

# MAXIM

## MAX3902 Evaluation Kit

**Evaluates: MAX3902**

### General Description

The MAX3902 evaluation kit (EV-kit) provides electrical evaluation of the MAX3902 receiver. The EV-kit also includes an optical section where a photodiode can be installed and optical evaluation is possible.

### Component List

DESIGNATION	QTY	DESCRIPTION
C1	1	0.01 $\mu$ F $\pm$ 10% Ceramic Capacitor (0402)
C2	1	0.022 $\mu$ F $\pm$ 10% Ceramic Capacitor (0402)
C4, C5, C10, C14, C16, C17, C33, C34, C39	9	0.1 $\mu$ F $\pm$ 10% Ceramic Capacitors (0402)
C6, C35	2	10pF $\pm$ 10% Ceramic Capacitors (0402)
C15	1	10 $\mu$ F $\pm$ 5% Tantalum Capacitor (B Case)
C28	1	2pF $\pm$ 10% Ceramic Capacitor (0402)
C29	1	Open
J1-J3, J15, J16, J18	6	SMA connectors (edge-mount, tab contact)
J6, J10, TP3, TP7, TP13	5	Test Points
JU1, JU4, JU5	3	2-pin headers, 0.1in centers
L2	1	1 $\mu$ H $\pm$ 5% inductor (1008CS)
R1	1	100k $\Omega$ $\pm$ 5% resistor (0603)
R2	1	1.5k $\Omega$ $\pm$ 5% resistor (0603)
R3	1	3.01k $\Omega$ $\pm$ 5% resistor (0603)
R4, R5	2	2.37k $\Omega$ $\pm$ 5% resistors (0603)
R6	1	49.9k $\Omega$ $\pm$ 5% resistor (0603)
R11	1	511 $\Omega$ $\pm$ 5% resistor (0603)
R22	1	10k $\Omega$ $\pm$ 5% resistor (0603)
R23	1	0 $\Omega$ $\pm$ 5% resistor (0402)
U1, U2	2	MAX3902 die in QFN24
None	3	Shunts
None	1	MAX3902 EV board

### Ordering Information

PART	TEMP. RANGE	IC PACKAGE
MAX3902EVKIT	-40°C to +125°C	24QFN

### Features

- ◆ Easy +3.3V Power Supply Operation
- ◆ Fully Assembled and Tested
- ◆ Optical Evaluation Possible

### Component Suppliers

SUPPLIER	PHONE	FAX
AVX	843-444-2863	843-626-3123
Coilcraft	847-639-6400	847-639-1469
Digi-Key	218-681-6674	218-681-3380
EF Johnson	402-474-4800	402-474-4858
Murata	415-964-6321	415-964-8165

**Note:** Please indicate that you are using the MAX3902 when ordering from these suppliers.

### Quick Start

#### Electrical Evaluation

- 1) Install a shunt across JU4. Remove shunts from JU1 and JU5.
- 2) Connect a +3.3V power supply to J6. Connect ground to J10.
- 3) Connect a DC current source to J18 and adjust the input current to 220 $\mu$ A.
- 4) Connect a data signal to J1 (IN) with a 2V<sub>P-P</sub> amplitude. This will create a 444 $\mu$ A<sub>P-P</sub> input current.
- 5) Connect J2 and J3 to a high-speed 50 $\Omega$  oscilloscope. The output seen on the oscilloscope should be an 800mV<sub>P-P</sub> differential output.

#### Optical Evaluation

The MAX3902 EV kit contains an optical evaluation section.

- 8) Install a photodiode with optical source. For layout configuration refer to Figure 1.
- 9) Connect J15 and J16 to a high-speed 50 $\Omega$  oscilloscope. The output seen on the oscilloscope should be an 800mV<sub>P-P</sub> differential output.
- 10) Connect a voltmeter to the TP13 (STATUS) test point. The output will indicate if the optical connection is successful.

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## Adjustment and Control Description (see Quick Start first)

COMPONENT	NAME	FUNCTION
JU1, JU4	-	Installing a shunt across JU1 or JU4 (or both) emulates photocurrent at the FILTER pin, which allows MAX3902 to enter the operational mode (STATUS = LOW). Removing shunts from JU1 and JU4 enters the standby mode (STATUS=HIGH).
JU5	-	Used for bypassing the supply filtering if needed.

