



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: V04

Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No.: CQASZ20201001195E-02
Applicant: Chengdu Ebyte Electronic Technology Co., Ltd.
Address of Applicant: Building B5, Mould Industrial Park, 199# Xiqu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China
Equipment Under Test (EUT):
EUT Name: Bluetooth
Model No.: E104-BT5032A
Brand Name: EBYTE
FCC ID: 2ALPH-E104BT5032A
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-10-13
Date of Test: 2020-10-13 to 2020-10-23
Date of Issue: 2020-10-23
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
CQASZ20201001195E-02	Rev.01	Initial report	2020-10-23

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:	Chengdu Ebyte Electronic Technology Co., Ltd.
Address of Applicant:	Building B5, Mould Industrial Park, 199# Xiqu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China
Manufacturer:	Chengdu Ebyte Electronic Technology Co., Ltd.
Address of Manufacturer:	Building B5, Mould Industrial Park, 199# Xiqu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China

3.2 General Description of EUT

Product Name:	Bluetooth
Model No.:	E104-BT5032A
Trade Mark:	EBYTE
Hardware Version:	v1.0
Software Version:	v1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Type:	GFSK
Transfer Rate:	1Mbps, 2Mbps
Number of Channel:	40
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Direct Test Mode Tool (manufacturer declare)
Antenna Type:	Ceramic antenna
Antenna Gain:	1.0dBi
EUT Power Supply:	DC 3.3V

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 BLE

Measurement Data

GFSK mode(1Mbps)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-5.93	-6.5±1	-5.5	0.282
Middle(2440MHz)	-4.79	-5.5±1	-4.5	0.355
Highest(2480MHz)	-4.82	-5.5±1	-4.5	0.355
GFSK mode(2Mbps)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-5.91	-6.5±1	-5.5	0.282
Middle(2440MHz)	-4.76	-5.5±1	-4.5	0.355
Highest(2480MHz)	-4.83	-5.5±1	-4.5	0.355

Worst case: GFSK mode(2Mbps)						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-5.91	-6.5±1	-5.5	0.282	0.087	3.0
Middle (2440MHz)	-4.76	-5.5±1	-4.5	0.355	0.111	
Highest (2480MHz)	-4.83	-5.5±1	-4.5	0.355	0.112	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20201001195E-01