

RF Exposure Evaluation

FCC ID: 2AYOQ-BTR2D

1. Client Information

Applicant	:	SPIRIT LLC
Address	:	1400 NW 159th ST (BAY 101) Miami Gardens, FL 33169
Manufacturer	:	SPIRIT LLC
Address	:	1400 NW 159th ST (BAY 101) Miami Gardens, FL 33169

2. General Description of EUT

EUT Name	:	Wireless Transceiver	
Model(s) No.	:	BTR2D	
Model Difference	:	----	
Product Description	:	Operation Frequency:	Bluetooth V5.0: 2402MHz~2480MHz
	:	RF Output Power:	BT: 1.959dBm (Max)
	:	Antenna Gain:	-0.68dBi PCB Antenna
Power Supply	:	Input: DC 5V, 500mA DC 3.7V by 250mAh Rechargeable Li-ion battery	
Software Version	:	CGBT2397_2831(BT30)_B13_V1.6.p5.09_[BT30]_ATT[7-22]_cap 160_hold bat_220721_att	
Hardware Version	:	BT30_2831_V1.1	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

Note: More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

- (1) Clause 4.3: General SAR test reduction and exclusion guidance

- Sub clause 4.31: Standalone SAR test exclusion considerations

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

- [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)] * $\sqrt{f_{\text{GHz}}}$ ≤ 3.0 for 1-g SAR

- [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)] * $\sqrt{f_{\text{GHz}}}$ $\leq 7.5.0$ for 10-g SAR

2. Calculation:

Test separation: 5mm							
Bluetooth							
Mode	Frequency (MHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
GFSK	2402	1.872	2±1	3	1.995	0.620	3.0
	2441	1.251	1±1	2	1.585	0.495	3.0
	2480	0.721	1±1	2	1.585	0.497	3.0
π/4-DQPSK	2402	1.889	2±1	3	1.995	0.62	3.0
	2441	1.245	1±1	2	1.585	0.50	3.0
	2480	0.703	1±1	2	1.585	0.50	3.0
8-DPSK	2402	1.959	2±1	3	1.995	0.62	3.0
	2441	1.328	1±1	2	1.585	0.50	3.0
	2480	0.773	1±1	2	1.585	0.50	3.0

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

-----END OF REPORT-----