

19-2179; Rev 0; 5/02

# MAXIM

## MAX3971/MAX3971A Evaluation Kits

### General Description

The MAX3971/MAX3971A evaluation kits (EV kits) simplify evaluation of the MAX3971 10.3Gbps limiting amplifier and the MAX3971A 10.7Gbps limiting amplifier. The EV kit enables testing of all the device's functions. SMA connectors with 50Ω controlled impedance connections to the MAX3971/MAX3971A are provided for all data input and output ports to facilitate connection to high-speed test equipment.

### Component List

DESIGNATION	QTY	DESCRIPTION
C1-C4	4	1000pF ±10% 10V min ceramic capacitors (0402)
C6, CZ	2	0.1μF ±10% 10V min ceramic capacitors (0603)
C7	1	2.2μF ±10% 10V min ceramic capacitor (1206)
C8	1	33μF ±10% 10V min Tantalum capacitor
C11-C14, C16-C19	8	0.1μF ±10% 10V min ceramic capacitors (0402)
J1-J4, J9-J13	9	SMA connectors, edge mount, tab contact
J6, J7	2	Test points
JU1	1	1 x 3-pin header (0.1in centers)
JU2	1	1 x 2-pin header (0.1in centers)
JU2	1	Shunt
L1	1	Ferrite bead inductor BLM11HA102SG
U1	1	MAX3971UGP 4X4 20 QFN-EP MAX3971AUGP 4X4 20 QFN-EP
None	1	MAX3971/MAX3971A evaluation circuit board, rev C
None	1	MAX3971/MAX3971A data sheet

### Features

- ◆ SMA Connections for all High-Speed Inputs and Outputs
- ◆ Single +3.3V Power-Supply
- ◆ Fully Assembled and Tested

### Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX3971EVKIT	0°C to +85°C	20 QFN-EP*
MAX3971AEVKIT	0°C to +85°C	20 QFN-EP*

\*EP = exposed pad

### Component Suppliers

SUPPLIER	PHONE	FAX
AVX	803-946-0690	803-626-3123
Murata	814-237-1431	814-238-0490

**Note:** Please indicate that you are using the MAX3971/MAX3971A when ordering from these suppliers.

### Quick Start

- 1) Connect a +3.3V power supply to J6 (VCC). Connect the power supply ground to J7.
- 2) For the MAX3971, apply a 10.3Gbps, 10mV<sub>P-P</sub> to 800mV<sub>P-P</sub> differential signal between J1 (IN+) and J2 (IN-). For the MAX3971A, apply a 10.7Gbps, 5mV<sub>P-P</sub> to 800mV<sub>P-P</sub> differential signal between J1 (IN+) and J2 (IN-).
- 3) Connect a jumper from the center pin to the ground pin of JU1 to enable the output.
- 4) Connect a 50Ω oscilloscope to the SMA connectors J3 and J4 (OUT+, OUT-) to observe the output of the limiter. The output signal is approximately 250mV<sub>P-P</sub>.

### Notes

At high frequencies such as from 1GHz to 10GHz, delays with the board and cables affect measurements. Mismatches in cables can cause significant measurement errors. Edge speeds are best observed by using single-ended methods. Careful calibration of cables, attenuators, and the board is necessary.

