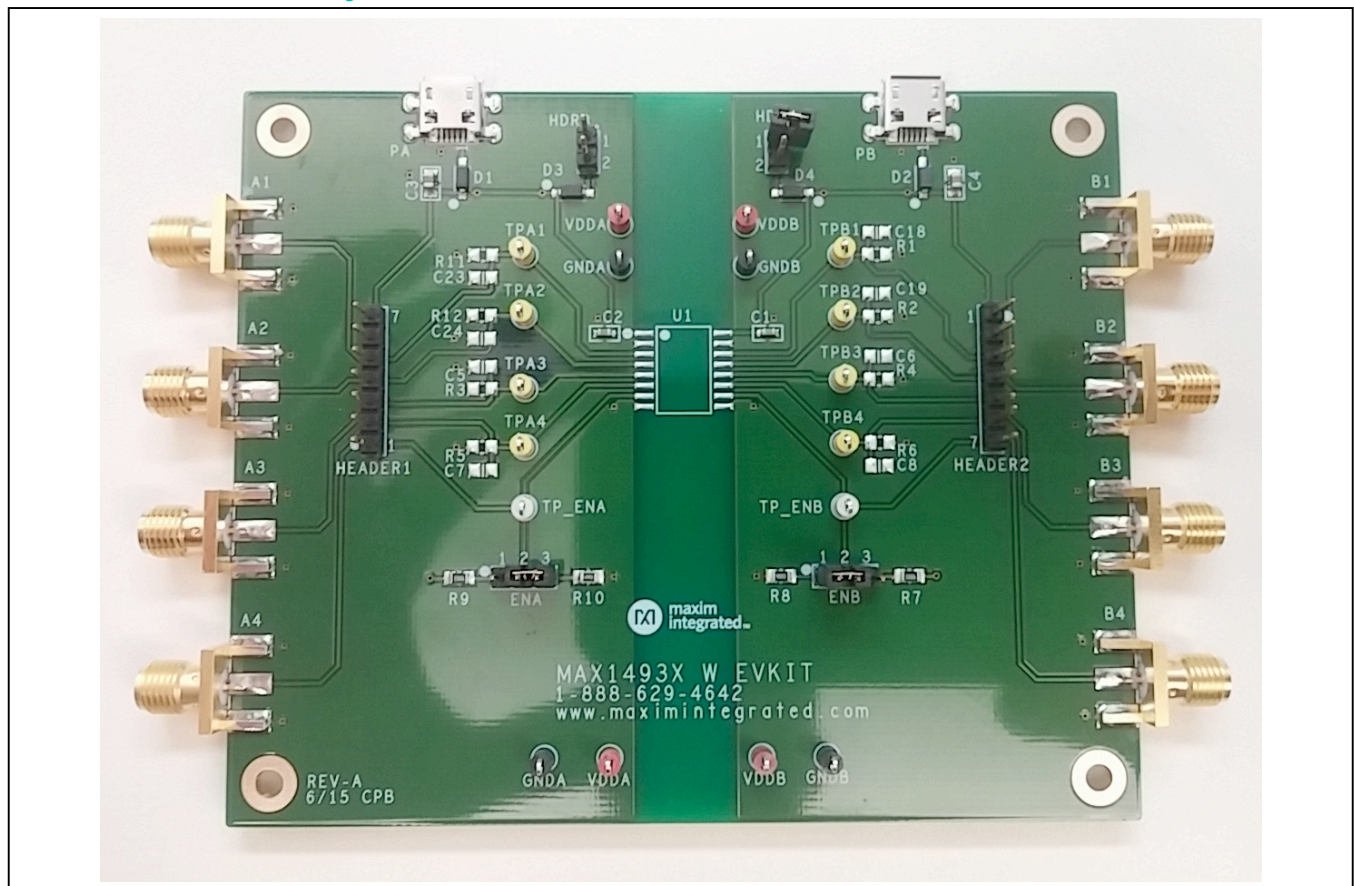# MAX1493X Evaluation Kit

Evaluates: MAX14130, MAX14131, MAX14930, MAX14931, MAX14932, MAX14934, MAX14935, MAX14936

General Description

The MAX1493X evaluation kit (EV kit) demonstrates the functionality of the MAX1493X 4-channel, unidirectional, digital isolators in a 16-pin, SOIC surface-mount package. The functionality and performance of the QSOP versions (MAX1413x) can be tested indirectly by using this EVkit populated with any of the equivalent narrow or wide SOIC (MAX1493x) devices. The functionality and electrical performance of the QSOP versions are identical to their corresponding SOIC versions. The EV kit features two independent isolated power supplies independently adjustable to +5V.

