



|  |   |   |   |  |
|--|---|---|---|--|
| <b>Prüfbericht-Nr.:</b><br><i>Test report no.:</i>   | <b>CN23C9SQ 002</b>   | <b>Auftrags-Nr.:</b><br><i>Order no.:</i>       | 168427200   | <b>Page 1 of 22</b><br><i>Seite 1 von 22</i> |
| <b>Kunden-Referenz-Nr.:</b><br><i>Client reference no.:</i>  | N/A   | <b>Auftragsdatum:</b><br><i>Order date:</i>     | 2023-04-11  |  |
| <b>Auftraggeber:</b><br><i>Client:</i>   | Harman International Industries, Inc<br>8500 Balboa Blvd, Northridge, California, 91329, United States                                    |   |   |  |
| <b>Prüfgegenstand:</b><br><i>Test item:</i>  | BLUETOOTH HEADSET   |   |   |  |
| <b>Bezeichnung / Typ-Nr.:</b><br><i>Identification / Type no.:</i>   | JBL VIBE BUDS<br>(Trademark: JBL)   |   |   |  |
| <b>Auftrags-Inhalt:</b><br><i>Order content:</i>   | Type test   |   |   |  |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>  | CFR47 FCC Part 15: Subpart C Section 15.247<br>CFR47 FCC Part 15: Subpart C Section 15.207<br>CFR47 FCC Part 15: Subpart C Section 15.209 |   | RSS-247 Issue 2 February 2017<br>RSS-Gen Issue 5 March 2019                             |  |
| <b>Wareneingangsdatum:</b><br><i>Date of sample receipt:</i>   | 2023-04-12  | Refer to photos document                        |   |  |
| <b>Prüfmuster-Nr.:</b><br><i>Test sample no.:</i>  | A003478029  |   |   |  |
| <b>Prüfzeitraum:</b><br><i>Testing period:</i>   | 2023-05-18 – 2023-06-05   |   |   |  |
| <b>Ort der Prüfung:</b><br><i>Place of testing:</i>  | TÜV Rheinland (Shenzhen)<br>Co., Ltd.   |   |   |  |
| <b>Prüflaboratorium:</b><br><i>Testing laboratory:</i>   | TÜV Rheinland (Shenzhen)<br>Co., Ltd.   |   |   |  |
| <b>Prüfergebnis*:</b><br><i>Test result*:</i>  | Pass  |   |   |  |
| <b>geprüft von:</b><br><i>tested by:</i>   | X    | <b>genehmigt von:</b><br><i>authorized by:</i>  | X  |  |
| <b>Datum:</b><br><i>Date:</i>  | 2023-07-10<br><small>Signed by: Harry W. C. Wu</small>  | <b>Ausstellungsdatum:</b><br><i>Issue date:</i> | 2023-07-11<br><small>Signed by: Alex Lan</small>  |  |
| <b>Stellung / Position:</b>  | Project Manager   | <b>Stellung / Position:</b>                     | Reviewer  |  |
| <b>Sonstiges /</b><br><i>Other:</i>  | FCC ID: APIVIBEBUDSD<br>IC: 6132A-VIBEBUDSD      HVIN: JBL VIBE BUDS  |   |   |  |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br><i>Condition of the test item at delivery:</i>   | Prüfmuster vollständig und unbeschädigt<br><i>Test item complete and undamaged</i>  |   |   |  |
| <small>* Legende:</small>  | <small>P(ass) = entspricht o.g. Prüfgrundlage(n)      F(ail) = entspricht nicht o.g. Prüfgrundlage(n)</small>                             |   | <small>N/A = nicht anwendbar      N/T = nicht getestet</small>                          |  |
| <small>* Legend:</small>   | <small>P(ass) = passed a.m. test specification(s)      F(ail) = failed a.m. test specification(s)</small>                                 |   | <small>N/A = not applicable      N/T = not tested</small>                               |  |
| <b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br><i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i> |   |   |   |  |

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**Remarks**  
*Anmerkungen*

|          |  |
|----------|--|
| <b>1</b> | <p>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.</p> <p>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</i></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>  |
| <b>2</b> | <p>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i></p>  |
| <b>3</b> | <p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</p> <p><i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i></p>  |
| <b>4</b> | <p>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p> |

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## Test Summary

**5.1.1 ANTENNA REQUIREMENT**

RESULT: *Pass*

**5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER**

RESULT: *Pass*

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**

RESULT: *Pass*

**5.1.4 99%dB BANDWIDTH**

RESULT: *Pass*

**5.1.5 6dB BANDWIDTH**

RESULT: *Pass*

**5.1.6 FREQUENCY STABILITY**

RESULT: *Pass*

**5.1.7 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH**

RESULT: *Pass*

**5.1.8 RADIATED SPURIOUS EMISSION**

RESULT: *Pass*

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## 1 General Remarks

### 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of left earbud.

Appendix C: Test Results of right earbud.

## 2 Test Sites

### 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**

No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District,  
Shenzhen, Guangdong, China/518110

FCC Registration No.: 694916

IC Registration No.: 25069 and the CAB identifier is CN0078.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| <b>Radio Spectrum Testing (TS8997)</b>         |                     |                   |                   |                   |
|--|---------------------|-------------------|-------------------|-------------------|
| <b>Equipment</b>                               | <b>Manufacturer</b> | <b>Model</b>      | <b>Serial No.</b> | <b>Cal. until</b> |
| EXA Signal Analyzer, Multi-touch               | Keysight            | N9010B            | MY60241175        | 2023-10-10        |
| MXG X-Series RF Vector Signal Generator        | Keysight            | N5182B            | MY61250137        | 2023-10-10        |
| EXG X-Series Microwave Analog Signal Generator | Keysight            | N5173B            | MY61250141        | 2023-10-10        |
| DC Power Supply                                | Keysight            | E3642A            | MY61276100        | 2023-10-10        |
| Wireless Connectivity Tester                   | R&S                 | CMW270            | 102505            | 2023-10-10        |
| Power Control Unit                             | Tonscend            | JS0806-4ADC       | N/A               | 2023-10-10        |
| Automation Control Unit                        | Tonscend            | JS0806-2          | 21C8060396        | 2023-10-10        |
| Test Software                                  | Tonscend            | JS1120-3          | N/A               | N/A               |
| Control PC                                     | Lenovo              | TianYi510S-071MB  | Y LX23JMF         | N/A               |
| Humid & Temp Programmable Tester               | BOST                | NTH090-60         | 19040801          | 2024-03-15        |
| Shielding Room 8#                              | Albatross           | SR8               | APC17151-SR8      | 2024-06-22        |
| <b>Unwanted Emission Testing (TS9975)</b>      |                     |                   |                   |                   |
| <b>Equipment</b>                               | <b>Manufacturer</b> | <b>Model</b>      | <b>Serial No.</b> | <b>Cal. until</b> |
| EMI Test Receiver                              | R&S                 | ESR 7             | 102021            | 2023-08-02        |
| Signal Analyzer                                | R&S                 | FSV 40            | 101439            | 2023-08-01        |
| System Controller Interface                    | R&S                 | SCI-100           | S10010038         | N/A               |
| Filterbank                                     | R&S                 | Wlan              | 100759            | 2023-08-01        |
| OSP  | R&S                 | OSP 120           | 102040            | N/A               |
| Pre-amplifier                                  | R&S                 | SCU08F1           | 08320031          | 2023-08-02        |
| Amplifier                                      | R&S                 | SCU-18F           | 180070            | 2023-08-02        |
| Amplifier                                      | R&S                 | SCU40A            | 100475            | 2023-08-02        |
| Trilog Broadband Antenna (30 MHz - 7 GHz)      | Schwarzbeck         | VULB 9162         | 193               | 2024-08-06        |
| Double-Ridged Antenna (1 -18 GHz)              | ETS-LINDGREN        | 3117              | 00218717          | 2024-08-06        |
| Wideband Ridged Horn Antenna (18-40 GHz)       | Steatite            | QMS-00880         | 19067             | 2024-08-27        |
| Active Loop Antenna                            | Schwarzbeck         | FMZB 1513         | 302               | 2023-08-06        |
| Test software                                  | R&S                 | EMC32 (V10.60.10) | N/A               | N/A               |
| Control PC                                     | Dell                | OptiPlex 7050     | 36NV9P2           | N/A               |
| 3m Semi-Anechoic Chamber                       | Albatross           | SAC-3m            | APC17151-SAC      | 2024-06-22        |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

| Parameter                     | Uncertainty (k=2) |
|-------------------------------|-------------------|
| Occupied Channel Bandwidth    | ± 2.08 %          |
| RF output power, conducted    | ± 0.99 dB         |
| RF power density, conducted   | ± 0.99 dB         |
| Unwanted Emissions, conducted | ± 0.89 dB         |
| All emissions, radiated       | ± 4.17 dB         |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China/518110 is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

### 3 General Product Information

#### 3.1 Product Function and Intended Use

The EUTs are Bluetooth earbuds, which supports Bluetooth dual mode technology.

There is no difference except the PCB layout of left and right earbuds.

For details refer to the User Manual and Circuit Diagram.

#### 3.2 Ratings and System Details

**Table 2: Technical Specification of EUT**

| General Information of EUT                             | Value  |
|--|--|
| Kind of Equipment                                      | BLUETOOTH HEADSET  |
| Type Designation                                       | JBL VIBE BUDS  |
| Trademark  | JBL  |
| FCC ID   | APIVIBEBUDSD   |
| IC   | 6132A-VIBEBUDSD  |
| HVIN   | JBL VIBE BUDS  |
| Extreme Temperature Range                              | 0°C to +45°C   |
| Operating Voltage                                      | DC 3.8V, 47mAh via built-in Li-ion cell battery<br>DC 5V, 100mA via charging case for charging |
| <b>Technical Specification of Classical Bluetooth</b>  |  |
| Bluetooth Core Version                                 | Bluetooth 5.3  |
| Operating Frequency band                               | 2402 ~ 2480 MHz  |
| Channel Number   | 79 channels  |
| Channel separation                                     | 1MHz   |
| Modulation   | GFSK, $\pi/4$ DQPSK, 8DPSK   |
| Antenna Type   | FPC Antenna  |
| Antenna Gain   | -1.6 dBi for left earbud<br>-1.6 dBi for right earbud  |
| <b>Technical Specification of Bluetooth Low Energy</b> |  |
| Bluetooth Core Version                                 | Bluetooth 5.3  |
| Operating Frequency band                               | 2402 ~ 2480 MHz  |
| Channel Number   | 40 channels  |
| Channel separation                                     | 2MHz   |
| Data rate  | 1Mbps  |
| Modulation   | GFSK   |
| Antenna Type   | FPC Antenna  |
| Antenna Gain   | -1.6 dBi for left earbud<br>-1.6 dBi for right earbud  |



**Table 3: RF Channel and Frequency of Classic Bluetooth**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|
| <b>00</b>  | <b>2402.00</b>  | 20         | 2422.00         | 40         | 2442.00         | 60         | 2462.00         |
| 01         | 2403.00         | 21         | 2423.00         | 41         | 2443.00         | 61         | 2463.00         |
| 02         | 2404.00         | 22         | 2424.00         | 42         | 2444.00         | 62         | 2464.00         |
| 03         | 2405.00         | 23         | 2425.00         | 43         | 2445.00         | 63         | 2465.00         |
| 04         | 2406.00         | 24         | 2426.00         | 44         | 2446.00         | 64         | 2466.00         |
| 05         | 2407.00         | 25         | 2427.00         | 45         | 2447.00         | 65         | 2467.00         |
| 06         | 2408.00         | 26         | 2428.00         | 46         | 2448.00         | 66         | 2468.00         |
| 07         | 2409.00         | 27         | 2429.00         | 47         | 2449.00         | 67         | 2469.00         |
| 08         | 2410.00         | 28         | 2430.00         | 48         | 2450.00         | 68         | 2470.00         |
| 09         | 2411.00         | 29         | 2431.00         | 49         | 2451.00         | 69         | 2471.00         |
| 10         | 2412.00         | 30         | 2432.00         | 50         | 2452.00         | 70         | 2472.00         |
| 11         | 2413.00         | 31         | 2433.00         | 51         | 2453.00         | 71         | 2473.00         |
| 12         | 2414.00         | 32         | 2434.00         | 52         | 2454.00         | 72         | 2474.00         |
| 13         | 2415.00         | 33         | 2435.00         | 53         | 2455.00         | 73         | 2475.00         |
| 14         | 2416.00         | 34         | 2436.00         | 54         | 2456.00         | 74         | 2476.00         |
| 15         | 2417.00         | 35         | 2437.00         | 55         | 2457.00         | 75         | 2477.00         |
| 16         | 2418.00         | 36         | 2438.00         | 56         | 2458.00         | 76         | 2478.00         |
| 17         | 2419.00         | 37         | 2439.00         | 57         | 2459.00         | 77         | 2479.00         |
| 18         | 2420.00         | 38         | 2440.00         | 58         | 2460.00         | <b>78</b>  | <b>2480.00</b>  |
| 19         | 2421.00         | <b>39</b>  | <b>2441.00</b>  | 59         | 2461.00         | --         | --              |

**Table 4: RF Channel and Frequency of Bluetooth Low Energy**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|
| <b>00</b>  | <b>2402.00</b>  | 10         | 2422.00         | 20         | 2442.00         | 30         | 2462.00         |
| 01         | 2404.00         | 11         | 2424.00         | 21         | 2444.00         | 31         | 2464.00         |
| 02         | 2406.00         | 12         | 2426.00         | 22         | 2446.00         | 32         | 2466.00         |
| 03         | 2408.00         | 13         | 2428.00         | 23         | 2448.00         | 33         | 2468.00         |
| 04         | 2410.00         | 14         | 2430.00         | 24         | 2450.00         | 34         | 2470.00         |
| 05         | 2412.00         | 15         | 2432.00         | 25         | 2452.00         | 35         | 2472.00         |
| 06         | 2414.00         | 16         | 2434.00         | 26         | 2454.00         | 36         | 2474.00         |
| 07         | 2416.00         | 17         | 2436.00         | 27         | 2456.00         | 37         | 2476.00         |
| 08         | 2418.00         | 18         | 2438.00         | 28         | 2458.00         | 38         | 2478.00         |
| 09         | 2420.00         | <b>19</b>  | <b>2440.00</b>  | 29         | 2460.00         | <b>39</b>  | <b>2480.00</b>  |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth LE transmitting mode
  - 1. Low channel
  - 2. Middle channel
  - 3. High channel
- B. On, Bluetooth connecting mode
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

- Application Form
- Block Diagram
- FCC/IC Label and Location Info
- Operation Description
- Photo Document
- Schematics
- User Manual

## 4 Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all test items were applied on model JBL VIBE BUDS with left & right earbuds.

### 4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

| Description | Manufacturer | Model | S/N       |
|-------------|--------------|-------|-----------|
| Laptop      | Lenovo       | T480  | PF-16A6N8 |

### 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

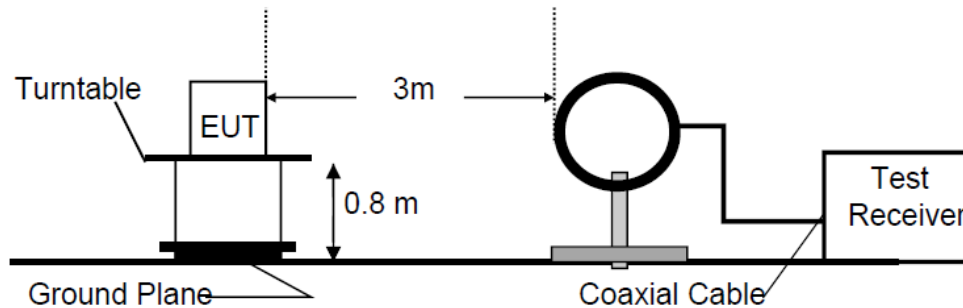


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

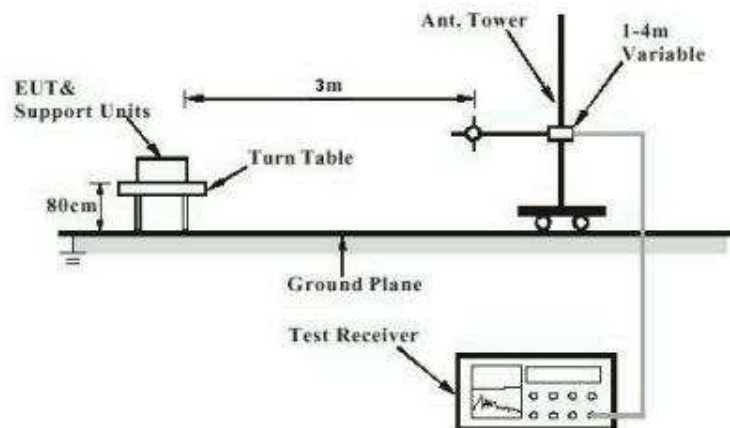
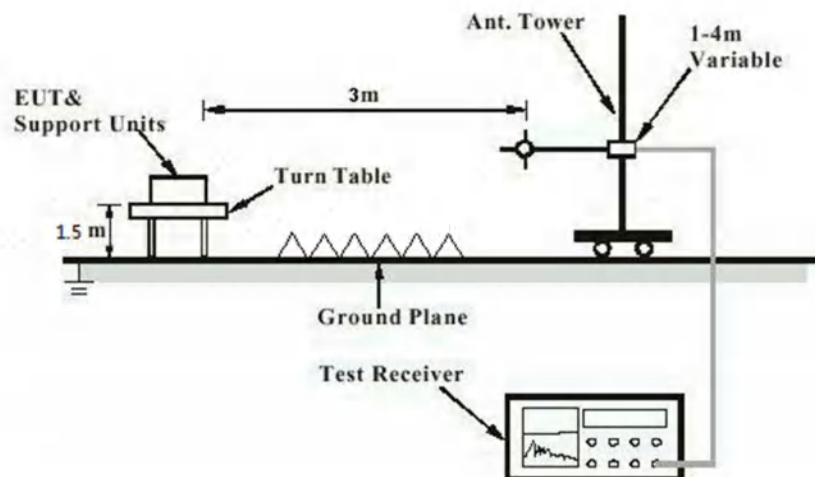
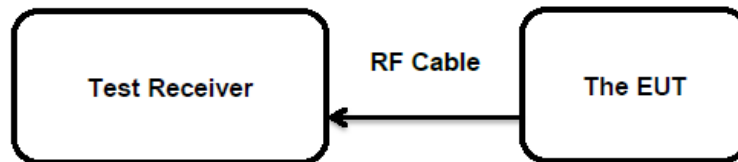


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



**Diagram of Measurement Configuration for Conducted Transmitter Measurement**



## 5 Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**RESULT:** **Pass**

**Test Specification**

|               |   |   |
|---------------|---|---|
| Test standard | : | FCC Part 15.247(b)(4) and Part 15.203                               |
|               | : | RSS-Gen Clause 6.7  |
| Limit         | : | the use of antennas with directional gains that do not exceed 6 dBi |

According to the manufacturer declared, the EUT has one FPC antenna , the directional gain of antennas are -1.6 dBi for left earbud & -1.6 dBi for right earbud , and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

### 5.1.2 Maximum Peak Conducted Output Power

**RESULT:** **Pass**
**Test Specification**

Test standard : FCC Part 15.247(b)(3)  
                   : RSS-247 Clause 5.4(d)  
 Basic standard : ANSI C63.10: 2013  
 Limits : < 1 Watt (Maximum Conducted Peak Power)  
           : e.i.r.p. <4W  
 Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-05-18 to 2023-06-05  
 Input voltage : DC 3.8V  
 Operation mode : A  
 Test channel : Low / Middle / High  
 Ambient temperature : 24.8 °C  
 Relative humidity : 55 %  
 Atmospheric pressure : 101 kPa

For details refer to following test result.

**Table 6: Test Result of Maximum Peak Conducted Output Power, Left earbud**

| Data Rate                     | Test Channel (MHz) | Measured Peak Power |        | Limit (W) |
|-------------------------------|--------------------|---------------------|--------|-----------|
|                               |                    | (dBm)               | (W)    |           |
| 1 Mbps                        | 2402               | 7.48                | 0.0056 | < 1.0     |
|                               | 2440               | 8.05                | 0.0064 |           |
|                               | 2480               | 8.48                | 0.0070 |           |
| <b>Maximum Measured Value</b> |                    | 8.48                | 0.0070 |           |

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 6.88 dBm less than 4W (36 dBm).

**Table 7: Test Result of Maximum Peak Conducted Output Power, Right earbud**

| Data Rate                     | Test Channel (MHz) | Measured Peak Power |        | Limit (W) |
|-------------------------------|--------------------|---------------------|--------|-----------|
|                               |                    | (dBm)               | (W)    |           |
| 1 Mbps                        | 2402               | 6.58                | 0.0045 | < 1.0     |
|                               | 2440               | 7.18                | 0.0052 |           |
|                               | 2480               | 7.67                | 0.0058 |           |
| <b>Maximum Measured Value</b> |                    | 7.67                | 0.0058 |           |

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 6.07 dBm less than 4W (36 dBm).

