

Radio Exposure Evaluation Report

FCC ID : UDX-600214010
Equipment : Cisco Wireless 9172I Series Wi-Fi 7 Access Point
Brand Name : CISCO
Model Name : CW9172I
Applicant : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Standard : 47 CFR FCC Part 2 Subpart J, section 2.1091

The product was received on Aug. 29, 2024, and testing was started from Sep. 11, 2024 and completed on Dec. 05, 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
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Photographs of EUT V01

History of this test report

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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: Ryan Hsiao

Report Producer: Debby Hung



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 (LPI)	5955-7115 (LPI)	802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
	5925-6425 6525-6875 (SPAP)	5955-6415 6535-6855 (SPAP)	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	6172004VJHDB1H	PIFA	I-Pex	2.4G	Radio1
					5G	Radio 2
2	Sercomm	6172004VJHDB2V	PIFA	I-Pex	2.4G	Radio1
					5G	Radio 2
3	Sercomm	6172004VJH561H	PIFA	I-Pex	5G/6G	Radio 2
4	Sercomm	6172004VJH562V	PIFA	I-Pex		
5	Sercomm	6172004VJHSC1V	PIFA	I-Pex	2.4G/5G/6G	Scan Radio 3 (RX)
6	Sercomm	6172004VJHSC2V	PIFA	I-Pex		
7	Sercomm	6172004VJHBLEV	PIFA	I-Pex	BT	Radio 4



Ant.	Port	Gain (dBi)									
		2.4G	5G				6G				BT
			UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-5	UNII-6	UNII-7	UNII-8	
1	1	3.78	3.45	2.71	4.22	3.86	-	-	-	-	-
2	2	4.06	3.44	3.37	4.88	4.62	-	-	-	-	-
3	3	-	5.26	5.46	5.47	4.92	6.23	5.81	5.59	5.80	-
4	4	-	4.03	5.09	4.08	4.73	4.68	3.89	3.74	4.66	-
5	1	2.4	2.87	2.96	3.08	2.71	3.61	3.17	4.38	3.32	-
6	2	2.3	3.24	3.56	3.46	3.18	3.96	4.12	3.98	4.08	-
7	1	-	-	-	-	-	-	-	-	-	2.23

Composite Gain (dBi)									
Wi-Fi Mode	2.4G	5G							
	Radio 1_2TX	Radio 2_2TX				Radio 2_4TX			
		UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-1	UNII-2A	UNII-2C	UNII-3
DG [1SS]	4.65	4.96	5.14	5.8	6.03	6.76	6.31	6.67	6.69
DG [2SS]	4.06	3.45	3.37	4.88	4.62	5.26	5.46	5.47	4.92
DG [4SS]	-	-	-	-	-	5.26	5.46	5.47	4.92

Composite Gain (dBi)				
6G Radio 2_2TX				
Wi-Fi Mode	UNII-5	UNII-6	UNII-7	UNII-8
DG [1SS]	6.84	7.04	6.2	6.56
DG [2SS]	6.23	5.81	5.59	5.8

Note 1: The EUT has seven 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 AP470202-01.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax/be mode (1TX/1RX) (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 IEEE 802.11 b/g/n/VHT/ax mode (2RX) (Radio 3)

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

For 5GHz function:

For IEEE 802.11 a/n/ac/ax/be mode (1TX/1RX) (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 (4TX/4RX) (Radio 2)

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



For IEEE 802.11 a/n/ac/ax mode (2RX) (Radio 3)
Ant. 5 (port 1) and Ant. 6 (port 2) could receive simultaneously.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX) (Radio 4)
Ant. 7 (port 1) could transmit/receive.

For 6GHz function:

For IEEE 802.11 ax/be mode (1TX/1RX) (Radio 2)
Ant. 3 (port 3) could transmit/receive.
For IEEE 802.11 ax/be mode (2TX/2RX) (Radio 2)
Ant. 3 (port 3) and Ant. 4 (port 4) could transmit/receive simultaneously.
For IEEE 802.11 ax mode (2RX) (Radio 3)
Ant. 5 (port 1) and Ant. 6 (port 2) could receive simultaneously.

