

RF Exposure Evaluation

FCC ID: 2ABHA7123-04

1. Client Information

Applicant : NINGBO CSTAR IMP&EXP CO., LTD.
Address : Floor 4, Building E, No. 655-90, Qiming Road, Yinzhou Investment & Innovation Center, Ningbo, China.
Manufacturer : NINGBO CSTAR IMP&EXP CO., LTD.
Address : Floor 4, Building E, No. 655-90, Qiming Road, Yinzhou Investment & Innovation Center, Ningbo, China.

2. General Description of EUT

EUT Name	:	Mobile Odyssey Duke Waterproof Bluetooth Speaker	
Models No.	:	7123-04	
Model Difference	:	N/A	
Product Description	:	Operation Frequency: Bluetooth:2402~2480MHz	
	:	Number of Channel:	Bluetooth:79 Channels
	:	Max Peak Output Power:	8-DPSK: 2.661dBm
	:	Antenna Gain:	0 dBi PCB Antenna
	:	Modulation Type:	GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps)
Power Supply	:	DC Voltage supplied from Host System by USB cable DC power by 400mA Li-ion Battery	
Power Rating	:	DC 5.0V by USB cable. DC 3.7V 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.

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0$ 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)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	2.112	0	±1	2.047	0.635	3.0
2.441	1.169	0	±1	1.648	0.515	3.0
2.480	-0.175	0	±1	1.209	0.381	3.0
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	2.661	0	±1	2.323	0.720	3.0
2.441	1.867	0	±1	1.935	0.605	3.0
2.480	0.595	0	±1	1.444	0.455	3.0

So standalone SAR measurements are not required.