Evaluate: MAX3971/MAX3971A



# MAX3971/MAX3971A Evaluation Kits

Evaluate: MAX3971/MAX3971A

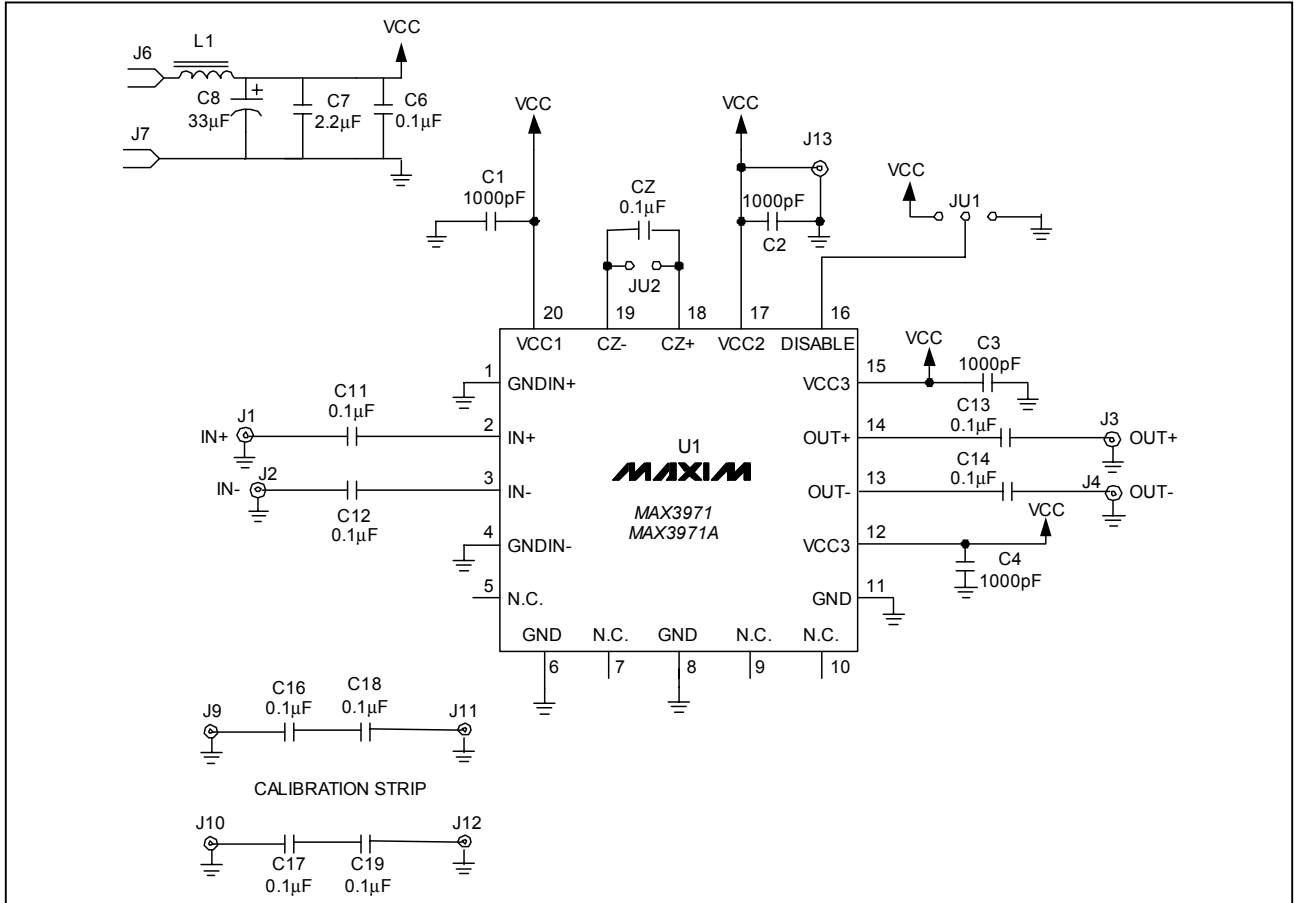


Figure 1. MAX3971/MAX3971A EV Kit Schematic

# MAX3971/1MAX3971A Evaluation Kits

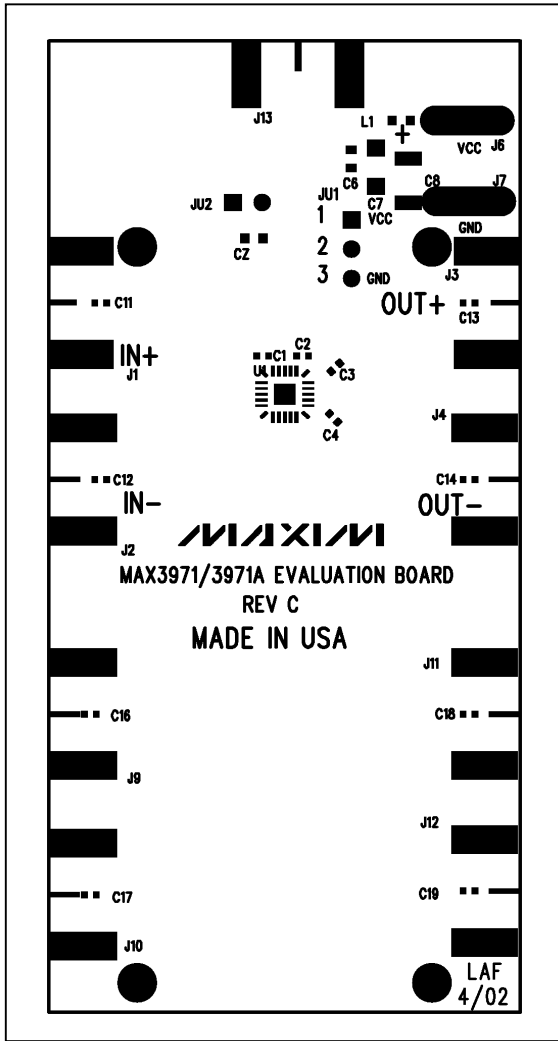


Figure 2. MAX3971/3971A EV Kit Component Placement Guide-Component Side

