

Radio Exposure Evaluation Report

FCC ID : TVE-241102
Contains FCC ID : RI7FN990A28HP
Equipment : Secured Network Extension Device
Brand Name : FORTINET
Model Name : FortiExtenderVehicle 511Gxxxxxxxxxx,
FORTIEXTENDERVEHICLE-511Gxxxxxxxxxx,
FEV-511Gxxxxxxxxxx
(where "x" can be used as "A-Z", or "0-9", or "-", or blank
for software changes or marketing purposes only)
Applicant : Fortinet, Inc.
909 Kifer Road, Sunnyvale, CA 94086, USA
Manufacturer : Fortinet, Inc.
909 Kifer Road, Sunnyvale, CA 94086, USA
Standard : 47 CFR FCC Part 2 Subpart J, section 2.1091

The product was received on Nov. 26, 2024, and testing was started from Dec. 29, 2024 and completed on Jan. 08, 2025. 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	10
1.3 Testing Location	10
2 MAXIMUM PERMISSIBLE EXPOSURE	11
2.1 Limit of Maximum Permissible Exposure	11
2.2 RF Exposure Exempt Measurement	12
2.3 Multiple RF Sources Exposure.....	13
2.4 MPE Calculation Method	14
2.5 Calculated Result and Limit.....	15

Photographs of EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FA4N2608	01	Initial issue of report	Apr. 25, 2025



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: Amber Chiu

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)
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)
Bluetooth	2400-2483.5	2402-2480	LE: DSSS (GFSK)

WWAN

Evaluation Mode	Operating Band	Freq. (MHz)	Modulation Type
3G	WCDMA Band II	1850 - 1910	QPSK, 16QAM, 64QAM, 256QAM
	WCDMA Band IV	1710 - 1755	
	WCDMA Band V	824 - 849	
LTE	LTE Band 2	1850 - 1910	
	LTE Band 4	1710 - 1755	
	LTE Band 5	824 - 849	
	LTE Band 7	2500 - 2570	
	LTE Band 12	699 - 716	
	LTE Band 13	777 - 787	
	LTE Band 14	788 - 798	
	LTE Band 17	704 - 716	
	LTE Band 25	1850 - 1915	
	LTE Band 26	814 - 849	
	LTE Band 30	2305 - 2315	
	LTE Band 38	2570 - 2620	
	LTE Band 41	2496 - 2690	



	LTE Band 42	3450 - 3550 3550 - 3600	
	LTE Band 43	3600 - 3700	
	LTE Band 48	3550 - 3700	
	LTE Band 66	1710 - 1780	
	LTE Band 71	663 - 698	
5G NR	5G Band n2	1850 - 1910	
	5G Band n5	824- 849	
	5G Band n7	2500 - 2570	
	5G Band n12	699 - 716	
	5G Band n13	777 - 787	
	5G Band n14	788 - 798	
	5G Band n25	1850 - 1915	
	5G Band n26	814 - 849	
	5G Band n30	2305 - 2315	
	5G Band n38	2570 - 2620	
	5G Band n41	2496 - 2690	
	5G Band n48	3550 - 3700	
	5G Band n66	1710 - 1780	
	5G Band n71	663 - 698	
	5G Band n77	3450 - 3980	
	5G Band n78	3450 - 3800	

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	TAOGLAS	MA1505.AK.001	MIMO	SMA	WWAN
					GPS
2	WHA YU	ANT DIPOLE 2/5/6GHz C496-510189-A BLACK	Dipole	Reverse SMA	Radio 2_2.4G+ Radio 1_5G
3	WHA YU	ANT DIPOLE 2/5/6GHz C496-510189-A BLACK	Dipole	Reverse SMA	Radio 2_2.4G+ Radio 1_5G
4	WHA YU	ANT DIPOLE 2GHz C496-510188-A BLACK	Dipole	Reverse SMA	BT

Note : Antenna 1 Gain See note 2.

Ant.	Port	Gain (dBi)			
		2.4G	5G	BT	GPS
1	1	-	-	-	4.54
2	1	2.08	2.41	-	-
3	2	2.08	2.41	-	-
4	1	-	-	1.8	-

Note 1: The EUT has four antennas.

