# FCC Test Report

| | | |
|---|---|---|
| **FCC ID** | : | **TTUBEOPLAYPL** |
| **Equipment** | : | **Wireless Gaming Headphones** |
| **Brand Name** | : | **Bang & Olufsen** |
| **Model Name** | : | **Beoplay Portal** |
| **Applicant** | : | **Bang & Olufsen A/S**<br>**Bang og Olufsen Allé 1, 7600 Struer, Denmark** |
| **Manufacturer** | : | **Bang & Olufsen A/S**<br>**Bang og Olufsen Allé 1, 7600 Struer, Denmark** |
| **Standard** | : | **47 CFR FCC Part 15.247** |

**The product was received on Nov. 06, 2020, and testing was started from Nov. 18, 2020 and completed on Dec. 12, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.**

**The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.**

Approved by: Allen Lin

***SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory***

*No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)*

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# History of this test report

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FR0N0708AD | 01 | Initial issue of report | Jan. 25, 2021 |
| FR0N0708AD | 02 | Remove wireless adapter and update photographs of EUT. (This report is the latest version replacing for the report issued on Jan. 25, 2021.) | Feb. 26, 2021 |
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# Summary of Test Result

| Report Clause | Ref. Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---|---|---|---|---|
| 1.1.2 | 15.203 | Antenna Requirement | PASS | - |
| 3.1 | 15.207 | AC Power-line Conducted Emissions | PASS | - |
| 3.2 | 15.247(a) | 20dB Bandwidth | PASS | - |
| 3.2 | 15.247(a) | Carrier Frequency Separation | PASS | - |
| 3.3 | 15.247(b) | Maximum Conducted Output Power | PASS | - |
| 3.4 | 15.247(a) | Number of Hopping Frequencies and Hopping Bandedge | PASS | - |
| 3.5 | 15.247(a) | Time of Occupancy (Dwell Time) | PASS | - |
| 3.6 | 15.247(d) | Emissions in Non-restricted Frequency Bands | PASS | - |
| 3.7 | 15.247(d) | Emissions in Restricted Frequency Bands | PASS | - |

| **Declaration of Conformity:** |
|---|
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| **Comments and explanations:** |
| None |

**Reviewed by: Sam Tsai**

**Report Producer: Michelle Tsai**

# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| Frequency Range (MHz) | Bluetooth Version | Ch. Frequency (MHz) | Channel Number |
|---|---|---|---|
| 2400-2483.5 | BR / EDR | 2402-2480 | 0-78 [79] |

| Band | Mode | BWch (MHz) | Nant |
|---|---|---|---|
| 2.4-2.4835GHz | BT-BR(1Mbps) | 1 | 1TX |
| 2.4-2.4835GHz | BT-EDR(2Mbps) | 1 | 1TX |
| 2.4-2.4835GHz | BT-EDR(3Mbps) | 1 | 1TX |

Note:
- Bluetooth BR uses a GFSK (1Mbps).
- Bluetooth EDR uses a combination of π/4-DQPSK (2Mbps) and 8DPSK (3Mbps).
- Bluetooth BR/EDR uses as a system using FHSS modulation.
- BWch is the nominal channel bandwidth.

### 1.1.2 Antenna Information

| Ant. | Brand | Model Name | Antenna Type | Connector |
|---|---|---|---|---|
| 1 | SAGE ELEPHANT | S306300001000-A | Couple Chip | N/A |
| 2 | SAGE ELEPHANT | S306300001000-A | Couple Chip | N/A |

| Ant. | Port | Gain (dBi) | | |
|---|---|---|---|---|
| | | 2.4G | 5G | BT |
| 1 | 1 | 0.72 | 0.71 | - |
| 2 | 1 | - | - | 0.73 |

Note 1: The EUT has two antennas.

**For 2.4GHz function:**

For IEEE 802.11 b/g/n mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

**For BT function:**

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 2 (port 1) could transmit/receive.

**For 5GHz function:**

For IEEE 802.11 a/n mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

### 1.1.3 EUT Information

| Operational Condition | | | | |
|---|---|---|---|---|
| **EUT Power Type** | From host system / Adapter | | | |
| **EUT Function** | ☒ | Point-to-multipoint | ☐ | Point-to-point |
| **Type of EUT** | | | | |
| ☒ | Stand-alone | | | |
| ☐ | Combined (EUT where the radio part is fully integrated within another device) | | | |
| | Combined Equipment - Brand Name / Model No.: | … | | |
| ☐ | Plug-in radio (EUT intended for a variety of host systems) | | | |
| | Host System - Brand Name / Model No.: | … | | |
| ☐ | Other: | | | |

### 1.1.4 Mode Test Duty Cycle

| Mode | DC | DCF(dB) | T(s) | VBW(Hz) ≥ 1/T |
|---|---|---|---|---|
| BT-BR(1Mbps) | 0.752 | 1.24 | 2.892m | 1k |
| BT-EDR(2Mbps) | 0.791 | 1.02 | 2.898m | 1k |
| BT-EDR(3Mbps) | 0.772 | 1.12 | 2.899m | 1k |

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

### 1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

| Model Name | Sample | Description |
|---|---|---|
| Beoplay Portal | 1 | There are two samples of EUT, the only difference is the color of appearance. |
| | 2 | |

Note: Sample 2 configuration was measured during the test.

## 1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

## 1.3 Testing Location Information

| Testing Location | | | |
|---|---|---|---|
| ☒ | HWA YA | ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) | |
| | | TEL : 886-3-327-3456 | FAX : 886-3-327-0973 |
| Test site Designation No. TW1190 with FCC. | | | |
| ☐ | JHUBEI | ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.) | |
| | | TEL : 886-3-656-9065 | FAX : 886-3-656-9085 |
| Test site Designation No. TW0006 with FCC. | | | |
| ☐ | Wen Shan | ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) | |
| | | TEL : 886-3-318-0787 | FAX : 886-3-318-0287 |
| Test site Designation No. TW1097 with FCC. | | | |

| Test Condition | Test Site No. | Test Engineer | Test Environment | Test Date |
|---|---|---|---|---|
| AC Conduction | CO04-HY | Edward Wang | 21.0~22.1°C/56~59% | 12/Dec/2020 |
| RF Conducted | TH01-HY | Vivi Jiang | 20.1~26.9°C/50~60% | 18/Nov/2020~19/Nov/2020 |
| Radiated | 03CH02-HY | Daniel Lin | 20.4~26.3°C/51~64% | 20/Nov/2020~25/Nov/2020 |

## 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

| Test Items | Uncertainty | Remark |
|---|---|---|
| Conducted Emission (150kHz ~ 30MHz) | 0.9 dB | Confidence levels of 95% |
| Radiated Emission (9kHz ~ 30MHz) | 2.4 dB | Confidence levels of 95% |
| Radiated Emission (30MHz ~ 1,000MHz) | 3.7 dB | Confidence levels of 95% |
| Radiated Emission (1GHz ~ 18GHz) | 3.6 dB | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz) | 3.5 dB | Confidence levels of 95% |
| Conducted Emission | 1.0 dB | Confidence levels of 95% |
| Temperature | 0.41 °C | Confidence levels of 95% |
| Humidity | 3.4 % | Confidence levels of 95% |

# 2 Test Configuration of EUT

## 2.1 Test Condition

| RF Conducted | Abbreviation | Remark |
|---|---|---|
| TnomVnom | Tnom | 20°C |
| - | Vnom | 3.7V |

## 2.2 Test Channel Mode

| Test Software Version | Bluetest3 |
|---|---|

| Mode | Power Setting |
|---|---|
| BT-BR(1Mbps) | - |
| 2402MHz | 3 |
| 2440MHz | 2 |
| 2480MHz | 2 |
| BT-EDR(2Mbps) | - |
| 2402MHz | 3 |
| 2440MHz | 2 |
| 2480MHz | 2 |
| BT-EDR(3Mbps) | - |
| 2402MHz | 3 |
| 2440MHz | 2 |
| 2480MHz | 2 |

## 2.3 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| **Tests Item** | AC power-line conducted emissions |
| **Condition** | AC power-line conducted measurement for line and neutral |
| **Operating Mode** | CTX |
| 1 | USB Mode |

| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| **Tests Item** | 20dB Bandwidth<br>Carrier Frequency Separation<br>Maximum Conducted Output Power<br>Number of Hopping Frequencies<br>Hopping Bandedge<br>Time of Occupancy (Dwell Time)<br>Emissions in Non-restricted Frequency Bands |
| **Test Condition** | Conducted measurement at transmit chains<br>☒ Non-adaptive frequency hopping systems (Non-AFH)<br>☒ adaptive frequency hopping systems (AFH) |
| Non-AFH Mode configuration was found to be the worst case and measured during the test. | |

| The Worst Case Mode for Following Conformance Tests | | | |
|---|---|---|---|
| **Tests Item** | Emissions in Restricted Frequency Bands | | |
| **Test Condition** | Radiated measurement<br>If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. | | |
| **Operating Mode < 1GHz** | CTX | | |
| 1 | USB Mode | | |
| **Operating Mode > 1GHz** | CTX | | |
| **Orthogonal Planes of EUT** | **X Plane** | **Y Plane** | **Z Plane** |
| |  |  |  |
| **Worst Planes of EUT** | | | V |

## 2.4 Accessories

| Accessories | | | | |
|---|---|---|---|---|
| Battery | Brand Name | Synergy | Model Name | AHB723938PCT |
| | Power Rating | 3.7Vdc,1110mAh | Type | Lithium-ion Polymer Battery Pack |
| USB Cable(1.8M) | Brand Name | Bang & Olufsen | Model Name | 4021XW01907ZEU |
| | Signal Line | 1.8 meter, D-shielded cable, w/o ferrite core | | |
| USB Cable(1.2M) | Brand Name | Bang & Olufsen | Model Name | 4021XW01907ZAU |
| | Signal Line | 1.2 meter, D-shielded cable, w/o ferrite core | | |
| Audio Cable | Brand Name | Bang & Olufsen | Model Name | 4021XW01906ZAS |
| | Signal Line | 1.2 meter, non-shielded cable, w/o ferrite core | | |

Reminder: Regarding to more detail and other information, please refer to user manual.

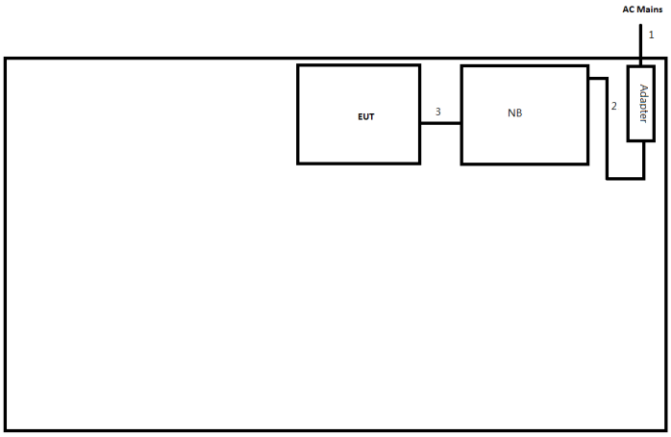
## 2.5 Support Equipment

| Support Equipment – AC Conduction and Radiated | | | | | |
|---|---|---|---|---|---|
| No. | Equipment | Brand Name | Model Name | FCC ID | Remark |
| 1 | Notebook | Acer | ZQS | - | - |
| 2 | Adapter for NB | Liteon | PA-1900-32 | - | - |

| Support Equipment – Conducted | | | | | |
|---|---|---|---|---|---|
| No. | Equipment | Brand Name | Model Name | FCC ID | Remark |
| 1 | Notebook | Dell | E5410 | - | - |
| 2 | Adapter for NB | Dell | HA65NM130 | - | - |

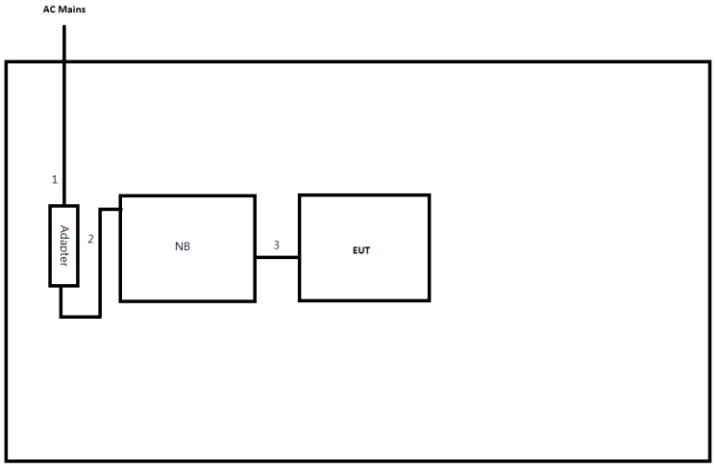
## 2.6 Test Setup Diagram

**Test Setup Diagram – AC Line Conducted Emission Test**




| Item | Connection | Shielded | Length(m) | Remark |
|---|---|---|---|---|
| 1 | AC Power cable | No | 1.8 | - |
| 2 | DC Power cable | No | 1.5 | - |
| 3 | USB cable | No | 0.1 | - |

**Test Setup Diagram - Radiated Test**




| Item | Connection | Shielded | Length(m) | Remark |
|---|---|---|---|---|
| 1 | AC Power cable | No | 1.8 | - |
| 2 | DC Power cable | No | 1.5 | - |
| 3 | USB cable | No | 0.1 | - |

# 3 Transmitter Test Result

## 3.1 AC Power-line Conducted Emissions

### 3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit | | |
|---|---|---|
| **Frequency Emission (MHz)** | **Quasi-Peak** | **Average** |
| 0.15-0.5 | 66 - 56 * | 56 - 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| Note 1: * Decreases with the logarithm of the frequency. | | |

### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.1.3 Test Procedures

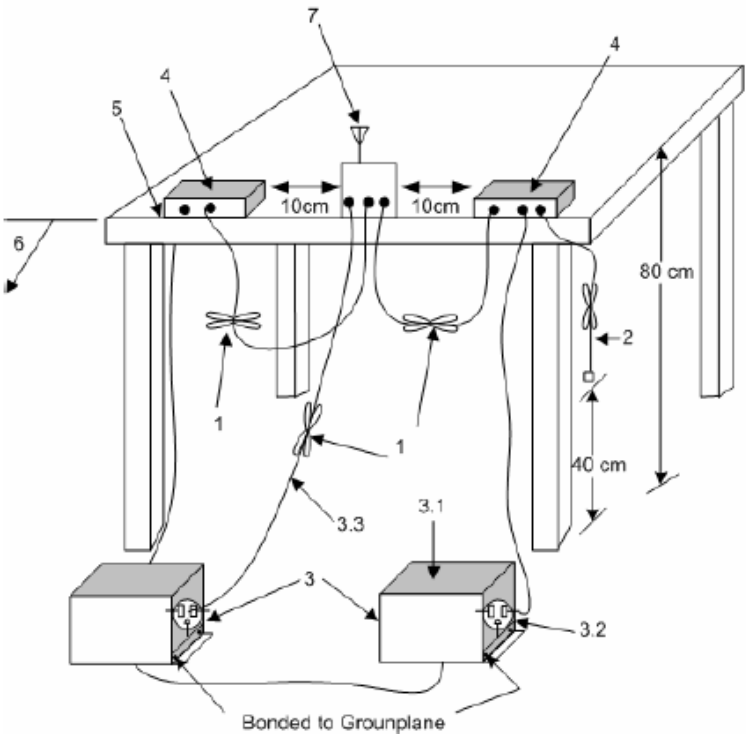
| Test Method |
|---|
| ▪ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions. |

### 3.1.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) +LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

### 3.1.5 Test Setup

**AC Power-line Conducted Emissions**




1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ωloads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

## 3.2 20dB Bandwidth and Carrier Frequency Separation

### 3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

| 20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems | |
|---|---|
| ▪ 2400-2483.5 MHz Band: | |
| | ▪ N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz). |
| | ▪ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz). |
| **N:**Number of Hopping Frequencies; **ChS**: Hopping Channel Separation | |

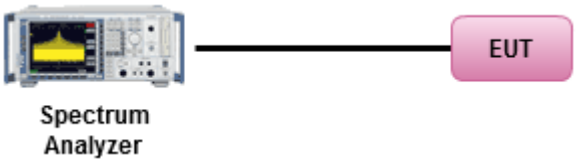
### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.2.3 Test Procedures

| Test Method |
|---|
| ▪ Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement. |
| ▪ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement. |

### 3.2.4 Test Setup

| 20dB Bandwidth and Carrier Frequency Separation |
|---|
|  |



### 3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

### 3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

# 3.3 Maximum Conducted Output Power

## 3.3.1 Maximum Conducted Output Power Limit

| Maximum Conducted Output Power Limit | |
|---|---|
| ▪ 2400-2483.5 MHz Band: | |
| | ▪ N ≥ 75; Power 30dBm; EIRP 36dBm |
| | ▪ 75 >N ≥ 15; Power 21dBm; EIRP 27dBm |
| **N:**Number of Hopping Frequencies | |

## 3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

## 3.3.3 Test Procedures

| Test Method |
|---|
| ▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement. |

## 3.3.4 Test Setup

| Maximum Conducted Output Power (Peak Power Meter) |
|---|
|  |



## 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

# 3.4 Number of Hopping Frequencies and Hopping Bandedge

## 3.4.1 Number of Hopping Frequencies Limit

| Number of Hopping Frequencies Limit | |
|---|---|
| ▪ 2400-2483.5 MHz Band: | |
| | ▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz). |
| | ▪ 75 >N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz). |
| **N:**Number of Hopping Frequencies; **ChS** : Hopping Channel Separation | |

## 3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

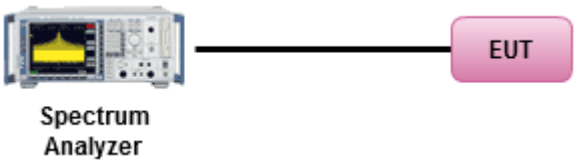
## 3.4.3 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

## 3.4.4 Test Procedures

| Test Method |
|---|
| ▪ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement. |
| ▪ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement. |

## 3.4.5 Test Setup

| Number of Hopping Frequencies and Hopping Frequencies Bandedge |
|---|
|   |

## 3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

## 3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

# 3.5 Time of Occupancy (Dwell Time)

## 3.5.1 Time of Occupancy (Dwell Time) Limit

| Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems | |
|---|---|
| ▪ 2400-2483.5 MHz Band: | |
| | ▪ N ≥ 75; 0.4s in N x 0.4 period |
| | ▪ 75 >N ≥ 15; 0.4s in N x 0.4 period |
| **N:**Number of Hopping Frequencies | |

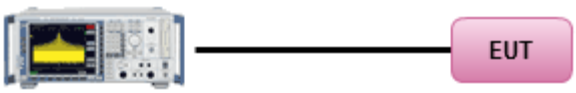
## 3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

## 3.5.3 Test Procedures

| Test Method | |
|---|---|
| ▪ Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement. | |
| ▪ Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle. | |
| | ▪ The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is 5/1600 seconds, or 3.125ms.DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel. |

## 3.5.4 Test Setup

| Time of Occupancy (Dwell Time) |
|---|
|   Spectrum Analyzer |

## 3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

# 3.6 Emissions in Non-restricted Frequency Bands

## 3.6.1 Emissions in Non-restricted Frequency Bands Limit

| Un-restricted Band Emissions Limit | |
|---|---|
| **RF output power procedure** | **Limit (dB)** |
| Peak output power procedure | 20 |
| Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. | |

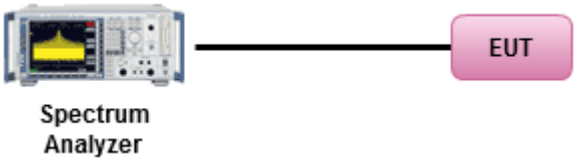
## 3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

## 3.6.3 Test Procedures

| Test Method |
|---|
| ▪ Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands. |

## 3.6.4 Test Setup

| Emissions in Non-restricted Frequency Bands |
|---|
|   |

## 3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

# 3.7 Emissions in Restricted Frequency Bands

## 3.7.1 Emissions in Restricted Frequency Bands Limit

| Restricted Band Emissions Limit | | | |
|---|---|---|---|
| **Frequency Range (MHz)** | **Field Strength (uV/m)** | **Field Strength (dBuV/m)** | **Measure Distance (m)** |
| 0.009~0.490 | 2400/F(kHz) | 48.5 - 13.8 | 300 |
| 0.490~1.705 | 24000/F(kHz) | 33.8 - 23 | 30 |
| 1.705~30.0 | 30 | 29 | 30 |
| 30~88 | 100 | 40 | 3 |
| 88~216 | 150 | 43.5 | 3 |
| 216~960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

## 3.7.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

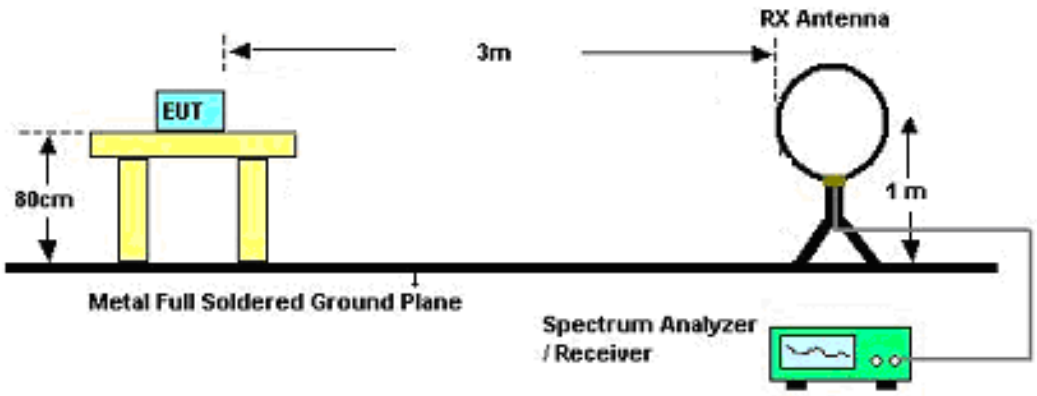
### 3.7.3 Test Procedures

| Test Method | |
|---|---|
| ▪ The average emission levels shall be measured in [hopping duty factor]. | |
| ▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. | |
| ▪ For the transmitter unwanted emissions shall be measured using following options below: | |
| | ▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value. |
| | ▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak. |
| | ▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions. |
| ▪ | KDB 414788 Open-Field Test Sites and Chamber Correlation Justification. |
| | ▪ Based on : measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field. |
| | ▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result. |

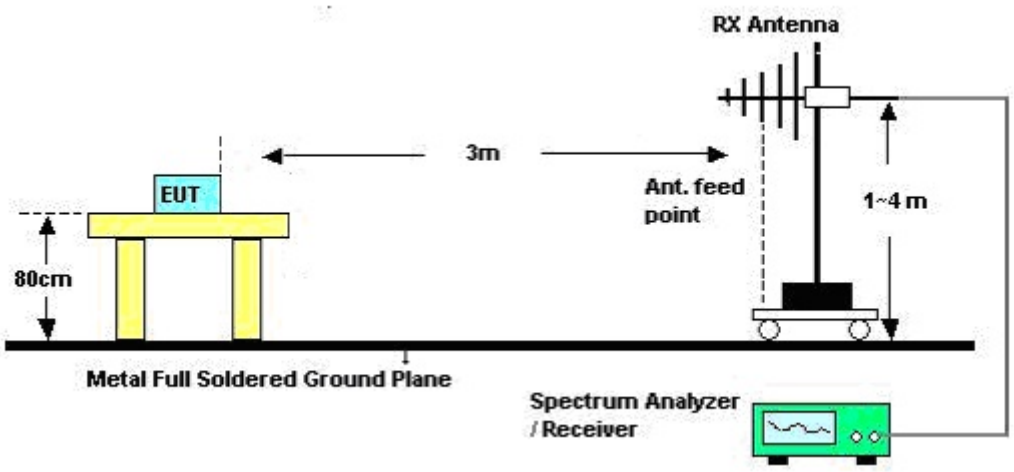
### 3.7.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

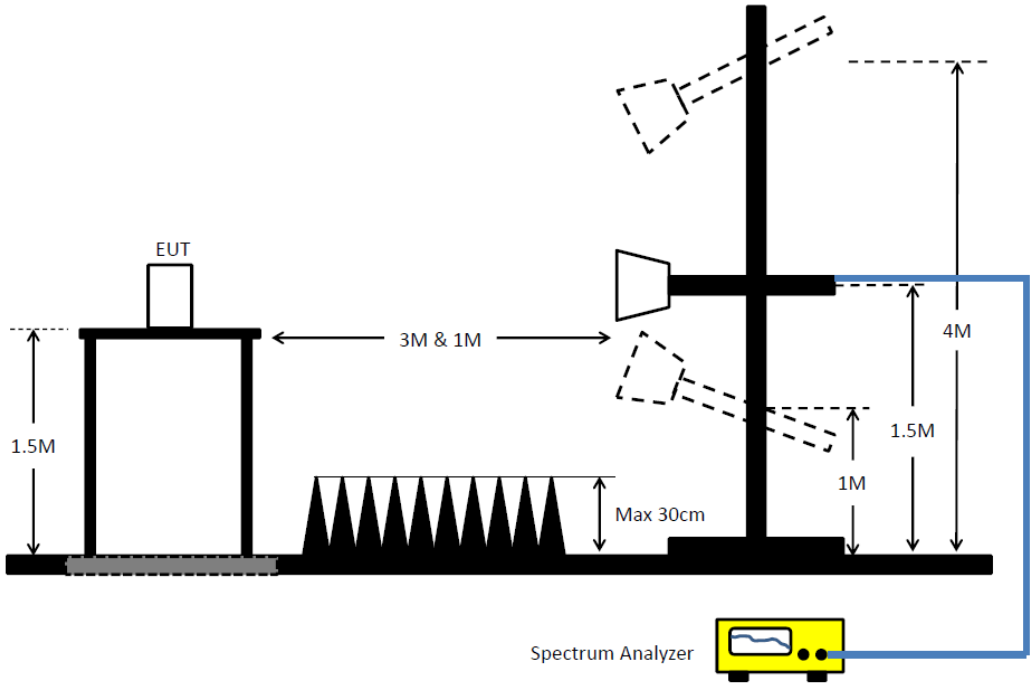
### 3.7.5 Test Setup

| Emissions in Restricted Frequency Bands |
|---|
| 9kHz ~30MHz |
|  |

**30MHz~1GHz**




**Above 1GHz**




### 3.7.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

### 3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

# 4 Test Equipment and Calibration Data

### Instrument for AC Conduction

| Instrument | Manufacturer/ Brand | Model No. | Serial No. | Spec. | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|---|
| EMI Test Receiver | R&S | ESR3 | 102051 | 9kHz ~ 3.6GHz | 29/May/2020 | 28/May/2021 |
| LISN | R&S | ENV216 | 101295 | 9kHz ~ 30MHz | 11/Nov/2020 | 10/Nov/2021 |
| RF Cable-CON | MTJ | RG142 | CB002-CO | 9kHz ~ 200MHz | 31/Aug/2020 | 30/Aug/2021 |
| Impuls Begrenzer Pulse Limiter | SCHWARZBECK | VTSD 9561-F | 9561-F041 | 9kHz ~ 30MHz | 21/Sep/2020 | 20/Sep/2021 |

