

Test Report of FCC Part 15 C for FCC Certificate

On Behalf of

ShenZhen Aoni Electronic Industry Co., Ltd.

FCC ID: Z63-AONI30402
Product Description: Bluetooth Headset
Model No.: BT304, AF62
Trade Mark: AONI, MEELECTRONICS

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Test by:

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Owen Li



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TABLE OF CONTENTS

1. GENERAL INFORMATION4
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)4
1.2 TEST FACILITY5
1.3 RELATED SUBMITTAL(S) / GRANT (S)5
1.4 MEASUREMENT UNCERTAINTY5

2. SYSTEM TEST CONFIGURATION6
2.1 EUT CONFIGURATION6
2.2 EUT EXERCISE6
2.3 GENERAL TEST PROCEDURES6
2.4 LIST OF MEASURING EQUIPMENTS7
2.5 LIST OF AUXILIARY DEVICE9

3. SUMMARY OF TEST RESULTS10

4. CONDCUTED EMISSION TEST11
4.1 APPLICABLE STANDARD11
4.2 LIMITS11
4.3 EUT TEST SETUP11
4.4 PROCEDURE OF CONDUCTED EMISSION TEST12
4.5 TEST RESULT12

5. TEST OF HOPPING CHANNEL BANDWIDTH15
5.1 APPLICABLE STANDARD15
5.2 EUT SETUP15
5.3 TEST EQUIPMENT LIST AND DETAILS15
5.4 TEST PROCEDURE15
5.5 TEST RESULT15

6. TEST OF HOPPING CHANNEL SEPARATION19
6.1 APPLICABLE STANDARD19
6.2 EUT SETUP19
6.3 TEST EQUIPMENT LIST AND DETAILS19
6.4 TEST PROCEDURE19
6.5 TEST RESULT19

7. TEST OF NUMBER OF HOPPING FREQUENCY23
7.1 APPLICABLE STANDARD23
7.2 EUT SETUP23
7.3 TEST EQUIPMENT LIST AND DETAILS23
7.4 TEST PROCEDURE23
7.5 TEST RESULT23

8. TEST OF DWELL TIME OF EACH FREQUENCY25
8.1 APPLICABLE STANDARD25
8.2 EUT SETUP25
8.3 TEST EQUIPMENT LIST AND DETAILS25
8.4 TEST PROCEDURE25
8.5 TEST RESULT25

9. TEST OF MAXIMUM PEAK OUTPUT POWER28
9.1 APPLICABLE STANDARD28
9.2 EUT SETUP28
9.3 TEST EQUIPMENT LIST AND DETAILS28
9.4 TEST EQUIPMENT LIST AND DETAILS28
9.5 TEST RESULT28

10. TEST OF BAND EDGES EMISSION29
10.1 APPLICABLE STANDARD29

| | |
|--|-----------|
| 10.2 EUT SETUP | 29 |
| 10.3 TEST EQUIPMENT LIST AND DETAILS | 30 |
| 10.4 TEST PROCEDURE | 30 |
| 10.5 TEST RESULT | 30 |
| 11. TEST OF SPURIOUS RADIATED EMISSION..... | 33 |
| 11.1 APPLICABLE STANDARD | 33 |
| 11.2 RADIATED MEASUREMENT SETUP | 34 |
| 11.3 TEST EQUIPMENT LIST AND DETAILS | 35 |
| 11.4 RADIATED MEASUREMENT TEST PROCEDURE | 35 |
| 11.5 TEST RESULT | 35 |
| 12. ANTENNA REQUIREMENT..... | 54 |
| 12.1 STANDARD APPLICABLE | 54 |
| 12.2 ANTENNA CONNECTED CONSTRUCTION..... | 54 |

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: **ShenZhen Aoni Electronic Industry Co., Ltd.**
Address of applicant: HongHui Industrial Park,2nd LiuXian Road, Xin'An streets,
District 68, Bao'an District,ShenZhen,China

Manufacturer: **ShenZhen Aoni Electronic Industry Co., Ltd.**
Address of manufacturer: HongHui Industrial Park,2nd LiuXian Road, Xin'An streets,
District 68, Bao'an District,ShenZhen,China

General Description of E.U.T

| Items | Description |
|---------------------|--------------------------------------|
| EUT Description: | Bluetooth Headset |
| Model No.: | BT304,AF62 |
| Type of Modulation: | FHSS |
| Frequency Band: | 2402 MHz ~ 2480 MHz |
| Number of Channels: | 79 |
| Channel Bandwidth: | 1 MHz |
| Antenna Type: | Integrated antenna, fixed on PCB |
| Antenna Gain: | -3dBi |
| Rated Voltage: | DC 5V from USB , DC3.7V from battery |

Note:

- * The test data gathered are from the production sample provided by the manufacturer,
- * The BT304 is the same as AF62, just difference in model number and trade mark serves as Marketing strategy.

1.2 Test Facility

All measurement required was performed at laboratory of Centre Testing International (ShenZhen) Corporation ,Location at Hongwei Industrial Zone, Baoan 70 District, Shenzhen, Guangdong, The site and apparatus are constructed in conformance with the requirements of ANSI C63.4, CISPR 16-1-1 and other equivalent standards.

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

FCC – Registration No.: 510007

CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION,EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. Registration 338263, March 20, 2009.

IC Registration No.: 7408B

The 3m alternate test site of CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7408B on December 29, 2009.

CNAS - Registration No.: L1910

CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION,. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.The acceptance letter from the CNAS is maintained in our files: Registration:L1910,January 12,2010.

1.3 Related Submittal(s) / Grant (s)

This submittal(s) is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.209, and 15.247 rules.

1.4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

| Test item | Value (dB) |
|--------------------|------------|
| Conducted Emission | 3.2 |
| Radiated Emission | 4.5 |

2. SYSTEM TEST CONFIGURATION

The tests documented in this report were performed in accordance with ANSI C63.4-2003 and FCC CFR 47 Part 15 Subpart C.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

2.3 General Test Procedures

Conducted Emissions The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

Radiated Emissions The EUT is placed on a turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m/10m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

2.4 List of Measuring Equipments

Test equipments list of CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION.

| Shielding Room No. 1 - Conducted disturbance Test | | | | |
|---|--------------|----------|------------|------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| Receiver | R&S | ESCI | 100009 | 07/19/2013 |
| LISN | ETS-LINDGREN | 3850/2 | 00051952 | 07/19/2013 |
| LISN | R&S | ENV216 | 100098 | 07/19/2013 |
| Voltage Probe | R&S | ESH2-Z3 | 100042 | 07/19/2013 |
| Current Probe | R&S | EZ17 | 100106 | 07/19/2013 |
| ISN | TESEQ GmbH | ISN T800 | 30297 | 08/04/2013 |

| Control Room - Conducted disturbance Test (10m part) | | | | |
|--|-----------------|----------|------------|------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| Receiver | R&S | ESCI | 100435 | 07/19/2013 |
| LISN | schwarzbeck | NNLK8121 | 8121-529 | 07/19/2013 |
| Transient Limiter | ELECTRO-METRICS | EM-7600 | 806 | 08/29/2013 |
| Voltage Probe | R&S | ESH2-Z3 | 100042 | 07/19/2013 |
| Current Probe | R&S | EZ17 | 100106 | 07/19/2013 |
| ISN | TESEQ GmbH | ISN T800 | 30297 | 08/04/2013 |

| 3M Semi-anechoic Chamber - Radiated disturbance Test | | | | |
|--|--------------|-----------|------------|------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| 3M Chamber & Accessory Equipment | ETS-LINDGREN | FACT-3 | 3510 | 07/09/2013 |
| Spectrum Analyzer | Agilent | E4440A | MY46185649 | 08/07/2013 |
| TRILOG Broadband Antenna | schwarzbeck | VULB 9163 | 401 | 07/21/2013 |
| Multi device Controller | ETS-LINGREN | 2090 | 00057230 | N/A |
| Horn Antenna | ETS-LINGREN | 3117 | 00057407 | 07/19/2013 |
| Microwave Preamplifier | Agilent | 8449B | 3008A02425 | 08/29/2013 |

| 10M Semi-anechoic Chamber - Radiated disturbance Test | | | | |
|---|--------------|-----------|------------|------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| 10M Chamber & Accessory Equipment | Rainford | -- | -- | 07/06/2015 |
| Receiver | R&S | ESCI | 100435 | 07/19/2013 |
| Spectrum Analyzer | R&S | FSP40 | 100416 | 07/06/2013 |
| EMI test receiver | R&S | ESIB40 | 2023282915 | 07/24/2013 |
| TRILOG Broadband Antenna | schwarzbeck | VULB 9163 | 484 | 07/21/2013 |

| | | | | |
|------------------------|-------------|-----------|------------|------------|
| Horn Antenna | ETS-LINGREN | 3117 | 00044562 | 07/07/2015 |
| Microwave Preamplifier | Agilent | 11909A | 186871 | 07/06/2013 |
| Microwave Preamplifier | HP | HP 8447F | 2805A03379 | 07/06/2013 |
| Microwave Preamplifier | CD | PAP-1G18G | 2001 | 08/29/2013 |

| Shielding Room No. 2 - Harmonic / Flicker Test (EN 61000-3-2) / (EN 61000-3-3) | | | | |
|---|------------------------|----------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| 5KVA AC POWER SOURCE | California instruments | 5001iX-400-413 | 57344 | 08/29/2013 |
| Flicker & Harmonic Tester | California instruments | PACS-1 | 72492 | 08/29/2013 |

| Shielding Room No. 3 - ESD Test (IEC 61000-4-2) | | | | |
|--|---------------------|--------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| ESD Simulator | EM TEST | ESD30C | V0603101091 | 07/30/2013 |
| ESD Simulator | TESEQ | NSG437 | 478 | 08/22/2013 |

| 3M Full-anechoic Chamber - Radio-frequency electromagnetic field Immunity Test (IEC 61000-4-3) | | | | |
|---|---------------------|--------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| 3M Chamber & Accessory Equipment | ETS-LINDGREN | FACT-3 | 3510 | 07/09/2012 |
| ESG Vector signal generators | Agilent | E4438C | MY45095744 | 08/07/2013 |
| Power Amplifier | AR | 150W1000 | 0322288 | 07/19/2013 |
| TRILOG Broadband Antenna | schwarzbeck | VULB 9163 | 401 | 07/21/2013 |

| Shielding Room No. 3 - EFT / Surges Test (IEC 61000-4-4) (IEC 61000-4-5) | | | | |
|---|---------------------|--------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| Compact Generator | EM-Test | UCS500M/6B | V0603101093 | 07/19/2013 |
| Capacitive Clamp | EM-Test | C Clamp HFK | 0306-43 | 07/19/2013 |
| CDN for Telecom Port | EM-Test | CNV504S1 | V0603101094 | 07/19/2013 |
| EFT Generator | SCHAFFNER | NSG 2025 | 19878 | 08/29/2013 |
| SURGE Generator | SCHAFFNER | NSG 2050 | 200313-135AR | 08/29/2013 |
| CDN | SCHAFFNER | CDN-131/133 | 34397 | 08/29/2013 |

| Shielding Room No. 2 - Radio-frequency continuous conducted Immunity Test (IEC 61000-4-6) | | | | |
|--|---------------------|--------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| Signal Generator | IFR | 2023B | 202307/883 | 08/07/2013 |
| Power Amplifier | AR | 75A 250A | 320297 | 08/29/2013 |
| Attenuator | EM-Test | ATT6/75 | 0320837 | 07/19/2013 |

| | | | | |
|----------|---------|-----------|---------|------------|
| CDN | EM-Test | CDN M2/M3 | 0204-01 | 07/19/2013 |
| EM-Clamp | EM-Test | EM101 | 35770 | 07/19/2013 |

| Shielding Room No. 2 - Power-frequency magnetic fields Immunity Test (IEC 61000-4-8) | | | | |
|---|---------|------------|-------------|------------|
| Compact Generator | EM-Test | UCS500M/6B | V0603101093 | 07/19/2013 |
| Induction Coil | EM-Test | MS100 | 0106-47 | 08/29/2013 |
| Current Transformer | EM-Test | MC2630 | 0106-02 | 08/29/2013 |

| Shielding Room No. 2 –Voltage dips and interruptions Test (IEC 61000-4-11) | | | | |
|---|------------------------|----------------|-------------------|-----------------|
| Equipment | Manufacturer | Model | Serial No. | Due Date |
| 5KVA AC POWER SOURCE | California instruments | 5001iX-400-413 | 57344 | 08/29/2013 |
| Electronic output switch | California instruments | EOS-1 | 72616 | 08/29/2013 |

2.5 List of auxiliary device

| Equipment | Manufacturer | Model | Serial No. | Specification |
|------------------|---------------------|--------------|-------------------|--|
| Notebook | Lenovo | E46L | EB23971458 | Input: DC20V (3.25A) Output: USB DC5V |
| Adapter | Lenovo | PA-1650-56LC | 36001651 | Input:100~240V (1.7A) 50-60Hz Output: DC20V (3.25A) |

3. SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|----------------------|----------------------------------|---------------|
| 15.207 | Conducted Emission | Pass |
| 15.247(a)(1) | Hopping Channel Bandwidth | Pass |
| 15.247(a)(1) | Hopping Channel Separation | Pass |
| 15.247(a)(1) | Number of Hopping Frequency Used | Pass |
| 15.247(a)(1)(iii) | Dwell Time of Each Frequency | Pass |
| 15.247(b)(1) | Maximum Peak Output Power | Pass |
| 15.247(d) | Band Edges Emission | Pass |
| 15.247(d) | Spurious Radiated Emission | Pass |
| 15.203/15.247(b)/(c) | Antenna Requirement | Pass |

4. Conducted Emission Test

4.1 Applicable Standard

Section 15.247(a): for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

4.2 Limits

Limits for Class A digital devices

| Frequency range (MHz) | Limits dB(μ V) | |
|-----------------------|---------------------|---------|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 79 | 66 |
| 0.50 to 30 | 73 | 60 |

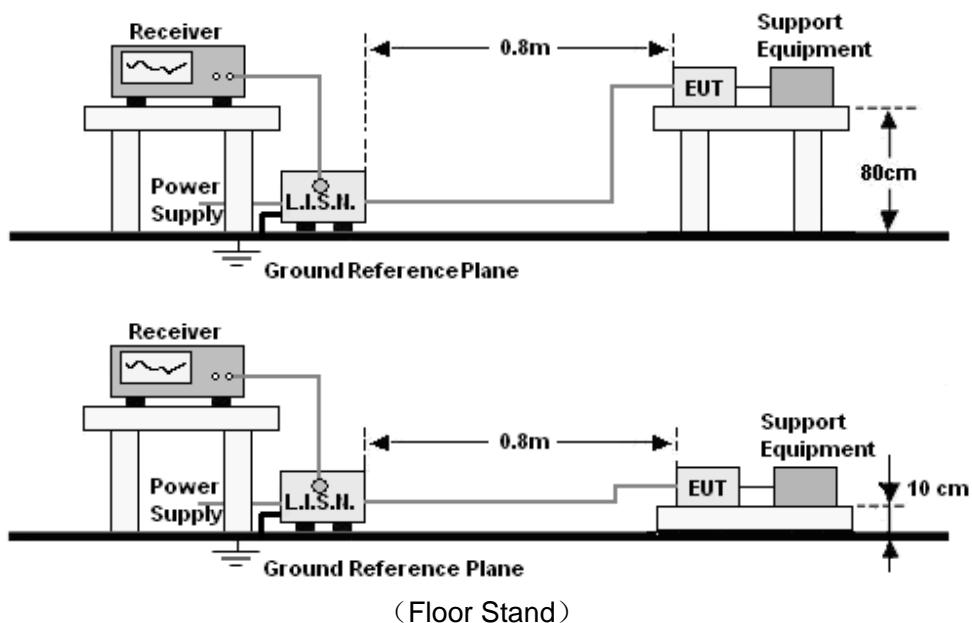
NOTE: The lower limit shall apply at the transition frequency.