1.1.3 Accessories

Accessories				
Wall Mount	Brand Name	CISCO	Model Name	69-2160-04
Ceiling	Brand Name	CISCO	Model Name	800-26066-03

Reminder: Regarding to more detail and other information, please refer to user manual.

1.1.4 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA470202-01AA & FA470202-01AB. Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
to enable punctured transmission capability to 5GHz(NII) and 6GHz(6ID+6PP) band by software.	MPE was evaluated

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:

Radio 1:WLAN 2.4G (2*2) + Radio 2: WLAN 5G (2*2) + Radio 2: WLAN 6G (2*2) + Bluetooth

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 20 cm (LPI) / 23 cm (SPAP) 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

LPI:

Non-Beamforming

2.4GHz WLAN_Radio 1_1TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	3.78	21.37	25.15	0.50	223.93	20.00	0.07307	1.00000	B	3060.000	0.0732
2.4G;D1D	3.78	21.03	24.81	0.50	207.07	20.00	0.06757	1.00000	B	3060.000	0.0677

2.4GHz WLAN_Radio 1_2TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	4.06	24.57	28.63	0.50	499.01	20.00	0.16283	1.00000	B	3060.000	0.1631
2.4G;D1D	4.06	24.25	28.31	0.50	463.56	20.00	0.15126	1.00000	B	3060.000	0.1515

5GHz WLAN_Radio 2_1TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	23.21	26.66	0.50	317.04	20.00	0.10345	1.00000	B	3060.000	0.1036
5.3G;D1D	2.71	22.88	25.59	0.50	247.80	20.00	0.08086	1.00000	B	3060.000	0.0810
5.6G;D1D	4.22	22.26	26.48	0.50	304.17	20.00	0.09925	1.00000	B	3060.000	0.0994
5.8G;D1D	3.86	22.72	26.58	0.50	311.25	20.00	0.10156	1.00000	B	3060.000	0.1017

5GHz WLAN_Radio 2_2TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	25.93	29.38	0.50	593.08	20.00	0.19352	1.00000	B	3060.000	0.1938
5.3G;D1D	3.37	23.92	27.29	0.50	366.53	20.00	0.11960	1.00000	B	3060.000	0.1198
5.6G;D1D	4.88	23.94	28.82	0.50	521.33	20.00	0.17011	1.00000	B	3060.000	0.1704
5.8G;D1D	4.62	25.55	30.17	0.50	711.39	20.00	0.23213	1.00000	B	3060.000	0.2325

5GHz WLAN_Radio 2_4TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.26	28.58	33.84	0.50	1656.19	20.00	0.54042	1.00000	B	3060.000	0.5412
5.3G;D1D	5.46	23.93	29.39	0.50	594.44	20.00	0.19397	1.00000	B	3060.000	0.1943
5.6G;D1D	5.47	23.95	29.42	0.50	598.56	20.00	0.19531	1.00000	B	3060.000	0.1956
5.8G;D1D	4.92	28.19	33.11	0.50	1399.94	20.00	0.45680	1.00000	B	3060.000	0.4575

**6GHz WLAN_Radio 2_1TX_LPI_Full RU**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	26.34	0.50	294.52	20.00	0.09610	1.00000	C	768.000	0.3835
6.4G;D1D	-	-	24.60	0.50	197.29	20.00	0.06438	1.00000	C	768.000	0.2569
6.7G;D1D	-	-	24.34	0.50	185.83	20.00	0.06064	1.00000	C	768.000	0.2420
7.0G;D1D	-	-	23.52	0.50	153.85	20.00	0.05020	1.00000	C	768.000	0.2003

6GHz WLAN_Radio 2_2TX_LPI_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	27.10	0.50	350.84	20.00	0.11448	1.00000	C	768.000	0.4568
6.4G;D1D	-	-	24.89	0.50	210.92	20.00	0.06882	1.00000	C	768.000	0.2746
6.7G;D1D	-	-	25.42	0.50	238.29	20.00	0.07776	1.00000	C	768.000	0.3103
7.0G;D1D	-	-	25.20	0.50	226.52	20.00	0.07391	1.00000	C	768.000	0.2950

