19-3287; Rev 2; 6/07

MAX3969 Evaluation Kit

Evaluates: MAX3969

General Description

The MAX3969 evaluation kit (EV kit) is a fully assembled and tested demonstration board for the MAX3969 limiting amplifier. The EV kit allows easy programming of the power-detect threshold, is designed for 50Ω test interfaces, and provides layout options for alternate output terminations.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C10, C20	3	0.1µF ±10% ceramic capacitors (0402)
C2, C3, C4	3	0.01µF ±5% ceramic capacitors (0402)
C5	1	0.027µF ±10% ceramic capacitor (0603)
C6, C26	2	33µF ±10% tantalum capacitors AVX TAJB336K010R
C7, C27	2	3.3µF ±10% ceramic capacitors (0805)
J1–J4	4	SMA connectors (edge mount) EF Johnson 142-0701-801
J5, J6, J7, TP1–TP13	16	Test points Digi-Key 5000K-ND
JU2, JU4, JU6	3	2-pin headers, 0.1in centers Digi-Key S1012-36-ND
JU2, JU4, JU6	3	Shunts Digi-Key S9000-ND
L1, L2	2	1.2µH inductors Coilcraft 1008LS-122XJBC
R1	1	10kΩ ±5% resistor (0402)
R2, R3, R10	3	Not installed
R6	1	10kΩ variable resistor
R7	1	200kΩ variable resistor
R8	1	100kΩ ±5% resistor (0402)
R11, R12	2	84.5Ω ±1% resistors (0402)
R5, R24, R25	3	49.9Ω ±1% resistors (0402)
R27, R28	2	4.7kΩ ±5% resistors (0402)
R29, R30	2	0Ω ±5% resistors (0402)
SB9	1	Solder bridge, open
U1	1	MAX3969ETP 20-pin Thin QFN
None	1	MAX3969ETP EV kit circuit board, Rev B

Features

- **Easy +2.97V to +5.5V Electrical Evaluation**
- **Fully Assembled and Tested**
- **Easy Power-Detect Threshold Programming**
- **Designed for 50Ω Test Interfaces**
- **Allows Alternate Output Terminations**

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX3969ETPEVKIT	-40°C to +85°C	20 Thin QFN

Component Suppliers

SUPPLIER	PHONE	FAX
AVX	843-448-9411	843-626-3123
Coilcraft	847-639-6400	847-639-1469
Digi-Key	800-344-4539	218-681-3380
Murata	770-436-1300	770-436-3030

Note: *Please indicate that you are using the MAX3969 when ordering from these suppliers.*

Quick Start

1) Remove the shunt from JU4 and place shunts on JU2 and JU6.
2) Apply a 155Mbps differential signal ($4mV_{P-P}$ to $1.5V_{P-P}$) between SMA connectors J3 (IN-) and J4 (IN+).
3) Connect an oscilloscope with 50Ω terminations to SMA connectors J1 (OUT-) and J2 (OUT+). (To avoid overloading the oscilloscope, use 20dB of attenuation between the outputs and the oscilloscope inputs.)
4) Connect a +2V power supply to J5 (V_{CC}), a -0.97V to -3.5V power supply to J7 (V_{EE}), and the power-supply ground to J6 (GND).
5) Monitor LOS by connecting a voltage meter between TP13 and TP6.
6) Adjust the power-detect threshold with R6 and R7.

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.

Detailed Description

The MAX3969 EV kit simplifies evaluation of the MAX3969 limiting amplifier. The EV kit provides the external components necessary to evaluate all the MAX3969 functions.

Setting the Power-Detect Threshold

Jumpers JU4 and JU6 control the resistor used to set the power-detect threshold. To use the variable resistors R6 and R7, place a shunt on JU6 and remove the shunt from JU4. If a fixed resistor is required, solder a resistor to R10, remove the shunt from JU6, and place a shunt on JU4.

Enabling Squelch Function

Jumper JU2 controls the squelch function. Place a shunt on JU2 to enable squelch. Remove the shunt from JU2 to disable squelch.

Monitoring RSSI Output

Test point TP1 provides access to the received-signal-strength-indicator (RSSI). Monitor RSSI by connecting a voltage meter between TP1 and TP6.

