

MAX20337 Evaluation Kit

Evaluates: MAX20337

General Description

The MAX20337 evaluation kit (EV kit) is a fully assembled and tested circuit board that evaluates the MAX20337 beyond-the-rails SPDT analog switches. The EV kit comes with the MAX20337ENT+ installed.

The EV kit features evaluation of the analog switches through audio jack inputs and outputs, as well as SMA connectors for AC characteristics. Input power to the EV kit is provided by a Micro-USB, type-B connector, or an external power supply.

Features

- USB Power Option
- SMA and 3.5mm Audio Jack Connectors
 - Directly Evaluate AC Characteristics Through SMA Connectors
 - Quickly Evaluate Audio Performance with 3.5mm Audio Jack Connectors
- Proven PCB Layout
- Fully Assembled and Tested

EV Kit Contents

- EV Kit Board containing a MAX20337

Ordering Information appears at end of data sheet.

Quick Start

Required Equipment

- MAX20337 EV kit
- USB Cable or Power Supply
- Audio source (e.g., MP3 player, computer, etc.)
- External speakers or headphones with 3.5mm audio jack

Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- 1) Connect a USB cable to J1 or power VB (TP1) with 5V power supply.
- 2) Verify that jumper JU4 has a shunt installed shorting pins 2–3. This shorts the control bit (CB) on the devices to ground, electrically connecting NC1 to COM1 and NC2 to COM2.
- 3) J2 is now connected to J3. Connect an audio source to the normally closed audio jack J2, using a male-to-male 3.5mm audio cable.
- 4) Connect external speakers or headphones to the common audio jack J3.
- 5) When the audio source outputs the audio signal and JU4 has a shunt shorting pins 2-3, the audio signal should be heard on the speakers or headphones connected at J3.
- 6) Move the shunt on JU4 from pins 2–3 to pins 1–2. Now CB is high, and J4 is connected to J3. The audio signal should no longer be heard on the speakers or headphones connected at J3.
- 7) If the audio source connection moves from the normally closed audio jack (J2) to the normally open audio jack (J4), the audio signal on the common audio jack (J3) is heard on the speakers or headphones.

Detailed Description

The MAX20337 EV kit is a fully assembled and tested circuit board evaluating the MAX20337 SPDT switches in a 6-bump WLP package.

Power Supply

The EV kit is powered by a user-supplied 1.6V to 5.5V external DC power supply connected between VEXT (TP3) and GND, the raw USB bus supplied at the micro-USB connector (J1), or the regulated output of the LDO (U3) that is powered by the USB bus.

Table 1. Power Supply Jumper Settings

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	1–2*	V _{CCEN} is connected to VCC
	2–3	V _{CCEN} is connected to ground
JU2	1–2	VCC is connected to VEXT (TP3). Supply from external power supply.
	3–4*	VCC is connected to V _{HH} , output of LDO
	5–6	VCC is connected to V _B , supply from USB bus
JU3	1–2*	LDO output set to 1.8V
	3–4	LDO output set to 2.5V
	5–6	LDO output set to 3.3V
	7–8	LDO output variable
JU4	1–2	CB is high. COM is connected to NO. J4 is connected to J3.
	2–3*	CB is low. COM is connected to NC. J2 is connected to J3.