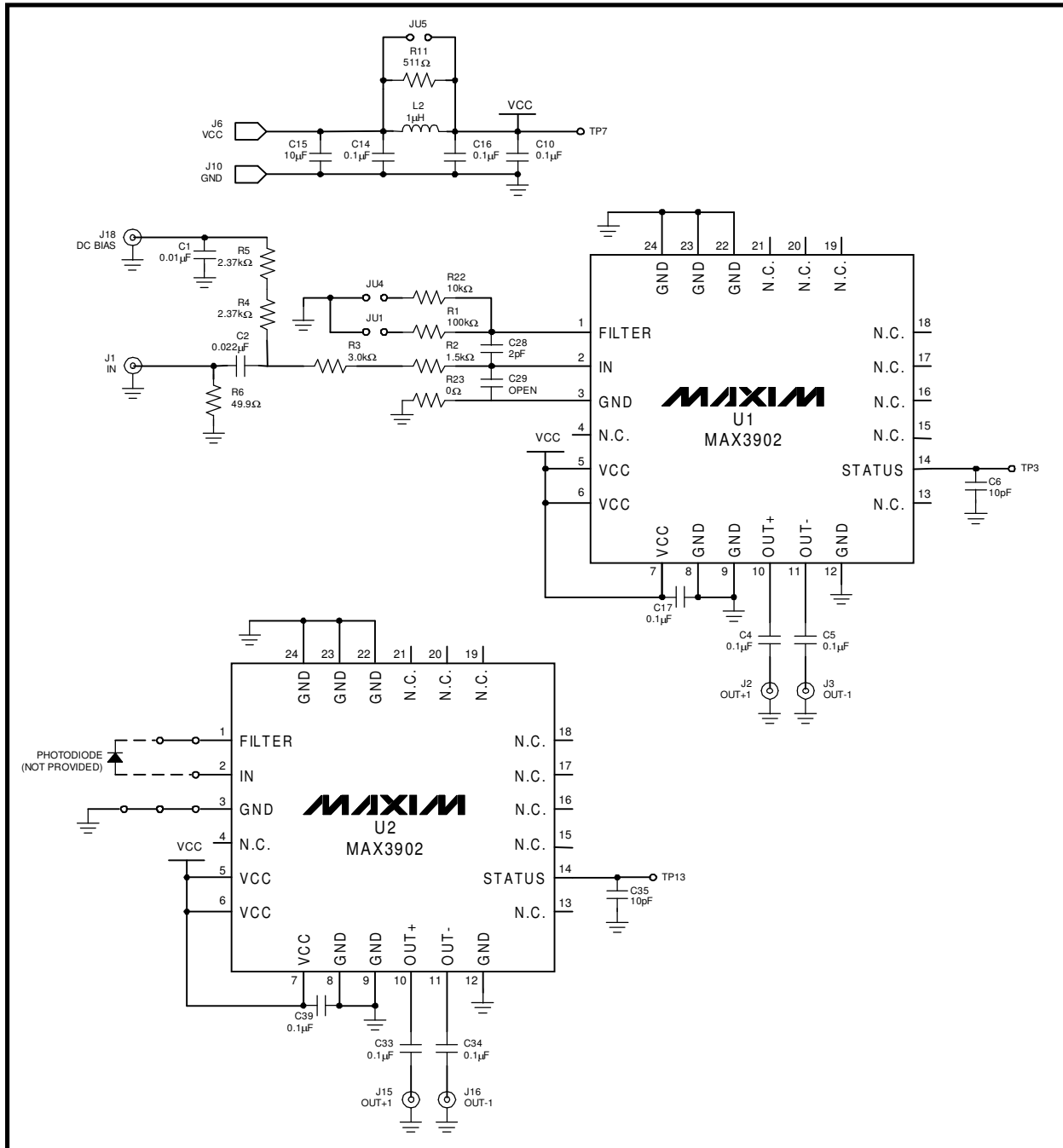


Figure 1. MAX3902 EV Kit Schematic Diagram

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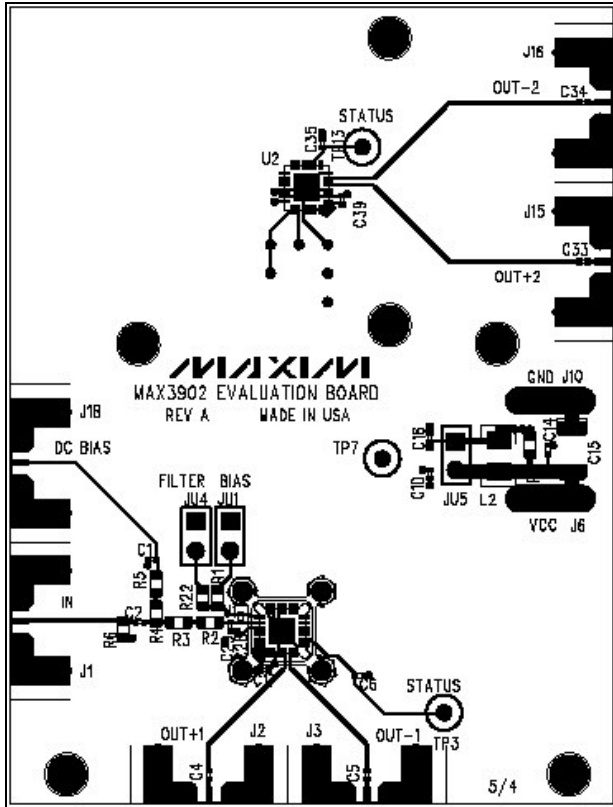


