General Description

The MAX14745 evaluation kit (EV kit) is a fully assembled and tested circuit for evaluating the MAX14745 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 MAX14745 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 MAX14745 evaluation kit (EV Kit) evaluates the MAX14745 wearable charge-management solution.

See Table 1 thru Table 3 for pin descriptions of the three connectors (J1–J3).

Ordering Information ***appears at end of data sheet.***

19-8647; Rev 0; 9/16

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Table 1. Connector J1

PIN	MAX14745	DESCRIPTION
1	GND	Ground
2	MON	Voltage Monitor Output
3	N.C.	Not Connected
4	INT	Open-drain Active-low Interrupt Output
5	RST	Power-On Reset Output.
6	SDA	I²C Serial Data Input / Output
7	SCL	I²C 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

Component Suppliers

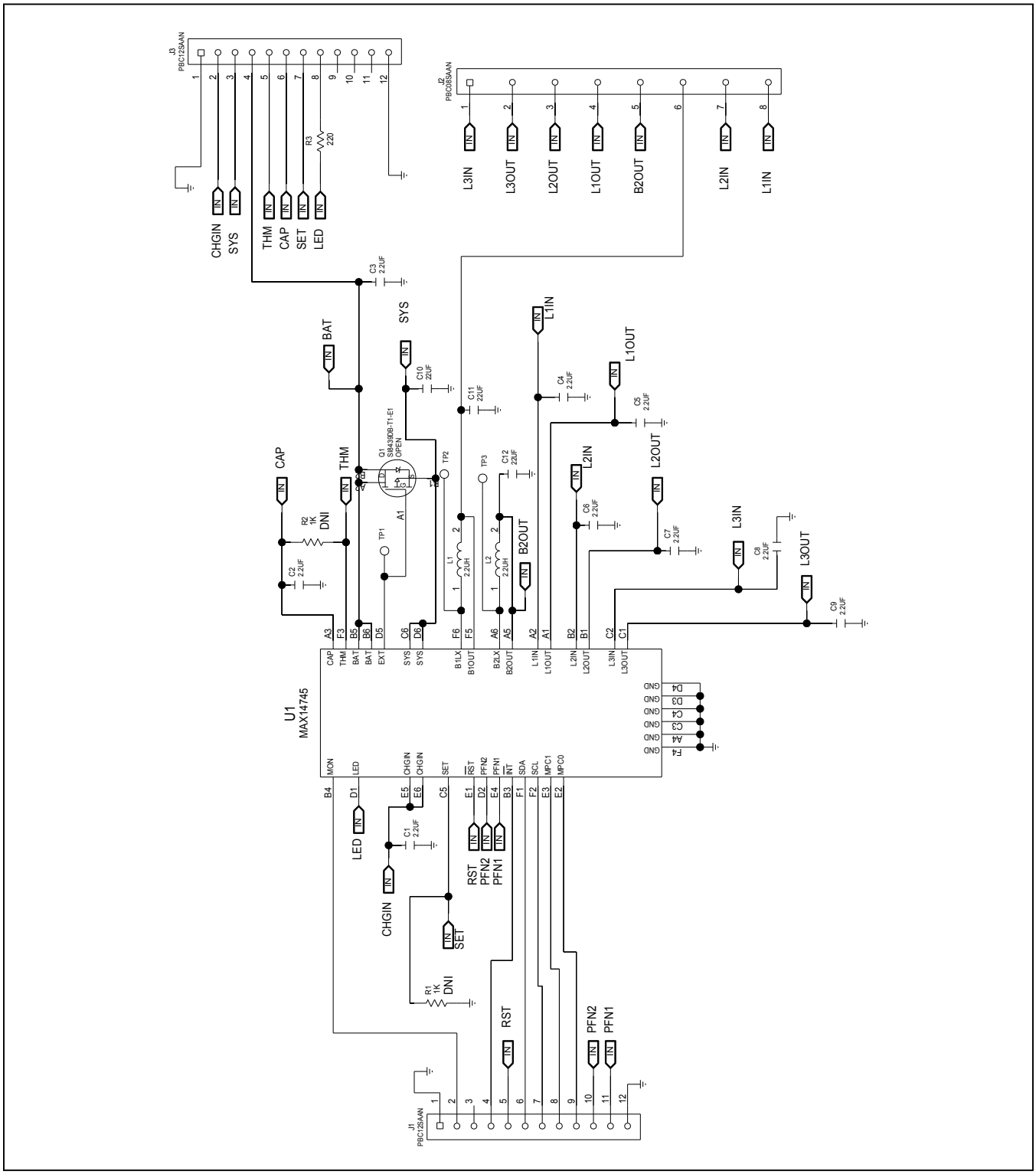
SUPPLIER	WEBSITE
Murata Americas	www.murata.com
TDK Corp	www.component.tdk.com

