RF Exposure Evaluation

FCC ID: 2A4SH-CS01

1. Client Information

Applicant	:	Geeks Tech (Shenzhen) Co., Ltd.
Address	:	3-105, Xujing Jiayuan Phase III, Bantian Street, Longgang District, Shenzhen, China
Manufacturer	:	Geeks Tech (Shenzhen) Co., Ltd.
Address		3-105, Xujing Jiayuan Phase III, Bantian Street, Longgang District, Shenzhen, China

2. General Description of EUT

EUT Name	:	BLUETOOTH RECORD PLAYER	
Model(s) No.	:	CS-01 RECORD PLAYER, CS-02 RECORD PLAYER, FS-01 RECORD PLAYER, FS-02 RECORD PLAYER	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance.	
Product Description	:	Operation Frequency:	Bluetooth V5.0: 2402MHz~2480MHz
		Antenna Gain:	-0.35dBi PCB Antenna
Power Supply	:	Adapter (TDX-2402000) Input: 100-240V~50/60Hz, 2.0A Output: 24.0V⎓2.0A, 48.0W	
Software Version	:	V2.8	
Hardware Version	:	V2.8	
Remark: The antenna gain and adapter provided by the applicant, the adapter and verified for the RF conduction test provided by TOBY test lab.			

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

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

2. Calculation:

Test separation: 5mm						
Bluetooth GFSK(1Mbps)						
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
2402	3.855	3±1	4	2.512	0.779	**3.0**
2441	3.766	3±1	4	2.512	0.785	**3.0**
2480	2.399	2±1	3	1.995	0.628	**3.0**

Test separation: 5mm						
Bluetooth π/4-DQPSK(2Mbps)						
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
2402	3.97	3±1	4	2.512	0.779	**3.0**
2441	3.862	3±1	4	2.512	0.785	**3.0**
2480	2.407	2±1	3	1.995	0.628	**3.0**

Test separation: 5mm						
Bluetooth 8-DPSK(3Mbps)						
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
2402	4.029	4±1	5	3.162	0.980	**3.0**
2441	3.814	3±1	4	2.512	0.785	**3.0**
2480	2.412	2±1	3	1.995	0.628	**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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