

MAX20330A Evaluation Kit

Evaluates: MAX20330A

General Description

The MAX20330A evaluation kit (EV kit) is a fully assembled and tested circuit board that demonstrates the MAX20330A HV-capable ID detection device. The EV kit comes with the MAX20330AEWA+ installed.

Features

- USB or 3.5mm Jack ID Detection
- Factory Mode Detection
- Proven PCB Layout
- Fully Assembled and Tested

EV Kit Contents

- EV Kit Board Containing a MAX20330A

Quick Start

Required Equipment

- MAX20330A EVKIT
- Power supply
- I²C master
- 150k Ω resistor
- Multimeter

Procedure

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

- 1) Connect a 5V power supply on VCC TP12. Check that LED1 is on.
- 2) Connect an I²C master to SDA and SCL on the EV kit. The device slave address is 1010111.
- 3) Remove the JU4 shunt, install the shunt on JU10. Check OVLO_ENb (0x02 bit0) is 1. The device is enabled.

- 4) Change the shunt on JU2 to 2–3 position.
- 5) Write 0 to FM_ENb (0x01 bit1).
- 6) Connect a 150k Ω resistor between ID TP22 and ground.
- 7) Check that register 0x09 is 00001000 (ID resistor is in factory mode range).
- 8) Connect 3V to ID. Verify that VBAT is now also 3V.

Detailed Description

The MAX20330A EV kit is a fully assembled and tested circuit board demonstrating the MAX20330A ID detector in an 8-bump wafer-level package (WLP).

VCC Power Supply

The V_{CC} can be connected from different power supply sources or externally supplied from TP12. ([Table 1](#))

USB/Audio ID Detection

The EV kit can be configured for USB micro-B or 3.5mm Jack ID detection. ([Table 2](#))

I²C Communication

Use JU5, JU6, JU7, JU8, and JU9 to have I²C pins pulled up to selected supply. User needs to provide I²C master to communicate with the device. The slave address is 1010 111. ([Table 3](#))

Enable

Use JU10 to enable the device. For USB configuration, the user can use external test point TP11 to enable the device or install shunts on JU3 and JU10. ([Table 4](#))

[Ordering Information](#) appears at end of data sheet.

Table 1. V_{CC} Jumper Setting

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	1-2	VCC is connected to 5V
	1-3	VCC is connected to VBAT
	1-4*	VCC is connected to VMC

*Default Position

Table 2. USB/Audio Jumper Setting

JUMPER	SHUNT POSITION	DESCRIPTION
JU2	1-2*	Configure to audio
	2-3	Configure to USB
JU3	Installed*	Configure to audio
	Not installed	Configure to USB
JU4	Installed*	Configure to audio
	Not installed	Configure to USB

*Default Position

Table 3. I²C Jumper Setting

JUMPER	SHUNT POSITION	DESCRIPTION
JU5	Installed	SCL is pulled up
	Not installed*	SCL is not pulled up
JU6	Installed	SDA is pulled up
	Not installed*	SDA is not pulled up
JU7	Installed	INT is pulled up
	Not installed*	INT is not pulled up
JU8	Installed	I ² C lines pullup to VMC
	Not installed*	I ² C lines not pullup to VMC
JU9	Installed	I ² C lines pullup to V _{CC}
	Not installed*	I ² C lines not pullup to V _{CC}

*Default Position

Table 4. JU10 Jumper Setting

JUMPER	SHUNT POSITION	DESCRIPTION
JU10	Installed	Install shunts on JU3 and JU10 to enable the device (ENB to ground)
	Not installed*	ENB is not to ground

*Default Position

Ordering Information

PART	TYPE
MAX20330AEVKIT#	EV Kit

#Denotes RoHS compliant.

