Maximum Permissible Exposure Report

1. Product Information

FCC ID:	2AEXCNB7532
Product name	Kisslink Pro
Model number	NB7532
Power supply	DC 12V/1.5A adapter from AC 120V/60Hz
Frequency Range	2.4G Band: 2412 – 2462 MHz
Trequency realige	5G Band: 5180 – 5240 MHz / 5745 – 5825 MHz
Modulation Technology	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM,QPSK,BPSK) IEEE 802.11a: OFDM (64QAM, 16QAM,QPSK,BPSK) IEEE 802.11ac: OFDM (64QAM, 16QAM,QPSK,BPSK)
Channel Bandwidth	20 MHz / 40 MHz / 80 MHz
Channel separation	5 MHz
Exposure category	General population/uncontrolled environment
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 C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

<u>FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06:</u> 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

Littilo	Elimita for Maximam r emiliabilite Expandire (Mi E)/Controlled Expan							
Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time				
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(minute)				
	Limits for Oc	cupational/Control	led 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	1	1	f/300	6				
1500 – 100,000	1	1	5	6				

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(minute)
	Limits for Oc	cupational/Control	led 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

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/4πR²

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

NB7532 can only use antennas certificated as follows provided by manufacturer;

Internal	Antenna Identification	Antenna type and	Operate frequency	Maximum antenna
Identification	in Internal photos	antenna number	band	gain
Antenna 0	2.4G Wifi Chain 0	PIFA Antenna	2.4GHz – 2.4835 GHz	3.78 dBi
Antenna 1	2.4G Wifi Chain 1	PIFA Antenna	2.4GHz – 2.4835 GHz	3.78 dBi
Antenna 2	2.4G Wifi Chain 2	PIFA Antenna	2.4GHz – 2.4835 GHz	3.78 dBi
Antenna 3	5G Wifi Chain 0	PIFA Antenna	5GHz – 6 GHz	2.15 dBi
Antenna 4	5G Wifi Chain 1	PIFA Antenna	5GHz – 6 GHz	2.15 dBi

6. Conducted Power

2.4GHz WLAN

			ΙE	EE 802.11	b				
Frequency	Α	Intenna 0		Antenna 1			Antenna 2		
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Average Conducted Power (dBm)	18.71	18.39	18.34	18.78	18.57	18.06	18.63	18.41	18.18
			ΙE	EE 802.11	g				
Frequency	Α	<u>ntenna 0</u>			Antenna 1		Д	ntenna 2	
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Average Conducted Power (dBm)	15.92	15.88	15.46	15.89	15.76	15.62	15.85	15.51	15.83
			IEEE	802.11n H	IT20				
Frequency	Α	Intenna 0		Antenna 1			Antenna 2		
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Average Conducted Power (dBm)	14.18	14.29	14.35	14.22	14.15	14.28	14.20	14.15	14.29
			IEEE	802.11n H	IT40				
Frequency	Α	Intenna 0			Antenna 1		Α	Intenna 2	
(MHz)	2422	2437	2452	2422	2437	2452	2422	2437	2452

^{*=}Plane-wave equivalent power density

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Average Conducted Power	11.52	11.48	11.57	11.41	11.34	11.48	11.40	11.35	11.44
(dBm)									

