19-4316; Rev 0; 10/08

MAX9656 Evaluation Kit

Evaluates: MAX9656

General Description

The MAX9656 evaluation kit (EV kit) is an assembled and tested PCB used to evaluate the MAX9656 dual SCART video switch matrix. The EV kit routes video signals between the TV SCART port, the VCR SCART port, and the video encoder. Standard-definition video signals are AC-coupled to the inputs, each of which has a sync-tip clamp. The EV kit operates from a single-supply voltage of 2.7V to 3.6V.

Features

- **VCR/TV SCART Connectors**
- **TV SCART CVBS Return Support**
- **2.7V to 3.6V Single-Supply Operation**
- **AC-Coupled Video Inputs**
- **Lead-Free and RoHS Compliant**
- **Fully Assembled and Tested**

Ordering Information

PART	TYPE
MAX9656EVKIT+	EV Kit

+Denotes lead-free and RoHS compliant.

Component List

DESIGNATION	QTY	DESCRIPTION
C1–C10	10	0.1µF ±10%, 16V X7R ceramic capacitors (0603) TDK C1608X7R1C104K Murata GRM188R71C104K
C11	1	10µF ±20%, 6.3V X5R ceramic capacitor (0805) TDK C2012X5R0J106M Taiyo Yuden JMK212BJ106MG
ENC_B_IN, ENC_CVBS_IN, ENC_G_IN, ENC_R_IN	4	75Ω BNC PCB-mount connectors
JU1, JU2, JU3	3	3-pin headers
P1, P2	2	SCART connectors (side-entry PCB mount) KYCON K-SCARTX-021
R1, R3, R5, R7, R9, R11, R13, R15, R16, R18–R21, R23	14	75Ω ±1% resistors (0603)
R2, R4, R6, R8, R10, R12, R14, R17, R22	0	Not installed, resistors—short PC trace (0603)
U1	1	Dual SCART video switch matrix (20 QSOP) Maxim MAX9656AEP+
—	3	Shunts KYCON S1100-B or equivalent
—	1	PCB: MAX9656 Evaluation Kit+

Component Suppliers

SUPPLIER	PHONE	WEBSITE
KYCON, Inc.	888-592-6622	www.kycon.com
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com
Taiyo Yuden	800-348-2496	www.t-yuden.com
TDK Corp.	847-803-6100	www.component.tdk.com

Note: *Indicate that you are using the MAX9656 when contacting these component suppliers.*

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.

Quick Start

Recommended Equipment

Before beginning, the following equipment is needed:

- 2.7V to 3.6V, 100mA DC power supply (VDD)
- DVD player with SCART connector

Procedure

The MAX9656 EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Caution: Do not turn on power supplies until all connections are made.**

1) Verify that all jumpers (JU1, JU2, and JU3) are in their default positions, as shown in Tables 1, 2, and 3.
2) Connect the 3.3V/100mA DC power supply to the VDD and the GND pads on the MAX9656 EV kit board.
3) Connect the DVD player output to the SCART connector (P1).
4) Connect a TV to the TV (P2) SCART connector.
5) Turn on the power supplies.
6) Verify that the video signals are being routed to the TV output.

Detailed Description of Hardware

VCR SCART Output Selection

The MAX9656 EV kit features 3-pin jumper JU1 to control the VCR_SEL input. Set VCR_SEL low by placing a shunt across pins 2-3 to route the ENC_CVBS_IN to the VCR SCART CVBS output. Set VCR_SEL high by placing a shunt across pins 1-2 to route the TV_CVBS_IN to the VCR SCART CVBS output. Table 1 summarizes jumper JU1's function.

Table 1. Jumper JU1 Functions (VCR_SEL)

SHUNT POSITION	VCR_SEL PIN	VIDEO SOURCE
1-2*	Connected to VDD	TV_CVBS_IN
2-3	Connected to GND	ENC_CVBS_IN

**Default position.*

TV SCART Output Selection

The MAX9656 EV kit features 3-pin jumper JU2 to control the TV_SEL input, which selects between the video signals from two different sources: video encoder and the VCR SCART port. Set TV_SEL low by placing a shunt across pins 2-3 to route the encoder video signals to the TV SCART outputs. Set TV_SEL high by placing a shunt across pins 1-2 to route the VCR SCART video signals to the TV SCART outputs. Table 2 summarizes jumper JU2's function.