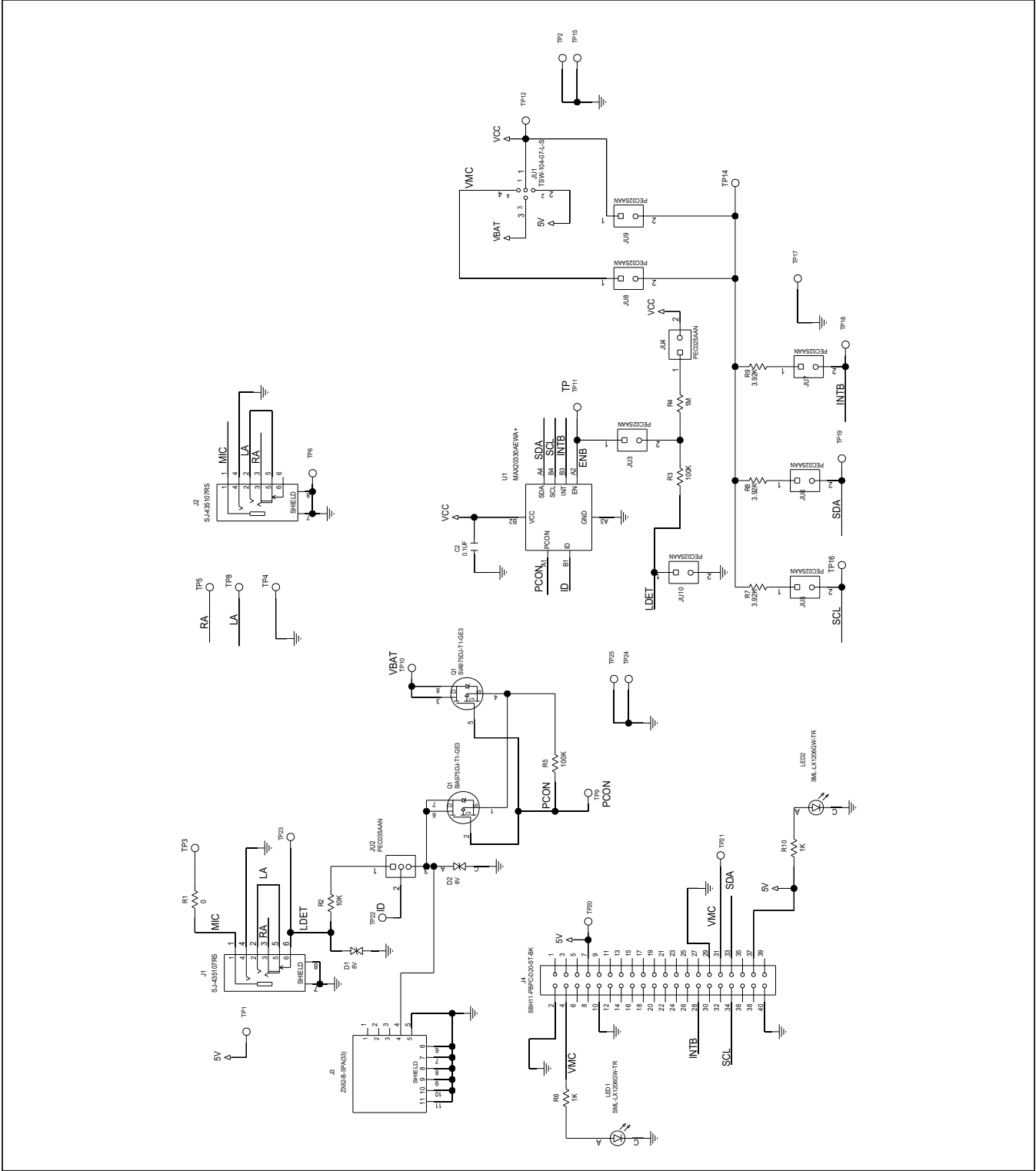
MAX20330A EV Kit Bill of Materials

ITEM	REF_DES	QTY	MFG PART #	MFG	VALUE	DESCRIPTION
1	C2	1	C0603C104KGRAC; C1608X7R1H104K	KEMET;TDK	0.1UF	CAPACITOR; SMT (0603); CERAMIC CHIP; 0.1UF; 50V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R;
2	D1, D2	2	RCLAMP082(P,TCT	SEMTECH	8V	DIODE; TVS; SMT; VRM=8V; IPP=4A
3	J1, J2	2	SJ-435107RS	CUI INC.	SJ-435107RS	CONNECTOR; FEMALE; THROUGH HOLE; SJ-435107 SERIES; 3.5 MM AUDIO JACK; RIGHT ANGLE; 6PINS
4	J3	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; WITH OPTION TO CONNECT SHIELD PINS
5	J4	1	SBH11-PBPC-D20-ST-BK	SULLINS ELECTRONICS CORP.	SBH11-PBPC-D20-ST-BK	CONNECTOR; MALE; THROUGH HOLE; HEADER CONNECTOR; STRAIGHT; 40PINS; EDGE FOOTPRINT
6	JU1	1	TSW-104-07-L-S	SAMTEC	TSW-104-07-L-S	EVKIT PART-CONNECTOR; MALE; THROUGH HOLE; TSW SERIES; SINGLE ROW; STRAIGHT; 4PINS
7	JU2	1	PEC03SAAN	SULLINS	PEC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
8	JU3-JU10	8	PEC02SAAN	SULLINS	PEC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS
9	LED1, LED2	2	SML-LX1206GW-TR	LUMEX OPTOCOMPONENTS INC	SML-LX1206GW-TR	DIODE; LED; STANDARD; GREEN; SMT (1206); PIV=2.2V; IF=0.02A; -40 DEGC TO +85 DEGC
10	Q1	1	SIA975DJ-T1-GE3	VISHAY SILICONIX	SIA975DJ-T1-GE3	TRAN; DUAL P-CHANNEL (D-S) MOSFET; PCH; SC70; PD-(7.8W); I-(4.5A); V-(-12V)
11	R1	1	CRCW08050000Z0EAHP	VISHAY DRALORIC	0	RESISTOR; 0805; 0 OHM; 0%; JUMPER; 0.5W; THICK FILM
12	R2	1	CRCW080510K0FK; MCR10EZHF1002; ERJ-6ENF1002V; RC0805FR-0710KL	VISHAY DALE; ROHM SEMICONDUCTOR; MURATA; YAGEO	10K	RESISTOR; 0805; 10K; 1%; 100PPM; 0.125W; THICK FILM
13	R3, R5	2	CRCW0805100KF; RK73H2 ATTD1003; ERJ-6ENF1003V	VISHAY DALE; KOA SPEER; PANASONIC	100K	RESISTOR; 0805; 100K; 1%; 100PPM; 0.125W; THICK FILM
14	R4	1	CRCW08051M00FK; RC0805FR-071ML	VISHAY DALE; YAGEO PHICOMP	1M	RESISTOR; 0805; 1M; 1%; 100PPM; 0.125W; THICK FILM
15	R6, R10	2	CRCW08051K00FK; ERJ-6ENF1001V; MCR10EZHF1001; RC0805FR-071KL	VISHAY DALE; PANASONIC; ROHM; YAGEO	1K	RESISTOR; 0805; 1K; 1%; 100PPM; 0.125W; THICK FILM
16	R7-R9	3	CRCW08053K92FK; MCR10EZHF3921	VISHAY DALE; ROHM	3.92K	RESISTOR; 0805; 3.92K OHM; 1%; 100PPM; 0.125W; THICK FILM

