

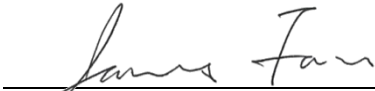
# Japan Test Report

**Equipment** : NUWA Ocular  
**Model No.** : KIT-M100  
**Brand Name** : NUWAROBOTICS  
**Applicant** : NUWA ROBOTICS (HK) LIMITED TAIWAN  
BRANCH  
**Address** : 9F., No. 101, Sec. 3, Nanjing E. Rd., Zhongshan  
Dist., Taipei City 104, Taiwan (R.O.C.)  
**Standard** : Article 2 Paragraph 1 Item 19  
**Received Date** : Aug. 10, 2020  
**Tested Date** : Aug. 18, 2020

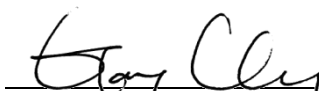
Measurement was conducted by the following test method:  
the test method of Ordinance Concerning Technical Regulations Conformity Certification  
etc. of Specified Radio Equipment in Annex 1, the Ministry of Internal Affairs and  
Communications notification in Annex "43" of Article 88, Paragraph 1 and ARIB STD-T66.

We, International Certification Corp., would like to declare that the tested sample has been  
evaluated and in compliance with the requirement of the above standards. The test results  
contained in this report refer exclusively to the product. It may be duplicated completely for  
legal use with the approval of the applicant. It shall not be reproduced except in full without  
the written approval of our laboratory.

Reviewed by:

  
James Fan / Assistant Manager

Approved by:

  
Gary Chang / Manager

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**APPENDIX A.1 TEST RESULTS FOR ANTENNA POWER**

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**APPENDIX B. TEST RESULTS FOR FREQUENCY TOLERANCE**

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**APPENDIX G. TEST RESULTS FOR INTERFERENCE PREVENTION FUNCTION**

**APPENDIX H. TEST RESULTS FOR RECEIVER SPURIOUS EMISSIONS**

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## Release Record

| Report No. | Version | Description   | Issued Date   |
|------------|---------|---------------|---------------|
| JR081001AD | Rev. 01 | Initial issue | Sep. 03, 2020 |

## Summary of Test Results

| Ref. Std. Clause | Description                                  | Result |
|------------------|----------------------------------------------|--------|
| 3.2(2)(3)        | Antenna Power / Tolerances for antenna power | Pass   |
| 3.2(4)           | Frequency Tolerance                          | Pass   |
| 3.2(6)           | Transmitter Spurious Emission                | Pass   |
| 3.2(7)           | Occupied Bandwidth                           | Pass   |
| 3.2(8)           | Spreading Bandwidth                          | Pass   |
| 3.2(9)           | Spreading Factor                             | Pass   |
| 3.2(11)          | Dwell time                                   | Pass   |
| 3.4.1            | Interference prevention function             | Pass   |
| 3.3(1)           | Receiver Spurious Emission                   | 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:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

# 1 General Description

## 1.1 Information

### 1.1.1 Specification of the Equipment under Test (EUT)

|                                           |                                                           |
|-------------------------------------------|-----------------------------------------------------------|
| <b>Power Type</b>                         | DC 5V=3A/9V=2A/12V=1.5A from adapter                      |
| <b>Type(s) of Modulation / Technology</b> | FHSS / GFSK = 1Mbps, $\pi/4$ DQPSK = 2Mbps, 8DPSK = 3Mbps |
| <b>Frequency Range (MHz)</b>              | 2402 ~ 2480 MHz                                           |
| <b>Total Channel Number</b>               | 79                                                        |
| <b>HW Version</b>                         | DVT                                                       |
| <b>SW Version</b>                         | 1.1.10000.1                                               |

### 1.1.2 Accessories

| No. | Equipment         | Description                                                                                                         |
|-----|-------------------|---------------------------------------------------------------------------------------------------------------------|
| 1   | AC Adapter        | Brand: NUWA<br>Model: KA1803A-JP<br>Power Rating<br>I/O: 100-240Vac, 50/60Hz, 0.5A Max<br>O/P: 5V=3A/9V=2A/12V=1.5A |
| 2   | USB charger cable | 1.20m non-shielded without core                                                                                     |

### 1.1.3 Antenna Details

| Ant. No. | Type | Connector | Antenna Gain (dBi) |
|----------|------|-----------|--------------------|
| 1        | chip | No        | 1.98               |

Note: Please refer to antenna report for more details about antenna pattern and other information.

### 1.1.4 Antenna Power

| Operating Mode     | Rated Power (mW/MHz) | Measured Conducted Power (mW/MHz) | Radiated Power (mW/MHz) |
|--------------------|----------------------|-----------------------------------|-------------------------|
| BT-BR (1Mbps)      | 0.10                 | 0.09099                           | 0.14355                 |
| BT-EDR (3Mbps)     | 0.10                 | 0.06934                           | 0.10940                 |
| BT-BR-AFH (1Mbps)  | 0.40                 | 0.34754                           | 0.54828                 |
| BT-EDR-AFH (3Mbps) | 0.40                 | 0.26303                           | 0.41495                 |

### 1.1.5 Channel List

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 0       | 2402            | 20      | 2422            | 40      | 2442            | 60      | 2462            |
| 1       | 2403            | 21      | 2423            | 41      | 2443            | 61      | 2463            |
| 2       | 2404            | 22      | 2424            | 42      | 2444            | 62      | 2464            |
| 3       | 2405            | 23      | 2425            | 43      | 2445            | 63      | 2465            |
| 4       | 2406            | 24      | 2426            | 44      | 2446            | 64      | 2466            |
| 5       | 2407            | 25      | 2427            | 45      | 2447            | 65      | 2467            |
| 6       | 2408            | 26      | 2428            | 46      | 2448            | 66      | 2468            |
| 7       | 2409            | 27      | 2429            | 47      | 2449            | 67      | 2469            |
| 8       | 2410            | 28      | 2430            | 48      | 2450            | 68      | 2470            |
| 9       | 2411            | 29      | 2431            | 49      | 2451            | 69      | 2471            |
| 10      | 2412            | 30      | 2432            | 50      | 2452            | 70      | 2472            |
| 11      | 2413            | 31      | 2433            | 51      | 2453            | 71      | 2473            |
| 12      | 2414            | 32      | 2434            | 52      | 2454            | 72      | 2474            |
| 13      | 2415            | 33      | 2435            | 53      | 2455            | 73      | 2475            |
| 14      | 2416            | 34      | 2436            | 54      | 2456            | 74      | 2476            |
| 15      | 2417            | 35      | 2437            | 55      | 2457            | 75      | 2477            |
| 16      | 2418            | 36      | 2438            | 56      | 2458            | 76      | 2478            |
| 17      | 2419            | 37      | 2439            | 57      | 2459            | 77      | 2479            |
| 18      | 2420            | 38      | 2440            | 58      | 2460            | 78      | 2480            |
| 19      | 2421            | 39      | 2441            | 59      | 2461            |         |                 |

### 1.1.6 Test Tool and Power Index

| Test Tool                         |
|-----------------------------------|
| MP CMD Tool, Version: 1.1.10000.1 |

| Power Index |                 |         |         |
|-------------|-----------------|---------|---------|
| Channel     | Frequency (MHz) | GFSK    | 8DPSK   |
| 0           | 2402            | default | default |
| 39          | 2441            | default | default |
| 78          | 2480            | default | default |

### 1.1.7 Test Voltage

|                     |                                                  |                                                    |                                                    |
|---------------------|--------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| <b>Test Voltage</b> | <input checked="" type="checkbox"/> Vnom (5 Vdc) | <input checked="" type="checkbox"/> Vmax (5.5 Vdc) | <input checked="" type="checkbox"/> Vmin (4.5 Vdc) |
|---------------------|--------------------------------------------------|----------------------------------------------------|----------------------------------------------------|

### 1.1.8 Protection Method for High Frequency and Modulation Section

| Protected Method | Description                                                                                                                       |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Special Screw    | RF and Modulation components are covered within case of EUT and this case used special screw to protect anybody to open this case |

## 1.2 Test Equipment and Calibration Data

| <b>Test Item</b>                                                                                                                                | RF Conducted |              |            |                  |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|------------|------------------|-------------------|
| <b>Test Site</b>                                                                                                                                | (TH01-WS)    |              |            |                  |                   |
| Instrument                                                                                                                                      | Manufacturer | Model No.    | Serial No. | Calibration Date | Calibration Until |
| Spectrum Analyzer                                                                                                                               | R&S          | FSV40        | 101486     | Feb. 10, 2020    | Feb. 09, 2021     |
| Power Meter                                                                                                                                     | Anritsu      | ML2495A      | 1241002    | Oct. 23, 2019    | Oct. 22, 2020     |
| Power Sensor                                                                                                                                    | Anritsu      | MA2411B      | 1207366    | Oct. 23, 2019    | Oct. 22, 2020     |
| AC POWER SOURCE                                                                                                                                 | APC          | AFC-500W     | F312060012 | Dec. 02, 2019    | Dec. 01, 2020     |
| Bluetooth Tester                                                                                                                                | R&S          | CBT          | 100959     | Oct. 18, 2019    | Oct. 17, 2020     |
| Measurement Software                                                                                                                            | -            | SENSE-T66_FS | V5.10.7    | NA               | NA                |
| Note 1: Calibration Interval of instruments listed above is one year.<br>Note 2: Above instruments are calibrated by Electronics Testing Center |              |              |            |                  |                   |

## 1.3 Testing Applied Standards

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

Article 2 Paragraph 1 Item 19

## 1.4 Deviation from Test Standard and Measurement Procedure

None

## 1.5 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ( $k=2$ )).

| Measurement Uncertainty |                        |
|-------------------------|------------------------|
| Parameters              | Uncertainty            |
| Bandwidth               | $\pm 34.139$ Hz        |
| Conducted power         | $\pm 0.808$ dB         |
| Frequency error         | $\pm 1 \times 10^{-9}$ |
| TX Conducted emission   | $\pm 2.680$ dB         |
| RX Conducted emission   | $\pm 3.034$ dB         |
| Time                    | $\pm 0.1\%$            |

## 2 Test Configuration

### 2.1 Testing Location and Conditions

| Test Site | Site Category | Ambient Condition | Tested By |
|-----------|---------------|-------------------|-----------|
| TH01-WS   | OVEN Room     | 25°C / 65%        | Ryan Lee  |

### 2.2 Testing Facility

|                                     |                                                                                            |
|-------------------------------------|--------------------------------------------------------------------------------------------|
| Test Laboratory                     | International Certification Corp.                                                          |
| Test Site                           | TH01-WS                                                                                    |
| Address of Test Site<br>(Kwei Shan) | No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan,<br>R.O.C. |

### 2.3 Supporting Units

| Support Unit | Brand | Model          | FCC ID |
|--------------|-------|----------------|--------|
| Notebook     | DELL  | Latitude E5420 | DoC    |

### 2.4 The Worst Test Modes and Channel Details

| Test item                        | Mode        | Test channel |
|----------------------------------|-------------|--------------|
| Antenna Power                    | GFSK, 8DPSK | Hopping      |
| Frequency Tolerance              | GFSK, 8DPSK | 0 / 39 / 78  |
| Occupied Bandwidth               | GFSK, 8DPSK | Hopping      |
| Spreading Bandwidth and Factor   | GFSK, 8DPSK | Hopping      |
| Transmitter Spurious Emission    | GFSK, 8DPSK | Hopping      |
| Dwell time                       | GFSK, 8DPSK | Hopping      |
| Interference Prevention Function | GFSK, 8DPSK | Hopping      |
| Receiver Spurious Emission       | GFSK, 8DPSK | 0 / 39 / 78  |

### 3 Transmitter Test Results

#### 3.1 Antenna Power

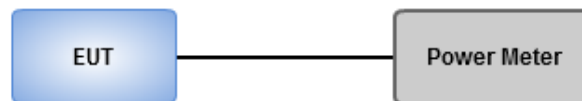
##### 3.1.1 Limit of Antenna Power

| Mode                           | Limit       | Tolerance     |
|--------------------------------|-------------|---------------|
| 1) FH, FH+DS, FH+OFDM          | 3 mW / MHz  | +20 % , -80 % |
| 2) OFDM(Narrow- bandwidht), DS | 10 mW / MHz |               |
| 3) Other than 1) & 2)          | 10mW        |               |
| 4) OFDM (Wide-band)            | 5 mW / MHz  |               |

##### 3.1.2 Test Procedures

1. Measure the total power by Power Meter in a state of hopping mode
2. Measure the burst ratio. Then calculate the real total power by burst ratio.
3. Calculate the mean power per 1MHz by dividing the total power by spread bandwidth
4.  $\text{Output Power Density (mW/MHz)} = \text{Total Output Power (mW)} / \text{Burst Ratio} / \text{Spread Bandwidth (MHz)}$

##### 3.1.3 Test Setup



##### 3.1.4 Test Result of Maximum Transmit Power

Refer to Appendix A1, A2

## 3.2 Frequency Tolerance

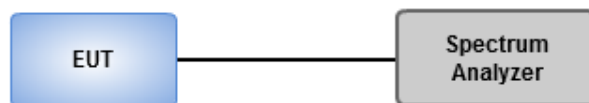
### 3.2.1 Limit of Frequency Tolerance

Frequency tolerance shall be +/- 50ppm.

### 3.2.2 Test Procedures

1. Set Span = 1.5 MHz, RBW = 100 kHz, VBW = 300 kHz, Sweep time = Auto, detector = Peak.
2. The peak value of the power envelope shall be measured and noted.
3. The span shall be reduced and the marker moved in a positive frequency increment until the upper, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f1.  
The marker shall then be moved in a negative frequency increment until the lower, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f2.  
The Measurement Frequency is calculated as  $(f1 + f2) / 2$ .
4.  $FT(ppm) = \{ (MF - CF) / CF \} \times 1000000$   
(FT: Frequency Tolerance, MF: Measurement Frequency, CF: Centre Frequency.)

### 3.2.3 Test Setup



### 3.2.4 Test Result of Frequency Tolerance

Refer to Appendix B

### 3.3 Occupied Bandwidth

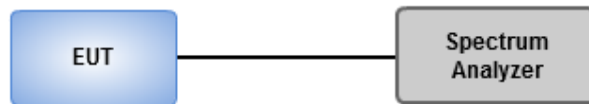
#### 3.3.1 Limit of Occupied Bandwidth

| Mode                        | Limit (MHz) |
|-----------------------------|-------------|
| FH                          | 83.5        |
| FH+DS                       | 83.5        |
| FH+OFDM                     | 83.5        |
| OFDM(Narrow- bandwidht), DS | 26          |
| Others                      | 26          |
| OFDM (Wide-band)            | 38          |

#### 3.3.2 Test Procedures

1. Set Span = 200MHz, RBW = VBW = 300kHz, detector = Peak, Sweep time = Auto.
2. Enable OBW function of spectrum analyzer to measure 99% bandwidth of total power.