Prüfbericht-Nr.: **CN23C9SQ 002**  
Test report no.:Seite 16 von 22  
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### 5.1.3 Conducted Power Spectral Density

RESULT:

Pass

**Test Specification**

|                   |   |   |
|-------------------|---|---|
| Test standard     | : | FCC Part 15.247(e)<br>RSS-247 Clause 5.2(b) |
| Basic standard    | : | ANSI C63.10: 2013                           |
| Limits            | : | 8 dBm / 3kHz                                |
| Kind of test site | : | Shielded Room                               |

**Test Setup**

|                      |   |                          |
|----------------------|---|--------------------------|
| Date of testing      | : | 2023-05-18 to 2023-06-05 |
| Input voltage        | : | DC 3.8V                  |
| Operation mode       | : | A                        |
| Test channel         | : | Low / Middle / High      |
| Ambient temperature  | : | 24.8 °C                  |
| Relative humidity    | : | 55 %                     |
| Atmospheric pressure | : | 101 kPa                  |

For the measurement records, refer to the appendix B&amp;C.



Prüfbericht-Nr.: **CN23C9SQ 002**  
Test report no.:Seite 17 von 22  
Page 17 of 22**5.1.4 99%dB Bandwidth****RESULT:****Pass****Test Specification**

Test standard : RSS-Gen clause 6.7  
Basic standard : ANSI C63.10: 2013  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-05-18 to 2023-06-05  
Input voltage : DC 3.8V  
Operation mode : A  
Test channel : Low / Middle / High  
Ambient temperature : 24.8 °C  
Relative humidity : 55 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B&C.

Prüfbericht-Nr.: **CN23C9SQ 002**  
Test report no.:Seite 18 von 22  
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### 5.1.5 6dB Bandwidth

RESULT:

Pass

#### Test Specification

|                   |   |  |
|-------------------|---|--|
| Test standard     | : | FCC Part 15.247(a)(2)<br>RSS-247 Clause 5.2(a) |
| Basic standard    | : | ANSI C63.10: 2013                              |
| Kind of test site | : | Shielded Room                                  |

#### Test Setup

|                      |   |                          |
|----------------------|---|--------------------------|
| Date of testing      | : | 2023-05-18 to 2023-06-05 |
| Input voltage        | : | DC 3.8V                  |
| Operation mode       | : | A                        |
| Test channel         | : | Low / Middle / High      |
| Ambient temperature  | : | 24.8 °C                  |
| Relative humidity    | : | 55 %                     |
| Atmospheric pressure | : | 101 kPa                  |

For the measurement records, refer to the appendix B&C.

Prüfbericht-Nr.: **CN23C9SQ 002**  
Test report no.:Seite 19 von 22  
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### 5.1.6 Frequency stability

RESULT:

Pass

**Test Specification**

Test standard : RSS-247 Clause 8.11  
Basic standard : ANSI C63.10: 2013  
Limits : within at least the central 80% of its permitted operating frequency band (2400-2483.5MHz)  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-05-18 to 2023-06-05  
Input voltage : DC 3.8V  
Operation mode : B  
Ambient temperature : 24.8 °C  
Relative humidity : 55 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B &amp; C

Prüfbericht-Nr.: **CN23C9SQ 002**  
Test report no.:Seite 20 von 22  
Page 20 of 22**5.1.7 Conducted Spurious Emissions Measured in 100 kHz Bandwidth****RESULT:** **Pass****Test Specification**

|                   |   |  |
|-------------------|---|--|
| Test standard     | : | FCC Part 15.247(d)<br>RSS-247 Clause 5.5   |
| Basic standard    | : | ANSI C63.10: 2013  |
| Limits            | : | 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);<br>In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a) |
| Kind of test site | : | Shielded Room  |

**Test Setup**

|                      |   |                          |
|----------------------|---|--------------------------|
| Date of testing      | : | 2023-05-18 to 2023-06-05 |
| Input voltage        | : | DC 3.8V                  |
| Operation mode       | : | A                        |
| Test channel         | : | Low / Middle / High      |
| Ambient temperature  | : | 24.8 °C                  |
| Relative humidity    | : | 55 %                     |
| Atmospheric pressure | : | 101 kPa                  |

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B&C.

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Test report no.:Seite 21 von 22  
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## 5.1.8 Radiated Spurious Emission

RESULT:

Pass

### Test Specification

|                   |   |   |
|-------------------|---|---|
| Test standard     | : | FCC Part 15.247(d) & FCC Part 15.205<br>RSS-247 Clause 3.3 & 5.5      |
| Basic standard    | : | ANSI C63.10: 2013   |
| Limits            | : | Refer to 15.209(a) of FCC part 15.247(d)<br>RSS-Gen Table 4 & Table 5 |
| Kind of test site | : | 3m Semi-anechoic Chamber  |

### Test Setup

|                      |   |                          |
|----------------------|---|--------------------------|
| Date of testing      | : | 2023-05-18 to 2023-06-05 |
| Input voltage        | : | DC 3.8V                  |
| Operation mode       | : | A                        |
| Test channel         | : | Low / Middle / High      |
| Ambient temperature  | : | Refer to test result     |
| Relative humidity    | : | Refer to test result     |
| Atmospheric pressure | : | 101 kPa                  |

### Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B&C.

## 6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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## Appendix B: Test Results of Left earbud

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### Appendix B.1: Test Results of Conducted Power Spectral Density

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402    | -8.23                | ≤8.00           | PASS    |
|          |         | 2440    | -7.62                | ≤8.00           | PASS    |
|          |         | 2480    | -7.25                | ≤8.00           | PASS    |



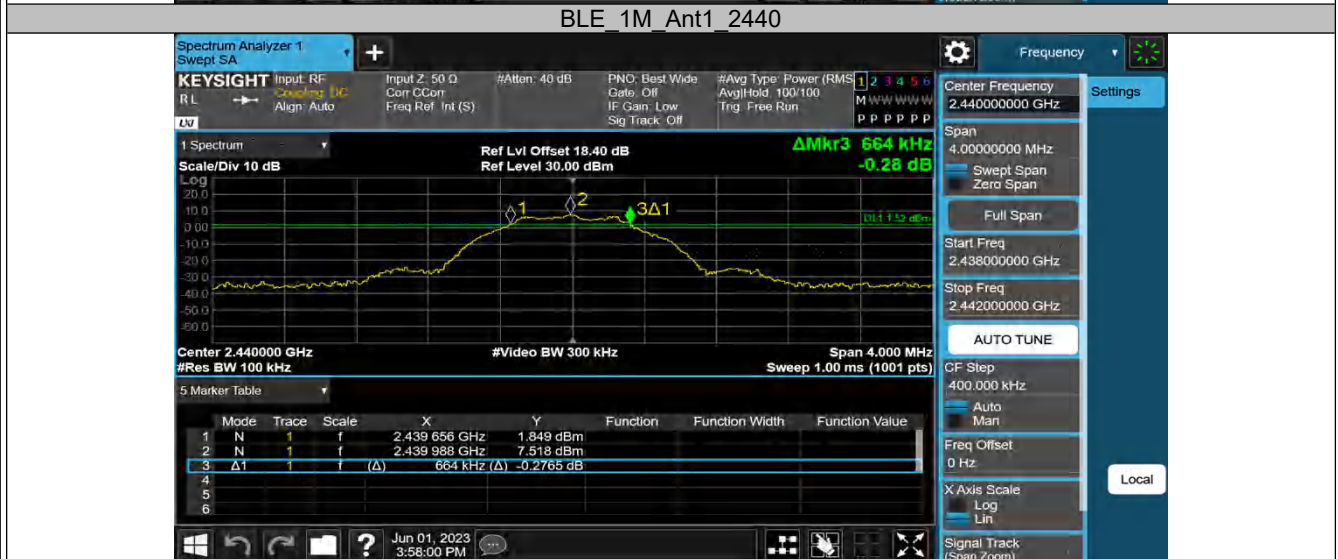


BLE 1M Ant1 2480



Appendix B.2: Test Results of 6dB Bandwidth

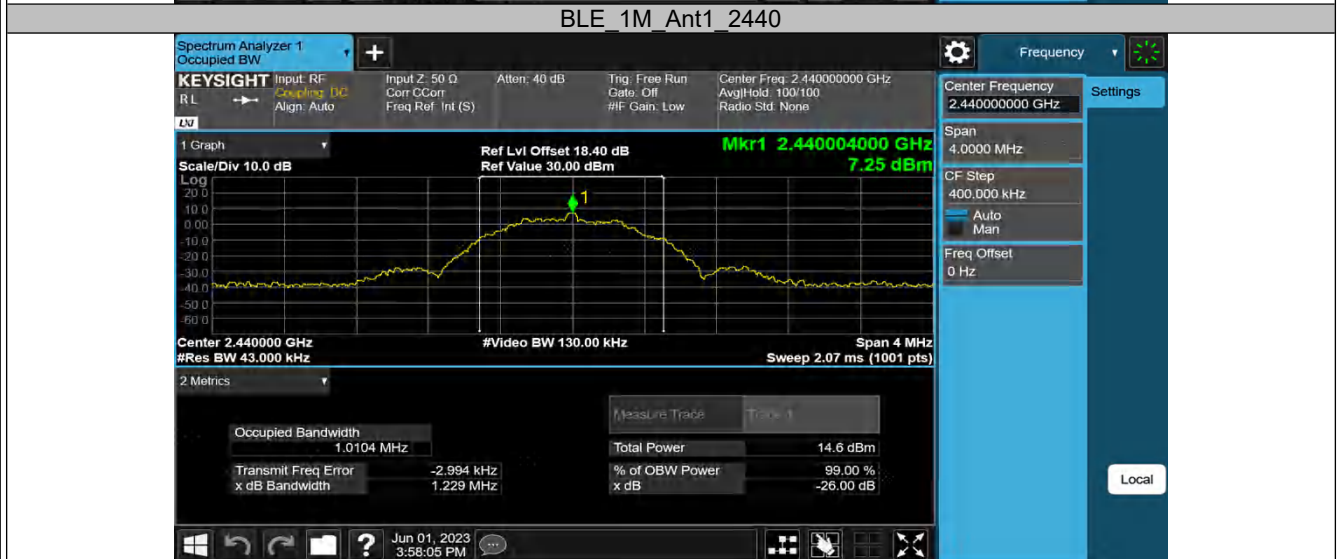
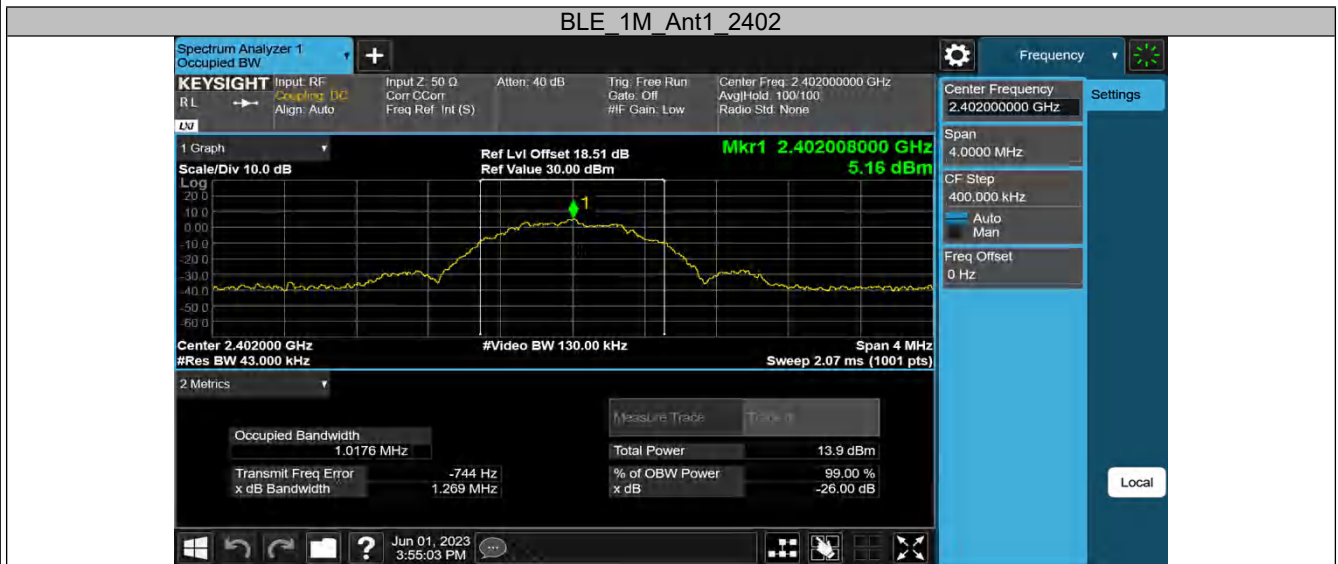
| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 0.620        | 2401.692 | 2402.312 | 0.5        | PASS    |
|          |         | 2440    | 0.664        | 2439.656 | 2440.320 | 0.5        | PASS    |
|          |         | 2480    | 0.664        | 2479.656 | 2480.320 | 0.5        | PASS    |

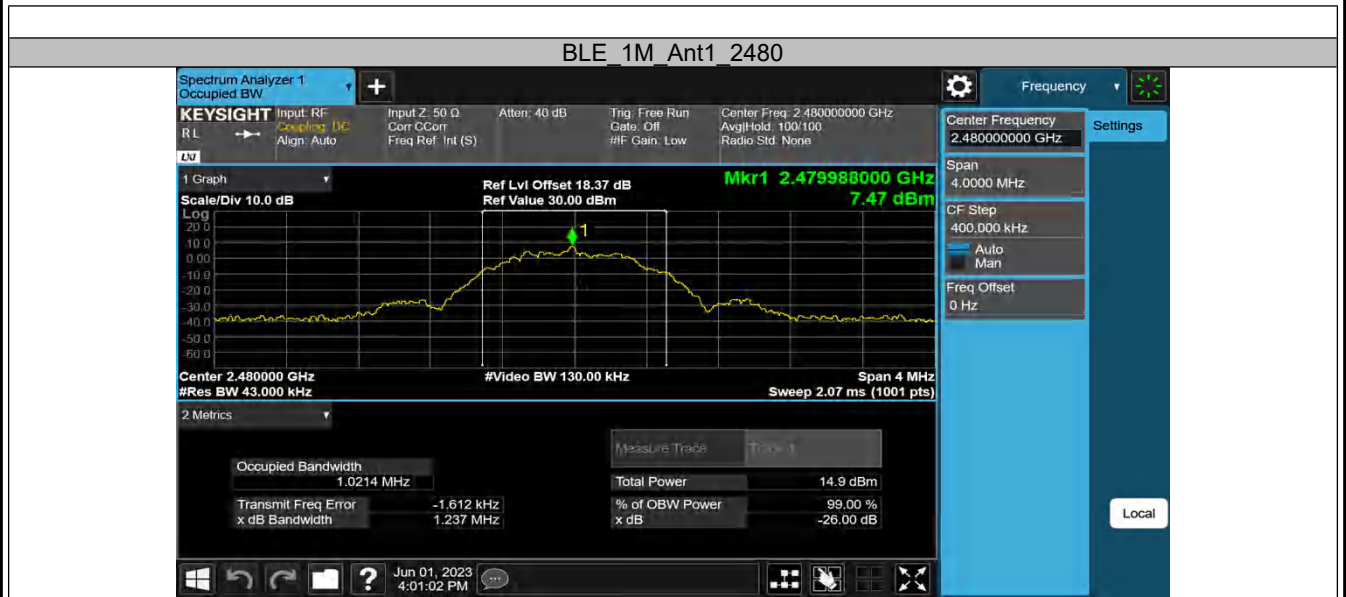




### Appendix B.3: Test Results of 99% Bandwidth

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|---------|-----------|-----------|-----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 1.0176    | 2401.4905 | 2402.5081 | ---        | ---     |
|          |         | 2440    | 1.0104    | 2439.4918 | 2440.5022 | ---        | ---     |
|          |         | 2480    | 1.0214    | 2479.4877 | 2480.5091 | ---        | ---     |





### Appendix B.4: Test Results of Frequency stability

|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2402 |
|--------------------|------|

#### Test result of frequency tolerance of voltage variation

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2401.995          | 5                         | 2.08              | 10          |
| DC 4.18V | 2401.996          | 4                         | 1.67              |             |
| DC 3.42V | 2401.995          | 5                         | 2.08              |             |

#### Test result of frequency tolerance of temperature variation

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2401.989          | 11                        | 4.58              | 10          |
| -20              | 2401.989          | 11                        | 4.58              |             |
| -10              | 2401.990          | 10                        | 4.16              |             |
| 0                | 2401.992          | 5                         | 2.08              |             |
| 10               | 2401.995          | 5                         | 2.08              |             |
| 20               | 2401.995          | 5                         | 2.08              |             |
| 30               | 2401.995          | 5                         | 2.08              |             |
| 40               | 2401.994          | 6                         | 2.50              |             |
| 50               | 2401.994          | 6                         | 2.50              |             |
| 55               | 2401.995          | 5                         | 2.08              |             |

|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2440 |
|--------------------|------|

#### Test result of frequency tolerance of voltage variation

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2439.994          | -6                        | -2.45902          | 10          |
| DC 4.18V | 2439.995          | -5                        | -2.04918          |             |
| DC 3.42V | 2439.994          | -6                        | -2.45902          |             |

#### Test result of frequency tolerance of temperature variation

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2439.994          | -6                        | -2.45902          | 10          |
| -20              | 2439.996          | -4                        | -1.63934          |             |
| -10              | 2439.995          | -5                        | -2.04918          |             |
| 0                | 2439.998          | -2                        | -0.81967          |             |
| 10               | 2439.996          | -4                        | -1.63934          |             |
| 20               | 2439.995          | -5                        | -2.04918          |             |
| 30               | 2439.996          | -4                        | -1.63934          |             |
| 40               | 2439.996          | -4                        | -1.63934          |             |
| 50               | 2439.997          | -3                        | -1.22951          |             |
| 55               | 2439.995          | -5                        | -2.04918          |             |



|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2480 |
|--------------------|------|

**Test result of frequency tolerance of voltage variation**

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2479.997          | -3                        | -1.21             | 10          |
| DC 4.18V | 2479.998          | -2                        | -0.81             |             |
| DC 3.42V | 2479.997          | -3                        | -1.21             |             |

**Test result of frequency tolerance of temperature variation**

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2479.995          | -5                        | -2.02             | 10          |
| -20              | 2479.995          | -5                        | -2.02             |             |
| -10              | 2479.993          | -7                        | -2.82             |             |
| 0                | 2479.996          | -4                        | -1.61             |             |
| 10               | 2479.997          | -3                        | -1.21             |             |
| 20               | 2479.995          | -5                        | -2.02             |             |
| 30               | 2479.996          | -4                        | -1.61             |             |
| 40               | 2479.996          | -4                        | -1.61             |             |
| 50               | 2479.995          | -5                        | -2.02             |             |
| 55               | 2479.994          | -6                        | -2.42             |             |

### Appendix B.5: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

#### Conducted measurements

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-----------------|----------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402    | Reference       | 5.92           | 5.92        | ---        | PASS    |
|          |         |         | 30~1000         | 5.92           | -41.19      | ≤-14.08    | PASS    |
|          |         |         | 1000~26500      | 5.92           | -31.98      | ≤-14.08    | PASS    |
|          |         | 2440    | Reference       | 6.39           | 6.39        | ---        | PASS    |
|          |         |         | 30~1000         | 6.39           | -41.63      | ≤-13.61    | PASS    |
|          |         |         | 1000~26500      | 6.39           | -32.66      | ≤-13.61    | PASS    |
|          |         | 2480    | Reference       | 7.16           | 7.16        | ---        | PASS    |
|          |         |         | 30~1000         | 7.16           | -42.02      | ≤-12.84    | PASS    |
|          |         |         | 1000~26500      | 7.16           | -32.22      | ≤-12.84    | PASS    |
| BLE_2M   | Ant1    | 2402    | Reference       | 5.92           | 5.92        | ---        | PASS    |
|          |         |         | 30~1000         | 5.92           | -41.19      | ≤-14.08    | PASS    |
|          |         |         | 1000~26500      | 5.92           | -31.98      | ≤-14.08    | PASS    |
|          |         | 2440    | Reference       | 6.39           | 6.39        | ---        | PASS    |
|          |         |         | 30~1000         | 6.39           | -41.63      | ≤-13.61    | PASS    |
|          |         |         | 1000~26500      | 6.39           | -32.66      | ≤-13.61    | PASS    |
|          |         | 2480    | Reference       | 7.16           | 7.16        | ---        | PASS    |
|          |         |         | 30~1000         | 7.16           | -42.02      | ≤-12.84    | PASS    |
|          |         |         | 1000~26500      | 7.16           | -32.22      | ≤-12.84    | PASS    |





