

MAX147xx Evaluation Kit

Evaluates: MAX14759, MAX14760, MAX14761,
MAX14762, MAX14763, MAX14764

General Description

The MAX147xx evaluation kit (EV kit) is a fully assembled and tested circuit board for evaluating the MAX14759 and MAX14760 family of beyond-the-rail switches. The EV kit features footprints for both 8-pin and 10-pin TDFN surface-mount packages to evaluate any part in the switch family. These switches operate from a single +3V to +5.5V supply.

The EV kit comes with a MAX14759 single channel switch installed on U1. This EV kit can also be used to evaluate the MAX14760–MAX14764.

Benefits and Features

- +3V to +5.5V Input Supply Range
- Evaluates Single- and Dual-Channel Switches
- ±25V Voltage Signal Input Range
- Proven PCB Layout
- Fully Assembled and Tested

Ordering Information appears at end of data sheet.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C4	2	1µF, 16V ±10% X7R ceramic capacitors (0603) Murata GRM188R71C105K
C2, C3, C5, C6	4	0.1µF, 50V ±10% X7R ceramic capacitors (0603) Murata GRM188R71H104K
JU1–JU3	3	3-pin headers
P1, P3	2	Red test points
P2, P4	2	Black test points

DESIGNATION	QTY	DESCRIPTION
U1	1	Single-channel above- and below-the-rails switch (8 TDFN-EP*) Maxim MAX14759ETA+
U2	1	Dual-channel above- and below-the-rails switch (10 TDFN-EP*) Maxim MAX14761ETA+
—	1	PCB: MAX147xx EVALUATION KIT

*EP = Exposed pad.

Component Supplier

SUPPLIER	PHONE	WEBSITE
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com

Note: Indicate that you are using the MAX147xx when contacting this component supplier.

Table 1. Single-Channel Switch Jumper Description Enable (JU1)

JUMPER	SHUNT POSITION	DESCRIPTION	
		MAX14759/MAX14760	MAX14763/MAX14764
JU1	1-2*	Switch is enabled	A2 connects to B
	2-3	Switch is disabled	A1 connects to B

*Default position.

Table 2. Dual-Channel Switch Jumper Description Enable (JU2, JU3)

JUMPER	SHUNT POSITION	DESCRIPTION
JU2	1-2	Switch A1 is disabled
	2-3*	Switch A1 is enabled
JU3	1-2	Switch A2 is enabled
	2-3*	Switch A2 is disabled

*Default position.

Quick Start

Required Equipment

- MAX147xx EV kit with U1 or U2 installed
- +5V, 50mA power supply
- +25V, 800mA power supply
- Two voltmeters

Procedure

The EV kit is fully assembled and tested. Follow these steps to verify board operation.

- 1) Verify that jumpers JU1, JU2, and JU3 are in their default position as shown in Table 1 and Table 2.
- 2) To evaluate a single-channel switch (U1), connect the +5V supply positive and ground terminals to the VCC1 and GND test points, respectively. To evaluate a dual-channel switch (U2), connect the +5V supply positive and ground terminals to the VCC2 and GND test points, respectively.
- 3) To evaluate a single-channel switch (U1), connect the +25V supply positive and ground terminals to the A2/A and GND test points, respectively. To evaluate a dual-channel switch (U2), connect the +25V supply positive and ground terminals to the A1 and GND test points, respectively.

- 4) Connect a voltmeter at the B (or B1, if using U2) and GND test points.
- 5) Enable the +5V supply.
- 6) Enable the +25V supply.
- 7) Verify that the voltmeter displays +25V.

Detailed Description of Hardware

The MAX147XX EV kit is a fully assembled and tested circuit board demonstrating the single-channel MAX14759/MAX14760/MAX14763/MAX14764 and MAX14761/MAX14762 dual-channel $\pm 25V$ above- and below-the-rails switches. The EV kit operates from a single +3V to +5.5V input voltage supply. These switches integrate bias circuitry to provide a $\pm 25V$ analog voltage range with a single +3V to +5.5V supply. This extended input range allows switching different communications signals such as RS-232, RS-485, audio, and USB 1.1 with a single 3V to 5V supply.

User-Supplied Power Supply

The EV kit is powered from a single +3V to +5.5V power supply connected at the VCC_ and GND test points. The EV kit circuit inputs (A_ and B_) can transmit signals of up to $\pm 25V$.

MAX14759 and MAX14760 Configuration

Jumper JU1 enables/disables the switch across the single-channel SPST MAX14759/MAX14760. See Table 1 for jumper settings to configure the switch.