Limits for Class B digital devices

| Frequency range (MHz) | Limits dB(μ V) | |
|-----------------------|---------------------|----------|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

4.3 EUT Test Setup



4.4 Procedure Of Conducted Emission Test

- a. The Product was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

4.5 Test Result

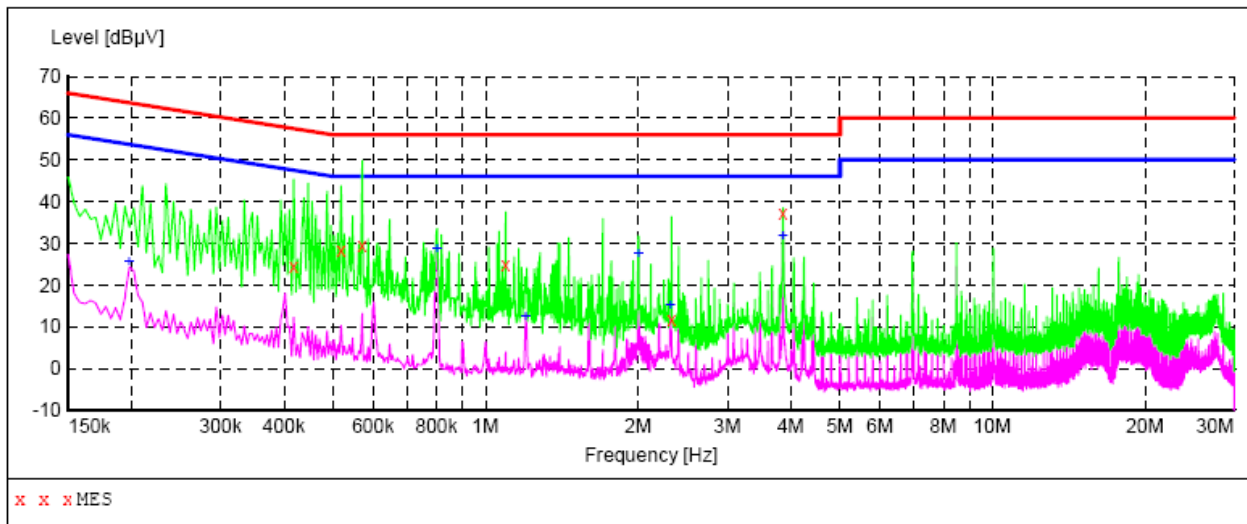
| | |
|---|------------------------------|
| Temperature (°C) : 22~23 | EUT: Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Tx Mode |

NOTE:The proformed test mode data is the worst test data.

The Test Data Of Conducted Emission

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Tx mode
Test Site: CHAMBER
Operator: Owen Li
Comment: Line:L
Tem:23°C Hum:50%

SCAN TABLE: "Voltage (150K-30M) FIN"
Short Description: 150k-30M Voltage



MEASUREMENT RESULT:

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.418000 | 24.40 | 10.1 | 58 | 33.1 | QP | -L- | --- |
| 0.518000 | 28.40 | 10.1 | 56 | 27.6 | QP | -L- | --- |
| 0.570000 | 29.60 | 10.2 | 56 | 26.4 | QP | -L- | --- |
| 1.094000 | 25.00 | 10.3 | 56 | 31.0 | QP | -L- | --- |
| 2.326000 | 11.70 | 10.3 | 56 | 44.3 | QP | -L- | --- |
| 3.862000 | 37.20 | 10.4 | 56 | 18.8 | QP | -L- | --- |

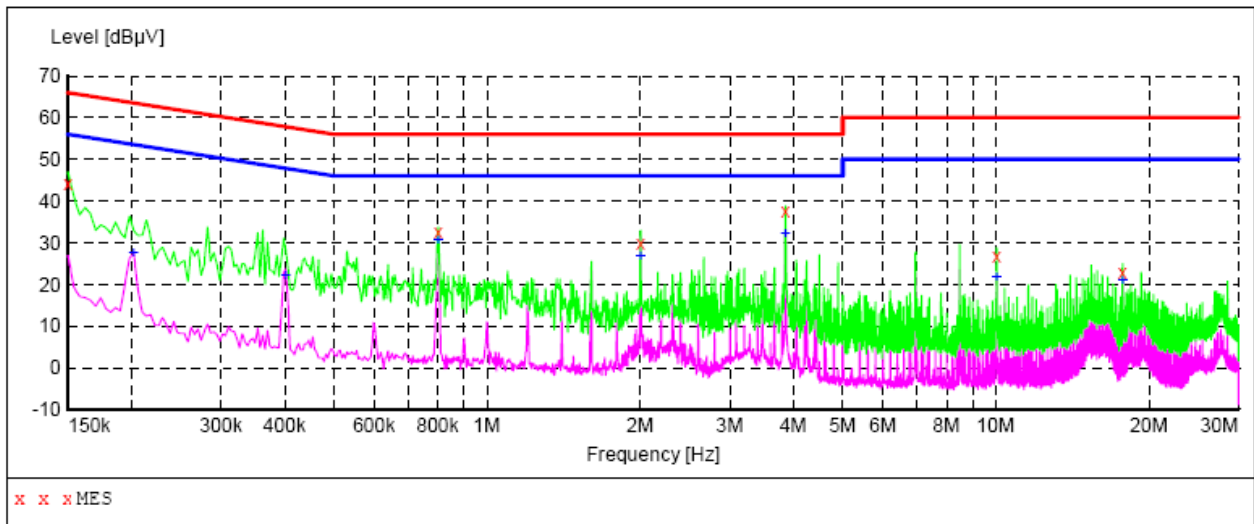
MEASUREMENT RESULT:

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.198000 | 25.70 | 10.1 | 54 | 28.0 | AV | -L- | --- |
| 0.802000 | 28.80 | 10.2 | 46 | 17.2 | AV | -L- | --- |
| 1.198000 | 12.50 | 10.3 | 46 | 33.5 | AV | -L- | --- |
| 2.002000 | 27.50 | 10.3 | 46 | 18.5 | AV | -L- | --- |
| 2.318000 | 15.20 | 10.3 | 46 | 30.8 | AV | -L- | --- |
| 3.862000 | 32.00 | 10.4 | 46 | 14.0 | AV | -L- | --- |

The Test Data Of Conducted Emission

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Tx mode
Test Site: CHAMBER
Operator: Owen Li
Comment: Line:N
Tem:23°C Hum:50%

SCAN TABLE: "Voltage (150K-30M) FIN"
Short Description: 150k-30M Voltage



MEASUREMENT RESULT:

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.150000 | 44.20 | 10.1 | 66 | 21.8 | QP | -N- | --- |
| 0.802000 | 32.80 | 10.2 | 56 | 23.2 | QP | -N- | --- |
| 2.002000 | 29.90 | 10.3 | 56 | 26.1 | QP | -N- | --- |
| 3.862000 | 37.70 | 10.4 | 56 | 18.3 | QP | -N- | --- |
| 10.038000 | 26.70 | 10.4 | 60 | 33.3 | QP | -N- | --- |
| 17.754000 | 23.10 | 10.6 | 60 | 36.9 | QP | -N- | --- |

MEASUREMENT RESULT:

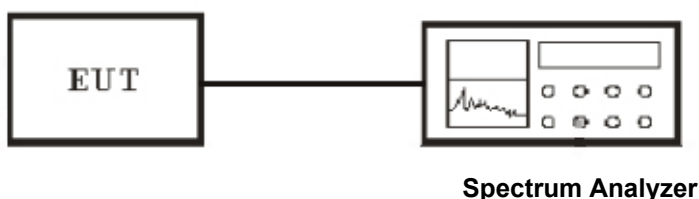
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.202000 | 27.50 | 10.1 | 54 | 26.0 | AV | -N- | --- |
| 0.402000 | 22.10 | 10.1 | 48 | 25.7 | AV | -N- | --- |
| 0.802000 | 30.50 | 10.2 | 46 | 15.5 | AV | -N- | --- |
| 2.002000 | 26.90 | 10.3 | 46 | 19.1 | AV | -N- | --- |
| 3.862000 | 32.10 | 10.4 | 46 | 13.9 | AV | -N- | --- |
| 10.038000 | 21.90 | 10.4 | 50 | 28.1 | AV | -N- | --- |
| 17.754000 | 21.00 | 10.6 | 50 | 29.0 | AV | -N- | --- |

5. Test of Hopping Channel Bandwidth

5.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.2 EUT Setup



5.3 Test Equipment List and Details

See section 2.4.

5.4 Test Procedure

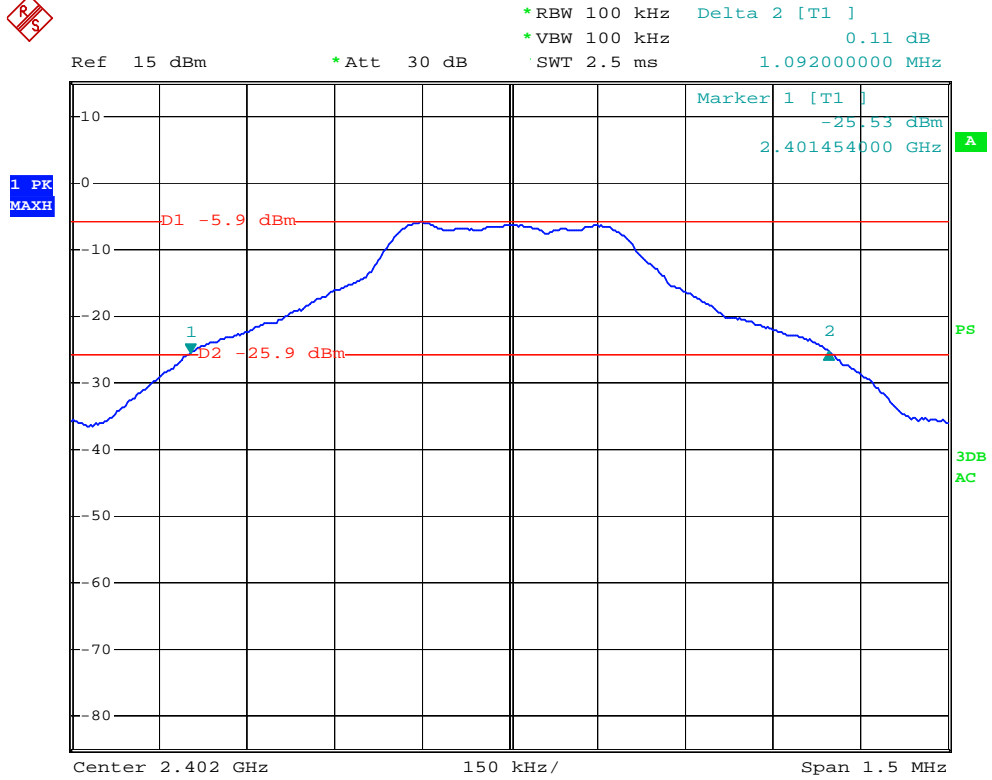
1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.
4. The spectrum width with level higher than 20dB below the peak level.
5. Repeat above 1~3 points for the low, middle and highest 3 channels of the EUT.

5.5 Test Result

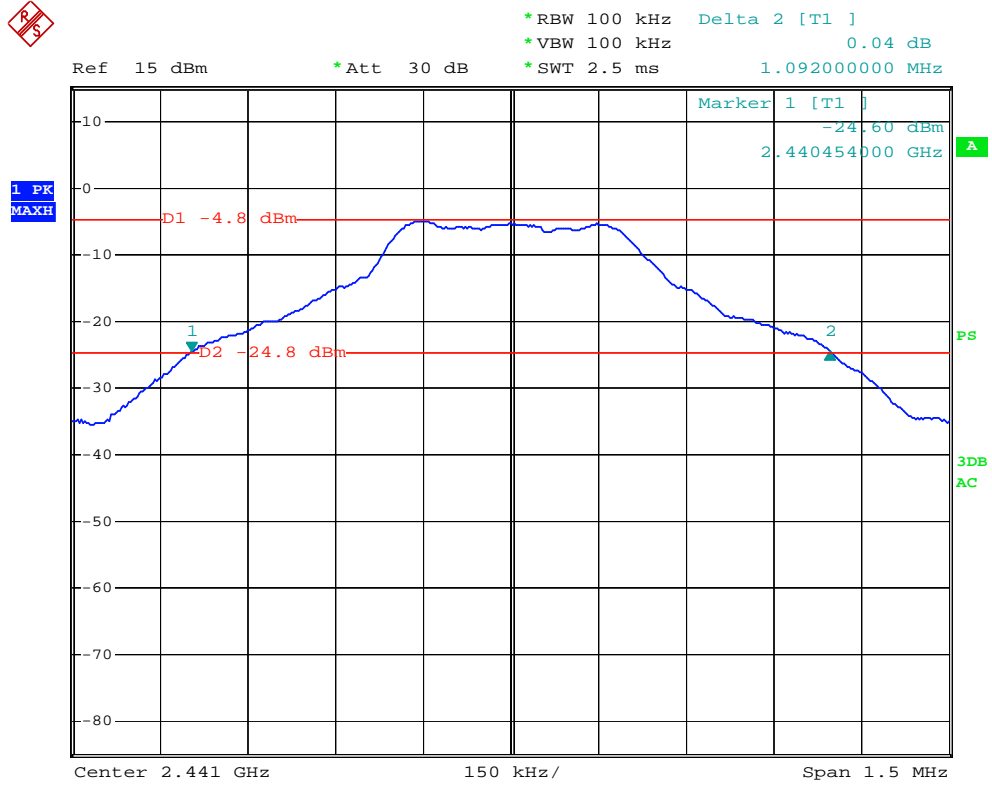
| | |
|---|------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Tx Mode |

| Modulation Type | Channel No. | Frequency (MHz) | 20dB Bandwidth (kHz) |
|-----------------|-------------|-----------------|----------------------|
| FHSS | Low | 2402 | 1170 |
| FHSS | Middle | 2440 | 1180 |
| FHSS | High | 2480 | 1150 |

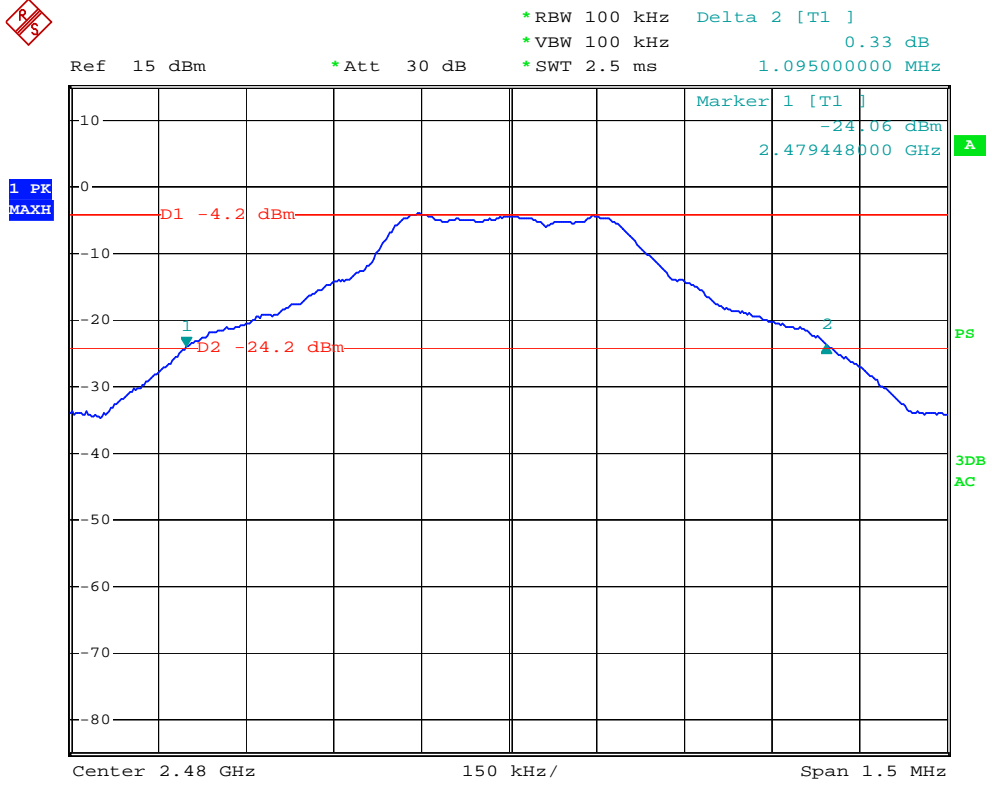
Channel Low :



Channel Middle :



Channel High:

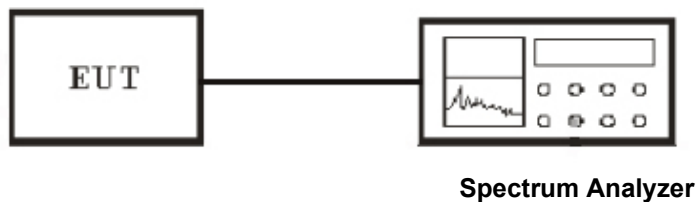


6. Test of Hopping Channel Separation

6.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

6.2 EUT Setup



6.3 Test Equipment List and Details

See section 2.4.