BLE 1M Ant1 2402 30~1000



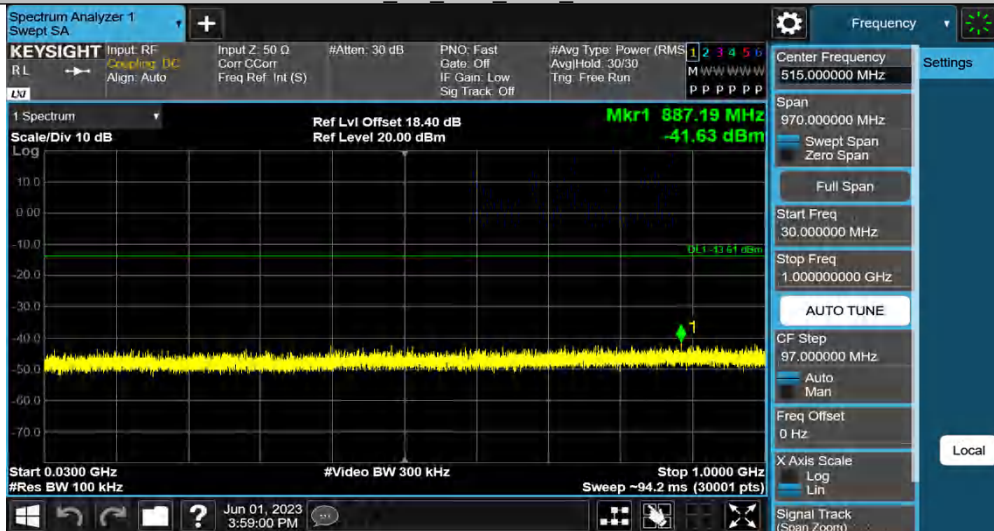
BLE 1M Ant1 2402 1000~26500



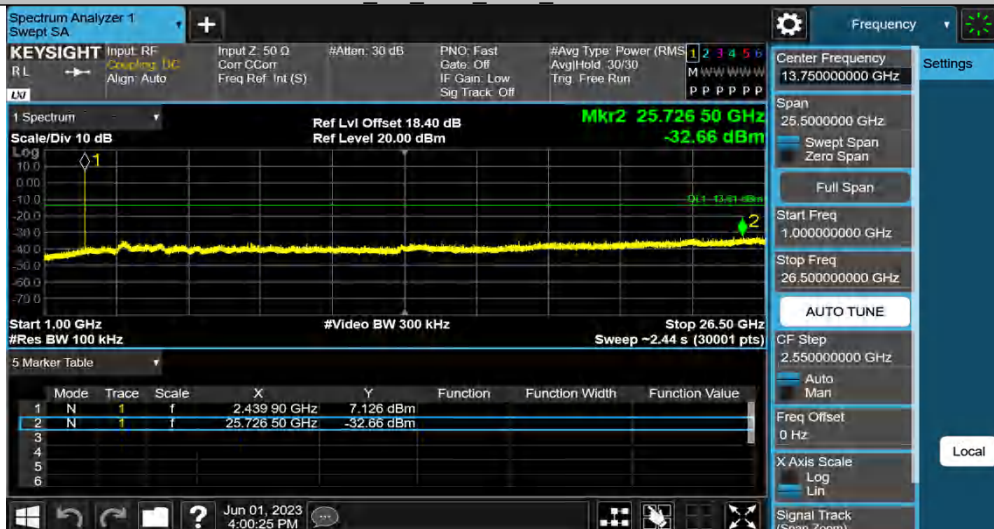
BLE 1M Ant1 2440 0~Reference



BLE 1M Ant1 2440 30~1000



BLE 1M Ant1 2440 1000~26500



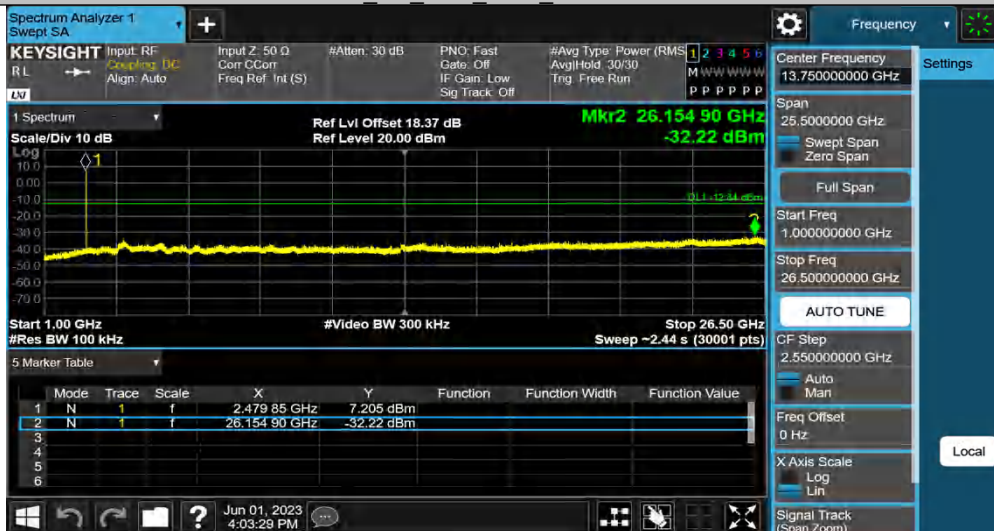
BLE 1M Ant1 2480 0~Reference



BLE 1M Ant1 2480 30~1000



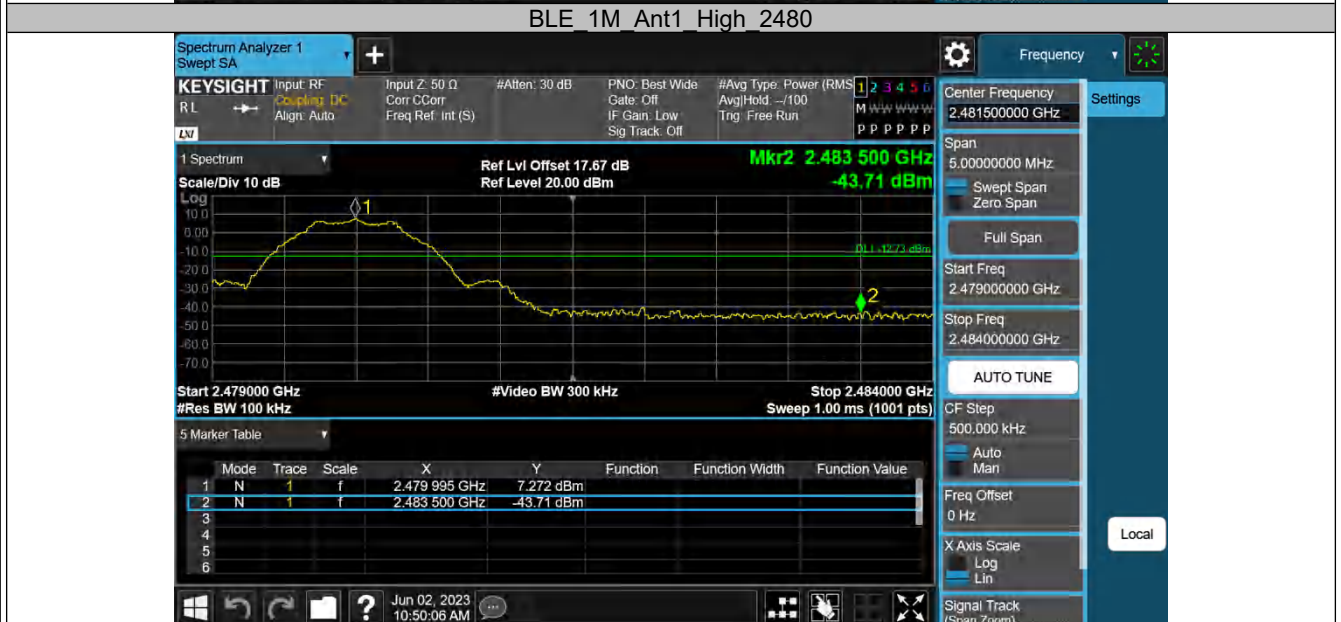
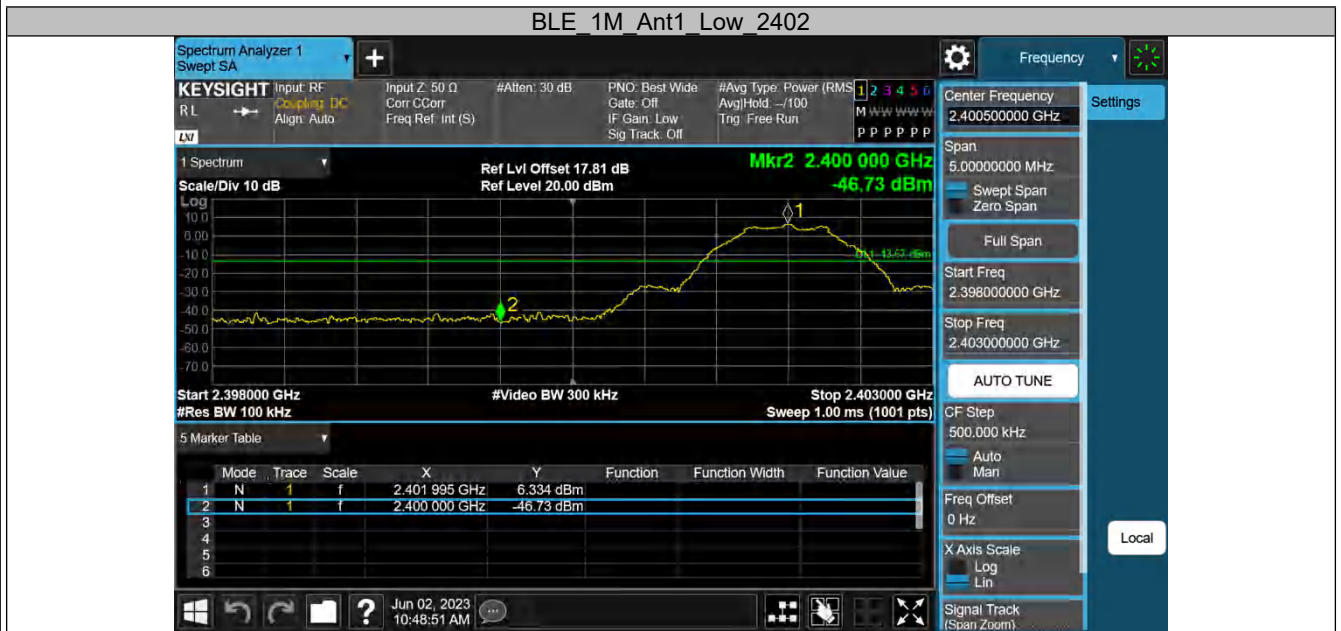
BLE 1M Ant1 2480 1000~26500





Band edge measurements

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|---------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | 6.334         | -46.73      | ≤-13.67    | PASS    |
|          |         | High   | 2480    | 7.272         | -43.71      | ≤-12.73    | PASS    |



## Appendix B.6: Test Results of Radiated Spurious Emissions

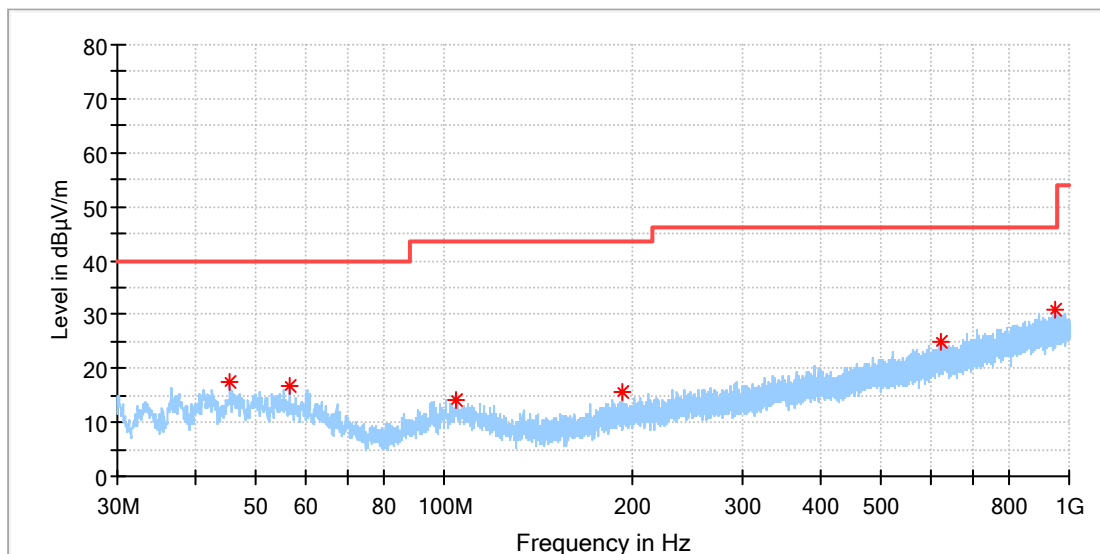
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Mid channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

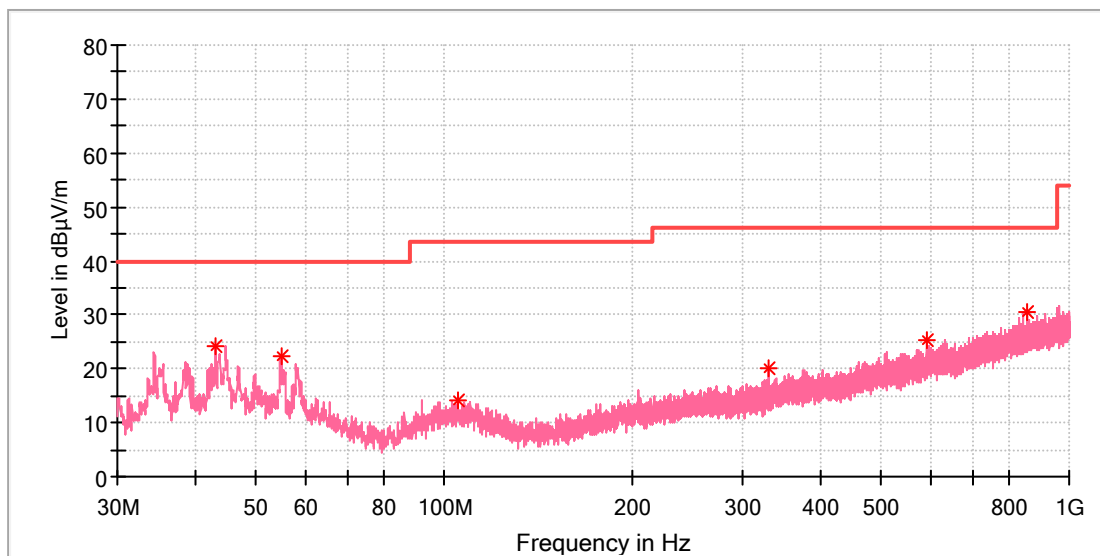


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 45.423000       | 17.59            | 40.00          | 22.41       | 100.0       | H   | 56.0          | -18.8        |
| 56.626500       | 16.65            | 40.00          | 23.35       | 100.0       | H   | 230.0         | -18.6        |
| 104.253500      | 14.05            | 43.50          | 29.45       | 100.0       | H   | 345.0         | -18.8        |
| 193.251000      | 15.79            | 43.50          | 27.71       | 100.0       | H   | 79.0          | -19.3        |
| 623.591500      | 25.11            | 46.00          | 20.89       | 100.0       | H   | 93.0          | -9.5         |
| 949.269000      | 30.78            | 46.00          | 15.22       | 100.0       | H   | 64.0          | -4.4         |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Mid channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |



## Critical Freqs

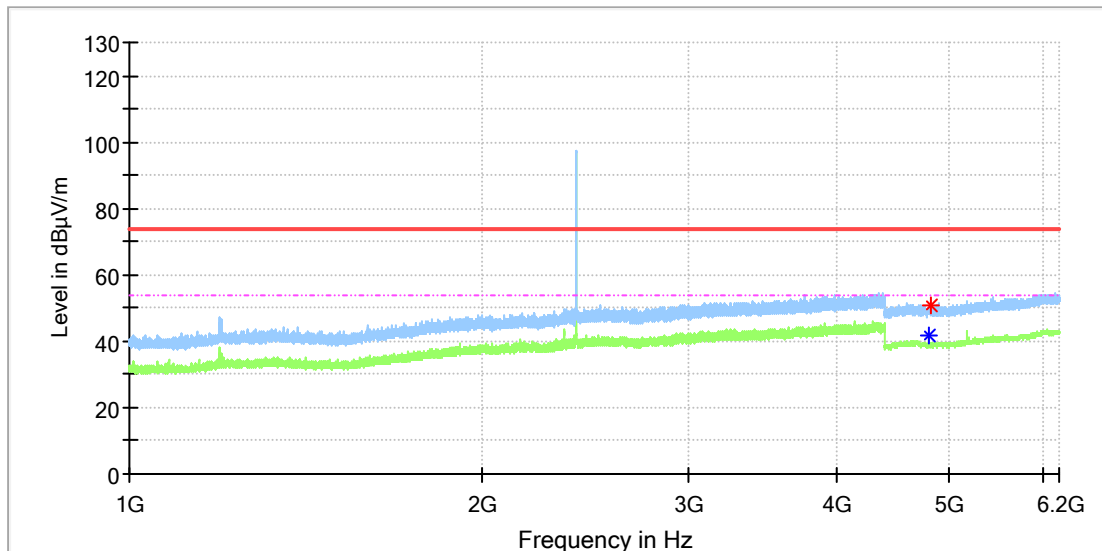
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 43.046500       | 24.31            | 40.00          | 15.69       | 100.0       | V   | 126.0         | -19.3        |
| 54.929000       | 22.37            | 40.00          | 17.63       | 100.0       | V   | 206.0         | -18.4        |
| 105.029500      | 14.15            | 43.50          | 29.35       | 100.0       | V   | 43.0          | -18.7        |
| 330.845500      | 20.00            | 46.00          | 26.00       | 100.0       | V   | 297.0         | -15.4        |
| 592.939500      | 25.39            | 46.00          | 20.61       | 100.0       | V   | 305.0         | -10.0        |
| 857.555500      | 30.39            | 46.00          | 15.61       | 100.0       | V   | 313.0         | -5.4         |

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

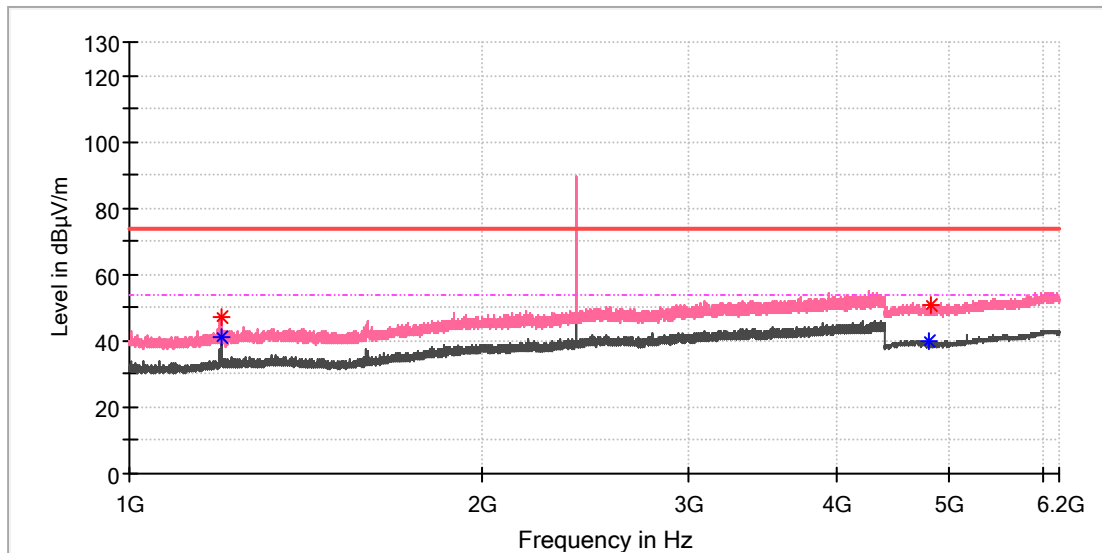


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4804.000000     | ---              | 41.51            | 54.00          | 12.49       | 150.0       | H   | 340.0         | 11.8         |
| 4820.000000     | 50.50            | ---              | 74.00          | 23.50       | 150.0       | H   | 334.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Low channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



