

# MAXIM

## MAX3982 Evaluation Kit

### General Description

The MAX3982 evaluation kit (EV Kit) is an assembled demonstration board that provides electrical evaluation of the MAX3982 SFP Copper-Cable Preemphasis Driver. All control inputs are adjustable by jumpers, and LOS is available through a test point.

### Component List

| DESIGNATION         | QTY | DESCRIPTION                                      |
|---------------------|-----|--|
| C1                  | 1   | 33 $\mu$ F tantalum capacitor                    |
| C2, C3, C8          | 3   | 0.1 $\mu$ F $\pm$ 10% ceramic capacitors (0402)  |
| C4 - C7             | 4   | 0.01 $\mu$ F $\pm$ 10% ceramic capacitors (0402) |
| J1-J4               | 4   | SMA connectors, tab contact, edge mount          |
| J6, J10, TP1 – TP3  | 5   | Test points<br>Digi-Key 5000K-ND                 |
| JU1 – JU3, JU5, JU6 | 5   | 2-pin headers, 0.1in centers                     |
| JU4                 | 1   | 3-pin header, 0.1in centers                      |
| JU1 – JU6           | 6   | Shunts   |
| L1                  | 1   | 4.7 $\mu$ H inductor<br>Coilcraft 1008CS-472XJB  |
| R1                  | 1   | 4.7k $\Omega$ $\pm$ 5% resistor (0402)           |
| U1                  | 1   | MAX3982UTE 16-pin QFN                            |
| None                |     | MAX3982 evaluation circuit board, rev A          |
| None                |     | MAX3982 data sheet                               |

### Features

- ◆ Fully Assembled and Tested
- ◆ Easy Selection of Operating Modes

### Ordering Information

| PART         | TEMP. RANGE  | IC PACKAGE |
|--------------|--------------|------------|
| MAX3982EVKIT | 0°C to +85°C | 16 QFN     |

### Component Suppliers

| SUPPLIER | PHONE        | FAX          |
|----------|--------------|--------------|
| AVX      | 843-448-9411 | 843-448-1943 |
| Digi-Key | 218-681-6674 | 218-681-3380 |
| Murata   | 770-436-1300 | 770-436-3030 |

**Note:** Please indicate that you are using the MAX3982 when ordering from these suppliers.

### Quick Start

- 1) Connect a +3.3V supply to the +3.3V terminal and ground to GND.
- 2) Install shunt at jumper JU4 in "ENABLE" position to enable the output.
- 3) Apply 1Gbps to 4.25Gbps data to IN+ and IN- (J1 and J2).
- 4) Connect OUT+ and OUT- to a 50 ohm-terminated oscilloscope.
- 5) Shunt JU5 (LOS PULLUP) to terminate the LOS output with 4.7k $\Omega$  to VCC.
- 6) Adjust pre-emphasis with jumpers JU2 and JU3 (PE1 and PE0).
- 7) Select output amplitude with jumper JU1 (OUTLEV).
- 8) Monitor LOS output at TP1 and select LOS sensitivity with JU6 (LOSLEV).

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## Jumper and Test Point Descriptions