Table 2. Jumper JU2 Functions (TV_SEL)

SHUNT POSITION	TV_SEL PIN	VIDEO SOURCE
1-2*	Connected to VDD	VCR SCART
2-3	Connected to GND	Encoder

**Default position.*

Active-Low Shutdown Logic Input

The MAX9656 EV kit features a shutdown control by implementing jumper JU3 to control the $\overline{SHDN}$ input. For normal operation, set $\overline{SHDN}$ to logic-high by placing a shunt across pins 1-2. To place the device in shutdown mode, set $\overline{SHDN}$ to logic-low by placing a shunt across pins 2-3.

Table 3. Jumper JU3 Functions ($\overline{SHDN}$)

SHUNT POSITION	$\overline{SHDN}$ PIN	MAX9656
1-2*	Connected to VDD	Normal operation
2-3	Connected to GND	Shutdown mode

**Default position.*

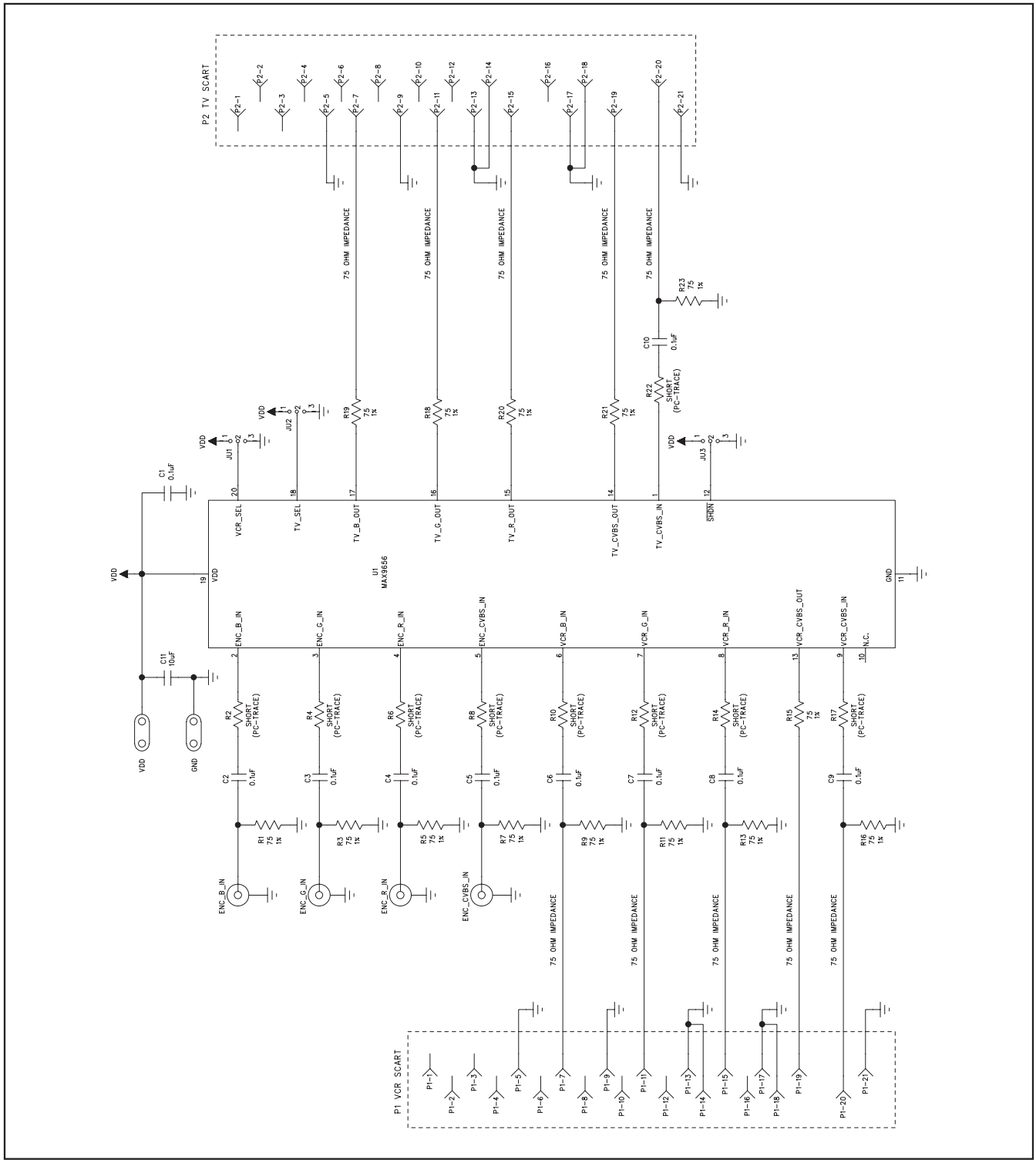


Figure 1. MAX9656 EV Kit Schematic

MAX9656 Evaluation Kit

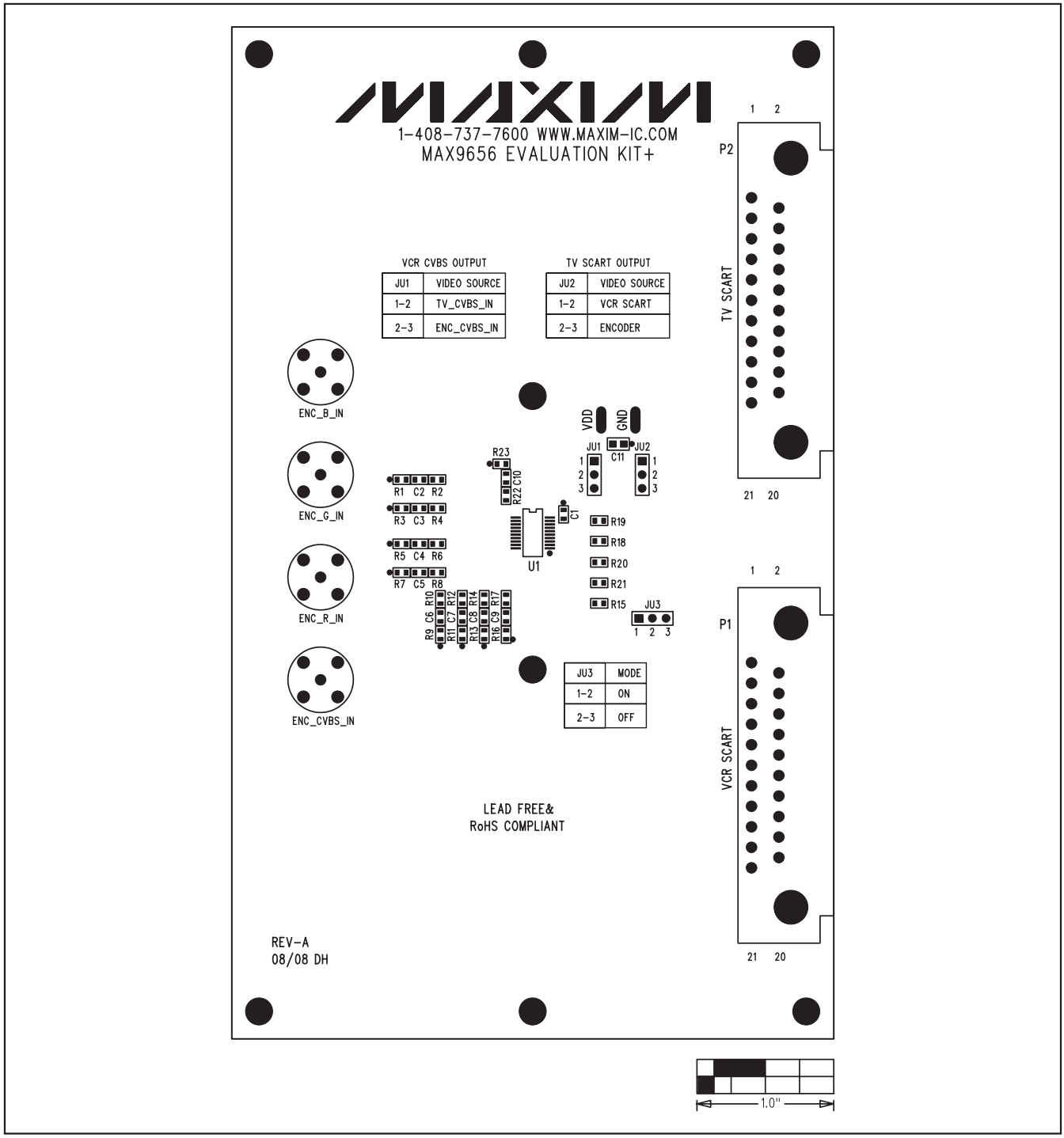


