

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                  |                                      |                                          |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Prüfbericht-Nr.:</b><br>Test report no.:                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>CN23SW85 001</b>                                                                                                                                                                              | <b>Auftrags-Nr.:</b><br>Order no.:   | 168454748                                | <b>Page 1 of 25</b><br>Seite 1 von 25                                                 |
| <b>Kunden-Referenz-Nr.:</b><br>Client reference no.:                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                                                              | <b>Auftragsdatum:</b><br>Order date: | 2023-11-24                               |                                                                                       |
| <b>Auftraggeber:</b><br>Client:                                                                                                                                                                                                                                                                                                                                                                                                                                       | Harman International Industries, Incorporated<br>8500 Balboa Blvd, Northridge, California, 91329, United States                                                                                  |                                      |                                          |                                                                                       |
| <b>Prüfgegenstand:</b><br>Test item:                                                                                                                                                                                                                                                                                                                                                                                                                                  | PORTABLE BLUETOOTH SPEAKER                                                                                                                                                                       |                                      |                                          |                                                                                       |
| <b>Bezeichnung / Typ-Nr.:</b><br>Identification / Type no.:                                                                                                                                                                                                                                                                                                                                                                                                           | CLIP5G<br>(Trademark: JBL)                                                                                                                                                                       |                                      |                                          |                                                                                       |
| <b>Auftrags-Inhalt:</b><br>Order content:                                                                                                                                                                                                                                                                                                                                                                                                                             | Type test                                                                                                                                                                                        |                                      |                                          |                                                                                       |
| <b>Prüfgrundlage:</b><br>Test specification:                                                                                                                                                                                                                                                                                                                                                                                                                          | CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247-Issue 3 August 2023<br>CFR47 FCC Part 15: Subpart C Section 15.207 RSS-Gen Issue 5 March 2019<br>CFR47 FCC Part 15: Subpart C Section 15.209 |                                      |                                          |                                                                                       |
| <b>Wareneingangsdatum:</b><br>Date of sample receipt:                                                                                                                                                                                                                                                                                                                                                                                                                 | 2023-11-27                                                                                                                                                                                       | Refer to photos document             |                                          |                                                                                       |
| <b>Prüfmuster-Nr.:</b><br>Test sample no.:                                                                                                                                                                                                                                                                                                                                                                                                                            | A003610626                                                                                                                                                                                       |                                      |                                          |                                                                                       |
| <b>Prüfzeitraum:</b><br>Testing period:                                                                                                                                                                                                                                                                                                                                                                                                                               | 2023-11-27 – 2023-12-12                                                                                                                                                                          |                                      |                                          |                                                                                       |
| <b>Ort der Prüfung:</b><br>Place of testing:                                                                                                                                                                                                                                                                                                                                                                                                                          | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                                                                                                                                            |                                      |                                          |                                                                                       |
| <b>Prüflaboratorium:</b><br>Testing laboratory:                                                                                                                                                                                                                                                                                                                                                                                                                       | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                                                                                                                                            |                                      |                                          |                                                                                       |
| <b>Prüfergebnis*:</b><br>Test result*:                                                                                                                                                                                                                                                                                                                                                                                                                                | Pass                                                                                                                                                                                             |                                      |                                          |                                                                                       |
| <b>geprüft von:</b><br>tested by:                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                               |                                      | <b>genehmigt von:</b><br>authorized by:  |  |
| <b>Datum:</b><br>Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2023-12-20<br><small>Signed by: Harry W. C. Wu</small>                                                                                                                                           |                                      | <b>Ausstellungsdatum:</b><br>Issue date: | 2023-12-21<br><small>Signed by: Alex Lan</small>                                      |
| <b>Stellung / Position:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | Project Manager                                                                                                                                                                                  |                                      | <b>Stellung / Position:</b>              | Reviewer                                                                              |
| <b>Sonstiges /</b><br>Other:                                                                                                                                                                                                                                                                                                                                                                                                                                          | FCC ID: APIJBLCLIP5G<br>IC: 6132A-JBLCLIP5G HVIN: CLIP5G                                                                                                                                         |                                      |                                          |                                                                                       |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br>Condition of the test item at delivery:                                                                                                                                                                                                                                                                                                                                                                       | Prüfmuster vollständig und unbeschädigt<br>Test item complete and undamaged                                                                                                                      |                                      |                                          |                                                                                       |
| <p>* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet<br/>* 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</p>                                                                                                                                                                      |                                                                                                                                                                                                  |                                      |                                          |                                                                                       |
| <p><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/>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.</p> |                                                                                                                                                                                                  |                                      |                                          |                                                                                       |

V05

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Page 2 of 25  
Seite 2 von 25

**Remarks**  
*Anmerkungen*

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <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>                                                                                                                                                |
| 2 | <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>                                                                                      |
| 3 | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4 | <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> |

**Prüfbericht-Nr.:** CN23SW85 001  
*Test report no.:*

Seite 3 von 25  
Page 3 of 25

## ***Test Summary***

**5.1.1 ANTENNA REQUIREMENT**

*RESULT: Pass*

**5.1.2 MAXIMUM CONDUCTED OUTPUT POWER**

*RESULT: Pass*

**5.1.3 99% BANDWIDTH**

*RESULT: Pass*

**5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH**

*RESULT: Pass*

**5.1.5 RADIATED SPURIOUS EMISSION**

*RESULT: Pass*

**5.1.6 20dB BANDWIDTH**

*RESULT: Pass*

**5.1.7 CARRIER FREQUENCY SEPARATION**

*RESULT: Pass*

**5.1.8 FREQUENCY STABILITY**

*RESULT: Pass*

**5.1.9 NUMBER OF HOPPING FREQUENCY**

*RESULT: Pass*

**5.1.10 TIME OF OCCUPANCY**

*RESULT: Pass*

**5.1.11 CONDUCTED EMISSION ON AC MAINS**

*RESULT: Pass*

**Prüfbericht-Nr.: CN23SW85 001**  
*Test report no.:*

Seite 4 von 25  
Page 4 of 25

## Contents

|               |                                                                         |           |
|---------------|-------------------------------------------------------------------------|-----------|
| <b>1</b>      | <b>GENERAL REMARKS .....</b>                                            | <b>5</b>  |
| <b>1.1</b>    | <b>COMPLEMENTARY MATERIALS .....</b>                                    | <b>5</b>  |
| <b>2</b>      | <b>TEST SITES.....</b>                                                  | <b>5</b>  |
| <b>2.1</b>    | <b>TEST FACILITIES.....</b>                                             | <b>5</b>  |
| <b>2.2</b>    | <b>LIST OF TEST AND MEASUREMENT INSTRUMENTS .....</b>                   | <b>6</b>  |
| <b>2.3</b>    | <b>TRACEABILITY.....</b>                                                | <b>7</b>  |
| <b>2.4</b>    | <b>CALIBRATION .....</b>                                                | <b>7</b>  |
| <b>2.5</b>    | <b>MEASUREMENT UNCERTAINTY .....</b>                                    | <b>7</b>  |
| <b>2.6</b>    | <b>LOCATION OF ORIGINAL DATA .....</b>                                  | <b>7</b>  |
| <b>2.7</b>    | <b>STATUS OF FACILITY USED FOR TESTING .....</b>                        | <b>7</b>  |
| <b>3</b>      | <b>GENERAL PRODUCT INFORMATION.....</b>                                 | <b>8</b>  |
| <b>3.1</b>    | <b>PRODUCT FUNCTION AND INTENDED USE.....</b>                           | <b>8</b>  |
| <b>3.2</b>    | <b>RATINGS AND SYSTEM DETAILS .....</b>                                 | <b>8</b>  |
| <b>3.3</b>    | <b>INDEPENDENT OPERATION MODES .....</b>                                | <b>10</b> |
| <b>3.4</b>    | <b>NOISE GENERATING AND NOISE SUPPRESSING PARTS.....</b>                | <b>10</b> |
| <b>3.5</b>    | <b>SUBMITTED DOCUMENTS.....</b>                                         | <b>10</b> |
| <b>4</b>      | <b>TEST SET-UP AND OPERATION MODES .....</b>                            | <b>11</b> |
| <b>4.1</b>    | <b>PRINCIPLE OF CONFIGURATION SELECTION .....</b>                       | <b>11</b> |
| <b>4.2</b>    | <b>TEST OPERATION AND TEST SOFTWARE .....</b>                           | <b>11</b> |
| <b>4.3</b>    | <b>SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT .....</b>                | <b>11</b> |
| <b>4.4</b>    | <b>COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE .....</b>                  | <b>11</b> |
| <b>4.5</b>    | <b>TEST SETUP DIAGRAM .....</b>                                         | <b>12</b> |
| <b>5</b>      | <b>TEST RESULTS.....</b>                                                | <b>14</b> |
| <b>5.1</b>    | <b>TRANSMITTER REQUIREMENT &amp; TEST SUITES.....</b>                   | <b>14</b> |
| <b>5.1.1</b>  | <i>Antenna Requirement.....</i>                                         | <i>14</i> |
| <b>5.1.2</b>  | <i>Maximum Conducted Output Power .....</i>                             | <i>15</i> |
| <b>5.1.3</b>  | <i>99% Bandwidth .....</i>                                              | <i>16</i> |
| <b>5.1.4</b>  | <i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth .....</i> | <i>17</i> |
| <b>5.1.5</b>  | <i>Radiated Spurious Emission.....</i>                                  | <i>18</i> |
| <b>5.1.6</b>  | <i>20dB Bandwidth .....</i>                                             | <i>19</i> |
| <b>5.1.7</b>  | <i>Carrier Frequency Separation.....</i>                                | <i>20</i> |
| <b>5.1.8</b>  | <i>Frequency stability .....</i>                                        | <i>21</i> |
| <b>5.1.9</b>  | <i>Number of Hopping Frequency.....</i>                                 | <i>22</i> |
| <b>5.1.10</b> | <i>Time of Occupancy .....</i>                                          | <i>23</i> |
| <b>5.1.11</b> | <i>Conducted Emission on AC Mains.....</i>                              | <i>24</i> |
| <b>6</b>      | <b>PHOTOGRAPHS OF THE TEST SET-UP .....</b>                             | <b>25</b> |
| <b>7</b>      | <b>LIST OF TABLES .....</b>                                             | <b>25</b> |

**Prüfbericht-Nr.:** CN23SW85 001  
*Test report no.:*

Seite 5 von 25  
Page 5 of 25

# 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 Classical Bluetooth.

Appendix B: Photographs of the Test Set-up.

# 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.

**Prüfbericht-Nr.: CN23SW85 001**  
**Test report no.:**

Seite 6 von 25  
Page 6 of 25

## 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        | 21.09.2024        |
| MXG X-Series RF Vector Signal Generator        | Keysight            | N5182B               | MY61250137        | 21.09.2024        |
| EXG X-Series Microwave Analog Signal Generator | Keysight            | N5173B               | MY61250141        | 21.09.2024        |
| DC Power Supply                                | Keysight            | E3642A               | MY61276100        | 21.09.2024        |
| Wireless Connectivity Tester                   | R&S                 | CMW270               | 102505            | 21.09.2024        |
| Power Control Unit                             | Tonscend            | JS0806-4ADC          | N/A               | 21.09.2024        |
| Automation Control Unit                        | Tonscend            | JS0806-2             | 21C8060396        | 21.09.2024        |
| Test Software                                  | Tonscend            | JS1120-3             | N/A               | N/A               |
| Control PC                                     | Lenovo              | TianYi510S-071MB     | Y LX23JMF         | N/A               |
| <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            | 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        |
| <b>Conducted Emission on AC Mains</b>          |                     |                      |                   |                   |
| <b>Equipment</b>                               | <b>Manufacturer</b> | <b>Model</b>         | <b>Serial No.</b> | <b>Cal. until</b> |
| EMI Test Receiver                              | R&S                 | ESR3                 | 102428            | 31.07.2024        |
| Artificial Mains Network                       | R&S                 | ENV216               | 102333            | 01.08.2024        |
| Impedance Stabilisation Network                | R&S                 | ENY81-CA6            | 101810            | 01.08.2024        |
| EMC32 test software                            | R&S                 | EMC32(Ver.10.50.00 ) | N/A               | N/A               |

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:Seite 7 von 25  
Page 7 of 25

## 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                             | $\pm 2.08 \%$                               |
| RF output power, conducted                             | $\pm 0.99 \text{ dB}$                       |
| RF power density, conducted                            | $\pm 0.99 \text{ dB}$                       |
| Unwanted Emissions, conducted                          | $\pm 0.89 \text{ dB}$                       |
| All emissions, radiated                                | $\pm 4.17 \text{ dB}$                       |
| Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz) | $\pm 3.70 \text{ dB} / \pm 3.30 \text{ dB}$ |

## 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.

### 3 General Product Information

#### 3.1 Product Function and Intended Use

The EUT is a portable Bluetooth speaker, which supports Bluetooth dual mode technology, this speaker has different color of enclosure.

For details refer to the User Manual, Technical Description and Circuit Diagram.

#### 3.2 Ratings and System Details

**Table 2: Technical Specification of EUT**

| General Information of EUT                             | Value                                                                          |
|--------------------------------------------------------|--------------------------------------------------------------------------------|
| Kind of Equipment                                      | PORTABLE BLUETOOTH SPEAKER                                                     |
| Type Designation                                       | CLIP5G                                                                         |
| Trademark                                              | JBL                                                                            |
| FCC ID                                                 | APIJBLCLIP5G                                                                   |
| IC                                                     | 6132A-JBLCLIP5G                                                                |
| HVIN                                                   | CLIP5G                                                                         |
| Extreme Temperature Range                              | 0°C to +45°C                                                                   |
| Operating Voltage                                      | DC 3.8V, 1400mAh via built-in lithium-ion battery<br>DC 5V, 1A via Type-C port |
| <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                                           | PCB Antenna                                                                    |
| Antenna Gain                                           | 3.13 dBi (Provided by the Client)                                              |
| <b>Technical Specification of Bluetooth Low Energy</b> |                                                                                |
| Bluetooth Core Version                                 | Bluetooth 5.3                                                                  |
| Operating Frequency band                               | 2402 ~ 2480 MHz for data rate 1Mbps<br>2404 ~ 2478 MHz for data rate 2Mbps     |
| Channel Number                                         | 40 channels for data rate 1Mbps<br>38 channels for data rate 2Mbps             |
| Channel separation                                     | 2MHz                                                                           |
| Data rate                                              | 1Mbps, 2Mbps                                                                   |
| Modulation                                             | GFSK                                                                           |
| Antenna Type                                           | PCB Antenna                                                                    |
| Antenna Gain                                           | 3.13 dBi (Provided by the Client)                                              |

**Prüfbericht-Nr.: CN23SW85 001**

Seite 9 von 25

*Test report no.:*
*Page 9 of 25*
**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
  - 1. Bluetooth transmitting mode (BR & EDR mode)
    - a) Low Channel
    - b) Middle Channel
    - c) High Channel
- B. On, Transmitting on Hopping channel
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

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

## 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 CLIP5G with black color of enclosure.

### 4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

| Description | Manufacturer | Model | S/N or Rating |
|-------------|--------------|-------|---------------|
| 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)