For WWAN function:

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

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax mode (2TX/2RX) < **Radio 2** >

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

For 5GHz function:

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

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

For BT function:

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

Ant. 4 could transmit/receive.

**Note 2**

Operating Band	Freq. (MHz)	Antenna Gain			
		ANT1(Main0)	ANT1(MIMO1)	ANT1(Main2)	ANT1(MIMO3)
☒ WCDMA Band II	1850 - 1910	1.7			
☒ WCDMA Band IV	1710 - 1755	3.8			
☒ WCDMA Band V	824 - 849	1.6			
☒ LTE Band 2	1850 - 1910	1.7			
☒ LTE Band 4	1710 - 1755	3.8			
☒ LTE Band 5	824 - 849	1.6			
☒ LTE Band 7	2500 - 2570	1.9			
☒ LTE Band 12	699 - 716	2.4			
☒ LTE Band 13	777 - 787	1.2			
☒ LTE Band 14	788 - 798	-0.3			
☒ LTE Band 17	704 - 716	2.4			
☒ LTE Band 25	1850 - 1915	1.7			
☒ LTE Band 26	814 - 849	0.3			
☒ LTE Band 30	2305 - 2315	1			
☒ LTE Band 38	2570 - 2620	0.8			
☒ LTE Band 41	2496 - 2690	1.9			
☒ LTE Band 42	3450 - 3550 3550 - 3600	0.4			
☒ LTE Band 43	3600 - 3700	-0.4			
☒ LTE Band 48	3550 - 3700	0.4			
☒ LTE Band 66	1710 - 1780	3.8			
☒ LTE Band 71	663 - 698	1.9			
☒ 5G Band n2	1850 - 1910	1.7			
☒ 5G Band n5	824- 849	1.6			
☒ 5G Band n7	2500 - 2570	1.9			
☒ 5G Band n12	699 - 716	2.4			
☒ 5G Band n13	777 - 787	1.2			
☒ 5G Band n14	788 - 798	-0.3			
☒ 5G Band n25	1850 - 1915	1.7			
☒ 5G Band n26	814 - 849	0.3			
☒ 5G Band n30	2305 - 2315	1			
☒ 5G Band n38	2570 - 2620	0.8			
☒ 5G Band n41	2496 - 2690	1.9			
☒ 5G Band n48	3550 - 3700	0.4			
☒ 5G Band n66	1710 - 1780	3.8			
☒ 5G Band n71	663 - 698	1.9			
☒ 5G Band n77	3450 - 3980	0.9			
☒ 5G Band n78	3450 - 3800	0.9			

Note 3: Directional gain information

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

1.1.3 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
FortiExtenderVehicle 511Gxxxxxxxxxx, FORTIEXTENDERVEHICLE-511Gxxxxxxxxxx, FEV-511Gxxxxxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)	All the models are identical, the different model served as marketing strategy.

From the above models, model: FEV-511G was selected as representative model for the test and its data was recorded in this report.

1.1.4 Accessories

Accessories				
AC Adapter	Brand Name	ASIAN	Model Name	WA-36W12R
	Power Rating	I/P: 100- 240Vac 50-60Hz, 0.9A Max, O/P: 12Vdc, 3.0A, 36.0W		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
Vehicle Power Adapter (Car Charger)	Brand Name	HUAI YANG	Model Name	FEVCBL-2M3-C
	Power Rating	I/P:12 Vdc, 2.0 A or 24 Vdc,1.0 A, O/P:12 Vdc, 2.0 A or 24 Vdc,1.0 A		
	Power Cord	2.3meter, non-shielded cable, w/o ferrite core		
Bluetooth Antenna *1	Brand Name	WHA YU	Model Name	ANT DIPOLE 2GHz C496-510188-A BLACK
Wi-Fi Antenna *2	Brand Name	WHA YU	Model Name	ANT DIPOLE 2/5/6GHz C496-510189-A BLACK

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

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_5G + Radio 2_2.4G+ Bluetooth + WWAN

