| | | | | |
|---|---|---|---|---|
| **Prüfbericht-Nr.:**<br>*Test report no.*: | **CN24YUWU 002** | **Auftrags-Nr.:**<br>*Order no.*: | 168486965 | **Page 1 of 23**<br>*Seite 1 von 23* |
| **Kunden-Referenz-Nr.:**<br>*Client reference no.*: | N/A | **Auftragsdatum**:<br>*Order date:* | 2024-06-03 | |
| **Auftraggeber:**<br>*Client*: | Harman International Industries, Incorporated<br>8500 Balboa Blvd, Northridge, California, 91329, United States | | | |
| **Prüfgegenstand:**<br>*Test item*: | BLUETOOTH HEADSET | | | |
| **Bezeichnung / Typ-Nr.:**<br>*Identification / Type no.*: | JUNIOR 320BT<br>(Trademark: JBL) | | | |
| **Auftrags-Inhalt:**<br>*Order content*: | Type test | | | |
| **Prüfgrundlage:**<br>*Test specification*: | 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 3 August 2023<br>RSS-Gen Issue 5 March 2019 | |

| | | |
|---|---|---|
| **Wareneingangsdatum:**<br>*Date of sample receipt*: | 2024-06-03 | Refer to photos document |
| **Prüfmuster-Nr.:**<br>*Test sample no:* | A003721212-016 | |
| **Prüfzeitraum:**<br>*Testing period*: | 2024-06-03 – 2024-06-12 | |
| **Ort der Prüfung:**<br>*Place of testing*: | See Section 2.1 | |
| **Prüflaboratorium:**<br>*Testing laboratory:* | TÜV Rheinland (Shenzhen) Co., Ltd. | |
| **Prüfergebnis*:**<br>*Test result**: | Pass | |

| | | | |
|---|---|---|---|
| **geprüft von:**<br>tested by: | X<br>Signed by: Harry W. C. Wu | **genehmigt von:**<br>*authorized by*: | X<br>Signed by: Alex Lan |
| **Datum:**<br>*Date:* 2024-06-28 | | **Ausstellungsdatum:**<br>*Issue date:* 2024-06-28 | |
| **Stellung** / Position: | Project Manager | **Stellung** / Position: | Reviewer |

**Sonstiges /** *Other*: FCC ID: APIJR320BT
IC: 6132A-JR320BT HVIN: JUNIOR 320BT

**Zustand des Prüfgegenstandes bei Anlieferung:** Prüfmuster vollständig und unbeschädigt
*Condition of the test item at delivery*: *Test item complete and undamaged*

| | | | | |
|---|---|---|---|---|
| * Legende: | P(ass) = entspricht o.g. Prüfgrundlage(n) | F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | N/A = nicht anwendbar | N/T = nicht getestet |
| ** Legend:* | *P(ass) = passed a.m. test specification(s)* | *F(ail) = failed a.m. test specification(s)* | *N/A = not applicable* | *N/T = not tested* |

## Remarks
*Anmerkungen*

| | |
|---|---|
| **1** | 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.<br>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.<br><br>*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.*<br>*Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.* |
| **2** | As contractually agreed, this document has been signed digitally only. TUV 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, TUV 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.<br><br>*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.* |
| **3** | Test clauses with remark of * are subcontracted to qualified subcontractors and descripted 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.<br><br>*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.* |
| **4** | 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.<br><br>*Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen 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 bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.* |

# *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*

**5.1.9 CONDUCTED EMISSION ON AC MAINS**
*RESULT: Pass*

# *Contents*

# 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: Test Results of Bluetooth Low Energy.

Appendix B: Photographs of the Test Set-up.

# 2 Test Sites

## 2.1 Test Facilities

Radio Spectrum Testing and Unwanted Emission Testing were tested in

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.

Conducted Emission was tested in

Shenzhen Academy of Metrology and Quality Inspection
NETC Building, No. 4 Tongfa Road, Xili, Nanshan District, Shenzhen, Guangdong, 518055, People's Republic of China

FCC Registration No.: 582918

IC Registration No.: 11177A

The test at the test site had been conducted under the supervision of a TÜV engineer.

## 2.2 List of Test and Measurement Instruments

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

| **Radio Spectrum Testing (TS8997)** | | | | |
|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| Wireless Connectivity Tester | R&S | CMW270 | 101375 | 25.07.2024 |
| Signal Analyzer | R&S | FSV 40 | 101441 | 25.07.2024 |
| Vector Signal Generator | R&S | SMBV100A | 263301 | 25.07.2024 |
| Signal Generator | R&S | SMB100A | 115186 | 25.07.2024 |
| OSP | R&S | OSP 150 | 101017 | 13.11.2024 |
| Control PC | DELL | OptiPlex 7050 | FTJZ9P2 | N/A |
| Test Software | R&S | WMS32 (V11.00.00) | N/A | N/A |
| Power Meter | R&S | NRP2 | 107105 | 13.11.2024 |
| Power Sensor | R&S | NRP-Z81 | 105677 | 25.07.2024 |
| Humid & Temp Programmable Tester | BOST | NTH090-60 | 19040801 | 28.02.2025 |
| Shielding Room | Albatross | SR8 | APC17151-SR8 | 22.06.2024 |
| **Unwanted Emission Testing (TS9975)** | | | | |
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| EMI Test Receiver | R&S | ESR 7 | 102021 | 25.07.2024 |
| Signal Analyzer | R&S | FSV 40 | 101439 | 25.07.2024 |
| System Controller Interface | R&S | SCI-100 | S10010038 | N/A |
| Filterbank | R&S | Wlan | 100759 | 25.07.2024 |
| OSP | R&S | OSP 120 | 102040 | N/A |
| Pre-amplifier | R&S | SCU08F1 | 08320031 | 25.07.2024 |
| Amplifier | R&S | SCU-18F | 180070 | 25.07.2024 |
| Amplifier | R&S | SCU40A | 100475 | 25.07.2024 |
| Trilog Broadband Antenna (30 MHz - 7 GHz) | Schwarzbeck | VULB 9162 | 193 | 06.08.2024 |
| Double-Ridged Antenna (1 -18 GHz) | ETS-LINDGREN | 3117 | 00218717 | 06.08.2024 |
| Wideband Ridged Horn Antenna (18-40 GHz) | Steatite | QMS-00880 | 19067 | 27.08.2024 |
| Active Loop Antenna | Schwarzbeck | FMZB 1513 | 302 | 06.08.2024 |
| 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 | 22.06.2024 |
| **Conducted Emission on AC Mains** | | | | |
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| EMI Test Receiver | R&S | ESCS30 | SB3319 | 2024-10-25 |
| Artificial Mains Network | R&S | ESH3-Z5 | SB2604 | 2025-01-12 |
| EMC32 test software | R&S | EMC32 | N/A | N/A |

## 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 basics 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 |
| Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz) | ± 3.70 dB / ± 3.30 dB |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B 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.

Shenzhen Academy of Metrology and Quality Inspection Test facility located at NETC Building, No. 4 Tongfa Road, Xili, Nanshan District, Shenzhen, Guangdong, 518055, People's Republic of China 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 EUT is a Bluetooth Headset, which supports Bluetooth dual mode technology, this Headset has three colors of enclosures (Pink, Blue, Mint Green).

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 | JUNIOR 320BT |
| Trademark | JBL |
| FCC ID | APIJR320BT |
| IC | 6132A-JR320BT |
| HVIN | JUNIOR 320BT |
| Extreme Temperature Range | 0ºC to +45ºC |
| Operating Voltage | DC 3.7V, 500mAh via built-in lithium-ion battery<br>DC 5V, 1A via Type-C port |
| **Technical Specification of Classical Bluetooth** | |
| Bluetooth Core Version | Bluetooth 5.3 |
| Operating Frequency band | 2402 ~ 2480 MHz |
| Channel Number | 79 channels |
| Channel separation | 1MHz |
| Modulation | GFSK, π/4DQPSK, 8DPSK |
| Antenna Type | PCB Antenna |
| Antenna Gain | 1.5 dBi (Provided by the Client) |
| **Technical Specification of Bluetooth Low Energy** | |
| Bluetooth Core Version | Bluetooth 5.3 |
| Operating Frequency band | 2402 ~ 2480 MHz for 1Mbps<br>2404 ~ 2478 MHz for 2Mbps |
| Channel Number | 40 channels for 1Mbps<br>38 channels for 2Mbps |
| Channel separation | 2MHz |
| Data rate | 1Mbps, 2Mbps |
| Modulation | GFSK |
| Antenna Type | PCB Antenna |
| Antenna Gain | 1.5 dBi (Provided by the Client) |

**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) |
|---|---|---|---|---|---|---|---|
| **00** | **2402.00** | 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 | **78** | **2480.00** |
| 19 | 2421.00 | **39** | **2441.00** | 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) |
|---|---|---|---|---|---|---|---|
| **00** | **2402.00** | 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 | **19** | **2440.00** | 29 | 2460.00 | **39** | **2480.00** |

## 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 JUNIOR 320BT with pink color of enclosure.

## 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 |
| AC/DC Adapter | HUAWEI | HW-200440C00 | Input: 100-240V, 50/60Hz, 2.4A<br>Output: DC 5V, 3A |

## 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)**

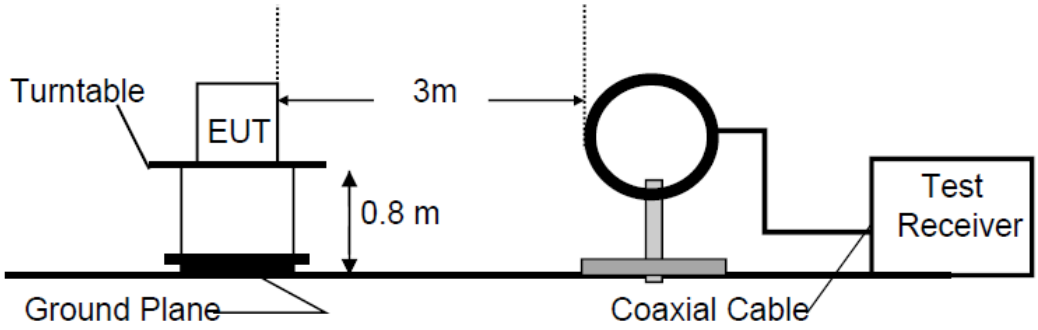



**Diagram of Measurement Configuration for Radiation Test (Below 1GHz)**

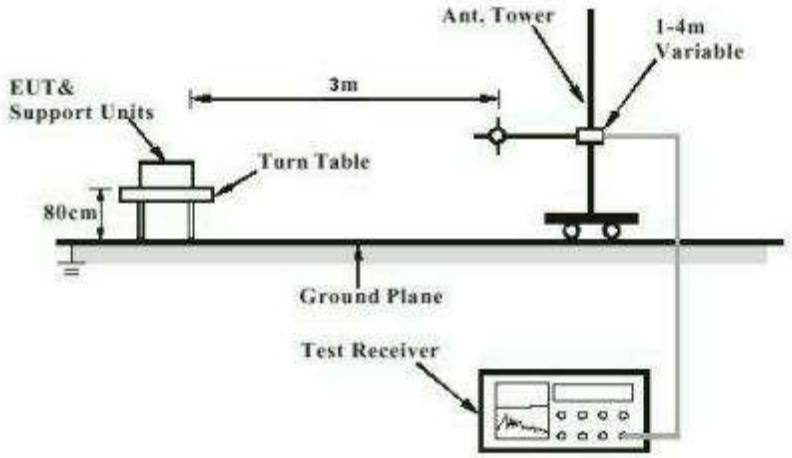



**Diagram of Measurement Configuration for Radiation Test (Above 1GHz)**

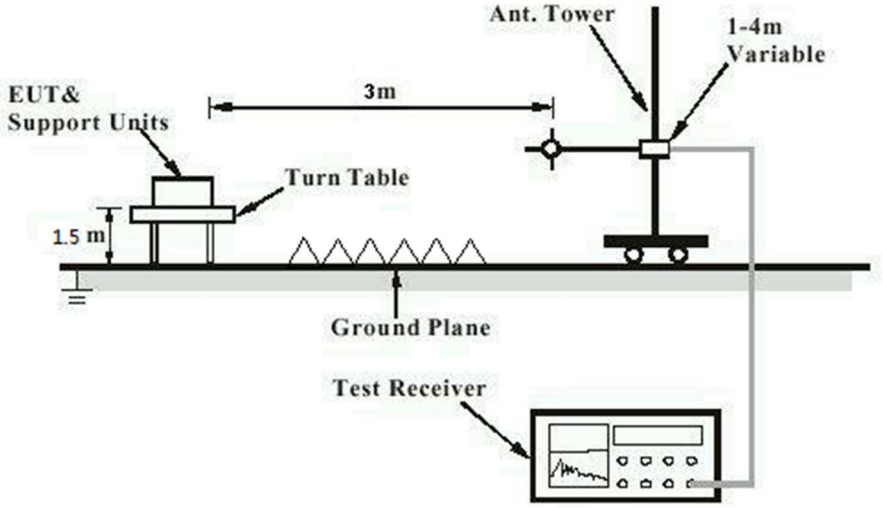


**Diagram of Measurement Configuration for Conducted Transmitter Measurement**

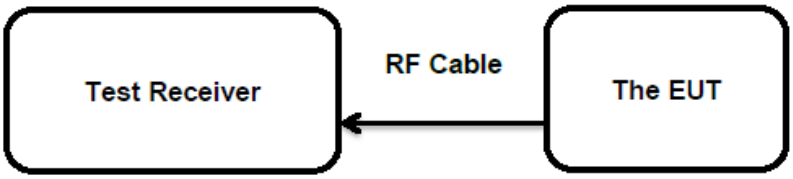
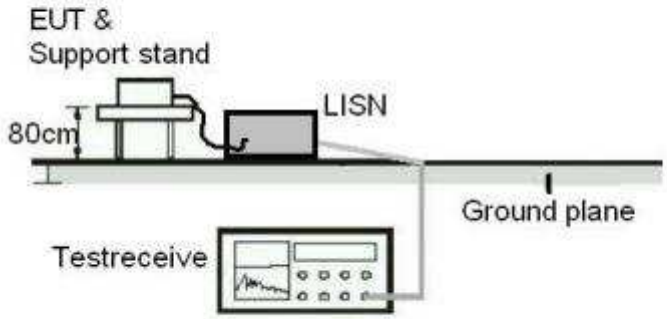



**Diagram of Measurement Configuration for Mains Conduction Measurement**



# 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<br>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 PCB antenna , the directional gain of antennas is 1.5 dBi, 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)<br>RSS-247 Clause 5.4(d) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | < 1 Watt (Maximum Conducted Peak Power)<br>e.i.r.p. <4W |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 50.2 % |
| Atmospheric pressure | : | 101 kPa |

For details refer to following test result.

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

| Data Rate | Test Channel (MHz) | Measured Peak Power | | Limit (W) |
|---|---|---|---|---|
| | | (dBm) | (W) | |
| BLE 1Mbps | 2402 | 6.1 | 0.0041 | < 1.0 |
| | 2440 | 6.0 | 0.0040 | |
| | 2480 | 6.1 | 0.0041 | |
| BLE 2Mbps | 2404 | 6.2 | 0.0042 | < 1.0 |
| | 2440 | 6.1 | 0.0041 | |
| | 2478 | 6.2 | 0.0042 | |
| **Maximum Measured Value** | | 6.2 | 0.0042 | |

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 7.7 dBm less than 4W (36 dBm).

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 50.2 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

**Table 7: Test Result of Conducted Power Spectral Density**

| Test Mode | Channel Frequency (MHz) | Conducted Power Spectral Density (dBm / 3kHz) | Limit |
|---|---|---|---|
| BLE 1Mbps | 2402 | -9.33 | 8 dBm / 3kHz |
| | 2440 | -9.16 | |
| | 2480 | -8.94 | |
| BLE 2Mbps | 2404 | -11.55 | 8 dBm / 3kHz |
| | 2440 | -11.43 | |
| | 2478 | -11.03 | |

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 50.2 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

**Table 8: Test Result of 99% Bandwidth**

| Test Mode | Channel Frequency (MHz) | Measured 99% Bandwidth (MHz) | Limit |
|---|---|---|---|
| BLE 1Mbps | 2402 | 1.020 | / |
| | 2440 | 1.015 | |
| | 2480 | 1.015 | |
| BLE 2Mbps | 2404 | 2.010 | / |
| | 2440 | 2.010 | |
| | 2478 | 2.010 | |

Note: The fundamental emissions stay within the allocated band 2400-2483.5MHz.