Evaluates: MAX3982

| NAME             | TYPE         | SHUNT POSITION | DESCRIPTION  |
|------------------|--------------|----------------|--|
| OUTLEV (JU1)     | 2-pin header | OPEN           | Selects maximum output swing   |
|                  |              | SHUNT (GND)    | Selects reduced output swing   |
| PE1 (JU2)        | 2-pin header | OPEN           | Enables most significant bit of pre-emphasis control   |
|                  |              | SHUNT (GND)    | Disables most significant bit of pre-emphasis control  |
| PE0 (JU3)        | 2-pin header | OPEN           | Enables least significant bit of pre-emphasis control  |
|                  |              | SHUNT (GND)    | Disables least significant bit of pre-emphasis control   |
| TX_DISABLE (JU4) | 3-pin header | OPEN           | Disables data output   |
|                  |              | ENABLE         | Enables data output  |
|                  |              | AUTO           | Enables autodetect by connecting LOS to TX_DISABLE. JU5 must be shunted or an external voltage (3.0V to 5.5V) must be present on pin 1 of JU5 for proper operation of autodetect.    |
| LOS PULLUP (JU5) | 2-pin header | OPEN           | Allows external voltage (3.0V to 5.5V) applied at pin 1 of JU5 as LOS pullup voltage   |
|                  |              | SHUNT (VCC)    | Sets VCC as the LOS resistor pullup voltage  |
| LOSLEV (JU6)     | 2-pin header | OPEN           | Sets LOS threshold to lower sensitivity (higher threshold)   |
|                  |              | SHUNT (GND)    | Sets LOS threshold to higher sensitivity (lower threshold)   |
| LOS (TP1)        | Test Point   | -              | Monitors the Loss-of-Signal output. LOS will be low when the input signal level is valid and JU5 is either shunted or an external voltage (3.0V to 5.5V) is present at pin 1 of JU5. |

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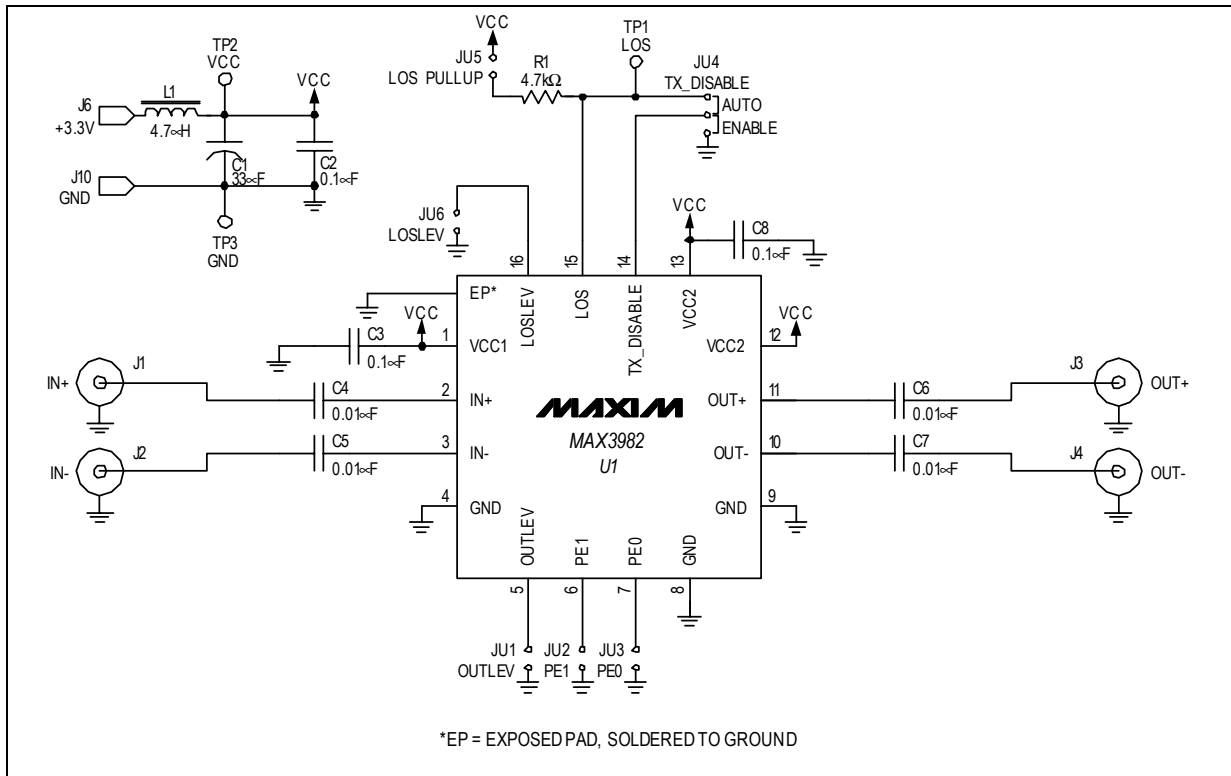