Bluetooth

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;BT-LE	2.23	20.17	22.40	0.50	118.88	20.00	0.03879	1.00000	B	3060.000	0.0388

Beamforming**2.4GHz WLAN_Radio 1_2TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	4.65	24.10	28.75	0.50	512.99	20.00	0.16739	1.00000	B	3060.000	0.1676

5GHz WLAN_Radio 2_2TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.96	25.81	30.77	0.50	816.79	20.00	0.26652	1.00000	B	3060.000	0.2669
5.3G;D1D	5.14	23.80	28.94	0.50	535.93	20.00	0.17488	1.00000	B	3060.000	0.1751
5.6G;D1D	5.80	23.69	29.49	0.50	608.29	20.00	0.19849	1.00000	B	3060.000	0.1988
5.8G;D1D	6.03	25.40	31.43	0.50	950.85	20.00	0.31026	1.00000	B	3060.000	0.3107

5GHz WLAN_Radio 2_4TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	6.76	28.32	35.08	0.50	2203.48	20.00	0.71900	1.00000	B	3060.000	0.7201
5.3G;D1D	6.31	23.13	29.44	0.50	601.33	20.00	0.19621	1.00000	B	3060.000	0.1965
5.6G;D1D	6.67	22.82	29.49	0.50	608.29	20.00	0.19849	1.00000	B	3060.000	0.1988
5.8G;D1D	6.69	27.95	34.64	0.50	1991.18	20.00	0.64973	1.00000	B	3060.000	0.6507

**6GHz WLAN_Radio 2_2TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	25.04	0.50	218.33	20.00	0.07124	1.00000	C	768.000	0.2843
6.4G;D1D	-	-	24.59	0.50	196.84	20.00	0.06423	1.00000	C	768.000	0.2563
6.7G;D1D	-	-	24.84	0.50	208.50	20.00	0.06803	1.00000	C	768.000	0.2715
7.0G;D1D	-	-	24.19	0.50	179.52	20.00	0.05858	1.00000	C	768.000	0.2337

Non-Beamforming_Channel Puncturing**5GHz WLAN_Radio 2_1TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	21.27	24.72	0.50	202.82	20.00	0.06618	1.00000	B	3060.000	0.0663
5.3G;D1D	2.71	20.30	23.01	0.50	136.81	20.00	0.04464	1.00000	B	3060.000	0.0447
5.6G;D1D	4.22	20.99	25.21	0.50	227.04	20.00	0.07408	1.00000	B	3060.000	0.0742
5.8G;D1D	3.86	20.90	24.76	0.50	204.70	20.00	0.06679	1.00000	B	3060.000	0.0669

5GHz WLAN_Radio 2_2TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	22.92	26.37	0.50	296.56	20.00	0.09677	1.00000	B	3060.000	0.0969
5.3G;D1D	3.37	21.54	24.91	0.50	211.89	20.00	0.06914	1.00000	B	3060.000	0.0692
5.6G;D1D	4.88	22.60	27.48	0.50	382.92	20.00	0.12495	1.00000	B	3060.000	0.1251
5.8G;D1D	4.62	23.92	28.54	0.50	488.78	20.00	0.15949	1.00000	B	3060.000	0.1597

5GHz WLAN_Radio 2_4TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.26	23.96	29.22	0.50	571.62	20.00	0.18652	1.00000	B	3060.000	0.1868
5.3G;D1D	5.46	21.90	27.36	0.50	372.49	20.00	0.12154	1.00000	B	3060.000	0.1217
5.6G;D1D	5.47	22.41	27.88	0.50	419.87	20.00	0.13700	1.00000	B	3060.000	0.1372
5.8G;D1D	4.92	26.30	31.22	0.50	905.96	20.00	0.29562	1.00000	B	3060.000	0.2961

6GHz WLAN_Radio 2_1TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	26.31	0.50	292.49	20.00	0.09544	1.00000	C	768.000	0.3808
7.0G;D1D	-	-	21.48	0.50	96.19	20.00	0.03139	1.00000	C	768.000	0.1252

6GHz WLAN_Radio 2_2TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	24.87	0.50	209.95	20.00	0.06851	1.00000	C	768.000	0.2734
7.0G;D1D	-	-	24.26	0.50	182.44	20.00	0.05953	1.00000	C	768.000	0.2375