#### 3.3.3 Test Setup



#### 3.3.4 Test Result of Occupied Bandwidth

Refer to Appendix C

### 3.4 Spreading Bandwidth and Factor

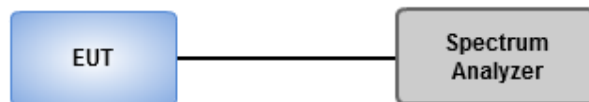
#### 3.4.1 Limit of Spreading Bandwidth and Factor

| Item                                                    | Limit                |
|---------------------------------------------------------|----------------------|
| Spreading bandwidth                                     | $\geq 500\text{kHz}$ |
| Spreading factor for DSSS (operates at 2400~2483.5 MHz) | $\geq 5$             |
| Spreading factor for DSSS (operates at 2471~2497 MHz)   | $\geq 10$            |

#### 3.4.2 Test Procedures

1. Set Span = 20MHz, RBW = VBW = 300kHz, detector = Peak, Sweep time = Auto.
2. Enable OBW (90%) function of spectrum analyzer to measure 90% bandwidth of total power.

#### 3.4.3 Test Setup



#### 3.4.4 Test Result of Spreading Bandwidth and Factor

Refer to Appendix D

### 3.5 Transmitter Spurious Emissions

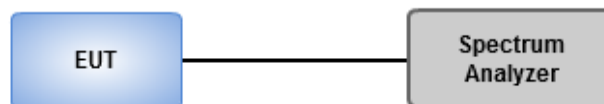
#### 3.5.1 Limit of Transmitter Spurious Emissions

| Item                 | Limits                                                                                                                        |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Tx Spurious Emission | $\leq 2.5 \mu\text{W}$ ( $2387\text{MHz} > f$ ; $2496.5\text{MHz} < f$ ).                                                     |
|                      | $\leq 25 \mu\text{W}$ .<br>( $2387\text{MHz} \leq f < 2400\text{MHz}$ ) and ( $2483.5\text{MHz} < f \leq 2496.5\text{MHz}$ ). |

#### 3.5.2 Test Procedures

1. Set EUT to transmit at rated power and channel to perform test.
2. Set RBW = VBW = 1MHz, Detector type = Peak, Sweep time = Auto.
3. Following above setting of spectrum analyzer to measure spurious emission of 30~12500 MHz.

#### 3.5.3 Test Setup



#### 3.5.4 Test Result of Transmitter Spurious Emissions

Refer to Appendix E

### 3.6 Dwell time

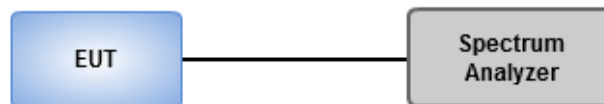
#### 3.6.1 Limit of Dwell time

|        |                               |
|--------|-------------------------------|
| Limits | Shall be less than 0.4 second |
|--------|-------------------------------|

#### 3.6.2 Test Procedures

1. Set EUT to transmit at rated power and channel to perform test.
2. Set RBW = VBW = 300kHz, Detector type = Peak, Span = Zero Span, Sweep time = 5 msec.
3. Use marker function to measure Burst on and off time.
4. Burst ratio = On Time / ( On Time + Off time)

#### 3.6.3 Test Setup



#### 3.6.4 Test Result of Dwell time

Refer to Appendix F

## 3.7 Interference Prevention Function

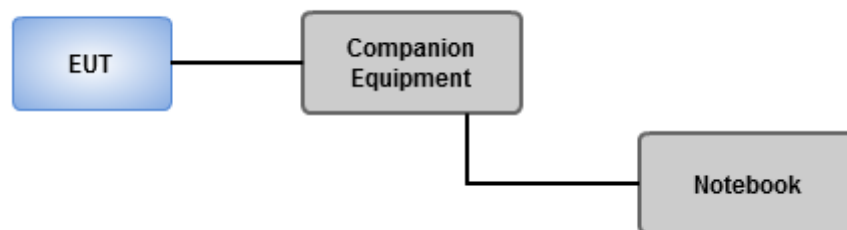
### 3.7.1 Limit of Interference Prevention Function

| Limits                                        |
|-----------------------------------------------|
| The identification code shall be 48 bits long |

### 3.7.2 Test Procedures

1. Set EUT under operating mode and link up with companion equipment
2. Check communication status between EUT and companion equipment is normal
3. Confirm the MAC address of EUT

### 3.7.3 Test Setup



### 3.7.4 Test Result of Interference Prevention Function

Refer to Appendix G

## 4 Receiver Test Results

### 4.1 Receiver Spurious Emissions

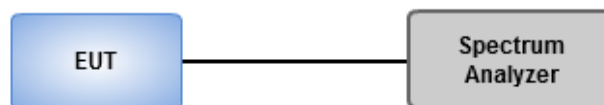
#### 4.1.1 Limit of Receiver Spurious Emissions

| Item                 | Limits                                       |
|----------------------|----------------------------------------------|
| Rx Spurious Emission | $\leq 4\text{nW}$ ( $f < 1\text{GHz}$ ).     |
|                      | $\leq 20\text{nW}$ ( $1\text{GHz} \leq f$ ). |

#### 4.1.2 Test Procedures

1. Set EUT under receiving condition to perform test
2. Set RBW = VBW = 100kHz, detector = Peak, Sweep time = Auto for emission measurement below 1GHz.
3. Set RBW = VBW=1MHz, detector = Peak, Sweep time = Auto for emission measurement above 1GHz.

#### 4.1.3 Test Setup



#### 4.1.4 Test Result of Receiver Spurious Emissions

Refer to Appendix H

## 5 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

### **Linkou**

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin Kou  
District, New Taipei City, Taiwan,  
R.O.C.

### **Kwei Shan**

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd  
St., Kwei Shan District, Tao Yuan  
City 333, Taiwan, R.O.C.

### **Kwei Shan Site II**

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd  
St., Kwei Shan District, Tao Yuan  
City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC\_Service@icertifi.com.tw

==END==



## Power-FHSS Result

## Appendix A.1

### Summary

| Mode              | Power<br>(dBm/MHz) | Power<br>(mW/MHz) | EIRP<br>(dBm/MHz) | EIRP<br>(mW/MHz) |
|-------------------|--------------------|-------------------|-------------------|------------------|
| 2.4-2.4835GHz     | -                  | -                 | -                 | -                |
| BT-BR(1Mbps)      | -10.41             | 0.09099           | -8.43             | 0.14355          |
| BT-EDR(3Mbps)     | -11.59             | 0.06934           | -9.61             | 0.10940          |
| BT-BR-AFH(1Mbps)  | -4.59              | 0.34754           | -2.61             | 0.54828          |
| BT-EDR-AFH(3Mbps) | -5.80              | 0.26303           | -3.82             | 0.41495          |

### Result

| Mode                  | Result | Gain<br>(dBi) | Power<br>(dBm/MHz) | Power<br>(mW/MHz) | Power<br>Lim.<br>(mW/MHz) | EIRP<br>(dBm/MHz) | EIRP<br>(mW/MHz) | EIRP Lim.<br>(mW/MHz) |
|-----------------------|--------|---------------|--------------------|-------------------|---------------------------|-------------------|------------------|-----------------------|
| BT-BR(1Mbps)          | -      | -             | -                  | -                 | -                         | -                 | -                | -                     |
| Hopping Mode_TnomVnom | Pass   | 1.98          | -10.42             | 0.09078           | 3                         | -8.44             | 0.14322          | 4.91                  |
| Hopping Mode_TnomVmin | Pass   | 1.98          | -10.43             | 0.09057           | 3                         | -8.45             | 0.14289          | 4.91                  |
| Hopping Mode_TnomVmax | Pass   | 1.98          | -10.41             | 0.09099           | 3                         | -8.43             | 0.14355          | 4.91                  |
| BT-EDR(3Mbps)         | -      | -             | -                  | -                 | -                         | -                 | -                | -                     |
| Hopping Mode_TnomVnom | Pass   | 1.98          | -11.60             | 0.06918           | 3                         | -9.62             | 0.10914          | 4.91                  |
| Hopping Mode_TnomVmin | Pass   | 1.98          | -11.62             | 0.06887           | 3                         | -9.64             | 0.10864          | 4.91                  |
| Hopping Mode_TnomVmax | Pass   | 1.98          | -11.59             | 0.06934           | 3                         | -9.61             | 0.10940          | 4.91                  |
| BT-BR-AFH(1Mbps)      | -      | -             | -                  | -                 | -                         | -                 | -                | -                     |
| Hopping Mode_TnomVnom | Pass   | 1.98          | -4.60              | 0.34674           | 3                         | -2.62             | 0.54702          | 4.91                  |
| Hopping Mode_TnomVmin | Pass   | 1.98          | -4.60              | 0.34674           | 3                         | -2.62             | 0.54702          | 4.91                  |
| Hopping Mode_TnomVmax | Pass   | 1.98          | -4.59              | 0.34754           | 3                         | -2.61             | 0.54828          | 4.91                  |
| BT-EDR-AFH(3Mbps)     | -      | -             | -                  | -                 | -                         | -                 | -                | -                     |
| Hopping Mode_TnomVnom | Pass   | 1.98          | -5.81              | 0.26242           | 3                         | -3.83             | 0.41400          | 4.91                  |
| Hopping Mode_TnomVmin | Pass   | 1.98          | -5.81              | 0.26242           | 3                         | -3.83             | 0.41400          | 4.91                  |
| Hopping Mode_TnomVmax | Pass   | 1.98          | -5.80              | 0.26303           | 3                         | -3.82             | 0.41495          | 4.91                  |



## Power Tolerance-FHSS Result

## Appendix A.2

### Summary

| Mode              | Result | Power<br>(dBm/MHz) | Power<br>(mW/MHz) | Declare<br>(mW/MHz) | Tolerance<br>(%) | Limit+<br>(%) | Limit-<br>(%) |
|-------------------|--------|--------------------|-------------------|---------------------|------------------|---------------|---------------|
| 2.4-2.4835GHz     | -      | -                  | -                 | -                   | -                | -             | -             |
| BT-BR(1Mbps)      | Pass   | -10.41             | 0.09099           | 0.10                | -9.01            | 20            | -80           |
| BT-EDR(3Mbps)     | Pass   | -11.62             | 0.06887           | 0.10                | -31.13           | 20            | -80           |
| BT-BR-AFH(1Mbps)  | Pass   | -4.60              | 0.34674           | 0.40                | -13.12           | 20            | -80           |
| BT-EDR-AFH(3Mbps) | Pass   | -5.81              | 0.26242           | 0.40                | -34.24           | 20            | -80           |

### Result

| Mode                  | Result | Power<br>(dBm/MHz) | Power<br>(mW/MHz) | Declare<br>(mW/MHz) | Tolerance<br>(%) | Limit+<br>(%) | Limit-<br>(%) |
|-----------------------|--------|--------------------|-------------------|---------------------|------------------|---------------|---------------|
| BT-BR(1Mbps)          | -      | -                  | -                 | -                   | -                | -             | -             |
| Hopping Mode_TnomVnom | Pass   | -10.42             | 0.09078           | 0.10                | -9.22            | 20            | -80           |
| Hopping Mode_TnomVmin | Pass   | -10.43             | 0.09057           | 0.10                | -9.43            | 20            | -80           |
| Hopping Mode_TnomVmax | Pass   | -10.41             | 0.09099           | 0.10                | -9.01            | 20            | -80           |
| BT-EDR(3Mbps)         | -      | -                  | -                 | -                   | -                | -             | -             |
| Hopping Mode_TnomVnom | Pass   | -11.60             | 0.06918           | 0.10                | -30.82           | 20            | -80           |
| Hopping Mode_TnomVmin | Pass   | -11.62             | 0.06887           | 0.10                | -31.13           | 20            | -80           |
| Hopping Mode_TnomVmax | Pass   | -11.59             | 0.06934           | 0.10                | -30.66           | 20            | -80           |
| BT-BR-AFH(1Mbps)      | -      | -                  | -                 | -                   | -                | -             | -             |
| Hopping Mode_TnomVnom | Pass   | -4.60              | 0.34674           | 0.40                | -13.32           | 20            | -80           |
| Hopping Mode_TnomVmin | Pass   | -4.60              | 0.34674           | 0.40                | -13.32           | 20            | -80           |
| Hopping Mode_TnomVmax | Pass   | -4.59              | 0.34754           | 0.40                | -13.12           | 20            | -80           |
| BT-EDR-AFH(3Mbps)     | -      | -                  | -                 | -                   | -                | -             | -             |
| Hopping Mode_TnomVnom | Pass   | -5.81              | 0.26242           | 0.40                | -34.40           | 20            | -80           |
| Hopping Mode_TnomVmin | Pass   | -5.81              | 0.26242           | 0.40                | -34.40           | 20            | -80           |
| Hopping Mode_TnomVmax | Pass   | -5.80              | 0.26303           | 0.40                | -34.24           | 20            | -80           |



## Frequency Tolerance-FHSS Result

## Appendix B

### Summary

| Mode          | Result | Ch<br>(Hz) | Center<br>(Hz) | ppm    | Limit<br>(ppm) | Port | Remark |
|---------------|--------|------------|----------------|--------|----------------|------|--------|
| 2.4-2.4835GHz | -      | -          | -              | -      | -              | -    | -      |
| BT-BR(1Mbps)  | Pass   | 2.48G      | 2.48000216G    | 0.869  | ±50            | 1    | -      |
| BT-EDR(3Mbps) | Pass   | 2.48G      | 2.4799895G     | -4.234 | ±50            | 1    | -      |