*Default Position

Ordering Information

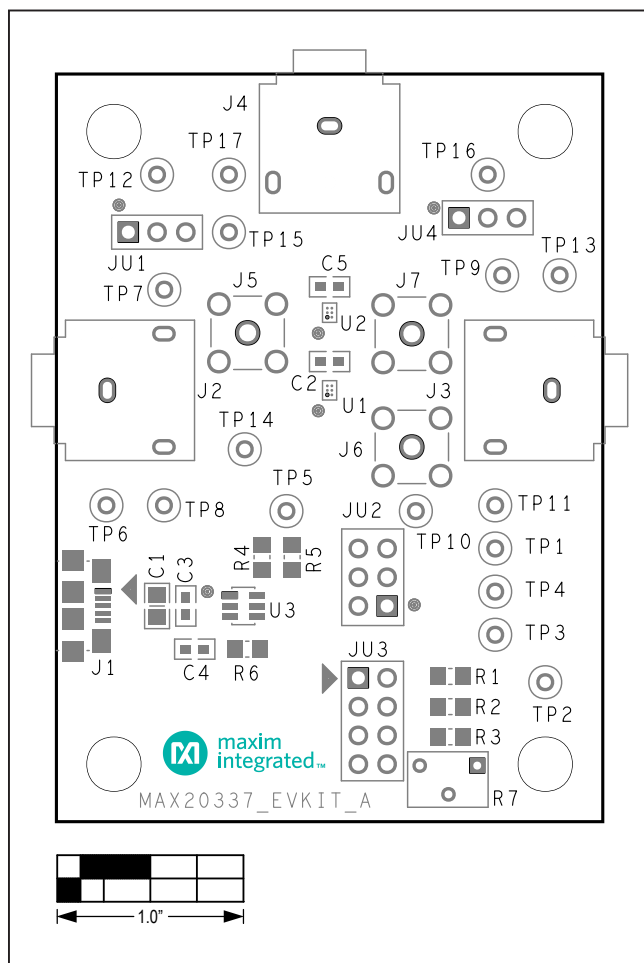
PART	TYPE
MAX20337EVKIT#	EV Kit

#Denotes RoHS compliant.