Figure 1. MAX3982 EV Kit Schematic

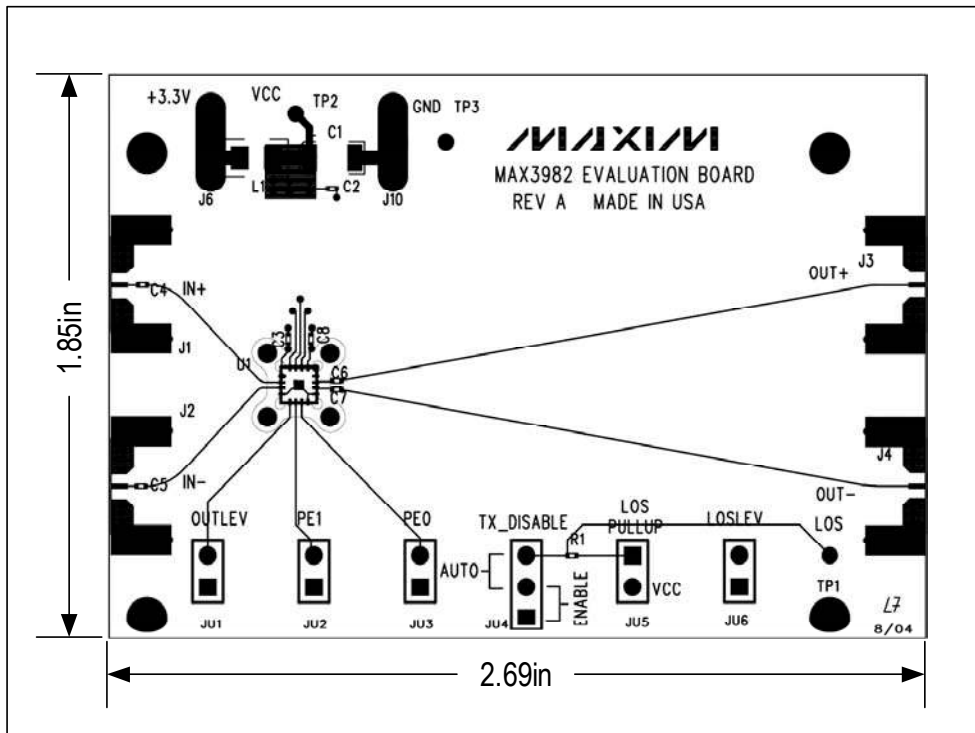


Figure 2. MAX3982 EV Kit Component Placement Guide – Component Side

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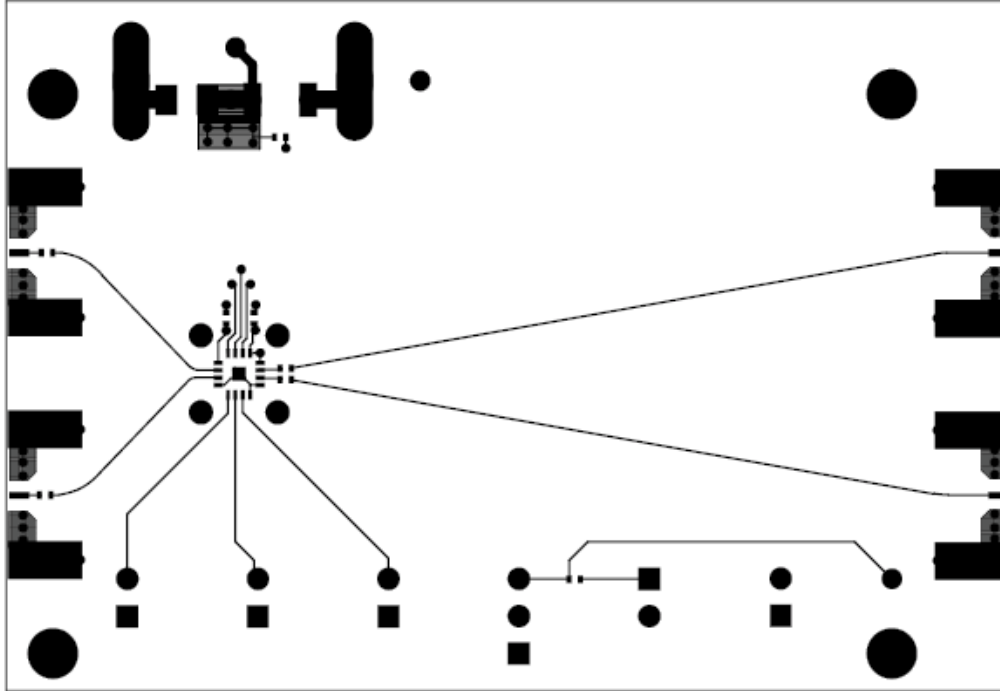