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 50.2 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

**Table 9: Test Result of 6dB Bandwidth**

| Test Mode | Channel Frequency (MHz) | Measured 6dB Bandwidth (MHz) | Limit |
|---|---|---|---|
| BLE 1Mbps | 2402 | 0.693 | >500kHz |
| | 2440 | 0.693 | |
| | 2480 | 0.693 | |
| BLE 2Mbps | 2404 | 1.188 | >500kHz |
| | 2440 | 1.188 | |
| | 2478 | 1.188 | |

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | B |
| Ambient temperature | : | Low / Middle / High |
| Relative humidity | : | 23.8 ℃ |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 50.2 % |
| 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 A.

## 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 | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 3.7V |
| 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 A.

## 5.1.9 Conducted Emission on AC Mains

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.207(a)<br>RSS-Gen Clause 8.8 |
| Basic standard | : | ANSI C63.10: 2013 |
| Frequency range | : | 0.15 – 30MHz |
| Limits | : | FCC Part 15.207(a)<br>RSS-Gen Table 4 |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-06-03 to 2024-06-12 |
| Input voltage | : | DC 5V via Type-C interface |
| Operation mode | : | B |
| Earthing | : | Not connected |
| Ambient temperature | : | Refer to test result |
| Relative humidity | : | Refer to test result |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

# 6 Photographs of the Test Set-Up

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

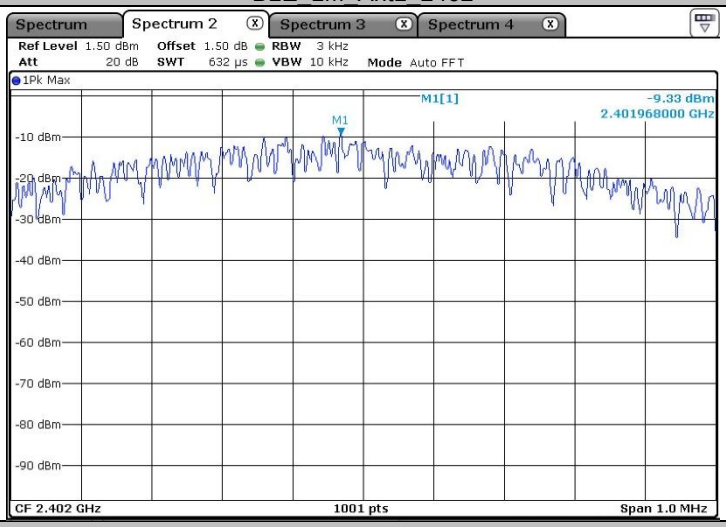
# 7 List of Tables

# Appendix A: Test Results of Bluetooth Low Energy

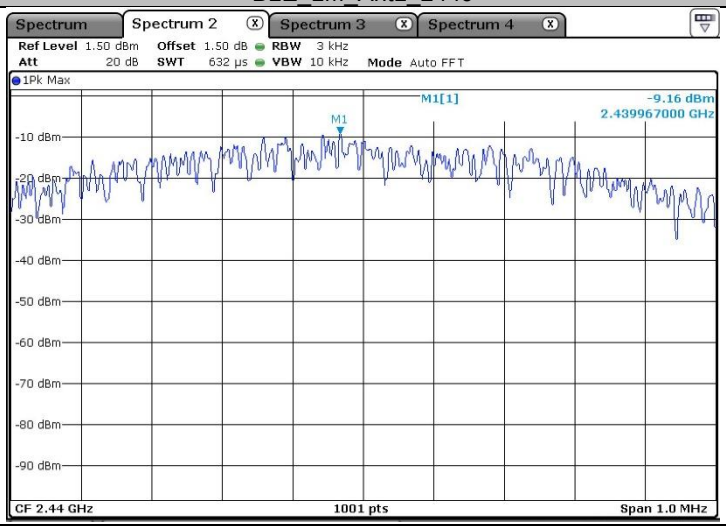
## Appendix A.1: Test Results of Conducted Power Spectral Density

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | -9.33 | ≤8.00 | PASS |
| | | 2440 | -9.16 | ≤8.00 | PASS |
| | | 2480 | -8.94 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2404 | -11.55 | ≤8.00 | PASS |
| | | 2440 | -11.43 | ≤8.00 | PASS |
| | | 2478 | -11.03 | ≤8.00 | PASS |

