



MPE Test Report

Report No.: MTi211027001-06E2

Date of issue: Nov. 17, 2021

Applicant: Shenzhen Monster Creative Technology Co., Ltd.

Product name: Monster Bluetooth Speaker

Model(s): MS22111, S100, S100A, S100B, S100C

FCC ID: 2AVD2-MS22111

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



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TEST RESULT CERTIFICATION	
Applicant's name.....	Shenzhen Monster Creative Technology Co., Ltd.
Address.....	Flat G, 3/F, Building D, The Central Avenue, Xixiang Street, Bao'an District, Shenzhen, Guangdong
Manufacturer's Name ...	Shenzhen Jonter Digital Co., Ltd
Address.....	3/F, Building4, Jinfo Industrial Park, Hezhou Village, Hangcheng Town, Bao'an District, Shenzhen, China
Factory's Name	Dongguan Jonter Digital Co., Ltd.
Address.....	Building 1, No. 5, Daguizi East Street, Tangjiao Village, Chashan Town, Dongguan, China
Product description	
Product name.....	Monster Bluetooth Speaker
Trademark	MONSTER, JONTER
Model Name	MS22111
Serial Model	S100, S100A, S100B, S100C
Standards.....	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests... :	2021-11-08 ~ 2021-11-17
Test Result.....:	Pass
This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.	

Testing Engineer

:

Cindy Qin

(Cindy Qin)

Technical Manager

:

Leon Chen

(Leon Chen)

Authorized Signatory

:

Tom Xue

(Tom Xue)



1 RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

1.1 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

1.2 Measurement Result

BT:

Operation Frequency: BT GFSK, $\pi/4$ -DQPSK, 8DPSK: 2402-2480MHz

Power density limited: $1\text{mW}/\text{cm}^2$

Antenna Type: BT Antenna: PCB Antenna;

BT antenna gain: -0.58dBi

R=20cm

$\text{mW}=10^{(\text{dBm}/10)}$

antenna gain Numeric= $10^{(\text{dBi}/10)}=10^{(-0.58/10)}=0.87$

Chann el Freq. (MHz)	modulat ion	conduct ed power	Tune- up power (dBm)	Max		Antenna		Evalua tion result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/c m2)	(mW/c m2)
				(dBm)	(mW)	(dBi)	Numeri c		
2402	GFSK	4.203	4±1	5	3.162	-0.58	0.87	0.0006	1
2441		2.862	2±1	3	1.995	-0.58	0.87	0.0003	1
2480		0.812	1±1	2	1.585	-0.58	0.87	0.0003	1
2402	π/4- DQPSK	4.346	4±1	5	3.162	-0.58	0.87	0.0006	1
2441		3.084	3±1	4	2.512	-0.58	0.87	0.0004	1
2480		1.061	1±1	2	1.585	-0.58	0.87	0.0003	1
2402	8DPSK	4.408	4±1	5	3.162	-0.58	0.87	0.0006	1
2441		3.114	3±1	4	2.512	-0.58	0.87	0.0004	1
2480		1.095	1±1	2	1.585	-0.58	0.87	0.0003	1

Conclusion:

For the max result: $0.0006 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----