



MAX3980/MAX3981 Evaluation Kits

General Description

The MAX3980/MAX3981 evaluation kits (EV kits) simplify evaluation of the MAX3980/MAX3981 quad equalizer. The EV kits enable testing of all the device functions. SMA connectors with 50Ω controlled-impedance connections to the MAX3980/MAX3981 are provided for all input and output ports to facilitate connection to high-speed test equipment.

Component Suppliers

| SUPPLIER | PHONE | FAX |
|----------|--------------|--------------|
| AVX | 843-444-2863 | 843-626-3123 |
| Murata | 415-964-6321 | 415-964-8165 |
| Toko | 800-PIK-TOKO | 847-699-7864 |

Note: Please indicate that you are using the MAX3980/MAX3981 when contacting these component suppliers.

Features

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

Ordering Information

| PART | TEMP RANGE | IC PACKAGE |
|--------------|--------------|------------|
| MAX3980EVKIT | 0°C to +85°C | 44 QFN-EP* |
| MAX3981EVKIT | 0°C to +85°C | 44 QFN-EP* |

*Exposed pad

Component List

| DESIGNATION | QTY | DESCRIPTION |
|-------------------------|-----|--|
| C1 | 1 | 33μF tantalum capacitor AVX TAJC336K010 |
| C2, C5–C24, C27, C28 | 23 | 0.1μF ±10% ceramic capacitors (0603) Murata GRM39X5R104K010 |
| L1 | 1 | 4.7μH inductor Toko LL1608FH-4N7K |
| J1–J16 | 16 | SMA connectors (edge-mount, tab) EJJohnson 142-0701-851 |
| JP1, JP2 | 2 | 2-pin headers (0.1in centers) Digi-Key S1012-36-ND |
| R5 | 1 | 10kΩ ±1% resistor (0603) |
| U1 | 1 | MAX3980UGH (MAX3980 EV kit) |
| | | MAX3981UGH (MAX3981 EV kit) |

| DESIGNATION | QTY | DESCRIPTION |
|-------------|-----|---|
| VCC, GND | 2 | Test points Digi-Key 5000-ND |
| None | 2 | Shunts Digi-Key S9000-ND |
| None | 1 | MAX3980/MAX3981 EV kit circuit board, rev D |
| None | 1 | MAX3980/MAX3981 EV kit data sheet |
| None | 1 | MAX3980 data sheet (MAX3980 EV kit) |
| None | 1 | MAX3981 data sheet (MAX3981 EV kit) |

Evaluate: MAX3980/MAX3981



MAX3980/MAX3981 Evaluation Kits

Quick Start

- 1) Connect a +3.3V power supply to JH1 (VCC). Connect the power-supply ground to JH2 (GND).
- 2) Connect a differential signal between 200mVp-p and 800mVp-p to the inputs IN1+ and IN1- using 50Ω cables.
- 3) Terminate unused inputs with 50Ω terminations.
- 4) If not already done, remove shunt from JP2. This ensures the part is enabled and is not in the stand-by mode.
- 5) Connect signals OUT1+ and OUT1- to an oscilloscope with 50Ω input terminations.
- 6) The input signal should be a short pattern, such as 2⁷ - 1 PRBS or K28.5, at 3.125Gbps.
- 7) The enable (EN) signal is available at JP2. It is pulled high with a 10kΩ resistor on the EV board so no other pullup is necessary. To disable the equalizer, connect shunt (B) as shown in Figure 1. Otherwise, remove the shunt.
- 8) The SDET pin, as shown in Figure 1, indicates the presence of a signal. When a shunt (A) is connected to JP1, the equalizer will automatically be enabled when a signal is detected. Otherwise, remove the shunt.