Figure 2. MAX9656 EV Kit Component Placement Guide—Component Side

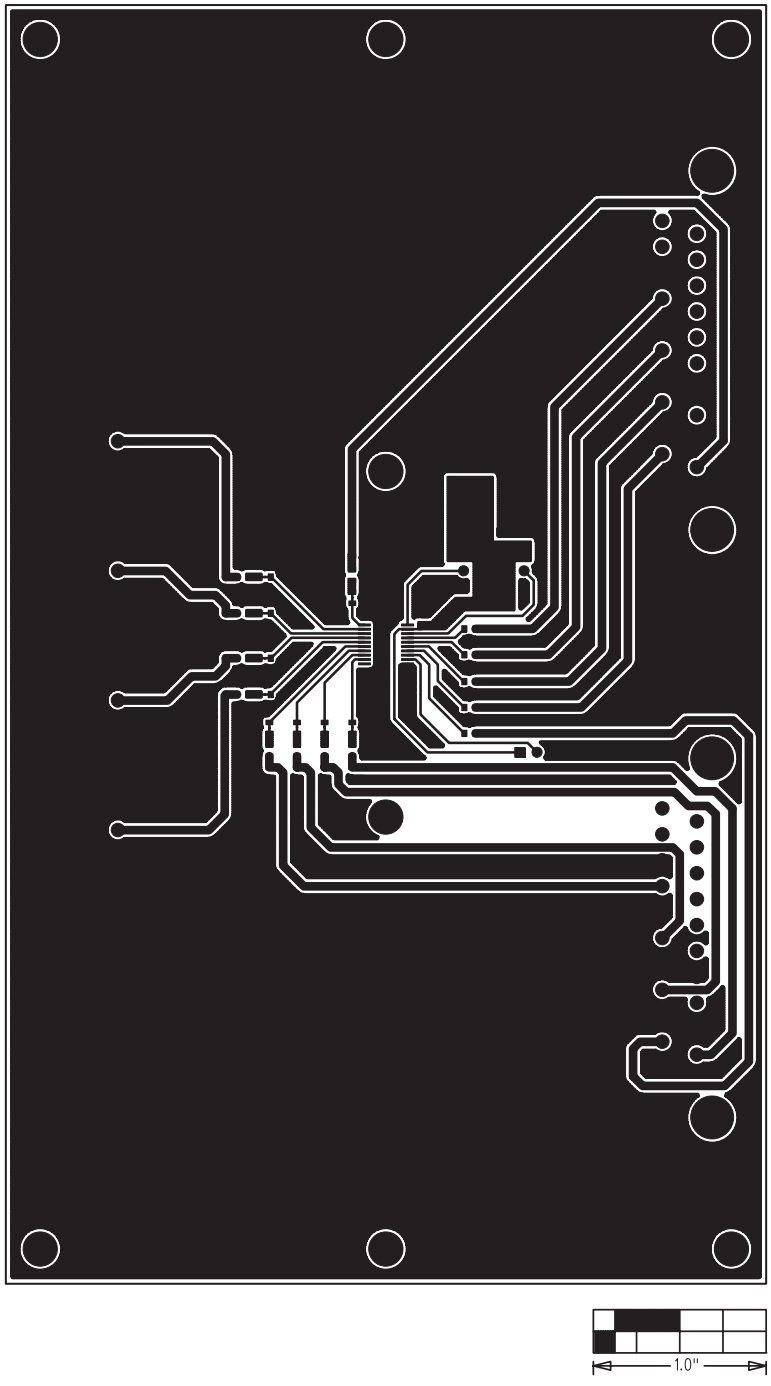


Figure 3. MAX9656 EV Kit Component PCB Layout—Component Side

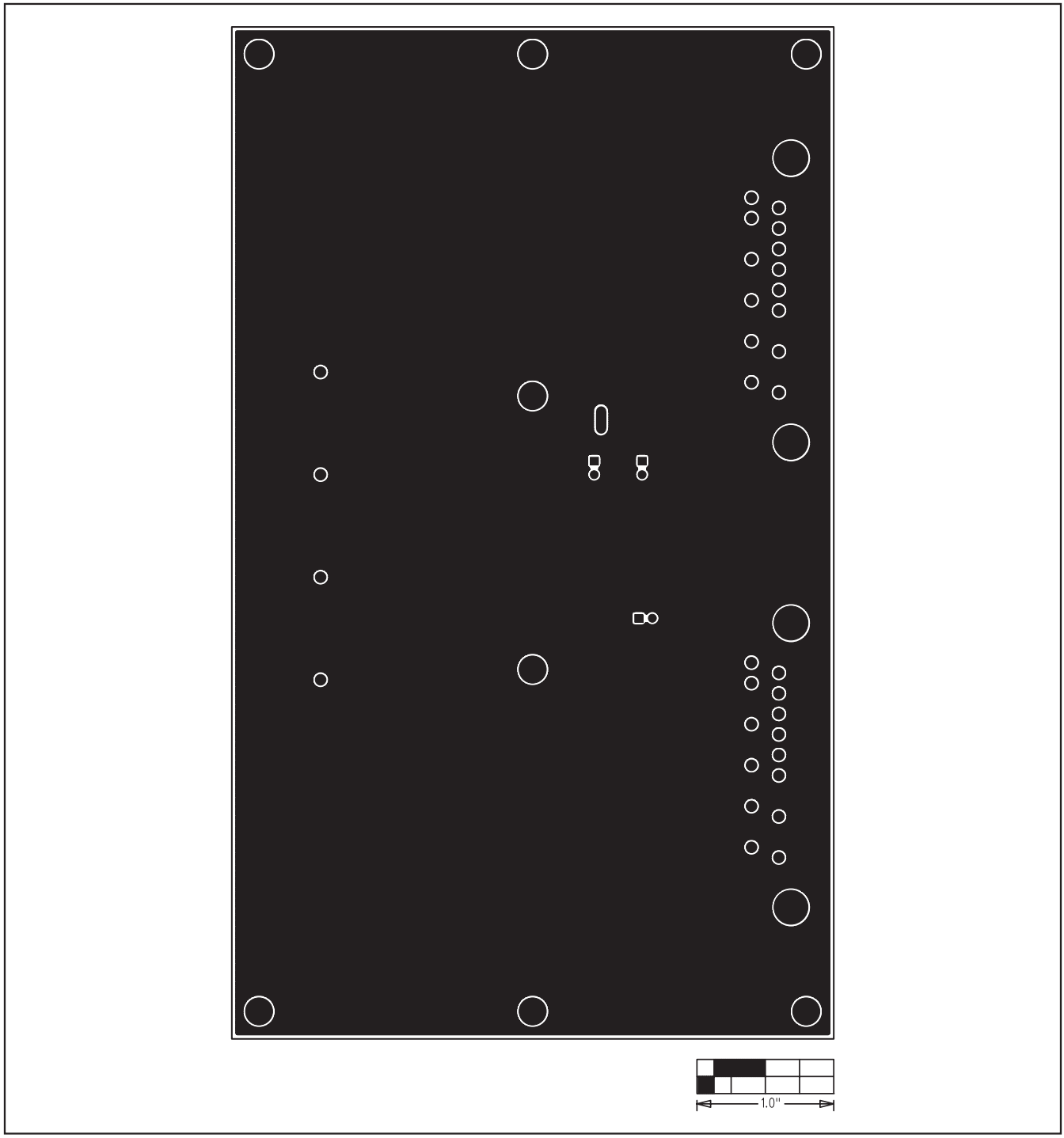


Figure 4. MAX9656 EV Kit PCB Layout—Solder Side

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