



# 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)<br>TDK C1608X7R1C104K<br>Murata GRM188R71C104K    |
| C11                                                | 1   | 10μF ±20%, 6.3V X5R ceramic capacitor (0805)<br>TDK C2012X5R0J106M<br>Taiyo Yuden JMK212BJ106MG |
| ENC_B_IN,<br>ENC_CVBS_IN,<br>ENC_G_IN,<br>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)<br>KYCON K-SCARTX-021                                   |

| DESIGNATION                                                   | QTY | DESCRIPTION                                                   |
|---------------------------------------------------------------|-----|---------------------------------------------------------------|
| R1, R3, R5, R7,<br>R9, R11, R13,<br>R15, R16,<br>R18–R21, R23 | 14  | 75Ω ±1% resistors (0603)                                      |
| R2, R4, R6, R8,<br>R10, R12, R14,<br>R17, R22                 | 0   | Not installed, resistors—short PC trace (0603)                |
| U1                                                            | 1   | Dual SCART video switch matrix (20 QSOP)<br>Maxim MAX9656AEP+ |
| —                                                             | 3   | Shunts<br>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.



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**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](http://www.maxim-ic.com).**

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## 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  $\overline{\text{SHDN}}$  input. For normal operation, set  $\overline{\text{SHDN}}$  to logic-high by placing a shunt across pins 1-2. To place the device in shutdown mode, set  $\overline{\text{SHDN}}$  to logic-low by placing a shunt across pins 2-3.

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

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

\*Default position.

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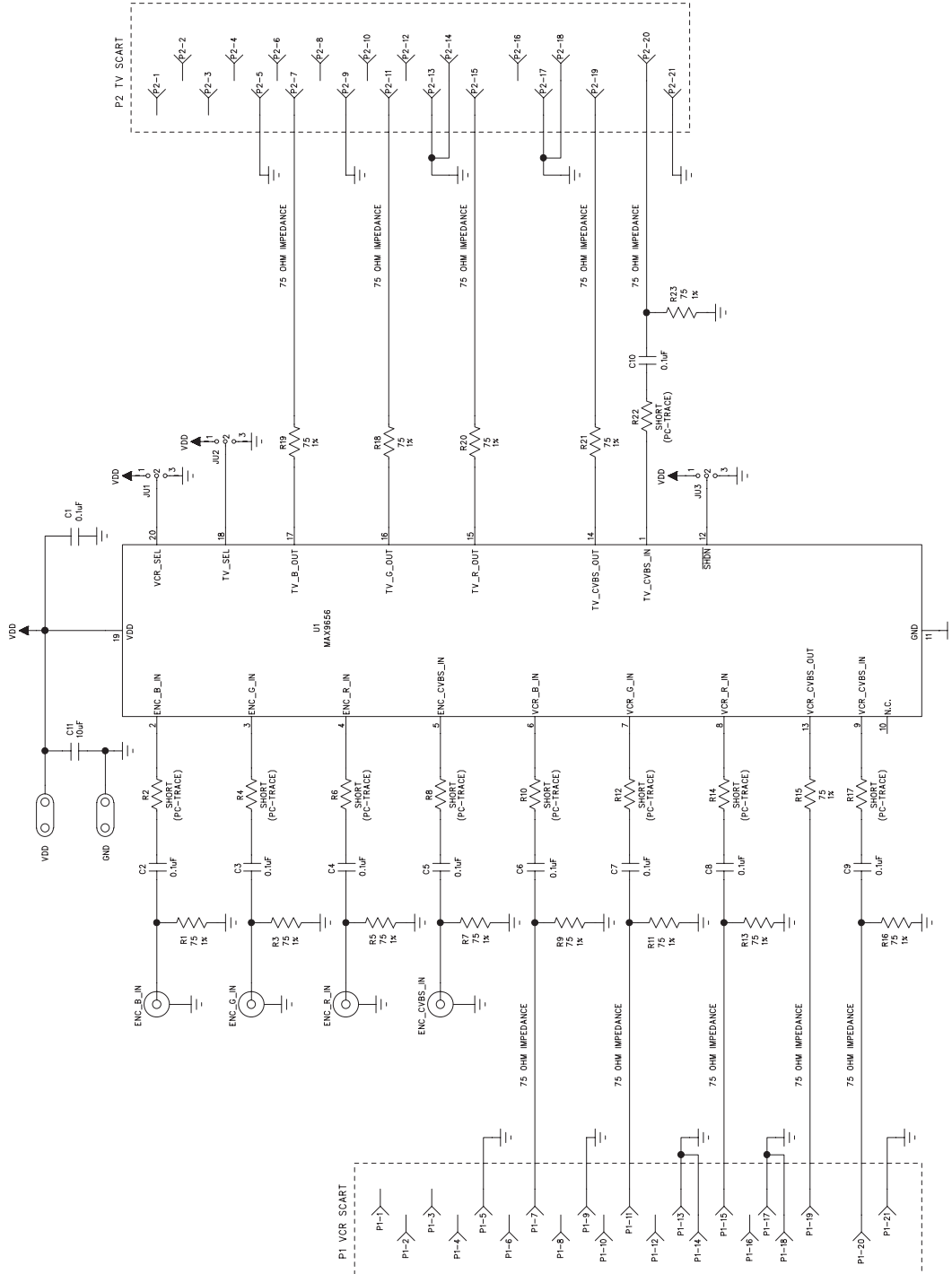