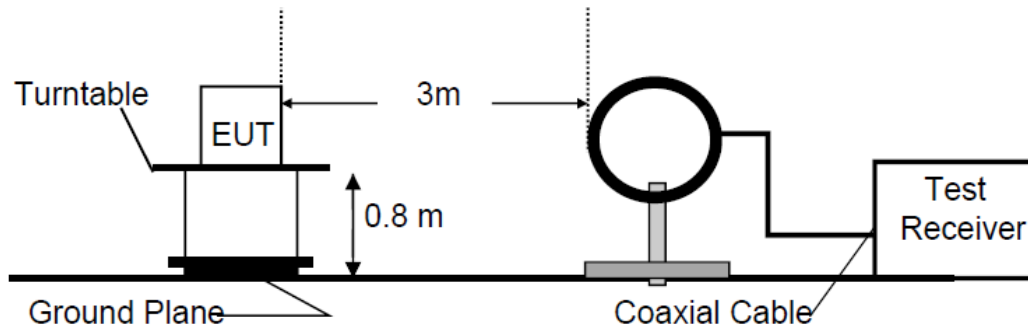


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

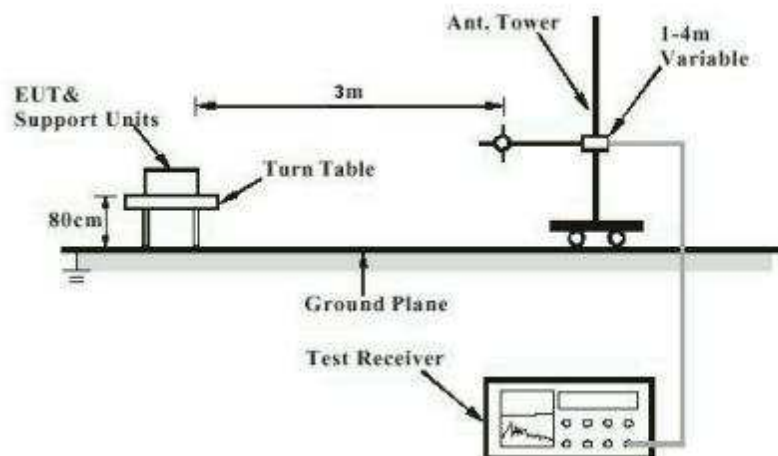
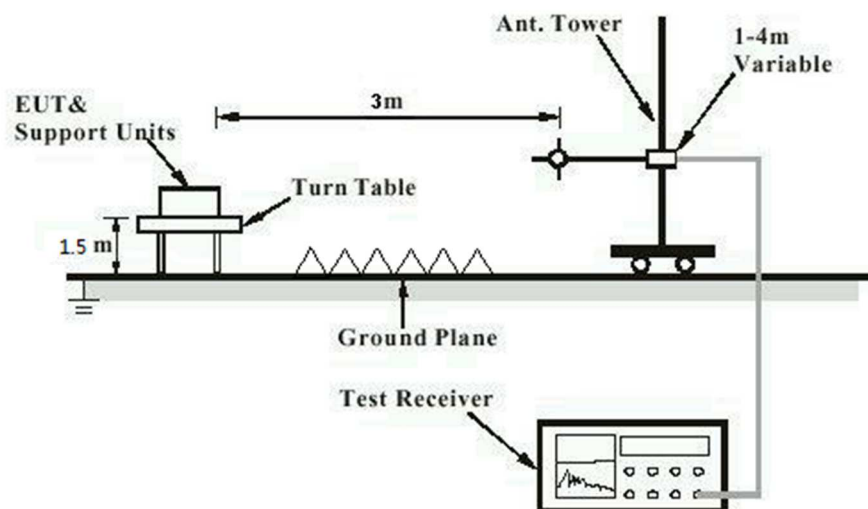
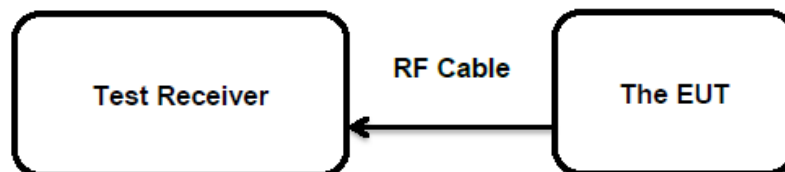


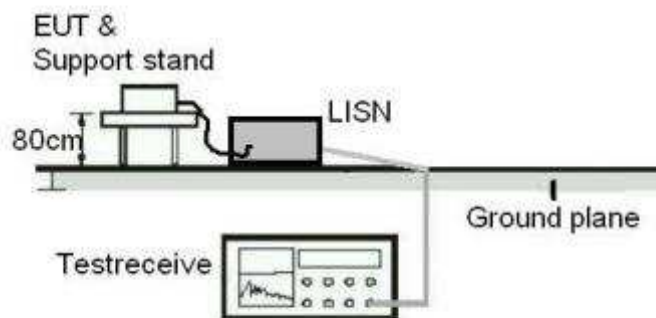
Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



### Diagram of Measurement Configuration for Conducted Transmitter Measurement



### Diagram of Measurement Configuration for Mains Conduction Measurement



Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Seite 14 von 25  
Page 14 of 25

## 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 8.3

According to the manufacturer declared, the EUT has one PCB antenna , the directional gain of antennas is 3.13 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.

**Prüfbericht-Nr.: CN23SW85 001**  
*Test report no.:*

Seite 15 von 25  
Page 15 of 25

## 5.1.2 Maximum Conducted Output Power

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

|                   |                                                                      |
|-------------------|----------------------------------------------------------------------|
| Test standard     | FCC Part 15.247(b)(1)<br>RSS-247 Clause 5.4(b)                       |
| Basic standard    | ANSI C63.10: 2013                                                    |
| Limits            | FHSS<0.125W(Maximum peak conducted output power)<br>< 4 W (e.i.r.p.) |
| Kind of test site | Shielded Room                                                        |

**Test Setup**

|                      |                          |
|----------------------|--------------------------|
| Date of testing      | 2023-11-27 to 2023-12-12 |
| Input voltage        | DC 3.8V                  |
| Operation mode       | A.1                      |
| Test channel         | Low / Middle / High      |
| Ambient temperature  | 25.1 °C                  |
| Relative humidity    | 56 %                     |
| Atmospheric pressure | 101 kPa                  |

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

| Test Mode | Channel Frequency (MHz) | Measured Peak Output Power |         | Limit (W) |
|-----------|-------------------------|----------------------------|---------|-----------|
|           |                         | (dBm)                      | (W)     |           |
| BR        | 2402                    | 5.91                       | 0.00390 | < 0.125   |
|           | 2441                    | 5.75                       | 0.00376 |           |
|           | 2480                    | 5.39                       | 0.00346 |           |
| EDR       | 2402                    | 4.32                       | 0.00270 | < 0.125   |
|           | 2441                    | 4.17                       | 0.00261 |           |
|           | 2480                    | 3.83                       | 0.00242 |           |

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 9.04 dBm less than 4W(36dBm).

**Prüfbericht-Nr.:** CN23SW85 001  
*Test report no.:*

Seite 16 von 25  
Page 16 of 25

### 5.1.3 99% 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 : 2023-11-27 to 2023-12-12  
Input voltage : DC 3.8V  
Operation mode : A.1  
Test channel : Low / Middle / High  
Ambient temperature : 25.1 °C  
Relative humidity : 56 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

**Table 7: Test Result of 99% Bandwidth**

| Test Mode | Channel Frequency (MHz) | Measured 99% Bandwidth | Limit |
|-----------|-------------------------|------------------------|-------|
|           |                         | (MHz)                  |       |
| BR        | 2402                    | 0.89453                | /     |
|           | 2441                    | 0.88628                |       |
|           | 2480                    | 0.89649                |       |
| EDR       | 2402                    | 1.1929                 | /     |
|           | 2441                    | 1.1977                 |       |
|           | 2480                    | 1.2002                 |       |

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

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:Seite 17 von 25  
Page 17 of 25

### 5.1.4 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

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

Test standard : FCC Part 15.247(d)  
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);

Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : A.1

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

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

For the measurement records, refer to the appendix A

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Seite 18 von 25  
Page 18 of 25

## 5.1.5 Radiated Spurious Emission

### RESULT:

Pass

#### Test Specification

Test standard : FCC Part 15.247(d) & FCC Part 15.205  
RSS-247 Clause 3.3  
Basic standard : ANSI C63.10: 2013  
Limits : Refer to 15.209(a) of FCC part 15.247(d)  
RSS-Gen Table 6 & Table 7  
Kind of test site : 3m Semi-anechoic Chamber

#### Test Setup

Date of testing : 2023-11-27 to 2023-12-12  
Input voltage : DC 3.8V  
Operation mode : A.1  
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.

For the measurement records, refer to the appendix A

**Prüfbericht-Nr.: CN23SW85 001**  
*Test report no.:*

Seite 19 von 25  
Page 19 of 25

### 5.1.6 20dB Bandwidth

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

Test standard : FCC Part 15.247(a)(1)  
RSS-247 Clause 5.1(a)

Basic standard : ANSI C63.10: 2013

Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : A.1

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

**Table 8: Test Result of -20dB Bandwidth**

| Test Mode | Channel Frequency (MHz) | 20dB Bandwidth (kHz) | 2/3 of 20dB Bandwidth (kHz) | Limit (MHz) |
|-----------|-------------------------|----------------------|-----------------------------|-------------|
| BR        | 2402                    | 939                  | 626.000                     | /           |
|           | 2441                    | 945                  | 630.000                     |             |
|           | 2480                    | 945                  | 630.000                     |             |
| EDR       | 2402                    | 1311                 | 874.000                     | /           |
|           | 2441                    | 1296                 | 864.000                     |             |
|           | 2480                    | 1269                 | 846.000                     |             |

**Prüfbericht-Nr.: CN23SW85 001**  
*Test report no.:*

Seite 20 von 25  
Page 20 of 25

### 5.1.7 Carrier Frequency Separation

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

Test standard : FCC Part 15.247(a)(1)  
RSS-247 Clause 5.1(b)

Basic standard : ANSI C63.10: 2013

Limits :  $\geq 25\text{kHz}$  or  $2/3$  of  $20\text{dB}$  bandwidth, whichever is greater

Kind of test site : Shielded Room

**Test Setup**

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : B

Test channel : Low / Middle / High

Ambient temperature :  $25.1\text{ }^{\circ}\text{C}$

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

**Table 9: Test Result of Carrier Frequency Separation**

| Test Mode | Channel | Result[MHz] | Limit[MHz]   | Verdict |
|-----------|---------|-------------|--------------|---------|
| BR-DH5    | Hop     | 0.668       | $\geq 0.630$ | PASS    |
| EDR-3DH5  | Hop     | 1.2         | $\geq 0.874$ | PASS    |

Note:

The limit is maximum  $2/3$  of the  $20\text{ dB}$  bandwidth:  $874\text{KHz}$ .

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Seite 21 von 25  
Page 21 of 25

### 5.1.8 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 : 2023-11-27 to 2023-12-12  
Input voltage : DC 3.8V  
Operation mode : B  
Ambient temperature : 25.1 °C  
Relative humidity : 56 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:Seite 22 von 25  
Page 22 of 25

### 5.1.9 Number of Hopping Frequency

RESULT:

Pass

#### Test Specification

Test standard : FCC part 15.247(a)(1)(iii)  
RSS-247 Clause 5.1(d)  
Basic standard : ANSI C63.10: 2013  
Limits :  $\geq 15$  non-overlapping channels  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 2023-11-27 to 2023-12-12  
Input voltage : DC 3.8V  
Operation mode : B  
Ambient temperature : 25.1 °C  
Relative humidity : 56 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Table 10: Test Result of Number of Hopping Frequency

| Frequency Range  | Measured Quantity of Hopping Channel | Limit     | Result |
|------------------|--------------------------------------|-----------|--------|
| 2402 to 2480 MHz | 79                                   | $\geq 15$ | Pass   |

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Seite 23 von 25  
Page 23 of 25

## 5.1.10 Time of Occupancy

RESULT:

Pass

### Test Specification

Test standard : FCC part 15.247(a)(1)(iii)  
RSS-247 Clause 5.1(d)  
Basic standard : ANSI C63.10: 2013  
Limits : < 0.4s  
Kind of test site : Shielded Room

### Test Setup

Date of testing : 2023-11-27 to 2023-12-12  
Input voltage : DC 3.8V  
Operation mode : B  
Test channel : Low / Middle / High  
Ambient temperature : 25.1 °C  
Relative humidity : 56 %  
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht-Nr.: CN23SW85 001  
Test report no.:

Seite 24 von 25  
Page 24 of 25

## 5.1.11 Conducted Emission on AC Mains

RESULT:

Pass

### Test Specification

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

### Test Setup

Date of testing : 2023-11-27 to 2023-12-12  
Input voltage : DC 5V via Type-C interface  
Operation mode : B  
Earthing : Not connected  
Ambient temperature : 25.0 °C  
Relative humidity : 51.2 %  
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 A.

## 7 List of Tables

|                                                                |    |
|----------------------------------------------------------------|----|
| Table 1: List of Test and Measurement Equipment.....           | 6  |
| Table 2: Technical Specification of EUT .....                  | 8  |
| Table 3: RF Channel and Frequency of Classic Bluetooth.....    | 9  |
| Table 4: RF Channel and Frequency of Bluetooth Low Energy..... | 9  |
| Table 5: List of Accessories and Auxiliary Equipment.....      | 11 |
| Table 6: Test Result of Maximum Conducted Output Power.....    | 15 |
| Table 7: Test Result of 99% Bandwidth .....                    | 16 |
| Table 8: Test Result of -20dB Bandwidth.....                   | 19 |
| Table 9: Test Result of Carrier Frequency Separation .....     | 20 |
| Table 10: Test Result of Number of Hopping Frequency .....     | 22 |

## Appendix A: Test Results of Classical Bluetooth

|                                                                                                |    |
|------------------------------------------------------------------------------------------------|----|
| APPENDIX A: TEST RESULTS OF CLASSICAL BLUETOOTH .....                                          | 1  |
| APPENDIX A.1: TEST RESULTS OF 99% BANDWIDTH .....                                              | 2  |
| APPENDIX A.2: TEST RESULTS OF 20dB BANDWIDTH .....                                             | 5  |
| APPENDIX A.3: TEST RESULTS OF FREQUENCY STABILITY .....                                        | 8  |
| APPENDIX A.4: TEST RESULTS OF CARRIER FREQUENCY SEPARATION .....                               | 10 |
| APPENDIX A.5: TEST RESULTS OF NUMBER OF HOPPING FREQUENCY .....                                | 11 |
| APPENDIX A.6: TEST RESULTS OF TIME OF OCCUPANCY .....                                          | 12 |
| APPENDIX A.7: TEST RESULTS OF CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH ..... | 17 |
| Conducted measurements.....                                                                    | 17 |
| Band edge measurements.....                                                                    | 24 |
| APPENDIX A.8: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS .....                                | 28 |
| 30MHz - 1GHz .....                                                                             | 28 |
| 1GHz - 18GHz .....                                                                             | 30 |
| APPENDIX A.9: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS .....                     | 42 |
| APPENDIX A.10: TEST RESULTS OF CONDUCTED EMISSIONS ON AC MAINS .....                           | 46 |

## Appendix A.1: Test Results of 99% Bandwidth

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|----------|---------|---------|-----------|-----------|-----------|------------|---------|
| DH5      | Ant1    | 2402    | 0.89453   | 2401.5496 | 2402.4442 | ---        | ---     |
|          |         | 2441    | 0.88628   | 2440.5506 | 2441.4369 | ---        | ---     |
|          |         | 2480    | 0.89649   | 2479.5464 | 2480.4429 | ---        | ---     |
| 3DH5     | Ant1    | 2402    | 1.1929    | 2401.3886 | 2402.5815 | ---        | ---     |
|          |         | 2441    | 1.1977    | 2440.3893 | 2441.5870 | ---        | ---     |
|          |         | 2480    | 1.2002    | 2479.3860 | 2480.5862 | ---        | ---     |