### Instrument for Radiated Test

| Instrument | Manufacturer/ Brand | Model No. | Serial No. | Spec. | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|---|
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH02-HY | 30MHz~1GHz 3m | 04/Aug/2020 | 03/Aug/2021 |
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH02-HY | 1GHz~18GHz 3m | 02/Aug/2020 | 01/Aug/2021 |
| Signal Analyzer | R&S | FSP40 | 100593 | 9kHz~40GHz | 27/Feb/2020 | 26/Feb/2021 |
| Amplifier | Agilent | 8447D | 2944A11149 | 100kHz~1.3GHz | 30/Jun/2020 | 29/Jun/2021 |
| Microwave Preamplifier | Agilent | 8449B | 3008A02373 | 1GHz~18GHz | 23/Oct/2020 | 22/Oct/2021 |
| Bilog Antenna & 5dB Attenuator | SCHAFFNER / MTJ | CBL 6112B / MTJ6102-05 | 2723 / 2 | 30MHz~1GHz | 06/Sep/2020 | 05/Sep/2021 |
| Double Ridged Guide Horn Antenna | SCHWARZBEC | BBHA 9120 D | BBHA 9120 D 01543 | 1GHz~18GHz | 09/Jun/2020 | 08/Jun/2021 |
| RF Cable-R03m | Jye Bao | RG142 | CB017 | 9kHz~30MHz | 20/Jun/2020 | 19/Jun/2021 |
| RF Cable-R03m | Jye Bao | RG142 | CB017 | 30MHz~1GHz | 25/Mar/2020 | 24/Mar/2021 |
| RF Cable-R03m | HUBER+SUHNER | SUCOFLEX104 | 805193/4+805192/4 | 1GHz~40GHz | 08/Apr/2020 | 07/Apr/2021 |
| Broadband Horn Antenna | SCHWARZBECK | BBHA 9170 | BBHA 9170221 | 18GHz~40GHz | 13/Mar/2020 | 12/Mar/2021 |
| Preamplifier | MITEQ | TTA1840-35-HG | 1864481 | 18GHz~40GHz | 10/Mar/2020 | 09/Mar/2021 |
| Loop Antenna | TESEQ | HLA 6120 | 31244 | 9kHz~30MHz | 16/Mar/2020 | 15/Mar/2021 |
| EMI Test Receiver | R&S | ESR3 | 102051 | 9kHz~3.6GHz | 29/May/2020 | 28/May/2021 |

### Instrument for Conducted Test

| Instrument | Manufacturer/ Brand | Model No. | Serial No. | Spec. | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|---|
| Signal Analyzer | R&S | FSV 40 | 101013 | 10Hz~40GHz | 19/Mar/2020 | 18/Mar/2021 |
| SMB100A Signal Generator | R&S | SMB100A03 | 181147 | 100kHz~40GHz | 20/Oct/2020 | 19/Oct/2022 |
| Pulse Sensor | Anritsu | MA2411B | 917017 | 300MHz~40GHz | 17/Feb/2020 | 16/Feb/2021 |
| Power Meter | Anritsu | ML2495A | 949003 | 300MHz~40GHz | 17/Feb/2020 | 16/Feb/2021 |

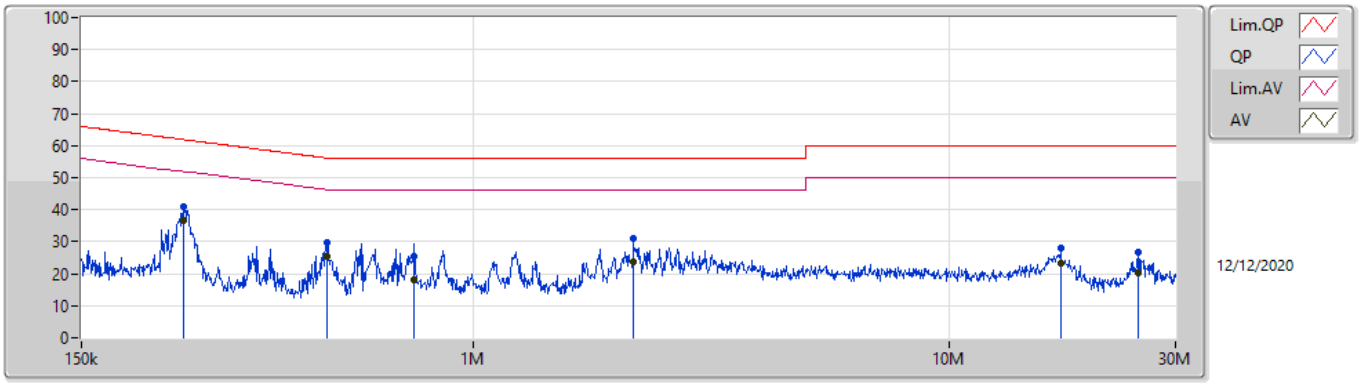
**Summary**

| Mode | Result | Type | Freq (Hz) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Condition |
|---|---|---|---|---|---|---|---|
| Mode 1 | Pass | AV | 246.077k | 36.44 | 51.89 | -15.45 | Line |

**Mode Configure**

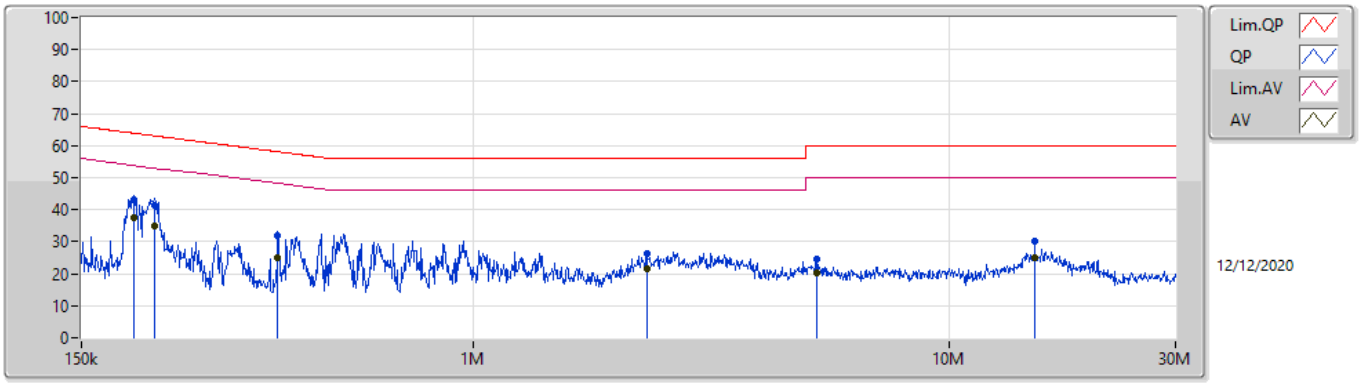
| Mode | Result | Type | Freq (Hz) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Condition | Comments |
|---|---|---|---|---|---|---|---|---|
| Mode 1 | Pass | QP | 246.077k | 41.00 | 61.89 | -20.89 | Line | - |
| Mode 1 | Pass | AV | 246.077k | 36.44 | 51.89 | -15.45 | Line | "Worst" |
| Mode 1 | Pass | QP | 492.876k | 29.80 | 56.11 | -26.31 | Line | - |
| Mode 1 | Pass | AV | 492.876k | 25.41 | 46.11 | -20.70 | Line | - |
| Mode 1 | Pass | QP | 752.508k | 25.41 | 56.00 | -30.59 | Line | - |
| Mode 1 | Pass | AV | 752.508k | 18.12 | 46.00 | -27.88 | Line | - |
| Mode 1 | Pass | QP | 2.176M | 30.85 | 56.00 | -25.15 | Line | - |
| Mode 1 | Pass | AV | 2.176M | 23.75 | 46.00 | -22.25 | Line | - |
| Mode 1 | Pass | QP | 17.208M | 28.03 | 60.00 | -31.97 | Line | - |
| Mode 1 | Pass | AV | 17.208M | 23.15 | 50.00 | -26.85 | Line | - |
| Mode 1 | Pass | QP | 25.044M | 26.64 | 60.00 | -33.36 | Line | - |
| Mode 1 | Pass | AV | 25.044M | 20.16 | 50.00 | -29.84 | Line | - |
| Mode 1 | Pass | QP | 193.664k | 43.27 | 63.88 | -20.61 | Neutral | - |
| Mode 1 | Pass | AV | 193.664k | 37.44 | 53.88 | -16.44 | Neutral | "Worst" |
| Mode 1 | Pass | QP | 213.989k | 41.38 | 63.06 | -21.68 | Neutral | - |
| Mode 1 | Pass | AV | 213.989k | 34.99 | 53.06 | -18.07 | Neutral | - |
| Mode 1 | Pass | QP | 387.896k | 31.90 | 58.10 | -26.20 | Neutral | - |
| Mode 1 | Pass | AV | 387.896k | 25.00 | 48.10 | -23.10 | Neutral | - |
| Mode 1 | Pass | QP | 2.32M | 26.08 | 56.00 | -29.92 | Neutral | - |
| Mode 1 | Pass | AV | 2.32M | 21.39 | 46.00 | -24.61 | Neutral | - |
| Mode 1 | Pass | QP | 5.279M | 24.36 | 60.00 | -35.64 | Neutral | - |
| Mode 1 | Pass | AV | 5.279M | 20.19 | 50.00 | -29.81 | Neutral | - |
| Mode 1 | Pass | QP | 15.145M | 30.07 | 60.00 | -29.93 | Neutral | - |
| Mode 1 | Pass | AV | 15.145M | 25.03 | 50.00 | -24.97 | Neutral | - |

## Conducted Emissions at Powerline_Mode 1




| Type | Freq | Level | Limit | Margin | Factor | Condition | Comment | Raw | LISN | CL | AT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV) | (dBuV) | (dB) | (dB) | | | (dBuV) | (dB) | (dB) | (dB) |
| QP | 246.077k | 41.00 | 61.89 | -20.89 | 19.59 | Line | - | 21.41 | 9.68 | 0.01 | 9.90 |
| AV | 246.077k | 36.44 | 51.89 | -15.45 | 19.59 | Line | "Worst" | 16.85 | 9.68 | 0.01 | 9.90 |
| QP | 492.876k | 29.80 | 56.11 | -26.31 | 19.58 | Line | - | 10.22 | 9.67 | 0.03 | 9.88 |
| AV | 492.876k | 25.41 | 46.11 | -20.70 | 19.58 | Line | - | 5.83 | 9.67 | 0.03 | 9.88 |
| QP | 752.508k | 25.41 | 56.00 | -30.59 | 19.54 | Line | - | 5.87 | 9.67 | 0.04 | 9.83 |
| AV | 752.508k | 18.12 | 46.00 | -27.88 | 19.54 | Line | - | -1.42 | 9.67 | 0.04 | 9.83 |
| QP | 2.176M | 30.85 | 56.00 | -25.15 | 19.57 | Line | - | 11.28 | 9.68 | 0.08 | 9.81 |
| AV | 2.176M | 23.75 | 46.00 | -22.25 | 19.57 | Line | - | 4.18 | 9.68 | 0.08 | 9.81 |
| QP | 17.208M | 28.03 | 60.00 | -31.97 | 19.85 | Line | - | 8.18 | 9.68 | 0.27 | 9.90 |
| AV | 17.208M | 23.15 | 50.00 | -26.85 | 19.85 | Line | - | 3.30 | 9.68 | 0.27 | 9.90 |
| QP | 25.044M | 26.64 | 60.00 | -33.36 | 19.84 | Line | - | 6.80 | 9.59 | 0.35 | 9.90 |
| AV | 25.044M | 20.16 | 50.00 | -29.84 | 19.84 | Line | - | 0.32 | 9.59 | 0.35 | 9.90 |

## Conducted Emissions at Powerline_Mode 1




| Type | Freq | Level | Limit | Margin | Factor | Condition | Comment | Raw | LISN | CL | AT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV) | (dBuV) | (dB) | (dB) | | | (dBuV) | (dB) | (dB) | (dB) |
| QP | 193.664k | 43.27 | 63.88 | -20.61 | 19.59 | Neutral | - | 23.68 | 9.68 | 0.01 | 9.90 |
| AV | 193.664k | 37.44 | 53.88 | -16.44 | 19.59 | Neutral | "Worst" | 17.85 | 9.68 | 0.01 | 9.90 |
| QP | 213.989k | 41.38 | 63.06 | -21.68 | 19.59 | Neutral | - | 21.79 | 9.68 | 0.01 | 9.90 |
| AV | 213.989k | 34.99 | 53.06 | -18.07 | 19.59 | Neutral | - | 15.40 | 9.68 | 0.01 | 9.90 |
| QP | 387.896k | 31.90 | 58.10 | -26.20 | 19.59 | Neutral | - | 12.31 | 9.67 | 0.02 | 9.90 |
| AV | 387.896k | 25.00 | 48.10 | -23.10 | 19.59 | Neutral | - | 5.41 | 9.67 | 0.02 | 9.90 |
| QP | 2.32M | 26.08 | 56.00 | -29.92 | 19.59 | Neutral | - | 6.49 | 9.68 | 0.09 | 9.82 |
| AV | 2.32M | 21.39 | 46.00 | -24.61 | 19.59 | Neutral | - | 1.80 | 9.68 | 0.09 | 9.82 |
| QP | 5.279M | 24.36 | 60.00 | -35.64 | 19.75 | Neutral | - | 4.61 | 9.70 | 0.15 | 9.90 |
| AV | 5.279M | 20.19 | 50.00 | -29.81 | 19.75 | Neutral | - | 0.44 | 9.70 | 0.15 | 9.90 |
| QP | 15.145M | 30.07 | 60.00 | -29.93 | 19.89 | Neutral | - | 10.18 | 9.74 | 0.25 | 9.90 |
| AV | 15.145M | 25.03 | 50.00 | -24.97 | 19.89 | Neutral | - | 5.14 | 9.74 | 0.25 | 9.90 |

**Summary**

| Mode | Max-N dB (Hz) | Max-OBW (Hz) | ITU-Code | Min-N dB (Hz) | Min-OBW (Hz) |
|---|---|---|---|---|---|
| 2.4-2.4835GHz | - | - | - | - | - |
| BT-BR(1Mbps) | 936.25k | 880.81k | 881KF1D | 936.25k | 877.061k |
| BT-EDR(2Mbps) | 1.333M | 1.217M | 1M22G1D | 1.325M | 1.207M |
| BT-EDR(3Mbps) | 1.326M | 1.216M | 1M22G1D | 1.321M | 1.211M |

Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

## Result

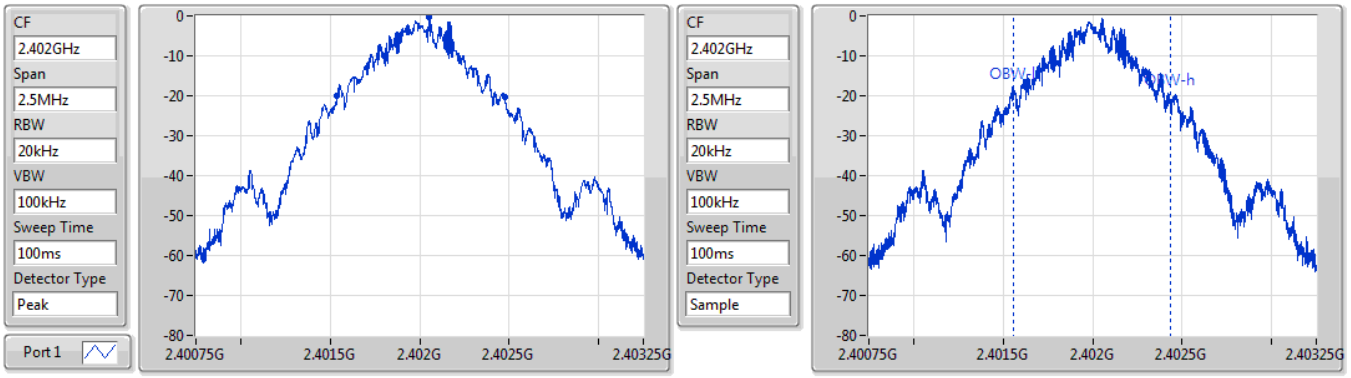
| Mode | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) |
|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 936.25k | 880.81k |
| 2440MHz | Pass | Inf | 936.25k | 879.56k |
| 2480MHz | Pass | Inf | 936.25k | 877.061k |
| BT-EDR(2Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 1.325M | 1.207M |
| 2440MHz | Pass | Inf | 1.33M | 1.216M |
| 2480MHz | Pass | Inf | 1.333M | 1.217M |
| BT-EDR(3Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 1.323M | 1.213M |
| 2440MHz | Pass | Inf | 1.321M | 1.216M |
| 2480MHz | Pass | Inf | 1.326M | 1.211M |

Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

## BT-BR(1Mbps) EBW-FS

### 2402MHz

18/11/2020

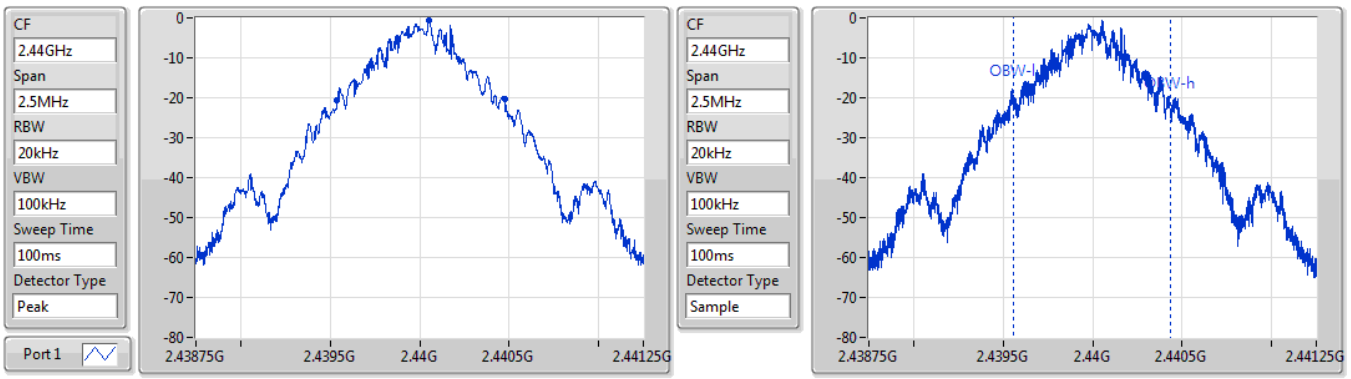



| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 936.25k | 2.40154G | 2.402476G | 880.81k | 2.401556G | 2.402437G | Inf | 1 |

## BT-BR(1Mbps) EBW-FS

### 2440MHz

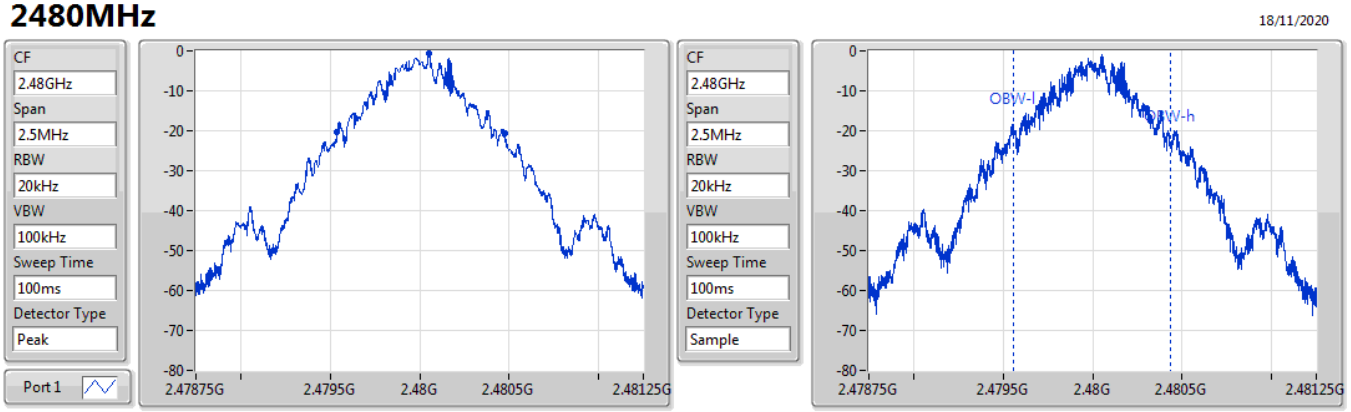
18/11/2020




| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 936.25k | 2.439539G | 2.440475G | 879.56k | 2.439555G | 2.440435G | Inf | 1 |

## BT-BR(1Mbps) EBW-FS

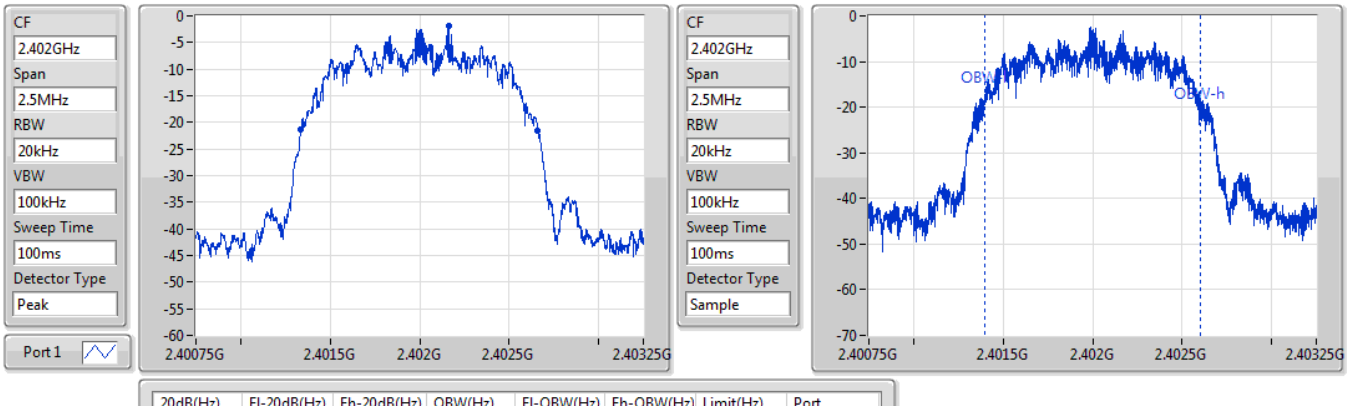
### 2480MHz




| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 936.25k | 2.479539G | 2.480475G | 877.061k | 2.479556G | 2.480434G | Inf | 1 |

## BT-EDR(2Mbps) EBW-FS

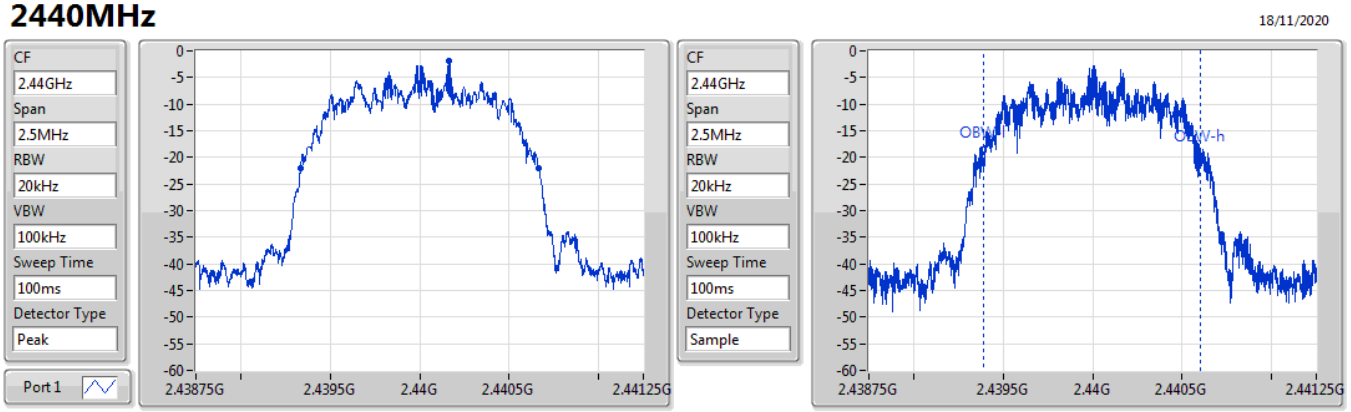
### 2402MHz




| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.325M | 2.401336G | 2.402661G | 1.207M | 2.401397G | 2.402603G | Inf | 1 |

## BT-EDR(2Mbps) EBW-FS

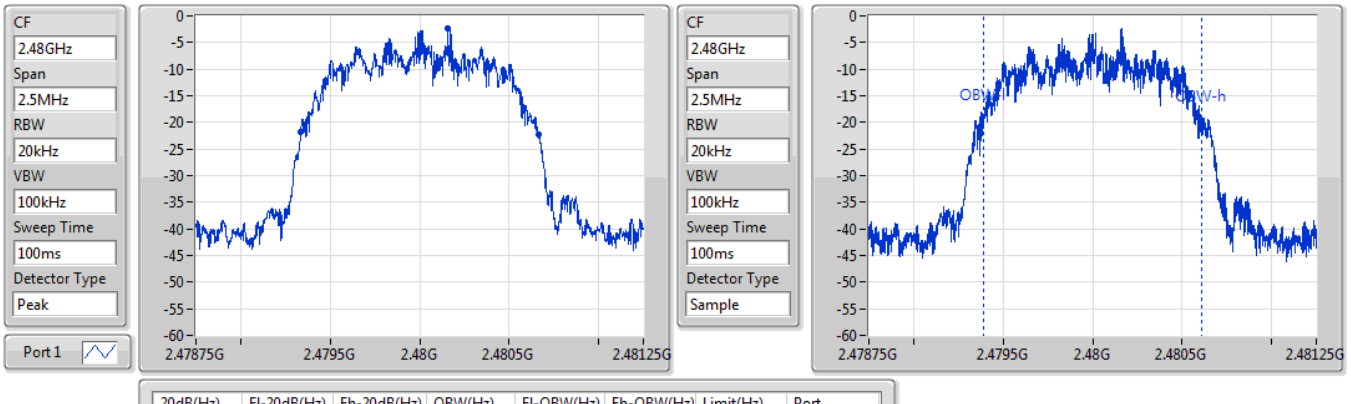
### 2440MHz




| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.33M | 2.439335G | 2.440665G | 1.216M | 2.439389G | 2.440605G | Inf | 1 |

## BT-EDR(2Mbps) EBW-FS

### 2480MHz

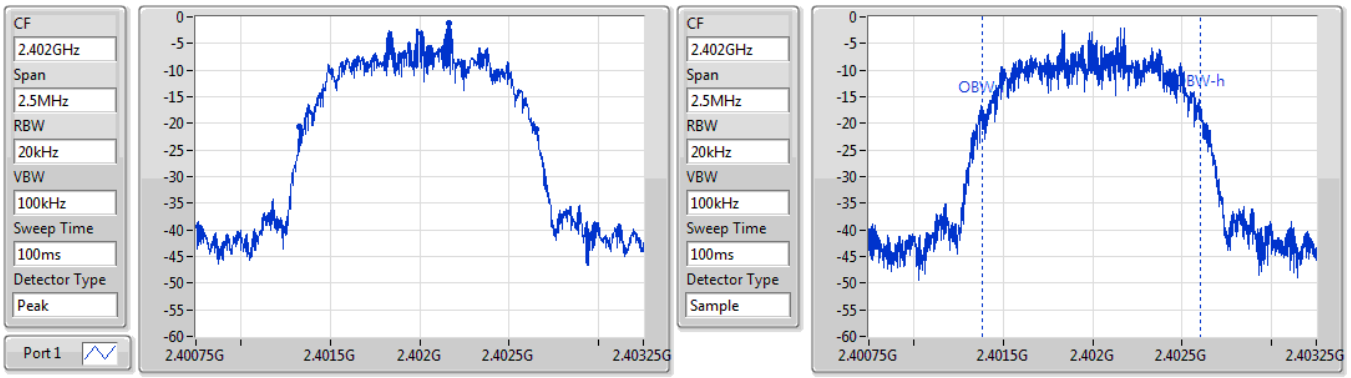



| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.333M | 2.479335G | 2.480668G | 1.217M | 2.47939G | 2.480607G | Inf | 1 |

## BT-EDR(3Mbps) EBW-FS

### 2402MHz

18/11/2020

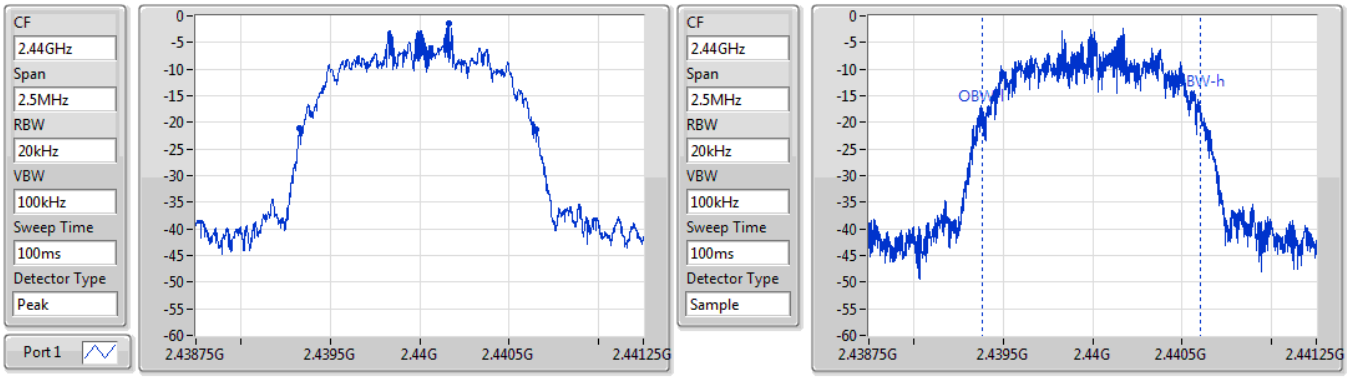



| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.323M | 2.401331G | 2.402654G | 1.213M | 2.401387G | 2.4026G | Inf | 1 |