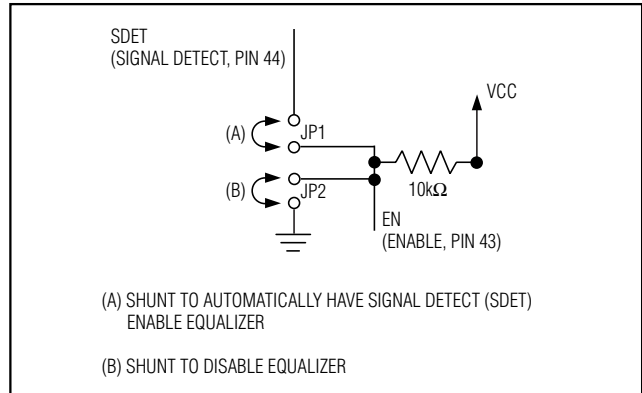


Figure 1. Control Functions

- 9) **MAX3980 Evaluation:** After the board has been checked out initially, evaluation can begin with an FR4 PC board. It is advisable to start with a board length of 20in and then progress to longer lengths. The user needs to adapt SMA connectors to the PC board.
- 10) **MAX3981 Evaluation:** After the board has been checked out initially, evaluation can begin with a twin-axial or shielded twisted-pair cable. It is advisable to start with a cable length of 5ft and then progress to longer lengths. The user needs to adapt SMA connectors to the cable.