## Appendix A.2: Test Results of 20dB Bandwidth

| TestMode | Antenna | Channel | 20db EBW[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|----------|---------|---------|---------------|----------|----------|------------|---------|
| DH5      | Ant1    | 2402    | 0.939         | 2401.538 | 2402.477 | ---        | ---     |
|          |         | 2441    | 0.945         | 2440.532 | 2441.477 | ---        | ---     |
|          |         | 2480    | 0.945         | 2479.532 | 2480.477 | ---        | ---     |
| 3DH5     | Ant1    | 2402    | 1.311         | 2401.340 | 2402.651 | ---        | ---     |
|          |         | 2441    | 1.296         | 2440.346 | 2441.642 | ---        | ---     |
|          |         | 2480    | 1.269         | 2479.349 | 2480.618 | ---        | ---     |

DH5 Ant1 2402



DH5 Ant1 2441



DH5\_Ant1\_2480



3DH5\_Ant1\_2402



3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



### Appendix A.3: Test Results of Frequency stability

|                       |      |
|-----------------------|------|
| Test Channel<br>(MHz) | 2402 |
|-----------------------|------|

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

| Voltage  | Test result<br>(MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|----------|----------------------|------------------------------|----------------------|-------------|
| DC 3.8V  | 2401.9969            | -3.1                         | -1.29                | 10          |
| DC 3.42V | 2401.9965            | -3.5                         | -1.46                |             |
| DC 4.18V | 2401.9973            | -2.7                         | -1.12                |             |

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

| Temperature<br>(°C) | Test result (MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|---------------------|-------------------|------------------------------|----------------------|-------------|
| -30                 | 2401.9961         | -3.9                         | -1.62                | 10          |
| -20                 | 2401.9962         | -3.8                         | -1.58                |             |
| -10                 | 2401.9965         | -3.5                         | -1.46                |             |
| 0                   | 2401.9969         | -3.1                         | -1.29                |             |
| 10                  | 2401.9969         | -3.1                         | -1.29                |             |
| 20                  | 2401.9970         | -3                           | -1.25                |             |
| 30                  | 2401.9971         | -2.9                         | -1.21                |             |
| 40                  | 2401.9971         | -2.9                         | -1.21                |             |
| 50                  | 2401.9972         | -2.8                         | -1.17                |             |
| 55                  | 2401.9975         | -2.5                         | -1.04                |             |

|                       |      |
|-----------------------|------|
| Test Channel<br>(MHz) | 2441 |
|-----------------------|------|

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

| Voltage  | Test result<br>(MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|----------|----------------------|------------------------------|----------------------|-------------|
| DC 3.8V  | 2440.9937            | -6.3                         | -2.58                | 10          |
| DC 3.42V | 2440.9933            | -6.7                         | -2.74                |             |
| DC 4.18V | 2440.9946            | -5.4                         | -2.21                |             |

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

| Temperature<br>(°C) | Test result (MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|---------------------|-------------------|------------------------------|----------------------|-------------|
| -30                 | 2440.9929         | -7.1                         | -2.91                | 10          |
| -20                 | 2440.9932         | -6.8                         | -2.79                |             |
| -10                 | 2440.9933         | -6.7                         | -2.74                |             |
| 0                   | 2440.9937         | -6.3                         | -2.58                |             |
| 10                  | 2440.9937         | -6.3                         | -2.58                |             |
| 20                  | 2440.9938         | -6.2                         | -2.54                |             |
| 30                  | 2440.9939         | -6.1                         | -2.50                |             |
| 40                  | 2440.9941         | -5.9                         | -2.42                |             |
| 50                  | 2440.9944         | -5.6                         | -2.29                |             |
| 55                  | 2440.9946         | -5.4                         | -2.21                |             |

|                       |      |
|-----------------------|------|
| Test Channel<br>(MHz) | 2480 |
|-----------------------|------|

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

| Voltage  | Test result<br>(MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|----------|----------------------|------------------------------|----------------------|-------------|
| DC 3.8V  | 2479.9947            | -5.3                         | -2.14                | 10          |
| DC 3.42V | 2479.9944            | -5.6                         | -2.26                |             |
| DC 4.18V | 2479.9956            | -4.4                         | -1.77                |             |

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

| Temperature<br>(°C) | Test result (MHz) | Deviation Frequency<br>(KHz) | Test result<br>(ppm) | Limit (ppm) |
|---------------------|-------------------|------------------------------|----------------------|-------------|
| -30                 | 2479.9940         | -6                           | -2.42                | 10          |
| -20                 | 2479.9941         | -5.9                         | -2.38                |             |
| -10                 | 2479.9943         | -5.7                         | -2.30                |             |
| 0                   | 2479.9946         | -5.4                         | -2.18                |             |
| 10                  | 2479.9947         | -5.3                         | -2.14                |             |
| 20                  | 2479.9949         | -5.1                         | -2.06                |             |
| 30                  | 2479.9950         | -5                           | -2.02                |             |
| 40                  | 2479.9951         | -4.9                         | -1.98                |             |
| 50                  | 2479.9955         | -4.5                         | -1.81                |             |
| 55                  | 2479.9957         | -4.3                         | -1.73                |             |

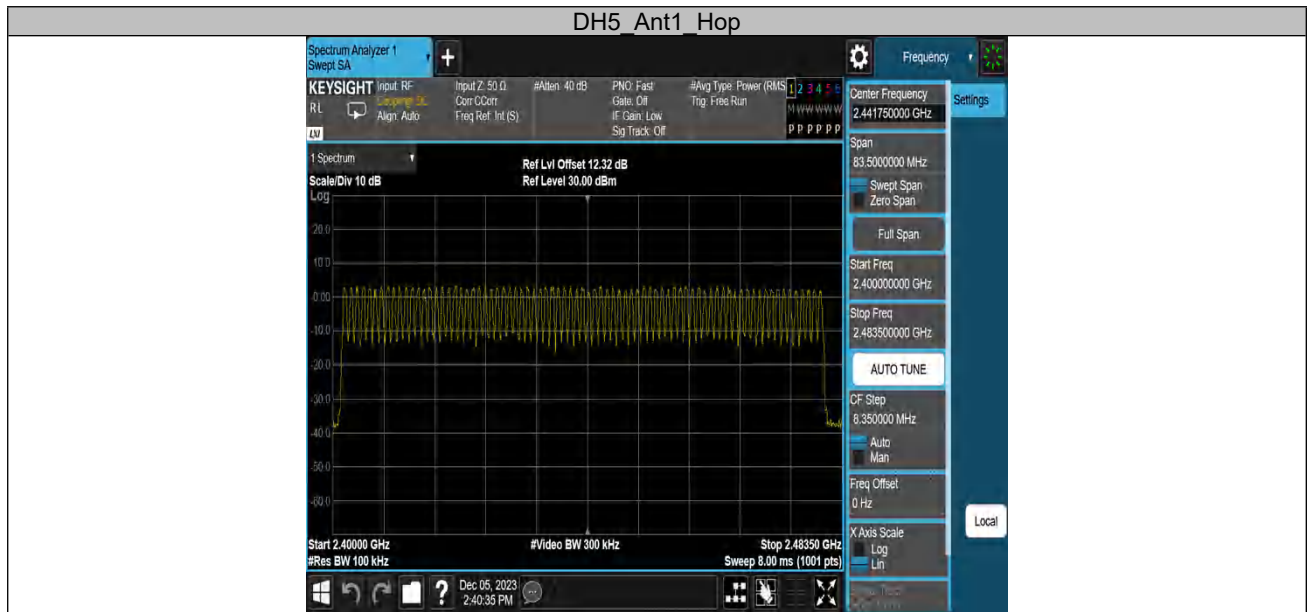
## Appendix A.4: Test Results of Carrier Frequency Separation

| TestMode | Antenna | Channel | Result[MHz] | Limit[MHz]   | Verdict |
|----------|---------|---------|-------------|--------------|---------|
| DH5      | Ant1    | Hop     | 0.668       | $\geq 0.630$ | PASS    |
| 3DH5     | Ant1    | Hop     | 1.2         | $\geq 0.874$ | PASS    |



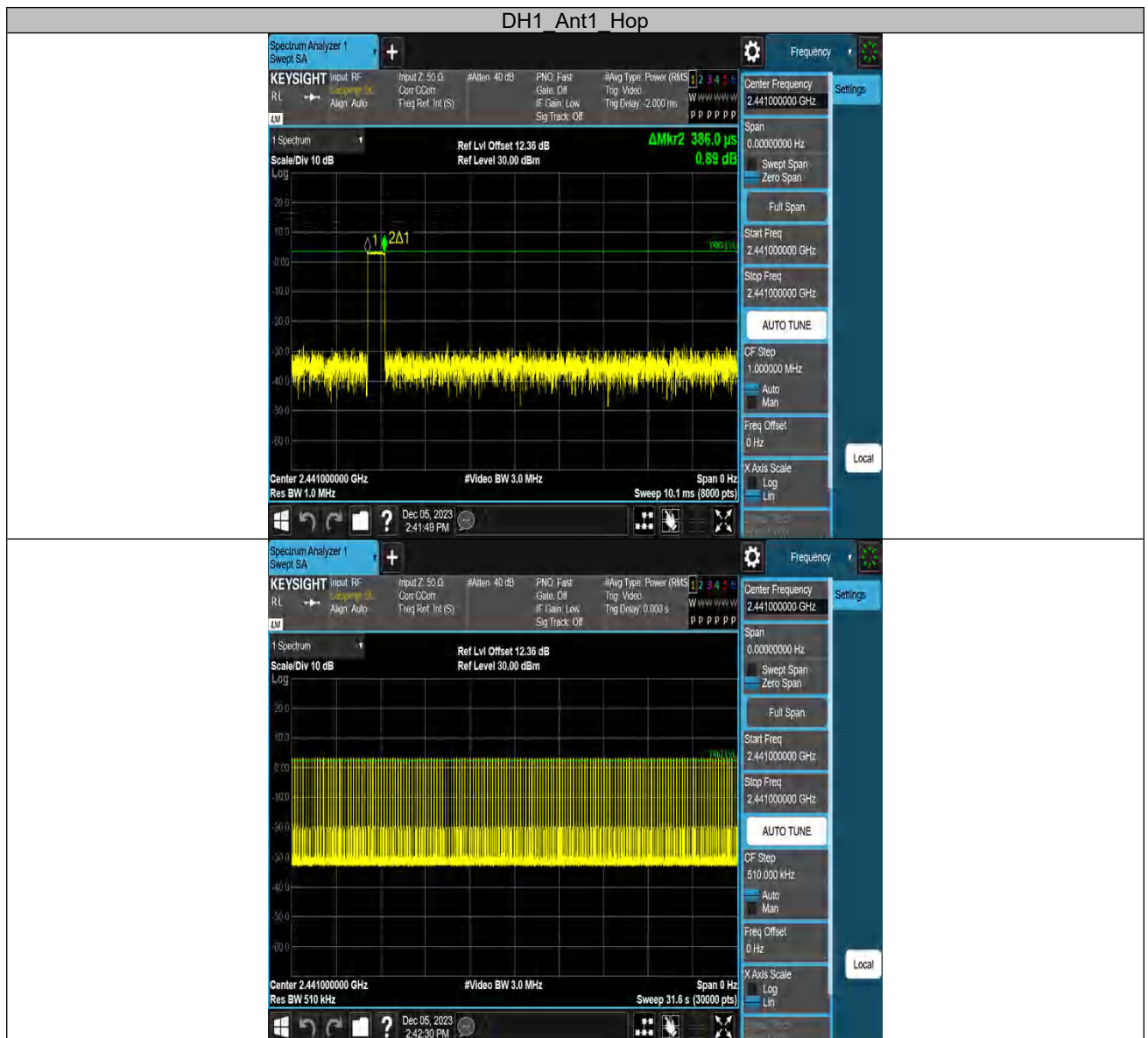
## Appendix A.5: Test Results of Number of Hopping Frequency

| TestMode | Antenna | Channel | Result[Num] | Limit[Num] | Verdict |
|----------|---------|---------|-------------|------------|---------|
| DH5      | Ant1    | Hop     | 79          | ≥15        | PASS    |
| 3DH5     | Ant1    | Hop     | 79          | ≥15        | PASS    |



## Appendix A.6: Test Results of Time of Occupancy

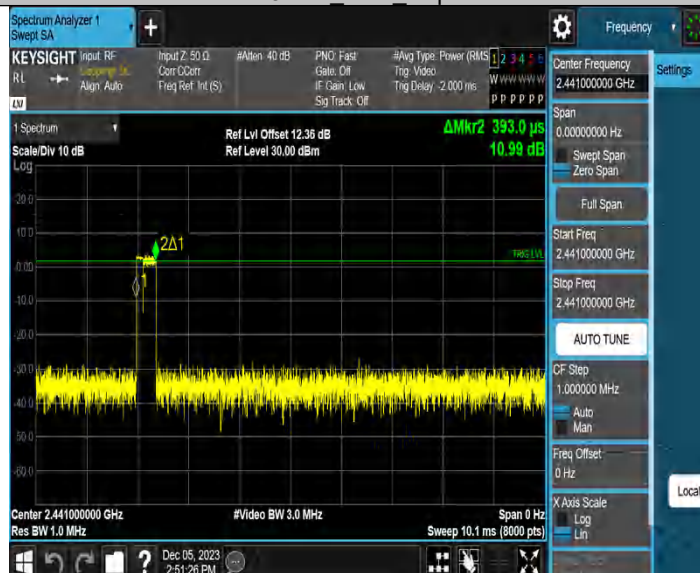
| TestMode | Antenna | Channel | BurstWidth [ms] | TotalHops [Num] | Result[s] | Limit[s] | Verdict |
|----------|---------|---------|-----------------|-----------------|-----------|----------|---------|
| DH1      | Ant1    | Hop     | 0.386           | 312             | 0.12      | ≤0.4     | PASS    |
| DH3      | Ant1    | Hop     | 1.659           | 157             | 0.26      | ≤0.4     | PASS    |
| DH5      | Ant1    | Hop     | 2.907           | 109             | 0.317     | ≤0.4     | PASS    |
| 3DH1     | Ant1    | Hop     | 0.393           | 313             | 0.123     | ≤0.4     | PASS    |
| 3DH3     | Ant1    | Hop     | 1.640           | 157             | 0.257     | ≤0.4     | PASS    |
| 3DH5     | Ant1    | Hop     | 2.893           | 113             | 0.327     | ≤0.4     | PASS    |







