




FCC RADIO EXPOSURE TEST REPORT

FCC ID : QXO-AP510E
Equipment : 802.11ax Access Point
Brand Name : Extreme Networks
Model Name : AP510e
Applicant : Extreme Networks, Inc.
6480 Via Del Oro, San Jose, CA 95119
Manufacturer : Extreme Networks, Inc.
6480 Via Del Oro, San Jose, CA 95119
Standard : 47 CFR Part 2.1091

The product was received on Nov. 09, 2018, and testing was started from Feb. 20, 2019 and completed on May 14, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.


Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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Photographs of EUT v01



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:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Vicky Huang**



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) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5250 5250-5320 5500-5720 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Bluetooth	2400-2483.5	2402-2480	LE: DSSS (GFSK)
Thread	2400-2483.5	2405-2480	Thread: O-QPSK (250kbps)

1.2 Table for EUT support function

The EUT has three radios, the information as following table:

Radio	Function		
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth/Thread
1	V	V	-
2	-	V	-
3	-	-	V

Function	Radio	Support Type	Support Band
AP	1,2,3	Master	WLAN 2.4GHz/Bluetooth/Thread/WLAN 5GHz Band 1~4
Client	1	Slave without Radar Detection (Sensor Mode)	WLAN 2.4GHz/WLAN 5GHz Band 1+4
Bridge	1,2,3	Master	WLAN 2.4GHz/Bluetooth/Thread/WLAN 5GHz Band 1+4
Mesh	1,2,3	Master	WLAN 2.4GHz/Bluetooth/Thread/WLAN 5GHz Band 1+4

Note: The above information was declared by manufacturer.



1.3 Table for EUT operation function

Mode	Radio 1	Radio 2	Radio 3
1	2.4G(Master-AP)	5G-Full Band(Master-AP)	Bluetooth/Thread
2	5G Band 1+4 / 2.4G Slave without Radar Detection (Sensor Mode)	5G-Full Band(Master-AP)	Bluetooth/Thread
3	5G-Low Band(Master-AP)	5G-High Band(Master-AP)	Bluetooth/Thread

Note: 1. The above information was declared by manufacturer.
 2. The Mode 2 was same as client function of section 1.2.

1.4 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA8O1739-03

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding 5GHz band 2 and band 3 (5250~5350 MHz, 5470~5725 MHz) for this device. 2. Adding 802.11ac 160MHz and 802.11ax 160MHz Mode.	Maximum Permissible Exposure.

Note: Maximum Permissible Exposure of WLAN 2.4GHz, Bluetooth, Thread and WLAN 5GHz band 1, 4 are based on original test report.

1.5 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086B with Industry Canada.



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)*	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)*	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 26 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

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



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

For WLAN Function:

For 2.4GHz:

Mode 1: (Ant. 4 Omni antenna / 3 dBi)

For Non-beamforming / 1T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	3.00	23.34	26.34	0.50	26.84	0.48306	26	0.05686	1
2.4G;D1D	3.00	20.84	23.84	0.50	24.34	0.27164	26	0.03198	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	3.00	22.46	25.46	0.50	25.96	0.39446	26	0.04643	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	3.00	28.78	31.78	0.50	32.28	1.69044	26	0.19899	1
2.4G;D1D	3.00	24.28	27.28	0.50	27.78	0.59979	26	0.07060	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	9.02	25.28	34.30	0.50	34.80	3.01995	26	0.35549	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	3.00	24.69	27.69	0.50	28.19	0.65917	26	0.07759	1

**Mode 2: (Ant. 7 Omni antenna / 4 dBi)****For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	4.00	23.43	27.43	0.50	27.93	0.62087	26	0.07309	1
2.4G;D1D	4.00	21.32	25.32	0.50	25.82	0.38194	26	0.04496	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	4.00	23.30	27.30	0.50	27.80	0.60256	26	0.07093	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	4.00	28.78	32.78	0.50	33.28	2.12814	26	0.25051	1
2.4G;D1D	4.00	25.54	29.54	0.50	30.04	1.00925	26	0.11880	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	10.02	25.09	35.11	0.50	35.61	3.63915	26	0.42838	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	4.00	25.36	29.36	0.50	29.86	0.96828	26	0.11398	1

**Mode 3: (Ant. 11 Panel antenna / 6.8 dBi)****For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	6.80	22.51	29.31	0.50	29.81	0.95719	26	0.11268	1
2.4G;D1D	6.80	20.56	27.36	0.50	27.86	0.61094	26	0.07192	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	6.80	22.46	29.26	0.50	29.76	0.94624	26	0.11139	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	6.80	28.50	35.30	0.50	35.80	3.80189	26	0.44754	1
2.4G;D1D	6.80	24.51	31.31	0.50	31.81	1.51705	26	0.17858	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	12.82	23.05	35.87	0.12	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	6.80	24.69	31.49	0.50	31.99	1.58125	26	0.18614	1