Note: *Indicate that you are using the MAX14745 when contacting these component suppliers.*

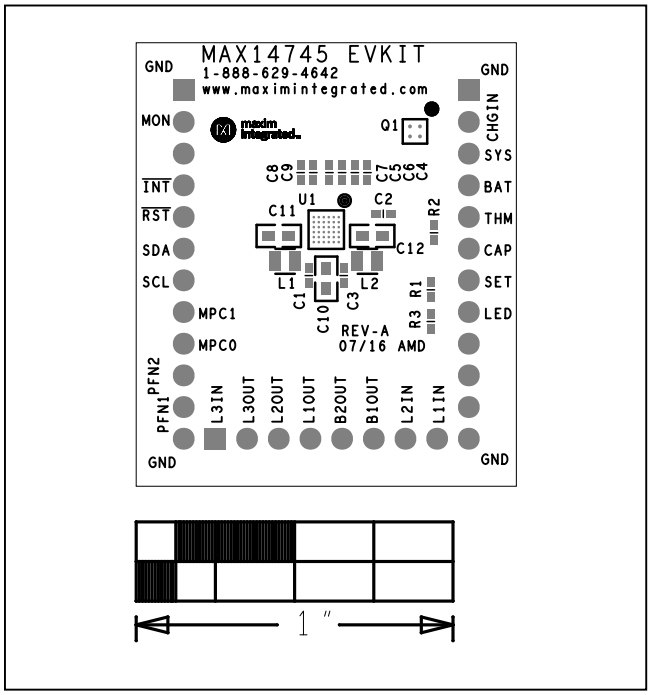
MAX14745 EV System Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
1	C1-C9	-	9	C1005X5R1V225M050BC	TDK	2.2µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 2.2µF; 35V; TOL = 20%; MODEL = C SERIES; TG = -55°C TO +85°C; TC = X5R	
2	C10-C12	-	3	C1608X5R0J226M080AC	TDK	22µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 22µF; 6.3V; TOL = 20%; MODEL = C SERIES; TG = -55°C TO +85°C; TC = X5R	
3	J1, J3	-	2	PBC12SAAN	SULLINS ELECTRONICS CORP.	PBC12SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 12PINS; -65°C TO +125°C	
4	J2	-	1	PBC08SAAN	SULLINS ELECTRONICS CORP.	PBC08SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 8PINS; -65°C TO +125°C	
5	L1, L2	-	2	DFE201610E-2R2M	TOKO	2.2µH	INDUCTOR; SMT (2016); METAL ALLOY CHIP; 2.2µH; TOL= ±20%; 2.6A	
6	R3	-	1	ERA-2AED221	PANASONIC	220	RESISTOR; 0402; 220Ω; 0.5%; 25PPM; 0.063W; THIN FILM	
7	U1	-	1	MAX14745	MAXIM	MAX14745	EVKIT PART-IC; PWRM; WEARABLE CHARGE MANAGEMENT SOLUTION; WLP36	
8	Q1	DNP	0	SI8439DB-T1-E1	N/A	SI8439DB-T1-E1	TRAN; P-CHANNEL 8V (D-S) MOSFET; PCH; SMT; PD-(2.7W); I-(-9.2A); V-(-8V)	OPEN
9	R1, R2	DNP	0	RG1005P-102-D	SUSUMU CO LTD.	1K	RESISTOR; 0402; 1KΩ; 0.5%; 25PPM; 0.0625W; THIN FILM	
10	PCB	-	1	MAX	MAXIM	PCB	PCB Board:MAX14745 EVALUATION KIT	