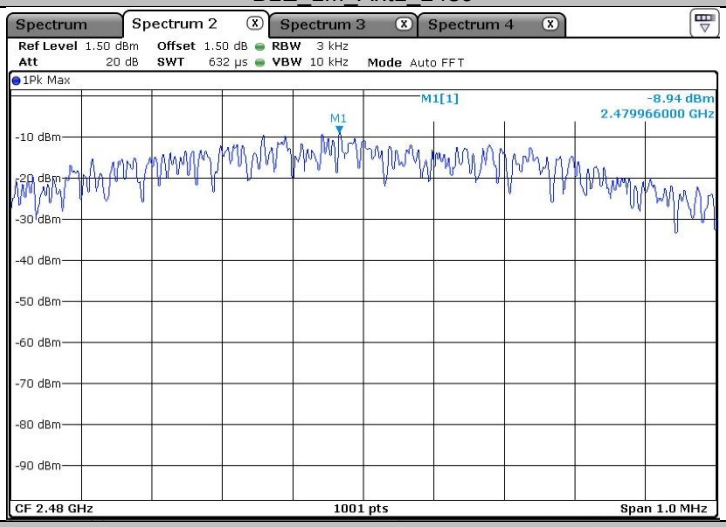
BLE_1M_Ant1_2402



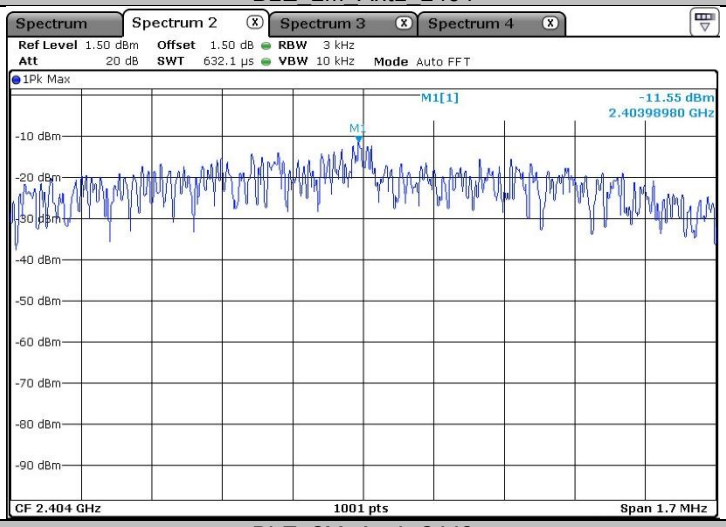

BLE_1M_Ant1_2440



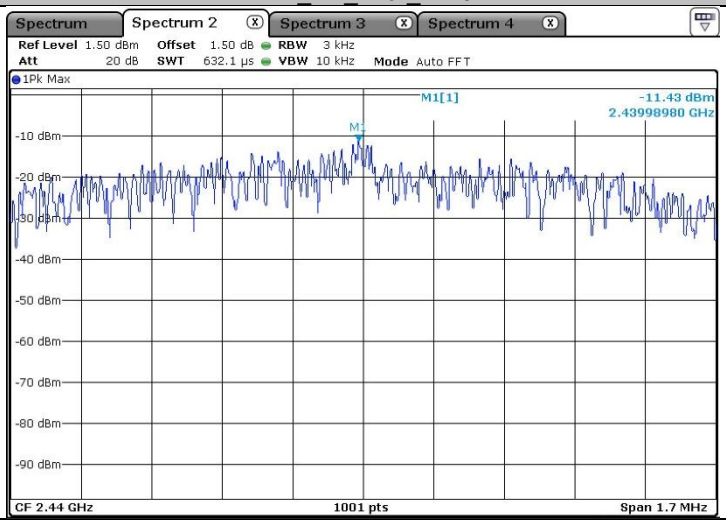
BLE_1M_Ant1_2480



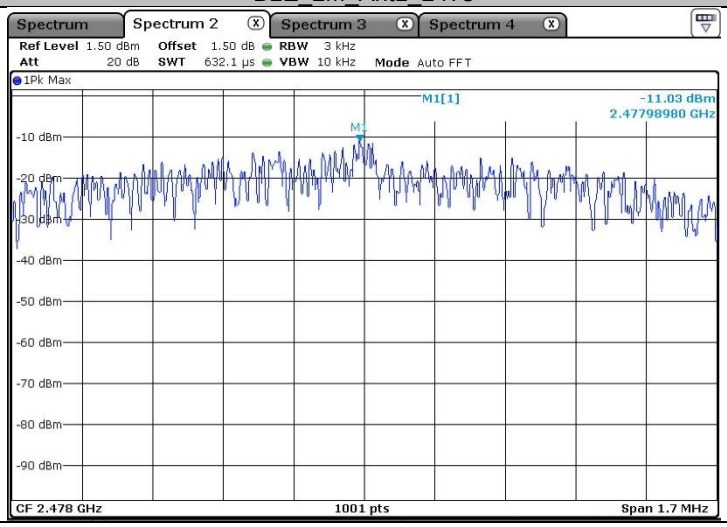

BLE_2M_Ant1_2404




BLE_2M_Ant1_2440

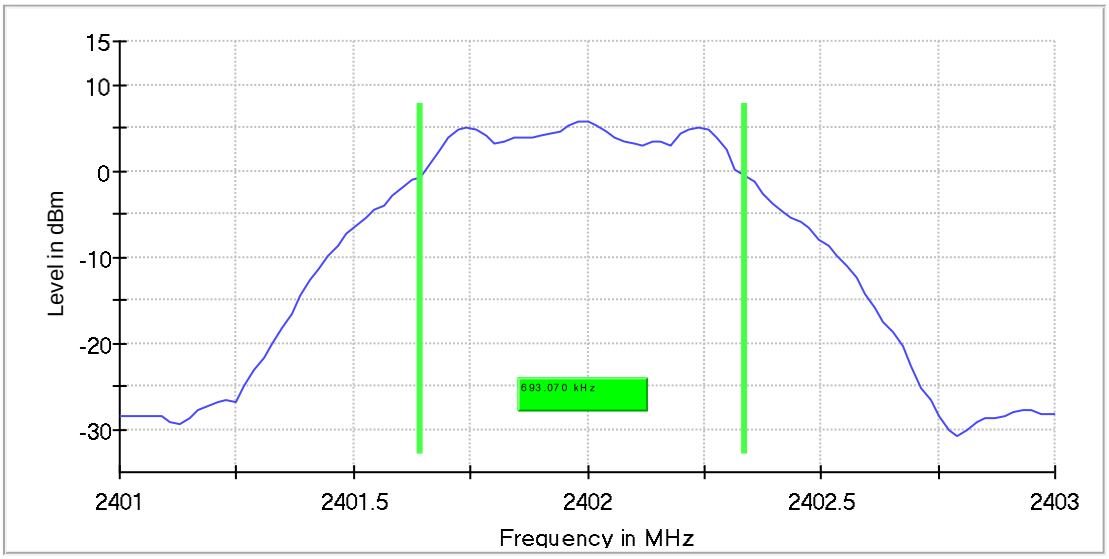


BLE_2M_Ant1_2478

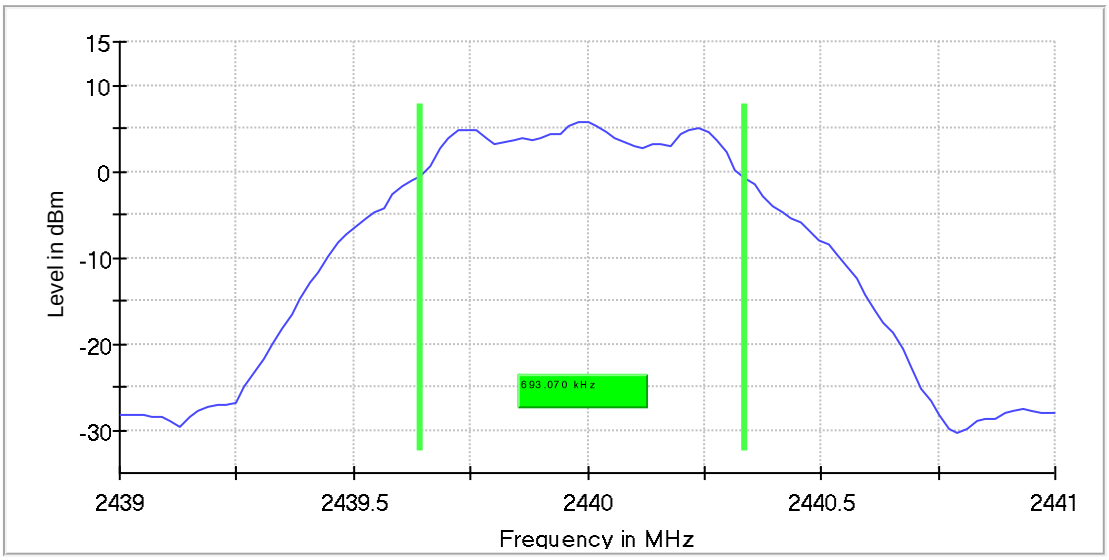


## Appendix A.2: Test Results of 6dB Bandwidth

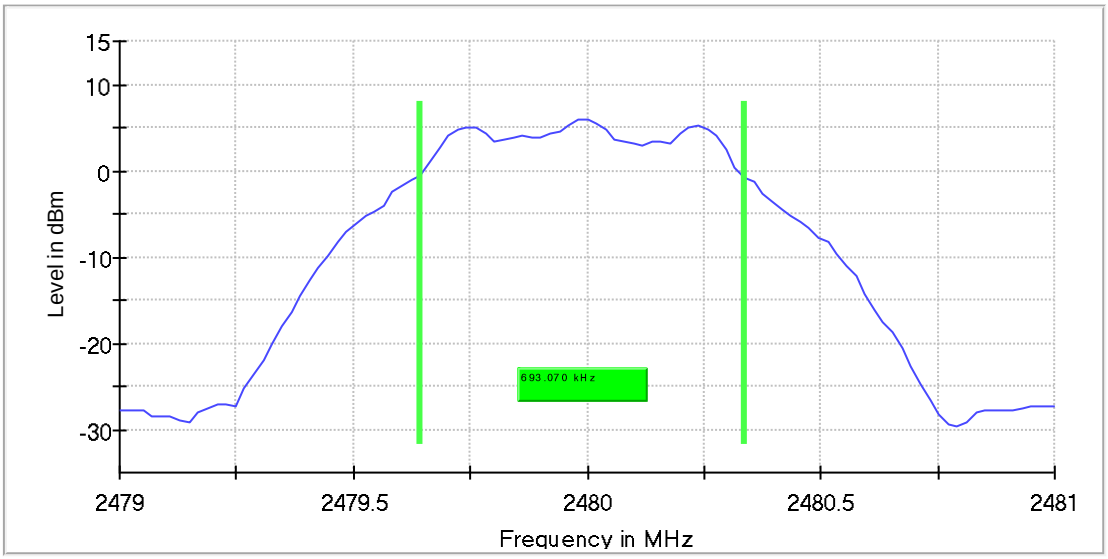
BLE_1M_Ant1_2402




BLE_1M_Ant1_2440

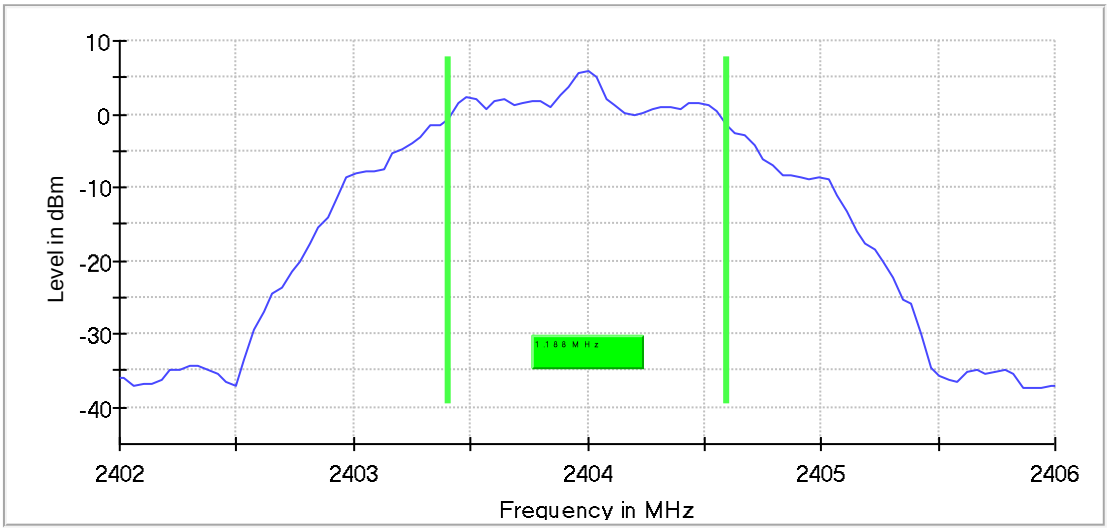


BLE_1M_Ant1_2480



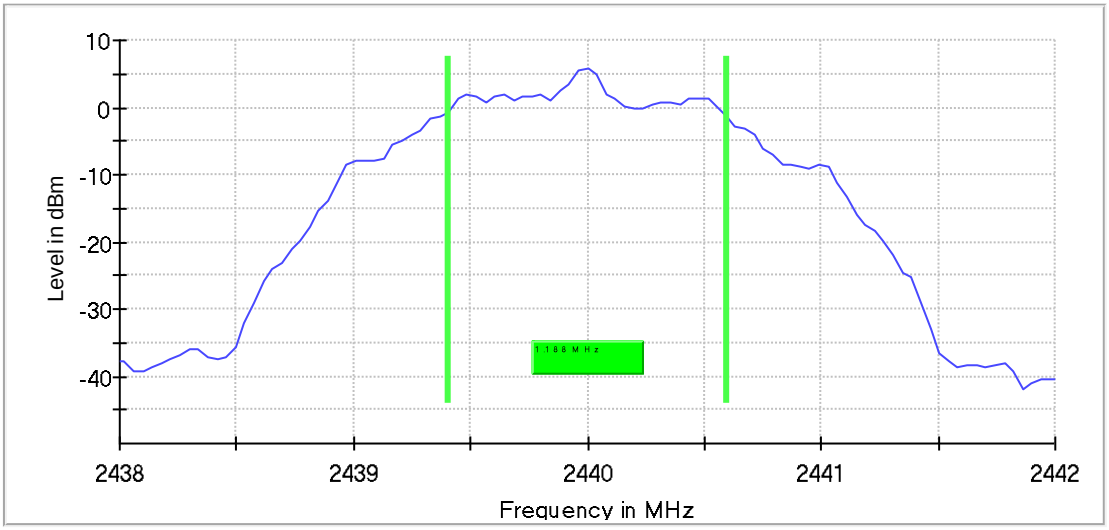

BLE_2M_Ant1_2404

6 dB Bandwidth



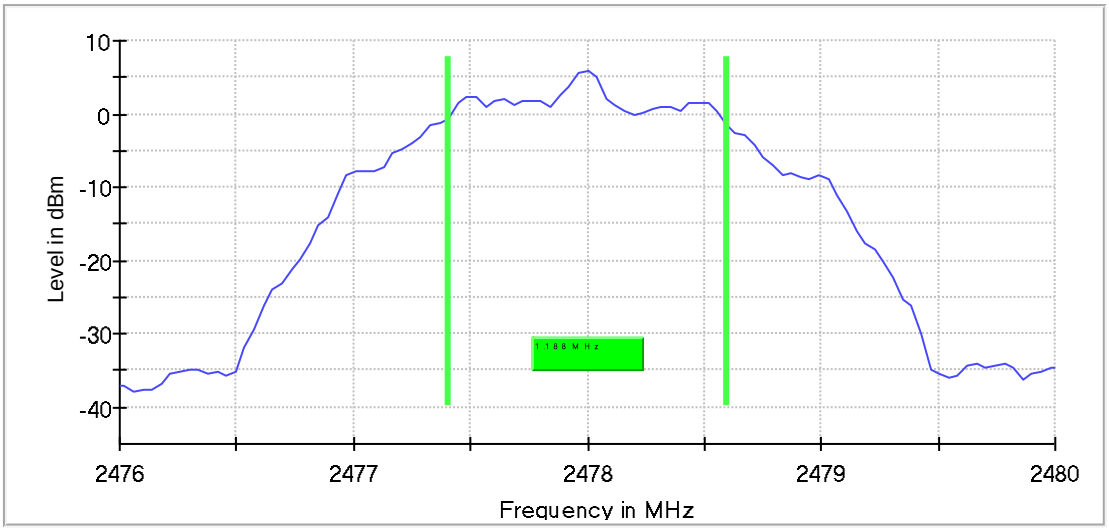
BLE_2M_Ant1_2440

6 dB Bandwidth




BLE_2M_Ant1_2478

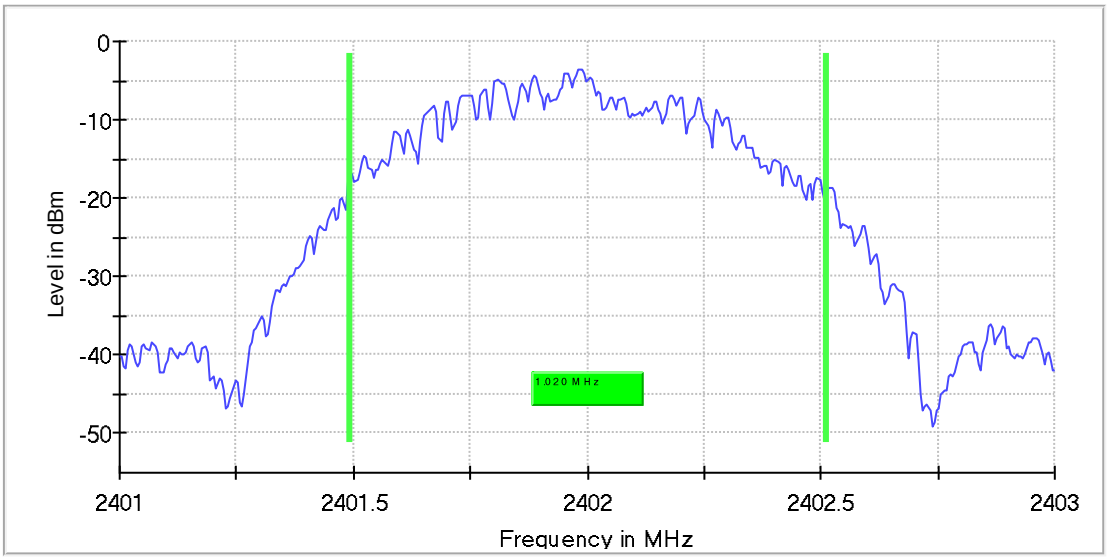
6 dB Bandwidth



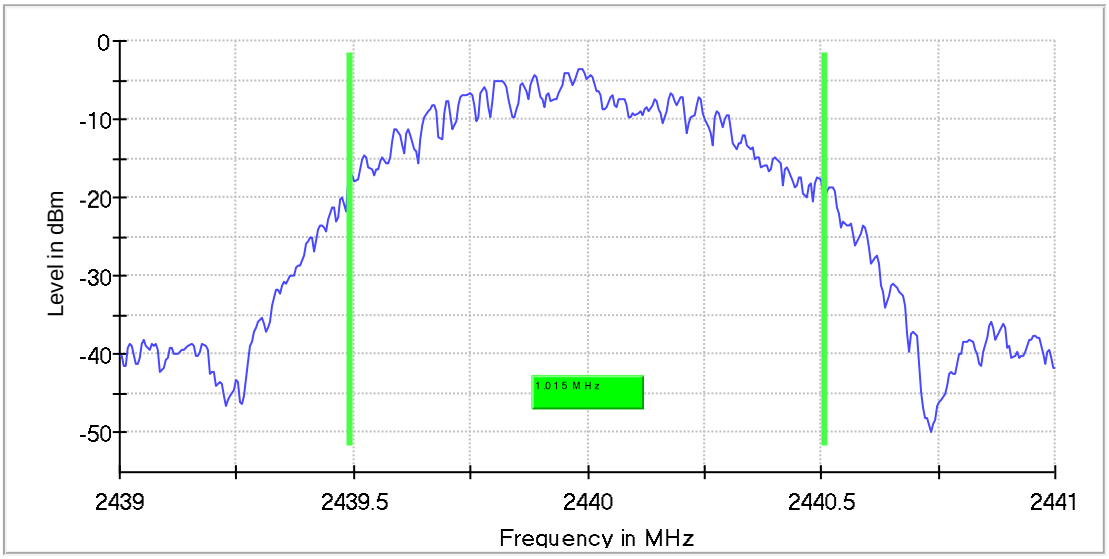

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 18.938 µs | AUTO |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |

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

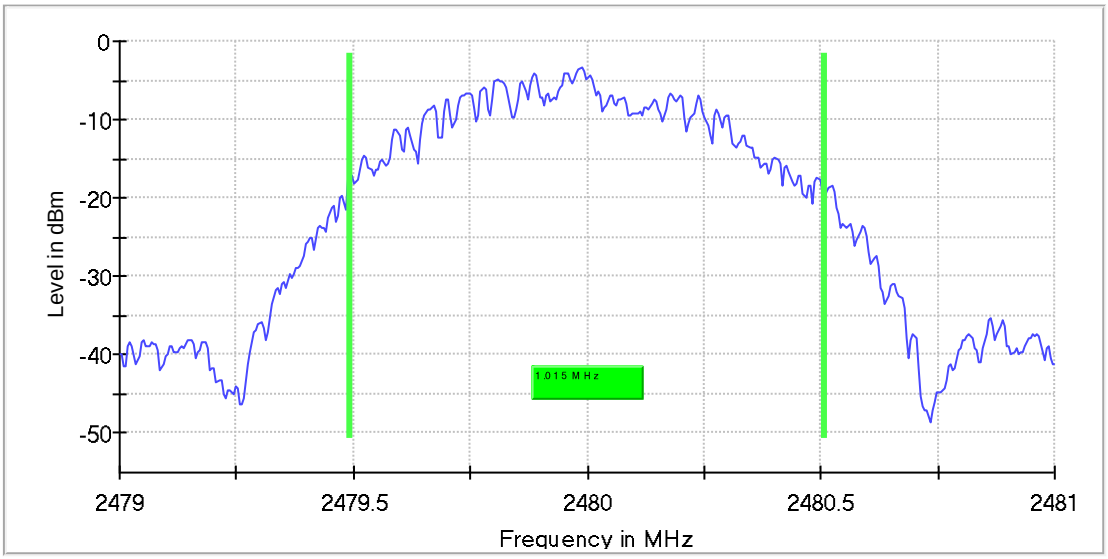
BLE_1M_Ant1_2402




BLE_1M_Ant1_2440

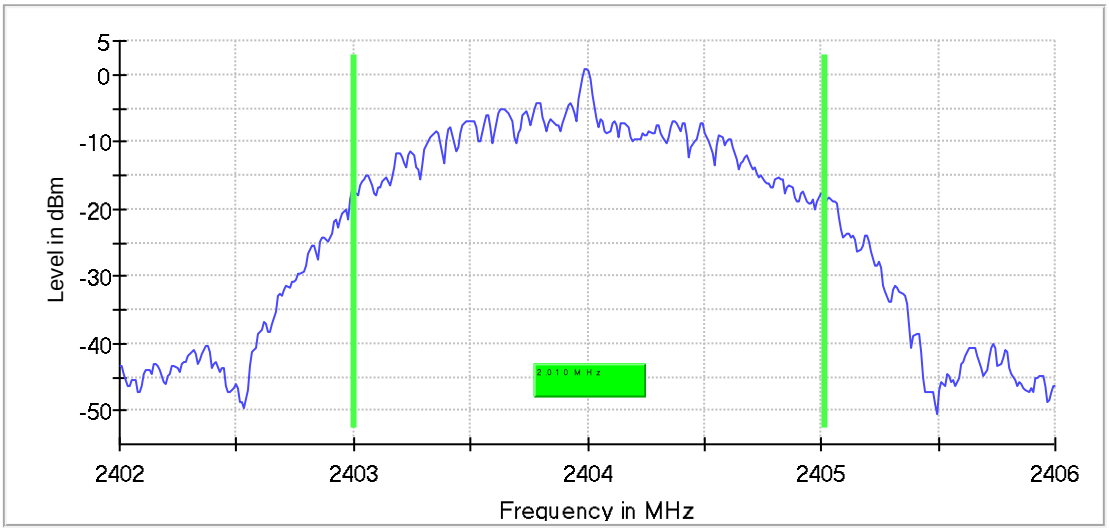


BLE_1M_Ant1_2480

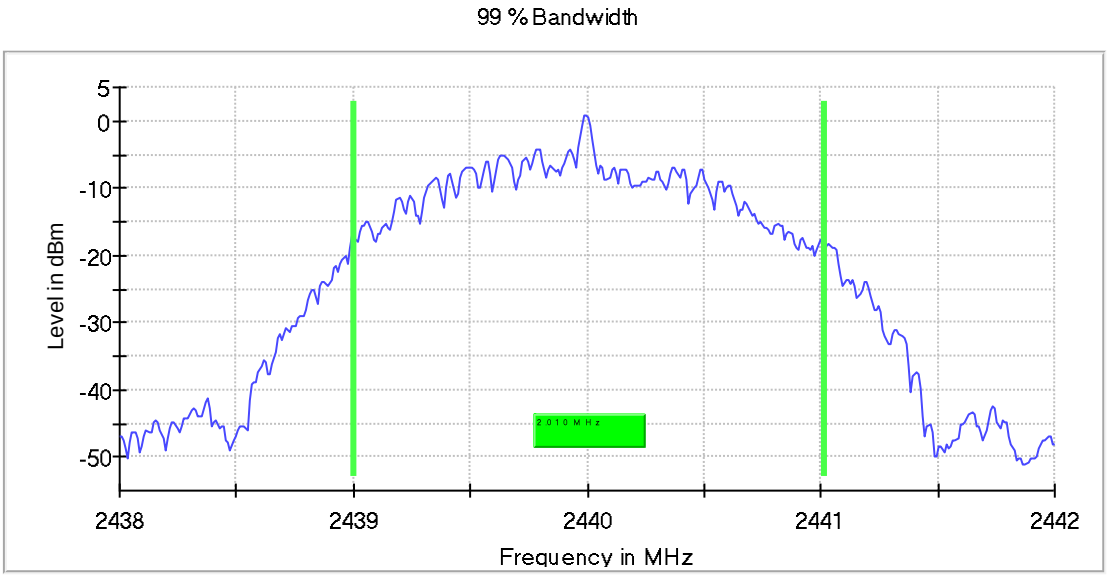



BLE_2M_Ant1_2404

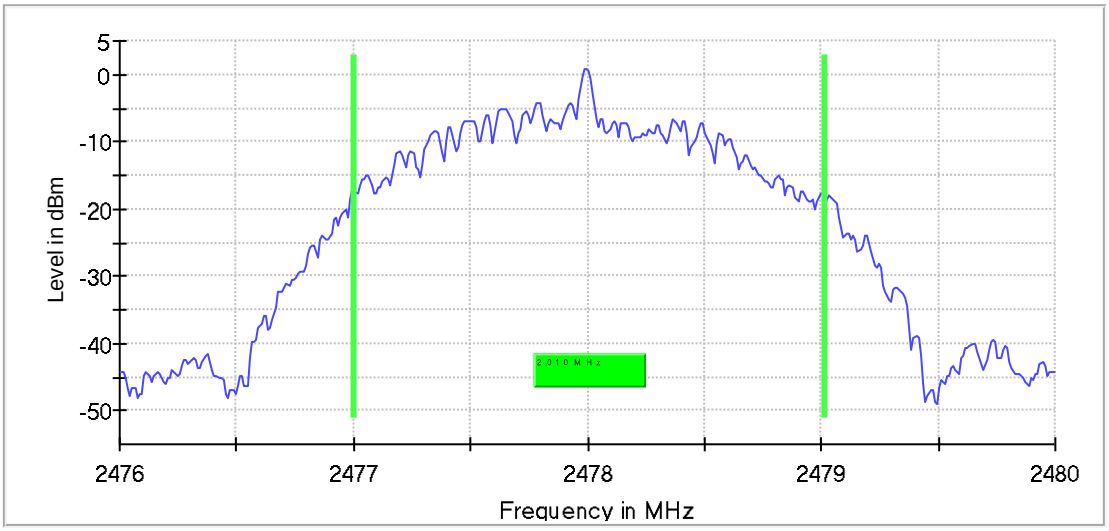
99 % Bandwidth



BLE_2M_Ant1_2440




BLE_2M_Ant1_2478




| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 30.000 kHz | >= 10.000 kHz |
| VBW | 100.00 kHz | >= 30.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 189.648 µs | AUTO |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |

## Appendix A.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 3.7V | 2401.980 | -20 | -8.33 | 10 |
| DC 3.3V | 2401.981 | -19 | -7.91 | |
| DC 4.07V | 2401.980 | -20 | -8.33 | |

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

| Temperature (℃) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|---|---|---|---|---|
| -30 | 2401.982 | -18 | -7.49 | 10 |
| -20 | 2401.981 | -19 | -7.91 | |
| -10 | 2401.980 | -20 | -8.33 | |
| 0 | 2401.980 | -20 | -8.33 | |
| 10 | 2401.980 | -20 | -8.33 | |
| 20 | 2401.980 | -20 | -8.33 | |
| 30 | 2401.980 | -20 | -8.33 | |
| 40 | 2401.981 | -19 | -7.91 | |
| 50 | 2401.982 | -18 | -7.49 | |
| 55 | 2401.981 | -19 | -7.91 | |

| 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 3.7V | 2439.990 | -10 | -4.10 | 10 |
| DC 3.3V | 2439.990 | -10 | -4.10 | |
| DC 4.07V | 2439.990 | -10 | -4.10 | |

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

| Temperature (℃) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|---|---|---|---|---|
| -30 | 2439.991 | -9 | -3.69 | 10 |
| -20 | 2439.990 | -10 | -4.10 | |
| -10 | 2439.990 | -10 | -4.10 | |
| 0 | 2439.990 | -10 | -4.10 | |
| 10 | 2439.990 | -10 | -4.10 | |
| 20 | 2439.990 | -10 | -4.10 | |
| 30 | 2439.992 | -8 | -3.28 | |
| 40 | 2439.992 | -8 | -3.28 | |
| 50 | 2439.992 | -8 | -3.28 | |
| 55 | 2439.991 | -9 | -3.69 | |

| 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 3.7V | 2479.989 | -11 | -4.44 | 10 |
| DC 3.3V | 2479.989 | -11 | -4.44 | |
| DC 4.07V | 2479.989 | -11 | -4.44 | |

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

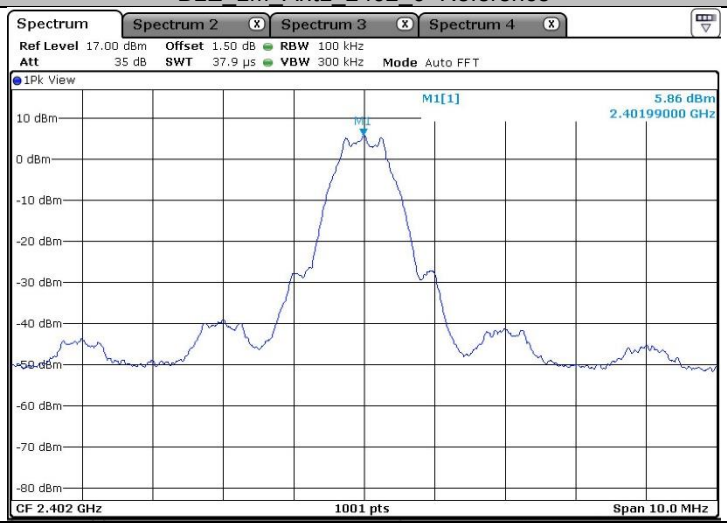
| Temperature (℃) | Test result (MHz) | Deviation Frequency (KHz) | Test result (ppm) | Limit (ppm) |
|---|---|---|---|---|
| -30 | 2479.987 | -13 | -5.24 | 10 |
| -20 | 2479.987 | -13 | -5.24 | |
| -10 | 2479.988 | -12 | -4.84 | |
| 0 | 2479.988 | -12 | -4.84 | |
| 10 | 2479.988 | -12 | -4.84 | |
| 20 | 2479.989 | -11 | -4.44 | |
| 30 | 2479.989 | -11 | -4.44 | |
| 40 | 2479.989 | -11 | -4.44 | |
| 50 | 2479.988 | -12 | -4.84 | |
| 55 | 2479.990 | -10 | -4.03 | |

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

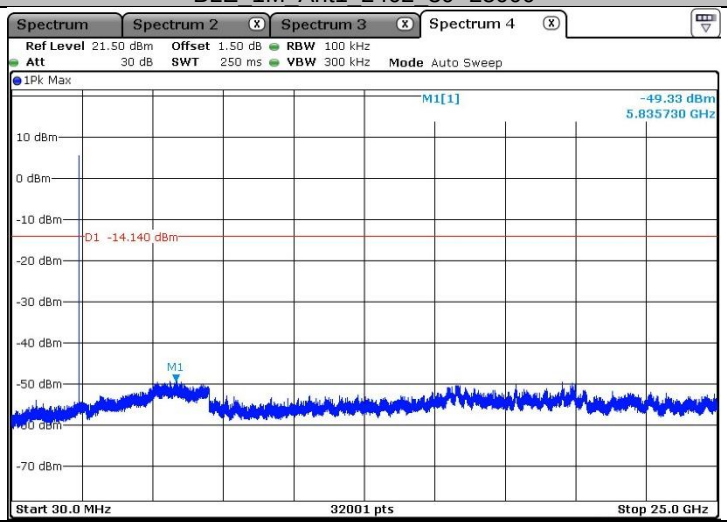
### Conducted measurements

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | Reference | 5.86 | 5.86 | --- | PASS |
| | | | 30~25000 | 5.86 | -49.33 | ≤-14.14 | PASS |
| | | 2440 | Reference | 5.39 | 5.39 | --- | PASS |
| | | | 30~25000 | 5.39 | -48.64 | ≤-14.61 | PASS |
| | | 2480 | Reference | 6.22 | 6.22 | --- | PASS |
| | | | 30~25000 | 6.22 | -49.18 | ≤-13.78 | PASS |
| BLE_2M | Ant1 | 2404 | Reference | 5.69 | 5.69 | --- | PASS |
| | | | 30~25000 | 5.69 | -48.37 | ≤-14.31 | PASS |
| | | 2440 | Reference | 5.85 | 5.85 | --- | PASS |
| | | | 30~25000 | 5.85 | -48.63 | ≤-14.15 | PASS |
| | | 2478 | Reference | 6.45 | 6.45 | --- | PASS |
| | | | 30~25000 | 6.45 | -49.31 | ≤-13.55 | PASS |

