



## 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

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## 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 2<sup>7</sup> - 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.

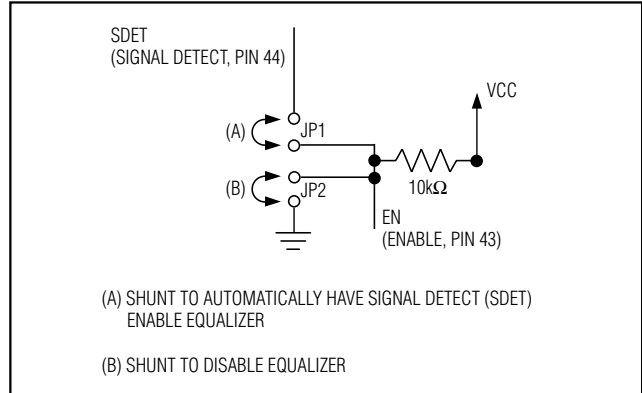


Figure 1. Control Functions

- 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.

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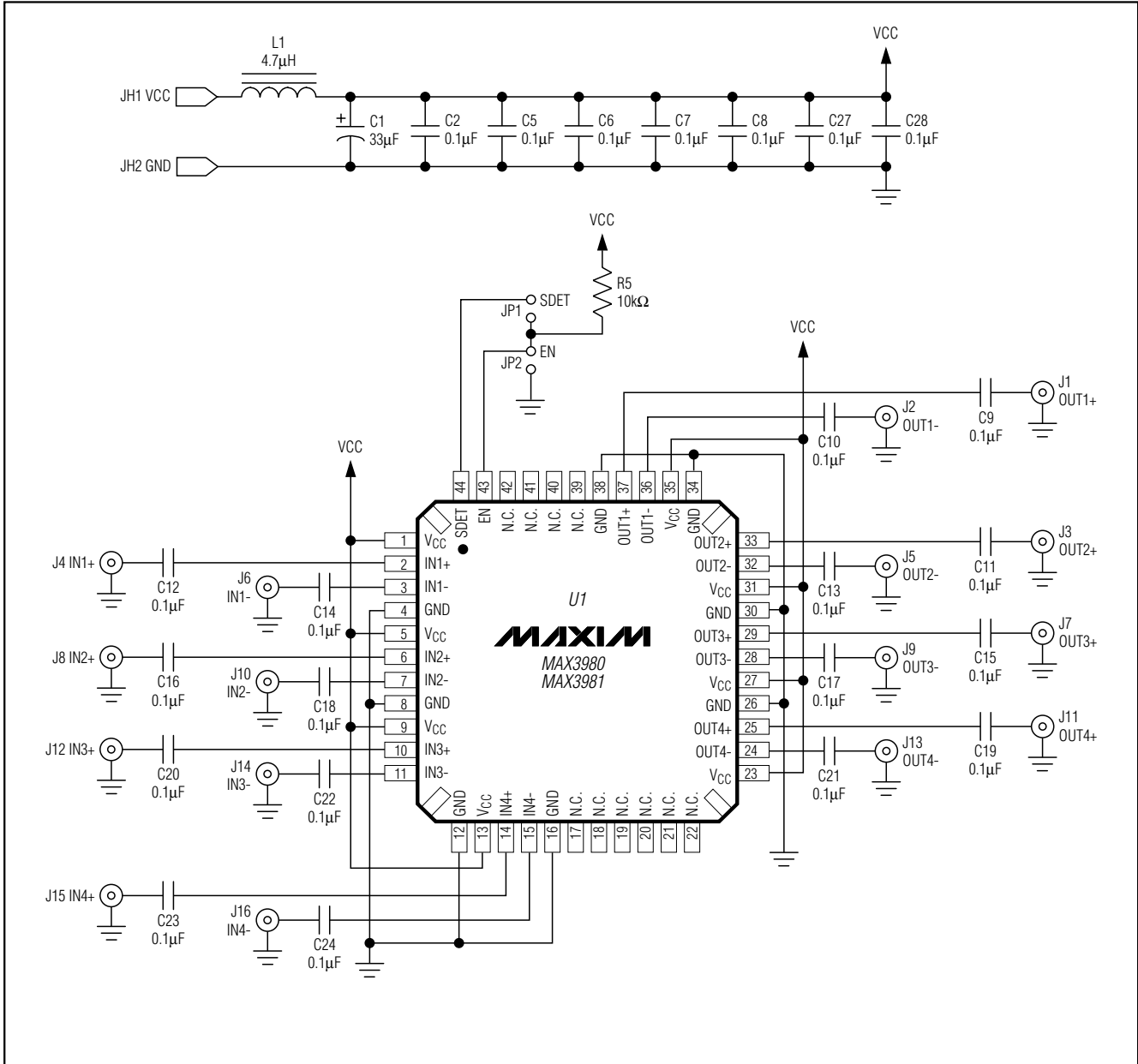


