

RF Exposure Evaluation

FCC ID: 2AGGR-MK

1. Client Information

Applicant : Shenzhen Rivers Technology Co.,Limited
Address : A#1611, Zhantao Technology Building, Longhua New District, Shenzhen, China
Manufacturer : Shenzhen Rivers Technology Co.,Limited
Address : A#1611, Zhantao Technology Building, Longhua New District, Shenzhen, China

2. General Description of EUT

EUT Name	: Keyboard	
Models No.	: MK75+, MK75, MK75F, MK80, MK85, MK85F, MK90, MK90F, MK95, MK95F, MK100	
Model Difference	: All these models are identical in the same PCB layout and electrical circuit, the only difference is model name for commercial.	
Product Description	Operation Frequency:	Bluetooth 4.0(BLE): 2402MHz~2480MHz
	Number of Channel:	Bluetooth 4.0(BLE): 40 channels
	RF Output Power:	-0.696 dBm Conducted Power(Module 1) -0.727 dBm Conducted Power(Module 2) -0.633 dBm Conducted Power(Module 3)
	Antenna Gain:	1.6 dBi PCB Antenna
	Modulation Type:	GFSK
	Bit Rate of Transmitter:	1Mbps(GFSK)
Power Supply	: DC Supply by the AA Battery.	
Power Rating	: DC 4*1.5V by AA Battery.	
Connecting I/O Port(S)	: Please refer to the User's Manual	

Note:

More test information about the EUT please refer to 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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR}$$
$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 7.5.0 \text{ for 10-g SAR}$$

2. Calculation:

Test separation: 5mm															
BLE Mode (GFSK)															
Frequency (MHz)	Worst 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			
	BLE Module No.			BLE Module No.			BLE Module No.								
	1	2	3	1	2	3	1	2	3						
2402	-0.696	-0.727	-0.633	0±1	0±1	0±1	1	1	1	3.777	1.171	3.0			
2442	-2.975	-3.001	-2.906	-3±1	-3±1	-3±1	-2	-2	-2	1.893	0.592				
2480	-5.002	-5.028	-4.949	-5±1	-5±1	-5±1	-4	-4	-4	1.194	0.376				

So standalone SAR measurements are not required.

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