For 5GHz:

For Radio 1:

Mode 1: (Ant. 5 Panel antenna / 3 dBi)

For Non-beamforming / 1T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	21.87	24.87	0.50	25.37	0.34435	26	0.04054	1
5.3G;D1D	3.00	21.77	24.77	0.50	25.27	0.33651	26	0.03961	1
5.6G;D1D	3.00	21.06	24.06	0.50	24.56	0.28576	26	0.03364	1
5.8G;D1D	3.00	21.96	24.96	0.50	25.46	0.35156	26	0.04138	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	23.99	26.99	0.50	27.49	0.56105	26	0.06604	1
5.3G;D1D	3.00	23.92	26.92	0.50	27.42	0.55208	26	0.06499	1
5.6G;D1D	3.00	23.88	26.88	0.50	27.38	0.54702	26	0.06439	1
5.8G;D1D	3.00	24.09	27.09	0.50	27.59	0.57412	26	0.06758	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	26.82	29.82	0.50	30.32	1.07647	26	0.12672	1
5.3G;D1D	3.00	23.83	26.83	0.50	27.33	0.54075	26	0.06366	1
5.6G;D1D	3.00	23.93	26.93	0.50	27.43	0.55335	26	0.06514	1
5.8G;D1D	3.00	26.45	29.45	0.50	29.95	0.98855	26	0.11637	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	9.02	26.53	35.55	0.44	35.99	3.97192	26	0.46756	1
5.3G;D1D	9.02	20.95	29.97	0.02	29.99	0.99770	26	0.11744	1
5.6G;D1D	9.02	20.87	29.89	0.10	29.99	0.99770	26	0.11744	1
5.8G;D1D	9.02	26.90	35.92	0.07	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	26.77	29.77	0.50	30.27	1.06414	26	0.12527	1
5.3G;D1D	3.00	23.96	26.96	0.50	27.46	0.55719	26	0.06559	1
5.6G;D1D	3.00	23.96	26.96	0.50	27.46	0.55719	26	0.06559	1
5.8G;D1D	3.00	26.43	29.43	0.50	29.93	0.98401	26	0.11583	1

**Mode 2: (Ant. 6 Omni antenna / 6 dBi)
For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	21.66	27.66	0.50	28.16	0.65464	26	0.07706	1
5.3G;D1D	6.00	21.48	27.48	0.50	27.98	0.62806	26	0.07393	1
5.6G;D1D	6.00	20.52	26.52	0.50	27.02	0.50350	26	0.05927	1
5.8G;D1D	6.00	22.00	28.00	0.50	28.50	0.70795	26	0.08334	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	24.42	30.42	0.50	30.92	1.23595	26	0.14549	1
5.3G;D1D	6.00	23.92	29.92	0.07	29.99	0.99770	26	0.11744	1
5.6G;D1D	6.00	23.88	29.88	0.11	29.99	0.99770	26	0.11744	1
5.8G;D1D	6.00	24.61	30.61	0.50	31.11	1.29122	26	0.15200	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	25.09	31.09	0.50	31.59	1.44212	26	0.16976	1
5.3G;D1D	6.00	21.73	27.73	0.50	28.23	0.66527	26	0.07831	1
5.6G;D1D	6.00	23.09	29.09	0.50	29.59	0.90991	26	0.10711	1
5.8G;D1D	6.00	27.43	33.43	0.50	33.93	2.47172	26	0.29096	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	12.02	23.77	35.79	0.50	36.29	4.25598	26	0.50099	1
5.3G;D1D	12.02	17.91	29.93	0.06	29.99	0.99770	26	0.11744	1
5.6G;D1D	12.02	17.94	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	27.00	33.00	0.50	33.50	2.23872	26	0.26353	1
5.3G;D1D	6.00	23.91	29.91	0.08	29.99	0.99770	26	0.11744	1
5.6G;D1D	6.00	23.96	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	6.00	27.67	33.67	0.50	34.17	2.61216	26	0.30749	1