Figure 1. MAX9656 EV Kit Schematic

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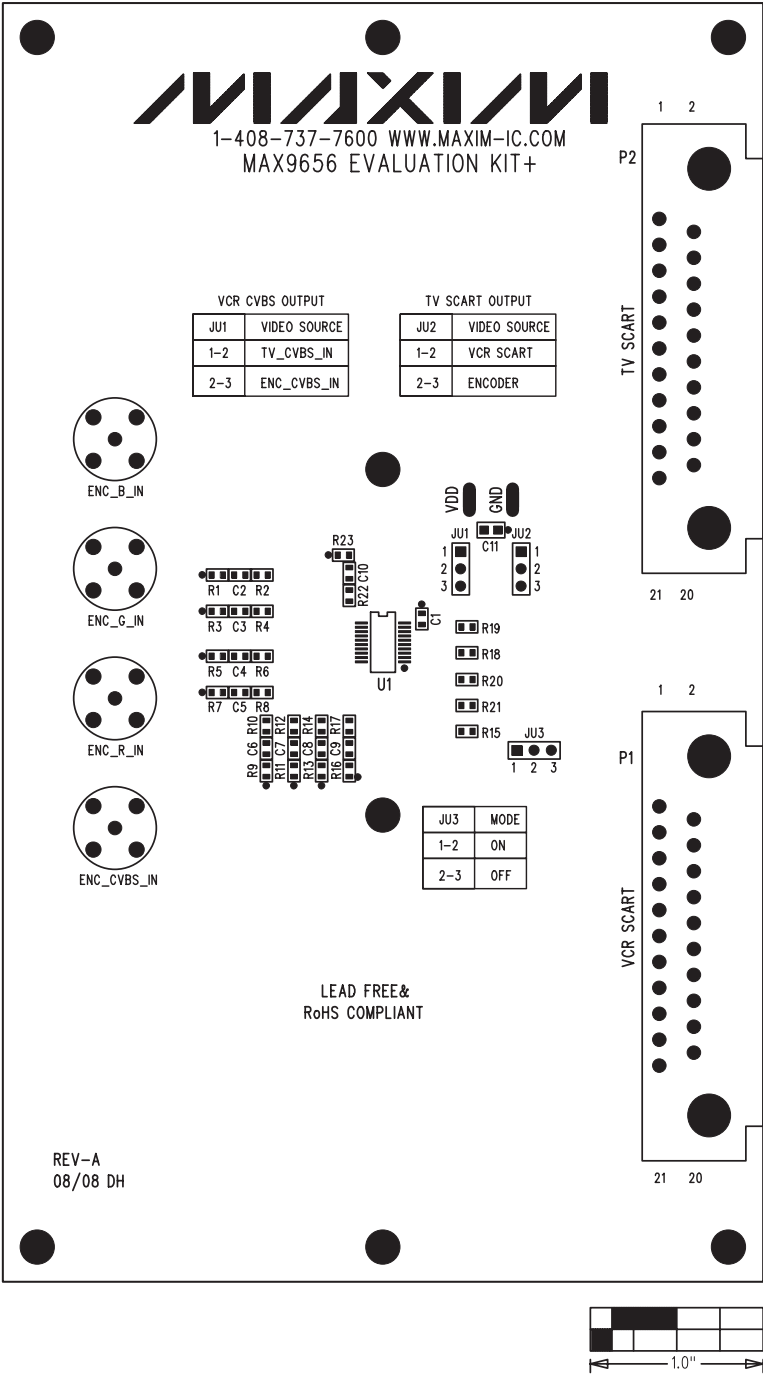


