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
- 150kΩ 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 150kΩ 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).

V_{CC} 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.**

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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. I^2C 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	$\overline{INT}$ is pulled up
	Not installed*	$\overline{INT}$ is not pulled up
JU8	Installed	I^2C lines pullup to VMC
	Not installed*	I^2C lines not pullup to VMC
JU9	Installed	I^2C lines pullup to V_{CC}
	Not installed*	I^2C 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.

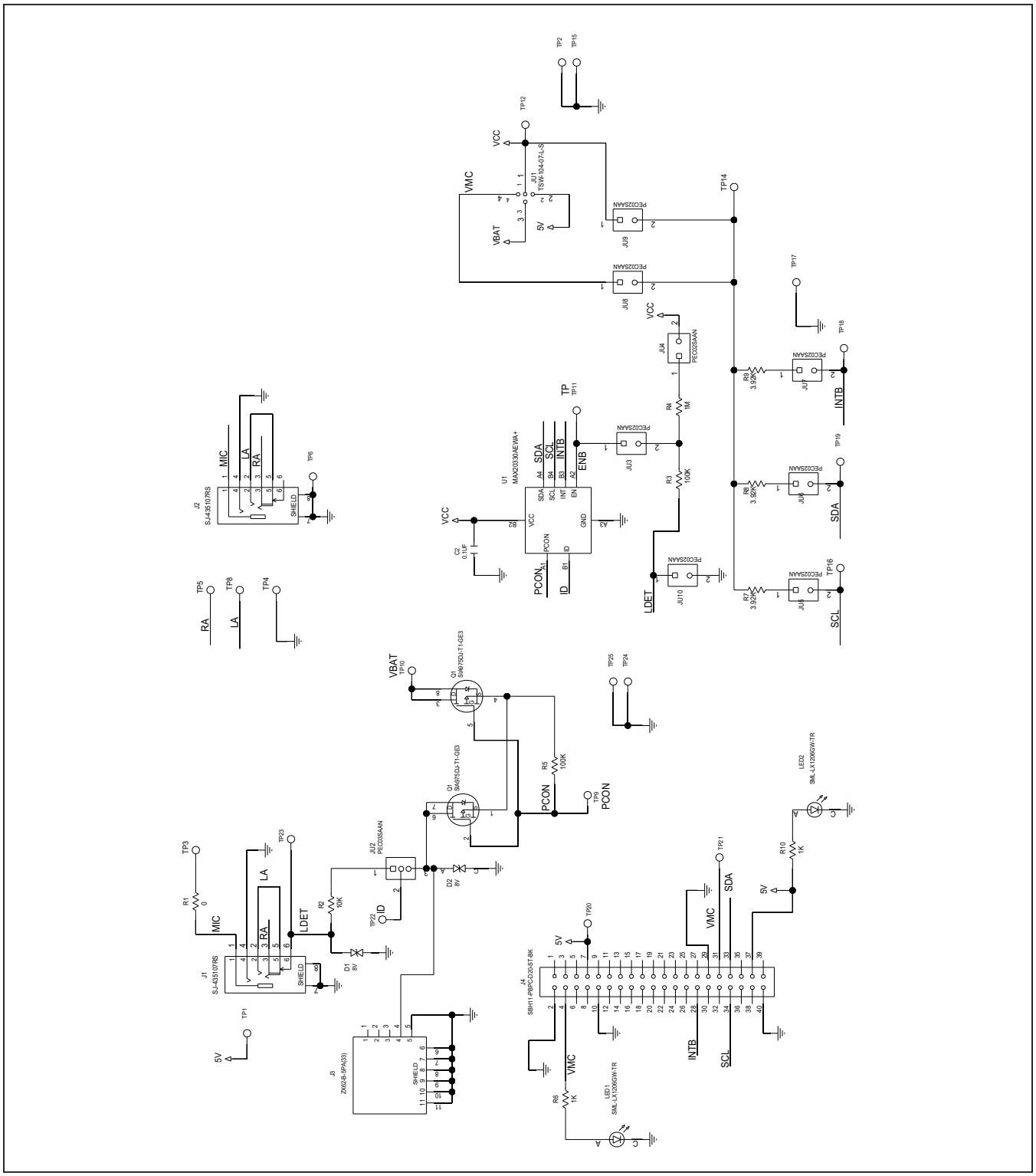
