19-2766; Rev 1; 10/10

MAX3882 Evaluation Kit

Evaluates: MAX3882A

General Description

The MAX3882 evaluation kit (EV kit) simplifies evaluation of the MAX3882A 2.488Gbps CDR with 1:4 demultiplexing. The EV kit enables testing of all the device functions. SMA connectors with 50Ω controlled impedance connections to the MAX3882A are provided for the NRZ data input and LVDS data outputs, as well as system loopback functions. The 50Ω connectors allow for direct connection with high-speed test equipment.

Features

- **SMA Connectors for All High-Speed Inputs and Outputs**
- **Test Point for Monitoring Loss-of-Lock**
- **Single +3.3V Power-Supply Operation**
- **Fully Assembled and Tested**

Component List

DESIGNATION	QTY	DESCRIPTION
C1-C7, C17, C19-C32	23	0.1µF ±10% ceramic capacitors (0402)
C8-C13, C18	7	1000pF ±10% ceramic capacitors (0402)
C14	1	33µF ±10% tantalum capacitor
C15	1	2.2µF ±10% tantalum capacitor
C16	1	0.068µF ±10% ceramic capacitor (0402)
D1	1	LED
J15, J19, J21, J22	4	1x2 pin headers (0.1" centers)
J16-J18, J20, J24, J25	6	1x3 pin headers (0.1" centers)
J1-J14, J29-J32	18	SMA connectors, edge mount, tab contact
J26-J28	3	Test points
L1-L3	3	56nH inductors
R1-R5, R10	6	100Ω 1% resistors (0402)
R6	1	402Ω 5% resistors (0402)
R8	1	20kΩ variable resistor
R9	1	20kΩ ±5% resistor (0402)
U1	1	MAX3882AETX+ 36 TQFN
J15-J18, J19-J22, J24, J25	10	Shunts
–	1	PCB: MAX3882 Evaluation Board, Rev A

Component Suppliers

SUPPLIER	PHONE	FAX
Digi-Key	218-681-6674	218-681-3380
Murata	814-237-1431	814-238-0490
Coilcraft	847-639-6400	847-639-1469
AVX	803-946-0690	803-626-3123

Note: Please indicate that you are using the MAX3882A when ordering from these suppliers.

Ordering Information

PART	TEMP. RANGE	IC PACKAGE
MAX3882EVKIT	-40°C to +85°C	36 pin TQFN

Quick Start

1) Connect a +3.3V power supply to J26 (Vcc). Connect power supply ground to J27 (GND).
2) Connect the three-lead jumper J20 center pin to Vcc, FREFSET (J24) center pin to GND, SIS (J16) center pin to GND, LREF (J18) center pin to Vcc, J17 center pin to LREF (J18) by connecting it to the upper pin.
3) Connect between a $10mV_{P-P}$ to $1600mV_{P-P}$ differential input signal on SDI± (J1-J2) by using SMA cables suitable for 2.488Gbps.
4) Remove the 100Ω resistor R4 and R5 to avoid double termination.
5) Connect the output clock and data signals (J13, J14, J11, and J12 respectively) to a 50Ω high-speed oscilloscope to view the output signals.

Detailed Description

The MAX3882 EV Kit is fully assembled and factory tested. It enables testing of all MAX3882A functions.

Connections

The MAX3882 EV Kit provides on-board connectors for all data and clock I/O ports. The serial data and system loopback inputs (SDI+ and SLBI+) can be connected directly to a 50Ω source.

Loss-of-Lock Indicator

PLL frequency lock condition can be monitored at the high-impedance $\overline{LOL}$ test point. A TTL high for $\overline{LOL}$ (LED off) indicates PLL frequency lock. A TTL low for $\overline{LOL}$ (LED on) indicates loss-of-lock.

