encoder output, the 200Ω termination resistor is provided on the board and selected by changing jumpers JU1 and JU3. A typical DAC termination resistor is 200Ω . If the full-scale DAC output current is different than $\approx 5\text{mA}$, change the 200Ω resistor accordingly to get 1V at the input of the MAX7443.

The MAX7443 EV kit incorporates jumper JU2 to control the gain setting. Table 2 lists the JU2 functions.

Evaluating MAX7444

The MAX7443 EV kit can be also used to evaluate the MAX7444. To evaluate the MAX7444, replace the MAX7443ETA with a MAX7444ETA.

Table 1. Jumpers JU1, JU3, JU4, and JU5 Functions

| JU1 SHUNT LOCATION | JU3 SHUNT LOCATION | INPUT TERMINATION (Ω) |
|------------------------|------------------------|--------------------------------|
| Pins 1 and 2 (default) | Pins 1 and 2 (default) | 75 |
| Pins 2 and 3 | Pins 2 and 3 | 200 |
| All other combinations | | Undefined |

Note: To emulate a 200Ω DAC source resistor when driving from a 75Ω generator, remove jumpers JU4 and JU5. The 162Ω resistor added to the standard 75Ω termination equals approximately 200Ω .

Table 2. JU2 Functions

| JU2 SHUNT LOCATION | GSET PIN | GAIN (dB) |
|--------------------|------------------|-----------|
| Pins 1 and 2 | Connected to VCC | 9.5 |
| Pins 2 and 3 | Connected to GND | 6 |
| Not installed | Not connected | 12 |