Features

- Ease of Use
  - Easy Powering Through Micro-USB or Test Points
  - SMA Connectors to Connect to External Equipment
- Guaranteed Up to 5kV$_{RMS}$ Isolation
  (for the Wide-Body SOIC Version)
  - Also Evaluates the 2.75KV$_{RMS}$ Versions.

Ordering Information **appears at end of data sheet.**

MAX1493X Wide-Body Evaluation Kit Board Photo

maxim
integrated™

MAX1493X Evaluation Kit

Quick Start

Required Equipment

- MAX1493X EV kit
- MAX1493X device separated sampled
- Two 5V DC power supplies or USB cables with a micro-B connector
- Signal/function generator
- Oscilloscope

Procedure

The MAX1493X EV kit has everything except the DUT installed. The user can install the desired flavor of the MAX1493X family of unidirectional isolators. Once installed, follow the steps below to verify board operation:

1) Connect the DC power supplies between the MAX1493X EV kit's VDDA/VDDB and GNDA/GNDB test points.
2) Turn on the DC power supplies and set to 5V, then enable the power-supply output.
   Note: It is also possible to power the MAX1493X EV kit with standard USB ports. To do so, connect the micro-B-end of the USB cables into PA/PB on the board. Connect the A-end of the USB cable into the USB ports. Please ensure that only one type of supply is used on either side (USB or DC power supply).
3) Connect any signal to the SMA connectors or test points and observe the isolated signal on the other side using an oscilloscope.

Detailed Description of Hardware (or Software)

The MAX1493X EV kit is powered from two +5V supplies, as described below.

External Power Supplies

Power on the MAX1493X EV kit is derived from two +5V sources. Connect external supplies to the +5V and GNDA test points, or connect a micro-B USB cable to the on-board PA/PB connectors to provide the 5V. Both options have a reverse-current protection diode.

The MAX1493X level-shifts the data and control signals, transmitting them across the isolation barrier. Each supply is set independently and can be present over the entire specified range of the device, regardless of the level or presence of the other supply.

Figure 1 is a simplified schematic showing the connections for evaluating the MAX1493X in a simple microprocessor interface. The MAX1493X level-shifts the signals and transmits them across the isolation barrier.
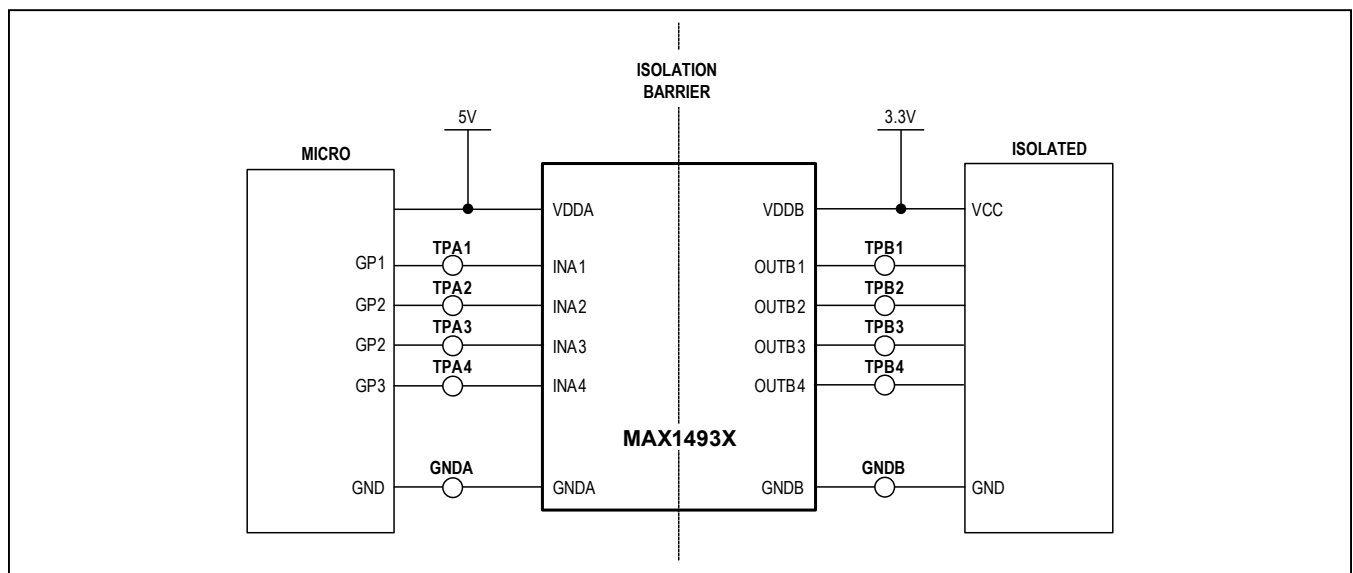

Figure 1. Simplified Schematic Shown for MAX1493X

Termination

Each input and output has an unpopulated resistor and capacitor to GND_ to allow terminating based on customer requirements.

