



# RADIO EXPOSURE TEST REPORT

**FCC ID** : Z8H89FT0073

**Equipment** : XE3-4TN Outdoor Wi-Fi 6e 4x4 Access Point with SDR

**Brand Name** : Cambium Networks

**Model Name** : XE3-4T

**Applicant** : Cambium Networks Inc.  
3800 Golf Road Suite 360 Rolling Meadows IL United States 60008

**Manufacturer** : LITE-ON Technology Corp. Networking Plant  
5F, No. 101, Neihuan N. Rd., Nanzih Dist., Kaohsiung City 811, Taiwan, R.O.C.

**Standard** : 47 CFR Part 2.1091

The product was received on Aug. 02, 2022, and testing was started from Aug. 02, 2022 and completed on Nov. 08, 2022. 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 variant 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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### Photographs of EUT v01





### Summary of Test Result

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

Note: Reference to Sporton Project No.: 290202-01

**Declaration of Conformity:**

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

**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: **Viola 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) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 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	BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK) LE: GFSK

Note: The test results include 160MHz, but the certification doesn't include 160MHz.



## 1.2 Antenna Information

Set	Port					Brand Name	Part Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz (Radio 1)	WLAN 5GHz (Radio 2)	WLAN 5GHz (Radio 3)	BT (Radio 4)	GPS (Radio 5)					
1	1	1	2	-	-	LYNwave	ALX22X-121050-00	Dipole	N-Type	
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
2	1	1	2	-	-	SmartAnt	SAA19-220130	Dipole	N-Type	
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
3	-	-	2	-	-	LYNwave	OLX22X-127130-A	Patch	N-Type	Note 1
	-	-	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
4	1	-	-	-	-	EAHISON	ANT-DIR15-2X2-2.4 G-01	Panel	N-Female	
	2	-	-	-	-					
5	-	1	2	-	-	KBT	ANT-DIR15-2X2-5.0 G-01	Panel	N-Female	
	-	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
6	-	-	-	-	1	Cirocomm	03V0134913Z010T	Marine GPS	SMA	
7	-	-	-	1	-	INPAQ	RFPCA403422IMAB702	PCB	I-PEX	



Note 1:

Set	Antenna Gain (dBi)				Cable loss (dB)				Net Gain (dBi)			
	WLAN 2.4GHz (Radio 1)		BT (Radio 4)		GPS (Radio 5)		WLAN 2.4GHz (Radio 1)		BT (Radio 4)		GPS (Radio 5)	
			1575.42 MHz	1602 MHz							1575.42 MHz	1602 MHz
1	4.4		-	-	-	-	-	-	-	-	-	-
2	3		-	-	-	-	-	-	-	-	-	-
4	18		-	-	0.77	-	-	-	-	17.23	-	-
6	-	-	3	4.5	-	-	-	-	-	-	3	4.5
7	-	3.73		-	-	-	-	-	-	-	3.73	-

Set	Antenna Gain (dBi)								Cable loss (dB)								Net Gain (dBi)							
	WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)			
	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3
1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	-	-	-	-	-	-	-	-	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2	5	5	6	6	5	5	6	6	-	-	-	-	-	-	-	-	5	5	6	6	5	5	6	6
3	-	-	-	-	11	11	11	11	-	-	-	-	1.45	1.45	1.6	1.6	-	-	-	-	9.55	9.55	9.4	9.4
5	18	18	18	18	18	18	18	18	1.45	1.45	1.6	1.6	1.45	1.45	1.6	1.6	16.55	16.55	16.4	16.4	16.55	16.55	16.4	16.4

Note 2: The EUT has five sets of antenna for WLAN and one set of antenna for GPS and Bluetooth.

Note 3: The above information was declared by manufacturer.

Note 4: The antenna set 1 and set 2 are the same antenna type, only the highest gain antenna (antenna set 1 for 2.4GHz and 5GHz UNII 1~2A, antenna set 2 for 5GHz UNII 2C~3) were selected to test and record in this report.