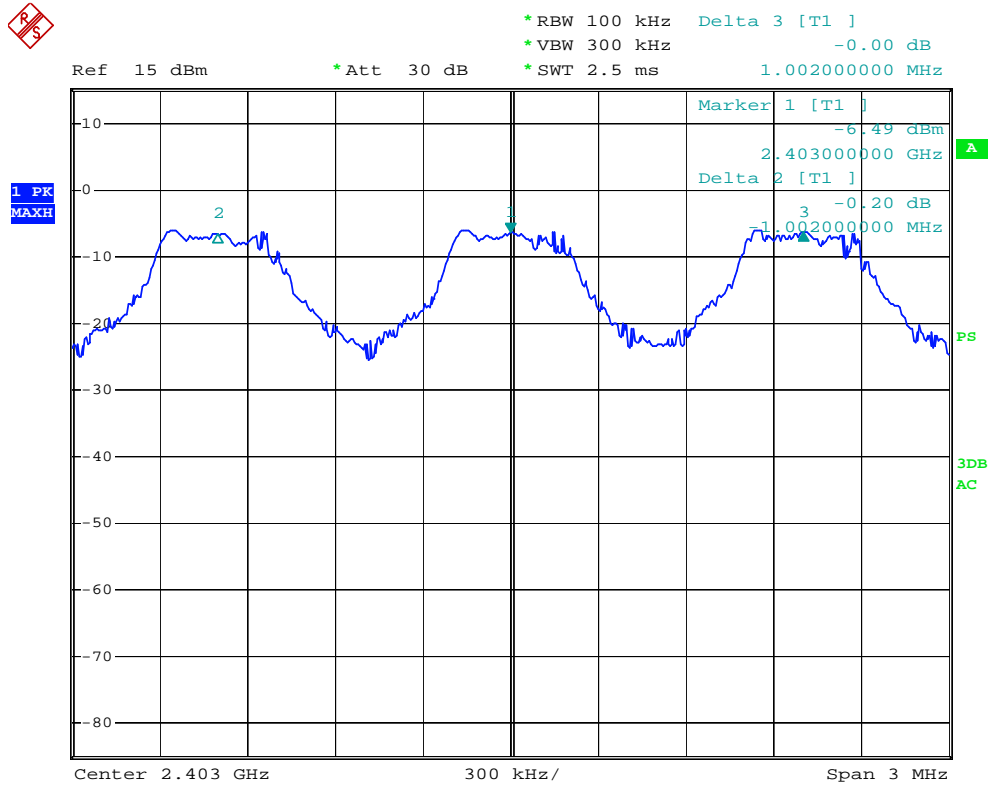
6.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 300KHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.
4. The Hopping Channel Separation is defined as the separation between 2 neighboring hopping frequencies.

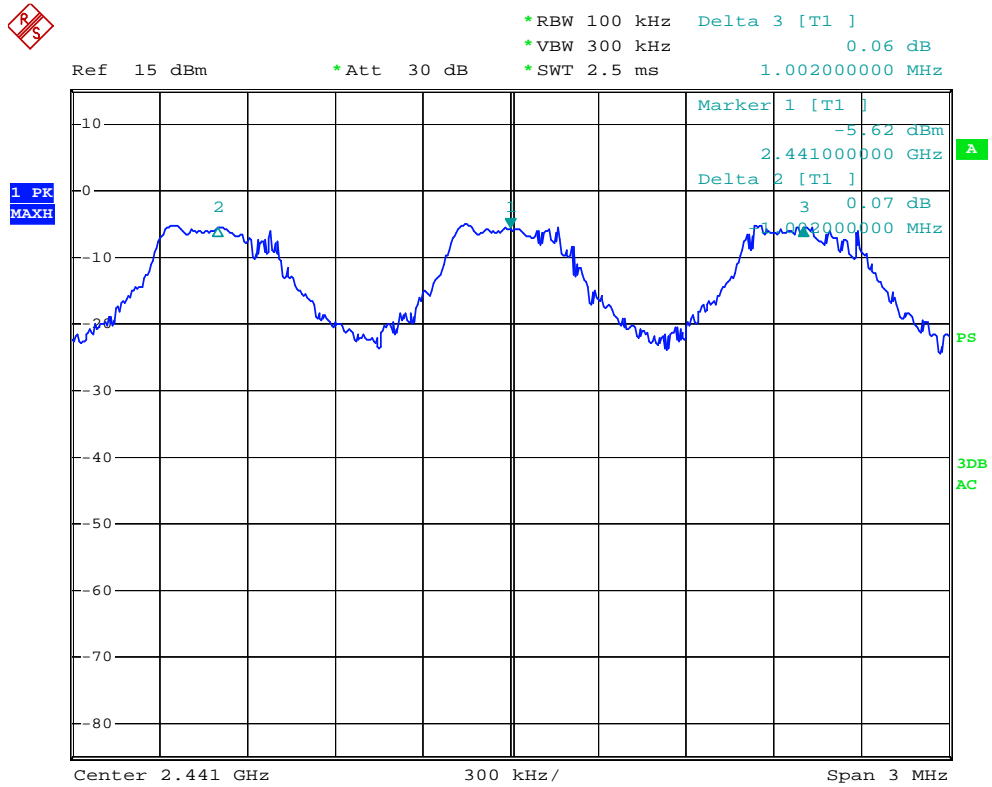
6.5 Test Result

| | |
|---|----------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Normal Mode |

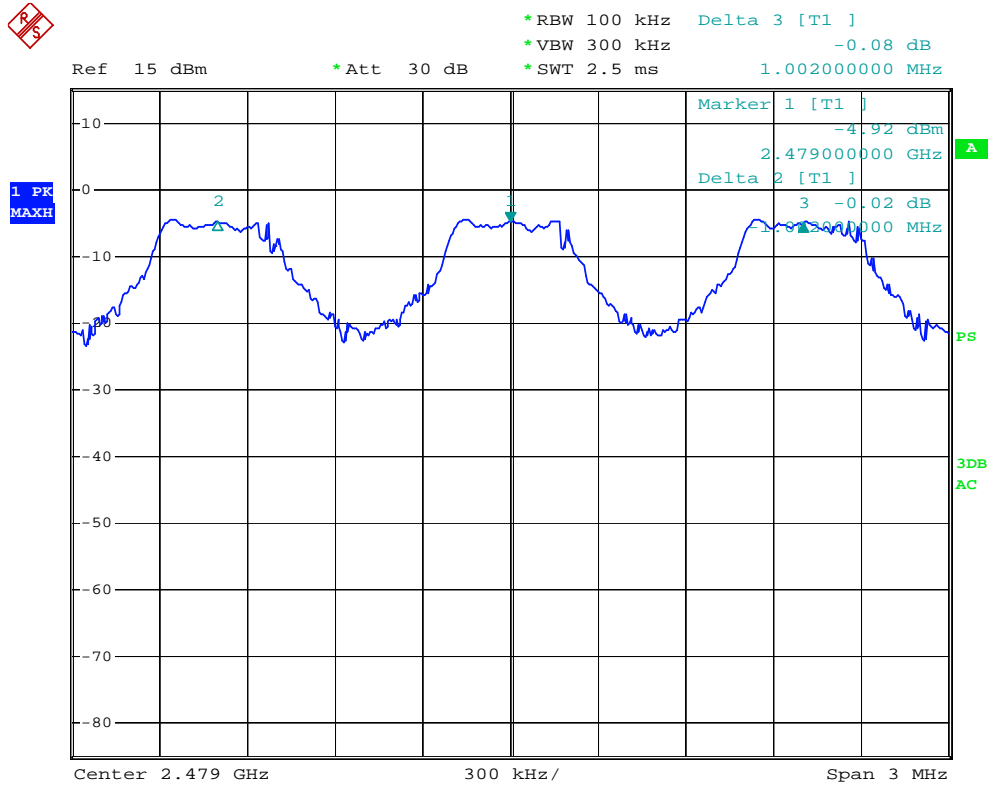
Channel Low :



Channel Middle :



Channel High :

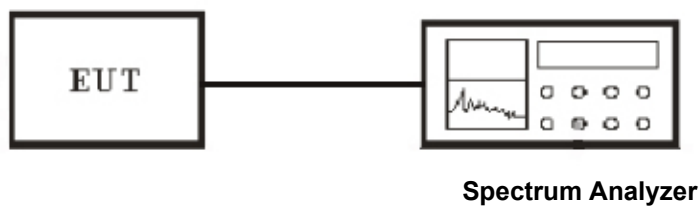


7. Test of Number of Hopping Frequency

7.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 15 non-overlapping hopping channels. Frequency hopping system which use fewer than 75 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping system may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.

7.2 EUT Setup



7.3 Test Equipment List and Details

See section 2.4.

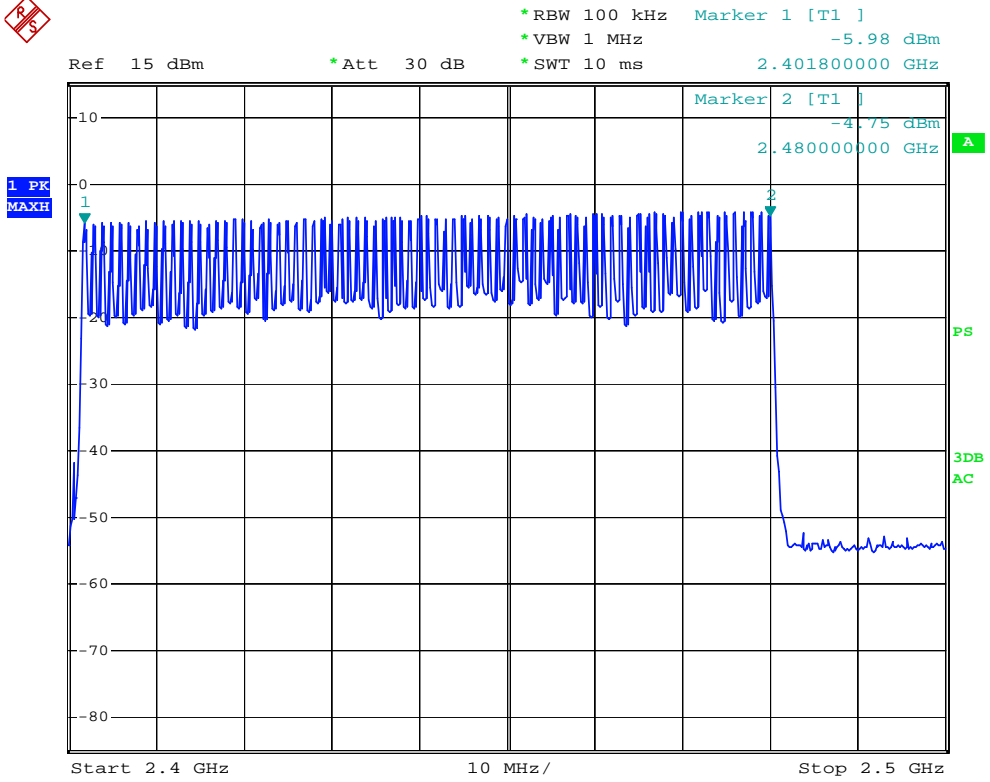
7.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 1MHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.

7.5 Test Result

| | |
|---|----------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Normal Mode |

| Modulation Type | Frequency (MHz) | Number of Hopping Channels | Min. Limit (kHz) |
|-----------------|-----------------|----------------------------|------------------|
| FHSS | 2402~2480 | 79 | >15 |

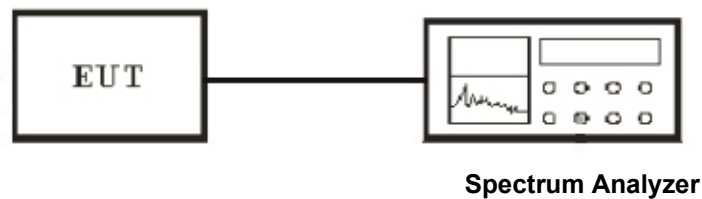


8. Test of Dwell Time of Each Frequency

8.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4seconds multiplied by the number of hopping channels employed.

8.2 EUT Setup



8.3 Test Equipment List and Details

See section 2.4.

8.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 1000kHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is more than once pulse time.
4. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
5. Measure the maximum time duration of one single pulse.

8.5 Test Result

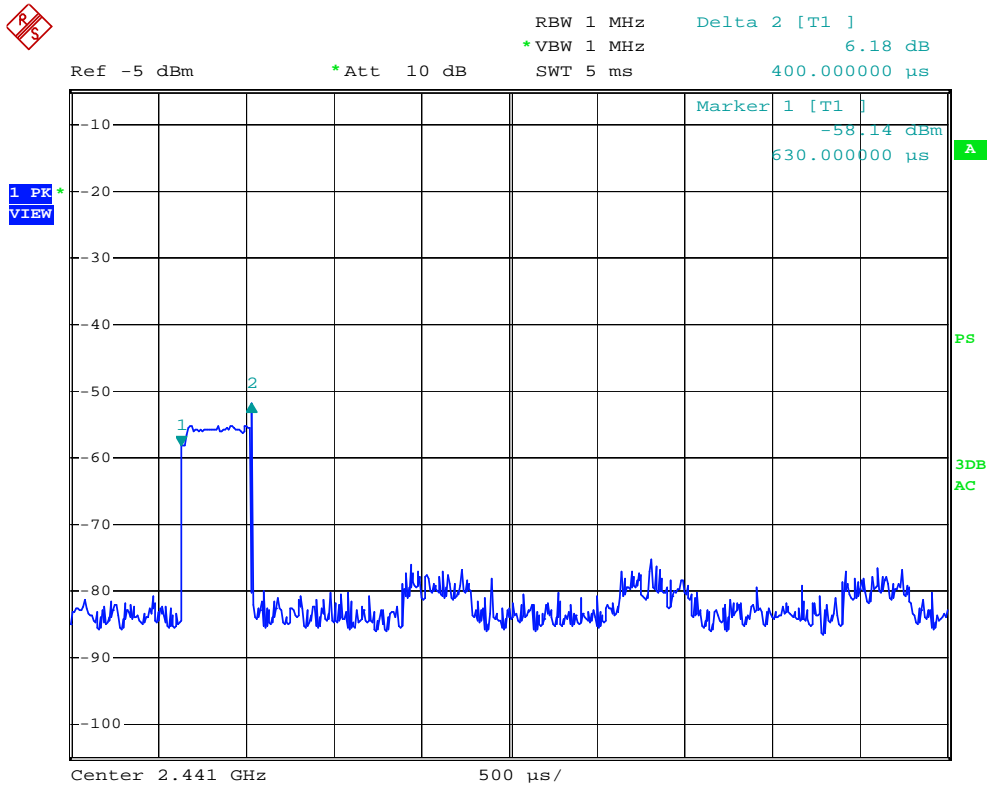
| | |
|---|----------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Normal Mode |

Note:The channel mid test data is the worst case in channel low,mid and high there modes test results