Figure 2. MAX3980/MAX3981 EV Kit Schematic Diagram

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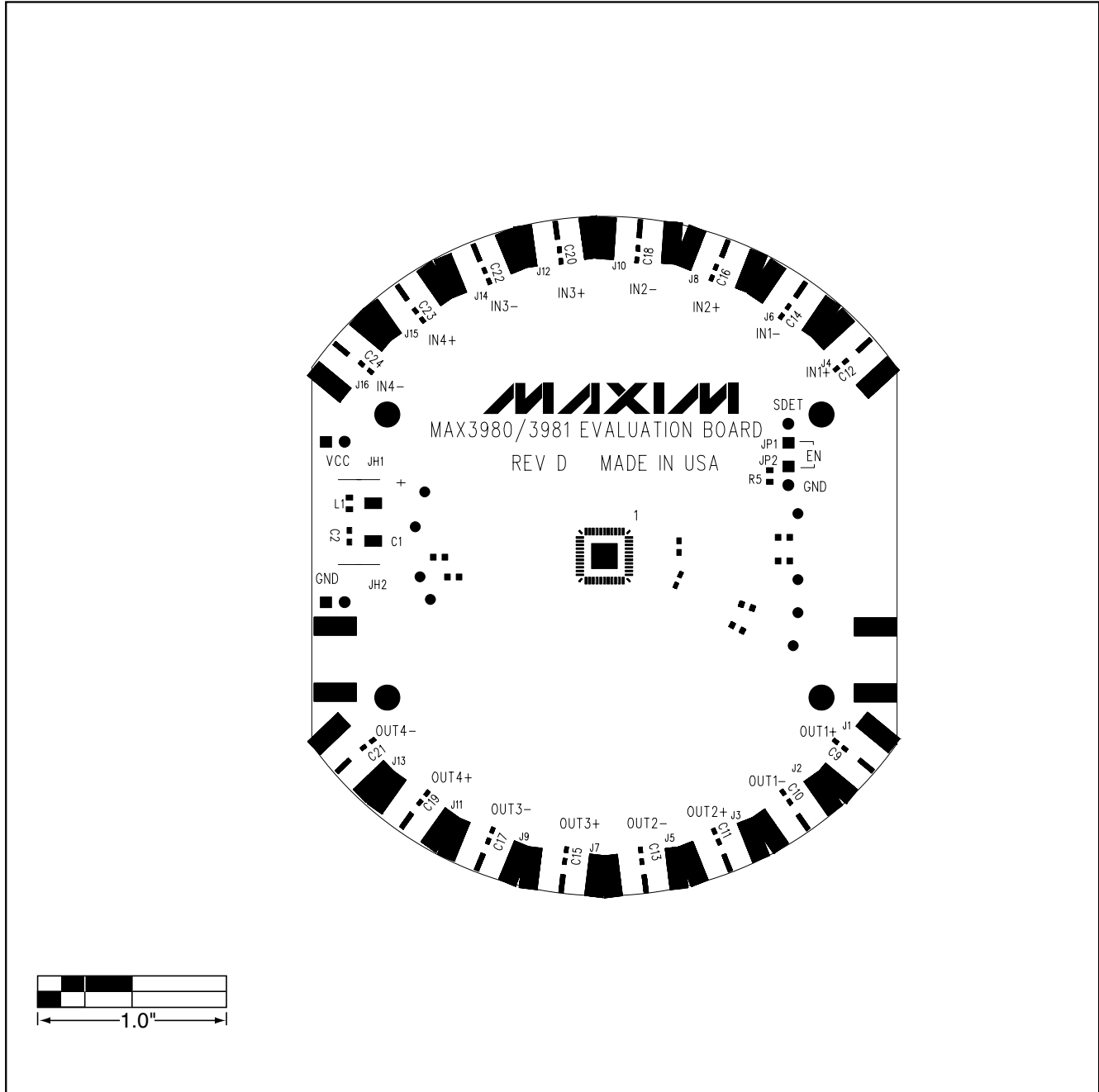


