Shenzhen Toby Technology Co., Ltd.

RF Exposure Evaluation
FCC ID: 2AEEF-1440

1. Client Information

Applicant	:	Sunstar Digi CO.,LTD.
Address	:	2-3 Floor, F Building, Guanlong 1st Industrial Zone, Xili Town, Nanshan District, Shenzhen, China
Manufacturer	:	Sunstar Digi CO.,LTD.
Address	:	2-3 Floor, F Building, Guanlong 1st Industrial Zone, Xili Town, Nanshan District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Bluetooth Speaker Shutter	
Models No.	:	1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, JTL-6	
Brand Name	:	Groove Cube	
Model difference	:	All models are identical in the same PCB layout, interior structure and electrical circuits, The only difference is model name for commercial purpose.	
Product Description	:	Operation Frequency: Bluetooth:2402~2480MHz	
		Number of Channel:	Bluetooth:79 Channels
		Max Peak Output Power:	GFSK: -2.594dBm
		Antenna Gain:	1.3 dBi PCB Antenna
		Modulation Type:	GFSK 1Mbps(1 Mbps) π/4-DQPSK(2 Mbps) 8-DPSK(3 Mbps)
Power Supply	:	DC power by USB cable form Host System DC power by Li-ion battery	
Power Rating	:	DC 5V by USB Cable from PC system. DC 3.7V by 180mAh Li-ion Battery.	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note:

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

TB-RF-074-1.0

SAR Test Exclusion Calculations

1. **FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v05r02.**
   (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 Mode (GFSK)					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (mw)**	**Calculation Value**	**Threshold Value**
2.402	-2.594	±0.5	0.617	0.191	**3.0**
2.441	-3.257	±0.5	0.530	0.166	**3.0**
2.480	-4.732	±0.5	0.377	0.119	**3.0**
Bluetooth Mode (π/4-DQPSK)					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (mw)**	**Calculation Value**	**Threshold Value**
2.402	-5.029	±0.5	0.352	0.109	**3.0**
2.441	-4.285	±0.5	0.418	0.131	**3.0**
2.480	-4.383	±0.5	0.409	0.129	**3.0**
Bluetooth Mode (8-DPSK)					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (mw)**	**Calculation Value**	**Threshold Value**
2.402	-4.281	±0.5	0.419	0.130	**3.0**
2.441	-4.958	±0.5	0.358	0.112	**3.0**
2.480	-5.537	±0.5	0.314	0.099	**3.0**

So standalone SAR measurements are not required.