

Features

- Qualcomm Atheros QCN9074
- 5GHz, max 23dBm per chain, up to 4804Mbps
- Single Band 5GHz 4x4 WiFi 6 (802.11ax)
- 4 spatial streams (4SS)
- M.2 E Key Interface
- PCI Express 3.0 Interface
- Supports Dynamic Frequency Selection (DFS)



Applications

- Security Surveillance
- Commercial radio coverage
- Hotel Wireless application
- Country coverage
- Forest fire protection engineering
- Some special scene application

Product Description

DR9074-5G(PN02.1) based on QCN9074 Chipset is an enterprise wireless module integrated with 4 x4 MU- MIMO 5 GHz Single Band Wireless Module designed specifically to provide users with mobile access to high- bandwidth video streaming, voice, and data transmission for office and challenging RF environment in factories, warehouses establishment

Absolute Maximum Rating

Parameter	Rating	Unit
Operating Temperature Range	-20 to 70	°C
Storage Temperature Range	-40 to 90	°C
Operating Humidity Range	5 to +95 (non-condensing)	%
Storage Humidity Range	0 to +90 (non-condensing)	%

Hardware Specifications



DR9074-5G(PN02.1)

WiFi 6(802.11ax) 4x4 MU-MIMO 5GHz
 QCN9074 Single Band Wireless Module

Symbol	Parameter
Chipset	Qualcomm Atheros QCN9074
WLAN Host Interface	PCI Express 3.0 Interface
System Memory	2 Mbit serial I2C bus EEPROM
Standard Operating Voltage	5V
Operating Systems	QSDK
Host Interface	M.2 E Key
Antenna Cable / Port	4 x MMCX Connectors, 4 T4 R
Frequency Range	5.15GHz-5.95GHz
Data Rates	5 GHz, max 23dBm per chain, up to 4804 Mbps
Channel Spectrum Widths	Support 20/40/80/ 160MHz at 5GHz
Modulation Techniques	OFDMA: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM;
Temperature Range	Operating: -20 ° C to 70 ° C, Storage: -40 ° C to 90 ° C
Humidity	Operating: 5% to 95% (non-condensing), Storage: Max. 90% (non-condensing)
Certification	TBD
Power Consumption	TBD
Reference Design	PN02.1
Dimensions (WxHxD)	57 mm x 63 mm x 6 mm

Product Version

	P/N	CPU	Chains	Frequency
1	DR9074-5GI	QCN9074	4	5180-5825
2	DR9074-5G	QCN9024	4	5180-5825

RF Performance Table for 5GHz

Operating Mode	Data Rate	TX Power		RX Specificatios	Tolerance
		Per Chain	4 Chains	Sensitivity	
5GHz 802.11a	6Mbps	24dBm	30dBm	-95dBm	±2dB
	9Mbps	24dBm	30dBm	-94dBm	±2dB
	12Mbps	24dBm	30dBm	-92dBm	±2dB
	18Mbps	24dBm	30dBm	-90dBm	±2dB
	24Mbps	24dBm	30dBm	-88dBm	±2dB
	36Mbps	23dBm	29dBm	-86dBm	±2dB
	48Mbps	23dBm	29dBm	-83dBm	±2dB
	54Mbps	23dBm	29dBm	-80dBm	±2dB
5GHz 802.11n/ac VHT20	MCS0	24dBm	30dBm	-95dBm	±2dB
	MCS1	24dBm	30dBm	-94dBm	±2dB
	MCS2	24dBm	30dBm	-92dBm	±2dB
	MCS3	24dBm	30dBm	-89dBm	±2dB
	MCS4	23dBm	29dBm	-86dBm	±2dB
	MCS5	23dBm	29dBm	-84dBm	±2dB
	MCS6	23dBm	29dBm	-82dBm	±2dB
	MCS7	23dBm	29dBm	-80dBm	±2dB
	MCS8	20dBm	26dBm	-77dBm	±2dB
5GHz	MCS0	24dBm	30dBm	-93dBm	±2dB
	MCS1	24dBm	30dBm	-91dBm	±2dB
	MCS2	24dBm	30dBm	-89dBm	±2dB
	MCS3	24dBm	30dBm	-86dBm	±2dB
	MCS4	23dBm	29dBm	-84dBm	±2dB
	MCS5	23dBm	29dBm	-82dBm	±2dB



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WiFi 6(802.11ax) 4x4 MU-MIMO 5GHz
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802.11n/ac VHT40	MCS6	23dBm	29dBm	-80dBm	±2dB
	MCS7	23dBm	29dBm	-78dBm	±2dB
	MCS8	20dBm	26dBm	-75dBm	±2dB
	MCS9	20dBm	26dBm	-72dBm	±2dB
5GHz 802.11n/ac VHT80	MCS0	23dBm	29dBm	-91dBm	±2dB
	MCS1	23dBm	29dBm	-89dBm	±2dB
	MCS2	23dBm	29dBm	-86dBm	±2dB
	MCS3	23dBm	29dBm	-83dBm	±2dB
	MCS4	22dBm	28dBm	-80dBm	±2dB
	MCS5	22dBm	28dBm	-78dBm	±2dB
	MCS6	22dBm	28dBm	-76dBm	±2dB
	MCS7	22dBm	28dBm	-73dBm	±2dB
	MCS8	20dBm	26dBm	-70dBm	±2dB
	MCS9	20dBm	26dBm	-68dBm	±2dB