Figure 3. MAX3980/MAX3981 EV Kit Component Placement Guide—Component Side

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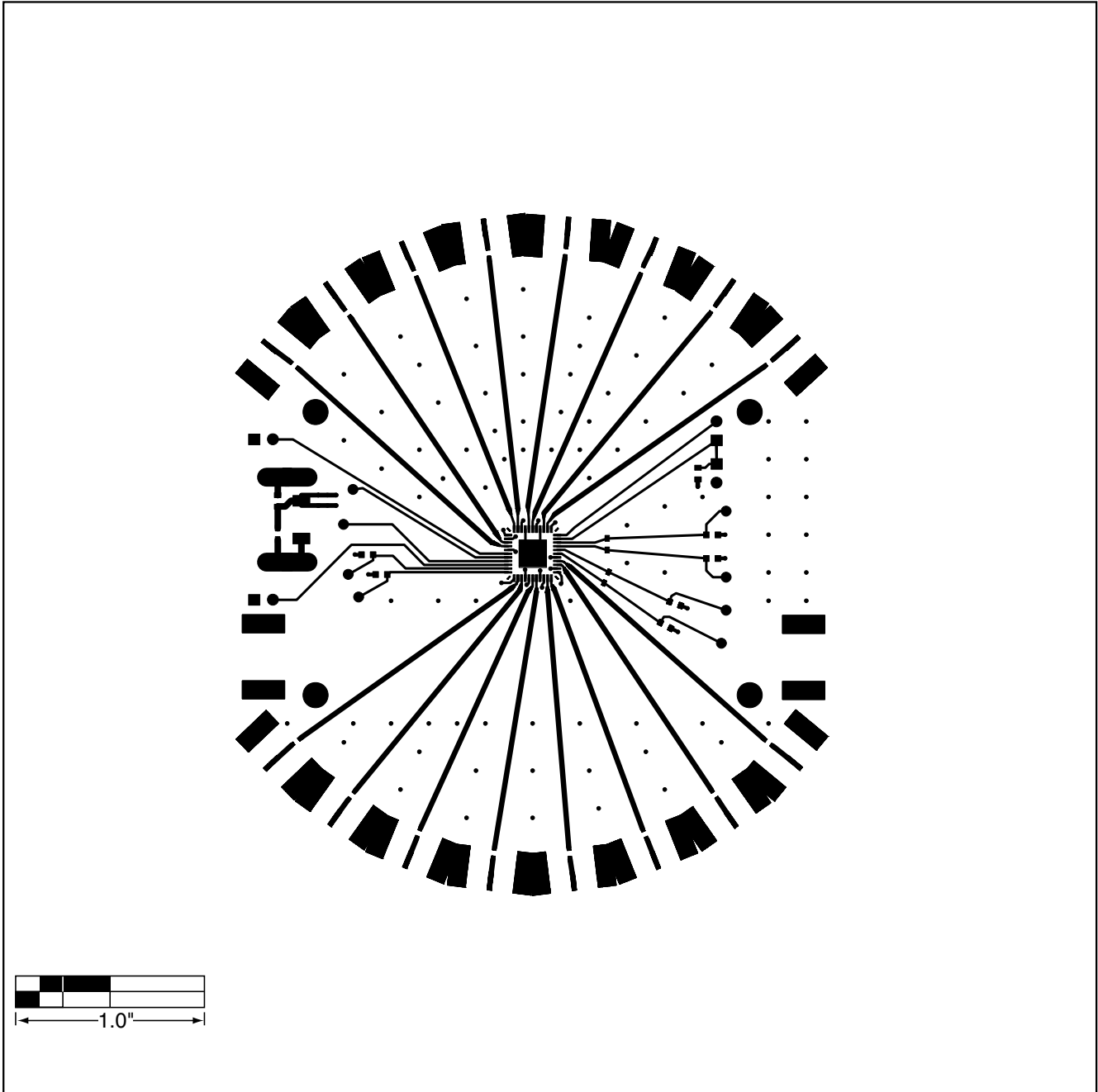