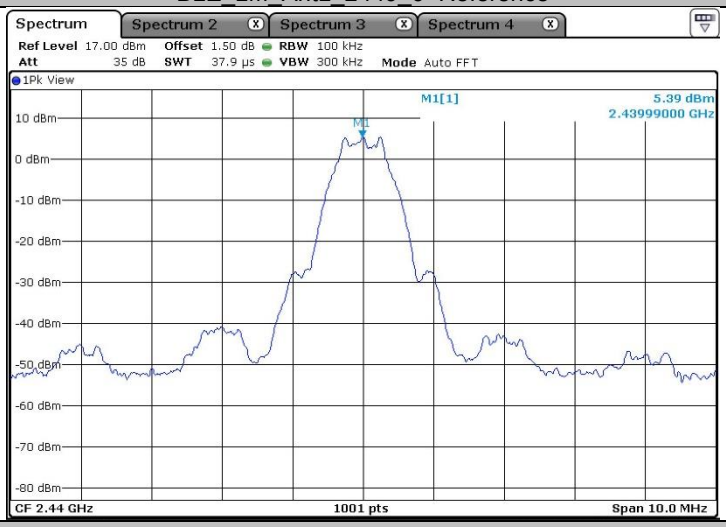
BLE_1M_Ant1_2402_0~Reference



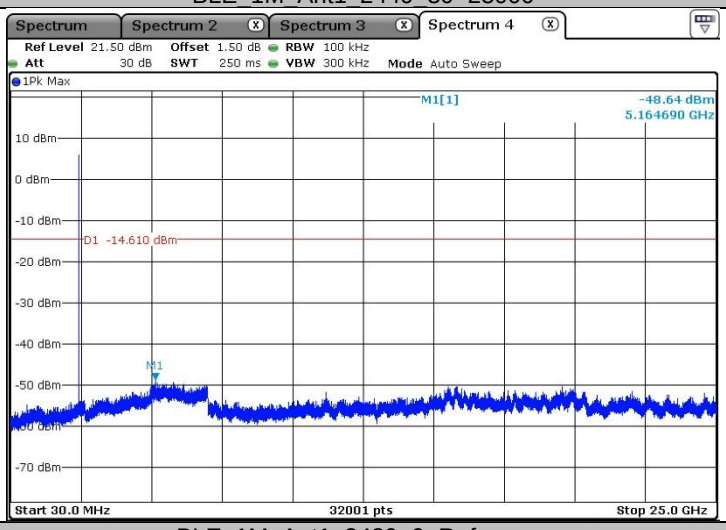

BLE_1M_Ant1_2402_30~25000



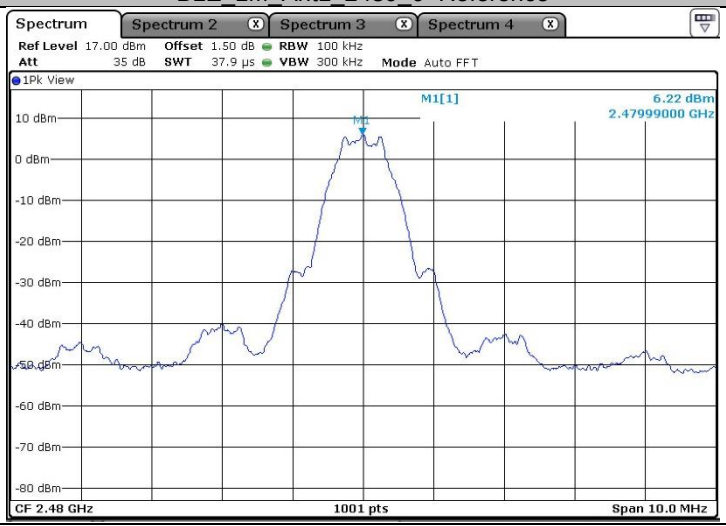
BLE_1M_Ant1_2440_0~Reference



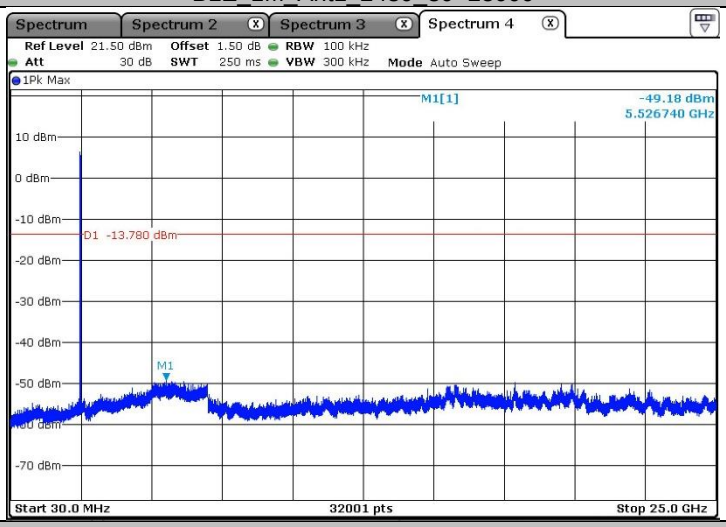

BLE_1M_Ant1_2440_30~25000



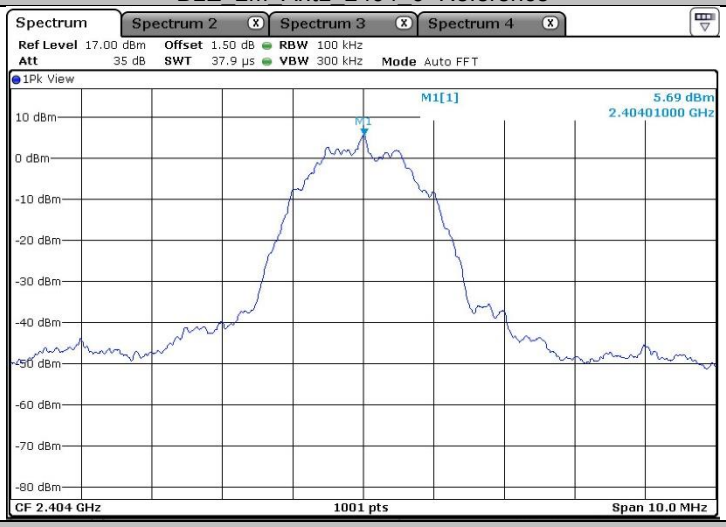

BLE_1M_Ant1_2480_0~Reference



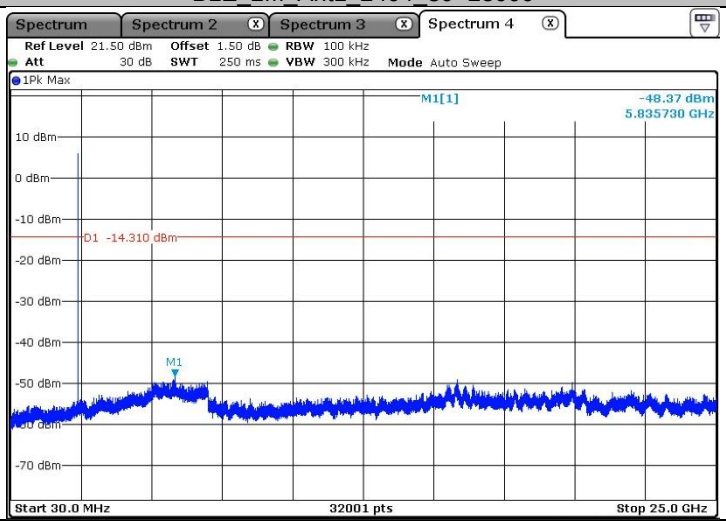
BLE_1M_Ant1_2480_30~25000



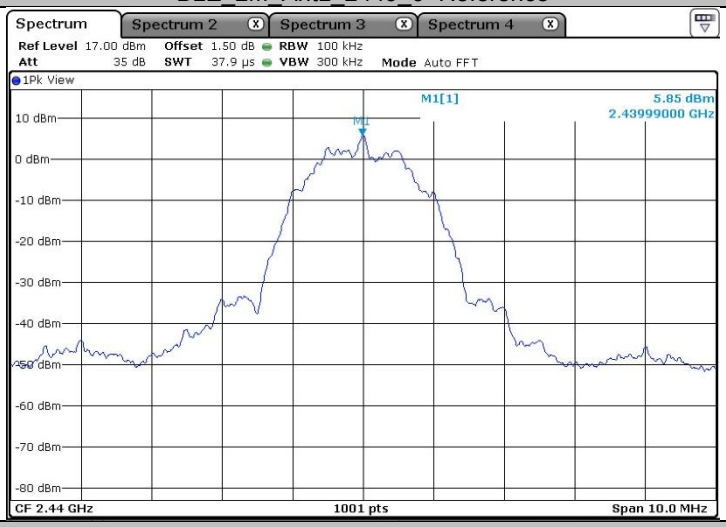

BLE_2M_Ant1_2404_0~Reference



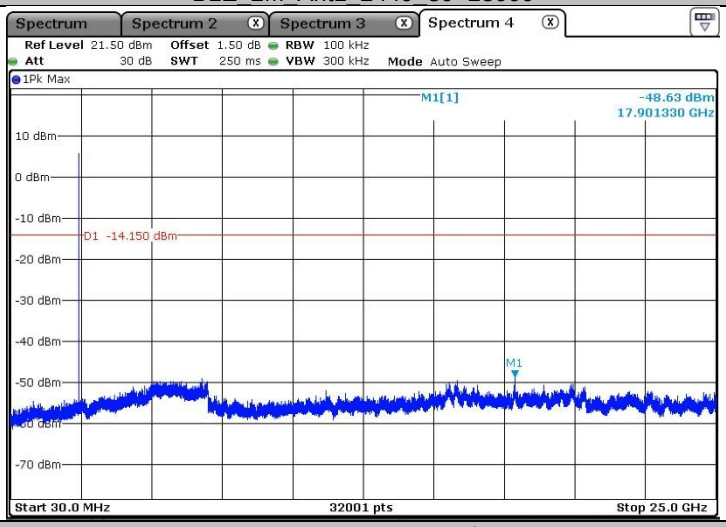

BLE_2M_Ant1_2404_30~25000



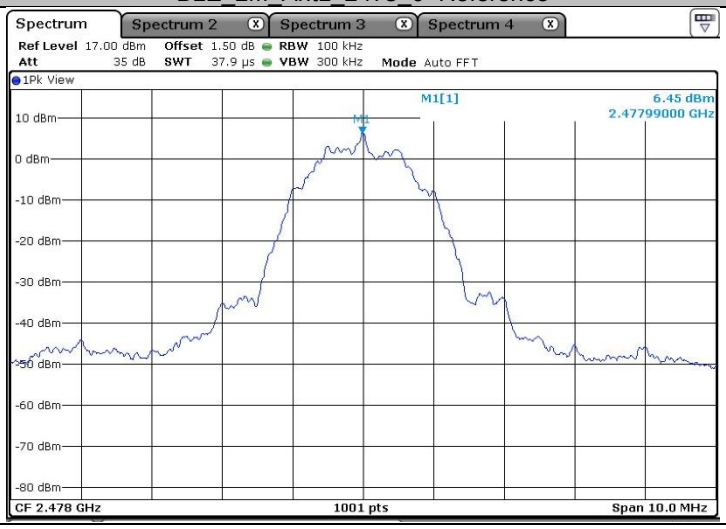
BLE_2M_Ant1_2440_0~Reference

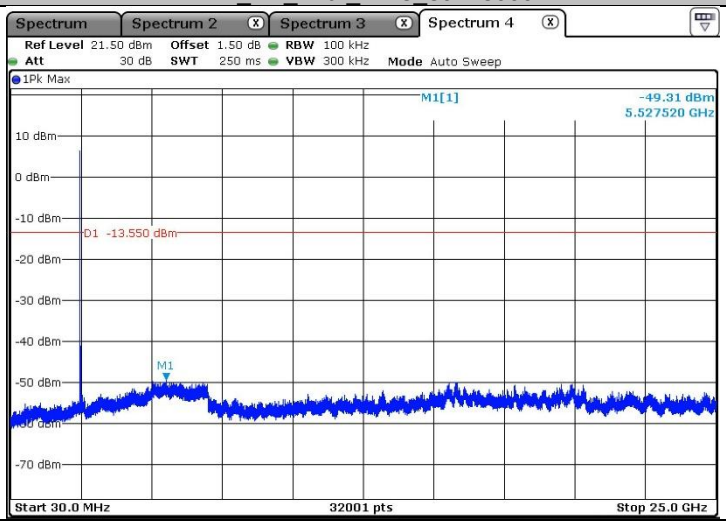



BLE_2M_Ant1_2440_30~25000




BLE_2M_Ant1_2478_0~Reference

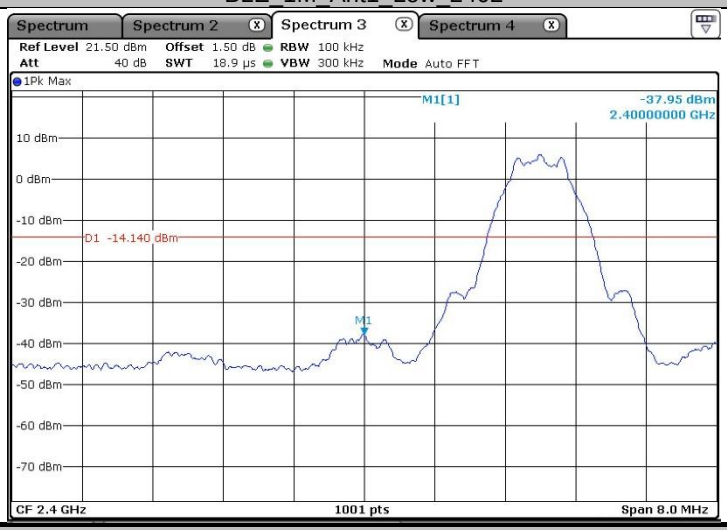


| BLE_2M_Ant1_2478_30~25000 |
| --- |
|  |

**Band edge measurements**

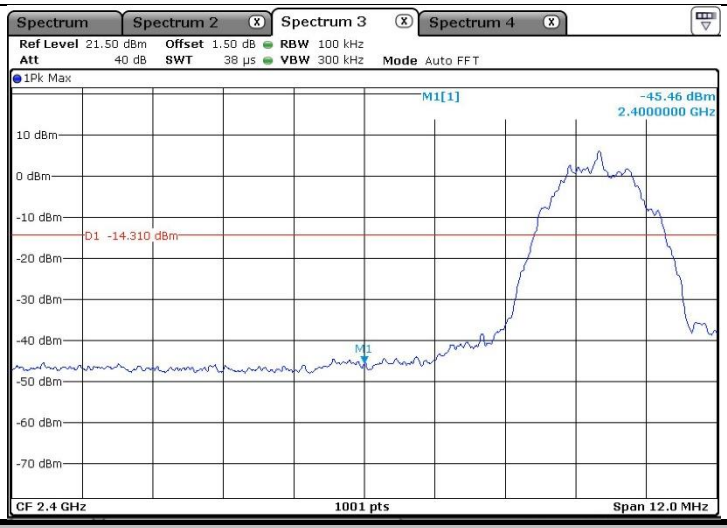
| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | Low | 2402 | 5.86 | -37.95 | ≤-14.14 | PASS |
| | | High | 2480 | 6.22 | -45.25 | ≤-13.78 | PASS |
| BLE_2M | Ant1 | Low | 2404 | 5.69 | -45.46 | ≤-14.14 | PASS |
| | | High | 2478 | 6.45 | -46.01 | ≤-13.55 | PASS |

BLE_1M_Ant1_Low_2402

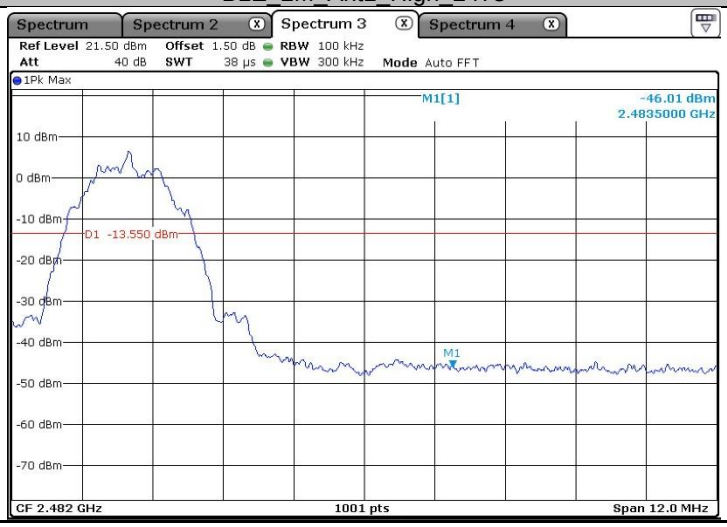



BLE_1M_Ant1_High_2480


BLE_2M_Ant1_Low_2404




BLE_2M_Ant1_High_2478



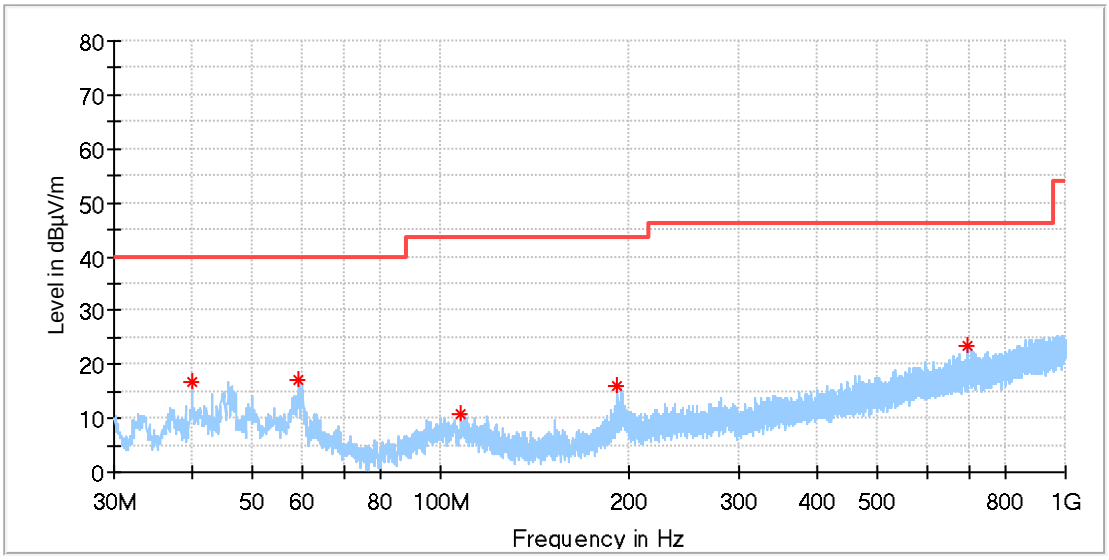
## Appendix A.6: Test Results of Radiated Spurious Emissions

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: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

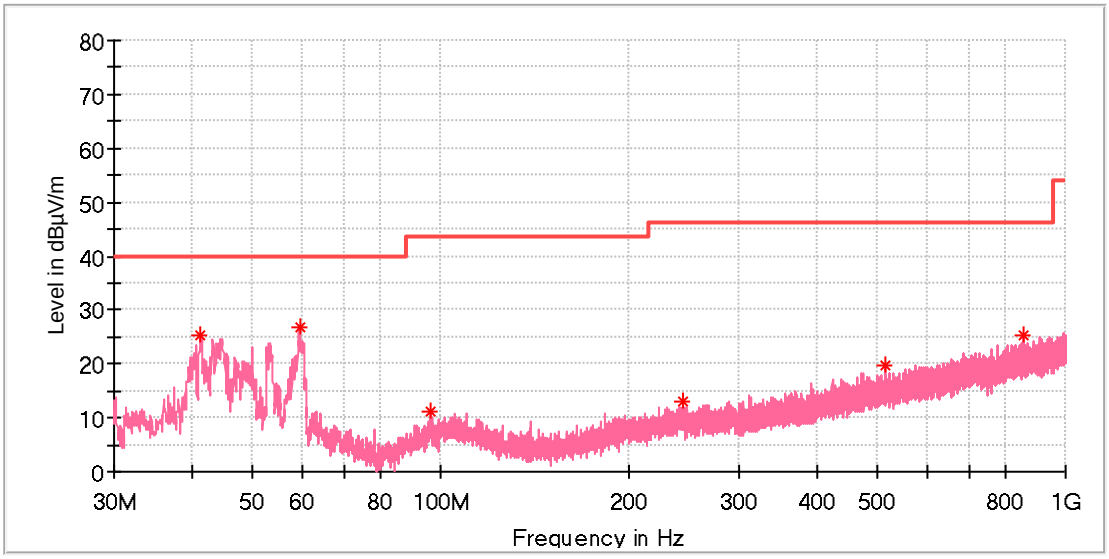



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 40.035769 | 16.60 | 40.00 | 23.40 | 100.0 | H | 264.0 | -20.4 |
| 59.361154 | 17.19 | 40.00 | 22.81 | 100.0 | H | 213.0 | -19.2 |
| 107.450769 | 10.70 | 43.50 | 32.80 | 100.0 | H | 91.0 | -19.2 |
| 191.990000 | 15.94 | 43.50 | 27.56 | 100.0 | H | 1.0 | -19.7 |
| 694.785769 | 23.63 | 46.00 | 22.37 | 100.0 | H | 40.0 | -8.5 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




# Critical_Freqs

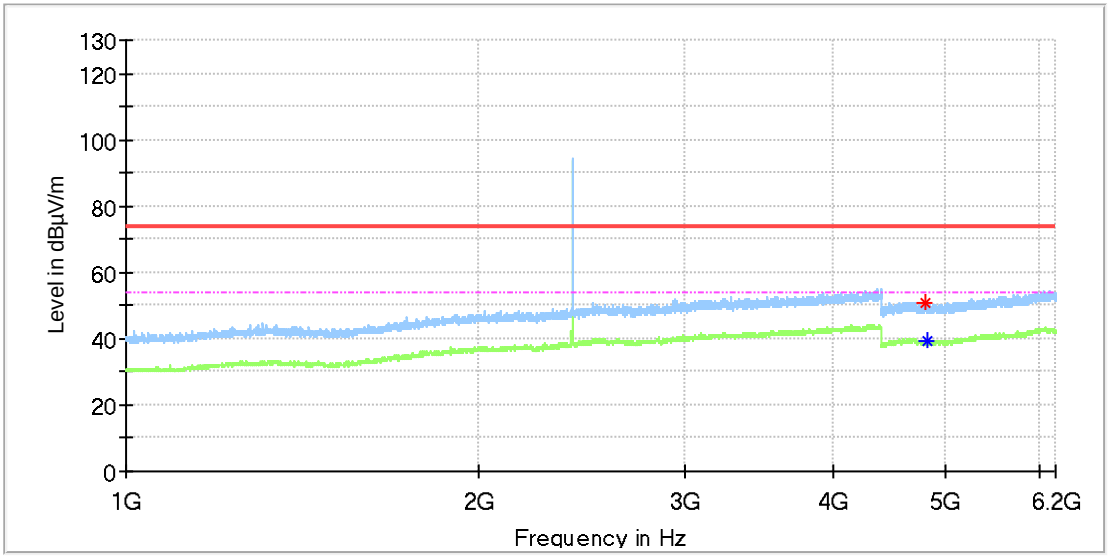
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 41.266923 | 25.48 | 40.00 | 14.52 | 100.0 | V | 325.0 | -20.1 |
| 59.435769 | 26.97 | 40.00 | 13.03 | 100.0 | V | 7.0 | -19.2 |
| 96.221154 | 11.17 | 43.50 | 32.33 | 100.0 | V | 193.0 | -19.9 |
| 244.481923 | 12.95 | 46.00 | 33.05 | 100.0 | V | 2.0 | -17.9 |
| 514.403077 | 19.71 | 46.00 | 26.29 | 100.0 | V | 53.0 | -12.0 |
| 856.887692 | 25.24 | 46.00 | 20.76 | 100.0 | V | 84.0 | -5.8 |

1GHz - 18GHz

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

## EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

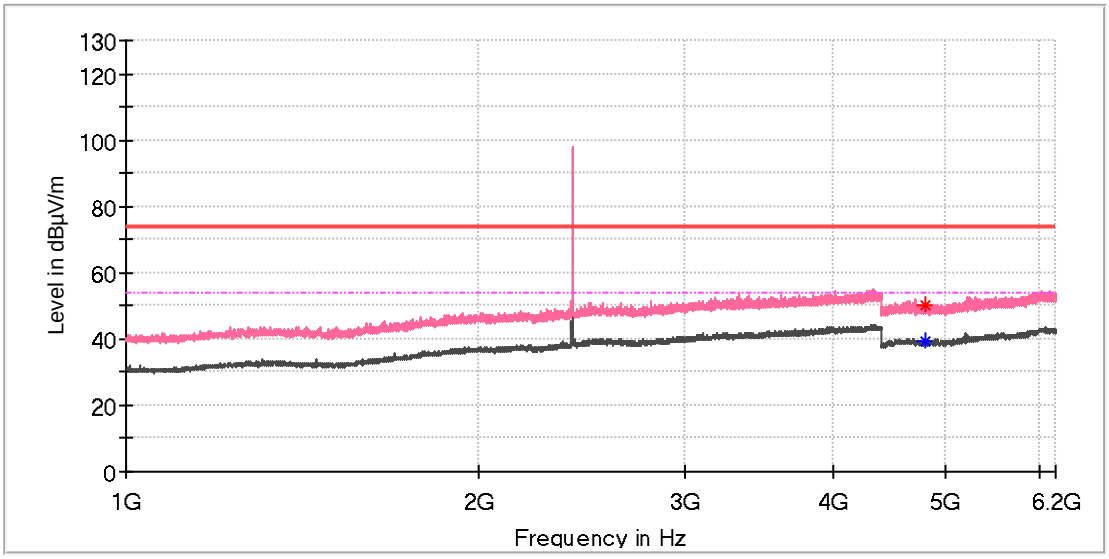



## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4798.500000 | 50.73 | --- | 74.00 | 23.28 | 150.0 | H | 2.0 | 11.8 |
| 4821.500000 | --- | 39.56 | 54.00 | 14.44 | 150.0 | H | 157.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