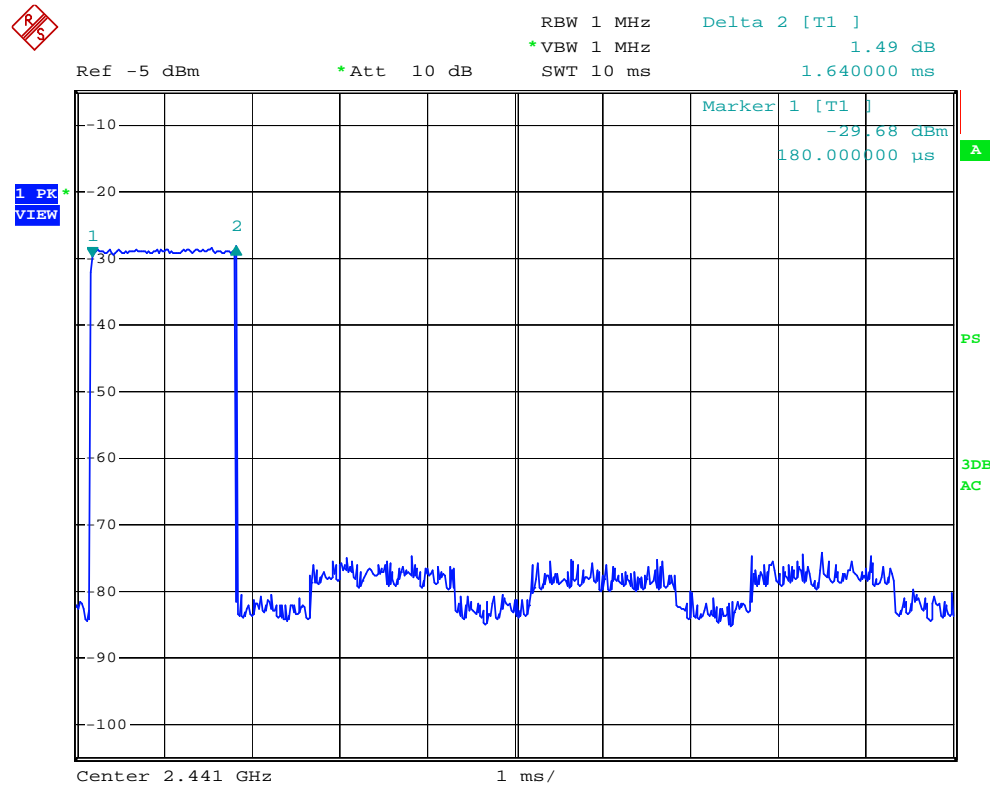
Test Data (Worset case)

| Packet | Frequency (MHz) | Pulse Wide (ms) | Number of Hopping Pulses in 0.4*channel number | Dwell Time (ms) | Limit (ms) |
|--------|-----------------|-----------------|--|-----------------|------------|
| DH1 | 2441 | 0.4 | *(1600/(2*79))*31.6 | 128.0 | 400 |
| DH3 | 2441 | 1.64 | *(1600/(4*79))*31.6 | 262.4 | 400 |
| DH5 | 2441 | 2.92 | *(1600/(6*79))*31.6 | 311.5 | 400 |

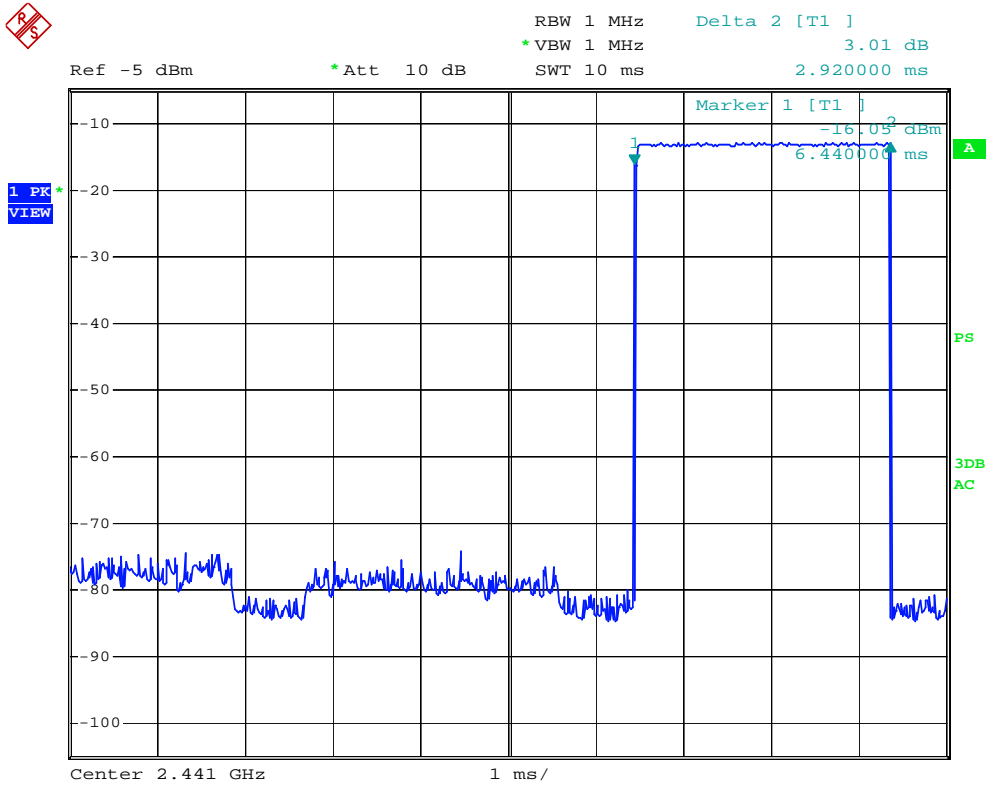
DH1:



DH3:



DH5:

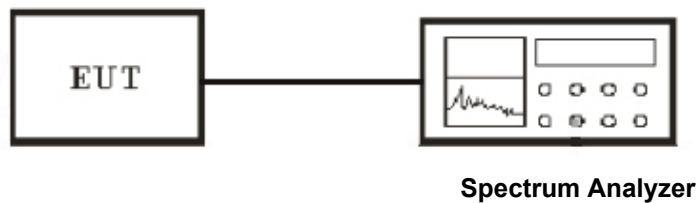


9. Test of Maximum Peak Output Power

9.1 Applicable Standard

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels and The maximum peak output power shall not exceed 1 watt. For all other frequency hopping systems in this frequency band, The maximum peak output power shall not exceed 0.125 watt.

9.2 EUT Setup



9.3 Test Equipment List and Details

See section 2.4.

9.4 Test Equipment List and Details

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz.Span to10MHz
3. Set Detector to Peak,

9.5 Test Result

| | |
|---|------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Tx Mode |

| Frequency (MHz) | Conducted Power (dBm) | Cable Loss (dB) | Output Power (dBm) | Limits (dBm) | Margin (dB) |
|-----------------|-----------------------|-----------------|--------------------|--------------|-------------|
| L: 2402 | -5.98 | 3.95 | -2.03 | 30 | 28.03 |
| M: 2441 | -5.96 | 3.95 | -2.01 | 30 | 28.01 |
| H: 2480 | -5.95 | 3.95 | -2.00 | 30 | 28.00 |

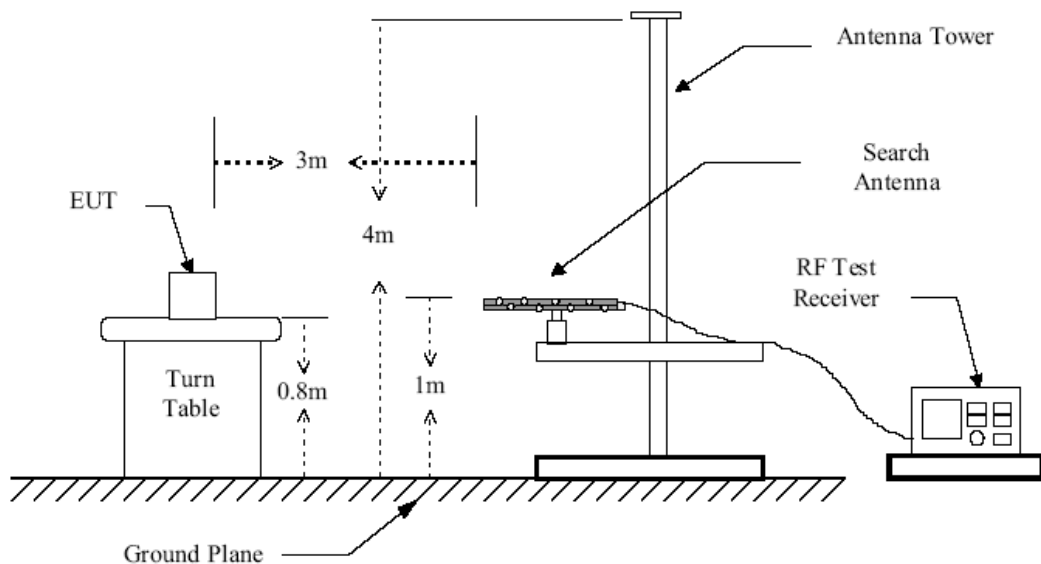
10. Test of Band Edges Emission

10.1 Applicable Standard

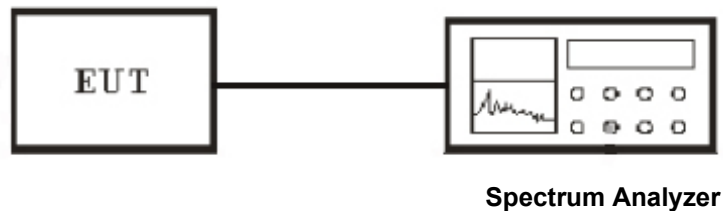
Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

10.2 EUT Setup

Radiated Measurement Setup



Conducted Measurement Setup



10.3 Test Equipment List and Details

See section 2.4.

10.4 Test Procedure

Conducted Measurement

1. The transmitter is set to the lowest channel.
2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100MHz bandwidth from lower band edge. Then detector set to peak and max hold this trace.
4. The lowest band edges emission was measured and recorded.
5. The transmitter set to the highest channel and repeated 2~4.

Radiated Measurement

1. Configure the EUT according to ANSI C63.4-2003
2. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
4. For band edge emission, the antenna tower was scan (from 1 M to 4 M) and then the turn table was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. For band edge emission, use 1MHz VBW and 1MHz RBW for reading under AV and use 1MHz VBW and 1MHz RBW for reading under PK.

10.5 Test Result

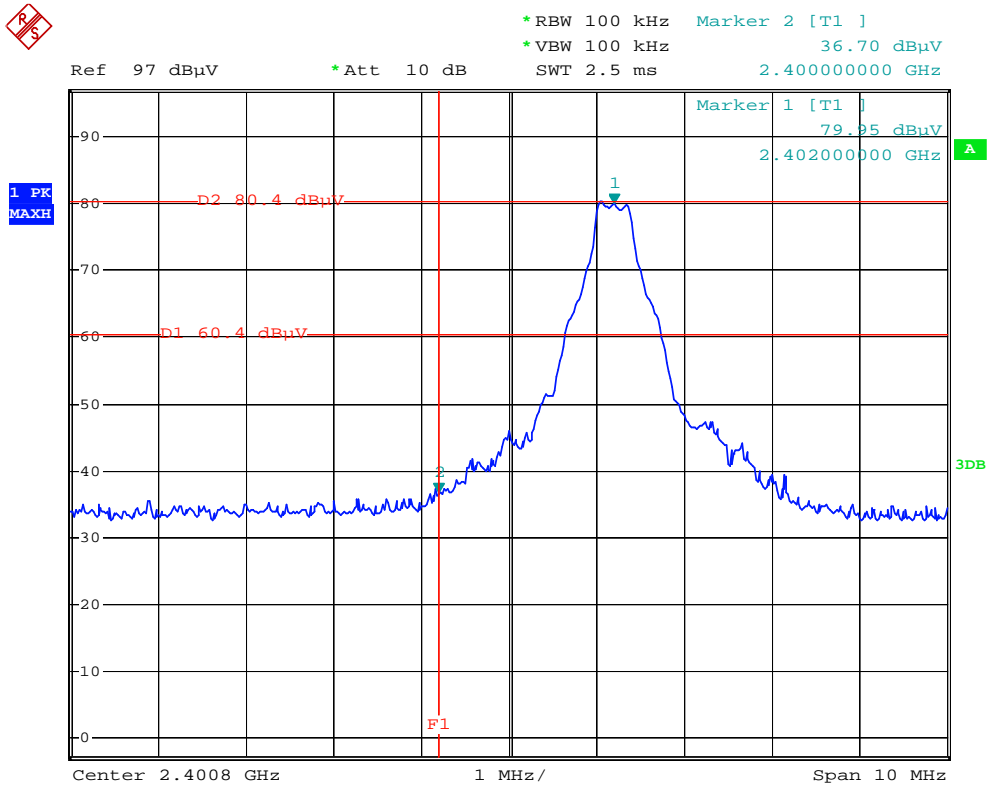
| | |
|---|------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Tx Mode |

Note:Channel low,mid and high,30MHz-25GHz conducted emissions all more than 20 dB below fundamental.

