

FCC ID: 2AKAGCLOUIOTCL7206B

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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

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=0.5m, as well as the maximum gain of the used antenna is 9dBi, the RF power density can be obtained.

MAX OUTPUT POWER

Test Channel	Frequency	Power Setting	Peak Output Power	LIMIT	Verdict
	(MHz)		(dBm)	(dBm)	
1	902.75	Default	27.08	30	PASS
25	914.75	Default	26.22	30	PASS
50	927.25	Default	25.47	30	PASS

Manufacturing tolerance

Frequency (MHz)	902.75	914.75	927.25
Target (dBm)	26.5	26.5	26.5
Tolerance ±(dB)	1.0	1.0	1.0

Measurement Result

Operation Frequency: 902MHz~928MHz

Power density limited: $1\text{mW}/\text{cm}^2$

Antenna Type: Panel Antenna

Antenna gain: 9.0dBi,

R=50cm

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
902.75	GFSK	26.5	26.5±1	27.5	562.341	9.00	7.94	0.1422	0.6018
914.75		26.5	26.5±2	27.5	562.341	9.00	7.94	0.1422	0.6098
927.25		26.5	26.5±3	27.5	562.341	9.00	7.94	0.1422	0.6182

Conclusion:

For the max result : $0.1422 \leq 1.0$ for 1g SAR, No SAR is required.

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Signature:

Date: 2016-12-13

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