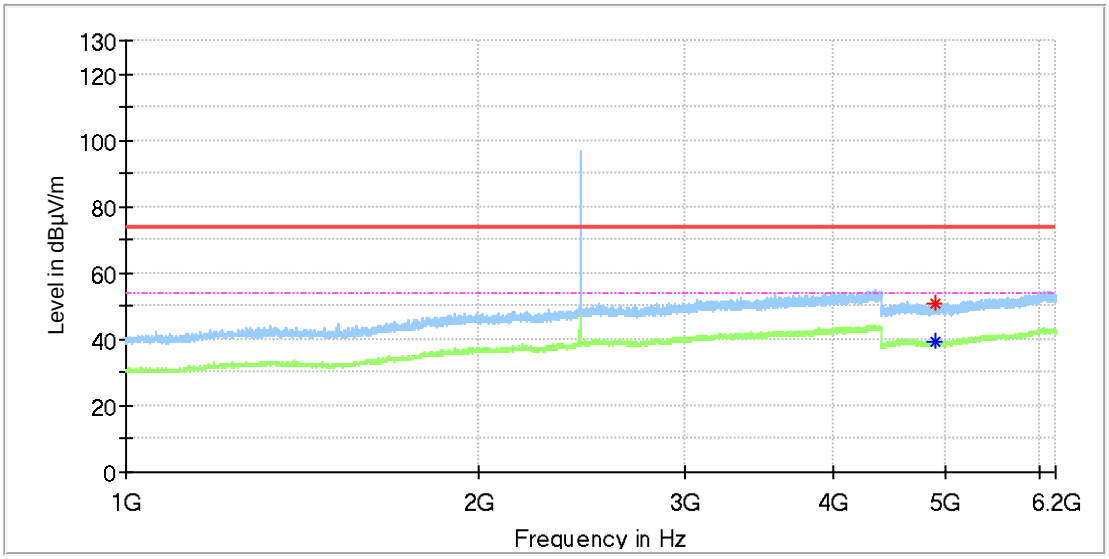



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4805.500000 | 50.35 | --- | 74.00 | 23.65 | 150.0 | V | 56.0 | 11.8 |
| 4808.500000 | --- | 39.52 | 54.00 | 14.48 | 150.0 | V | 6.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

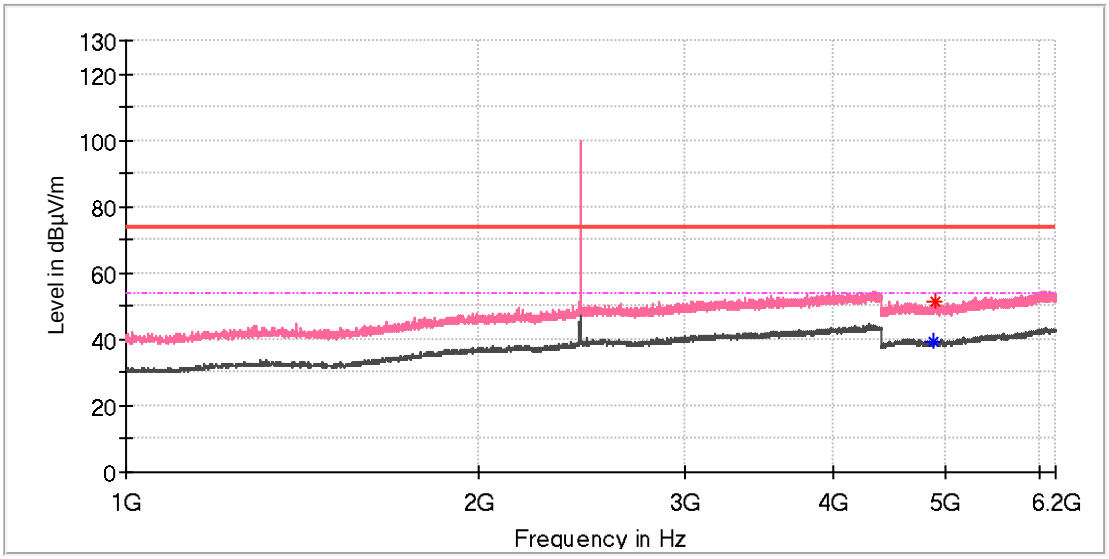



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4892.500000 | 51.04 | --- | 74.00 | 22.96 | 150.0 | H | 219.0 | 11.8 |
| 4893.000000 | --- | 39.45 | 54.00 | 14.55 | 150.0 | H | 213.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

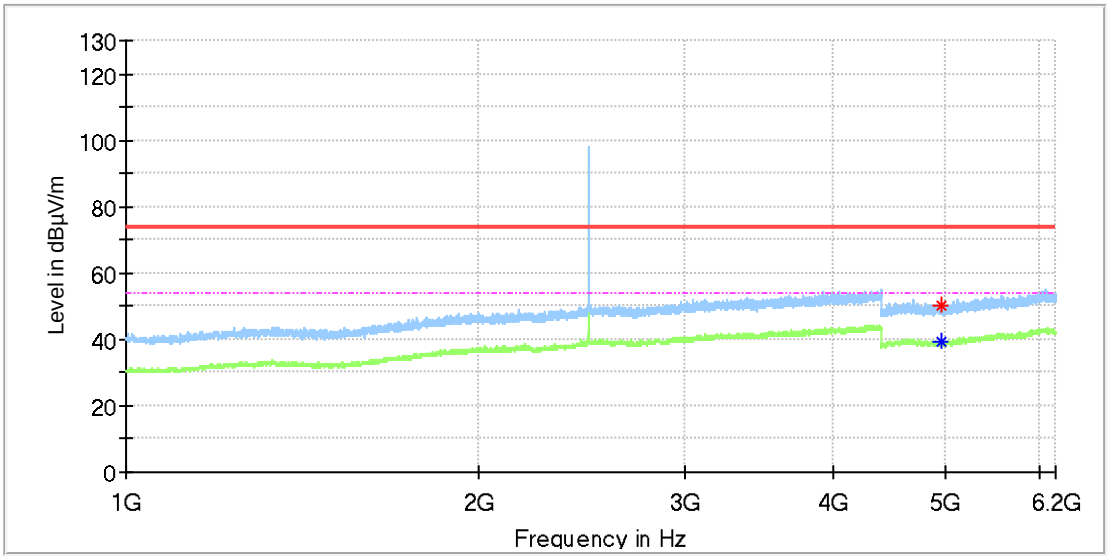



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4869.000000 | --- | 39.34 | 54.00 | 14.66 | 150.0 | V | 304.0 | 11.8 |
| 4903.000000 | 51.70 | --- | 74.00 | 22.30 | 150.0 | V | 189.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

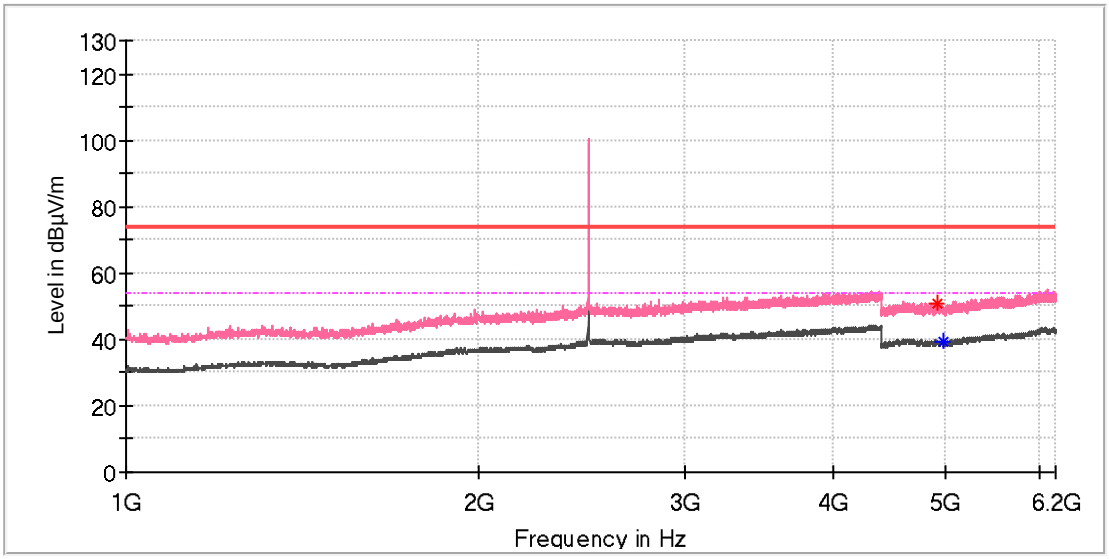



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4948.500000 | 50.29 | --- | 74.00 | 23.71 | 150.0 | H | 205.0 | 11.8 |
| 4951.500000 | --- | 39.59 | 54.00 | 14.41 | 150.0 | H | 168.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

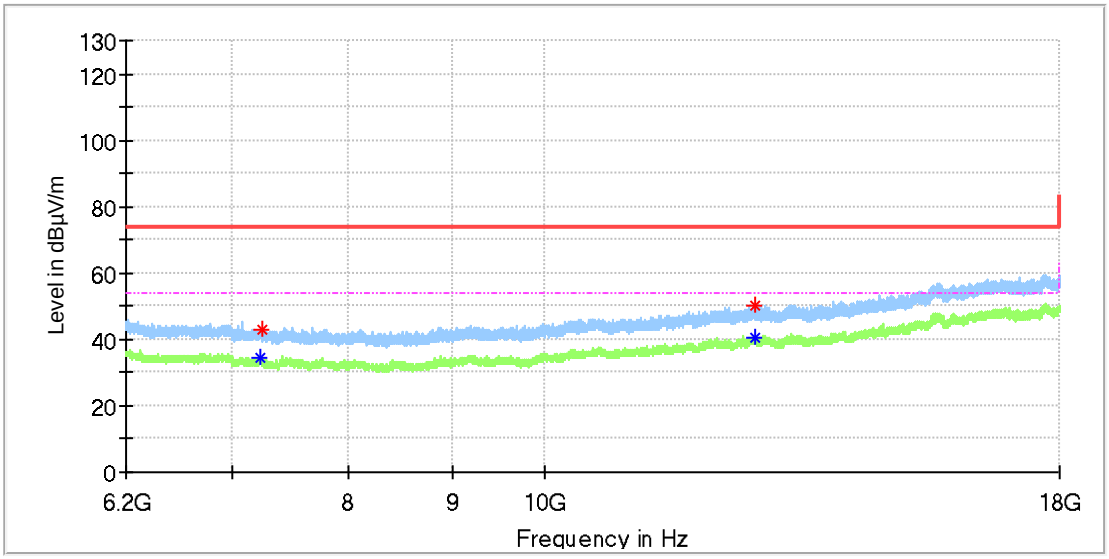



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4913.000000 | 50.84 | --- | 74.00 | 23.16 | 150.0 | V | 270.0 | 11.8 |
| 4967.000000 | --- | 39.29 | 54.00 | 14.71 | 150.0 | V | 202.0 | 11.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

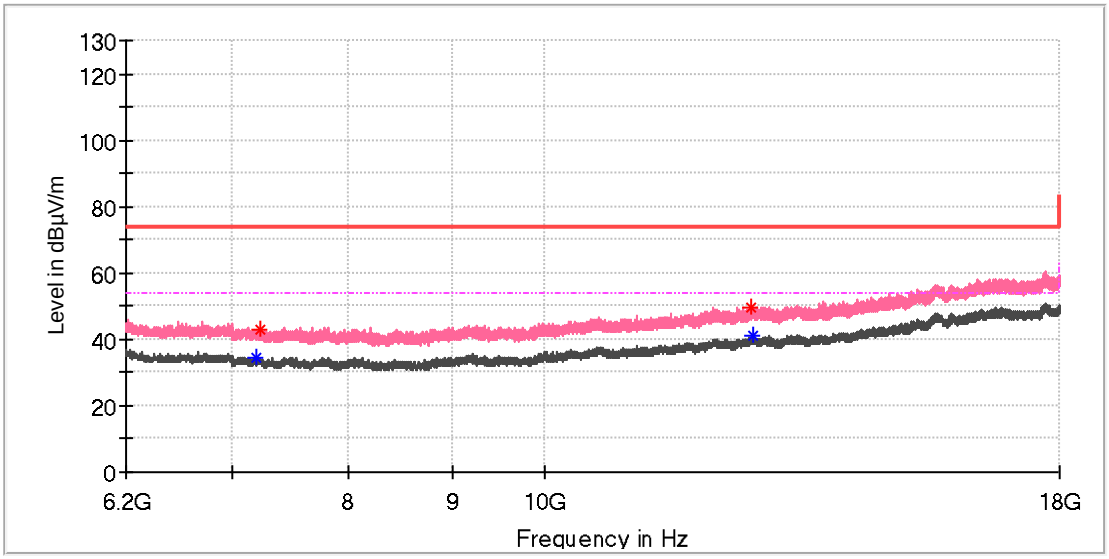



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7223.158333 | --- | 34.42 | 54.00 | 19.58 | 150.0 | H | 99.0 | 8.7 |
| 7235.450000 | 42.77 | --- | 74.00 | 31.23 | 150.0 | H | 48.0 | 8.6 |
| 12700.816667 | 50.06 | --- | 74.00 | 23.95 | 150.0 | H | 241.0 | 15.1 |
| 12718.516667 | --- | 40.72 | 54.00 | 13.28 | 150.0 | H | 277.0 | 15.1 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

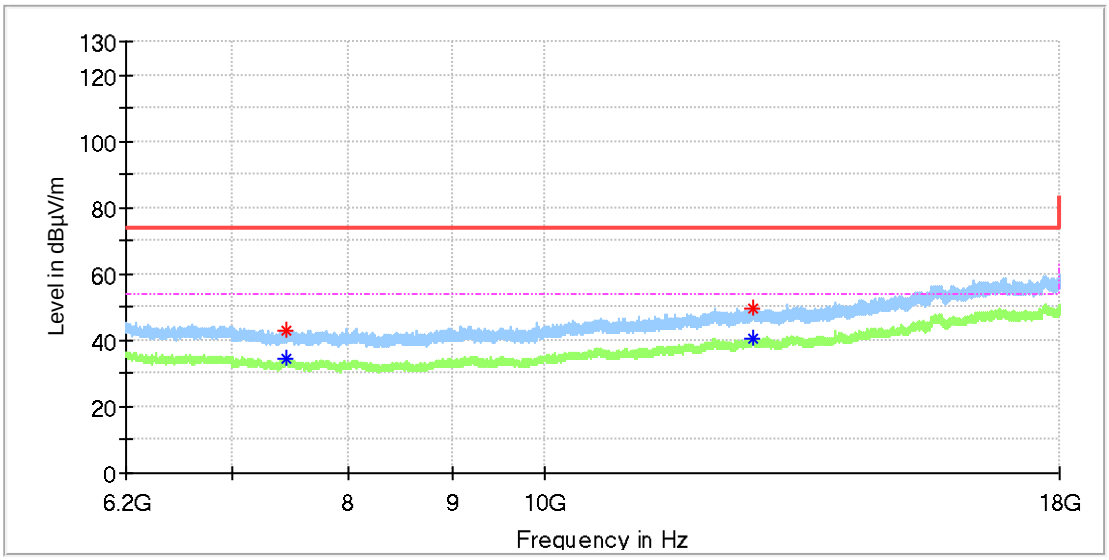



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7199.558333 | --- | 34.57 | 54.00 | 19.43 | 150.0 | V | 109.0 | 8.8 |
| 7231.516667 | 42.99 | --- | 74.00 | 31.01 | 150.0 | V | 264.0 | 8.6 |
| 12658.533333 | 49.77 | --- | 74.00 | 24.23 | 150.0 | V | 36.0 | 15.0 |
| 12690.983333 | --- | 41.29 | 54.00 | 12.71 | 150.0 | V | 169.0 | 15.1 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