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)	$P_{th}(mW) = \begin{cases} ERP_{20cm} (d / 20cm)^x \rightarrow d \leq 20cm \\ ERP_{20cm} \rightarrow 20cm < d \leq 40cm \end{cases}$ $x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right) \text{ and } f \text{ is in GHz}$ $\begin{cases} ERP_{20cm} : 0.3GHz \leq f < 1.5GHz \rightarrow 2040 f(mW) \\ ERP_{20cm} : 1.5GHz \leq f \leq 6GHz \rightarrow 3060(mW) \end{cases}$
C	§1.1307(b)(3)(i)(C)	$\begin{cases} 0.3 \sim 1.34MHz \rightarrow ERP(W) = 1920 R^2 \\ 1.34 \sim 30MHz \rightarrow ERP(W) = 3450 R^2 / f^2 \\ 30 \sim 300MHz \rightarrow ERP(W) = 3.83R^2 \\ 300 \sim 1500MHz \rightarrow ERP(W) = 0.0128 R^2 f \\ 1500 \sim 100000MHz \rightarrow ERP(W) = 19.2R^2 \end{cases}$ 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 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

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;G1D	2.08	22.22	24.30	0.50	184.077	20	B	3060.000	0.06017
2.4G;D1D	2.08	21.89	23.97	0.50	170.608	20	B	3060.000	0.05577

5GHz WLAN_Indoor

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	2.41	21.79	24.20	0.50	179.887	20	B	3060.000	0.05880
5.3G;D1D	2.41	22.02	24.43	0.50	189.671	20	B	3060.000	0.06200
5.6G;D1D	2.41	21.62	24.03	0.50	172.982	20	B	3060.000	0.05654
5.8G;D1D	2.41	22.31	24.72	0.50	202.768	20	B	3060.000	0.06628

5GHz WLAN_Outdoor

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	2.41	21.38	23.79	0.50	163.682	20	B	3060.000	0.05350
5.3G;D1D	2.41	22.02	24.43	0.50	189.671	20	B	3060.000	0.06200
5.6G;D1D	2.41	21.62	24.03	0.50	172.982	20	B	3060.000	0.05654
5.8G;D1D	2.41	22.31	24.72	0.50	202.768	20	B	3060.000	0.06628

Bluetooth

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;BT-LE	1.80	4.99	6.79	0.50	3.266	20	B	3060.000	0.00107

UMTS

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
WCDMA Band II	1.70	24.50	26.20	0.50	285.17	20	B	3060.000	0.09319
WCDMA Band IV	3.80	24.50	28.30	0.50	462.50	20	B	3060.000	0.15114
WCDMA Band V	1.60	24.50	26.10	0.50	278.68	20	B	1680.960	0.16579

**LTE**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
LTE Band 2	1.70	24.00	25.70	0.50	254.16	20	B	3060.000	0.08306
LTE Band 4	3.80	24.00	27.80	0.50	412.20	20	B	3060.000	0.13471
LTE Band 5	1.60	24.00	25.60	0.50	248.38	20	B	1680.960	0.14776
LTE Band 7	1.90	24.00	25.90	0.50	266.14	20	B	3060.000	0.08697
LTE Band 12	2.40	24.00	26.40	0.50	298.61	20	B	1425.960	0.20941
LTE Band 13	1.20	24.00	25.20	0.50	226.52	20	B	1585.080	0.14291
LTE Band 14	-0.30	24.00	23.70	0.50	160.37	20	B	1607.520	0.09976
LTE Band 17	2.40	24.00	26.40	0.50	298.61	20	B	1436.160	0.20793
LTE Band 25	1.70	24.00	25.70	0.50	254.16	20	B	3060.000	0.08306
LTE Band 26	0.30	24.00	24.30	0.50	184.12	20	B	1660.560	0.11088
LTE Band 30	1.00	23.00	24.00	0.50	171.83	20	B	3060.000	0.05616
LTE Band 38	0.80	24.00	24.80	0.50	206.59	20	B	3060.000	0.06751
LTE Band 41	1.90	26.50	28.40	0.50	473.27	20	B	3060.000	0.15466
LTE Band 42	0.40	22.50	22.90	0.50	133.39	20	B	3060.000	0.04359
LTE Band 43	-0.40	22.50	22.10	0.50	110.95	20	B	3060.000	0.03626
LTE Band 48	0.40	22.50	22.90	0.50	133.39	20	B	3060.000	0.04359
LTE Band 66	3.80	24.00	27.80	0.50	412.20	20	B	3060.000	0.13471
LTE Band 71	1.90	24.00	25.90	0.50	266.14	20	B	1352.520	0.19677