MAX20330A EV Kit Bill of Materials

ITEM	REF_DES	QTY	MFG PART #	MFG	VALUE	DESCRIPTION
1	C2	1	C0603C104K5RAC; 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	RCLAMP0821P.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	CRCW0805100KFK;RK73H2ATTD1003;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

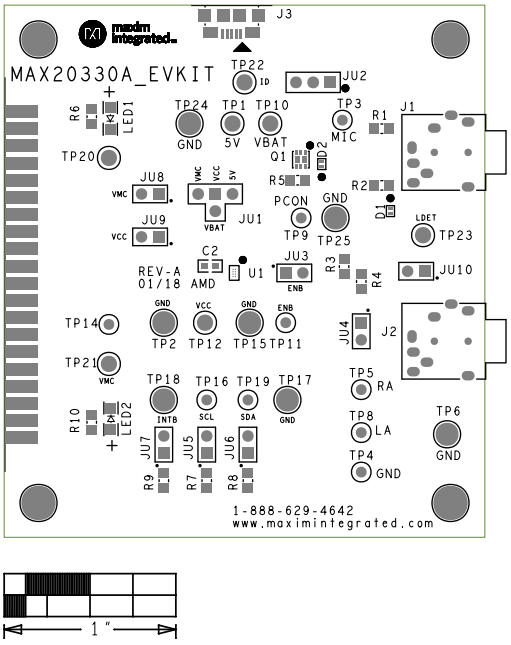
MAX20330A EV Kit Bill of Materials (continued)

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	TESTPOINTWITH1.80MMHOLEDIA,RED,MULTIPURPOSE;NOTFORCOLDTEST
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; MAX20330A; PACKAGE OUTLINE: 21-100229; PACKAGE CODE: W81B1+1; WLP8
27	PCB	1	MAX	MAXIM	PCB	PCB:MAX
TOTAL		55				
NOTE: DNI--> DO NOT INSTALL(PACKOUT) ; DNP--> DO NOT PROCURE						