MAX3980/MAX3981 Evaluation Kits

Evaluate: MAX3980/MAX3981

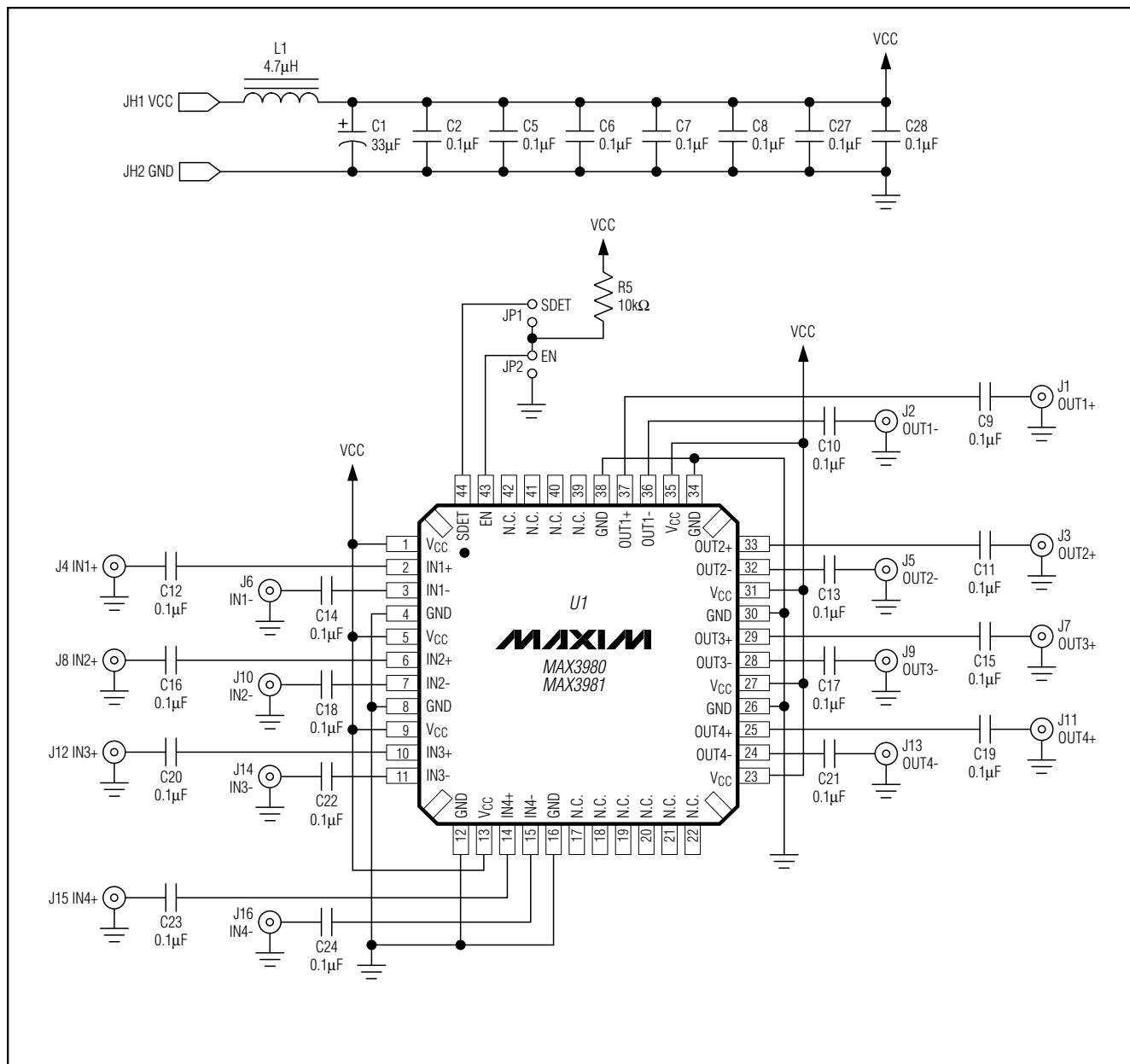


Figure 2. MAX3980/MAX3981 EV Kit Schematic Diagram

MAX3980/MAX3981 Evaluation Kits

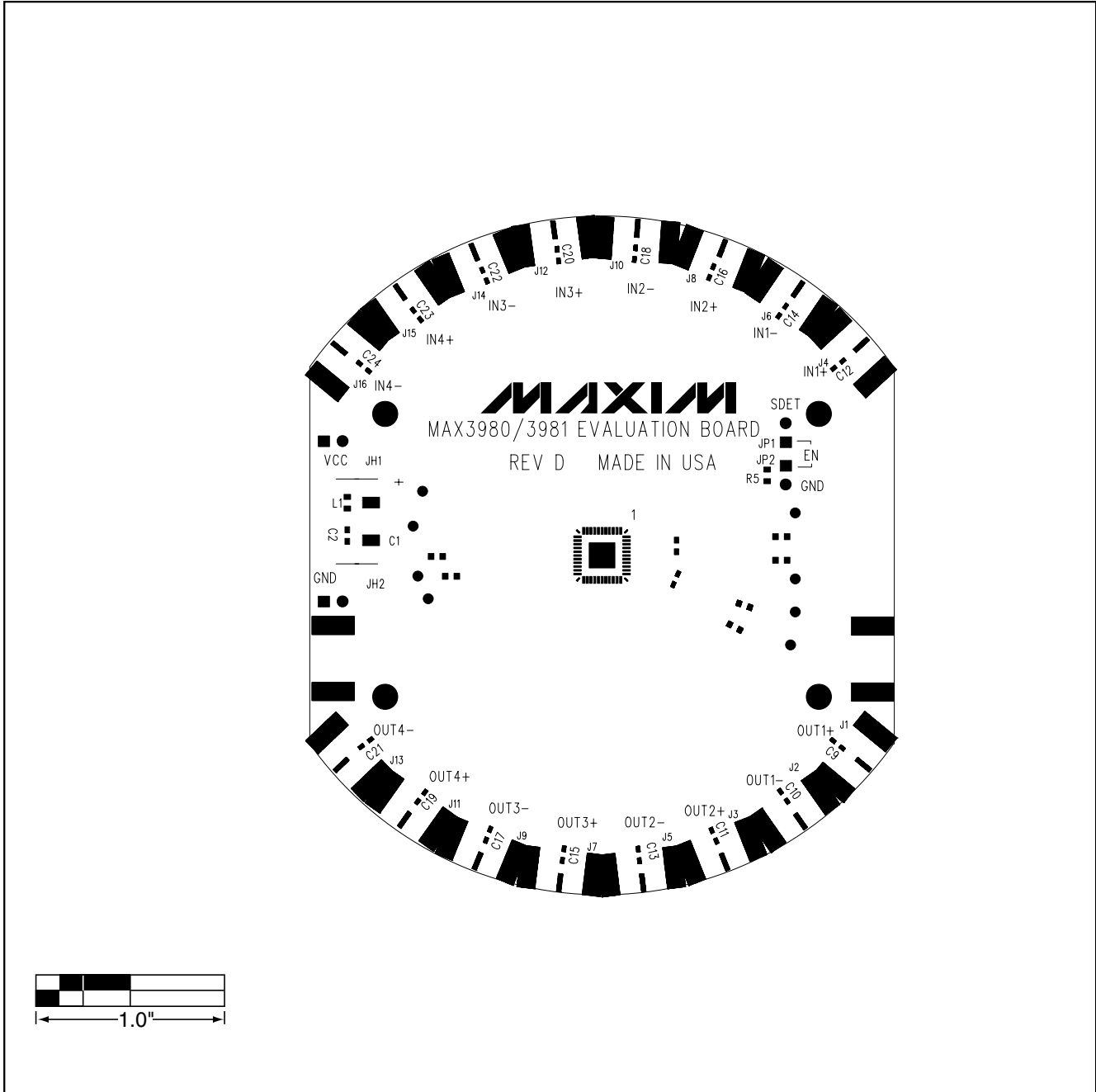