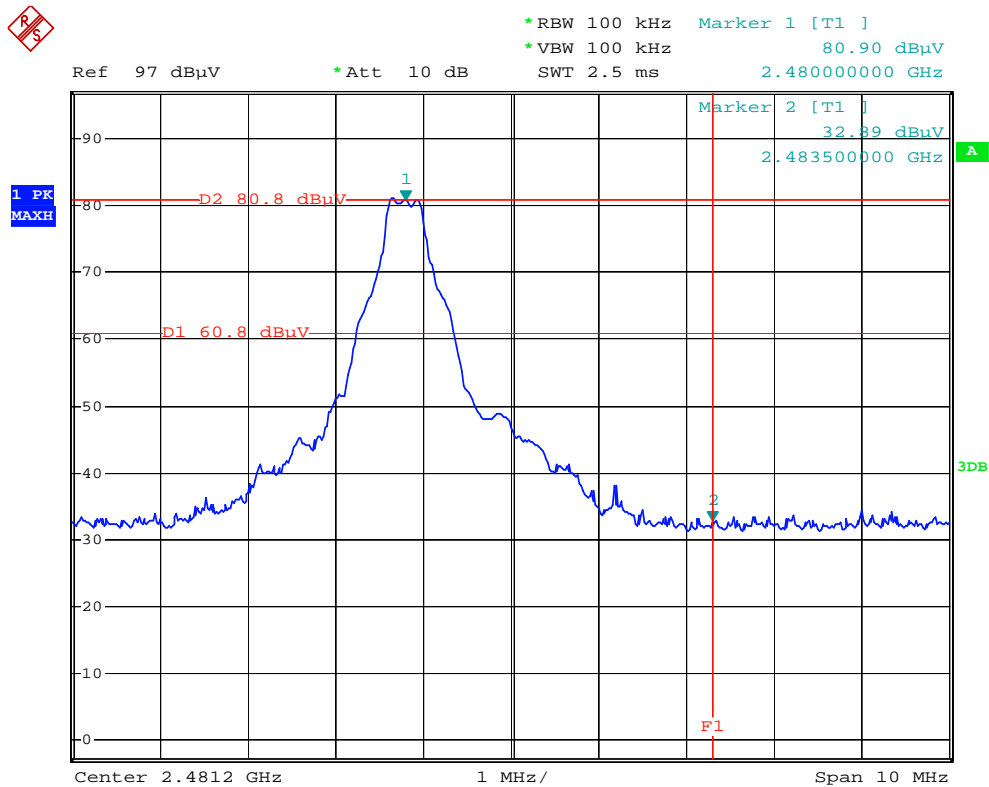
Radiated Test Result

| Frequency(MHz) |
|----------------|
| <2400 |
| >2483.5 |

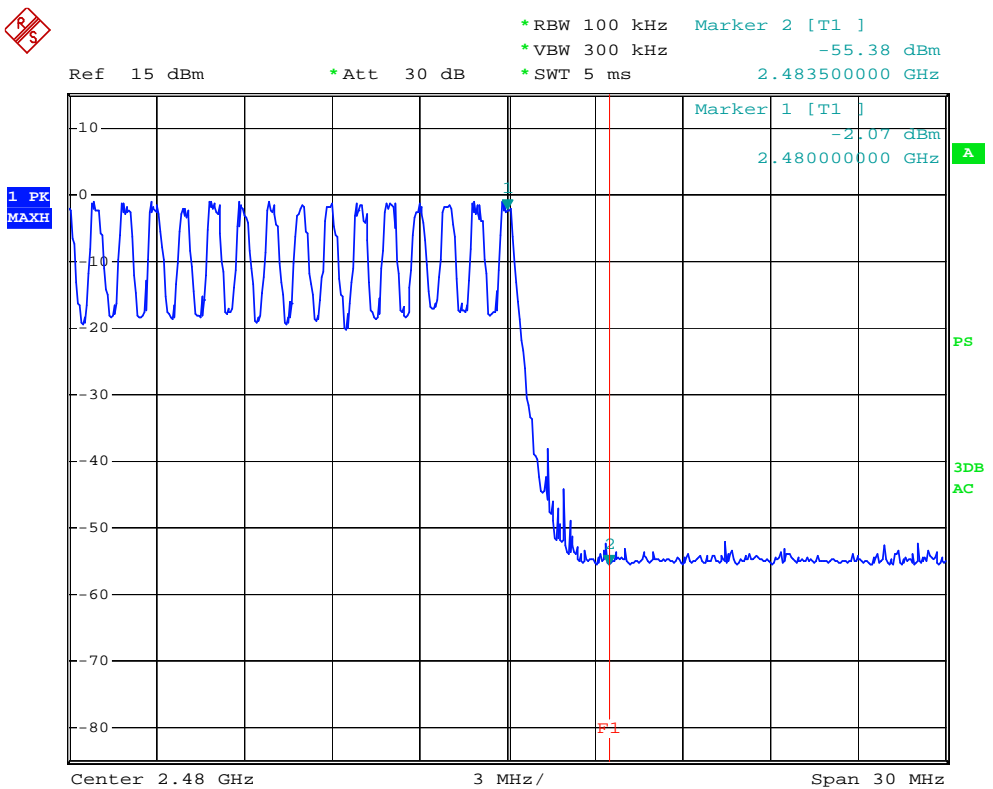
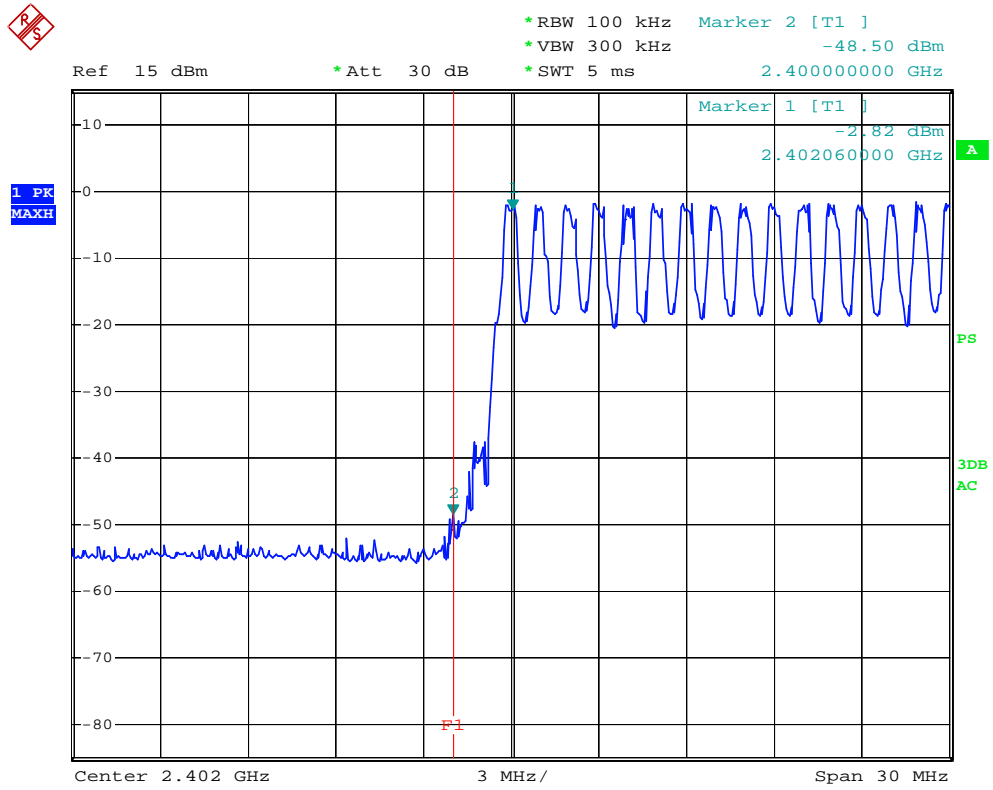
The worst frequency range of continual TX Low Channel



The worst frequency range of continual TX High Channel



The worst frequency range of Hopping Mode



11. Test of Spurious Radiated Emission

11.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

Limits for Class B digital devices

| Frequency (MHz) | limits at 3m dB(μ V/m) |
|-----------------|-----------------------------|
| 30-88 | 40.0 |
| 88-216 | 43.5 |
| 216-960 | 46.0 |
| Above 960 | 54.0 |

- NOTE:**
1. The lower limit shall apply at the transition frequency.
 2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
 3. The limits shown above are based on measuring equipment employing an average detector function for frequencies above 1000MHz.

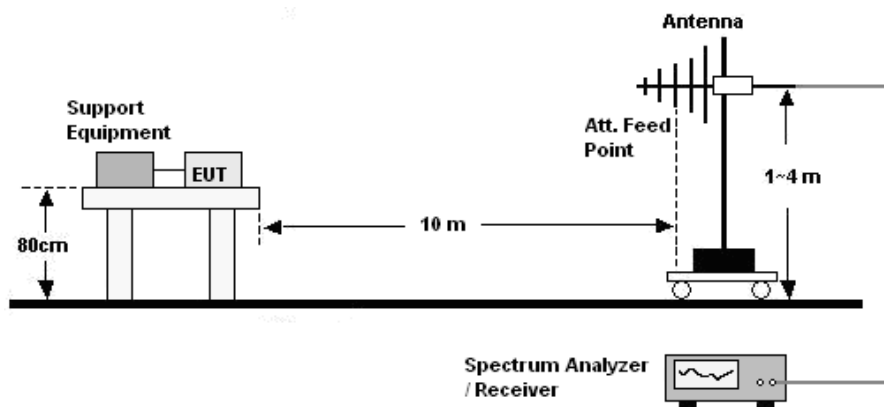
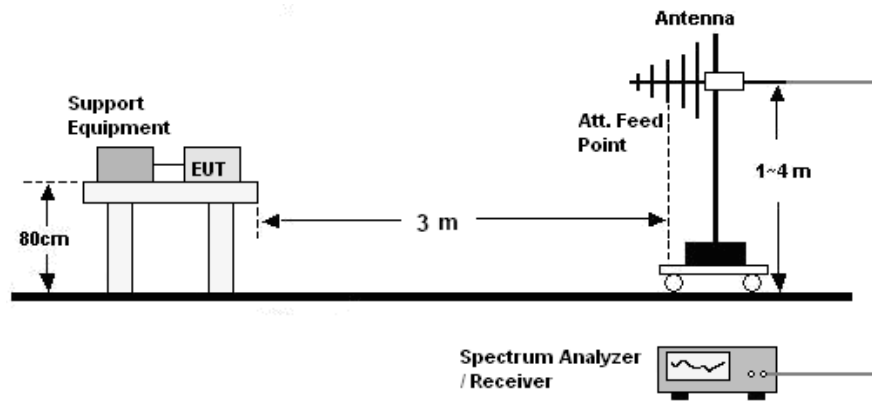
Limits for Class B digital devices

| Frequency (MHz) | limits at 10m dB(μ V/m) |
|-----------------|------------------------------|
| 30-88 | 30.0 |
| 88-216 | 33.5 |
| 216-960 | 56.0 |
| Above 960 | 64.0 |

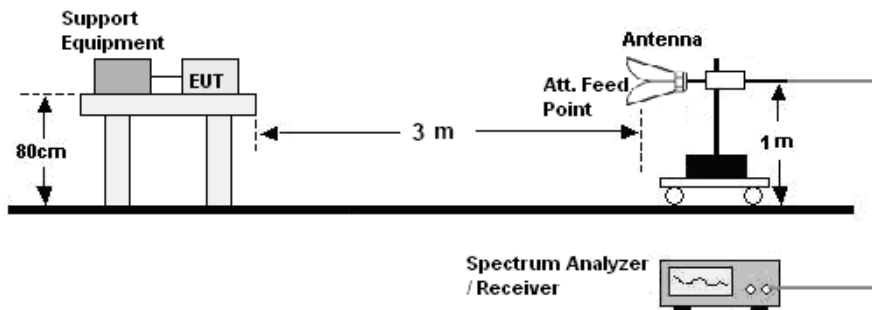
- NOTE:**
1. The lower limit shall apply at the transition frequency.
 2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
 3. The limits shown above are based on measuring equipment employing an average detector function for frequencies above 1000MHz.

11.2 Radiated Measurement Setup

30MHz ~ 1GHz:



Above 1GHz:



11.3 Test Equipment List and Details

See section 2.4.

11.4 Radiated Measurement Test Procedure

30MHz ~ 1GHz:

- a. The Product was placed on the non-conductive turntable 0.8/0.1 m above the ground at a chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Above 1GHz:

- a. The Product was placed on the non-conductive turntable 0.8/0.1 m above the ground at a chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

11.5 Test Result

| | |
|---|---------------------------------------|
| Temperature (°C) : 22~23 | EUT:Bluetooth Headset |
| Humidity (%RH) : 50~54 | M/N: BT304 |
| Barometric Pressure (mbar) : 950~1000 | Operation Condition: Normal operation |

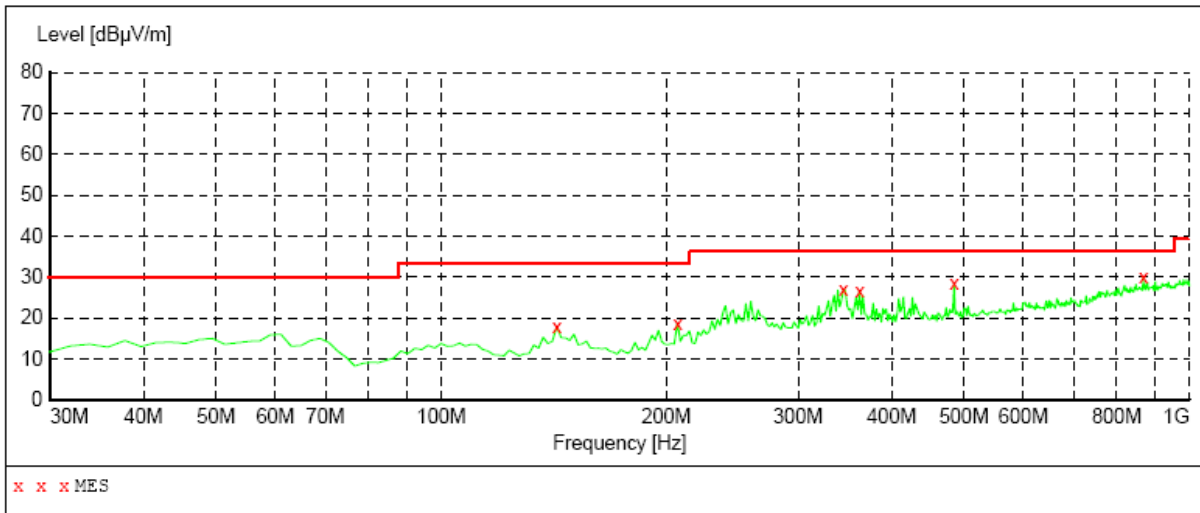
Note:The test data of (14-25GHz) emissions in BT TX Mode is just noise floor.

The Spurious Emission (30~1000MHz) Of Horizontal (Charging mode)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Charging
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | Transducer |
| Frequency | Frequency | | | | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

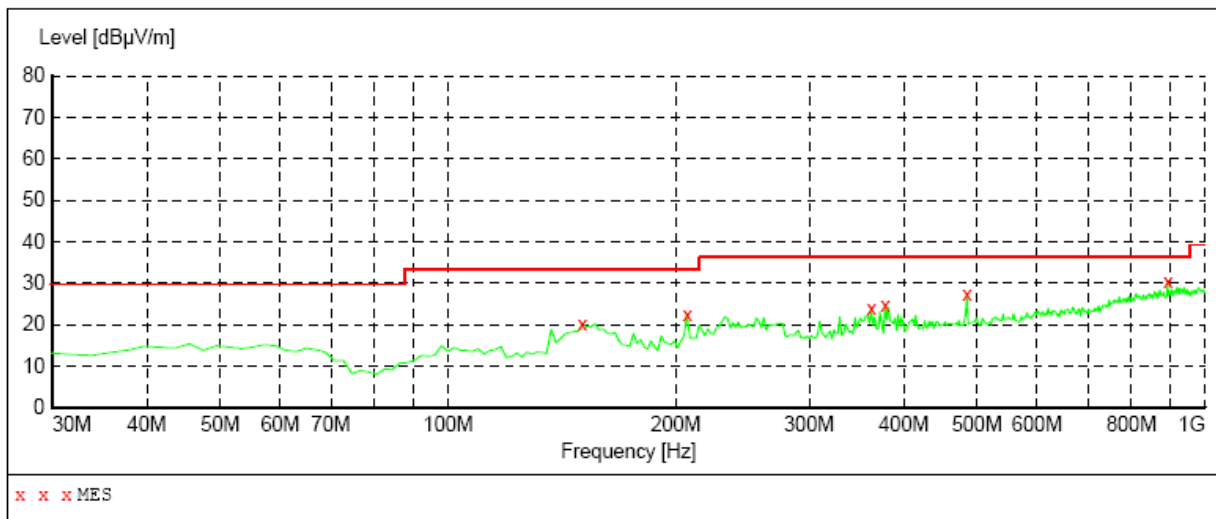
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 142.745491 | 17.90 | -15.6 | 33.5 | 15.6 | --- | 100.0 | 179.00 | HORIZONTAL |
| 206.893788 | 18.80 | -12.6 | 33.5 | 14.7 | --- | 100.0 | 88.00 | HORIZONTAL |
| 344.909820 | 27.10 | -8.1 | 36.5 | 9.4 | --- | 100.0 | 268.00 | HORIZONTAL |
| 362.404810 | 26.60 | -8.2 | 36.5 | 9.9 | --- | 100.0 | 284.00 | HORIZONTAL |
| 484.869739 | 28.50 | -6.2 | 36.5 | 8.0 | --- | 100.0 | 370.00 | HORIZONTAL |
| 867.815631 | 29.90 | 0.4 | 36.5 | 6.6 | --- | 100.0 | 120.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (Charging mode)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Charging
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | | Transducer |
|--------------------|---------|----------------|------------|-----------|----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 | |



MEASUREMENT RESULT:

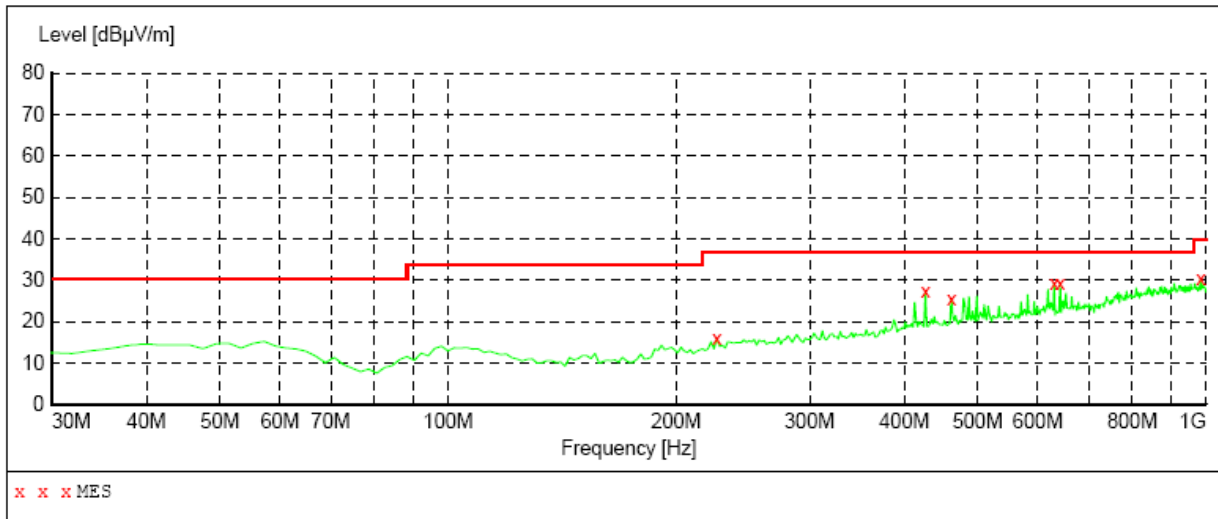
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 150.521042 | 20.20 | -15.8 | 33.5 | 13.3 | --- | 100.0 | 349.00 | VERTICAL |
| 206.893788 | 22.50 | -12.6 | 33.5 | 11.0 | --- | 100.0 | 10.00 | VERTICAL |
| 362.404810 | 23.80 | -8.2 | 36.5 | 12.7 | --- | 100.0 | 97.00 | VERTICAL |
| 377.955912 | 24.60 | -7.9 | 36.5 | 11.9 | --- | 100.0 | 97.00 | VERTICAL |
| 484.869739 | 27.20 | -6.2 | 36.5 | 9.3 | --- | 100.0 | 285.00 | VERTICAL |
| 893.086172 | 30.50 | 0.9 | 36.5 | 6.0 | --- | 100.0 | 276.00 | VERTICAL |

The Spurious Emission (30~1000MHz) Of Horizontal (Line in Model)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Line in
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | Transducer |
|--------------------|-------------------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | |
| Frequency 30.0 MHz | Frequency 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

