



MAX4885AE Evaluation Kit

General Description

The MAX4885AE evaluation kit (EV kit) is a fully assembled and tested circuit board that evaluates the MAX4885AE VGA 2:1 multiplexer. VGA input/output connectors are provided to easily interface the MAX4885AE EV kit with VGA-compatible devices. The EV kit can be powered from the 5V DC delivered through the VGA cable or from an external 5V DC power supply.

Features

- ◆ Complete 2:1 VGA Multiplexer
- ◆ VGA Connections and Power
- ◆ LED Indicators for Switch Connections
- ◆ VGA Inputs/Outputs
- ◆ Fully Assembled and Tested

Ordering Information

PART	TYPE
MAX4885AEEVKIT+	EV Kit

+Denotes lead(Pb)-free and RoHS compliant.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C3, C5, C7, C9, C11–C14	9	0.1 μ F \pm 10%, 16V X7R ceramic capacitors (0603) Murata GRM188R71C104K
C2, C4, C6, C8, C10	5	10 μ F \pm 20%, 6.3V X5R ceramic capacitors (0603) Murata GRM188R60J106M
D1, D2, D3	3	40V, 500mA Schottky diodes (SOT563) Central Semi CMLSH05-4+
D4, D5, D6	3	Red LEDs (0603)
JU1, JU2, JU3	3	3-pin headers
JU4–JU7	4	2-headers
Q1, Q2	2	n-channel FETs (SOT23) Fairchild FDV303N
R1	1	300 Ω \pm 5% resistor (0603)

DESIGNATION	QTY	DESCRIPTION
R2, R4	2	51k Ω \pm 5% resistors (0603)
R3, R5	2	270 Ω \pm 5% resistors (0603)
TP1, TP3, TP5, TP7, TP30	5	Red multipurpose test points
TP2, TP4, TP6, TP8, TP31	5	Black multipurpose test points
TP9–TP29	21	Red miniature test points
U1	1	VGA multiplexer (28 TQFN-EP*) Maxim MAX4885AEETI+
VGA0, VGA1, VGA2	3	15-pin VGA, HD sub-D female connectors
—	7	Shunts
—	1	PCB: MAX4885AE EVALUATION KIT+

*EP = Exposed pad.

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Central Semiconductor	631-435-1110	www.centralsemi.com
Fairchild Semiconductor	888-522-5372	www.fairchildsemi.com
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com

Note: Indicate that you are using the MAX4885AE when contacting these component suppliers.

Evaluates: MAX4885AE

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Quick Start

Required Equipment

- MAX4885AE EV kit
- Two user-supplied PCs
- Two 15-pin, VGA HD sub-D cables (all pins present)
- VGA monitor

Procedure

The MAX4885AE EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Caution: Do not turn on the power supply until all connections are completed.**

- 1) Verify that all jumpers (JU1–JU7) are in their default positions, as shown in Table 1.
- 2) Connect the monitor to VGA0 (VGA monitor).
- 3) Connect the first PC to VGA1 (VGA SRC1) and the second PC to VGA2 (VGA SRC2).
- 4) Turn on the power to both PCs and monitor.
- 5) Verify that LEDs D4 and D6 are on. If both D4 and D6 are not on, then verify that the VGA cable from the PC has all 15 pins present. If pin 9 on the VGA cable is missing, use an external power supply to power VCC.
- 6) Verify that the first PC displays on the monitor. Change the shunt on jumper JU3 to select SRC2. Now verify that the second PC displays on the monitor. LEDs D4 and D5 should now be lit.

Detailed Description of Hardware

The MAX4885AE EV kit is a fully assembled and tested circuit board that contains all the components necessary to evaluate the MAX4885AE. VGA input/output connections are provided to easily interface the MAX4885AE EV

kit with VGA-compatible devices. The EV kit can be powered from the 5V DC that is delivered through the VGA cable or from an external regulated 5V DC power supply.

The MAX4885AE EV kit provides jumpers to control the various features of the MAX4885AE, such as the enable input, monitor select, and logic select. The EV kit also provides test points to monitor the individual video signals.