Figure 3. MAX3980/MAX3981 EV Kit Component Placement Guide—Component Side

MAX3980/MAX3981 Evaluation Kits

Evaluate: MAX3980/MAX3981

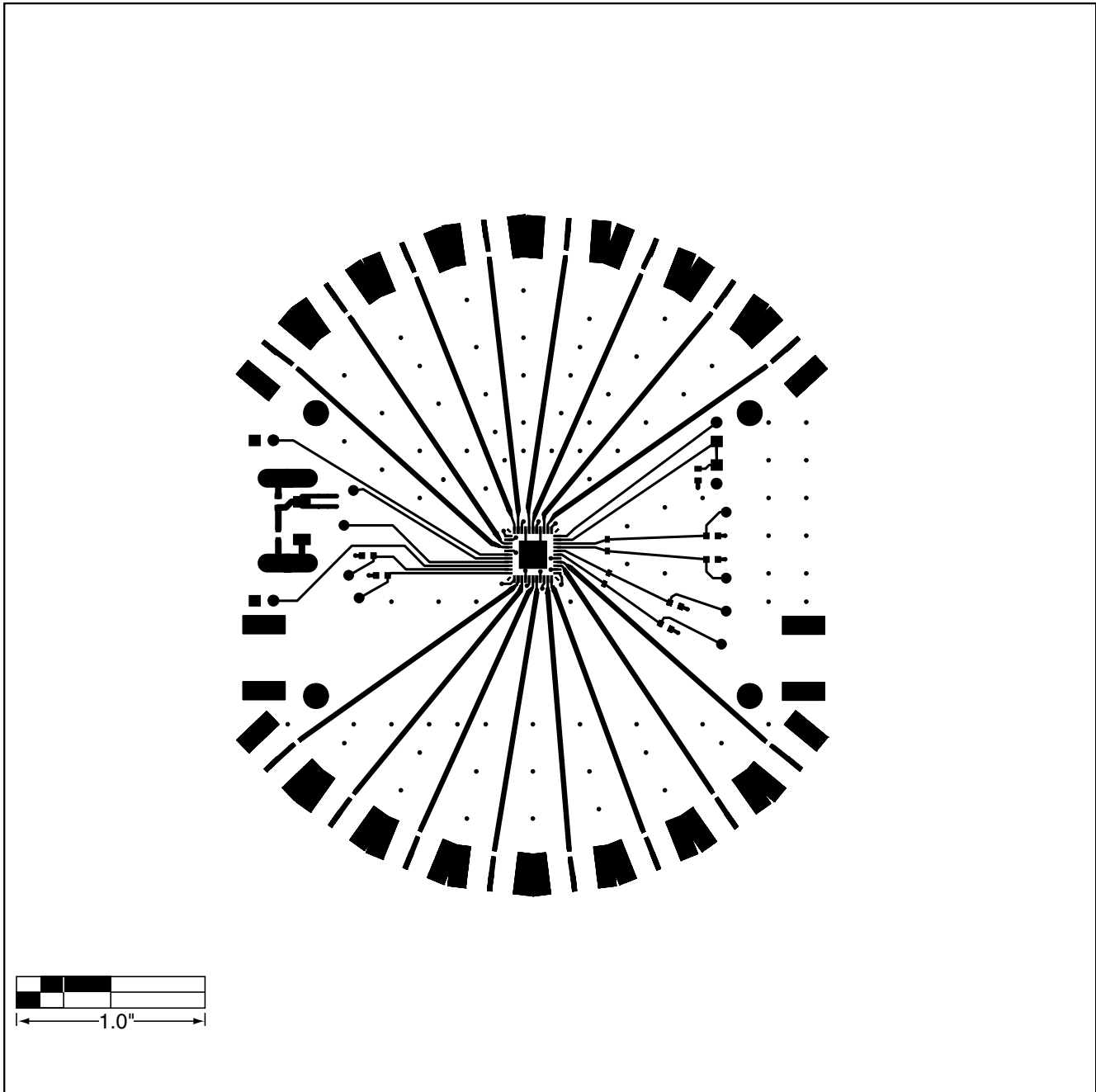


Figure 4. MAX3980/MAX3981 EV Kit PC Board Layout—Component Side

MAX3980/MAX3981 Evaluation Kits

