Maximum Permissible Exposure Evaluation

FCC ID: ACQ-VIP7300&IC: 109AS-VIP7300

1. Client Information

Applicant	:	ARRIS
Address	:	101 Tournament Drive, Horsham PA, 19044
Manufacturer	:	Shenzhen SDMC Technology Co.,Ltd.
Address	:	19/F, Changhong Science & Technology Mansion, No.18, Keji South 12th Road, High-tech Industrial Park, Nanshan District, Shenzhen, China, 518000

2. General Description of EUT

EUT Name	:	TV DECODER	
HVIN/Models No.	:	VIP7300	
Model Different	:	----	
Sample ID	:	202202-0006-4-1#&202202-0006-4-2#	
Product Description	:	Operation Frequency:	U-NII-1: 5180MHz~5240MHz U-NII-2A: 5260MHz~5320MHz U-NII-2C: 5500MHz~5700MHz U-NII-3: 5745MHz~5825MHz 802.11b/g/n(HT20)/ax(HE20): 2412MHz~2462MHz Bluetooth 5.0(BER+EDR): 2402MHz~2480MHz Bluetooth 5.0(BLE): 2402MHz~2480MHz
Power Rating	:	Adapter1#:(DCT12W120100US-A0) Input: 100-240V~, 50/60Hz 0.3A max. Output: DC 12.0V, 1.0A Adapter2#:(TPQ-233A120100UW01) Input: 100-240V~, 50/60Hz 0.4A Output: DC 12.0V, 1.0A	
Software Version	:	10	
Hardware Version	:	DV8947-V5	
Remark	:	The adapter and antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Tel: +86 75526509301 Fax: +86 75526509195

Method Of Measurement for FCC

1. Max. Antenna Gain:

Band	Antenna Type	Antenna Gain	
		Antenna 1	Antenna 2
Bluetooth	FPC	/	2.95
2.4G WiFi		1.88	2.95
U-NII-1		3.70	3.32
U-NII-2A		3.91	2.93
U-NII-2C		3.86	3.76
U-NII-3		3.95	3.66

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

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 the 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

Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1.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 modeled or measured field strengths or power density, is ≤ 1.0.
This means that:

∑ of MPE ratios ≤ 1.0

4. Test Result:

Bluetooth MPE Result								
Mode	N_{TX}	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
GFSK	1	2402	-3.65	-3±1	-2	2.95	20	0.0002
		2441	-2.50	-3±1	-2	2.95	20	0.0002
		2480	2.96	3±1	4	2.95	20	0.0010
π /4-DQPSK	1	2402	-1.23	-1±1	0	2.95	20	0.0004
		2441	-0.07	0±1	1	2.95	20	0.0005
		2480	4.52	4±1	5	2.95	20	0.0012
8-DPSK	1	2402	-1.17	-1±1	0	2.95	20	0.0004
		2441	0.45	0±1	1	2.95	20	0.0005
		2480	4.77	5±1	6	2.95	20	0.0016

Note:
N_{TX}= Number of Transmit Antennas
RF Output power specifies that Maximum Conducted Peak Output Power.

BLE MPE Result								
Mode	N_{TX}	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
GFSK (1Mbps)	1	2402	4.57	5±1	6	2.95	20	0.0016
		2440	4.26	5±1	6	2.95	20	0.0016
		2480	5.38	5±1	6	2.95	20	0.0016
GFSK (2Mbps)	1	2402	4.70	5±1	6	2.95	20	0.0016
		2440	4.34	5±1	6	2.95	20	0.0016
		2480	5.41	5±1	6	2.95	20	0.0016

Note:
N_{TX}= Number of Transmit Antennas
RF Output power specifies that Maximum Conducted Peak Output Power.