3DH1 Ant1 Hop





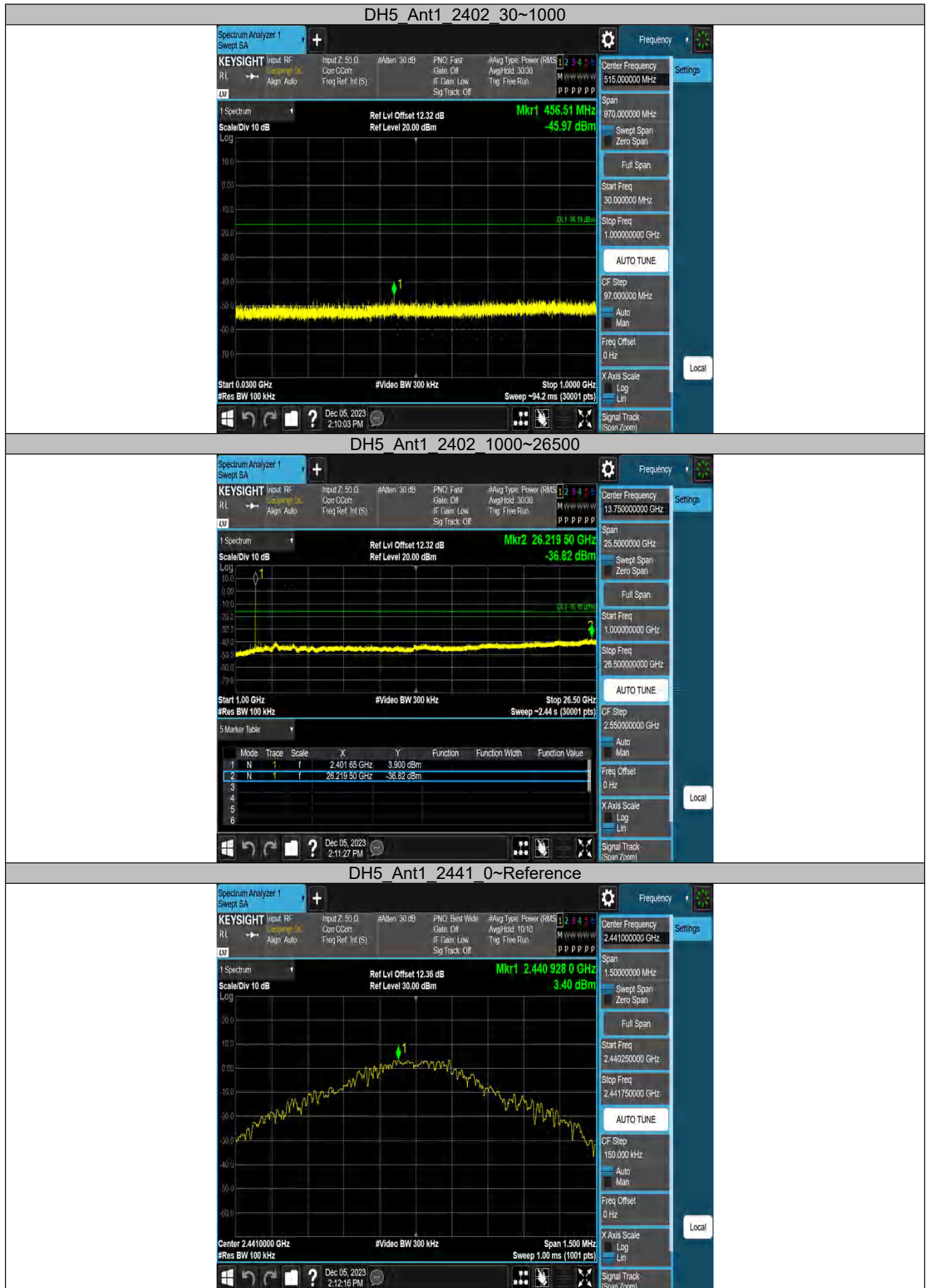


## Appendix A.7: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

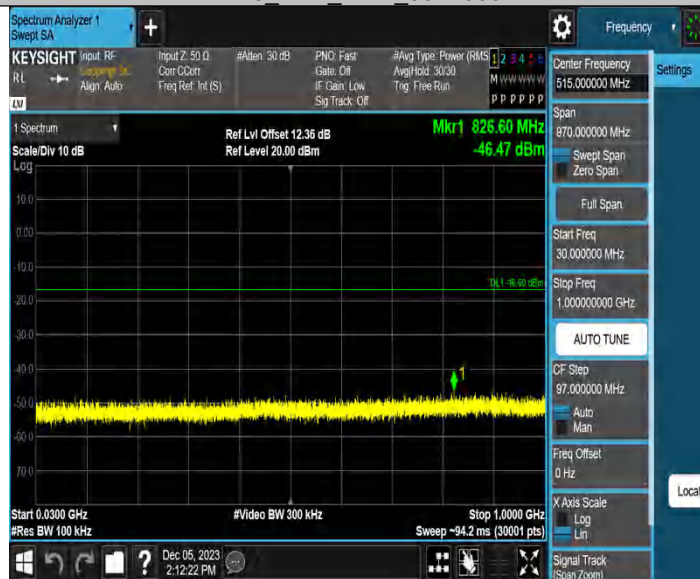
### Conducted measurements

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|---------|-----------------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | 2402    | Reference       | 3.81           | 3.81         | ---         | PASS    |
|          |         |         | 30~1000         | 3.81           | -45.97       | ≤-16.19     | PASS    |
|          |         |         | 1000~26500      | 3.81           | -36.82       | ≤-16.19     | PASS    |
|          |         | 2441    | Reference       | 3.40           | 3.40         | ---         | PASS    |
|          |         |         | 30~1000         | 3.40           | -46.47       | ≤-16.6      | PASS    |
|          |         |         | 1000~26500      | 3.40           | -37.36       | ≤-16.6      | PASS    |
|          |         | 2480    | Reference       | 3.10           | 3.10         | ---         | PASS    |
|          |         |         | 30~1000         | 3.10           | -45.93       | ≤-16.9      | PASS    |
|          |         |         | 1000~26500      | 3.10           | -37.3        | ≤-16.9      | PASS    |
| 3DH5     | Ant1    | 2402    | Reference       | 0.65           | 0.65         | ---         | PASS    |
|          |         |         | 30~1000         | 0.65           | -46.92       | ≤-19.35     | PASS    |
|          |         |         | 1000~26500      | 0.65           | -38.07       | ≤-19.35     | PASS    |
|          |         | 2441    | Reference       | 0.08           | 0.08         | ---         | PASS    |
|          |         |         | 30~1000         | 0.08           | -46.09       | ≤-19.92     | PASS    |
|          |         |         | 1000~26500      | 0.08           | -37.66       | ≤-19.92     | PASS    |
|          |         | 2480    | Reference       | 3.06           | 3.06         | ---         | PASS    |
|          |         |         | 30~1000         | 3.06           | -45.89       | ≤-16.94     | PASS    |
|          |         |         | 1000~26500      | 3.06           | -36.88       | ≤-16.94     | PASS    |





