

MAX14724PMB1 Peripheral Module

Evaluates: MAX14724

General Description

The MAX14724PMB1 peripheral module provides the necessary hardware to interface the MAX14724 8:4 matrix switch multiplexer to any system that utilizes Pmod™-compatible expansion ports configurable for I²C or SPI communication. The IC can be powered from a single 1.6V to 5.5V supply or dual $\pm 2.5V$ supplies. The device features an 8:4 multiplexer that every switch combination can be selected through using I²C or SPI. Refer to the MAX14724 IC data sheet for detailed information regarding the operation of the IC.

Features

- 8:4 Matrix Switch Multiplexer
- 50 Ω Controlled-Impedance Signal Traces
- 12-Pin Pmod-Compatible Connector
- Proven PCB Layout
- Fully Assembled and Tested

Pmod is a trademark of Digilent Inc.

Ordering Information appears at end of data sheet.

EV Kit Contents

Peripheral module containing a MAX14724

Quick Start

Required Equipment

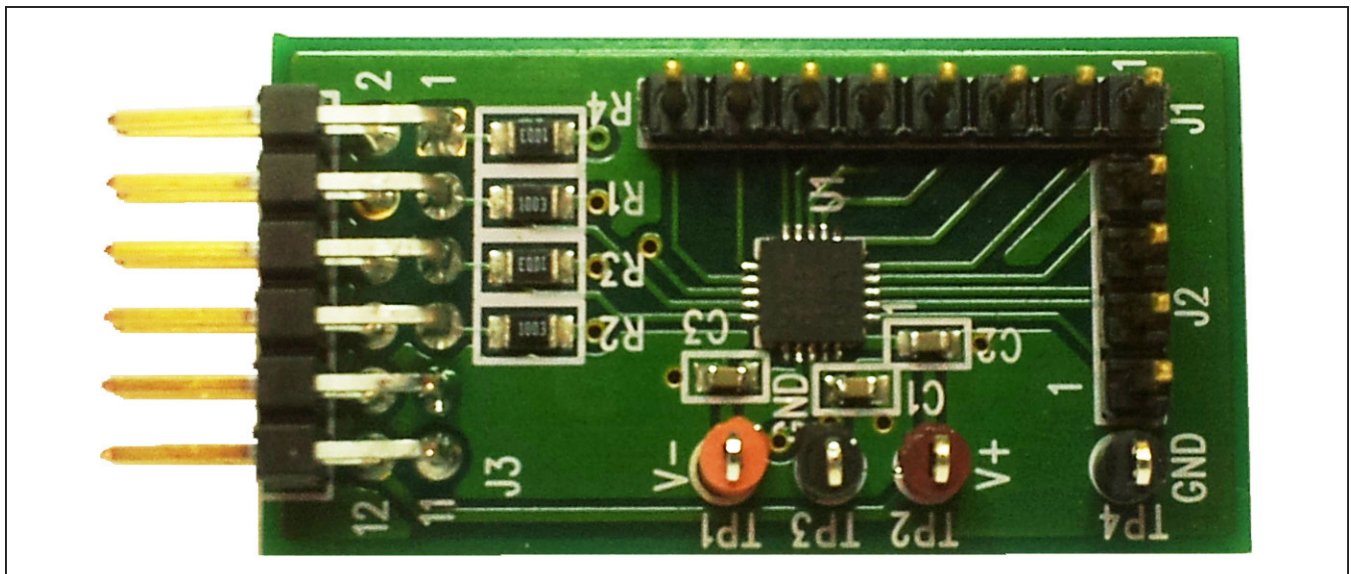
- MAX14724PMB1
- I²C or SPI host
- Power supply

Procedure

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

- 1) Connect 2.5V to V+ TP2. Connect -2.5V to V- TP1. (or use the voltage available on your I²C/SPI host on J3, V+ pin 12 on J3, V- pin 10 on J3)
- 2) Connect 2.5V or the VL of I²C/SPI host to VL, pin 11 of J3 header.
- 3) Connect I²C or SPI host to J3.
- 4) Connect I²C/CS (pin 1 of J3) high for I²C, low for SPI.
- 5) The switches can be controlled through I²C or SPI. See MAX14724 datasheet for detail.