Input Power Supply

The MAX4885AE EV kit accepts a single 5V input power supply from one of the two VGA connections, or from an external 5V regulated supply. The power from each VGA is ORed through individual Schottky diodes. The logic supply (VL) is equal to the 5V VCC supply by default. To apply a different voltage other than VCC, move the shunt on jumper JU1 to the 2-3 position and apply the logic voltage between EXTVCL (TP30) and GND (TP31).

Monitor Select (SEL1, SEL2)

The jumper settings on JU2 and JU3 control the signal path between the VGA monitor (VGA0) and VGA sources (VGA1 and VGA2). The video lines (R, G, B, H, and V) are selected by jumper JU3, while the data lines (SDA, SCL) are selected by jumper JU2. VGA0 is the common output terminal for inputs VGA1 and VGA2 sources. LEDs D4, D5, and D6 light up to show the connection. LED D4 represents the common output terminal and is always lit with 5V power. D5 and D6 are lit depending on the VGA source selected and are simple visual elements to display the video connection. Jumpers JU4, JU5, and JU6 are included to disconnect the LEDs. The HSYNC and VSYNC signals are not bidirectionally buffered; therefore, the EV kit cannot work as a 1:2 multiplexer. Refer to the MAX4885 or MAX4885E IC data sheet for a 1:2 multiplexer.

Table 1. MAX4885AE EV Kit Jumper Descriptions (JU1–JU7)

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	1-2*	VL is powered by on-board 5V power
	2-3	VL is powered externally by applying a voltage to EXTVCL (TP30)
JU2	1-2	SEL2 input: Monitor data lines (SCL and SDA) are connected to VGA2 data lines
	2-3*	SEL2 input: Monitor data lines (SCL and SDA) are connected to VGA1 data lines
JU3	1-2	SEL1 input: Monitor video lines (R, G, B, H, V) are connected to VGA2 data lines
	2-3*	SEL1 input: Monitor video lines (R, G, B, H, V) are connected to VGA1 data lines
JU4, JU5, JU6	1-2*	Connects a red LED from the VGA power line for a visual display of the connections
	Open	Disconnects red LED from VGA power
JU7	1-2	Connects SEL1 to SEL2; when the jumper is in this position, use one jumper for JU2 or JU3
	Open*	Does not connect SEL1 to SEL2; jumpers must be placed on JU2 and JU3

*Default position.

