



RADIO EXPOSURE TEST REPORT

FCC ID : QXO-AP5020

Equipment : Access Point

Brand Name : Extreme Networks

Model Name : AP5020

Applicant : Extreme Networks, Inc.
2121 RDU Center Drive Morrisville North Carolina
United States 27560

Manufacturer : Extreme Networks, Inc.
2121 RDU Center Drive Morrisville North Carolina
United States 27560

Standard : 47 CFR Part 2.1091

The product was received on Dec. 14, 2023, and testing was started from Jan. 11, 2024 and completed on Apr. 03, 2024. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A1_1 Ver1.1

Page Number : 3 of 17
Issued Date : Apr. 30, 2024
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturee who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen

Report Producer: Lavender Zeng



1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11be: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11be: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM)
6GHz WLAN	5925-7125	5955-7095	802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11be: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM)
Bluetooth	2400-2483.5	2402-2480	LE: GFSK
Zigbee	2400-2483.5	2405-2480	O-QPSK



1.2 Antenna Information

Ant.	Operating Band	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	WLAN 2.4GHz / 5GHz	Sercomm	6172001TJH.20	PIFA	I-PEX	Note 1
2	WLAN 2.4GHz / 5GHz	Sercomm	6172001TJH.21	PIFA	I-PEX	
3	WLAN 2.4GHz / 5GHz	Sercomm	6172001TJH.22	PIFA	I-PEX	
4	WLAN 2.4GHz / 5GHz	Sercomm	6172001TJH.23	PIFA	I-PEX	
5	WLAN 6GHz	Sercomm	6172001TJH.24	PIFA	I-PEX	
6	WLAN 6GHz	Sercomm	6172001TJH.25	PIFA	I-PEX	
7	WLAN 6GHz	Sercomm	6172001TJH.26	PIFA	I-PEX	
8	WLAN 6GHz	Sercomm	6172001TJH.27	PIFA	I-PEX	
9	WLAN 5GHz / 6GHz	Sercomm	6172001TJH.28	PIFA	I-PEX	
10	WLAN 5GHz / 6GHz	Sercomm	6172001TJH.29	PIFA	I-PEX	
11	Bluetooth / Zigbee	Sercomm	6172001TJH.30	PIFA	I-PEX	4.22
12	Bluetooth / Zigbee	Sercomm	6172001TJH.31	PIFA	I-PEX	4.12
13	Bluetooth / Zigbee	Sercomm	6172001TJH.32	PIFA	I-PEX	4.19
14	GPS	Sercomm	6172001TJH.33	PIFA	I-PEX	1.176GHz: 4.50 1.575GHz: 4.20

Ant.	Port							
	2.4GHz (Radio 1)	2.4GHz (Radio 3)	5GHz (Radio 1)	5GHz (Radio 2)	6GHz (Radio 1)	6GHz (Radio 3)	Bluetooth / Zigbee	GPS
1	1	-	-	1	-	-	-	-
2	2	-	-	2	-	-	-	-
3	3	1	-	3	-	-	-	-
4	4	2	-	4	-	-	-	-
5	-	-	-	-	-	1	-	-
6	-	-	-	-	-	2	-	-
7	-	-	-	-	-	3	-	-
8	-	-	-	-	-	4	-	-
9	-	-	1	-	1	-	-	-
10	-	-	2	-	2	-	-	-
11	-	-	-	-	-	-	1	-
12	-	-	-	-	-	-	2	-
13	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	1



Note 1:

Ant.	Antenna Gain (dBi)								
	2.4GHz	5GHz UNII 1	5GHz UNII 2A	5GHz UNII 2C	5GHz UNII 3	6GHz UNII 5	6GHz UNII 6	6GHz UNII 7	6GHz UNII 8
1	2.91	4.88	4.99	5.07	5.29	-	-	-	-
2	3.17	3.95	3.41	5.00	5.07	-	-	-	-
3	2.98	4.49	4.06	4.40	3.93	-	-	-	-
4	2.64	4.75	4.07	4.71	4.40	-	-	-	-
5	-	-	-	-	-	5.33	4.93	5.50	4.83
6	-	-	-	-	-	5.41	4.54	5.26	5.39
7	-	-	-	-	-	5.95	5.96	4.82	4.77
8	-	-	-	-	-	5.79	5.88	5.89	5.91
9	-	3.07	2.35	2.59	3.21	2.71	2.66	4.37	3.21
10	-	3.01	2.66	3.88	4.23	4.41	3.82	3.37	4.42
11	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-

