



Maximum Permissible Exposure Evaluation

FCC ID: 2AW68-DV9061

1. Client Information

Applicant	:	Shenzhen SDMC Technology Co.,Ltd.
Address	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China 518000
Manufacturer	:	Shenzhen SDMC Technology Co.,Ltd.
Address	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China 518000

2. General Description of EUT

EUT Name	:	SUMTV_BOX
Models No.	:	DV9061
Brand Name	:	SUMTEC, SDMC
Sample ID	:	202212-0216-3-1#&202212-0216-3-2#
Model Different	:	----
Product Description	:	Operation Frequency: 802.11a/n(HT20&HT40)/ac(VHT20&VHT40&VHT80):: 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)/n(HT40): 2412MHz~2462MHz Bluetooth 5.0(BR+EDR): 2402MHz~2480MHz Bluetooth 5.0(BLE): 2402MHz~2480MHz
Power Rating	:	Adapter:(SA12BV-120100U) Input: 100-240V~, 50/60Hz 0.4A Output: 12.0V=1.0A
Software Version	:	N/A
Hardware Version	:	N/A
Remark	:	The adapter and antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.

Method Of Measurement for FCC

1. Max. Antenna Gain:

Band	Antenna Type	Antenna Gain
Bluetooth	PCB	3.53
2.4G WiFi		4.79
U-NII-1		3.33
U-NII-2A		3.32
U-NII-2C		3.94
U-NII-3		3.29

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:

$$\sum \text{ of MPE ratios } \leq 1.0$$



4. Test Result:

Bluetooth MPE Result								
Mode	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]	Limit (mW/ cm ²)
GFSK	2402	2.19	2±1	3	3.53	20	0.0009	1
	2441	1.80	2±1	3	3.53	20	0.0009	1
	2480	2.04	2±1	3	3.53	20	0.0009	1
π /4-DQPSK	2402	3.34	3±1	4	3.53	20	0.0011	1
	2441	2.12	3±1	4	3.53	20	0.0011	1
	2480	2.62	3±1	4	3.53	20	0.0011	1
8-DPSK	2402	4.33	4±1	5	3.53	20	0.0014	1
	2441	3.17	4±1	5	3.53	20	0.0014	1
	2480	3.05	4±1	5	3.53	20	0.0014	1

Note:

N_{TX} = Number of Transmit Antennas

RF Output power specifies that Maximum Conducted Peak Output Power.

BLE MPE Result								
Mode	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]	Limit (mW/ cm ²)
GFSK (1Mbps)	2402	2.13	2±1	3	3.53	20	0.0009	1
	2440	1.85	2±1	3	3.53	20	0.0009	1
	2480	2.08	2±1	3	3.53	20	0.0009	1
GFSK (2Mbps)	2402	2.00	2±1	3	3.53	20	0.0009	1
	2440	1.54	2±1	3	3.53	20	0.0009	1
	2480	1.89	2±1	3	3.53	20	0.0009	1

Note:

N_{TX} = Number of Transmit Antennas

RF Output power specifies that Maximum Conducted Peak Output Power.



2.4G WiFi MPE Result

Test Mode	Channel (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]	Limit (mW/ cm ²)
11B	2412	16.55	17±1	18	4.79	20	0.0378	1
	2437	17.76	17±1	18	4.79	20	0.0378	1
	2462	17.36	17±1	18	4.79	20	0.0378	1
11G	2412	15.15	15±1	16	4.79	20	0.0239	1
	2437	15.57	15±1	16	4.79	20	0.0239	1
	2462	15.53	15±1	16	4.79	20	0.0239	1
11N20	2412	15.13	15±1	16	4.79	20	0.0239	1
	2437	15.36	15±1	16	4.79	20	0.0239	1
	2462	15.45	15±1	16	4.79	20	0.0239	1
11N40	2422	15.06	15±1	16	4.79	20	0.0239	1
	2437	15.31	15±1	16	4.79	20	0.0239	1
	2452	15.83	15±1	16	4.79	20	0.0239	1

Note: RF Output power specifies that Maximum Conducted Peak Output Power.



5G Wi-Fi(U-NII-1) MPE Result

Test Mode	Channel (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]	Limit (mW/cm ²)
11A	5180	17.67	18±1	19	3.33	20	0.0340	1
	5200	17.85	18±1	19	3.33	20	0.0340	1
	5240	18.36	18±1	19	3.33	20	0.0340	1
11N20	5180	17.12	18±1	19	3.33	20	0.0340	1
	5200	17.57	18±1	19	3.33	20	0.0340	1
	5240	17.98	18±1	19	3.33	20	0.0340	1
11N40	5190	17.52	18±1	19	3.33	20	0.0340	1
	5230	18.14	18±1	19	3.33	20	0.0340	1
11AC20	5180	17.43	18±1	19	3.33	20	0.0340	1
	5200	17.55	18±1	19	3.33	20	0.0340	1
	5240	17.83	18±1	19	3.33	20	0.0340	1
11AC40	5190	17.36	18±1	19	3.33	20	0.0340	1
	5230	18.12	18±1	19	3.33	20	0.0340	1
11AC80	5210	14.13	14±1	15	3.33	20	0.0135	1

Note: RF Output power specifies that Maximum Conducted Peak Output Power.