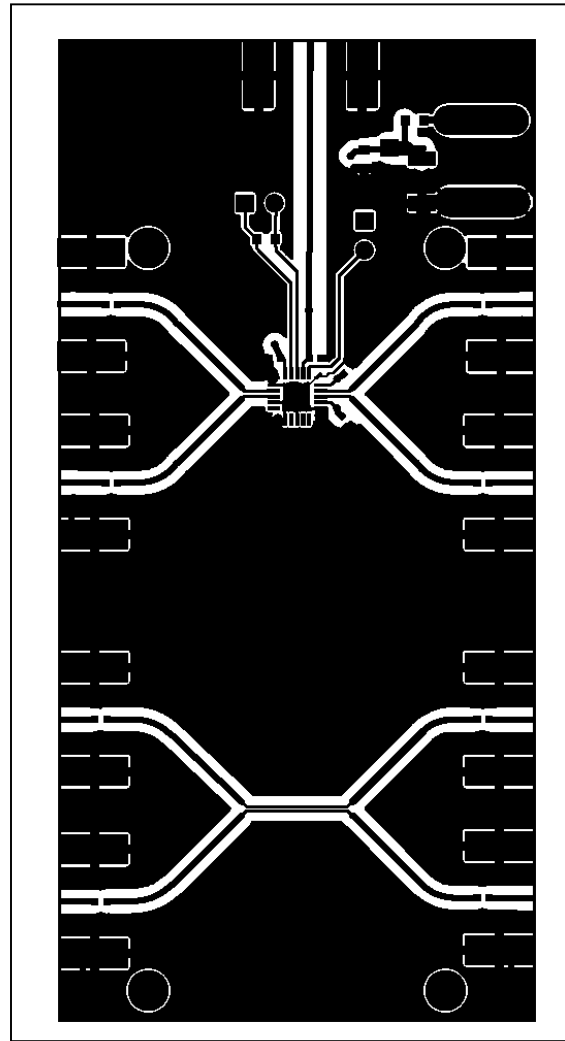


Figure 3. MAX3971/3971A EV Kit PC Board Layout-Component Side

Evaluates: MAX3971/1MAX3971A

## MAX3971/MAX3971A Evaluation Kits

**Evaluate: MAX3971/MAX3971A**

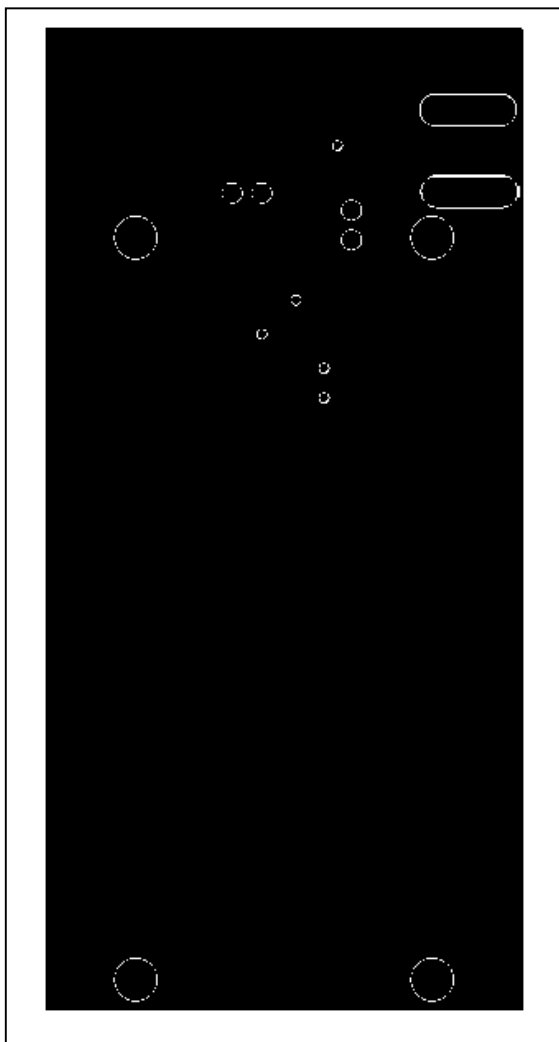


Figure 4. MAX3971/MAX3971A EV Kit PC Board Layout – Ground Plane

