

Radio Exposure Evaluation Report

FCC ID : QXO-AP4020
Equipment : Access Point
Brand Name : Extreme Networks
Model Name : AP4020
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 FCC Part 2 Subpart J, section 2.1091

The product was received on Jun. 27, 2024, and testing was started from Oct. 13, 2024 and completed on Dec. 06, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR FCC Part 2 Subpart J, section 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.


Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Applicable Standards	8
1.3 Testing Location	8
2 MAXIMUM PERMISSIBLE EXPOSURE	9
2.1 Limit of Maximum Permissible Exposure	9
2.2 RF Exposure Exempt Measurement	10
2.3 Multiple RF Sources Exposure.....	11
2.4 MPE Calculation Method	12
2.5 Calculated Result and Limit.....	13
Photographs of EUT V01	

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Summary of Test Result

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

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

None

Reviewed by: Barry Hsiao

Report Producer: Michelle Tsai



1 General Description

1.1 Information

1.1.1 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) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11be: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5720 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	5955-7115	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) 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: DSSS (GFSK)

**1.1.2 Antenna Information**

Ant.	Brand	Model Name	Antenna Type	Connector	Support	Radio
1	Sercomm	6172005QWA01	PIFA	I-Pex	2.4G+5G	Radio 1_2.4G
						Radio 2_5G
2	Sercomm	6172005QWA02	PIFA	I-Pex	2.4G+5G	Radio 1_2.4G
						Radio 2_5G
3	Sercomm	6172005QWA04	PIFA	I-Pex	5G	Radio 3_5G
4	Sercomm	6172005QWA05	PIFA	I-Pex	5G	Radio 3_5G
5	Sercomm	6172005QWA06	PIFA	I-Pex	6G	Radio 3_6G
6	Sercomm	6172005QWA07	PIFA	I-Pex	6G	Radio 3_6G
7	Sercomm	6172005QWA03	PIFA	I-Pex	2.4G+5G+6G	Radio 1_Scan
8	Sercomm	6172005QWA08	PIFA	I-Pex	BT	BLE_chain 0
9	Sercomm	6172005QWA09	PIFA	I-Pex	BT	BLE_chain 1_H
10	Sercomm	6172005QWA10	PIFA	I-Pex	BT	BLE_chain 1_V
11	Sercomm	6172005QWA11	PIFA	I-Pex	GPS	N/A

Ant.	Port	Gain (dBi)											
		2.4G	5G				6G				BT chain 0	BT chain 1_H	BT chain 1_V
			UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-5	UNII-6	UNII-7	UNII-8			
1	1	1.53	2.94	3.56	4.68	5.34	-	-	-	-	-	-	-
2	2	1.36	2.3	2.23	2.37	2.92	-	-	-	-	-	-	-
3	1	-	3.49	3.73	-	-	-	-	-	-	-	-	-
4	2	-	2.69	2.56	-	-	-	-	-	-	-	-	-
5	1	-	-	-	-	-	5.48	5.28	5.85	4.31	-	-	-
6	2	-	-	-	-	-	2.82	2.9	2.64	2.43	-	-	-
7	1	2.22	3.14	3.33	3.41	4.5	5.35	4.73	4.59	4.69	-	-	-
8	1	-	-	-	-	-	-	-	-	-	1.58	-	-
9	1	-	-	-	-	-	-	-	-	-	-	2.24	-
10	2	-	-	-	-	-	-	-	-	-	-	-	1.8



Composite Gain (dBi)										
Ant.		2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-5	UNII-6	UNII-7	UNII-8
1~2	DG [1SS]	1.55	3.19	4.6	5.41	5.34	-	-	-	-
	DG [2SS]	1.53	2.94	3.56	4.68	5.34	-	-	-	-
3~4	DG [1SS]	-	5.77	5.82	-	-	-	-	-	-
	DG [2SS]	-	3.49	3.73	-	-	-	-	-	-
5~6	DG [1SS]	-	-	-	-	-	5.58	5.33	5.93	5.02
	DG [2SS]	-	-	-	-	-	5.48	5.28	5.85	4.31

Note 1: The EUT has eleven antennas.

Note 2: The composite gain is derived as KDB 662911 D03 v01 which was used as directional gain. For more detail information, please refer to the Antenna Pattern Report AP462705.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax/be mode (1TX/2RX) (Radio 1)

Ant. 1 (port 1) could transmit/receive.