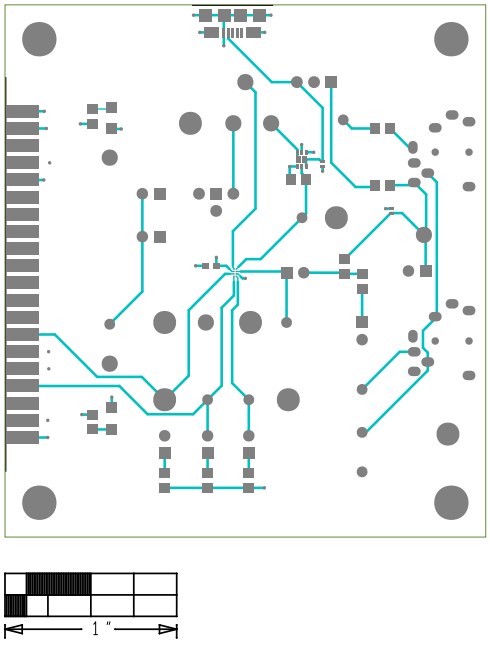
MAX20330A EV Kit Schematic



MAX20330A EV PCB Layout Diagrams

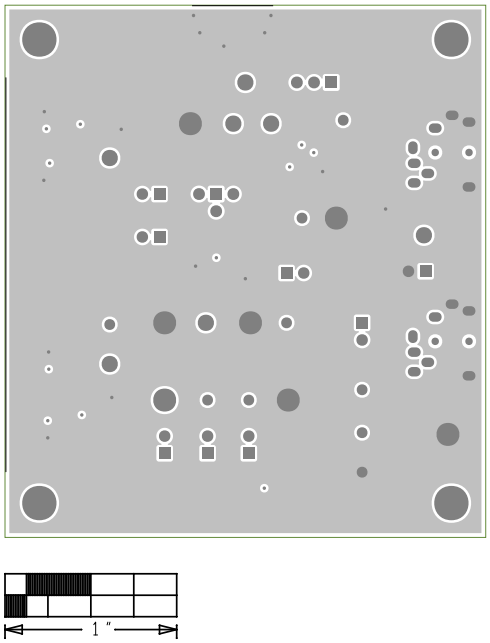


MAX20330A EV Kit—Top Silkscreen

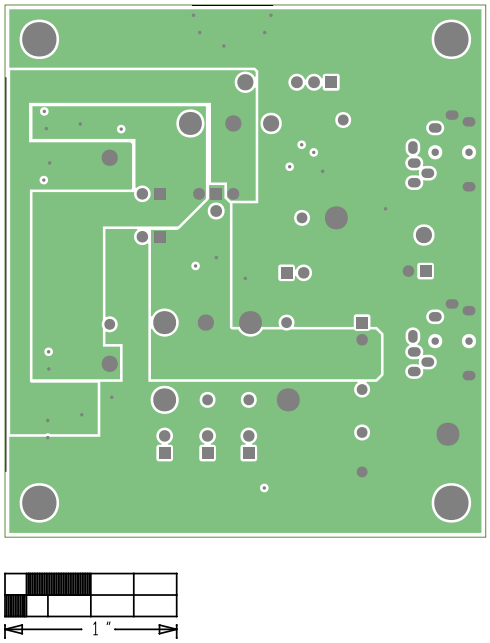


MAX20330A EV Kit—Top

MAX20330A EV PCB Layout Diagrams (continued)