5G NR

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
NR n2	1.70	24.50	26.20	0.50	285.17	20	B	3060.000	0.09319
NR n5	1.60	24.50	26.10	0.50	278.68	20	B	1680.960	0.16579
NR n7	1.90	24.50	26.40	0.50	298.61	20	B	3060.000	0.09759
NR n12	2.40	24.00	26.40	0.50	298.61	20	B	1425.960	0.20941
NR n13	1.20	24.00	25.20	0.50	226.52	20	B	1585.080	0.14291
NR n14	-0.30	24.00	23.70	0.50	160.37	20	B	1607.520	0.09976
NR n25	1.70	24.50	26.20	0.50	285.17	20	B	3060.000	0.09319
NR n26	0.30	24.00	24.30	0.50	184.12	20	B	1660.560	0.11088
NR n30	1.00	23.00	24.00	0.50	171.83	20	B	3060.000	0.05616
NR n38	0.80	25.00	25.80	0.50	260.08	20	B	3060.000	0.08499
NR n41	1.90	27.50	29.40	0.50	595.81	20	B	3060.000	0.19471
NR n41 PC1.5	1.90	29.00	30.90	0.50	841.61	20	B	3060.000	0.27504
NR n48	0.40	22.50	22.90	0.50	133.39	20	B	3060.000	0.04359
NR n66	3.80	24.50	28.30	0.50	462.50	20	B	3060.000	0.15114
NR n71	1.90	24.50	26.40	0.50	298.61	20	B	1352.520	0.22078



Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
NR n77	0.9	27.50	28.40	0.50	473.27	20	B	3060.000	0.15466
NR n77 PC1.5	0.90	29.00	29.90	0.50	668.51	20	B	3060.000	0.21847
NR n78	0.90	27.50	28.40	0.50	473.27	20	B	3060.000	0.15466
NR n78 PC1.5	0.90	29.00	29.90	0.50	668.51	20	B	3060.000	0.21847

Beamforming**2.4GHz WLAN**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	5.09	21.89	26.98	0.50	341.193	20	B	3060.000	0.11153

5GHz WLAN_Indoor

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.42	21.47	26.89	0.50	334.195	20	B	3060.000	0.10924
5.3G;D1D	5.42	21.94	27.36	0.50	372.392	20	B	3060.000	0.12173
5.6G;D1D	5.42	21.62	27.04	0.50	345.939	20	B	3060.000	0.11308
5.8G;D1D	5.42	22.31	27.73	0.50	405.509	20	B	3060.000	0.13255

5GHz WLAN_Outdoor

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.2G;D1D	5.42	21.13	26.55	0.50	309.030	20	B	3060.000	0.10102
5.3G;D1D	5.42	21.94	27.36	0.50	372.392	20	B	3060.000	0.12173
5.6G;D1D	5.42	21.62	27.04	0.50	345.939	20	B	3060.000	0.11308
5.8G;D1D	5.42	22.31	27.73	0.50	405.509	20	B	3060.000	0.13255

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_5G + Radio 2_2.4G+ Bluetooth + WWAN

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
2.4G;D1D	5.09	21.89	26.98	0.50	341.193	20	B	3060.000	0.11153
5.8G;D1D	5.42	22.31	27.73	0.50	405.509	20	B	3060.000	0.13255
2.4G;BT-LE	1.80	4.99	6.79	0.50	3.266	20	B	3060.000	0.00107
NR n41 PC1.5	1.90	29.00	30.90	0.50	841.61	20	B	3060.000	0.27504
Sum Ratio	0.52018								
Ratio Limit	1.00000								

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—————