



Maximum Permissible Exposure Evaluation

FCC ID: MSQ-DV6068Y

1. Client Information

Applicant	:	ASUSTeK Computer Inc
Address	:	1F, No. 15, Lide Rd. Beitou, Taipei, Taiwan 112
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.

2. General Description of EUT

EUT Name	:	Network Media Players
Models No.	:	DV6068Y
Model Different	:	----
Sample ID	:	202305-0132-12-#1 & 202305-0132-12-#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): 2412MHz~2462MHz 802.11n(HT40): 2422MHz-2452MHz Bluetooth 5.0(BER+EDR): 2402MHz~2480MHz Bluetooth 5.0(BLE): 2402MHz~2480MHz
Power Rating	:	USB Input: 5V, 1.5A
Software Version	:	V10.2.14
Hardware Version	:	V2.1
Remark	:	The antenna gain provided by the applicant, the verified for the RF conduction test and adapter provided by TOBY test lab.

Method of Measurement for FCC

1. Max. Antenna Gain:

Bluetooth				
Antenna	Brand	Model Name	Type	Antenna Gain (dBi)
ANT. 1	N/A	N/A	Patch Ceramic	0.41

2.4G WIFI				
Antenna	Brand	Model Name	Type	Antenna Gain (dBi)
ANT. 1	N/A	N/A	PCB	2.04
ANT. 2	N/A	N/A	PCB	2.03
Note: For MIMO mode: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/NANT]$ =5.02dBi 2.4G working with 802.11b/g/n has MIMO mode.				

U-NII-1 5180~5240MHz				
Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
ANT. 1	N/A	N/A	PCB	2.54
ANT. 2	N/A	N/A	PCB	2.42
Note: For MIMO mode: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/NANT]$ =5.49dBi 5G working with 802.11a/n/ac has MIMO mode.				

U-NII-2A 5260~5320MHz				
Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
ANT. 1	N/A	N/A	PCB	3.22
ANT. 2	N/A	N/A	PCB	2.29
Note: For MIMO mode: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/NANT]$ =5.78dBi 5G working with 802.11a/n/ac has MIMO mode.				

U-NII-2C 5500~5700MHz				
Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
ANT. 1	N/A	N/A	PCB	3.64
ANT. 2	N/A	N/A	PCB	3.31
Note: For MIMO mode: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/NANT]$ =6.47dBi 5G working with 802.11a/n/ac has MIMO mode.				

U-NII-3 5745~5825MHz				
Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
ANT. 1	N/A	N/A	PCB	4.16
ANT. 2	N/A	N/A	PCB	3.18
Note: For MIMO mode: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/NANT]$ =6.68dBi 5G working with 802.11a/n/ac has MIMO mode.				



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	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	6.92	7±1	8	0.41	20	0.00138
		2441	6.84	7±1	8	0.41	20	0.00138
		2480	5.96	6±1	7	0.41	20	0.00110
π/4-DQPSK	1	2402	7.75	8±1	9	0.41	20	0.00174
		2441	7.58	8±1	9	0.41	20	0.00174
		2480	7.44	7±1	8	0.41	20	0.00138
8-DPSK	1	2402	8.21	8±1	9	0.41	20	0.00174
		2441	8.20	8±1	9	0.41	20	0.00174
		2480	7.16	7±1	8	0.41	20	0.00138

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]
BLE (1Mbps)	1	2402	7.74	8±1	9	0.41	20	0.00174
		2440	8.00	8±1	9	0.41	20	0.00174
		2480	7.51	7±1	8	0.41	20	0.00138
BLE (2Mbps)	1	2402	7.92	8±1	9	0.41	20	0.00174
		2440	8.05	8±1	9	0.41	20	0.00174
		2480	7.10	7±1	8	0.41	20	0.00138

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



2.4G WiFi MPE Result Antenna 1								
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]
802.11b	1	2412	17.51	18±1	19	2.04	20	0.0253
		2437	17.33	17±1	18	2.04	20	0.0201
		2462	17.29	17±1	18	2.04	20	0.0201
802.11g	1	2412	16.56	17±1	18	2.04	20	0.0201
		2437	17.55	18±1	19	2.04	20	0.0253
		2462	17.74	18±1	19	2.04	20	0.0253
802.11n20	1	2412	18.06	18±1	19	2.04	20	0.0253
		2437	17.86	18±1	19	2.04	20	0.0253
		2462	18.03	18±1	19	2.04	20	0.0253
802.11n40	1	2422	17.68	18±1	19	2.04	20	0.0253
	1	2437	16.55	17±1	18	2.04	20	0.0201
	1	2452	17.48	17±1	18	2.04	20	0.0201
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Peak Output Power.								



