

MAXIM

MAX3971 Evaluation Kit

General Description

The MAX3971 evaluation kit (EV kit) simplifies evaluation of the MAX3971 10.3Gbps limiting amplifier. The EV kit enables testing of all the device's functions. SMA connectors with 50Ω controlled-impedance connections to the MAX3971 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 | 0.001μF ±10% ceramic capacitors (0402) Murata GRM36X7R102K050AD |
| C6, CZ | 2 | 0.1μF ±10% ceramic capacitors (0603) Murata GRM39X7R104K016AD |
| C7 | 1 | 2.2μF ±10% ceramic capacitor (1206) Murata GRM42-6X7R225K016AD |
| C8 | 1 | 33μF ±10% tantalum capacitor AVX TAJC336K010 |
| C9, C16–C21 | 0 | Open |
| C11–C14 | 4 | 0.1μF ±10% ceramic capacitors (0402) Murata GRM36X5R104K010AD |
| J1–J4 | 4 | SMA connectors (edge-mount, tab contact) |
| J6, J7 | 2 | Test points Digi-Key 5000K-ND |
| J8–J14 | 0 | Open |
| JU1 | 1 | 1 × 3-pin header (0.1in center) |
| L1 | 1 | Murata BLM11HA102SG |
| R3, R4 | 0 | Open |
| U1 | 1 | MAX3971UGP (20 QFN) |
| None | 1 | Shunt |
| None | 1 | MAX3971 evaluation circuit board, Rev B |
| None | 1 | MAX3971 data sheet |

Features

- ◆ SMA Connectors for All High-Speed Inputs and Outputs
- ◆ Fully Assembled and Tested
- ◆ Single 3.3V Power Supply

Ordering Information

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

*Exposed paddle

Component Suppliers

| SUPPLIER | PHONE | FAX |
|----------|--------------|--------------|
| AVX | 843-444-2863 | 843-626-3123 |
| Murata | 415-964-6321 | 415-964-8165 |

Note: Please indicate that you are using the MAX3971 when contacting these component suppliers.

Quick Start

- 1) Connect a 3.3V power supply to J6 (VCC). Connect the power supply ground to J7.
- 2) Connect a differential or single-ended input signal (differential voltage amplitude between 10mVp-p and 800mVp-p) to the inputs (IN+ and IN-) by using SMA cables suitable for 10.3GHz use.
- 3) 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 200mVp-p to 400mVp-p differential.
- 4) To disable the output signals OUT+ and OUT-, jumper the three-pin header JU1 from the center pin (pin 2) to VCC (pin 1). To enable the output signals, jumper should be from pin 2 to ground (pin 3).

Notes

- 1) 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.

