

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

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

EV Kit Contents

Peripheral module containing a MAX14724

Quick Start

Required Equipment

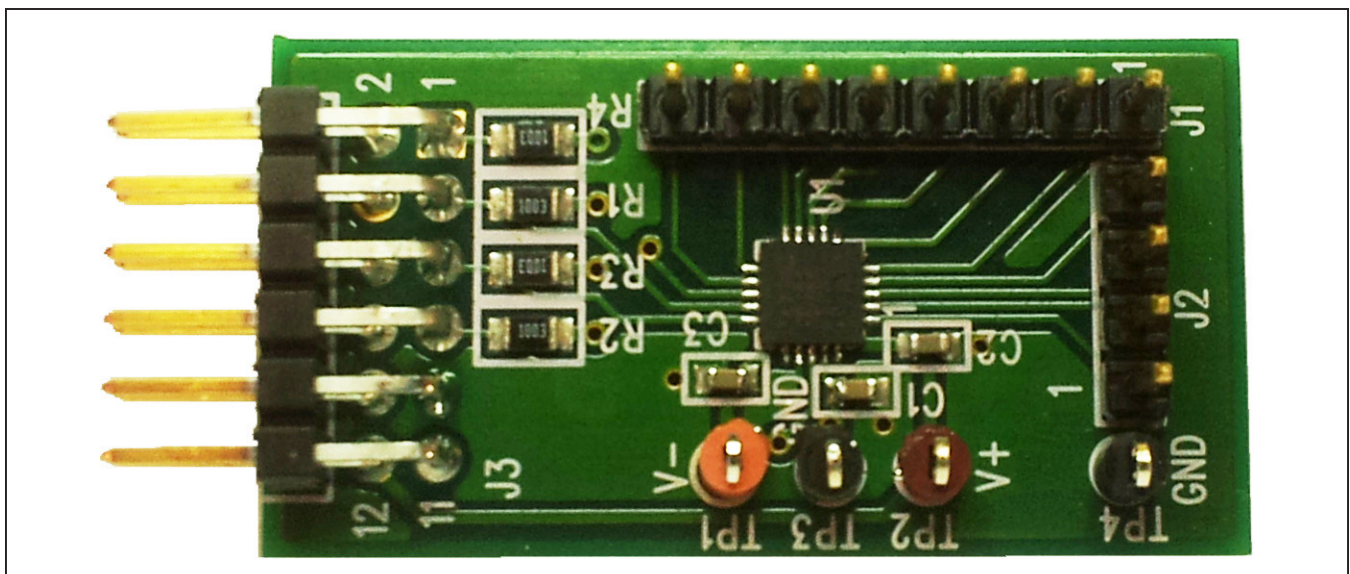
- MAX14724PMB1
- I²C or SPI host
- Power supply

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

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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
0	1	1	1	0	1	0	0	1/0	0xE9	0xE8
1	1	1	1	0	1	0	1	1/0	0xEB	0xEA