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

Note 2: For option B, P_{th}(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)

**SPAP:****Non-Beamforming_SPAP****2.4GHz WLAN_Radio 1_1TX_Full RU**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	3.78	21.37	25.15	0.50	223.93	23.00	0.05525	1.00000	B	3060.000	0.0732
2.4G;D1D	3.78	21.03	24.81	0.50	207.07	23.00	0.05109	1.00000	B	3060.000	0.0677

2.4GHz WLAN_Radio 1_2TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	4.06	24.57	28.63	0.50	499.01	23.00	0.12312	1.00000	B	3060.000	0.1631
2.4G;D1D	4.06	24.25	28.31	0.50	463.56	23.00	0.11438	1.00000	B	3060.000	0.1515

5GHz WLAN_Radio 2_1TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	23.21	26.66	0.50	317.04	23.00	0.07822	1.00000	B	3060.000	0.1036
5.3G;D1D	2.71	22.88	25.59	0.50	247.80	23.00	0.06114	1.00000	B	3060.000	0.0810
5.6G;D1D	4.22	22.26	26.48	0.50	304.17	23.00	0.07505	1.00000	B	3060.000	0.0994
5.8G;D1D	3.86	22.72	26.58	0.50	311.25	23.00	0.07680	1.00000	B	3060.000	0.1017

5GHz WLAN_Radio 2_2TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	25.93	29.38	0.50	593.08	23.00	0.14633	1.00000	B	3060.000	0.1938
5.3G;D1D	3.37	23.92	27.29	0.50	366.53	23.00	0.09043	1.00000	B	3060.000	0.1198
5.6G;D1D	4.88	23.94	28.82	0.50	521.33	23.00	0.12863	1.00000	B	3060.000	0.1704
5.8G;D1D	4.62	25.55	30.17	0.50	711.39	23.00	0.17552	1.00000	B	3060.000	0.2325

5GHz WLAN_Radio 2_4TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.26	28.58	33.84	0.50	1656.19	23.00	0.40863	1.00000	B	3060.000	0.5412
5.3G;D1D	5.46	23.93	29.39	0.50	594.44	23.00	0.14667	1.00000	B	3060.000	0.1943
5.6G;D1D	5.47	23.95	29.42	0.50	598.56	23.00	0.14768	1.00000	B	3060.000	0.1956
5.8G;D1D	4.92	28.19	33.11	0.50	1399.94	23.00	0.34541	1.00000	B	3060.000	0.4575

6GHz WLAN_Radio 2_1TX_Full RU

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	26.60	0.50	312.69	23.00	0.07715	1.00000	C	1015.680	0.3079
6.7G;D1D	-	-	23.95	0.50	169.87	23.00	0.04191	1.00000	C	1015.680	0.1672

**6GHz WLAN_Radio 2_2TX_Full RU**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	26.17	0.50	283.21	23.00	0.06988	1.00000	C	1015.680	0.2788
6.7G;D1D	-	-	26.62	0.50	314.13	23.00	0.07751	1.00000	C	1015.680	0.3093

Bluetooth

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;BT-LE	2.23	20.17	22.40	0.50	118.88	23.00	0.02933	1.00000	B	3060.000	0.0388

Beamforming**2.4GHz WLAN_Radio 1_2TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	4.65	24.10	28.75	0.50	512.99	23.00	0.12657	1.00000	B	3060.000	0.1676

5GHz WLAN_Radio 2_2TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	4.96	25.81	30.77	0.50	816.79	23.00	0.20153	1.00000	B	3060.000	0.2669
5.3G;D1D	5.14	23.80	28.94	0.50	535.93	23.00	0.13223	1.00000	B	3060.000	0.1751
5.6G;D1D	5.80	23.69	29.49	0.50	608.29	23.00	0.15008	1.00000	B	3060.000	0.1988
5.8G;D1D	6.03	25.40	31.43	0.50	950.85	23.00	0.23460	1.00000	B	3060.000	0.3107

