Maximum Permissible Exposure Report

1. Product Information

EUT	:	Legends Pinball
Test Model	:	HA9920
Additional Model No.	:	See Model List
Model Declaration	:	PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Power Supply	:	Input: AC 110-240V, 50/60Hz, 1.2A
Hardware Version	:	HA9920
Software Version	:	/
Bluetooth		
Frequency Range	:	2402MHz ~ 2480MHz
Channel Number	:	79 Channels for Bluetooth V5.1(DSS) 40 channels for Bluetooth V5.1(DTS)
Channel Spacing	:	1MHz for Bluetooth V5.1(DSS) 2MHz for Bluetooth V5.1 (DTS)
Modulation Type	:	GFSK, π/4-DQPSK, 8-DPSK for Bluetooth V5.1(DSS) GFSK for Bluetooth V5.1(DTS)
Bluetooth Version	:	V5.1
Antenna Description	:	Internal Antenna, 2.0dBi(Max.)
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)
Antenna Description	:	Antenna1: Internal Antenna, 2.0dBi(Max.) Antenna2: Internal Antenna, 2.0dBi(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)
Antenna Description	:	Antenna1: Internal Antenna, 2.0dBi(Max.) Antenna2: Internal Antenna, 2.0dBi(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)
Antenna Description	:	Antenna1: Internal Antenna, 2.0dBi(Max.) Antenna2: Internal Antenna, 2.0dBi(Max.)
Exposure category	:	General population/uncontrolled environment
EUT Type	:	Production Unit
Device Type	:	Mobile Device

Model List:

HA9920	HA9920A	HA9920B	HA9920C	HA9920D	HA9920E
HA9921	HA9921A	HA9921B	HA9921C	HA9921D	HA9921E
HA9950	HA9950A	HA9950B	HA9950C	HA9950D	HA9950E
HA9951	HA9951A	HA9951B	HA9951C	HA9951D	HA9951E
HA9952	HA9952A	HA9952B	HA9952C	HA9952D	HA9952E
HA9922	HA9922A	HA9922B	HA9922C	HA9922D	HA9922E
HA9923	HA9923A	HA9923B	HA9923C	HA9923D	HA9923E
HA9924	HA9924A	HA9924B	HA9924C	HA9924D	HA9924E
HA9925	HA9925A	HA9925B	HA9925C	HA9925D	HA9925E
HA9926	HA9926A	HA9926B	HA9926C	HA9926D	HA9926E
HA9927	HA9927A	HA9927B	HA9927C	HA9927D	HA9927E
HA9928	HA9928A	HA9928B	HA9928C	HA9928D	HA9928E
HA9929	HA9929A	HA9929B	HA9929C	HA9929D	HA9929E
HA9930	HA9930A	HA9930B	HA9930C	HA9930D	HA9930E
HA9931	HA9931A	HA9931B	HA9931C	HA9931D	HA9931E
HA9932	HA9932A	HA9932B	HA9932C	HA9932D	HA9932E
HA9933	HA9933A	HA9933B	HA9933C	HA9933D	HA9933E
HA9934	HA9934A	HA9934B	HA9934C	HA9934D	HA9934E
HA9935	HA9935A	HA9935B	HA9935C	HA9935D	HA9935E
HA9953	HA9953A	HA9953B	HA9953C	HA9953D	HA9953E
HA9954	HA9954A	HA9954B	HA9954C	HA9954D	HA9954E
HA9955	HA9955A	HA9955B	HA9955C	HA9955D	HA9955E
HA9956	HA9956A	HA9956B	HA9956C	HA9956D	HA9956E
HA9957	HA9957A	HA9957B	HA9957C	HA9957D	HA9957E
HA9958	HA9958A	HA9958B	HA9958C	HA9958D	HA9958E
HA9959	HA9959A	HA9959B	HA9959C	HA9959D	HA9959E
HA9960	HA9960A	HA9960B	HA9960C	HA9960D	HA9960E
HA9961	HA9961A	HA9961B	HA9961C	HA9961D	HA9961E
HA9962	HA9962A	HA9962B	HA9962C	HA9962D	HA9962E

HA9963	HA9963A	HA9963B	HA9963C	HA9963D	HA9963E
HA9964	HA9964A	HA9964B	HA9964C	HA9964D	HA9964E
HA9965	HA9965A	HA9965B	HA9965C	HA9965D	HA9965E
HA9966	HA9966A	HA9966B	HA9966C	HA9966D	HA9966E
HA9967	HA9967A	HA9967B	HA9967C	HA9967D	HA9967E
HA9968	HA9968A	HA9968B	HA9968C	HA9968D	HA9968E
HA9969	HA9969A	HA9969B	HA9969C	HA9969D	HA9969E

