

General Description

The MAX14690 evaluation kit (EV kit) is a fully assembled and tested circuit for evaluating the MAX14690 wearable charge-management solution with I²C capability for low-power wearable application. The device includes a linear battery charger, Smart Power Selector™, two ultra-low quiescent current buck regulators, and three low-dropout (LDO) linear regulators.

Refer to the MAX14690 IC data sheet for detailed information regarding the operation and features of the devices.

Features

- RoHS Compliant
- Proven PCB Layout
- Full Assembled and Tested
- I²C Serial Interface

Detailed Description of Hardware

The MAX14690 evaluation kit (EV Kit) evaluates the MAX14690 wearable charge-management solution.

See [Table 1](#) through [Table 3](#) for pin descriptions of the three connectors (J1–J3).

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

Smart Power Selector is a trademark of Maxim Integrated Products, Inc.

Table 1. Connector J1

PIN	MAX14690	DESCRIPTION
1	GND	Ground
2	MON	Voltage Monitor Output
3	N.C.	Not Connected
4	$\overline{\text{INT}}$	Open-Drain, Active-Low Interrupt Output
5	$\overline{\text{RST}}$	Power-On Reset Output.
6	SDA	I ² C Serial Data Input/Output
7	SCL	I ² C Serial Clock Input
8	MPC1	Multipurpose Configuration Input 1
9	MPC0	Multipurpose Configuration Input 0
10	PFN2	Power Function Control Input/Output
11	PFN1	Power Function Control Input
12	GND	Ground

Table 2. Connector J2

PIN	SIGNAL	DESCRIPTION
1	L3IN	LDO3 Input
2	L3OUT	LDO3 Output
3	L2OUT	LDO2 Output
4	L1OUT	LDO1 Output
5	B2OUT	Buck Regulator 2 Output
6	B1OUT	Buck Regulator 1 Output
7	L2IN	LDO2 Input
8	L1IN	LDO1 Input

Table 3. Connector J3

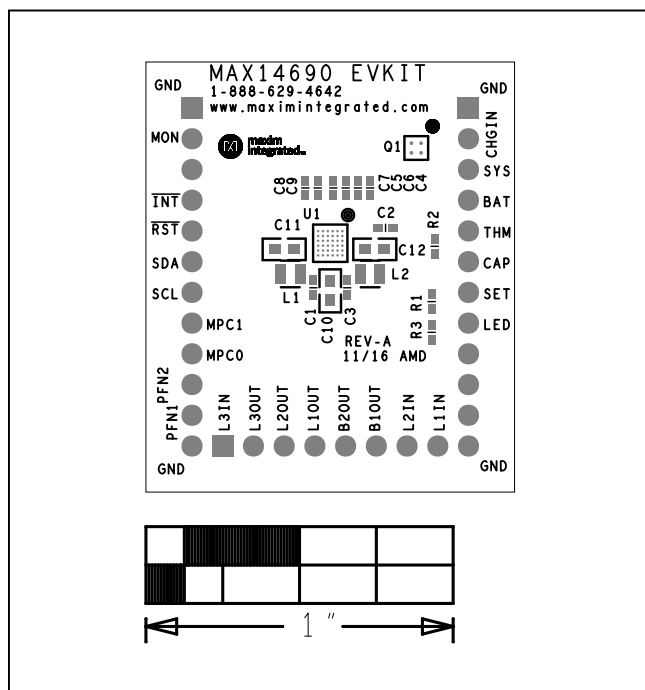
PIN	SIGNAL	DESCRIPTION
1	GND	Ground
2	CHRGIN	Charger Input
3	SYS	System Load Connection
4	BAT	Battery
5	THM	Battery Temperature Thermistor Connection
6	CAP	Bypass for Internal LDO
7	SET	External Resistor Connection for Configuring Battery Charge Current
8	LED	LED Current Sink Input
9	N.C.	Not Connected
10	N.C.	Not Connected
11	N.C.	Not Connected
12	GND	Ground