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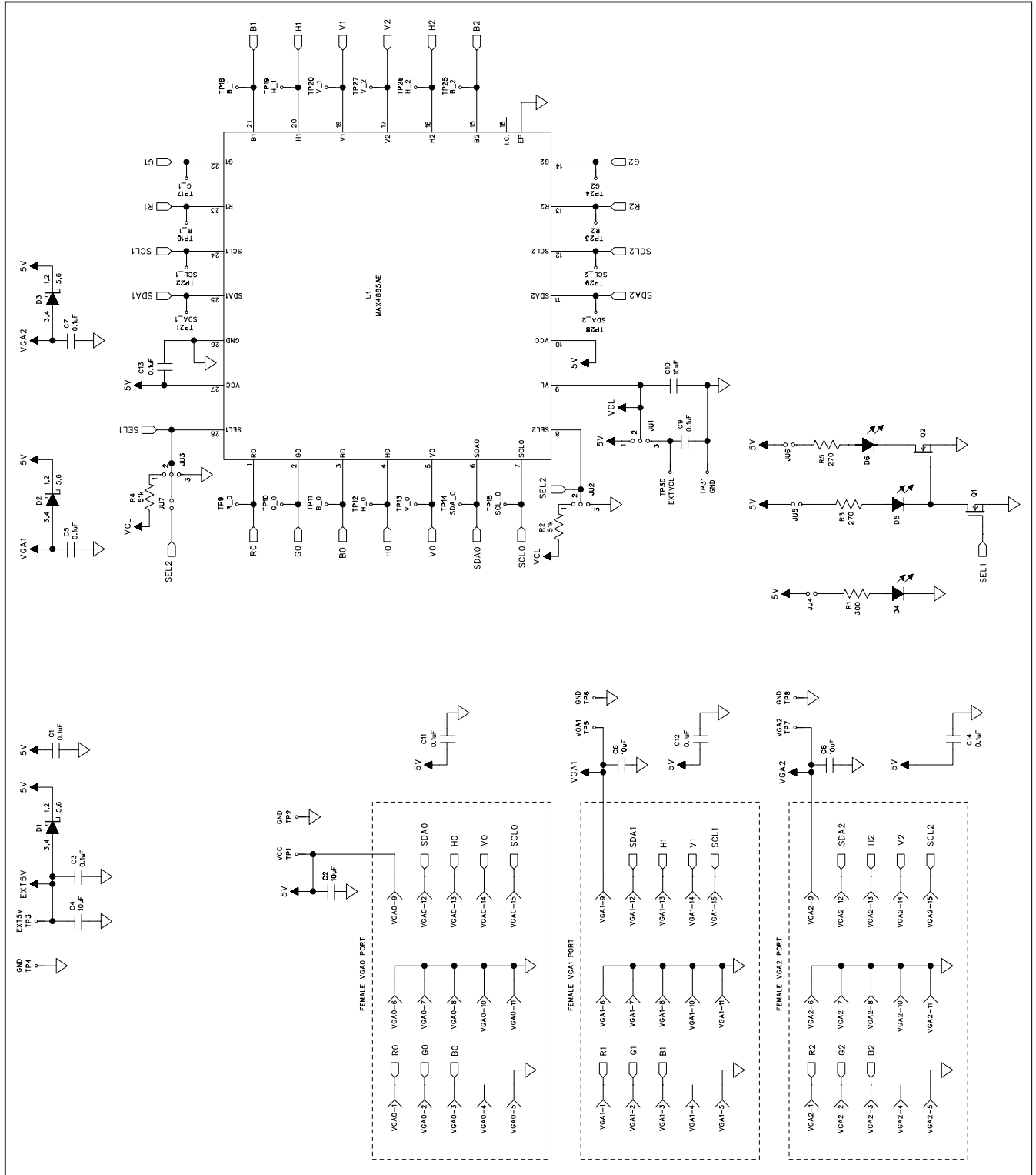