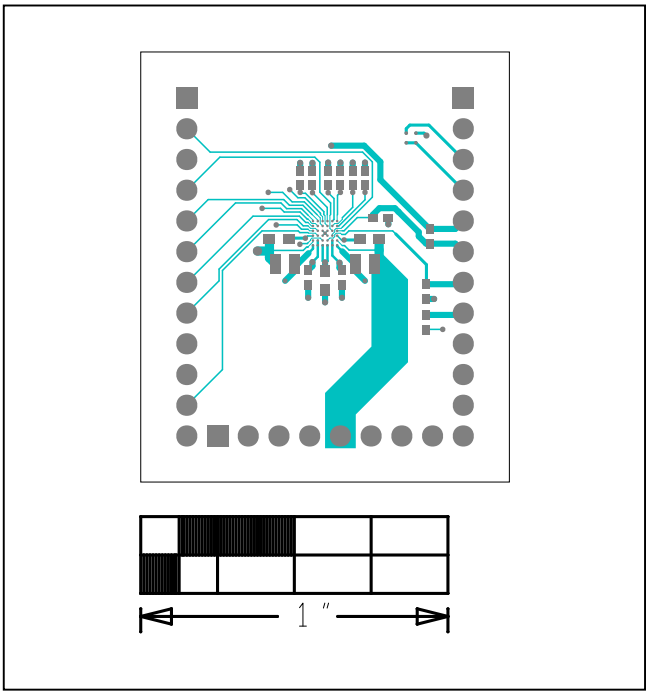
MAX14745 EV System Schematic



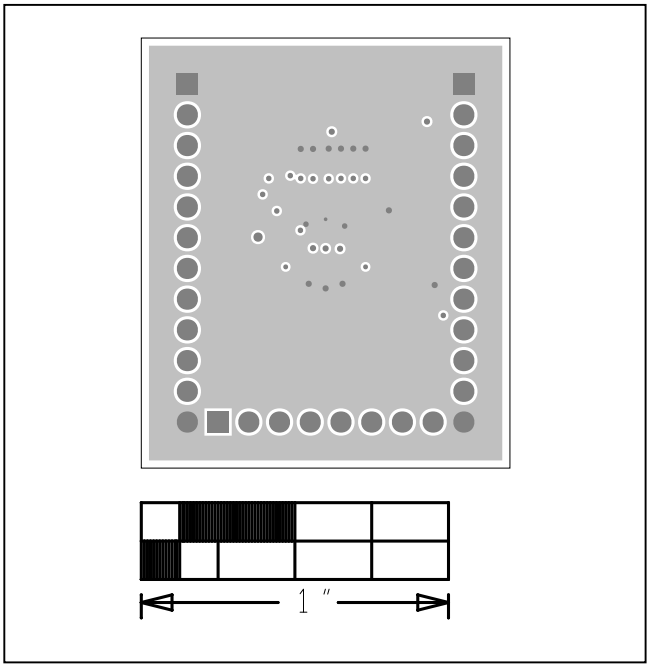
MAX14745 EV System PCB Layout



MAX14745 EV Kit—Top Silkscreen

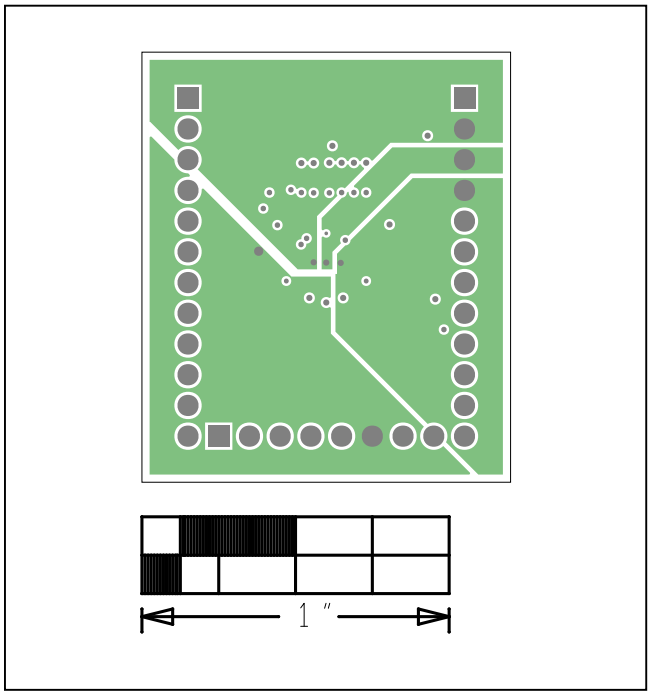


MAX14745 EV Kit—Top

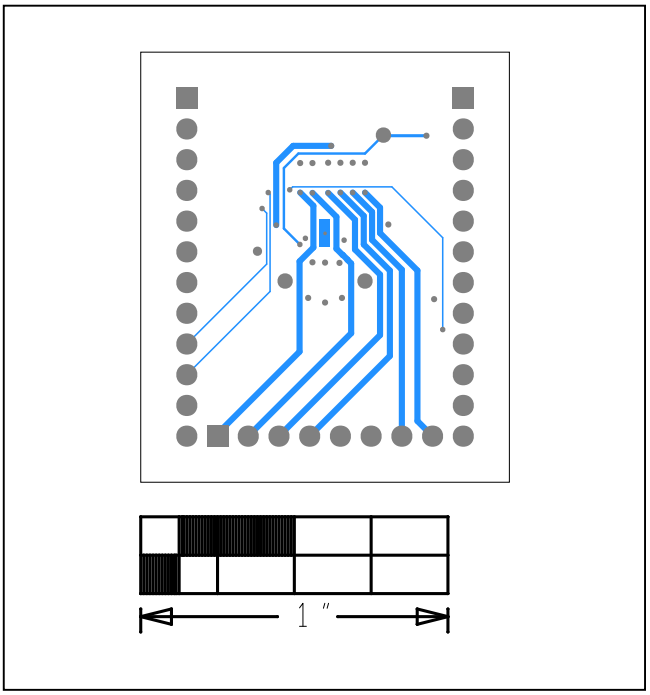


MAX14745 EV Kit—Layer 2