## BT-EDR(3Mbps) EBW-FS

### 2440MHz

18/11/2020

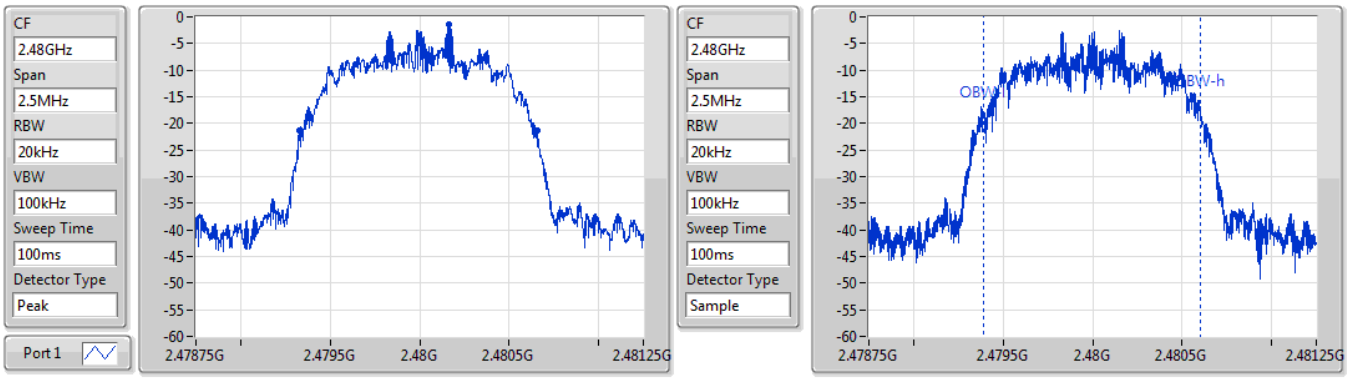



| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.321M | 2.43933G | 2.440651G | 1.216M | 2.439384G | 2.4406G | Inf | 1 |

**BT-EDR(3Mbps)** **EBW-FS**

**2480MHz**

18/11/2020




| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|---|---|---|---|---|---|---|---|
| 1.326M | 2.47933G | 2.480656G | 1.211M | 2.479389G | 2.4806G | Inf | 1 |

**Summary**

| Mode | Max-Space (Hz) | Min-Space (Hz) |
|---|---|---|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 1.0005M | 999k |
| BT-EDR(2Mbps) | 1.002M | 997.5k |
| BT-EDR(3Mbps) | 1.002M | 999k |

**Result**

| Mode | Result | Fl (Hz) | Fh (Hz) | Ch.Space (Hz) | Limit (Hz) |
|---|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.402161G | 2.40316G | 999k | 623.5425k |
| 2440MHz | Pass | 2.440161G | 2.441162G | 1.0005M | 623.5425k |
| 2480MHz | Pass | 2.479161G | 2.48016G | 999k | 623.5425k |
| BT-EDR(2Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.402002G | 2.403004G | 1.002M | 882.45k |
| 2440MHz | Pass | 2.440001G | 2.441001G | 1.0005M | 885.78k |
| 2480MHz | Pass | 2.479005G | 2.480003G | 997.5k | 887.778k |
| BT-EDR(3Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.402161G | 2.403163G | 1.002M | 881.118k |
| 2440MHz | Pass | 2.44016G | 2.441162G | 1.002M | 879.786k |
| 2480MHz | Pass | 2.479163G | 2.480162G | 999k | 883.116k |

**BT-BR(1Mbps)** **Channel Separation-FS**

**2.402G/2.403GHz**


| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.402161G | 2.40316G | 999k | 623.5425k |

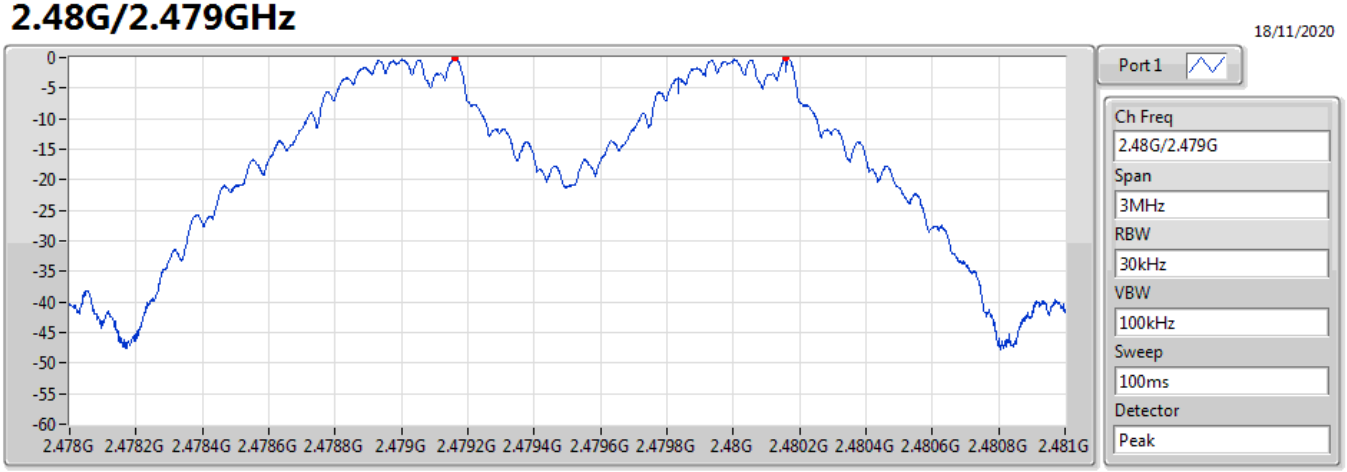
**BT-BR(1Mbps)** **Channel Separation-FS**

**2.44G/2.441GHz**


| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.440161G | 2.441162G | 1.0005M | 623.5425k |

## BT-BR(1Mbps) Channel Separation-FS

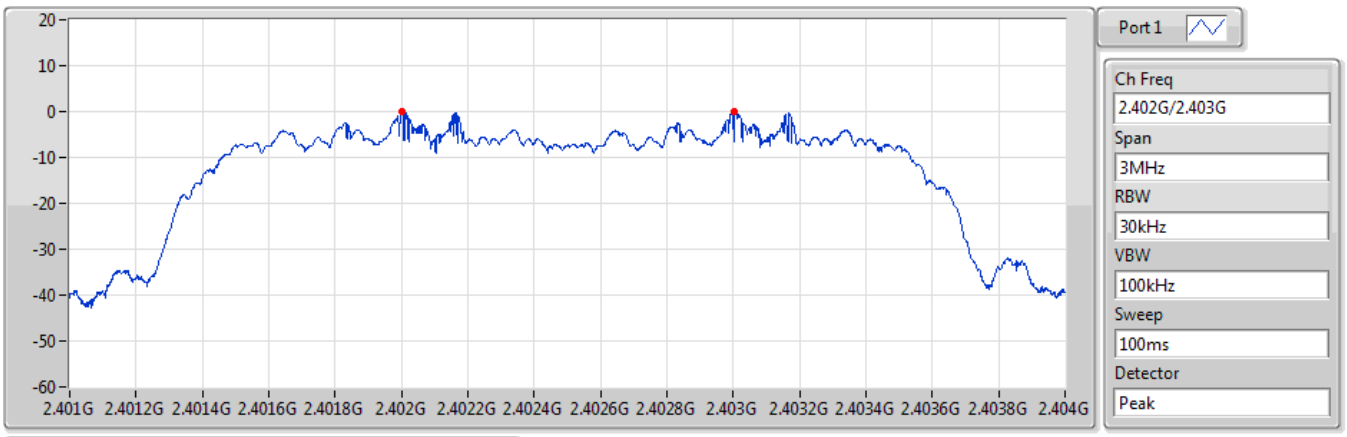
### 2.48G/2.479GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.479161G | 2.48016G | 999k | 623.5425k |

## BT-EDR(2Mbps) Channel Separation-FS

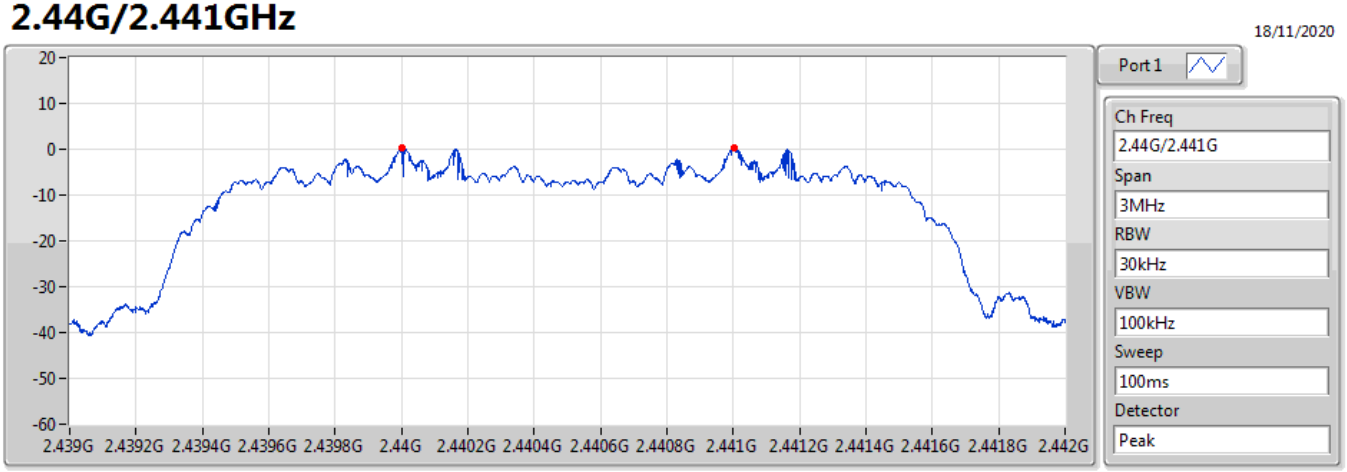
### 2.402G/2.403GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.402002G | 2.403004G | 1.002M | 882.45k |

## BT-EDR(2Mbps) Channel Separation-FS

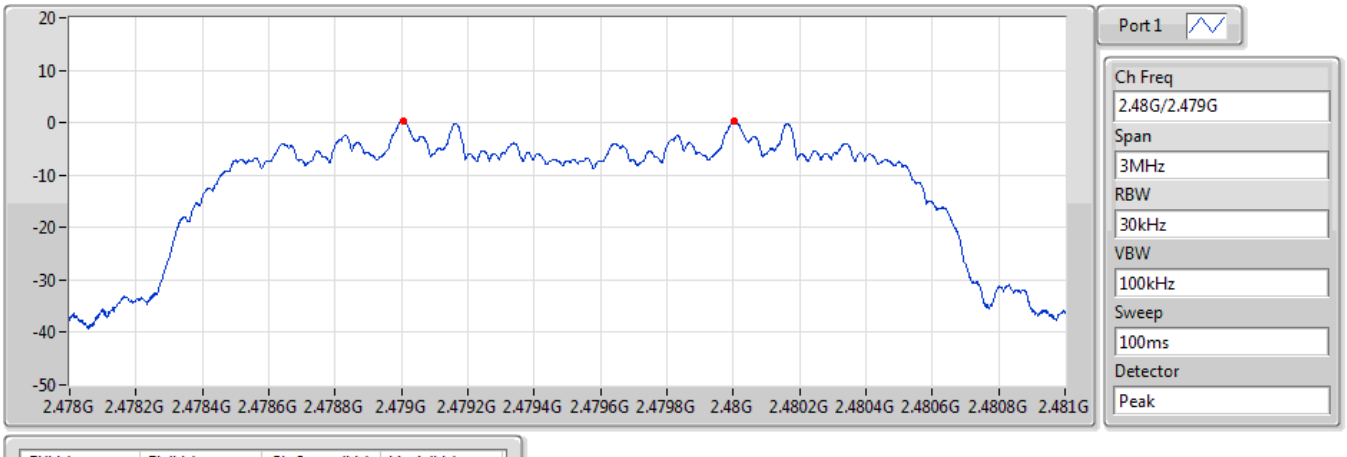
### 2.44G/2.441GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.440001G | 2.441001G | 1.0005M | 885.78k |

## BT-EDR(2Mbps) Channel Separation-FS

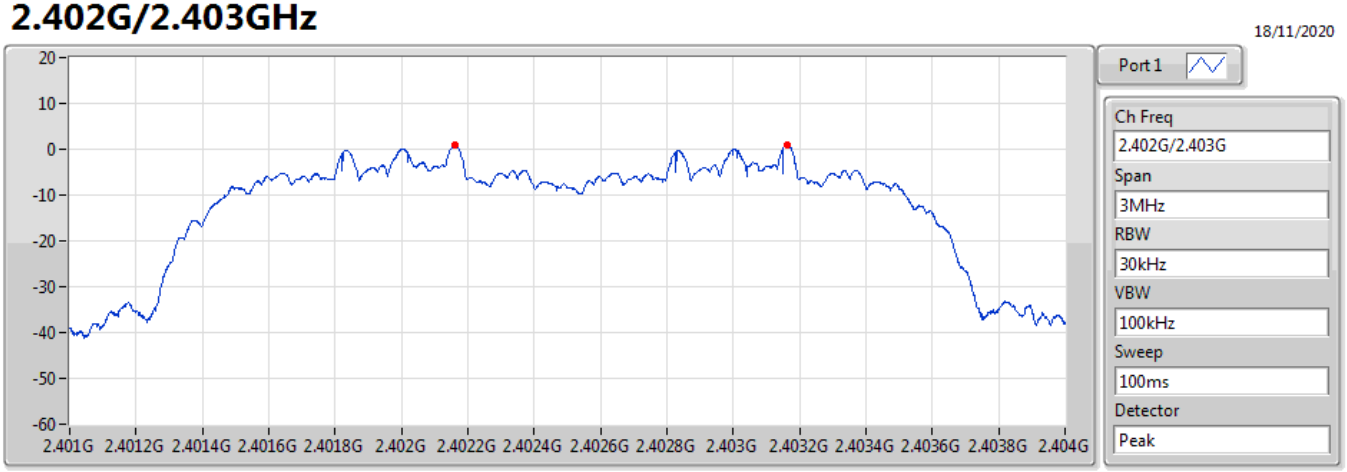
### 2.48G/2.479GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.479005G | 2.480003G | 997.5k | 887.778k |

## BT-EDR(3Mbps) Channel Separation-FS

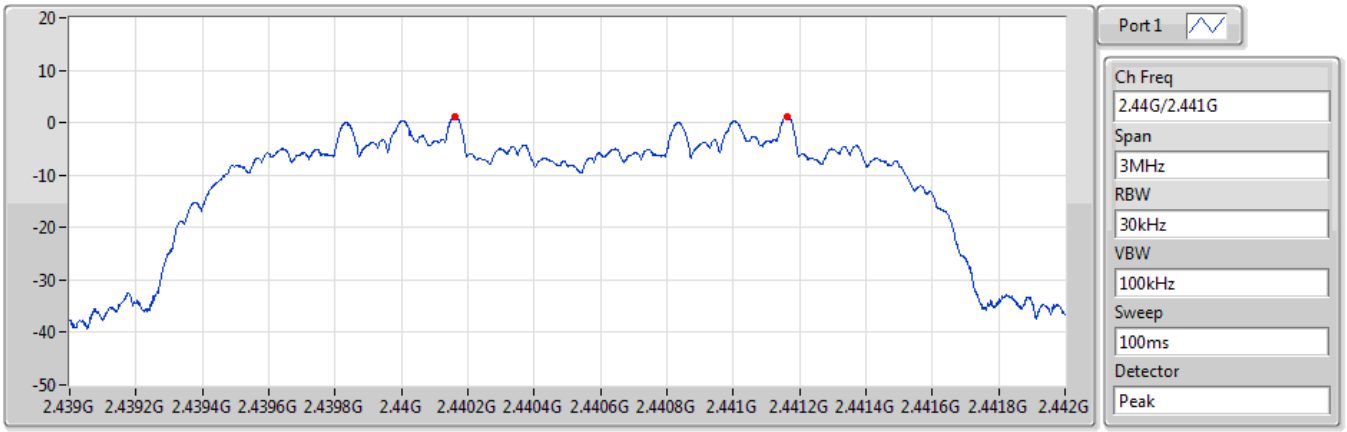
### 2.402G/2.403GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.402161G | 2.403163G | 1.002M | 881.118k |

## BT-EDR(3Mbps) Channel Separation-FS

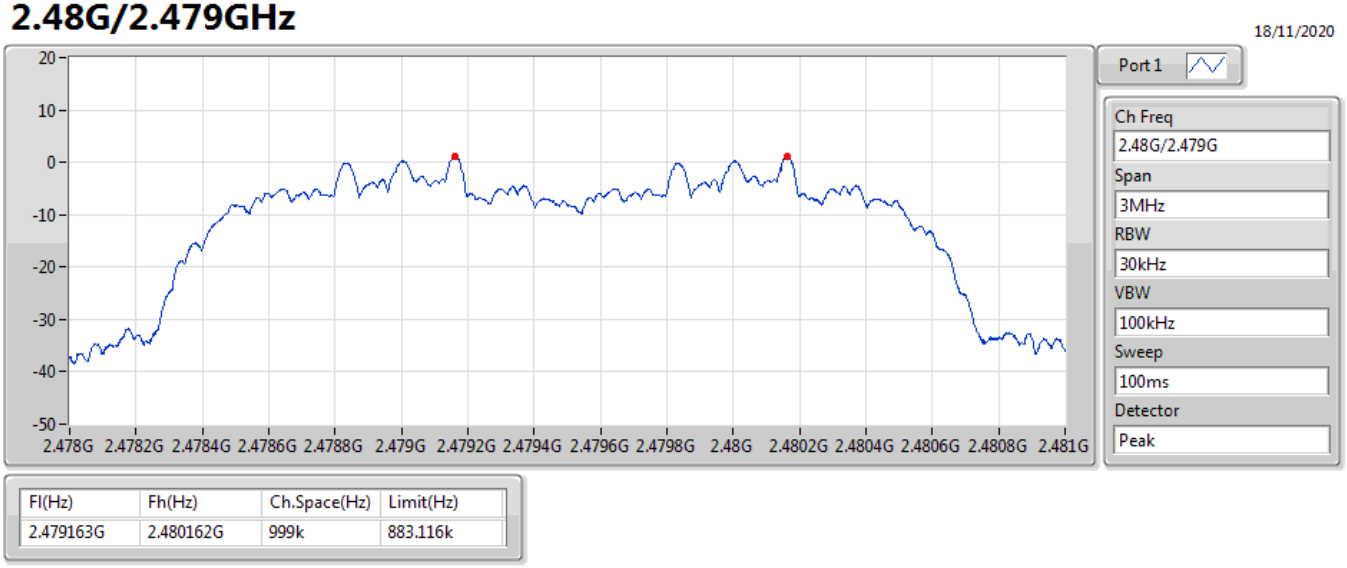
### 2.44G/2.441GHz




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.44016G | 2.441162G | 1.002M | 879.786k |

**BT-EDR(3Mbps)** **Channel Separation-FS**

**2.48G/2.479GHz**




| Fl(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|---|---|---|---|
| 2.479163G | 2.480162G | 999k | 883.116k |

**Summary**

| Mode | Power (dBm) | Power (W) |
|---|---|---|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 3.46 | 0.00222 |
| BT-EDR(2Mbps) | 5.75 | 0.00376 |
| BT-EDR(3Mbps) | 6.25 | 0.00422 |

**Result**

| Mode | Result | Gain (dBi) | Power (dBm) | Power Limit (dBm) |
|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 3.46 | 21.00 |
| 2440MHz | Pass | 0.73 | 3.28 | 21.00 |
| 2480MHz | Pass | 0.73 | 3.32 | 21.00 |
| BT-EDR(2Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 5.75 | 21.00 |
| 2440MHz | Pass | 0.73 | 5.45 | 21.00 |
| 2480MHz | Pass | 0.73 | 5.44 | 21.00 |
| BT-EDR(3Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 6.25 | 21.00 |
| 2440MHz | Pass | 0.73 | 5.90 | 21.00 |
| 2480MHz | Pass | 0.73 | 5.95 | 21.00 |

DG = Directional Gain; Port X = Port X output power

**Summary**

| Mode | Power (dBm) | Power (W) |
|---|---|---|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 3.14 | 0.00206 |
| BT-EDR(2Mbps) | 3.11 | 0.00205 |
| BT-EDR(3Mbps) | 3.12 | 0.00205 |

**Result**

| Mode | Result | Gain (dBi) | Power (dBm) | Power Limit (dBm) |
|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 3.14 | 21.00 |
| 2440MHz | Pass | 0.73 | 2.93 | 21.00 |
| 2480MHz | Pass | 0.73 | 2.93 | 21.00 |
| BT-EDR(2Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 3.11 | 21.00 |
| 2440MHz | Pass | 0.73 | 2.86 | 21.00 |
| 2480MHz | Pass | 0.73 | 2.84 | 21.00 |
| BT-EDR(3Mbps) | - | - | - | - |
| 2402MHz | Pass | 0.73 | 3.12 | 21.00 |
| 2440MHz | Pass | 0.73 | 2.84 | 21.00 |
| 2480MHz | Pass | 0.73 | 2.86 | 21.00 |

DG = Directional Gain; Port X = Port X output power

**Summary**

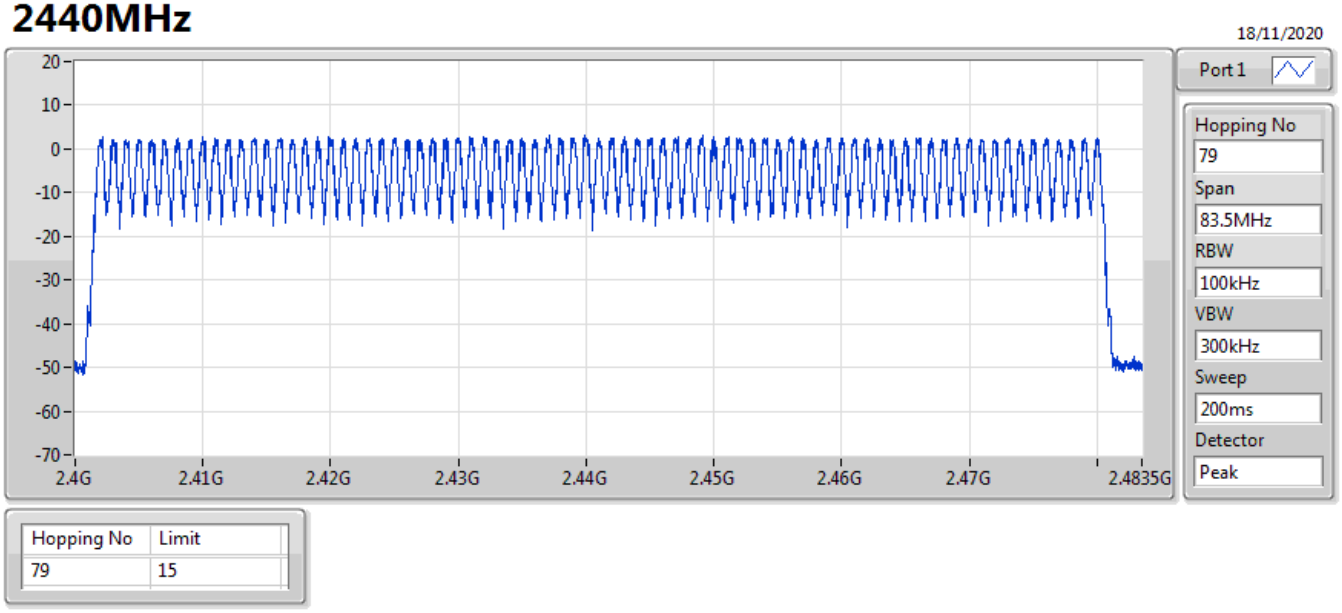
| Mode | Max-Hop No |
|---|---|
| 2.4-2.4835GHz | - |
| BT-BR(1Mbps) | 79 |
| BT-EDR(2Mbps) | 79 |
| BT-EDR(3Mbps) | 79 |

**Result**

| Mode | Result | Hopping No | Limit |
|---|---|---|---|
| BT-BR(1Mbps) | - | - | - |
| 2440MHz | Pass | 79 | 15 |
| BT-EDR(2Mbps) | - | - | - |
| 2440MHz | Pass | 79 | 15 |
| BT-EDR(3Mbps) | - | - | - |
| 2440MHz | Pass | 79 | 15 |

**BT-BR(1Mbps)** **Hopping-FS**

**2440MHz**

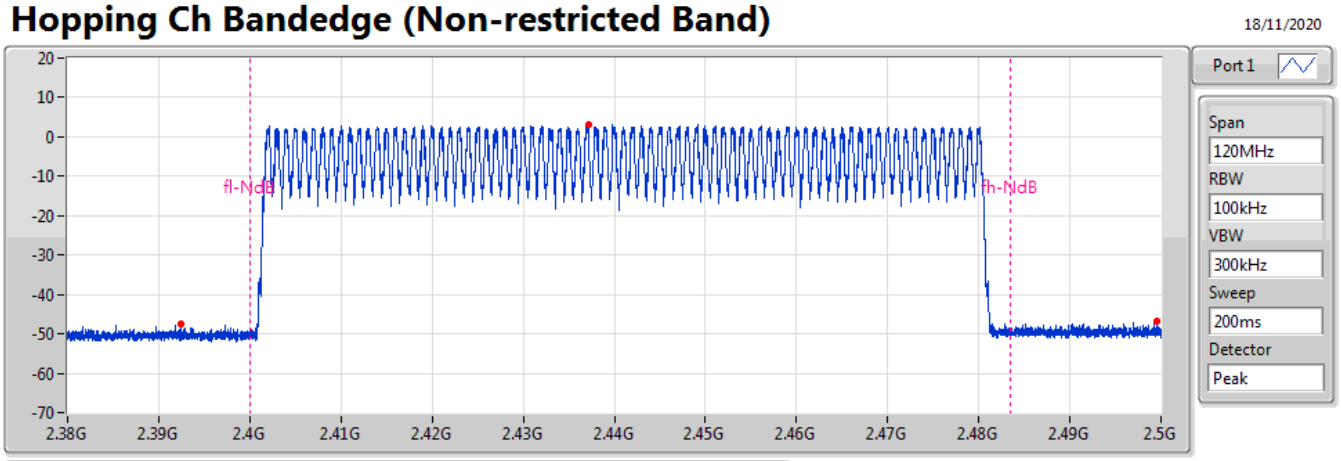



| Hopping No | Limit |
|---|---|
| 79 | 15 |

**BT-BR(1Mbps)**

**2440MHz**

**Hopping Ch Bandedge (Non-restricted Band)**

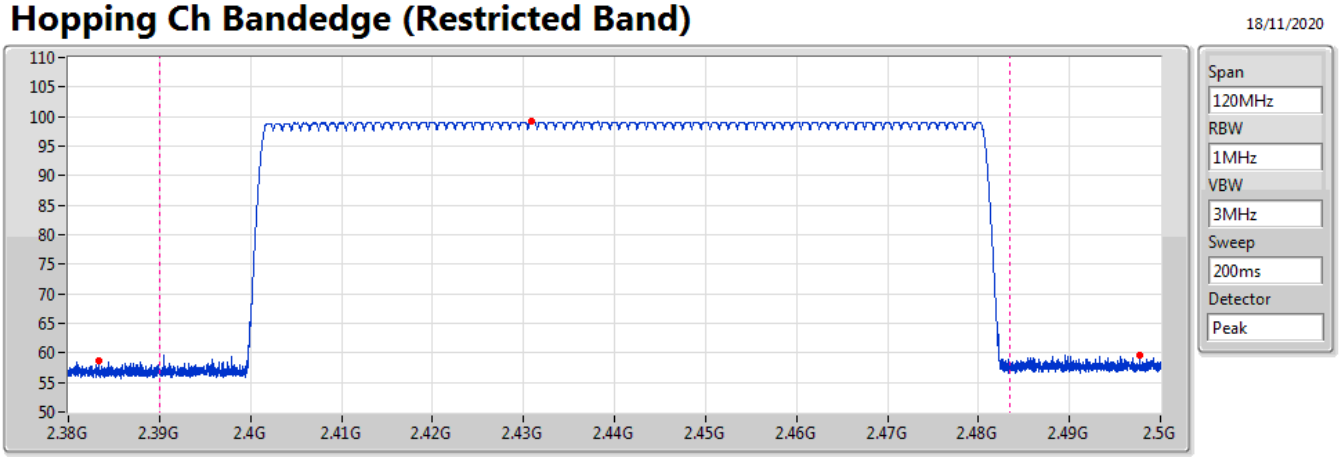



| Limit(dBm) | Ref(Hz) | Ref(dBm) | BE-l(Hz) | BE-l(dBm) | BE-h(Hz) | BE-h(dBm) |
|---|---|---|---|---|---|---|
| -16.91 | 2.437165G | 3.09 | 2.392465G | -47.61 | 2.49958G | -46.86 |