MAX7443 Evaluation Kit

Evaluates: MAX7443/MAX7444

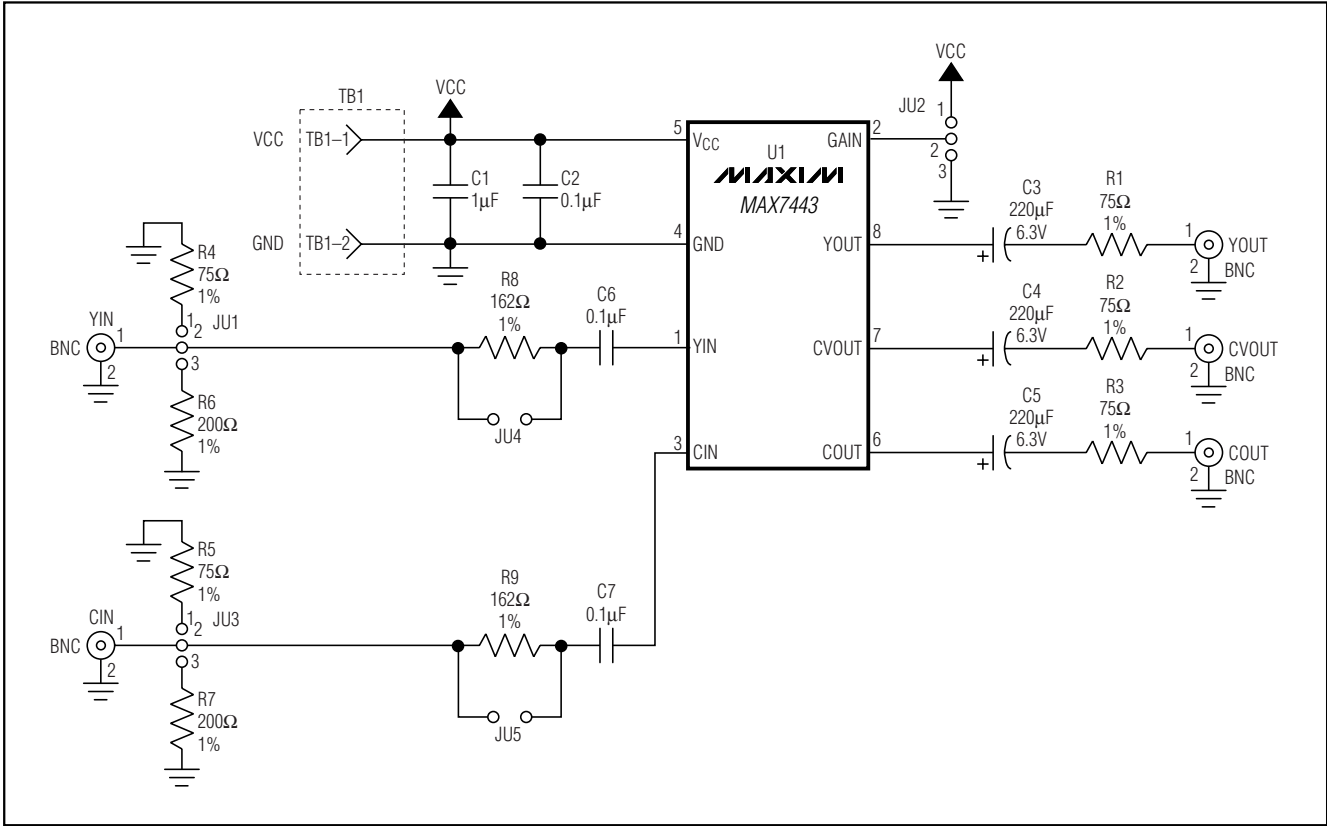


Figure 1. MAX7443 EV Kit Schematic

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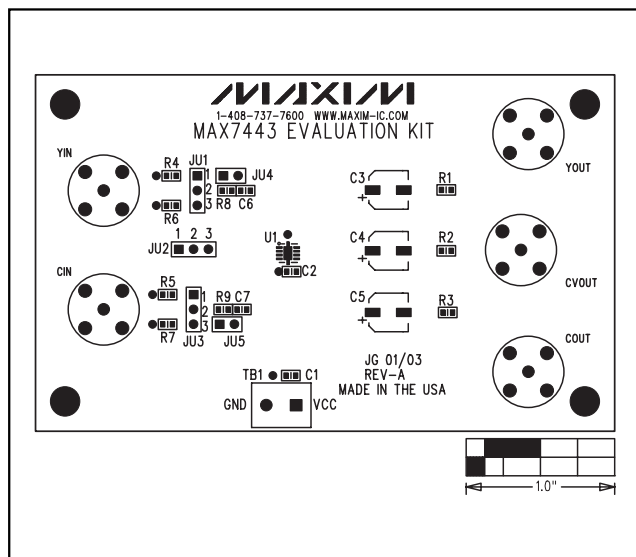


Figure 2. MAX7443 EV Kit Component Placement Guide—Top Silkscreen

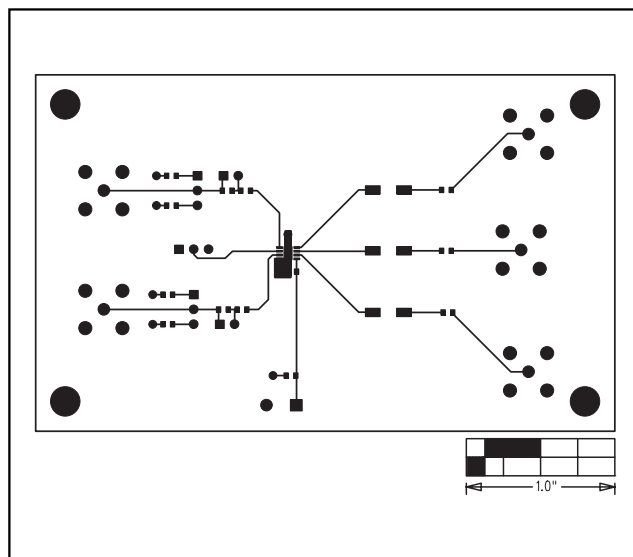


Figure 3. MAX7443 EV Kit PC Board Layout—Component Side

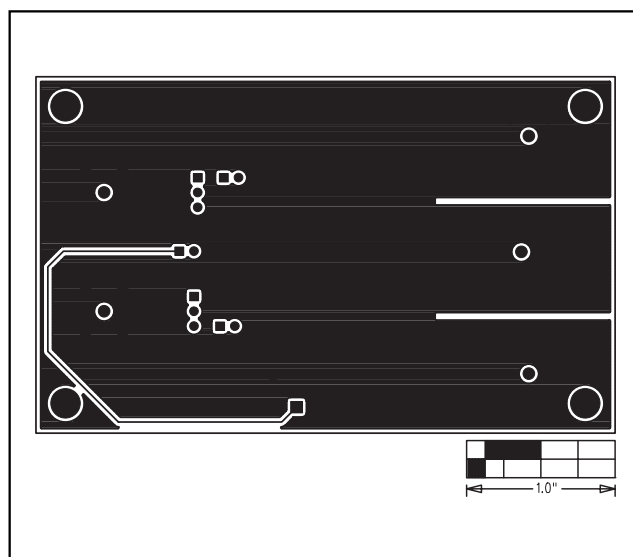


Figure 4. MAX7443 EV Kit PC Board Layout—Solder Side

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