



# COREXOM I9074L M.2 MODULE DATASHEET

Rev. V0.2 (Draft)  
2024/11/04

P/N : SP.F1J06G004



## Revision History

Rev.	Date	Description
0.0	2024/03/28	Draft
0.1	2024/06/14	P4, VDD_XPA_PCIE pin voltage has been corrected from 3P3 to 5V. P4, Add new section 3.4 Power Rated
0.2	2024/10/25	P9, section 4.1 update new version dimension drawing P9, section 5.1 update Marking Label
	2024/11/04	Updated section 3.3 pin assignment to correct the voltage of pin 52, 53, and 55 from 3P3 to 1P8.

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## About This Document

- Illustrations in this documentation might look different from your product.
- Depending on the model, some optional accessories, features, and software programs might not be available on your device.
- Depending on the version of operating systems and programs, some user interface instructions might not be applicable to your device.
- Documentation content is subject to change without notice. Coretronic Reality Inc. (CRI) makes constant improvements on the documentation of your computer, including this guidebook.

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# 1. Introduction

CRI I9074L is a high perform M.2 module to leverage QCN9074 chip with Qualcomm® 802.11ax technology which is a highly integrated wireless local area network (WLAN) system-on chip (SoC) for 2.4/5/6 GHz IEEE802.11ax/ac/n/g/b/a applications. QCN9074 performs AP and STA functionality with 4x4 MIMO and 4 spatial streams. The QCN9074 is a dual-synthesizer WLAN radio with native 160 MHz support, and through PCIe to access for Enterprise Access Points and Campus deployments.

The QCN9074 chip platform is a single band 4x4 802.11 ax WLAN. The I9074L M.2 module is includes 2.4 GHz and 5 GHz, however it only works in either 2.4 GHz or 5 GHz, not dual band operation.

# 2. Features and Specification

The following table shows the detailed features and Spec. of I9074L M.2 module.

Key features of I9074L M.2 module

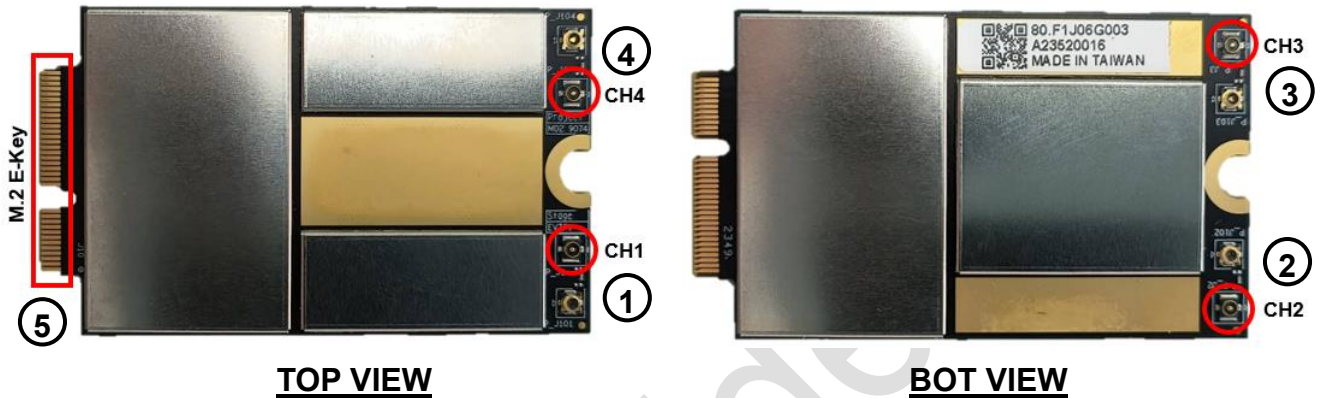
Item	Description
Chip Platform	Qualcomm QCN9074
Technology	Wi-Fi 6, IEEE 802.11ax/ac/n/g/b/a
MIMO	4T4R, 2T4R, 2T/2R
Frequency	<ul style="list-style-type: none"><li>● 2412MHz~2462MHz</li><li>● 5180MHz~5240MHz / 5745MHz~5825MHz</li></ul>
RF signal B.W	5MHz / 10MHz / 20MHz / 40MHz
Data rate (Max.)	UDP 240 Mbps, TCP 140 Mbps (via 20MHz B.W)
RF Tx Power	<ul style="list-style-type: none"><li>● <math>\leq 24\text{dBm}</math> @ 2.4GHz</li><li>● <math>\leq 24\text{dBm}</math> @ 5GHz</li></ul>
RF Rx Sensitivity	-95 dBm @ 20MHz
Interfaces	2 lanes PCIe Gen 2, over M.2 (E key)
Power Supply	3.3V, 5V on M.2
Power Consumption	<ul style="list-style-type: none"><li>● 2.4GHz 4T4R &lt; TBC</li><li>● 5GHz 4T4R &lt; TBC</li></ul>
Dimension	53 x 31 x 4.3 mm
Weight	Around 16 g
Operation Temp.	-20 ~ 70 °C
Storage Temp.	-20 ~ 70 °C
Device Driver	Ubuntu Driver for QBR5165

**Notice :** When using, be sure to connect the antenna as a load at the antenna terminal to prevent no-load reflection from damaging the PA.