For IEEE 802.11 b/g/n/VHT/ax/be mode (2TX/2RX) (Radio 1)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For b20, g20 mode (1TX/1RX) (Radio 1_Scan)

Ant. 7 (port 1) could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax/be mode (1TX/2RX) (Radio 2)

Ant. 1 (port 1) could transmit/receive.

For IEEE 802.11 a/n/ac/ax/be mode (2TX/2RX) (Radio 2)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For IEEE 802.11 a/n/ac/ax/be mode (1TX/2RX) (Radio 3)

Ant. 3 (port 1) could transmit/receive.

For IEEE 802.11 a/n/ac/ax/be mode (2TX/2RX) (Radio 3)

Ant. 3 (port 1) and Ant. 4 (port 2) could transmit/receive simultaneously.

For a20, a40, a80, a160 (1TX/1RX) (Radio 1_Scan)

Ant. 7 (port 1) could transmit/receive.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX) (Chain 0)

Ant. 8 (port 1) could transmit/receive.

For IEEE 802.15.1 Bluetooth mode (1TX/2RX) (Chain 1)

Ant. 9 (port 1) or Ant. 10 (port 2) could transmit/receive

Support diversity function and pre-tested on each single chain, the worst case was Ant. 10 (port 2) and it was recorded in this test report.

For 6GHz function:

For IEEE 802.11 a/ax/be mode (1TX/2RX) (Radio3)

Ant. 5 (port 1) could transmit/receive.

For IEEE 802.11 a/ax/be mode (2TX/2RX) (Radio 3)

Ant. 5 (port 1) and Ant. 6 (port 2) could transmit/receive simultaneously.

For 11a20, 11a40, 11a80, 11a160 (1TX/1RX) (Radio 1_Scan)

Ant. 7 (port 1) could transmit/receive.

1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 2 Subpart J, section 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

1.3 Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory			
☒	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)	
		TEL: 886-3-327-3456	FAX: 886-3-327-0973
Test site Designation No. TW3785 with FCC.			
☐	Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)	
		TEL: 886-3-318-0787	FAX: 886-3-318-0287
Test site Designation No. TW0008 with FCC.			

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

Multiple Transmitters Condition

Co-location as simultaneously transmitting (co-transmitting) and the evaluation shall be consider that simultaneous transmissions from co-located devices the individual transmitters are evaluated separately. After sum of the individual value (basic restriction / reference level) are measured/calculated also have to under basic restriction / reference level.

Co-transmitting mode:

1. Radio 1:2.4G+Radio 2:5G Full+Radio 3:6G Full+Radio 1:Scan 2.4G+ Radio 1:Scan 5G + Radio 1:Scan 6G+Bluetooth(chain0)
2. Radio 1:2.4G+Radio 2:5G High(Band3/4)+Radio 3:5G Low(Band1/2)+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain0)
3. Radio 1:2.4G+Radio 2:5G Full+Radio 3:6G Full+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain1)
4. Radio 1:2.4G+Radio 2:5G High(Band3/4)+Radio 3:5G Low(Band1/2)+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain1)

2.2 RF Exposure Exempt Measurement

Option	Refer Std.	Exemption Exposure Thresholds (TL)
A	§1.1307(b)(3)(i)(A)	Available maximum time-averaged power is no more than 1 mW
B	§1.1307(b)(3)(i)(B)	$P_{th}(mW) = \begin{cases} ERP_{20cm} (d / 20cm)^x \rightarrow d \leq 20cm \\ ERP_{20cm} \rightarrow 20cm < d \leq 40cm \end{cases}$ $x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right) \text{ and } f \text{ is in GHz}$ $\begin{cases} ERP_{20cm} : 0.3GHz \leq f < 1.5GHz \rightarrow 2040f(mW) \\ ERP_{20cm} : 1.5GHz \leq f \leq 6GHz \rightarrow 3060(mW) \end{cases}$
C	§1.1307(b)(3)(i)(C)	$\begin{cases} 0.3 \sim 1.34MHz \rightarrow ERP(W) = 1920R^2 \\ 1.34 \sim 30MHz \rightarrow ERP(W) = 3450R^2 / f^2 \\ 30 \sim 300MHz \rightarrow ERP(W) = 3.83R^2 \\ 300 \sim 1500MHz \rightarrow ERP(W) = 0.0128R^2 f \\ 1500 \sim 100000MHz \rightarrow ERP(W) = 19.2R^2 \end{cases}$ f is in MHz; R is in m; $R > \lambda / 2\pi$