MAX14724PMB1 Evaluation Kit Board



MAX14724PMB1 Peripheral Module

Evaluates: MAX14724

Detailed Description

The MAX14724PMB1 peripheral module provides a convenient way to evaluate the MAX14724 multiplexer. All PCB signal traces are 50Ω controlled impedance to allow

easy impedance matching. The device can be programmed by using I²C or SPI.

The J1 connector provides connection to NO_ ports (see [Table 1](#)), while the J2 connector provides connection to COM_ ports (see [Table 2](#)).

The MAX14724PMB1 can interface to the host by plugging directly into a Pmod-compatible port (configured for I²C or SPI) through connector J3 (see [Table 3](#)).

Table 1. Connector J1

PIN	SIGNAL
1	NO1
2	NO2
3	NO3
4	NO4
5	NO5
6	NO6
7	NO7
8	NO8

Table 2. Connector J2

PIN	SIGNAL
1	COMD
2	COMC
3	COMB
4	COMA

Table 3. Connector J3

PIN	Pmod PIN	SIGNAL		DESCRIPTION
		I ² C/ $\overline{CS}$ = 1	I ² C/ $\overline{CS}$ = 0	
1	1	I ² C/ $\overline{CS}$	I ² C/ $\overline{CS}$	I ² C select (high)/SPI $\overline{CS}$ (low)
2	7	N.C.	N.C.	Not connected
3	2	SDA	DI	I ² C serial data/SPI data input
4	8	N.C.	N.C.	Not connected
5	3	ADD	DO	I ² C address bit/SPI data output
6	9	N.C.	N.C.	Not connected
7	4	SCL	SCK	I ² C serial clock/SPI serial clock
8	10	N.C.	N.C.	Not connected
9	5	GND	GND	Ground
10	11	V-	V-	Negative supply voltage
11	6	V _L	V _L	Logic supply voltage
12	12	V+	V+	Positive supply voltage

Table 4. I²C Slave Address Configuration

LOGIC INPUT	I ² C SLAVE ADDRESS									
ADD/DO	A6	A5	A4	A3	A2	A1	A0 (ADD)	R/ $\overline{W}$	READ	WRITE
0	1	1	1	0	1	0	0	1/0	0xE9	0xE8
1	1	1	1	0	1	0	1	1/0	0xEB	0xEA

MAX14724PMB1 Peripheral Module

Evaluates: MAX14724

Ordering Information

PART	TYPE
MAX14724PMB1#	Peripheral Module

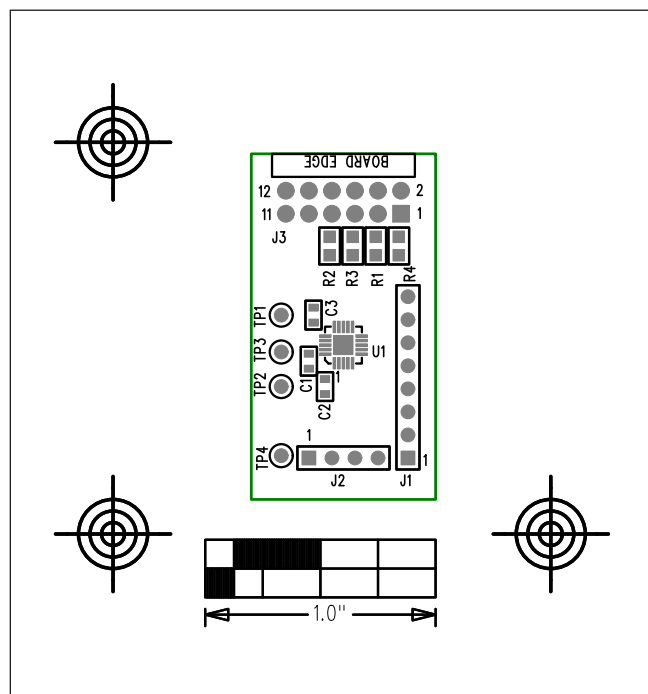
#Denotes RoHS compliant.