MAX14690 EV Kit Bill of Materials

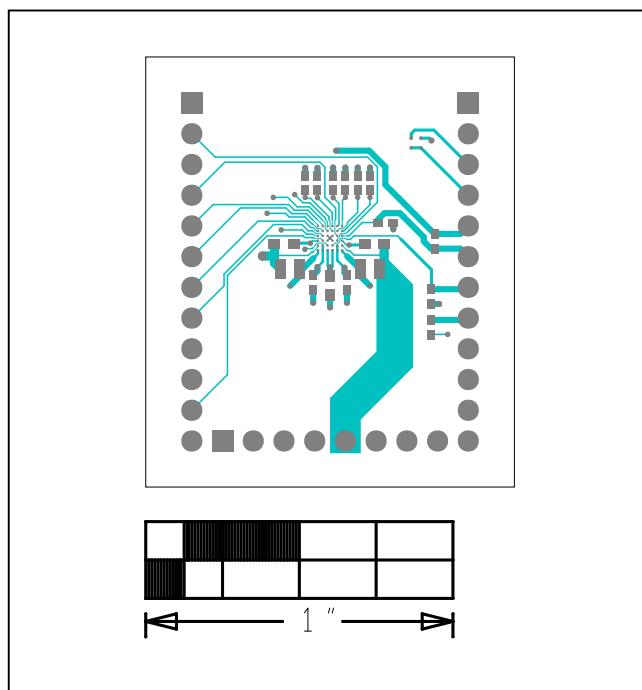
ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE
1	C1-C9	-	9	C1005X5R1V225M050BC	TDK	2.2UF
2	C10-C12	-	3	C1608X5R0J226M080AC	TDK	22UF
3	J1, J3	-	2	PBC12SAAN	SULLINS ELECTRONICS CORP.	PBC12SAAN
4	J2	-	1	PBC08SAAN	SULLINS ELECTRONICS CORP.	PBC08SAAN
5	L1, L2	-	2	DFE201610E-2R2M	TOKO	2.2UH
6	R3	-	1	ERA-2AED221	PANASONIC	220
7	U1	-	1	MAX14690BEWX+	MAXIM	MAX14690BEWX+
8	Q1	DNP	0	SI8439DB-T1-E1	N/A	SI8439DB-T1-E1
9	R1	DNP	0	RG1005P-102-D	SUSUMU CO LTD.	1K
10	R2	DNP	0	CRCW040210K0FK; RC0402FR-0710K	VISHAY DALE; YAGEO PHICOMP	10K
11	PCB	-	1	MAX	MAXIM	PCB
TOTAL			20			

The schematic diagram illustrates the internal circuitry of the MAX14690BEWx+ integrated circuit. It features four main connector blocks: J1 (PROG/SSMAN) at the top, J2 (PROG/SSMAN) on the right, J3 (PROG/SSMAN) at the bottom, and J4 (PROG/SSMAN) on the left. The circuit includes a central IC labeled U1 (MAX14690BEWx+). Various components are connected to the IC pins, including capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11), inductors (L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100), resistors (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100), and other components like diodes (D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D71, D72, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D93, D94, D95, D96, D97, D98, D99, D100). The diagram also shows various test points (TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21, TP22, TP23, TP24, TP25, TP26, TP27, TP28, TP29, TP30, TP31, TP32, TP33, TP34, TP35, TP36, TP37, TP38, TP39, TP40, TP41, TP42, TP43, TP44, TP45, TP46, TP47, TP48, TP49, TP50, TP51, TP52, TP53, TP54, TP55, TP56, TP57, TP58, TP59, TP60, TP61, TP62, TP63, TP64, TP65, TP66, TP67, TP68, TP69, TP70, TP71, TP72, TP73, TP74, TP75, TP76, TP77, TP78, TP79, TP80, TP81, TP82, TP83, TP84, TP85, TP86, TP87, TP88, TP89, TP90, TP91, TP92, TP93, TP94, TP95, TP96, TP97, TP98, TP99, TP100) and a power supply section with a 2.2uF capacitor (C9) and a 2.2uF inductor (L9).