2.4G WiFi MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
11B	Ant1	2412	15.60	16±1	17	1.88	20	0.0154
	Ant2	2412	16.13	16±1	17	2.95	20	0.0197
	Ant1	2437	15.35	16±1	17	1.88	20	0.0154
	Ant2	2437	15.41	16±1	17	2.95	20	0.0197
	Ant1	2462	15.33	16±1	17	1.88	20	0.0154
	Ant2	2462	14.74	15±1	16	2.95	20	0.0156
11G	Ant1	2412	15.40	15±1	16	1.88	20	0.0122
	Ant2	2412	15.63	15±1	16	2.95	20	0.0156
	Ant1	2437	15.11	15±1	16	1.88	20	0.0122
	Ant2	2437	14.46	15±1	16	2.95	20	0.0156
	Ant1	2462	15.34	15±1	16	1.88	20	0.0122
	Ant2	2462	15.43	15±1	16	2.95	20	0.0156
11N20	Ant1	2412	13.49	13±1	14	1.88	20	0.0077
	Ant2	2412	12.21	13±1	14	2.95	20	0.0099
	total	2412	15.91	/	/	/	/	/
	Ant1	2437	12.88	13±1	14	1.88	20	0.0077
	Ant2	2437	12.23	13±1	14	2.95	20	0.0099
	total	2437	15.58	/	/	/	/	/
	Ant1	2462	13.41	13±1	14	1.88	20	0.0077
	Ant2	2462	13.05	13±1	14	2.95	20	0.0099
	total	2462	16.24	/	/	/	/	/
11AX20	Ant1	2412	14.23	14±1	15	1.88	20	0.0097
	Ant2	2412	14.91	14±1	15	2.95	20	0.0124
	total	2412	17.59	/	/	/	/	/
	Ant1	2437	13.93	14±1	15	1.88	20	0.0097
	Ant2	2437	14.02	14±1	15	2.95	20	0.0124
	total	2437	16.99	/	/	/	/	/
	Ant1	2462	13.83	14±1	15	1.88	20	0.0097
	Ant2	2462	13.61	14±1	15	2.95	20	0.0124
	total	2462	16.73	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-1) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
11A	Ant1	5180	10.74	11±1	12	3.70	20	0.0074
	Ant2	5180	10.30	11±1	12	3.32	20	0.0068
	Ant1	5220	11.16	11±1	12	3.70	20	0.0074
	Ant2	5220	11.48	11±1	12	3.32	20	0.0068
	Ant1	5240	11.36	11±1	12	3.70	20	0.0074
	Ant2	5240	11.65	11±1	12	3.32	20	0.0068
11N20	Ant1	5180	9.29	9±1	10	3.70	20	0.0047
	Ant2	5180	8.77	9±1	10	3.32	20	0.0043
	total	5180	12.05	/	/	/	/	/
	Ant1	5220	9.09	9±1	10	3.70	20	0.0047
	Ant2	5220	9.44	9±1	10	3.32	20	0.0043
	total	5220	12.28	/	/	/	/	/
	Ant1	5240	9.30	9±1	10	3.70	20	0.0047
	Ant2	5240	9.56	9±1	10	3.32	20	0.0043
	total	5240	12.44	/	/	/	/	/
11N40	Ant1	5190	9.24	9±1	10	3.70	20	0.0047
	Ant2	5190	8.96	9±1	10	3.32	20	0.0043
	total	5190	12.11	/	/	/	/	/
	Ant1	5230	9.30	9±1	10	3.70	20	0.0047
	Ant2	5230	9.57	9±1	10	3.32	20	0.0043
	total	5230	12.45	/	/	/	/	/
11AC20	Ant1	5180	9.27	9±1	10	3.70	20	0.0047
	Ant2	5180	9.24	9±1	10	3.32	20	0.0043
	total	5180	12.27	/	/	/	/	/
	Ant1	5220	9.38	9±1	10	3.70	20	0.0047
	Ant2	5220	9.67	9±1	10	3.32	20	0.0043
	total	5220	12.54	/	/	/	/	/
	Ant1	5240	9.36	9±1	10	3.70	20	0.0047
	Ant2	5240	9.73	9±1	10	3.32	20	0.0043
	total	5240	12.56	/	/	/	/	/
11AC40	Ant1	5190	9.07	9±1	10	3.70	20	0.0047
	Ant2	5190	9.08	9±1	10	3.32	20	0.0043
	total	5190	12.09	/	/	/	/	/
	Ant1	5230	9.14	9±1	10	3.70	20	0.0047
	Ant2	5230	9.64	9±1	10	3.32	20	0.0043
	total	5230	12.41	/	/	/	/	/
11AC80	Ant1	5210	8.85	9±1	10	3.70	20	0.0047
	Ant2	5210	8.86	9±1	10	3.32	20	0.0043
	total	5210	11.87	/	/	/	/	/
11AX20	Ant1	5180	Ant1	8±1	9	3.70	20	0.0037
	Ant2	5180	Ant2	8±1	9	3.32	20	0.0034
	total	5180	total	/	/	/	/	/
	Ant1	5220	Ant1	9±1	10	3.70	20	0.0047
	Ant2	5220	Ant2	9±1	10	3.32	20	0.0043

	total	5220	total	/	/	/	/	/
	Ant1	5240	Ant1	9±1	10	3.70	20	0.0047
	Ant2	5240	Ant2	9±1	10	3.32	20	0.0043
	total	5240	total	/	/	/	/	/
11AX40	Ant1	5190	8.96	9±1	10	3.70	20	0.0047
	Ant2	5190	8.42	9±1	10	3.32	20	0.0043
	total	5190	11.71	/	/	/	/	/
	Ant1	5230	9.42	9±1	10	3.70	20	0.0047
	Ant2	5230	9.02	9±1	10	3.32	20	0.0043
	total	5230	12.23	/	/	/	/	/
11AX80	Ant1	5210	7.64	8±1	9	3.70	20	0.0037
	Ant2	5210	7.20	8±1	9	3.32	20	0.0034
	total	5210	10.44	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-2A) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
11A	Ant1	5260	11.58	11±1	12	3.91	20	0.0078
	Ant2	5260	11.63	11±1	12	2.93	20	0.0062
	Ant1	5300	11.98	11±1	12	3.91	20	0.0078
	Ant2	5300	11.36	11±1	12	2.93	20	0.0062
	Ant1	5320	10.13	11±1	12	3.91	20	0.0078
	Ant2	5320	10.99	11±1	12	2.93	20	0.0062
11N20	Ant1	5260	8.47	9±1	10	3.91	20	0.0049
	Ant2	5260	8.89	9±1	10	2.93	20	0.0039
	total	5260	11.70	/	/	/	/	/
	Ant1	5300	8.93	9±1	10	3.91	20	0.0049
	Ant2	5300	8.19	9±1	10	2.93	20	0.0039
	total	5300	11.59	/	/	/	/	/
	Ant1	5320	8.78	9±1	10	3.91	20	0.0049
	Ant2	5320	8.15	9±1	10	2.93	20	0.0039
	total	5320	11.49	/	/	/	/	/
11N40	Ant1	5270	8.24	9±1	10	3.91	20	0.0049
	Ant2	5270	8.05	9±1	10	2.93	20	0.0039
	total	5270	11.16	/	/	/	/	/
	Ant1	5310	9.53	9±1	10	3.91	20	0.0049
	Ant2	5310	9.05	9±1	10	2.93	20	0.0039
	total	5310	12.31	/	/	/	/	/
11AC20	Ant1	5260	8.91	9±1	10	3.91	20	0.0049
	Ant2	5260	9.10	9±1	10	2.93	20	0.0039
	total	5260	12.02	/	/	/	/	/
	Ant1	5300	9.32	9±1	10	3.91	20	0.0049
	Ant2	5300	8.99	9±1	10	2.93	20	0.0039
	total	5300	12.17	/	/	/	/	/
	Ant1	5320	9.25	9±1	10	3.91	20	0.0049
	Ant2	5320	8.49	9±1	10	2.93	20	0.0039
	total	5320	11.90	/	/	/	/	/
11AC40	Ant1	5270	8.19	9±1	10	3.91	20	0.0049
	Ant2	5270	8.10	9±1	10	2.93	20	0.0039
	total	5270	11.16	/	/	/	/	/
	Ant1	5310	8.47	9±1	10	3.91	20	0.0049
	Ant2	5310	8.01	9±1	10	2.93	20	0.0039
	total	5310	11.26	/	/	/	/	/
11AC80	Ant1	5290	7.91	9±1	10	3.91	20	0.0049
	Ant2	5290	7.84	9±1	10	2.93	20	0.0039
	total	5290	10.89	/	/	/	/	/
11AX20	Ant1	5260	9.05	9±1	10	3.91	20	0.0049
	Ant2	5260	9.28	9±1	10	2.93	20	0.0039
	total	5260	12.18	/	/	/	/	/
	Ant1	5300	9.82	9±1	10	3.91	20	0.0049
	Ant2	5300	9.28	9±1	10	2.93	20	0.0039

