# **Maximum Permissible Exposure Report**

#### 1. Product Information

FCC ID : 2AG8VVBOX7

EUT : VBOX

Additional Model No. : VBOX8, VBOX9, VBOX10

Model Declaration : PCB board, structure and internal of these model(s) are the same,

Only models name is different for these models.

Test Model : VBOX7

Power Supply : DC 5V by AC/DC ADAPTER

Hardware version : VBOX7\_V2.0

Software version : V1.0
Bluetooth Version : V4.1

Channel Number 79 Channels for Bluetooth V3.0(DSS)

40 Channels for Bluetooth V4.1(DTS)

Modulation Technology

GFSK, π/4-DQPSK, 8-DPSK for Bluetooth V3.0(DSS)

: 0.701/(...71)

GFSK for Bluetooth V4.1(DTS)

Data Rates Bluetooth V3.0(DSS): 1~3Mbps

Bluetooth V4.1(DTS): 1Mbps

WLAN : Supported 802.11b/802.11g/802.11n/802.11a/802.11ac

WLAN FCC Operation : IEEE

Frequency

: IEEE 802.11b:2412-2462MHz IEEE 802.11g:2412-2462MHz

IEEE 802.11n

HT20:2412-2462MHz/5150-5250MHz/5725-5825MHz

IEEE 802.11n

HT40:2422-2452MHz/5150-5250MHz/5725-5825MHz IEEE 802.11a: 5150-5250MHz/5725.00-5825.00MHz IEEE 802.11ac: 5150-5250MHz/5725.00-5825.00MHz

WLAN Channel Number : 11 Channels for WIFI 20MHz Bandwidth(802.11b/g/n-HT20)

7 Channels for WIFI 40MHz Bandwidth(802.11n-HT40) 4 Channels for 5180.00-5240.00MHz(802.11a/n/ac-HT20) 5 Channels for 5745.00-5825.00MHz(802.11a/n/ac-HT20) 2 Channels for 5190.00-5230.00MHz(802.11n/ac-HT40) 2 Channels for 5755.00-5795.00MHz(802.11n/ac-HT40)

1 Channels for 5210.00MHz(802.11ac-HT80) 1 Channels for 5775.00MHz(802.11ac-HT80)

WLAN 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)

Antenna Type And Gain : Two same PIFA Antenna;

Chain 0 used for WIFI TX/RX, 2.0dBi(Max.);

Chain 1 used for WIFI/Bluetooth TX/RX, 2.0dBi(Max.)

#### 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.

FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

<u>FCC CFR 47 part1 1.1310:</u> Radiofrequency radiation exposure limits. <u>FCC CFR 47 part2 2.1091:</u> Radiofrequency radiation exposure evaluation: mobile devices.

#### 3. 2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time					
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(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 <sup>2</sup> )*	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	Electric Field	Magnetic Field	Power Density	Averaging Time		
Range(MHz)	Strength(V/m)	Strength(A/m)	(mW/cm²)	(minute)		
Limits for Occupational/Controlled Exposure						
0.3 - 3.0	614	1.63	(100) *	30		
3.0 - 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		

F=frequency in MHz

<sup>\*=</sup>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

VBOX7 can only use antennas certificated as follows provided by manufacturer;

Internal Identification	Antenna Identification	Antenna type and	Operate frequency	Maximum antenna
identification	in Internal photos	antenna number	band	gain
Antenna 0	2.4G/5G Wifi Chain 0	PIFA Antenna	2.4GHz – 2.4835 GHz 5GHz – 6 GHz	2.00 dBi
Antenna 1	2.4G/5G Wifi Chain 1 Bluetooth	PIFA Antenna	2.4GHz – 2.4835 GHz 5GHz – 6 GHz	2.00 dBi

### 6. Conducted Power

### 6.1 Test Setup Block Diagram



### **6.2 Test Procedure**

- 1) The EUT was directly connected to the power meter and antenna output port as show in the Block diagram;
- 2) Reading average power in RMS detector.

### **6.3 Measurement Equipment**

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Power Meter	R&S	NRVS	100444	2017-06-17	2018-06-16
2	Power Sensor	R&S	NRV-Z32	10057	2017-06-17	2018-06-16

Bluetooth

Mode	Channel	Frequency(MHz)	Peak Conducted Output Power (dBm)
	0	2402	2.891
GFSK	39	2441	2.970
	78	2480	3.021
	0	2402	2.703
π/4DQPSK	39	2441	2.774
	78	2480	2.822
	0	2402	2.901
8-DPSK	39	2441	3.008
	78	2480	3.083
	0	2402	-1.420
GFSK(BLE)	19	2440	-1.525
	39	2480	-1.578