### Result

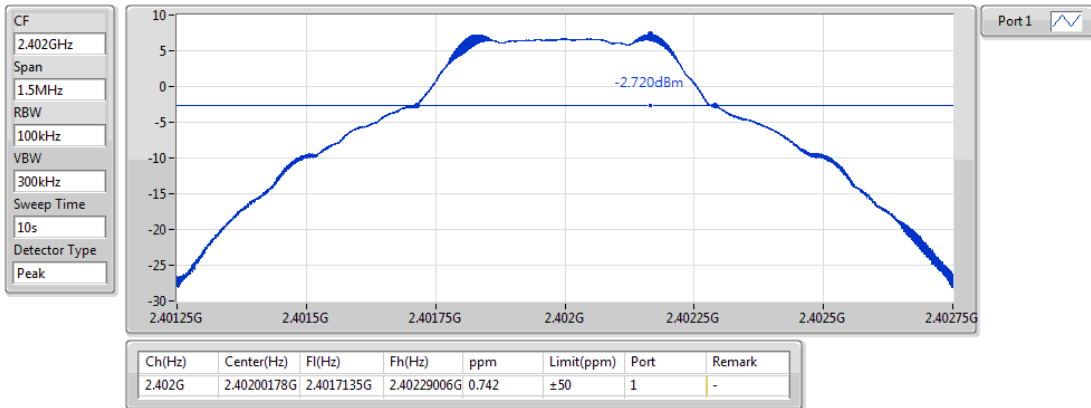
| Mode             | Result | Ch<br>(Hz) | Center<br>(Hz) | ppm    | Limit<br>(ppm) | Port | Remark |
|------------------|--------|------------|----------------|--------|----------------|------|--------|
| BT-BR(1Mbps)     | -      | -          | -              | -      | -              | -    | -      |
| 2402MHz_TnomVnom | Pass   | 2.402G     | 2.40200178G    | 0.742  | ±50            | 1    | -      |
| 2402MHz_TnomVmin | Pass   | 2.402G     | 2.40200169G    | 0.703  | ±50            | 1    | -      |
| 2402MHz_TnomVmax | Pass   | 2.402G     | 2.40200188G    | 0.781  | ±50            | 1    | -      |
| 2441MHz_TnomVnom | Pass   | 2.441G     | 2.44100141G    | 0.576  | ±50            | 1    | -      |
| 2441MHz_TnomVmin | Pass   | 2.441G     | 2.44100131G    | 0.538  | ±50            | 1    | -      |
| 2441MHz_TnomVmax | Pass   | 2.441G     | 2.44100159G    | 0.653  | ±50            | 1    | -      |
| 2480MHz_TnomVnom | Pass   | 2.48G      | 2.48000197G    | 0.794  | ±50            | 1    | -      |
| 2480MHz_TnomVmin | Pass   | 2.48G      | 2.48000216G    | 0.869  | ±50            | 1    | -      |
| 2480MHz_TnomVmax | Pass   | 2.48G      | 2.48000197G    | 0.794  | ±50            | 1    | -      |
| BT-EDR(3Mbps)    | -      | -          | -              | -      | -              | -    | -      |
| 2402MHz_TnomVnom | Pass   | 2.402G     | 2.40199034G    | -4.02  | ±50            | 1    | -      |
| 2402MHz_TnomVmin | Pass   | 2.402G     | 2.40199006G    | -4.137 | ±50            | 1    | -      |
| 2402MHz_TnomVmax | Pass   | 2.402G     | 2.40199006G    | -4.137 | ±50            | 1    | -      |
| 2441MHz_TnomVnom | Pass   | 2.441G     | 2.44099025G    | -3.994 | ±50            | 1    | -      |
| 2441MHz_TnomVmin | Pass   | 2.441G     | 2.44099034G    | -3.956 | ±50            | 1    | -      |
| 2441MHz_TnomVmax | Pass   | 2.441G     | 2.44099044G    | -3.917 | ±50            | 1    | -      |
| 2480MHz_TnomVnom | Pass   | 2.48G      | 2.4799895G     | -4.234 | ±50            | 1    | -      |
| 2480MHz_TnomVmin | Pass   | 2.48G      | 2.4799895G     | -4.234 | ±50            | 1    | -      |
| 2480MHz_TnomVmax | Pass   | 2.48G      | 2.47998997G    | -4.045 | ±50            | 1    | -      |



BT-BR(1Mbps)

Freq. Stability

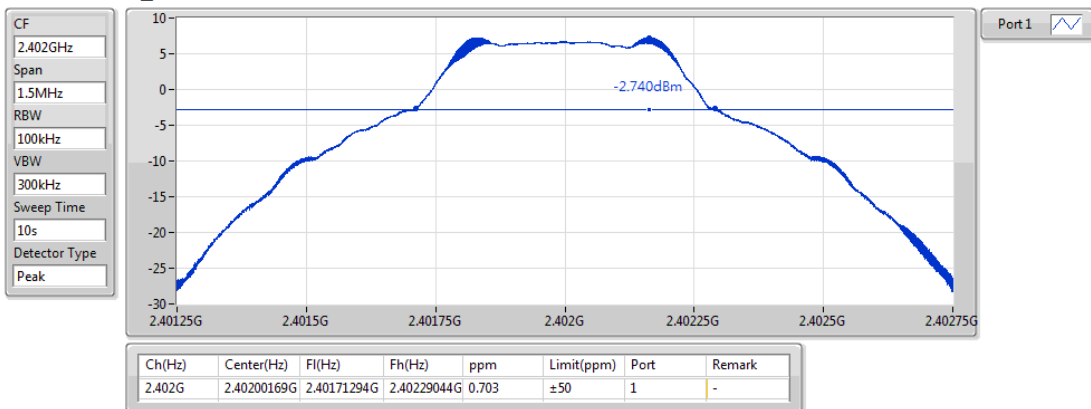
2402MHz\_TnomVnom



BT-BR(1Mbps)

Freq. Stability

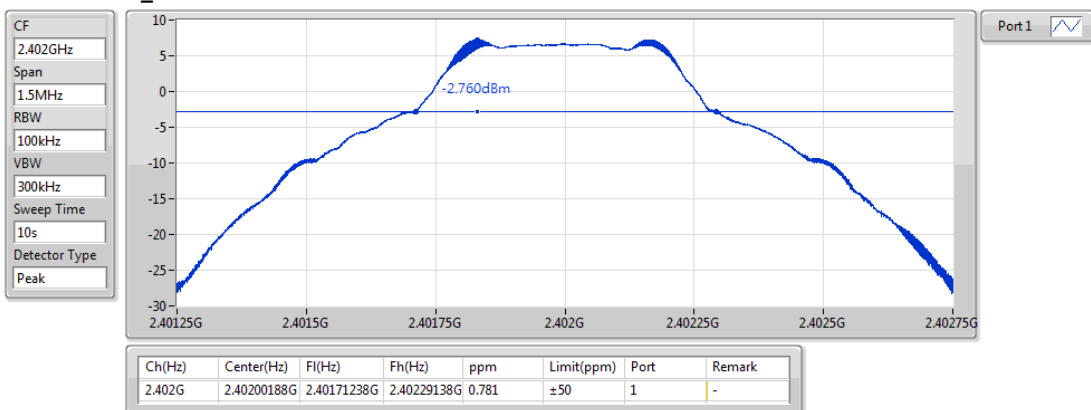
2402MHz\_TnomVmin



BT-BR(1Mbps)

Freq. Stability

2402MHz\_TnomVmax

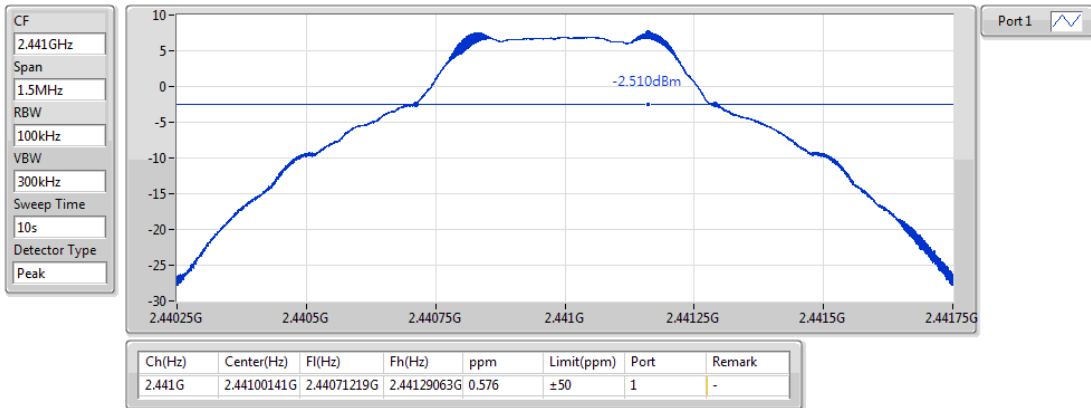




BT-BR(1Mbps)

Freq. Stability

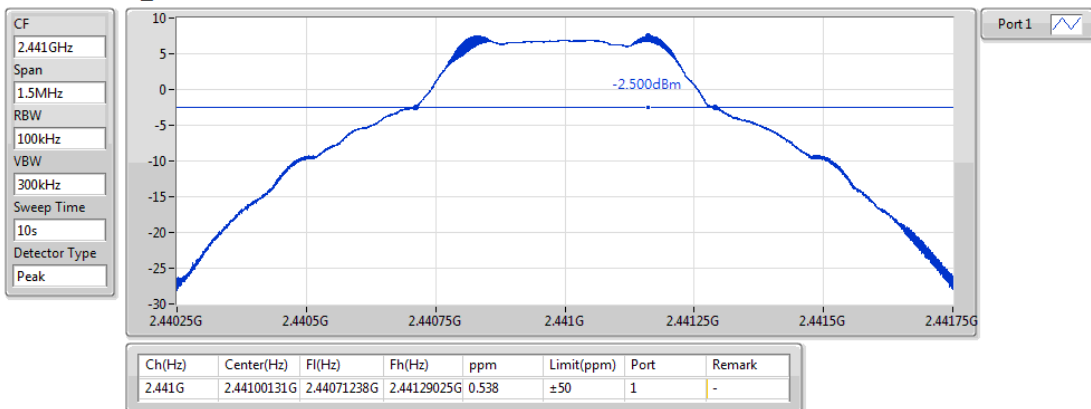
2441MHz\_TnomVnom



BT-BR(1Mbps)

Freq. Stability

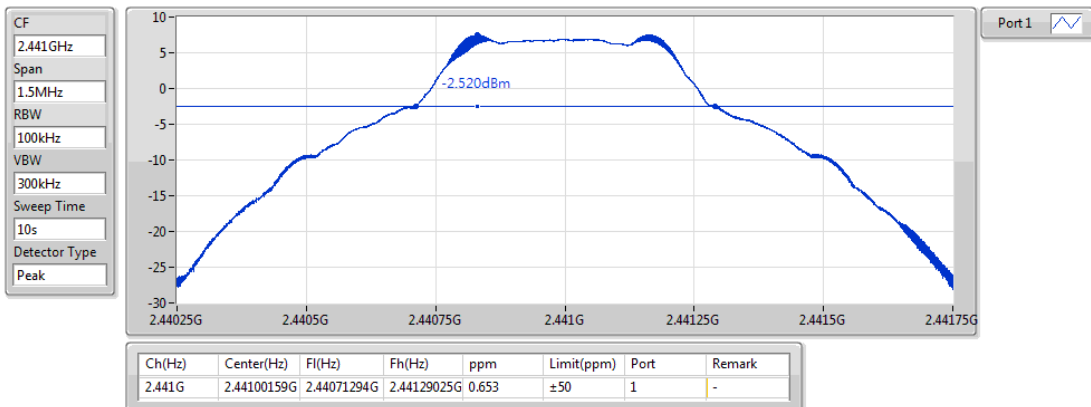
2441MHz\_TnomVmin



BT-BR(1Mbps)

Freq. Stability

2441MHz\_TnomVmax

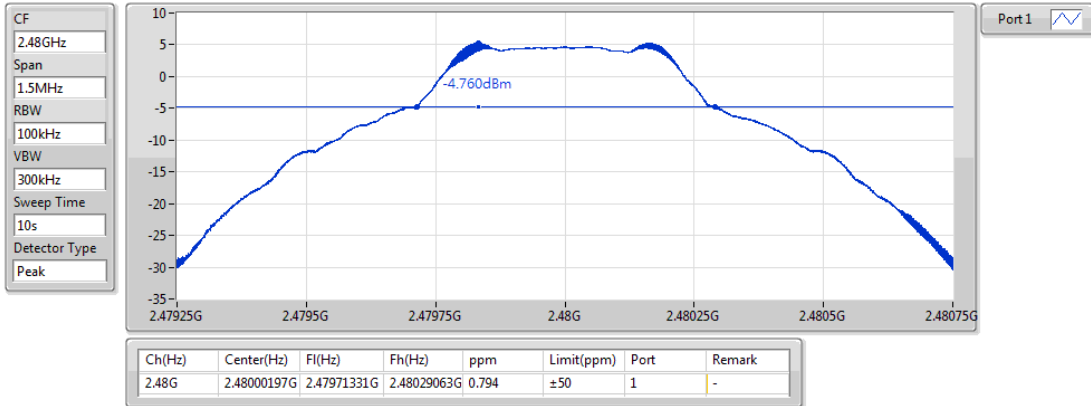




BT-BR(1Mbps)

Freq. Stability

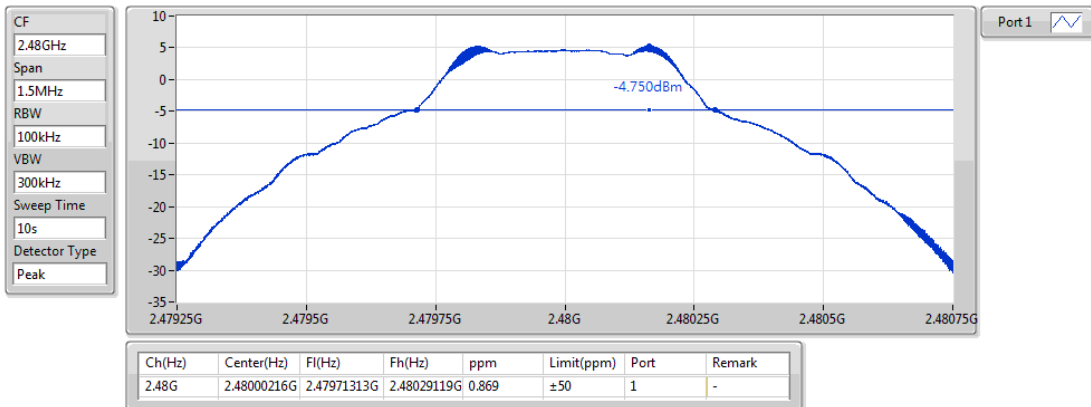
2480MHz\_TnomVnom



BT-BR(1Mbps)

Freq. Stability

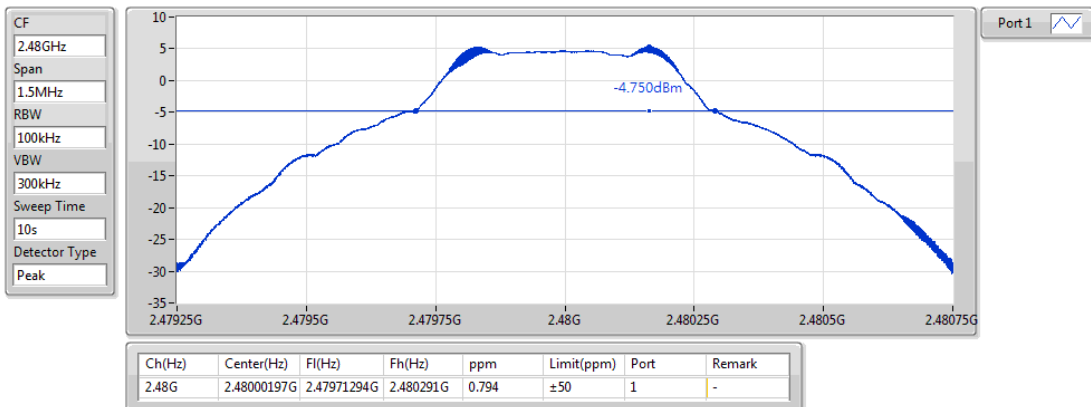
2480MHz\_TnomVmin



BT-BR(1Mbps)

