Maximum Permissible Exposure Report

1. Product Information

EUT	:	Wireless Router
Test Model	:	TR300
Power Supply	:	Input: 12V⎓2500mA For AC Adapter Input: 100-240V~, 50/60Hz, 1.5A Adapter Output: 12V⎓2500mA
Hardware Version	:	V02
Software Version	:	/
WIFI (2.4G Band)		
Frequency Range	:	2412MHz~2462MHz
Channel Number	:	11 Channels for 20MHz bandwidth(2412~2462MHz) 7 Channels for 40MHz bandwidth(2422~2452MHz)
Channel Spacing	:	5MHz
Modulation Type	:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDM (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	:	Antenna 0: External Antenna, 3.0dBi(Max.) Antenna 1: External Antenna, 3.0dBi(Max.)
WIFI(5.2G Band)		
Frequency Range	:	5180MHz~5240MHz
Channel Number	:	4 channels for 20MHz bandwidth(5180MHz~5240MHz) 2 channels for 40MHz bandwidth(5190MHz~5230MHz) 1 channels for 80MHz bandwidth(5210MHz)
Modulation Type	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDM (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	:	Antenna0: External Antenna, 3.0dBi(Max.) Antenna1: External Antenna, 3.0dBi(Max.)
WIFI(5.8G Band)		
Frequency Range	:	5745MHz~5825MHz
Channel Number	:	5 channels for 20MHz bandwidth(5745MHz~5825MHz) 2 channels for 40MHz bandwidth(5755MHz~5795MHz) 1 channels for 80MHz bandwidth(5775MHz)
Modulation Type	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDM (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	:	Antenna 0: External Antenna, 3.0dBi(Max.) Antenna 1: External Antenna, 3.0dBi(Max.)
Exposure category	:	General population/uncontrolled environment
LTE Modular SR3595D		
Support LTE Bands	:	GSM850/GSM1900, WCDMA Band II/V, LTE Band 2/4/5/7/12/13/17/25/26/41/66
Div. Antenna	:	Support and only RX
Antenna Description	:	External Antenna, 2.40dBi(Max.)
LTE Modular SIM7912-M2		
Support LTE Bands	:	WCDMA Band II/IV/V, LTE Band 2/4/5/7/12/13/14/17/18/19/25/26/30/38/40/41/48/66
Div. Antenna	:	Support and only RX
Antenna Description	:	External Antenna, 2.40dBi(Max.)
EUT Type	:	Production Unit
Device Type	:	Mobile Device

2. Evaluation Method

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.
In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3. 1 Refer Evaluation Method

ANSI C95.1–2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz
FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.
FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.
FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

3. 2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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

F=frequency in MHz
*=Plane-wave equivalent power density

4. MPE Calculation Method

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$

Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to an isotropic radiator
R=distance to the center of radiation of the antenna

5. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

Internal/ External Identification	Antenna type and antenna number	Operate frequency band	Maximum antenna gain	Notes
ANT 0	External Antenna	2400MHz ~ 2500MHz	3.00 dBi	2.4GHz WALN Antenna 0
ANT 1	External Antenna	2400MHz ~ 2500MHz	3.00 dBi	2.4GHz WALN Antenna 1
ANT 2	External Antenna	5000MHz ~ 6000MHz	3.00 dBi	5GHz WALN Antenna 0
ANT 3	External Antenna	5000MHz ~ 6000MHz	3.00 dBi	5GHz WALN Antenna 1
ANT 4	External Antenna	600 MHz – 5000 MHz	2.40 dBi	LTE Modular SR3595D Main Antenna
ANT 5	External Antenna	600 MHz – 5000 MHz	2.40 dBi	LTE Modular SIM7912-M2 Main Antenna

6. Conducted Power

[2.4G WIFI]