# 2.4GHz WLAN

2.75.12 772/114									
IEEE 802.11b									
Frequency	Antenna 0			Antenna 1					
(MHz)	2412	2437	2462	2412	2437	2462			
Peak Conducted Power	12.95	12.63	12.60	12.77	12.74	12.67			
(dBm)									
			E 802.11g						
Frequency		Antenna 0			Antenna 1				
(MHz)	2412	2437	2462	2412	2437	2462			
Peak Conducted Power (dBm)	12.88	12.52	11.85	13.20	12.44	12.10			
		IEEE 8	302.11n HT20						
Frequency		Antenna 0		Antenna 1					
(MHz)	2412	2437	2462	2412	2437	2462			
Peak Conducted Power (dBm)	12.99	12.60	12.30	12.84	12.53	11.92			
		IEEE 8	302.11n HT40						
Frequency		Antenna 0			Antenna 1				
(MHz)	2422	2437	2452	2422	2437	2452			
Peak Conducted Power (dBm)	13.07	12.68	12.77	12.75	12.36	12.56			

# 5GHz WLAN Band 1

IEEE 802.11a								
Frequency		Antenna 0	. 002.114		Antenna 1			
(MHz)	5180	5200	5240	5180	5200	5240		
Average Conducted Power (dBm)	12.75	13.40	14.15	13.80	13.72	14.20		
		IEEE 80	2.11n HT20					
Frequency		Antenna 0			Antenna 1			
(MHz)	5180	5200	5240	5180	5200	5240		
Average Conducted Power (dBm)	13.40	13.57	14.11	13.44	13.88	14.31		
		IEEE 802	.11ac VHT20					
Frequency		Antenna 0			Antenna 1			
(MHz)	5180	5200	5240	5180	5200	5240		
Average Conducted Power (dBm)	12.71	13.35	14.08	13.38	13.83	14.25		
			2.11n HT40					
Frequency		Antenna 0	Antenna 1					
(MHz)	5190	/	5230	5190	/	5230		
Average Conducted Power (dBm)	13.20	/	13.85	13.37	/	14.07		
			.11ac VHT40					
Frequency	= 100	Antenna 0	=000	= 100	Antenna 1	=000		
(MHz)	5190	/	5230	5190	/	5230		
Average Conducted Power (dBm)	13.16	/	13.84	13.32	/	14.02		
			.11ac VHT80					
Frequency		Antenna 0			Antenna 1			
(MHz)	/	5210	/	/	5210	/		
Average Conducted Power	/	11.82	/	/	11.94	/		

# 5GHz WLAN Band 3

IEEE 802.11a							
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Average Conducted Power (dBm)	13.14	11.76	11.60	13.44	12.78	12.90	
			2.11n HT20				
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Average Conducted Power (dBm)	13.05	11.70	11.52	14.19	12.76	12.71	
			.11ac VHT20				
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Average Conducted Power (dBm)	13.02	11.66	11.49	14.10	12.83	12.88	
			2.11n HT40				
Frequency		Antenna 0		Antenna 1			
(MHz)	5755	/	5795	5755	/	5795	
Average Conducted Power (dBm)	12.95	/	11.96	13.98	/	13.37	
			.11ac VHT40				
Frequency		Antenna 0			Antenna 1		
(MHz)	5755	/	5795	5755	/	5795	
Average Conducted Power (dBm)	12.91	/	11.98	13.64	/	13.13	
			2.11ac VHT80				
Frequency		Antenna 0			Antenna 1		
(MHz)	/	5775	/	/	5775	/	
Average Conducted Power (dBm)	/	9.29	/	/	9.19	/	

# 7. Manufacturing Tolerance

# Bluetooth

GFSK (Peak)									
Channel	Channel 0	Channel 39	Channel 78						
Target (dBm)	2.0	2.0	3.0						
Tolerance ±(dB)	1.0	1.0	1.0						
	π/4DQPSK	(Peak)							
Channel	Channel 0	Channel 39	Channel 78						
Target (dBm)	2.0	2.0	2.0						
Tolerance ±(dB)	Tolerance ±(dB) 1.0		1.0						
	8-DPSK (F								
Channel	Channel 0	Channel 39	Channel 78						
Target (dBm)	2.0	3.0	3.0						
Tolerance ±(dB)	1.0	1.0	1.0						
	GFSK (BT LE	E) (Peak)							
Channel	Channel 0	Channel 19	Channel 39						
Target (dBm)	-1.0	-1.0	-1.0						
Tolerance ±(dB)	1.0	1.0	1.0						