Freq. Stability

2480MHz\_TnomVmax

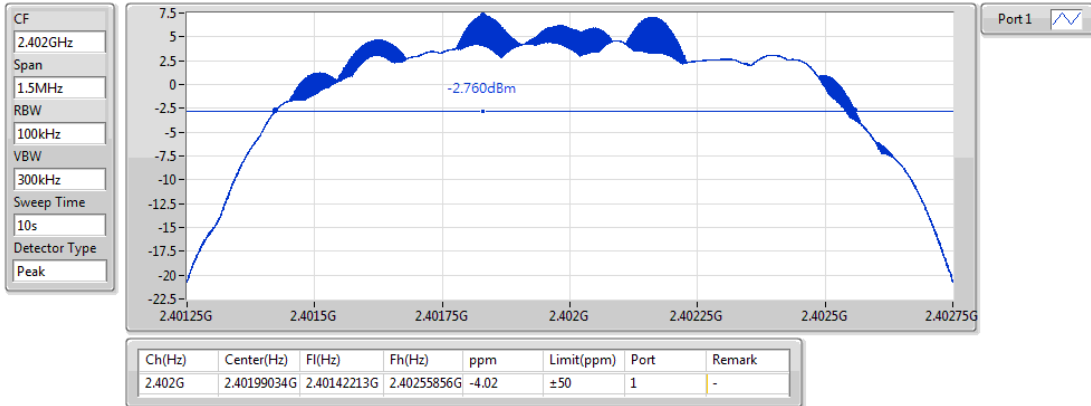




BT-EDR(3Mbps)

Freq. Stability

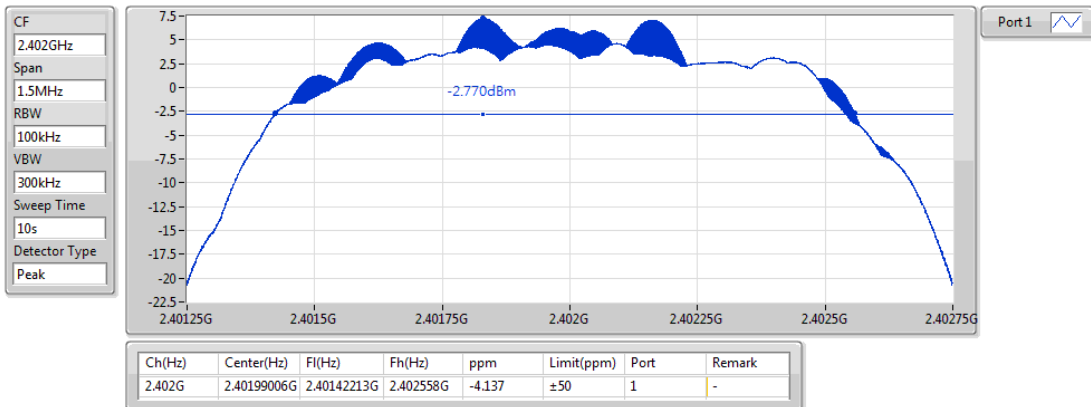
2402MHz\_TnomVnom



BT-EDR(3Mbps)

Freq. Stability

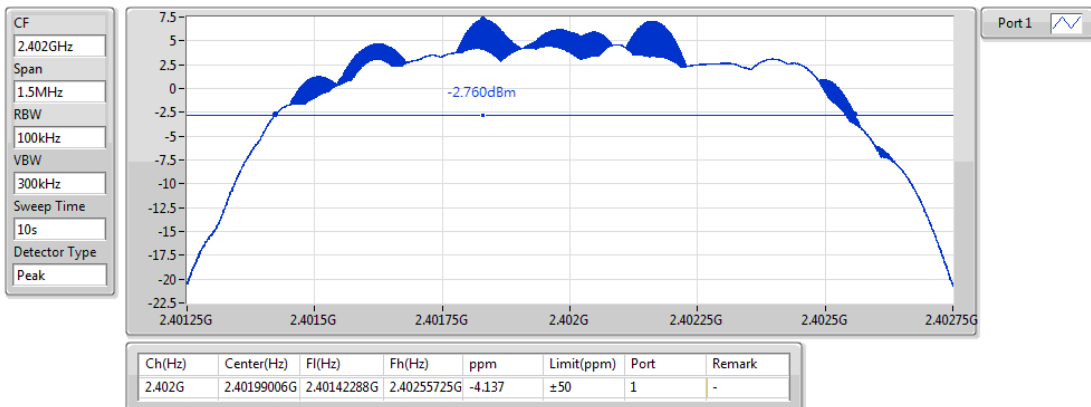
2402MHz\_TnomVmin



BT-EDR(3Mbps)

Freq. Stability

2402MHz\_TnomVmax

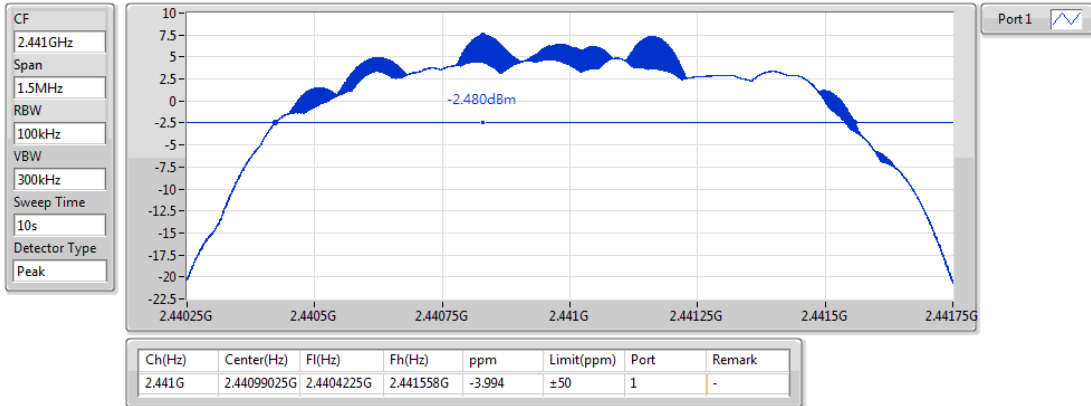




BT-EDR(3Mbps)

Freq. Stability

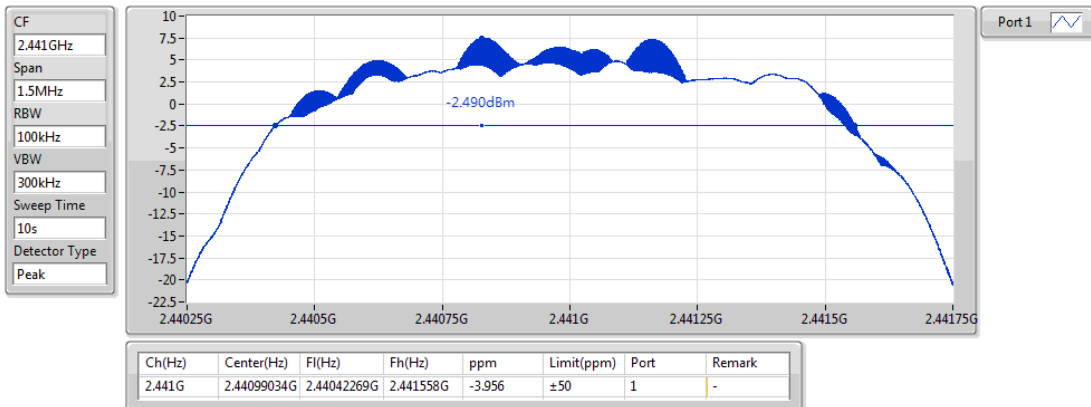
2441MHz\_TnomVnom



BT-EDR(3Mbps)

Freq. Stability

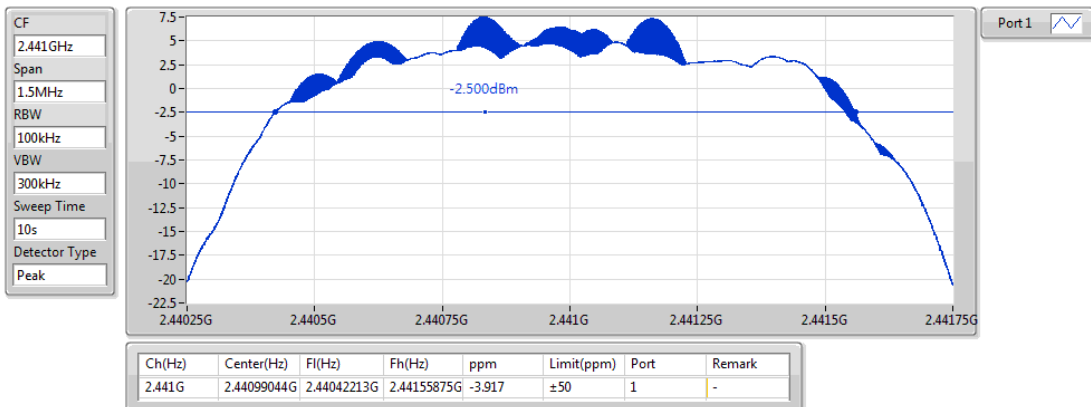
2441MHz\_TnomVmin



BT-EDR(3Mbps)

Freq. Stability

2441MHz\_TnomVmax

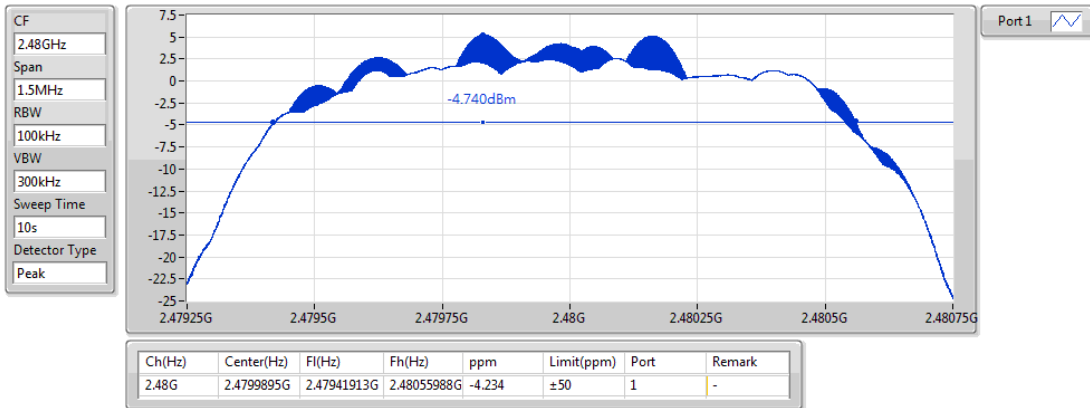




BT-EDR(3Mbps)

Freq. Stability

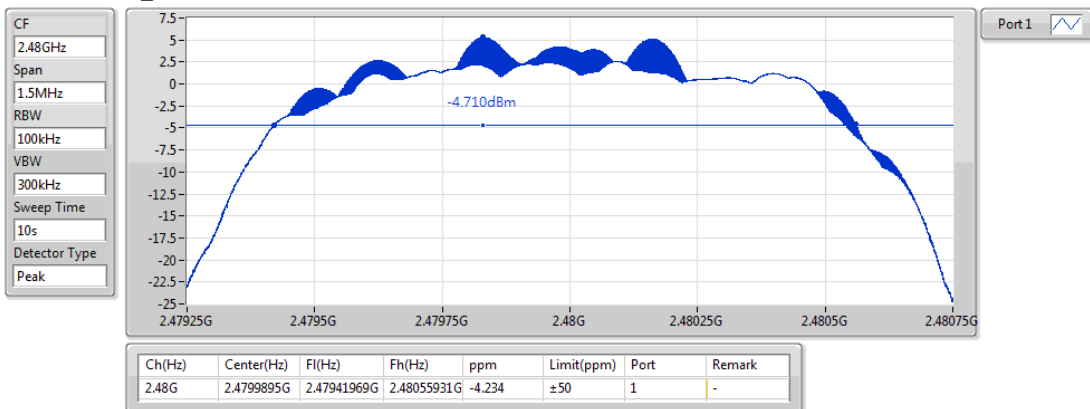
2480MHz\_TnomVnom



BT-EDR(3Mbps)

Freq. Stability

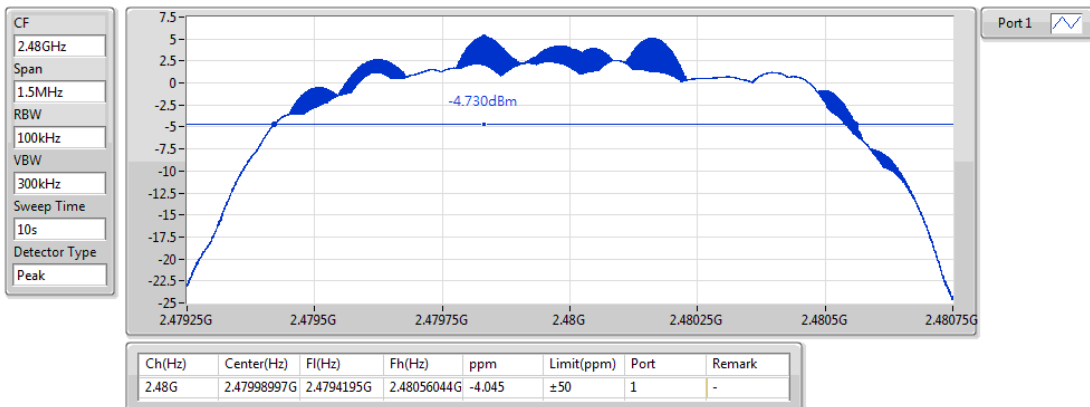
2480MHz\_TnomVmin



BT-EDR(3Mbps)

Freq. Stability

2480MHz\_TnomVmax





## Occupied Bandwidth-FHSS Result

## Appendix C

### Summary

| Mode              | Max-OBW<br>(Hz) | ITU-Code | Min-OBW<br>(Hz) |
|-------------------|-----------------|----------|-----------------|
| 2.4-2.4835GHz     | -               | -        | -               |
| BT-BR(1Mbps)      | 78.663M         | 78M6F1D  | 78.656M         |
| BT-EDR(3Mbps)     | 78.782M         | 78M7G1D  | 78.692M         |
| BT-BR-AFH(1Mbps)  | 20.542M         | 20M5F1D  | 20.541M         |
| BT-EDR-AFH(3Mbps) | 20.816M         | 20M8G1D  | 20.811M         |