Note 5: Polarization of antenna set 3: 2\*Horizontal, 2\*Vertical. so array gain only adds 10log (2).

Polarization of antenna set 4: 1\*Horizontal, 1\*Vertical. so the array gain is 0dBi.

Polarization of antenna set 5: Radio 2: 1\*Horizontal, 1\*Vertical. so the array gain is 0dBi.

Radio 3: 2\*Horizontal, 2\*Vertical. so array gain only adds 10log (2).



Note 6: Directional gain information.

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left[ \sum_{k=1}^{N_{ANT}} G_{j,k} \right]^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left[ \sum_{k=1}^{N_{ANT}} G_{j,k} \right]^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left[ \sum_{k=1}^{N_{ANT}} G_{j,k} \right]^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left[ \sum_{k=1}^{N_{ANT}} G_{j,k} \right]^2}{N_{ANT}} \right]$$

$NSS1(g1,1) = 10^{G1/20}$  ;  $NSS1(g1,2) = 10^{G2/20}$  ;  $NSS1(g1,3) = 10^{G3/20}$  ;  $NSS1(g1,4) = 10^{G4/20}$

$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$

$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$

$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$

Where ;

Antenna set 1

2.4G G1 = 4.4 dBi; G2 = 4.4 dBi ;DG = 4.4 dBi

5G Band1 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

5G Band2 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

2.4G DG = 7.41 dBi

For 2TX

Radio 2 5G Band1 DG = 8.51 dBi

Radio 2 5G Band2 DG = 8.51 dBi

For 4TX

Radio 3 5G Band1 DG = 11.52 dBi

Radio 3 5G Band2 DG = 11.52 dBi

Antenna set 2

5G Band3 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

5G Band4 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

For 2TX

Radio 2 5G Band3 DG = 9.01 dBi

Radio 2 5G Band4 DG = 9.01 dBi

For 4TX

Radio 3 5G Band3 DG = 12.02 dBi

Radio 3 5G Band4 DG = 12.02 dBi





Antenna set 3(Cross-Polarized Antenna)

5G Band1 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi;DG = 9.55 dBi  
5G Band2 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi;DG = 9.55 dBi  
5G Band3 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi;DG = 9.4 dBi  
5G Band4 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi;DG = 9.4 dBi  
Radio 3 5G Band1 DG = 12.56 dBi  
Radio 3 5G Band2 DG = 12.56 dBi  
Radio 3 5G Band3 DG = 12.41 dBi  
Radio 3 5G Band4 DG = 12.41 dBi

Antenna set 4(Cross-Polarized Antenna)

2.4G G1 = 17.23 dBi; G2 = 17.23 dBi  
DG = 17.23 dBi

Antenna set 5(Cross-Polarized Antenna)

5G Band1 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi;DG = 16.55 dBi  
5G Band2 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi;DG = 16.55 dBi  
5G Band3 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi;DG = 16.4 dBi  
5G Band4 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi;DG = 16.4 dBi  
For 2TX  
Radio 2 5G Band1 DG = 16.55 dBi  
Radio 2 5G Band2 DG = 16.55 dBi  
Radio 2 5G Band3 DG = 16.40 dBi  
Radio 2 5G Band4 DG = 16.40 dBi  
For 4TX  
Radio 3 5G Band1 DG = 19.56 dBi  
Radio 3 5G Band2 DG = 19.56 dBi  
Radio 3 5G Band3 DG = 19.41 dBi  
Radio 3 5G Band4 DG = 19.41 dBi

**For Radio 1**

**For 2.4GHz:**

**For IEEE 802.11b/g/n/VHT/ax mode (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**

**For 5GHz UNII 1~3:**

**For IEEE 802.11a/n/ac/ax mode (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 3**

**For 5GHz UNII 1~3:**

**For IEEE 802.11a/n/ac/ax mode (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 (1TX/1RX):**

Only Port 1 can be used as transmitting/receiving antenna.