Figure 3. MAX3982 EV Kit PC Board Layout – Component Side, Layer 1

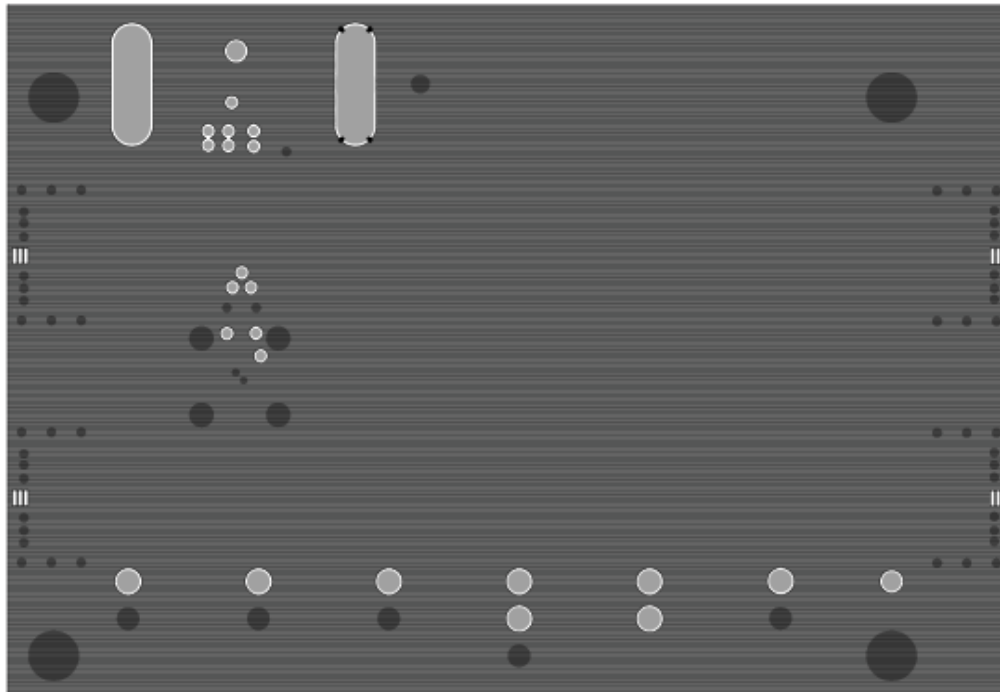


Figure 4. MAX3982 EV Kit PC Board Layout – Ground Plane, Layer 2

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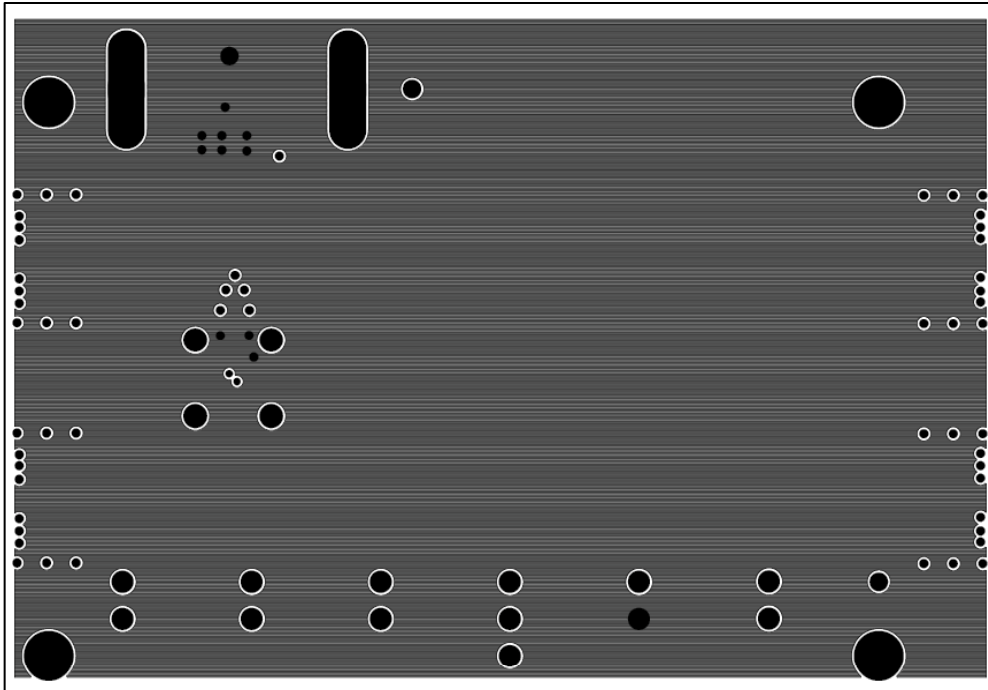