**Max-OBW** = Maximum 99% occupied bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

### Result

| Mode                  | Result | Limit<br>(Hz) | P1-OBW<br>(Hz) |
|-----------------------|--------|---------------|----------------|
| BT-BR(1Mbps)          | -      | -             | -              |
| Hopping Mode_TnomVnom | Pass   | 83.5M         | 78.656M        |
| Hopping Mode_TnomVmin | Pass   | 83.5M         | 78.663M        |
| Hopping Mode_TnomVmax | Pass   | 83.5M         | 78.657M        |
| BT-EDR(3Mbps)         | -      | -             | -              |
| Hopping Mode_TnomVnom | Pass   | 83.5M         | 78.692M        |
| Hopping Mode_TnomVmin | Pass   | 83.5M         | 78.756M        |
| Hopping Mode_TnomVmax | Pass   | 83.5M         | 78.782M        |
| BT-BR-AFH(1Mbps)      | -      | -             | -              |
| Hopping Mode_TnomVnom | Pass   | 83.5M         | 20.542M        |
| Hopping Mode_TnomVmin | Pass   | 83.5M         | 20.541M        |
| Hopping Mode_TnomVmax | Pass   | 83.5M         | 20.542M        |
| BT-EDR-AFH(3Mbps)     | -      | -             | -              |
| Hopping Mode_TnomVnom | Pass   | 83.5M         | 20.811M        |
| Hopping Mode_TnomVmin | Pass   | 83.5M         | 20.816M        |
| Hopping Mode_TnomVmax | Pass   | 83.5M         | 20.816M        |

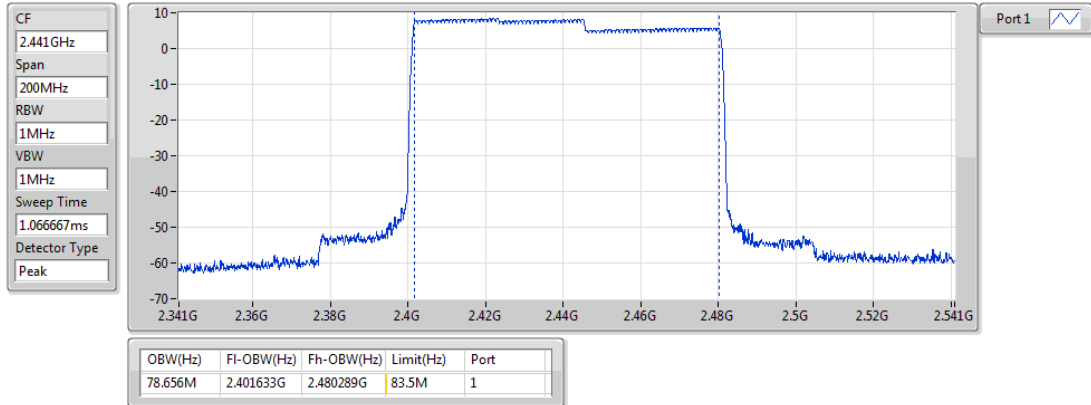
**P1-OBW** = Port 1 99% occupied bandwidth;



BT-BR(1Mbps)

OBW

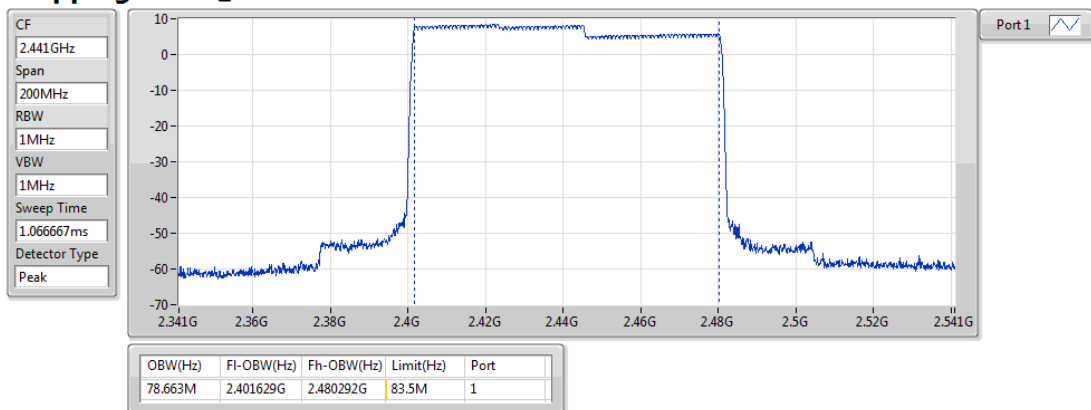
Hopping Mode\_TnomVnom



BT-BR(1Mbps)

OBW

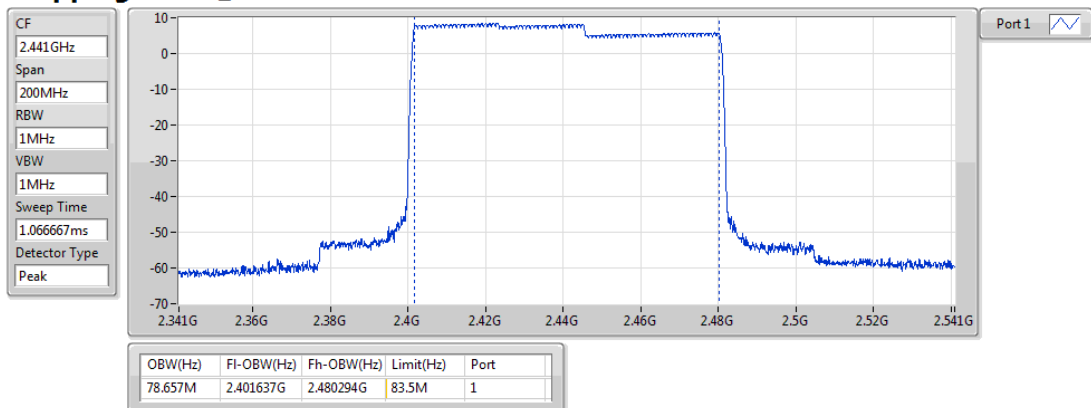
Hopping Mode\_TnomVmin



BT-BR(1Mbps)

OBW

Hopping Mode\_TnomVmax

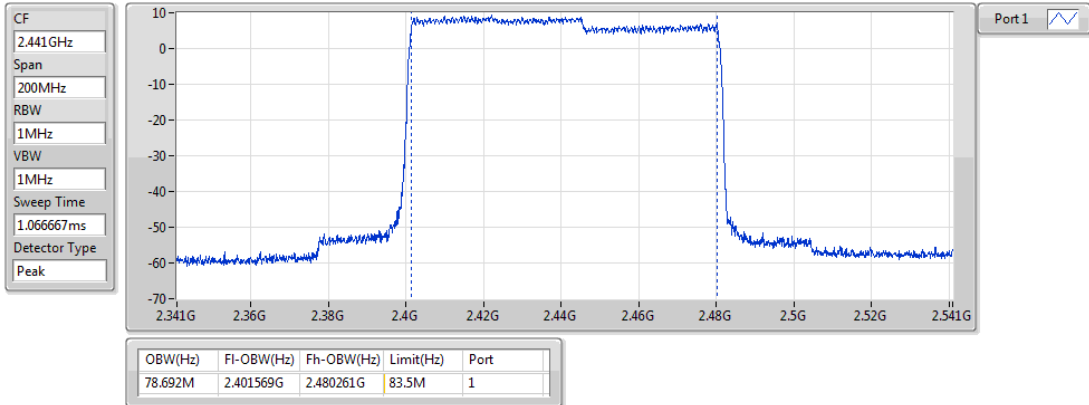




BT-EDR(3Mbps)

OBW

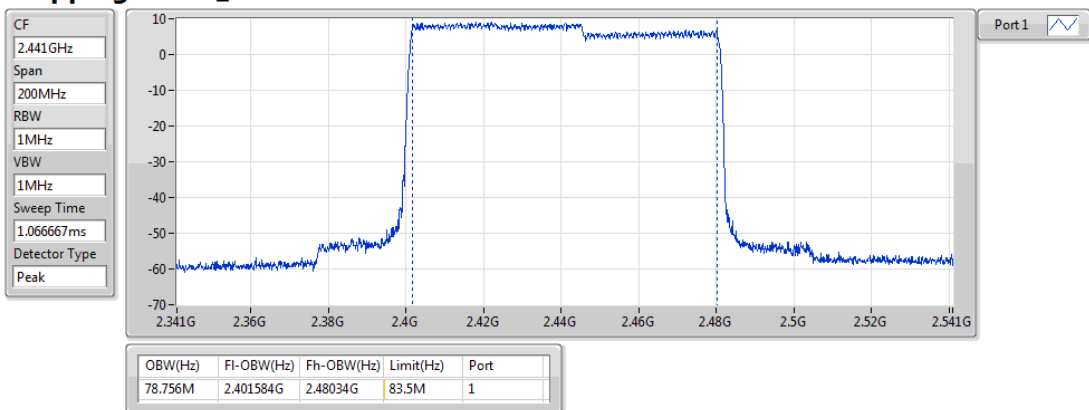
Hopping Mode\_TnomVnom



BT-EDR(3Mbps)

OBW

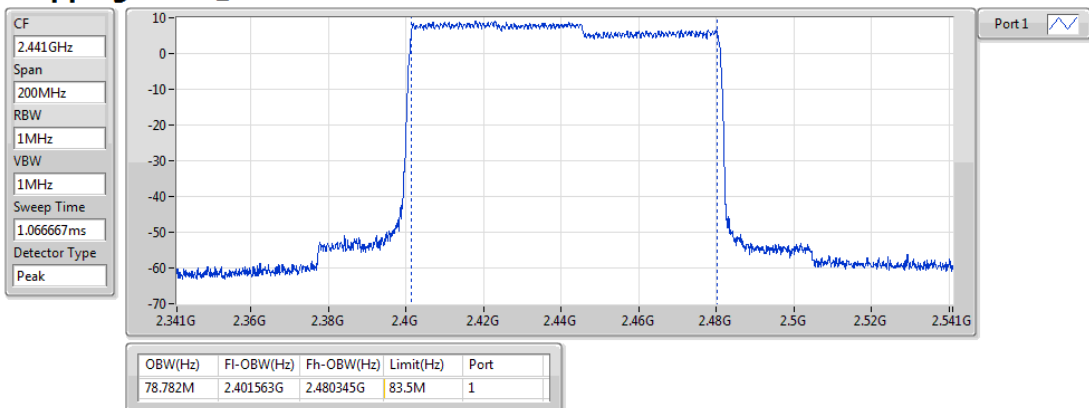
Hopping Mode\_TnomVmin



BT-EDR(3Mbps)

OBW

Hopping Mode\_TnomVmax

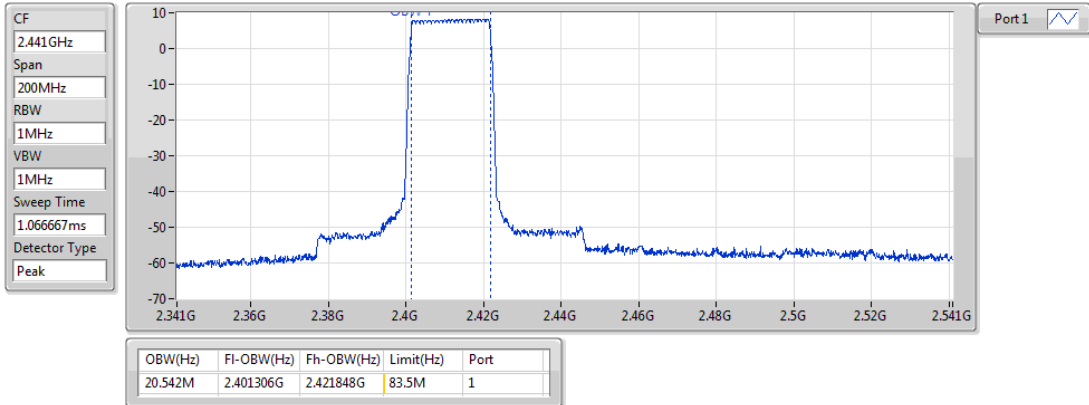




BT-BR-AFH(1Mbps)

OBW

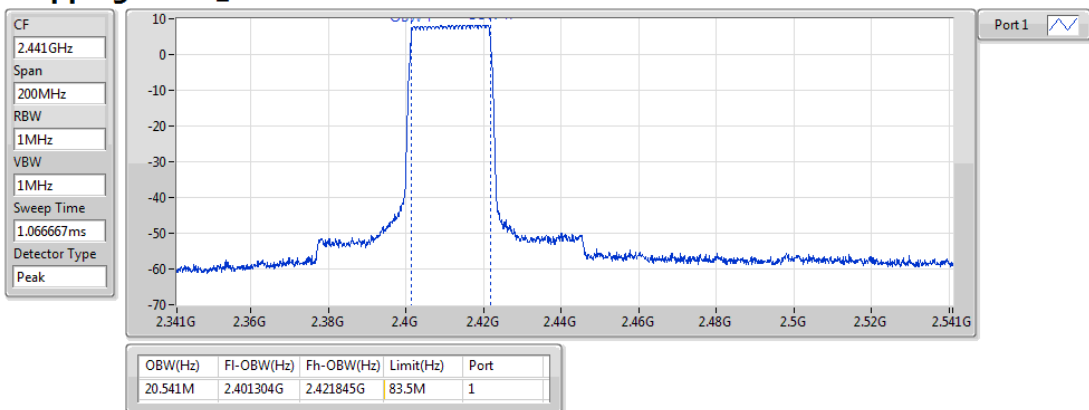
Hopping Mode\_TnomVnom



BT-BR-AFH(1Mbps)

OBW

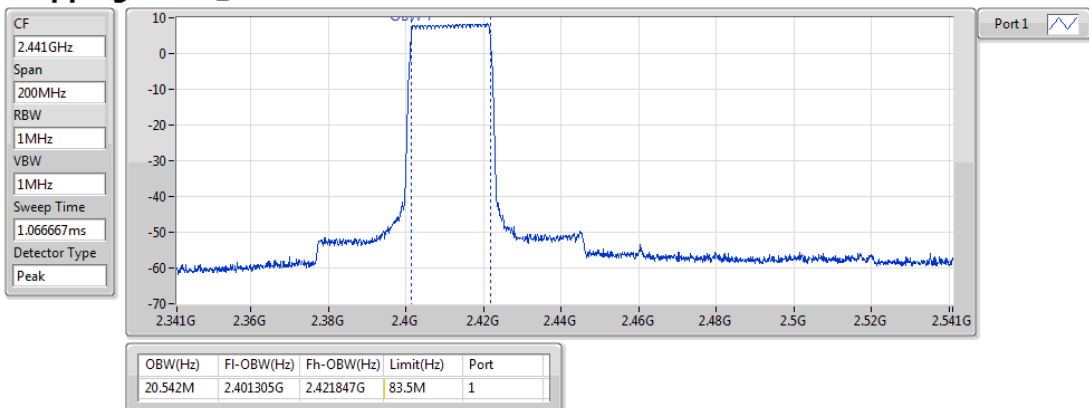
Hopping Mode\_TnomVmin



BT-BR-AFH(1Mbps)