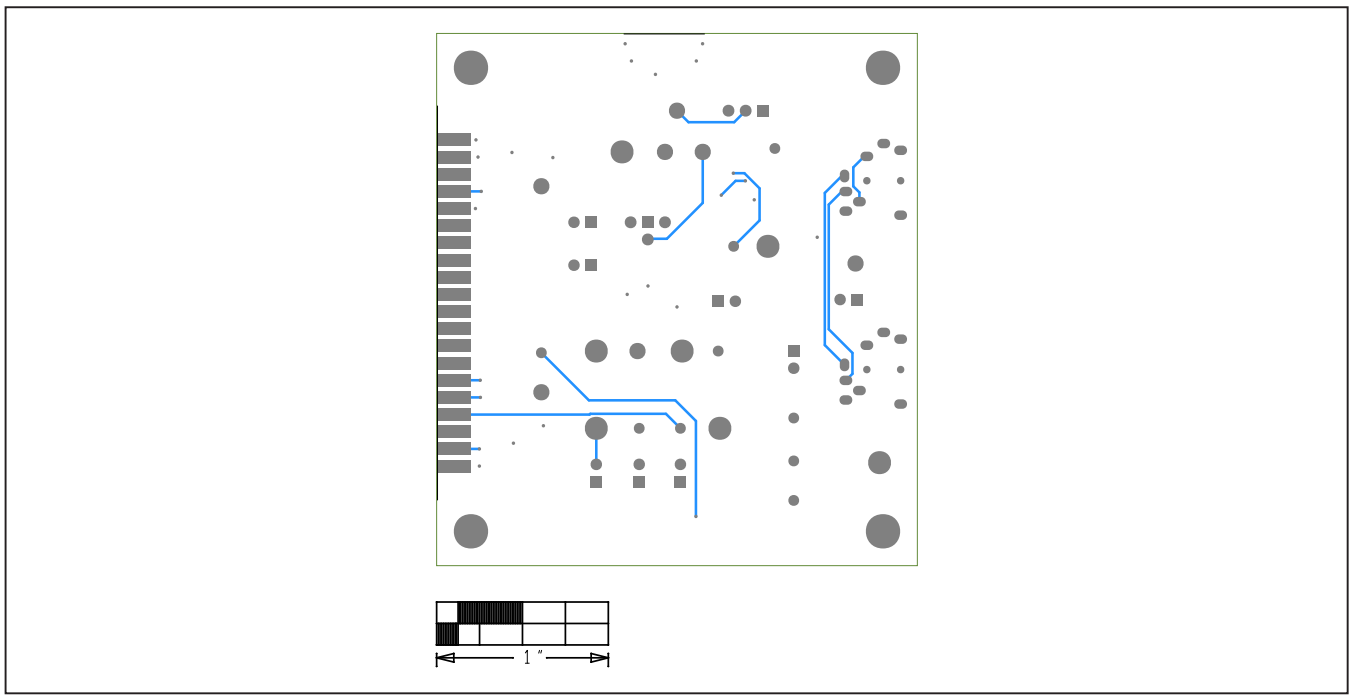


MAX20330A EV Kit—Layer 2

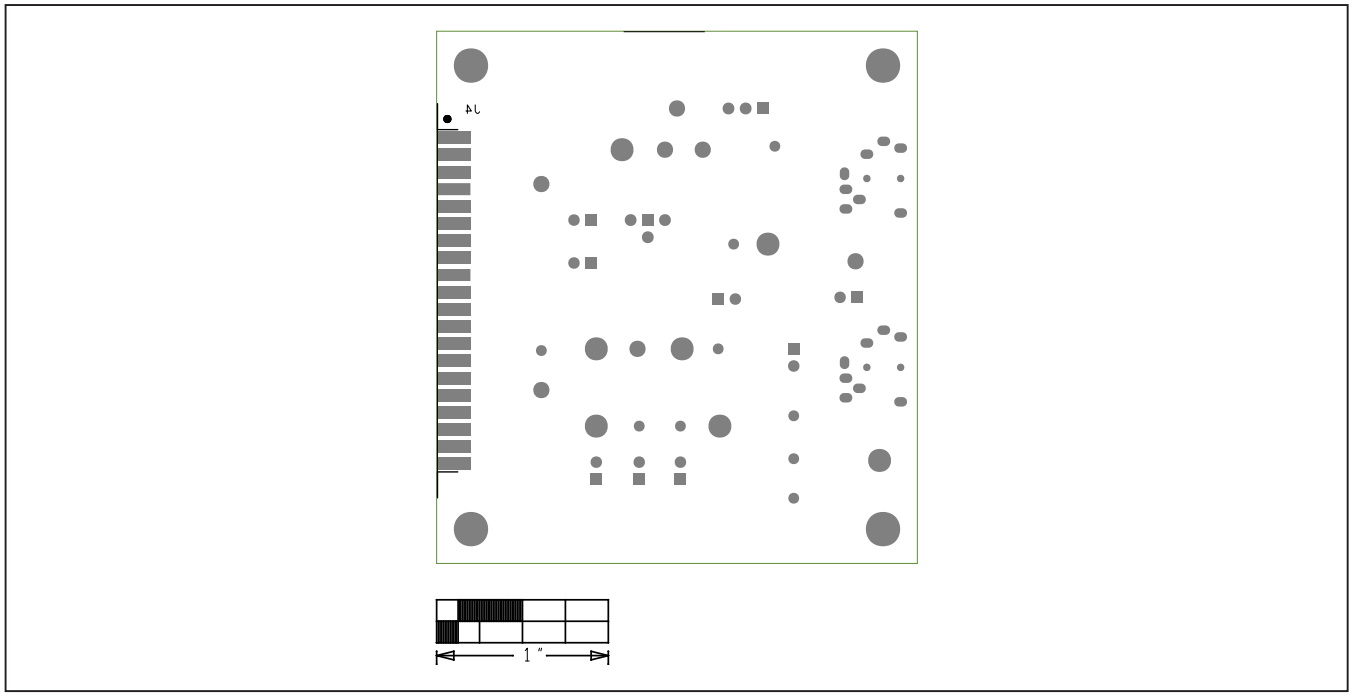


MAX20330A EV Kit—Layer 3

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 *Quick Start* section	1

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