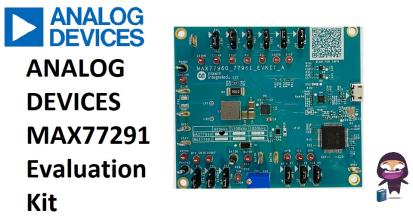
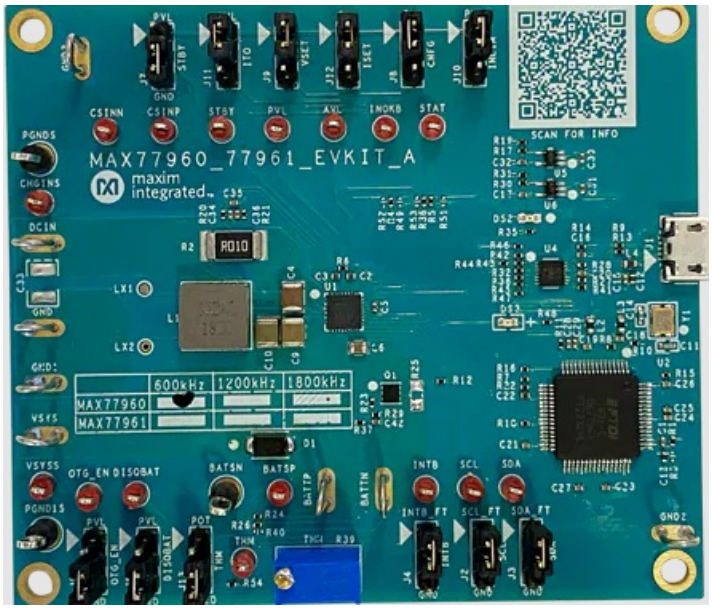


ANALOG DEVICES MAX77291 Evaluation Kit Owner's Manual

Contents

ANALOG DEVICES MAX77291 Evaluation Kit



- Product: MAX77291 Evaluation Kit
- Evaluates: MAX77291
- Input Range: 1.8V to 5.5V
- Output Voltage Range: 5.5V to 20V
- Peak Inductor Current Limit: 100mA
- Features: True ShutdownTM, Short-Circuit Protection

Product Usage Instructions

Quick Start
Required Equipment

- MAX77291 Evaluation Kit (fully assembled and tested)
- Power supply
- Digital Voltmeter (DVM)

Procedure

1. Verify that a shunt is installed on pins 1 and 2 of jumpers JU1 (EV kit enabled).
2. Connect the power supply between the IN and nearest GND terminal posts.
3. Connect the DVM between the OUT and nearest GND terminal posts.
4. Set the power supply to 4.5V and turn it on.
5. Verify that the voltage at the OUT-terminal post is approximately 12V.

Detailed Description of Hardware

The MAX77291 EV kit evaluates the MAX77291 IC, a high-efficiency, low-quiescent current, step-up DC-DC converter with True ShutdownTM and short-circuit protection. The kit operates over an input range of 1.8V to 5.5V and provides output voltages from 5.5V to 20V. It comes pre-configured for a 12V output.
The kit includes jumper JU1 for enabling or disabling the MAX77291. Refer to Table 1 for JU1 jumper settings.

FAQ

- **Q: What is the default output voltage configuration of the MAX77291 EV kit?**

  A: The EV kit comes configured for a 12V output.

MAX77291 Evaluation Kit

General Description

The MAX77291 evaluation kit (EV kit) evaluates the MAX77291 IC packaged in a wafer-level package (WLP). The MAX77291 is a low quiescent-current boost (step-up) DC-DC converter with a 100mA peak inductor current limit, True Shutdown™, and short-circuit protection. The EV kit operates over an input range of 1.8V to 5.5V and provides resistor-configurable output voltages from 5.5V to 20V. The EV kit comes with the MAX77291ANT+ installed.

Features and Benefits

- Evaluates the MAX77291 IC
- 1.27mm x 0.87mm 6-Bump WLP (3 x 2, 0.4mm Pitch) Package
- 1.8V to 5.5V Input Range
- 5.5V to 20V Configurable Output Voltage
- Up to 100mA Input Peak Current
- Proven 2-layer, 1.5oz Copper Printed Circuit Board (PCB) Layout
- Demonstrates Compact Solution Size

MAX77291 EV kit Files

FILE	DESCRIPTION
MAX77291 WLP EVKIT A	EV kit Bill of Materials
MAX77291 WLP EVKIT A PCB LAYOUT	EV kit PCB Layout Diagrams
MAX77291 WLP EVKIT A SCHEMATIC	EV kit Schematic Diagram

Quick Start Required Equipment

- MAX77291 EV kit
- 1.8V to 5.5V, 1A DC Power Supply
- Digital Voltmeter (DVM)

Procedure
The EV kit is fully assembled and tested. Follow the steps below to verify board operation.
Caution:
Do not turn on the power supply until all connections are completed.