MAX3971 Evaluation Kit

Evaluates: MAX3971

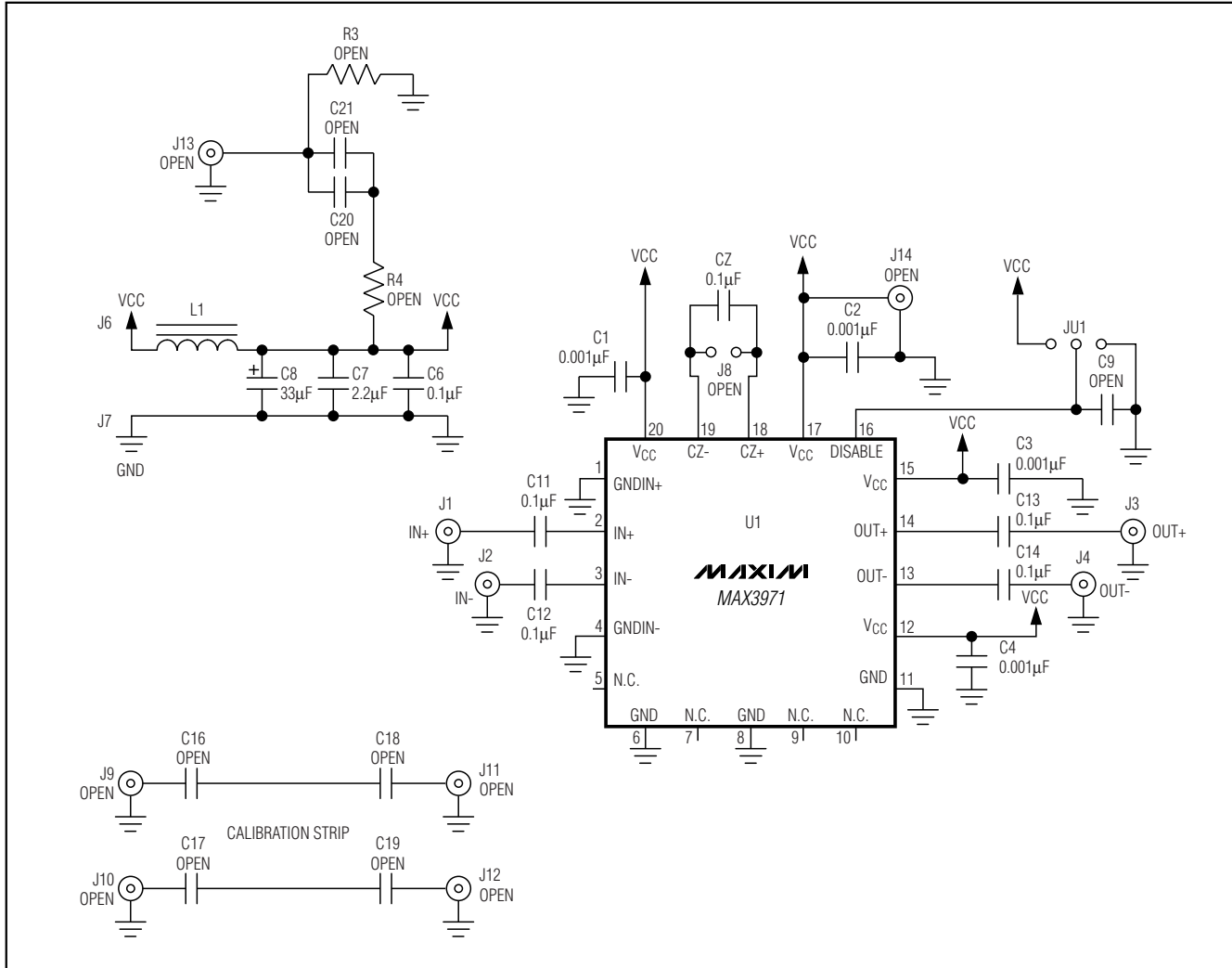


Figure 1. MAX3971 EV Kit Schematic

MAX3971 Evaluation Kit

Evaluates: MAX3971

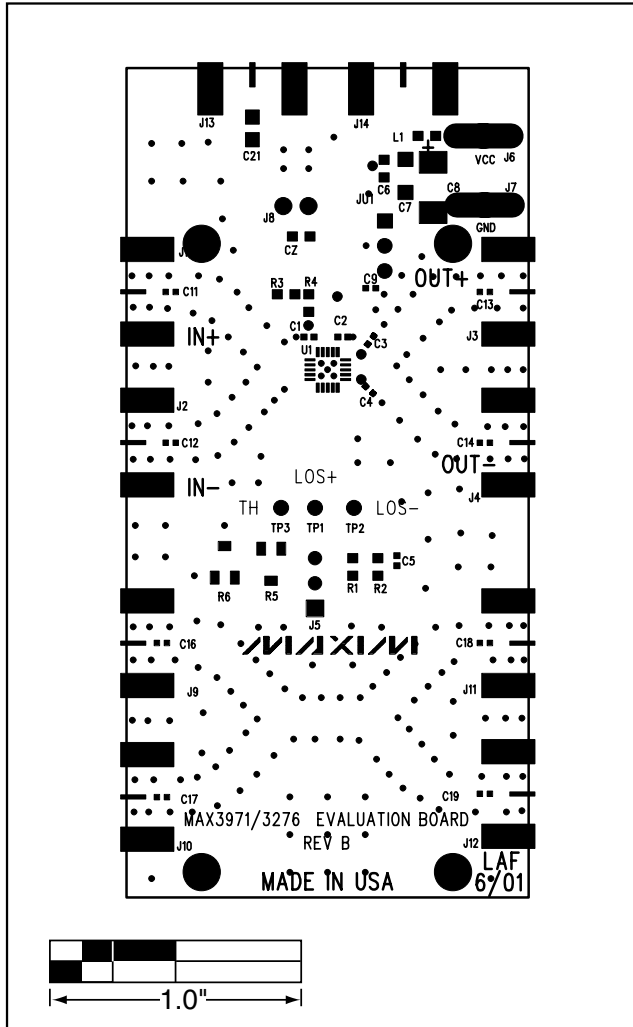


