

RF Exposure Evaluation

FCC ID:2A8EE-GP06

1. Client Information

Applicant	:	Shenzhen Sulang Technology Co., Ltd
Address	:	Room B1, C, D1, D2, 18th Floor, Building 12, Lehui Science and Technology Innovation Center, No. 489 Jihua Road, Bantian Street, Longgang District, Shenzhen, Guangdong Province, China
Manufacturer	:	Shenzhen Sulang Technology Co., Ltd
Address	:	Room B1, C, D1, D2, 18th Floor, Building 12, Lehui Science and Technology Innovation Center, No. 489 Jihua Road, Bantian Street, Longgang District, Shenzhen, Guangdong Province, China

2. General Description of EUT

EUT Name	:	Galaxy projector
Model(s) No.	:	GP06, GP08, GP09, GP10
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is that appearance color.
Product Description	:	Operation Frequency: Bluetooth V5.1: 2402MHz~2480MHz Bluetooth 5.1(BLE): 2402MHz~2480MHz
	:	Number of Channel: Bluetooth 5.1: 79 channels Bluetooth 5.1(BLE):40 channels
	:	Antenna Gain: 2.499dBi PCB Antenna
	:	Modulation Type: GFSK, Pi/4-DQPSK, 8-DPSK Bluetooth LE:1/2Mbps
	:	Bit Rate of Transmitter: 1/2/3Mbps
Power Supply	:	Input: DC 5V/2A
Software Version	:	V1
Hardware Version	:	v1.2
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:

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

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

2. Calculation:

Test separation: 5mm						
Bluetooth Mode (GFSK)						
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	-0.946	-1±1	0	1.000	0.310	3.0
2.441	-0.452	0±1	1	1.259	0.393	3.0
2.480	-0.375	0±1	1	1.259	0.397	3.0
Bluetooth Mode (Pi/4-DQPSK)						
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	-0.056	0±1	1	1.259	0.390	3.0
2.441	0.382	0±1	1	1.259	0.393	3.0
2.480	0.377	0±1	1	1.259	0.397	3.0
Bluetooth Mode (8-DPSK)						
2.402	0.48	0±1	1	1.259	0.390	3.0
2.441	0.943	1±1	2	1.585	0.495	3.0
2.480	0.928	1±1	2	1.585	0.499	3.0
Bluetooth LE 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	-4.227	-4±1	-3	0.501	0.155	3.0
2.440	-3.91	-4±1	-3	0.501	0.157	3.0
2.480	-3.375	-3±1	-2	0.631	0.199	3.0
Bluetooth LE 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	-4.395	-4±1	-3	0.501	0.155	3.0
2.440	-3.931	-4±1	-3	0.501	0.157	3.0
2.480	-3.484	-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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