RF Performance Table for 5GHz

Operating Mode	Data Rate	TX Power		RX Specificatioos	Tolerance
		Per Chain	4 Chains	Sensitivity	
5GHz 802.11ax HE20	MCS0	24dBm	30dBm	-95dBm	±2dB
	MCS1	24dBm	30dBm	-93dBm	±2dB
	MCS2	24dBm	30dBm	-90dBm	±2dB
	MCS3	24dBm	30dBm	-88dBm	±2dB
	MCS4	23dBm	29dBm	-86dBm	±2dB
	MCS5	23dBm	29dBm	-83dBm	±2dB
	MCS6	23dBm	29dBm	-80dBm	±2dB
	MCS7	23dBm	29dBm	-78dBm	±2dB
	MCS8	20dBm	26dBm	-75dBm	±2dB



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	MCS9	20dBm	26dBm	-73dBm	±2dB
	MCS10	18dBm	24dBm	-70dBm	±2dB
	MCS11	18dBm	24dBm	-68dBm	±2dB
5GHz 802.11ax HE40	MCS0	24dBm	30dBm	-93dBm	±2dB
	MCS1	24dBm	30dBm	-91dBm	±2dB
	MCS2	24dBm	30dBm	-89dBm	±2dB
	MCS3	24dBm	30dBm	-87dBm	±2dB
	MCS4	23dBm	29dBm	-84dBm	±2dB
	MCS5	23dBm	29dBm	-82dBm	±2dB
	MCS6	23dBm	29dBm	-80dBm	±2dB
	MCS7	23dBm	29dBm	-77dBm	±2dB
	MCS8	20dBm	26dBm	-75dBm	±2dB
	MCS9	20dBm	26dBm	-72dBm	±2dB
	MCS10	18dBm	24dBm	-69dBm	±2dB
MCS11	18dBm	24dBm	-66dBm	±2dB	
5GHz 802.11ax HE80	MCS0	23dBm	29dBm	-89dBm	±2dB
	MCS1	23dBm	29dBm	-87dBm	±2dB
	MCS2	23dBm	29dBm	-85dBm	±2dB
	MCS3	23dBm	29dBm	-83dBm	±2dB
	MCS4	22dBm	28dBm	-80dBm	±2dB
	MCS5	22dBm	28dBm	-78dBm	±2dB
	MCS6	22dBm	28dBm	-75dBm	±2dB
	MCS7	22dBm	28dBm	-73dBm	±2dB
	MCS8	20dBm	26dBm	-70dBm	±2dB
	MCS9	20dBm	26dBm	-68dBm	±2dB
	MCS10	18dBm	24dBm	-65dBm	±2dB
MCS11	18dBm	24dBm	-62dBm	±2dB	

RF Performance Table for 5GHz

Operating Mode	Data Rate	TX Power		RX Specificatios	Tolerance
		Per Chain	4 Chains	Sensitivity	
5GHz 802.11ax HE160	MCS0	21dBm	27dBm	-87dBm	±2dB
	MCS1	21dBm	27dBm	-85dBm	±2dB
	MCS2	21dBm	27dBm	-83dBm	±2dB
	MCS3	21dBm	27dBm	-81dBm	±2dB
	MCS4	21dBm	27dBm	-78dBm	±2dB
	MCS5	21dBm	27dBm	-76dBm	±2dB
	MCS6	21dBm	27dBm	-74dBm	±2dB
	MCS7	21dBm	27dBm	-71dBm	±2dB
	MCS8	18dBm	24dBm	-69dBm	±2dB
	MCS9	18dBm	24dBm	-66dBm	±2dB
	MCS10	16dBm	22dBm	-63dBm	±2dB
	MCS11	16dBm	22dBm	-60dBm	±2dB

M.2 Pin Definitions

Pin No.	Name	Pin No.	Name
1	GND	2	VDD3P3_ PCIE
3		4	VDD3P3_ PCIE
5		6	PCIE_ LED0
7	GND	8	GPIO46_WCI2_ UART_TXD_ PCIE
9	TP19	10	GPIO47_ WCI2_ UART_RXD_ PCIE
11		12	
13		14	
15	VDD_XPA_ PCIE	16	PCIE_ LED1
17	VDD_XPA_ PCIE	18	GND
19	VDD_XPA_ PCIE	20	
21	VDD_XPA_ PCIE	22	
23	VDD_XPA_ PCIE		
33	GND	32	
35	PCIE0_ RX0_ P	34	
37	PCIE0_ RX0_ N	36	
39	GND	38	MOD_BT_STS_2
41	PCIE0_TX0_ P	40	MOD_WL_ACT_2
43	PCIE0_TX0_ N	42	PINE_BT_ACT_2
45	GND	44	MOD_BT_STS
47	PCIE0_REFCLK_ P	46	MOD_WL_ACT
49	PCIE0_REFCLK_ N	48	PINE_BT_ACT
51	GND	50	
53	PCIE0_CLKREQ_3 P3_ N	52	PCIE0_PERST_3P3
55	PCIE0_WAKE_3 P3_ N	54	
57	GND	56	
59	PCIE0_RX1_ P	58	
61	PCIE0_RX1_ N	60	
63	GND	62	
65	PCIE0_TX1_ P	64	
67	PCIE0_TX1_ N	66	
69	GND	68	
71		70	
73		72	VDD3P3_ PCIE
75	GND	74	VDD3P3_ PCIE