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Ordering Information

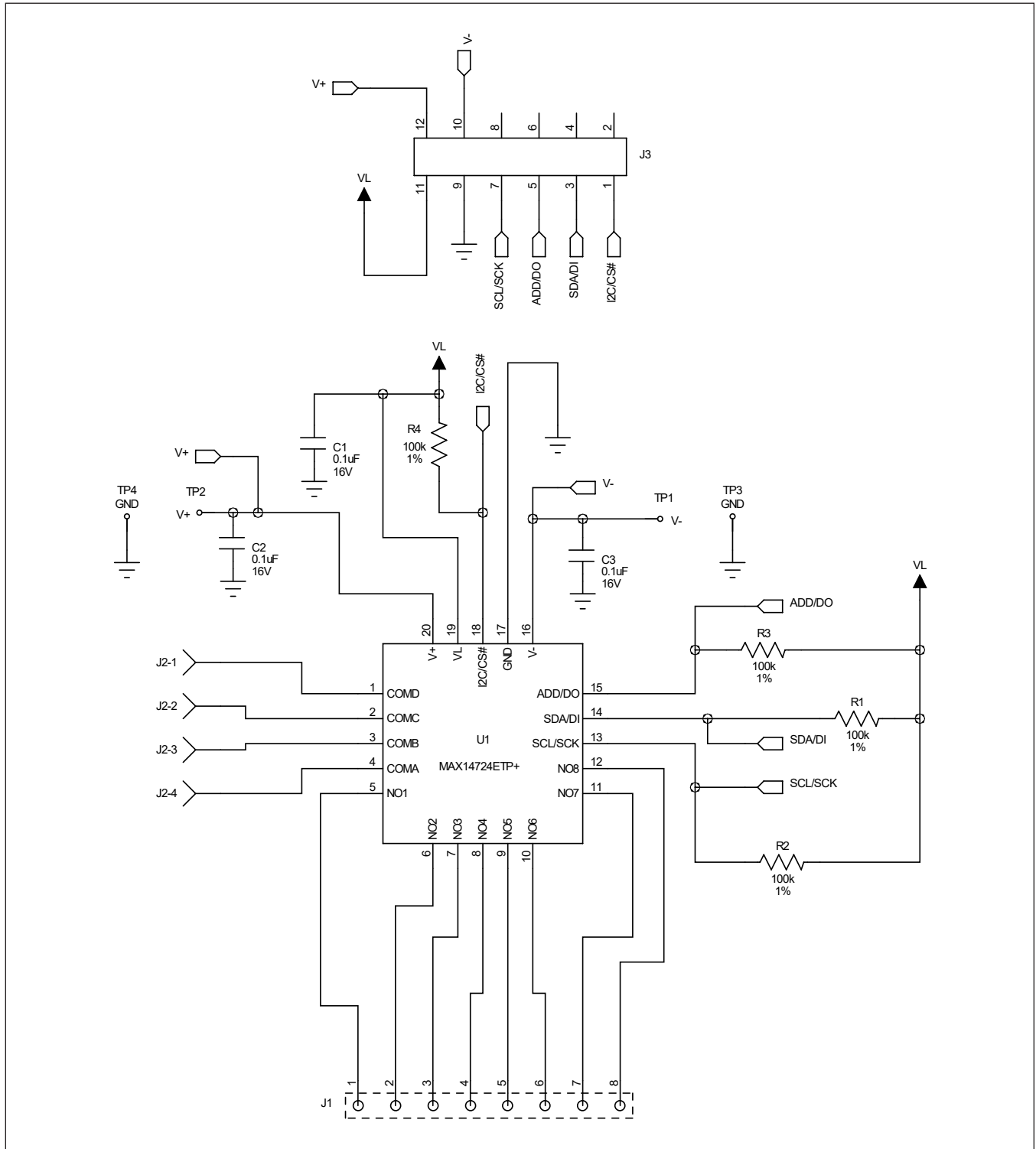
PART	TYPE
MAX14724PMB1#	Peripheral Module

#Denotes RoHS compliant.

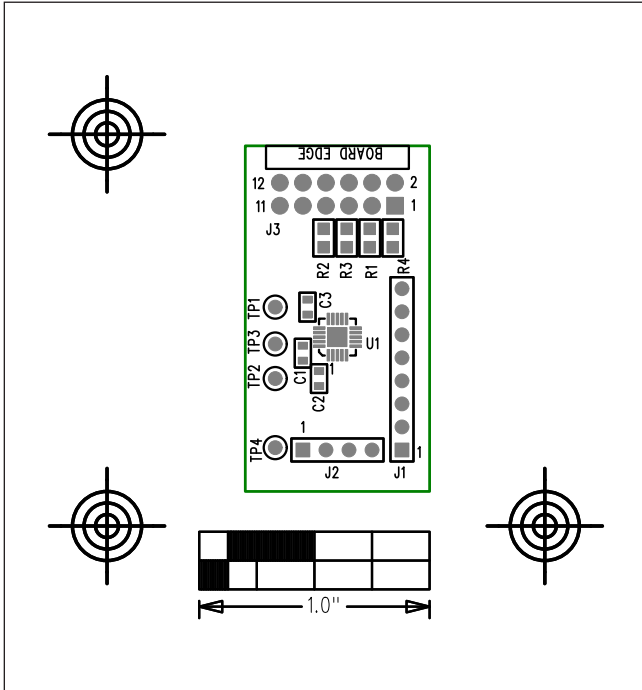
MAX14724PMB1 Peripheral Module Bill of Materials