Ant.	Item	Directional gain (dBi)								
		2.4GHz	5GHz UNII 1	5GHz UNII 2A	5GHz UNII 2C	5GHz UNII 3	6GHz UNII 5	6GHz UNII 6	6GHz UNII 7	6GHz UNII 8
1~4 (4TX)	4T1S	6.00	8.49	7.89	8.04	7.52	-	-	-	-
	4T2S	3.17	5.49	4.99	5.07	5.29	-	-	-	-
	4T3S	3.17	4.88	4.99	5.07	5.29	-	-	-	-
1~2 (2TX)	2T1S	3.9	7.09	6.19	6.33	5.81	-	-	-	-
	2T2S	3.17	4.88	4.99	5.07	5.29	-	-	-	-
3~4 (2TX)	2T1S	3.05	5.48	5.79	6.26	5.87	-	-	-	-
	2T2S	2.98	4.75	4.07	4.71	4.40	-	-	-	-
5~8 (4TX)	4T1S	-	-	-	-	-	9.23	8.77	9.49	9.13
	4T2S	-	-	-	-	-	6.23	5.96	6.49	6.13
	4T3S	-	-	-	-	-	5.95	5.96	5.89	5.91
5~6 (2TX)	2T1S	-	-	-	-	-	7.38	6.63	8.00	7.03
	2T2S	-	-	-	-	-	5.41	4.93	5.50	5.39
9~10 (2TX)	2T1S	-	4.51	4.52	6.00	5.95	5.82	4.82	5.36	5.47
	2T2S	-	3.07	2.66	3.88	4.23	4.41	3.82	4.37	4.42

Note 2: The above information (excepting WLAN gain) was declared by manufacturer.



Note 3: The antenna gain (WLAN) and directional gain (WLAN) are measured which follow the procedure of KDB 662911 D03.

Note 4: The Bluetooth / Zigbee function of Antenna 13 is not enabled at this time.

Note 5: The DFS band is not enabled at this time.

Note 6:

<For Radio 1>

2.4GHz Function

IEEE 802.11b/g/n/VHT/ax/be

For 2TX/2RX:

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 2TX/4RX:

Port 1, Port 2, Port 3 and Port 4 can be used as receiving antenna, but only Port 1 and Port 2 can be used as transmitting antenna.

Port 1, Port 2, Port 3 and Port 4 could receive simultaneously, but only Port 1 and Port 2 could transmit simultaneously.

For 4TX/4RX:

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

5GHz Function

IEEE 802.11a/n/ac/ax/be

UNII 1~UNII 3:

For 2RX:

Port 1 and Port 2 can be used as receiving antenna.

Port 1 and Port 2 could receive simultaneously.

UNII1~UNII 2A:

For 2TX/2RX:

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

6GHz Function

IEEE 802.11ax/be

For 2TX/2RX:

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

<For Radio 2>

5GHz Function

IEEE 802.11a/n/ac/ax/be

For 2TX/4RX:

Port 1, Port 2, Port 3 and Port 4 can be used as receiving antenna, but only Port 1 and Port 2 can be used as transmitting antenna.

Port 1, Port 2, Port 3 and Port 4 could receive simultaneously, but only Port 1 and Port 2 could transmit simultaneously.

For 4TX/4RX:

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**<For Radio 3>****2.4GHz Function****IEEE 802.11b/g/n/VHT/ax/be****For 1TX/2RX:**

Port 1 and Port 2 can be used as receiving antenna, but only Port 1 can be used as transmitting antenna.
Port 1 and Port 2 could receive simultaneously.

For 2TX/2RX:

Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.

6GHz Function**IEEE 802.11ax/be****For 2TX/4RX:**

Port 1, Port 2, Port 3 and Port 4 can be used as receiving antenna, but only Port 1 and Port 2 can be used as transmitting antenna.

Port 1, Port 2, Port 3 and Port 4 could receive simultaneously, but only Port 1 and Port 2 could transmit simultaneously.

For 4TX/4RX:

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.
Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

<For Radio 4>**Bluetooth/Zigbee Functions****For 1TX/1RX:**

The EUT supports the antenna with TX and RX diversity functions.

Both Port 1 and Port 2 support transmit and receive functions, but only one of them will be used at one time.
The Port 1 generated the worst case, so it was selected to test and record in the report.



1.3 Table for EUT Information

EUT	GPS Integrated Module
1	With
2	Without

Note 1: From the above EUTs, EUT 1 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.4 Table for Radio Function

Radio	Support Band		
	2.4GHz	5GHz	6GHz
1	BW: 20MHz	2TX: UNII 1, 2RX: UNII 1&3 (scan) BW: 20/40/80MHz	UNII 5 or UNII 5~8 (scan) BW: 20/40/80/160MHz
2	-	UNII 3 or UNII 1&3 BW: 20/40/80MHz	-
3	BW: 20MHz	-	UNII 7~8 or UNII 5~8 BW: 20/40/80/160/320MHz
4	Bluetooth / Zigbee		
5	GPS		

Note: The above information was declared by manufacturer.