MAX14761 and MAX14762 Configuration

Jumpers JU2 and JU3 enable/disable the switches across the dual-channel SPST MAX14761/MAX14762. See Table 2 for jumper settings to configure the switches.

MAX14763 and MAX14764 Configuration

Jumper JU1 configures the single-channel SPDT switch across the MAX14763/MAX14764. See Table 1 for jumper settings to configure the switch.

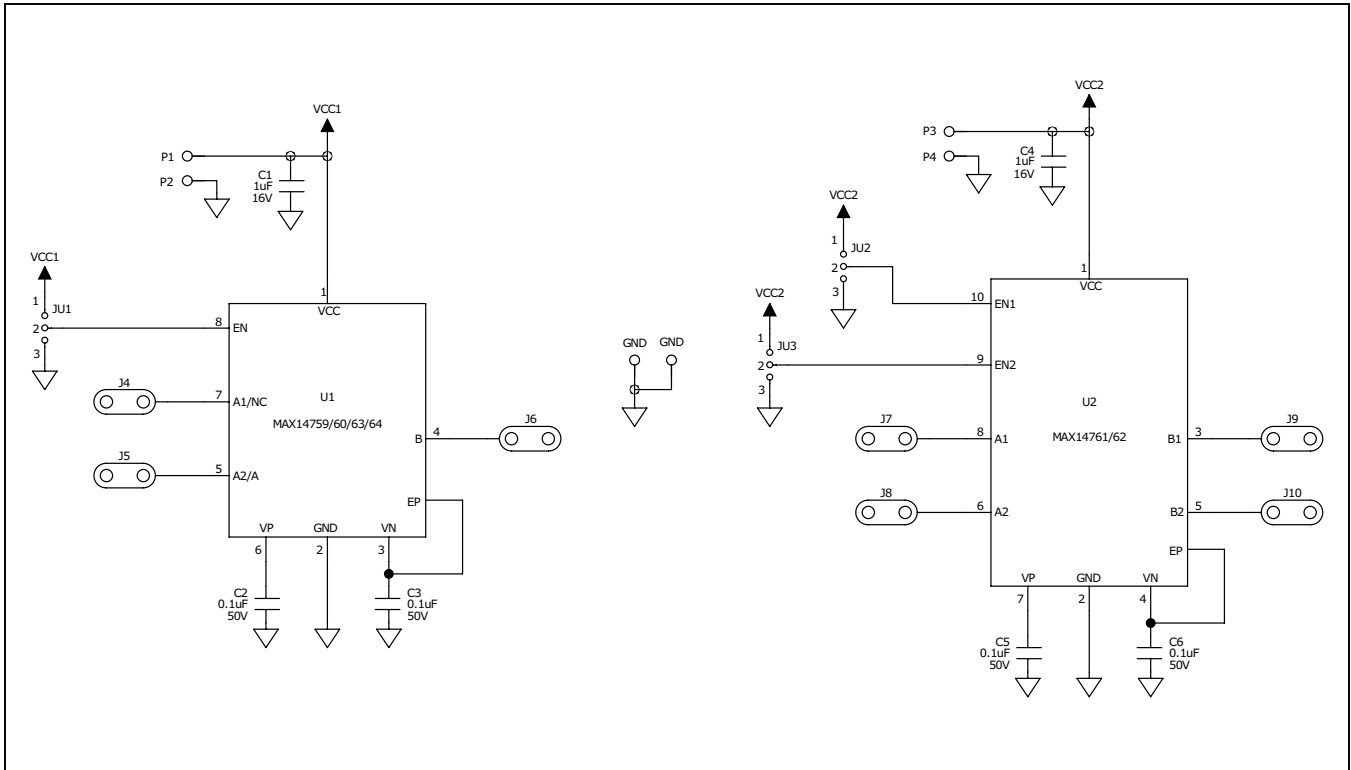


Figure 1. MAX147xx EV Kit Schematic

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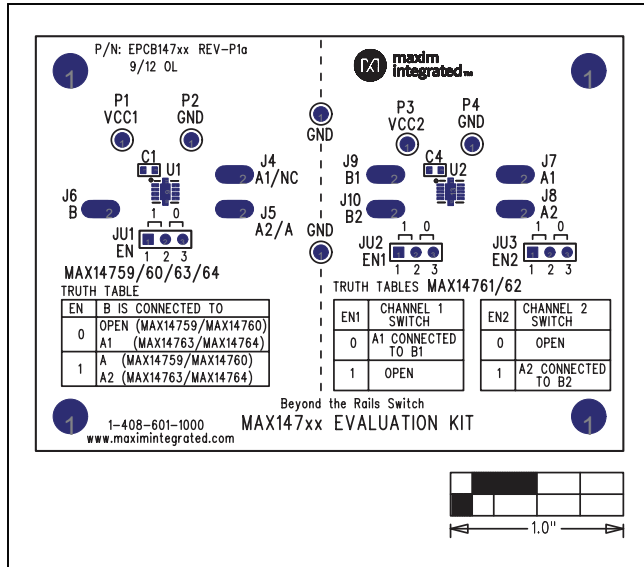