OBW

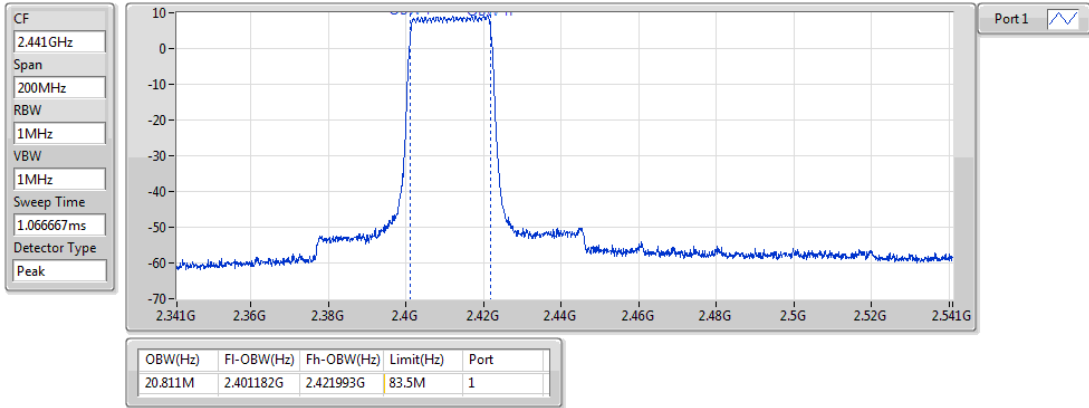
Hopping Mode\_TnomVmax



## BT-EDR-AFH(3Mbps)

OBW

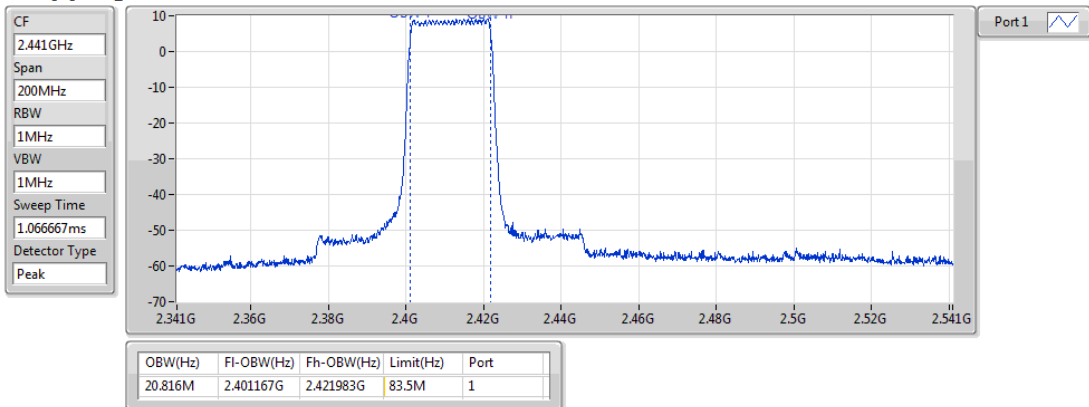
### Hopping Mode\_TnomVnom



## BT-EDR-AFH(3Mbps)

OBW

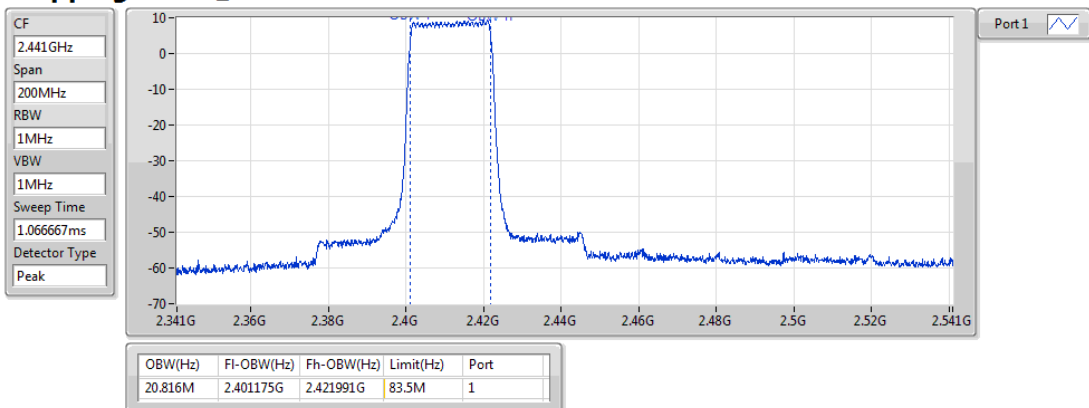
### Hopping Mode\_TnomVmin



## BT-EDR-AFH(3Mbps)

OBW

### Hopping Mode\_TnomVmax





## Spread Bandwidth-FHSS Result

## Appendix D

### Summary

| Mode              | Max-SBW<br>(Hz) | Min-SBW<br>(Hz) | Max-SF | Min-SF |
|-------------------|-----------------|-----------------|--------|--------|
| 2.4-2.4835GHz     | -               | -               | -      | -      |
| BT-BR(1Mbps)      | 70.844M         | 70.822M         | 70.844 | 70.822 |
| BT-EDR(3Mbps)     | 71.075M         | 70.977M         | 71.075 | 70.977 |
| BT-BR-AFH(1Mbps)  | 18.522M         | 18.505M         | 18.522 | 18.505 |
| BT-EDR-AFH(3Mbps) | 18.724M         | 18.67M          | 18.724 | 18.67  |

**Max-SBW** = Maximum spreading bandwidth; **Min-SBW** = Minimum spreading bandwidth;  
**Max-SF** = Maximum spreading factor; **Min-SF** = Minimum spreading factor;

### Result

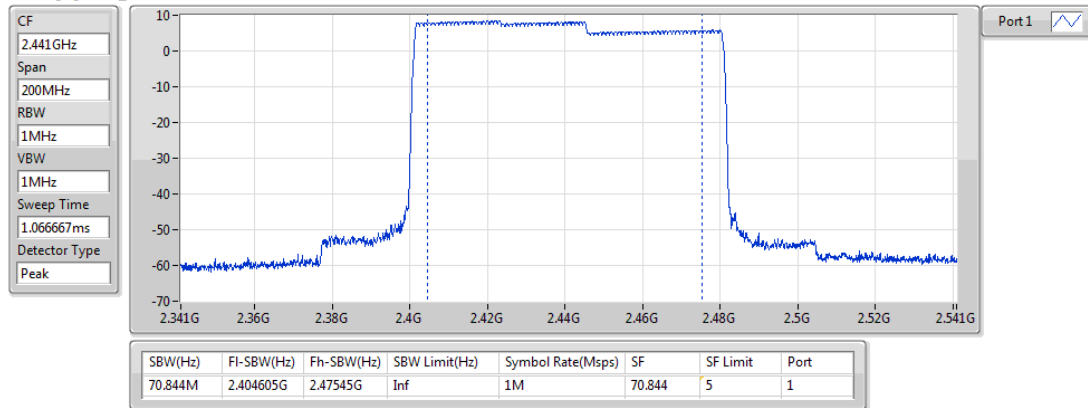
| Mode                  | Result | Symbol Rate<br>(Mps) | SF Limit | P1-SBW<br>(Hz) | P1-SF  |
|-----------------------|--------|----------------------|----------|----------------|--------|
| BT-BR(1Mbps)          | -      | -                    | -        | -              | -      |
| Hopping Mode_TnomVnom | Pass   | 1M                   | 5        | 70.844M        | 70.844 |
| Hopping Mode_TnomVmin | Pass   | 1M                   | 5        | 70.826M        | 70.826 |
| Hopping Mode_TnomVmax | Pass   | 1M                   | 5        | 70.822M        | 70.822 |
| BT-EDR(3Mbps)         | -      | -                    | -        | -              | -      |
| Hopping Mode_TnomVnom | Pass   | 1M                   | 5        | 70.989M        | 70.989 |
| Hopping Mode_TnomVmin | Pass   | 1M                   | 5        | 71.075M        | 71.075 |
| Hopping Mode_TnomVmax | Pass   | 1M                   | 5        | 70.977M        | 70.977 |
| BT-BR-AFH(1Mbps)      | -      | -                    | -        | -              | -      |
| Hopping Mode_TnomVnom | Pass   | 1M                   | 5        | 18.518M        | 18.518 |
| Hopping Mode_TnomVmin | Pass   | 1M                   | 5        | 18.505M        | 18.505 |
| Hopping Mode_TnomVmax | Pass   | 1M                   | 5        | 18.522M        | 18.522 |
| BT-EDR-AFH(3Mbps)     | -      | -                    | -        | -              | -      |
| Hopping Mode_TnomVnom | Pass   | 1M                   | 5        | 18.724M        | 18.724 |
| Hopping Mode_TnomVmin | Pass   | 1M                   | 5        | 18.67M         | 18.67  |
| Hopping Mode_TnomVmax | Pass   | 1M                   | 5        | 18.718M        | 18.718 |