1.5 Table for EUT Operation Mode

Mode	Radio 1	Radio 2	Radio 3	Radio 4	Radio 5	Note
1	2.4GHz 4x4	5GHz (UNII 1&3) 4x4	6GHz (UNII 5~8) 4x4	Bluetooth or Zigbee	GPS	Tri Radio
2	2.4GHz 2x2 (TX) / 5GHz (2RX) / 6GHz (2RX)	5GHz (UNII 1&3) 4x4	6GHz (UNII 5~8) 4x4	Bluetooth or Zigbee	GPS	Full Band w/Scan
3	5GHz (UNII 1) 2x2	5GHz (UNII 3) 4x4	6GHz (UNII 5~8) 4x4	Bluetooth or Zigbee	GPS	Dual 5GHz w/6GHz
4	6GHz 2x2 (TX) / 2.4GHz (2RX) / 5GHz (2RX)	5GHz (UNII 1&3) 4x4	2.4GHz 2x2	Bluetooth or Zigbee	GPS	DBDC w/Scan
5	5GHz (UNII 1) 2x2	5GHz (UNII 3) 4x4	2.4GHz 2x2	Bluetooth or Zigbee	GPS	Dual 5GHz w/2.4GHz
6	6GHz (UNII 5) 2x2	5GHz (UNII 1&3) 4x4	6GHz (UNII 7~8) 4x4	Bluetooth or Zigbee	GPS	Dual 6GHz w/5GHz

Note: The above information was declared by manufacturer.



1.6 Accessories

Accessories
Mount bracket *1

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 2.1091
- ♦ KDB 447498 D04 Interim General RF Exposure Guidance v01

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ 47 CFR Part 1.1307
- ♦ 47 CFR Part 1.1310

1.8 Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1500	-	-	f/300	<6
1500-100,000	-	-	5	<6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 54 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 MPE Exemption

Option (A): 1.1307(b)(3)(i)(A): Available maximum time-averaged power is < 1 mW

Option (B): 1.1307(b)(3)(i)(B): Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, <= Pth.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

Option (C): 1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance

R between the person and the antenna / radiating structure, where $R > \lambda / 2 \pi$.

Single RF Sources Subject to Routine Environmental Evaluation	
RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.
Note: R is in meters, f is in MHz.	



2.4 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

For Radio 1

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D (2TX)	3.17	29.72	30.74	0.50	1330.454	54	C	5598.8	0.2377
2.4G;D1D (4TX)	6.00	28.75	32.60	0.50	2041.738	54	C	5598.8	0.3648
5.2G;D1D	4.51	25.1	27.46	0.50	625.173	54	C	5598.8	0.1117
6.2G;D1D (scan)	4.41	-	23.11	0.50	229.615	54	C	5598.8	0.0410
6.2G;D1D	5.82	-	24.47	0.50	314.051	54	C	5598.8	0.0561
6.4G;D1D	3.82	-	23.03	0.50	225.424	54	C	5598.8	0.0403
6.7G;D1D	4.37	-	22.41	0.50	195.434	54	C	5598.8	0.0349
7.0G;D1D	4.42	-	20.23	0.50	118.304	54	C	5598.8	0.0211

For Radio 2

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D (2TX)	7.09	24.81	29.75	0.50	1059.254	54	C	5598.8	0.1893
5.2G;D1D (4TX)	8.49	27.48	33.82	0.02	2421.029	54	C	5598.8	0.4326
5.8G;D1D (2TX)	5.29	27.81	30.95	0.50	1396.368	54	C	5598.8	0.2495
5.8G;D1D (4TX)	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326

For Radio 3

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	2.98	28.97	29.80	0.50	1071.519	54	C	5598.8	0.1915
6.2G;D1D (2TX)	7.38	-	27.25	0.50	595.662	54	C	5598.8	0.1064
6.2G;D1D (4TX)	9.23	-	27.80	0.04	608.135	54	C	5598.8	0.1087
6.4G;D1D (2TX)	6.63	-	27.03	0.50	566.239	54	C	5598.8	0.1012
6.4G;D1D (4TX)	8.77	-	27.65	0.19	608.135	54	C	5598.8	0.1087
6.7G;D1D (2TX)	8.00	-	26.32	0.50	480.839	54	C	5598.8	0.0859
6.7G;D1D (4TX)	9.49	-	27.68	0.16	608.135	54	C	5598.8	0.1087
7.0G;D1D (2TX)	7.03	-	23.82	0.50	270.396	54	C	5598.8	0.0483
7.0G;D1D (4TX)	9.13	-	25.42	0.50	390.841	54	C	5598.8	0.0698