Figure 5. MAX3982 EV Kit PC Board Layout – Power Plane, Layer 3

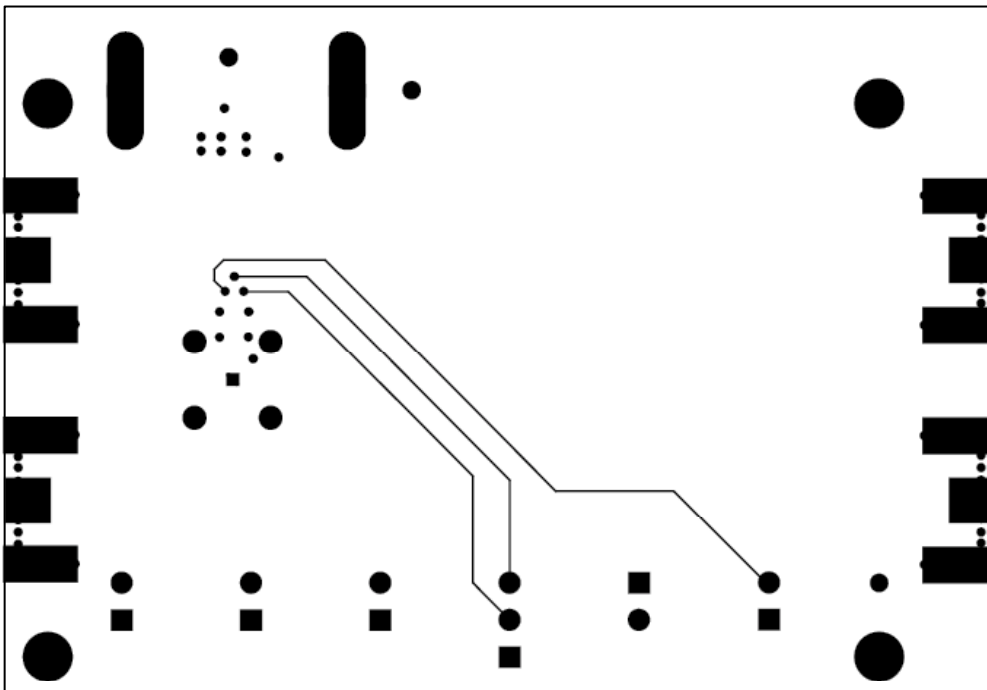


Figure 6. MAX3982 EV Kit PC Board Layout – Bottom, Layer 4

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