Figure 2. MAX3971 EV Kit Component Placement Guide—Component Side

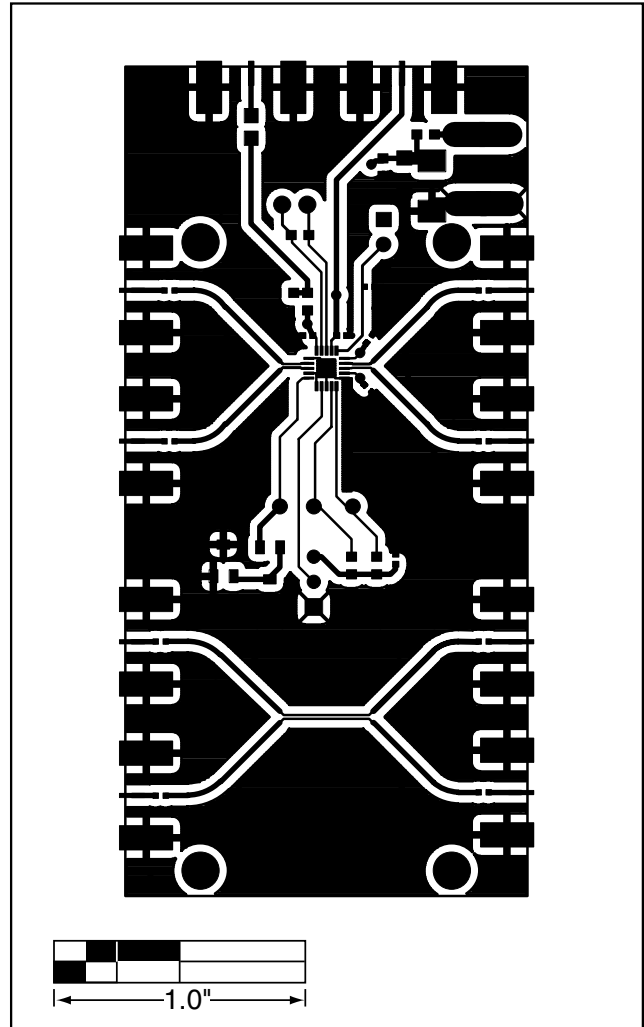


Figure 3. MAX3971 EV Kit PC Board Layout—Component Side

MAX3971 Evaluation Kit

Evaluates: MAX3971

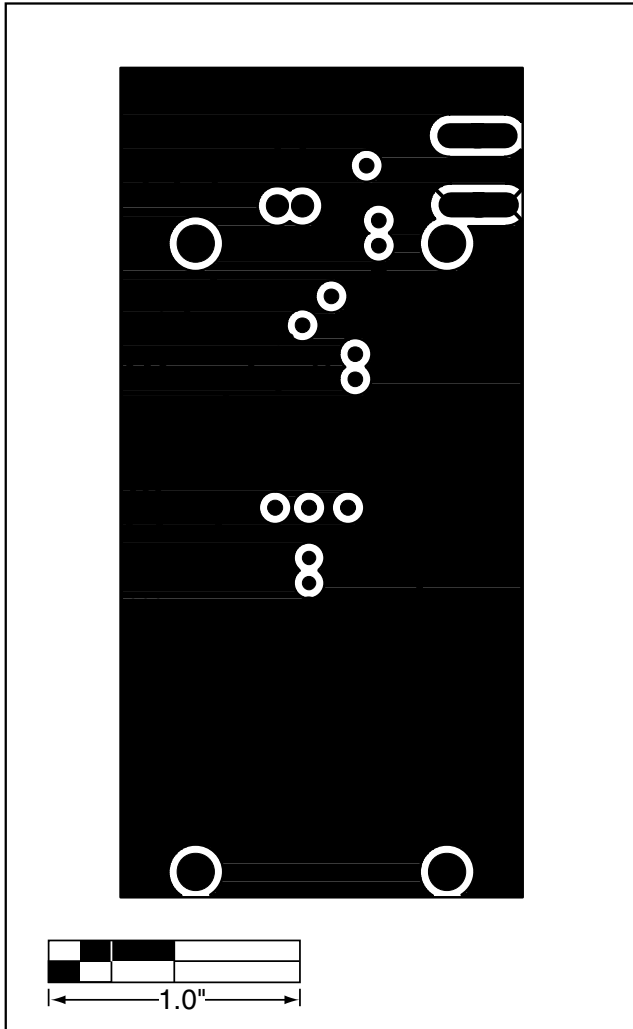