### 3. Interface

#### 3.1 Major interface Connector location

Below picture identify the major interface connectors found on the I9074L M.2 module



No.	Function Description
1	IPEX4 ANT Conn, CH 1
2	IPEX4 ANT Conn, CH 2
3	IPEX4 ANT Conn, CH 3
4	IPEX4 ANT Conn, CH 4
5	M.2 E-Key pins array

#### 3.2 MIMO RF Channels' configuration

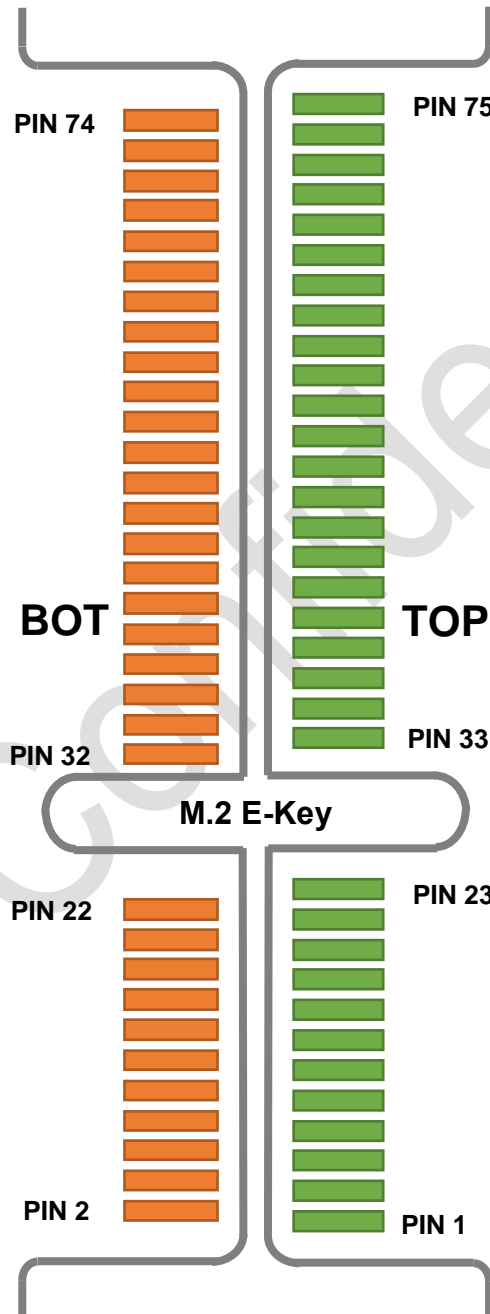
I9074L M.2 module can be configured MIMO models listed in below

	CH1	CH2	CH3	CH4
<b>2T/2R</b>	TX/RX	NA	TX/RX	NA
<b>2T/4R</b>	TX/RX	RX	TX/RX	RX
<b>4T/4R</b>	TX/RX	TX/RX	TX/RX	TX/RX

### 3.3 M.2 Pin Assignment

The following figure shows the M.2 pin assignment of the module.

Pin Name	Pin #
VDD_3P3_PCIE	74
VDD_3P3_PCIE	72
NA	70
NA	68
NA	66
NA	64
NA	62
NA	60
NA	58
PCIE0_WDIS_1P8_L	56
NA	54
PCIE0_PERST	52
NA	50
PINE_BT_ACT	48
MOD_WL_ACT	46
MOD_BT_STS	44
PINE_BT_ACT_2	42
MOD_WL_ACT_2	40
MOD_WL_STS_2	38
NA	36
NA	34
NA	32
NOTCH	30-24
NA	22
NA	20
GND	18
PCIE_LED1	16
NA	14
NA	12
WC12_UART_RXD_PCIE	10
WC12_UART_TXD_PCIE	8
PCIE_LED0	6
VDD_3P3_PCIE	4
VDD_3P3_PCIE	2



Pin #	Pin Name
75	GND
73	NA
71	NA
69	GND
67	PCIE0_TX1_N
65	PCIE0_TX1_P
63	GND
61	PCIE0_RX1_N
59	PCIE0_RX1_P
57	GND
55	PCIE0_WAKE_N
53	PCIE0_CLKREQ_N
51	GND
49	PCIE0_REFCLK_N
47	PCIE0_REFCLK_P
45	GND
43	PCIE0_TX0_N
41	PCIE0_TX0_P
39	GND
37	PCIE0_RX0_N
35	PCIE0_RX0_P
33	GND
31-25	NOTCH
23	VDD_XPA_PCIE
21	VDD_XPA_PCIE
19	VDD_XPA_PCIE
17	VDD_XPA_PCIE
15	VDD_XPA_PCIE
13	VDD_XPA_PCIE
11	VDD_XPA_PCIE
9	TP9
7	GND
5	NA
3	NA
1	GND