**For Radio 5**

**GPS (1RX):**

Only Port 1 can be used as receiving antenna.



### 1.3 Table for EUT support function

Function	Support Band
Mesh Base	2.4GHz/5GHz UNII 1~3
Mesh Client (Not pure client)	5GHz UNII 2A, 2C

Note: The above information was declared by manufacturer.

### 1.4 Table for Radio function

Radio (R)	WLAN 2.4GHz	5GHz	Bluetooth	GPS
R1	V	-	-	-
R2	-	V (20/40/80MHz)	-	-
R3	-	V (20/40/80/160MHz)	-	-
R4	-	-	V	-
R5	-	-	-	V

Note: The above information was declared by manufacturer.

### 1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA290202.

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

Modifications	Performance Checking
1. Add UNII 2A and UNII 2C (5250~5350MHz and 5470~5725MHz) for this device. 2. Add 160MHz for Radio 3.	RF Exposure
3. Add Mesh Client mode (Not pure client). 4. Remove AP and bridge mode. 5. Change EUT function to "Mesh Base" from "Mesh"	Do not have to retest assessed.

Note 1: RF Exposure Evaluation of 5GHz UNII 1, UNII 3 and 2.4GHz Band are based on original test report.

Note 2: For items 2: After evaluating, the manufacturer designated the test mode.



### 1.6 Accessories

Accessories
Bracket 1*1 (Only for EUT 1~EUT 2 use)
Bracket 2*1 (Only for Antenna Set 3 use)
Bracket 3*1 (Only for Antenna Set 4 use)
Bracket 4*1 (Only for Antenna Set 5 use)
Antenna cable*6 (Only for Antenna Set 3~5 use)
Sealing collar*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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<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 62 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 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 <sup>2</sup> .
1.34-30	3,450 R <sup>2</sup> /f <sup>2</sup> .
30-300	3.83 R <sup>2</sup> .
300-1,500	0.0128 R <sup>2</sup> f.
1,500-100,000	19.2R <sup>2</sup> .

Note: R is in meters, f is in MHz.



## 2.4 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

For Radio 1

Antenna set 1

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;D1D	7.41	28.58	35.99	0.00	35.99	3.97192	62	0.08222	1.00000

Antenna set 4

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;D1D	17.23	18.69	35.92	0.07	35.99	3.97192	62	0.08222	1.00000

For Radio 2

Antenna set 1 for UNII 1~2A and Antenna set 2 for UNII 2C~3

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	5.50	18.86	24.36	0.50	24.86	0.30620	62	0.00634	1.00000
5.3G;D1D	8.51	21.31	29.82	0.50	30.32	1.07647	62	0.02228	1.00000
5.6G;D1D	6.00	23.94	29.94	0.50	30.44	1.10662	62	0.02291	1.00000
5.8G;D1D	6.00	29.94	35.94	0.05	35.99	3.97192	62	0.08222	1.00000

Antenna set 5

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	16.55	18.82	35.37	0.50	35.87	3.86367	62	0.07998	1.00000
5.3G;D1D	16.55	13.39	29.94	0.50	30.44	1.10662	62	0.02291	1.00000
5.6G;D1D	16.40	13.57	29.97	0.50	30.47	1.11429	62	0.02307	1.00000
5.8G;D1D	16.40	19.57	35.97	0.02	35.99	3.97192	62	0.08222	1.00000

For Radio 3

Antenna set 1 for UNII 1~2A and Antenna set 2 for UNII 2C~3

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	11.52	12.82	24.34	0.50	24.84	0.30479	62	0.00631	1.00000
5.3G;D1D	11.52	18.31	29.83	0.50	30.33	1.07895	62	0.02234	1.00000
5.6G;D1D	12.02	17.91	29.93	0.50	30.43	1.10408	62	0.02286	1.00000
5.8G;D1D	12.02	23.83	35.85	0.14	35.99	3.97192	62	0.08222	1.00000