**Mode 3: (Ant. 11 Panel antenna / 8.7 dBi)
For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	21.37	30.07	0.50	30.57	1.14025	26	0.13422	1
5.3G;D1D	8.70	21.20	29.90	0.09	29.99	0.99770	26	0.11744	1
5.6G;D1D	8.70	21.06	29.76	0.23	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	21.98	30.68	0.50	31.18	1.31220	26	0.15447	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	23.54	32.24	0.50	32.74	1.87932	26	0.22122	1
5.3G;D1D	8.70	21.22	29.92	0.07	29.99	0.99770	26	0.11744	1
5.6G;D1D	8.70	21.26	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	24.19	32.89	0.50	33.39	2.18273	26	0.25694	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	23.43	32.13	0.50	32.63	1.83231	26	0.21569	1
5.3G;D1D	8.70	19.03	27.73	0.50	28.23	0.66527	26	0.07831	1
5.6G;D1D	8.70	21.23	29.93	0.06	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	27.23	35.93	0.06	35.99	3.97192	26	0.46756	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	14.72	21.16	35.88	0.11	35.99	3.97192	26	0.46756	1
5.3G;D1D	14.72	15.24	29.96	0.03	29.99	0.99770	26	0.11744	1
5.6G;D1D	14.72	15.25	29.97	0.02	29.99	0.99770	26	0.11744	1
5.8G;D1D	14.72	21.26	35.98	0.01	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	26.40	35.10	0.50	35.60	3.63078	26	0.42740	1
5.3G;D1D	8.70	21.26	29.96	0.03	29.99	0.99770	26	0.11744	1
5.6G;D1D	8.70	21.26	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	26.71	35.41	0.50	35.91	3.89942	26	0.45902	1

**For Radio 2:****Mode 1: (Ant. 5 Panel antenna / 3 dBi)****For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	21.38	24.38	0.50	24.88	0.30761	26	0.03621	1
5.3G;D1D	3.00	19.60	22.60	0.50	23.10	0.20417	26	0.02403	1
5.6G;D1D	3.00	21.64	24.64	0.50	25.14	0.32659	26	0.03844	1
5.8G;D1D	3.00	22.92	25.92	0.50	26.42	0.43853	26	0.05162	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	23.43	26.43	0.50	26.93	0.49317	26	0.05805	1
5.3G;D1D	3.00	22.82	25.82	0.50	26.32	0.42855	26	0.05045	1
5.6G;D1D	3.00	23.78	26.78	0.50	27.28	0.53456	26	0.06293	1
5.8G;D1D	3.00	25.55	28.55	0.50	29.05	0.80353	26	0.09459	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	26.54	29.54	0.50	30.04	1.00925	26	0.11880	1
5.3G;D1D	3.00	23.83	26.83	0.50	27.33	0.54075	26	0.06366	1
5.6G;D1D	3.00	23.91	26.91	0.50	27.41	0.55081	26	0.06484	1
5.8G;D1D	3.00	28.58	31.58	0.50	32.08	1.61436	26	0.19003	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	9.02	25.87	34.89	0.50	35.39	3.45939	26	0.40722	1
5.3G;D1D	9.02	20.94	29.96	0.03	29.99	0.99770	26	0.11744	1
5.6G;D1D	9.02	20.94	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	9.02	26.92	35.94	0.05	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	3.00	26.24	29.24	0.50	29.74	0.94189	26	0.11087	1
5.3G;D1D	3.00	23.96	26.96	0.50	27.46	0.55719	26	0.06559	1
5.6G;D1D	3.00	23.96	26.96	0.50	27.46	0.55719	26	0.06559	1
5.8G;D1D	3.00	28.43	31.43	0.50	31.93	1.55955	26	0.18358	1

**Mode 2: (Ant. 6 Omni antenna / 6 dBi)
For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	19.29	25.29	0.50	25.79	0.37931	26	0.04465	1
5.3G;D1D	6.00	19.64	25.64	0.50	26.14	0.41115	26	0.04840	1
5.6G;D1D	6.00	21.64	27.64	0.50	28.14	0.65163	26	0.07671	1
5.8G;D1D	6.00	21.76	27.76	0.50	28.26	0.66988	26	0.07886	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	22.66	28.66	0.50	29.16	0.82414	26	0.09701	1
5.3G;D1D	6.00	22.78	28.78	0.50	29.28	0.84723	26	0.09973	1
5.6G;D1D	6.00	23.78	29.78	0.21	29.99	0.99770	26	0.11744	1
5.8G;D1D	6.00	24.27	30.27	0.50	30.77	1.19399	26	0.14055	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	24.19	30.19	0.50	30.69	1.17220	26	0.13799	1
5.3G;D1D	6.00	21.06	27.06	0.50	27.56	0.57016	26	0.06712	1
5.6G;D1D	6.00	23.04	29.04	0.50	29.54	0.89950	26	0.10588	1
5.8G;D1D	6.00	27.20	33.20	0.50	33.70	2.34423	26	0.27595	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	12.02	23.79	35.81	0.50	36.31	4.27563	26	0.50331	1
5.3G;D1D	12.02	17.95	29.97	0.02	29.99	0.99770	26	0.11744	1
5.6G;D1D	12.02	17.95	29.97	0.02	29.99	0.99770	26	0.11744	1
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	6.00	25.15	31.15	0.50	31.65	1.46218	26	0.17212	1
5.3G;D1D	6.00	23.89	29.89	0.10	29.99	0.99770	26	0.11744	1
5.6G;D1D	6.00	23.96	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	6.00	27.06	33.06	0.50	33.56	2.26986	26	0.26720	1

