RF EXPOSURE EVALUATION METHOD

FCC ID: 2A2TBEKS468-BT

Applicable standard：
In accordance with FCC 47 CFR part 2 (2.1093) this device has been defined as a portable device which is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

Portable devices must be evaluated using the specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEEC95.1-1992. and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003.

Per FCC KDB 447498 D01 v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances s 50 mm are determined by:

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

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 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

BT-BLE

	Frequency	Maximum Conducted Output Power(PK)	Conducted Output Power Limit
	(MHz)	(dBm)	dBm
GFSK	2402	-4.169	30
	2440	-4.824	30
	2480	-5.461	30

max possible output power (PK,conducted)：-4±1dBm

3.38dBi logarithmic terms convert to numeric result is nearly 2.18.

-3dBm=0.50mW

2402MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]=0.50/5*√2.402=0.155≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2440MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]= 0.50/5*√2.440=0.156≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2480MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]=0.50/5*√2.48=0.157≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

Conclusion: No SAR is required.

BT-EDR

Modulation	Test Channel	Output Power (dBm)	Limit (dBm)
GFSK	Low	-3.209	21
GFSK	Middle	-4.281	21
GFSK	High	-4.657	21
Pi/4 DQPSK	Low	-3.191	21
Pi/4 DQPSK	Middle	-4.291	21
Pi/4 DQPSK	High	-4.662	21
8DPSK	Low	-3.180	21
8DPSK	Middle	-4.274	21
8DPSK	High	-4.664	21

max possible output power (PK,conducted)：-3±1dBm

3.38dBi logarithmic terms convert to numeric result is nearly 2.18

-2dBm=0.63mW

2402MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]=0.63/5*√2.402=0.195≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2441MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]= 0.63/5*√2.441=0.197≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2480MHz

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)] · [√f(GHz)]= 0.63/5*√2.48=0.198≤3.0

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

Conclusion: No SAR is required.