



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

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RF Exposure Evaluation Report

Report No.: CQASZ20201101349E-02
Applicant: GuangDong Substanbo Technology Co., Ltd.
Address of Applicant: 2508, Building 4, Tianan Cloud Park Phase II, Bantian Street, Longgang District, Shenzhen, China 518100
Equipment Under Test (EUT):
EUT Name: Party Speaker
Model No.: PT860A, Lark PA01, Lark PA03
Test Model No.: Lark PA01
Brand Name: Bomaker
FCC ID: 2AS9DLARK01
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-11-09
Date of Test: 2020-11-09 to 2020-11-12
Date of Issue: 2020-11-12
Test Result: PASS*

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

Tested By:

Martin Lee

(Martin Lee)

Reviewed By:

Sheek Luo

(Sheek Luo)

Approved By:

Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201101349E-02	Rev.01	Initial report	2020-11-12

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:	GuangDong Substanbo Technology Co., Ltd.
Address of Applicant:	2508, Building 4, Tianan Cloud Park Phase II, Bantian Street, Longgang District, Shenzhen, China 518100
Manufacturer:	GuangDong Substanbo Technology Co., Ltd.
Address of Manufacturer:	2508, Building 4, Tianan Cloud Park Phase II, Bantian Street, Longgang District, Shenzhen, China 518100

3.2 General Description of EUT

Product Name:	Party Speaker
Model No.:	PT860A, Lark PA01, Lark PA03
Test Model No.:	Lark PA01
Trade Mark:	Bomaker
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	FCC Assist 1.0.0.2 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	-0.58dBi
Power Supply:	lithium battery: DC11.1V, 2200mAh, Charge by adapter Adapter: MODEL: YN-24WA180130US INPUT: 100-240V~50/60Hz 0.75A OUTPUT: 18V 1.3A 23.4W

Note:

Model No.: PT860A, Lark PA01, Lark PA03

Only the model Lark PA01 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model name.

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:

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

$f(\text{GHz})$ 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

1) For BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.150	1.5±1	2.5	1.778
Middle(2441MHz)	2.400	1.5±1	2.5	1.778
Highest(2480MHz)	2.520	2.0±1	3.0	1.995
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.410	0.5±1	1.5	1.413
Middle(2441MHz)	1.560	1.0±1	2.0	1.585
Highest(2480MHz)	1.660	1.0±1	2.0	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)	2.150	1.5±1	2.5	1.778	0.551	3.0
Middle (2441MHz)	2.400	1.5±1	2.5	1.778	0.556	
Highest (2480MHz)	2.520	2.0±1	3.0	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20201101349E-01