DH5\_Ant1\_2441\_30~1000

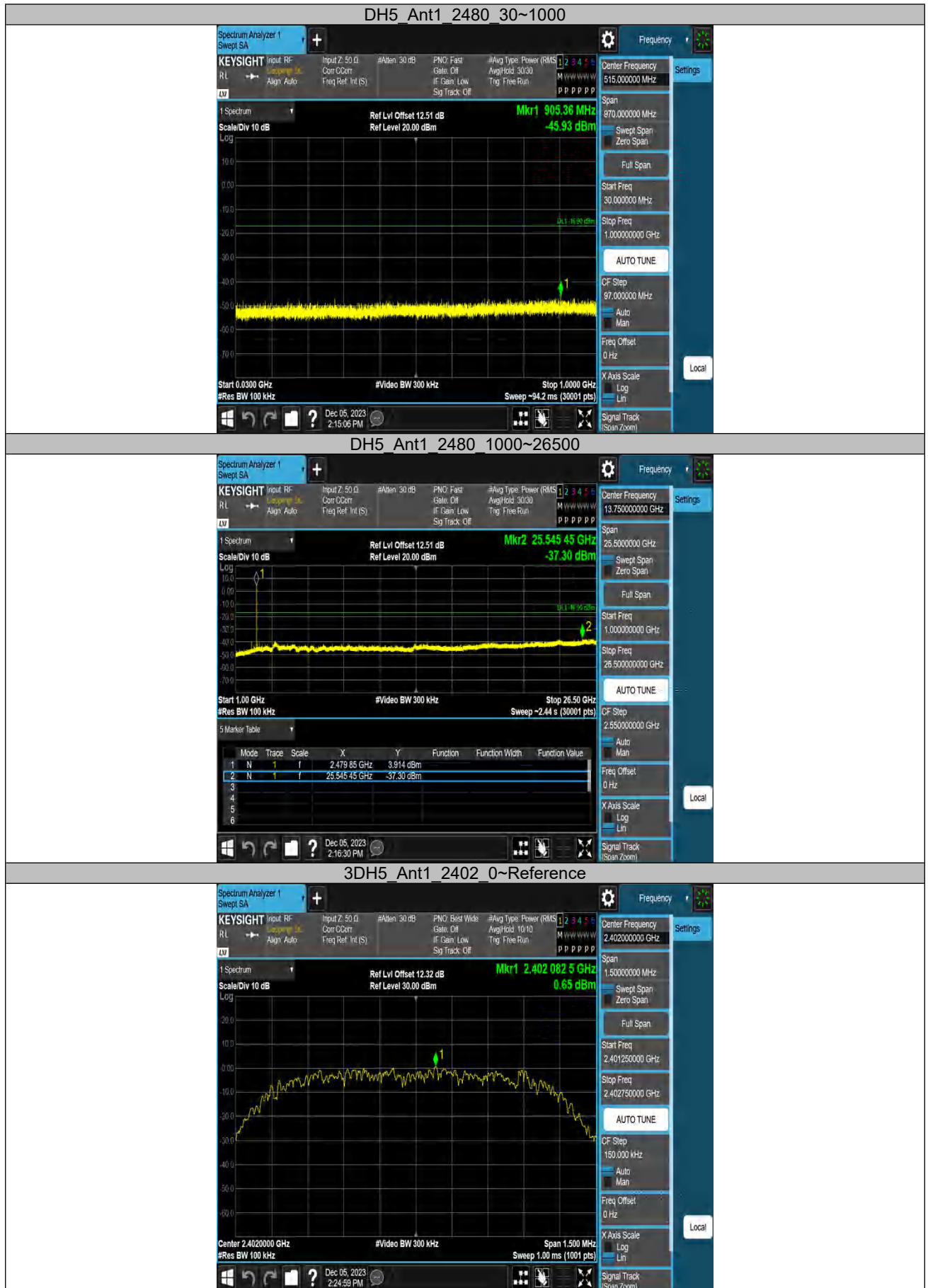


DH5\_Ant1\_2441\_1000~26500

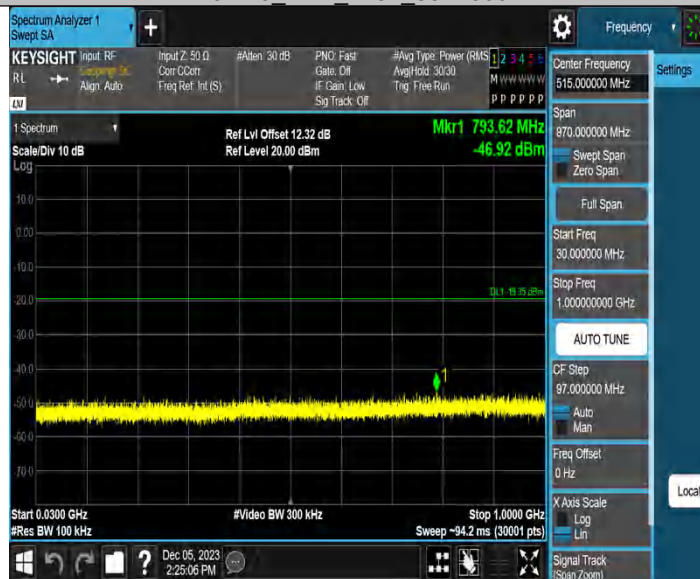


DH5\_Ant1\_2480\_0~Reference





3DH5\_Ant1\_2402\_30~1000



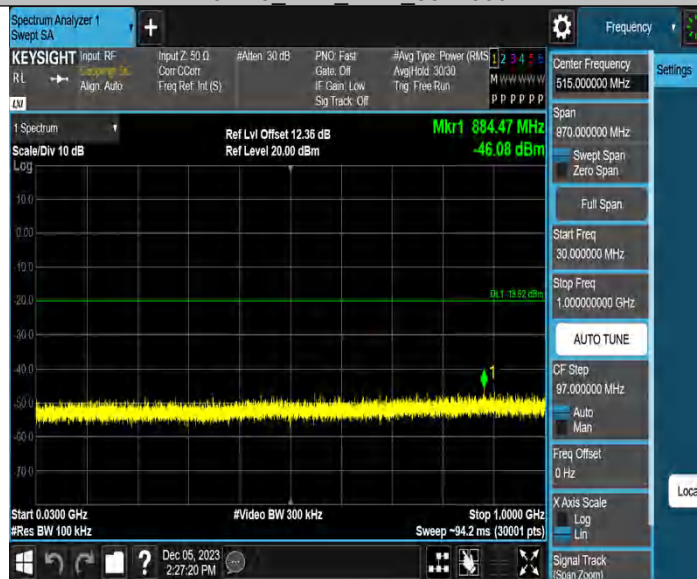
3DH5\_Ant1\_2402\_1000~26500



3DH5\_Ant1\_2441\_0~Reference



3DH5\_Ant1\_2441\_30~1000



3DH5\_Ant1\_2441\_1000~26500



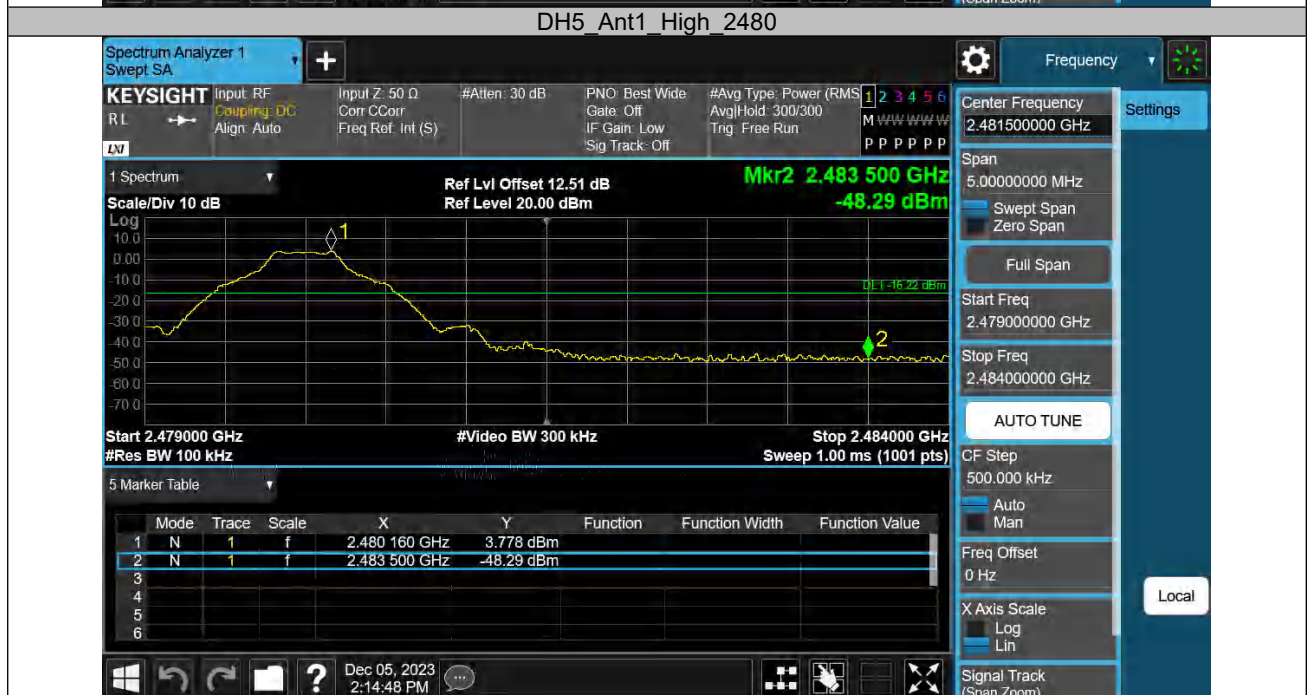
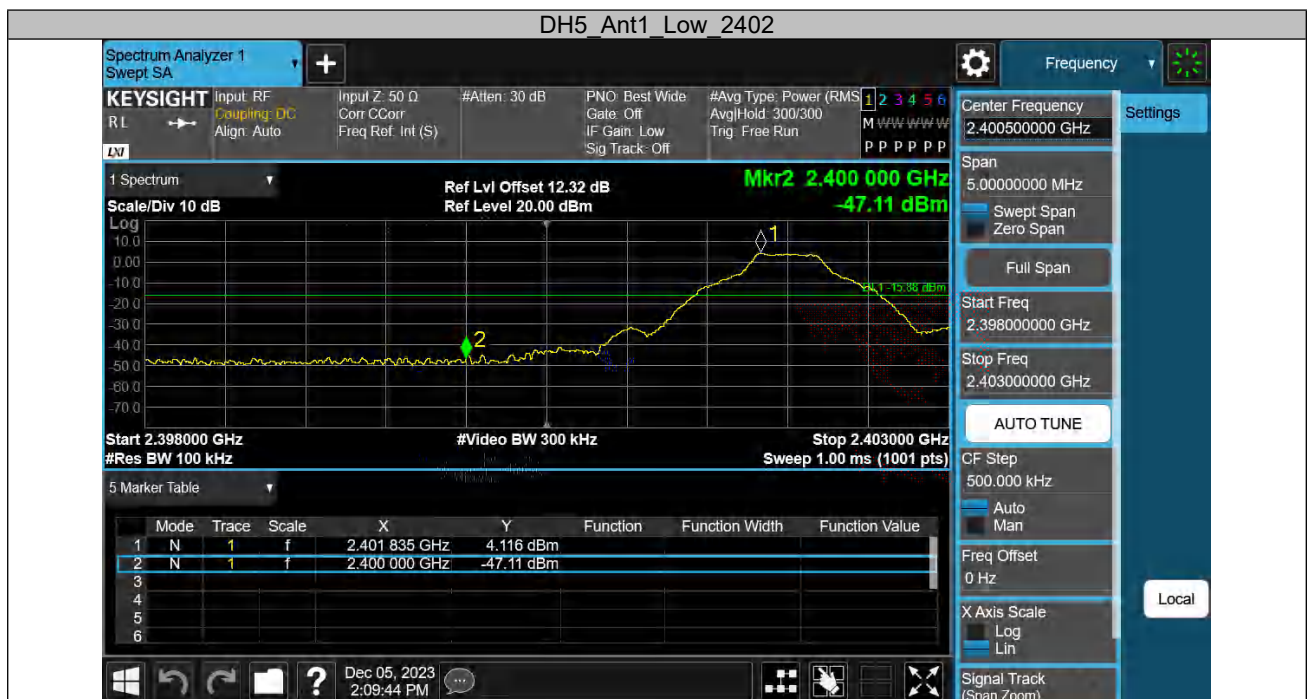
3DH5\_Ant1\_2480\_0~Reference





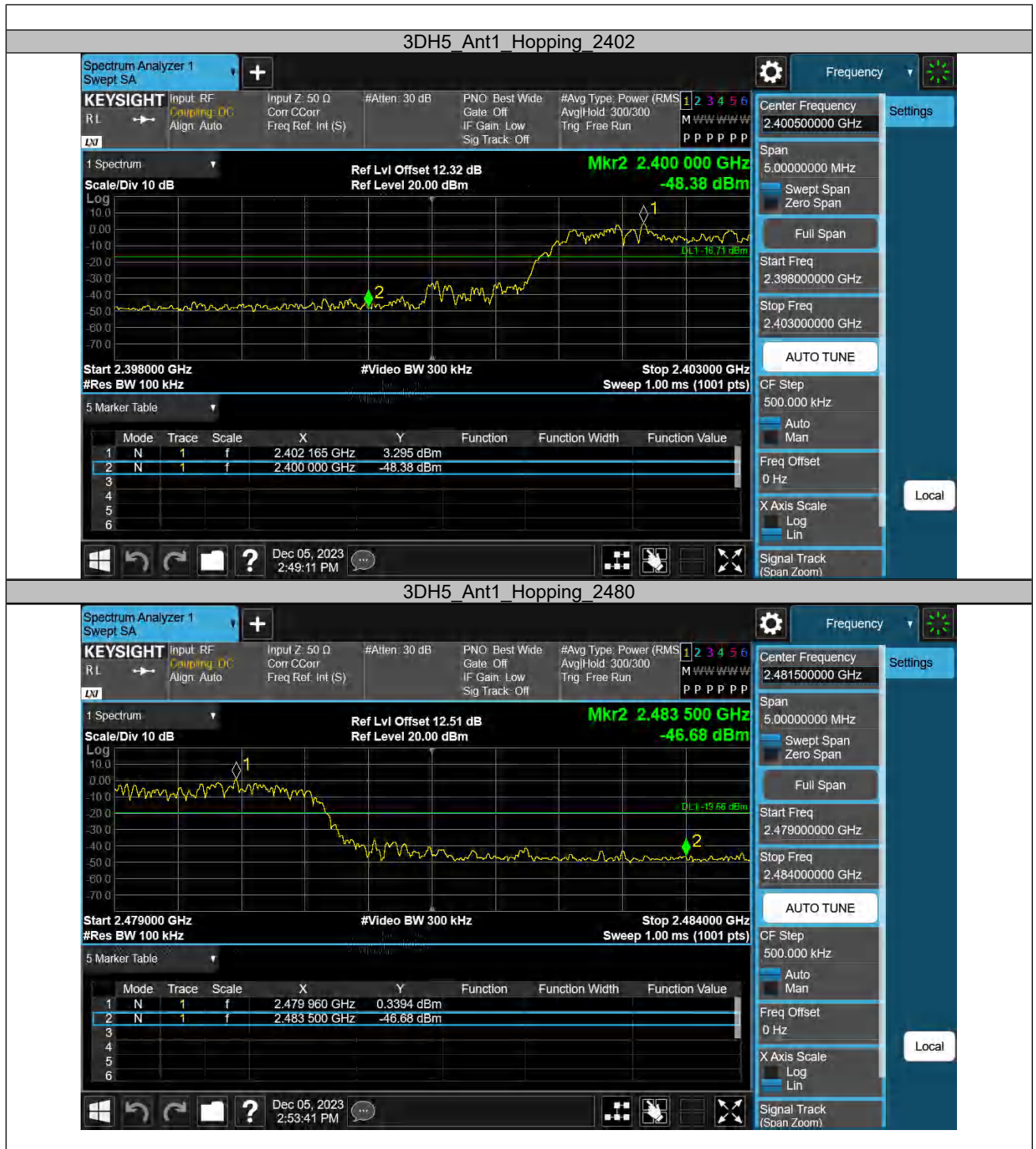
### Band edge measurements

| TestMode | Antenna | ChName  | Channel | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|----------|---------|---------|---------|----------------|--------------|-------------|---------|
| DH5      | Ant1    | Low     | 2402    | 4.116          | -47.11       | ≤-15.88     | PASS    |
|          |         | High    | 2480    | 3.778          | -48.29       | ≤-16.22     | PASS    |
| 3DH5     | Ant1    | Low     | 2402    | 3.777          | -39.43       | ≤-16.22     | PASS    |
|          |         | High    | 2480    | 3.381          | -45.12       | ≤-16.62     | PASS    |
| DH5      | Ant1    | Hopping | 2402    | 1.982          | -46.11       | ≤-18.92     | PASS    |
|          |         | Hopping | 2480    | 3.349          | -48.42       | ≤-16.65     | PASS    |
| 3DH5     | Ant1    | Hopping | 2402    | 3.295          | -48.38       | ≤-16.71     | PASS    |
|          |         | Hopping | 2480    | 0.3394         | -46.68       | ≤-19.66     | PASS    |









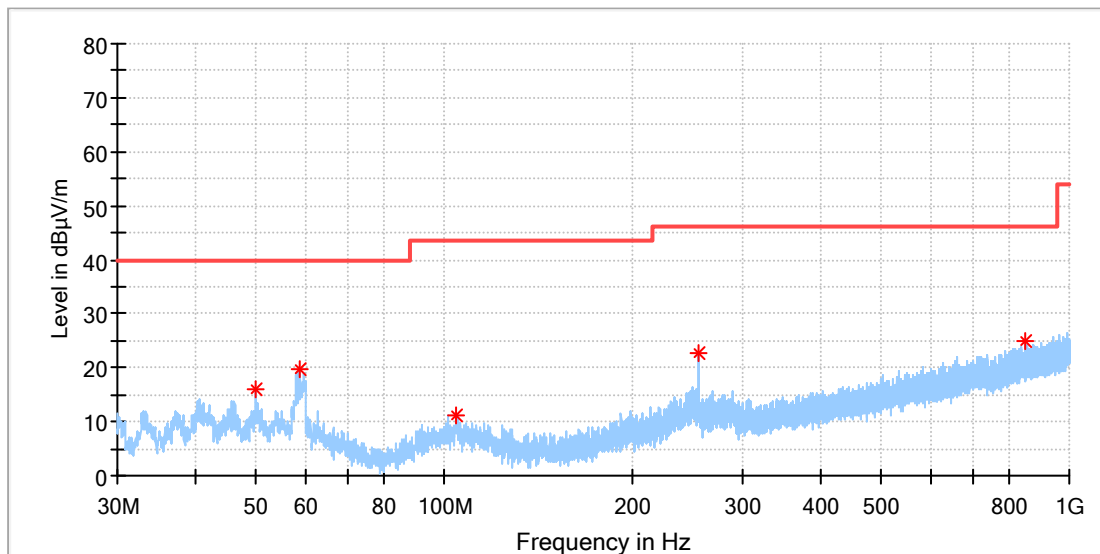
## Appendix A.8: Test Results of Radiated Spurious Emissions

Note: 1. 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. 2. This testing was carried out on different modulations, but only the worst case (GFSK) was presented in this report.

30MHz - 1GHz

### EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Mid channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

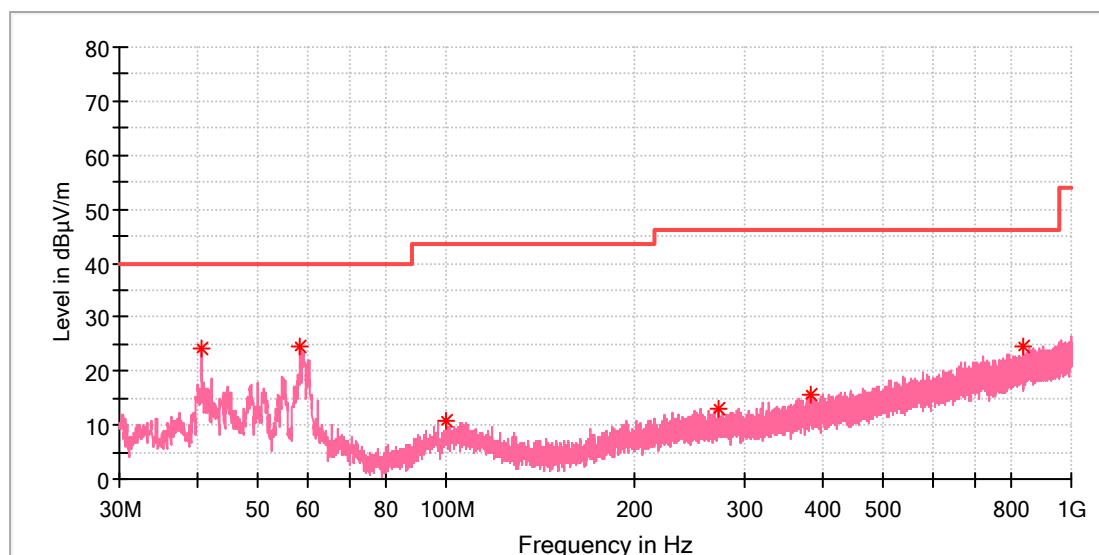


### Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 49.996923       | 15.94            | 40.00          | 24.06       | 100.0       | H   | 226.0         | -18.6        |
| 58.726923       | 19.72            | 40.00          | 20.28       | 100.0       | H   | 135.0         | -19.2        |
| 104.839231      | 11.19            | 43.50          | 32.31       | 100.0       | H   | 209.0         | -19.1        |
| 255.972692      | 22.75            | 46.00          | 23.25       | 100.0       | H   | 1.0           | -17.6        |
| 847.523462      | 24.77            | 46.00          | 21.23       | 100.0       | H   | 150.0         | -6.0         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Mid channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |



## Critical\_Freqs

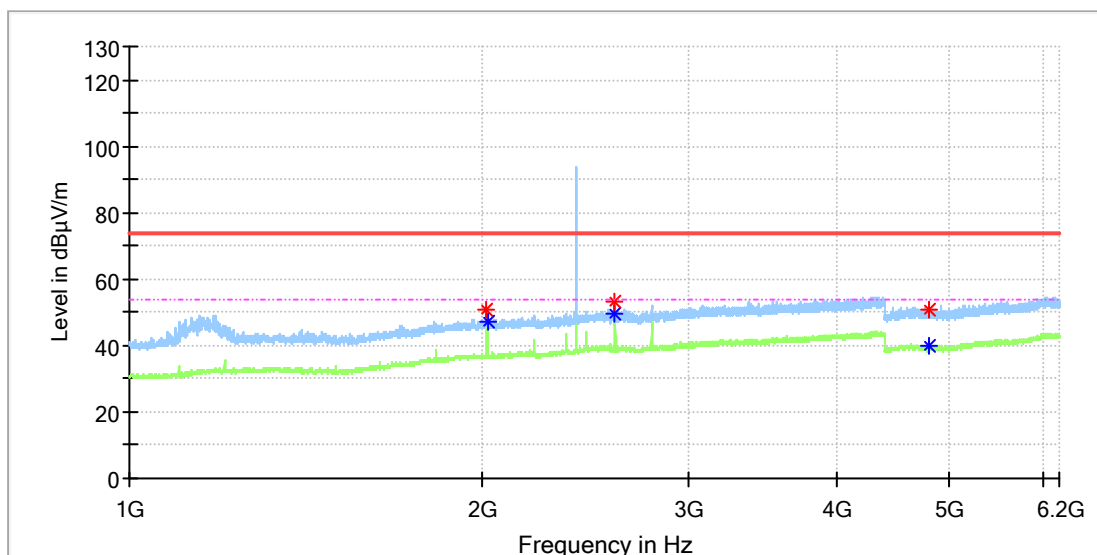
| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 40.632692       | 24.37            | 40.00          | 15.63       | 100.0       | V   | 166.0         | -20.2        |
| 58.428462       | 24.61            | 40.00          | 15.39       | 100.0       | V   | 261.0         | -19.1        |
| 100.213077      | 10.98            | 43.50          | 32.52       | 100.0       | V   | 149.0         | -19.3        |
| 272.313462      | 13.07            | 46.00          | 32.93       | 100.0       | V   | 104.0         | -17.2        |
| 381.625000      | 15.79            | 46.00          | 30.21       | 100.0       | V   | 0.0           | -14.5        |
| 838.196539      | 24.49            | 46.00          | 21.51       | 100.0       | V   | 336.0         | -6.1         |