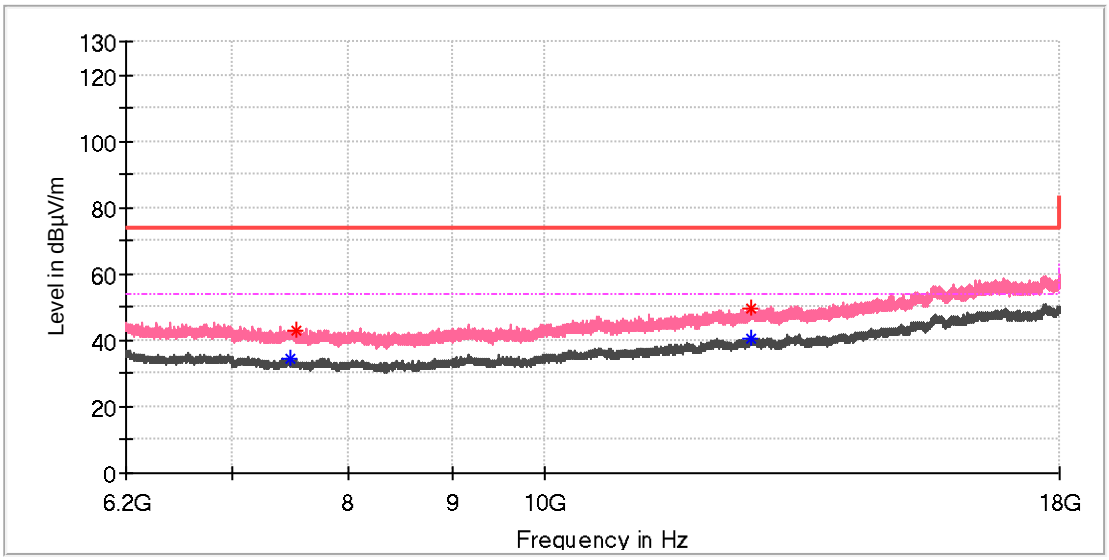



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7443.916667 | 42.78 | --- | 74.00 | 31.22 | 150.0 | H | 106.0 | 8.5 |
| 7444.408333 | --- | 34.26 | 54.00 | 19.74 | 150.0 | H | 71.0 | 8.5 |
| 12674.266667 | --- | 40.76 | 54.00 | 13.24 | 150.0 | H | 118.0 | 15.1 |
| 12693.441667 | 49.82 | --- | 74.00 | 24.18 | 150.0 | H | 213.0 | 15.1 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

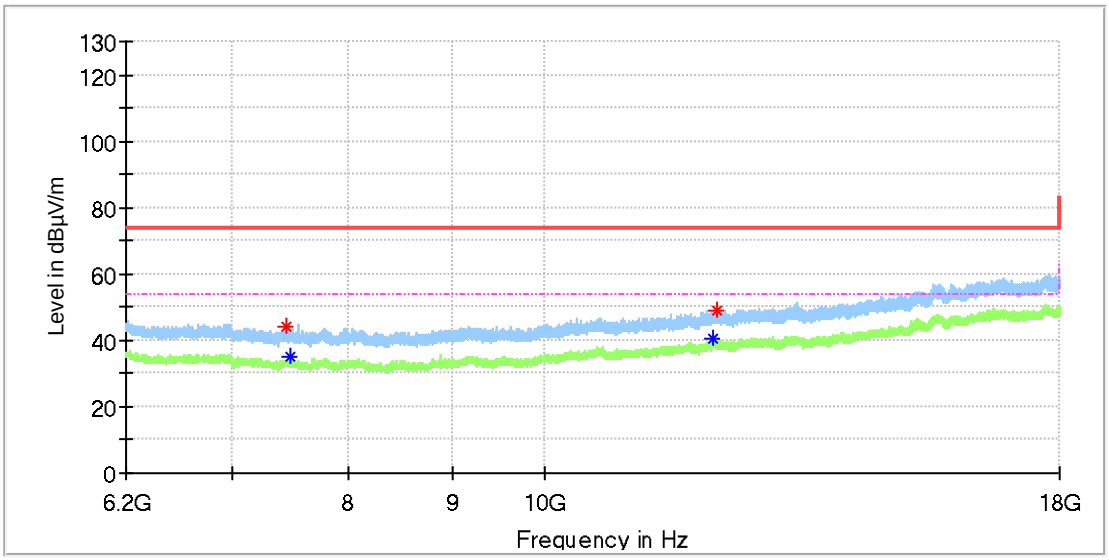



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7484.725000 | --- | 34.60 | 54.00 | 19.40 | 150.0 | V | 129.0 | 8.7 |
| 7528.483333 | 42.95 | --- | 74.00 | 31.05 | 150.0 | V | 214.0 | 8.7 |
| 12658.041667 | 49.46 | --- | 74.00 | 24.54 | 150.0 | V | 318.0 | 15.0 |
| 12665.908333 | --- | 40.80 | 54.00 | 13.20 | 150.0 | V | 214.0 | 15.1 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

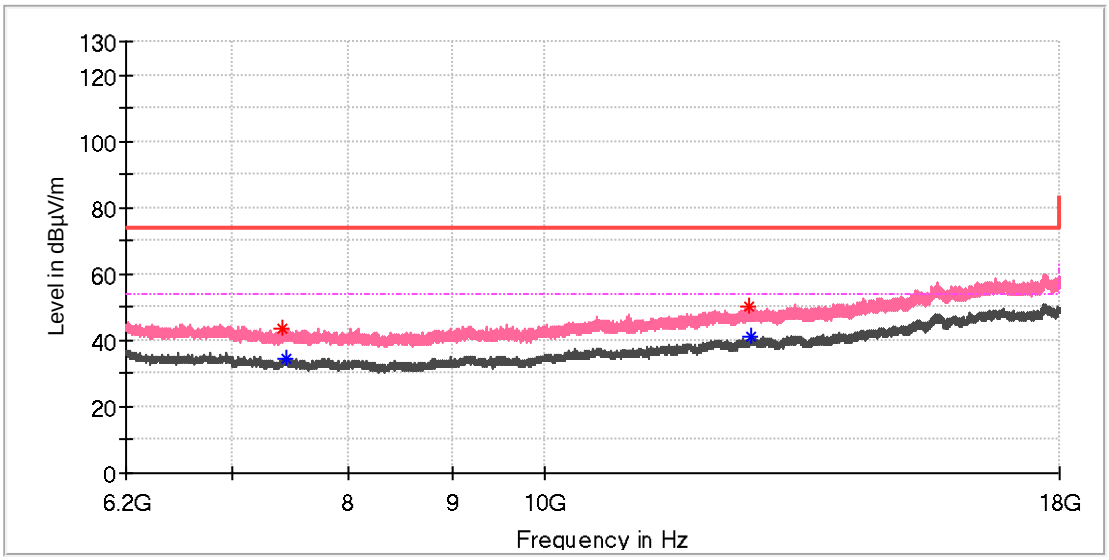



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7437.525000 | 44.22 | --- | 74.00 | 29.78 | 150.0 | H | 208.0 | 8.4 |
| 7483.741667 | --- | 35.07 | 54.00 | 18.93 | 150.0 | H | 294.0 | 8.7 |
| 12114.258333 | --- | 40.30 | 54.00 | 13.70 | 150.0 | H | 354.0 | 14.2 |
| 12173.750000 | 48.82 | --- | 74.00 | 25.18 | 150.0 | H | 195.0 | 14.5 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



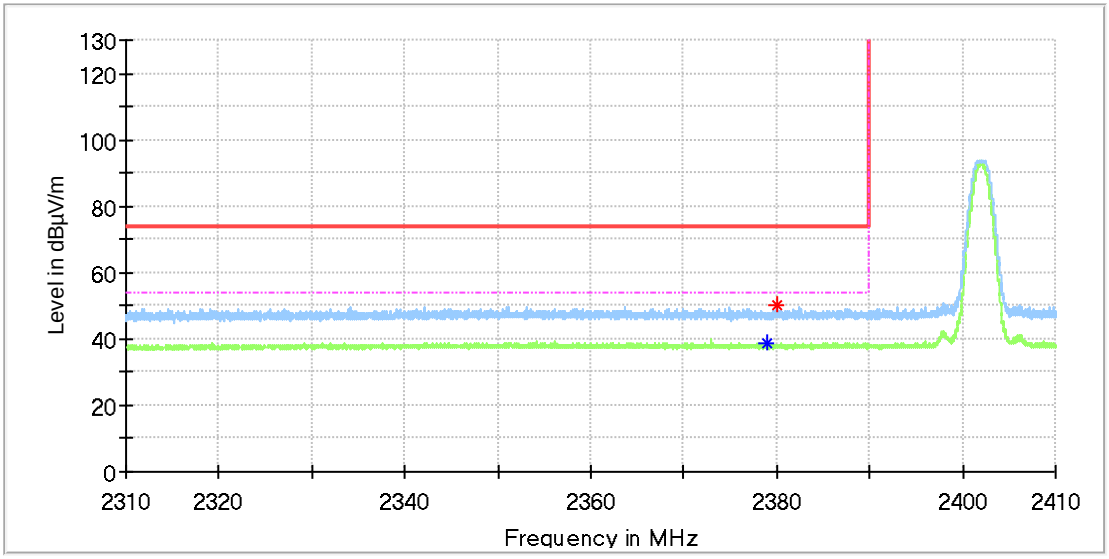

# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7402.616667 | 43.82 | --- | 74.00 | 30.18 | 150.0 | V | 251.0 | 8.3 |
| 7438.508333 | --- | 34.62 | 54.00 | 19.38 | 150.0 | V | 163.0 | 8.4 |
| 12638.866667 | 50.49 | --- | 74.00 | 23.51 | 150.0 | V | 224.0 | 15.0 |
| 12657.058333 | --- | 40.93 | 54.00 | 13.07 | 150.0 | V | 78.0 | 15.0 |

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

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

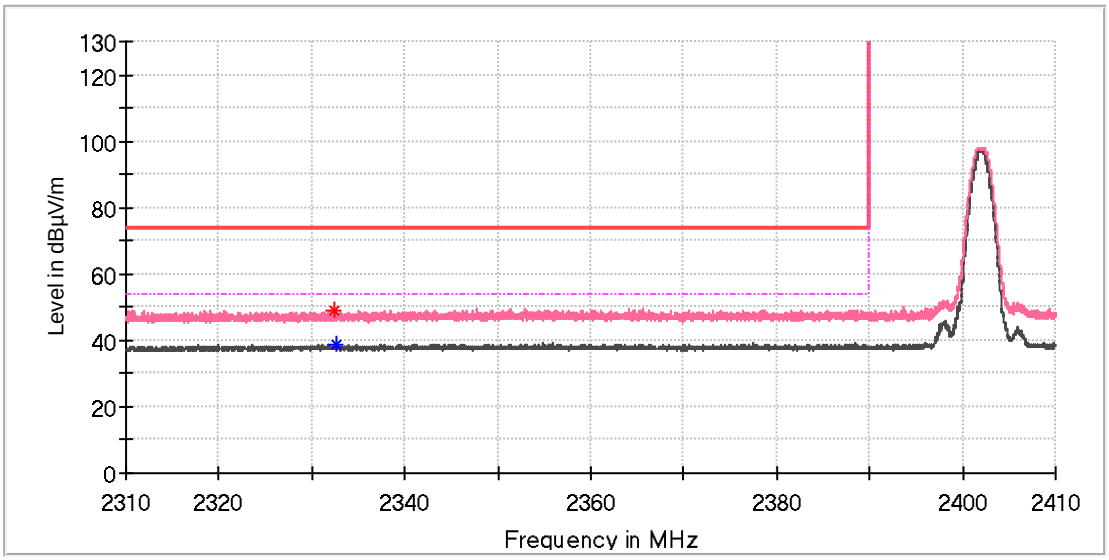



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2379.029412 | --- | 38.60 | 54.00 | 15.40 | 150.0 | H | 52.0 | 7.0 |
| 2379.941177 | 50.18 | --- | 74.00 | 23.82 | 150.0 | H | 335.0 | 7.0 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

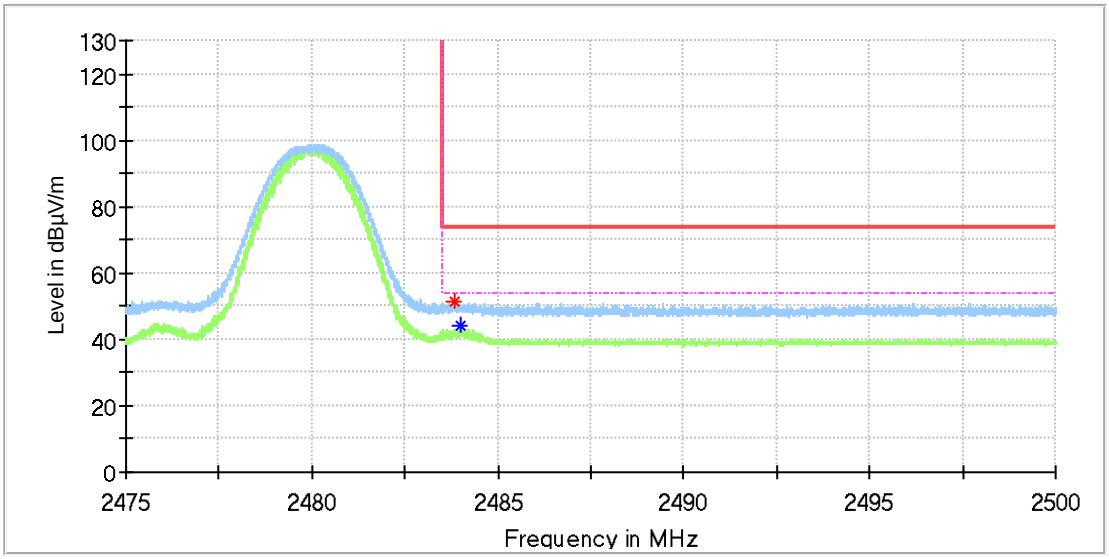



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2332.485294 | 49.18 | --- | 74.00 | 24.82 | 150.0 | V | 359.0 | 6.7 |
| 2332.676471 | --- | 38.85 | 54.00 | 15.15 | 150.0 | V | 100.0 | 6.7 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

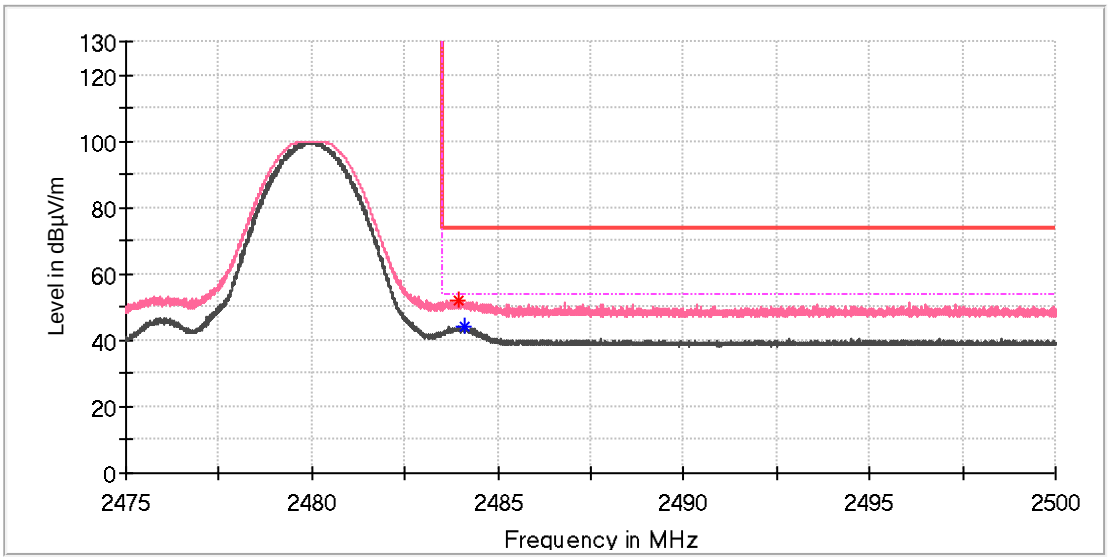



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2483.834559 | 51.53 | --- | 74.00 | 22.47 | 150.0 | H | 17.0 | 7.4 |
| 2483.992647 | --- | 44.07 | 54.00 | 9.93 | 150.0 | H | 218.0 | 7.4 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