	total	5300	12.57	/	/	/	/	/
	Ant1	5320	8.66	8±1	9	3.91	20	0.0039
	Ant2	5320	7.73	8±1	9	2.93	20	0.0031
	total	5320	11.23	/	/	/	/	/
11AX40	Ant1	5270	8.55	8±1	9	3.91	20	0.0039
	Ant2	5270	8.34	8±1	9	2.93	20	0.0031
	total	5270	11.46	/	/	/	/	/
	Ant1	5310	8.62	8±1	9	3.91	20	0.0039
	Ant2	5310	8.15	8±1	9	2.93	20	0.0031
	total	5310	11.40	/	/	/	/	/
11AX80	Ant1	5290	7.23	8±1	9	3.91	20	0.0039
	Ant2	5290	7.07	8±1	9	2.93	20	0.0031
	total	5290	10.16	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-2C) MPE Result								
Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
11A	Ant1	5500	10.13	11±1	12	3.86	20	0.0077
	Ant2	5500	11.19	11±1	12	3.76	20	0.0075
	Ant1	5580	11.15	11±1	12	3.86	20	0.0077
	Ant2	5580	11.25	11±1	12	3.76	20	0.0075
	Ant1	5700	11.55	11±1	12	3.86	20	0.0077
	Ant2	5700	11.66	11±1	12	3.76	20	0.0075
11N20	Ant1	5500	9.25	10±1	11	3.86	20	0.0061
	Ant2	5500	10.55	10±1	11	3.76	20	0.0060
	total	5500	12.96	/	/	/	/	/
	Ant1	5580	10.34	10±1	11	3.86	20	0.0061
	Ant2	5580	10.44	10±1	11	3.76	20	0.0060
	total	5580	13.40	/	/	/	/	/
	Ant1	5700	10.57	10±1	11	3.86	20	0.0061
	Ant2	5700	10.74	10±1	11	3.76	20	0.0060
	total	5700	13.67	/	/	/	/	/
11N40	Ant1	5510	8.25	9±1	10	3.86	20	0.0048
	Ant2	5510	9.17	9±1	10	3.76	20	0.0047
	total	5510	11.74	/	/	/	/	/
	Ant1	5550	9.46	9±1	10	3.86	20	0.0048
	Ant2	5550	9.68	9±1	10	3.76	20	0.0047
	total	5550	12.58	/	/	/	/	/
	Ant1	5670	8.99	9±1	10	3.86	20	0.0048
	Ant2	5670	8.87	9±1	10	3.76	20	0.0047
	total	5670	11.94	/	/	/	/	/
11AC20	Ant1	5500	8.12	9±1	10	3.86	20	0.0048
	Ant2	5500	9.14	9±1	10	3.76	20	0.0047
	total	5500	11.67	/	/	/	/	/
	Ant1	5580	8.45	9±1	10	3.86	20	0.0048
	Ant2	5580	8.76	9±1	10	3.76	20	0.0047
	total	5580	11.62	/	/	/	/	/
	Ant1	5700	8.44	9±1	10	3.86	20	0.0048
	Ant2	5700	8.54	9±1	10	3.76	20	0.0047
	total	5700	11.50	/	/	/	/	/
11AC40	Ant1	5510	8.81	9±1	10	3.86	20	0.0048
	Ant2	5510	9.81	9±1	10	3.76	20	0.0047
	total	5510	12.35	/	/	/	/	/
	Ant1	5550	9.35	9±1	10	3.86	20	0.0048
	Ant2	5550	9.65	9±1	10	3.76	20	0.0047
	total	5550	12.51	/	/	/	/	/
	Ant1	5670	8.94	9±1	10	3.86	20	0.0048
	Ant2	5670	8.78	9±1	10	3.76	20	0.0047
	total	5670	11.87	/	/	/	/	/
11AC80	Ant1	5530	9.36	9±1	10	3.86	20	0.0048
	Ant2	5530	9.75	9±1	10	3.76	20	0.0047
	total	5530	12.57	/	/	/	/	/