Mode	Channel	Frequency (MHz)	Ant 0 Max Conducted Power(dBm)	Ant 1 Max Conducted Power(dBm)
11B	1	2412	16.92	16.97
	6	2437	17.13	17.05
	11	2462	17.17	17.24
11G	1	2412	17.10	16.99
	6	2437	17.11	17.26
	11	2462	17.39	17.33
11N20 SISO	1	2412	16.88	16.93
	6	2437	17.20	17.18
	11	2462	16.88	16.87
11N40 SISO	3	2422	16.35	16.69
	6	2437	16.88	16.96
	9	2452	17.08	17.02
11AX20 SISO	1	2412	16.62	16.53
	6	2437	16.67	17.17
	11	2462	16.66	17.12
11AX40 SISO	3	2422	17.02	16.53
	6	2437	17.06	17.27
	9	2452	17.15	16.79

[5.2G WIFI]

Mode	Channel	Frequency (MHz)	Ant 0 Max Conducted Power(dBm)	Ant 1 Max Conducted Power(dBm)
11A	36	5180	13.67	13.79
	40	5200	14.05	13.97
	48	5240	13.14	13.09
11N20 SISO	36	5180	13.74	13.25
	40	5200	14.04	13.47
	48	5240	13.63	13.52
11N40 SISO	38	5190	14.06	13.92
	46	5230	13.88	13.21
11AC20 SISO	36	5180	13.74	13.75
	40	5200	14.01	13.99
	48	5240	13.21	13.63
11AC40 SISO	38	5190	14.48	13.97
	46	5230	13.73	13.60
11AC80 SISO	42	5210	14.02	13.96
11AX20 SISO	36	5180	13.35	13.36
	40	5200	13.62	13.68
	48	5240	13.32	12.82
11AX40 SISO	38	5190	14.15	13.73
	46	5230	13.96	12.96
11AX80 SISO	42	5210	14.28	12.66

[5.8G WIFI Max Conducted Power]

Mode	Channel	Frequency (MHz)	Ant 0 Max Conducted Power(dBm)	Ant 1 Max Conducted Power(dBm)
11A	149	5745	13.63	13.03
	157	5785	13.56	12.58
	165	5825	13.69	12.49
11N20 SISO	149	5745	13.08	12.46
	157	5785	12.66	12.01
	165	5825	13.16	11.90
11N40 SISO	151	5755	14.17	12.57
	159	5795	13.21	11.60
11AC20 SISO	149	5745	13.61	12.46
	157	5785	13.62	12.09
	165	5825	13.65	11.99
11AC40 SISO	151	5755	14.16	12.52
	159	5795	13.20	11.64
11AC80 SISO	155	5775	11.97	11.30
11AX20 SISO	149	5745	13.32	12.65
	157	5785	12.79	12.23
	165	5825	12.82	12.10
11AX40 SISO	151	5755	13.36	12.70
	159	5795	12.49	11.79
11AX80 SISO	155	5775	12.32	11.66

7. Manufacturing Tolerance

[2.4G WIFI Ant0]

11B (Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11G (Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	17.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	16.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Peak)			
Channel	Channel 3	Channel 6	Channel 9
Target (dBm)	16.0	16.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX20(Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	16.0	16.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Peak)			
Channel	Channel 3	Channel 6	Channel 9
Target (dBm)	17.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0

[2.4G WIFI Ant1]

11B (Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11G (Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	16.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Peak)			
Channel	Channel 3	Channel 6	Channel 9
Target (dBm)	16.0	16.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX20(Peak)			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	16.0	17.0	17.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Peak)			
Channel	Channel 3	Channel 6	Channel 9
Target (dBm)	16.0	17.0	16.0
Tolerance ±(dB)	1.0	1.0	1.0

[5.2G WIFI Ant0]