# 2.4GHz WLAN

<i>IEEE 802.11b (</i> Peak)									
Frequency		Antenna 0			Antenna 1				
(MHz)	2412	2437	2462	2412	2437	2462			
Target (dBm)	12.0	12.0	12.0	12.0	12.0	12.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
		IEEE 8	02.11g (Peak)						
Frequency		Antenna 0			Antenna 1				
(MHz)	2412	2437	2462	2412	2437	2462			
Target (dBm)	12.0	12.0	11.0	13.0	12.0	12.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
		IEEE 802.	.11n HT20 (Pea	ak)					
Frequency		Antenna 0			Antenna 1				
(MHz)	2412	2437	2462	2412	2437	2462			
Target (dBm)	12.0	12.0	12.0	12.0	12.0	11.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
		IEEE 802.	.11n HT40 (Pea	ak)					
Frequency		Antenna 0			Antenna 1				
(MHz)	2422	2437	2452	2422	2437	2452			
Target (dBm)	13.0	12.0	12.0	12.0	12.0	12.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			

# 5GHz WLAN Band 1

	IEEE 802.11a (Average)								
Frequency		Antenna 0			Antenna 1				
(MHz)	5180	5200	5240	5180	5200	5240			
Target (dBm)	12.0	13.0	14.0	13.0	13.0	14.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
	ı	EEE 802.11n	HT20 (Averag	ge)					
Frequency		Antenna 0			Antenna 1				
(MHz)	5180	5200	5240	5180	5200	5240			
Target (dBm)	13.0	13.0	14.0	13.0	13.0	14.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
	IE	EE 802.11ac	VHT20 (Avera	age)					
Frequency		Antenna 0			Antenna 1				
(MHz)	5180	5200	5240	5180	5200	5240			
Target (dBm)	12.0	13.0	14.0	13.0	13.0	14.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0			
	I	EEE 802.11n	HT40 (Averag	ge)					
Frequency		Antenna 0			Antenna 1				
(MHz)	5190	/	5230	5190	/	5230			
Target (dBm)	13.0	/	13.0	13.0	/	14.0			
Tolerance ± (dB)	1.0		1.0	1.0		1.0			
	IE	EE 802.11ac	VHT40 (Avera	age)					
Frequency		Antenna 0			Antenna 1				
(MHz)	5190	/	5230	5190	/	5230			
Target (dBm)	13.0	/	13.0	13.0	/	14.0			
Tolerance ± (dB)	1.0		1.0	1.0		1.0			
	IE	EE 802.11ac	VHT80 (Avera	age)					
Frequency		Antenna 0			Antenna 1				
(MHz)	/	5210	/	/	5210	1			
Target (dBm)	/	11.0	/	/	11.0	/			
Tolerance ± (dB)		1.0			1.0				

### 5GHz WLAN Band 3

IEEE 802.11a (Average)							
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Target (dBm)	13.0	11.0	11.0	13.0	12.0	12.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	
		IEEE 802.11n	HT20 (Average	ge)			
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Target (dBm)	13.0	11.0	11.0	14.0	12.0	12.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	
	IE	EE 802.11ac	VHT20 (Avera	age)			
Frequency		Antenna 0			Antenna 1		
(MHz)	5745	5785	5825	5745	5785	5825	
Target (dBm)	13.0	11.0	11.0	14.0	12.0	12.0	
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	
		IEEE 802.11n	HT40 (Average	ge)			
Frequency		Antenna 0			Antenna 1		
(MHz)	5755	/	5795	5755	/	5795	
Target (dBm)	12.0	/	11.0	13.0	/	13.0	
Tolerance ± (dB)	1.0		1.0	1.0		1.0	
	IE	EE 802.11ac	VHT40 (Avera	age)			
Frequency		Antenna 0			Antenna 1		
(MHz)	5755	/	5795	5755	/	5795	
Target (dBm)	12.0	/	11.0	13.0	/	13.0	
Tolerance ± (dB)	1.0		1.0	1.0		1.0	
	IE	EE 802.11ac	VHT80 (Avera	age)			
Frequency		Antenna 0			Antenna 1		
(MHz)	/	5775	/	/	5775	/	
Target (dBm)	/	9.0	/	/	9.0	/	
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.