MAX14724PMB1 Peripheral Module Bill of Materials

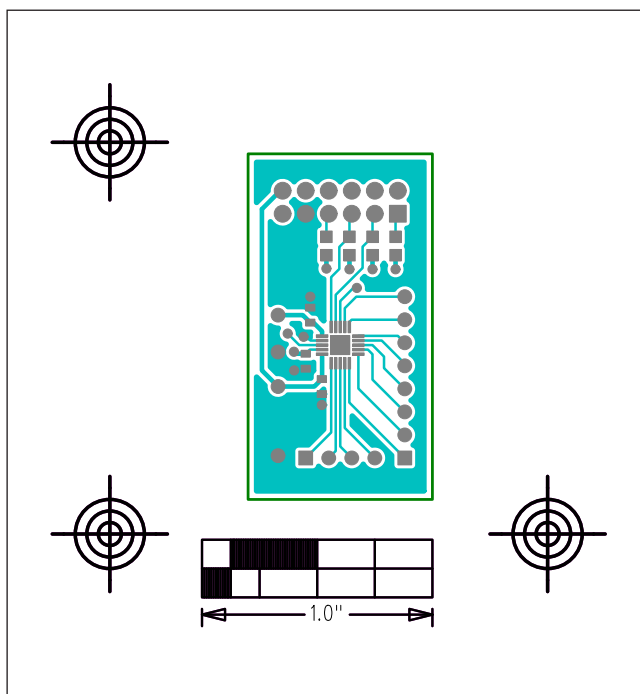
Part Reference	Qty	Description
C1,C2,C3	3	CAPACITOR CER 0.1UF 16V ±10% X7R 0603
J1	1	8 PIN STRAIGHT MALE HEADER
J2	1	4 PIN STRAIGHT MALE HEADER
J3	1	12 PIN RIGHT ANGLE MALE HEADER
R1,R2,R3,R4	4	RES 100K OHM 1% 0805 SMD
TP1	1	ORANGE TEST POINT
TP2	1	RED TEST POINT
TP3,TP4	2	BLACK TEST POINT
U1	1	IC 8:4 MATRIX SWITCH MULTIPLEXER (MAX14724ETP+)
	1	PCB: EPCB14724

Evaluates: MAX14724

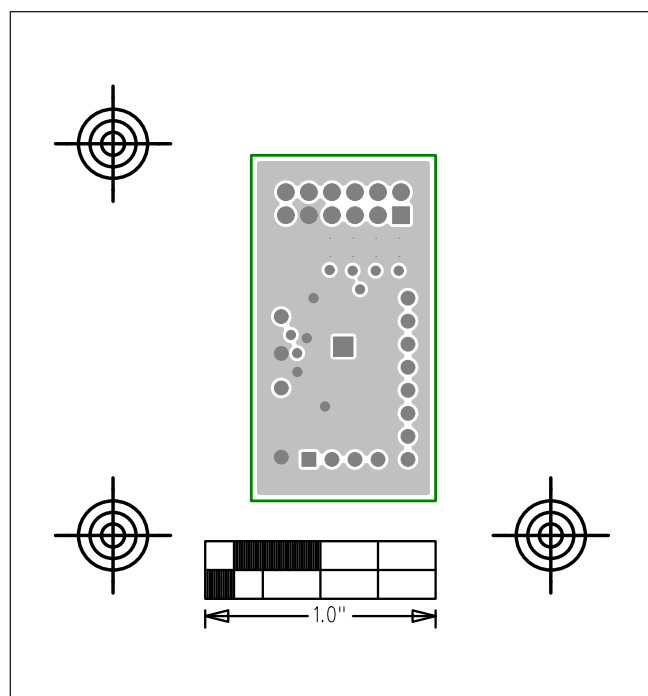
MAX14724PMB1 Peripheral Module PCB Layout