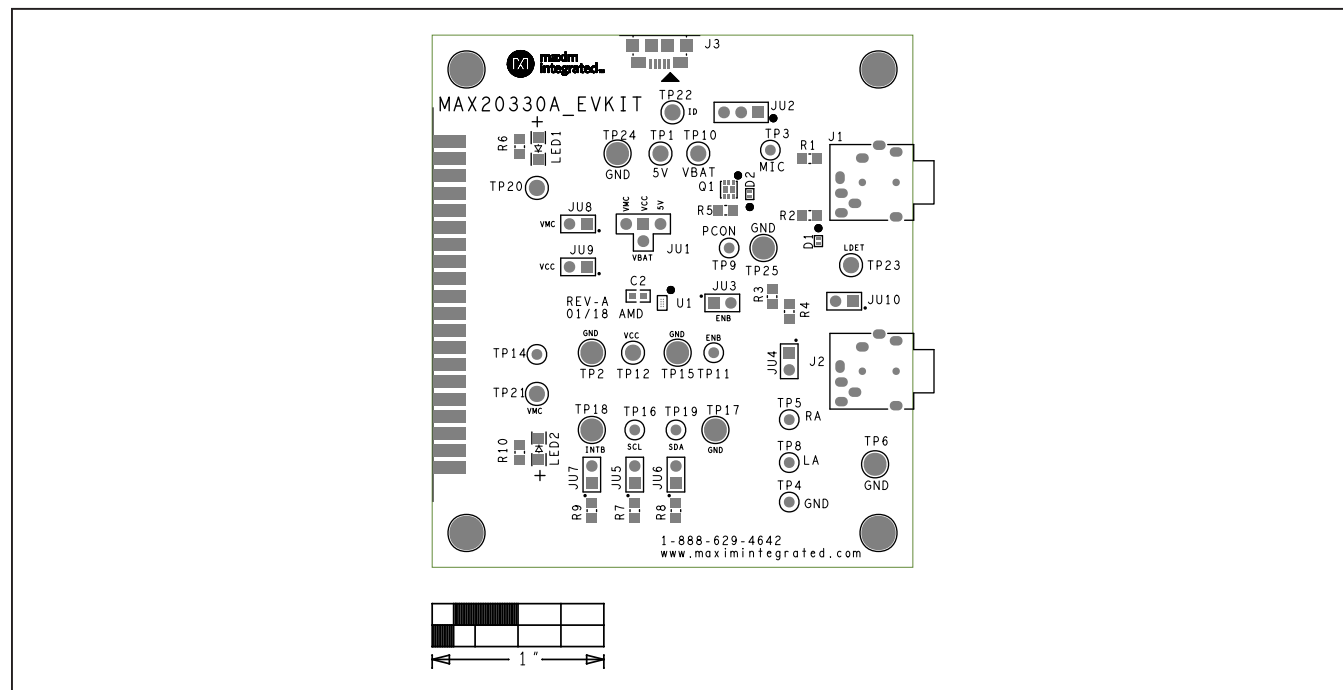
MAX20330A EV Kit Bill of Materials (continued)

ITEM	REF DES	QTY	MFG PART #	MFG	VALUE	DESCRIPTION
17	TP2, TP6, TP15, TP17, TP24, TP25	6	5011	KEystone	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
18	TP3, TP5, TP14	3	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;
19	TP4	1	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;
20	TP8	1	5004	KEystone	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; YELLOW; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
21	TP9	1	5119	KEystone	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; PURPLE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
22	TP1, TP12, TP20-TP23, TP10	7	5010	KEystone	N/A	TEST POINT WITH 1.80MM HOLE DIA, RED, MULTIPURPOSE, NOT FOR COLD TIE
23	TP11, TP19	2	5117	KEystone	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; BLUE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
24	TP16	1	5116	KEystone	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; GREEN; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
25	TP18	1	5013	KEystone	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; ORANGE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
26	U1	1	MAX20330AEWA+	MAXIM	MAX20330AEWA+	EVKIT PART - IC; DET; PRECISION HV CAPABLE ID DETECTOR;
27	PCB	1	MAX	MAXIM	PCB	MAX20330A; PACKAGE OUTLINE: 21-100229; PACKAGE CODE: W81B1+1; WLP8
TOTAL		55				PCB: MAX
NOTE: DNI--> DO NOT INSTALL (PACKOUT); DNP--> DO NOT PROCURE						