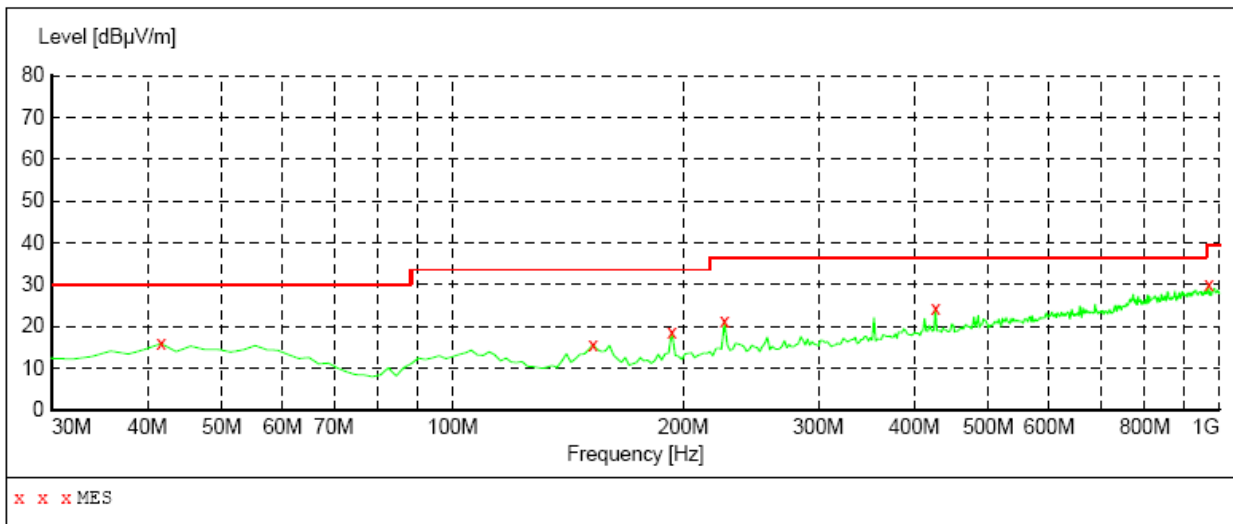
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 226.332665 | 15.90 | -11.5 | 36.5 | 20.6 | --- | 100.0 | 291.00 | HORIZONTAL |
| 426.553106 | 27.50 | -6.8 | 36.5 | 9.0 | --- | 100.0 | 118.00 | HORIZONTAL |
| 461.543086 | 25.60 | -6.8 | 36.5 | 10.9 | --- | 100.0 | 315.00 | HORIZONTAL |
| 630.661323 | 29.40 | -3.9 | 36.5 | 7.1 | --- | 100.0 | 275.00 | HORIZONTAL |
| 642.324649 | 29.40 | -3.9 | 36.5 | 7.1 | --- | 100.0 | 362.00 | HORIZONTAL |
| 984.448898 | 30.50 | 1.7 | 39.5 | 9.0 | --- | 100.0 | 118.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (Line in Model)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Line in
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|---------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | Transducer |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

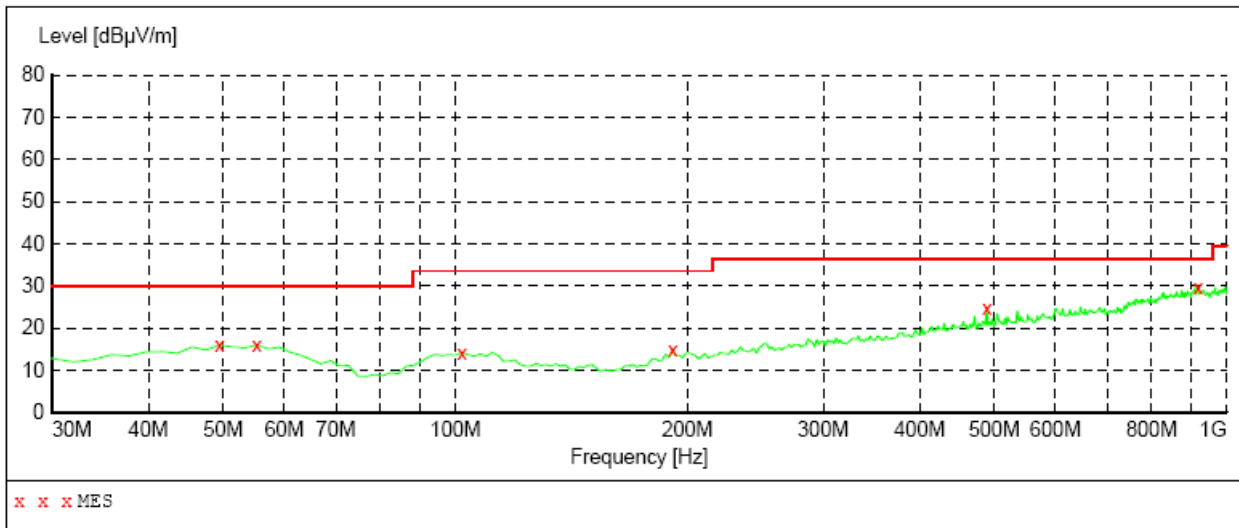
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 41.663327 | 15.90 | -11.5 | 30.0 | 14.1 | --- | 100.0 | 210.00 | VERTICAL |
| 152.464930 | 15.60 | -15.8 | 33.5 | 17.9 | --- | 100.0 | 292.00 | VERTICAL |
| 193.286573 | 18.70 | -12.2 | 33.5 | 14.8 | --- | 100.0 | 226.00 | VERTICAL |
| 226.332665 | 21.20 | -11.5 | 36.5 | 15.3 | --- | 100.0 | 365.00 | VERTICAL |
| 426.553106 | 24.50 | -6.8 | 36.5 | 12.0 | --- | 100.0 | 367.00 | VERTICAL |
| 968.897796 | 29.90 | 1.3 | 39.5 | 9.6 | --- | 100.0 | 325.00 | VERTICAL |

The Spurious Emission (30~1000MHz) Of Horizontal (Mic speaking Model)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Mic speaking
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | | Transducer |
|--------------------|-------------------|----------------|------------|-----------|----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | | |
| Frequency 30.0 MHz | Frequency 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 | |



MEASUREMENT RESULT:

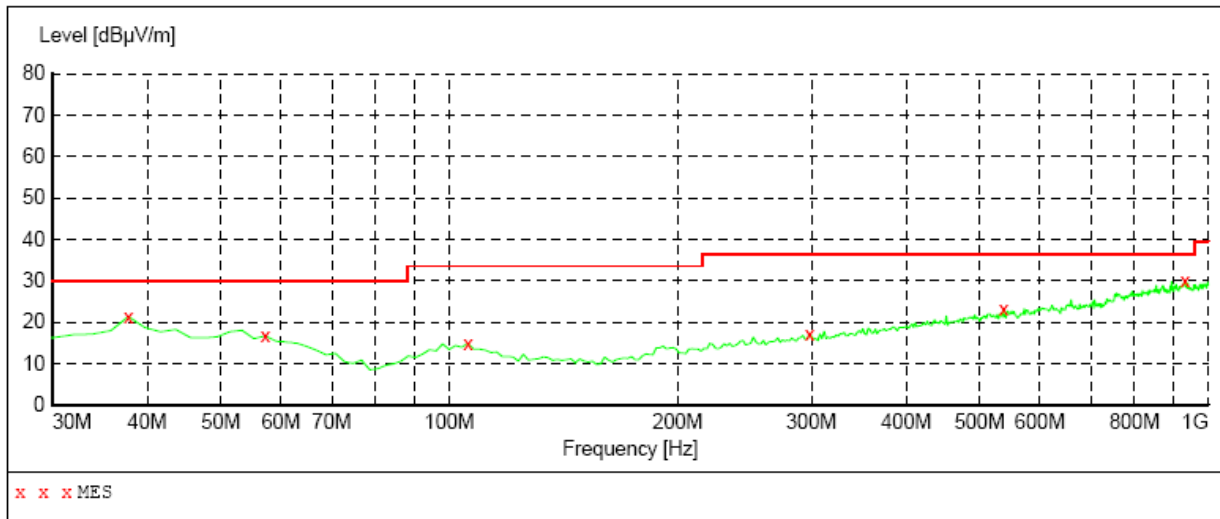
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 49.438878 | 16.00 | -11.1 | 30.0 | 14.0 | --- | 100.0 | 274.00 | HORIZONTAL |
| 55.270541 | 16.00 | -10.8 | 30.0 | 14.0 | --- | 200.0 | 131.00 | HORIZONTAL |
| 101.923848 | 14.20 | -12.3 | 33.5 | 19.3 | --- | 100.0 | 106.00 | HORIZONTAL |
| 191.342685 | 15.00 | -12.2 | 33.5 | 18.5 | --- | 200.0 | 44.00 | HORIZONTAL |
| 488.757515 | 24.70 | -6.1 | 36.5 | 11.8 | --- | 200.0 | 290.00 | HORIZONTAL |
| 918.356713 | 29.80 | 1.2 | 36.5 | 6.7 | --- | 200.0 | 88.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (Mic speaking Model)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: Mic speaking
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|---------|---------|------------|
| Start | Stop | Detector | Meas. | IF | Transducer |
| Frequency | Frequency | | Time | Bandw. | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

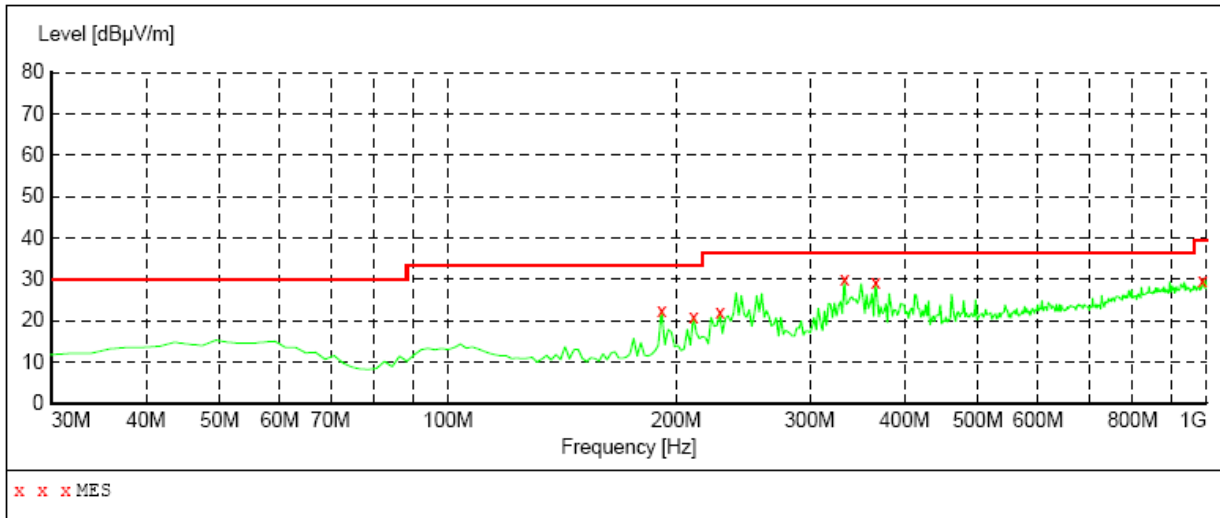
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 37.775551 | 21.40 | -12.1 | 30.0 | 8.6 | --- | 100.0 | 141.00 | VERTICAL |
| 57.214429 | 16.70 | -10.8 | 30.0 | 13.3 | --- | 100.0 | 0.00 | VERTICAL |
| 105.811623 | 14.90 | -12.3 | 33.5 | 18.6 | --- | 200.0 | 82.00 | VERTICAL |
| 298.256513 | 17.30 | -9.3 | 36.5 | 19.2 | --- | 200.0 | 154.00 | VERTICAL |
| 537.354709 | 23.10 | -5.5 | 36.5 | 13.4 | --- | 100.0 | 285.00 | VERTICAL |
| 931.963928 | 29.90 | 1.2 | 36.5 | 6.6 | --- | 200.0 | 146.00 | VERTICAL |

The Spurious Emission (30~1000MHz) Of Horizontal (BT TX Model L)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Low
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | Transducer |
|--------------------|-----------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | |
| Frequency | Frequency | | | | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

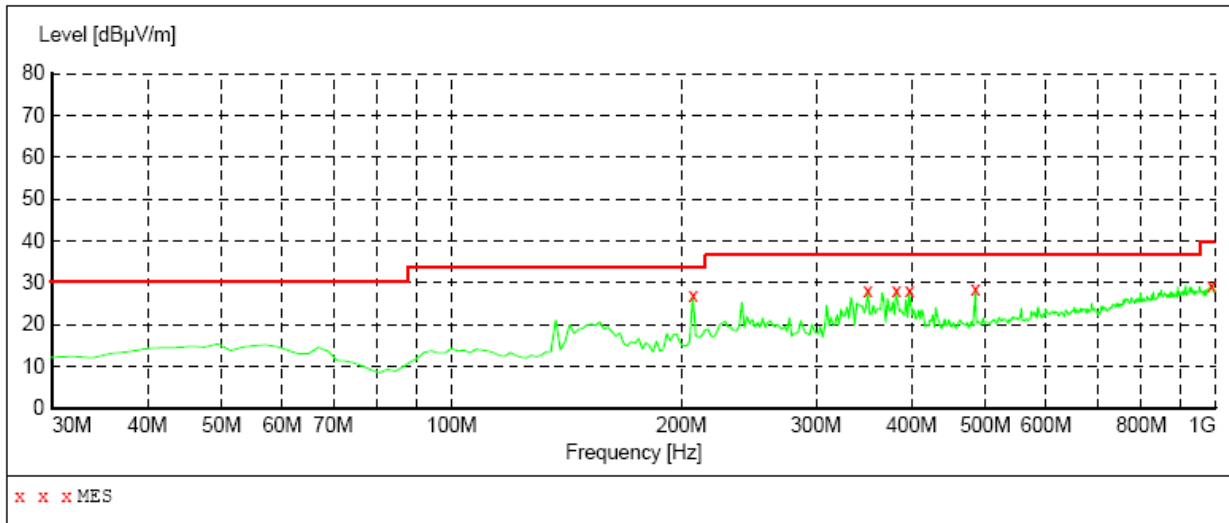
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 191.342685 | 22.30 | -12.2 | 33.5 | 10.2 | --- | 100.0 | 286.00 | HORIZONTAL |
| 210.781563 | 21.00 | -12.4 | 33.5 | 12.5 | --- | 100.0 | 253.00 | HORIZONTAL |
| 228.276553 | 21.90 | -11.4 | 36.5 | 14.6 | --- | 100.0 | 236.00 | HORIZONTAL |
| 333.246493 | 30.00 | -8.5 | 36.5 | 6.5 | --- | 100.0 | 278.00 | HORIZONTAL |
| 366.292585 | 29.20 | -8.1 | 36.5 | 7.3 | --- | 100.0 | 270.00 | HORIZONTAL |
| 988.336673 | 29.80 | 1.8 | 39.5 | 9.7 | --- | 100.0 | 160.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (BT TX Model L)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Low
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|---------|---------|------------|
| Start | Stop | Detector | Meas. | IF | Transducer |
| Frequency | Frequency | | Time | Bandw. | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