Table 1. Jumper Settings

COMPONENT	FUNCTION
J15	Shorts CDR filter capacitor. Remove shunt for normal operation.
J16	Sets SIS pin high or low.
J17	Connects $\overline{LOL}$ output to jumper J18 or LREF input.
J18	Sets $\overline{LREF}$ input high or low.
J19	Connects VREF to R8 variable resistor.
J20	Connects VCTRL pin to Vcc (threshold adjust disabled) or VREF voltage divider (shunt installed on J19 and threshold set by variable resistor R8).
J21	Test point isolation jumper for CPWD. Remove shunt for normal operation.
J22	Shorts CPWD capacitor. Remove shunt for normal operation.
J24	Sets FREFSET pin high or low.
J25	Jumper shorted to GND.

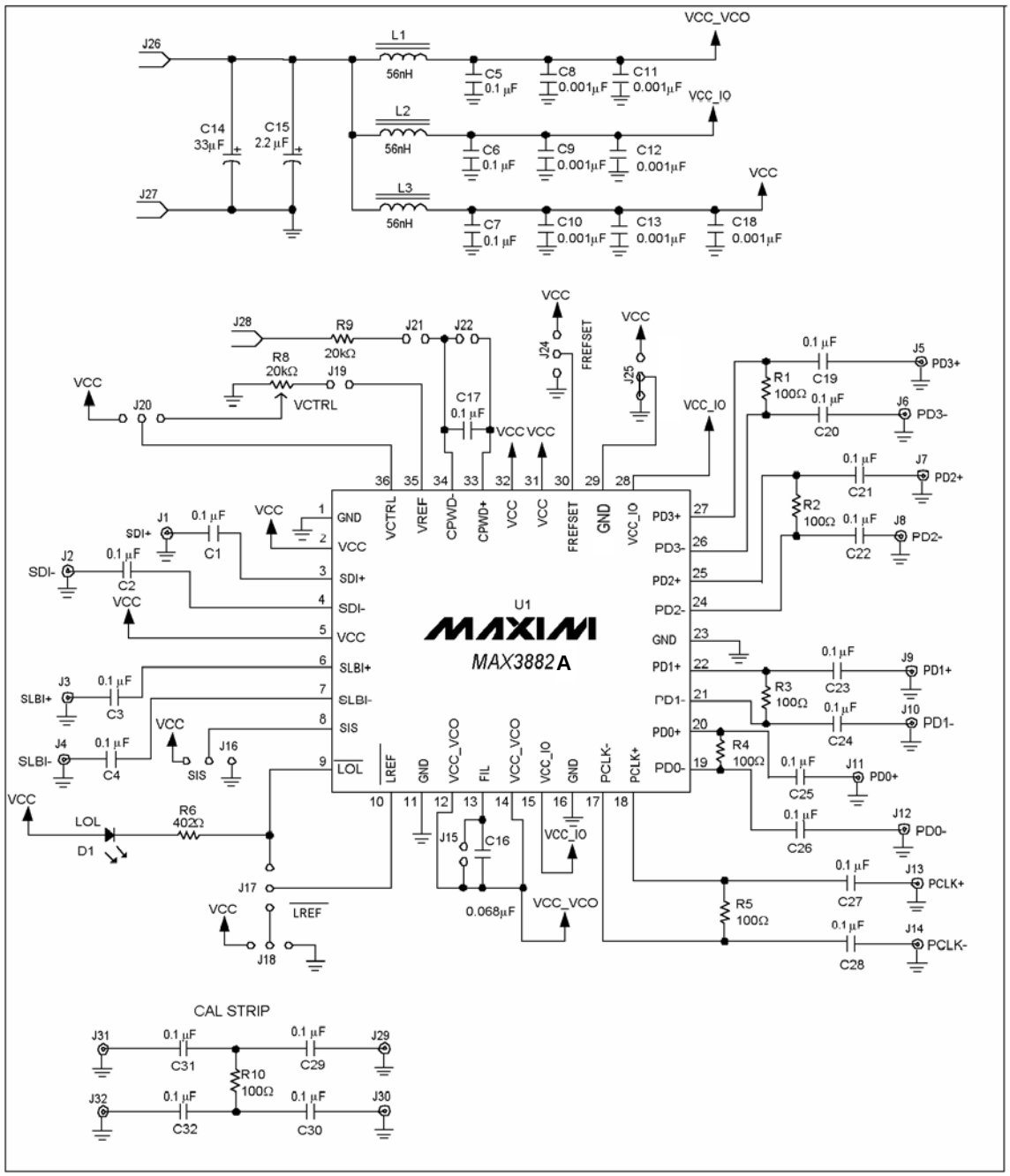

Figure 1. MAX3882 EV Kit Schematic

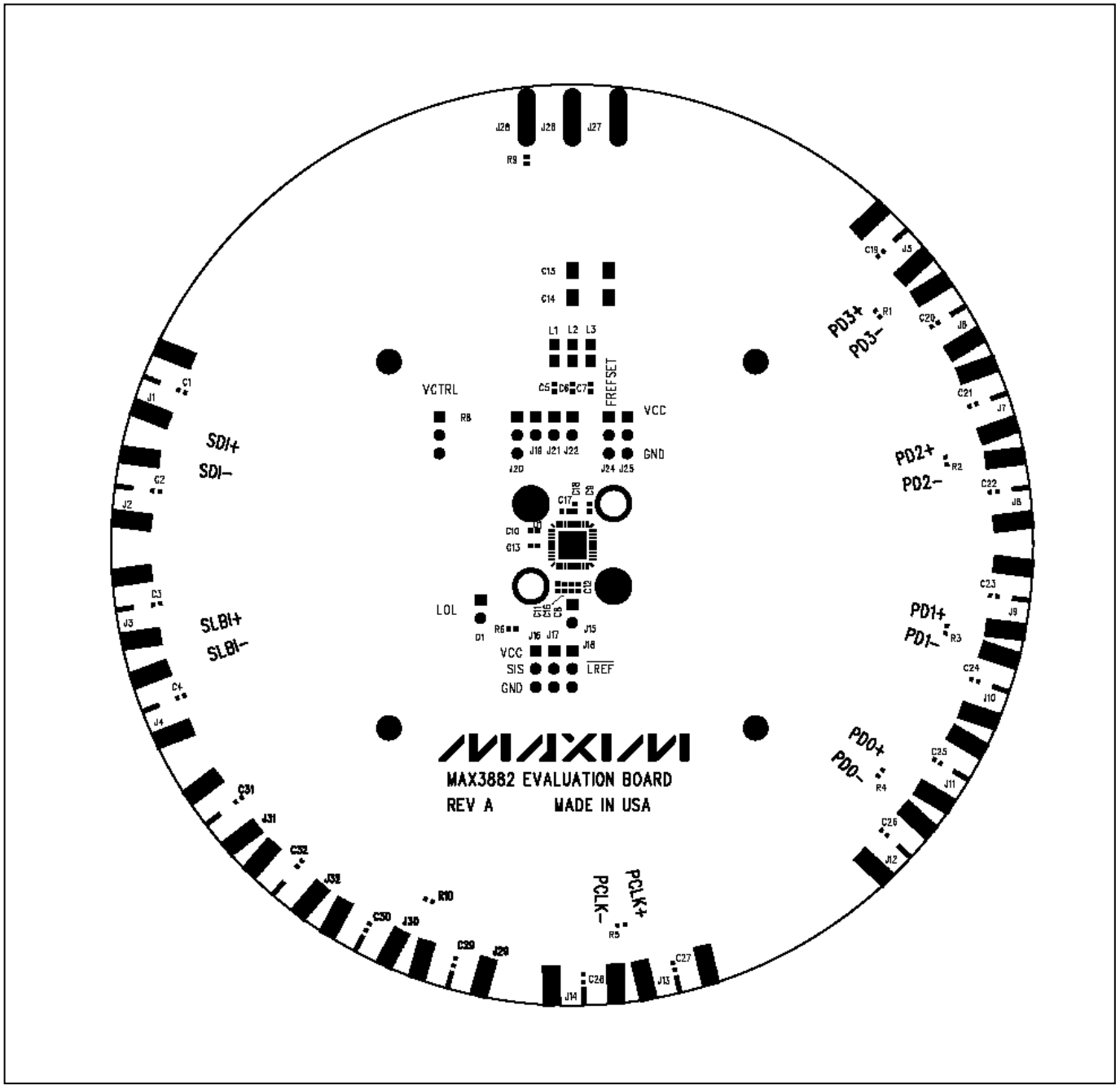

Figure 2. MAX3882 EV Kit Component Placement Guide–Component Side