Monitoring LOS Outputs

The EV kit provides 4.7kΩ pullup resistors for the LOS outputs. Monitor LOS by connecting a voltage meter between TP13 and TP6. Monitor $\overline{LOS}$ by connecting a voltage meter between TP7 and TP6.

Data-Input Terminations

The EV kit has a 100Ω differential-input termination. If the input is driven single-ended, terminate both sides of the input with 50Ω to ground by shorting solder bridge SB9.

PECL-Output Terminations

The data outputs (OUT+, OUT-) and signal detect output (SD) are PECL compatible and any standard termination technique can be used. Figure 1 illustrates typical DC and AC terminations.

Monitor OUT+ and OUT- with a 50Ω-terminated oscilloscope. To avoid overloading the oscilloscope, use 20dB of attenuation between the data outputs and the oscilloscope inputs.

Monitor the SD output by connecting a voltage meter between TP12 and TP11. This will provide the output voltage relative to V_{CC}.

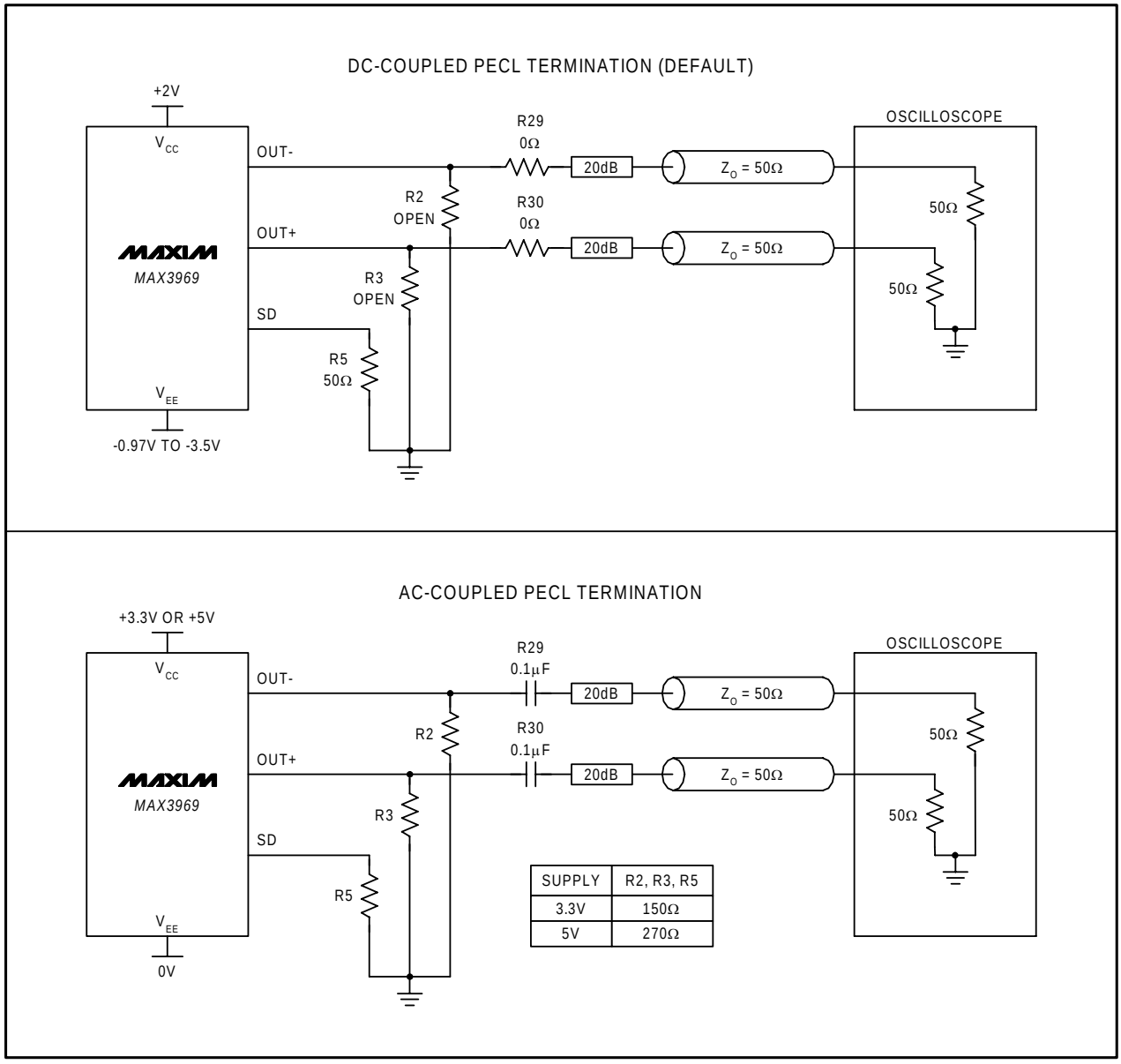


Figure 1. PECL-Output Terminations

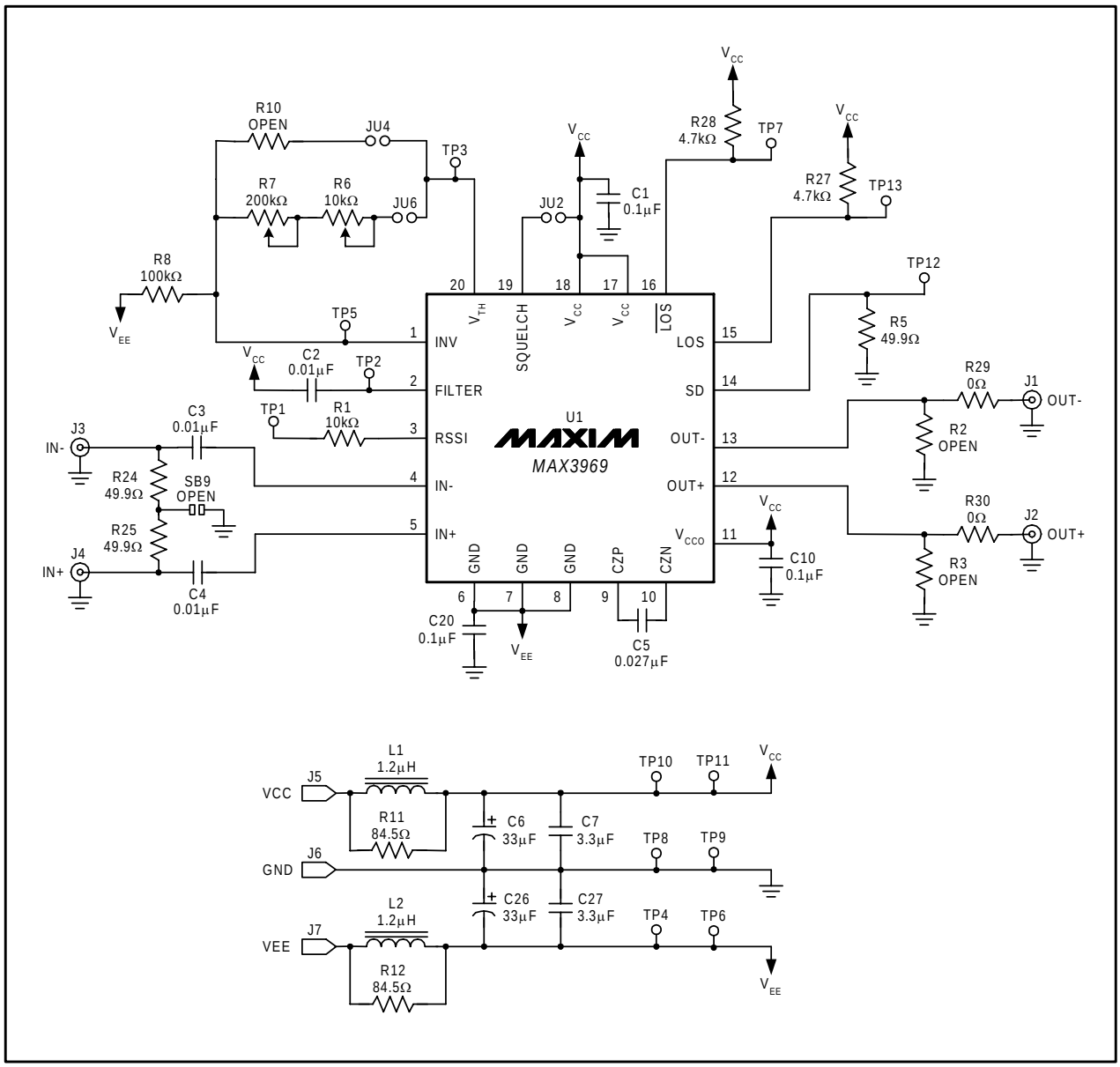


Figure 2. MAX3969 EV Kit Schematic

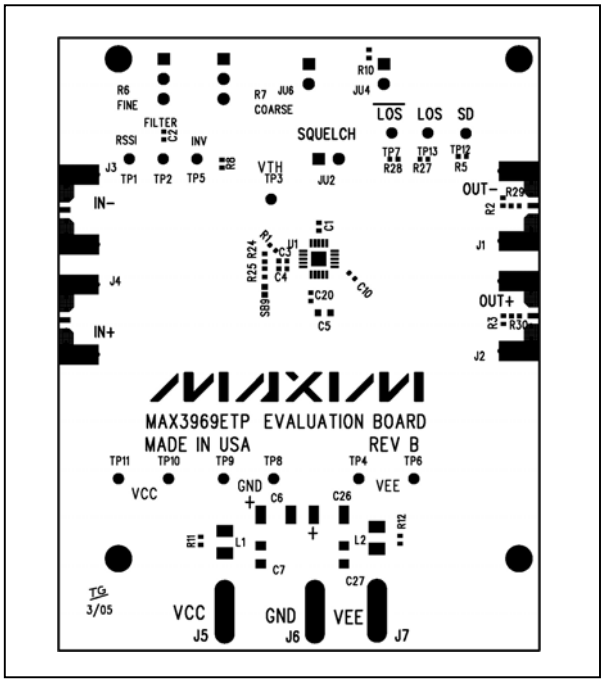


Figure 3. MAX3969 EV Kit Component Placement Guide—Component Side

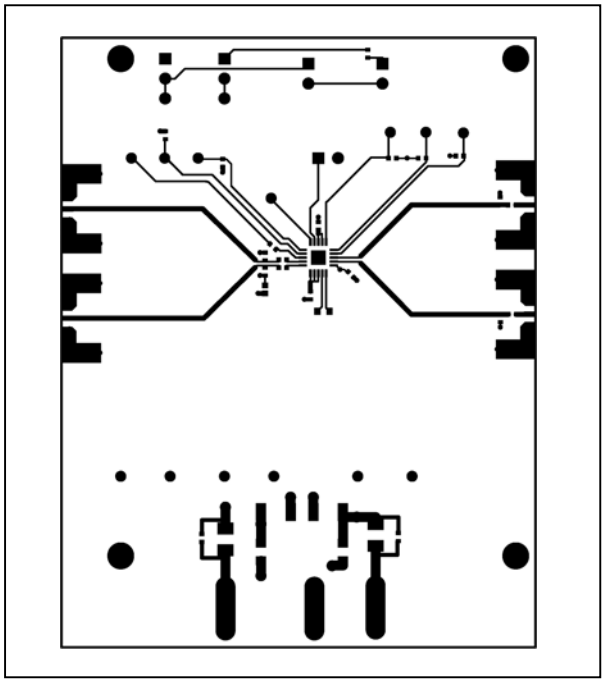


Figure 4. MAX3969 EV Kit PC Board Layout—Component Side

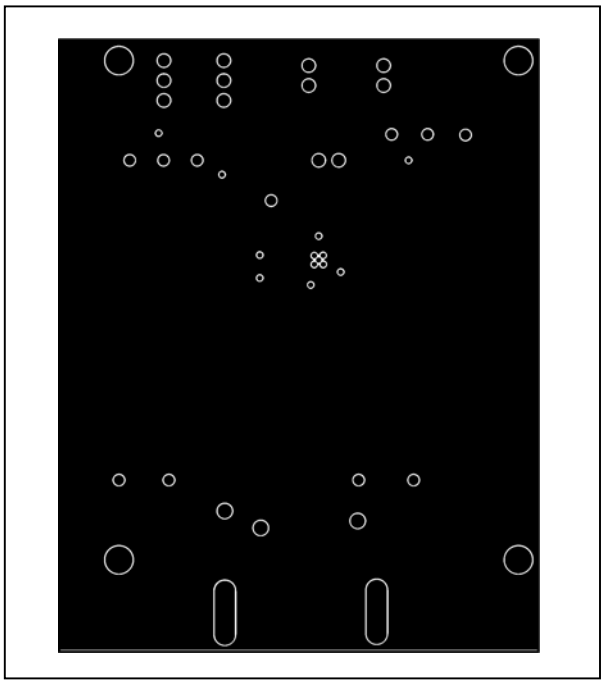


Figure 5. MAX3969 EV Kit PC Board Layout—Ground Plane