Figure 2. MAX147xx EV Kit Component Placement Guide—Component Side

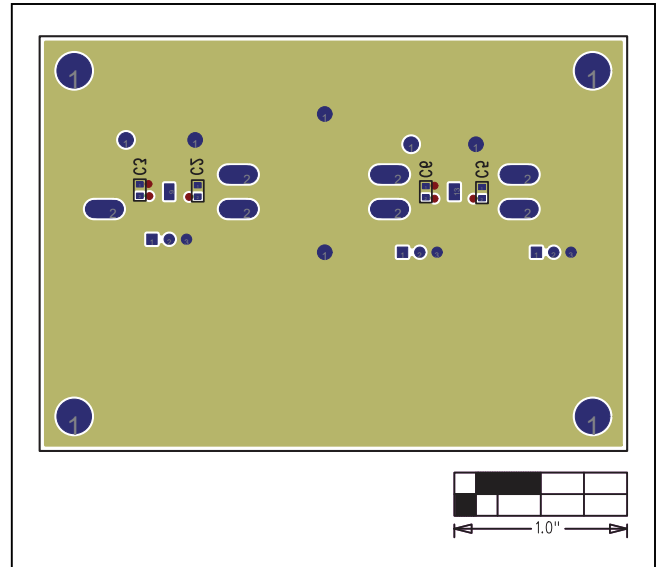


Figure 4. MAX147xx EV Kit PCB Layout—Solder Side

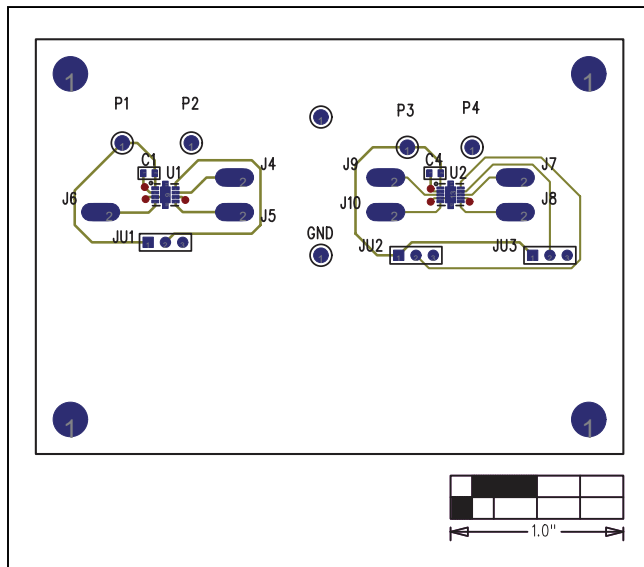


Figure 3. MAX147xx EV Kit PCB Layout—Component Side

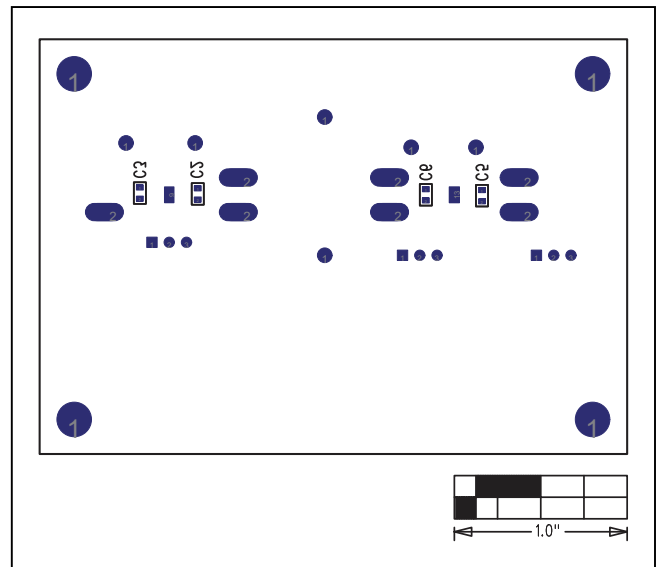


Figure 5. MAX147xx EV Kit Component Placement Guide—Solder Side

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Ordering Information

PART	TYPE
MAX147XXEVKIT#	EV Kit

#Denotes RoHS compliant.

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Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	11/12	Initial release	—

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