2.3 Multiple RF Sources Exposure

Refer Std.	Exemption Exposure Thresholds (TL)
§1.1307(b)(3)(ii)(A)	The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required)
§1.1307(b)(3)(ii)(B)	$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{ExposureLimit_k} \leq 1$ a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph §1.1307(b)(3)(i)(B) of this section for P , including existing exempt transmitters and those being added. b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph §1.1307(b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added. c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters. P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive). $P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph §1.1307(b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i. ERP_j = the ERP of fixed, mobile, or portable RF source j. $ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph §1.1307(b)(3)(i)(C) of this section. $Evaluated_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure. $Evaluated Limit_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310 of this chapter.



2.4 MPE Calculation Method

The MPE was calculated at 22 cm to show compliance with the power density limit.
The following formula was used to calculate the Power Density:

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

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

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

2.5 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Non-Beamforming

2.4GHz WLAN_Radio 1_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	20.57	19.95	0.50	110.917	22	B	3060.0	0.0363
2.4G;D1D	1.53	19.62	19.00	0.50	89.125	22	B	3060.0	0.0291

2.4GHz WLAN_Radio 1_2T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	23.59	22.97	0.50	222.331	22	B	3060.0	0.0727
2.4G;D1D	1.53	23.18	22.56	0.50	202.302	22	B	3060.0	0.0661

2.4GHz WLAN_Radio 1_2T2S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	1.53	23.13	22.51	0.50	199.986	22	B	3060.0	0.0654

2.4GHz WLAN_Radio 1_Scan_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	2.22	23.52	23.59	0.50	256.448	22	B	3060.0	0.0838
2.4G;D1D	2.22	19.38	19.45	0.50	98.855	22	B	3060.0	0.0323

5GHz WLAN_Radio 2_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	2.94	18.84	19.63	0.50	103.039	22	B	3060.0	0.0337
5.3G;D1D	3.56	19.07	20.48	0.50	125.314	22	B	3060.0	0.0410
5.6G;D1D	4.68	19.60	22.13	0.50	183.231	22	B	3060.0	0.0599
5.8G;D1D	5.34	19.88	23.07	0.50	227.510	22	B	3060.0	0.0744

**5GHz WLAN_Radio 2_2T1S**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	2.94	22.26	23.05	0.50	226.464	22	B	3060.0	0.0740
5.3G;D1D	3.56	22.36	23.77	0.50	267.301	22	B	3060.0	0.0874
5.6G;D1D	4.68	22.55	25.08	0.50	361.410	22	B	3060.0	0.1182
5.8G;D1D	5.34	22.99	26.18	0.50	465.586	22	B	3060.0	0.1522

5GHz WLAN_Radio 2_2T2S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	2.94	22.24	23.03	0.50	225.424	22	B	3060.0	0.0737
5.3G;D1D	3.56	22.34	23.75	0.50	266.073	22	B	3060.0	0.0870
5.6G;D1D	4.68	22.49	25.02	0.50	356.451	22	B	3060.0	0.1165
5.8G;D1D	5.34	23.09	26.28	0.50	476.431	22	B	3060.0	0.1558

5GHz WLAN_Radio 1_Scan_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.14	11.46	12.45	0.50	19.724	22	B	3060.0	0.0064
5.3G;D1D	3.33	18.10	19.28	0.50	95.060	22	B	3060.0	0.0311
5.6G;D1D	3.41	17.86	19.12	0.50	91.622	22	B	3060.0	0.0300
5.8G;D1D	4.50	18.03	20.38	0.50	122.462	22	B	3060.0	0.0400

5GHz WLAN_Radio 3_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.49	19.50	20.84	0.50	136.144	22	B	3060.0	0.0445
5.3G;D1D	3.73	20.42	22.00	0.50	177.828	22	B	3060.0	0.0581

5GHz WLAN_Radio 3_2T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.49	22.51	23.85	0.50	272.270	22	B	3060.0	0.0890
5.3G;D1D	3.73	23.23	24.81	0.50	339.625	22	B	3060.0	0.1110