Figure 4. MAX3980/MAX3981 EV Kit PC Board Layout—Component Side

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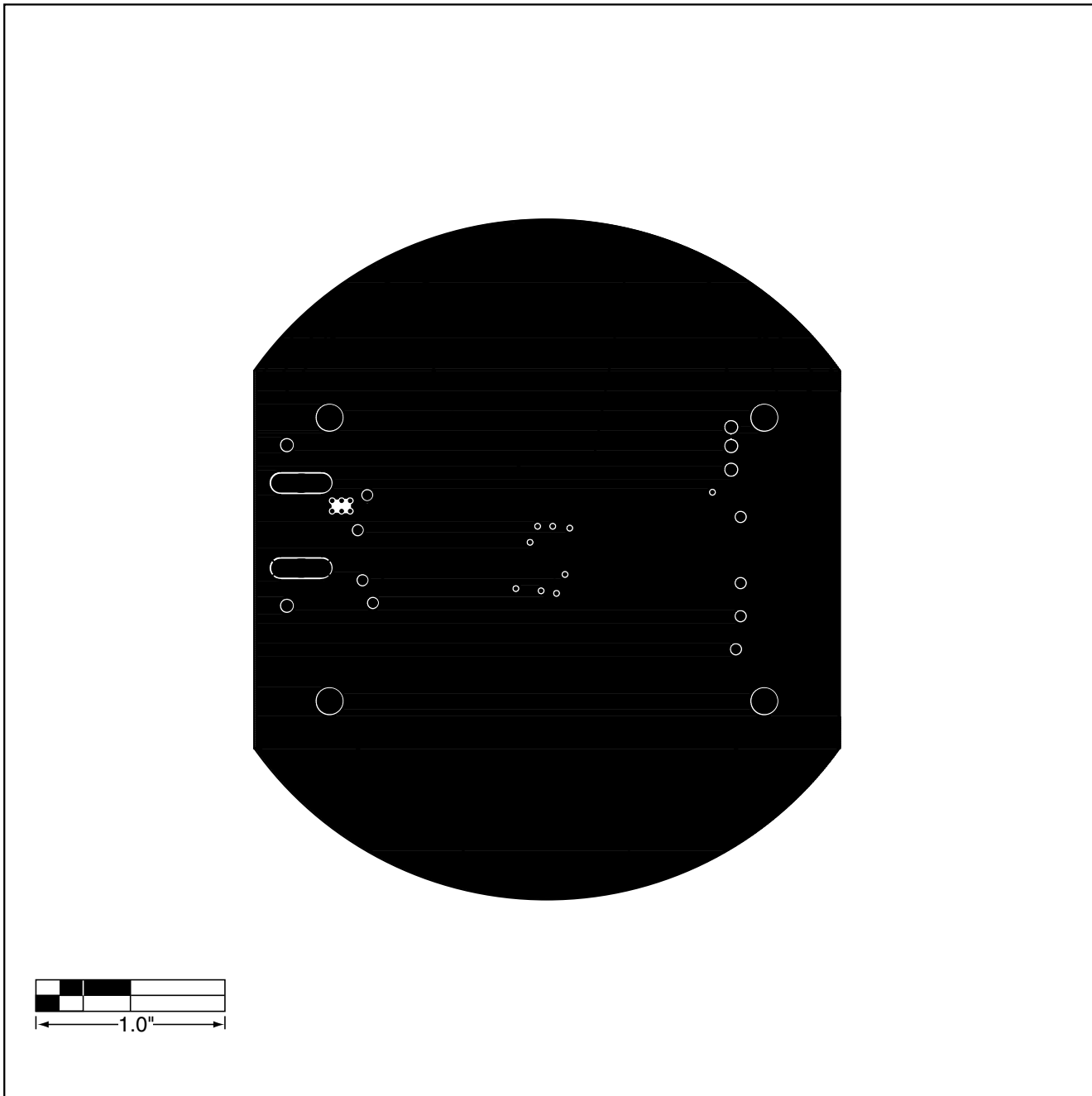


