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RF Exposure Evaluation Report

Report No.: CQASZ20180800069E-02

Applicant: ZHEJIANG R&H INDUSTRY AND TRADE CO.,LTD

Address of Applicant: No.8 Fengshan Road&65292,Kecheng District, Quzhou City, Zhejiang Province, China

Manufacturer: ZHEJIANG R&H INDUSTRY AND TRADE CO.,LTD

Address of Manufacturer: No.8 Fengshan Road&65292,Kecheng District, Quzhou City, Zhejiang Province, China

Equipment Under Test (EUT):

Product: bluetooth

All Model No.: KT-BA,KT-BB,KT-360D,KT-BC, KT-BD, KT-HE

Test Model No.: KT-BA

Brand Name: N/A

FCC ID: 2AQ2EKT-BA

Standards: 47 CFR Part 1.1307

47 CFR Part 2.1093

KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2018-08-15 to 2018-08-21

Date of Issue: 2018-08-21

Test Result: PASS*

Tested By:

Tiny You

Reviewed By:

(Tiny You)
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.

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180800069E-02	Rev.01	Initial report	2018-08-21

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4 General Information

4.1 Client Information

Applicant:	ZHEJIANG R&H INDUSTRY AND TRADE CO.,LTD
Address of Applicant:	No.8 Fengshan Road&65292,Kecheng District, Quzhou City, Zhejiang Province, China
Manufacturer:	ZHEJIANG R&H INDUSTRY AND TRADE CO.,LTD
Address of Manufacturer:	No.8 Fengshan Road&65292,Kecheng District, Quzhou City, Zhejiang Province, China

4.2 General Description of EUT

Product Name:	bluetooth
All Model No.:	KT-BA,KT-BB,KT-360D,KT-BC, KT-BD, KT-HE
Test Model No.:	KT-BA
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	RF test (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0.5dBi
EUT Power Supply:	Button battery: DC3V,220mAh

Note:

All model: KT-BA,KT-BB,KT-360D,KT-BC KT-BD KT-HE

Only the model KT-BA was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 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.

5.1.2 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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ 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

5.1.3 EUT RF Exposure

For BT:**Measurement Data**

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-6.66
Middle	-6.56
Highest	-5.92

The Max Conducted Peak Output Power is -5.92dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0.5dBi.

EIRP= -5.92dBm + 0.5dBi = -5.42dBm

-5.42dBm logarithmic terms convert to numeric result is nearly 0.287mW

According to the formula. calculate the EIRP test result:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

General RF Exposure = $(0.287\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.09$ ①

SAR requirement:

$S = 3.0$ ② ;

① < ②.

So the SAR report is not required.

Remark: The Max Conducted Peak Output Power data refer to report Report No.:CQASZ20180800069E-01