1GHz - 18GHz

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

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

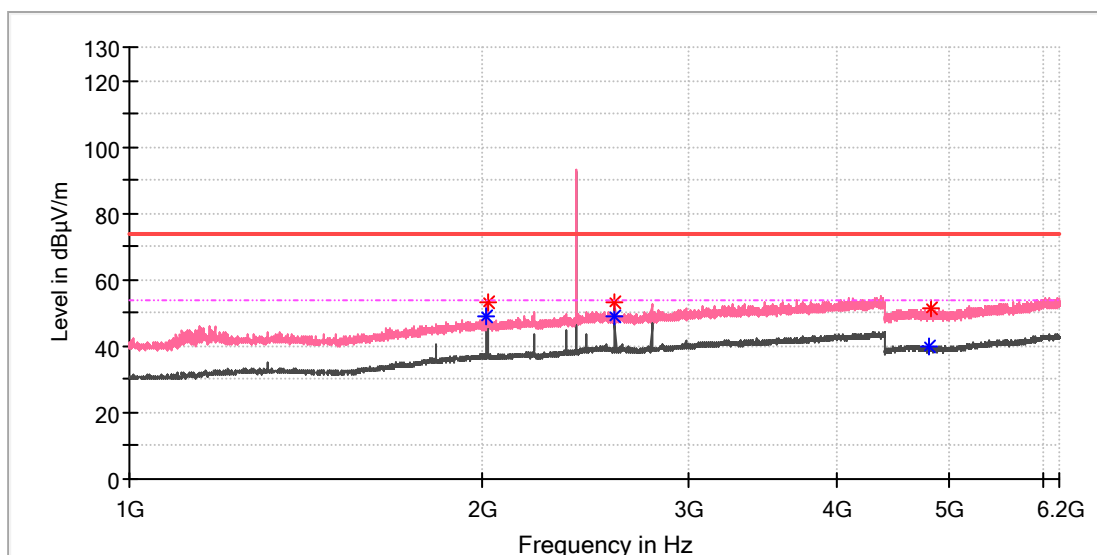


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2017.500000     | 50.98            | ---              | 74.00          | 23.02       | 150.0       | H   | 180.0         | 6.0          |
| 2018.000000     | ---              | 47.25            | 54.00          | 6.75        | 150.0       | H   | 167.0         | 6.0          |
| 2594.000000     | 53.12            | ---              | 74.00          | 20.88       | 150.0       | H   | 203.0         | 7.4          |
| 2594.000000     | ---              | 49.34            | 54.00          | 4.66        | 150.0       | H   | 203.0         | 7.4          |
| 4802.000000     | 51.07            | ---              | 74.00          | 22.93       | 150.0       | H   | 38.0          | 11.8         |
| 4804.000000     | ---              | 40.15            | 54.00          | 13.85       | 150.0       | H   | 144.0         | 11.8         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

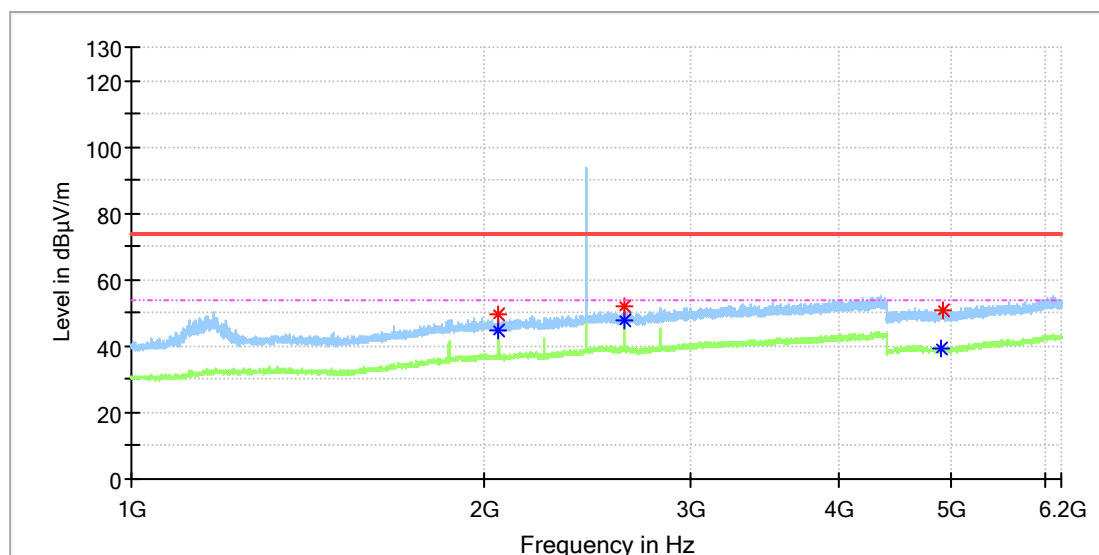


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2017.500000     | ---              | 49.17            | 54.00          | 4.83        | 150.0       | V   | 102.0         | 6.0          |
| 2018.000000     | 53.23            | ---              | 74.00          | 20.77       | 150.0       | V   | 96.0          | 6.0          |
| 2594.000000     | 52.99            | ---              | 74.00          | 21.01       | 150.0       | V   | 89.0          | 7.4          |
| 2594.000000     | ---              | 48.76            | 54.00          | 5.24        | 150.0       | V   | 89.0          | 7.4          |
| 4804.000000     | ---              | 40.18            | 54.00          | 13.82       | 150.0       | V   | 62.0          | 11.8         |
| 4814.000000     | 51.29            | ---              | 74.00          | 22.71       | 150.0       | V   | 119.0         | 11.8         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Mid channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

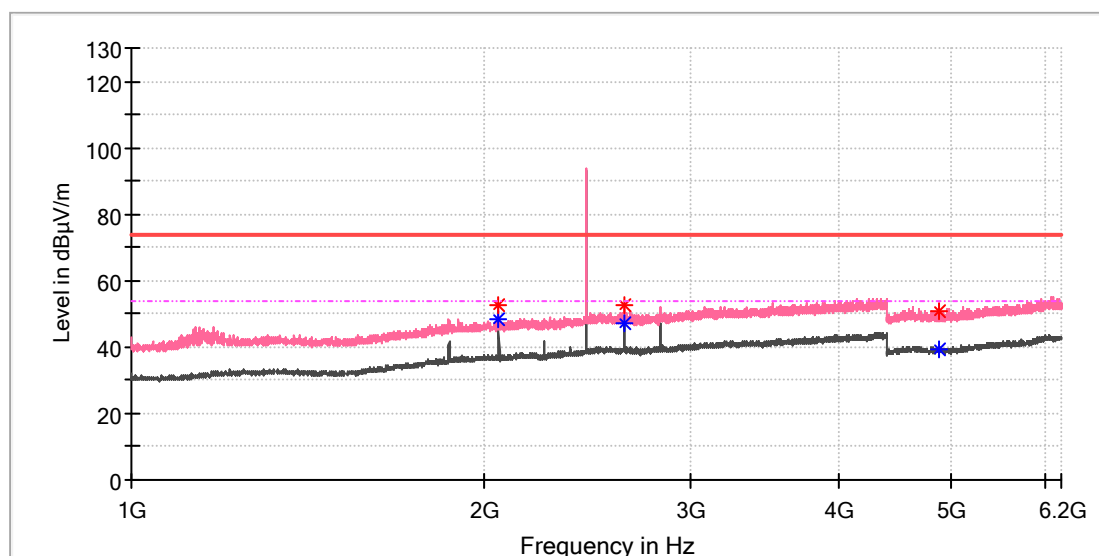


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2057.000000     | 49.64            | ---              | 74.00          | 24.36       | 150.0       | H   | 166.0         | 5.9          |
| 2057.000000     | ---              | 44.97            | 54.00          | 9.03        | 150.0       | H   | 166.0         | 5.9          |
| 2633.000000     | 52.03            | ---              | 74.00          | 21.97       | 150.0       | H   | 205.0         | 7.5          |
| 2633.000000     | ---              | 47.60            | 54.00          | 6.40        | 150.0       | H   | 205.0         | 7.5          |
| 4902.000000     | ---              | 39.57            | 54.00          | 14.43       | 150.0       | H   | 237.0         | 11.8         |
| 4909.000000     | 51.08            | ---              | 74.00          | 22.92       | 150.0       | H   | 166.0         | 11.8         |

## EUT Information

EUT Name: Portable Bluetooth Speaker  
Model: CLIP5G  
Test Mode: BR\_DH5\_Mid channel  
Order No/Sample No: 168450870/A003611357-008  
Test Voltage:: Battery  
Remark: Temp 23 Humi:53%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin

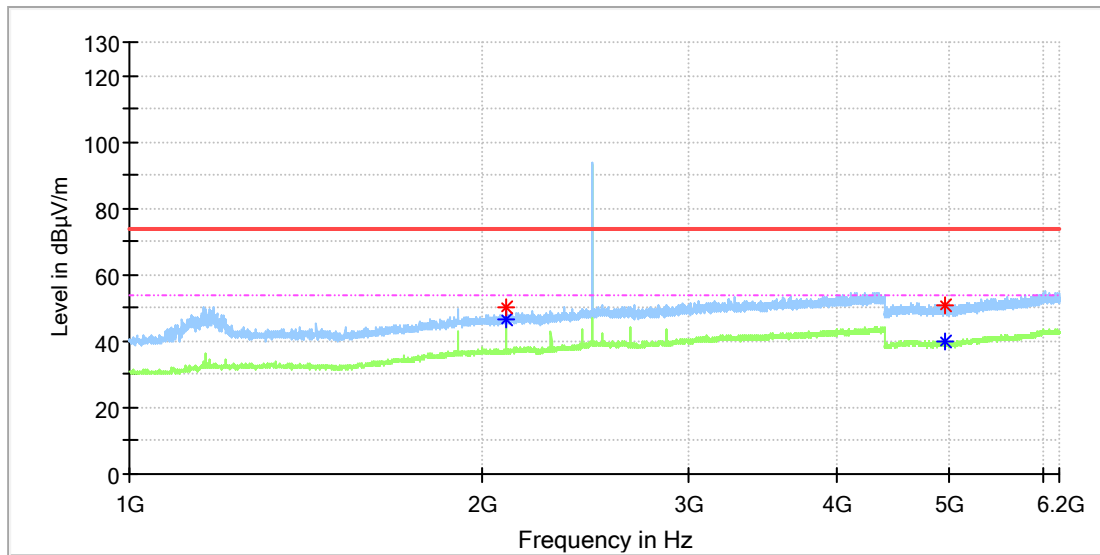


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2057.000000     | 52.61            | ---              | 74.00          | 21.39       | 150.0       | V   | 151.0         | 5.9          |
| 2057.000000     | ---              | 48.24            | 54.00          | 5.76        | 150.0       | V   | 151.0         | 5.9          |
| 2633.000000     | 52.46            | ---              | 74.00          | 21.54       | 150.0       | V   | 93.0          | 7.5          |
| 2633.000000     | ---              | 47.05            | 54.00          | 6.95        | 150.0       | V   | 93.0          | 7.5          |
| 4874.500000     | 50.60            | ---              | 74.00          | 23.40       | 150.0       | V   | 307.0         | 11.8         |
| 4877.500000     | ---              | 39.38            | 54.00          | 14.62       | 150.0       | V   | 237.0         | 11.8         |

## EUT Information

EUT Name: Portable Bluetooth Speaker  
Model: CLIP5G  
Test Mode: BR\_DH5\_High channel  
Order No/Sample No: 168450870/A003611357-008  
Test Voltage:: Battery  
Remark: Temp 23 Humi:53%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin

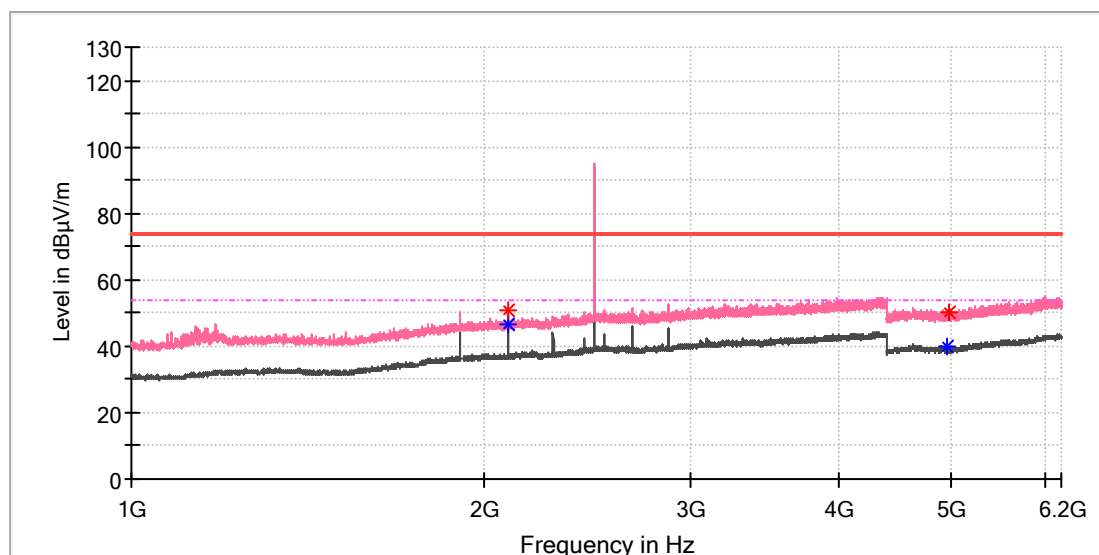


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2096.000000     | ---              | 46.30            | 54.00          | 7.70        | 150.0       | H   | 342.0         | 6.0          |
| 2096.500000     | 50.38            | ---              | 74.00          | 23.62       | 150.0       | H   | 342.0         | 6.0          |
| 4952.500000     | 50.89            | ---              | 74.00          | 23.11       | 150.0       | H   | 347.0         | 11.8         |
| 4959.000000     | ---              | 39.63            | 54.00          | 14.37       | 150.0       | H   | 114.0         | 11.8         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_High channel        |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