Jumpers

Two jumpers (ENA/ENB) are provided to enable either side of the isolation barrier. These are active-high signals. To enable each side, connect to VDDA/VDDB, respectively.
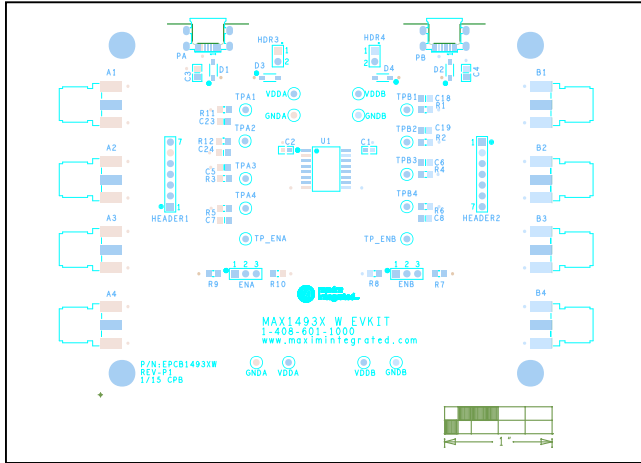

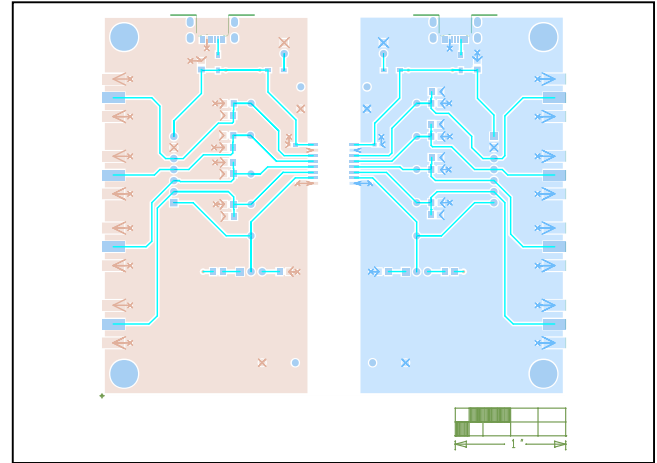Figure 2. MAX1493X EV Kit Component Placement Guide (Top Silkscreen)

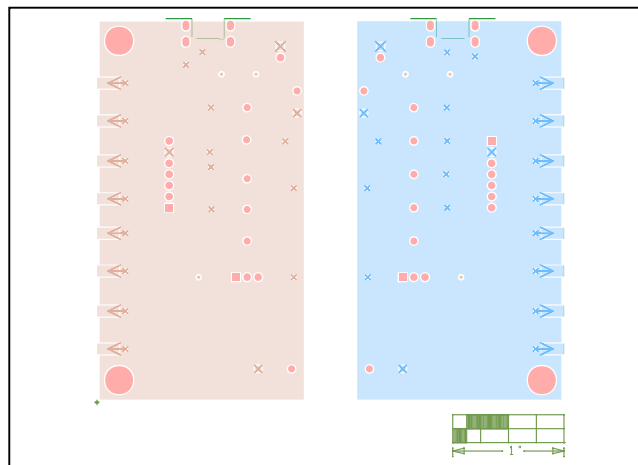Figure 3. MAX1493X EV Kit PCB Layout (Top Layer)