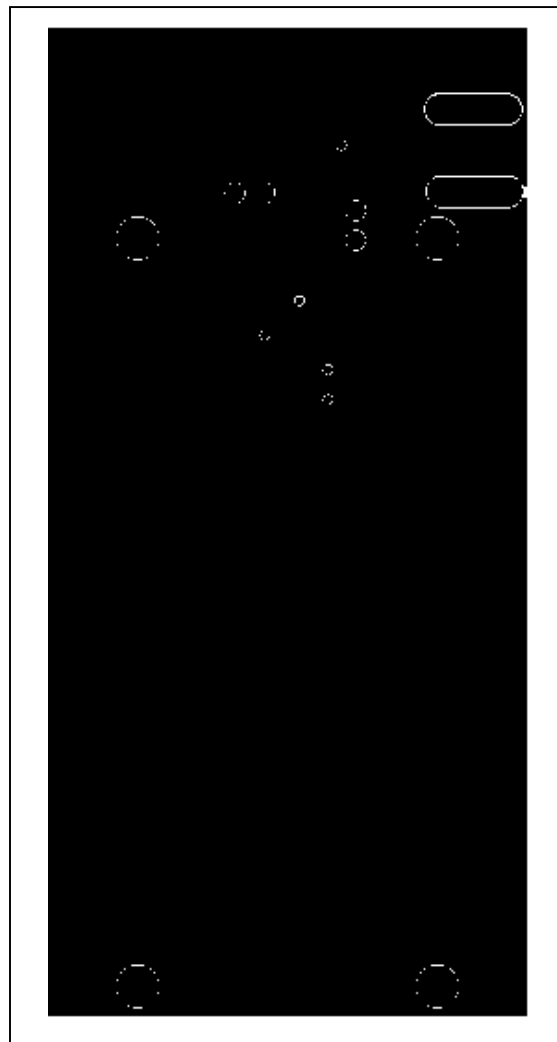


Figure 5. MAX3971/MAX3971A EV Kit PC Board Layout-Power Plane

## MAX3971/MAX3971A Evaluation Kits

Evaluates: MAX3971/MAX3971A

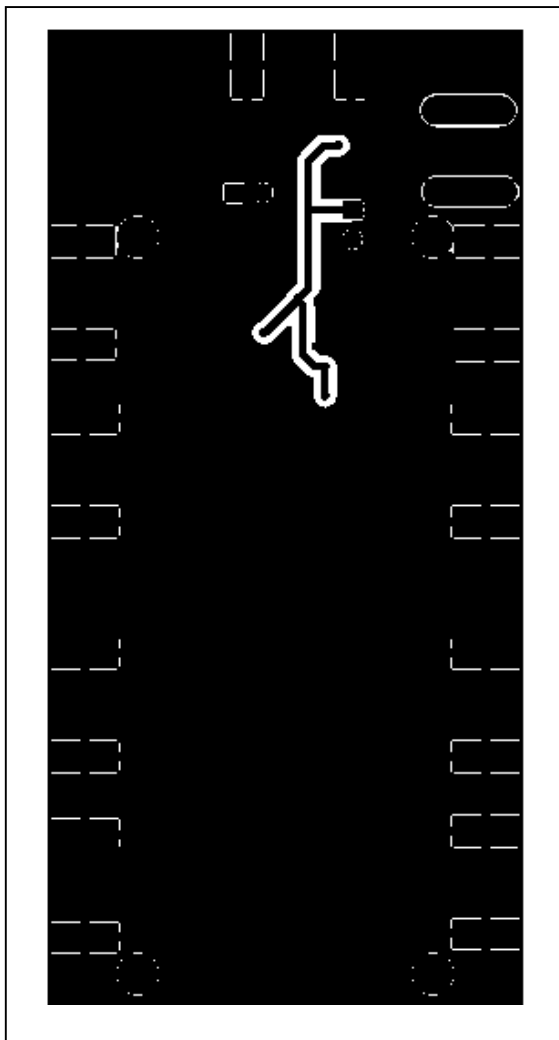


Figure 6. MAX3971/MAX3971A EV Kit PC Board Layout-Solder Side

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