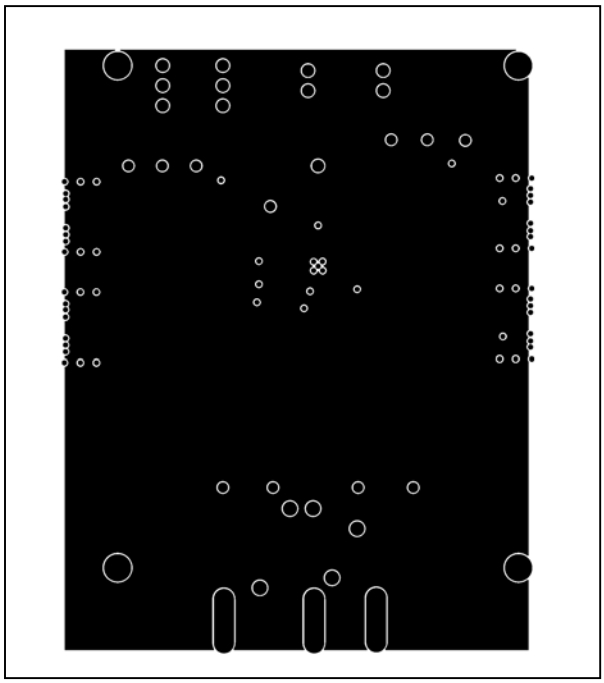


Figure 6. MAX3969 EV Kit PC Board Layout—Power Plane

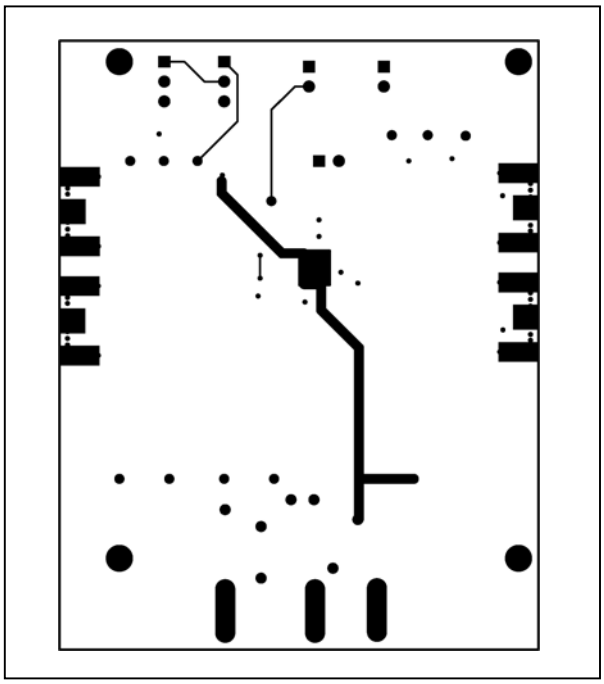


Figure 7. MAX3969 EV Kit PC Board Layout—Solder Side

Revision History

Rev 1; 3/05:	Changed PCB in BOM to Rev B (page 1); updated Figures 3 and 5 (page 5).
Rev 2; 6/07:	Changed part number in *Ordering Information* table from MAX3969EVKIT to MAX3969ETPEVKIT (page 1).

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