### Bluetooth

# Antenna 1

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
GFSK	4.00	2.5119	2.00	1.5849	100%	0.0008	1.0000
π/4DQPSK	3.00	1.9953	2.00	1.5849	100%	0.0006	1.0000
8-DPSK	4.00	2.5119	2.00	1.5849	100%	0.0008	1.0000
GFSK (BT LE)	0.00	1.0000	2.00	1.5849	100%	0.0003	1.0000

# 2.4GHz WLAN

### Antenna 0

	Output	power	Antenna	Antenna	Dutv	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11b	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11g	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11n HT20	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11n HT40	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000

### Antenna 1

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11b	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11g	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11n HT20	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11n HT40	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000

# 5GHz WLAN Band 1

### Antenna 0

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11a	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11n HT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11ac VHT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11n HT40	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11ac VHT40	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11ac VHT80	12.00	15.8489	2.00	1.5849	100%	0.0050	1.0000

### Antenna 1

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11a	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11n HT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11ac VHT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11n HT40	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11ac VHT40	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11ac VHT80	12.00	15.8489	2.00	1.5849	100%	0.0050	1.0000

# 5GHz WLAN Band 3

### Antenna 0

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11a	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11n HT20	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11ac VHT20	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11n HT40	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11ac VHT40	13.00	19.9526	2.00	1.5849	100%	0.0063	1.0000
IEEE 802.11ac VHT80	10.00	10.0000	2.00	1.5849	100%	0.0032	1.0000

#### Antenna 1

	Output	power	Antenna	Antenna	Duty	MPE	MPE
Modulation Type	dBm	mW	Gain (dBi)	Gain (linear)	Cycle	(mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
IEEE 802.11a	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11n HT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11ac VHT20	15.00	31.6228	2.00	1.5849	100%	0.0100	1.0000
IEEE 802.11n HT40	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11ac VHT40	14.00	25.1189	2.00	1.5849	100%	0.0079	1.0000
IEEE 802.11ac VHT80	10.00	10.0000	2.00	1.5849	100%	0.0032	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 2 antennas for 2.4GHz WLAN and 5G WLAN. The Antenna 0 is used for 2.4G/5G WLAN and the Antenna 1 is used for Bluetooth/2.4G/5G WLAN. The Bluetooth, 2.4G WLAN and 5G WLAN can not transmit simultaneous.

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

∑ of MPE ratios ≤ 1.0

### 8.2.1 Summary simultaneous transmission information

		Transmit	Antenna	Antenna 0
Modulation Type	Work Frequency Band	Antenna 0	Antenna 1	Antenna 1 Synchronization transmit
Bluetooth	2.4GHz	No	Yes	No
IEEE 802.11a	5.8G/5.2GHz	Yes	Yes	No
IEEE 802.11b	2.4GHz	Yes	Yes	No
IEEE 802.11g	2.4GHz	Yes	Yes	No
IEEE 802.11n HT20	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	5.8G/5.2GHz	Yes	Yes	Yes
IEEE 802.11n HT40	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT40	5.8G/5.2GHz	Yes	Yes	Yes
IEEE 802.11ac VHT20	5.8G/5.2GHz	Yes	Yes	Yes
IEEE 802.11ac VHT40	5.8G/5.2GHz	Yes	Yes	Yes
IEEE 802.11ac VHT80	5.8G/5.2GHz	Yes	Yes	Yes

## 8.2.2 Summary simultaneous transmission results

Antenna 0 and Antenna 1 for 2.4GWLAN

Modulation Type	MPE <sub>Antenna0</sub> (mW/cm <sup>2</sup> )	MPE <sub>Antenna1</sub> (mW/cm <sup>2</sup> )	∑MPE ratios	Limit	Results
IEEE 802.11n HT20	0.0063	0.0063	0.0126	1.0	PASS
IEEE 802.11n HT40	0.0079	0.0063	0.0142	1.0	PASS

### Antenna 0 and Antenna 1 for 5GWLAN Band 1

Modulation Type	MPE <sub>Antenna0</sub> (mW/cm <sup>2</sup> )	MPE <sub>Antenna1</sub> (mW/cm <sup>2</sup> )	∑MPE ratios	Limit	Results
IEEE 802.11n HT20	0.0100	0.0100	0.0200	1.0	PASS
IEEE 802.11ac VHT20	0.0100	0.0100	0.0200	1.0	PASS
IEEE 802.11n HT40	0.0079	0.0100	0.0179	1.0	PASS
IEEE 802.11ac VHT40	0.0079	0.0100	0.0179	1.0	PASS
IEEE 802.11ac VHT80	0.0050	0.0050	0.0100	1.0	PASS

### Antenna 0 and Antenna 1 for 5GWLAN Band 3

Modulation Type	MPE <sub>Antenna0</sub> (mW/cm <sup>2</sup> )	MPE <sub>Antenna1</sub> (mW/cm <sup>2</sup> )	∑MPE ratios	Limit	Results
IEEE 802.11n HT20	0.0079	0.0100	0.0179	1.0	PASS
IEEE 802.11ac VHT20	0.0079	0.0100	0.0179	1.0	PASS
IEEE 802.11n HT40	0.0063	0.0079	0.0142	1.0	PASS
IEEE 802.11ac VHT40	0.0063	0.0079	0.0142	1.0	PASS
IEEE 802.11ac VHT80	0.0032	0.0032	0.0064	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-----