	Ant1	5610	7.68	8±1	9	3.86	20	0.0038
	Ant2	5610	7.13	8±1	9	3.76	20	0.0038
	total	5610	10.42	/	/	/	/	/
11AX20	Ant1	5500	9.99	10±1	11	3.86	20	0.0061
	Ant2	5500	11.61	11±1	12	3.76	20	0.0075
	total	5500	13.89	/	/	/	/	/
	Ant1	5580	10.66	11±1	12	3.86	20	0.0077
	Ant2	5580	11.38	11±1	12	3.76	20	0.0075
	total	5580	14.05	/	/	/	/	/
	Ant1	5700	8.89	9±1	10	3.86	20	0.0048
	Ant2	5700	9.44	9±1	10	3.76	20	0.0047
	total	5700	12.18	/	/	/	/	/
11AX40	Ant1	5510	9.49	9±1	10	3.86	20	0.0048
	Ant2	5510	11.23	11±1	12	3.76	20	0.0075
	total	5510	13.46	/	/	/	/	/
	Ant1	5550	10.03	11±1	12	3.86	20	0.0077
	Ant2	5550	10.98	11±1	12	3.76	20	0.0075
	total	5550	13.54	/	/	/	/	/
	Ant1	5670	9.03	9±1	10	3.86	20	0.0048
	Ant2	5670	9.55	9±1	10	3.76	20	0.0047
	total	5670	12.31	/	/	/	/	/
11AX80	Ant1	5530	8.57	9±1	10	3.86	20	0.0048
	Ant2	5530	9.61	9±1	10	3.76	20	0.0047
	total	5530	12.13	/	/	/	/	/
	Ant1	5610	7.80	8±1	9	3.86	20	0.0038
	Ant2	5610	7.93	8±1	9	3.76	20	0.0038
	total	5610	10.88	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-3) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
11A	Ant1	5745	11.91	11±1	12	3.95	20	0.0078
	Ant2	5745	10.90	11±1	12	3.66	20	0.0073
	Ant1	5785	11.45	11±1	12	3.95	20	0.0078
	Ant2	5785	10.17	11±1	12	3.66	20	0.0073
	Ant1	5825	11.73	11±1	12	3.95	20	0.0078
	Ant2	5825	10.77	11±1	12	3.66	20	0.0073
11N20	Ant1	5745	10.46	10±1	11	3.95	20	0.0062
	Ant2	5745	9.64	10±1	11	3.66	20	0.0058
	total	5745	13.08	/	/	/	/	/
	Ant1	5785	10.21	10±1	11	3.95	20	0.0062
	Ant2	5785	8.88	9±1	10	3.66	20	0.0046
	total	5785	12.61	/	/	/	/	/
	Ant1	5825	10.52	10±1	11	3.95	20	0.0062
	Ant2	5825	9.29	10±1	11	3.66	20	0.0058
	total	5825	12.96	/	/	/	/	/
11N40	Ant1	5755	8.26	8±1	9	3.95	20	0.0039
	Ant2	5755	7.30	8±1	9	3.66	20	0.0037
	total	5755	10.82	/	/	/	/	/
	Ant1	5795	8.09	8±1	9	3.95	20	0.0039
	Ant2	5795	6.99	7±1	8	3.66	20	0.0029
	total	5795	10.59	/	/	/	/	/
11AC20	Ant1	5745	8.31	8±1	9	3.95	20	0.0039
	Ant2	5745	7.18	8±1	9	3.66	20	0.0037
	total	5745	10.79	/	/	/	/	/
	Ant1	5785	9.26	9±1	10	3.95	20	0.0049
	Ant2	5785	7.72	8±1	9	3.66	20	0.0037
	total	5785	11.57	/	/	/	/	/
	Ant1	5825	9.54	9±1	10	3.95	20	0.0049
	Ant2	5825	7.98	8±1	9	3.66	20	0.0037
	total	5825	11.84	/	/	/	/	/
11AC40	Ant1	5755	9.80	9±1	10	3.95	20	0.0049
	Ant2	5755	8.84	9±1	10	3.66	20	0.0046
	total	5755	12.36	/	/	/	/	/
	Ant1	5795	9.56	9±1	10	3.95	20	0.0049
	Ant2	5795	8.46	9±1	10	3.66	20	0.0046
	total	5795	12.06	/	/	/	/	/
11AC80	Ant1	5775	8.54	8±1	9	3.95	20	0.0039
	Ant2	5775	7.53	8±1	9	3.66	20	0.0037
	total	5775	11.07	/	/	/	/	/
11AX20	Ant1	5745	8.80	9±1	10	3.95	20	0.0049
	Ant2	5745	9.85	9±1	10	3.66	20	0.0046
	total	5745	12.37	/	/	/	/	/
	Ant1	5785	8.43	9±1	10	3.95	20	0.0049
	Ant2	5785	9.17	9±1	10	3.66	20	0.0046

	total	5785	11.83	/	/	/	/	/
	Ant1	5825	9.19	9±1	10	3.95	20	0.0049
	Ant2	5825	9.88	9±1	10	3.66	20	0.0046
	total	5825	12.56	/	/	/	/	/
11AX40	Ant1	5755	8.51	9±1	10	3.95	20	0.0049
	Ant2	5755	10.07	10±1	11	3.66	20	0.0058
	total	5755	12.37	/	/	/	/	/
	Ant1	5795	8.89	9±1	10	3.95	20	0.0049
	Ant2	5795	10.19	10±1	11	3.66	20	0.0058
	total	5795	12.60	/	/	/	/	/
11AX80	Ant1	5775	7.93	8±1	9	3.95	20	0.0039
	Ant2	5775	9.34	9±1	10	3.66	20	0.0046
	total	5775	11.70	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm^2)
300-1,500	F/1500
1,500-100,000	1.0

For:2402~2480MHz&2412~2462MHz&5180~5825MHz
MPE limit S: 1mW/ cm^2
The MPE is calculated as ***0.0197mW / cm^2 < limit 1mW / cm^2***.

6. Summary simultaneous transmission information

Modulation Type	Work Frequency Band	Transmit Antenna		Antenna 1 Antenna 2 Synchronization Transmit
		Antenna 1	Antenna 2	
IEEE 802.11a	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	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 802.11ax HE20	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11n HT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes

7. Summary simultaneous transmission results

Antenna 1 and Antenna 2 for 2.4GWLAN

Modulation Type	MPE Antenna 1 (mW/cm^2)	MPE Antenna 2 (mW/cm^2)	∑MPE ratios	Limit	Results
IEEE 802.11b	0.0154	0.0197	/	1.0	PASS
IEEE 802.11g	0.0122	0.0156	/	1.0	PASS
IEEE 802.11n HT20	0.0077	0.0099	0.0176	1.0	PASS
IEEE 802.11ax HE40	0.0097	0.0124	0.0221	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN

Modulation Type	MPE Antenna 1 (mW/cm^2)	MPE Antenna 2 (mW/cm^2)	∑MPE ratios	Limit	Results
IEEE 802.11a	0.0078	0.0075	/	1.0	PASS
IEEE 802.11n HT20	0.0061	0.0060	0.0121	1.0	PASS
IEEE 802.11n HT40	0.0048	0.0047	0.0095	1.0	PASS
IEEE 802.11ac VHT20	0.0048	0.0047	0.0095	1.0	PASS
IEEE 802.11ac VHT40	0.0048	0.0047	0.0095	1.0	PASS
IEEE 802.11ac VHT80	0.0048	0.0047	0.0095	1.0	PASS
IEEE 802.11ax HE20	0.0077	0.0075	0.0152	1.0	PASS
IEEE 802.11ax HE40	0.0075	0.0077	0.0152	1.0	PASS
IEEE 802.11ax HE80	0.0048	0.0038	0.0086	1.0	PASS

WiFi and Bluetooth support Synchronization transmit the

Maximum MPE ratio Bluetooth	Maximum MPE ratio 2.4GWiFi	∑MPE ratios	Limit	Results
0.0016	0.0221	0.0237	1	PASS

So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b). The RF Exposure Information page from the manual is included here for reference.

