

RF Exposure Evaluation

FCC ID: 2A5PG-HRA6

1. Client Information

Applicant	:	Guangzhou Xingyue Electronic Technology Co., Ltd.
Address	:	guangdongsheng guangzhoushi panyuqudashijiehuijiangcun shinanerlu8haozhiyi201fang.China.
Manufacturer	:	Guangzhou Xingyue Electronic Technology Co., Ltd.
Address	:	guangdongsheng guangzhoushi panyuqudashijiehuijiangcun shinanerlu8haozhiyi201fang.China.

2. General Description of EUT

EUT Name	:	Hearangel	
Model(s)	:	HRA6	
Model Difference	:	----	
Product Description	:	Operation Frequency:	Bluetooth 5.1(BDR+EDR): 2402MHz~2480MHz
		Number of Channel:	79 channels
		RF Output Power:	-2.519dBm (Max)
		Antenna Gain:	0.58dBi PCB Antenna
		Modulation Type:	GFSK(1Mbps) π /4-DQPSK(2Mbps) 8-DPSK(3Mbps)
Power Supply	:	DC 3V	
Software Version	:	v1.0	
Hardware Version	:	v1.0	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
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:

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

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

2. Calculation:

Test separation: 5mm						
GFSK Mode (1Mbps)						
Frequency (GHz)	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
2.402	-4.025	-4±1	-3	0.501	0.155	3.0
2.441	-4.322	-4±1	-3	0.501	0.157	3.0
2.480	-4.898	-4±1	-3	0.501	0.158	3.0

Test separation: 5mm						
$\pi/4$ -DQPSK Mode (2Mbps)						
Frequency (GHz)	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
2.402	-3.117	-3±1	-2	0.631	0.196	3.0
2.441	-3.392	-3±1	-2	0.631	0.197	3.0
2.480	-4.048	-4±1	-3	0.501	0.158	3.0

Test separation: 5mm						
8-DPSK Mode (3Mbps)						
Frequency (GHz)	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
2.402	-2.519	-2±1	-1	0.794	0.246	3.0
2.441	-2.807	-2±1	-1	0.794	0.248	3.0
2.480	-3.469	-3±1	-2	0.631	0.199	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.

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