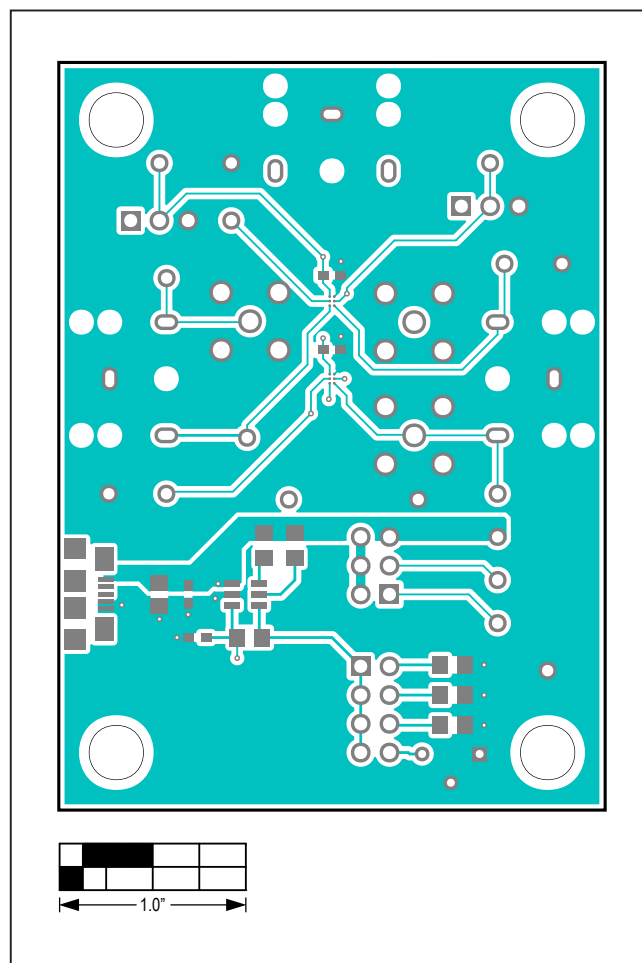
MAX20337 EV Kit Bill of Materials

ITEM	REF_DEB1:E16S	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	1	GRM21BR71E155KA	MURATA	1.5µF	CAPACITOR; SMT (0805); CERAMIC CHIP; 1.5µF; 25V; TOL = 10%; MODEL = X7R; TG = -55°C TO +125°C; TC = ±
2	C2, C5	2	885012206071; CGJ3E2X7R1E104K080AA; C1608X7R1E104K080AA; C0603C104K3RAC; GRM188R71E104KA01; C1608X7R1E104K; 06033C104KAT2A; CGA3E2X7R1E104K080AA	WURTH ELECTRONICS INC; TDK; TDK; KEMET; AVX; TDK	0.1µF	CAPACITOR; SMT; 0603; CERAMIC; 0.1µF; 25V; 10%; X7R; -55°C to +125°C; ±15% from -55°C to +125°C
3	C3	1	C1608X5R1V225K080AC; GRM188R6YA225KA12	TDK; MURATA	2.2µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 2.2µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
4	C4	1	C1608X5R1V475K080AC	TDK	4.7µF	CAP; SMT (0603); 4.7µF; 10%; 35V; X5R; CERAMIC CHIP
5	J1	1	ZX62-B-5PA(33)	HIROSE ELECTRIC CO LTD.	ZX62-B-5PA(33)	CONNECTOR; MALE; SMT; USB MICRO B-TYPE; BOTTOM MOUNT; RIGHT ANGLE; 5PINS
6	J2-J4	3	SJ1-3523NG	CUI INC.	SJ1-3523NG	CONNECTOR; FEMALE; THROUGH HOLE; 3.5MM NO SWITCH JACK STEREO, RIGHT ANGLE; 3PINS
7	J5-J7	3	73391-0060	MOLEX	73391-0060	CONNECTOR; FEMALE; THROUGH HOLE; SMA JACK CONNECTOR; STRAIGHT; 5PINS
8	JU1, JU4	2	PEC03SAAN	SULLINS	PEC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
9	JU2	1	PEC03DAAN	SULLINS ELECTRONICS CORP.	PEC03DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 6PINS; -65°C TO +125°C
10	JU3	1	PEC04DAAN	SULLINS ELECTRONICS CORP.	PEC04DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 8PINS
11	R1	1	CRCW0805232KFK; ERJ-6ENF2323	VISHAY; PANASONIC	232K	RESISTOR; 0805; 232KΩ; 1%; 100PPM; 0.125W; THICK FILM
12	R2, R4-R6	4	CRCW0805100KFK; RK73H2ATD1003; ERJ-6ENF1003	VISHAY DALE; KOA SPEER; PANASONIC	100K	RESISTOR; 0805; 100K; 1%; 100PPM; 0.125W; THICK FILM
13	R3	1	ERJ-6ENF6192	PANASONIC	61.9K	RESISTOR; 0805; 61.9KΩ; 1%; 100PPM; 0.125W; THICK FILM
14	R7	1	PV37W504C01B00	BOURNS	500K	RES; THROUGH HOLE-RADIAL LEAD; 500K; 10%; ±150PPM/°C; 0.25W
15	SPACER1- SPACER4	4	9032	KEYSTONE	9032	MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON
16	TP1, TP3-TP5, TP12	5	5000	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; RED; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
17	TP2, TP6, TP10, TP13, TP17	5	5001	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
18	TP7-TP9, TP11, TP14-TP16	7	5002	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
19	U1, U2	2	MAX20337ENT+	MAXIM	MAX20337ENT+	EVKIT PART - IC; MAX20337; PACKAGE OUTLINE NUMBER: 21-100308; PACKAGE CODE: N60K1+1
20	U3	1	MAX8880EUT+	MAXIM	MAX8880EUT+	IC; VREG; ULTRA-LOW-IQ LOW-DROPOUT LINEAR REGULATOR WITH POK; SOT23-6
21	PCB	1	MAX20337	MAXIM	PCB	PCB:MAX20337
TOTAL		48				

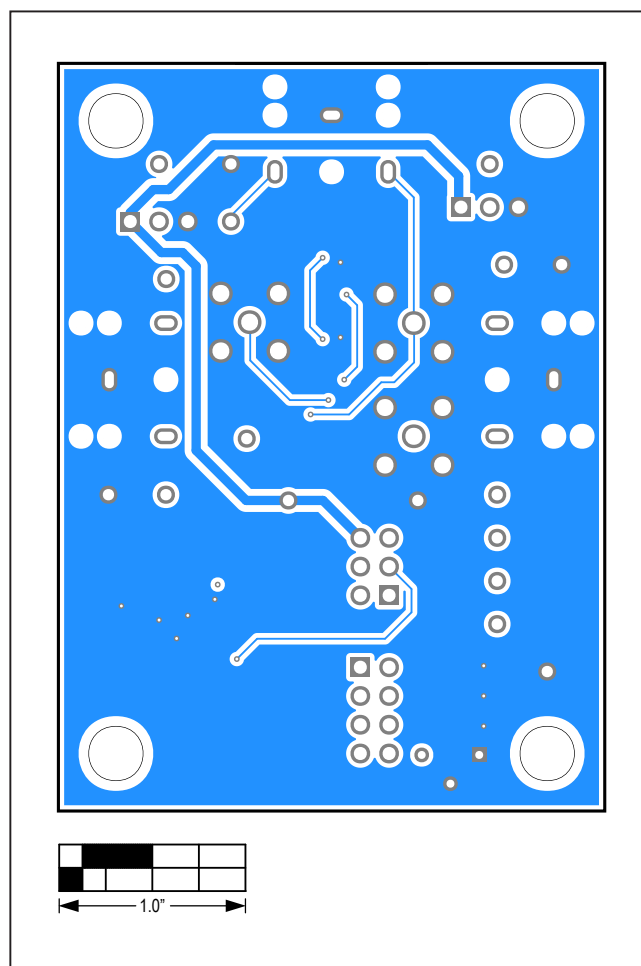
MAX20337 EV Kit PCB Layout Diagrams



MAX20337 EV Kit PCB Layout Diagram—Top Silkscreen



MAX20337 EV Kit PCB Layout Diagram—Top View

MAX20337 EV Kit PCB Layout Diagrams (continued)*MAX20337 EV Kit PCB Layout Diagram—Bottom View*

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	12/20	Initial release	—
1	1/21	Updated the title	1–7

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