5GHz WLAN_Radio 2_4TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	6.76	28.32	35.08	0.50	2203.48	23.00	0.54367	1.00000	B	3060.000	0.7201
5.3G;D1D	6.31	23.13	29.44	0.50	601.33	23.00	0.14837	1.00000	B	3060.000	0.1965
5.6G;D1D	6.67	22.82	29.49	0.50	608.29	23.00	0.15008	1.00000	B	3060.000	0.1988
5.8G;D1D	6.69	27.95	34.64	0.50	1991.18	23.00	0.49129	1.00000	B	3060.000	0.6507

Non-Beamforming_SPAP_Channel Puncturing**5GHz WLAN_Radio 2_1TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	21.27	24.72	0.50	202.82	23.00	0.05004	1.00000	B	3060.000	0.0663
5.3G;D1D	2.71	20.30	23.01	0.50	136.81	23.00	0.03375	1.00000	B	3060.000	0.0447
5.6G;D1D	4.22	20.99	25.21	0.50	227.04	23.00	0.05602	1.00000	B	3060.000	0.0742
5.8G;D1D	3.86	20.90	24.76	0.50	204.70	23.00	0.05051	1.00000	B	3060.000	0.0669

**5GHz WLAN_Radio 2_2TX**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	3.45	22.92	26.37	0.50	296.56	23.00	0.07317	1.00000	B	3060.000	0.0969
5.3G;D1D	3.37	21.54	24.91	0.50	211.89	23.00	0.05228	1.00000	B	3060.000	0.0692
5.6G;D1D	4.88	22.60	27.48	0.50	382.92	23.00	0.09448	1.00000	B	3060.000	0.1251
5.8G;D1D	4.62	23.92	28.54	0.50	488.78	23.00	0.12060	1.00000	B	3060.000	0.1597

5GHz WLAN_Radio 2_4TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.26	23.96	29.22	0.50	571.62	23.00	0.14104	1.00000	B	3060.000	0.1868
5.3G;D1D	5.46	21.90	27.36	0.50	372.49	23.00	0.09190	1.00000	B	3060.000	0.1217
5.6G;D1D	5.47	22.41	27.88	0.50	419.87	23.00	0.10359	1.00000	B	3060.000	0.1372
5.8G;D1D	4.92	26.30	31.22	0.50	905.96	23.00	0.22353	1.00000	B	3060.000	0.2961

6GHz WLAN_Radio 2_1TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	26.16	0.50	282.56	23.00	0.06972	1.00000	C	1015.680	0.2782

6GHz WLAN_Radio 2_2TX

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
6.2G;D1D	-	-	24.75	0.50	204.23	23.00	0.05039	1.00000	C	1015.680	0.2011

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:WLAN 2.4G (2*2) + Radio 2: WLAN 5G (2*2) + Radio 2: WLAN 6G (2*2) + Bluetooth_LPI

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	4.65	24.10	28.75	0.50	512.99	20.00	0.16739	1.00000	B	3060.000	0.1676
5.8G;D1D	6.03	25.40	31.43	0.50	950.85	20.00	0.31026	1.00000	B	3060.000	0.3107
6.2G;D1D	-	-	27.10	0.50	350.84	20.00	0.11448	1.00000	C	768.000	0.4568
2.4G;BT-LE	2.23	20.17	22.40	0.50	118.88	20.00	0.03879	1.00000	B	3060.000	0.0388
										Sum Ratio	0.9739
										Ratio Limit	1

Radio 1:WLAN 2.4G (2*2) + Radio 2: WLAN 5G (2*2) + Radio 2: WLAN 6G (2*2) + Bluetooth_SPAP

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	4.65	24.10	28.75	0.50	512.99	23.00	0.12657	1.00000	B	3060.000	0.1676
5.8G;D1D	6.03	25.40	31.43	0.50	950.85	23.00	0.23460	1.00000	B	3060.000	0.3107
6.2G;D1D	-	-	28.32	0.50	350.84	23.00	0.11464	1.00000	C	1015.680	0.4575
2.4G;BT-LE	2.23	20.17	22.40	0.50	118.88	23.00	0.02933	1.00000	B	3060.000	0.0388
										Sum Ratio	0.9746
										Ratio Limit	1

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

Note 2: For option B, P_{th}(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.

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