Method Of Measurement for IC

1. Applicable Standard

Radio Standards Specification 102, Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands), sets out the requirements and measurement techniques used to evaluate radio frequency (RF) exposure compliance of radio communication apparatus designed to be used within the vicinity of the human body.

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 RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

2. Evaluation Method and Limit

According to RSS-102 §4 Table 4, RF Filed Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142f^{0.3417}$	$0.008335f^{0.3417}$	$0.02619f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000/f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

Frequency Band	f (MHz)	Limit of Power Density (W/m^2)
2.4G WLAN	2412	5.37
Bluetooth	2402	5.35
5G WLAN	5180	9.05

Note: Limit=$0.02619f^{0.6834}$ (where f is in MHz).
The f in the limit is the frequency of the lowest Channel.

4.1 Calculation Formula

Prediction of power density at the distance of the applicable MPE limit:
$S=PG/4\pi R^2$=Power density(in appropriate units, e.g W/m^2）

P=power input to antenna (in appropriate units, e.g W）
G=power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R=distance to the center of radiation of the antenna(in appropriate units, e.g m）

Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1.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 modeled or measured field strengths or power density, is ≤ 1.0.
This means that:

∑ of MPE ratios ≤ 1.0

5. Evaluation Results

Standalone MPE Evaluation:

Bluetooth MPE Result								
Mode	N_{TX}	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (W/ m^2) [S]
GFSK	1	2402	-3.65	-3±1	-2	2.95	0.2	0.002
		2441	-2.50	-3±1	-2	2.95	0.2	0.002
		2480	2.96	3±1	4	2.95	0.2	0.010
π /4-DQPSK	1	2402	-1.23	-1±1	0	2.95	0.2	0.004
		2441	-0.07	0±1	1	2.95	0.2	0.005
		2480	4.52	4±1	5	2.95	0.2	0.012
8-DPSK	1	2402	-1.17	-1±1	0	2.95	0.2	0.004
		2441	0.45	0±1	1	2.95	0.2	0.005
		2480	4.77	5±1	6	2.95	0.2	0.016

Note:
N_{TX}= Number of Transmit Antennas
RF Output power specifies that Maximum Conducted Peak Output Power.

BLE MPE Result								
Mode	N_{TX}	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/ m^2) [S]
GFSK (1Mbps)	1	2402	4.57	5±1	6	2.95	0.2	0.016
		2440	4.26	5±1	6	2.95	0.2	0.016
		2480	5.38	5±1	6	2.95	0.2	0.016
GFSK (2Mbps)	1	2402	4.70	5±1	6	2.95	0.2	0.016
		2440	4.34	5±1	6	2.95	0.2	0.016
		2480	5.41	5±1	6	2.95	0.2	0.016

Note:
N_{TX}= Number of Transmit Antennas
RF Output power specifies that Maximum Conducted Peak Output Power.

2.4G WiFi MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/m^2) [S]
11B	Ant1	2412	15.60	16±1	17	1.88	0.2	0.154
	Ant2	2412	16.13	16±1	17	2.95	0.2	0.197
	Ant1	2437	15.35	16±1	17	1.88	0.2	0.154
	Ant2	2437	15.41	16±1	17	2.95	0.2	0.197
	Ant1	2462	15.33	16±1	17	1.88	0.2	0.154
	Ant2	2462	14.74	15±1	16	2.95	0.2	0.156
11G	Ant1	2412	15.40	15±1	16	1.88	0.2	0.122
	Ant2	2412	15.63	15±1	16	2.95	0.2	0.156
	Ant1	2437	15.11	15±1	16	1.88	0.2	0.122
	Ant2	2437	14.46	15±1	16	2.95	0.2	0.156
	Ant1	2462	15.34	15±1	16	1.88	0.2	0.122
	Ant2	2462	15.43	15±1	16	2.95	0.2	0.156
11N20	Ant1	2412	13.49	13±1	14	1.88	0.2	0.077
	Ant2	2412	12.21	13±1	14	2.95	0.2	0.099
	total	2412	15.91	/	/	/	/	/
	Ant1	2437	12.88	13±1	14	1.88	0.2	0.077
	Ant2	2437	12.23	13±1	14	2.95	0.2	0.099
	total	2437	15.58	/	/	/	/	/
	Ant1	2462	13.41	13±1	14	1.88	0.2	0.077
	Ant2	2462	13.05	13±1	14	2.95	0.2	0.099
	total	2462	16.24	/	/	/	/	/
11AX20	Ant1	2412	14.23	14±1	15	1.88	0.2	0.097
	Ant2	2412	14.91	14±1	15	2.95	0.2	0.124
	total	2412	17.59	/	/	/	/	/
	Ant1	2437	13.93	14±1	15	1.88	0.2	0.097
	Ant2	2437	14.02	14±1	15	2.95	0.2	0.124
	total	2437	16.99	/	/	/	/	/
	Ant1	2462	13.83	14±1	15	1.88	0.2	0.097
	Ant2	2462	13.61	14±1	15	2.95	0.2	0.124
	total	2462	16.73	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-1) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/m^2) [S]
11A	Ant1	5180	10.74	11±1	12	3.70	0.2	0.074
	Ant2	5180	10.30	11±1	12	3.32	0.2	0.068
	Ant1	5220	11.16	11±1	12	3.70	0.2	0.074
	Ant2	5220	11.48	11±1	12	3.32	0.2	0.068
	Ant1	5240	11.36	11±1	12	3.70	0.2	0.074
	Ant2	5240	11.65	11±1	12	3.32	0.2	0.068
11N20	Ant1	5180	9.29	9±1	10	3.70	0.2	0.047
	Ant2	5180	8.77	9±1	10	3.32	0.2	0.043
	total	5180	12.05	/	/	/	/	/
	Ant1	5220	9.09	9±1	10	3.70	0.2	0.047
	Ant2	5220	9.44	9±1	10	3.32	0.2	0.043
	total	5220	12.28	/	/	/	/	/
	Ant1	5240	9.30	9±1	10	3.70	0.2	0.047
	Ant2	5240	9.56	9±1	10	3.32	0.2	0.043
	total	5240	12.44	/	/	/	/	/
11N40	Ant1	5190	9.24	9±1	10	3.70	0.2	0.0047
	Ant2	5190	8.96	9±1	10	3.32	0.2	0.0043
	total	5190	12.11	/	/	/	/	/
	Ant1	5230	9.30	9±1	10	3.70	0.2	0.047
	Ant2	5230	9.57	9±1	10	3.32	0.2	0.043
	total	5230	12.45	/	/	/	/	/
11AC20	Ant1	5180	9.27	9±1	10	3.70	0.2	0.047
	Ant2	5180	9.24	9±1	10	3.32	0.2	0.043
	total	5180	12.27	/	/	/	/	/
	Ant1	5220	9.38	9±1	10	3.70	0.2	0.047
	Ant2	5220	9.67	9±1	10	3.32	0.2	0.043
	total	5220	12.54	/	/	/	/	/
	Ant1	5240	9.36	9±1	10	3.70	0.2	0.047
	Ant2	5240	9.73	9±1	10	3.32	0.2	0.043
	total	5240	12.56	/	/	/	/	/
11AC40	Ant1	5190	9.07	9±1	10	3.70	0.2	0.047
	Ant2	5190	9.08	9±1	10	3.32	0.2	0.043
	total	5190	12.09	/	/	/	/	/
	Ant1	5230	9.14	9±1	10	3.70	0.2	0.047
	Ant2	5230	9.64	9±1	10	3.32	0.2	0.043
	total	5230	12.41	/	/	/	/	/
11AC80	Ant1	5210	8.85	9±1	10	3.70	0.2	0.047
	Ant2	5210	8.86	9±1	10	3.32	0.2	0.043
	total	5210	11.87	/	/	/	/	/
11AX20	Ant1	5180	Ant1	8±1	9	3.70	0.2	0.037
	Ant2	5180	Ant2	8±1	9	3.32	0.2	0.034
	total	5180	total	/	/	/	/	/
	Ant1	5220	Ant1	9±1	10	3.70	0.2	0.047
	Ant2	5220	Ant2	9±1	10	3.32	0.2	0.043