11A(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	14.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	14.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Average)			
Channel	Channel 38		Channel 46
Target (dBm)	14.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	14.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11AC40(Average)			
Channel	Channe 38		Channel 46
Target (dBm)	14.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC80(Average)			
Channel	Channel 42		
Target (dBm)	14.0		
Tolerance ±(dB)	1.0		
11AX20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Average)			
Channel	Channe 38		Channel 46
Target (dBm)	14.0		13.0
Tolerance ±(dB)	1.0		1.0
11AX80(Average)			
Channel	Channel 42		
Target (dBm)	14.0		
Tolerance ±(dB)	1.0		

[5.2G WIFI Ant1]

11A(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Average)			
Channel	Channel 38		Channel 46
Target (dBm)	13.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11AC40(Average)			
Channel	Channe 38		Channel 46
Target (dBm)	13.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC80(Average)			
Channel	Channel 42		
Target (dBm)	13.0		
Tolerance ±(dB)	1.0		
11AX20(Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	13.0	13.0	12.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Average)			
Channel	Channe 38		Channel 46
Target (dBm)	13.0		12.0
Tolerance ±(dB)	1.0		1.0
11AX80(Average)			
Channel	Channel 42		
Target (dBm)	12.0		
Tolerance ±(dB)	1.0		

[5.8G WIFI Ant0]

11A (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	12.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Average)			
Channel	Channel 151		Channel 159
Target (dBm)	14.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0
11AC40(Average)			
Channel	Channe151		Channel 159
Target (dBm)	14.0		13.0
Tolerance ±(dB)	1.0		1.0
11AC80(Average)			
Channel	Channel 155		
Target (dBm)	11.0		
Tolerance ±(dB)	1.0		
11AX20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	12.0	12.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Average)			
Channel	Channe151		Channel 159
Target (dBm)	13.0		12.0
Tolerance ±(dB)	1.0		1.0
11AX80(Average)			
Channel	Channel 155		
Target (dBm)	12.0		
Tolerance ±(dB)	1.0		

[5.8G WIFI Ant1]

11A (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	13.0	12.0	12.0
Tolerance ±(dB)	1.0	1.0	1.0
11N20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	11.0
Tolerance ±(dB)	1.0	1.0	1.0
11N40(Average)			
Channel	Channel 151		Channel 159
Target (dBm)	12.0		11.0
Tolerance ±(dB)	1.0		1.0
11AC20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	11.0
Tolerance ±(dB)	1.0	1.0	1.0
11AC40(Average)			
Channel	Channe151		Channel 159
Target (dBm)	12.0		11.0
Tolerance ±(dB)	1.0		1.0
11AC80(Average)			
Channel	Channel 155		
Target (dBm)	11.0		
Tolerance ±(dB)	1.0		
11AX20(Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ±(dB)	1.0	1.0	1.0
11AX40(Average)			
Channel	Channe151		Channel 159
Target (dBm)	12.0		11.0
Tolerance ±(dB)	1.0		1.0
11AX80(Average)			
Channel	Channel 155		
Target (dBm)	11.0		
Tolerance ±(dB)	1.0		

LTE Modular SIM7912-M2

WCDMA Band II/IV/V, LTE Band 2/4/5/7/12/13/14/17/18/19/25/26/30/38/40/41/48/66: 24.00 dBm

LTE Modular SR3595D

WCDMA Band II/V, LTE Band 2/4/5/7/12/13/17/25/26/41/66: 24.00 dBm

GSM850: 23.49 dBm

GSM1900: 29.50 dBm

8. Measurement Results

8.1 Standalone MPE Evaluation

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, r =20cm, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

[2.4G WIFI Ant0]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11b	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11g	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11n HT20	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11n HT40	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11AX HET20	17.0	50.1187	3.0	1.9953	0.0199	1.0000
IEEE 802.11AX HET40	18.0	63.0957	3.0	1.9953	0.0251	1.0000

[2.4G WIFI Ant1]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11b	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11g	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11n HT20	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11n HT40	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11AX HET20	18.0	63.0957	3.0	1.9953	0.0251	1.0000
IEEE 802.11AX HET40	18.0	63.0957	3.0	1.9953	0.0251	1.0000