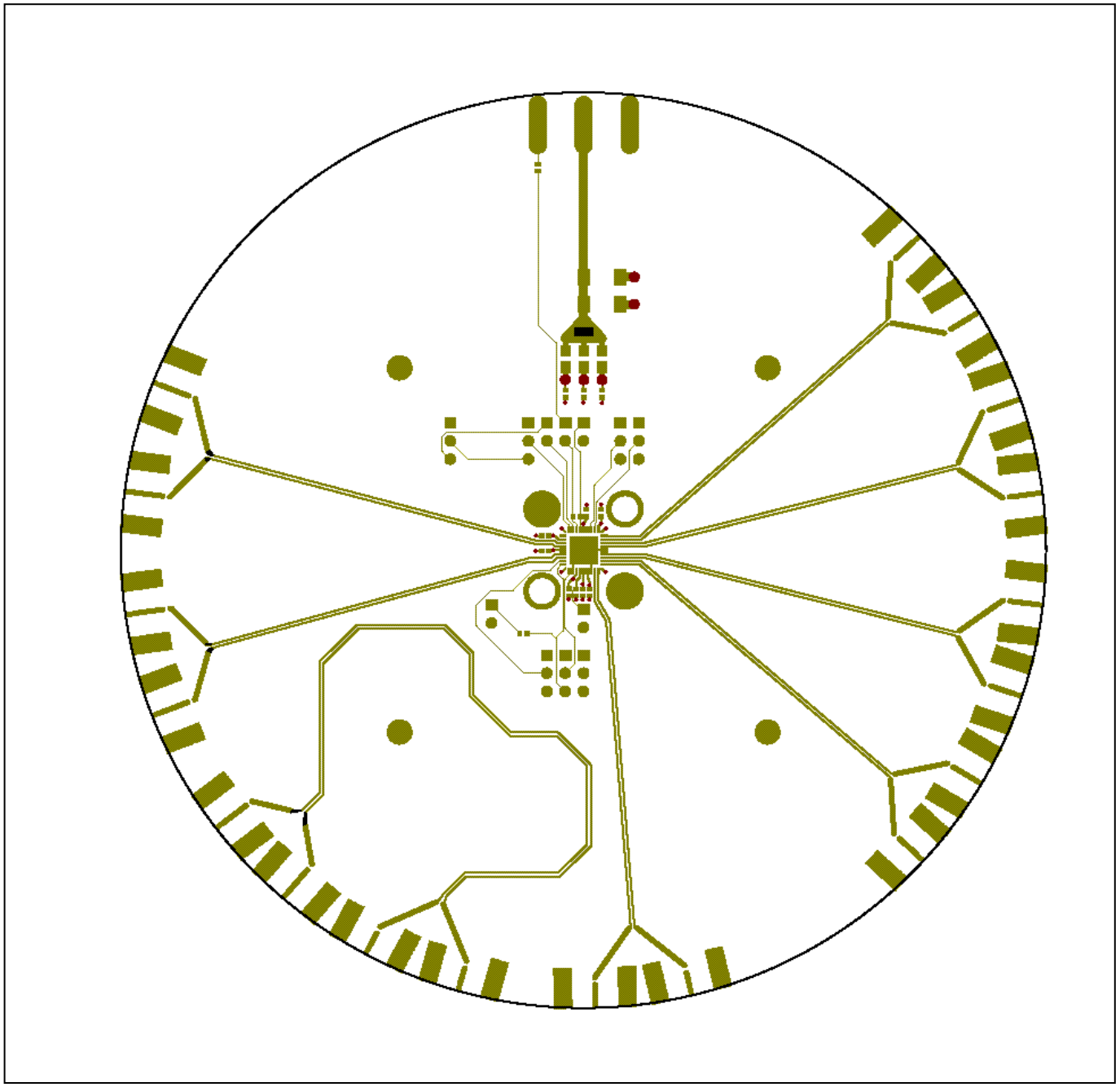

Figure 3. MAX3882 EV Kit PC Board Layout–Component Side

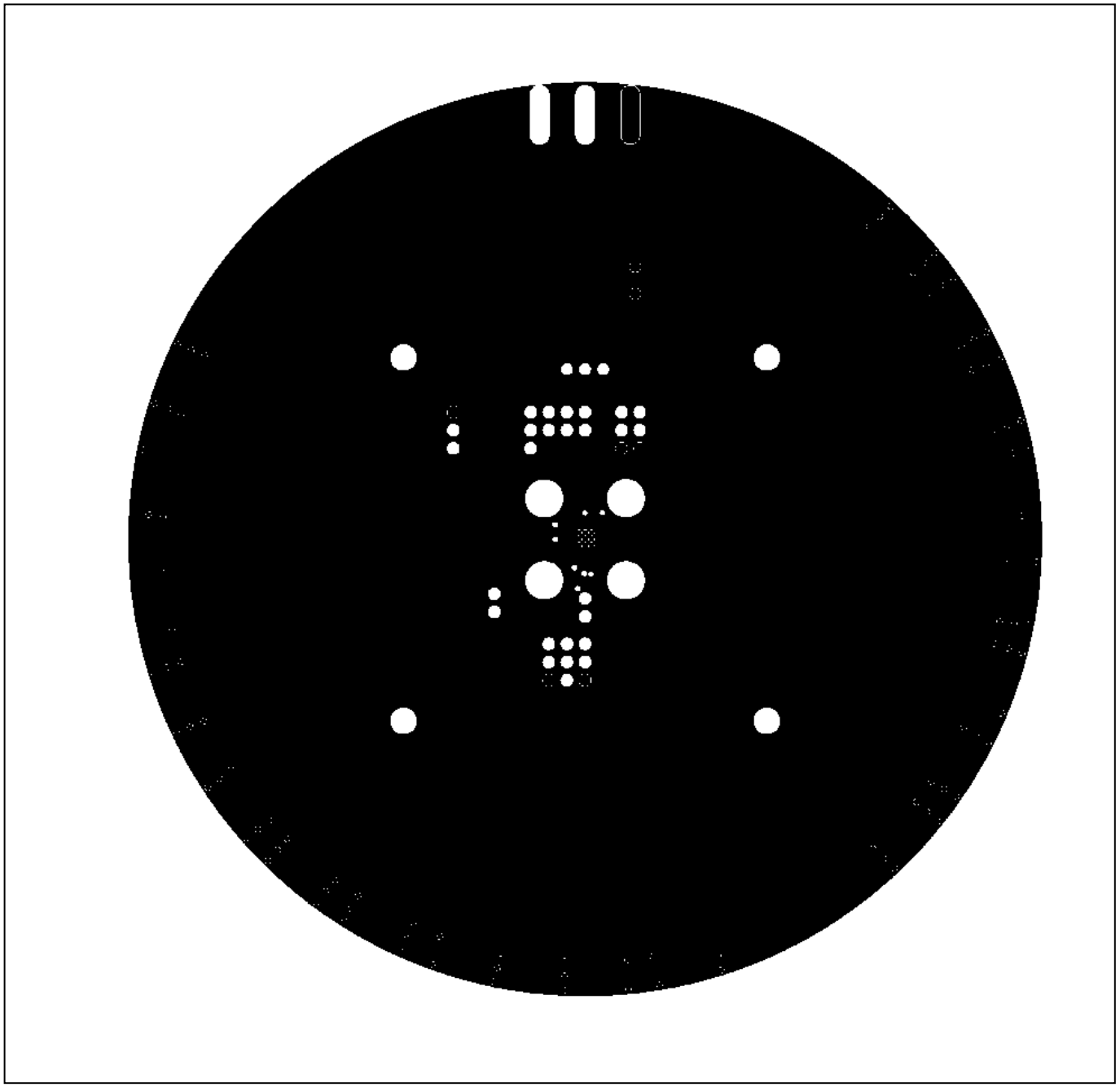

Figure 4. MAX3882 EV Kit PC Board Layout–Ground Plane