## BT-BR(1Mbps)

## 2440MHz

## Hopping Ch Bandedge (Restricted Band)

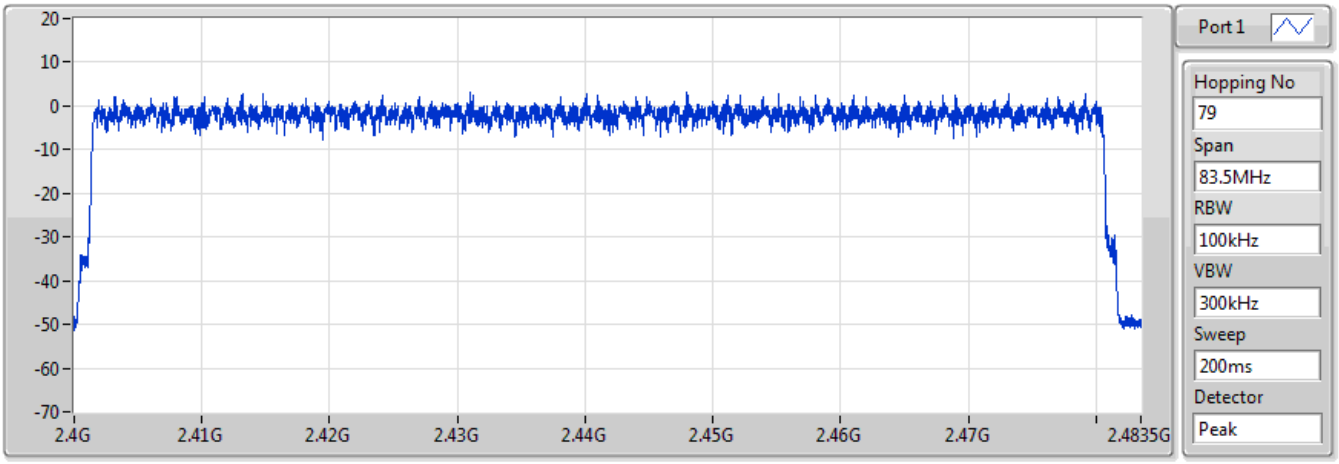



| Ref(Hz) | Ref(dBuV/m) | BE-l(Hz) | PK(dBuV/m) | AV(dBuV/m) | BE-h(Hz) | PK(dBuV/m) | AV(dBuV/m) | LimPK(dBuV/ | LimAV(dBuV/ | Tx On(ms) | DCF(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.43082G | 99.11 | 2.383375G | 58.7 | 28.6 | 2.497705G | 59.57 | 29.47 | 74 | 54 | 3.125 | -30.1 |

## BT-EDR(2Mbps)

## Hopping-FS

## 2440MHz

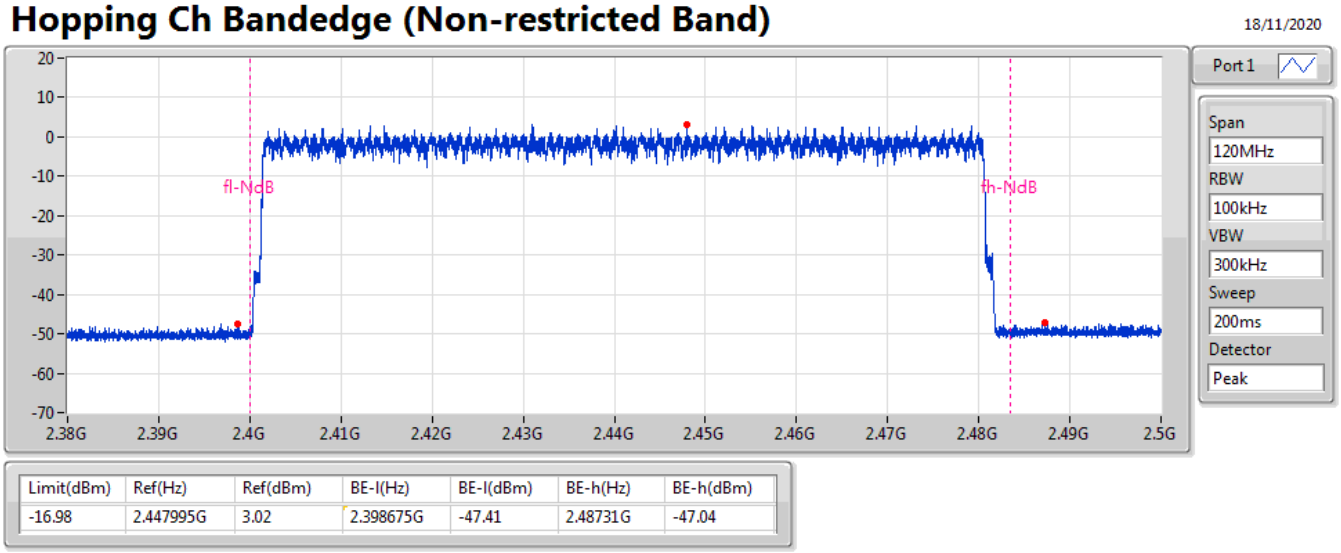



| Hopping No | Limit |
|---|---|
| 79 | 15 |

## BT-EDR(2Mbps)

## 2440MHz

## Hopping Ch Bandedge (Non-restricted Band)

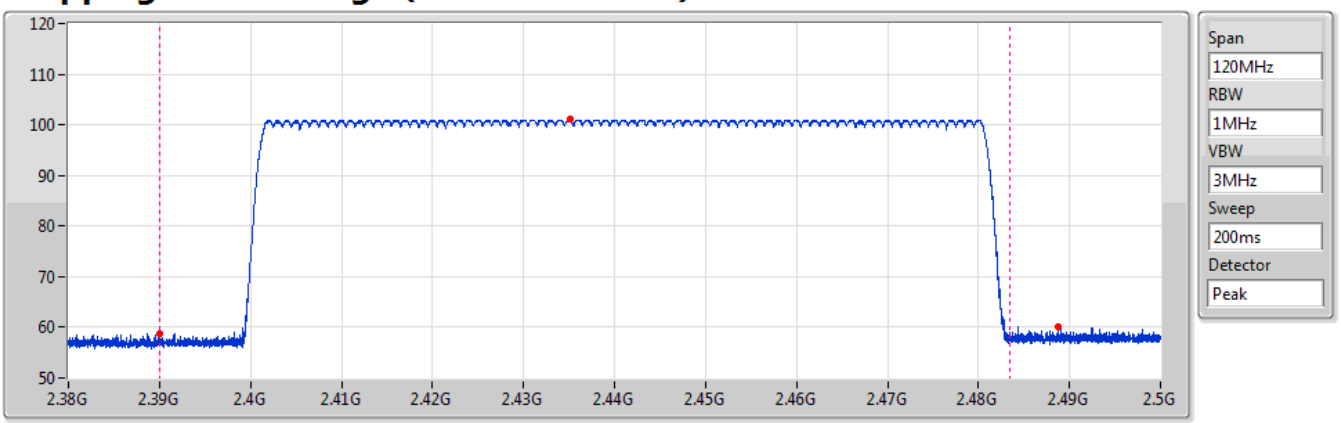



| Limit(dBm) | Ref(Hz) | Ref(dBm) | BE-l(Hz) | BE-l(dBm) | BE-h(Hz) | BE-h(dBm) |
|---|---|---|---|---|---|---|
| -16.98 | 2.447995G | 3.02 | 2.398675G | -47.41 | 2.48731G | -47.04 |

## BT-EDR(2Mbps)

## 2440MHz

## Hopping Ch Bandedge (Restricted Band)

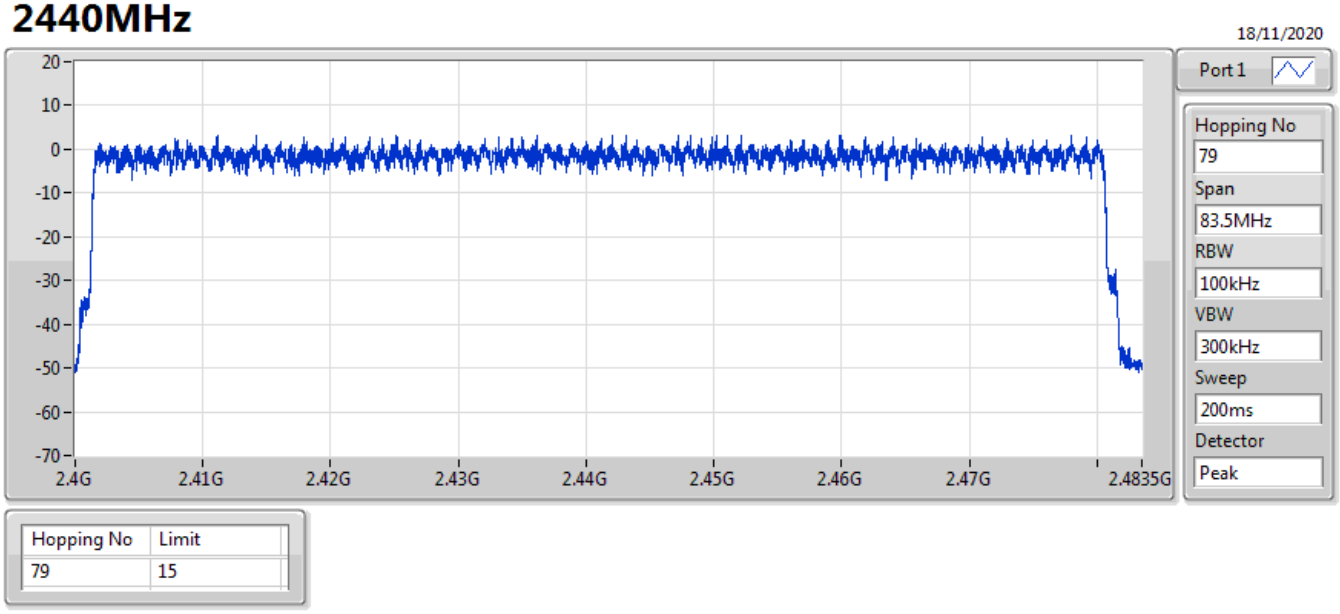



| Ref(Hz) | Ref(dBuV/m) | BE-l(Hz) | PK(dBuV/m) | AV(dBuV/m) | BE-h(Hz) | PK(dBuV/m) | AV(dBuV/m) | LimPK(dBuV/ | LimAV(dBuV/ | Tx On(ms) | DCF(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.435125G | 101 | 2.389975G | 58.65 | 28.55 | 2.48875G | 60.21 | 30.11 | 74 | 54 | 3.125 | -30.1 |

## BT-EDR(3Mbps)

## 2440MHz

**Hopping-FS**

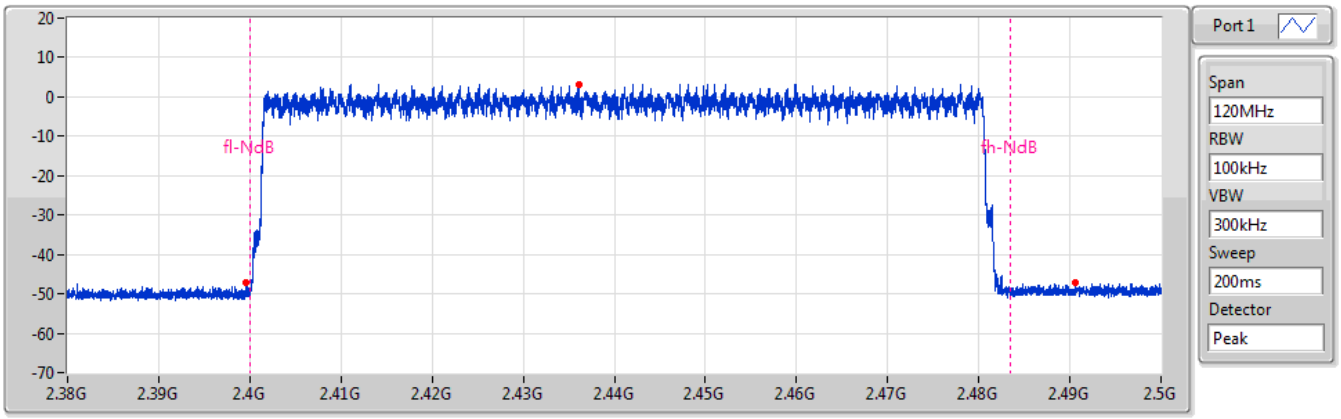



| Hopping No | Limit |
|---|---|
| 79 | 15 |

## BT-EDR(3Mbps)

## 2440MHz

## Hopping Ch Bandedge (Non-restricted Band)

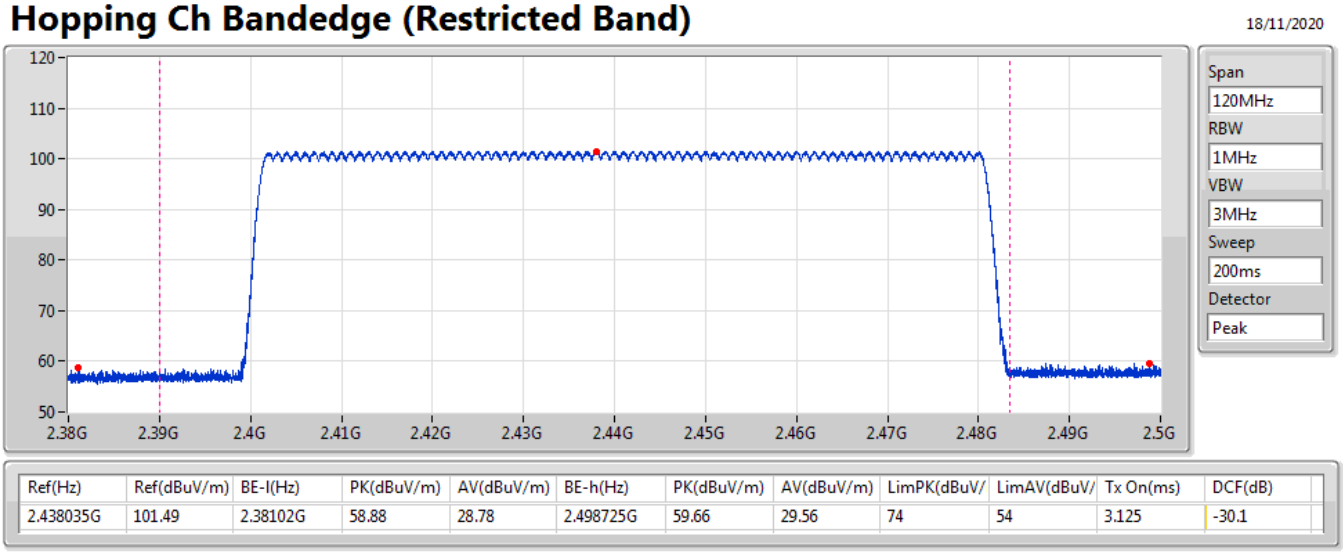



| Limit(dBm) | Ref(Hz) | Ref(dBm) | BE-l(Hz) | BE-l(dBm) | BE-h(Hz) | BE-h(dBm) |
|---|---|---|---|---|---|---|
| -16.81 | 2.43616G | 3.19 | 2.399575G | -46.98 | 2.49061G | -47.03 |

**BT-EDR(3Mbps)**

**2440MHz**

**Hopping Ch Bandedge (Restricted Band)**




| Ref(Hz) | Ref(dBuV/m) | BE-l(Hz) | PK(dBuV/m) | AV(dBuV/m) | BE-h(Hz) | PK(dBuV/m) | AV(dBuV/m) | LimPK(dBuV/ | LimAV(dBuV/ | Tx On(ms) | DCF(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.438035G | 101.49 | 2.38102G | 58.88 | 28.78 | 2.498725G | 59.66 | 29.56 | 74 | 54 | 3.125 | -30.1 |

**Summary**

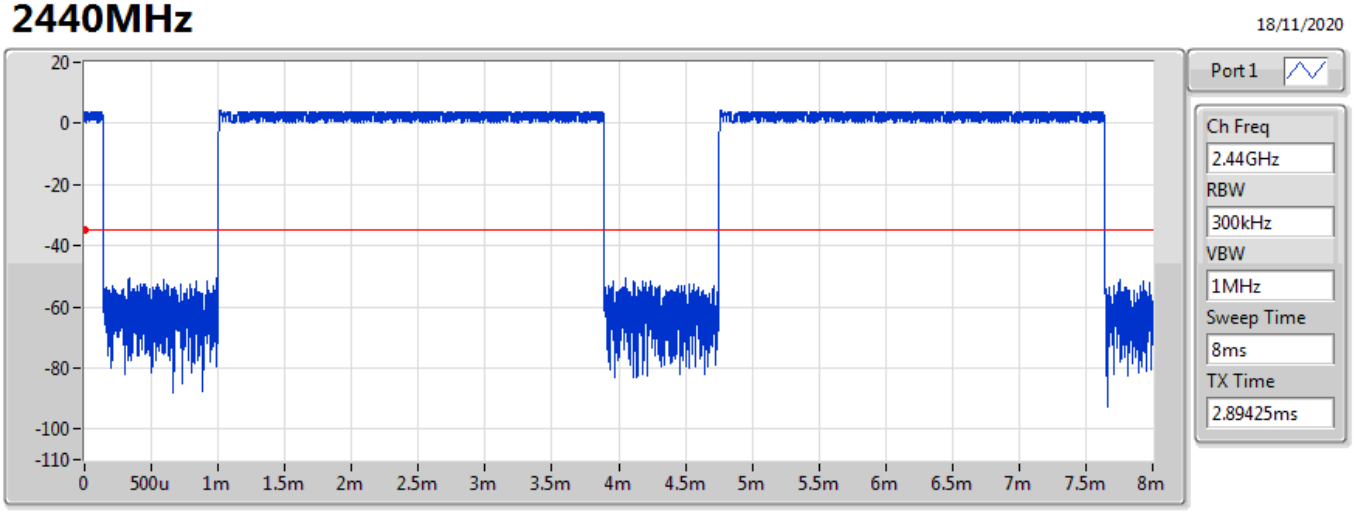
| Mode | Max-Dwell (s) |
|---|---|
| 2.4-2.4835GHz | - |
| BT-BR(1Mbps) | 308.52705m_DH5 |
| BT-EDR(2Mbps) | 309.2999m_DH5 |
| BT-EDR(3Mbps) | 309.37985m_DH5 |

**Result**

| Mode | Result | Period (s) | Dwell (s) | Limit (s) | Tx On (s) |
|---|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - | - |
| 2440MHz | Pass | 31.6 | 308.52705m_DH5 | 400m | 2.89425m |
| 2440MHz | Pass | 8 | 154.2502m_DH5-AFH | 400m | 2.894m |
| BT-EDR(2Mbps) | - | - | - | - | - |
| 2440MHz | Pass | 31.6 | 309.2999m_DH5 | 400m | 2.9015m |
| 2440MHz | Pass | 8 | 154.6766m_DH5-AFH | 400m | 2.902m |
| BT-EDR(3Mbps) | - | - | - | - | - |
| 2440MHz | Pass | 31.6 | 309.37985m_DH5 | 400m | 2.90225m |
| 2440MHz | Pass | 8 | 154.716575m_DH5-AFH | 400m | 2.90275m |

**BT-BR(1Mbps)** **Dwell-FS**

**2440MHz**

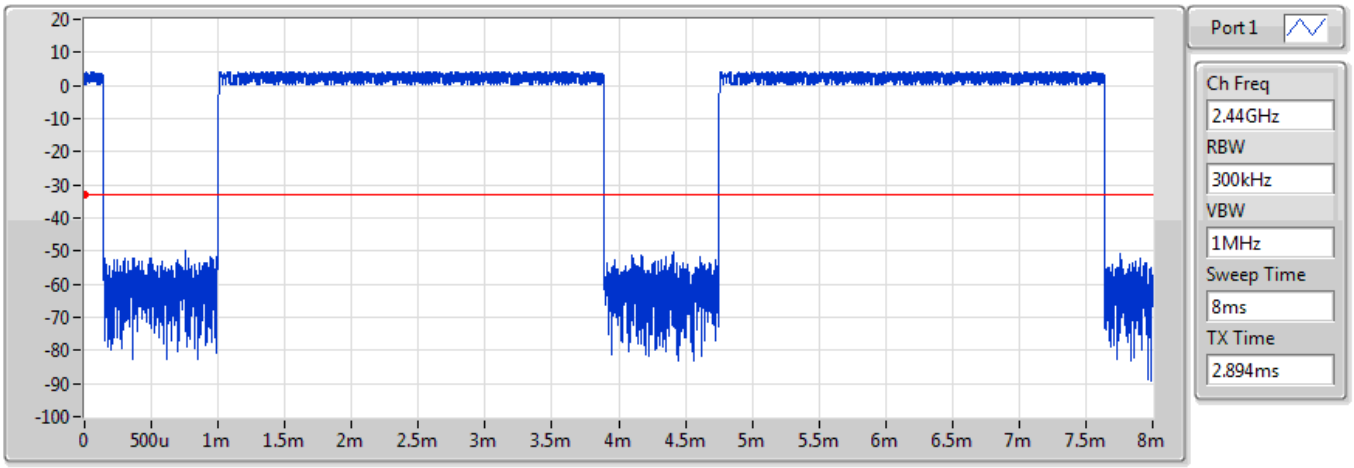



| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 31.6 | 308.52705m_DH5 | 400m | 2.89425m |

**DH5**

**BT-BR(1Mbps)** **Dwell-FS**

**2440MHz**

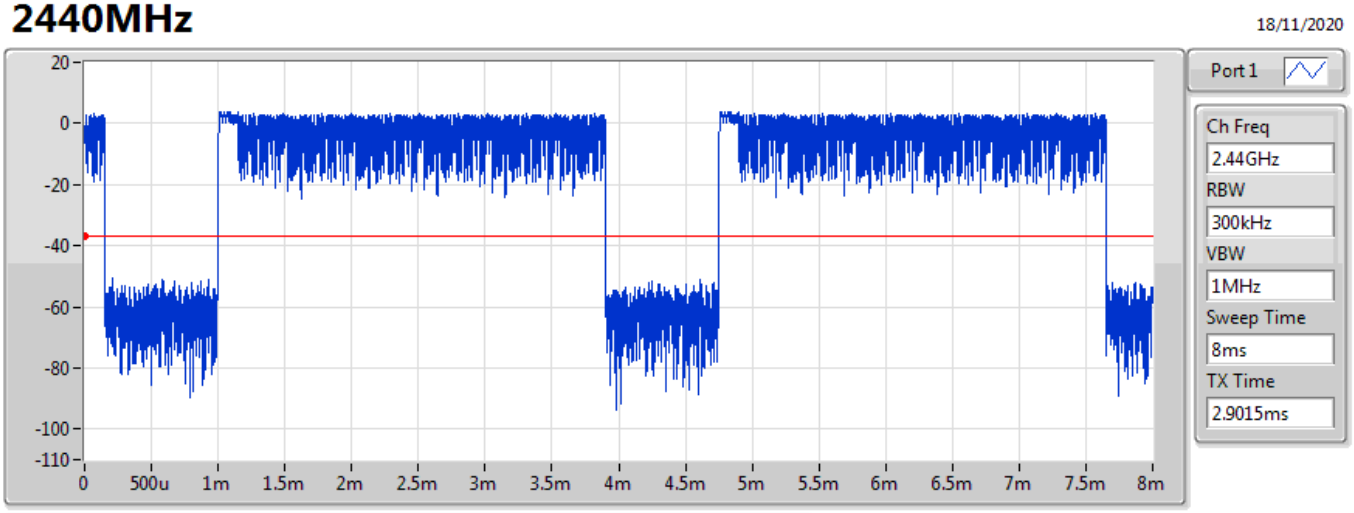



| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 8 | 154.2502m_DH5-AFH | 400m | 2.894m |

**DH5-AFH**

**BT-EDR(2Mbps)** **Dwell-FS**

**2440MHz**

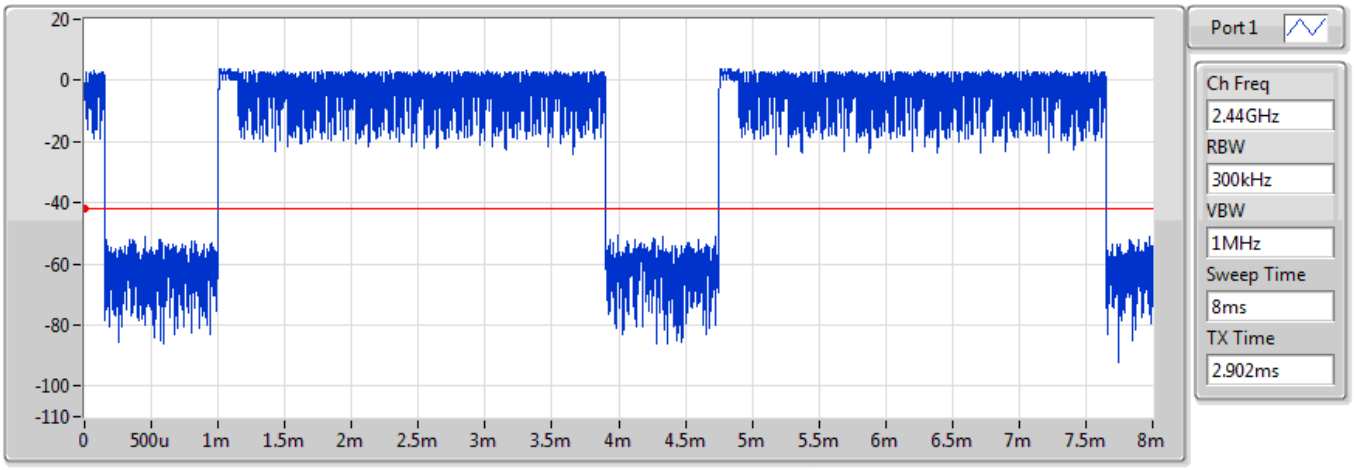



| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 31.6 | 309.2999m_DH5 | 400m | 2.9015m |

**DH5**

**BT-EDR(2Mbps)** **Dwell-FS**

**2440MHz**

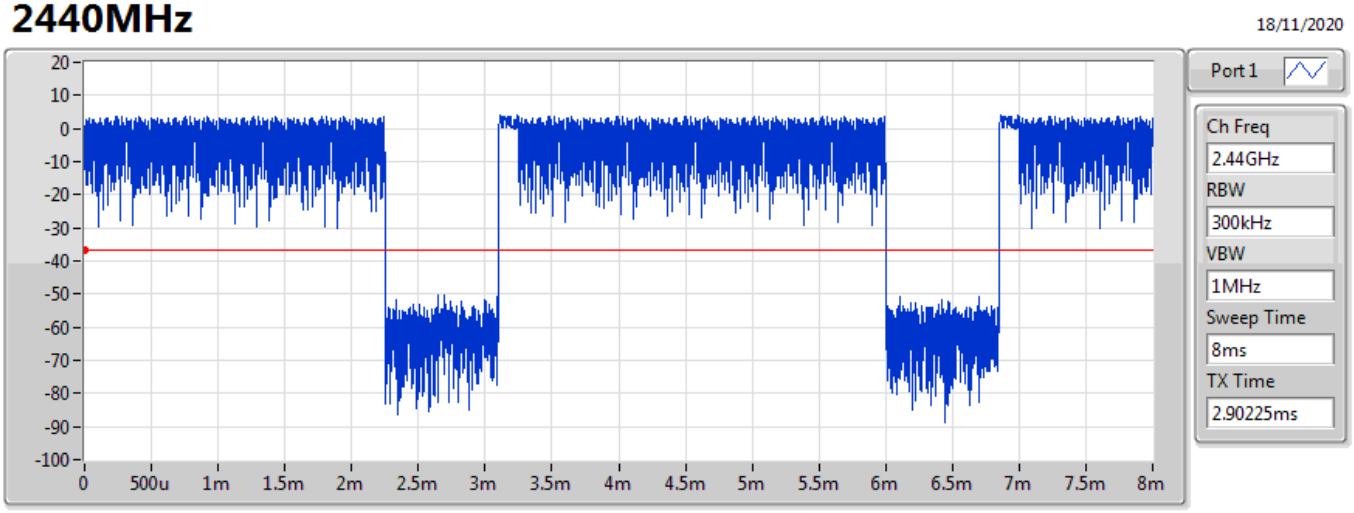



| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 8 | 154.6766m_DH5-AFH | 400m | 2.902m |