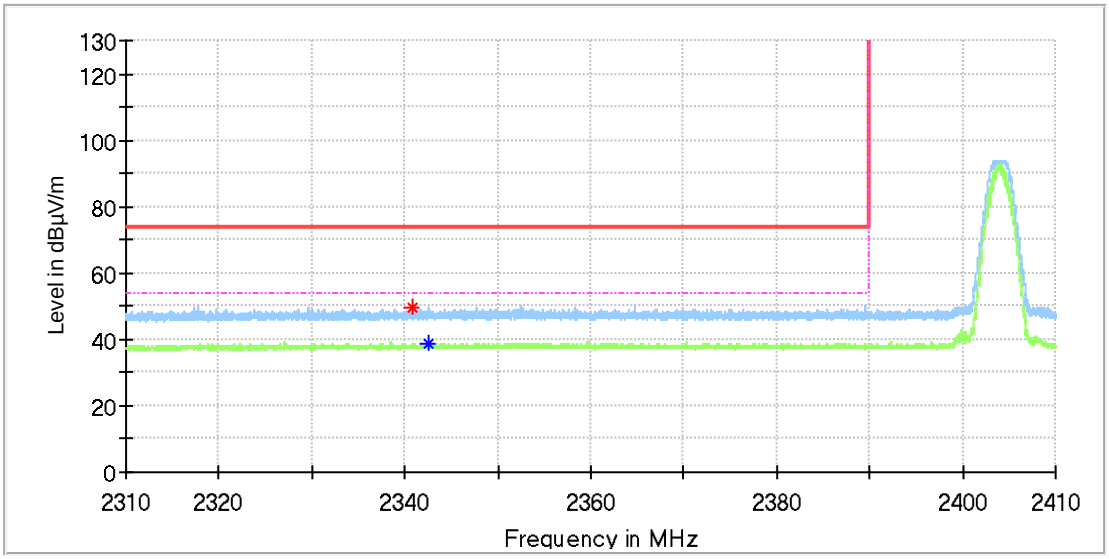



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2483.930147 | 51.74 | --- | 74.00 | 22.26 | 150.0 | V | 96.0 | 7.4 |
| 2484.088235 | --- | 44.11 | 54.00 | 9.89 | 150.0 | V | 256.0 | 7.4 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 2M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

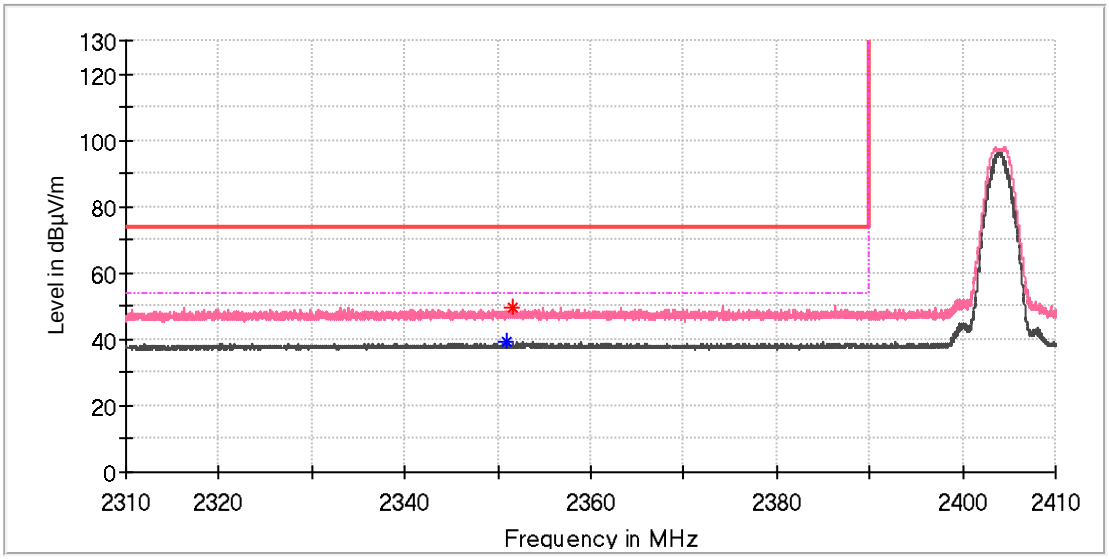



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2340.838235 | 49.73 | --- | 74.00 | 24.27 | 150.0 | H | 225.0 | 6.8 |
| 2342.647059 | --- | 38.84 | 54.00 | 15.16 | 150.0 | H | 176.0 | 6.8 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 2M_Low channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

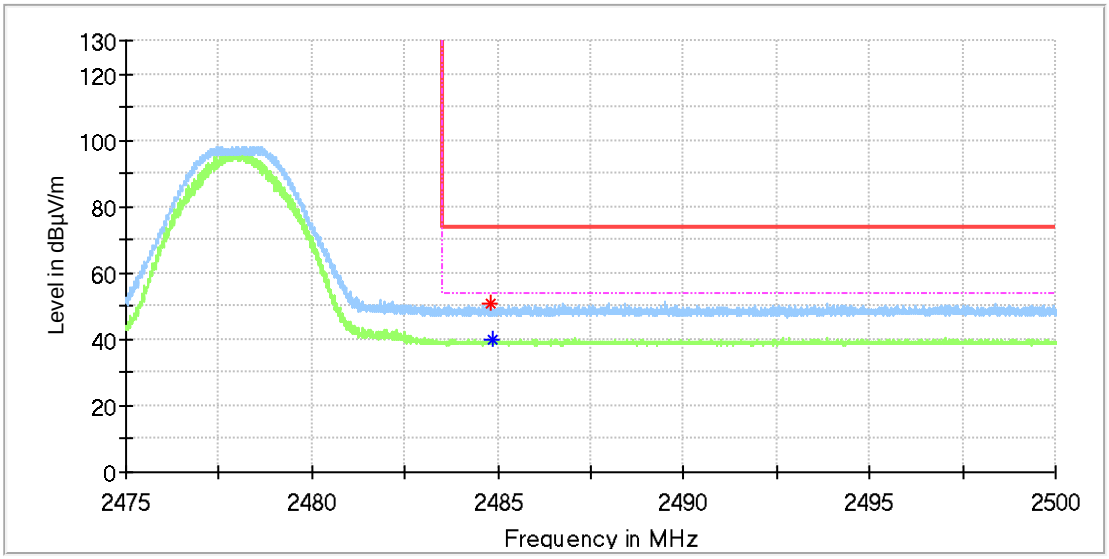



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2350.926471 | --- | 39.34 | 54.00 | 14.66 | 150.0 | V | 356.0 | 6.9 |
| 2351.691177 | 49.80 | --- | 74.00 | 24.20 | 150.0 | V | 122.0 | 6.9 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 2M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |

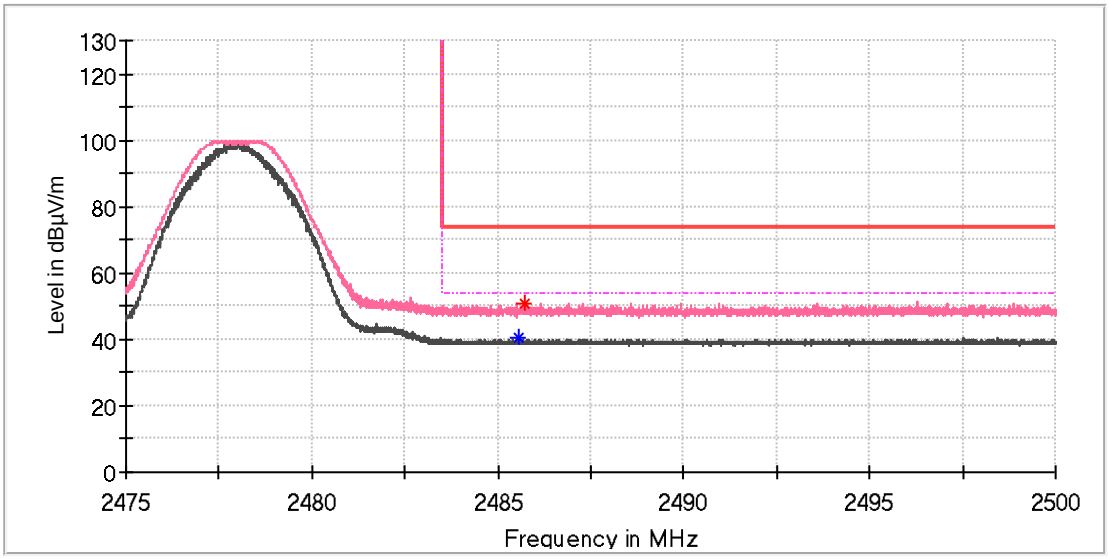



# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2484.794118 | 51.05 | --- | 74.00 | 22.95 | 150.0 | H | 291.0 | 7.4 |
| 2484.856618 | --- | 39.62 | 54.00 | 14.38 | 150.0 | H | 211.0 | 7.4 |

# EUT Information

| | |
|---|---|
| EUT Name: | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | BLE 2M_High channel |
| Order No/Sample No: | A003721212-016 |
| Test Voltage:: | Battery |
| Remark: | Temp 24 Humi:50% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



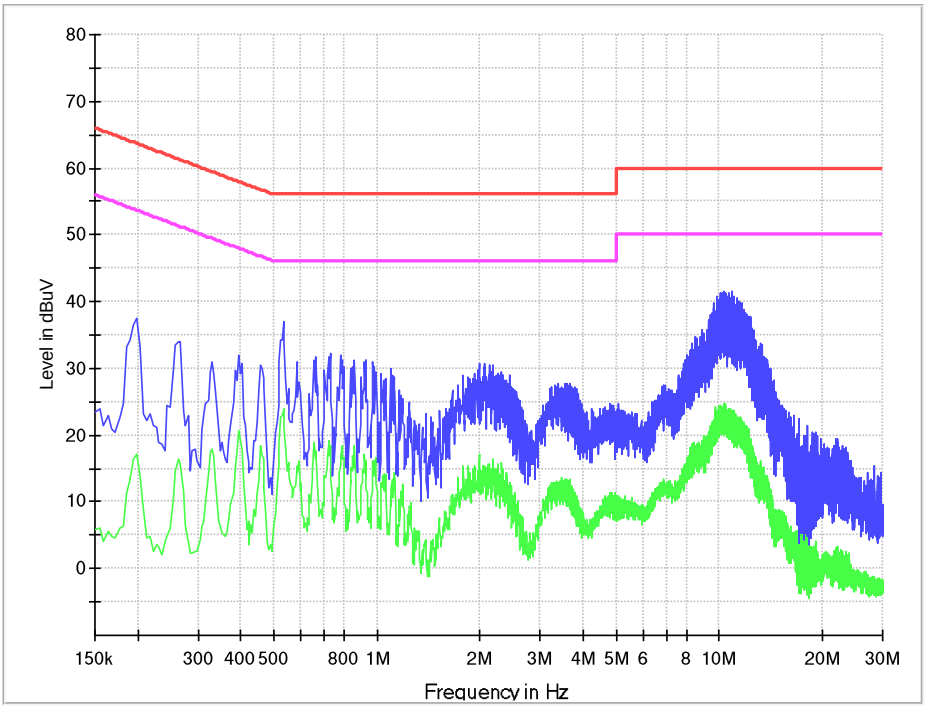

# Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2485.547794 | --- | 40.41 | 54.00 | 13.59 | 150.0 | V | 76.0 | 7.4 |
| 2485.709559 | 50.93 | --- | 74.00 | 23.07 | 150.0 | V | 141.0 | 7.4 |

## Appendix A.8: Test Results of Conducted Emissions on AC Mains

# EUT Information

| | |
|---|---|
| EUT Name | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | Bluetooth |
| Test Voltage: | AC 120V/60Hz |
| Test Standard: | FCC Part 15C |
| Test By:/Review By: | Yangchang/ Zhouli |
| Tem./Hum./Pressure: | 24.7°C/50.2%/101kPa |
| Remark: | |

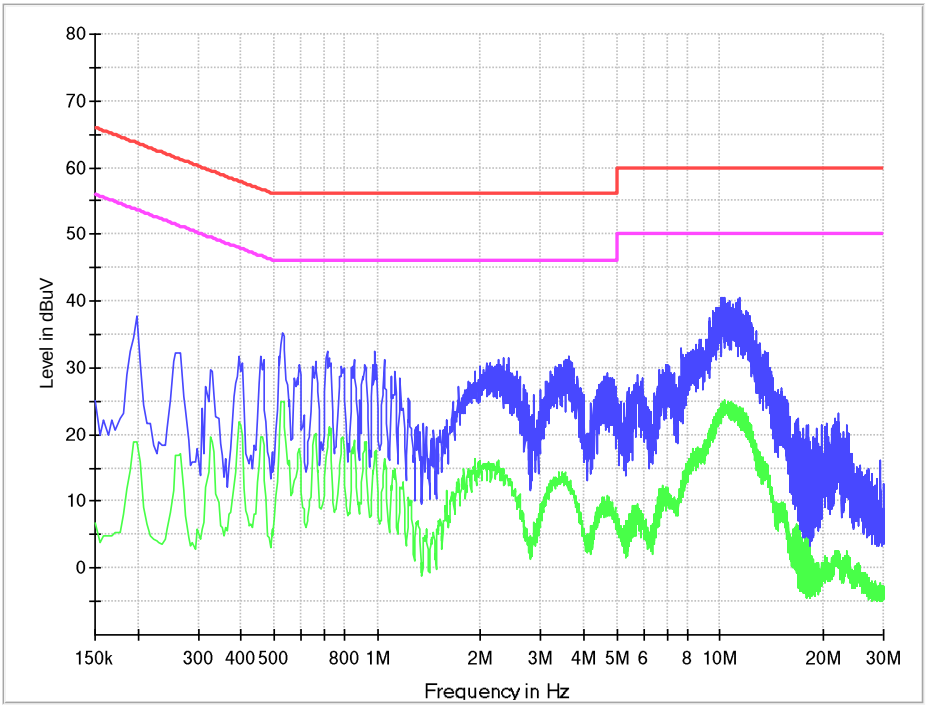



# Final_Result

| Frequency (MHz) | QPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|
| 0.532000 | 32.7 | --- | 56.00 | 23.3 | L1 | 10.0 |
| 0.532000 | --- | 23.5 | 46.00 | 22.5 | L1 | 10.0 |
| 0.721000 | 27.8 | --- | 56.00 | 28.2 | L1 | 10.0 |
| 0.721000 | --- | 18.4 | 46.00 | 27.6 | L1 | 10.1 |
| 10.315000 | 38.5 | --- | 60.00 | 21.5 | L1 | 10.2 |
| 10.315000 | --- | 23.8 | 50.00 | 26.2 | L1 | 10.2 |

# EUT Information

| | |
|---|---|
| EUT Name | BLUETOOTH HEADSET |
| Model: | JUNIOR 320BT |
| Test Mode: | Bluetooth |
| Test Voltage: | AC 120V/60Hz |
| Test Standard: | FCC Part 15C |
| Test By:/Review By: | Yangchang/ Zhouli |
| Tem./Hum./Pressure: | 24.7°C/50.2%/101kPa |
| Remark: | |




# Final_Result

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|
| 0.528000 | 31.4 | --- | 56.00 | 24.6 | N | 9.8 |
| 0.528000 | --- | 25.1 | 46.00 | 20.9 | N | 9.8 |
| 0.712000 | 28.6 | --- | 56.00 | 27.6 | N | 9.8 |
| 0.712000 | --- | 19.4 | 46.00 | 26.6 | N | 9.8 |
| 10.086000 | 36.4 | --- | 60.00 | 23.6 | N | 9.9 |
| 10.086000 | --- | 25.2 | 50.00 | 24.8 | N | 9.9 |