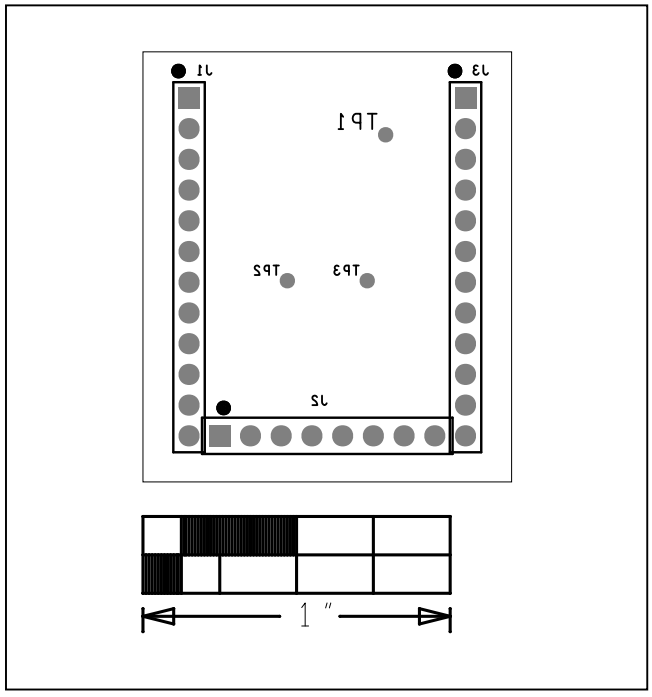
MAX14745 EV System PCB Layout (continued)



MAX14745 EV Kit—Layer 3



MAX14745 EV Kit—Bottom



MAX14745 EV Kit—Bottom Silkscreen

Ordering Information

PART	TYPE
MAX14745EVKIT#	EV Kit

#Denotes RoHS compliant.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	9/16	Initial release	—