**P1-SBW** = Port 1 spreading bandwidth; **P1-SF** = Port 1 spreading factor

## BT-BR(1Mbps)

SBW

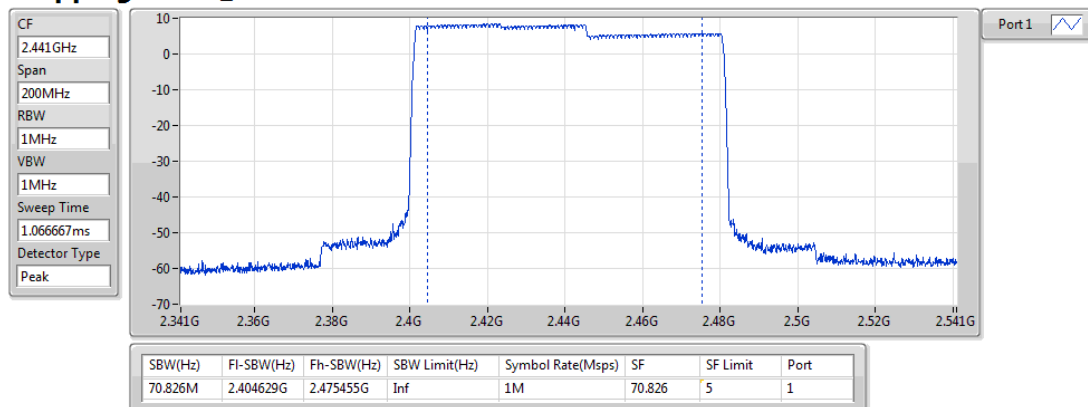
### Hopping Mode\_TnomVnom



## BT-BR(1Mbps)

SBW

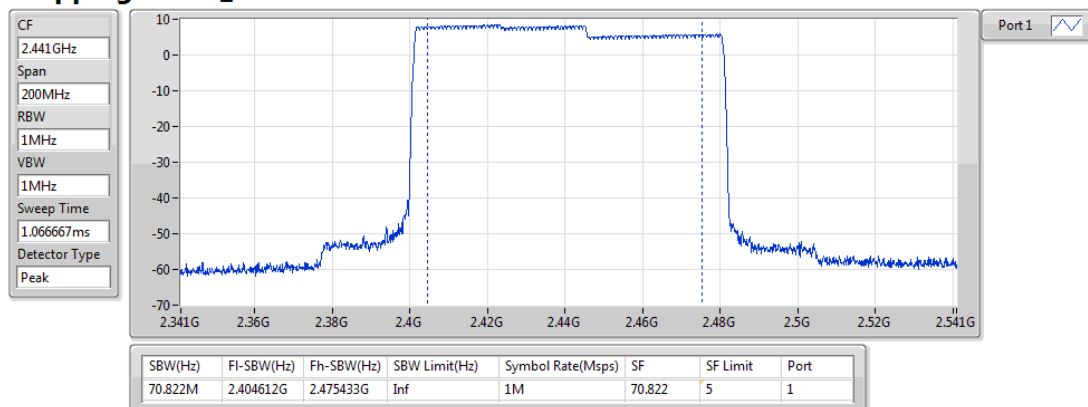
### Hopping Mode\_TnomVmin



## BT-BR(1Mbps)

SBW

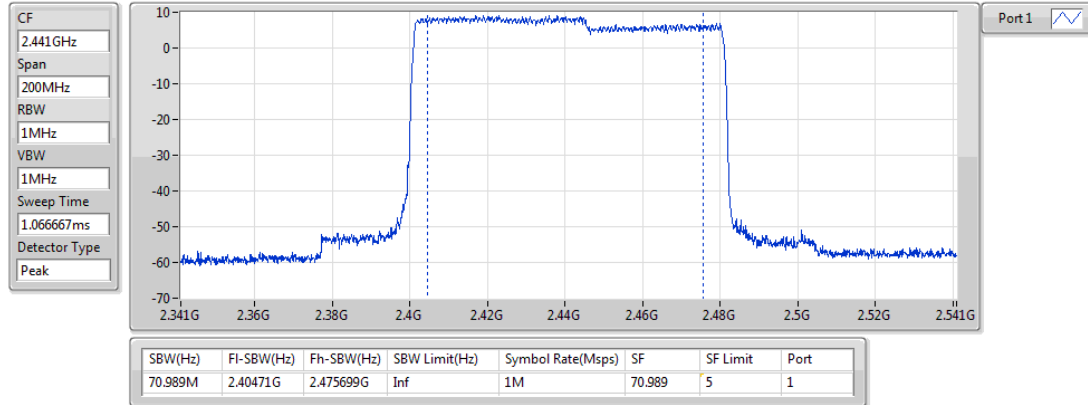
### Hopping Mode\_TnomVmax



## BT-EDR(3Mbps)

SBW

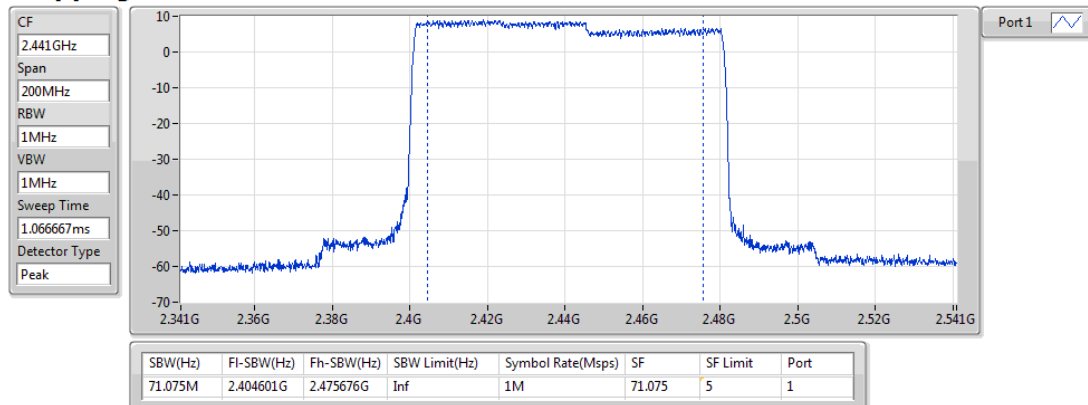
### Hopping Mode\_TnomVnom



## BT-EDR(3Mbps)

SBW

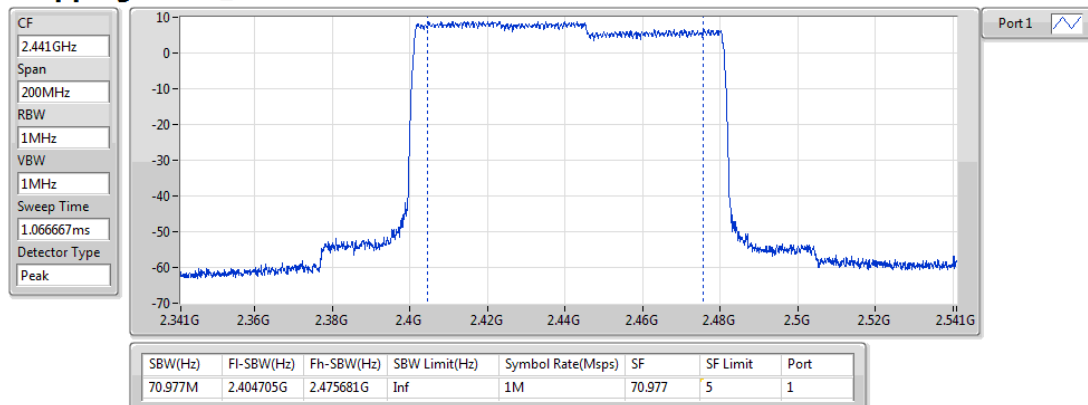
### Hopping Mode\_TnomVmin



## BT-EDR(3Mbps)

SBW

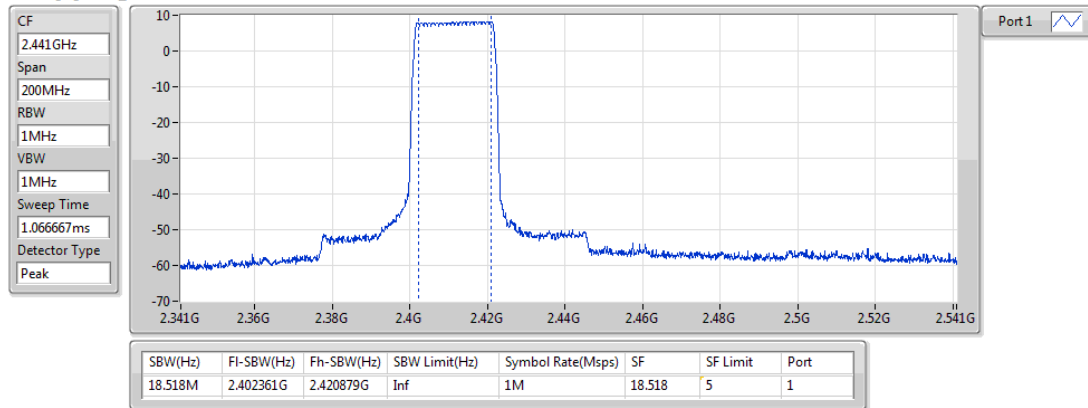
### Hopping Mode\_TnomVmax



## BT-BR-AFH(1Mbps)

SBW

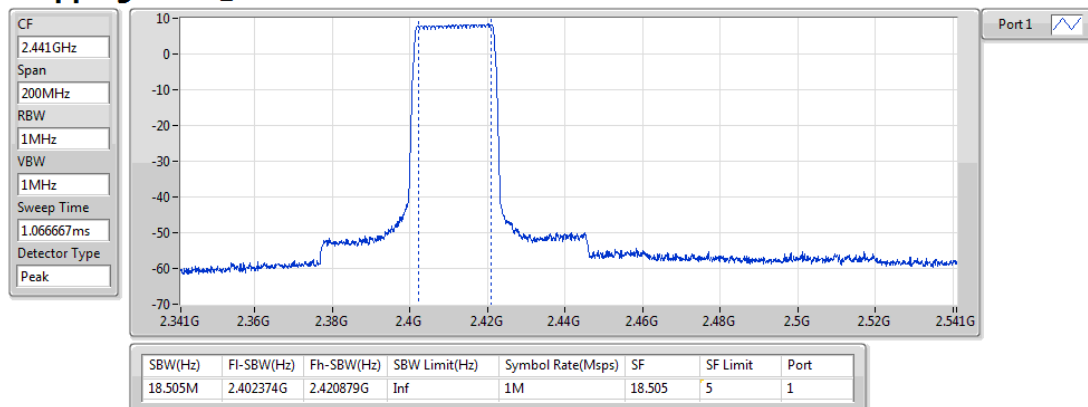
### Hopping Mode\_TnomVnom



## BT-BR-AFH(1Mbps)

SBW

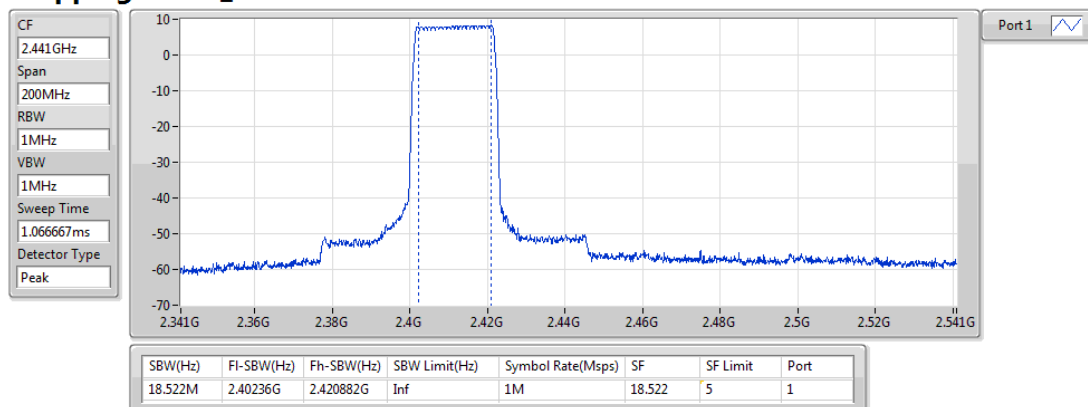
### Hopping Mode\_TnomVmin



## BT-BR-AFH(1Mbps)

SBW

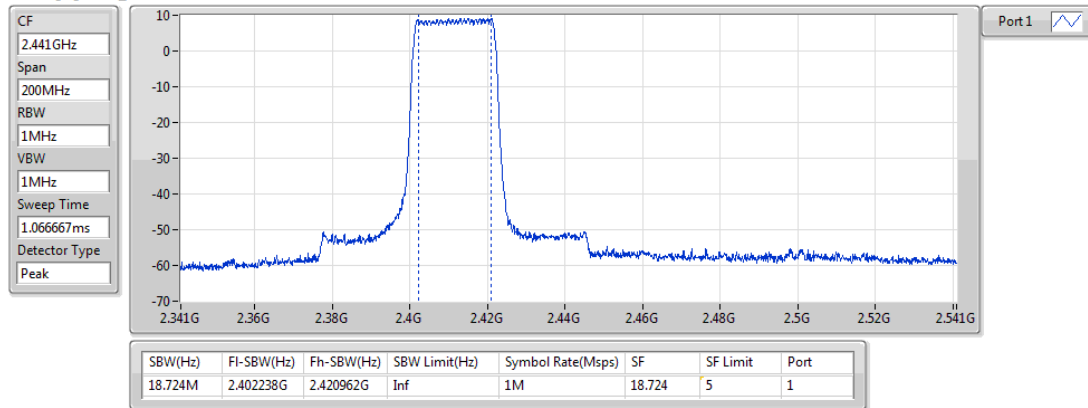
### Hopping Mode\_TnomVmax



## BT-EDR-AFH(3Mbps)

SBW

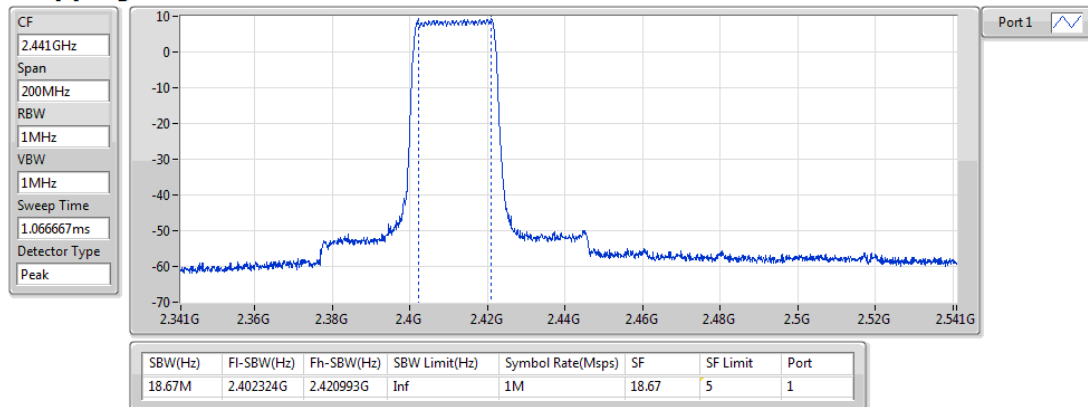
### Hopping Mode\_TnomVnom



## BT-EDR-AFH(3Mbps)

SBW

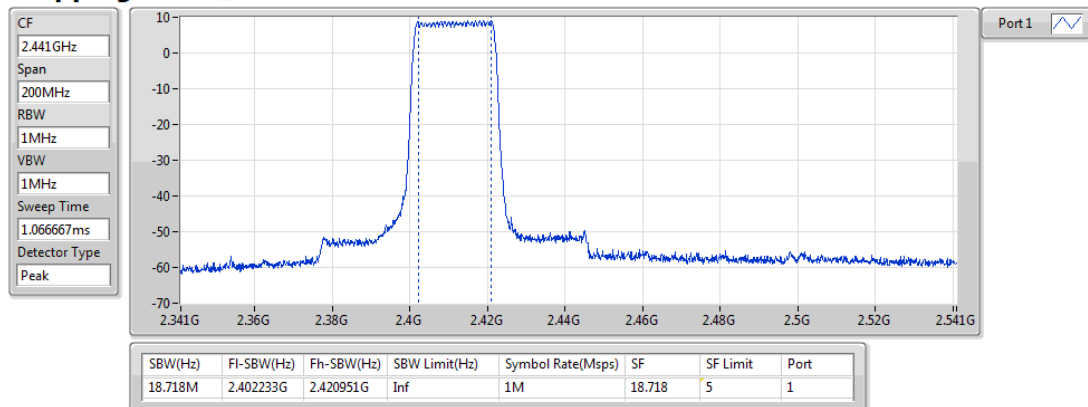
### Hopping Mode\_TnomVmin



## BT-EDR-AFH(3Mbps)

SBW

### Hopping Mode\_TnomVmax



**CSE-TX Unwanted Emission Strength-FHSS Result****Appendix E****Summary**

| Mode          | Result | F-Start<br>(Hz) | F-Stop<br>(Hz) | RBW<br>(Hz) | Freq<br>(Hz) | Psum<br>(dBm) | Psum<br>(uW/MHz) | Limit<br>(dBm) | Limit<br>(uW/MHz) |
|---------------|--------|-----------------|----------------|-------------|--------------|---------------|------------------|----------------|-------------------|
| 2.4-2.4835GHz | -      | -               | -              | -           | -            | -             | -                | -              | -                 |
| BT-BR(1Mbps)  | Pass   | 2.4965G         | 12.5G          | 1M          | 12.47499G    | -51.92        | 0.00643          | -26.02         | 2.5               |
| BT-EDR(3Mbps) | Pass   | 2.387G          | 2.4G           | 1M          | 2.3999G      | -32.79        | 0.52602          | -16.02         | 25                |

**Result**

| Mode                  | Result | F-Start<br>(Hz) | F-Stop<br>(Hz) | RBW<br>(Hz) | Freq<br>(Hz) | Psum<br>(dBm) | Psum<br>(uW/MHz) | Limit<br>(dBm) | Limit<br>(uW/MHz) |
|-----------------------|--------|-----------------|----------------|-------------|--------------|---------------|------------------|----------------|-------------------|
| BT-BR(1Mbps)          | -      | -               | -              | -           | -            | -             | -                | -              | -                 |
| Hopping Mode_TnomVnom | Pass   | 30M             | 2.387G         | 1M          | 2.38464G     | -54.18        | 0.00382          | -26.02         | 2.5               |
| Hopping Mode_TnomVnom | Pass   | 2.387G          | 2.4G           | 1M          | 2.39904G     | -51.35        | 0.00733          | -16.02         | 25                |
| Hopping Mode_TnomVnom | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.4836G      | -52.50        | 0.00562          | -16.02         | 25                |
| Hopping Mode_TnomVnom | Pass   | 2.4965G         | 12.5G          | 1M          | 12.47499G    | -51.92        | 0.00643          | -26.02         | 2.5               |
| Hopping Mode_TnomVmin | Pass   | 30M             | 2.387G         | 1M          | 2.36579G     | -55.93        | 0.00255          | -26.02         | 2.5               |
| Hopping Mode_TnomVmin | Pass   | 2.387G          | 2.4G           | 1M          | 2.39808G     | -52.11        | 0.00615          | -16.02         | 25                |
| Hopping Mode_TnomVmin | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.48415G     | -52.50        | 0.00562          | -16.02         | 25                |
| Hopping Mode_TnomVmin | Pass   | 2.4965G         | 12.5G          | 1M          | 12.44248G    | -51.94        | 0.0064           | -26.02         | 2.5               |
| Hopping Mode_TnomVmax | Pass   | 30M             | 2.387G         | 1M          | 2.354G       | -55.76        | 0.00265          | -26.02         | 2.5               |
| Hopping Mode_TnomVmax | Pass   | 2.387G          | 2.4G           | 1M          | 2.39919G     | -51.28        | 0.00745          | -16.02         | 25                |
| Hopping Mode_TnomVmax | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.48381G     | -52.24        | 0.00597          | -16.02         | 25                |
| Hopping Mode_TnomVmax | Pass   | 2.4965G         | 12.5G          | 1M          | 12.43873G    | -52.03        | 0.00627          | -26.02         | 2.5               |
| BT-EDR(3Mbps)         | -      | -               | -              | -           | -            | -             | -                | -              | -                 |
| Hopping Mode_TnomVnom | Pass   | 30M             | 2.387G         | 1M          | 2.23969G     | -55.63        | 0.00274          | -26.02         | 2.5               |
| Hopping Mode_TnomVnom | Pass   | 2.387G          | 2.4G           | 1M          | 2.3999G      | -32.79        | 0.52602          | -16.02         | 25                |
| Hopping Mode_TnomVnom | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.48363G     | -52.88        | 0.00515          | -16.02         | 25                |
| Hopping Mode_TnomVnom | Pass   | 2.4965G         | 12.5G          | 1M          | 12.39496G    | -51.99        | 0.00632          | -26.02         | 2.5               |
| Hopping Mode_TnomVmin | Pass   | 30M             | 2.387G         | 1M          | 2.38464G     | -54.14        | 0.00385          | -26.02         | 2.5               |
| Hopping Mode_TnomVmin | Pass   | 2.387G          | 2.4G           | 1M          | 2.39992G     | -49.17        | 0.01211          | -16.02         | 25                |
| Hopping Mode_TnomVmin | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.4841G      | -53.28        | 0.0047           | -16.02         | 25                |
| Hopping Mode_TnomVmin | Pass   | 2.4965G         | 12.5G          | 1M          | 12.42247G    | -51.92        | 0.00643          | -26.02         | 2.5               |
| Hopping Mode_TnomVmax | Pass   | 30M             | 2.387G         | 1M          | 2.35872G     | -55.83        | 0.00261          | -26.02         | 2.5               |
| Hopping Mode_TnomVmax | Pass   | 2.387G          | 2.4G           | 1M          | 2.3988G      | -48.82        | 0.01312          | -16.02         | 25                |
| Hopping Mode_TnomVmax | Pass   | 2.4835G         | 2.4965G        | 1M          | 2.48368G     | -53.16        | 0.00483          | -16.02         | 25                |
| Hopping Mode_TnomVmax | Pass   | 2.4965G         | 12.5G          | 1M          | 12.3662G     | -51.72        | 0.00673          | -26.02         | 2.5               |