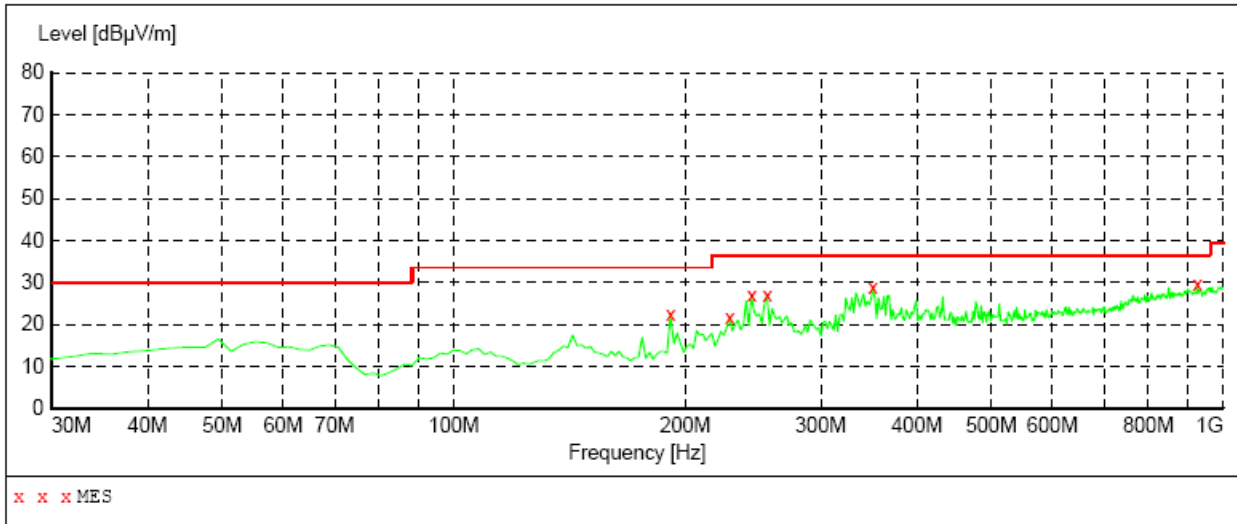
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 206.893788 | 26.90 | -12.6 | 33.5 | 6.6 | --- | 100.0 | 354.00 | VERTICAL |
| 350.741483 | 28.30 | -8.3 | 36.5 | 8.2 | --- | 100.0 | 221.00 | VERTICAL |
| 381.843687 | 28.20 | -7.8 | 36.5 | 8.3 | --- | 100.0 | 137.00 | VERTICAL |
| 397.394790 | 28.20 | -7.5 | 36.5 | 8.3 | --- | 100.0 | 121.00 | VERTICAL |
| 484.869739 | 28.40 | -6.2 | 36.5 | 8.1 | --- | 100.0 | 10.00 | VERTICAL |
| 988.336673 | 29.30 | 1.8 | 39.5 | 10.2 | --- | 100.0 | 137.00 | VERTICAL |

The Spurious Emission (30~1000MHz) Of Horizontal (BT TX Model M)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Middle
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|---------|---------|------------|
| Start | Stop | Detector | Meas. | IF | Transducer |
| Frequency | Frequency | | Time | Bandw. | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

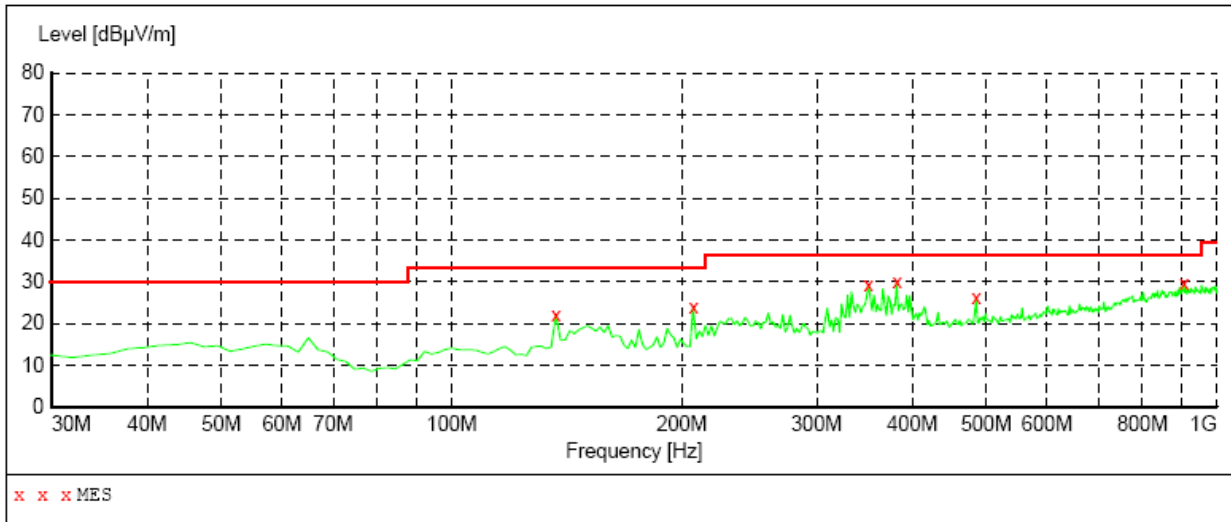
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 191.342685 | 22.40 | -12.2 | 33.5 | 11.1 | --- | 100.0 | 296.00 | HORIZONTAL |
| 228.276553 | 21.70 | -11.4 | 36.5 | 14.8 | --- | 100.0 | 239.00 | HORIZONTAL |
| 243.827655 | 26.90 | -10.7 | 36.5 | 9.6 | --- | 100.0 | 296.00 | HORIZONTAL |
| 255.490982 | 27.00 | -10.5 | 36.5 | 9.5 | --- | 100.0 | 288.00 | HORIZONTAL |
| 350.741483 | 28.90 | -8.3 | 36.5 | 7.6 | --- | 100.0 | 304.00 | HORIZONTAL |
| 926.132265 | 29.70 | 1.3 | 36.5 | 6.8 | --- | 100.0 | 271.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (BT TX Model M)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Middle
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | Transducer |
| Frequency | Frequency | | | | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

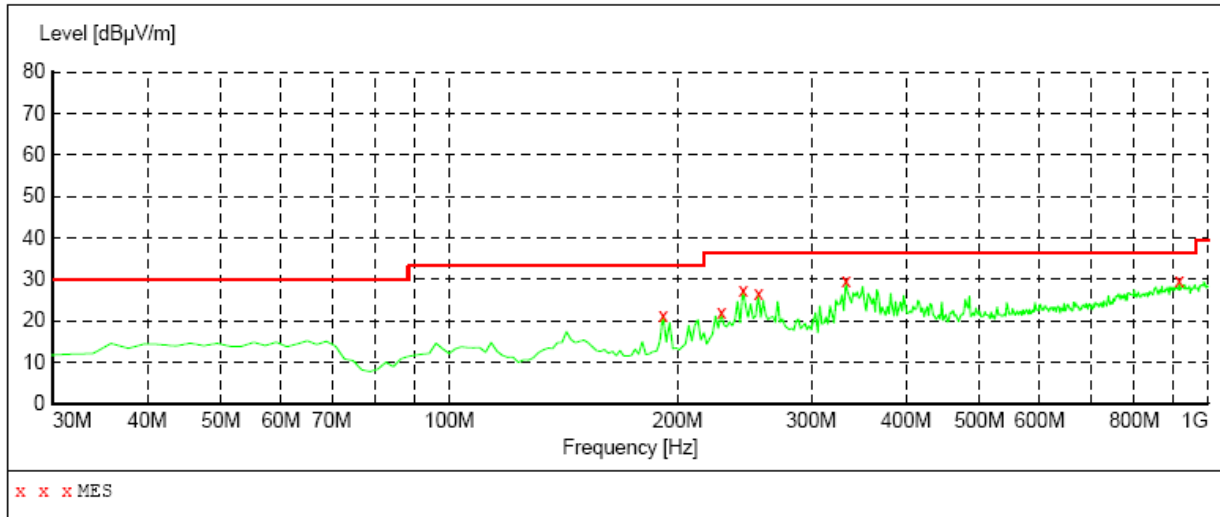
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 136.913828 | 22.00 | -15.4 | 33.5 | 11.5 | --- | 100.0 | 178.00 | VERTICAL |
| 206.893788 | 24.10 | -12.6 | 33.5 | 9.4 | --- | 100.0 | 370.00 | VERTICAL |
| 350.741483 | 29.40 | -8.3 | 36.5 | 7.1 | --- | 100.0 | 119.00 | VERTICAL |
| 381.843687 | 29.90 | -7.8 | 36.5 | 6.5 | --- | 100.0 | 127.00 | VERTICAL |
| 484.869739 | 26.30 | -6.2 | 36.5 | 10.2 | --- | 100.0 | 356.00 | VERTICAL |
| 906.693387 | 29.70 | 1.1 | 36.5 | 6.8 | --- | 100.0 | 295.00 | VERTICAL |

The Spurious Emission (30~1000MHz) Of Horizontal (BT TX Model H)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel High
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-------------------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | Transducer |
| Frequency 30.0 MHz | Frequency 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |



MEASUREMENT RESULT:

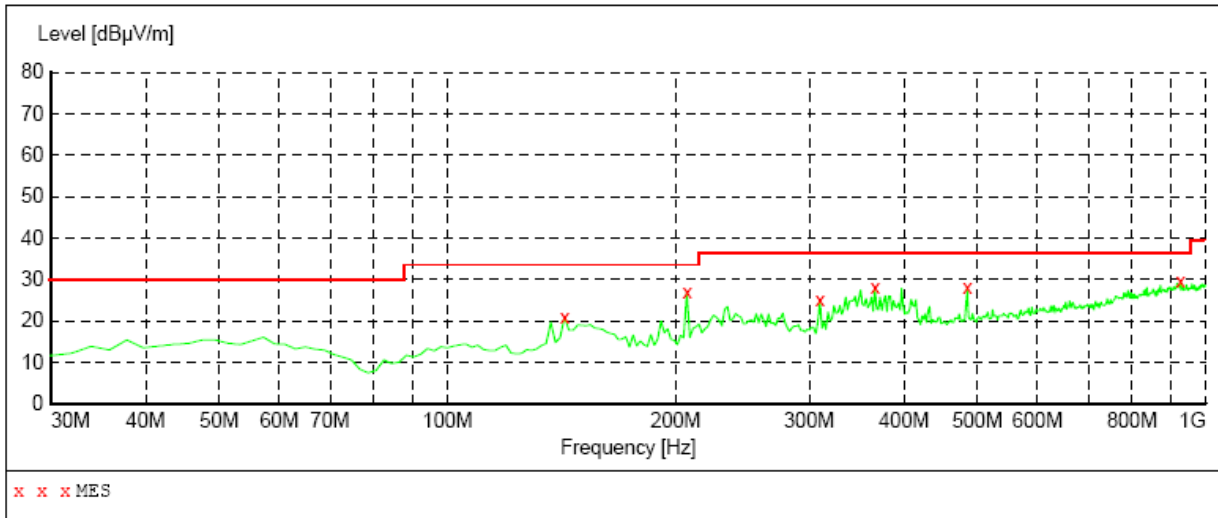
| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 191.342685 | 21.40 | -12.2 | 33.5 | 12.1 | --- | 100.0 | 305.00 | HORIZONTAL |
| 228.276553 | 21.90 | -11.4 | 36.5 | 14.6 | --- | 100.0 | 248.00 | HORIZONTAL |
| 243.827655 | 27.40 | -10.7 | 36.5 | 9.1 | --- | 100.0 | 248.00 | HORIZONTAL |
| 255.490982 | 26.60 | -10.5 | 36.5 | 9.9 | --- | 100.0 | 330.00 | HORIZONTAL |
| 333.246493 | 29.60 | -8.5 | 36.5 | 6.9 | --- | 100.0 | 289.00 | HORIZONTAL |
| 916.412826 | 29.80 | 1.2 | 36.5 | 6.7 | --- | 100.0 | 224.00 | HORIZONTAL |

The Spurious Emission (30~1000MHz) Of Vertical (BT TX Model H)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel High
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:50%

SWEEP TABLE: "test (30M-1G) 8447F"

| Short Description: | | Field Strength | | | |
|--------------------|-----------|----------------|------------|-----------|------------|
| Start | Stop | Detector | Meas. Time | IF Bandw. | Transducer |
| Frequency | Frequency | | | | |
| 30.0 MHz | 1.0 GHz | MaxPeak | Coupled | 100 kHz | VBLU9163 |

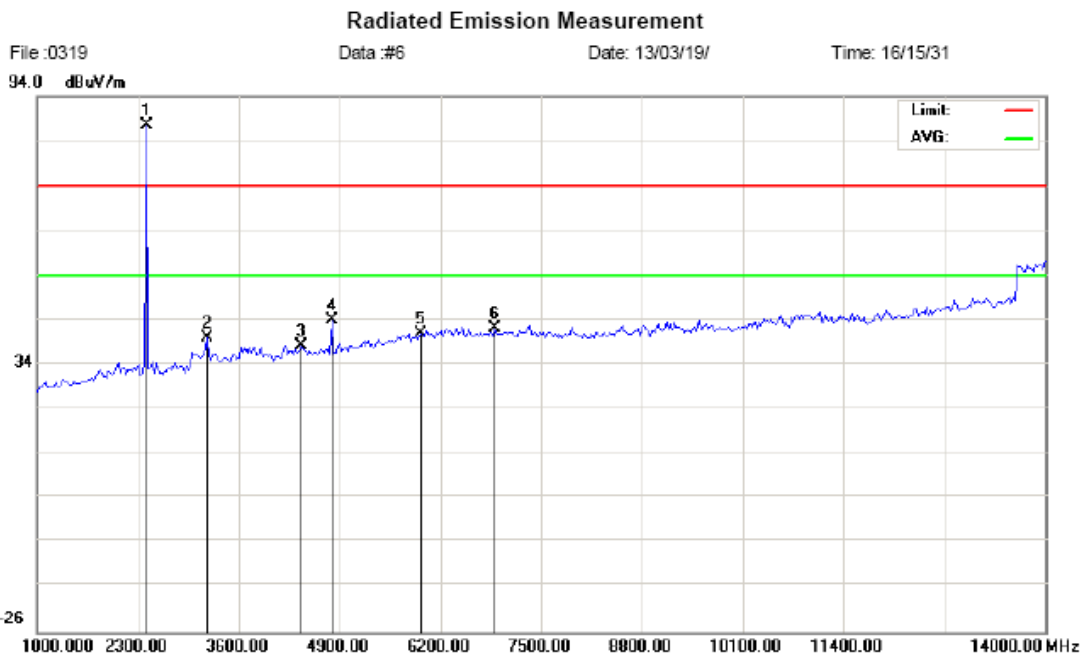


MEASUREMENT RESULT:

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 142.745491 | 21.00 | -15.6 | 33.5 | 12.5 | --- | 100.0 | 125.00 | VERTICAL |
| 206.893788 | 27.00 | -12.6 | 33.5 | 6.5 | --- | 100.0 | 10.00 | VERTICAL |
| 309.919840 | 25.20 | -9.1 | 36.5 | 11.3 | --- | 100.0 | 32.00 | VERTICAL |
| 366.292585 | 28.10 | -8.1 | 36.5 | 8.4 | --- | 100.0 | 125.00 | VERTICAL |
| 484.869739 | 28.10 | -6.2 | 36.5 | 8.4 | --- | 100.0 | 294.00 | VERTICAL |
| 926.132265 | 29.70 | 1.3 | 36.5 | 6.8 | --- | 100.0 | 211.00 | VERTICAL |

The Spurious Emission (Above 1GHz) Of Horizontal (BT TX Model L)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Low
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:65%

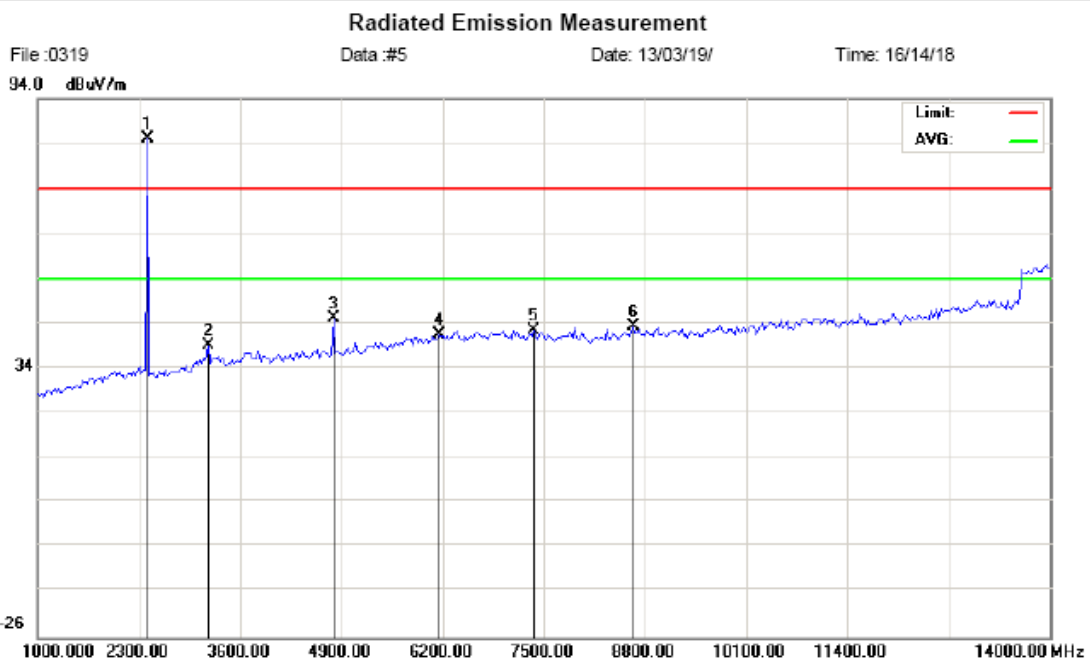


Site site #1 Polarization: *Horizontal* Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: LOW