Evaluate: MAX3980/MAX3981

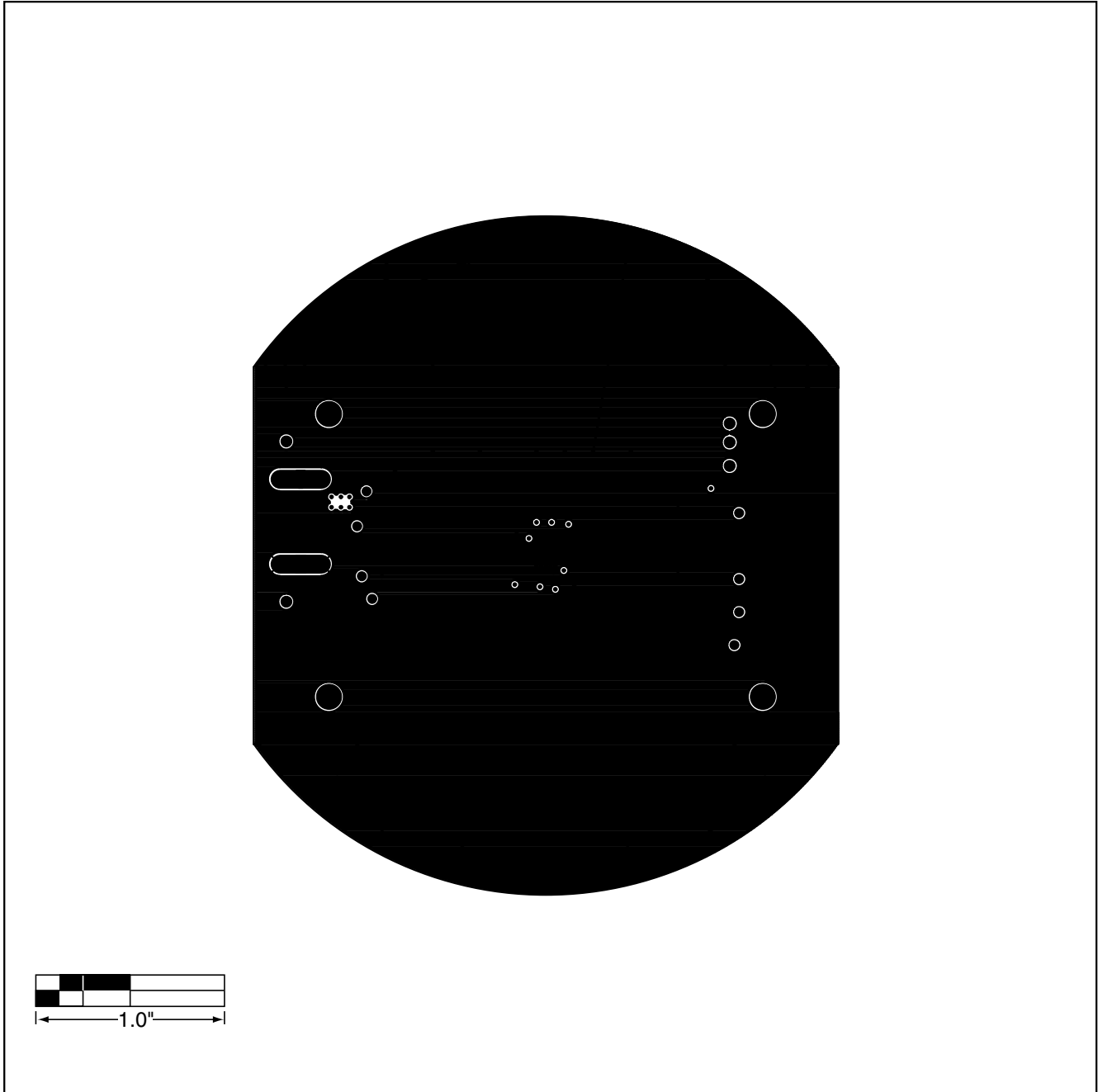


Figure 5. MAX3980/MAX3981 EV Kit PC Board Layout—Ground Plane

MAX3980/MAX3981 Evaluation Kits

Evaluate: MAX3980/MAX3981

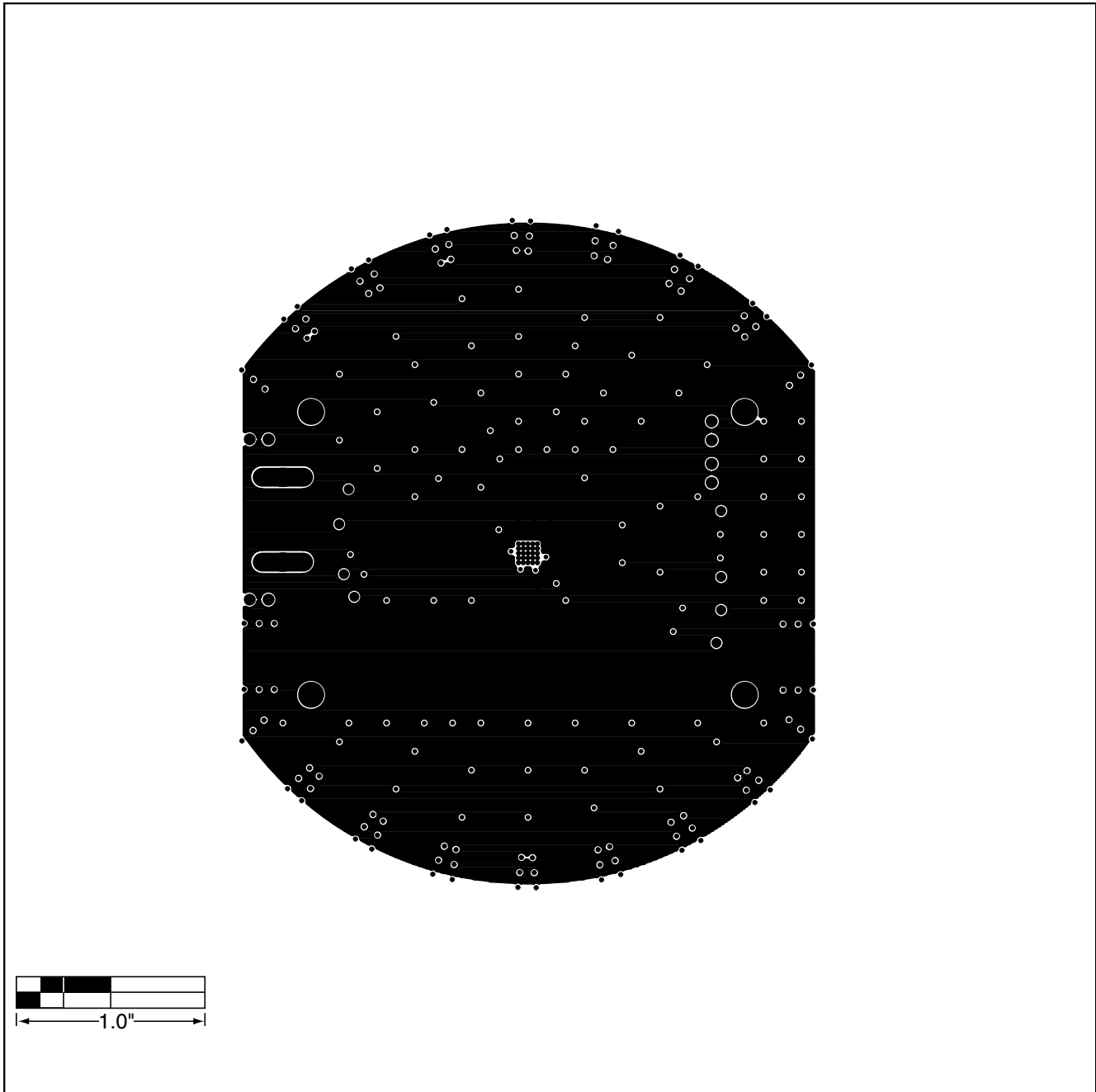