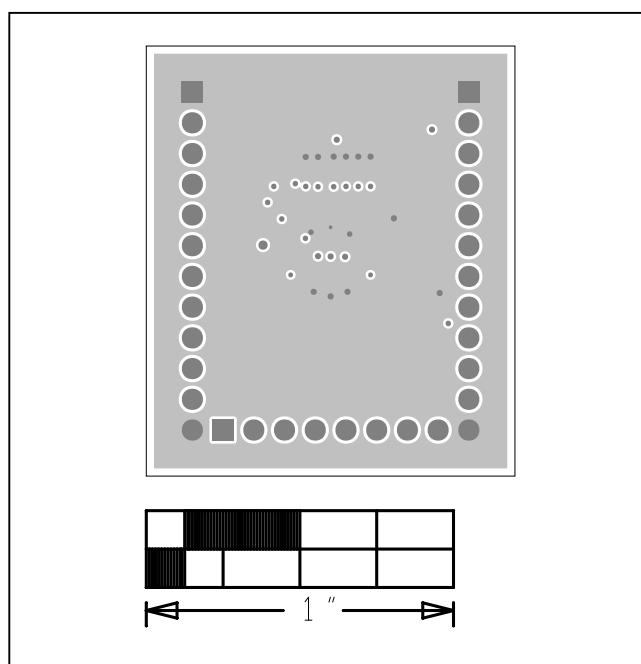
MAX14690 EV Kit PCB Layout Diagrams



MAX14690 EV Kit—Top Silkscreen

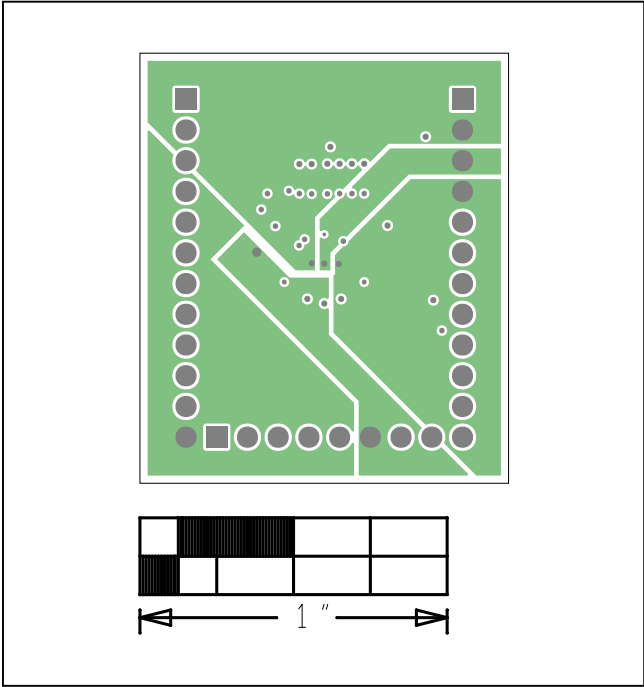


MAX14690 EV Kit—Top

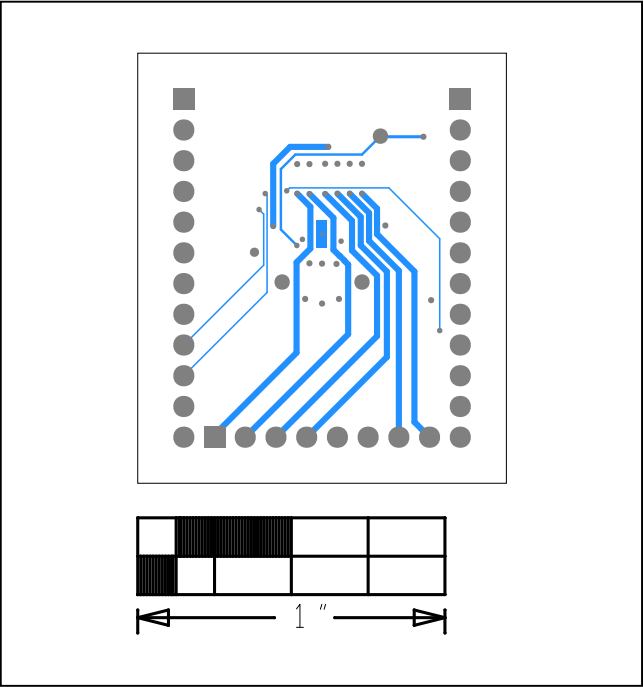


MAX14690 EV Kit—Layer 2

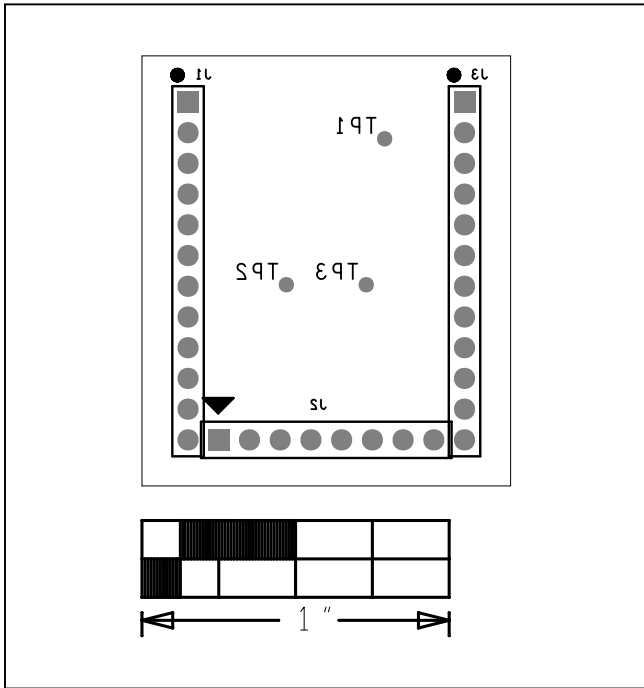
MAX14690 EV Kit PCB Layout Diagrams (continued)



MAX14690 EV Kit—Layer 3



MAX14690 EV Kit—Bottom



MAX14690 EV Kit—Bottom Silkscreen

Ordering Information

PART	TYPE
MAX14690EVKIT#	EV Kit

#Denotes RoHS compliant.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	12/16	Initial release	—

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

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