FCC RF Exposure

FCC ID: 2AG32SBS81040

Applicant: Baicells Technologies Co., Ltd.

Exposure category: General population/uncontrolled environment

EUT Type: Internal Antenna

Refer Standard: FCC Part 2.1091: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

FCC MPE Limited:

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

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, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (30cm)

Antenna Gain information

Permission Antenna Gain for LTE Band41:

ANT1:17dBi

ANT2:17dBi

Note 1：According to KDB 662911, all transmit signals are completely uncorrelated with each other.

Directional gain=G_{ANT}=17dBi

Maximum Conduct Power & Manufacturing tolerance

Bandwidth	Modulation	Test Channel	Chain 0 Output power (dBmz)	Chain 1 Output power (dBmz)	Total Power (dBm)	Total Power tolerance (dBm)
10MHz	QPSK	Low	41.95	41.84	44.91	45±1
		Middle	42.58	42.32	45.46	45±1
		High	42.40	42.15	45.29	45±1
	64QAM	Low	41.87	41.78	44.84	45±1
		Middle	42.30	42.51	45.42	45±1
		High	42.29	42.24	45.28	45±1
Bandwidth	Modulation	Test Channel	Chain 0 Output power (dBmz)	Chain 1 Output power (dBmz)	Total Power (dBm)	Total Power tolerance (dBm)
15MHz	QPSK	Low	41.72	41.78	44.76	45±1
		Middle	42.36	42.33	45.36	45±1
		High	42.07	42.11	45.10	45±1
	64QAM	Low	41.76	41.65	44.72	45±1
		Middle	42.67	42.38	45.54	45±1
		High	42.04	42.12	45.09	45±1
Bandwidth	Modulation	Test Channel	Chain 0 Output power (dBmz)	Chain 1 Output power (dBmz)	Total Power (dBm)	Total Power tolerance (dBm)
20MHz	QPSK	Low	41.92	41.93	44.94	45±1
		Middle	42.63	42.53	45.59	45±1
		High	42.51	42.39	45.46	45±1
	64QAM	Low	41.98	41.98	44.99	45±1
		Middle	42.67	42.65	45.67	45±1
		High	42.51	42.55	45.54	45±1

Calculation results: pass

Mode	Maximum tune up power(dBm)	ANT Gain(dBi)	RF distance(cm)	Result (mW/cm^2)	Limit (mW/cm^2)
LTE Band41	46	17	550	0.525	1