Figure 5. MAX3980/MAX3981 EV Kit PC Board Layout—Ground Plane

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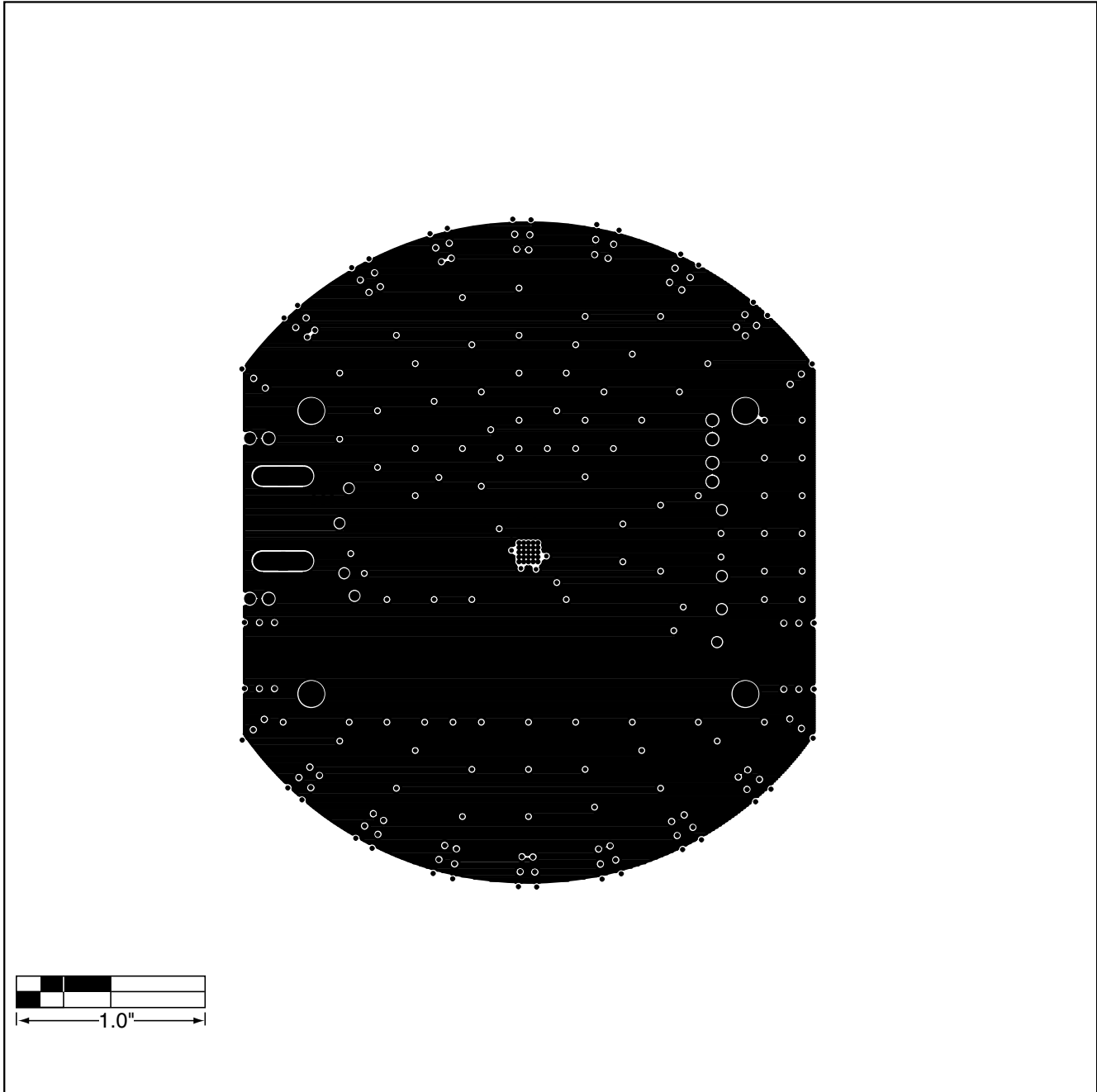