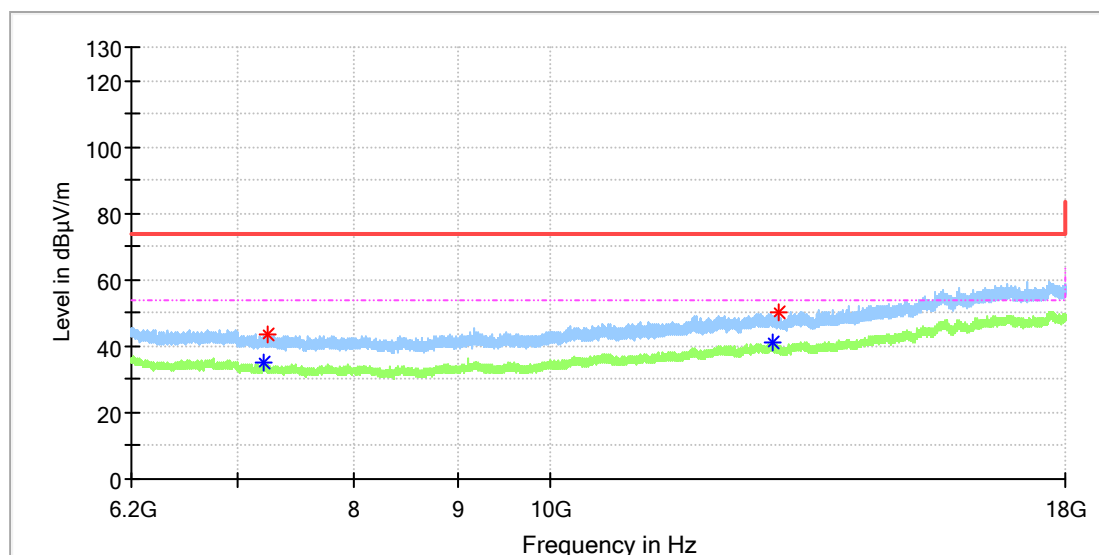


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2096.000000     | 50.93            | ---              | 74.00          | 23.07       | 150.0       | V   | 142.0         | 6.0          |
| 2096.000000     | ---              | 46.43            | 54.00          | 7.57        | 150.0       | V   | 142.0         | 6.0          |
| 4960.000000     | ---              | 39.96            | 54.00          | 14.04       | 150.0       | V   | 141.0         | 11.8         |
| 4969.500000     | 50.25            | ---              | 74.00          | 23.75       | 150.0       | V   | 292.0         | 11.8         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

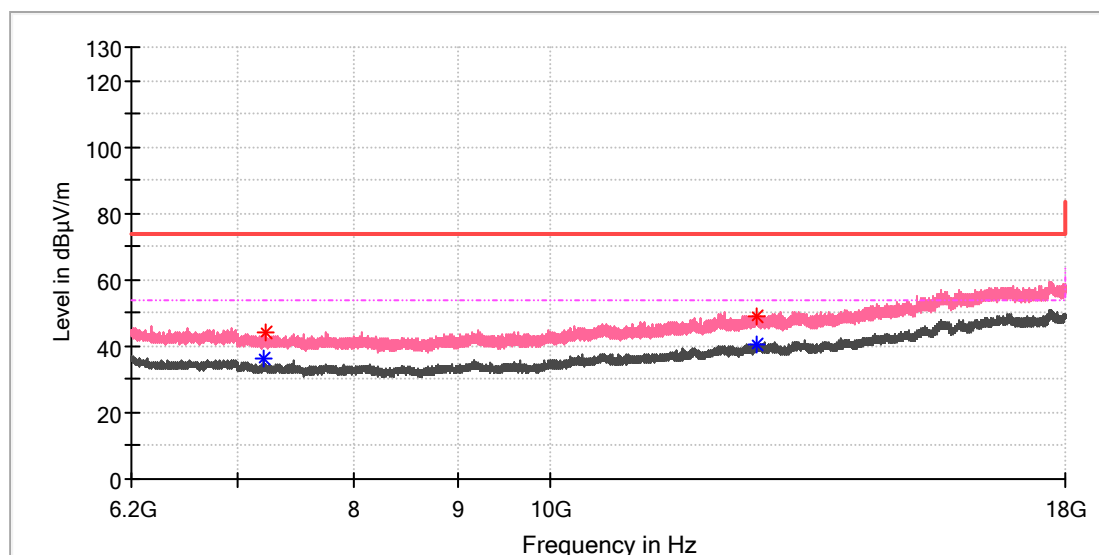


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7215.783333     | ---              | 34.84            | 54.00          | 19.16       | 150.0       | H   | 209.0         | 8.7          |
| 7235.450000     | 43.44            | ---              | 74.00          | 30.56       | 150.0       | H   | 257.0         | 8.6          |
| 12878.308333    | ---              | 41.06            | 54.00          | 12.94       | 150.0       | H   | 147.0         | 15.4         |
| 12966.808333    | 50.41            | ---              | 74.00          | 23.59       | 150.0       | H   | 113.0         | 15.5         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

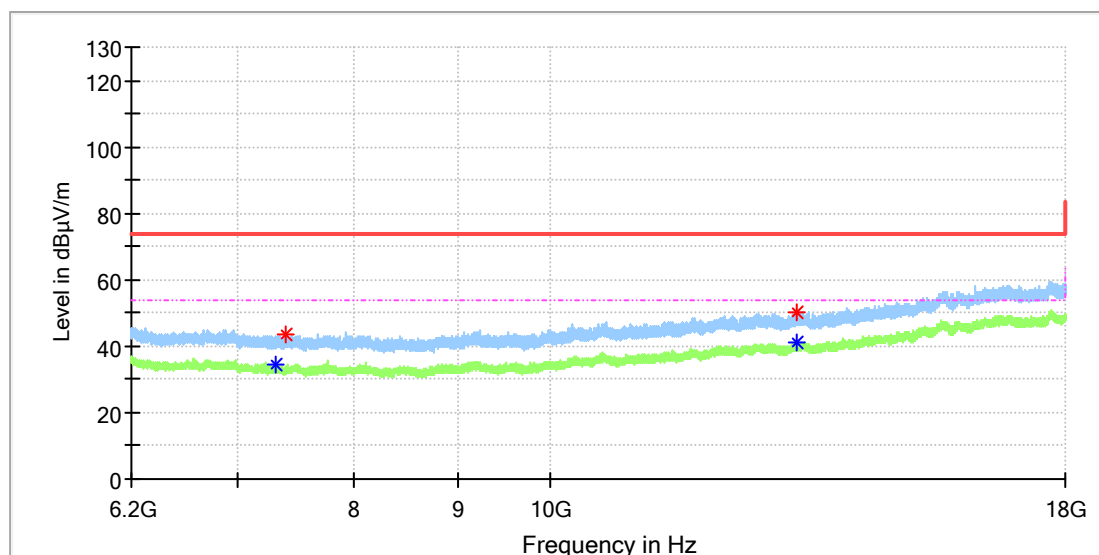


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7205.950000     | ---              | 36.22            | 54.00          | 17.78       | 150.0       | V   | 6.0           | 8.8          |
| 7225.616667     | 43.93            | ---              | 74.00          | 30.07       | 150.0       | V   | 270.0         | 8.7          |
| 12664.925000    | ---              | 40.73            | 54.00          | 13.27       | 150.0       | V   | 134.0         | 15.0         |
| 12666.400000    | 48.97            | ---              | 74.00          | 25.03       | 150.0       | V   | 0.0           | 15.1         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Mid channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

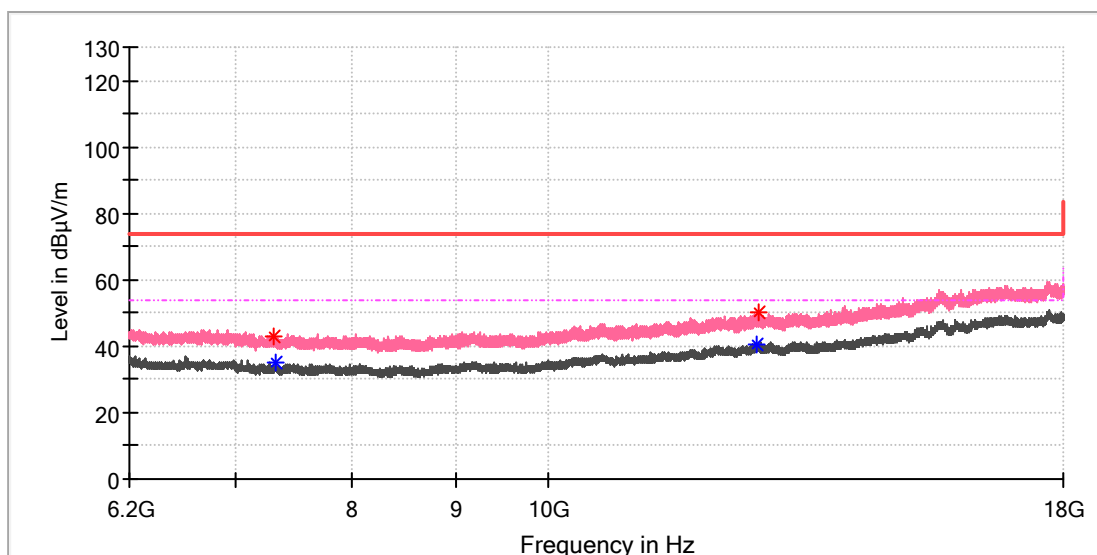


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7317.066667     | ---              | 34.33            | 54.00          | 19.67       | 150.0       | H   | 263.0         | 8.2          |
| 7391.308333     | 43.68            | ---              | 74.00          | 30.32       | 150.0       | H   | 120.0         | 8.3          |
| 13240.175000    | 50.12            | ---              | 74.00          | 23.88       | 150.0       | H   | 179.0         | 15.5         |
| 13259.841667    | ---              | 41.08            | 54.00          | 12.92       | 150.0       | H   | 26.0          | 15.5         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Mid channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

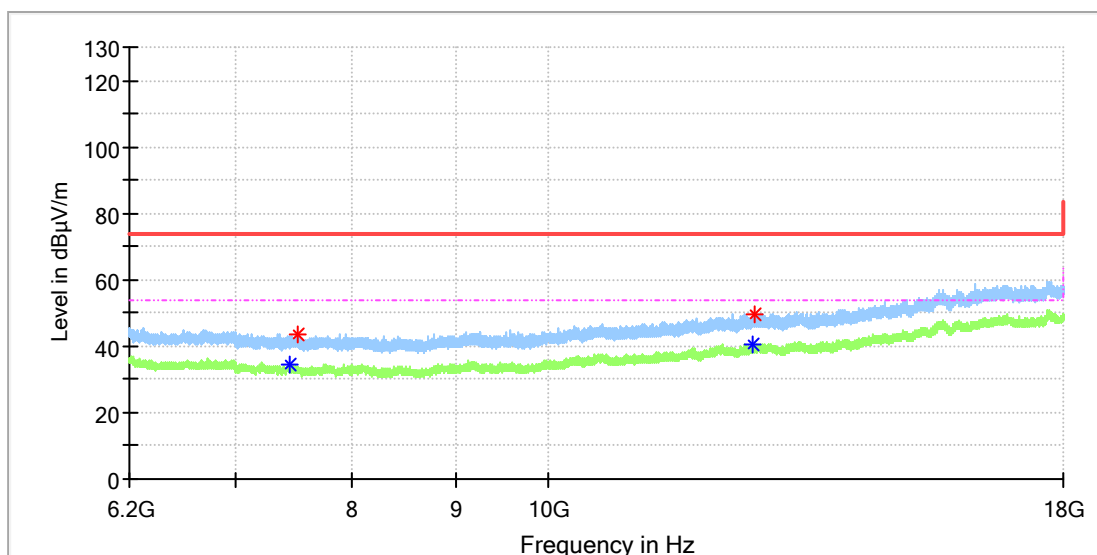


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7317.558333     | 42.79            | ---              | 74.00          | 31.21       | 150.0       | V   | 354.0         | 8.2          |
| 7322.966667     | ---              | 35.13            | 54.00          | 18.87       | 150.0       | V   | 185.0         | 8.2          |
| 12688.525000    | ---              | 40.68            | 54.00          | 13.32       | 150.0       | V   | 47.0          | 15.1         |
| 12706.716667    | 50.07            | ---              | 74.00          | 23.93       | 150.0       | V   | 0.0           | 15.1         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_High channel        |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

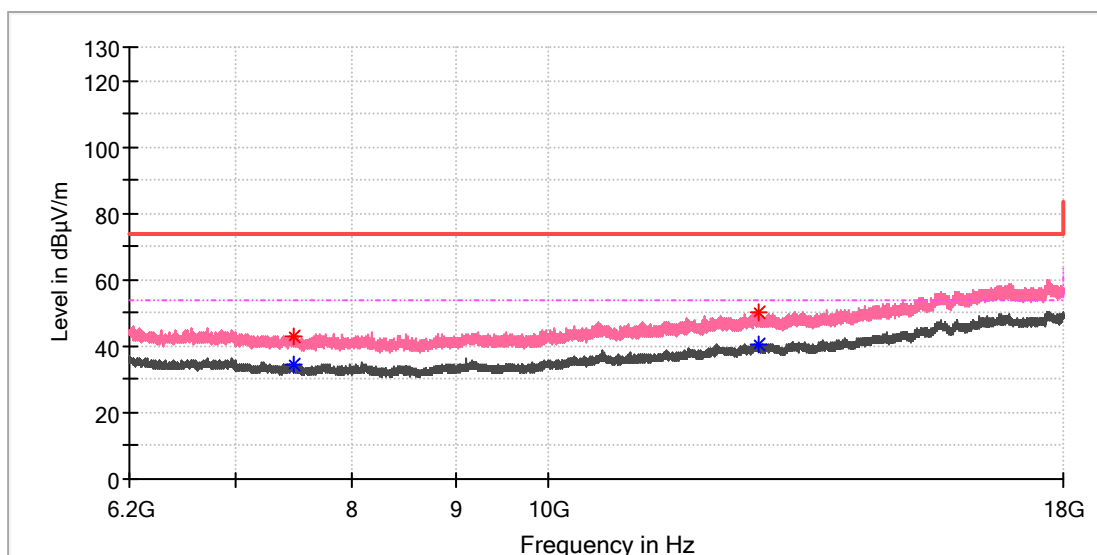


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7439.983333     | ---              | 34.34            | 54.00          | 19.66       | 150.0       | H   | 110.0         | 8.4          |
| 7509.308333     | 43.30            | ---              | 74.00          | 30.70       | 150.0       | H   | 340.0         | 8.7          |
| 12639.358333    | ---              | 40.80            | 54.00          | 13.20       | 150.0       | H   | 293.0         | 15.0         |
| 12660.991667    | 49.71            | ---              | 74.00          | 24.29       | 150.0       | H   | 352.0         | 15.0         |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_High channel        |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |



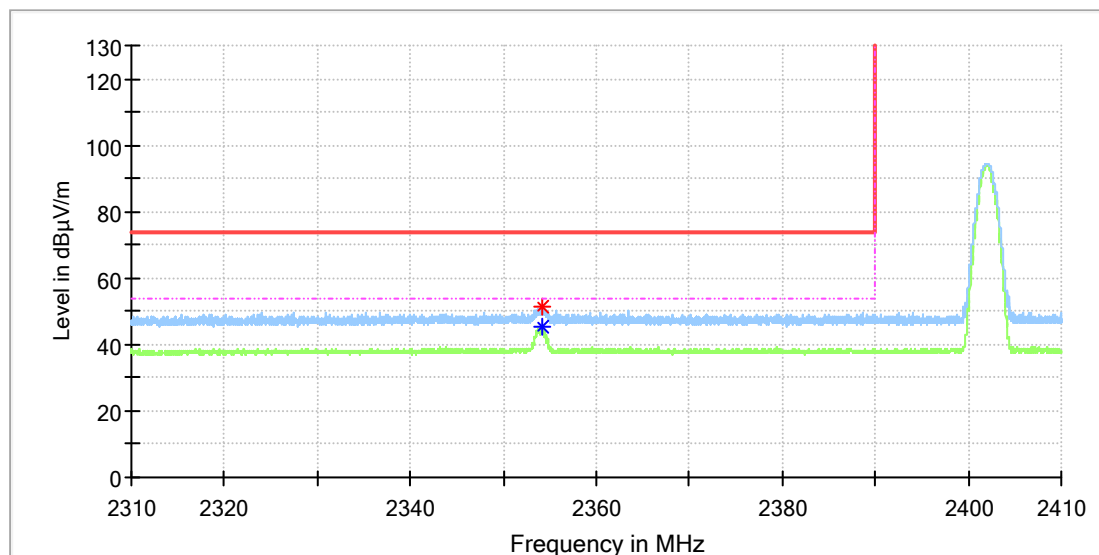
## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 7476.366667     | ---              | 34.18            | 54.00          | 19.82       | 150.0       | V   | 313.0         | 8.6          |
| 7480.300000     | 43.09            | ---              | 74.00          | 30.91       | 150.0       | V   | 263.0         | 8.7          |
| 12703.766667    | ---              | 40.53            | 54.00          | 13.47       | 150.0       | V   | 170.0         | 15.1         |
| 12727.858333    | 50.27            | ---              | 74.00          | 23.73       | 150.0       | V   | 48.0          | 15.2         |