Figure 2. MAX9656 EV Kit Component Placement Guide—Component Side

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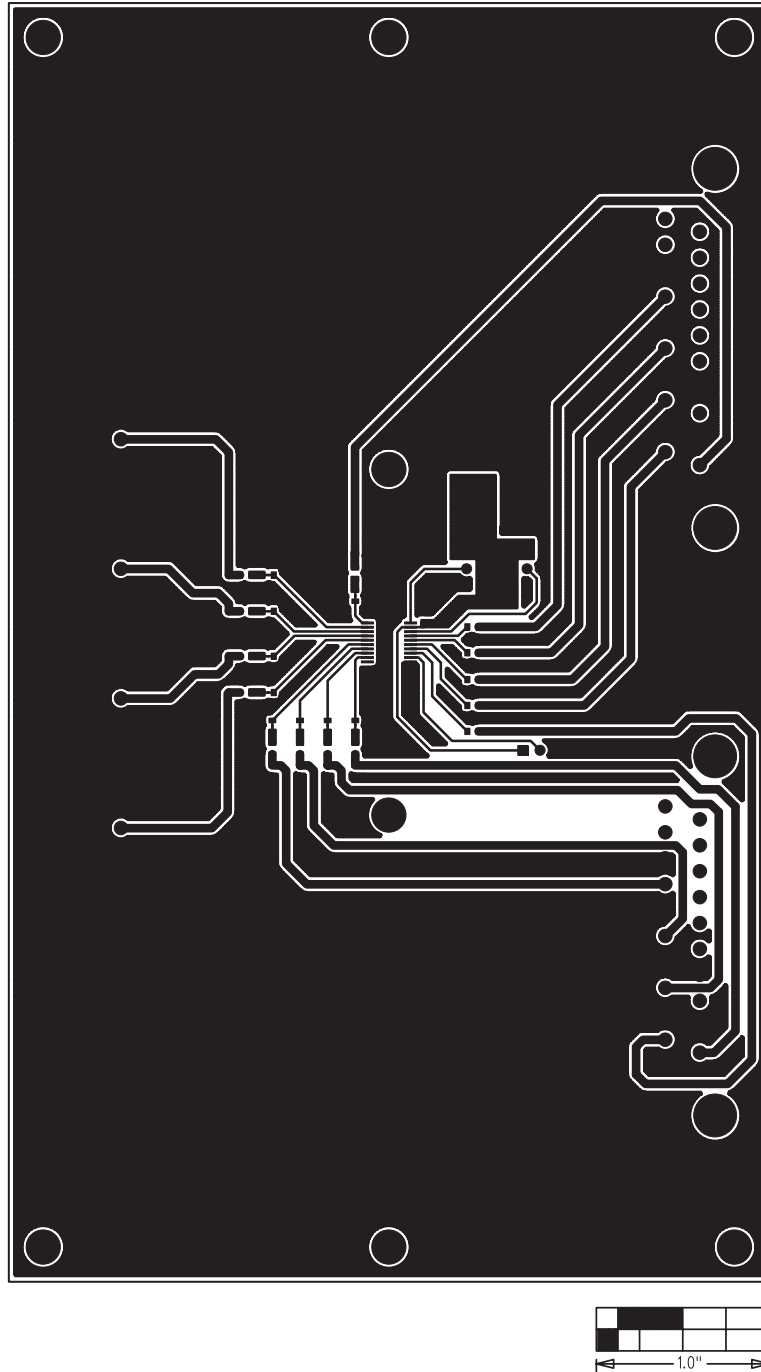