**5GHz WLAN_Radio 3_2T2S**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.49	22.60	23.94	0.50	277.971	22	B	3060.0	0.0909
5.3G;D1D	3.73	23.27	24.85	0.50	342.768	22	B	3060.0	0.1121

6GHz WLAN_Radio 3_1T1S_LPI

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	21.55	0.50	160.325	22	C	929.287	0.1726
6.4G;D1D	-	-	20.34	0.50	121.339	22	C	929.287	0.1306
6.7G;D1D	-	-	20.74	0.50	133.045	22	C	929.287	0.1432
7.0G;D1D	-	-	20.34	0.50	121.339	22	C	929.287	0.1306

6GHz WLAN_Radio 3_2T1S_LPI

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	20.92	0.50	138.676	22	C	929.287	0.1493
6.4G;D1D	-	-	20.85	0.50	136.458	22	C	929.287	0.1469
6.7G;D1D	-	-	21.08	0.50	143.880	22	C	929.287	0.1549
7.0G;D1D	-	-	21.04	0.50	142.561	22	C	929.287	0.1535

6GHz WLAN_Radio 3_2T2S_LPI

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	21.84	0.50	171.396	22	C	929.287	0.1845
6.4G;D1D	-	-	22.34	0.50	192.309	22	C	929.287	0.2070
6.7G;D1D	-	-	22.06	0.50	180.302	22	C	929.287	0.1941
7.0G;D1D	-	-	21.24	0.50	149.279	22	C	929.287	0.1607

6GHz WLAN_Radio 1_Scan_1T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	20.81	0.50	135.207	22	C	929.287	0.1455
6.4G;D1D	-	-	20.97	0.50	140.281	22	C	929.287	0.1510
6.7G;D1D	-	-	20.92	0.50	138.676	22	C	929.287	0.1493
7.0G;D1D	-	-	21.15	0.50	146.218	22	C	929.287	0.1574

Bluetooth_chain 0

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	1.58	11.92	11.35	0.50	15.311	22	B	3060.0	0.0050

Bluetooth_chain 1

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	1.80	11.69	11.34	0.50	15.276	22	B	3060.0	0.0050

Beamforming
2.4GHz WLAN_Radio 1_2T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	1.55	22.76	22.16	0.50	184.502	22	B	3060.0	0.0603

5GHz WLAN_Radio 2_2T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.19	22.26	23.30	0.50	239.883	22	B	3060.0	0.0784
5.3G;D1D	4.60	22.36	24.81	0.50	339.625	22	B	3060.0	0.1110
5.6G;D1D	5.41	22.55	25.81	0.50	427.563	22	B	3060.0	0.1398
5.8G;D1D	5.34	22.99	26.18	0.50	465.586	22	B	3060.0	0.1522

5GHz WLAN_Radio 3_2T1S

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.77	22.51	26.13	0.50	460.257	22	B	3060.0	0.1505
5.3G;D1D	5.82	23.23	26.90	0.50	549.541	22	B	3060.0	0.1797

6GHz WLAN_Radio 3_2T1S_LPI

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	25.00	0.50	354.813	22	C	929.287	0.3820
6.4G;D1D	-	-	25.57	0.50	404.576	22	C	929.287	0.4355
6.7G;D1D	-	-	25.47	0.50	395.367	22	C	929.287	0.4256
7.0G;D1D	-	-	24.59	0.50	322.849	22	C	929.287	0.3475

Note 1: Option A, B and C refer as clause 2.2

Note 2: For option B, Pth(mW) convert to TL ERP(mW); For option C, ERP(W) convert to TL ERP(mW)

Note 3: TL Ratio=Tune-up ERP(mW)/TL ERP(mW)

**Simultaneous Transmission Analysis Mode:****Radio 1:2.4G+Radio 2:5G Full+Radio 3:6G Full+Radio 1:Scan 2.4G+Radio:Scan 5G +R1:Scan 6G+Bluetooth(chain0)**