**DH5-AFH**

## BT-EDR(3Mbps) Dwell-FS

### 2440MHz

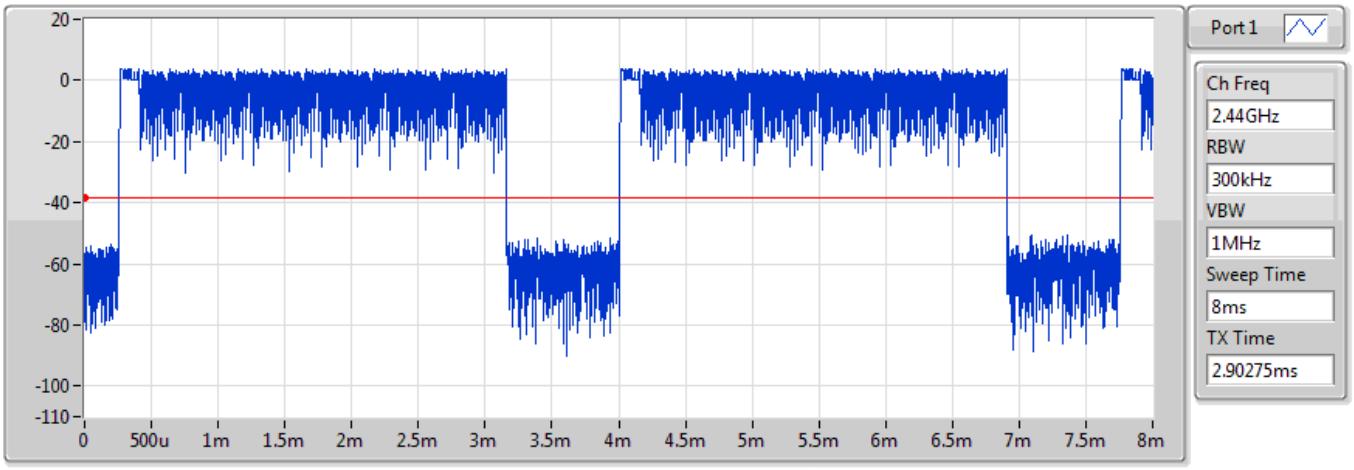



| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 31.6 | 309.37985m_DH5 | 400m | 2.90225m |

**DH5**

## BT-EDR(3Mbps) Dwell-FS

### 2440MHz




| Period(s) | Dwell(s) | Limit(s) | Tx On(s) |
|---|---|---|---|
| 8 | 154.716575m_DH5-AFI | 400m | 2.90275m |

**DH5-AFH**

## Summary

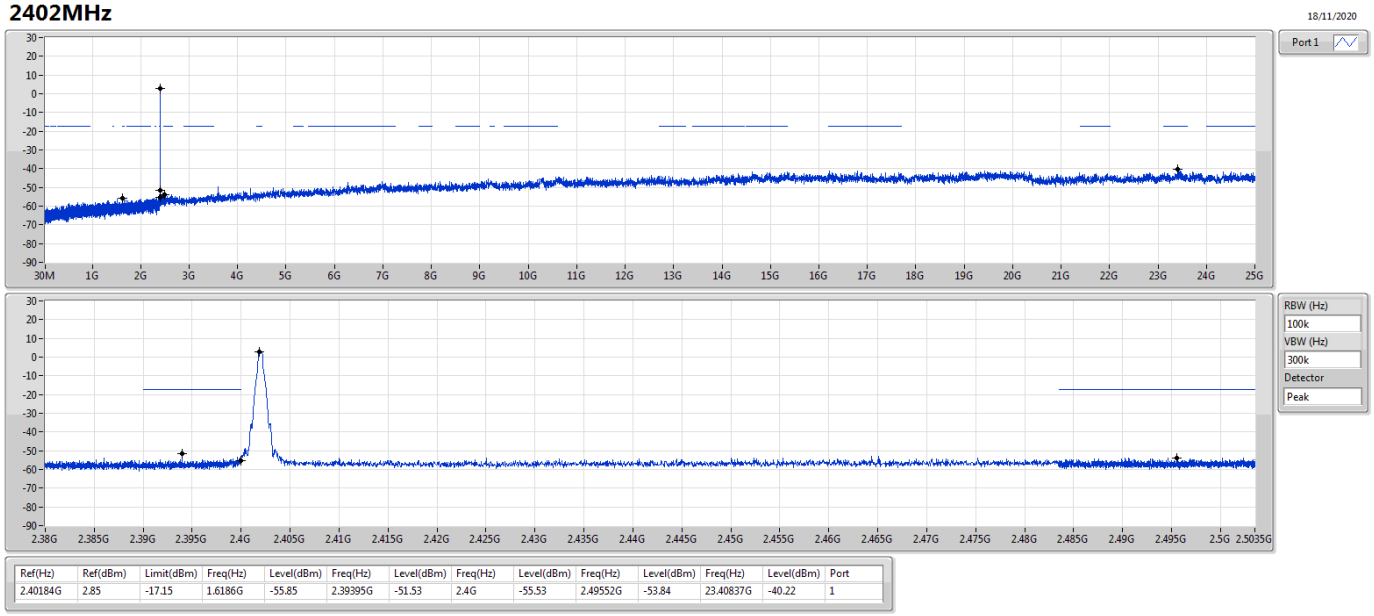
| Mode | Result | Ref (Hz) | Ref (dBm) | Limit (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4-2.4835GHz | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| BT-BR(1Mbps) | Pass | 2.47999G | 2.12 | -17.88 | 2.30568G | -55.33 | 2.39592G | -53.88 | 2.4835G | -54.12 | 2.49414G | -52.00 | 14.97219G | -39.74 | 1 |
| BT-EDR(2Mbps) | Pass | 2.44004G | 0.72 | -19.28 | 1.96053G | -54.56 | 2.39481G | -54.95 | 2.4G | -56.74 | 2.50249G | -53.04 | 24.12545G | -40.40 | 1 |
| BT-EDR(3Mbps) | Pass | 2.40213G | 3.01 | -16.99 | 2.15323G | -55.28 | 2.39997G | -48.72 | 2.4G | -48.68 | 2.5032G | -54.00 | 23.44212G | -40.81 | 1 |

## Result

| Mode | Result | Ref (Hz) | Ref (dBm) | Limit (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Freq (Hz) | Level (dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40184G | 2.85 | -17.15 | 1.6186G | -55.85 | 2.39395G | -51.53 | 2.4G | -55.53 | 2.49552G | -53.84 | 23.40837G | -40.22 | 1 |
| 2440MHz | Pass | 2.44004G | 2.18 | -17.82 | 2.15969G | -54.76 | 2.3975G | -54.65 | 2.4835G | -54.34 | 2.48429G | -53.55 | 23.12154G | -41.17 | 1 |
| 2480MHz | Pass | 2.47999G | 2.12 | -17.88 | 2.30568G | -55.33 | 2.39592G | -53.88 | 2.4835G | -54.12 | 2.49414G | -52.00 | 14.97219G | -39.74 | 1 |
| BT-EDR(2Mbps) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40196G | 2.86 | -17.14 | 2.10828G | -55.53 | 2.39994G | -52.17 | 2.4G | -52.21 | 2.50117G | -53.47 | 24.0214G | -41.18 | 1 |
| 2440MHz | Pass | 2.44004G | 0.72 | -19.28 | 1.96053G | -54.56 | 2.39481G | -54.95 | 2.4G | -56.74 | 2.50249G | -53.04 | 24.12545G | -40.40 | 1 |
| 2480MHz | Pass | 2.48003G | 2.51 | -17.49 | 2.18613G | -54.59 | 2.3945G | -55.06 | 2.4835G | -54.31 | 2.48802G | -51.82 | 16.27979G | -41.69 | 1 |
| BT-EDR(3Mbps) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40213G | 3.01 | -16.99 | 2.15323G | -55.28 | 2.39997G | -48.72 | 2.4G | -48.68 | 2.5032G | -54.00 | 23.44212G | -40.81 | 1 |
| 2440MHz | Pass | 2.44012G | 1.87 | -18.13 | 2.11739G | -55.31 | 2.39522G | -55.22 | 2.4835G | -55.83 | 2.49587G | -53.78 | 16.61443G | -41.13 | 1 |
| 2480MHz | Pass | 2.4802G | 2.76 | -17.24 | 2.15117G | -55.80 | 2.39623G | -54.84 | 2.4835G | -55.23 | 2.48802G | -49.14 | 15.31526G | -41.21 | 1 |

**BT-BR(1Mbps)** **CSENdB-FS**

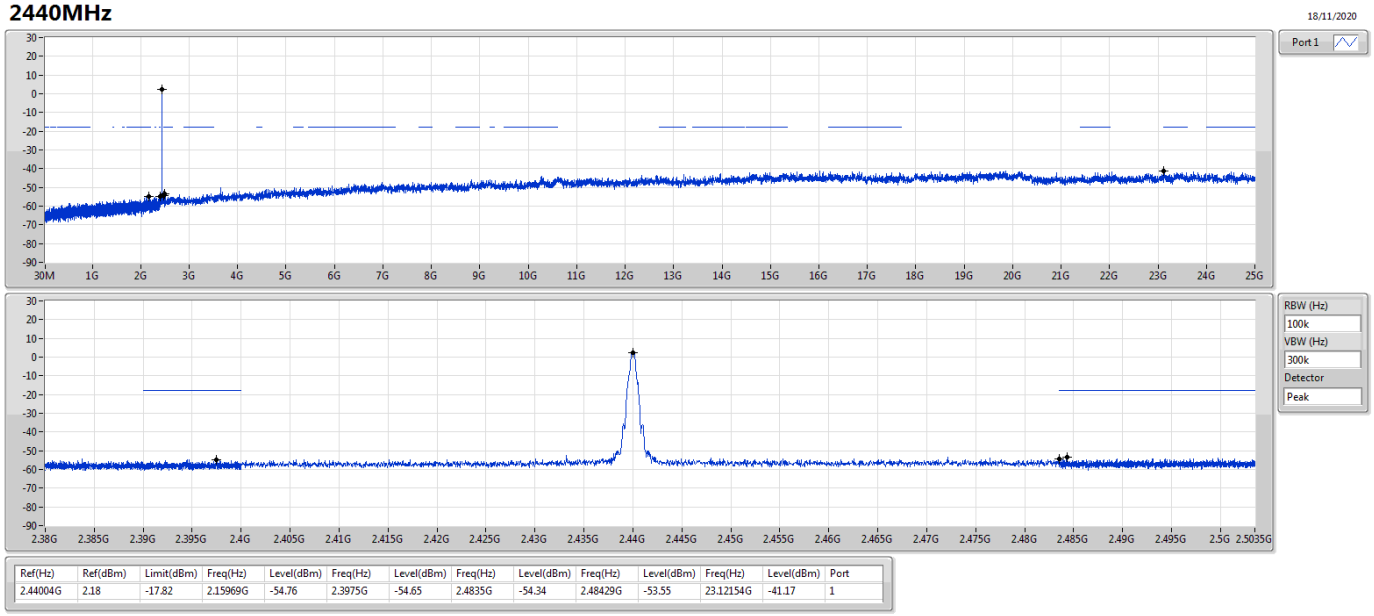
**2402MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.40184G | 2.85 | -17.15 | 1.6186G | -55.85 | 2.39395G | -51.53 | 2.4G | -55.53 | 2.49552G | -53.84 | 23.40837G | -40.22 | 1 |

**BT-BR(1Mbps)** **CSENdB-FS**

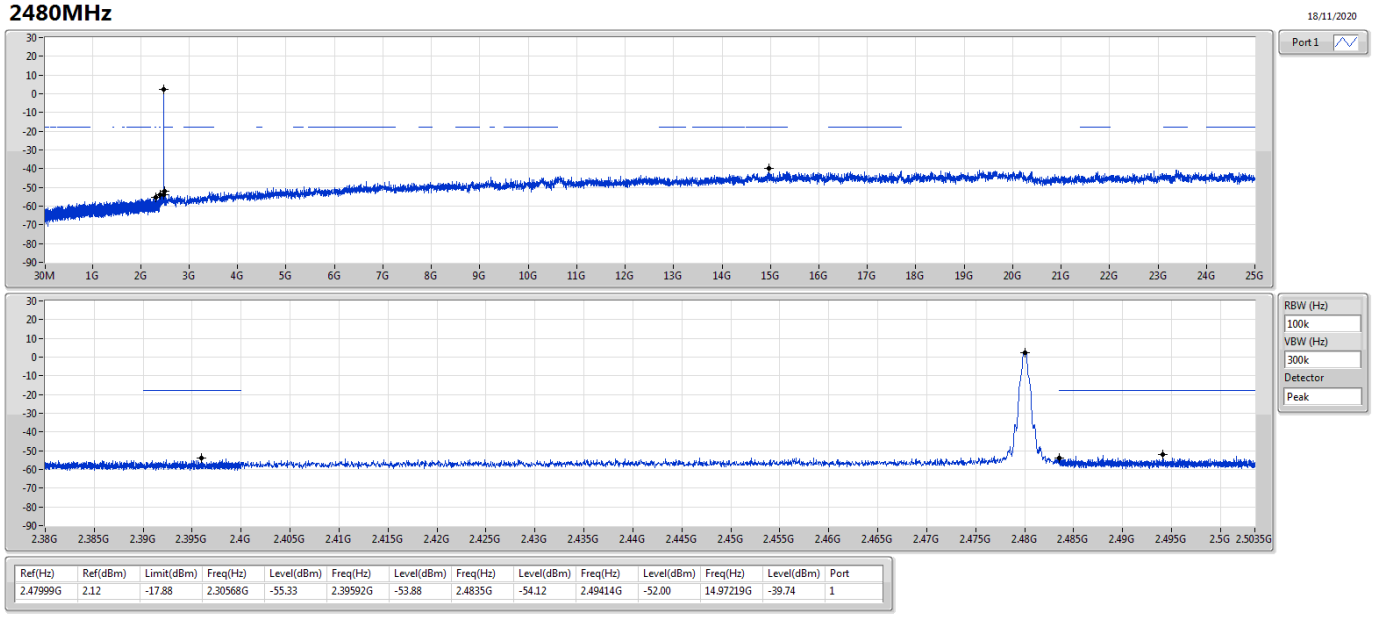
**2440MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.44004G | 2.18 | -17.82 | 2.15969G | -54.76 | 2.3975G | -54.65 | 2.4835G | -54.34 | 2.48429G | -53.55 | 23.12154G | -41.17 | 1 |

**BT-BR(1Mbps)** **CSENdB-FS**

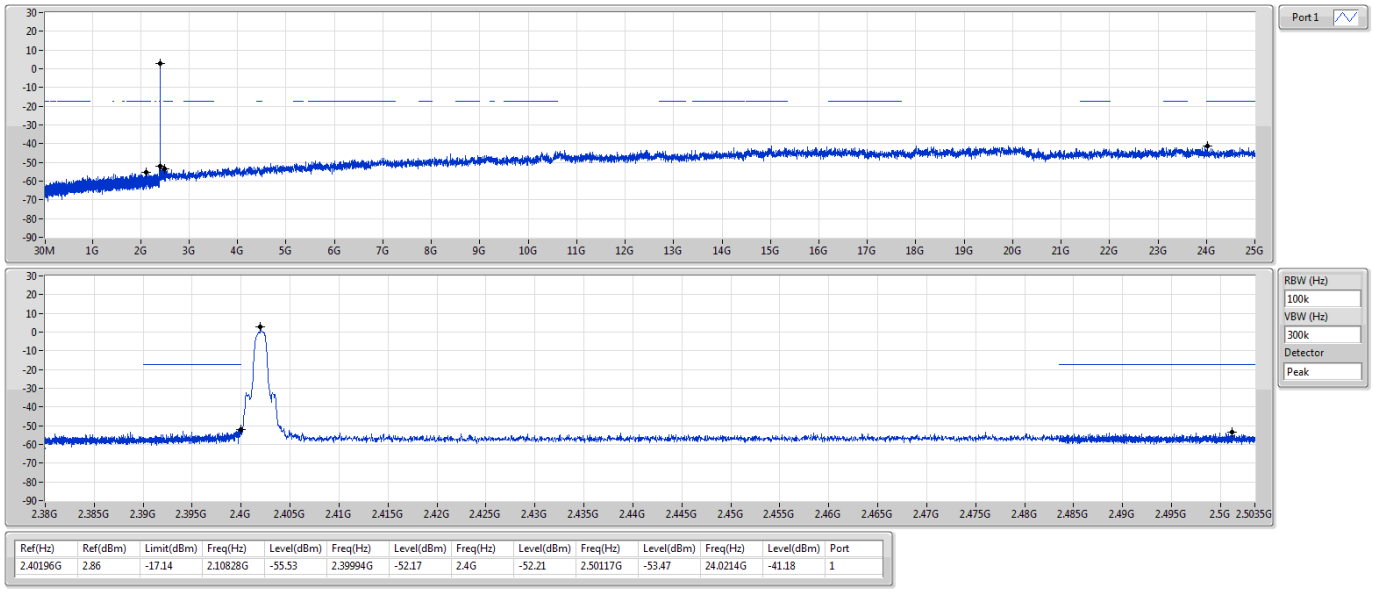
**2480MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.47999G | 2.12 | -17.88 | 2.30568G | -55.33 | 2.39592G | -53.88 | 2.4835G | -54.12 | 2.49414G | -52.00 | 14.97219G | -39.74 | 1 |

**BT-EDR(2Mbps)** **CSENdB-FS**

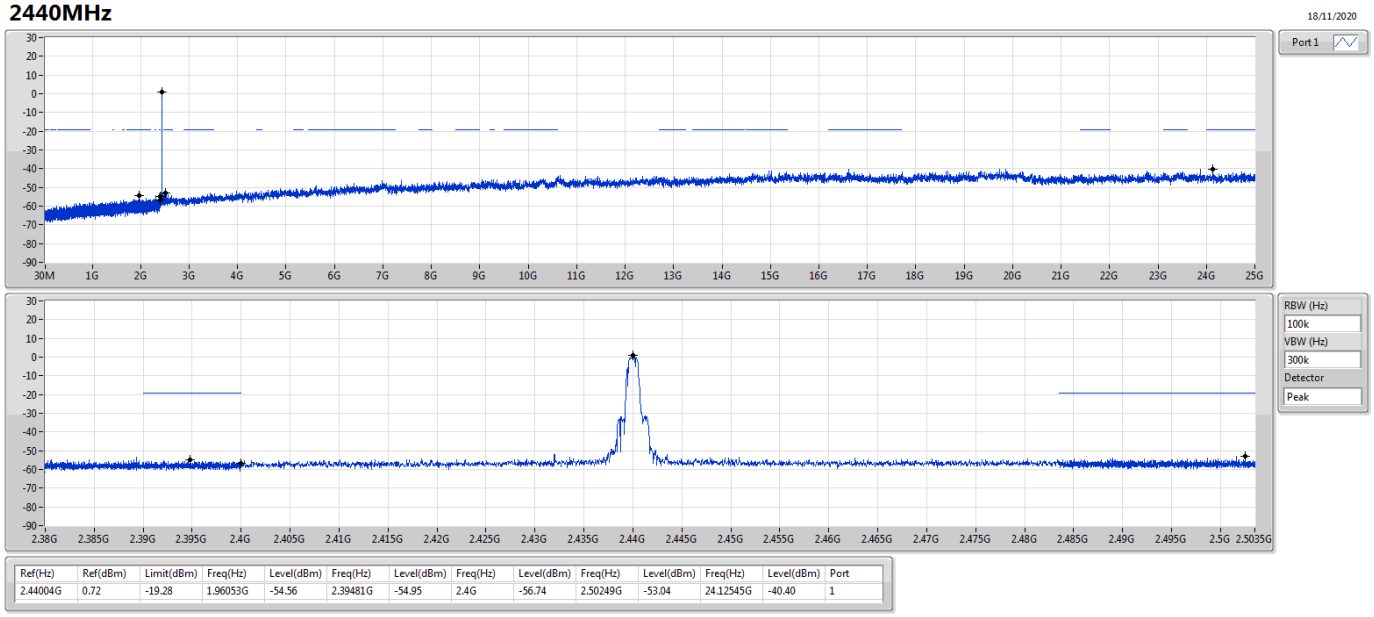
**2402MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.40196G | 2.86 | -17.14 | 2.10828G | -55.53 | 2.39994G | -52.17 | 2.4G | -52.21 | 2.50117G | -53.47 | 24.0214G | -41.18 | 1 |

**BT-EDR(2Mbps)** **CSENdB-FS**

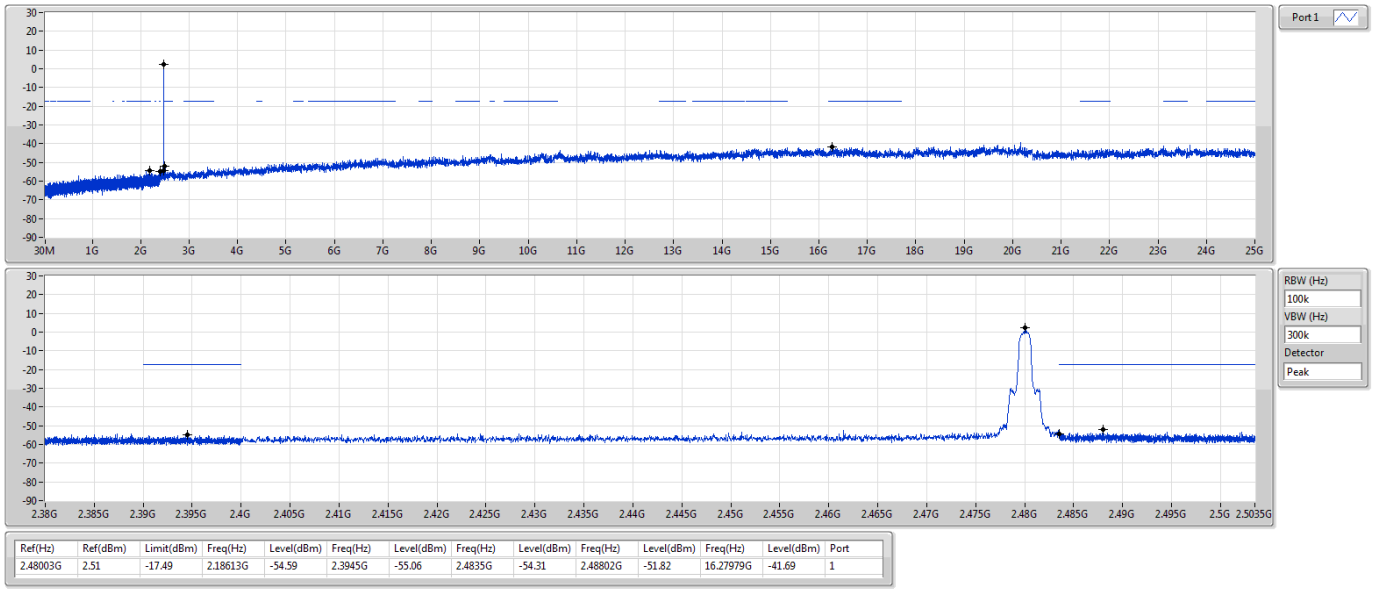
**2440MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.44004G | 0.72 | -19.28 | 1.96053G | -54.56 | 2.39481G | -54.95 | 2.4G | -56.74 | 2.50249G | -53.04 | 24.12545G | -40.40 | 1 |

**BT-EDR(2Mbps)** **CSENdB-FS**

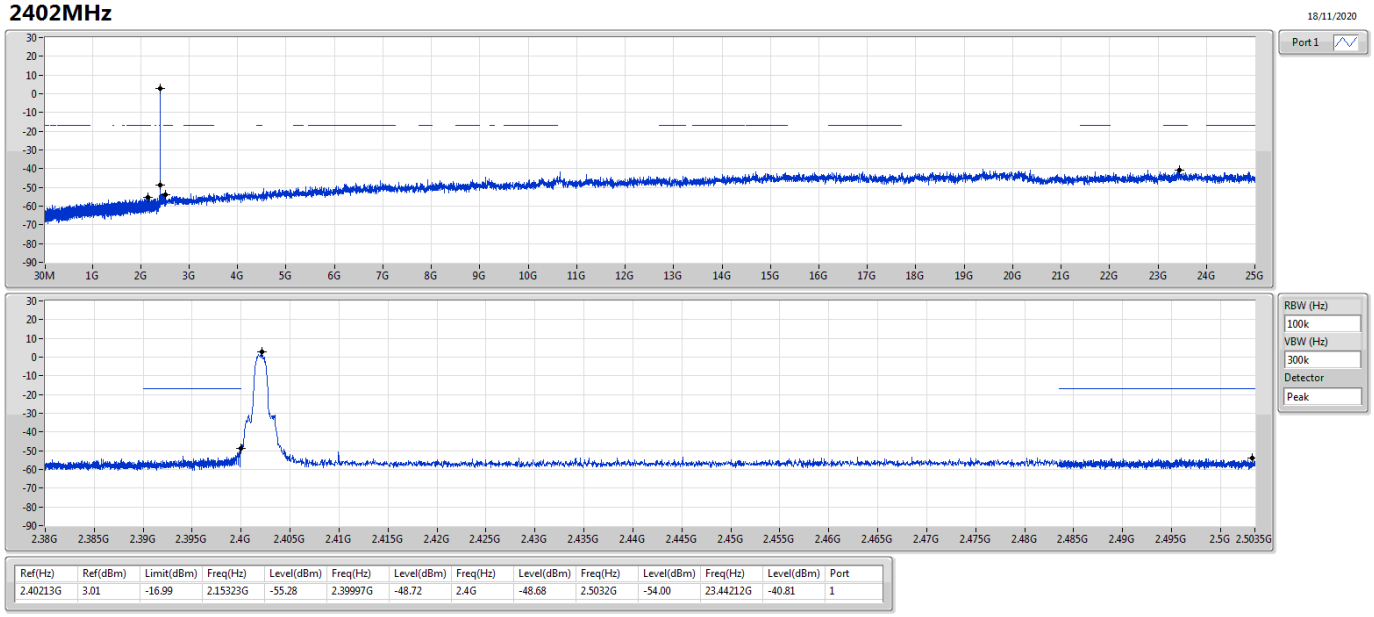
**2480MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.48003G | 2.51 | -17.49 | 2.18613G | -54.59 | 2.3945G | -55.06 | 2.4835G | -54.31 | 2.48802G | -51.82 | 16.27979G | -41.69 | 1 |