5GHz WLAN Band 1

IEEE 802.11a				AN Band 1					
MHz S180 S200 S240 S180 S200 S240 Average Conducted Power (dBm) 11.719 11.669 11.599 12.269 11.989 11.949	_			802.11a					
Nerage Conducted Power (dBm)									
Power (dBm)		5180	5200	5240	5180	5200	5240		
Company Comp	Average Conducted								
IEEE 802.11n HT20		11.719	11.669	11.599	12.269	11.989	11.949		
Frequency (MHz) 5180 5200 5240 5180 5200 5240 Average Conducted Power (dBm)	(dBm)								
(MHz) 5180 5200 5240 5180 5200 5240 Average Conducted Power (dBm) 11.166 10.966 11.076 11.046 10.706 10.776 IEEE 802.11ac VHT20 Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 11.082 10.962 10.892 10.982 10.712 10.652 IEEE 802.11n HT40 Frequency (MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 10.568 / 10.578 11.278 / 10.448 Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) Antenna 3 Antenna 4 Antenna 3 Antenna 4 (MHz) / 5210 / 5210 / 5210 / 10.767 / 10.862				2.11n HT20					
Average Conducted Power (dBm) IEEE 802.11ac VHT20									
Power (dBm)	(MHz)	5180	5200	5240	5180	5200	5240		
Company Comp	Average Conducted								
Frequency (MHz)	Power	11.166	10.966	11.076	11.046	10.706	10.776		
Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 11.082 10.962 10.892 10.982 10.712 10.652 IEEE 802.11n HT40 Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 10.568 / 10.578 11.278 / 10.448 IEEE 802.11ac VHT40 Frequency (MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) 11.082 / 10.972 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 / 5210 /	(dBm)								
(MHz) 5180 5200 5240 5180 5200 5240 Average Conducted Power (dBm) 11.082 10.962 10.892 10.982 10.712 10.652 IEEE 802.11n HT40 Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 10.568 / 10.578 11.278 / 10.448 Frequency (MHz) Antenna 3 Antenna 4 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) Antenna 3 Antenna 4 (MHz) / 5210 / 5210 / 5210 / Average Conducted (MHz) / 5210 / 5210 / 5210 / Average Conducted / 10.927 / 5210 / 10.757 /			IEEE 802.	11ac VHT20					
Average Conducted Power (dBm) 11.082	Frequency		Antenna 3			Antenna 4			
Power (dBm)	(MHz)	5180	5200	5240	5180	5200	5240		
Company Comp	Average Conducted								
Frequency	Power	11.082	10.962	10.892	10.982	10.712	10.652		
Frequency (MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm)	(dBm)								
(MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 10.568 / 10.578 11.278 / 10.448 Frequency (MHz) Antenna 3 Antenna 4 (MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) Antenna 3 Antenna 4 Antenna 4 / 5210 / 5210 / 40.757 / Average Conducted / 10.927 / / 10.757 /			IEEE 802	2.11n HT40					
Average Conducted Power (dBm)	Frequency		Antenna 3						
Power (dBm)	(MHz)	5190	1	5230	5190	/	5230		
Power (dBm)	Average Conducted								
Company Comp		10.568	1	10.578	11.278	/	10.448		
Frequency (MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm)	(dBm)								
(MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) Antenna 3 (MHz) Antenna 4 (MHz) / 5210 / 5210 / 10.757 / Average Conducted / 10.927 / 10.757 /			IEEE 802.	11ac VHT40					
(MHz) 5190 / 5230 5190 / 5230 Average Conducted Power (dBm) 11.082 / 10.972 10.892 / 10.862 Frequency (MHz) Antenna 3 (MHz) Antenna 4 (MHz) / 5210 / 5210 / 10.757 / Average Conducted / 10.927 / 10.757 /	Frequency		Antenna 3			Antenna 4			
Average Conducted Power (dBm) IEEE 802.11ac VHT80 Frequency (MHz) Antenna 3 (MHz) Average Conducted Antenna 3 Average Conducted Antenna 4 (MHz) Average Conducted Antenna 4 Antenna 4 Average Conducted		5190	1	5230	5190	/	5230		
Power (dBm)									
(dBm) IEEE 802.11ac VHT80 Frequency (MHz) Antenna 3 Antenna 4 6 Average Conducted 10.027 10.027 10.757 1		11.082	/	10.972	10.892	/	10.862		
IEEE 802.11ac VHT80	(dBm)								
Frequency (MHz) Antenna 3 Antenna 4 verage Conducted 10,027 10,027 10,757			IEEE 802.	11ac VHT80					
(MHz) / 5210 / 5210 / Average Conducted / 10.027 / 10.757 /	Frequency					Antenna 4			
Average Conducted / 10 027 / 10 757 /		1		1	1		/		
		,	10.027	1	1	10.757	,		
1 OWG	Power	/	10.921	/	/	10.757	/		