5G Wi-Fi(U-NII-2A) MPE Result

Test Mode	Channel (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]	Limit (mW/cm ²)
11A	5260	17.98	18±1	19	3.32	20	0.0339	1
	5280	18.25	18±1	19	3.32	20	0.0339	1
	5320	18.38	18±1	19	3.32	20	0.0339	1
11N20	5260	17.78	18±1	19	3.32	20	0.0339	1
	5280	17.73	18±1	19	3.32	20	0.0339	1
	5320	17.92	18±1	19	3.32	20	0.0339	1
11N40	5270	17.87	18±1	19	3.32	20	0.0339	1
	5310	18.00	18±1	19	3.32	20	0.0339	1
11AC20	5260	17.42	18±1	19	3.32	20	0.0339	1
	5280	17.56	18±1	19	3.32	20	0.0339	1
	5320	18.19	18±1	19	3.32	20	0.0339	1
11AC40	5270	17.85	18±1	19	3.32	20	0.0339	1
	5310	18.23	18±1	19	3.32	20	0.0339	1
11AC80	5290	12.14	12±1	13	3.32	20	0.0085	1

Note: RF Output power specifies that Maximum Conducted Peak Output Power.



5G Wi-Fi(U-NII-2C) MPE Result

Test Mode	Channel (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]	Limit (mW/cm ²)
11A	5500	18.96	18±1	19	3.94	20	0.0392	1
	5600	18.02	18±1	19	3.94	20	0.0392	1
	5700	18.29	18±1	19	3.94	20	0.0392	1
11N20	5500	17.66	18±1	19	3.94	20	0.0392	1
	5600	16.95	17±1	18	3.94	20	0.0311	1
	5700	18.06	18±1	19	3.94	20	0.0392	1
11N40	5510	16.61	17±1	18	3.94	20	0.0311	1
	5550	16.60	17±1	18	3.94	20	0.0311	1
	5670	18.12	18±1	19	3.94	20	0.0392	1
11AC20	5500	16.62	17±1	18	3.94	20	0.0311	1
	5600	16.79	17±1	18	3.94	20	0.0311	1
	5700	17.88	17±1	18	3.94	20	0.0311	1
11AC40	5510	16.69	17±1	18	3.94	20	0.0311	1
	5550	16.62	17±1	18	3.94	20	0.0311	1
	5670	18.03	18±1	19	3.94	20	0.0392	1
11AC80	5530	13.91	13±1	14	3.94	20	0.0124	1
	5610	13.70	13±1	14	3.94	20	0.0124	1

Note: RF Output power specifies that Maximum Conducted Peak Output Power.

5G Wi-Fi(U-NII-3) MPE Result

Test Mode	Channel (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]	Limit (mW/cm ²)
11A	5745	15.88	16±1	17	3.29	20	0.0213	1
	5785	16.61	16±1	17	3.29	20	0.0213	1
	5825	15.45	16±1	17	3.29	20	0.0213	1
11N20	5745	17.00	17±1	18	3.29	20	0.0268	1
	5785	16.58	16±1	17	3.29	20	0.0213	1
	5825	15.40	16±1	17	3.29	20	0.0213	1
11N40	5755	17.68	17±1	18	3.29	20	0.0268	1
	5795	16.41	17±1	18	3.29	20	0.0268	1
11AC20	5745	17.50	17±1	18	3.29	20	0.0268	1
	5785	16.58	17±1	18	3.29	20	0.0268	1
	5825	15.64	16±1	17	3.29	20	0.0213	1
11AC40	5755	17.55	17±1	18	3.29	20	0.0268	1
	5795	16.49	17±1	18	3.29	20	0.0268	1
11AC80	5775	11.12	11±1	12	3.29	20	0.0067	1

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/ cm²

The MPE is calculated as **0.0392mW / cm² < limit 1mW / cm²**.

6. Summary simultaneous transmission results

WiFi and Bluetooth support Synchronization transmitter

Maximum MPE ratio Bluetooth	Maximum MPE ratio WiFi	ΣMPE ratios	Limit	Results
0.0014	0.0392	0.0406	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.

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