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3184.000 | 38.69 | | 36.42 | 1.36 | 40.05 | | 37.78 | 74.00 | 54.00 | -33.95 | -16.22 | P | |
| 3 | 4406.000 | 34.07 | | 32.89 | 4.22 | 38.29 | | 37.11 | 74.00 | 54.00 | -35.71 | -16.89 | P | |
| 4 | 4796.000 | 39.03 | | 38.97 | 5.11 | 44.08 | | 42.98 | 74.00 | 54.00 | -29.86 | -9.92 | P | |
| 5 | 5940.000 | 32.56 | | 30.13 | 8.51 | 41.07 | | 38.64 | 74.00 | 54.00 | -32.93 | -15.36 | P | |
| 6 | 6902.000 | 32.73 | | 30.86 | 9.63 | 42.36 | | 40.72 | 74.00 | 54.00 | -31.64 | -13.28 | P | |

The Spurious Emission (Above 1GHz) Of Vertical (BT TX Model L)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Low
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:65%

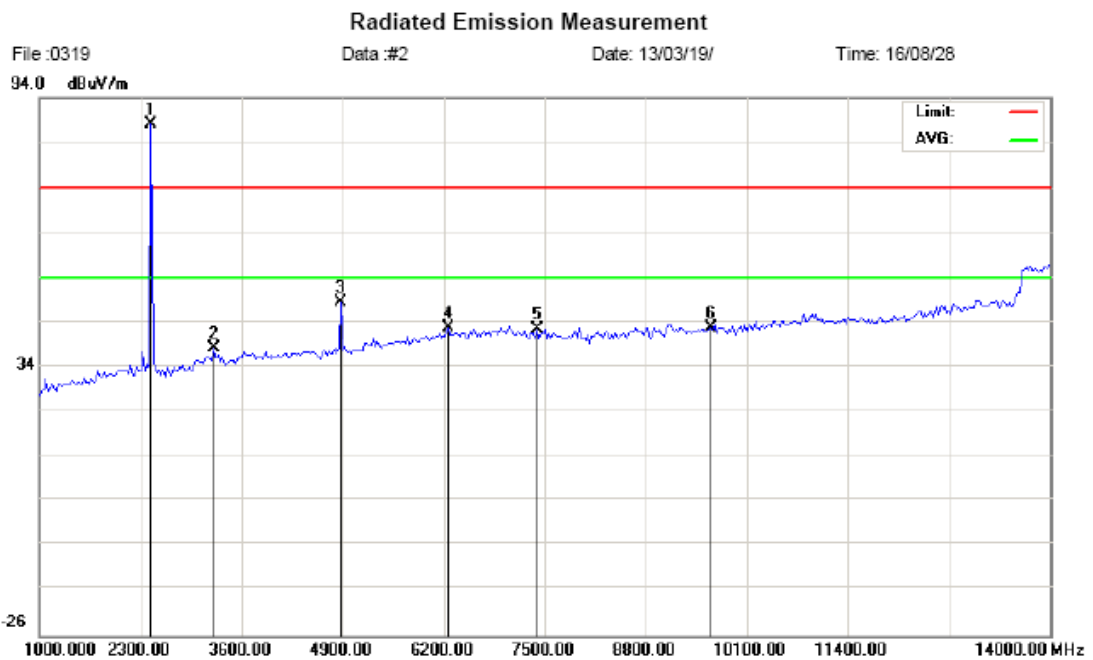


Site site #1 Polarization: *Vertical* Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: LOW

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3184.000 | 38.00 | | 35.67 | 1.36 | 39.36 | | 37.03 | 74.00 | 54.00 | -34.64 | -16.97 | P | |
| 3 | 4796.000 | 40.08 | | 39.32 | 5.11 | 45.19 | | 44.43 | 74.00 | 54.00 | -28.81 | -9.57 | P | |
| 4 | 6148.000 | 32.78 | | 30.44 | 8.85 | 41.63 | | 39.29 | 74.00 | 54.00 | -32.37 | -14.71 | P | |
| 5 | 7370.000 | 33.06 | | 31.23 | 9.46 | 42.52 | | 40.69 | 74.00 | 54.00 | -31.48 | -13.31 | P | |
| 6 | 8644.000 | 34.14 | | 32.42 | 9.39 | 43.53 | | 41.81 | 74.00 | 54.00 | -30.47 | -12.19 | P | |

The Spurious Emission (Above 1GHz) Of Horizontal (BT TX Model M)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Middle
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:65%

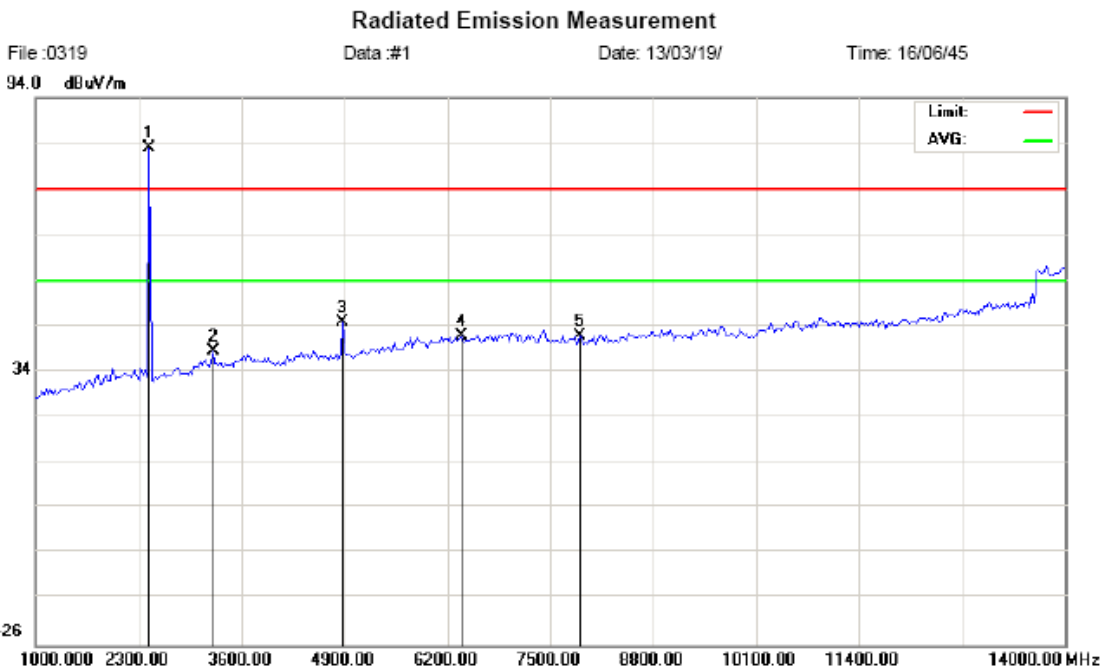


Site site #1 Polarization: *Horizontal* Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: middle

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3236.000 | 36.98 | | 34.21 | 1.48 | 38.46 | | 35.69 | 74.00 | 54.00 | -35.54 | -18.31 | P | |
| 3 | 4874.000 | 43.28 | | 42.15 | 5.28 | 48.56 | | 47.43 | 74.00 | 54.00 | -25.44 | -6.57 | P | |
| 4 | 6252.000 | 34.02 | | 33.62 | 8.96 | 42.98 | | 42.58 | 74.00 | 54.00 | -31.02 | -11.42 | P | |
| 5 | 7396.000 | 33.16 | | 32.08 | 9.44 | 42.60 | | 41.52 | 74.00 | 54.00 | -31.40 | -12.48 | P | |
| 6 | 9632.000 | 32.96 | | 30.43 | 9.87 | 42.83 | | 40.30 | 74.00 | 54.00 | -31.17 | -13.70 | P | |

The Spurious Emission (Above 1GHz) Of Vertical (BT TX Model M)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel Middle
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:65%

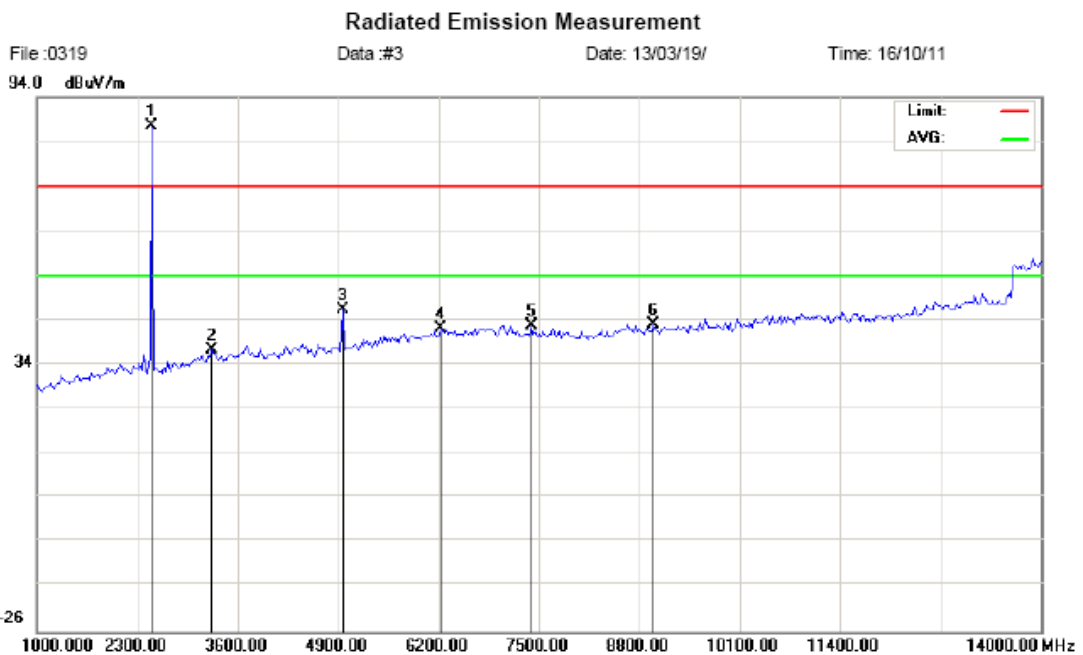


Site site #1 Polarization: **Vertical** Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: middle

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3236.000 | 37.31 | | 35.42 | 1.48 | 38.79 | | 36.90 | 74.00 | 54.00 | -35.21 | -17.10 | P | |
| 3 | 4874.000 | 39.58 | | 37.43 | 5.28 | 44.86 | | 42.71 | 74.00 | 54.00 | -29.14 | -11.29 | P | |
| 4 | 6382.000 | 32.78 | | 31.54 | 9.09 | 41.87 | | 40.63 | 74.00 | 54.00 | -32.13 | -13.37 | P | |
| 5 | 7864.000 | 32.92 | | 30.21 | 9.09 | 42.01 | | 39.30 | 74.00 | 54.00 | -31.99 | -14.70 | P | |

The Spurious Emission (Above 1GHz) Of Horizontal (BT TX Model H)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel High
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Horizontal
Tem:23°C Hum:65%

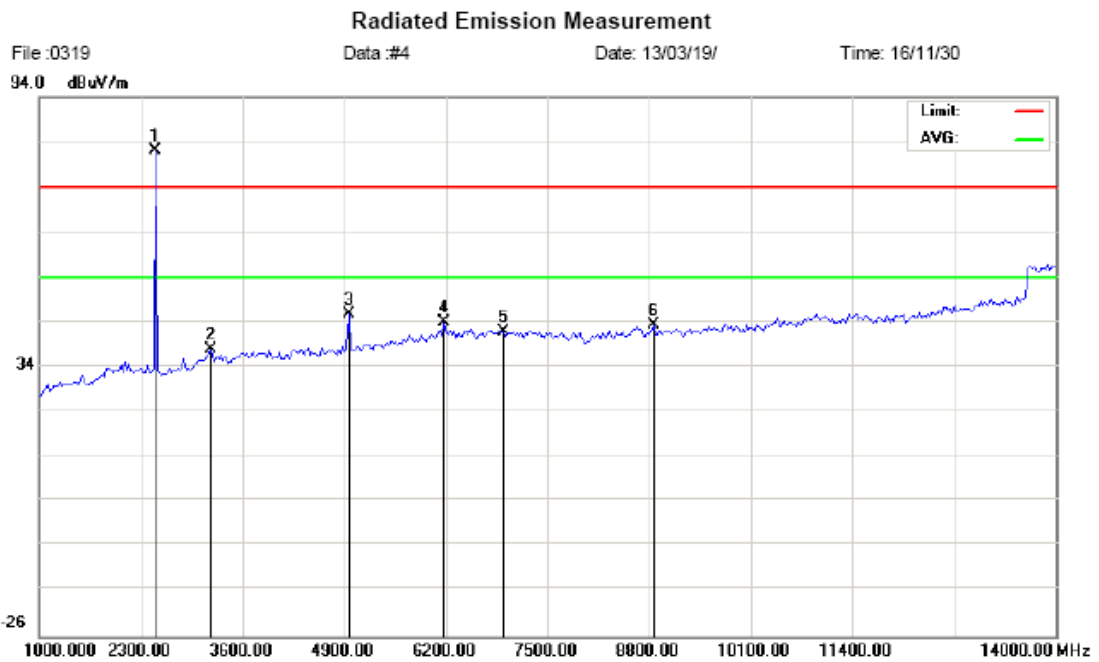


Site site #1 Polarization: *Horizontal* Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: HI

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3262.000 | 35.93 | | 33.11 | 1.54 | 37.47 | | 34.65 | 74.00 | 54.00 | -36.53 | -19.35 | P | |
| 3 | 4952.000 | 41.08 | | 39.32 | 5.46 | 46.54 | | 44.78 | 74.00 | 54.00 | -27.46 | -9.22 | P | |
| 4 | 6226.000 | 33.18 | | 31.07 | 8.93 | 42.11 | | 40.00 | 74.00 | 54.00 | -31.89 | -14.00 | P | |
| 5 | 7396.000 | 33.46 | | 31.02 | 9.44 | 42.90 | | 40.46 | 74.00 | 54.00 | -31.10 | -13.54 | P | |
| 6 | 8982.000 | 33.48 | | 30.78 | 9.60 | 43.08 | | 40.38 | 74.00 | 54.00 | -30.92 | -13.62 | P | |

The Spurious Emission (Above 1GHz) Of Vertical (BT TX Model H)

EUT: Bluetooth Headset
M/N: BT304
Operating Condition: BT TX Channel High
Test Site: 10m CHAMBER
Operator: Owen Li
Test Specification: DC 5V
Comment: Polarization: Vertical
Tem:23°C Hum:65%



Site site #1 Polarization: **Vertical** Temperature: 28
Limit: FCC PART15B ABOVE 1G PEAK Power: DC 5V Humidity: 65 %
EUT:
M/N: BT304
Mode: TX
Note: HI

| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-------|-------------------------|-------------------------|----|-------|-------------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 2 | 3184.000 | 36.80 | | 34.12 | 1.36 | 38.16 | | 35.48 | 74.00 | 54.00 | -35.84 | -18.52 | P | |
| 3 | 4952.000 | 40.25 | | 38.74 | 5.46 | 45.71 | | 44.20 | 74.00 | 54.00 | -28.29 | -9.80 | P | |
| 4 | 6174.000 | 35.05 | | 33.23 | 8.88 | 43.93 | | 42.11 | 74.00 | 54.00 | -30.07 | -11.89 | P | |
| 5 | 6928.000 | 32.39 | | 30.27 | 9.66 | 42.05 | | 39.93 | 74.00 | 54.00 | -31.95 | -14.07 | P | |
| 6 | 8852.000 | 33.79 | | 30.81 | 9.52 | 43.31 | | 40.33 | 74.00 | 54.00 | -30.69 | -13.67 | P | |

12. ANTENNA REQUIREMENT

12.1 Standard Applicable

Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

12.2 Antenna Connected Construction

The antenna used in this product is complied with Standard. The maximum Gain of the antenna lower than 6.0dBi and the antenna is integrated, fixed on PCB.