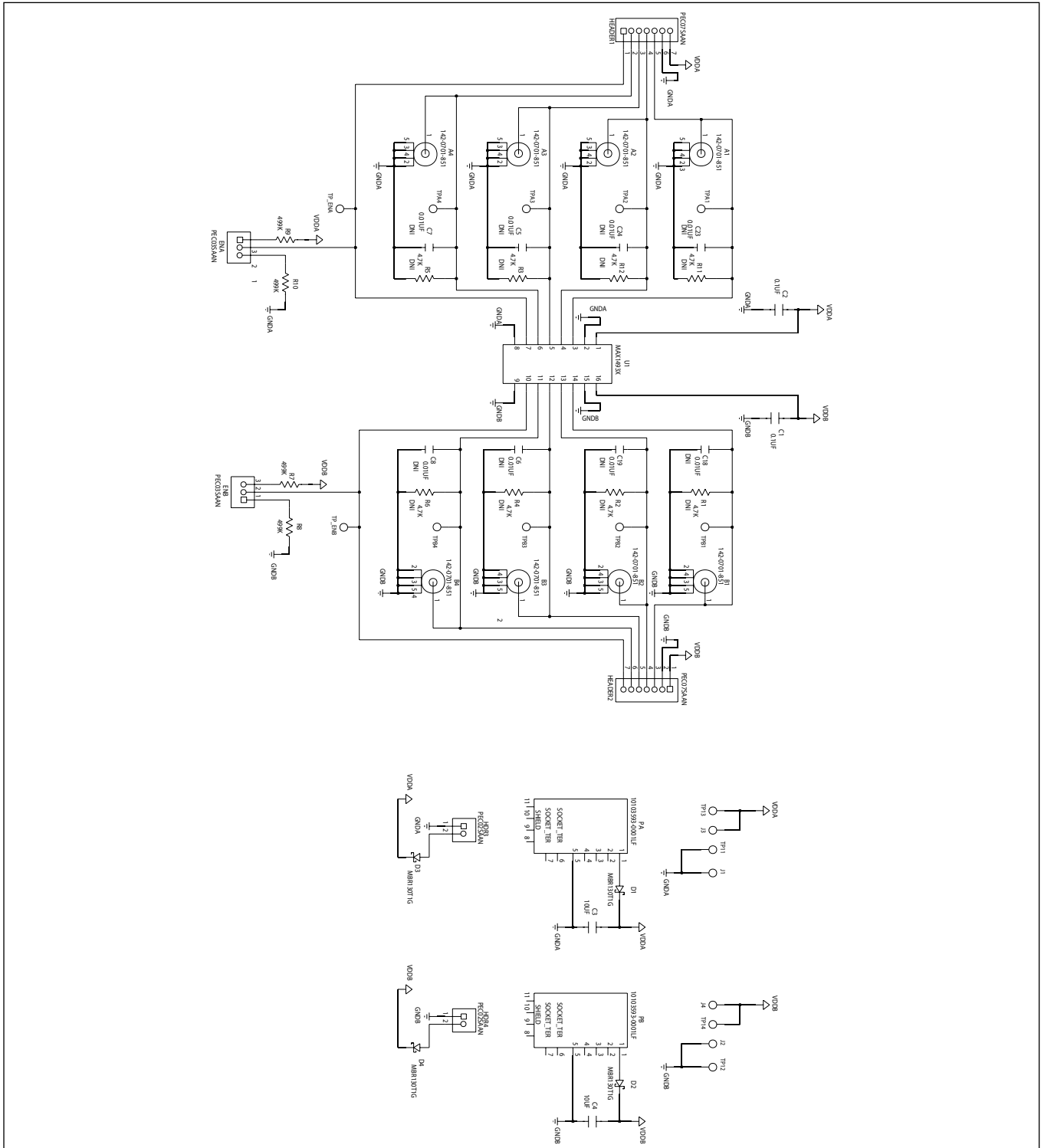Figure 4. MAX1493X EV Kit PCB Layout (Bottom Layer)

MAX1493X EV Schematic

MAX1493X Bill of Materials

PART	QTY	MFG PART #	MOUSER PART NUMBERS	VALUE	COMMENTS
A1-A4, B1-B4	8	142-0701-851	530-142-0701-801	142-0701-851	
C1, C2	2	EMK107BJ104KAH	963-EMK107BJ104KAHT	0.1UF	
C3, C4	2	LMK212F106ZG-T	963-LMK212F106ZG-T	10UF	
D1-D4	4	MBR130T1G	863-MBR130T3G	MBR130T1G	
ENA, ENB	2	961103-6404-AR	517-9611036404AR	PEC03SAAN	
HDR3, HDR4	2	961102-6404-AR	517-9611026404AR	PEC02SAAN	
HEADER1, HEADER2	2	961107-6404-AR	517-9611076404AR	PEC07SAAN	
GNDA, GNDB	4	5001	534-5001	N/A	
VDDA, VDDB	4	5000	534-5000	N/A	
PA,PB	2	10103593-0001LF	649-10103593-0001LF	10103593-0001LF	
R7-R10	4	RCV0805499KFKEA	71-RCV0805499KFKEA	499K	
TPA1–TPA4, TPB1–TPB4	8	5004	534-5004	N/A	
TP_ENA, TP_ENB	2	5002	534-5002	N/A	
	1	EPCB1493XW		PCB	
U1	1	MAX1493X			
SU1-SU4	4	969102-0000-DA	517-9691020000DA	STC02SYAN, JMP	
C5-C8, C18, C19, C23, C24	8	GRM2195C1H103JA01	81-GRM215C1H103JA01D		PACKOUT
R1-R6, R11, R12	8	ERJ-P06J472V	667-ERJ-P06J472V		PACKOUT

Ordering Information

PART	TYPE
MAX1493XWEVKIT#	EVKIT (for wide-body SOIC packages)
MAX1493XSEVKIT#	EVKIT (for narrow-body SOIC packages)

#Denotes RoHS compliant.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	6/15	Initial release	—
1	8/15	Expanded part numbers that this document applies to	1, 2, 4
2	8/16	Added MAX14130 and MAX14131 part numbers	1–6