Figure 1. MAX4885AE EV Kit Schematic

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Evaluates: MAX4885AE

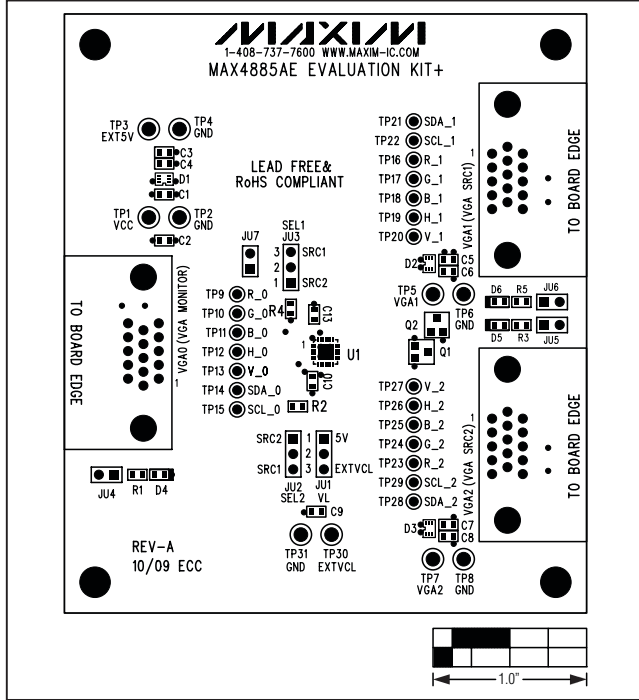


Figure 2. MAX4885AE EV Kit Component Placement Guide—Component Side

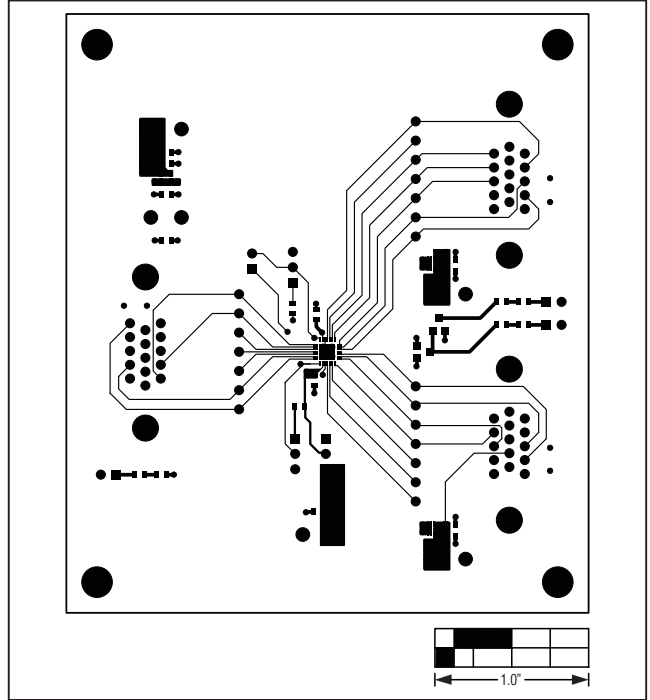


Figure 3. MAX4885AE EV Kit PCB Layout—Component Side

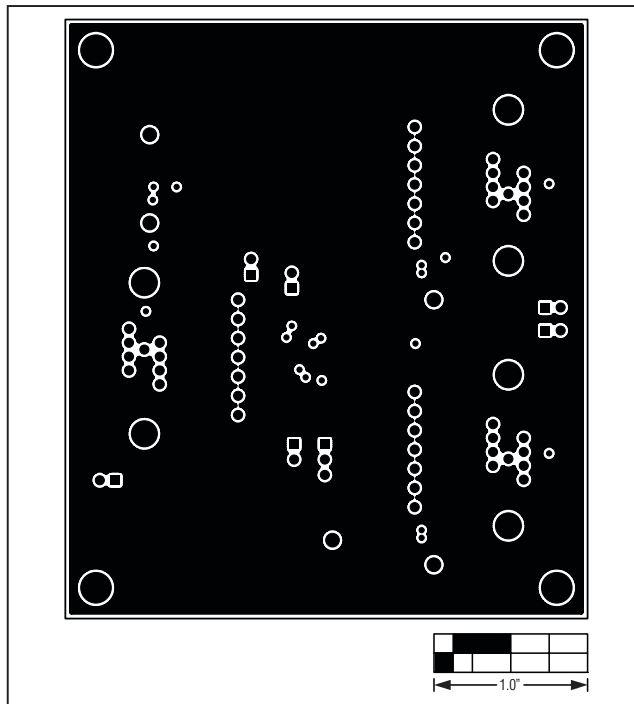


Figure 4. MAX4885AE EV Kit PCB Layout—GND Layer 2

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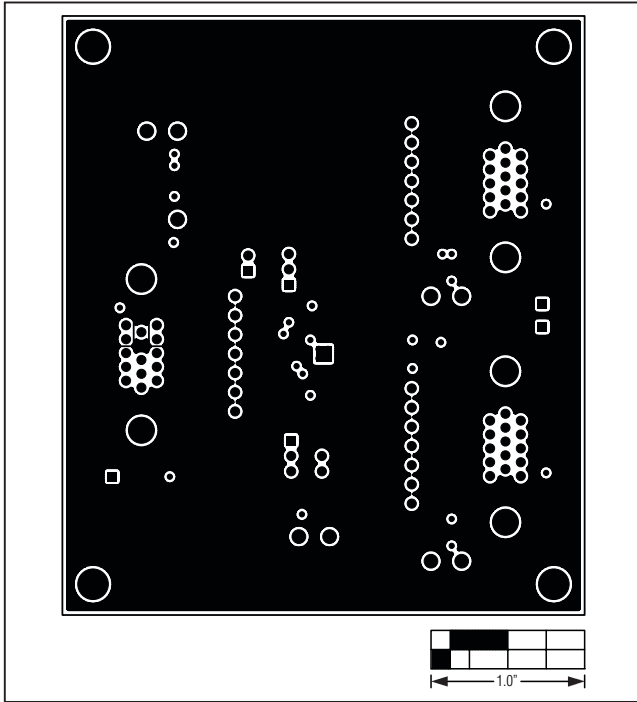