Figure 2. MAX3902 EV Kit Component Placement Guide - Component Side

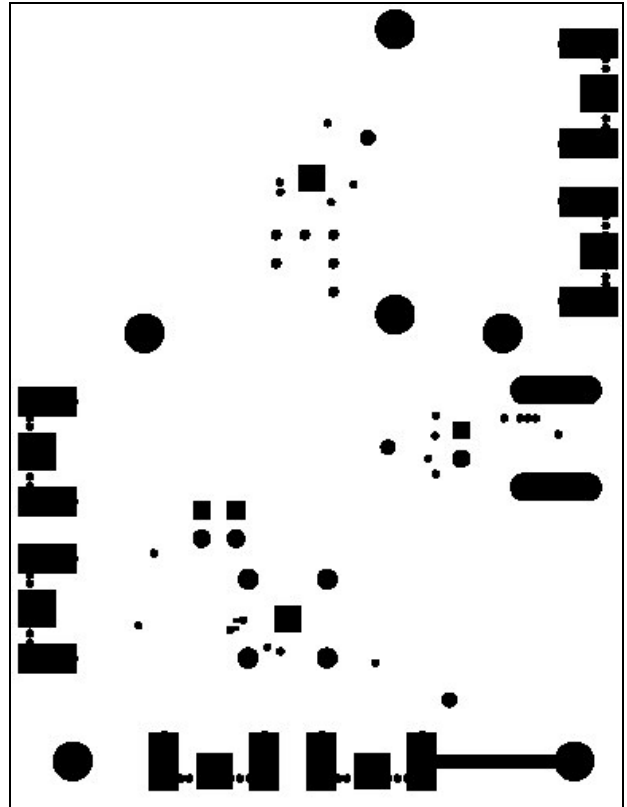


Figure 3. MAX3902 EV Kit PC Board Layout - Solder Side

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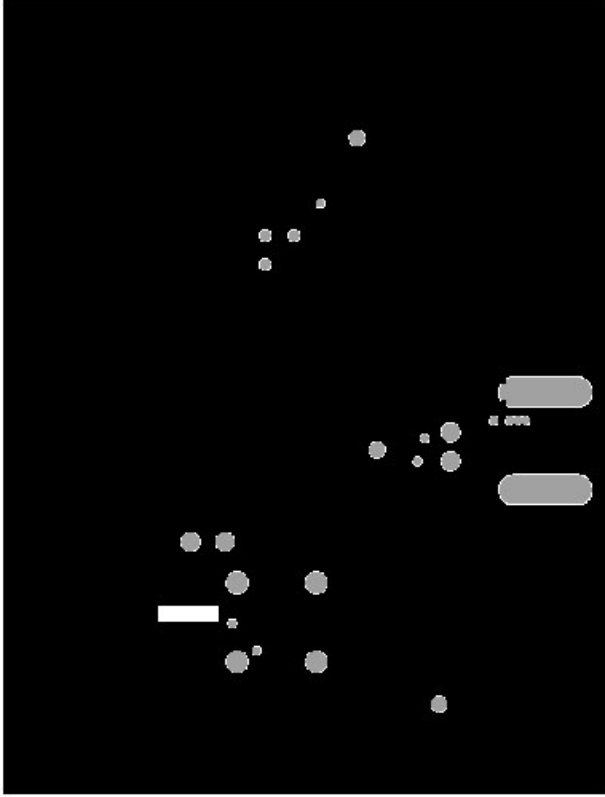


Figure 4. MAX3902 EV Kit PC Board Layout - Ground Plane

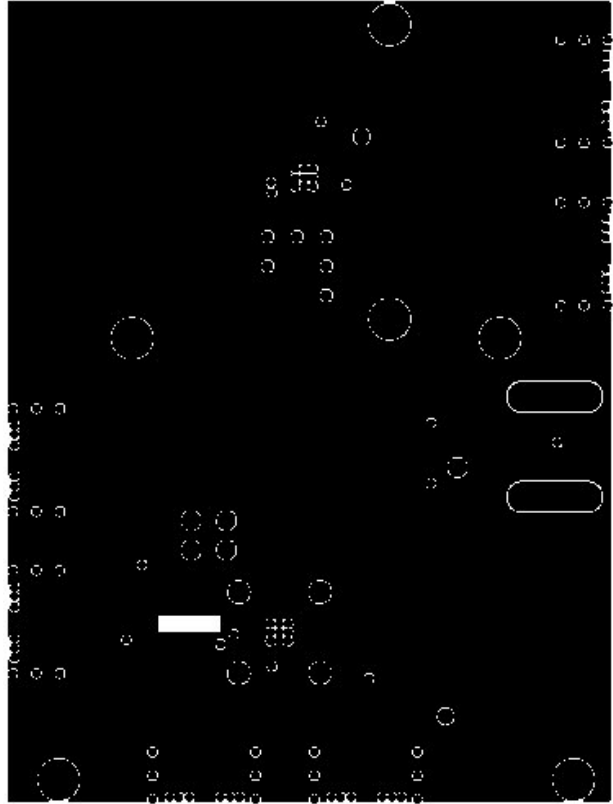


Figure 5. MAX3902 EV Kit PC Board Layout - Power Plane

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