	total	5220	total	/	/	/	/	/
	Ant1	5240	Ant1	9±1	10	3.70	0.2	0.047
	Ant2	5240	Ant2	9±1	10	3.32	0.2	0.043
	total	5240	total	/	/	/	/	/
11AX40	Ant1	5190	8.96	9±1	10	3.70	0.2	0.047
	Ant2	5190	8.42	9±1	10	3.32	0.2	0.043
	total	5190	11.71	/	/	/	/	/
	Ant1	5230	9.42	9±1	10	3.70	0.2	0.047
	Ant2	5230	9.02	9±1	10	3.32	0.2	0.043
	total	5230	12.23	/	/	/	/	/
11AX80	Ant1	5210	7.64	8±1	9	3.70	0.2	0.037
	Ant2	5210	7.20	8±1	9	3.32	0.2	0.034
	total	5210	10.44	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-2A) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/m^2) [S]
11A	Ant1	5260	11.58	11±1	12	3.91	0.2	0.078
	Ant2	5260	11.63	11±1	12	2.93	0.2	0.062
	Ant1	5300	11.98	11±1	12	3.91	0.2	0.078
	Ant2	5300	11.36	11±1	12	2.93	0.2	0.062
	Ant1	5320	10.13	11±1	12	3.91	0.2	0.078
	Ant2	5320	10.99	11±1	12	2.93	0.2	0.062
11N20	Ant1	5260	8.47	9±1	10	3.91	0.2	0.049
	Ant2	5260	8.89	9±1	10	2.93	0.2	0.039
	total	5260	11.70	/	/	/	/	/
	Ant1	5300	8.93	9±1	10	3.91	0.2	0.049
	Ant2	5300	8.19	9±1	10	2.93	0.2	0.039
	total	5300	11.59	/	/	/	/	/
	Ant1	5320	8.78	9±1	10	3.91	0.2	0.049
	Ant2	5320	8.15	9±1	10	2.93	0.2	0.039
	total	5320	11.49	/	/	/	/	/
11N40	Ant1	5270	8.24	9±1	10	3.91	0.2	0.049
	Ant2	5270	8.05	9±1	10	2.93	0.2	0.039
	total	5270	11.16	/	/	/	/	/
	Ant1	5310	9.53	9±1	10	3.91	0.2	0.049
	Ant2	5310	9.05	9±1	10	2.93	0.2	0.039
	total	5310	12.31	/	/	/	/	/
11AC20	Ant1	5260	8.91	9±1	10	3.91	0.2	0.049
	Ant2	5260	9.10	9±1	10	2.93	0.2	0.039
	total	5260	12.02	/	/	/	/	/
	Ant1	5300	9.32	9±1	10	3.91	0.2	0.049
	Ant2	5300	8.99	9±1	10	2.93	0.2	0.039
	total	5300	12.17	/	/	/	/	/
	Ant1	5320	9.25	9±1	10	3.91	0.2	0.049
	Ant2	5320	8.49	9±1	10	2.93	0.2	0.039
	total	5320	11.90	/	/	/	/	/
11AC40	Ant1	5270	8.19	9±1	10	3.91	0.2	0.049
	Ant2	5270	8.10	9±1	10	2.93	0.2	0.039
	total	5270	11.16	/	/	/	/	/
	Ant1	5310	8.47	9±1	10	3.91	0.2	0.049
	Ant2	5310	8.01	9±1	10	2.93	0.2	0.039
	total	5310	11.26	/	/	/	/	/
11AC80	Ant1	5290	7.91	9±1	10	3.91	0.2	0.049
	Ant2	5290	7.84	9±1	10	2.93	0.2	0.039
	total	5290	10.89	/	/	/	/	/
11AX20	Ant1	5260	9.05	9±1	10	3.91	0.2	0.049
	Ant2	5260	9.28	9±1	10	2.93	0.2	0.039
	total	5260	12.18	/	/	/	/	/
	Ant1	5300	9.82	9±1	10	3.91	0.2	0.049
	Ant2	5300	9.28	9±1	10	2.93	0.2	0.039