Figure 3. MAX9656 EV Kit Component PCB Layout—Component Side

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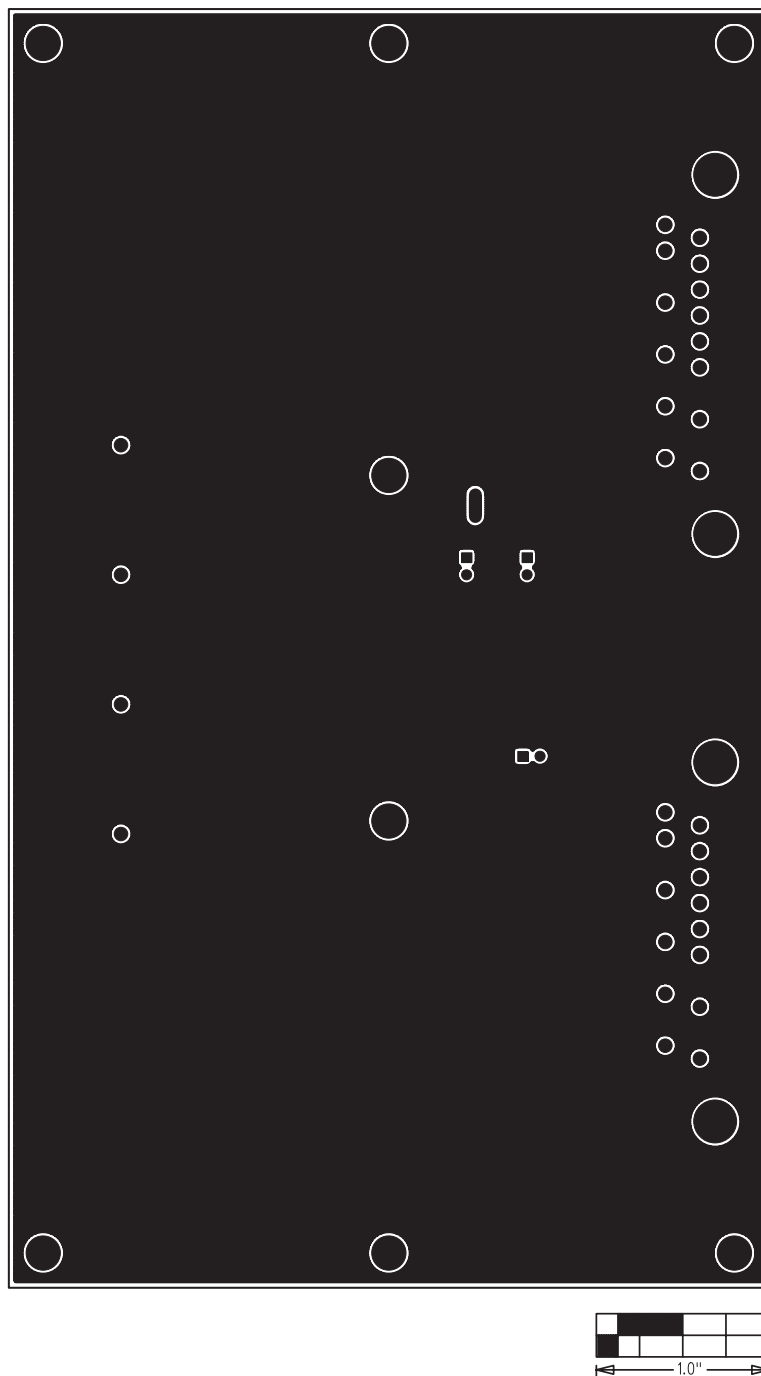


Figure 4. MAX9656 EV Kit PCB Layout—Solder Side

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