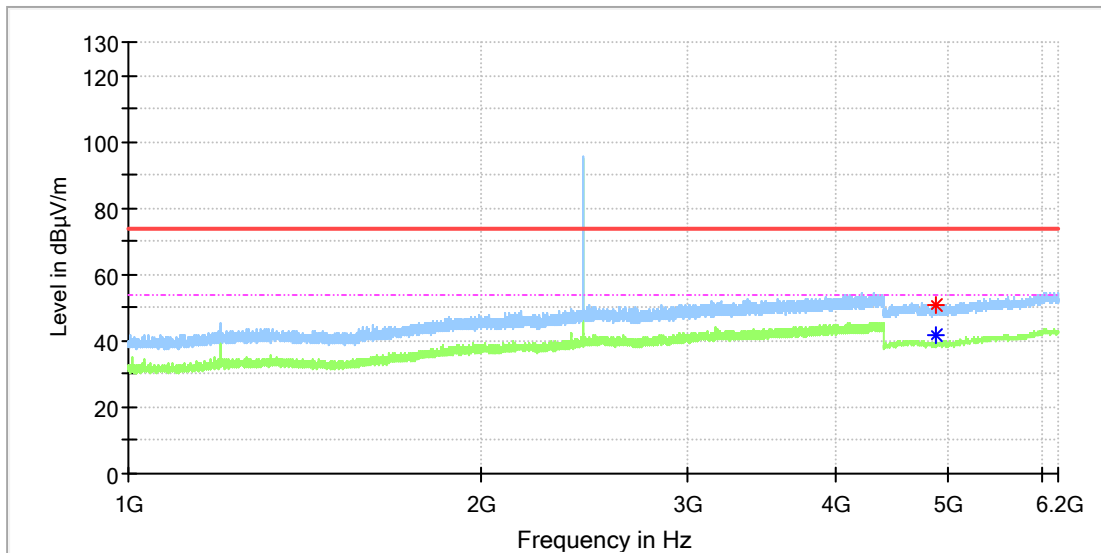
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1196.690000     | 47.45            | ---              | 74.00          | 26.55       | 150.0       | V   | 125.0         | 1.1          |
| 1197.710000     | ---              | 41.27            | 54.00          | 12.73       | 150.0       | V   | 135.0         | 1.1          |
| 4804.000000     | ---              | 40.12            | 54.00          | 13.88       | 150.0       | V   | 241.0         | 11.8         |
| 4822.000000     | 50.51            | ---              | 74.00          | 23.49       | 150.0       | V   | 359.0         | 11.8         |



### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

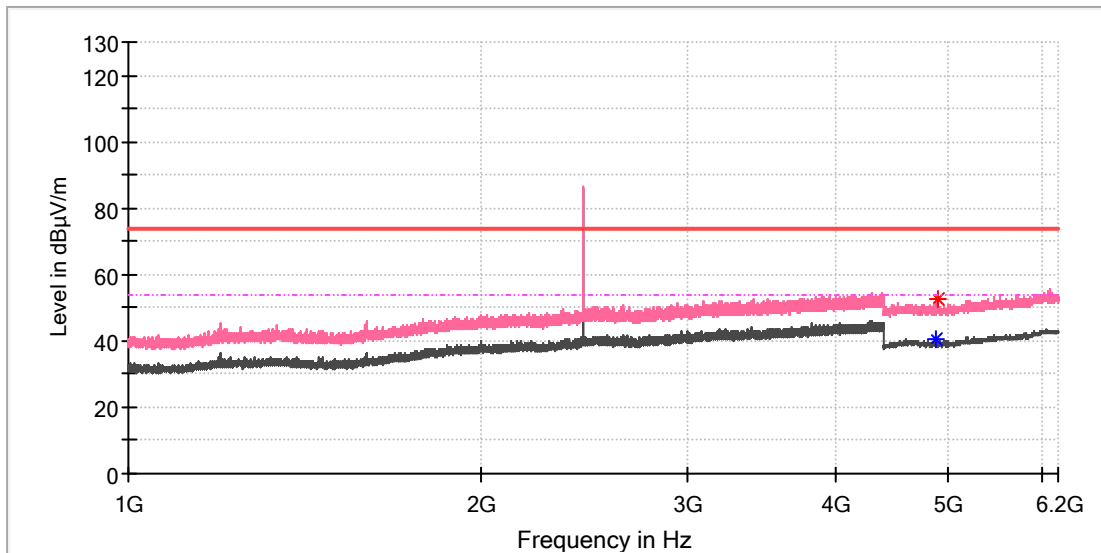


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4879.500000     | ---              | 41.94            | 54.00          | 12.06       | 150.0       | H   | 21.0          | 11.8         |
| 4880.000000     | 50.61            | ---              | 74.00          | 23.39       | 150.0       | H   | 69.0          | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

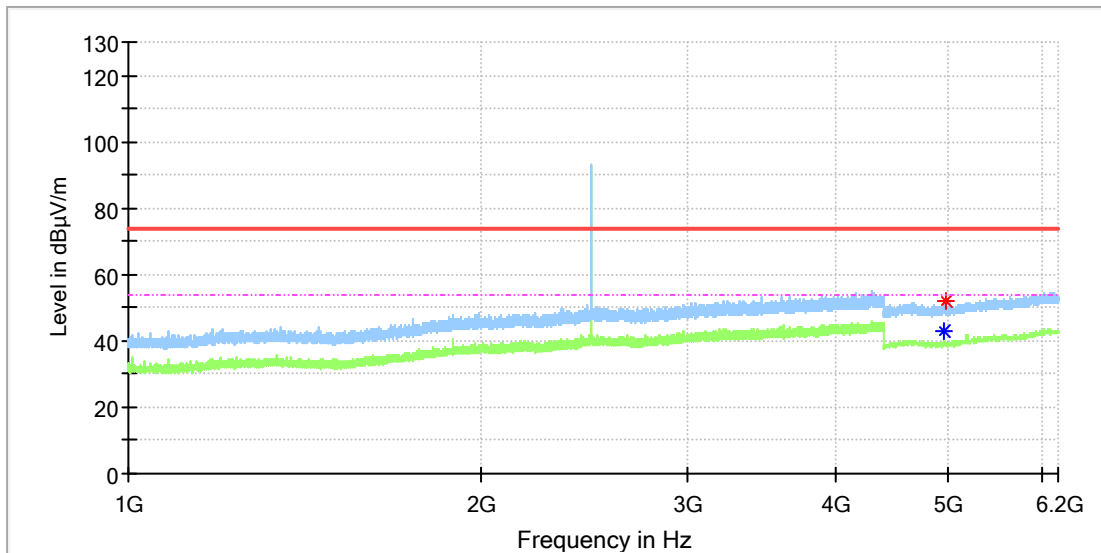


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4880.000000     | ---              | 40.23            | 54.00          | 13.77       | 150.0       | V   | 332.0         | 11.8         |
| 4904.500000     | 52.33            | ---              | 74.00          | 21.67       | 150.0       | V   | 359.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

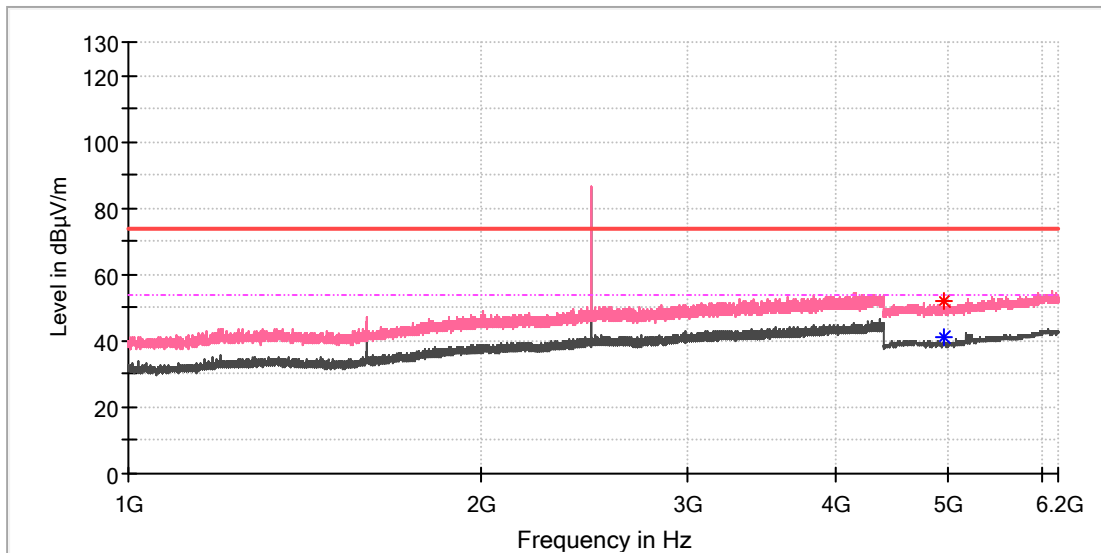


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4960.000000     | ---              | 43.22            | 54.00          | 10.78       | 150.0       | H   | 338.0         | 11.8         |
| 4969.500000     | 51.86            | ---              | 74.00          | 22.14       | 150.0       | H   | 238.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

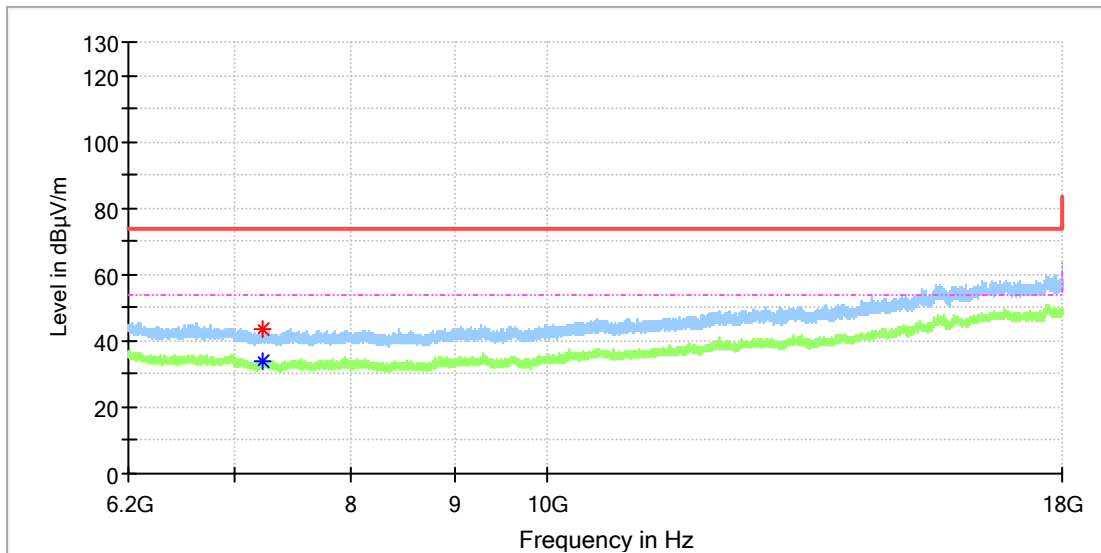


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4959.000000     | 51.70            | ---              | 74.00          | 22.30       | 150.0       | V   | 312.0         | 11.8         |
| 4959.500000     | ---              | 41.31            | 54.00          | 12.69       | 150.0       | V   | 116.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Low channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

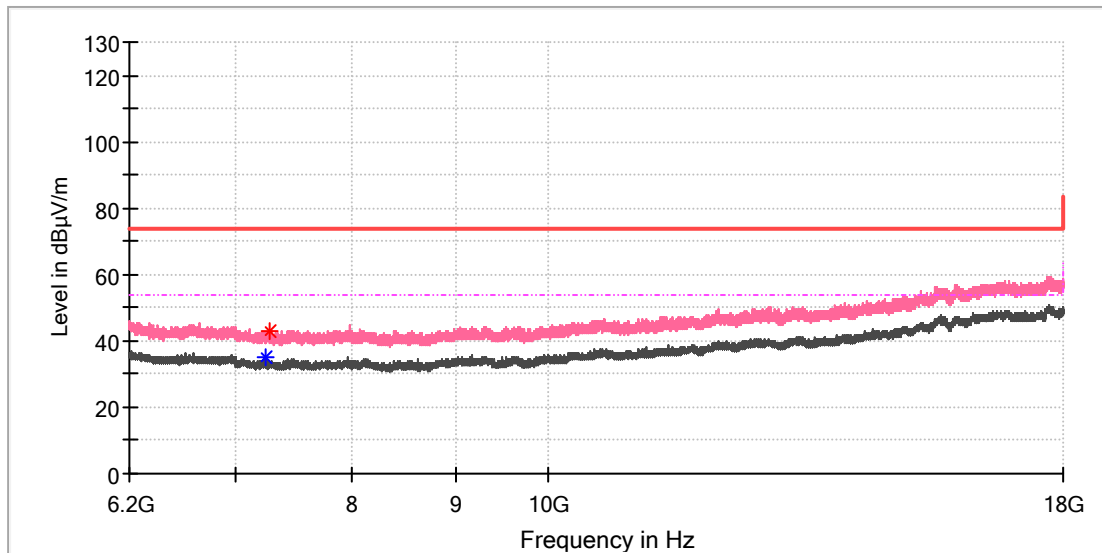


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7229.550000     | 43.43            | ---              | 74.00          | 30.57       | 150.0       | H   | 173.0         | 8.6          |
| 7232.008333     | ---              | 33.82            | 54.00          | 20.18       | 150.0       | H   | 310.0         | 8.6          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Low channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

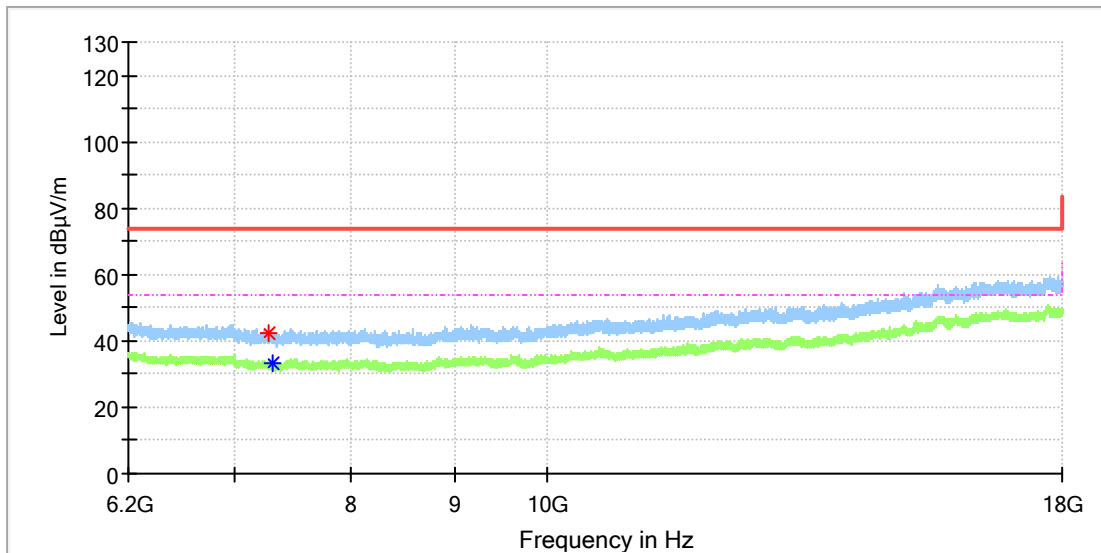


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7249.708333     | ---              | 34.83            | 54.00          | 19.17       | 150.0       | V   | 258.0         | 8.5          |
| 7282.650000     | 43.06            | ---              | 74.00          | 30.94       | 150.0       | V   | 0.0           | 8.4          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

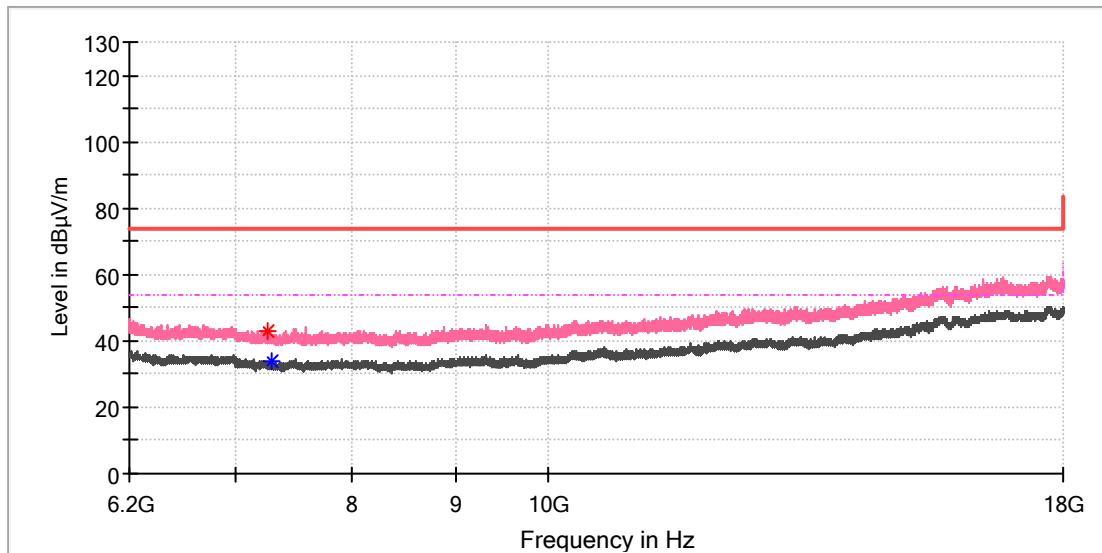


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7284.616667     | 42.57            | ---              | 74.00          | 31.43       | 150.0       | H   | 0.0           | 8.4          |
| 7305.758333     | ---              | 33.40            | 54.00          | 20.60       | 150.0       | H   | 174.0         | 8.3          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



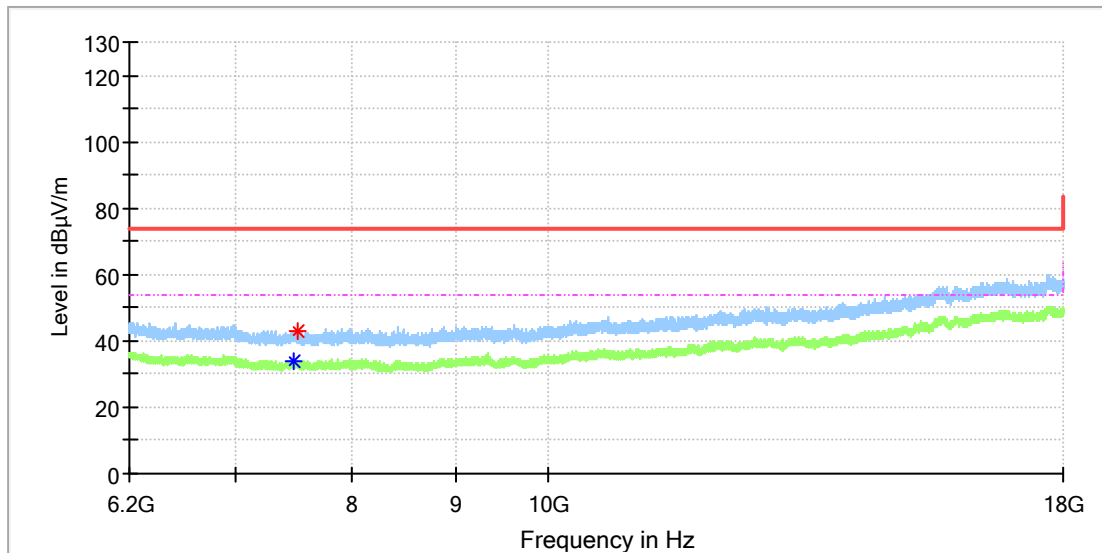
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7259.541667     | 42.99            | ---              | 74.00          | 31.01       | 150.0       | V   | 353.0         | 8.5          |
| 7290.516667     | ---              | 33.92            | 54.00          | 20.08       | 150.0       | V   | 33.0          | 8.3          |



### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

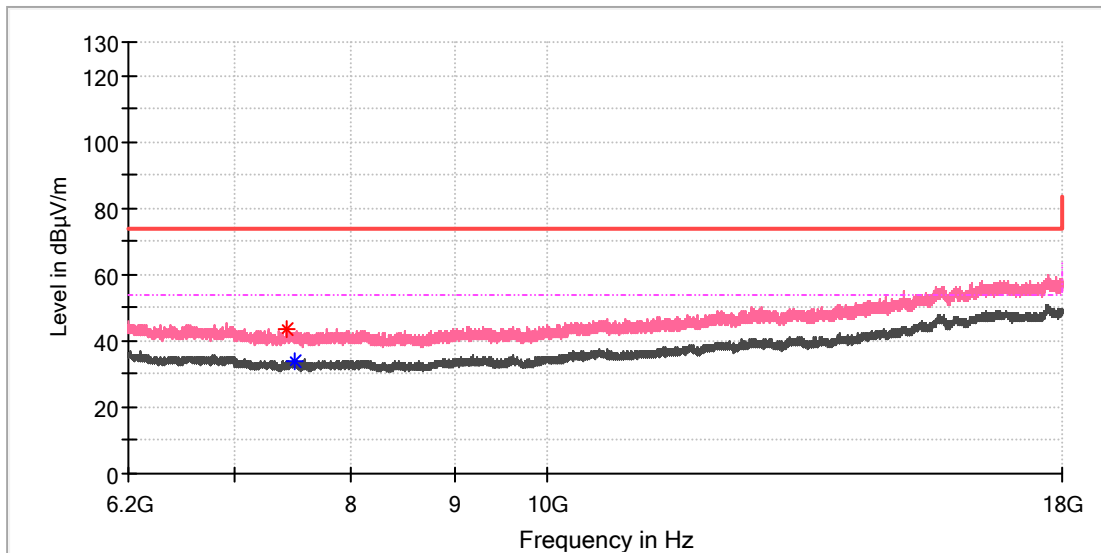


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7477.350000     | ---              | 33.61            | 54.00          | 20.39       | 150.0       | H   | 287.0         | 8.6          |
| 7507.341667     | 42.82            | ---              | 74.00          | 31.18       | 150.0       | H   | 142.0         | 8.7          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



