

FCC ID: 2ASYY-GS366AMWAC

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-1000000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-1000000	--	--	1	30

11.1 Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

mW = 10[^](dBm/10)

11.2 Measurement Result

Operation Frequency: 2412MHz-2462MHz;

Antenna gain: 3.62 dBi;

R=20cm

2.4G WIFI

Channel Freq. (MHz)	modulation	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
2412	802.11b	22.48	22.00±1	23.00	3.62	0.091354328	1
2437		22.76	22.00±1	23.00	3.62	0.091354328	1
2462		23.04	23.00±1	24.00	3.62	0.115008285	1
2412	802.11g	23.19	23.00±1	24.00	3.62	0.115008285	1
2437		23.45	23.00±1	24.00	3.62	0.115008285	1
2462		23.89	23.00±1	24.00	3.62	0.115008285	1
2412	802.11n(HT20)	23.30	23.00±1	24.00	3.62	0.115008285	1
2437		23.49	23.00±1	24.00	3.62	0.115008285	1
2462		23.61	23.00±1	24.00	3.62	0.115008285	1
2422	802.11n(HT40)	22.72	22.00±1	23.00	3.62	0.091354328	1
2437		22.88	22.00±1	23.00	3.62	0.091354328	1
2452		23.00	23.00±1	24.00	3.62	0.115008285	1

Operation Frequency: 2402MHz-2480MHz;

Antenna gain: 3.62 dBi;

R=20cm

BLE

Channel Freq. (MHz)	modulation	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
2402	BLE_1M	17.60	17.00±1	18.00	3.62	0.028888775	1
2440		18.47	18.00±1	19.00	3.62	0.036368813	1
2480		19.27	19.00±1	20.00	3.62	0.045785623	1

Operation Frequency: 5180MHz-5825MHz;

Antenna gain:

5180-5250 MHz: 3.07 dBi

5250-5350 MHz: 1.93 dBi

5470-5725 MHz: 3.43 dBi

5725-5850 MHz: 2.80 dBi

R=20cm

5G WiFi

Channel Freq. (MHz)	modulation	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
5180	802.11a	17.68	17.00±1	18.00	3.07	0.025452423	1
5200		17.43	17.00±1	18.00	3.07	0.025452423	1
5240		17.39	17.00±1	18.00	3.07	0.025452423	1
5260		17.75	17.00±1	18.00	1.93	0.019576233	1
5280		17.38	17.00±1	18.00	1.93	0.019576233	1
5320		16.87	16.00±1	17.00	1.93	0.015549955	1
5500		18.31	18.00±1	19.00	3.43	0.034812012	1
5580		18.54	18.00±1	19.00	3.43	0.034812012	1
5700		16.81	16.00±1	17.00	3.43	0.021964895	1
5745		17.14	17.00±1	18.00	2.80	0.023918235	1
5785		16.68	16.00±1	17.00	2.80	0.018998929	1
5825		16.49	16.00±1	17.00	2.80	0.018998929	1
5180	802.11n(HT20)	17.22	17.00±1	18.00	3.07	0.025452423	1
5200		16.99	16.00±1	17.00	3.07	0.020217578	1
5240		17.00	17.00±1	18.00	3.07	0.025452423	1
5260		17.11	17.00±1	18.00	1.93	0.019576233	1
5280		16.76	16.00±1	17.00	1.93	0.015549955	1
5320		16.23	16.00±1	17.00	1.93	0.015549955	1
5500		17.84	17.00±1	18.00	3.43	0.027652164	1
5580		18.24	18.00±1	19.00	3.43	0.034812012	1
5700		16.36	16.00±1	17.00	3.43	0.021964895	1
5745		17.10	17.00±1	18.00	2.80	0.023918235	1
5785		16.74	16.00±1	17.00	2.80	0.018998929	1
5825		16.53	16.00±1	17.00	2.80	0.018998929	1
5190	802.11n(HT40)	14.95	14.00±1	15.00	3.07	0.012756429	1
5230		16.83	16.00±1	17.00	3.07	0.020217578	1
5270		16.72	16.00±1	17.00	3.07	0.020217578	1
5310		13.87	13.00±1	14.00	1.93	0.007793439	1
5510		15.28	15.00±1	16.00	1.93	0.012351768	1
5550		17.64	17.00±1	18.00	1.93	0.019576233	1
5670		15.13	15.00±1	16.00	3.43	0.017447336	1
5755		16.01	16.00±1	17.00	3.43	0.021964895	1
5795		15.43	15.00±1	16.00	3.43	0.017447336	1
5180	802.11ac (VHT20)	16.92	16.00±1	17.00	3.07	0.020217578	1
5200		16.76	16.00±1	17.00	3.07	0.020217578	1
5240		16.79	16.00±1	17.00	3.07	0.020217578	1
5260		16.93	16.00±1	17.00	1.93	0.015549955	1
5280		16.59	16.00±1	17.00	1.93	0.015549955	1
5320		16.08	16.00±1	17.00	1.93	0.015549955	1
5500		17.49	17.00±1	18.00	3.43	0.027652164	1
5580		17.86	17.00±1	18.00	3.43	0.027652164	1
5700		16.09	16.00±1	17.00	3.43	0.021964895	1
5745		16.74	16.00±1	17.00	2.80	0.018998929	1
5785		16.34	16.00±1	17.00	2.80	0.018998929	1
5825		15.99	15.00±1	16.00	2.80	0.015091386	1
5180	802.11ax	16.59	16.00±1	17.00	3.07	0.020217578	1

5200	(HE20)	16.42	16.00±1	17.00	3.07	0.020217578	1
5240		16.43	16.00±1	17.00	3.07	0.020217578	1
5260		16.59	16.00±1	17.00	1.93	0.015549955	1
5280		16.29	16.00±1	17.00	1.93	0.015549955	1
5320		15.87	15.00±1	16.00	1.93	0.012351768	1
5500		17.35	17.00±1	18.00	3.43	0.027652164	1
5580		17.67	17.00±1	18.00	3.43	0.027652164	1
5700		15.90	15.00±1	16.00	3.43	0.017447336	1
5745		16.67	16.00±1	17.00	2.80	0.018998929	1
5785		16.22	16.00±1	17.00	2.80	0.018998929	1
5825		15.82	15.00±1	16.00	2.80	0.015091386	1

*** End of Report ***