	total	5300	12.57	/	/	/	/	/
	Ant1	5320	8.66	8±1	9	3.91	0.2	0.039
	Ant2	5320	7.73	8±1	9	2.93	0.2	0.031
	total	5320	11.23	/	/	/	/	/
11AX40	Ant1	5270	8.55	8±1	9	3.91	0.2	0.039
	Ant2	5270	8.34	8±1	9	2.93	0.2	0.031
	total	5270	11.46	/	/	/	/	/
	Ant1	5310	8.62	8±1	9	3.91	0.2	0.039
	Ant2	5310	8.15	8±1	9	2.93	0.2	0.031
	total	5310	11.40	/	/	/	/	/
11AX80	Ant1	5290	7.23	8±1	9	3.91	0.2	0.039
	Ant2	5290	7.07	8±1	9	2.93	0.2	0.031
	total	5290	10.16	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-2C) MPE Result								
Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/m^2) [S]
11A	Ant1	5500	10.13	11±1	12	3.86	0.2	0.077
	Ant2	5500	11.19	11±1	12	3.76	0.2	0.075
	Ant1	5580	11.15	11±1	12	3.86	0.2	0.077
	Ant2	5580	11.25	11±1	12	3.76	0.2	0.075
	Ant1	5700	11.55	11±1	12	3.86	0.2	0.077
	Ant2	5700	11.66	11±1	12	3.76	0.2	0.075
11N20	Ant1	5500	9.25	10±1	11	3.86	0.2	0.061
	Ant2	5500	10.55	10±1	11	3.76	0.2	0.060
	total	5500	12.96	/	/	/	/	/
	Ant1	5580	10.34	10±1	11	3.86	0.2	0.061
	Ant2	5580	10.44	10±1	11	3.76	0.2	0.060
	total	5580	13.40	/	/	/	/	/
	Ant1	5700	10.57	10±1	11	3.86	0.2	0.061
	Ant2	5700	10.74	10±1	11	3.76	0.2	0.060
	total	5700	13.67	/	/	/	/	/
11N40	Ant1	5510	8.25	9±1	10	3.86	0.2	0.048
	Ant2	5510	9.17	9±1	10	3.76	0.2	0.047
	total	5510	11.74	/	/	/	/	/
	Ant1	5550	9.46	9±1	10	3.86	0.2	0.048
	Ant2	5550	9.68	9±1	10	3.76	0.2	0.047
	total	5550	12.58	/	/	/	/	/
	Ant1	5670	8.99	9±1	10	3.86	0.2	0.048
	Ant2	5670	8.87	9±1	10	3.76	0.2	0.047
	total	5670	11.94	/	/	/	/	/
11AC20	Ant1	5500	8.12	9±1	10	3.86	0.2	0.048
	Ant2	5500	9.14	9±1	10	3.76	0.2	0.047
	total	5500	11.67	/	/	/	/	/
	Ant1	5580	8.45	9±1	10	3.86	0.2	0.048
	Ant2	5580	8.76	9±1	10	3.76	0.2	0.047
	total	5580	11.62	/	/	/	/	/
	Ant1	5700	8.44	9±1	10	3.86	0.2	0.048
	Ant2	5700	8.54	9±1	10	3.76	0.2	0.047
	total	5700	11.50	/	/	/	/	/
11AC40	Ant1	5510	8.81	9±1	10	3.86	0.2	0.048
	Ant2	5510	9.81	9±1	10	3.76	0.2	0.047
	total	5510	12.35	/	/	/	/	/
	Ant1	5550	9.35	9±1	10	3.86	0.2	0.048
	Ant2	5550	9.65	9±1	10	3.76	0.2	0.047
	total	5550	12.51	/	/	/	/	/
	Ant1	5670	8.94	9±1	10	3.86	0.2	0.048
	Ant2	5670	8.78	9±1	10	3.76	0.2	0.047
	total	5670	11.87	/	/	/	/	/
11AC80	Ant1	5530	9.36	9±1	10	3.86	0.2	0.048
	Ant2	5530	9.75	9±1	10	3.76	0.2	0.047
	total	5530	12.57	/	/	/	/	/

	Ant1	5610	7.68	8±1	9	3.86	0.2	0.038
	Ant2	5610	7.13	8±1	9	3.76	0.2	0.038
	total	5610	10.42	/	/	/	/	/
11AX20	Ant1	5500	9.99	10±1	11	3.86	0.2	0.061
	Ant2	5500	11.61	11±1	12	3.76	0.2	0.075
	total	5500	13.89	/	/	/	/	/
	Ant1	5580	10.66	11±1	12	3.86	0.2	0.077
	Ant2	5580	11.38	11±1	12	3.76	0.2	0.075
	total	5580	14.05	/	/	/	/	/
	Ant1	5700	8.89	9±1	10	3.86	0.2	0.048
	Ant2	5700	9.44	9±1	10	3.76	0.2	0.047
	total	5700	12.18	/	/	/	/	/
11AX40	Ant1	5510	9.49	9±1	10	3.86	0.2	0.048
	Ant2	5510	11.23	11±1	12	3.76	0.2	0.075
	total	5510	13.46	/	/	/	/	/
	Ant1	5550	10.03	11±1	12	3.86	0.2	0.077
	Ant2	5550	10.98	11±1	12	3.76	0.2	0.075
	total	5550	13.54	/	/	/	/	/
	Ant1	5670	9.03	9±1	10	3.86	0.2	0.0048
	Ant2	5670	9.55	9±1	10	3.76	0.2	0.0047
	total	5670	12.31	/	/	/	/	/
11AX80	Ant1	5530	8.57	9±1	10	3.86	0.2	0.048
	Ant2	5530	9.61	9±1	10	3.76	0.2	0.047
	total	5530	12.13	/	/	/	/	/
	Ant1	5610	7.80	8±1	9	3.86	0.2	0.038
	Ant2	5610	7.93	8±1	9	3.76	0.2	0.038
	total	5610	10.88	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