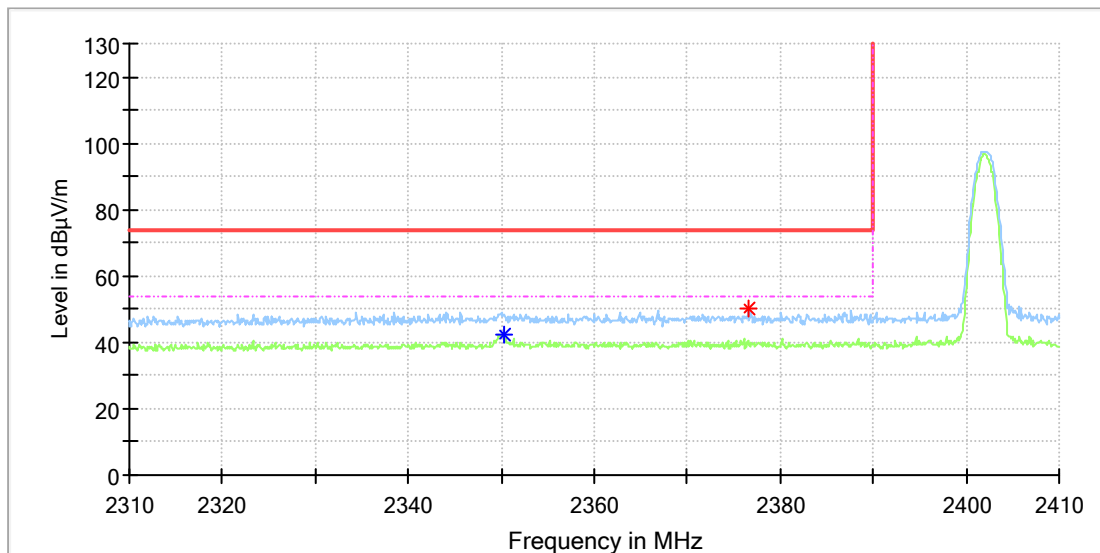
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7435.066667     | 43.48            | ---              | 74.00          | 30.52       | 150.0       | V   | 317.0         | 8.4          |
| 7488.166667     | ---              | 34.13            | 54.00          | 19.87       | 150.0       | V   | 267.0         | 8.7          |

## Appendix B.7: Test Results of Radiated Emissions in Restricted Bands

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

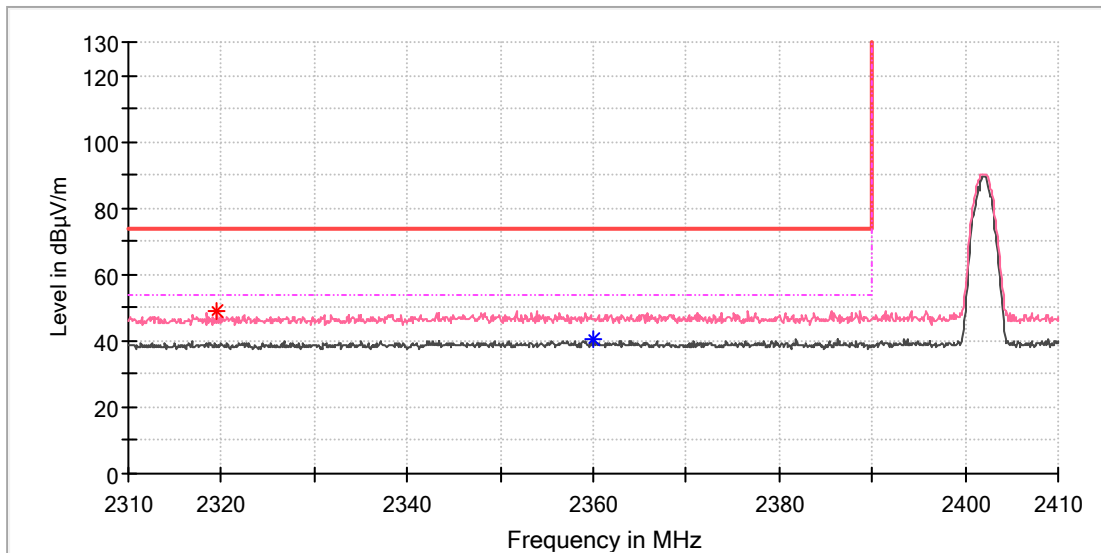


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2350.200000     | ---              | 42.42            | 54.00          | 11.58       | 150.0       | H   | 58.0          | 6.9          |
| 2376.600000     | 50.34            | ---              | 74.00          | 23.66       | 150.0       | H   | 67.0          | 6.9          |

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

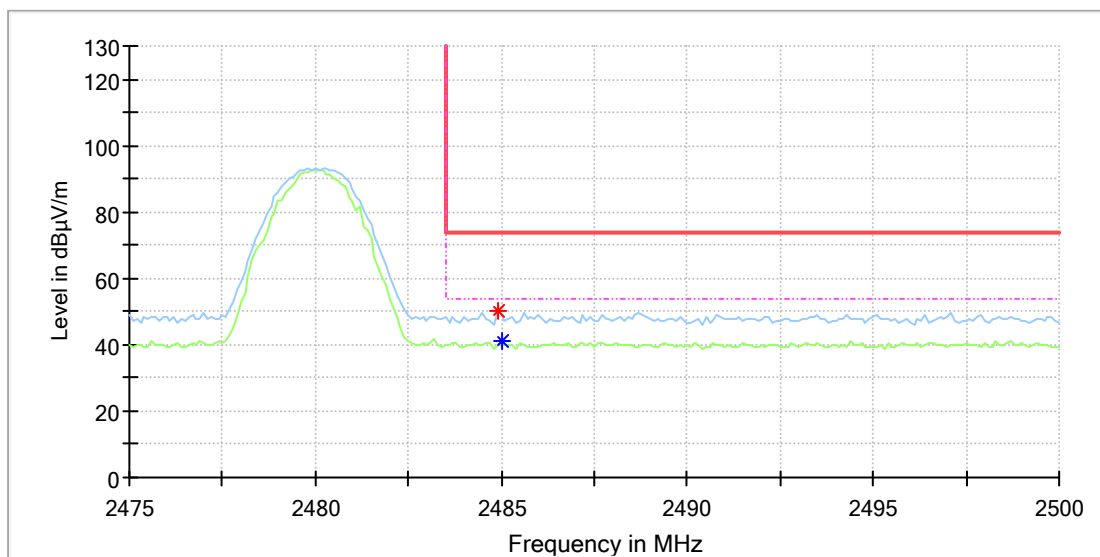


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2319.500000     | 49.25            | ---              | 74.00          | 24.75       | 150.0       | V   | 185.0         | 6.6          |
| 2360.100000     | ---              | 40.73            | 54.00          | 13.27       | 150.0       | V   | 233.0         | 6.9          |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_High channel      |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

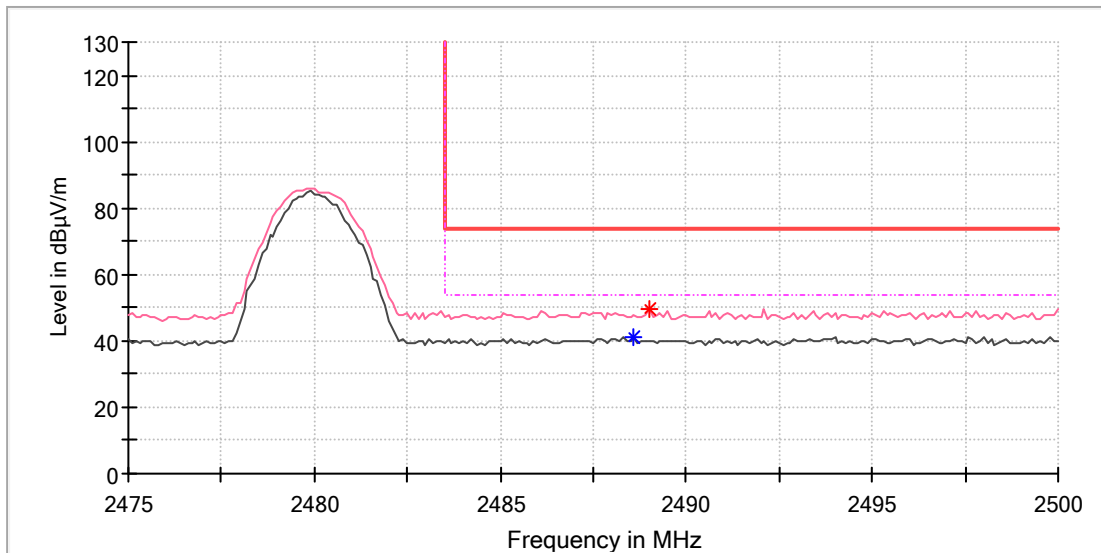


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2484.900000     | 50.13            | ---              | 74.00          | 23.87       | 150.0       | H   | 168.0         | 7.4          |
| 2485.000000     | ---              | 41.33            | 54.00          | 12.67       | 150.0       | H   | 178.0         | 7.4          |

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_High channel      |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |



### Critical Freqs

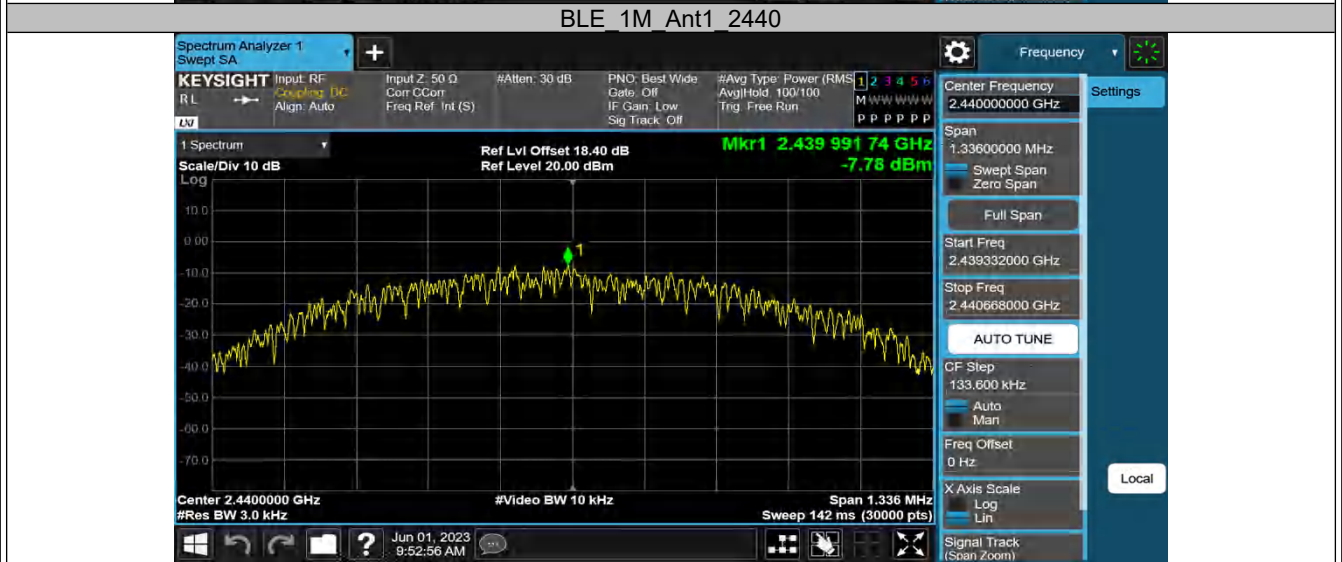
| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2488.600000     | ---              | 41.19            | 54.00          | 12.81       | 150.0       | V   | 45.0          | 7.4          |
| 2489.000000     | 49.64            | ---              | 74.00          | 24.36       | 150.0       | V   | 71.0          | 7.4          |

## Appendix C: Test Results of Right earbud

|  |    |
|--|----|
| APPENDIX C: TEST RESULTS OF RIGHT EARBUD .....   | 1  |
| APPENDIX C.1: TEST RESULTS OF CONDUCTED POWER SPECTRAL DENSITY .....                           | 2  |
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### Appendix C.1: Test Results of Conducted Power Spectral Density

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|---------|----------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402    | -8.5                 | ≤8.00           | PASS    |
|          |         | 2440    | -7.78                | ≤8.00           | PASS    |
|          |         | 2480    | -8.18                | ≤8.00           | PASS    |

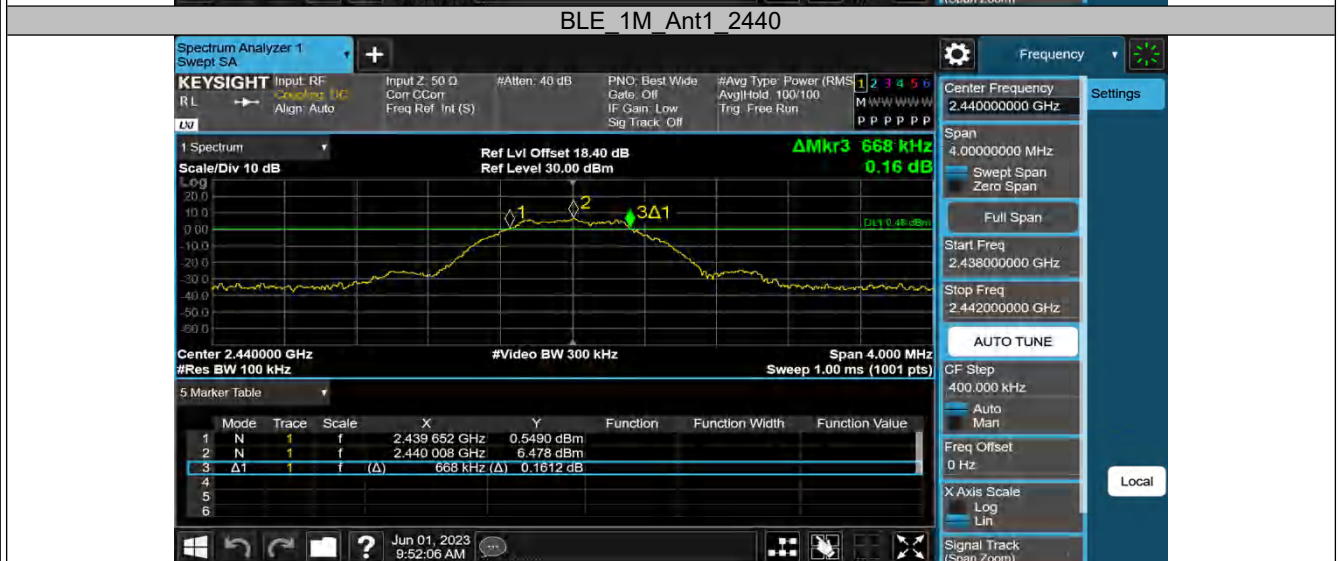


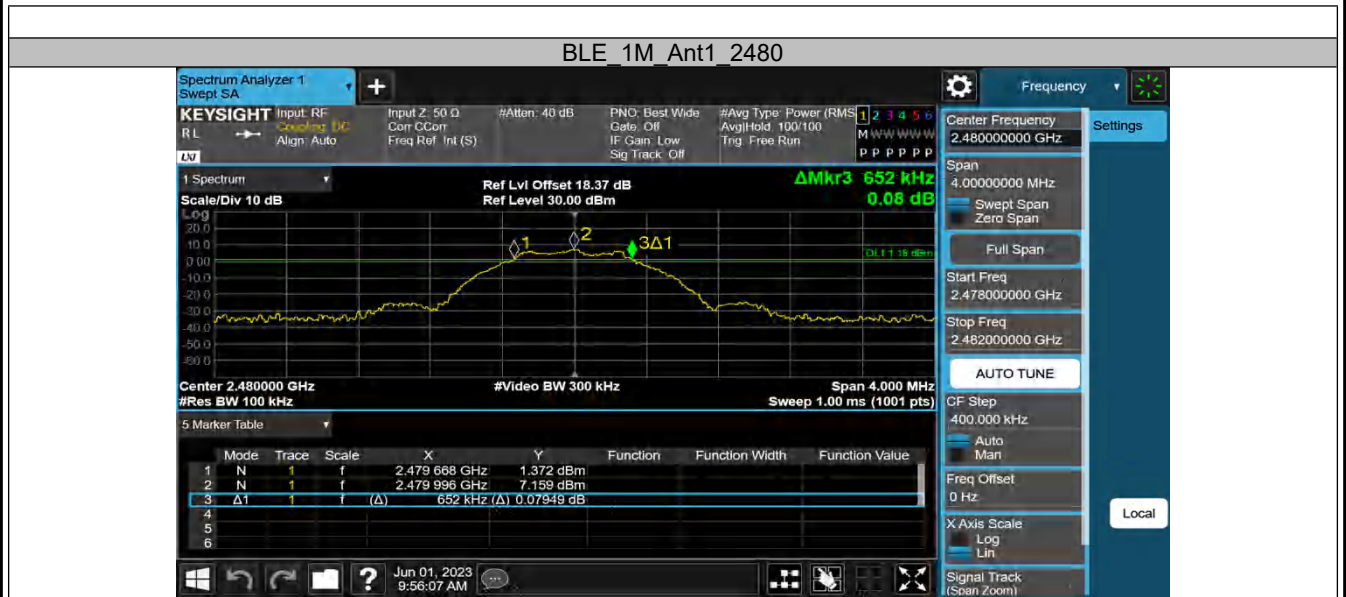




Appendix C.2: Test Results of 6dB Bandwidth

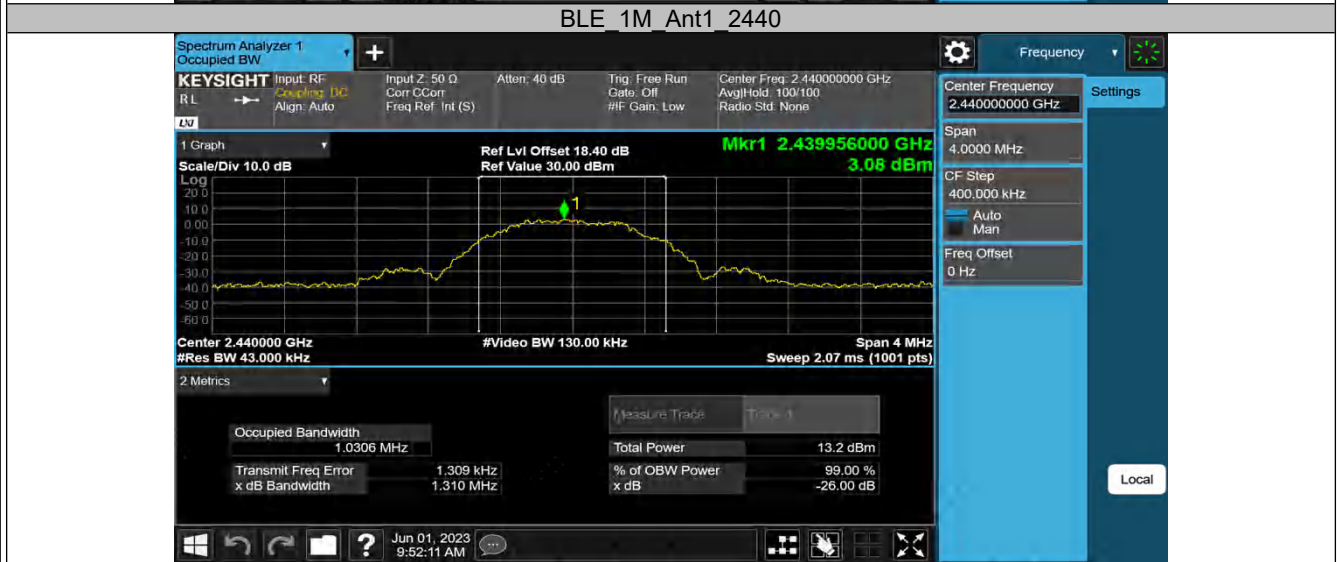
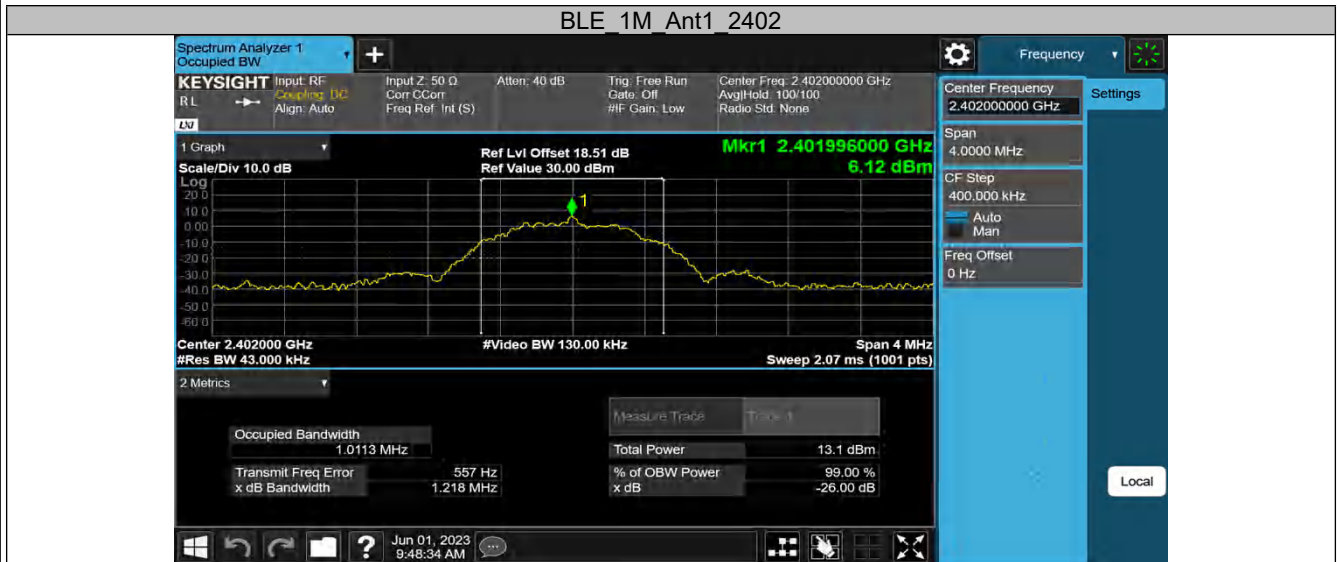
| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|--------------|----------|----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 0.676        | 2401.652 | 2402.328 | 0.5        | PASS    |
|          |         | 2440    | 0.668        | 2439.652 | 2440.320 | 0.5        | PASS    |
|          |         | 2480    | 0.652        | 2479.668 | 2480.320 | 0.5        | PASS    |