2.4G WiFi MPE Result Antenna 2								
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]
802.11b	1	2412	17.49	17±1	18	2.03	20	0.0200
		2437	17.43	17±1	18	2.03	20	0.0200
		2462	16.12	16±1	17	2.03	20	0.0159
802.11g	1	2412	17.55	18±1	19	2.03	20	0.0252
		2437	17.19	17±1	18	2.03	20	0.0200
		2462	16.71	17±1	18	2.03	20	0.0200
802.11n20	1	2412	17.18	17±1	18	2.03	20	0.0200
		2437	17.39	17±1	18	2.03	20	0.0200
		2462	17.04	17±1	18	2.03	20	0.0200
802.11n40	1	2422	17.30	17±1	18	2.03	20	0.0200
	1	2437	16.82	17±1	18	2.03	20	0.0200
	1	2452	17.42	17±1	18	2.03	20	0.0200
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Peak Output Power.								



5.2G WiFi MPE Result Antenna 1								
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]
802.11a	1	5180	13.29	13±1	14	2.54	20	0.0090
		5200	14.16	14±1	15	2.54	20	0.0113
		5240	14.87	15±1	16	2.54	20	0.0142
802.11n20	1	5180	15.10	15±1	16	2.54	20	0.0142
		5200	16.38	16±1	17	2.54	20	0.0179
		5240	16.41	16±1	17	2.54	20	0.0179
802.11n40	1	5190	15.99	16±1	17	2.54	20	0.0179
		5230	16.58	17±1	18	2.54	20	0.0225
802.11ac20	1	5180	16.77	17±1	18	2.54	20	0.0225
		5200	16.42	16±1	17	2.54	20	0.0179
		5240	16.40	16±1	17	2.54	20	0.0179
802.11ac40	1	5190	16.59	17±1	18	2.54	20	0.0225
		5230	16.60	17±1	18	2.54	20	0.0225
802.11ac80	1	5210	17.01	17±1	18	2.54	20	0.0225
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.2G WiFi MPE Result Antenna 2								
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]
802.11a	1	5180	13.18	13±1	14	2.42	20	0.0087
		5200	13.92	14±1	15	2.42	20	0.0110
		5240	13.89	14±1	15	2.42	20	0.0110
802.11n20	1	5180	14.87	15±1	16	2.42	20	0.0138
		5200	16.42	16±1	17	2.42	20	0.0174
		5240	15.98	16±1	17	2.42	20	0.0174
802.11n40	1	5190	16.07	16±1	17	2.42	20	0.0174
		5230	16.51	17±1	18	2.42	20	0.0219
802.11ac20	1	5180	16.57	17±1	18	2.42	20	0.0219
		5200	16.42	16±1	17	2.42	20	0.0174
		5240	16.37	16±1	17	2.42	20	0.0174
802.11ac40	1	5190	16.67	17±1	18	2.42	20	0.0219
		5230	16.64	17±1	18	2.42	20	0.0219
802.11ac80	1	5210	16.75	17±1	18	2.42	20	0.0219
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.3G WiFi MPE Result Antenna 1								
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]
802.11a	1	5260	15.82	16±1	17	3.22	20	0.0209
		5280	16.25	16±1	17	3.22	20	0.0209
		5320	15.68	16±1	17	3.22	20	0.0209
802.11n20	1	5260	16.82	17±1	18	3.22	20	0.0263
		5280	16.55	17±1	18	3.22	20	0.0263
		5320	16.83	17±1	18	3.22	20	0.0263
802.11n40	1	5270	18.06	18±1	19	3.22	20	0.0332
		5310	16.92	17±1	18	3.22	20	0.0263
802.11ac20	1	5260	16.82	17±1	18	3.22	20	0.0263
		5280	16.64	17±1	18	3.22	20	0.0263
		5320	16.94	17±1	18	3.22	20	0.0263
802.11ac40	1	5270	17.86	18±1	19	3.22	20	0.0332
		5310	16.95	17±1	18	3.22	20	0.0263
802.11ac80	1	5290	15.71	16±1	17	3.22	20	0.0209
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.3G WiFi MPE Result Antenna 2								
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]
802.11a	1	5260	15.56	16±1	17	2.29	20	0.0169
		5280	15.34	15±1	16	2.29	20	0.0134
		5320	15.31	15±1	16	2.29	20	0.0134
802.11n20	1	5260	15.86	16±1	17	2.29	20	0.0169
		5280	15.50	16±1	17	2.29	20	0.0169
		5320	15.14	15±1	16	2.29	20	0.0134
802.11n40	1	5270	17.22	17±1	18	2.29	20	0.0213
		5310	15.45	15±1	16	2.29	20	0.0134
802.11ac20	1	5260	15.92	16±1	17	2.29	20	0.0169
		5280	15.60	16±1	17	2.29	20	0.0169
		5320	15.29	15±1	16	2.29	20	0.0134
802.11ac40	1	5270	17.04	17±1	18	2.29	20	0.0213
		5310	15.64	16±1	17	2.29	20	0.0169
802.11ac80	1	5290	16.43	16±1	17	2.29	20	0.0169
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.5G WiFi MPE Result Antenna1								
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]
802.11a	1	5500	15.24	15±1	16	3.64	20	0.0183
		5580	14.87	15±1	16	3.64	20	0.0183
		5700	15.44	15±1	16	3.64	20	0.0183
802.11n20	1	5500	17.45	17±1	18	3.64	20	0.0290
		5580	15.82	16±1	17	3.64	20	0.0231
		5700	13.42	13±1	14	3.64	20	0.0116
802.11n40	1	5510	15.09	15±1	16	3.64	20	0.0183
		5550	15.44	15±1	16	3.64	20	0.0183
		5670	15.76	16±1	17	3.64	20	0.0231
802.11ac20	1	5500	15.61	16±1	17	3.64	20	0.0231
		5580	15.61	16±1	17	3.64	20	0.0231
		5700	15.49	15±1	16	3.64	20	0.0183
802.11ac40	1	5510	15.19	15±1	16	3.64	20	0.0183
		5550	15.13	15±1	16	3.64	20	0.0183
		5670	15.59	16±1	17	3.64	20	0.0231
802.11ac80	1	5530	15.65	16±1	17	3.64	20	0.0231
		5610	15.25	15±1	16	3.64	20	0.0183
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.5G WiFi MPE Result Antenna2								
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]
802.11a	1	5500	14.97	15±1	16	3.31	20	0.0170
		5580	15.76	16±1	17	3.31	20	0.0214
		5700	15.02	15±1	16	3.31	20	0.0170
802.11n20	1	5500	14.86	15±1	16	3.31	20	0.0170
		5580	14.87	15±1	16	3.31	20	0.0170
		5700	13.28	13±1	14	3.31	20	0.0107
802.11n40	1	5510	15.01	15±1	16	3.31	20	0.0170
		5550	14.92	15±1	16	3.31	20	0.0170
		5670	16.03	16±1	17	3.31	20	0.0214
802.11ac20	1	5500	15.24	15±1	16	3.31	20	0.0170
		5580	15.84	16±1	17	3.31	20	0.0214
		5700	15.09	15±1	16	3.31	20	0.0170
802.11ac40	1	5510	15.14	15±1	16	3.31	20	0.0170
		5550	14.94	15±1	16	3.31	20	0.0170
		5670	14.66	15±1	16	3.31	20	0.0170
802.11ac80	1	5530	14.43	14±1	15	3.31	20	0.0135
		5610	14.75	15±1	16	3.31	20	0.0170
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.8G WiFi MPE Result Antenna 1								
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]
802.11a	1	5745	16.15	16±1	17	4.16	20	0.0260
		5785	16.29	16±1	17	4.16	20	0.0260
		5825	16.65	17±1	18	4.16	20	0.0327
802.11n20	1	5745	15.92	16±1	17	4.16	20	0.0260
		5785	16.23	16±1	17	4.16	20	0.0260
		5825	16.57	17±1	18	4.16	20	0.0327
802.11n40	1	5755	16.43	16±1	17	4.16	20	0.0260
		5795	16.63	17±1	18	4.16	20	0.0327
802.11ac20	1	5745	16.02	16±1	17	4.16	20	0.0260
		5785	16.46	16±1	17	4.16	20	0.0260
		5825	16.63	17±1	18	4.16	20	0.0327
802.11ac40	1	5755	16.31	16±1	17	4.16	20	0.0260
		5795	16.51	17±1	18	4.16	20	0.0327
802.11ac80	1	5775	17.00	17±1	18	4.16	20	0.0327
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted average Output Power.								