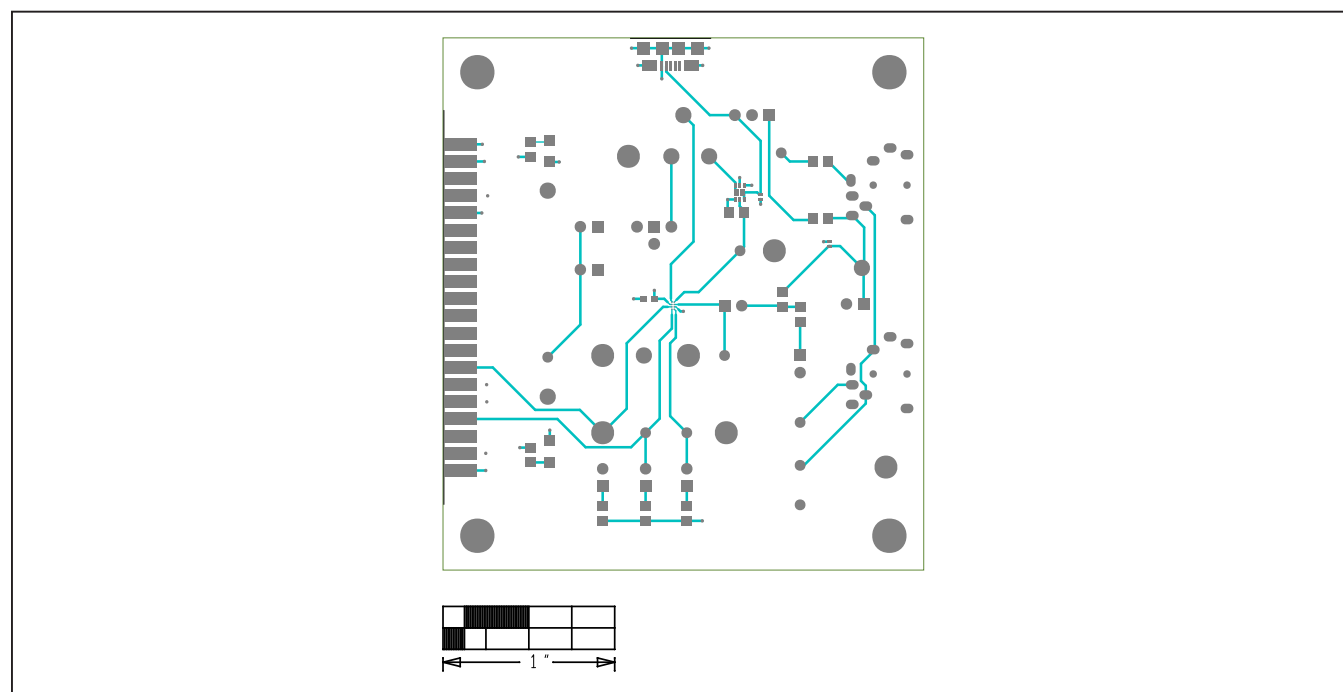
MAX20330A EV Kit Schematic



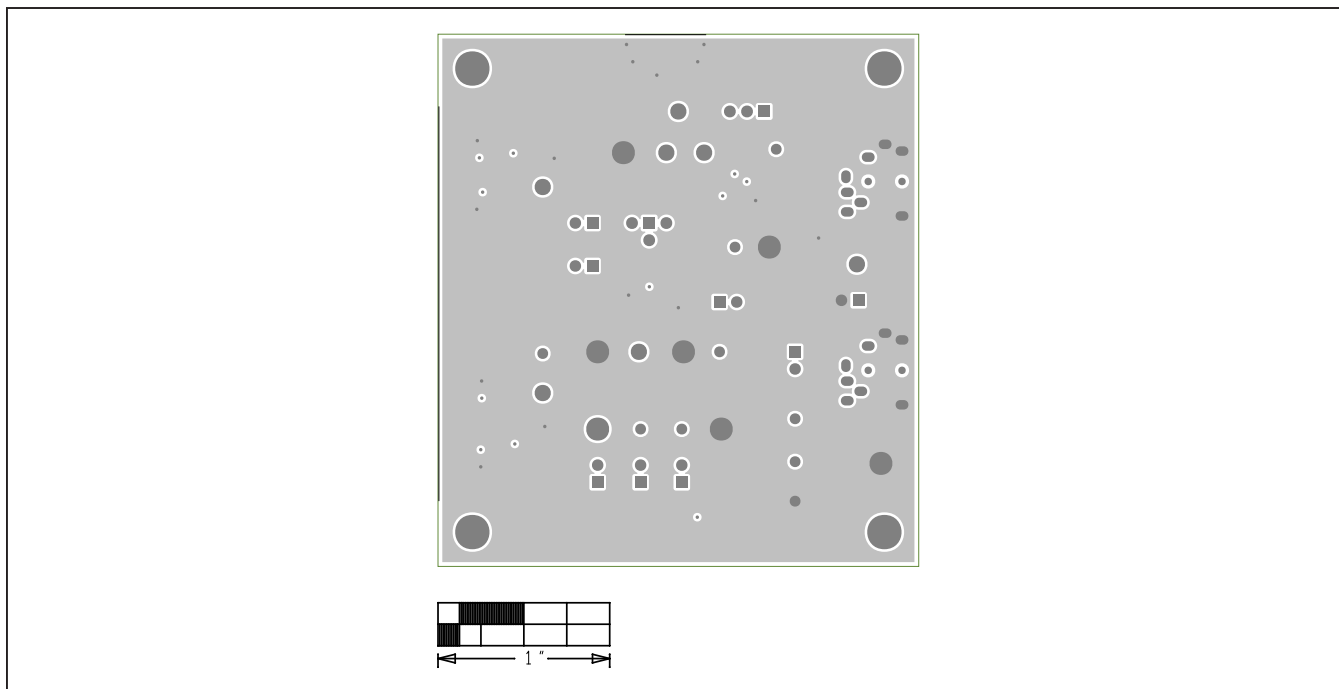
