

# MPE REPORT

FCC ID: 2AS5O-17257

Date of issue: May 07, 2019

Report Number:	MTi190424E165
Sample Description:	Portable Bluetooth Speaker
Model(s):	E-BS-17257-A, E-BS-17257-A1, E-BS-17257-A2, E-BS-17257-A3, IWSK1002-BLK, S10
Applicant:	China Etech Groups Ltd
Address:	16/F, Block C, 2nd Phase of Central Avenue, Haihong Industrial Area, Xixiang Road, Baoan
Date of Test:	Apr. 10, 2019 to May 07, 2019

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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TEST RESULT CERTIFICATION	
Applicant's name:	China Etech Groups Ltd
Address:	16/F, Block C, 2nd Phase of Central Avenue, Haihong Industrial Area, Xixiang Road, Baoan
Manufacture's Name:	China Etech Groups Ltd
Address:	16/F, Block C, 2nd Phase of Central Avenue, Haihong Industrial Area, Xixiang Road, Baoan
Product name:	Portable Bluetooth Speaker
Trademark:	N/A
Model:	E-BS-17257-A
Serial Model:	E-BS-17257-A1, E-BS-17257-A2, E-BS-17257-A3, IWSK1002-BLK, S10
RF Exposure Procedures.....:	KDB 447498 D01 v06

*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.*

Tested by:



Demi Mu

May 07, 2019

Reviewed by:



Blue Zheng

May 07, 2019

Approved by:



Smith Chen

May 07, 2019

## 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)

Limits for Maximum Permissible Exposure (MPE)

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

$P_{out}$  = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$\pi$  = 3.1415926

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

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. 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.

## Measurement Result

### BT:

Operation Frequency: 2402-2480MHz

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: PCB Antenna;

antenna gain: -0.58dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}= 10^{(1/10)}= 0.87$

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm2 )	(mW/cm2)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2402	GFSK	2.230	2±1	3	1.995	0.87	0.0003	1
2441		1.539	2±1	3	1.995	0.87	0.0003	1
2480		1.251	2±1	3	1.995	0.87	0.0003	1
2402	π/4-DQPSK	2.973	3±1	4	2.512	0.87	0.0004	1
2441		2.803	3±1	4	2.512	0.87	0.0004	1
2480		2.544	3±1	4	2.512	0.87	0.0004	1

### Conclusion:

For the max result: 0.0004≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----