1. verify that a shunt is installed on pins 1 and 2 of jumpers JU1 (EV kit enabled).
2. Connect the power supply between the IN and nearest GND terminal posts.
3. Connect the DVM between the OUT and nearest GND terminal posts.
4. Set the power supply to 4.5V and turn it on.

5. Verify that the voltage at the OUT-terminal post is approximately 12V.
6. Ordering Information appears at end of data sheet.

MAX77291 EV kit Photo

True Shutdown is a trademark of Maxim Integrated Products, Inc.

Detailed Description of Hardware

The MAX77291 EV kit evaluates the MAX77291 IC. The MAX77291 is a high-efficiency, low-quiescent current, step-up DC-DC converter with True Shutdown™ and short-circuit protection. True Shutdown disconnects the output from the input with no forward or reverse current. The MAX77291 EV kit operates over an input range of 1.8V to 5.5V. The EV kit provides resistor-configurable output voltages from 5.5V to 20V. The EV kit comes with the MAX77291ANT+ installed and is configured for a 12V output.
The MAX77291 EV kit provides a jumper JU1 to enable or disable the MAX77291. See Table 1 for JU1 jumper settings.

Table 1. EN (JU1) Jumper Settings

SHUNT POSITION	DESCRIPTION
1-2*	Enabled. EN = IN*
2-3	Disabled. EN = GND

Ordering Information

PART	TYPE
MAX77291EVKIT#	EV kit

MAX77291 EV Kit Bill of Materials

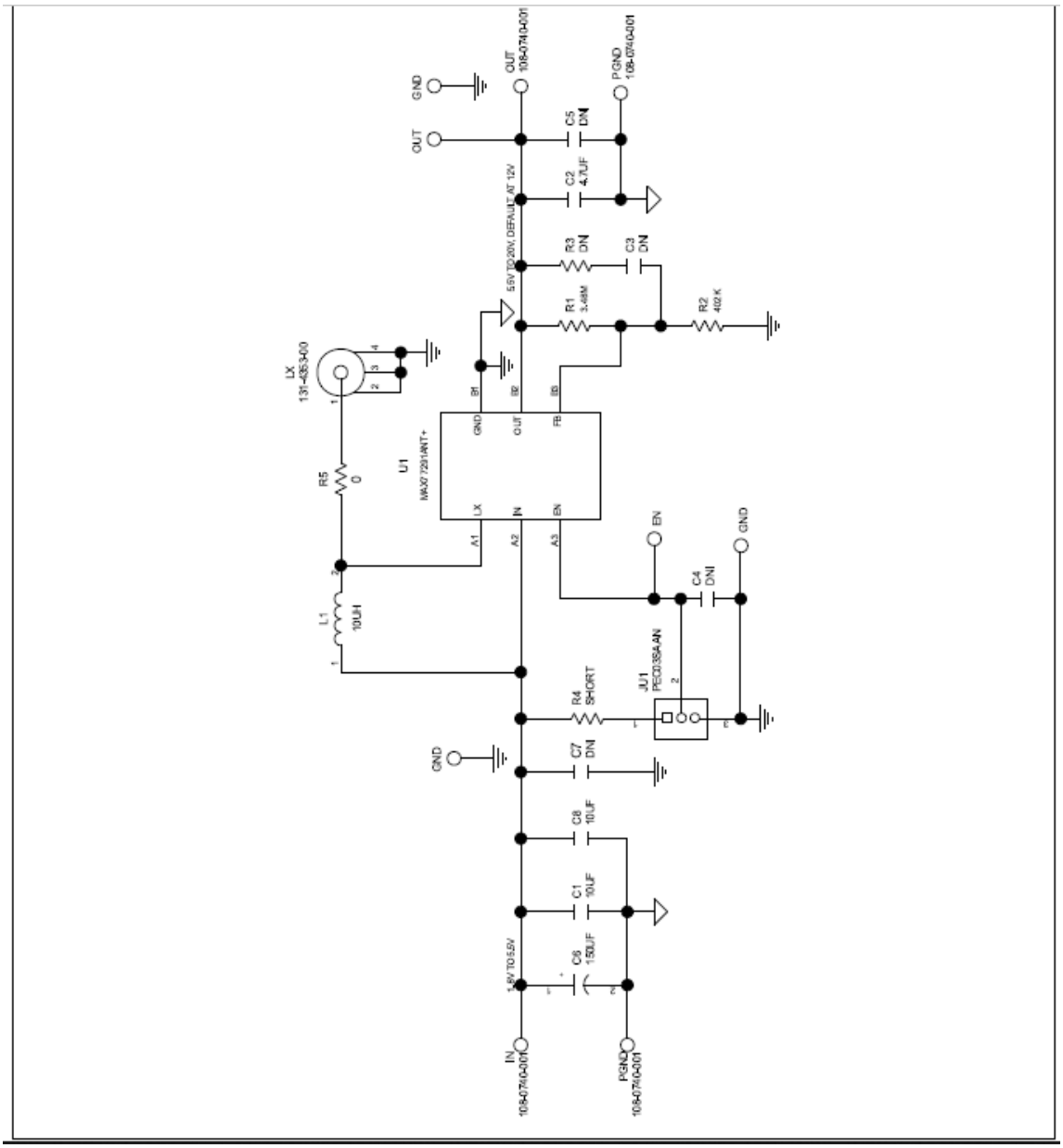
ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	DESCRIPTION
1	C1, C8	2	• CL21B106KPQNNN; LMK212AB7106KG; • C0805X106K8RACAUTO; • GRM21BR71A106KA73; • C2012X7R1A106K125AC; • GMC21X7R106K10NT	SAMSUNG; TAIYO YUDEN; KEMET; MURATA; TDK; CAL-CHIP ELECTRONIC INC.	CAP; SMT (0805); 10UF; 10%; 10V; X7R; CERAMIC
2	C2	1	• GRM31CR71H475KA12; • GRJ31CR71H475KE11; • GXM31CR71H475KA10; • UMK316AB7475KL; • GRM31CR71H475KA12L; • CC1206KKX7R9BB475; • CC1206KKX7R9BB475	• MURATA; MURATA; MURATA; TAIYO YUDEN; MURATA; • YAGEO	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
3	C6	1	UWJ0J151MCL	NICHICON	CAP; SMT; 150UF; 20%; 6.3V; ALUMINUM-ELECTROLYTIC
4	EN, TP3	2	5012	KEYSTONE	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;

ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	DESCRIPTION
5	GND1, TP2, TP4	3	5011	KEYSTONE	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;

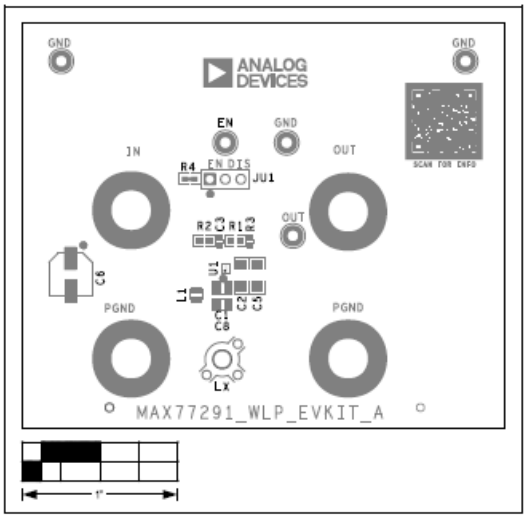
6	IN, OUT, PGND, PGND2	4	108-0740-001	EMERSON NETWORK POWER	CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN
7	JU1	1	PEC03SAAN	SULLINS	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
8	L1	1	DFE201610E-100M	MURATA	INDUCTOR; SMT (0806); FERRITE; 10UH; 20%; 0.65A
9	LX	1	131-4353-00	TEKTRONICS	CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS
10	R1	1	CRCW06033M48FK	VISHAY	RES; SMT (0603); 3.48M; 1%; +/-100PPM/DEGK; 0.1000W
11	R2	1	CRCW06034023FK; ERJ-3EKF4023	VISHAY; PANASONIC	RES; SMT (0603); 402K; 1%; +/-100PPM/DEGC; 0.1000W
12	R5	1	ERJ-2GE0R00	PANASONIC	RES; SMT (0402); 0; JUMPER; JUMPER;0.1000W
13	SU1	1	2SN-BK-G	SAMTEC	• TEST POINT; JUMPER; STR; TOTAL • LENGTH=0.175IN; BLACK; • INSULATION=PBT; PHOSPHOR BRONZE • CONTACT=GOLD PLATED
14	U1	1	MAX77291ANT+	ANALOG DEVICES	• EVKIT PART – IC; 1.8V TO 5.5V INPUT • RANGE HIGH-VOLTAGE MICROPOWER • BOOST CONVERTER WITH 50MA INPUT • CURRENT LIMIT; PACKAGE OUTLINE: 21- 100577; PACKAGE CODE: N60N1+1SWLP6
15	PCB	1	MAX77291WLP	ANALOG DEVICES	PCB: MAX77291WLP
16	C3, C4	0	N/A	N/A	CAPACITOR; SMT (0603); OPEN; FORM FACTOR

ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	DESCRIPTION
17	C5	0	• GRM31CR71H475KA12; • GRJ31CR71H475KE11; • GXM31CR71H475KA10; • UMK316AB7475KL; • GRM31CR71H475KA12L; • CC1206KKX7R9BB475; • CC1206KKX7R9BB475	MURATA;MURATA;MURATA; TAIYO YUDEN;MURATA;YAGEO	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
18	C7	0	N/A	N/A	CAPACITOR; 0402 PACKAGE; GENERIC
19	R3	0	N/A	N/A	RESISTOR; 0603; OPEN; FOR MFACTOR
20	R4	0	N/A	N/A	PACKAGE OUTLINE 0603 RESISTOR

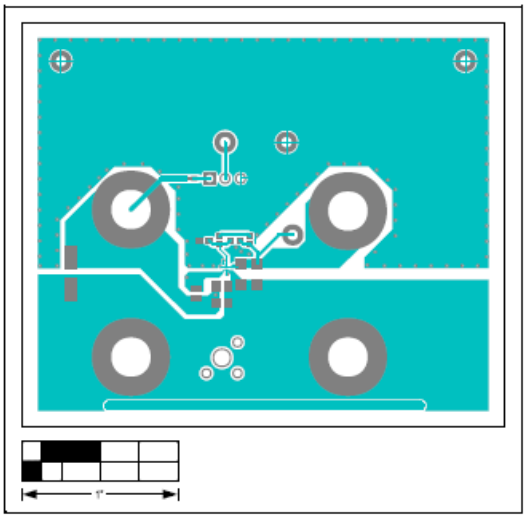
MAX77291 EV Kit Schematic Diagram



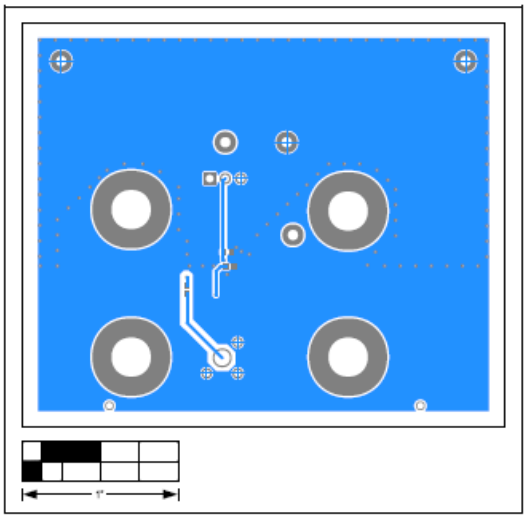
MAX77291 EV Kit PCB Layout



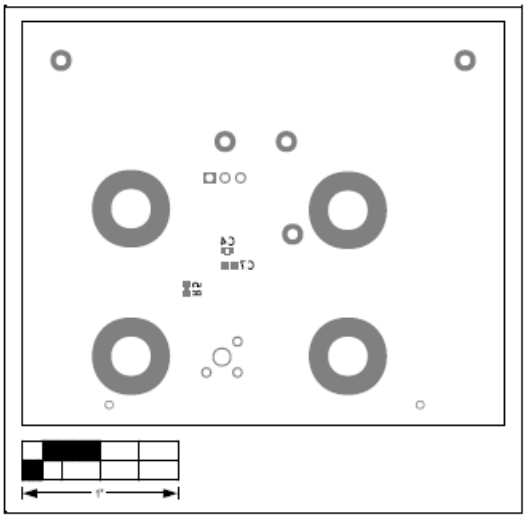
MAX77291 EV Kit Component Placement Guide—Top Silkscreen



MAX77291 EV Kit PCB Layout—Top View



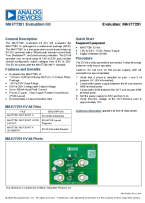
MAX77291 EV Kit PCB Layout—Bottom View



MAX77291 EV Kit Component Placement Guide —Bottom Silkscreen

ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	DESCRIPTION
17	C5	0	• GRM31CR71H475KA12; • GRJ31CR71H475KE11; • GXM31CR71H475KA10; • UMK316AB7475KL; • GRM31CR71H475KA12L; • CC1206KKX7R9BB475; • CC1206KKX7R9BB475	MURATA;MURATA;MURATA; TAIYO YUDEN;MURATA;YAGEO	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
18	C7	0	N/A	N/A	CAPACITOR; 0402 PACKAGE; GENERIC
19	R3	0	N/A	N/A	RESISTOR; 0603; OPEN; FOR MFACTOR
20	R4	0	N/A	N/A	PACKAGE OUTLINE 0603 RESISTOR

Documents / Resources

	ANALOG DEVICES MAX77291 Evaluation Kit [pdf] Owner's Manual MAX77291ANT, MAX77291 Evaluation Kit, MAX77291, Evaluation Kit, Kit

References

- User Manual