The following table shows the M.2 module pin function description

Pin #	Pin name	Voltage	Type	Description
47	PCIE0_REFCLK_P	PCIe	AI,AO	PCIe Gen 3 reference clock – positive
49	PCIE0_REFCLK_M	PCIe	AI,AO	PCIe Gen 3 receive lane 0 – negative
41	PCIE0_TX0_P	PCIe	AO	PCIe Gen 3 Transmit lane 0– positive
43	PCIE0_TX0_M	PCIe	AO	PCIe Gen 3 Transmit lane 0– negative
35	PCIE0_RX0_P	PCIe	AI	PCIe Gen 3 receive lane 0 – positive
37	PCIE0_RX0_M	PCIe	AI	PCIe Gen 3 receive lane 0 – negative
65	PCIE0_TX1_P	PCIe	AO	PCIe Gen 3 Transmit lane 1– positive
67	PCIE0_TX1_M	PCIe	AO	PCIe Gen 3 Transmit lane 1– negative
59	PCIE0_RX1_P	PCIe	AI	PCIe Gen 3 receive lane 1 – positive
61	PCIE0_RX1_M	PCIe	AI	PCIe Gen 3 receive lane 1 – negative
53	PCIE0_CLKREQ_N	1P8	DO	PCIe Clock request
52	PCIE0_PERST	1P8	DI	PCIe reset signal
55	PCIE0_WAKE_N	1P8	DO	PCIe wake up signal
10	WC12_UART_RXD_PCIE	1P8	DI	UART Rx signal
8	WC12_UART_TXD_PCIE	1P8	DO	UART Tx signal
6	PCIE_LED0	1P8	DO	LED control
16	PCIE_LED1	1P8	DO	LED control
	VDD_XPA_PCIE	5V	PI	5V power supply for external FEM
	VDD_3P3_PCIE	3P3	PI	3.3V power supply for module
	GND		GND	Ground

### 3.4 Power Rated

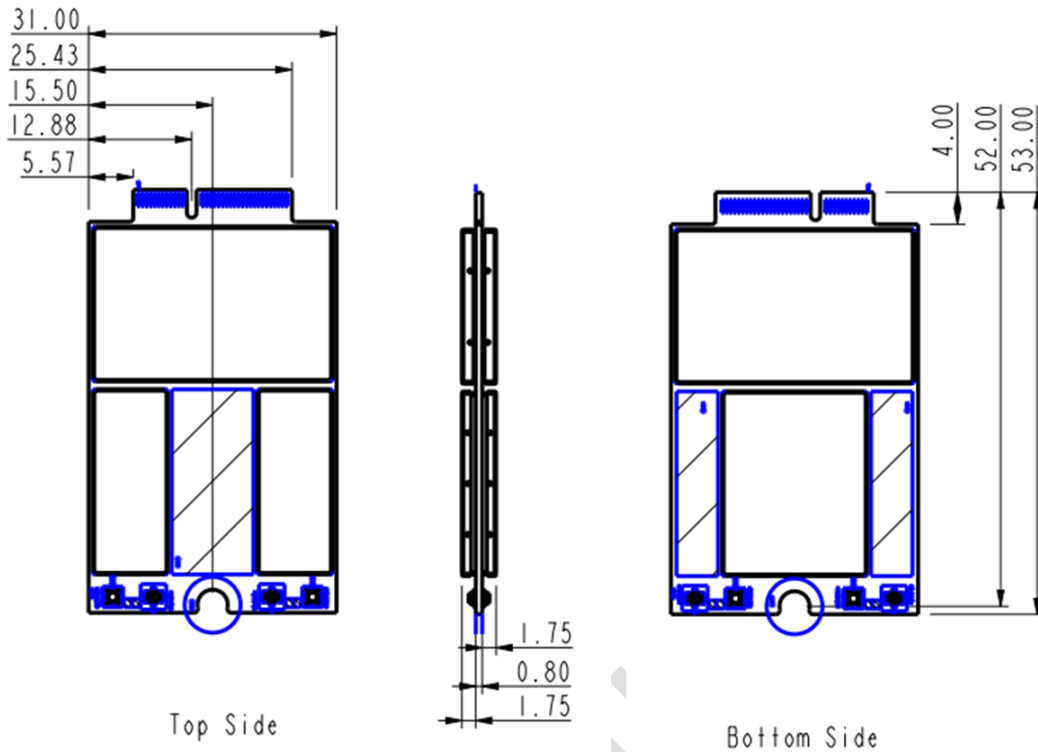
The recommended operating conditions for the M.2 module to meet all performance specifications at 4T4R.

Function	Min	Typ.	Max	Unit
VDD_3P3_PCIE	3.1	3.3	3.5	V
	-	820	1000	mA
VDD_XPA_PCIE	4.5	5	5.25	V
	-	1700	2100	mA



## 4. Mechanical Specification

### 4.1 I9074L M.2 module Mechanical dimensions



### 4.2 Weight

Around  $16 \pm 2$  g

## 5. Product Marking, Ordering and Shipping Info.

### 5.1 Product Marking (Label)



P/N Label :

**P/N: SP.F1J06G004**

**Desc: S.P. MD2 9074\_CRI**

NCC Certification Label :

型號 : MD2 9074

CCAF23Y10220T0