## Appendix A.9: Test Results of Radiated Emissions in Restricted Bands

### EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

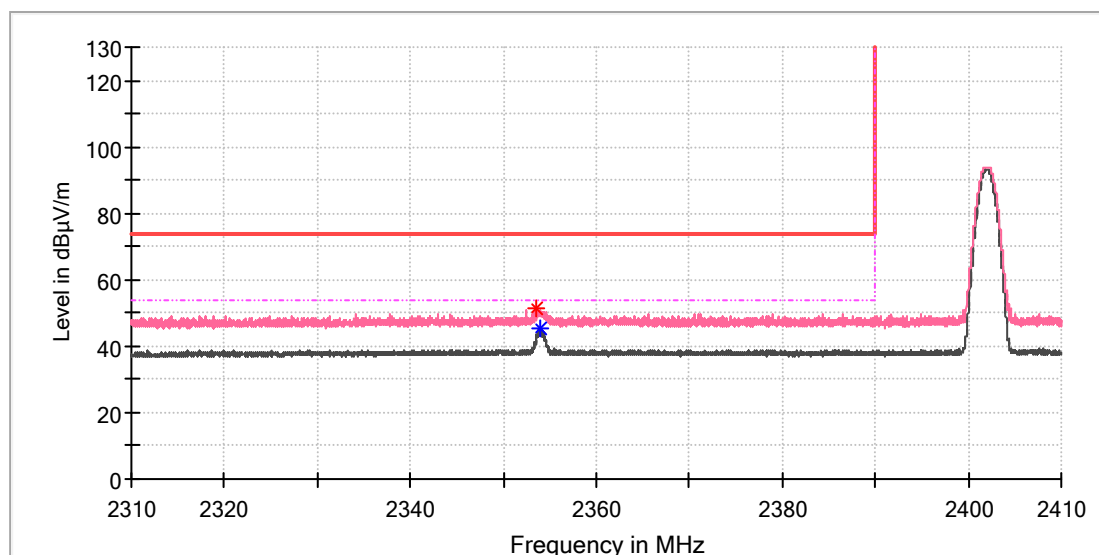


### Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2354.147059     | ---              | 45.25            | 54.00          | 8.75        | 150.0       | H   | 329.0         | 6.9          |
| 2354.176471     | 51.13            | ---              | 74.00          | 22.87       | 150.0       | H   | 329.0         | 6.9          |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_Low channel         |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

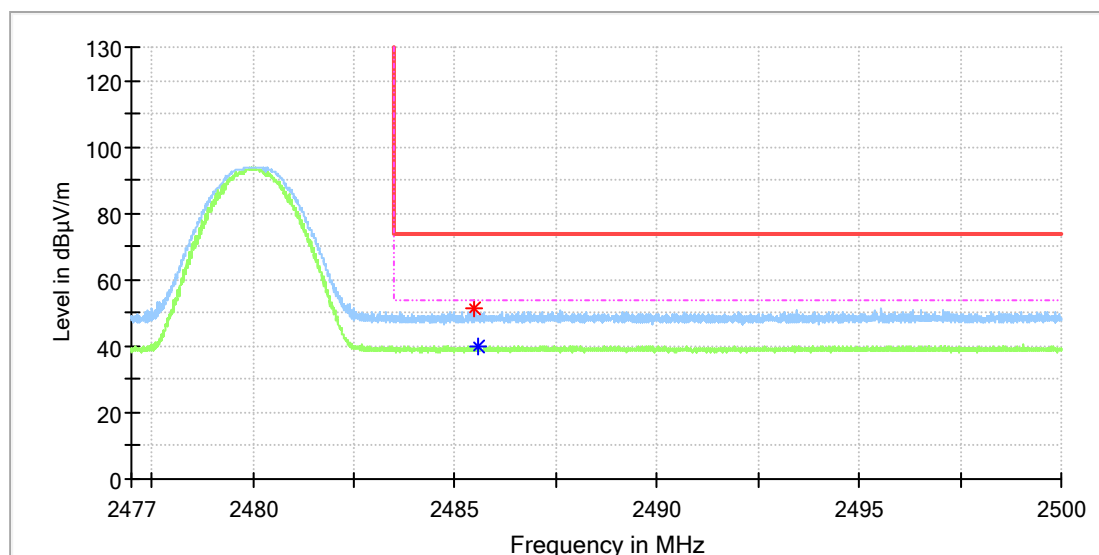


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2353.602941     | 51.12            | ---              | 74.00          | 22.88       | 150.0       | V   | 169.0         | 6.9          |
| 2353.911765     | ---              | 45.18            | 54.00          | 8.82        | 150.0       | V   | 125.0         | 6.9          |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_High channel        |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |

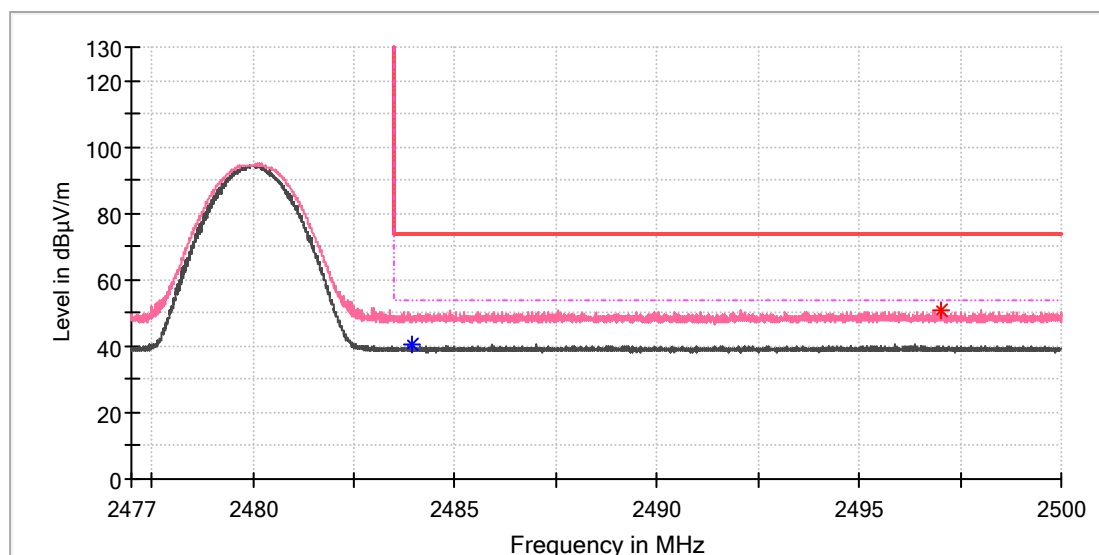


## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2485.489706     | 51.44            | ---              | 74.00          | 22.56       | 150.0       | H   | 325.0         | 7.4          |
| 2485.573530     | ---              | 39.94            | 54.00          | 14.06       | 150.0       | H   | 339.0         | 7.4          |

## EUT Information

|                     |                            |
|---------------------|----------------------------|
| EUT Name:           | Portable Bluetooth Speaker |
| Model:              | CLIP5G                     |
| Test Mode:          | BR_DH5_High channel        |
| Order No/Sample No: | 168450870/A003611357-008   |
| Test Voltage::      | Battery                    |
| Remark:             | Temp 23 Humi:53%           |
| Test Standard:      | FCC 15.247                 |
| Tested By:          | Kei Zhang                  |
| Reviewed By:        | Terry Yin                  |



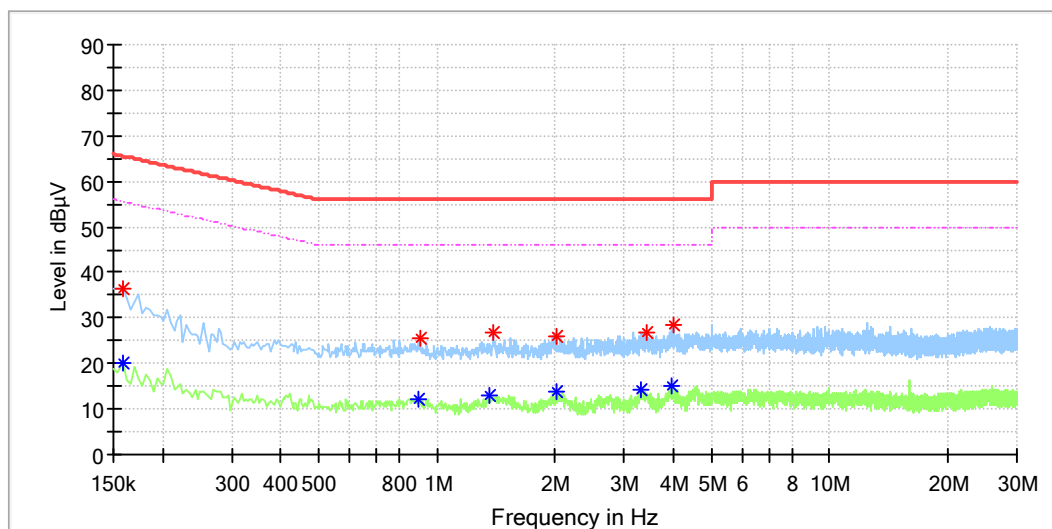
## Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2483.963235     | ---              | 40.32            | 54.00          | 13.68       | 150.0       | V   | 127.0         | 7.4          |
| 2497.008824     | 50.87            | ---              | 74.00          | 23.13       | 150.0       | V   | 283.0         | 7.4          |

## Appendix A.10: Test Results of Conducted Emissions on AC Mains

### EUT Information

|                     |                                              |
|---------------------|----------------------------------------------|
| EUT Name:           | portable bluetooth speaker                   |
| Order Number:       | 168454748 290                                |
| Model:              | CLIP5G                                       |
| Test Mode:          | Charging + Bluetooth playing + multi speaker |
| Test Voltage:       | AC 230V/50Hz                                 |
| Test By:/Review By: | Charlie Zha / Gary Chen                      |
| Tem./Hum./Pressure: | 25.0°C/51.2%/101kPa                          |
| Remark:             | SR1                                          |

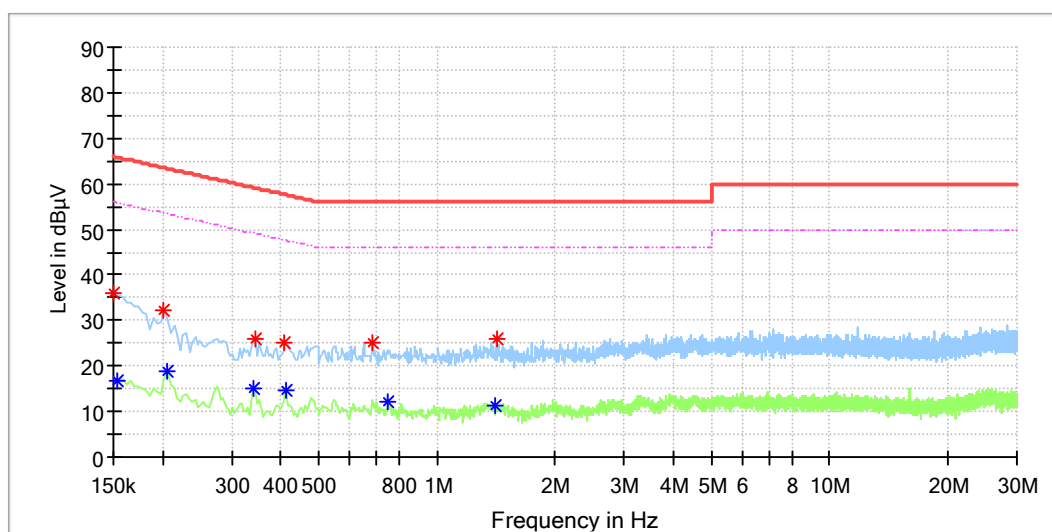


### Critical Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.158000        | 36.33          | ---            | 65.57        | 29.24       | L1   | 9.9        |
| 0.158000        | ---            | 19.98          | 55.57        | 35.59       | L1   | 9.9        |
| 0.902000        | ---            | 12.31          | 46.00        | 33.69       | L1   | 10.0       |
| 0.906000        | 25.49          | ---            | 56.00        | 30.51       | L1   | 10.0       |
| 1.362000        | ---            | 13.17          | 46.00        | 32.83       | L1   | 10.1       |
| 1.394000        | 26.61          | ---            | 56.00        | 29.39       | L1   | 10.1       |
| 2.010000        | ---            | 13.66          | 46.00        | 32.34       | L1   | 10.1       |
| 2.010000        | 25.92          | ---            | 56.00        | 30.08       | L1   | 10.1       |
| 3.314000        | ---            | 14.42          | 46.00        | 31.58       | L1   | 10.2       |
| 3.430000        | 26.87          | ---            | 56.00        | 29.13       | L1   | 10.2       |
| 3.950000        | ---            | 14.89          | 46.00        | 31.11       | L1   | 10.2       |
| 3.990000        | 28.66          | ---            | 56.00        | 27.34       | L1   | 10.2       |

## EUT Information

EUT Name: portable bluetooth speaker  
Order Number: 168454748 290  
Model: CLIP5G  
Test Mode: Charging + Bluetooth playing + multi speaker  
Test Voltage: AC 230V/50Hz  
Test By:/Review By: Charlie Zha / Gary Chen  
Tem./Hum./Pressure: 25.0°C/51.2%/101kPa  
Remark: SR1



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.150000        | 35.96          | ---            | 66.00        | 30.04       | N    | 9.8        |
| 0.154000        | ---            | 16.77          | 55.78        | 39.01       | N    | 9.8        |
| 0.202000        | 32.04          | ---            | 63.53        | 31.49       | N    | 9.8        |
| 0.206000        | ---            | 18.74          | 53.37        | 34.63       | N    | 9.8        |
| 0.342000        | ---            | 15.18          | 49.16        | 33.97       | N    | 9.8        |
| 0.346000        | 26.06          | ---            | 59.06        | 33.00       | N    | 9.8        |
| 0.410000        | 24.97          | ---            | 57.65        | 32.68       | N    | 9.8        |
| 0.414000        | ---            | 14.64          | 47.57        | 32.93       | N    | 9.8        |
| 0.686000        | 24.99          | ---            | 56.00        | 31.01       | N    | 9.8        |
| 0.750000        | ---            | 12.00          | 46.00        | 34.00       | N    | 9.8        |
| 1.414000        | ---            | 11.50          | 46.00        | 34.50       | N    | 9.8        |
| 1.418000        | 25.97          | ---            | 56.00        | 30.03       | N    | 9.8        |