



Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

Report Template Version: V03
Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. : CQASZ20190600467E-02
Applicant: APEX TOP INTL LTD
Address of Applicant: A BUILDING, HUAYANG TECH INDUSTRY, NO. 5 NANTAI RD., GUSHU XIXIANG BAO'AN, SHENZHEN, CHINA

Equipment Under Test (EUT):
Product: Bluetooth Speaker
Test Model No.: 2214
Brand Name: N/A
FCC ID: 2APOD-2214
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06

Date of Receipt: 2019-06-13
Date of Test: 2019-06-14 to 2019-06-24
Date of Issue: 2019-06-25
Test Result : PASS*

Tested By:

Daisy Qin

(Daisy Qin)

Reviewed By:

Aaron Ma

(Aaron Ma)

Approved By:

Jack Ai

(Jack Ai)



* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190600467E-02	Rev.01	Initial report	2019-06-25

2 Contents

	Page
1 VERSION	2
2 CONTENTS	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION.....	4
3.2 GENERAL DESCRIPTION OF EUT	4
4 SAR EVALUATION	5
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT	5
4.1.1 <i>Standard Requirement</i>	5
4.1.2 <i>Limits</i>	5
4.1.3 <i>EUT RF Exposure</i>	6

3 General Information

3.1 Client Information

Applicant:	APEX TOP INTL LTD
Address of Applicant:	A BUILDING, HUAYANG TECH INDUSTRY, NO. 5 NANTAI RD., GUSHU XIXIANG BAO'AN, SHENZHEN, CHINA
Manufacturer:	APEX TOP INTL LTD
Address of Manufacturer:	A BUILDING, HUAYANG TECH INDUSTRY, NO. 5 NANTAI RD., GUSHU XIXIANG BAO'AN, SHENZHEN, CHINA

3.2 General Description of EUT

Product Name:	Bluetooth Speaker
Test Model No.:	2214
Trade Mark:	N/A
Hardware Version:	2214-2221
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	FCCAssist_V2.4 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery: DC3.7V, Charge by USB

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{[\sqrt{f(\text{GHz})}]^2} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where} \right.$$

☐ $f(\text{GHz})$ is the RF channel transmit frequency in GHz

☐ Power and distance are rounded to the nearest mW and mm before calculation¹⁷

☐ The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.620	1±1	2	1.585
Middle(2441MHz)	1.640	2±1	3	1.995
Highest(2480MHz)	2.910	2±1	3	1.995
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.730	0±1	1	1.259
Middle(2441MHz)	0.280	1±1	2	1.585
Highest(2480MHz)	1.600	1±1	2	1.585

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.620	1±1	2	1.585	0.49	3.0
Middle (2441MHz)	1.640	2±1	3	1.995	0.62	
Highest (2480MHz)	2.910	2±1	3	1.995	0.40	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190600467E-01