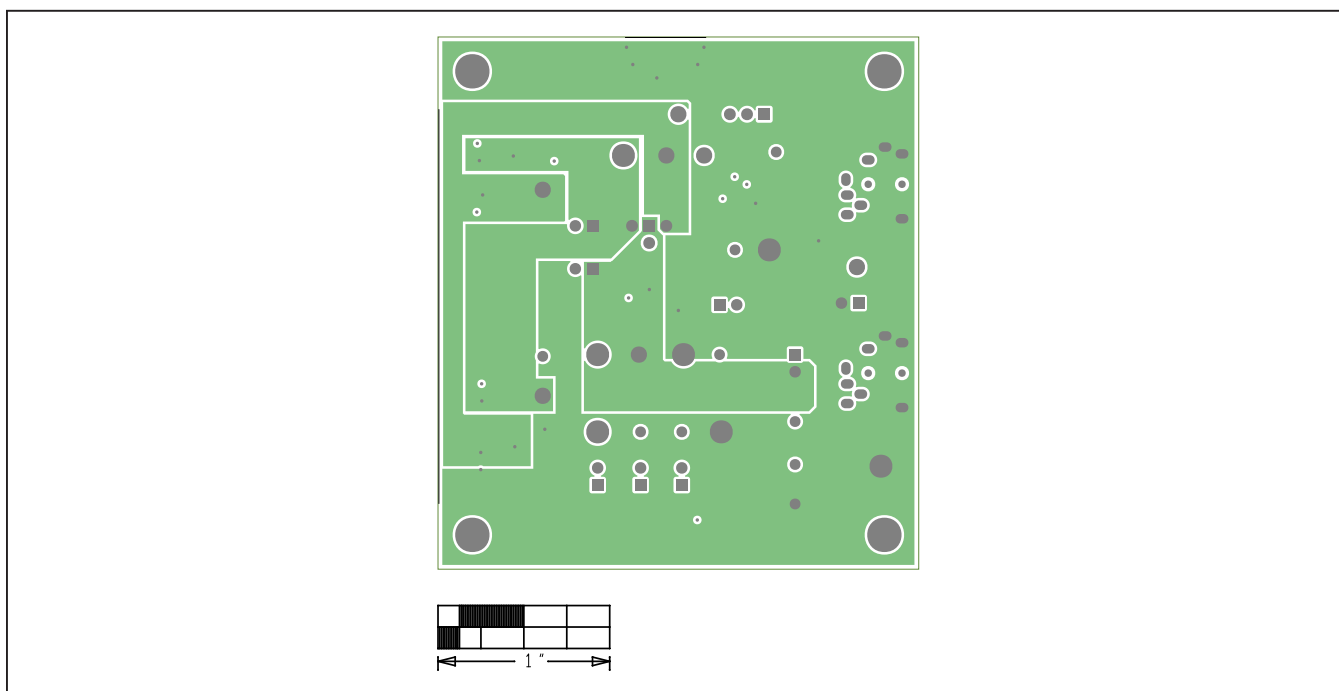
MAX20330A EV PCB Layout Diagrams