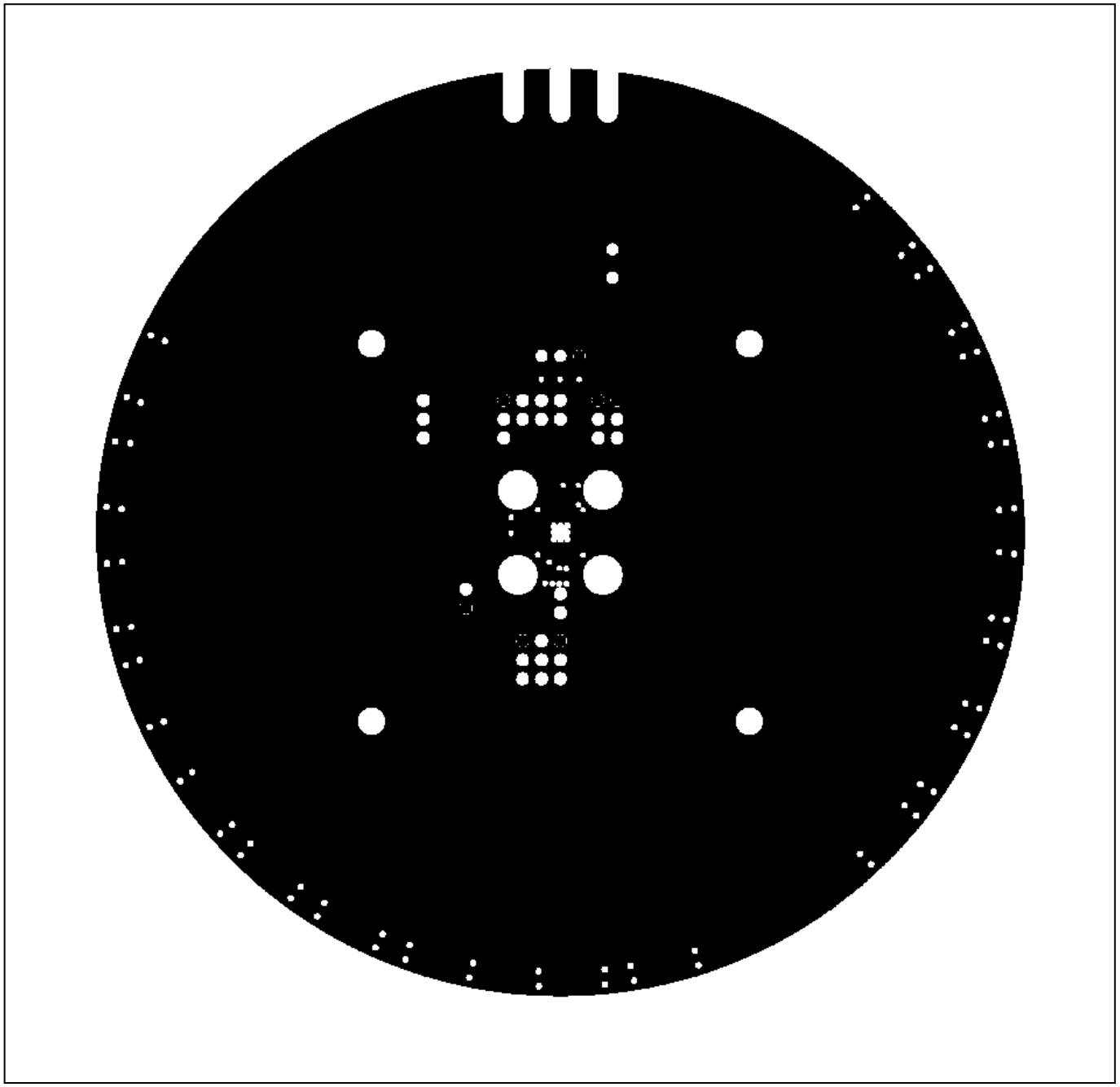

Figure 5. MAX3882 EV Kit PC Board Layout–Power Plane

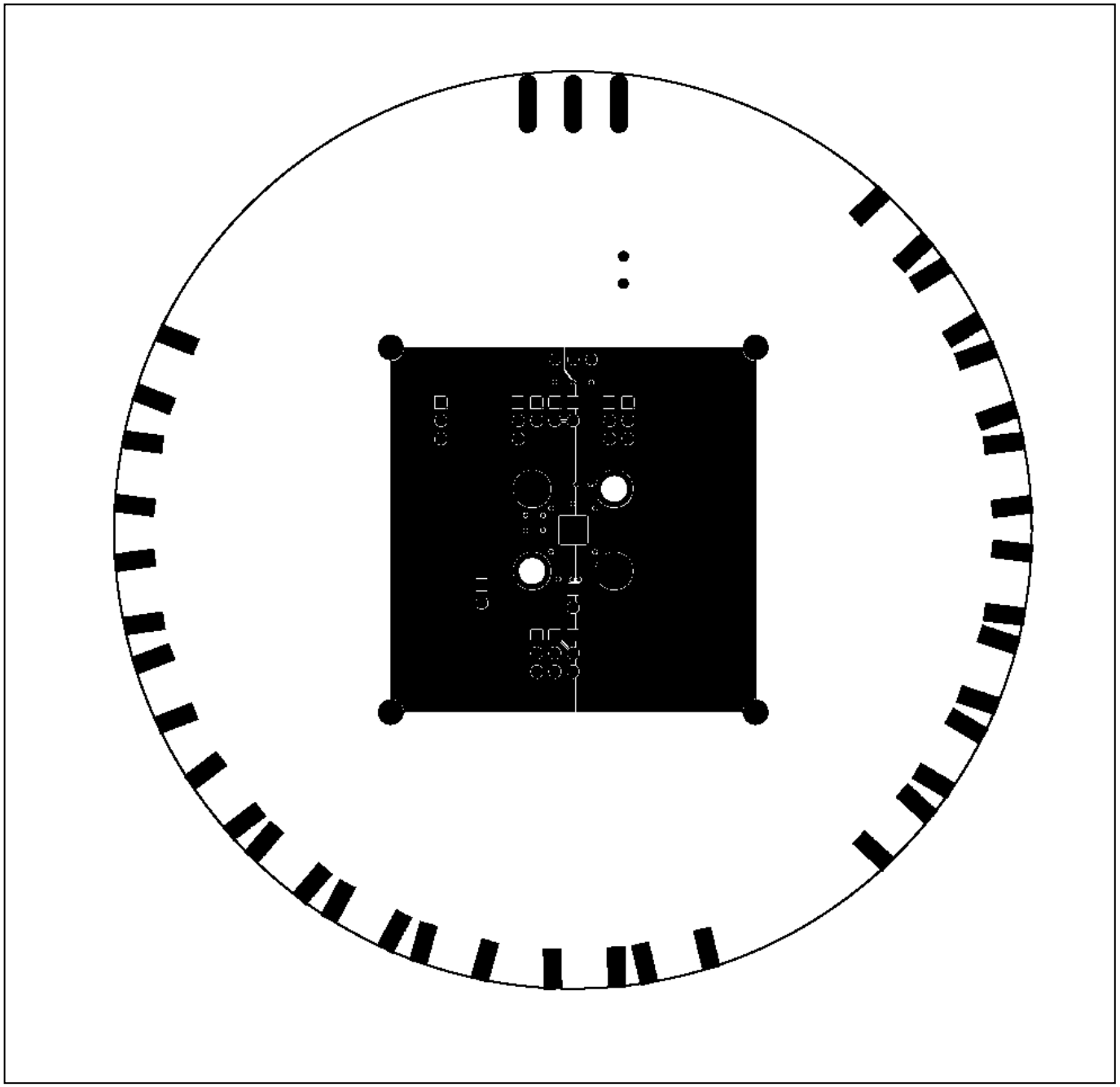

Figure 6. MAX3882 EV Kit PC Board Layout–Solder Side