

# RF Exposure Report

Report No.: AGC02390231203CH01

**IC** : 25657-2564C

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION** : BDE Bluetooth 5.1 Dual Mode Transceiver Module Based on CC2564C

**BRAND NAME** : BDE

**MODEL NAME** : BDE-BD2564CN

**APPLICANT** : Guangzhou BDE Technology Inc.

**DATE OF ISSUE** : Jan. 10, 2024

**STANDARD(S)** : RSS-102 Issue 5

**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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**Report Revise Record**

| Report Version | Revise Time | Issued Date   | Valid Version | Notes           |
|----------------|-------------|---------------|---------------|-----------------|
| V1.0           | /           | Jan. 10, 2024 | Valid         | Initial Release |

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## 1. General Information

|                              |                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------|
| Applicant                    | Guangzhou BDE Technology Inc.                                                            |
| Address                      | B2-403, ChuangYi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China |
| Manufacturer                 | Guangzhou BDE Technology Inc.                                                            |
| Address                      | B2-403, ChuangYi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China |
| Factory                      | Guangzhou BDE Technology Inc.                                                            |
| Address                      | B2-403, ChuangYi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China |
| Product Designation          | BDE Bluetooth 5.1 Dual Mode Transceiver Module Based on CC2564C                          |
| Brand Name                   | BDE                                                                                      |
| Test Model                   | BDE-BD2564CN                                                                             |
| Series Model(s)              | N/A                                                                                      |
| Difference Description       | N/A                                                                                      |
| Date of receipt of test item | Aug. 07, 2023                                                                            |
| Date of Test                 | Aug. 08, 2023 to Nov. 08, 2023                                                           |
| Deviation from Standard      | No any deviation from the test method                                                    |
| Condition of Test Sample     | Normal                                                                                   |
| Test Result                  | Pass                                                                                     |
| Test Report Form No          | AGCER-ISED-RF Exposure-V1                                                                |

Note: The test results of this report relate only to the tested sample identified in this report.

|             |                                                                                     |               |
|-------------|-------------------------------------------------------------------------------------|---------------|
| Prepared By |  |               |
|             | Alan Duan<br>(Project Engineer)                                                     | Jan. 10, 2024 |
| Reviewed By |  |               |
|             | Calvin Liu<br>(Reviewer)                                                            | Jan. 10, 2024 |
| Approved By |  |               |
|             | Max Zhang<br>(Authorized Officer)                                                   | Jan. 10, 2024 |

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## 2. Product Information

### 2.1 Product Technical Description

|                             |                                                                                                                                                                                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Band (Operating)  | <input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz<br><input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz<br><input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz<br><input checked="" type="checkbox"/> Bluetooth: 2.402GHz ~ 2.480GHz<br><input type="checkbox"/> Other: |
| Hardware Version            | 1.1                                                                                                                                                                                                                                                                                      |
| Software Version            | 1.0                                                                                                                                                                                                                                                                                      |
| Modulation Type             | BT_BLE: GFSK<br>BT_BR_EDR: GFSK, $\pi/4$ -DQPSK, 8DPSK                                                                                                                                                                                                                                   |
| Device Category             | <input checked="" type="checkbox"/> Portable (<20cm separation)                                                                                                                                                                                                                          |
| Antenna Diversity           | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                                                           |
| Antenna Designation         | Patch antenna                                                                                                                                                                                                                                                                            |
| Antenna Gain                | 2.2dBi                                                                                                                                                                                                                                                                                   |
| Minimum Assessment Distance | 15mm                                                                                                                                                                                                                                                                                     |
| Evaluation Applied          | <input checked="" type="checkbox"/> SAR Evaluation                                                                                                                                                                                                                                       |

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### 3. Test Environment

#### 3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

#### 3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

##### **CNAS-Lab Code: L5488**

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

##### **A2LA-Lab Cert. No.: 5054.02**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

##### **FCC-Registration No.: 975832**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

##### **IC-Registration No.: 24842(CAB identifier: CN0063)**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

### 3.3 Environmental Conditions

|                         | Normal Conditions |
|-------------------------|-------------------|
| Temperature range (°C)  | 15 - 35           |
| Relative humidity range | 20% - 75%         |
| Pressure range (kPa)    | 86 - 106          |
| Power supply            | DC 3.3V           |

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## 4. RSS-102 RF Exposure Assessment Measurements

### 4.1 Measurement Limits

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in [Table 1](#).

**Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance<sup>4,5</sup>**

| Frequency<br>(MHz) | Exemption Limits (mW)                 |                                       |                                       |                                       |                                       |
|--------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
|                    | At separation<br>distance of<br>≤5 mm | At separation<br>distance of<br>10 mm | At separation<br>distance of<br>15 mm | At separation<br>distance of<br>20 mm | At separation<br>distance of<br>25 mm |
| ≤300               | 71 mW                                 | 101 mW                                | 132 mW                                | 162 mW                                | 193 mW                                |
| 450                | 52 mW                                 | 70 mW                                 | 88 mW                                 | 106 mW                                | 123 mW                                |
| 835                | 17 mW                                 | 30 mW                                 | 42 mW                                 | 55 mW                                 | 67 mW                                 |
| 1900               | 7 mW                                  | 10 mW                                 | 18 mW                                 | 34 mW                                 | 60 mW                                 |
| 2450               | 4 mW                                  | 7 mW                                  | 15 mW                                 | 30 mW                                 | 52 mW                                 |
| 3500               | 2 mW                                  | 6 mW                                  | 16 mW                                 | 32 mW                                 | 55 mW                                 |
| 5800               | 1 mW                                  | 6 mW                                  | 15 mW                                 | 27 mW                                 | 41 mW                                 |

| Frequency<br>(MHz) | Exemption Limits (mW)                 |                                       |                                       |                                       |                                        |
|--------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|
|                    | At separation<br>distance of<br>30 mm | At separation<br>distance of<br>35 mm | At separation<br>distance of<br>40 mm | At separation<br>distance of<br>45 mm | At separation<br>distance of<br>≥50 mm |
| ≤300               | 223 mW                                | 254 mW                                | 284 mW                                | 315 mW                                | 345 mW                                 |
| 450                | 141 mW                                | 159 mW                                | 177 mW                                | 195 mW                                | 213 mW                                 |
| 835                | 80 mW                                 | 92 mW                                 | 105 mW                                | 117 mW                                | 130 mW                                 |
| 1900               | 99 mW                                 | 153 mW                                | 225 mW                                | 316 mW                                | 431 mW                                 |
| 2450               | 83 mW                                 | 123 mW                                | 173 mW                                | 235 mW                                | 309 mW                                 |
| 3500               | 86 mW                                 | 124 mW                                | 170 mW                                | 225 mW                                | 290 mW                                 |
| 5800               | 56 mW                                 | 71 mW                                 | 85 mW                                 | 97 mW                                 | 106 mW                                 |

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 5. For limb-worn devices where the 10gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

For medical implants devices, the exemption limit for routine evaluation is set at 1 mW. The output power of a medical implants device is defined as the higher of the conducted or e.i.r.p to determine whether the device is exempt from the SAR evaluation.

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## 4.2 Measurement Results

| Test Mode | Frequency (MHz) | Tune up Tolerance | Antenna gain (dBi) | Max Tune up Power (dBm) | Max Tune up EIRP (dBm) | Calculation Results (mW) | Exemption Limits (mW) |
|-----------|-----------------|-------------------|--------------------|-------------------------|------------------------|--------------------------|-----------------------|
| BT_EDR    | 2441            | 8±1               | 2.2                | 9                       | 11.2                   | 13.18                    | 15                    |
| BT_BLE    | 2480            | 7±1               | 2.2                | 8                       | 10.2                   | 10.47                    | 15                    |

Note:

1. Max Tune up Power (mW) =  $10^{(\text{Max Tune up power (dBm)}/10)}$
2. The power for this evaluation had to be taken into account the condition of the device's antenna and is exempted using a power tolerance.

## 4.3 Measurement Conclusion

Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

-----End of Report-----

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## Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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