5GHz WLAN Band 3

IEEE 802.11a									
Frequency		Antenna 3			Antenna 4				
(MHz)	5745	5785	5825	5745	5785	5825			
Average Conducted Power	15.169	15.089	15.069	15.059	14.979	14.969			
(dBm)									
IEEE 802.11n HT20									
Frequency		Antenna 3			Antenna 4				
(MHz)	5745	5785	5825	5745	5785	5825			
Average Conducted									
Power	14.959	14.859	14.829	14.829	14.629	14.679			
(dBm)		/FFF 000	11 1/1/1700						
			11ac VHT20						
Frequency		Antenna 3			Antenna 4				
(MHz)	5745	5785	5825	5745	5785	5825			
Average Conducted									
Power	14.739	14.719	14.689	14.609	14.619	14.589			
(dBm)									
		IEEE 802	2.11n HT40						

Frequency		Antenna 3			Antenna 4	
(MHz)	5755	/	5795	5755	/	5795
Average Conducted Power (dBm)	14.518	1	14.628	14.408	1	14.478
		IEEE 802.	11ac VHT40			
Frequency		Antenna 3			Antenna 4	
(MHz)	5755	1	5795	5755	/	5795
Average Conducted Power (dBm)	14.553	1	14.543	14.383	1	14.263
		IEEE 802.	11ac VHT80			
Frequency		Antenna 3			Antenna 4	
(MHz)	1	5775	/	1	5775	1
Average Conducted Power (dBm)	1	14.894	1	1	14.704	1

7. Manufacturing Tolerance

2 4GHz WI AN

	2.4GHz WLAN									
			IEEE 80	02.11b (Ave	erage)					
Frequency	A	ntenna 0			Antenna 1		A	Antenna 2		
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462	
Target (dBm)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
			IEEE 80	02.11g (Ave	erage)					
Frequency	A	ntenna 0			Antenna 1		Α	Antenna 2		
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462	
Target (dBm)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
		IE	EEE 802.	11n HT20 (Average)					
Frequency	A	ntenna 0			Antenna 1			Antenna 2		
(MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462	
Target (dBm)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
		IE	EEE 802.	11n HT40 ((Average)					
Frequency	A	ntenna 0			Antenna 1		Α	Antenna 2		
(MHz)	2422	2437	2452	2422	2437	2452	2422	2437	2452	
Target (dBm)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Tolerance ± (dB)	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	

5GHz WLAN Band 1

IEEE 802.11a (Average)										
Гиоличана.			ra (Average)		Antonno 1					
Frequency		Antenna 3		Antenna 4						
(MHz)	5180	5200	5240	5180	5200	5240				
Target (dBm)	11.5	11.5	11.5	11.5	11.5	11.5				
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0				
	IEEE 802.11n HT20 (Average)									
Frequency		Antenna 3			Antenna 4					
(MHz)	5180	5200	5240	5180	5200	5240				
Target (dBm)	10.5	10.5	10.5	10.5	10.5	10.5				
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0				
	IE	EE 802.11ac	VHT20 (Avera	age)						
Frequency		Antenna 3			Antenna 4					
(MHz)	5180	5200	5240	5180	5200	5240				
Target (dBm)	10.5	10.5	10.5	10.5	10.5	10.5				
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0				
		EEE 802.11n	HT40 (Averag	ge)						
Frequency		Antenna 3			Antenna 4					

(MHz)	5190	/	5230	5190	1	5230
Target (dBm)	10.5	/	10.5	10.5	/	10.5
Tolerance ± (dB)	1.0		1.0	1.0		1.0
	IE		VHT40 (Avera	age)		
Frequency		Antenna 3			Antenna 4	
(MHz)	5190	1	5230	5190	1	5230
Target (dBm)	10.5	/	10.5	10.5	/	10.5
Tolerance ± (dB)	1.0		1.0	1.0		1.0
	IE	EEE 802.11ac	VHT80 (Avera	age)		
Frequency		Antenna 3			Antenna 4	
(MHz)	1	5210	/	1	5210	1
Target (dBm)	1	10.0	1	1	10.0	1
Tolerance ± (dB)		1.0			1.0	