5G Wi-Fi(U-NII-3) MPE Result								
Test Mode	Antenna	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (m) [R]	Power Density (W/m^2) [S]
11A	Ant1	5745	11.91	11±1	12	3.95	0.2	0.078
	Ant2	5745	10.90	11±1	12	3.66	0.2	0.073
	Ant1	5785	11.45	11±1	12	3.95	0.2	0.078
	Ant2	5785	10.17	11±1	12	3.66	0.2	0.073
	Ant1	5825	11.73	11±1	12	3.95	0.2	0.078
	Ant2	5825	10.77	11±1	12	3.66	0.2	0.073
11N20	Ant1	5745	10.46	10±1	11	3.95	0.2	0.062
	Ant2	5745	9.64	10±1	11	3.66	0.2	0.058
	total	5745	13.08	/	/	/	/	/
	Ant1	5785	10.21	10±1	11	3.95	0.2	0.062
	Ant2	5785	8.88	9±1	10	3.66	0.2	0.046
	total	5785	12.61	/	/	/	/	/
	Ant1	5825	10.52	10±1	11	3.95	0.2	0.062
	Ant2	5825	9.29	10±1	11	3.66	0.2	0.058
	total	5825	12.96	/	/	/	/	/
11N40	Ant1	5755	8.26	8±1	9	3.95	0.2	0.039
	Ant2	5755	7.30	8±1	9	3.66	0.2	0.037
	total	5755	10.82	/	/	/	/	/
	Ant1	5795	8.09	8±1	9	3.95	0.2	0.039
	Ant2	5795	6.99	7±1	8	3.66	0.2	0.029
	total	5795	10.59	/	/	/	/	/
11AC20	Ant1	5745	8.31	8±1	9	3.95	0.2	0.039
	Ant2	5745	7.18	8±1	9	3.66	0.2	0.037
	total	5745	10.79	/	/	/	/	/
	Ant1	5785	9.26	9±1	10	3.95	0.2	0.049
	Ant2	5785	7.72	8±1	9	3.66	0.2	0.037
	total	5785	11.57	/	/	/	/	/
	Ant1	5825	9.54	9±1	10	3.95	0.2	0.049
	Ant2	5825	7.98	8±1	9	3.66	0.2	0.037
	total	5825	11.84	/	/	/	/	/
11AC40	Ant1	5755	9.80	9±1	10	3.95	0.2	0.049
	Ant2	5755	8.84	9±1	10	3.66	0.2	0.046
	total	5755	12.36	/	/	/	/	/
	Ant1	5795	9.56	9±1	10	3.95	0.2	0.049
	Ant2	5795	8.46	9±1	10	3.66	0.2	0.046
	total	5795	12.06	/	/	/	/	/
11AC80	Ant1	5775	8.54	8±1	9	3.95	0.2	0.039
	Ant2	5775	7.53	8±1	9	3.66	0.2	0.037
	total	5775	11.07	/	/	/	/	/
11AX20	Ant1	5745	8.80	9±1	10	3.95	0.2	0.049
	Ant2	5745	9.85	9±1	10	3.66	0.2	0.046
	total	5745	12.37	/	/	/	/	/
	Ant1	5785	8.43	9±1	10	3.95	0.2	0.049
	Ant2	5785	9.17	9±1	10	3.66	0.2	0.046

	total	5785	11.83	/	/	/	/	/
	Ant1	5825	9.19	9±1	10	3.95	0.2	0.049
	Ant2	5825	9.88	9±1	10	3.66	0.2	0.046
	total	5825	12.56	/	/	/	/	/
11AX40	Ant1	5755	8.51	9±1	10	3.95	0.2	0.049
	Ant2	5755	10.07	10±1	11	3.66	0.2	0.058
	total	5755	12.37	/	/	/	/	/
	Ant1	5795	8.89	9±1	10	3.95	0.2	0.049
	Ant2	5795	10.19	10±1	11	3.66	0.2	0.058
	total	5795	12.60	/	/	/	/	/
11AX80	Ant1	5775	7.93	8±1	9	3.95	0.2	0.039
	Ant2	5775	9.34	9±1	10	3.66	0.2	0.046
	total	5775	11.70	/	/	/	/	/
Note: RF Output power specifies that Maximum Conducted Peak Output Power.								

6. Summary simultaneous transmission information

Modulation Type	Work Frequency Band	Transmit Antenna		Antenna 1 Antenna 2 Synchronization Transmit
		Antenna 1	Antenna 2	
IEEE 802.11a	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	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 802.11ax HE20	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11n HT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes

7. Summary simultaneous transmission results

Antenna 1 and Antenna 2 for 2.4GWLAN

Modulation Type	MPE Antenna 1 (W/m^2)	MPE Antenna 2 (W/m^2)	∑MPE ratios	Limit	Results
IEEE 802.11b	0.154	0.197	/	1.0	PASS
IEEE 802.11g	0.122	0.156	/	1.0	PASS
IEEE 802.11n HT20	0.077	0.099	0.176	1.0	PASS
IEEE 802.11ax HE40	0.097	0.124	0.221	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN

Modulation Type	MPE Antenna 1 (W/m^2)	MPE Antenna 2 (W/m^2)	∑MPE ratios	Limit	Results
IEEE 802.11a	0.078	0.075	/	1.0	PASS
IEEE 802.11n HT20	0.061	0.060	0.121	1.0	PASS
IEEE 802.11n HT40	0.048	0.047	0.095	1.0	PASS
IEEE 802.11ac VHT20	0.048	0.047	0.095	1.0	PASS
IEEE 802.11ac VHT40	0.048	0.047	0.095	1.0	PASS
IEEE 802.11ac VHT80	0.048	0.047	0.095	1.0	PASS
IEEE 802.11ax HE20	0.077	0.075	0.152	1.0	PASS
IEEE 802.11ax HE40	0.075	0.077	0.152	1.0	PASS
IEEE 802.11ax HE80	0.048	0.038	0.086	1.0	PASS

Maximum Simultaneous transmission MPE Ratios for Bluetooth and WiFi support

Maximum MPE ratio Bluetooth	Maximum MPE ratio 2.4GWiFi	∑MPE ratios	Limit	Results
0.016	0.221	0.237	1	PASS

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.

Note

For a more detailed features description, please refer to the RF Test Report.

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