Figure 6. MAX3980/MAX3981 EV Kit PC Board Layout—Power Plane

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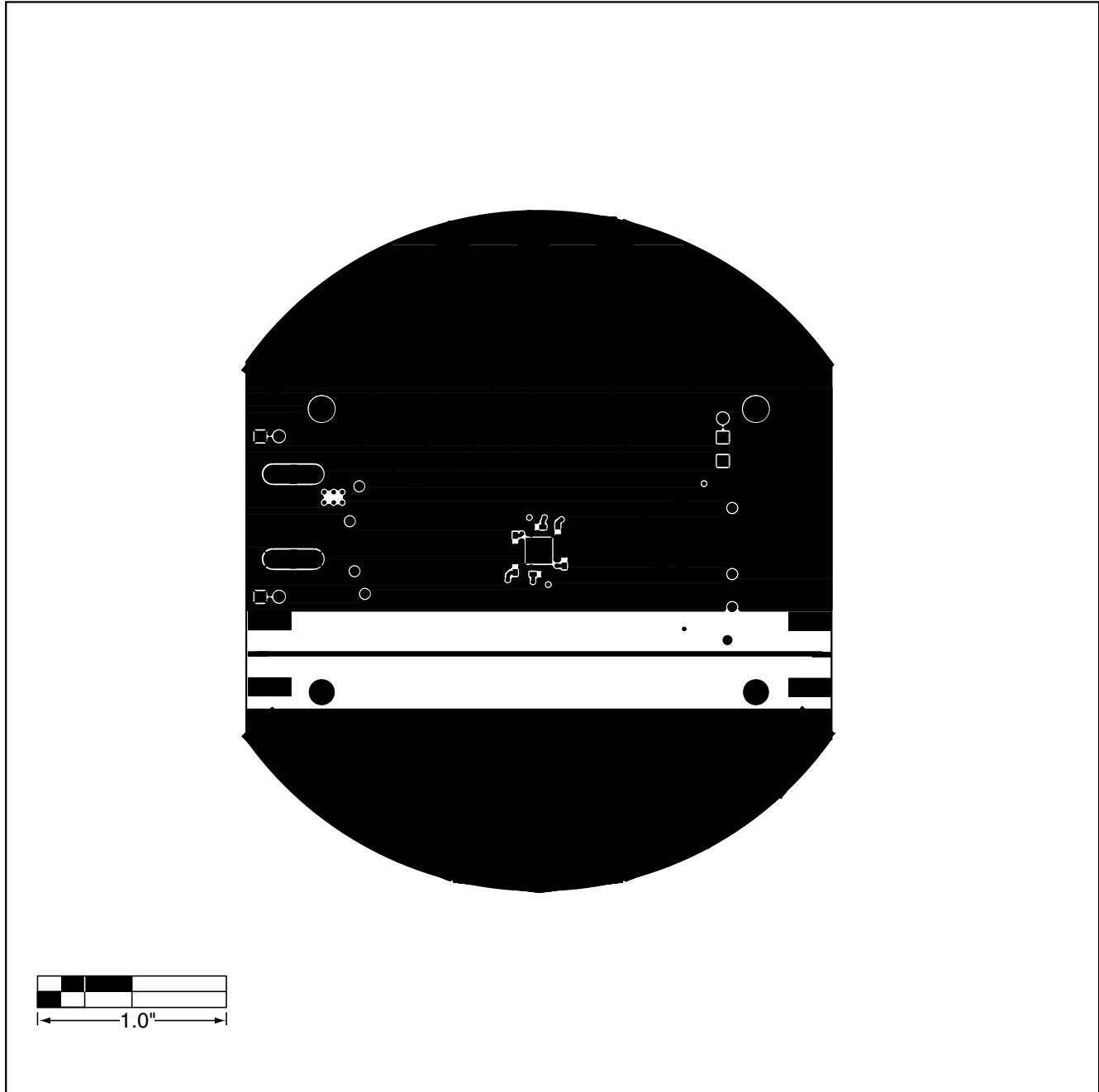


Figure 7. MAX3980/MAX3981 EV Kit PC Board Layout—Solder Side

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