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
Internal	Internal Antenna	2400-2500 MHz	2.0 dBi	BT Antenna
Internal	Internal Antenna	2400-2500 MHz	2.0 dBi	WIFI Ant 1
		5180~5240 MHz	2.0 dBi	
		5745~5825 MHz	2.0 dBi	
Internal	Internal Antenna	2400-2500 MHz	2.0 dBi	WIFI Ant 2
		5180~5240 MHz	2.0 dBi	
		5745~5825 MHz	2.0 dBi	

6. Conducted Power

[BT]

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
GFSK	0	2402	-1.26
	39	2441	-1.37
	78	2480	-0.36
π/4DQPSK	0	2402	-1.6
	39	2441	-2.17
	78	2480	-1.14
8DPSK	0	2402	-1.67
	19	2441	-2.22
	39	2480	-1.16

[BLE]

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
BLE_1M	0	2402	-2.38
	19	2440	-1.96
	39	2480	-2.08

[2.4G WIFI]

Mode	Channel	Frequency (MHz)	Ant 1 Max Conducted Power(dBm)	Ant 2 Max Conducted Power(dBm)
11B	1	2412	15.25	15.18
	6	2437	15.29	15.44
	11	2462	15.27	15.42
11G	1	2412	14.06	14.13
	6	2437	14.25	14.24
	11	2462	14.37	14.22
11N20 SISO	1	2412	13.5	13.44
	6	2437	13.6	13.56
	11	2462	13.58	13.58
11N40 SISO	3	2422	12.31	12.36
	6	2437	12.36	12.29
	9	2452	12.26	12.2

[5.2G WIFI]

Mode	Channel	Frequency (MHz)	Ant 1 Max Conducted Power(dBm)	Ant 2 Max Conducted Power(dBm)
11A	36	5180	12.29	12.12
	40	5200	12.37	12.17
	48	5240	12.37	12.28
11N20 SISO	36	5180	12.42	12.53
	40	5200	12.36	12.63
	48	5240	12.65	12.65
11N40 SISO	38	5190	11.44	11.34
	46	5230	11.85	11.94
11AC20 SISO	36	5180	12.31	12.48
	40	5200	12.44	12.42
	48	5240	12.73	12.7
11AC40 SISO	38	5190	11.38	11.49
	46	5230	11.47	11.44
11AC80 SISO	42	5210	10.63	10.75

[5.8G WIFI]

Mode	Channel	Frequency (MHz)	Ant 1 Max Conducted Power(dBm)	Ant 2 Max Conducted Power(dBm)
11A	149	5745	12.56	12.59
	157	5785	12.71	12.75
	165	5825	12.73	12.59
11N20 SISO	149	5745	12.45	12.43
	157	5785	12.41	12.32
	165	5825	12.65	12.52
11N40 SISO	151	5755	11.67	11.7
	159	5795	11.91	11.83
11AC20 SISO	149	5745	12.41	12.42
	157	5785	12.53	12.58
	165	5825	12.68	12.5
11AC40 SISO	151	5755	11.67	11.72
	159	5795	11.91	11.96
11AC80 SISO	155	5775	10.47	10.65

7. Manufacturing Tolerance

[BT]

GFSK(Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-1.0	-1.0	0
Tolerance ± (dB)	1.0	1.0	1.0
π/4-DQPSK(Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-1.0	-2.0	-1.0
Tolerance ± (dB)	1.0	1.0	1.0
8-DPSK(Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-1.0	-2.0	-1.0
Tolerance ± (dB)	1.0	1.0	1.0

[BLE]

BT LE(Peak)			
Channel	Channel 00	Channel 19	Channel 39
Target (dBm)	-2.0	-1.0	-2.0
Tolerance ± (dB)	1.0	1.0	1.0

[2.4G WIFI_ Ant1]

IEEE 802.11b*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	15.0	15.0	15.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11g*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n20*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n40(Peak)			
Channel	Channel 03	Channel 06	Channel 09
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0

[2.4G WIFI_ Ant2]

IEEE 802.11b*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	15.0	15.0	15.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11g*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n20*(Peak)*			
Channel	Channel 01	Channel 06	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n40(Peak)			
Channel	Channel 03	Channel 06	Channel 09
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0