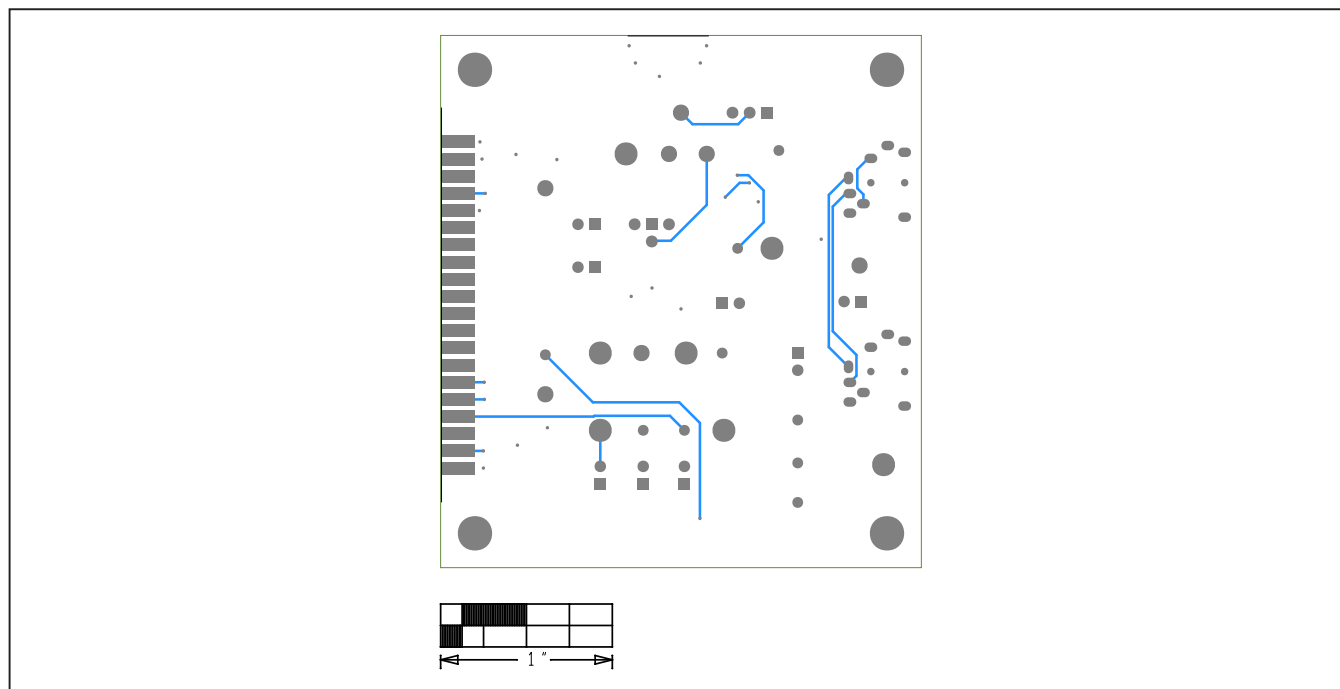
MAX20330A EV Kit—Top Silkscreen



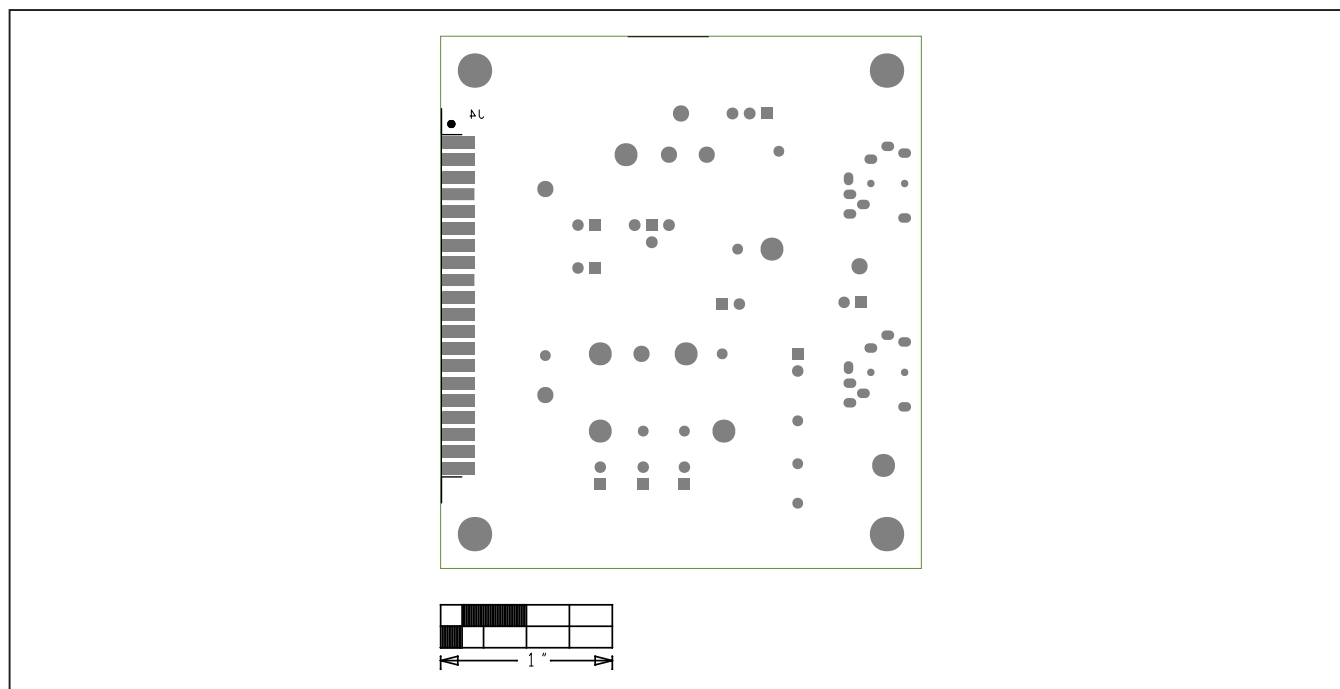
MAX20330A EV Kit—Top

MAX20330A EV PCB Layout Diagrams (continued)*MAX20330A EV Kit—Layer 2**MAX20330A EV Kit—Layer 3*

MAX20330A EV PCB Layout Diagrams (continued)



MAX20330A EV Kit—Bottom



MAX20330A EV Kit—Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	9/18	Initial release	—
1	2/19	Added <i>Quick Start</i> section	1

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