**Antenna set 3**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	9.55	21.46	31.01	0.50	31.51	1.41579	62	0.02931	1.00000
5.3G;D1D	9.55	20.14	29.69	0.50	30.19	1.04472	62	0.02163	1.00000
5.6G;D1D	12.41	17.44	29.85	0.50	30.35	1.08393	62	0.02244	1.00000
5.8G;D1D	9.40	26.57	35.97	0.02	35.99	3.97192	62	0.08222	1.00000

**Antenna set 5**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	16.55	18.80	35.35	0.50	35.85	3.84592	62	0.07962	1.00000
5.3G;D1D	19.56	10.40	29.96	0.50	30.46	1.11173	62	0.02301	1.00000
5.6G;D1D	16.40	13.56	29.96	0.50	30.46	1.11173	62	0.02301	1.00000
5.8G;D1D	19.41	16.57	35.98	0.01	35.99	3.97192	62	0.08222	1.00000

**For Radio 4****Antenna set 7**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;BT-BR	3.73	9.09	12.82	0.50	13.32	0.02148	62	0.00044	1.00000
2.4G;BT-LE	3.73	8.68	12.41	0.50	12.91	0.01954	62	0.00040	1.00000

**MPE Exemption Option C**

Frequency (MHz)	$\lambda/2\pi$ (m)	R (m)	Tune-up EIRP (dBm)	Tune-up ERP (dBm)	Tune-up ERP (W)	ERP Threshold (W)	MPE Exemption
2437-R1	0.0196	0.62	35.99	33.84	2.421	7.380	Complies
5785-R2	0.0082		35.99	33.84	2.421	7.380	Complies
5825-R3	0.0083		35.99	33.84	2.421	7.380	Complies
2480-R4	0.0192		13.35	11.20	0.013	7.380	Complies



**Simultaneous Transmission Analysis Mode:**

**R1 (2.4G + antenna set 1) + R2 (5G + antenna set 2) + R3 (5G + antenna set 2) + R4 (Bluetooth + antenna set 7)**

Simultaneous Transmissions Option C							
Frequency (MHz)	R (m)	Tune-up EIRP (dBm)	Tune-up ERP (dBm)	Tune-up ERP (W)	ERP Threshold (W)	Simultaneous Transmissions	Simultaneous Transmissions Limit
2437	0.62	35.99	33.84	2.421	7.380	0.99	<= 1
5745		35.99	33.84	2.421	7.380		
5795		35.99	33.84	2.421	7.380		
2480		13.35	11.20	0.013	7.380		

**R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 5) + R4 (Bluetooth + antenna set 7)**

Simultaneous Transmissions Option C							
Frequency (MHz)	R (m)	Tune-up EIRP (dBm)	Tune-up ERP (dBm)	Tune-up ERP (W)	ERP Threshold (W)	Simultaneous Transmissions	Simultaneous Transmissions Limit
2437	0.62	35.99	33.84	2.421	7.380	0.99	<= 1
5785		35.99	33.84	2.421	7.380		
5825		35.99	33.84	2.421	7.380		
2480		13.35	11.20	0.013	7.380		

**R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 3) + R4 (Bluetooth + antenna set 7)**

Simultaneous Transmissions Option C							
Frequency (MHz)	R (m)	Tune-up EIRP (dBm)	Tune-up ERP (dBm)	Tune-up ERP (W)	ERP Threshold (W)	Simultaneous Transmissions	Simultaneous Transmissions Limit
2437	0.62	35.99	33.84	2.421	7.380	0.99	<= 1
5785		35.99	33.84	2.421	7.380		
5745		35.99	33.84	2.421	7.380		
2480		13.35	11.20	0.013	7.380		

—————THE END—————