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RF Exposure Evaluation Report

Report No.: CQASZ20211202223E-03
Applicant: Shenzhen DO Intelligent Technology Co., Ltd
Address of Applicant: 11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Equipment Under Test (EUT):
EUT Name: Smart Watch
Model No.: boAt Wave Connect RTL, boAt Wave Connect F, boAt Wave Connect A, boAt Wave Connect Plus, boAt Wave Connect Pro, boAt Wave Connect Max, boAt Wave Connect, ID208, ID208 BT
Test Model No.: ID208 BT
Brand Name: IDO
FCC ID: 2AHFT418
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-12-23
Date of Test: 2021-12-23 to 2021-12-30
Date of Issue: 2022-03-02
Test Result: **PASS***

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

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Rock Huang
(Rock Huang)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

| Report No. | Version | Description | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20211202223E-03 | Rev.01 | Initial report | 2022-03-02 |

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3 General Information

3.1 Client Information

| | |
|--------------------------|--|
| Applicant: | Shenzhen DO Intelligent Technology Co., Ltd |
| Address of Applicant: | 11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China |
| Manufacturer: | Shenzhen DO Intelligent Technology Co., Ltd |
| Address of Manufacturer: | 11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China |
| Factory: | Shenzhen DO Intelligent Technology Co., Ltd |
| Address of Factory: | 11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China |

3.2 General Description of EUT

| | |
|-------------------|--|
| Product Name: | Smart Watch |
| Model No.: | boAt Wave Connect RTL, boAt Wave Connect F, boAt Wave Connect A, boAt Wave Connect Plus, boAt Wave Connect Pro, boAt Wave Connect Max , boAt Wave Connect, ID208, ID208 BT |
| Test Model No.: | ID208 BT |
| Trade Mark: | IDO |
| Software Version: | V1 |
| Hardware Version: | V1.1 |
| Power Supply: | lithium battery:DC3.8V, 300mAh, 1.140Wh, Charge by DC5.0V 280mA |

3.3 General Description of BLE

| | |
|----------------------|--|
| Operation Frequency: | 2402MHz~2480MHz |
| 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 |
| Antenna Type: | FPC antenna |
| Antenna Gain: | -0.61dBi |

3.4 General Description of BT

| | |
|----------------------|--|
| Operation Frequency: | 2402MHz~2480MHz |
| Modulation Type: | GFSK, $\pi/4$ DQPSK, 8DPSK |
| Transfer Rate: | 1Mbps/2Mbps/3Mbps |
| Number of Channel: | 79 |
| Product Type: | <input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location |
| Antenna Type: | FPC antenna |
| Antenna Gain: | -0.61dBi |

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:

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

4.1.3 EUT RF Exposure

1) For BLE(1Mbps)

Measurement Data

| GFSK mode | | | | |
|------------------|----------------------------|----------------------------|-----------------------|-------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | -1.57 | -1.5±1 | -0.5 | 0.891 |
| Middle(2440MHz) | 0.29 | 0±1 | 1 | 1.259 |
| Highest(2480MHz) | 1.77 | 1±1 | 2 | 1.585 |

| Worst case: GFSK mode | | | | | | |
|---|--|-------------------------------|---------------------------|-------|---------------------|------------------------|
| Channel | Maximum Peak Conducted Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune- up Power | | Calculated value | Exclusion threshold |
| | | | (dBm) | (mW) | | |
| Lowest (2402MHz) | -1.57 | -1.5±1 | -0.5 | 0.891 | 0.276 | 3.0 |
| Middle (2440MHz) | 0.29 | 0±1 | 1 | 1.259 | 0.393 | |
| Highest (2480MHz) | 1.77 | 1±1 | 2 | 1.585 | 0.499 | |
| Conclusion: the calculated value ≤3.0, SAR is exempted. | | | | | | |

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20211202223E-01 BLE can not simultaneous transmitting at same time.

2) For BT

Measurement Data

| GFSK mode | | | | |
|------------------|----------------------------|----------------------------|-----------------------|-------|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | -1.55 | -2±1 | -1 | 0.794 |
| Middle(2441MHz) | 0.22 | 0±1 | 1 | 1.259 |
| Highest(2480MHz) | 1.41 | 1±1 | 2 | 1.585 |
| π/4DQPSK mode | | | | |
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | -1.86 | -2±1 | -1 | 0.794 |
| Middle(2441MHz) | -0.05 | -1±1 | 0 | 1.000 |
| Highest(2480MHz) | 1.49 | -0.5±1 | 0.5 | 1.585 |
| 8DPSK mode | | | | |
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | -1.73 | -2±1 | -1 | 0.794 |
| Middle(2441MHz) | -0.06 | -1±1 | 0 | 1.000 |
| Highest(2480MHz) | 1.32 | 1±1 | 2 | 1.585 |

| Worst case: GFSK mode | | | | | | |
|---|--|-------------------------------|---------------------------|-------|---------------------|------------------------|
| Channel | Maximum Peak Conducted Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune- up Power | | Calculated value | Exclusion threshold |
| | | | (dBm) | (mW) | | |
| Lowest (2402MHz) | -1.55 | -2±1 | -1 | 0.794 | 0.246 | 3.0 |
| Middle (2441MHz) | 0.22 | 0±1 | 1 | 1.259 | 0.393 | |
| Highest (2480MHz) | 1.41 | 1±1 | 2 | 1.585 | 0.499 | |
| Conclusion: the calculated value ≤3.0, SAR is exempted. | | | | | | |

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20211202223E-02 BLE can not simultaneous transmitting at same time.

*** END OF REPORT ***