5.8G WiFi MPE Result Antenna 2

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]
802.11a	1	5745	16.23	16±1	17	3.18	20	0.0207
		5785	16.78	17±1	18	3.18	20	0.0261
		5825	17.07	17±1	18	3.18	20	0.0261
802.11n20	1	5745	16.12	16±1	17	3.18	20	0.0207
		5785	16.85	17±1	18	3.18	20	0.0261
		5825	17.13	17±1	18	3.18	20	0.0261
802.11n40	1	5755	16.78	17±1	18	3.18	20	0.0261
		5795	17.07	17±1	18	3.18	20	0.0261
802.11ac20	1	5745	16.20	16±1	17	3.18	20	0.0207
		5785	16.91	17±1	18	3.18	20	0.0261
		5825	17.09	17±1	18	3.18	20	0.0261
802.11ac40	1	5755	16.65	17±1	18	3.18	20	0.0261
		5795	16.99	17±1	18	3.18	20	0.0261
802.11ac80	1	5775	17.33	17±1	18	3.18	20	0.0261

Note:

N_{TX}= Number of Transmit Antennas

RF Output power specifies that Maximum Conducted average 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 **0.0332mW / cm² < limit 1mW / cm²**.

Bluetooth + 2.4G&5G WIFI Antenna1 + 2.4G&5G WIFI Antenna2 support Synchronization transmit the

$$\sum \text{MPE}_{\text{ratios}} = 0.00174 + 0.0332 + 0.0261 = 0.06104 < 1$$

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 THE REPORT-----