5GHz WLAN Band 3

			AN Band 3					
			11a (Average)					
Frequency		Antenna 3			Antenna 4			
(MHz)	5745	5785	5825	5745	5785	5825		
Target (dBm)	14.5	14.5	14.5	14.5	14.5	14.5		
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0		
	I	IEEE 802.11n	HT20 (Averag					
Frequency		Antenna 3			Antenna 4			
(MHz)	5745	5785	5825	5745	5785	5825		
Target (dBm)	14.5	14.5	14.5	14.5	14.5	14.5		
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0		
	IEEE 802.11ac VHT20 (Average)							
Frequency		Antenna 3			Antenna 4			
(MHz)	5745	5785	5825	5745	5785	5825		
Target (dBm)	14.5	14.5	14.5	14.5	14.5	14.5		
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0		
	I	IEEE 802.11n	HT40 (Averag					
Frequency		Antenna 3			Antenna 4			
(MHz)	5755	1	5795	5755	1	5795		
Target (dBm)	14.5	/	14.5	14.5	1	14.5		
Tolerance ± (dB)	1.0		1.0	1.0		1.0		
	IE	EE 802.11ac	VHT40 (Avera					
Frequency		Antenna 3			Antenna 4			
(MHz)	5755	/	5795	5755	1	5795		
Target (dBm)	14.5	/	14.5	14.5	1	14.5		
Tolerance ± (dB)	1.0		1.0	1.0		1.0		
	IE	EE 802.11ac	VHT80 (Avera					
Frequency		Antenna 3			Antenna 4			
(MHz)	/	5775	1	/	5775	/		
Target (dBm)	1	14.5	1	/	14.5	/		
Tolerance ± (dB)		1.0			1.0			

8. Measurement Results

8.1 Standalone MPE

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.

2.4GHz WLAN

Antenna 0

	Output power		Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11b	19.00	79.4328	3.78	2.3878	100%	0.0378	1.0000
IEEE 802.11g	16.00	39.8107	3.78	2.3878	100%	0.0189	1.0000
IEEE 802.11n HT20	15.00	31.6228	3.78	2.3878	100%	0.0150	1.0000
IEEE 802.11n HT40	12.00	15.8489	3.78	2.3878	100%	0.0075	1.0000

Antenna 1

	Output power		Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11b	19.00	79.4328	3.78	2.3878	100%	0.0378	1.0000
IEEE 802.11g	16.00	39.8107	3.78	2.3878	100%	0.0189	1.0000
IEEE 802.11n HT20	15.00	31.6228	3.78	2.3878	100%	0.0150	1.0000
IEEE 802.11n HT40	12.00	15.8489	3.78	2.3878	100%	0.0075	1.0000

Antenna 2

	Output power		Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11b	19.00	79.4328	3.78	2.3878	100%	0.0378	1.0000
IEEE 802.11g	16.00	39.8107	3.78	2.3878	100%	0.0189	1.0000
IEEE 802.11n HT20	15.00	31.6228	3.78	2.3878	100%	0.0150	1.0000
IEEE 802.11n HT40	12.00	15.8489	3.78	2.3878	100%	0.0075	1.0000

5GHz WLAN Band 1

Antenna 3

	Output power		Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11a	12.50	17.7828	2.15	1.6406	100%	0.0058	1.0000
IEEE 802.11n HT20	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT20	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11n HT40	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT40	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT80	11.00	12.5893	2.15	1.6406	100%	0.0041	1.0000

Antenna 4

	Output	Output power		Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11a	12.50	17.7828	2.15	1.6406	100%	0.0058	1.0000
IEEE 802.11n HT20	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT20	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11n HT40	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT40	11.50	14.1254	2.15	1.6406	100%	0.0046	1.0000
IEEE 802.11ac VHT80	11.00	12.5893	2.15	1.6406	100%	0.0041	1.0000

5GHz WLAN Band 3

Antenna 3

	Output power		Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11a	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11n HT20	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT20	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11n HT40	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT40	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT80	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000

Antenna 4

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm ²)	Limits (mW/cm ²)
IEEE 802.11a	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11n HT20	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT20	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11n HT40	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT40	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000
IEEE 802.11ac VHT80	15.50	35.4813	2.15	1.6406	100%	0.0116	1.0000

Remark:

- 1. Output power (Average) 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;

8.2 Simultaneous Transmission MPE

The sample supports 3 antennas for 2.4GHz WLAN and 2 antennas for 5G WLAN, the 5 antenna can transmit simultaneous.