Figure 4. MAX3971 EV Kit PC Board Layout—Ground Plane

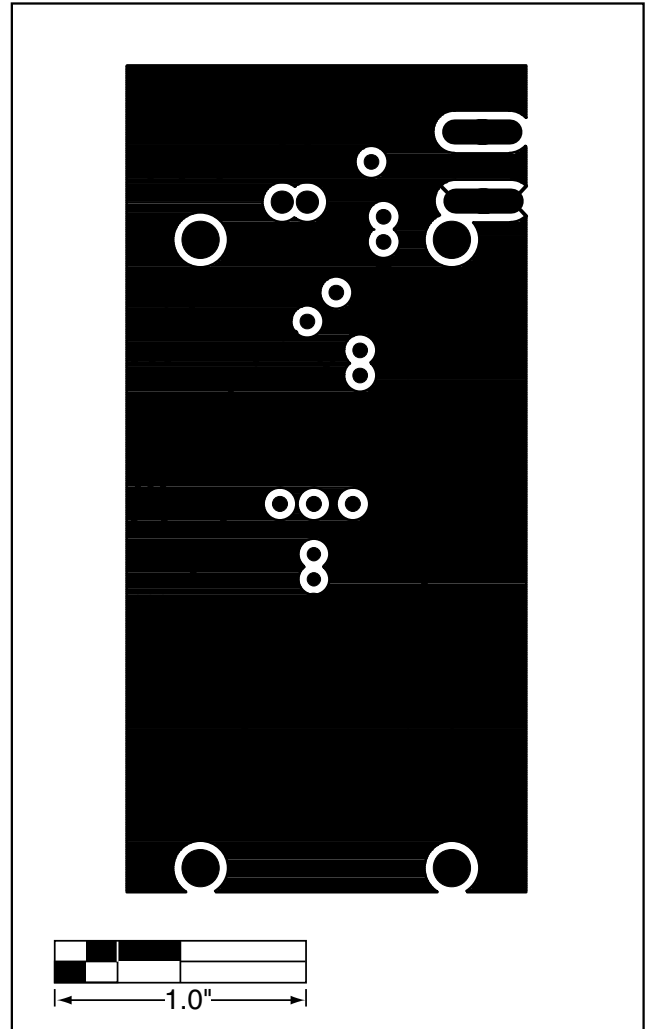


Figure 5. MAX3971 EV Kit PC Board Layout—Power Plane

MAX3971 Evaluation Kit

Evaluates: MAX3971

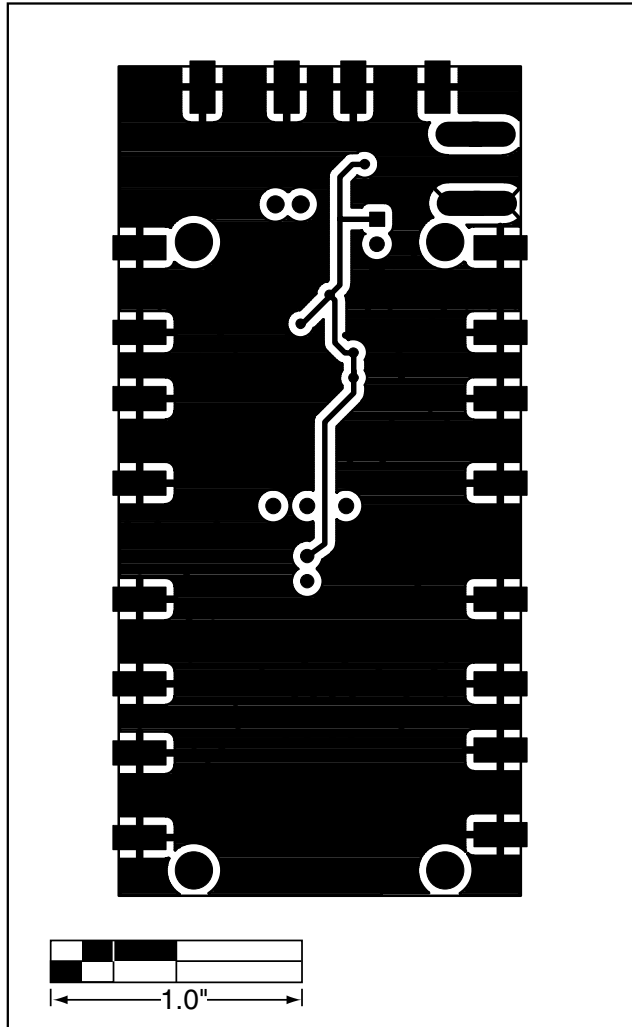


