FCC ID : VYVMW2569-32P

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**
1500-100000	**--**	**--**	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	**--**	**--**	**F/1500**	**6**
1500-100000	**--**	**--**	**1**	**30**

11.1 Friis transmission formula: Pd= (Pout*G)\ ($4*pi*R^2$)

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

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

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

11.2 Measurement Result

Antenna gain: 2.0dBi

Antenna A

Mode	Measured power Min (dBm)	Measured power Max (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11b	18.23	18.49	18.0±1	19.0	0.0250	1
802.11g	17.69	18.12	18.0±1	19.0	0.0250	1
802.11n HT20	17.56	18.15	18.0±1	19.0	0.0250	1
802.11n HT40	12.66	13.32	13.0±1	14.0	0.0079	1

Antenna B

Mode	Measured power Min (dBm)	Measured power Max (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11b	17.59	17.88	18.0±1	19.0	0.0250	1
802.11g	17.03	17.40	18.0±1	19.0	0.0250	1
802.11n HT20	17.01	17.46	18.0±1	19.0	0.0250	1
802.11n HT40	12.17	12.50	13.0±1	14.0	0.0079	1

Antenna A+B

Mode	Measured A (mW/cm2)	Measured B (mW/cm2)	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11n HT20	0.0250	0.0250	**0.0500**	1
802.11n HT40	0.0079	0.0079	0.0158	1

Antenna A

Mode	Band	Measured power Min (dBm)	Measured power Max (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11a	UNII Band I	15.00	15.20	15.0±1	16.0	0.0126	1
	UNII Band II-A	15.70	15.86	15.0±1	16.0	0.0126	1
	UNII Band II-C	12.80	14.14	13.5±1	14.5	0.0089	1
	UNII Band III	10.42	10.64	10.0±1	11.0	0.0040	1
802.11n HT20	UNII Band I	14.66	15.00	15.0±1	16.0	0.0126	1
	UNII Band II-A	15.19	15.58	15.0±1	16.0	0.0126	1
	UNII Band II-C	12.18	12.41	13.0±1	14.0	0.0079	1
	UNII Band III	9.91	10.09	10.0±1	11.0	0.0040	1
802.11ac HT20	UNII Band I	14.85	15.09	15.0±1	16.0	0.0126	1
	UNII Band II-A	14.85	15.80	15.0±1	16.0	0.0126	1
	UNII Band II-C	12.19	13.20	13.0±1	14.0	0.0079	1
	UNII Band III	10.08	10.24	10.0±1	11.0	0.0040	1
802.11n HT40	UNII Band I	12.33	12.42	13.0±1	14.0	0.0079	1
	UNII Band II-A	12.98	13.09	13.0±1	14.0	0.0079	1
	UNII Band II-C	9.93	10.97	10.0±1	11.0	0.0040	1
	UNII Band III	7.65	7.93	8.0±1	9.0	0.0025	1
802.11ac HT40	UNII Band I	12.91	12.93	13.0±1	14.0	0.0079	1
	UNII Band II-A	13.13	13.31	13.0±1	14.0	0.0079	1
	UNII Band II-C	10.02	11.80	10.0±1	11.0	0.0040	1
	UNII Band III	7.74	8.11	8.0±1	9.0	0.0025	1
802.11ac HT80	UNII Band I	7.95	7.95	8.0±1	9.0	0.0025	1
	UNII Band II-A	7.75	7.75	8.0±1	9.0	0.0025	1
	UNII Band II-C	5.71	5.79	5.0±1	6.0	0.0013	1
	UNII Band III	4.81	4.81	5.0±1	6.0	0.0013	1

Antenna B

Mode	Band	Measured power Min (dBm)	Measured power Max (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (dBm)	Power density Limits (mW/cm2)
802.11a	UNII Band I	11.85	12.27	12.0±1	13.0	0.0063	1
	UNII Band II-A	12.45	13.19	13.0±1	14.0	0.0079	1
	UNII Band II-C	9.47	10.18	10.0±1	11.0	0.0040	1
	UNII Band III	5.44	6.85	6.0±1	7.0	0.0016	1
802.11n HT20	UNII Band I	11.50	12.17	12.0±1	13.0	0.0063	1
	UNII Band II-A	12.40	12.64	12.0±1	13.0	0.0063	1
	UNII Band II-C	9.02	9.83	10.0±1	11.0	0.0040	1
	UNII Band III	4.95	6.47	5.5±1	6.5	0.0014	1
802.11ac HT20	UNII Band I	11.89	12.02	12.0±1	13.0	0.0063	1
	UNII Band II-A	12.57	13.06	13.0±1	14.0	0.0079	1
	UNII Band II-C	9.40	10.37	10.0±1	11.0	0.0040	1
	UNII Band III	5.09	6.39	6.0±1	7.0	0.0016	1
802.11n HT40	UNII Band I	9.02	9.43	10.0±1	11.0	0.0040	1
	UNII Band II-A	9.81	9.81	10.0±1	11.0	0.0040	1
	UNII Band II-C	6.47	7.76	7.0±1	8.0	0.0020	1
	UNII Band III	2.71	4.17	3.5±1	4.5	0.0009	1
802.11ac HT40	UNII Band I	9.55	9.79	10.0±1	11.0	0.0040	1
	UNII Band II-A	10.10	10.32	10.0±1	11.0	0.0040	1
	UNII Band II-C	6.90	7.95	7.0±1	8.0	0.0020	1
	UNII Band III	2.87	4.18	3.5±1	4.5	0.0009	1
802.11ac HT80	UNII Band I	4.63	4.63	4.0±1	5.0	0.0010	1
	UNII Band II-A	6.16	6.16	6.0±1	7.0	0.0016	1
	UNII Band II-C	6.16	6.28	6.0±1	7.0	0.0016	1
	UNII Band III	0.46	0.46	0.0±1	1.0	0.0004	1

Mode	Band	Measured A (mW/cm2)	Measured B (mW/cm2)	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
802.11n HT20	UNII Band I	0.0126	0.0063	0.0189	1
	UNII Band II-A	0.0126	0.0063	0.0189	1
	UNII Band II-C	0.0079	0.0040	0.0119	1
	UNII Band III	0.0040	0.0014	0.0054	1
802.11ac HT20	UNII Band I	0.0126	0.0063	0.0189	1
	UNII Band II-A	0.0126	0.0079	**0.0205**	1
	UNII Band II-C	0.0079	0.0040	0.0119	1
	UNII Band III	0.0040	0.0016	0.0056	1
802.11n HT40	UNII Band I	0.0079	0.0040	0.0119	1
	UNII Band II-A	0.0079	0.0040	0.0119	1
	UNII Band II-C	0.0040	0.0020	0.0060	1
	UNII Band III	0.0025	0.0009	0.0034	1
802.11ac HT40	UNII Band I	0.0079	0.0040	0.0119	1
	UNII Band II-A	0.0079	0.0040	0.0119	1
	UNII Band II-C	0.0040	0.0020	0.0060	1
	UNII Band III	0.0025	0.0009	0.0034	1
802.11ac HT80	UNII Band I	0.0025	0.0010	0.0035	1
	UNII Band II-A	0.0025	0.0016	0.0041	1
	UNII Band II-C	0.0013	0.0016	0.0029	1
	UNII Band III	0.0013	0.0004	0.0017	1