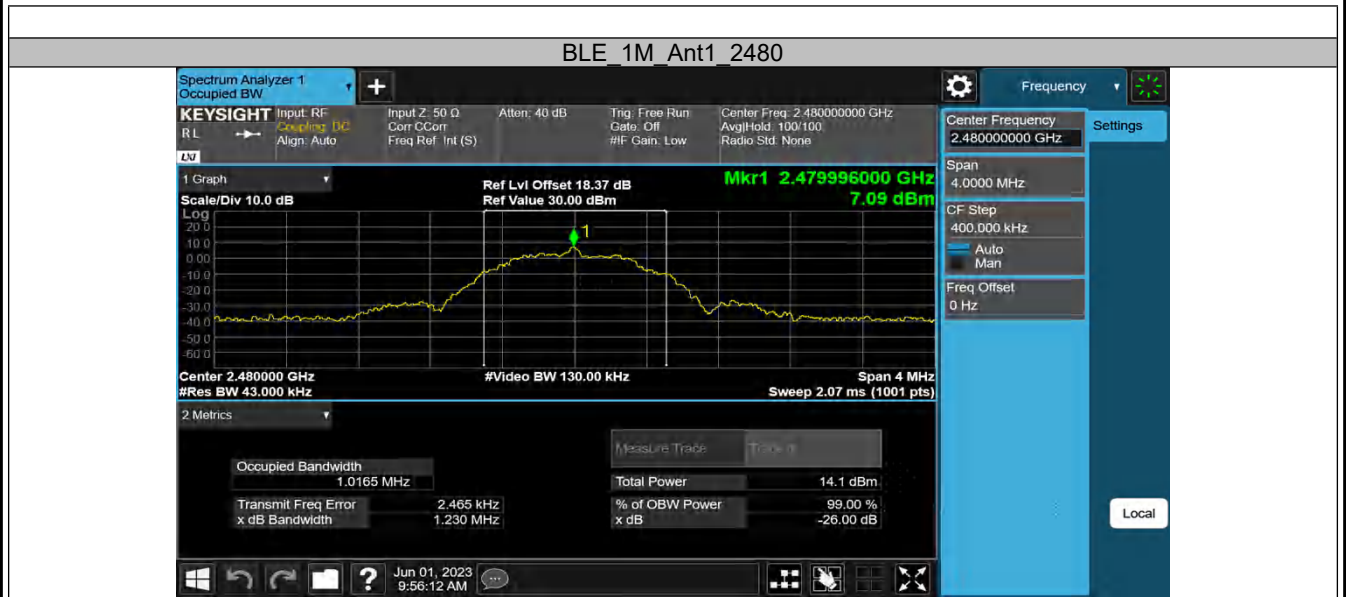




### Appendix C.3: Test Results of 99% Bandwidth

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|---------|-----------|-----------|-----------|------------|---------|
| BLE_1M   | Ant1    | 2402    | 1.0113    | 2401.4949 | 2402.5062 | ---        | ---     |
|          |         | 2440    | 1.0306    | 2439.4860 | 2440.5166 | ---        | ---     |
|          |         | 2480    | 1.0165    | 2479.4942 | 2480.5107 | ---        | ---     |





### Appendix C.4: Test Results of Frequency stability

|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2402 |
|--------------------|------|

#### Test result of frequency tolerance of voltage variation

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2401.996          | 4                         | 1.67              | 10          |
| DC 4.18V | 2401.995          | 5                         | 2.08              |             |
| DC 3.42V | 2401.996          | 4                         | 1.67              |             |

#### Test result of frequency tolerance of temperature variation

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2401.988          | 12                        | 5.00              | 10          |
| -20              | 2401.988          | 12                        | 5.00              |             |
| -10              | 2401.989          | 11                        | 4.58              |             |
| 0                | 2401.993          | 4                         | 1.67              |             |
| 10               | 2401.996          | 4                         | 1.67              |             |
| 20               | 2401.996          | 4                         | 1.67              |             |
| 30               | 2401.996          | 4                         | 1.67              |             |
| 40               | 2401.995          | 5                         | 2.08              |             |
| 50               | 2401.993          | 7                         | 2.91              |             |
| 55               | 2401.994          | 6                         | 2.50              |             |

|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2440 |
|--------------------|------|

#### Test result of frequency tolerance of voltage variation

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2439.995          | -5                        | -2.04918          | 10          |
| DC 4.18V | 2439.995          | -5                        | -2.04918          |             |
| DC 3.42V | 2439.994          | -6                        | -2.45902          |             |

#### Test result of frequency tolerance of temperature variation

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2439.988          | -12                       | -4.91803          | 10          |
| -20              | 2439.989          | -11                       | -4.5082           |             |
| -10              | 2439.990          | -10                       | -4.09836          |             |
| 0                | 2439.994          | -6                        | -2.45902          |             |
| 10               | 2439.994          | -6                        | -2.45902          |             |
| 20               | 2439.995          | -5                        | -2.04918          |             |
| 30               | 2439.994          | -6                        | -2.45902          |             |
| 40               | 2439.993          | -7                        | -2.86885          |             |
| 50               | 2439.991          | -9                        | -3.68852          |             |
| 55               | 2439.990          | -10                       | -4.09836          |             |



|                    |      |
|--------------------|------|
| Test Channel (MHz) | 2480 |
|--------------------|------|

**Test result of frequency tolerance of voltage variation**

| Voltage  | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|----------|-------------------|---------------------------|-------------------|-------------|
| DC 3.8V  | 2479.994          | -6                        | -2.42             | 10          |
| DC 4.18V | 2479.994          | -6                        | -2.42             |             |
| DC 3.42V | 2479.992          | -8                        | -3.23             |             |

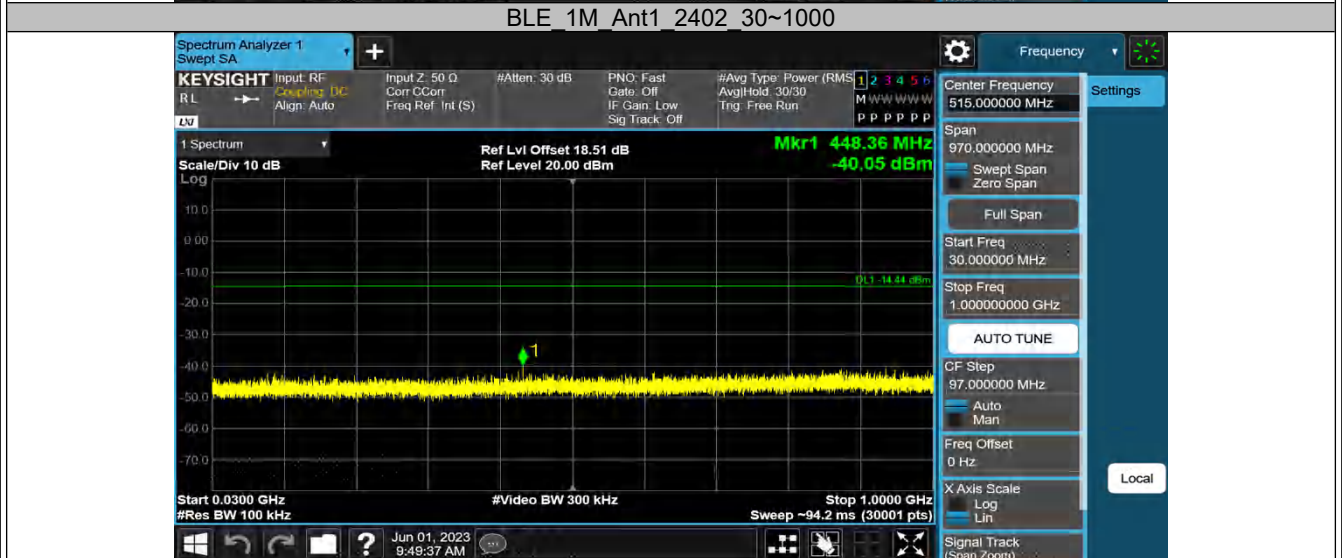
**Test result of frequency tolerance of temperature variation**

| Temperature (°C) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|------------------|-------------------|---------------------------|-------------------|-------------|
| -30              | 2479.992          | -8                        | -3.23             | 10          |
| -20              | 2479.991          | -9                        | -3.63             |             |
| -10              | 2479.992          | -8                        | -3.23             |             |
| 0                | 2479.992          | -8                        | -3.23             |             |
| 10               | 2479.994          | -6                        | -2.42             |             |
| 20               | 2479.994          | -6                        | -2.42             |             |
| 30               | 2479.993          | -7                        | -2.82             |             |
| 40               | 2479.992          | -8                        | -3.23             |             |
| 50               | 2479.991          | -9                        | -3.63             |             |
| 55               | 2479.992          | -8                        | -3.23             |             |

### Appendix C.5: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

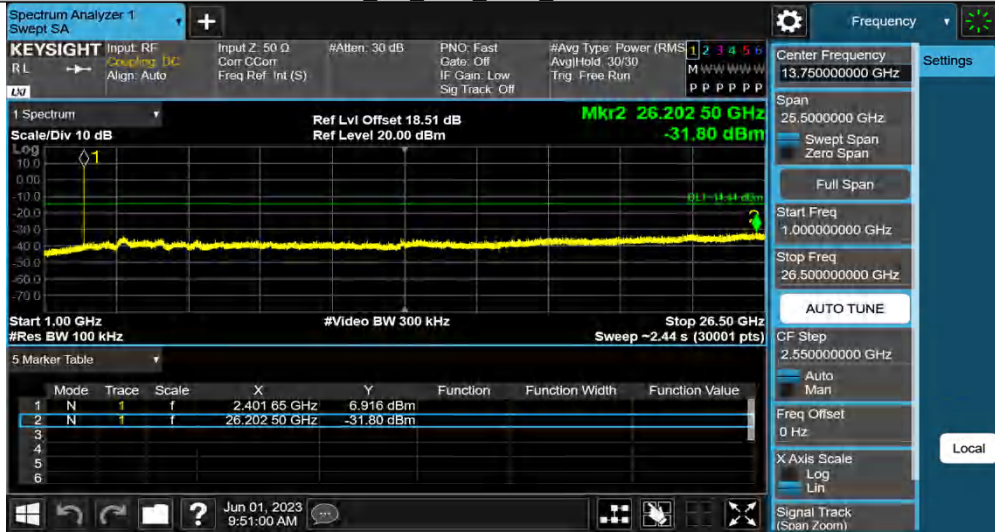
#### Conducted measurements

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|---------|-----------------|----------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402    | Reference       | 5.56           | 5.56        | ---        | PASS    |
|          |         |         | 30~1000         | 5.56           | -40.05      | ≤-14.44    | PASS    |
|          |         |         | 1000~26500      | 5.56           | -31.8       | ≤-14.44    | PASS    |
|          |         | 2440    | Reference       | 7.22           | 7.22        | ---        | PASS    |
|          |         |         | 30~1000         | 7.22           | -41.17      | ≤-12.78    | PASS    |
|          |         |         | 1000~26500      | 7.22           | -31.9       | ≤-12.78    | PASS    |
|          |         | 2480    | Reference       | 4.97           | 4.97        | ---        | PASS    |
|          |         |         | 30~1000         | 4.97           | -41.36      | ≤-15.03    | PASS    |
|          |         |         | 1000~26500      | 4.97           | -32.78      | ≤-15.03    | PASS    |





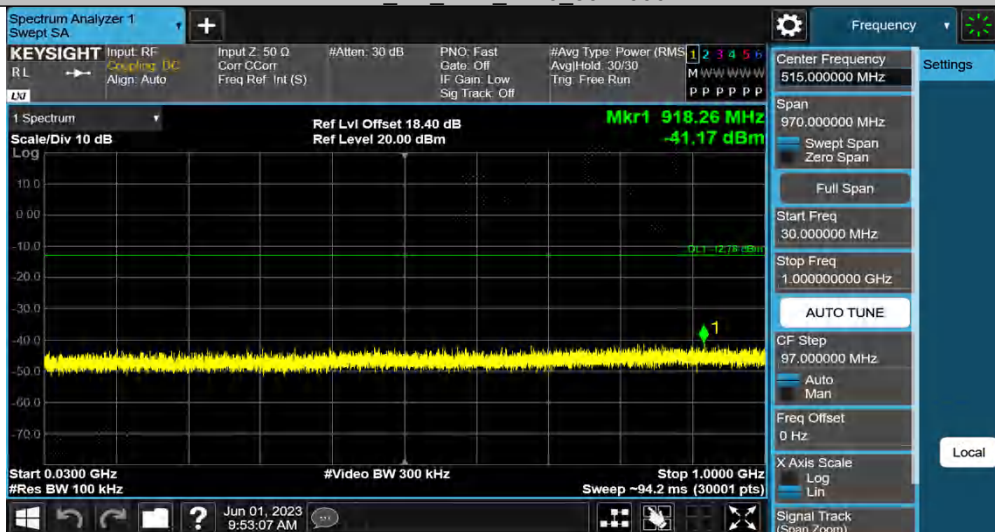
BLE 1M Ant1 2402 1000~26500



BLE 1M Ant1 2440 0~Reference



BLE 1M Ant1 2440 30~1000



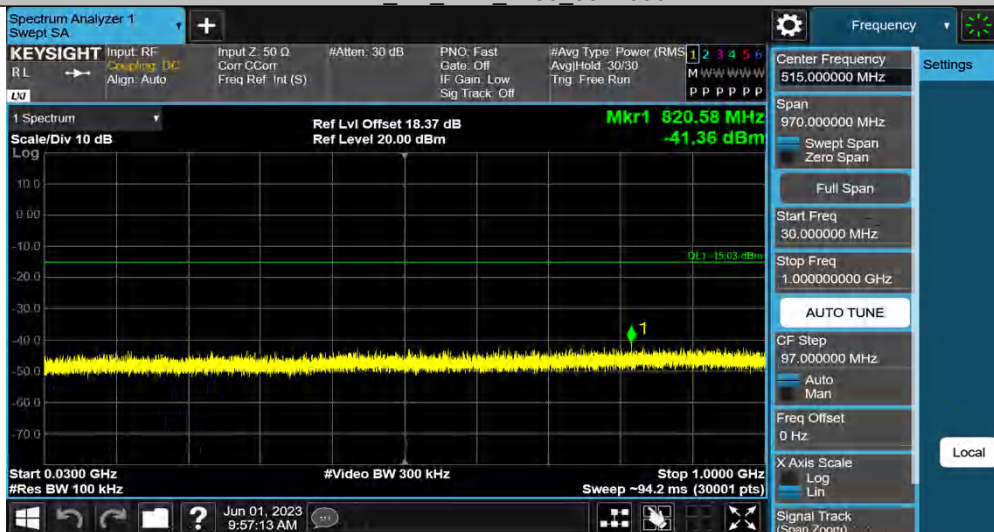
BLE 1M Ant1 2440 1000~26500

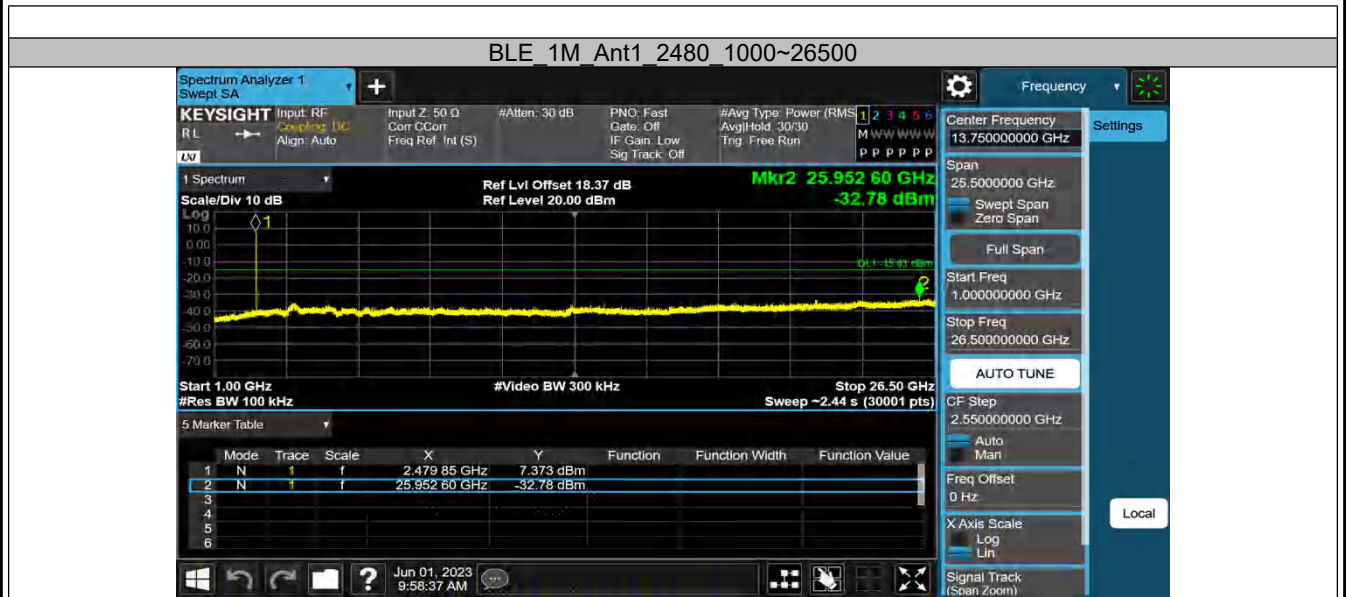


BLE 1M Ant1 2480 0~Reference



BLE 1M Ant1 2480 30~1000

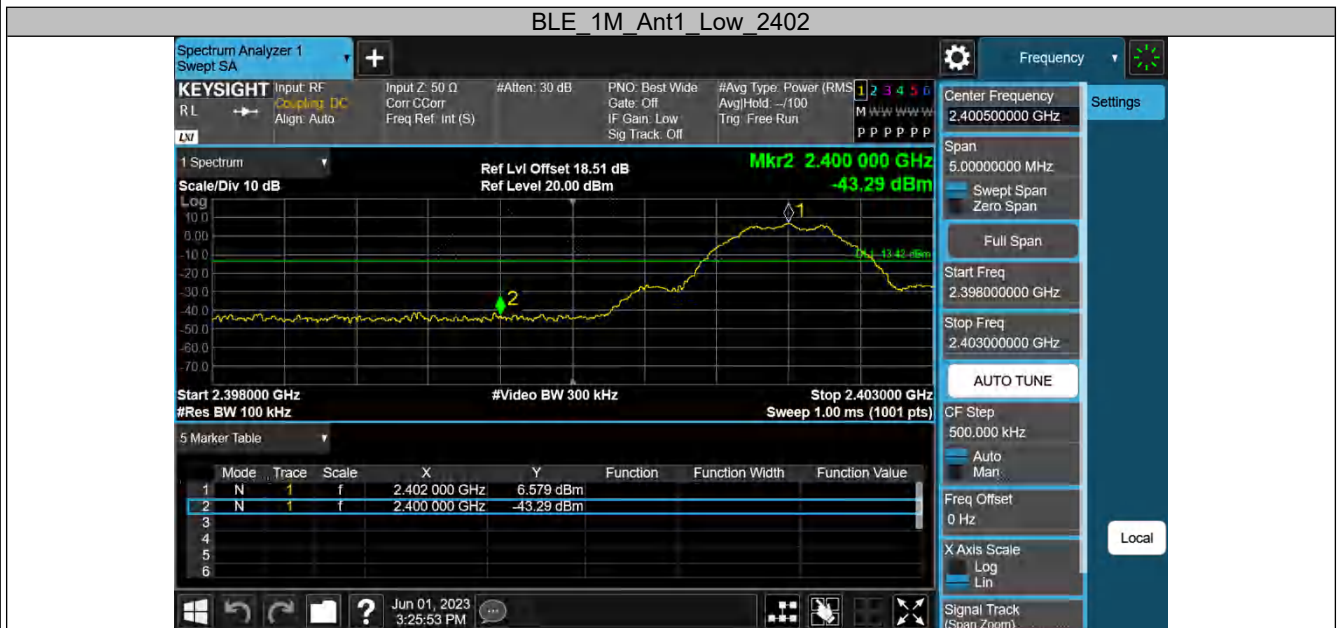






Band edge measurements

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|---------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low    | 2402    | 6.579         | -43.29      | ≤-13.42    | PASS    |
|          |         | High   | 2480    | 7.638         | -45.89      | ≤-12.36    | PASS    |