Figure 6. MAX3971 EV Kit PC Board Layout—Solder Side

MAX3971 Evaluation Kit

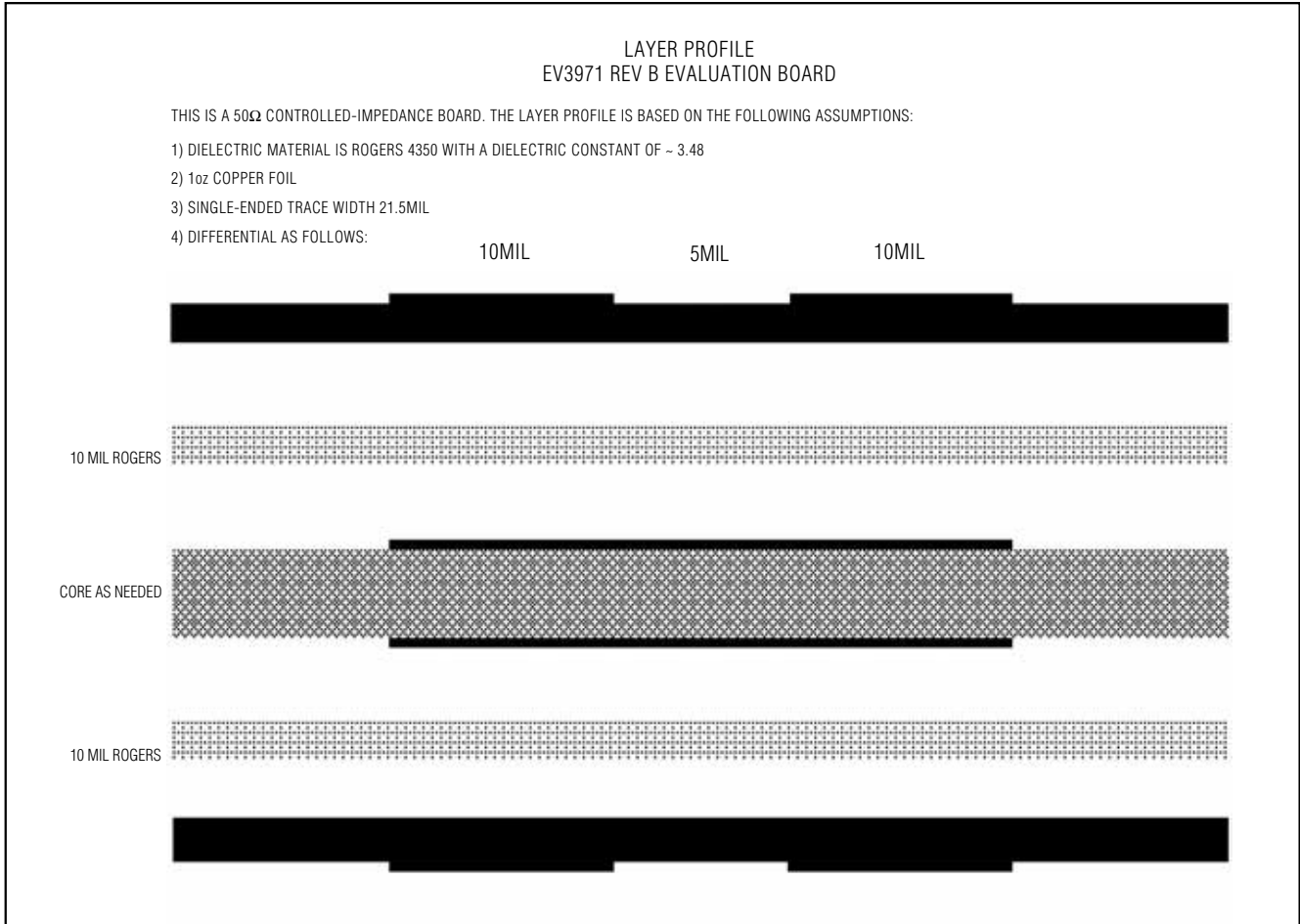


Figure 7. MAX3971 EV Kit PC Board Layer Profile

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