COREXOM I9074L M.2 MODULE

DATASHEET

Rev. V0.3 (Draft)
2025/08/08

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.
0.3	2025/08/08	Add new section 6 Compliance Statements

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	● 2412MHz~2462MHz ● 5180MHz~5240MHz / 5745MHz~5825MHz
RF signal B.W	5MHz / 10MHz / 20MHz / 40MHz
Data rate (Max.)	UDP 240 Mbps, TCP 140 Mbps (via 20MHz B.W)
RF Tx Power	● ≦ 24dBm @ 2.4GHz ● ≦ 24dBm @ 5GHz
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	● 2.4GHz 4T4R < TBC ● 5GHz 4T4R < TBC
Dimension	53 x 31 x 4.3 mm
Weight	Around 16 g
Operation Temp.	-20 ~ 70 ℃
Storage Temp.	-20 ~ 70 ℃
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

TOP VIEW

BOT VIEW

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

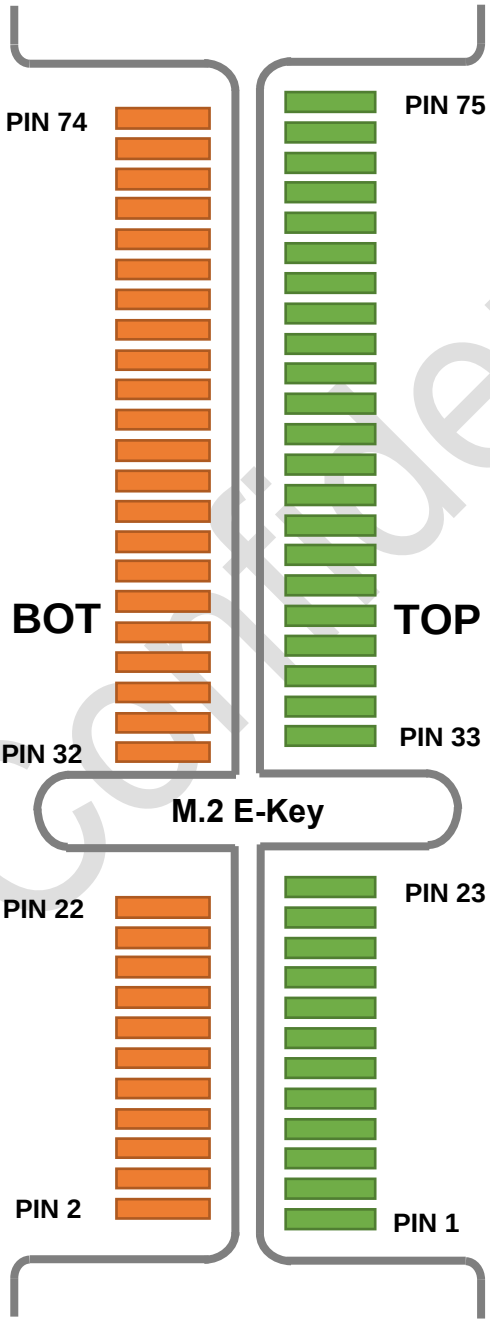
I9074L M.2 module can be configured MIMO models listed in below

	CH1	CH2	CH3	CH4
2T/2R	TX/RX	NA	TX/RX	NA
2T/4R	TX/RX	RX	TX/RX	RX
4T/4R	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
WCI2_UART_RXD_PCIE	10
WCI2_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	WCI2_UART_RXD_PCIE	1P8	DI	UART Rx signal
8	WCI2_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

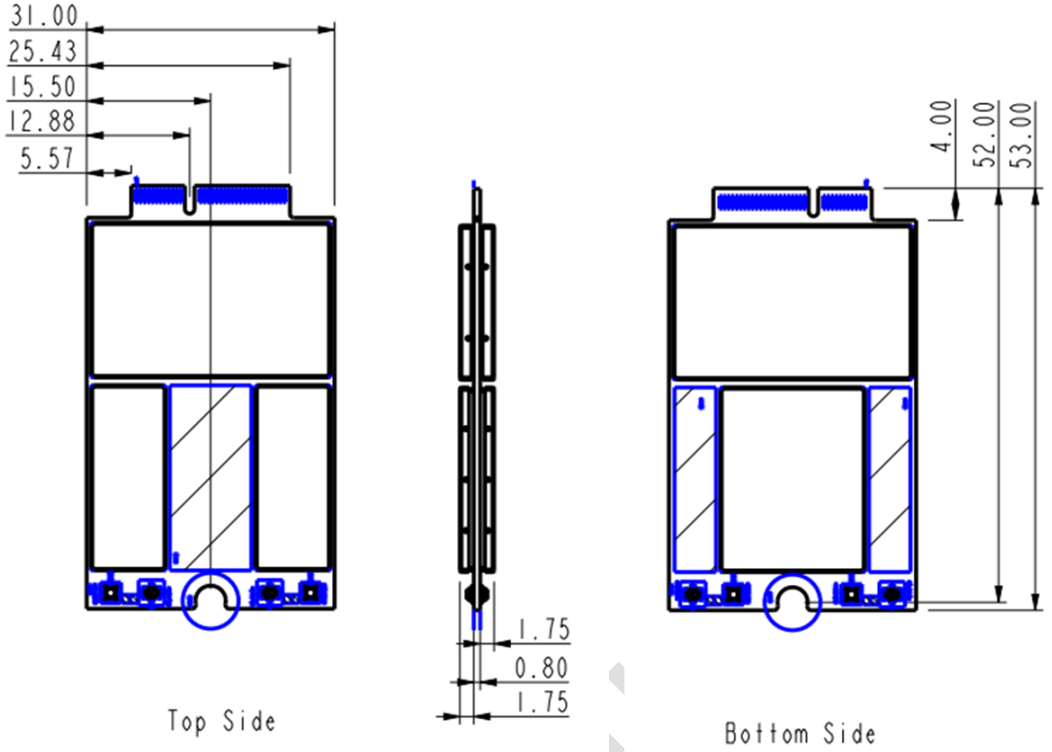
3.4 Power Rated

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 ± 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

6. Compliance Statements

MSL (Moisture Sensitivity Level) :

The moisture sensitivity level of this product is rated at MSL Level 2a.

Strategic Hi-Tech Commodity (SHTC) :

□ Yes (Y) / ■ No (N) , This product is not intended for use in military application.

RoHS Statement :

This product complies with the EU RoHS Directive (2011/65/EU and its amendments) and does not contain restricted hazardous substances.

Halogen-free Statement :

This product meets halogen-free requirements and does not contain halogen elements such as chlorine (Cl) or bromine (Br).

REACH 247 Statement :

This product does not contain any of the 247 substances of very high concern (SVHCs) listed under the EU REACH regulation.

CMRT v6.5 :

The company adheres to the Conflict Minerals Reporting Template (CMRT v6.5) developed by the Responsible Minerals Initiative (RMI) to disclose the sources of tin (Sn), tantalum (Ta), tungsten (W), and gold (Au). Does this product contain conflict minerals: □ Yes / ■ No