Figure 5. MAX4885AE EV Kit PCB Layout—VCC Layer 3

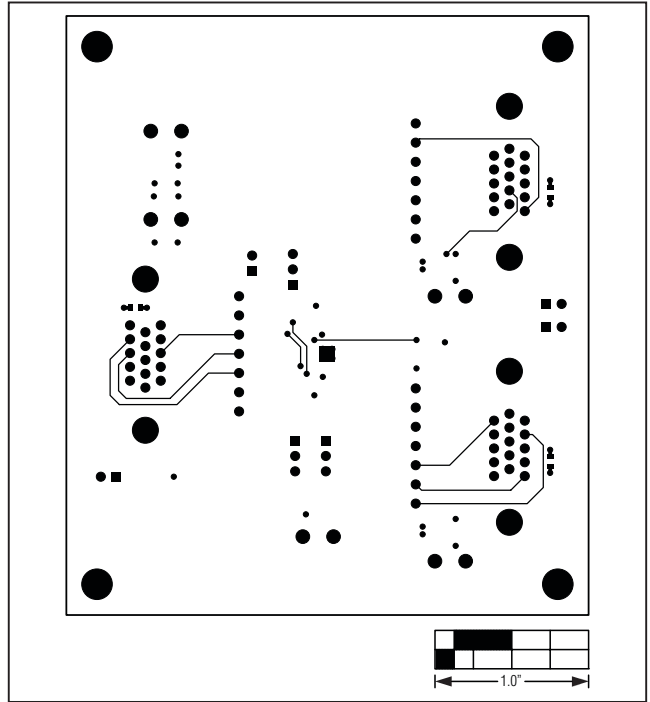


Figure 6. MAX4885AE EV Kit PCB Layout—Solder Side

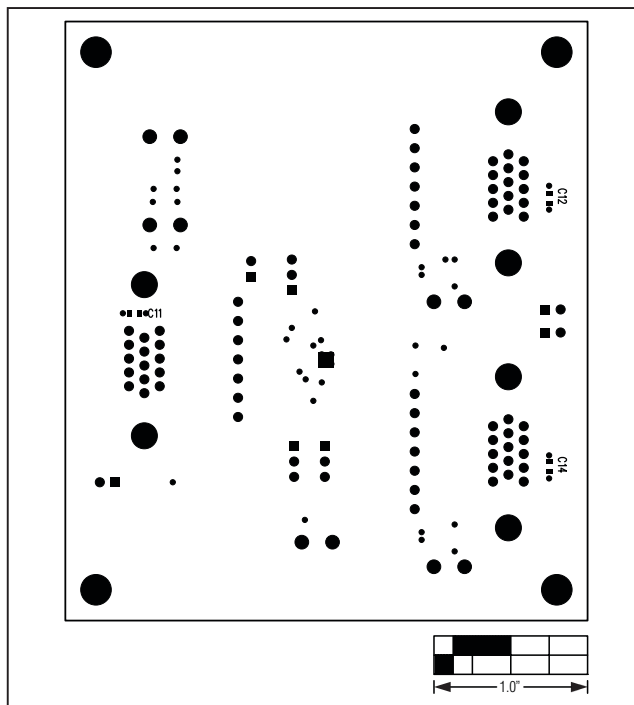


Figure 7. MAX4885AE EV Kit Component Placement Guide—Solder Side

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