**Mode 3: (Ant. 11 Panel antenna / 8.7 dBi)****For Non-beamforming / 1T1S mode**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	21.23	29.93	0.50	30.43	1.10408	26	0.12997	1
5.3G;D1D	8.70	19.34	28.04	0.50	28.54	0.71450	26	0.08411	1
5.6G;D1D	8.70	21.25	29.95	0.04	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	23.46	32.16	0.50	32.66	1.84502	26	0.21719	1

For Non-beamforming / 2T2S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	23.05	31.75	0.50	32.25	1.67880	26	0.19762	1
5.3G;D1D	8.70	21.23	29.93	0.06	29.99	0.99770	26	0.11744	1
5.6G;D1D	8.70	21.18	29.88	0.11	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	24.77	33.47	0.50	33.97	2.49459	26	0.29365	1

For Non-beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	23.34	32.04	0.50	32.54	1.79473	26	0.21127	1
5.3G;D1D	8.70	19.04	27.74	0.50	28.24	0.66681	26	0.07849	1
5.6G;D1D	8.70	21.25	29.95	0.04	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	27.25	35.95	0.04	35.99	3.97192	26	0.46756	1

For Beamforming / 4T1S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	14.72	21.25	35.97	0.02	35.99	3.97192	26	0.46756	1
5.3G;D1D	14.72	15.24	29.96	0.03	29.99	0.99770	26	0.11744	1
5.6G;D1D	14.72	15.24	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	14.72	21.22	35.94	0.05	35.99	3.97192	26	0.46756	1

For Non-beamforming / 4T4S mode

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.70	25.90	34.60	0.50	35.10	3.23594	26	0.38092	1
5.3G;D1D	8.70	21.26	29.96	0.03	29.99	0.99770	26	0.11744	1
5.6G;D1D	8.70	21.26	29.96	0.03	29.99	0.99770	26	0.11744	1
5.8G;D1D	8.70	27.10	35.80	0.19	35.99	3.97192	26	0.46756	1



For Bluetooth Function:

Mode 1: (Ant. 11 Panel antenna / 6.8 dBi)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;BT-LE	6.80	1.33	8.13	0.50	8.63	0.00729	26	0.00086	1

Mode 2: (Ant. 12 Omni antenna / 7 dBi)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;BT-LE	7.00	1.33	8.33	0.50	8.83	0.00764	26	0.00090	1

For Thread Function:

Mode 1: (Ant. 11 Panel antenna / 6.8 dBi)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	6.80	1.08	7.88	0.50	8.38	0.00689	26	0.00081	1

Mode 2: (Ant. 12 Omni antenna / 7 dBi)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	7.00	1.08	8.08	0.50	8.58	0.00721	26	0.00085	1

Simultaneous Transmission Analysis Mode:

Mode 1: WLAN 2.4GHz (Radio 1) + WLAN 5GHz (Radio 2) + Bluetooth (Radio 3)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
2.4G;G1D	12.82	23.05	35.87	0.12	35.99	3.97192	26	0.46756	1	0.46756
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
2.4G;BT-LE	7.00	1.33	8.33	0.50	8.83	0.00764	26	0.00090	1	0.00090
									Sum Ratio	0.93602
									Ratio Limit	1



Mode 2: WLAN 5GHz (Radio 1) + WLAN 5GHz (Radio 2) + Bluetooth (Radio 3)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
2.4G;BT-LE	7.00	1.33	8.33	0.50	8.83	0.00764	26	0.00090	1	0.00090
									Sum Ratio	0.93602
									Ratio Limit	1

Mode 3: WLAN 2.4GHz (Radio 1) + WLAN 5GHz (Radio 2) + Thread (Radio 3)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
2.4G;G1D	12.82	23.05	35.87	0.12	35.99	3.97192	26	0.46756	1	0.46756
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
2.4G;G1D	7.00	1.08	8.08	0.50	8.58	0.00721	26	0.00085	1	0.00085
									Sum Ratio	0.93597
									Ratio Limit	1

Mode 4: WLAN 5GHz (Radio 1) + WLAN 5GHz (Radio 2) + Thread (Radio 3)

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
5.8G;D1D	12.02	23.97	35.99	0.00	35.99	3.97192	26	0.46756	1	0.46756
2.4G;G1D	7.00	1.08	8.08	0.50	8.58	0.00721	26	0.00085	1	0.00085
									Sum Ratio	0.93597
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

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