**BT-EDR(3Mbps)** **CSENdB-FS**

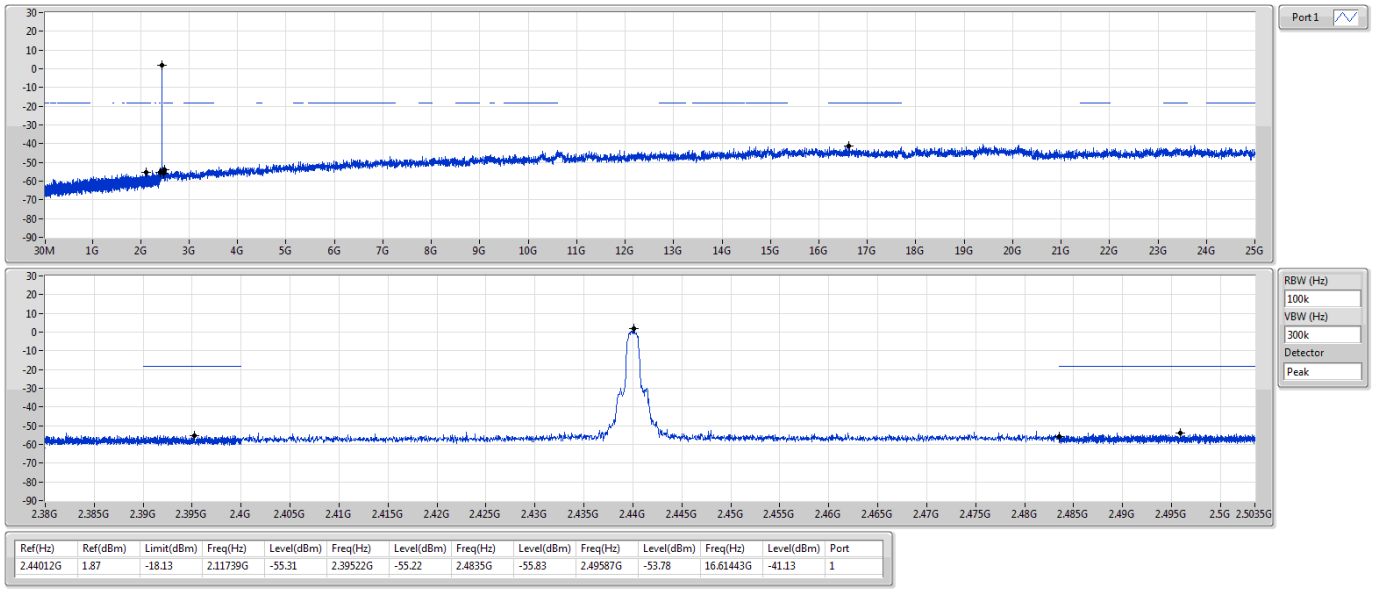
**2402MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.40213G | 3.01 | -16.99 | 2.15323G | -55.28 | 2.39997G | -48.72 | 2.4G | -48.68 | 2.5032G | -54.00 | 23.44212G | -40.81 | 1 |

**BT-EDR(3Mbps)** **CSENdB-FS**

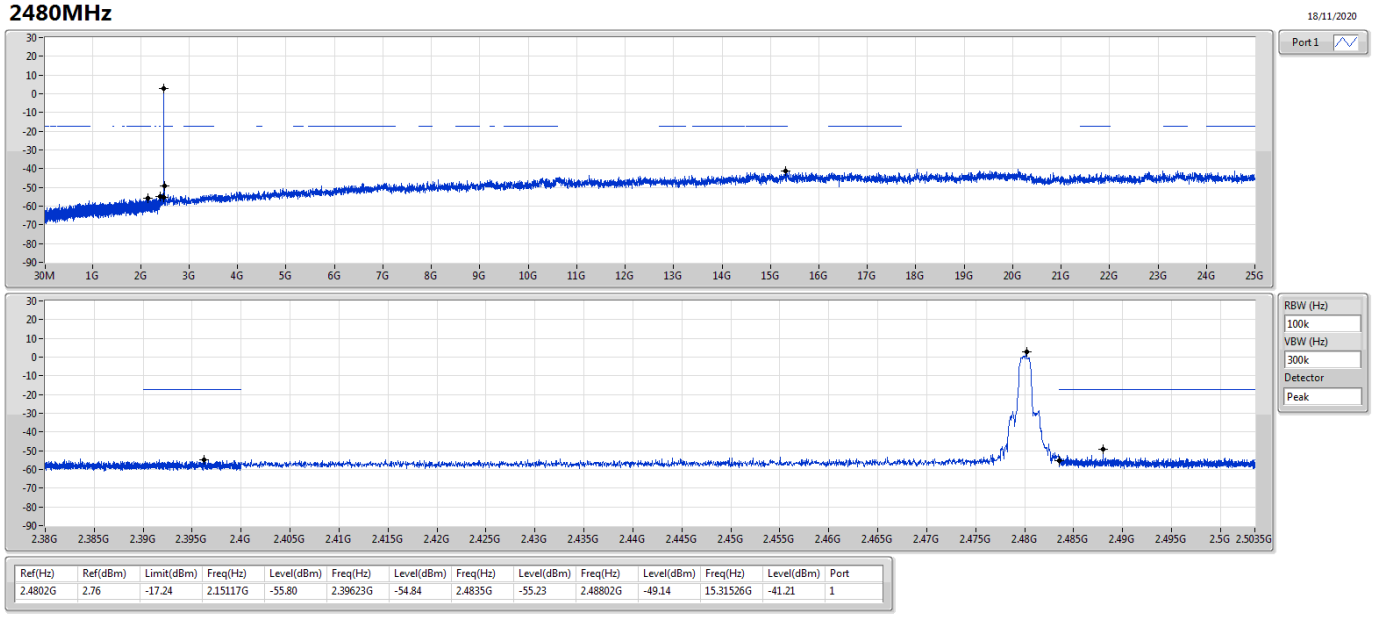
**2440MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.44012G | 1.87 | -18.13 | 2.11739G | -55.31 | 2.39522G | -55.22 | 2.4835G | -55.83 | 2.49587G | -53.78 | 16.61443G | -41.13 | 1 |

**BT-EDR(3Mbps)** **CSENdB-FS**

**2480MHz**




| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4802G | 2.76 | -17.24 | 2.15117G | -55.80 | 2.39623G | -54.84 | 2.4835G | -55.23 | 2.48802G | -49.14 | 15.31526G | -41.21 | 1 |

## Summary

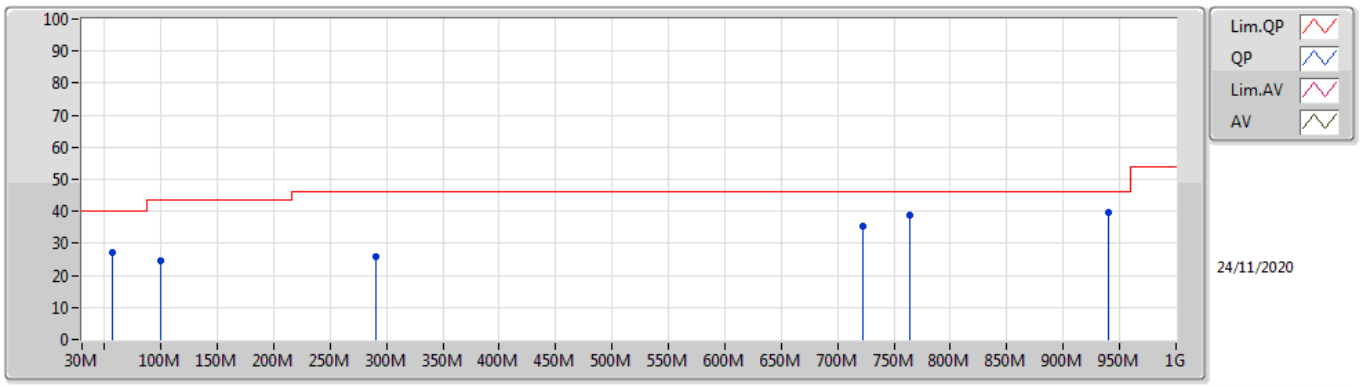
| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4-2.4835GHz | - | - | - | - | - | - | - | - | - | - | - |
| BT-EDR(3Mbps) | Pass | PK | 932.1M | 40.69 | 46.00 | -5.31 | 3 | Horizontal | 0 | 1.00 | - |

## Result

| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BT-EDR(3Mbps) | - | - | - | - | - | - | - | - | - | - | - |
| 2440MHz | Pass | PK | 57.16M | 27.05 | 40.00 | -12.95 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 99.84M | 24.61 | 43.50 | -18.89 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 289.96M | 25.68 | 46.00 | -20.32 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 722.58M | 35.29 | 46.00 | -10.71 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 763.32M | 38.70 | 46.00 | -7.30 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 939.86M | 39.65 | 46.00 | -6.35 | 3 | Vertical | 360 | 1.00 | - |
| 2440MHz | Pass | PK | 173.56M | 27.54 | 43.50 | -15.96 | 3 | Horizontal | 0 | 1.00 | - |
| 2440MHz | Pass | PK | 282.2M | 34.90 | 46.00 | -11.10 | 3 | Horizontal | 0 | 1.00 | - |
| 2440MHz | Pass | PK | 293.84M | 34.64 | 46.00 | -11.36 | 3 | Horizontal | 0 | 1.00 | - |
| 2440MHz | Pass | PK | 313.24M | 34.92 | 46.00 | -11.08 | 3 | Horizontal | 0 | 1.00 | - |
| 2440MHz | Pass | PK | 745.86M | 38.35 | 46.00 | -7.65 | 3 | Horizontal | 0 | 1.00 | - |
| 2440MHz | Pass | PK | 932.1M | 40.69 | 46.00 | -5.31 | 3 | Horizontal | 0 | 1.00 | - |

## BT-EDR(3Mbps)

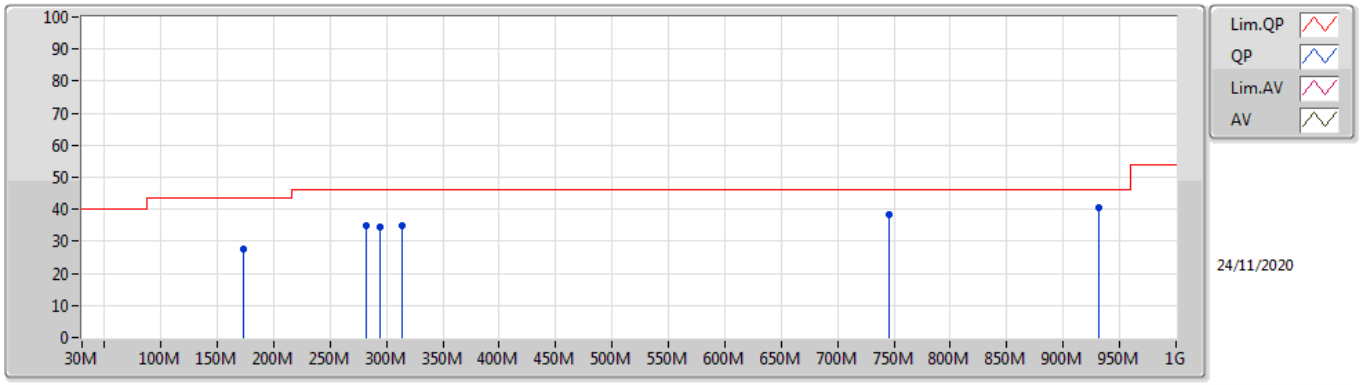
## 2440MHz_USB




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| PK | 57.16M | 27.05 | 40.00 | -12.95 | -14.91 | 3 | Vertical | 360 | 1.00 | - | 41.96 | 11.84 | 1.04 | 27.79 |
| PK | 99.84M | 24.61 | 43.50 | -18.89 | -10.28 | 3 | Vertical | 360 | 1.00 | - | 34.89 | 16.09 | 1.40 | 27.77 |
| PK | 289.96M | 25.68 | 46.00 | -20.32 | -6.28 | 3 | Vertical | 360 | 1.00 | - | 31.96 | 18.20 | 2.56 | 27.04 |
| PK | 722.58M | 35.29 | 46.00 | -10.71 | 0.65 | 3 | Vertical | 360 | 1.00 | - | 34.64 | 24.46 | 4.25 | 28.06 |
| PK | 763.32M | 38.70 | 46.00 | -7.30 | 1.41 | 3 | Vertical | 360 | 1.00 | - | 37.29 | 25.00 | 4.35 | 27.94 |
| PK | 939.86M | 39.65 | 46.00 | -6.35 | 3.45 | 3 | Vertical | 360 | 1.00 | - | 36.20 | 25.85 | 4.88 | 27.28 |

## BT-EDR(3Mbps)

## 2440MHz_USB




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| PK | 173.56M | 27.54 | 43.50 | -15.96 | -10.80 | 3 | Horizontal | 0 | 1.00 | - | 38.34 | 14.73 | 1.94 | 27.47 |
| PK | 282.2M | 34.90 | 46.00 | -11.10 | -6.42 | 3 | Horizontal | 0 | 1.00 | - | 41.32 | 18.09 | 2.53 | 27.04 |
| PK | 293.84M | 34.64 | 46.00 | -11.36 | -6.18 | 3 | Horizontal | 0 | 1.00 | - | 40.82 | 18.28 | 2.58 | 27.04 |
| PK | 313.24M | 34.92 | 46.00 | -11.08 | -5.69 | 3 | Horizontal | 0 | 1.00 | - | 40.61 | 18.77 | 2.65 | 27.11 |
| PK | 745.86M | 38.35 | 46.00 | -7.65 | 1.18 | 3 | Horizontal | 0 | 1.00 | - | 37.17 | 24.90 | 4.29 | 28.01 |
| PK | 932.1M | 40.69 | 46.00 | -5.31 | 3.39 | 3 | Horizontal | 0 | 1.00 | - | 37.30 | 25.83 | 4.86 | 27.30 |

## Summary

| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4-2.4835GHz | - | - | - | - | - | - | - | - | - | - | - |
| BT-BR(1Mbps) | Pass | PK | 2.363G | 58.27 | 74.00 | -15.73 | 3 | Vertical | 31 | 1.06 | - |
| BT-EDR(3Mbps) | Pass | PK | 2.4835G | 58.51 | 74.00 | -15.49 | 3 | Horizontal | 221 | 2.62 | - |

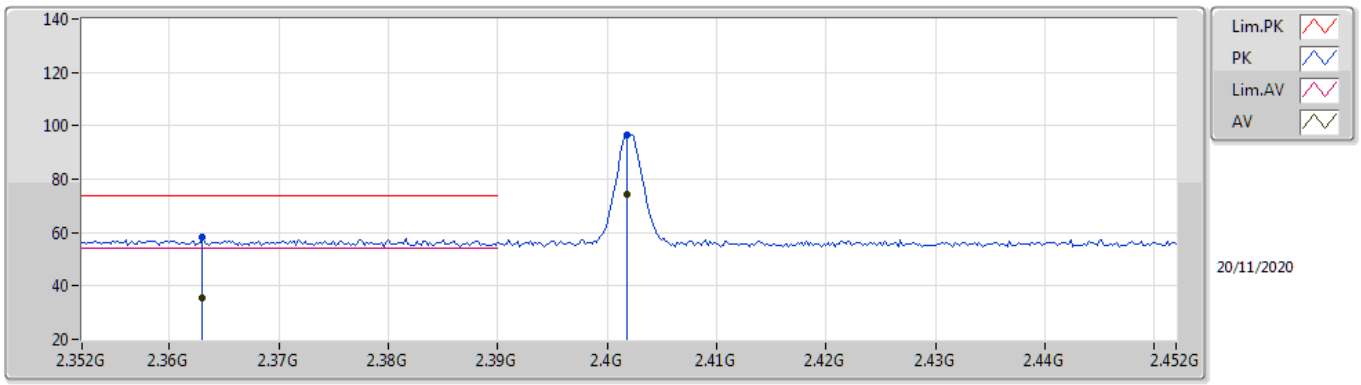
## Result

| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BT-BR(1Mbps) | - | - | - | - | - | - | - | - | - | - | - |
| 2402MHz | Pass | AV | 2.363G | 35.77 | 54.00 | -18.23 | 3 | Vertical | 31 | 1.06 | - |
| 2402MHz | Pass | AV | 2.4018G | 74.25 | Inf | -Inf | 3 | Vertical | 31 | 1.06 | - |
| 2402MHz | Pass | PK | 2.363G | 58.27 | 74.00 | -15.73 | 3 | Vertical | 31 | 1.06 | - |
| 2402MHz | Pass | PK | 2.4018G | 96.75 | Inf | -Inf | 3 | Vertical | 31 | 1.06 | - |
| 2402MHz | Pass | AV | 2.3568G | 35.47 | 54.00 | -18.53 | 3 | Horizontal | 257 | 1.30 | - |
| 2402MHz | Pass | AV | 2.4018G | 77.22 | Inf | -Inf | 3 | Horizontal | 257 | 1.30 | - |
| 2402MHz | Pass | PK | 2.3568G | 57.97 | 74.00 | -16.03 | 3 | Horizontal | 257 | 1.30 | - |
| 2402MHz | Pass | PK | 2.4018G | 99.72 | Inf | -Inf | 3 | Horizontal | 257 | 1.30 | - |
| 2402MHz | Pass | AV | 4.80414G | 23.46 | 54.00 | -30.54 | 3 | Vertical | 280 | 1.00 | - |
| 2402MHz | Pass | PK | 4.80414G | 45.96 | 74.00 | -28.04 | 3 | Vertical | 280 | 1.00 | - |
| 2402MHz | Pass | AV | 4.80366G | 25.95 | 54.00 | -28.05 | 3 | Horizontal | 282 | 1.00 | - |
| 2402MHz | Pass | PK | 4.80366G | 48.45 | 74.00 | -25.55 | 3 | Horizontal | 282 | 1.00 | - |
| 2440MHz | Pass | AV | 2.344G | 35.11 | 54.00 | -18.89 | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | AV | 2.44G | 73.28 | Inf | -Inf | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | AV | 2.4944G | 34.38 | 54.00 | -19.62 | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | PK | 2.344G | 57.61 | 74.00 | -16.39 | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | PK | 2.44G | 95.78 | Inf | -Inf | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | PK | 2.4944G | 56.88 | 74.00 | -17.12 | 3 | Vertical | 33 | 1.48 | - |
| 2440MHz | Pass | AV | 2.3492G | 35.23 | 54.00 | -18.77 | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | AV | 2.44G | 75.27 | Inf | -Inf | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | AV | 2.4896G | 34.96 | 54.00 | -19.04 | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | PK | 2.3492G | 57.73 | 74.00 | -16.27 | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | PK | 2.44G | 97.77 | Inf | -Inf | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | PK | 2.4896G | 57.46 | 74.00 | -16.54 | 3 | Horizontal | 255 | 1.00 | - |
| 2440MHz | Pass | AV | 4.87964G | 23.02 | 54.00 | -30.98 | 3 | Vertical | 287 | 1.12 | - |
| 2440MHz | Pass | AV | 7.32036G | 31.60 | 54.00 | -22.40 | 3 | Vertical | 283 | 2.93 | - |
| 2440MHz | Pass | PK | 4.87964G | 45.52 | 74.00 | -28.48 | 3 | Vertical | 287 | 1.12 | - |
| 2440MHz | Pass | PK | 7.32036G | 54.10 | 74.00 | -19.90 | 3 | Vertical | 283 | 2.93 | - |
| 2440MHz | Pass | AV | 4.87992G | 23.77 | 54.00 | -30.23 | 3 | Horizontal | 285 | 1.00 | - |
| 2440MHz | Pass | AV | 7.32017G | 29.22 | 54.00 | -24.78 | 3 | Horizontal | 315 | 2.36 | - |
| 2440MHz | Pass | PK | 4.87992G | 46.27 | 74.00 | -27.73 | 3 | Horizontal | 285 | 1.00 | - |
| 2440MHz | Pass | PK | 7.32017G | 51.72 | 74.00 | -22.28 | 3 | Horizontal | 315 | 2.36 | - |
| 2480MHz | Pass | AV | 2.4798G | 74.37 | Inf | -Inf | 3 | Vertical | 35 | 1.23 | - |
| 2480MHz | Pass | AV | 2.4992G | 34.67 | 54.00 | -19.33 | 3 | Vertical | 35 | 1.23 | - |
| 2480MHz | Pass | PK | 2.4798G | 96.87 | Inf | -Inf | 3 | Vertical | 35 | 1.23 | - |
| 2480MHz | Pass | PK | 2.4992G | 57.17 | 74.00 | -16.83 | 3 | Vertical | 35 | 1.23 | - |
| 2480MHz | Pass | AV | 2.4802G | 76.74 | Inf | -Inf | 3 | Horizontal | 224 | 2.62 | - |
| 2480MHz | Pass | AV | 2.491G | 35.23 | 54.00 | -18.77 | 3 | Horizontal | 224 | 2.62 | - |
| 2480MHz | Pass | PK | 2.4802G | 99.24 | Inf | -Inf | 3 | Horizontal | 224 | 2.62 | - |
| 2480MHz | Pass | PK | 2.491G | 57.73 | 74.00 | -16.27 | 3 | Horizontal | 224 | 2.62 | - |
| 2480MHz | Pass | AV | 4.95975G | 24.27 | 54.00 | -29.73 | 3 | Vertical | 286 | 1.02 | - |
| 2480MHz | Pass | AV | 7.44042G | 30.69 | 54.00 | -23.31 | 3 | Vertical | 286 | 2.94 | - |
| 2480MHz | Pass | PK | 4.95975G | 46.77 | 74.00 | -27.23 | 3 | Vertical | 286 | 1.02 | - |
| 2480MHz | Pass | PK | 7.44042G | 53.19 | 74.00 | -20.81 | 3 | Vertical | 286 | 2.94 | - |
| 2480MHz | Pass | AV | 4.96015G | 23.66 | 54.00 | -30.34 | 3 | Horizontal | 224 | 2.54 | - |
| 2480MHz | Pass | AV | 7.44025G | 29.57 | 54.00 | -24.43 | 3 | Horizontal | 310 | 2.23 | - |
| 2480MHz | Pass | PK | 4.96015G | 46.16 | 74.00 | -27.84 | 3 | Horizontal | 224 | 2.54 | - |
| 2480MHz | Pass | PK | 7.44025G | 52.07 | 74.00 | -21.93 | 3 | Horizontal | 310 | 2.23 | - |
| BT-EDR(3Mbps) | - | - | - | - | - | - | - | - | - | - | - |
| 2402MHz | Pass | AV | 2.3888G | 35.46 | 54.00 | -18.54 | 3 | Vertical | 30 | 1.09 | - |
| 2402MHz | Pass | AV | 2.4018G | 73.59 | Inf | -Inf | 3 | Vertical | 30 | 1.09 | - |
| 2402MHz | Pass | PK | 2.3888G | 57.96 | 74.00 | -16.04 | 3 | Vertical | 30 | 1.09 | - |
| 2402MHz | Pass | PK | 2.4018G | 96.09 | Inf | -Inf | 3 | Vertical | 30 | 1.09 | - |
| 2402MHz | Pass | AV | 2.3692G | 35.32 | 54.00 | -18.68 | 3 | Horizontal | 257 | 1.12 | - |
| 2402MHz | Pass | AV | 2.4018G | 75.58 | Inf | -Inf | 3 | Horizontal | 257 | 1.12 | - |
| 2402MHz | Pass | PK | 2.3692G | 57.82 | 74.00 | -16.18 | 3 | Horizontal | 257 | 1.12 | - |
| 2402MHz | Pass | PK | 2.4018G | 98.08 | Inf | -Inf | 3 | Horizontal | 257 | 1.12 | - |
| 2402MHz | Pass | AV | 4.8041G | 22.26 | 54.00 | -31.74 | 3 | Vertical | 215 | 1.00 | - |
| 2402MHz | Pass | PK | 4.8041G | 44.76 | 74.00 | -29.24 | 3 | Vertical | 215 | 1.00 | - |
| 2402MHz | Pass | AV | 4.80416G | 25.43 | 54.00 | -28.57 | 3 | Horizontal | 101 | 1.07 | - |

| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2402MHz | Pass | PK | 4.80416G | 47.93 | 74.00 | -26.07 | 3 | Horizontal | 101 | 1.07 | - |
| 2440MHz | Pass | AV | 2.3432G | 35.40 | 54.00 | -18.60 | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | AV | 2.44G | 74.48 | Inf | -Inf | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | AV | 2.4976G | 34.35 | 54.00 | -19.65 | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | PK | 2.3432G | 57.90 | 74.00 | -16.10 | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | PK | 2.44G | 96.98 | Inf | -Inf | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | PK | 2.4976G | 56.85 | 74.00 | -17.15 | 3 | Vertical | 34 | 1.48 | - |
| 2440MHz | Pass | AV | 2.3888G | 35.08 | 54.00 | -18.92 | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | AV | 2.4396G | 77.08 | Inf | -Inf | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | AV | 2.494G | 34.85 | 54.00 | -19.15 | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | PK | 2.3888G | 57.58 | 74.00 | -16.42 | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | PK | 2.4396G | 99.58 | Inf | -Inf | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | PK | 2.494G | 57.35 | 74.00 | -16.65 | 3 | Horizontal | 254 | 1.00 | - |
| 2440MHz | Pass | AV | 4.87995G | 22.02 | 54.00 | -31.98 | 3 | Vertical | 102 | 1.03 | - |
| 2440MHz | Pass | AV | 7.31909G | 30.85 | 54.00 | -23.15 | 3 | Vertical | 98 | 2.74 | - |
| 2440MHz | Pass | PK | 4.87995G | 44.52 | 74.00 | -29.48 | 3 | Vertical | 102 | 1.03 | - |
| 2440MHz | Pass | PK | 7.31909G | 53.35 | 74.00 | -20.65 | 3 | Vertical | 98 | 2.74 | - |
| 2440MHz | Pass | AV | 4.87948G | 22.46 | 54.00 | -31.54 | 3 | Horizontal | 117 | 1.15 | - |
| 2440MHz | Pass | AV | 7.32005G | 28.19 | 54.00 | -25.81 | 3 | Horizontal | 51 | 1.94 | - |
| 2440MHz | Pass | PK | 4.87948G | 44.96 | 74.00 | -29.04 | 3 | Horizontal | 117 | 1.15 | - |
| 2440MHz | Pass | PK | 7.32005G | 50.69 | 74.00 | -23.31 | 3 | Horizontal | 51 | 1.94 | - |
| 2480MHz | Pass | AV | 2.4798G | 75.33 | Inf | -Inf | 3 | Vertical | 35 | 1.25 | - |
| 2480MHz | Pass | AV | 2.4838G | 35.17 | 54.00 | -18.83 | 3 | Vertical | 35 | 1.25 | - |
| 2480MHz | Pass | PK | 2.4798G | 97.83 | Inf | -Inf | 3 | Vertical | 35 | 1.25 | - |
| 2480MHz | Pass | PK | 2.4838G | 57.67 | 74.00 | -16.33 | 3 | Vertical | 35 | 1.25 | - |
| 2480MHz | Pass | AV | 2.48G | 77.49 | Inf | -Inf | 3 | Horizontal | 221 | 2.62 | - |
| 2480MHz | Pass | AV | 2.4835G | 36.01 | 54.00 | -17.99 | 3 | Horizontal | 221 | 2.62 | - |
| 2480MHz | Pass | PK | 2.48G | 99.99 | Inf | -Inf | 3 | Horizontal | 221 | 2.62 | - |
| 2480MHz | Pass | PK | 2.4835G | 58.51 | 74.00 | -15.49 | 3 | Horizontal | 221 | 2.62 | - |
| 2480MHz | Pass | AV | 4.95973G | 23.25 | 54.00 | -30.75 | 3 | Vertical | 131 | 1.00 | - |
| 2480MHz | Pass | AV | 7.4396G | 31.22 | 54.00 | -22.78 | 3 | Vertical | 101 | 2.77 | - |
| 2480MHz | Pass | PK | 4.95973G | 45.75 | 74.00 | -28.25 | 3 | Vertical | 131 | 1.00 | - |
| 2480MHz | Pass | PK | 7.4396G | 53.72 | 74.00 | -20.28 | 3 | Vertical | 101 | 2.77 | - |
| 2480MHz | Pass | AV | 4.96G | 24.16 | 54.00 | -29.84 | 3 | Horizontal | 154 | 1.00 | - |
| 2480MHz | Pass | AV | 7.43962G | 27.59 | 54.00 | -26.41 | 3 | Horizontal | 146 | 1.49 | - |
| 2480MHz | Pass | PK | 4.96G | 46.66 | 74.00 | -27.34 | 3 | Horizontal | 154 | 1.00 | - |
| 2480MHz | Pass | PK | 7.43962G | 50.09 | 74.00 | -23.91 | 3 | Horizontal | 146 | 1.49 | - |