**For Radio 4**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081

Simultaneous Transmission Analysis Mode:**Mode 1: Radio 1 (WLAN 2.4GHz) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 6GHz/UNII 5~8) + Radio 4 (Zigbee)**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	6.00	28.75	32.60	0.50	2041.738	54	C	5598.8	0.3648
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.2G;D1D	9.23	-	27.80	0.04	608.135	54	C	5598.8	0.1087
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081
Sum TL Ratio_C	0.9142								
Ratio Limit	1								

Mode 2: Radio 1 (WLAN 2.4GHz) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 6GHz/UNII 5~8) + Radio 4 (Bluetooth)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	6.00	28.75	32.60	0.50	2041.738	54	C	5598.8	0.3648
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.2G;D1D	9.23	-	27.80	0.04	608.135	54	C	5598.8	0.1087
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
Sum TL Ratio_C	0.9142								
Ratio Limit	1								

Mode 3: Radio 1 (WLAN 5GHz/UNII 1) + Radio 2 (WLAN 5GHz/UNII 3) + Radio 3 (WLAN 6GHz/UNII 5~8) + Radio 4 (Zigbee)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.51	25.1	27.46	0.50	625.173	54	C	5598.8	0.1117
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.2G;D1D	9.23	-	27.80	0.04	608.135	54	C	5598.8	0.1087
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6611								
Ratio Limit	1								

**Mode 4: Radio 1 (WLAN 5GHz/UNII 1) + Radio 2 (WLAN 5GHz/UNII 3) + Radio 3 (WLAN 6GHz/UNII 5~8) + Radio 4 (Bluetooth)**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.51	25.1	27.46	0.50	625.173	54	C	5598.8	0.1117
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.2G;D1D	9.23	-	27.80	0.04	608.135	54	C	5598.8	0.1087
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6611								
Ratio Limit	1								

Mode 5: Radio 1 (WLAN 6GHz/UNII 5~8) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 2.4GHz) + Radio 4 (Zigbee)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	4.41	-	23.11	0.50	229.615	54	C	5598.8	0.0410
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
2.4G;G1D	2.98	28.97	29.80	0.50	1071.519	54	C	5598.8	0.1915
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6732								
Ratio Limit	1								

Mode 6: Radio 1 (WLAN 6GHz/UNII 5~8) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 2.4GHz) + Radio 4 (Bluetooth)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	4.41	-	23.11	0.50	229.615	54	C	5598.8	0.0410
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
2.4G;G1D	2.98	28.97	29.80	0.50	1071.519	54	C	5598.8	0.1915
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6732								
Ratio Limit	1								

Mode 7: Radio 1 (WLAN 5GHz/UNII 1) + Radio 2 (WLAN 5GHz/UNII 3) + Radio 3 (WLAN 2.4GHz) + Radio 4 (Zigbee)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.51	25.1	27.46	0.50	625.173	54	C	5598.8	0.1117
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
2.4G;G1D	2.98	28.97	29.80	0.50	1071.519	54	C	5598.8	0.1915
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081
Sum TL Ratio_C	0.7439								
Ratio Limit	1								

**Mode 8: Radio 1 (WLAN 5GHz/UNII 1) + Radio 2 (WLAN 5GHz/UNII 3) + Radio 3 (WLAN 2.4GHz) + Radio 4 (Bluetooth)**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.51	25.1	27.46	0.50	625.173	54	C	5598.8	0.1117
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
2.4G;G1D	2.98	28.97	29.80	0.50	1071.519	54	C	5598.8	0.1915
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
Sum TL Ratio_C	0.7439								
Ratio Limit	1								

Mode 9: Radio 1 (WLAN 6GHz/UNII 5) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 6GHz/UNII 7~8) + Radio 4 (Zigbee)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	5.82	-	24.47	0.50	314.051	54	C	5598.8	0.0561
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.7G;D1D	9.49	-	27.68	0.16	608.135	54	C	5598.8	0.1087
2.4G;G1D Zigbee	4.22	14.01	16.08	0.50	45.499	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6055								
Ratio Limit	1								

Mode 10: Radio 1 (WLAN 6GHz/UNII 5) + Radio 2 (WLAN 5GHz/UNII 1&3) + Radio 3 (WLAN 6GHz/UNII 7~8) + Radio 4 (Bluetooth)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	5.82	-	24.47	0.50	314.051	54	C	5598.8	0.0561
5.8G;D1D	7.52	28.46	33.83	0.01	2421.029	54	C	5598.8	0.4326
6.7G;D1D	9.49	-	27.68	0.16	608.135	54	C	5598.8	0.1087
2.4G;BT-LE	4.22	13.98	16.05	0.50	45.186	54	C	5598.8	0.0081
Sum TL Ratio_C	0.6055								
Ratio Limit	1								

Note: The above antenna gain was declared by manufacturer.

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