[5.2G WIFI_ Ant1]

IEEE 802.11a (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT20 (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT40 (Average)			
Channel	Channel 38		Channel 46
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT20 (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11ac VHT40 (Average)			
Channel	Channel 38		Channel 46
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT80(Average)			
Channel	Channel 42		
Target (dBm)	10.0		
Tolerance ± (dB)	1.0		

[5.2G WIFI_ Ant2]

IEEE 802.11a (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT20 (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT40 (Average)			
Channel	Channel 38		Channel 46
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT20 (Average)			
Channel	Channel 36	Channel 40	Channel 48
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11ac VHT40 (Average)			
Channel	Channel 38		Channel 46
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT80(Average)			
Channel	Channel 42		
Target (dBm)	10.0		
Tolerance ± (dB)	1.0		

[5.8G WIFI_ Ant1]

IEEE 802.11a (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT20 (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT40 (Average)			
Channel	Channel 151		Channel 159
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT20 (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11ac VHT40 (Average)			
Channel	Channel 151		Channel 159
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT80(Average)			
Channel	Channel 155		
Target (dBm)	10.0		
Tolerance ± (dB)	1.0		

[5.8G WIFI_ Ant2]

IEEE 802.11a (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT20 (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11n HT40 (Average)			
Channel	Channel 151		Channel 159
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT20 (Average)			
Channel	Channel 149	Channel 157	Channel 165
Target (dBm)	12.0	12.0	12.0
Tolerance ± (dB)	1.0	1.0	1.0
IEEE 802.11ac VHT40 (Average)			
Channel	Channel 151		Channel 159
Target (dBm)	11.0		11.0
Tolerance ± (dB)	1.0		1.0
IEEE 802.11ac VHT80(Average)			
Channel	Channel 155		
Target (dBm)	10.0		
Tolerance ± (dB)	1.0		

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.

[BT]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
GFSK	1.0	1.2589	2.0	1.5849	0.0004	1.0000
π/4-DQPSK	0	1.0000	2.0	1.5849	0.0003	1.0000
8-DPSK	0	1.0000	2.0	1.5849	0.0003	1.0000

[BT LE]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
BT LE	0	1.0000	2.0	1.5849	0.0003	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	16.0	39.8107	2.0	1.5849	0.0126	1.0000
IEEE 802.11g	15.0	31.6228	2.0	1.5849	0.0100	1.0000
IEEE 802.11n HT20	14.0	25.1189	2.0	1.5849	0.0079	1.0000
IEEE 802.11n HT40	13.0	19.9526	2.0	1.5849	0.0063	1.0000

[2.4G WIFI_ Ant2]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11b	16.0	39.8107	2.0	1.5849	0.0126	1.0000
IEEE 802.11g	15.0	31.6228	2.0	1.5849	0.0100	1.0000
IEEE 802.11n HT20	14.0	25.1189	2.0	1.5849	0.0079	1.0000
IEEE 802.11n HT40	13.0	19.9526	2.0	1.5849	0.0063	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	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11ac VHT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT80	11.0	12.5893	2.0	1.5849	0.0040	1.0000

[5.2G WIFI_ Ant2]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11ac VHT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT80	11.0	12.5893	2.0	1.5849	0.0040	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	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11ac VHT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT80	11.0	12.5893	2.0	1.5849	0.0040	1.0000

[5.8G WIFI_ Ant2]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
IEEE 802.11a	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11n HT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT20	13.0	19.9526	2.0	1.5849	0.0063	1.0000
IEEE 802.11ac VHT40	12.0	15.8489	2.0	1.5849	0.0050	1.0000
IEEE 802.11ac VHT80	11.0	12.5893	2.0	1.5849	0.0040	1.0000

Remark:
1. Output power including tune-up tolerance;
2. Output power was adjusted to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.

8.2 Simultaneous Transmission MPE Evaluation

The EUT equiped with one BT antenna and one 2.4GWIFI& 5GWIFI antenna and anther2.4GWIFI& 5GWIFI .So need consider simultaneous transmission. Both Bluetooth and WIFI cannot be transmitter simultaneously

<the worst simultaneous transmission operations result>

2.4GWIFI-ANT1 MAX ANT	2.4GWIFI-ANT2 MAX ANT	∑ MPE ratios	Limit	Results
0.0079	0.0079	0.0158	1.0	Pass

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----------