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

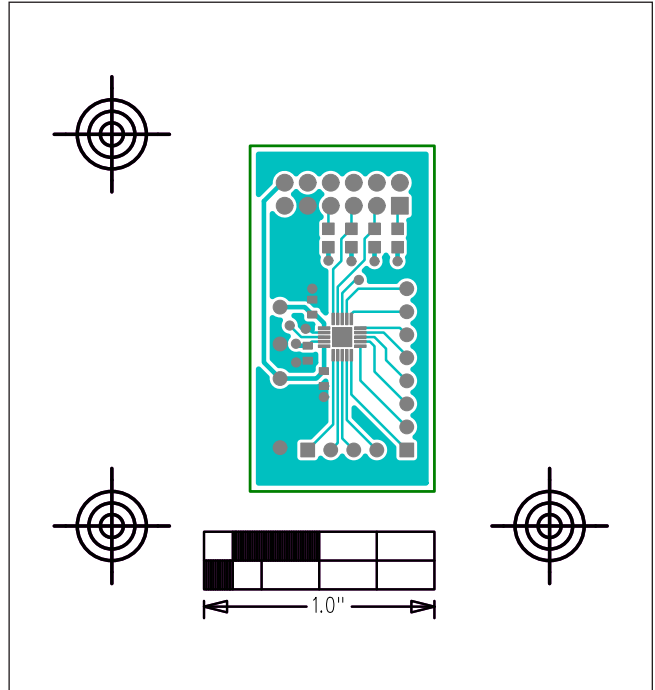
MAX14724PMB1 Peripheral Module Schematic



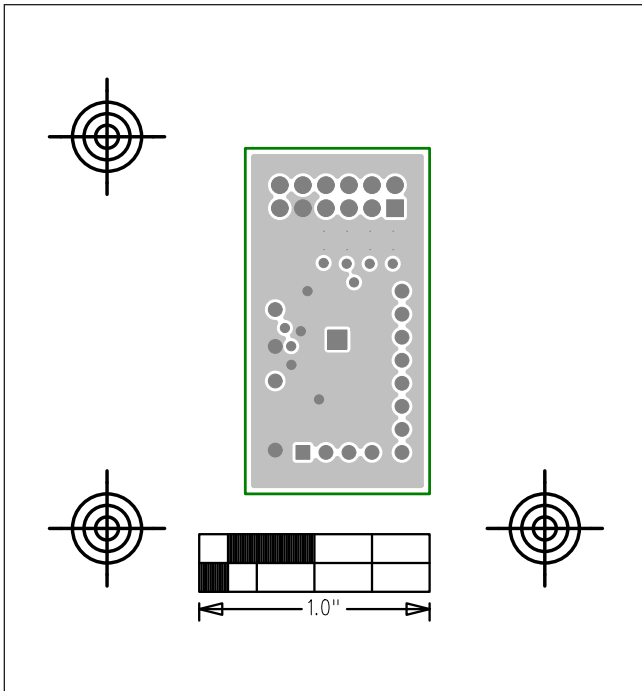
MAX14724PMB1 Peripheral Module PCB Layout



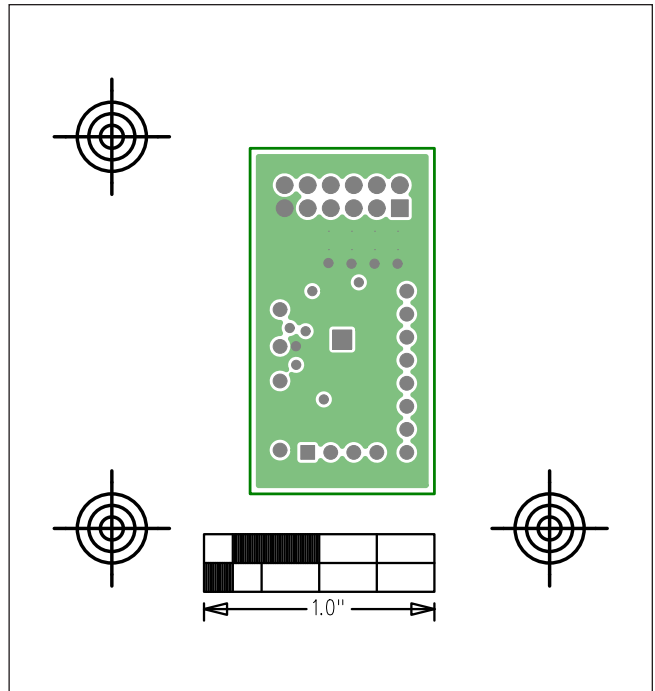
MAX14724PMB1 PCB—Top Silkscreen



MAX14724PMB1 PCB—Component Side



MAX14724PMB1 PCB—Layer 2 Ground



MAX14724PMB1 PCB—Layer 3 Power

Revision History

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

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