## BT-BR(1Mbps)

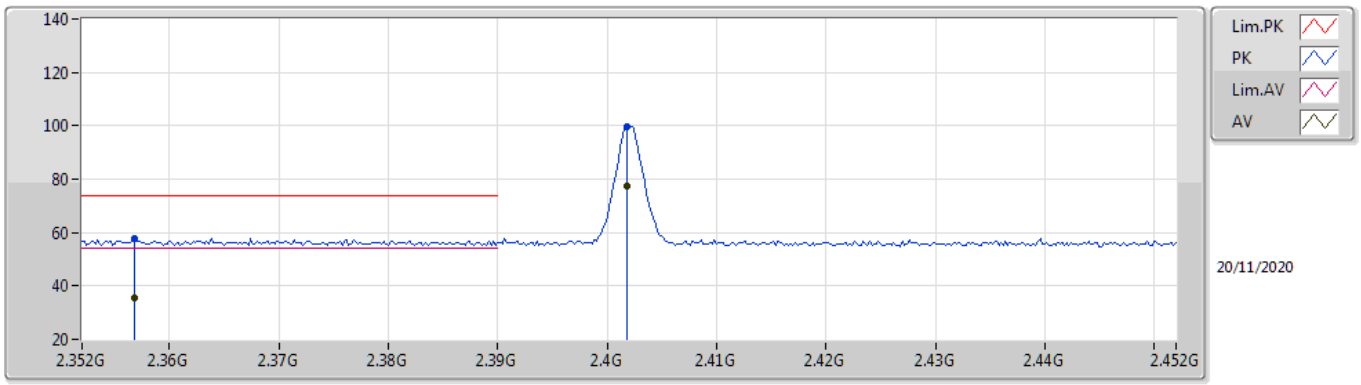
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.363G | 35.77 | 54.00 | -18.23 | 33.60 | 3 | Vertical | 31 | 1.06 | - | 2.17 | 27.67 | 5.93 | - |
| AV | 2.4018G | 74.25 | Inf | -Inf | 33.55 | 3 | Vertical | 31 | 1.06 | - | 40.70 | 27.59 | 5.96 | - |
| PK | 2.363G | 58.27 | 74.00 | -15.73 | 33.60 | 3 | Vertical | 31 | 1.06 | - | 24.67 | 27.67 | 5.93 | - |
| PK | 2.4018G | 96.75 | Inf | -Inf | 33.55 | 3 | Vertical | 31 | 1.06 | - | 63.20 | 27.59 | 5.96 | - |

## BT-BR(1Mbps)

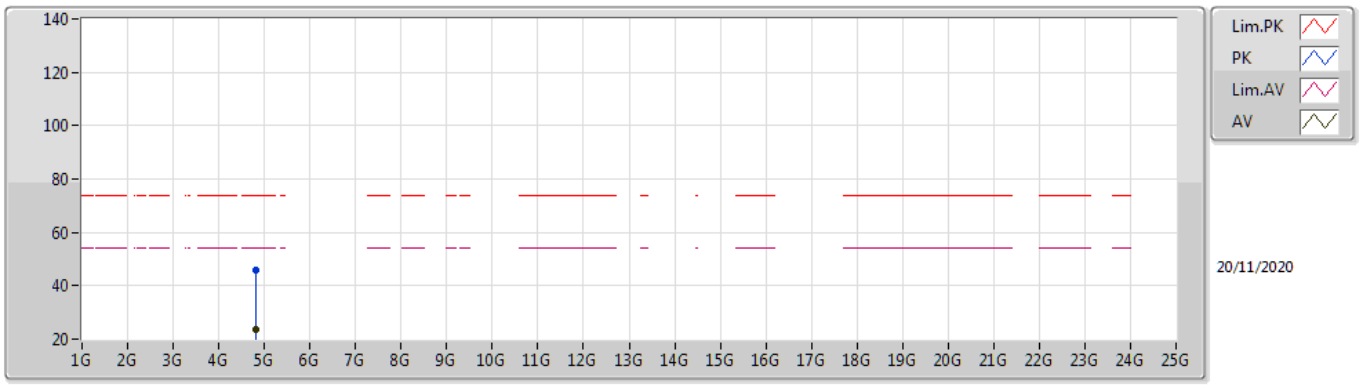
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3568G | 35.47 | 54.00 | -18.53 | 33.62 | 3 | Horizontal | 257 | 1.30 | - | 1.85 | 27.69 | 5.93 | - |
| AV | 2.4018G | 77.22 | Inf | -Inf | 33.55 | 3 | Horizontal | 257 | 1.30 | - | 43.67 | 27.59 | 5.96 | - |
| PK | 2.3568G | 57.97 | 74.00 | -16.03 | 33.62 | 3 | Horizontal | 257 | 1.30 | - | 24.35 | 27.69 | 5.93 | - |
| PK | 2.4018G | 99.72 | Inf | -Inf | 33.55 | 3 | Horizontal | 257 | 1.30 | - | 66.17 | 27.59 | 5.96 | - |

## BT-BR(1Mbps)

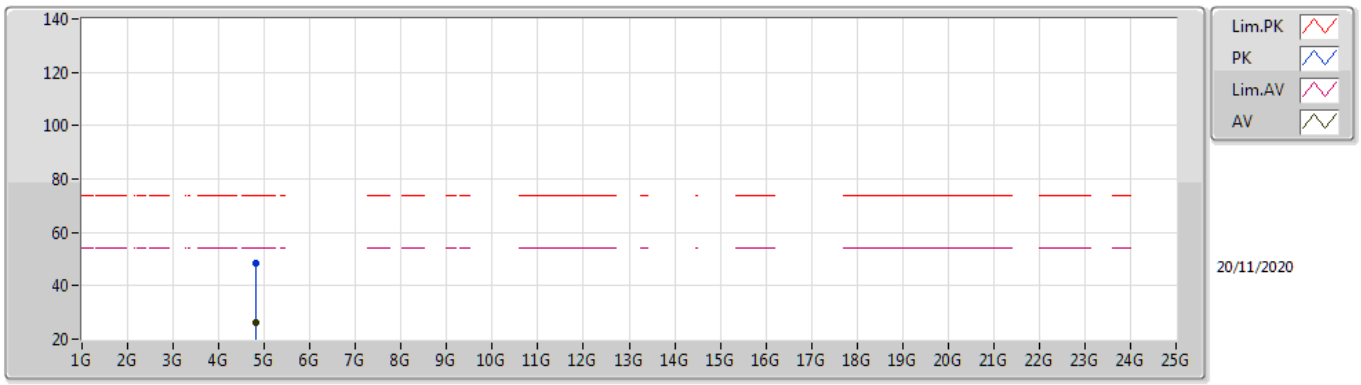
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.80414G | 23.46 | 54.00 | -30.54 | 4.88 | 3 | Vertical | 280 | 1.00 | - | 18.58 | 30.92 | 8.25 | 34.29 |
| PK | 4.80414G | 45.96 | 74.00 | -28.04 | 4.88 | 3 | Vertical | 280 | 1.00 | - | 41.08 | 30.92 | 8.25 | 34.29 |

## BT-BR(1Mbps)

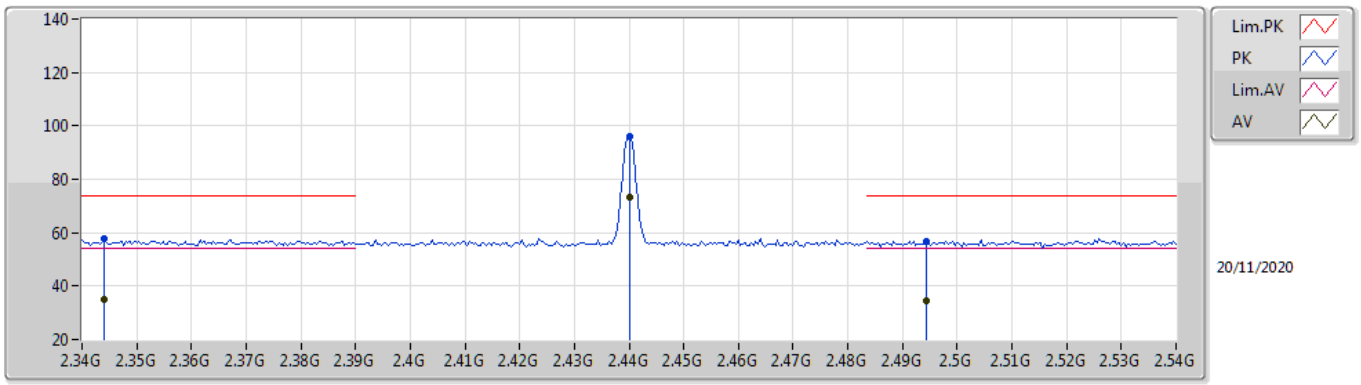
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.80366G | 25.95 | 54.00 | -28.05 | 4.87 | 3 | Horizontal | 282 | 1.00 | - | 21.08 | 30.91 | 8.25 | 34.29 |
| PK | 4.80366G | 48.45 | 74.00 | -25.55 | 4.87 | 3 | Horizontal | 282 | 1.00 | - | 43.58 | 30.91 | 8.25 | 34.29 |

## BT-BR(1Mbps)

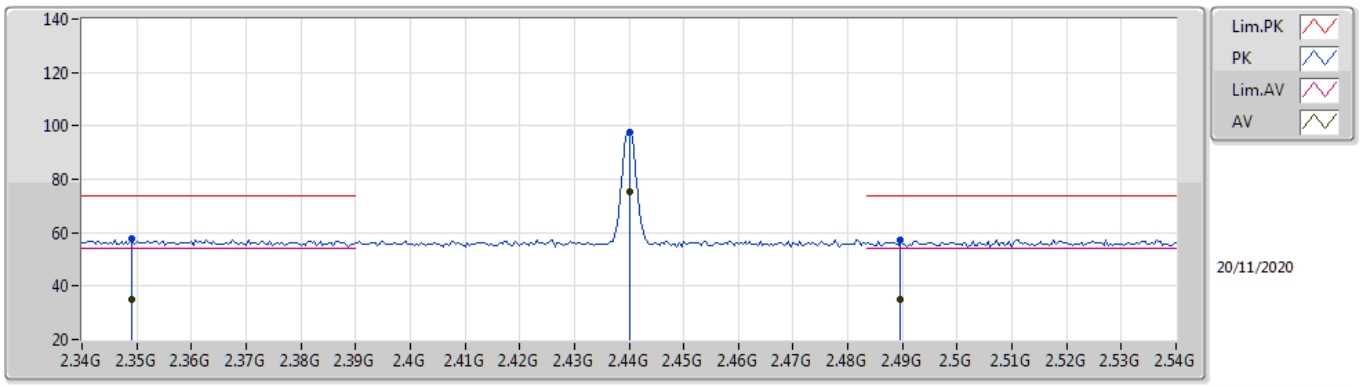
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.344G | 35.11 | 54.00 | -18.89 | 33.64 | 3 | Vertical | 33 | 1.48 | - | 1.47 | 27.72 | 5.92 | - |
| AV | 2.44G | 73.28 | Inf | -Inf | 33.45 | 3 | Vertical | 33 | 1.48 | - | 39.83 | 27.44 | 6.01 | - |
| AV | 2.4944G | 34.38 | 54.00 | -19.62 | 33.47 | 3 | Vertical | 33 | 1.48 | - | 0.91 | 27.40 | 6.07 | - |
| PK | 2.344G | 57.61 | 74.00 | -16.39 | 33.64 | 3 | Vertical | 33 | 1.48 | - | 23.97 | 27.72 | 5.92 | - |
| PK | 2.44G | 95.78 | Inf | -Inf | 33.45 | 3 | Vertical | 33 | 1.48 | - | 62.33 | 27.44 | 6.01 | - |
| PK | 2.4944G | 56.88 | 74.00 | -17.12 | 33.47 | 3 | Vertical | 33 | 1.48 | - | 23.41 | 27.40 | 6.07 | - |

## BT-BR(1Mbps)

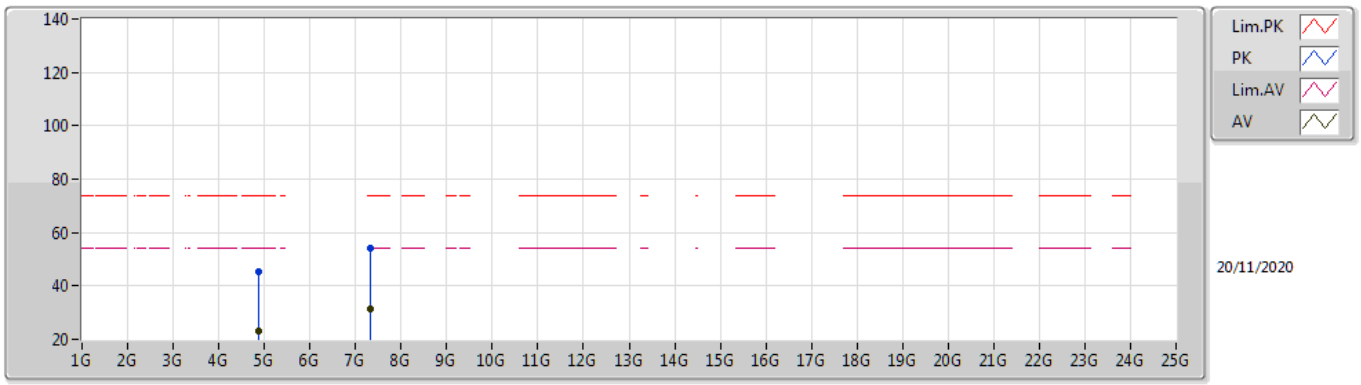
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3492G | 35.23 | 54.00 | -18.77 | 33.62 | 3 | Horizontal | 255 | 1.00 | - | 1.61 | 27.70 | 5.92 | - |
| AV | 2.44G | 75.27 | Inf | -Inf | 33.45 | 3 | Horizontal | 255 | 1.00 | - | 41.82 | 27.44 | 6.01 | - |
| AV | 2.4896G | 34.96 | 54.00 | -19.04 | 33.47 | 3 | Horizontal | 255 | 1.00 | - | 1.49 | 27.40 | 6.07 | - |
| PK | 2.3492G | 57.73 | 74.00 | -16.27 | 33.62 | 3 | Horizontal | 255 | 1.00 | - | 24.11 | 27.70 | 5.92 | - |
| PK | 2.44G | 97.77 | Inf | -Inf | 33.45 | 3 | Horizontal | 255 | 1.00 | - | 64.32 | 27.44 | 6.01 | - |
| PK | 2.4896G | 57.46 | 74.00 | -16.54 | 33.47 | 3 | Horizontal | 255 | 1.00 | - | 23.99 | 27.40 | 6.07 | - |

## BT-BR(1Mbps)

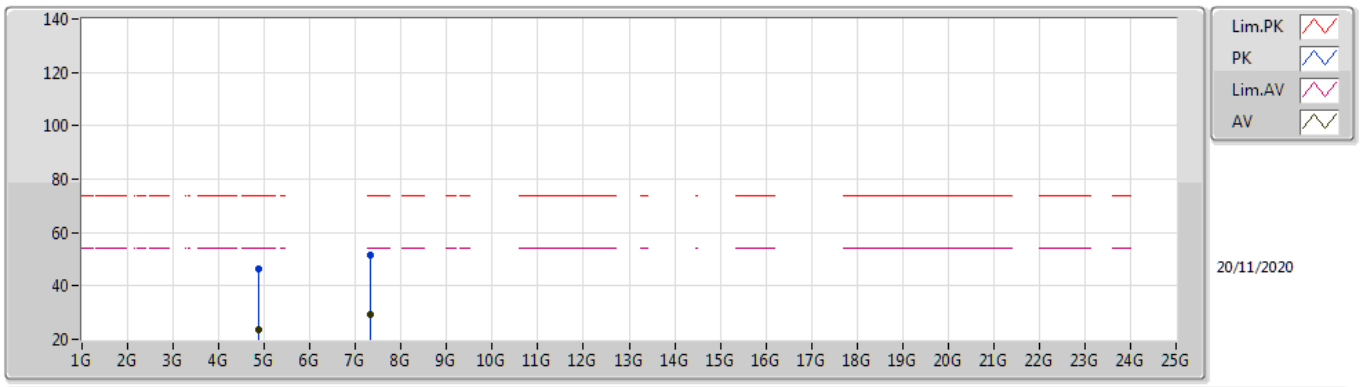
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.87964G | 23.02 | 54.00 | -30.98 | 5.08 | 3 | Vertical | 287 | 1.12 | - | 17.94 | 31.04 | 8.30 | 34.26 |
| AV | 7.32036G | 31.60 | 54.00 | -22.40 | 11.78 | 3 | Vertical | 283 | 2.93 | - | 19.82 | 36.32 | 10.03 | 34.57 |
| PK | 4.87964G | 45.52 | 74.00 | -28.48 | 5.08 | 3 | Vertical | 287 | 1.12 | - | 40.44 | 31.04 | 8.30 | 34.26 |
| PK | 7.32036G | 54.10 | 74.00 | -19.90 | 11.78 | 3 | Vertical | 283 | 2.93 | - | 42.32 | 36.32 | 10.03 | 34.57 |

## BT-BR(1Mbps)

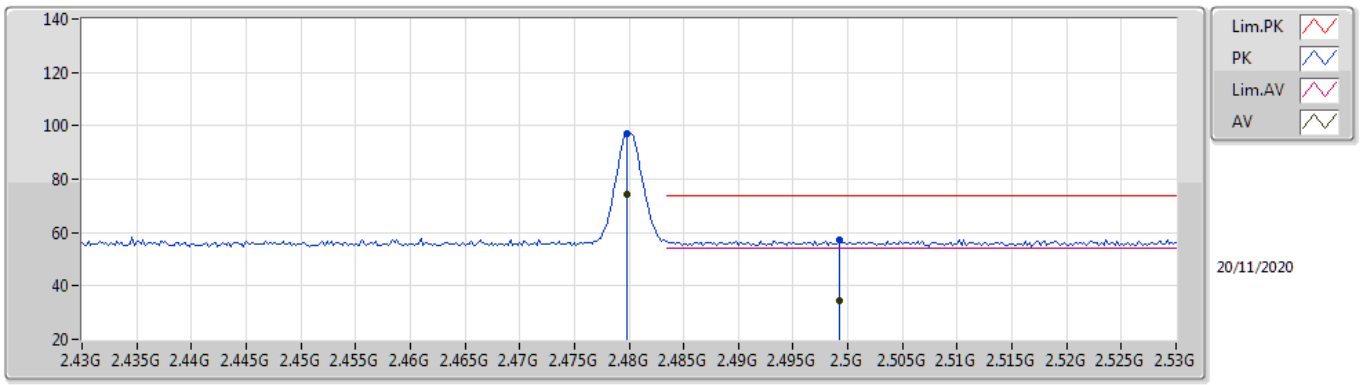
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.87992G | 23.77 | 54.00 | -30.23 | 5.08 | 3 | Horizontal | 285 | 1.00 | - | 18.69 | 31.04 | 8.30 | 34.26 |
| AV | 7.32017G | 29.22 | 54.00 | -24.78 | 11.78 | 3 | Horizontal | 315 | 2.36 | - | 17.44 | 36.32 | 10.03 | 34.57 |
| PK | 4.87992G | 46.27 | 74.00 | -27.73 | 5.08 | 3 | Horizontal | 285 | 1.00 | - | 41.19 | 31.04 | 8.30 | 34.26 |
| PK | 7.32017G | 51.72 | 74.00 | -22.28 | 11.78 | 3 | Horizontal | 315 | 2.36 | - | 39.94 | 36.32 | 10.03 | 34.57 |

## BT-BR(1Mbps)

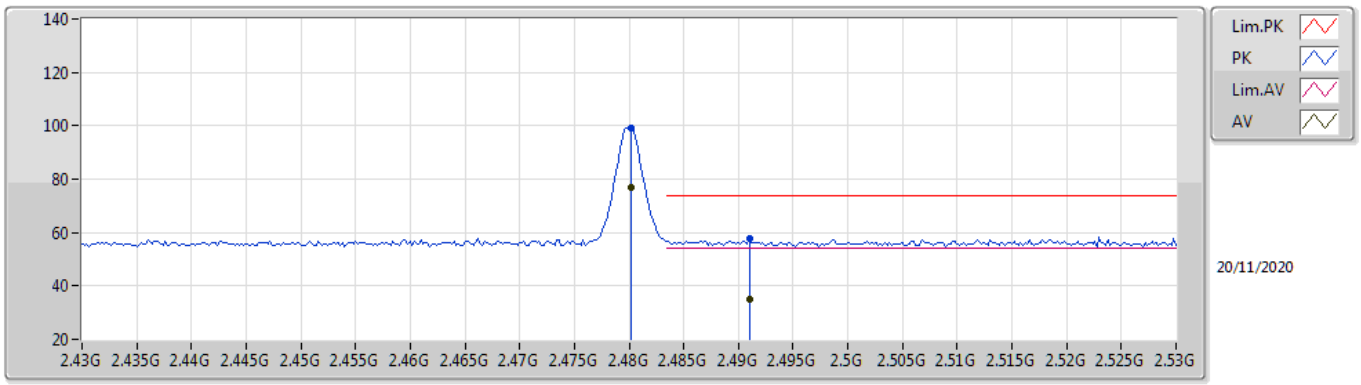
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.4798G | 74.37 | Inf | -Inf | 33.46 | 3 | Vertical | 35 | 1.23 | - | 40.91 | 27.40 | 6.06 | - |
| AV | 2.4992G | 34.67 | 54.00 | -19.33 | 33.48 | 3 | Vertical | 35 | 1.23 | - | 1.19 | 27.40 | 6.08 | - |
| PK | 2.4798G | 96.87 | Inf | -Inf | 33.46 | 3 | Vertical | 35 | 1.23 | - | 63.41 | 27.40 | 6.06 | - |
| PK | 2.4992G | 57.17 | 74.00 | -16.83 | 33.48 | 3 | Vertical | 35 | 1.23 | - | 23.69 | 27.40 | 6.08 | - |

## BT-BR(1Mbps)

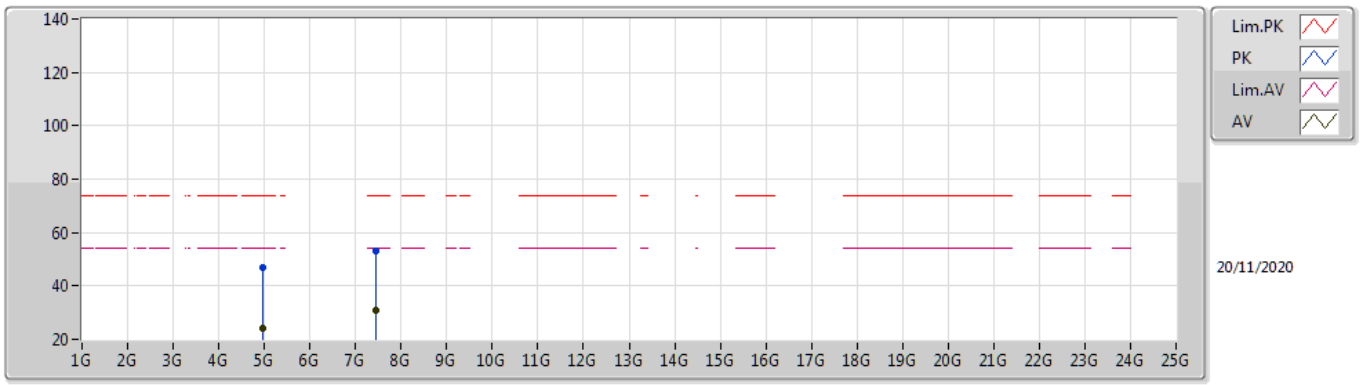
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.4802G | 76.74 | Inf | -Inf | 33.46 | 3 | Horizontal | 224 | 2.62 | - | 43.28 | 27.40 | 6.06 | - |
| AV | 2.491G | 35.23 | 54.00 | -18.77 | 33.47 | 3 | Horizontal | 224 | 2.62 | - | 1.76 | 27.40 | 6.07 | - |
| PK | 2.4802G | 99.24 | Inf | -Inf | 33.46 | 3 | Horizontal | 224 | 2.62 | - | 65.78 | 27.40 | 6.06 | - |
| PK | 2.491G | 57.73 | 74.00 | -16.27 | 33.47 | 3 | Horizontal | 224 | 2.62 | - | 24.26 | 27.40 | 6.07 | - |

## BT-BR(1Mbps)

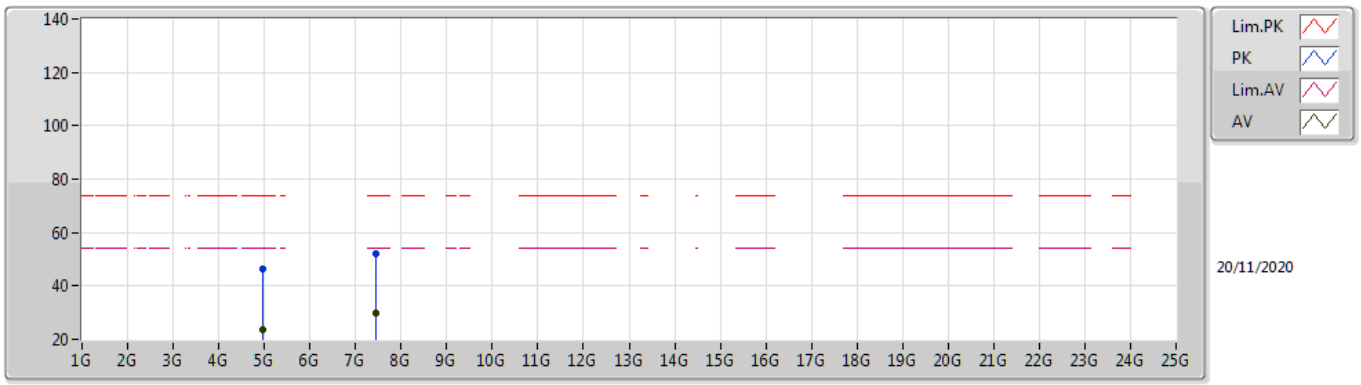
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.95975G | 24.27 | 54.00 | -29.73 | 5.34 | 3 | Vertical | 286 | 1.02 | - | 18.93 | 31.22 | 8.35 | 34.23 |
| AV | 7.44042G | 30.69 | 54.00 | -23.31 | 11.69 | 3 | Vertical | 286 | 2.94 | - | 19.00 | 36.18 | 10.10 | 34.59 |
| PK | 4.95975G | 46.77 | 74.00 | -27.23 | 5.34 | 3 | Vertical | 286 | 1.02 | - | 41.43 | 31.22 | 8.35 | 34.23 |
| PK | 7.44042G | 53.19 | 74.00 | -20.81 | 11.69 | 3 | Vertical | 286 | 2.94 | - | 41.50 | 36.18 | 10.10 | 34.59 |

## BT-BR(1Mbps)

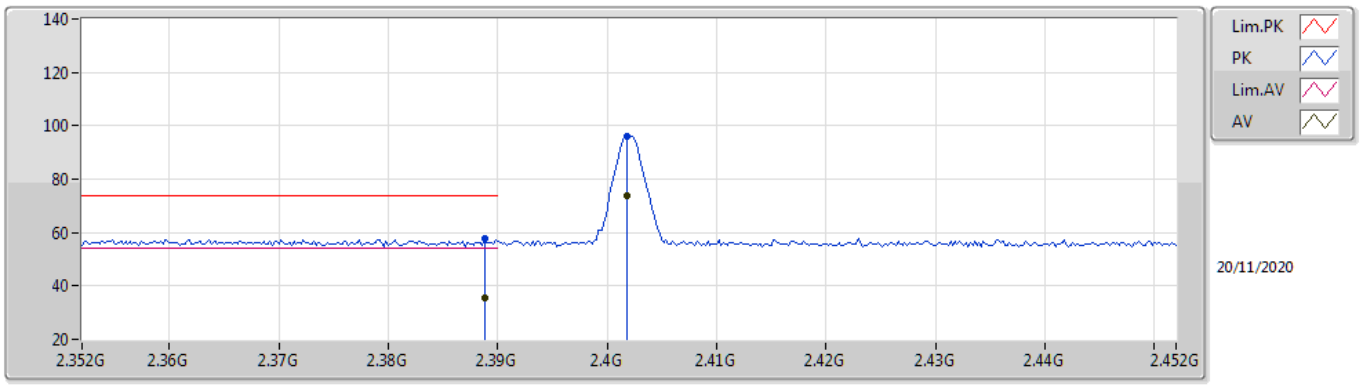
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.96015G | 23.66 | 54.00 | -30.34 | 5.34 | 3 | Horizontal | 224 | 2.54 | - | 18.32 | 31.22 | 8.35 | 34.23 |
| AV | 7.44025G | 29.57 | 54.00 | -24.43 | 11.69 | 3 | Horizontal | 310 | 2.23 | - | 17.88 | 36.18 | 10.10 | 34.59 |
| PK | 4.96015G | 46.16 | 74.00 | -27.84 | 5.34 | 3 | Horizontal | 224 | 2.54 | - | 40.82 | 31.22 | 8.35 | 34.23 |
| PK | 7.44025G | 52.07 | 74.00 | -21.93 | 11.69 | 3 | Horizontal | 310 | 2.23 | - | 40.38 | 36.18 | 10.10 | 34.59 |

