FCC RF Exposure

EUT Description:Barcode Scanner
ModelNo.:ZKB202S
Series Model: MJ-2877,MJ-6709, MJ-4590, MJ-4591, MJ-1090, MJ-2090, MJ-3090, MJ-5090, MJ-3310
FCC ID: 2A4TH-MJ-1400
Equipment type: Portable Device

1. Test Procedure
   According to KDB 447498 D01 General RF Exposure Guidance v06

   The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ⩽ 50 mm are determined by:

   [(max. power of channel, including tune-up tolerance, mW)/
   (min. test separation distance, mm)] · [√f(GHz)] ⩽ 3.0 for 1-g SAR and ⩽ 7.5 for 10-g extremity SAR,

   where
   f(GHz) is the RF channel transmit frequency in GHz
   Power and distance are rounded to the nearest mW and mm before calculation The result is rounded to one decimal place for comparison

   The test exclusions are applicable only when the minimum test separation distance is ⩽ 50 mm and for transmission frequencies between 100 MHz and 6GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

2. Test Result of RF Exposure Evaluation

BLE

Mode	Channel Freq. (MHz)	Maximum Conducted Output Power(PK)	Antenna Gain (dBi)	Antenna gain numeric	Tune-up power (dBm)	Max tune-up power (W)
GFSK	2402	2.89	0.55	1.14	2.89±1	0.002449
	2440	2.82	0.55	1.14	2.82±1	0.002409
	2480	2.87	0.55	1.14	2.87±1	0.002437

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]=2.449/5*√2.402=0.759≤3.0 Threshold at which no SAR required is and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2.4G
EIRP=EMeas+20log(dmeas)-104.7
EIRP is the equivalent isotropically radiated power,
E_{Meas} in dBmis the field strength of the emission at the measurement distance, in dB u V/m
d_{Meas} is the measurement distance, in m

Field strength(dBuV/m)	EIRP(dBm)	Max tune-up(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
89.20	-6	0.251	2408	5	0.0778	3.0
89.48	-5.72	0.267	2440	5	0.0834	3.0
92.79	-2.41	0.574	2474	5	0.1805	3.0

Conclusion： No SAR required