Figure 6. MAX3980/MAX3981 EV Kit PC Board Layout—Power Plane

MAX3980/MAX3981 Evaluation Kits

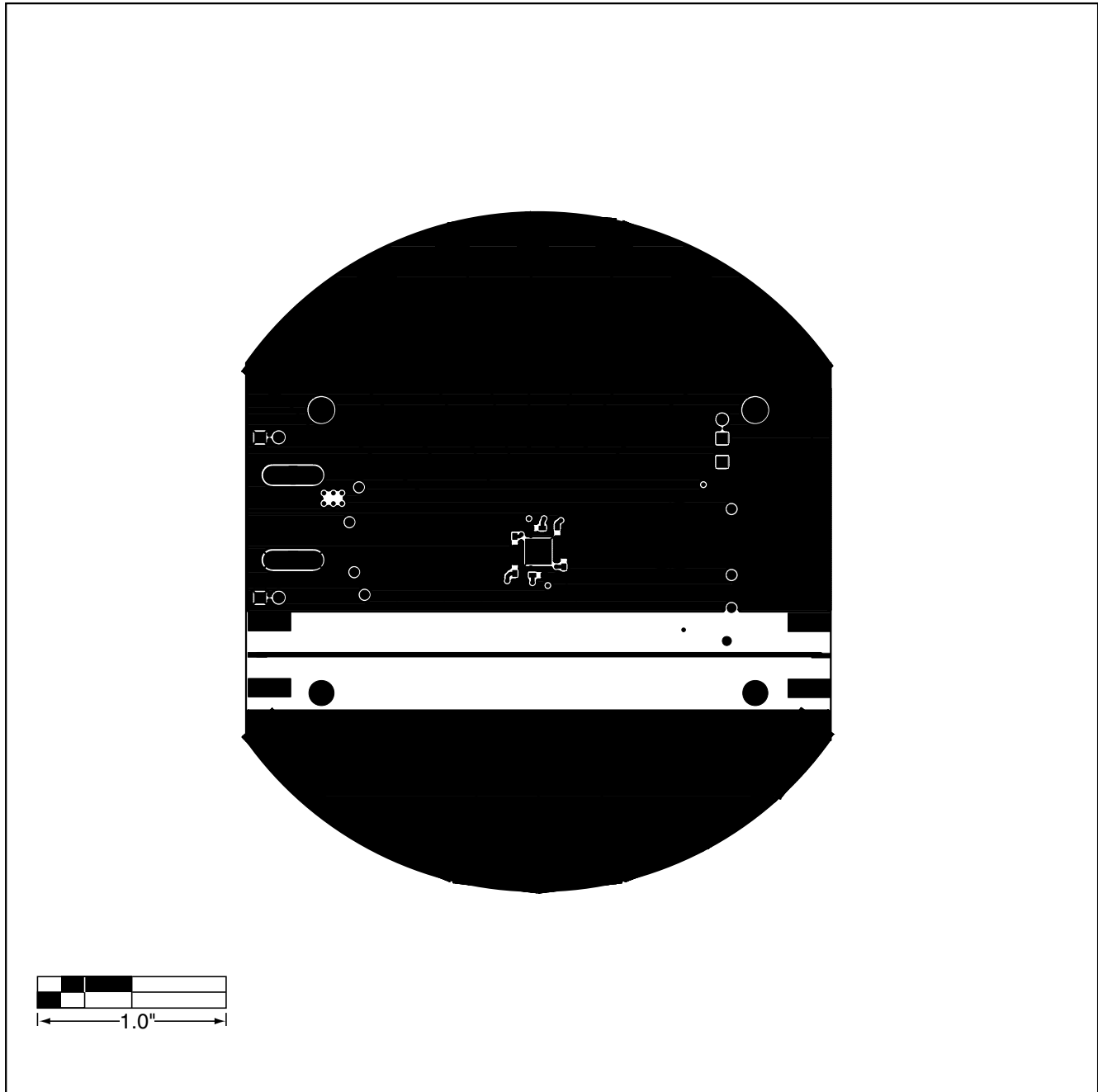


Figure 7. MAX3980/MAX3981 EV Kit PC Board Layout—Solder Side

Maxim cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim product. No circuit patent licenses are implied. Maxim reserves the right to change the circuitry and specifications without notice at any time.

8 **Maxim Integrated Products, 120 San Gabriel Drive, Sunnyvale, CA 94086 408-737-7600**