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	23.59	22.97	0.50	222.331	22	B	3060.0	0.0727
5.8G;D1D	5.34	23.09	26.28	0.50	476.431	22	B	3060.0	0.1558
2.4G;G1D	2.22	23.52	23.59	0.50	256.448	22	B	3060.0	0.0838
5.8G;D1D	4.50	18.03	20.38	0.50	122.462	22	B	3060.0	0.0400
7.0G;D1D	-	-	21.15	0.50	146.218	22	C	929.287	0.1574
6.7G;D1D	-	-	25.57	0.50	404.576	22	C	929.287	0.4355
2.4G;BT-LE	1.58	11.92	11.35	0.50	15.311	22	B	3060.0	0.0050
Sum TL Ratio_B	0.3573								
Sum TL Ratio_C	0.5929								
Sum Ratio	0.9502								
Ratio Limit	1								

Radio 1:2.4G+Radio 2:5G High(Band3/4)+Radio 3:5G Low(Band1/2)+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain0)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	23.59	22.97	0.50	222.331	22	B	3060.0	0.0727
5.8G;D1D	5.34	23.09	26.28	0.50	476.431	22	B	3060.0	0.1558
2.4G;G1D	2.22	23.52	23.59	0.50	256.448	22	B	3060.0	0.0838
5.8G;D1D	4.50	18.03	20.38	0.50	122.462	22	B	3060.0	0.0400
7.0G;D1D	-	-	21.15	0.50	146.218	22	C	929.287	0.1574
5.3G;D1D	5.82	23.23	26.90	0.50	549.541	22	B	3060.0	0.1797
2.4G;BT-LE	1.58	11.92	11.35	0.50	15.311	22	B	3060.0	0.0050
Sum TL Ratio_B	0.537								
Sum TL Ratio_C	0.1574								
Sum Ratio	0.6944								
Ratio Limit	1								



Radio 1:2.4G+Radio 2:5G Full+Radio 3:6G Full+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain1)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	23.59	22.97	0.50	222.331	22	B	3060.0	0.0727
5.8G;D1D	5.34	23.09	26.28	0.50	476.431	22	B	3060.0	0.1558
2.4G;G1D	2.22	23.52	23.59	0.50	256.448	22	B	3060.0	0.0838
5.8G;D1D	4.50	18.03	20.38	0.50	122.462	22	B	3060.0	0.0400
7.0G;D1D	-	-	21.15	0.50	146.218	22	C	929.287	0.1574
6.7G;D1D	-	-	25.57	0.50	404.576	22	C	929.287	0.4355
2.4G;BT-LE	1.80	11.69	11.34	0.50	15.276	22	B	3060.0	0.0050
Sum TL Ratio_B	0.3573								
Sum TL Ratio_C	0.5929								
Sum Ratio	0.9502								
Ratio Limit	1								

Radio 1:2.4G+Radio 2:5G High(Band3/4)+Radio 3:5G Low(Band1/2)+Radio 1:Scan 2.4G+Radio 1:Scan 5G+Radio 1:Scan 6G+Bluetooth(chain1)

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	1.53	23.59	22.97	0.50	222.331	22	B	3060.0	0.0727
5.8G;D1D	5.34	23.09	26.28	0.50	476.431	22	B	3060.0	0.1558
2.4G;G1D	2.22	23.52	23.59	0.50	256.448	22	B	3060.0	0.0838
5.8G;D1D	4.50	18.03	20.38	0.50	122.462	22	B	3060.0	0.0400
7.0G;D1D	-	-	21.15	0.50	146.218	22	C	929.287	0.1574
5.3G;D1D	5.82	23.23	26.90	0.50	549.541	22	B	3060.0	0.1797
2.4G;BT-LE	1.80	11.69	11.34	0.50	15.276	22	B	3060.0	0.0050
Sum TL Ratio_B	0.537								
Sum TL Ratio_C	0.1574								
Sum Ratio	0.6944								
Ratio Limit	1								

Note 1: Option A, B and C refer as clause 2.2

Note 2: For option B, Pth(mW) convert to TL ERP(mW); For option C, ERP(W) convert to TL ERP(mW)

Note 3: TL Ratio=Tune-up ERP(mW)/TL ERP(mW)

Note 4: Refer as clause 2.3 Multiple RF Sources Exposure. Please follow below option and sum TL ration table.

Option	Sum TL Ratio_B	Option	Sum TL Ratio_C	Option	Sum TL Ratio_E
B	$\sum_{i=1}^a \frac{P_i}{P_{th,i}}$	C	$\sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}}$	E	$\sum_{k=1}^c \frac{Evaluated_k}{ExposureLimit_k}$

Note: The above antenna gain was declared by manufacturer.

—————THE END—————