[5.2G WIFI Ant0]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11n HT20	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11n HT40	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ac VHT20	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ac VHT40	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ac VHT80	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ax HET20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET40	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ax HET80	15.0	31.6228	3.0	1.9953	0.0126	1.0000

[5.2G WIFI Ant1]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11n HT20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11n HT40	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ac VHT20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ac VHT40	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ac VHT80	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET40	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET80	13.0	19.9526	3.0	1.9953	0.0079	1.0000

[5.8G WIFI Ant0]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11n HT20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11n HT40	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ac VHT20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ac VHT40	15.0	31.6228	3.0	1.9953	0.0126	1.0000
IEEE 802.11ac VHT80	12.0	15.8489	3.0	1.9953	0.0063	1.0000
IEEE 802.11ax HET20	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET40	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11ax HET80	13.0	19.9526	3.0	1.9953	0.0079	1.0000

[5.8G WIFI Ant1]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	14.0	25.1189	3.0	1.9953	0.0100	1.0000
IEEE 802.11n HT20	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11n HT40	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11ac VHT20	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11ac VHT40	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11ac VHT80	12.0	15.8489	3.0	1.9953	0.0063	1.0000
IEEE 802.11ax HET20	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11ax HET40	13.0	19.9526	3.0	1.9953	0.0079	1.0000
IEEE 802.11ax HET80	12.0	15.8489	3.0	1.9953	0.0063	1.0000

LTE Modular SIM7912-M2

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
WCDMA/LTE	24.00	251.1886	2.40	1.7378	0.0869	0.4666*

LTE Modular SR3595D

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
GSM	23.49	223.3572	2.40	1.7378	0.0773	0.5490
WCDMA/LTE	24.00	251.1886	2.40	1.7378	0.0869	0.4666*

Remark:
1. Output power including turn-up tolerance;
2. Output power was adjust to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.
4. GSM average power (dBm) = Burst average power (dBm) – $10\log_{10}(1/8)$
5. LTE Modular SIM7912-M2 information from FCC ID: 2AJYU-8XM0003 test report; LTE Modular SR3595D information from FCC ID: 2AU4T-TM22-LCC
6. MPE limits use lowest frequency related worst limits to evaluate worst case.

8.2 Simultaneous Transmission MPE Evaluation

The EUT contains 2 antennas support 2T2R MIMO for 2.4GHz WLAN, also contains 2 antennas for 2T2R MIMO for 5GHz WLAN, 2.4GHz and 5 GHz WLAN share difference antennas, can support simultaneously transmission. The device also supports LTE modular SIM7912-M2 (FCC ID: 2AJYU-8XM0003) and LTE modular SR3595D (FCC ID: 2AU4T-TM22-LCC), LTE modular share main antenna and one diversity antennas only for receiver function. LTE modular SIM7912-M2 and LTE modular SR3595D share difference antennas and can supports simultaneously transmission. The device support 2.4GHz WLAN, 5GHz WLAN, LTE modular SIM7912-M2 and LTE modular SR3595D support simultaneously transmission.

According to KDB447498 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;
∑of MPE ratios ≤ 1.0

<the worst simultaneous transmission operations result>

2.4GWIFI MAX		5GWIFI MAX		LTE Modular SIM7912-M2	LTE Modular SR3595D	∑ MPE ratios	Limit	Results
Ant 0	Ant 1	Ant 2	Ant 3	Ant 4	Ant 5			
0.0251	0.0251	0.0126	0.0100	0.1862	0.1862	0.4452	1.0	Pass

Remark:
1. Output power including turn-up tolerance;
2. BT/BLE/2.4G WIFI output power is burst peak power;
3. 5G WIFI output power is burst average power;
4. MPE evaluate distance is 20cm from user manual provide by manufacturer;
5. MPE values = $PG/4\pi R^2$

9. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

----------THE END OF REPORT----------