## BT-EDR(3Mbps)

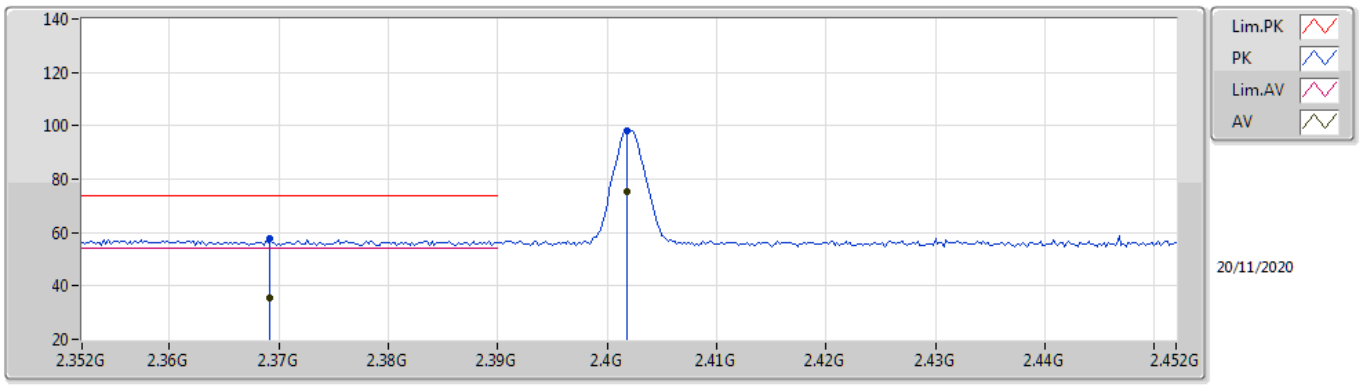
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3888G | 35.46 | 54.00 | -18.54 | 33.57 | 3 | Vertical | 30 | 1.09 | - | 1.89 | 27.62 | 5.95 | - |
| AV | 2.4018G | 73.59 | Inf | -Inf | 33.55 | 3 | Vertical | 30 | 1.09 | - | 40.04 | 27.59 | 5.96 | - |
| PK | 2.3888G | 57.96 | 74.00 | -16.04 | 33.57 | 3 | Vertical | 30 | 1.09 | - | 24.39 | 27.62 | 5.95 | - |
| PK | 2.4018G | 96.09 | Inf | -Inf | 33.55 | 3 | Vertical | 30 | 1.09 | - | 62.54 | 27.59 | 5.96 | - |

## BT-EDR(3Mbps)

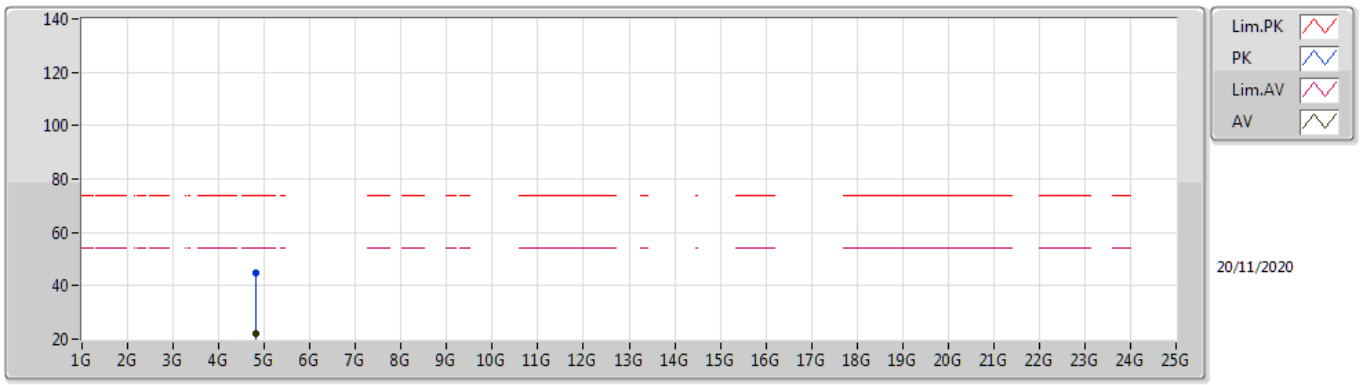
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3692G | 35.32 | 54.00 | -18.68 | 33.60 | 3 | Horizontal | 257 | 1.12 | - | 1.72 | 27.66 | 5.94 | - |
| AV | 2.4018G | 75.58 | Inf | -Inf | 33.55 | 3 | Horizontal | 257 | 1.12 | - | 42.03 | 27.59 | 5.96 | - |
| PK | 2.3692G | 57.82 | 74.00 | -16.18 | 33.60 | 3 | Horizontal | 257 | 1.12 | - | 24.22 | 27.66 | 5.94 | - |
| PK | 2.4018G | 98.08 | Inf | -Inf | 33.55 | 3 | Horizontal | 257 | 1.12 | - | 64.53 | 27.59 | 5.96 | - |

## BT-EDR(3Mbps)

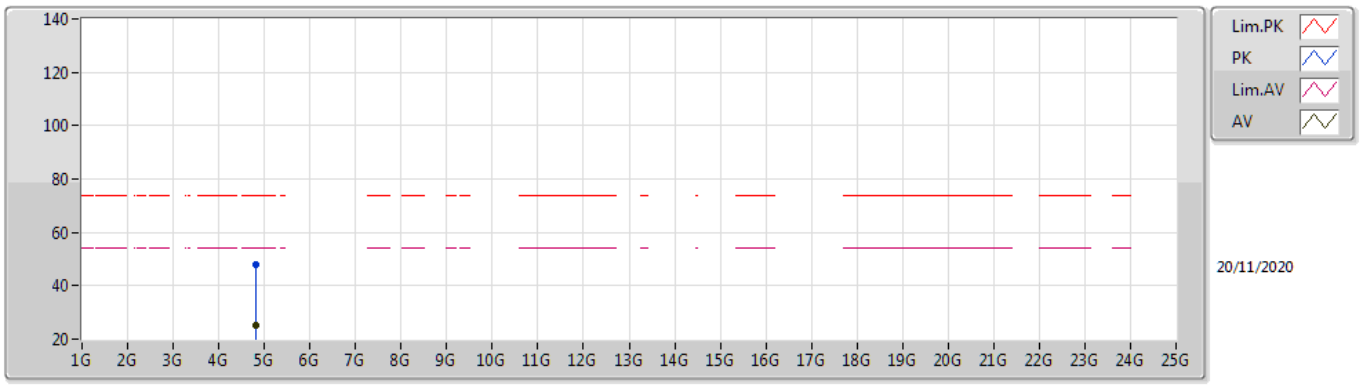
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.8041G | 22.26 | 54.00 | -31.74 | 4.88 | 3 | Vertical | 215 | 1.00 | - | 17.38 | 30.92 | 8.25 | 34.29 |
| PK | 4.8041G | 44.76 | 74.00 | -29.24 | 4.88 | 3 | Vertical | 215 | 1.00 | - | 39.88 | 30.92 | 8.25 | 34.29 |

## BT-EDR(3Mbps)

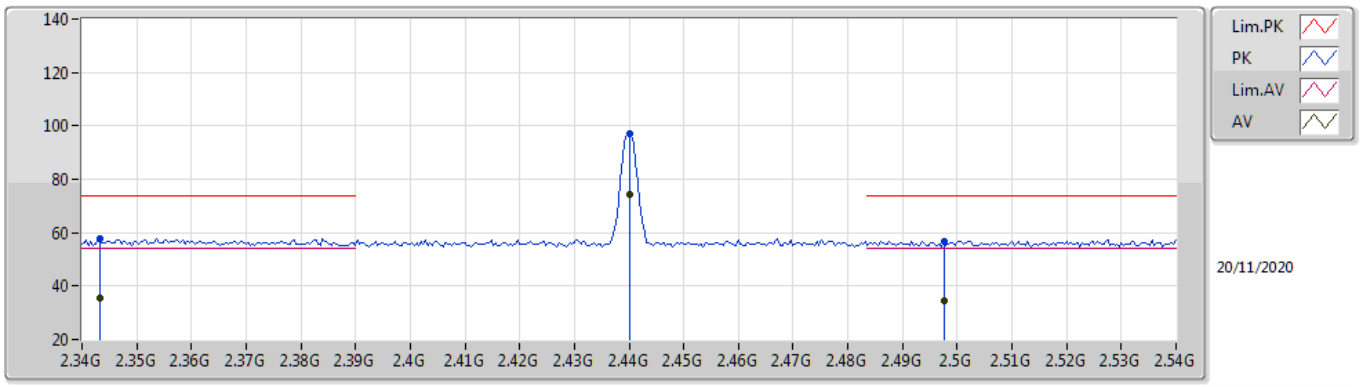
## 2402MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.80416G | 25.43 | 54.00 | -28.57 | 4.88 | 3 | Horizontal | 101 | 1.07 | - | 20.55 | 30.92 | 8.25 | 34.29 |
| PK | 4.80416G | 47.93 | 74.00 | -26.07 | 4.88 | 3 | Horizontal | 101 | 1.07 | - | 43.05 | 30.92 | 8.25 | 34.29 |

## BT-EDR(3Mbps)

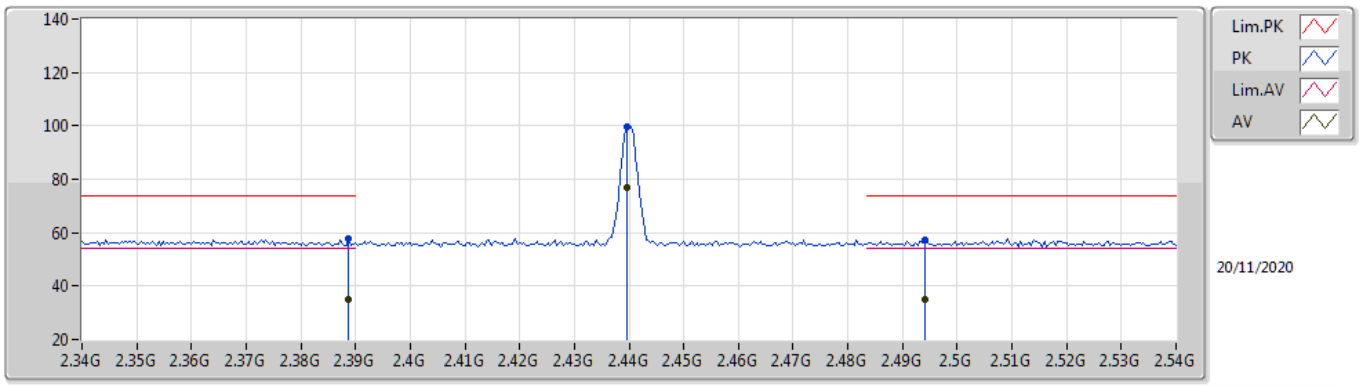
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3432G | 35.40 | 54.00 | -18.60 | 33.65 | 3 | Vertical | 34 | 1.48 | - | 1.75 | 27.73 | 5.92 | - |
| AV | 2.44G | 74.48 | Inf | -Inf | 33.45 | 3 | Vertical | 34 | 1.48 | - | 41.03 | 27.44 | 6.01 | - |
| AV | 2.4976G | 34.35 | 54.00 | -19.65 | 33.48 | 3 | Vertical | 34 | 1.48 | - | 0.87 | 27.40 | 6.08 | - |
| PK | 2.3432G | 57.90 | 74.00 | -16.10 | 33.65 | 3 | Vertical | 34 | 1.48 | - | 24.25 | 27.73 | 5.92 | - |
| PK | 2.44G | 96.98 | Inf | -Inf | 33.45 | 3 | Vertical | 34 | 1.48 | - | 63.53 | 27.44 | 6.01 | - |
| PK | 2.4976G | 56.85 | 74.00 | -17.15 | 33.48 | 3 | Vertical | 34 | 1.48 | - | 23.37 | 27.40 | 6.08 | - |

## BT-EDR(3Mbps)

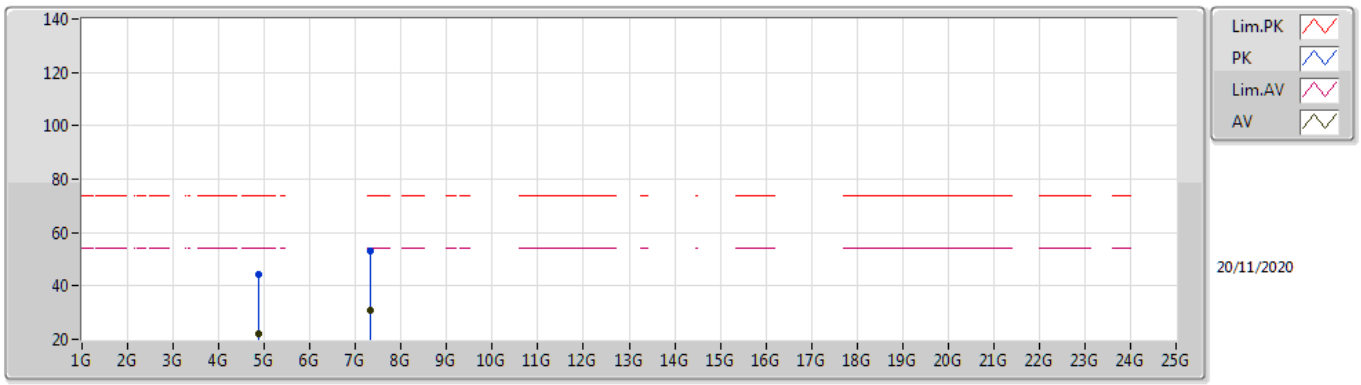
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.3888G | 35.08 | 54.00 | -18.92 | 33.57 | 3 | Horizontal | 254 | 1.00 | - | 1.51 | 27.62 | 5.95 | - |
| AV | 2.4396G | 77.08 | Inf | -Inf | 33.45 | 3 | Horizontal | 254 | 1.00 | - | 43.63 | 27.44 | 6.01 | - |
| AV | 2.494G | 34.85 | 54.00 | -19.15 | 33.47 | 3 | Horizontal | 254 | 1.00 | - | 1.38 | 27.40 | 6.07 | - |
| PK | 2.3888G | 57.58 | 74.00 | -16.42 | 33.57 | 3 | Horizontal | 254 | 1.00 | - | 24.01 | 27.62 | 5.95 | - |
| PK | 2.4396G | 99.58 | Inf | -Inf | 33.45 | 3 | Horizontal | 254 | 1.00 | - | 66.13 | 27.44 | 6.01 | - |
| PK | 2.494G | 57.35 | 74.00 | -16.65 | 33.47 | 3 | Horizontal | 254 | 1.00 | - | 23.88 | 27.40 | 6.07 | - |

## BT-EDR(3Mbps)

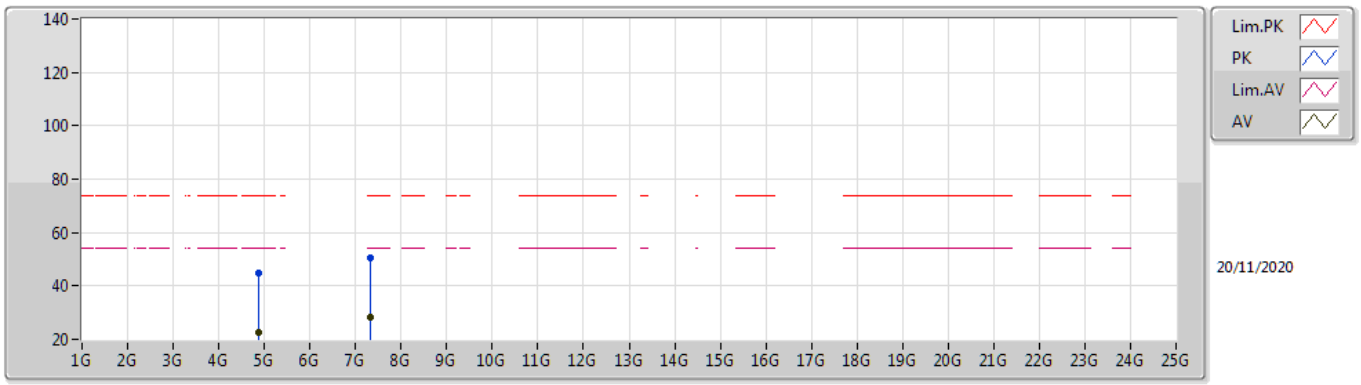
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.87995G | 22.02 | 54.00 | -31.98 | 5.08 | 3 | Vertical | 102 | 1.03 | - | 16.94 | 31.04 | 8.30 | 34.26 |
| AV | 7.31909G | 30.85 | 54.00 | -23.15 | 11.78 | 3 | Vertical | 98 | 2.74 | - | 19.07 | 36.32 | 10.03 | 34.57 |
| PK | 4.87995G | 44.52 | 74.00 | -29.48 | 5.08 | 3 | Vertical | 102 | 1.03 | - | 39.44 | 31.04 | 8.30 | 34.26 |
| PK | 7.31909G | 53.35 | 74.00 | -20.65 | 11.78 | 3 | Vertical | 98 | 2.74 | - | 41.57 | 36.32 | 10.03 | 34.57 |

## BT-EDR(3Mbps)

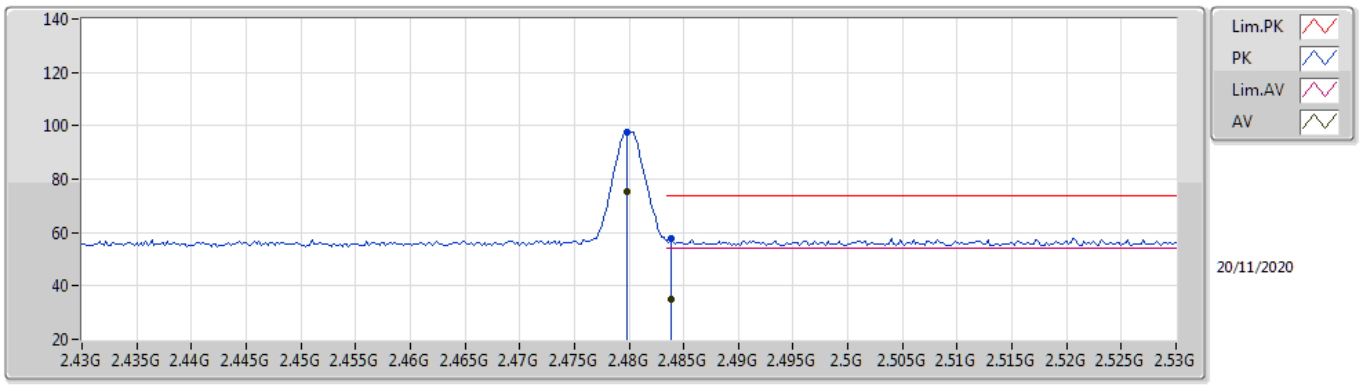
## 2440MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.87948G | 22.46 | 54.00 | -31.54 | 5.08 | 3 | Horizontal | 117 | 1.15 | - | 17.38 | 31.04 | 8.30 | 34.26 |
| AV | 7.32005G | 28.19 | 54.00 | -25.81 | 11.78 | 3 | Horizontal | 51 | 1.94 | - | 16.41 | 36.32 | 10.03 | 34.57 |
| PK | 4.87948G | 44.96 | 74.00 | -29.04 | 5.08 | 3 | Horizontal | 117 | 1.15 | - | 39.88 | 31.04 | 8.30 | 34.26 |
| PK | 7.32005G | 50.69 | 74.00 | -23.31 | 11.78 | 3 | Horizontal | 51 | 1.94 | - | 38.91 | 36.32 | 10.03 | 34.57 |

## BT-EDR(3Mbps)

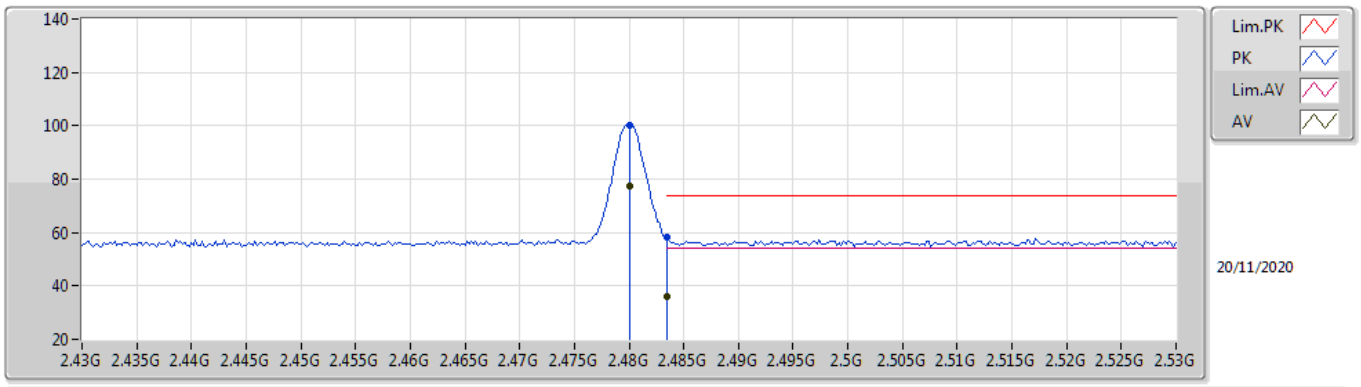
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.4798G | 75.33 | Inf | -Inf | 33.46 | 3 | Vertical | 35 | 1.25 | - | 41.87 | 27.40 | 6.06 | - |
| AV | 2.4838G | 35.17 | 54.00 | -18.83 | 33.46 | 3 | Vertical | 35 | 1.25 | - | 1.71 | 27.40 | 6.06 | - |
| PK | 2.4798G | 97.83 | Inf | -Inf | 33.46 | 3 | Vertical | 35 | 1.25 | - | 64.37 | 27.40 | 6.06 | - |
| PK | 2.4838G | 57.67 | 74.00 | -16.33 | 33.46 | 3 | Vertical | 35 | 1.25 | - | 24.21 | 27.40 | 6.06 | - |

## BT-EDR(3Mbps)

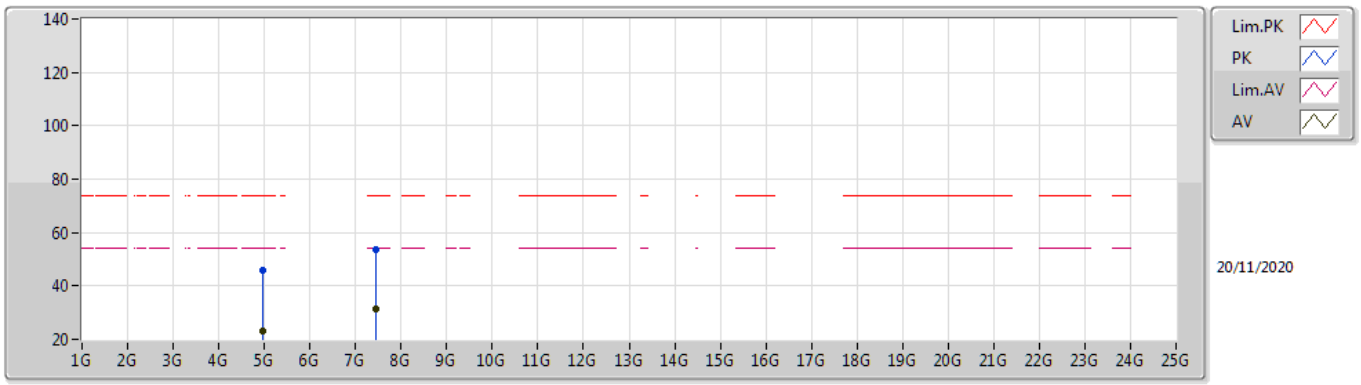
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 2.48G | 77.49 | Inf | -Inf | 33.46 | 3 | Horizontal | 221 | 2.62 | - | 44.03 | 27.40 | 6.06 | - |
| AV | 2.4835G | 36.01 | 54.00 | -17.99 | 33.46 | 3 | Horizontal | 221 | 2.62 | - | 2.55 | 27.40 | 6.06 | - |
| PK | 2.48G | 99.99 | Inf | -Inf | 33.46 | 3 | Horizontal | 221 | 2.62 | - | 66.53 | 27.40 | 6.06 | - |
| PK | 2.4835G | 58.51 | 74.00 | -15.49 | 33.46 | 3 | Horizontal | 221 | 2.62 | - | 25.05 | 27.40 | 6.06 | - |

## BT-EDR(3Mbps)

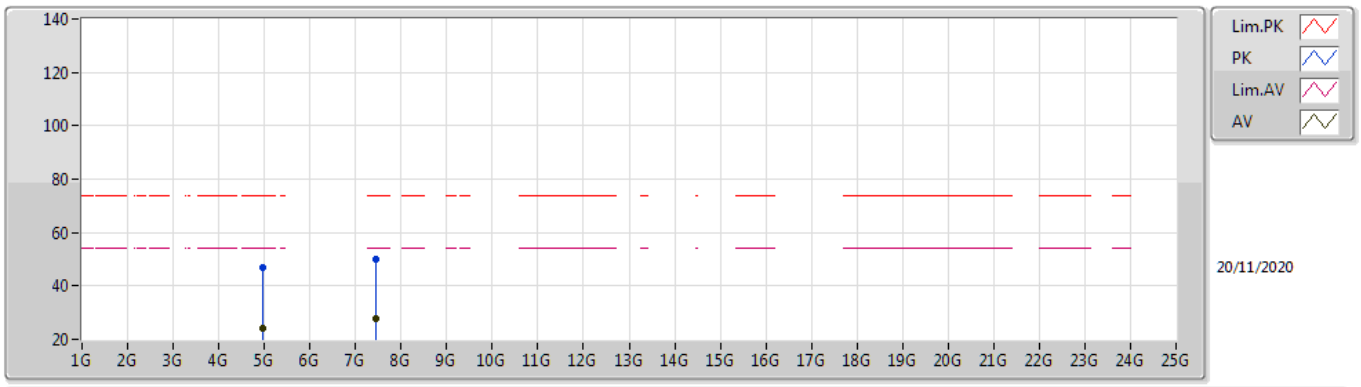
## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.95973G | 23.25 | 54.00 | -30.75 | 5.34 | 3 | Vertical | 131 | 1.00 | - | 17.91 | 31.22 | 8.35 | 34.23 |
| AV | 7.4396G | 31.22 | 54.00 | -22.78 | 11.69 | 3 | Vertical | 101 | 2.77 | - | 19.53 | 36.18 | 10.10 | 34.59 |
| PK | 4.95973G | 45.75 | 74.00 | -28.25 | 5.34 | 3 | Vertical | 131 | 1.00 | - | 40.41 | 31.22 | 8.35 | 34.23 |
| PK | 7.4396G | 53.72 | 74.00 | -20.28 | 11.69 | 3 | Vertical | 101 | 2.77 | - | 42.03 | 36.18 | 10.10 | 34.59 |

## BT-EDR(3Mbps)

## 2480MHz_TX




| Type | Freq | Level | Limit | Margin | Factor | Dist | Condition | Azimuth | Height | Comment | Raw | AF | CL | PA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Hz) | (dBuV/m) | (dBuV/m) | (dB) | (dB) | (m) | | (°) | (m) | | (dBuV) | (dB) | (dB) | (dB) |
| AV | 4.96G | 24.16 | 54.00 | -29.84 | 5.34 | 3 | Horizontal | 154 | 1.00 | - | 18.82 | 31.22 | 8.35 | 34.23 |
| AV | 7.43962G | 27.59 | 54.00 | -26.41 | 11.69 | 3 | Horizontal | 146 | 1.49 | - | 15.90 | 36.18 | 10.10 | 34.59 |
| PK | 4.96G | 46.66 | 74.00 | -27.34 | 5.34 | 3 | Horizontal | 154 | 1.00 | - | 41.32 | 31.22 | 8.35 | 34.23 |
| PK | 7.43962G | 50.09 | 74.00 | -23.91 | 11.69 | 3 | Horizontal | 146 | 1.49 | - | 38.40 | 36.18 | 10.10 | 34.59 |