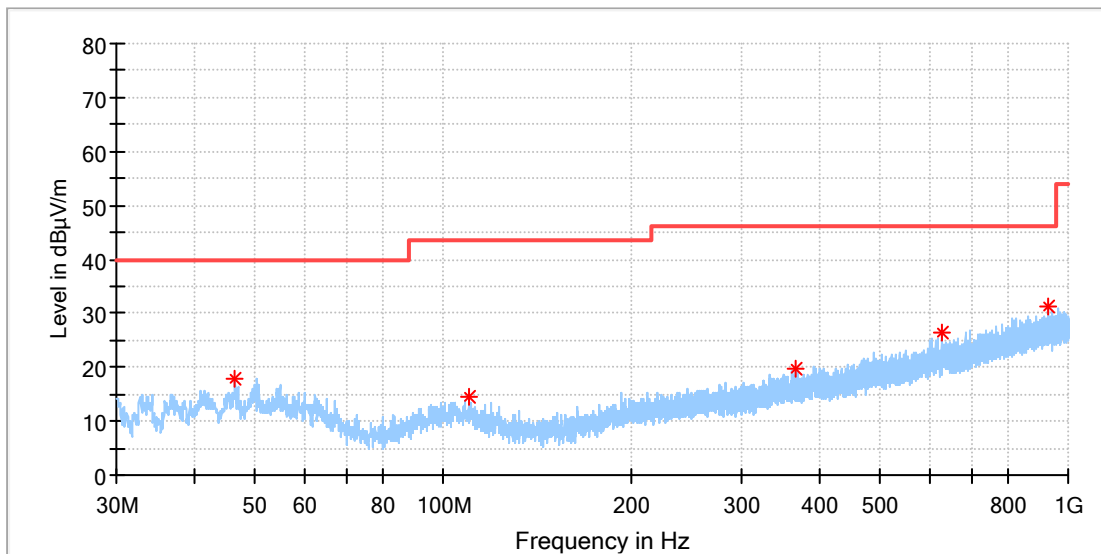
### Appendix C.6: Test Results of Radiated Spurious Emissions

Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Mid channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

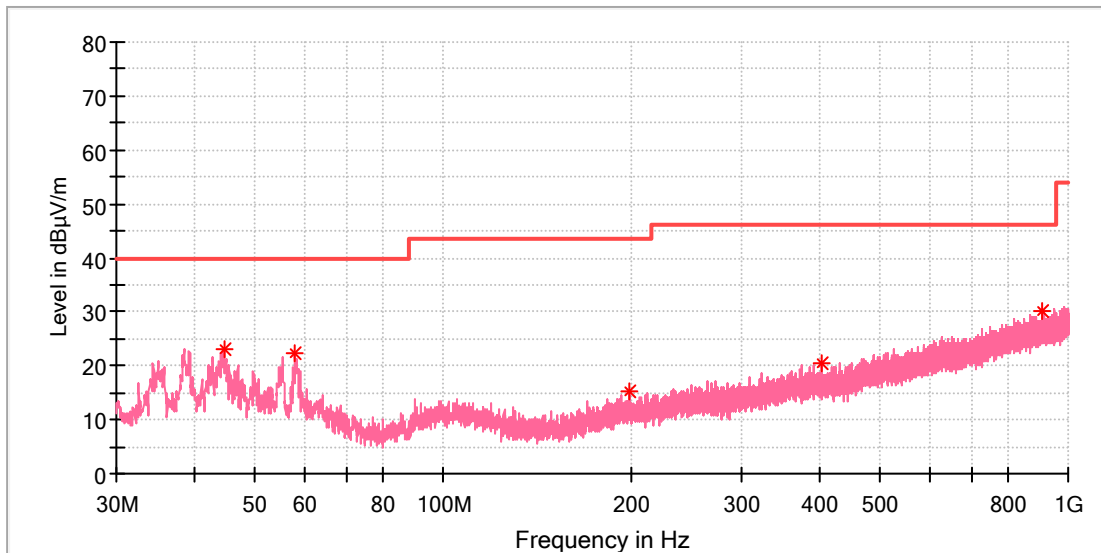


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 46.490000       | 17.73            | 40.00          | 22.27       | 100.0       | H   | 118.0         | -18.6        |
| 110.316000      | 14.40            | 43.50          | 29.10       | 100.0       | H   | 83.0          | -19.1        |
| 367.123500      | 19.71            | 46.00          | 26.29       | 100.0       | H   | 268.0         | -14.5        |
| 630.139000      | 26.33            | 46.00          | 19.67       | 100.0       | H   | 268.0         | -9.4         |
| 931.130000      | 31.15            | 46.00          | 14.86       | 100.0       | H   | 31.0          | -4.7         |

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Mid channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |



### Critical Freqs

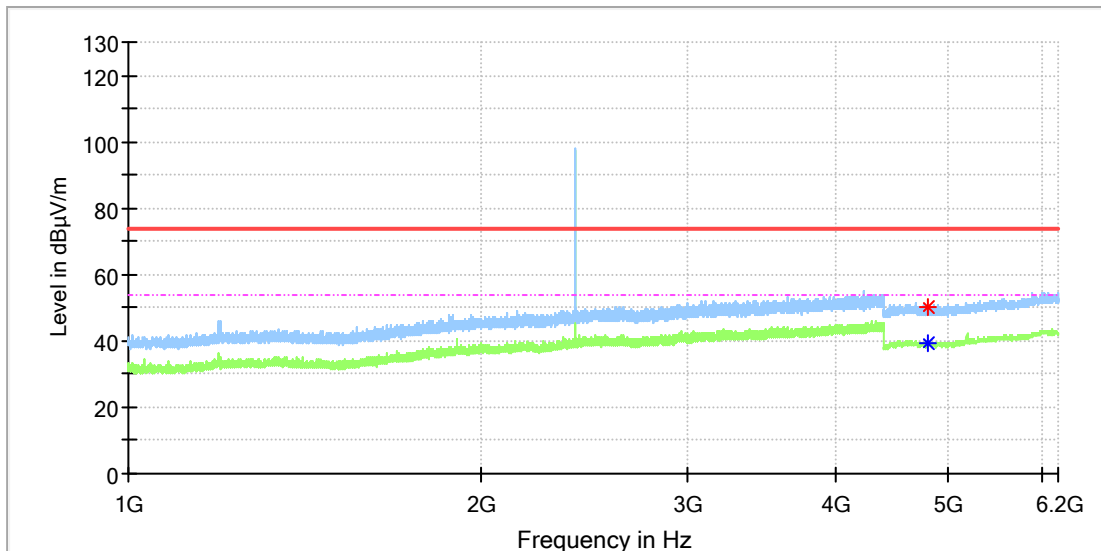
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 44.598500       | 23.16            | 40.00          | 16.84       | 100.0       | V   | 342.0         | -18.9        |
| 58.033000       | 22.36            | 40.00          | 17.64       | 100.0       | V   | 231.0         | -18.8        |
| 198.198000      | 15.11            | 43.50          | 28.39       | 100.0       | V   | 231.0         | -19.0        |
| 402.237500      | 20.64            | 46.00          | 25.36       | 100.0       | V   | 0.0           | -13.6        |
| 908.432000      | 30.22            | 46.00          | 15.78       | 100.0       | V   | 111.0         | -4.9         |

1GHz-18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

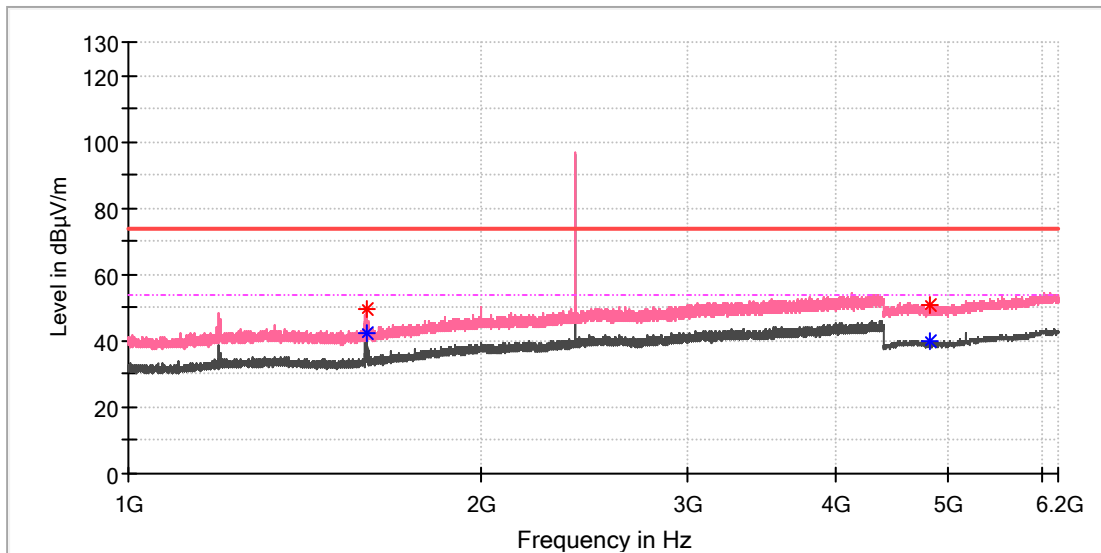


### Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4803.500000     | 50.14            | ---              | 74.00          | 23.86       | 150.0       | H   | 216.0         | 11.8         |
| 4808.500000     | ---              | 39.55            | 54.00          | 14.45       | 150.0       | H   | 189.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Low channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



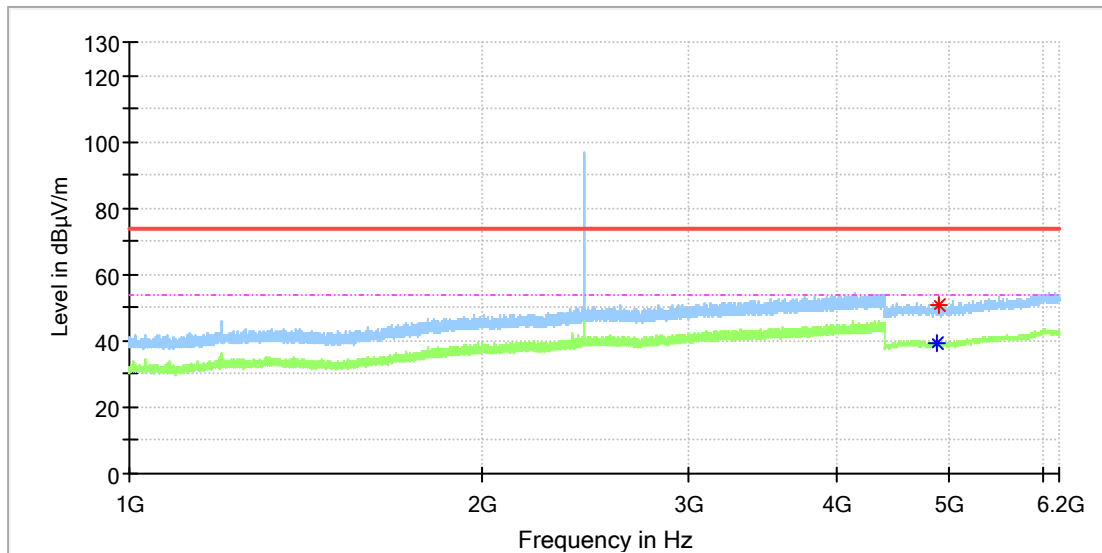
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 1595.850000     | 49.85            | ---              | 74.00          | 24.15       | 150.0       | V   | 166.0         | 2.0          |
| 1598.740000     | ---              | 42.44            | 54.00          | 11.56       | 150.0       | V   | 166.0         | 2.1          |
| 4820.500000     | ---              | 39.63            | 54.00          | 14.37       | 150.0       | V   | 249.0         | 11.8         |
| 4821.000000     | 50.93            | ---              | 74.00          | 23.07       | 150.0       | V   | 255.0         | 11.8         |



### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

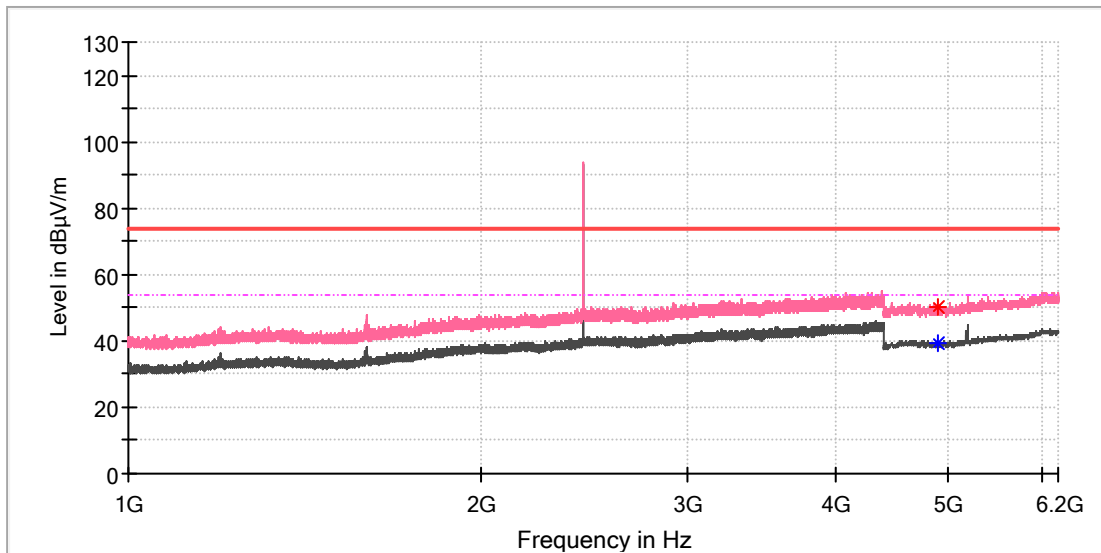


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4875.500000     | ---              | 39.24            | 54.00          | 14.76       | 150.0       | H   | 248.0         | 11.8         |
| 4894.500000     | 50.95            | ---              | 74.00          | 23.05       | 150.0       | H   | 348.0         | 11.8         |

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Mid channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

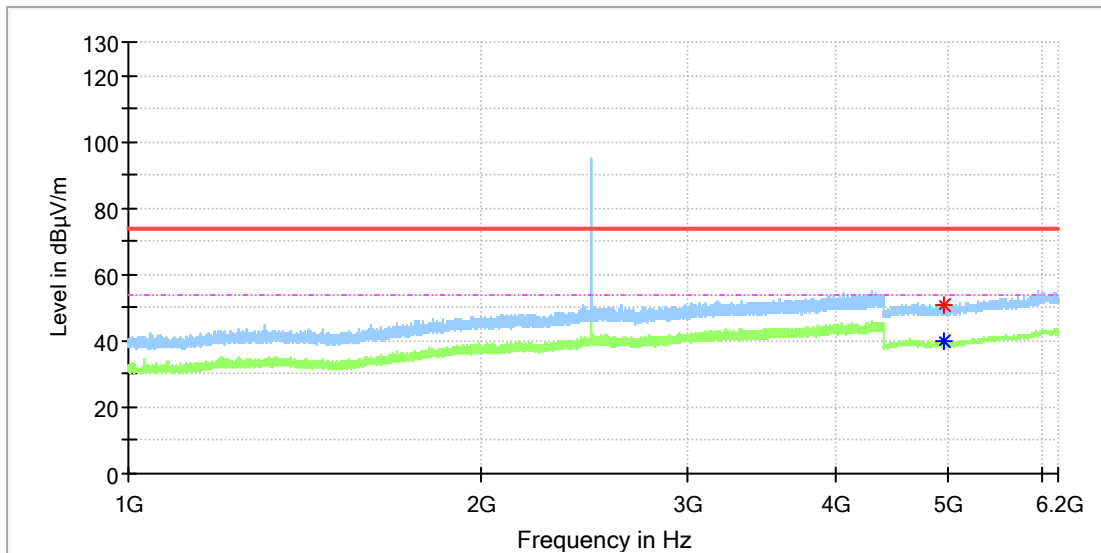


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4901.000000     | 50.36            | ---              | 74.00          | 23.64       | 150.0       | V   | 64.0          | 11.8         |
| 4904.000000     | ---              | 39.30            | 54.00          | 14.70       | 150.0       | V   | 318.0         | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

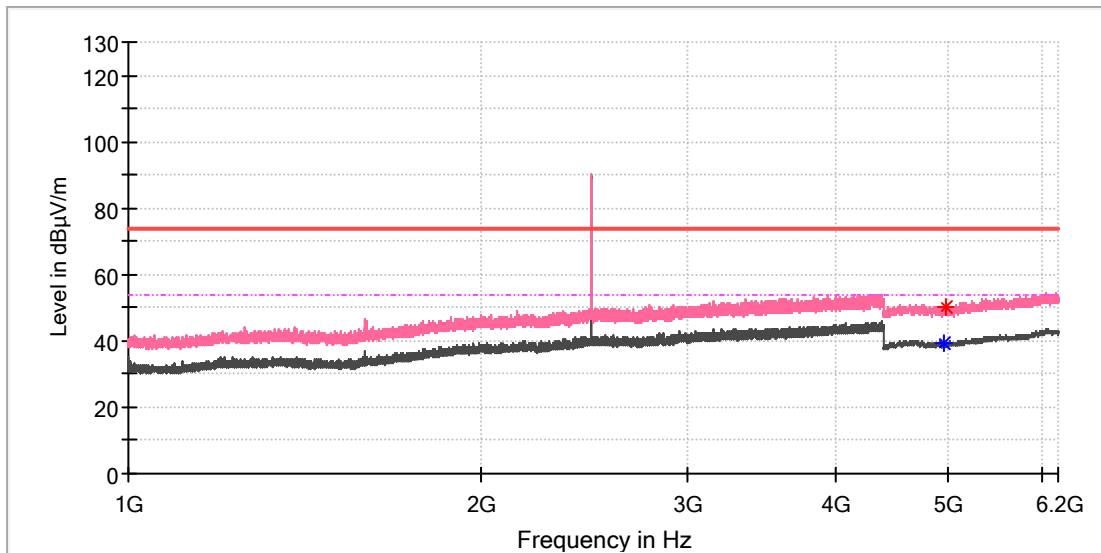


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4958.500000     | 50.74            | ---              | 74.00          | 23.26       | 150.0       | H   | 359.0         | 11.8         |
| 4959.000000     | ---              | 39.70            | 54.00          | 14.30       | 150.0       | H   | 99.0          | 11.8         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

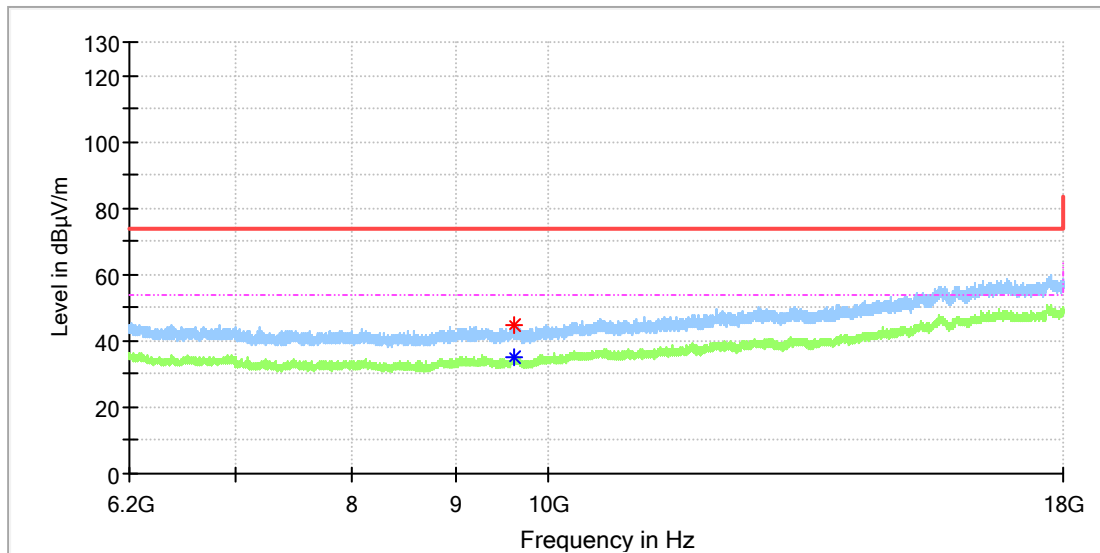


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 4956.000000     | ---              | 39.39            | 54.00          | 14.61       | 150.0       | V   | 282.0         | 11.8         |
| 4972.500000     | 50.25            | ---              | 74.00          | 23.75       | 150.0       | V   | 224.0         | 11.8         |

## EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

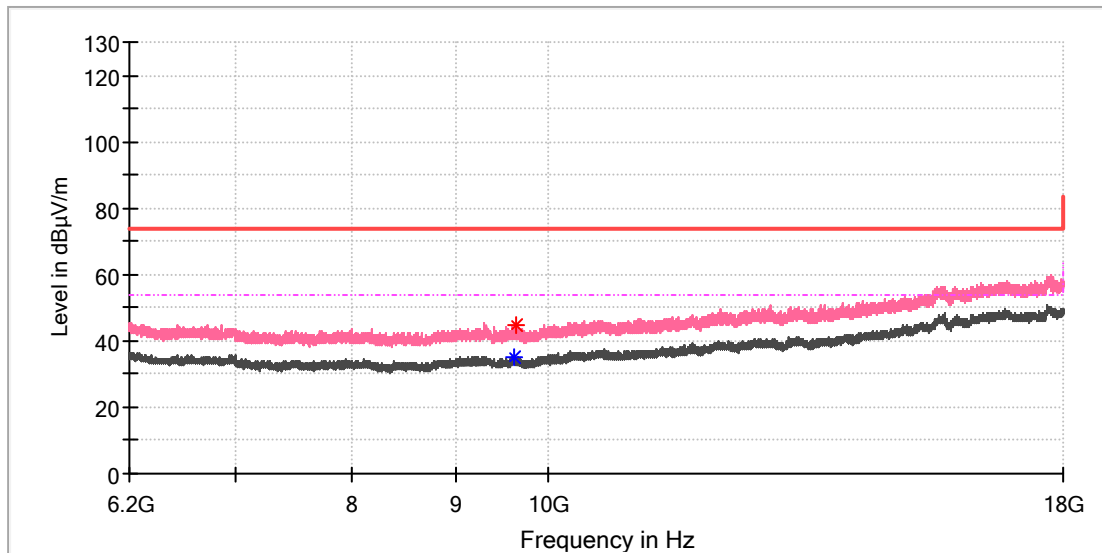


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 9620.525000     | ---              | 35.13            | 54.00          | 18.87       | 150.0       | H   | 199.0         | 10.4         |
| 9624.458333     | 44.90            | ---              | 74.00          | 29.10       | 150.0       | H   | 235.0         | 10.4         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Low channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

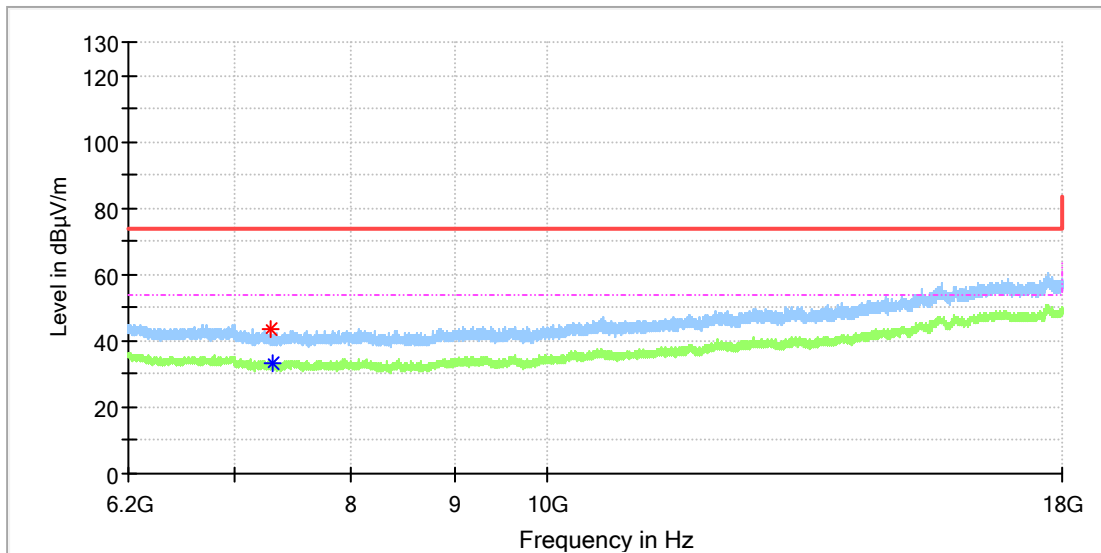


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 9609.708333     | ---              | 35.02            | 54.00          | 18.98       | 150.0       | V   | 134.0         | 10.4         |
| 9636.258333     | 44.46            | ---              | 74.00          | 29.54       | 150.0       | V   | 121.0         | 10.4         |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

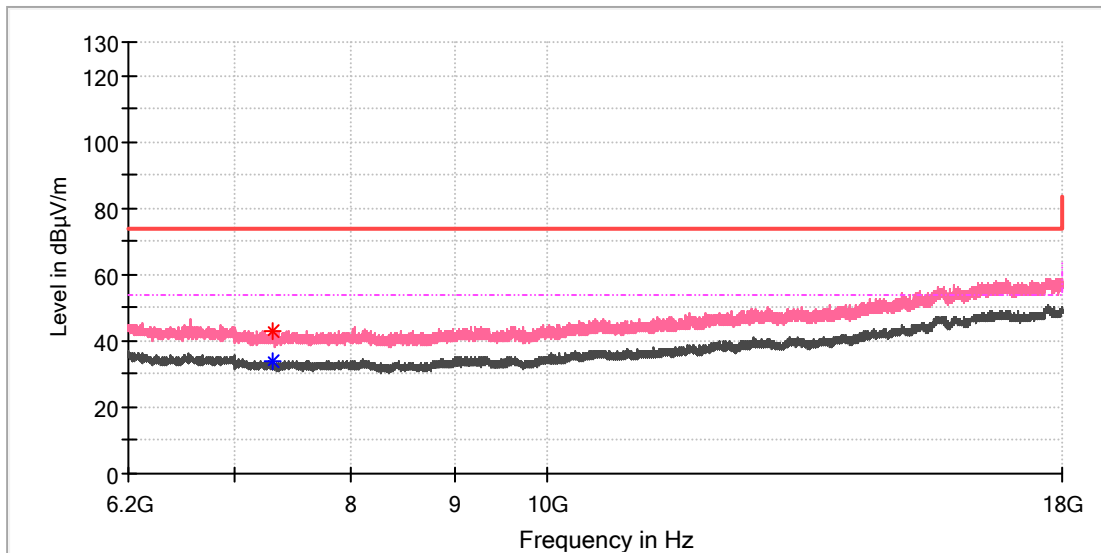


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7288.058333     | 43.39            | ---              | 74.00          | 30.61       | 150.0       | H   | 187.0         | 8.4          |
| 7310.675000     | ---              | 33.52            | 54.00          | 20.48       | 150.0       | H   | 278.0         | 8.2          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_Mid channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



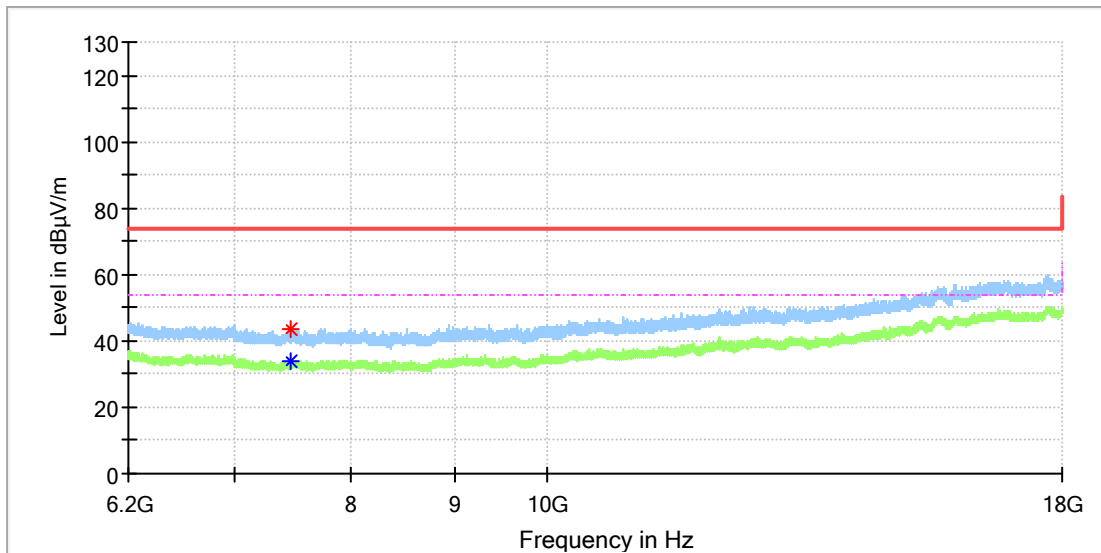
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7308.216667     | 42.99            | ---              | 74.00          | 31.01       | 150.0       | V   | 307.0         | 8.2          |
| 7314.608333     | ---              | 33.58            | 54.00          | 20.42       | 150.0       | V   | 307.0         | 8.2          |



### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

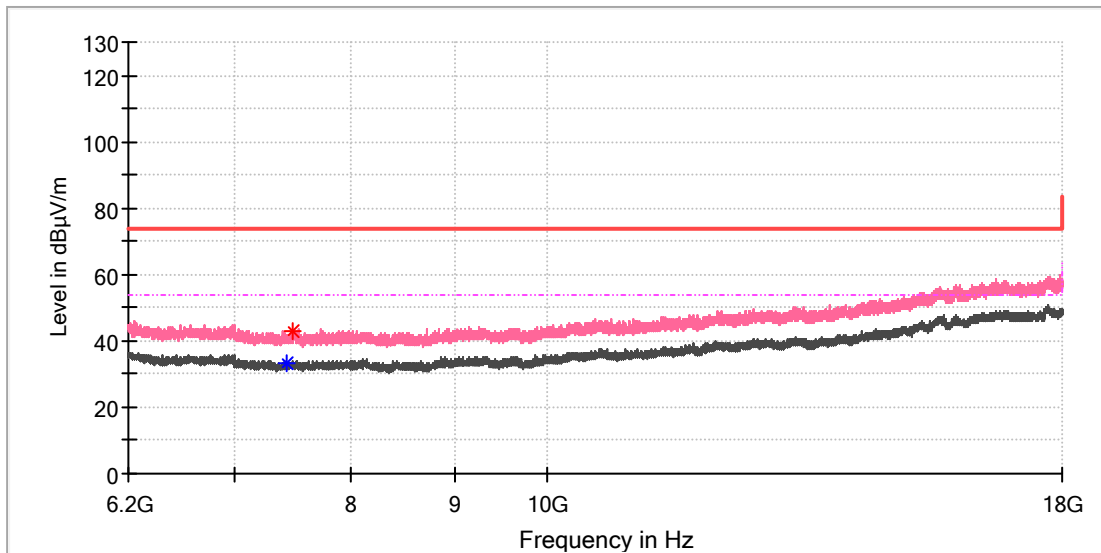


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7462.108333     | 43.45            | ---              | 74.00          | 30.55       | 150.0       | H   | 93.0          | 8.6          |
| 7466.041667     | ---              | 34.07            | 54.00          | 19.93       | 150.0       | H   | 0.0           | 8.6          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



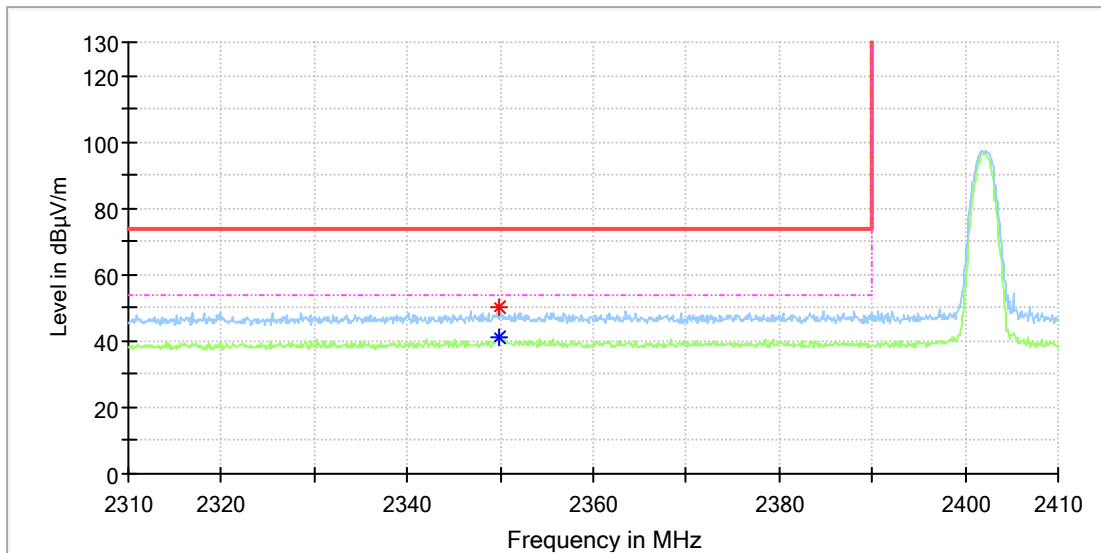
### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7428.183333     | ---              | 33.52            | 54.00          | 20.48       | 150.0       | V   | 63.0          | 8.4          |
| 7470.958333     | 42.87            | ---              | 74.00          | 31.13       | 150.0       | V   | 136.0         | 8.6          |

### Appendix C.7: Test Results of Radiated Emissions in Restricted Bands

#### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

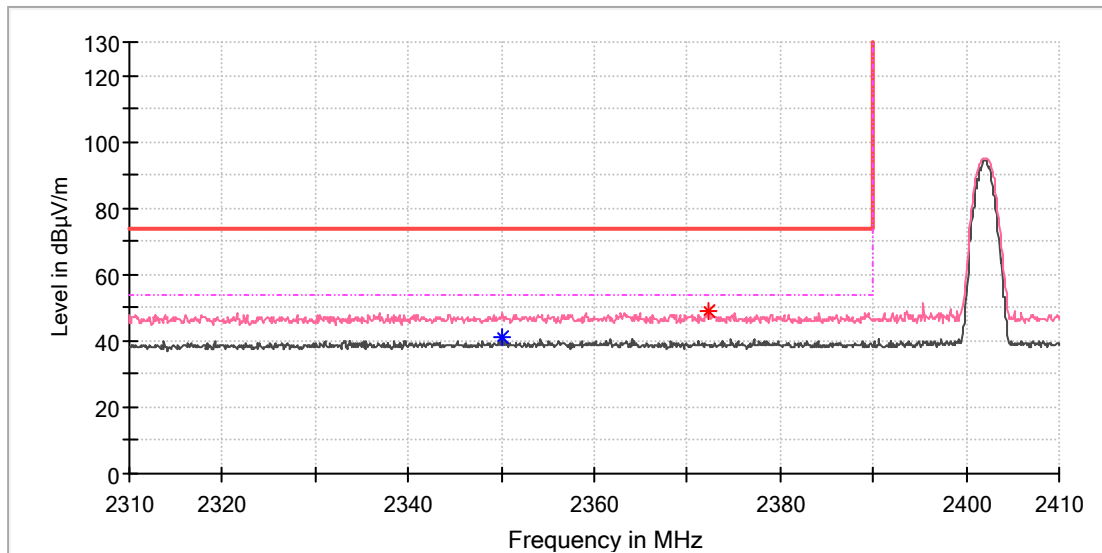


#### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2349.800000     | 50.03            | ---              | 74.00          | 23.97       | 150.0       | H   | 2.0           | 6.9          |
| 2349.900000     | ---              | 41.04            | 54.00          | 12.96       | 150.0       | H   | 26.0          | 6.9          |

### EUT Information

|                     |                          |
|---------------------|--------------------------|
| EUT Name:           | Bluetooth Headset        |
| Model:              | JBL WAVE BUDS            |
| Test Mode:          | BLE 1M_Low channel       |
| Order No/Sample No: | 168427200/A003478029-002 |
| Test Voltage::      | Battery                  |
| Remark:             | Temp 23 Humi:56%         |
| Test Standard:      | FCC 15.247               |
| Tested By:          | Kei Zhang                |
| Reviewed By:        | Terry Yin                |

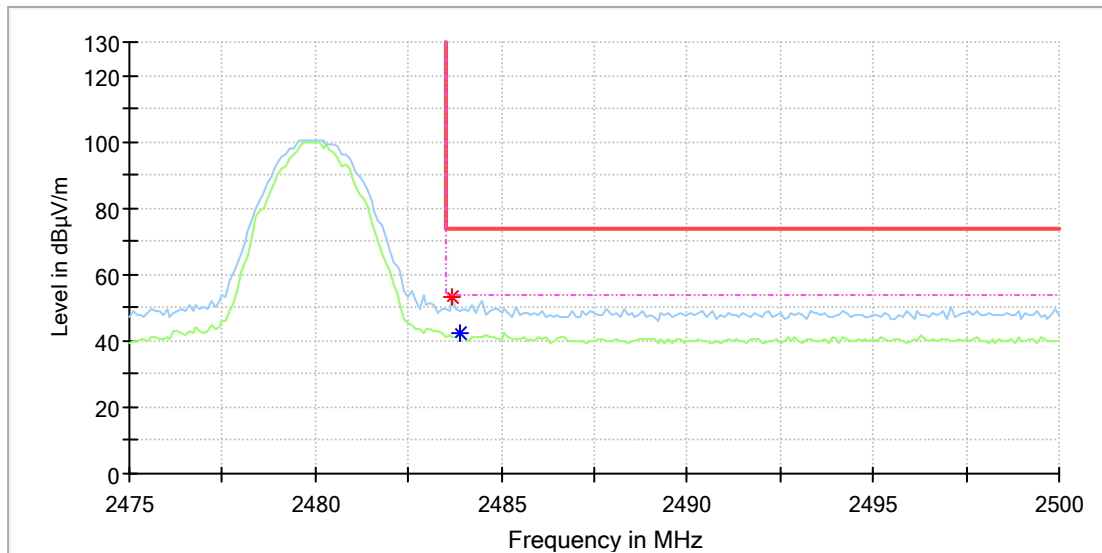


### Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2350.000000     | ---              | 41.12            | 54.00          | 12.88       | 150.0       | V   | 0.0           | 6.9          |
| 2372.300000     | 49.21            | ---              | 74.00          | 24.79       | 150.0       | V   | 255.0         | 6.9          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin

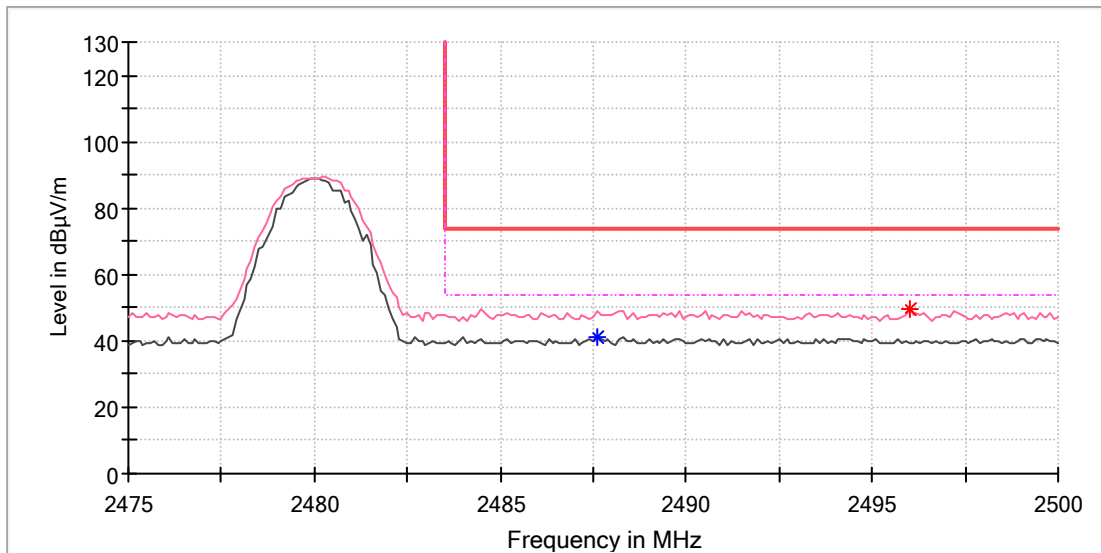


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2483.700000     | 53.06            | ---              | 74.00          | 20.94       | 150.0       | H   | 14.0          | 7.4          |
| 2483.900000     | ---              | 42.23            | 54.00          | 11.77       | 150.0       | H   | 87.0          | 7.4          |

### EUT Information

EUT Name: Bluetooth Headset  
 Model: JBL WAVE BUDS  
 Test Mode: BLE 1M\_High channel  
 Order No/Sample No: 168427200/A003478029-002  
 Test Voltage:: Battery  
 Remark: Temp 23 Humi:56%  
 Test Standard: FCC 15.247  
 Tested By: Kei Zhang  
 Reviewed By: Terry Yin



### Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2487.600000     | ---              | 41.13            | 54.00          | 12.87       | 150.0       | V   | 236.0         | 7.4          |
| 2496.000000     | 49.77            | ---              | 74.00          | 24.23       | 150.0       | V   | 27.0          | 7.4          |