According to KDB447498 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;

 \sum of MPE ratios ≤ 1.0

8.2.1 Summary simultaneous transmission information

			Tra	ansmit Anter	ına				Antenna 0
Modulation Type	Work Frequency Band	Antenna 0	Antenna 1	Antenna 2	Antenna 3	Antenna 4	Antenna 0 Antenna 1 Antenna 2 Synchronization transmit	Antenna 3 Antenna 4 Synchronization transmit	Antenna 1 Antenna 2 Antenna 3 Antenna 4 Synchronization transmit
IEEE 802.11a	5.8G/5.2GHz	No	No	No	Yes	Yes	No	No	
IEEE 802.11b	2.4GHz	Yes	Yes	Yes	No	No	No	No	
IEEE 802.11g	2.4GHz	Yes	Yes	Yes	No	No	No	No	
IEEE 802.11n HT20	2.4GHz	Yes	Yes	Yes	No	No	Yes	No	
IEEE 802.11n HT20	5.8G/5.2GHz	No	No	No	Yes	Yes	No	Yes	Yes
IEEE 802.11n HT40	2.4GHz	Yes	Yes	Yes	No	No	Yes	No	res
IEEE 802.11n HT40	5.8G/5.2GHz	No	No	No	Yes	Yes	No	Yes	
IEEE 802.11ac VHT20	5.8G/5.2GHz	No	No	No	Yes	Yes	No	Yes	
IEEE 802.11ac VHT40	5.8G/5.2GHz	No	No	No	Yes	Yes	No	Yes	
IEEE 802.11ac VHT80	5.8G/5.2GHz	No	No	No	Yes	Yes	No	Yes	

8.2.2 Summary simultaneous transmission results

Antenna 0, Antenna 1 and Antenna 2 for 2.4GWLAN

Modulation Type	MPE _{Antenga0} (mW/cm ²)	MPE Antenna1 (mW/cm²)	MPE _{Antenna2} (mW/cm ²)	∑MPE ratios	Limit	Results
IEEE 802.11b	0.0378	0.0378	0.0378	0.1	1.0	PASS
IEEE 802.11g	0.0189	0.0189	0.0189	0.1	1.0	PASS
IEEE 802.11n HT20	0.0150	0.0150	0.0150	0.1	1.0	PASS
IEEE 802.11n HT40	0.0075	0.0075	0.0075	0.1	1.0	PASS

Antenna 3 and Antenna 4 for 5GWLAN Band 1

Modulation Type	MPE _{Antenna3} (mW/cm ²)	MPE _{Antenpa4} (mW/cm²)	∑MPE ratios	Limit	Results
IEEE 802.11a	0.0058	0.0058	0.1	1.0	PASS
IEEE 802.11n HT20	0.0046	0.0046	0.1	1.0	PASS
IEEE 802.11ac VHT20	0.0046	0.0046	0.1	1.0	PASS
IEEE 802.11n HT40	0.0046	0.0046	0.1	1.0	PASS
IEEE 802.11ac VHT40	0.0046	0.0046	0.1	1.0	PASS
IEEE 802.11ac VHT80	0.0041	0.0041	0.1	1.0	PASS

Antenna 3 and Antenna 4 for 5GWLAN Band 3

Modulation Type	MPE _{Antenpa3} (mW/cm ²)	MPE _{Antenpa4} (mW/cm ²)	∑MPE ratios	Limit	Results
IEEE 802.11a	0.0116	0.0116	0.1	1.0	PASS
IEEE 802.11n HT20	0.0116	0.0116	0.1	1.0	PASS
IEEE 802.11ac VHT20	0.0116	0.0116	0.1	1.0	PASS
IEEE 802.11n HT40	0.0116	0.0116	0.1	1.0	PASS
IEEE 802.11ac VHT40	0.0116	0.0116	0.1	1.0	PASS
IEEE 802.11ac VHT80	0.0116	0.0116	0.1	1.0	PASS

Maximum Simultaneous transmission MPE Ratios for 2.4GHz WLAN and 5G WLAN

Maximum MPE ratio _{2.4GWLAN}	Maximum MPE ratio _{5GWLAN}	∑MPE ratios	Limit	Results
0.1	0.1	0.2	1.0	PASS

Remark:

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-----

^{1.} Record worst case at 3 antennas for 2.4GHz WLAN and 2 antennas for 5GHz WLAN simultaneous emission after evaluate all simultaneous transmission;