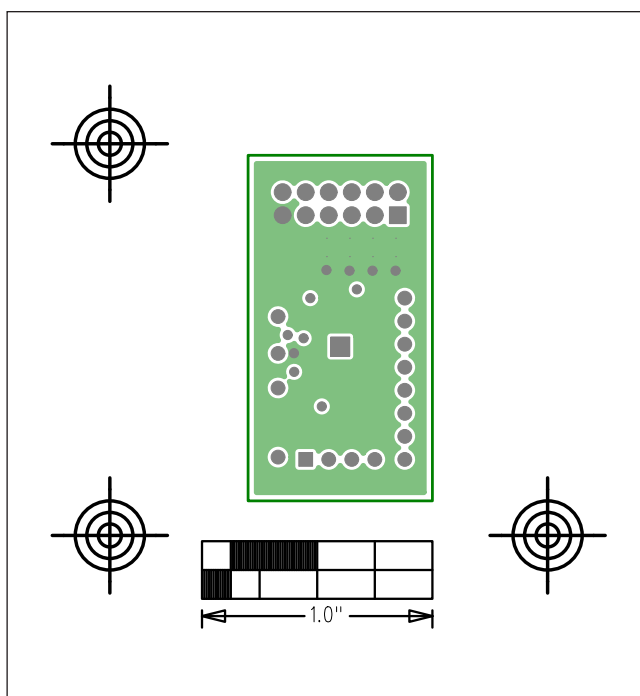
MAX14724PMB1 PCB—Top Silkscreen



MAX14724PMB1 PCB—Component Side

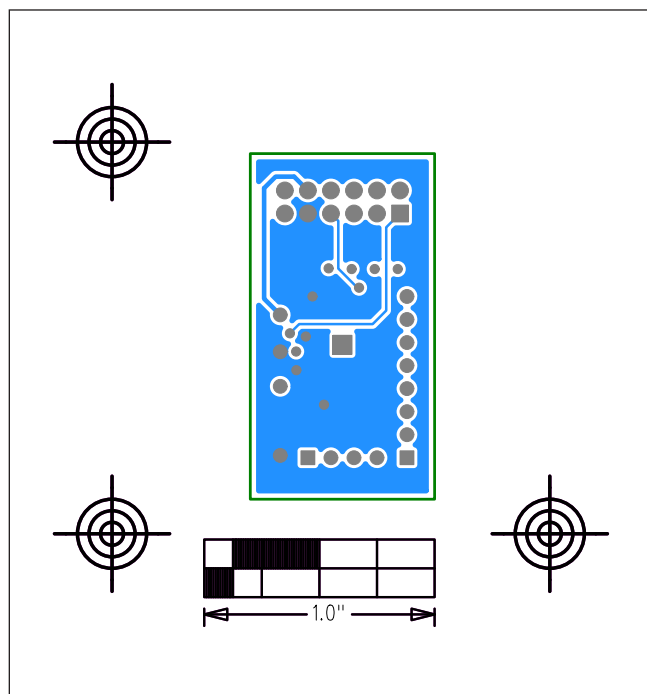


MAX14724PMB1 PCB—Layer 2 Ground

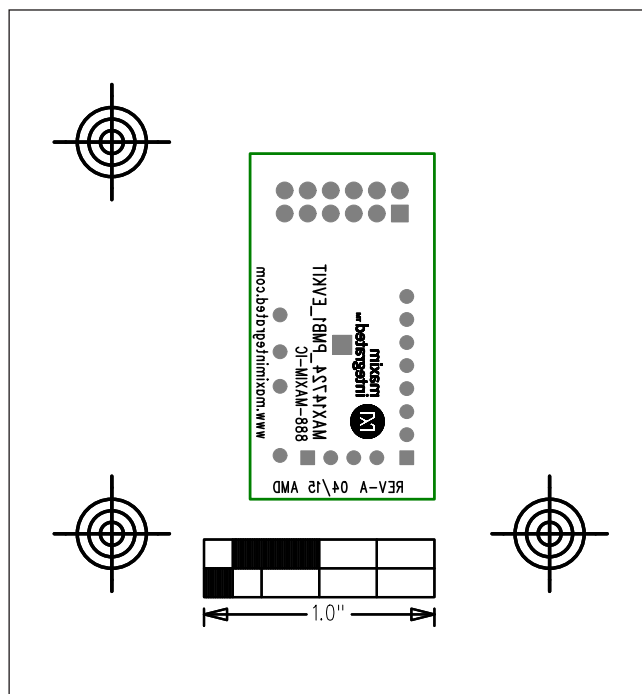


MAX14724PMB1 PCB—Layer 3 Power

MAX14724PMB1 Peripheral Module PCB Layout (continued)



MAX14724PMB1 PCB—Solder Side



MAX14724PMB1 PCB—Bottom Silkscreen

MAX14724PMB1
Peripheral Module

Evaluates: MAX14724

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	5/15	Initial release	—
1	2/19	Added <i>Quick Start</i> section	1

For pricing, delivery, and ordering information, please visit Maxim Integrated's online storefront at <https://www.maximintegrated.com/en/storefront/storefront.html>.

Maxim Integrated cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim Integrated product. No circuit patent licenses are implied. Maxim Integrated reserves the right to change the circuitry and specifications without notice at any time.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Maxim Integrated:](#)

[MAX14724EVKIT#](#)