FCC ID : 2AKKJ-SSM-F100

1. RF EXPOSURE

1.1.The Requirement

System operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See Section 15.247

1.2.Limit For Maximum Permissible Exposure (MPE)

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2, \|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

F = frequency in MHz, * Plane-wave equivalent power density

1.3.MPE Calculation Method

Predication of MPE limit at a given distance
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 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

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the antenna is 3dBi, the RF power density can be obtained.

1.4.TEST RESULTS

Maximum measured transmitter power
For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$

G_{ANT} MAX=3； N_{ANT} = number of transmit antennas

Directional gain= G_{ANT} + Array Gain=3

Operation Mode	Channel Number	Channel Frequency (MHz)	Antenna Gain (Numeric)	Power Density At 20cm (mW/cm^2)			Power Density Limit (mW/cm^2)	Test Results
				Ant 1	Ant 2	Sum		
802.11b	1	2412	1.995	0.011	0.011	--	1.000	Pass
	6	2437	1.995	0.012	0.012	--	1.000	Pass
	11	2462	1.995	0.013	0.013	--	1.000	Pass
802.11g	1	2412	1.995	0.006	0.006	--	1.000	Pass
	6	2437	1.995	0.006	0.006	--	1.000	Pass
	11	2462	1.995	0.007	0.007	--	1.000	Pass
802.11n 20M	1	2412	1.995	0.004	0.004	0.008	1.000	Pass
	6	2437	1.995	0.005	0.005	0.010	1.000	Pass
	11	2462	1.995	0.005	0.005	0.010	1.000	Pass
802.11n 40M	3	2422	1.995	0.003	0.003	0.006	1.000	Pass
	6	2437	1.995	0.003	0.003	0.006	1.000	Pass
	9	2452	1.995	0.003	0.004	0.007	1.000	Pass

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure.

1.5.FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, Human proximity to the antenna shall not be less than 20cm(8 inches) during normal operation. Proposed RF exposure safety information to include in User’s Manual.

1.6.Maximum conducted (average) output power test result

The test was performed with 802.11b						
Channel	Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	Ave output power ANT 1(mW)	Ave output power ANT 2 (mW)	Limits dBm / W
Low	2412	14.34	14.44	27.16	27.80	30 dBm / 1 W
Middle	2437	14.77	14.87	29.99	30.69	30 dBm / 1 W
High	2462	15.03	15.01	31.84	31.70	30 dBm / 1 W

The test was performed with 802.11g						
Channel	Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	Ave output power ANT 1(mW)	Ave output power ANT 2 (mW)	Limits dBm / W
Low	2412	11.47	11.54	14.03	14.26	30 dBm / 1 W
Middle	2437	12.08	12.09	16.14	16.18	30 dBm / 1 W
High	2462	12.29	12.20	16.94	16.60	30 dBm / 1 W

The test was performed with 802.11n20						
Channel	Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	Ave output Total power (dBm)	Ave output Total power (mW)	Limits dBm / W
Low	2412	10.19	10.22	13.22	20.967	30 dBm / 1 W
Middle	2437	10.72	10.77	13.76	23.743	30 dBm / 1 W
High	2462	11.25	11.30	14.29	26.825	30 dBm / 1 W

The test was performed with 802.11n40						
Channel	Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	Ave output Total power (dBm)	Ave output Total power (mW)	Limits dBm / W
Low	2412	8.70	8.76	11.74	14.929	30 dBm / 1 W
Middle	2437	8.99	9.07	12.04	15.997	30 dBm / 1 W
High	2462	9.43	9.47	12.46	17.621	30 dBm / 1 W