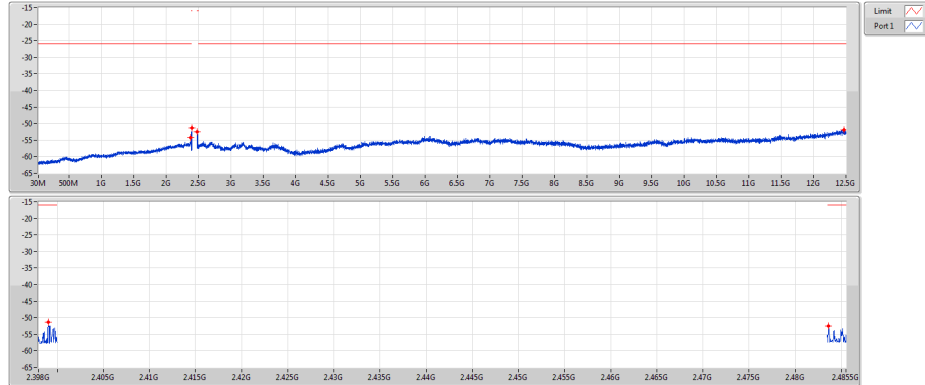
## CSE-TX Unwanted Emission Strength-FHSS Result

## Appendix E

BT-BR(1Mbps)

CSE-TX-FS

Hopping Mode\_TnomVnom

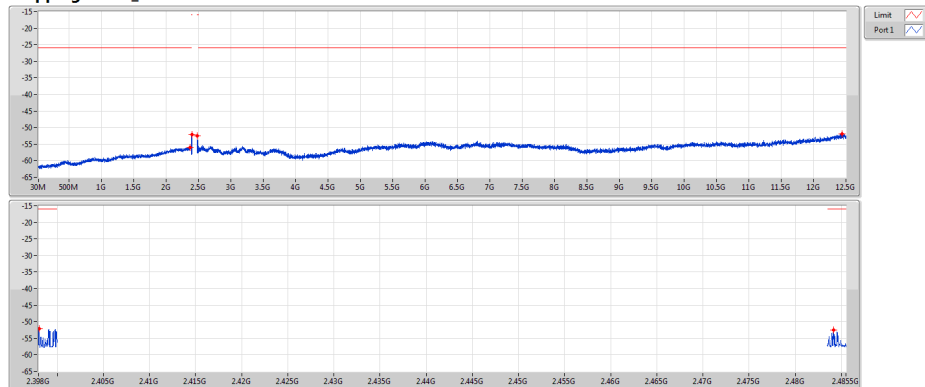


| F-Start(Hz) | F-Stop(Hz) | Freq(Hz)  | Ps(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|-----------|---------|------------|------------|---------|
| 30M         | 2.387G     | 2.38464G  | -54.18  | -26.02     | -28.16     | -54.18  |
| 2.387G      | 2.4G       | 2.39004G  | -51.35  | -16.02     | -35.33     | -51.35  |
| 2.4835G     | 2.4865G    | 2.4836G   | -52.50  | -16.02     | -36.48     | -52.50  |
| 2.4865G     | 12.5G      | 12.47499G | -51.92  | -26.02     | -25.90     | -51.92  |

BT-BR(1Mbps)

CSE-TX-FS

Hopping Mode\_TnomVmin

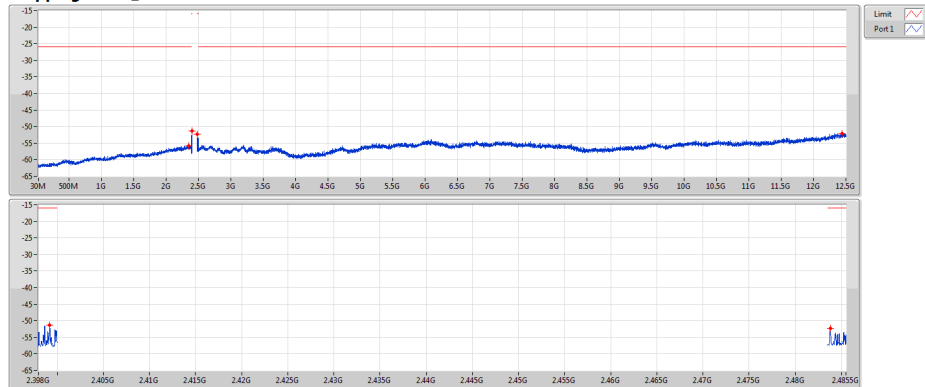


| F-Start(Hz) | F-Stop(Hz) | Freq(Hz)  | Ps(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|-----------|---------|------------|------------|---------|
| 30M         | 2.387G     | 2.36579G  | -55.93  | -26.02     | -29.91     | -55.93  |
| 2.387G      | 2.4G       | 2.38808G  | -52.11  | -16.02     | -36.09     | -52.11  |
| 2.4835G     | 2.4865G    | 2.48415G  | -52.50  | -16.02     | -36.48     | -52.50  |
| 2.4865G     | 12.5G      | 12.44248G | -51.94  | -26.02     | -25.92     | -51.94  |

BT-BR(1Mbps)

CSE-TX-FS

Hopping Mode\_TnomVmax



| F-Start(Hz) | F-Stop(Hz) | Freq(Hz)  | Ps(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|-----------|---------|------------|------------|---------|
| 30M         | 2.387G     | 2.354G    | -55.76  | -26.02     | -29.74     | -55.76  |
| 2.387G      | 2.4G       | 2.39919G  | -51.28  | -16.02     | -35.26     | -51.28  |
| 2.4835G     | 2.4865G    | 2.48381G  | -52.24  | -16.02     | -36.22     | -52.24  |
| 2.4865G     | 12.5G      | 12.43873G | -52.03  | -26.02     | -26.01     | -52.03  |



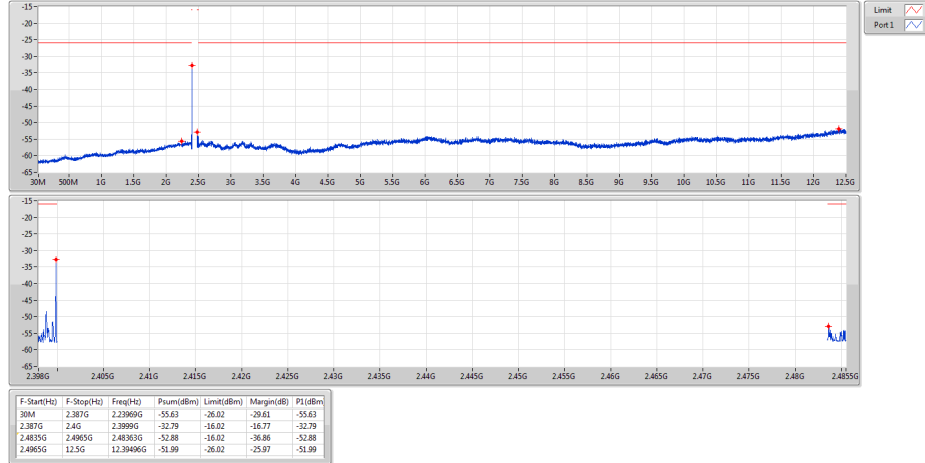
## CSE-TX Unwanted Emission Strength-FHSS Result

## Appendix E

BT-EDR(3Mbps)

CSE-TX-FS

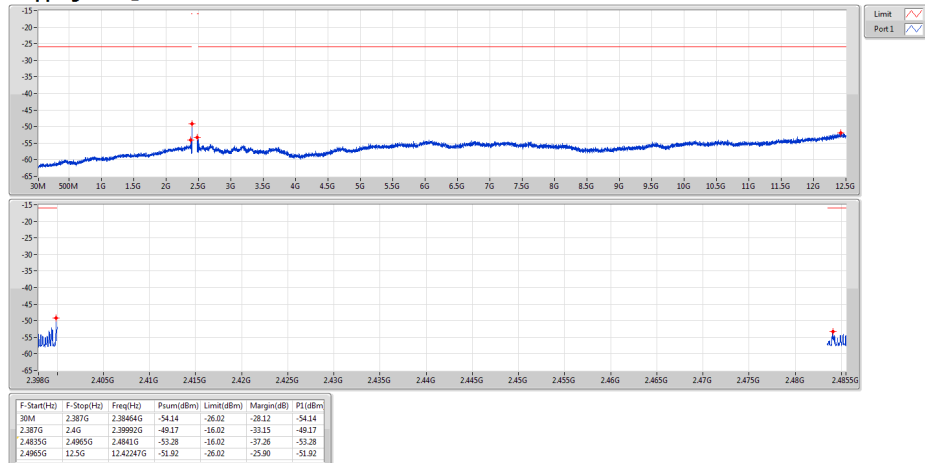
Hopping Mode\_TnomVnom



BT-EDR(3Mbps)

CSE-TX-FS

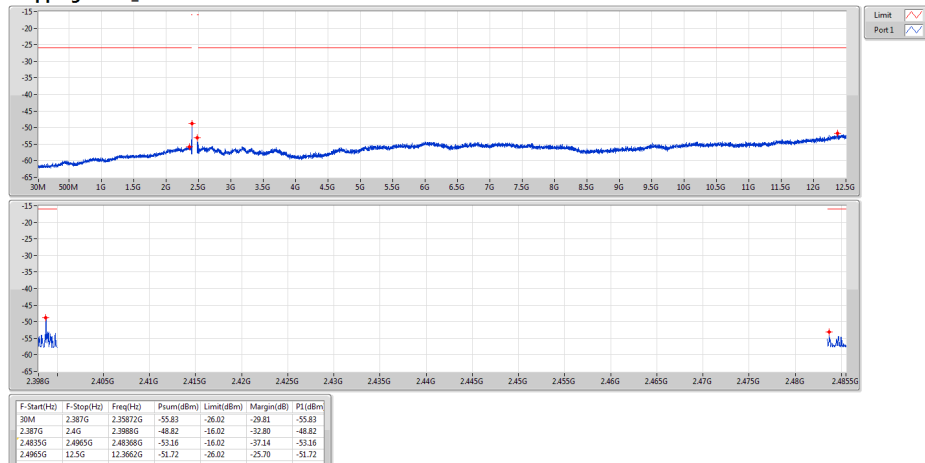
Hopping Mode\_TnomVmin



BT-EDR(3Mbps)

CSE-TX-FS

Hopping Mode\_TnomVmax





## Dwell Time-FHSS Result

## Appendix F

### Summary

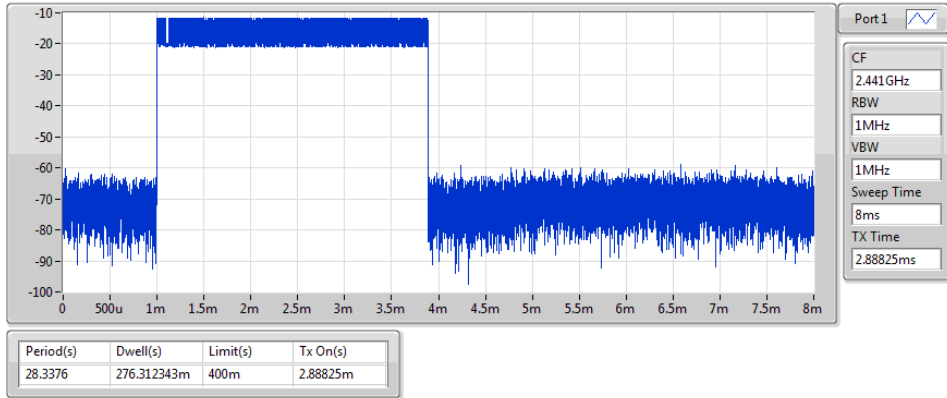
| Mode              | Max-Dwell<br>(s) |
|-------------------|------------------|
| 2.4-2.4835GHz     | -                |
| BT-BR(1Mbps)      | 276.312343m      |
| BT-EDR(3Mbps)     | 277.933158m      |
| BT-BR-AFH(1Mbps)  | 142.663577m      |
| BT-EDR-AFH(3Mbps) | 144.581474m      |

### Result

| Mode                  | Result | Period<br>(s) | Dwell<br>(s) | Limit<br>(s) | Tx On<br>(s) |
|-----------------------|--------|---------------|--------------|--------------|--------------|
| BT-BR(1Mbps)          | -      | -             | -            | -            | -            |
| Hopping Mode_TnomVnom | Pass   | 28.3376       | 276.312343m  | 400m         | 2.88825m     |
| Hopping Mode_TnomVmin | Pass   | 28.3304       | 276.218227m  | 400m         | 2.888m       |
| Hopping Mode_TnomVmax | Pass   | 28.3288       | 276.226537m  | 400m         | 2.88825m     |
| BT-EDR(3Mbps)         | -      | -             | -            | -            | -            |
| Hopping Mode_TnomVnom | Pass   | 28.3956       | 277.572896m  | 400m         | 2.8955m      |
| Hopping Mode_TnomVmin | Pass   | 28.43         | 277.933158m  | 400m         | 2.89575m     |
| Hopping Mode_TnomVmax | Pass   | 28.3908       | 263.819806m  | 400m         | 2.7525m      |
| BT-BR-AFH(1Mbps)      | -      | -             | -            | -            | -            |
| Hopping Mode_TnomVnom | Pass   | 7.4072        | 142.632767m  | 400m         | 2.88825m     |
| Hopping Mode_TnomVmin | Pass   | 7.402         | 142.532636m  | 400m         | 2.88825m     |
| Hopping Mode_TnomVmax | Pass   | 7.4088        | 142.663577m  | 400m         | 2.88825m     |
| BT-EDR-AFH(3Mbps)     | -      | -             | -            | -            | -            |
| Hopping Mode_TnomVnom | Pass   | 7.4896        | 144.581474m  | 400m         | 2.8955m      |
| Hopping Mode_TnomVmin | Pass   | 7.468         | 144.176948m  | 400m         | 2.89575m     |
| Hopping Mode_TnomVmax | Pass   | 7.4872        | 137.334593m  | 400m         | 2.75125m     |

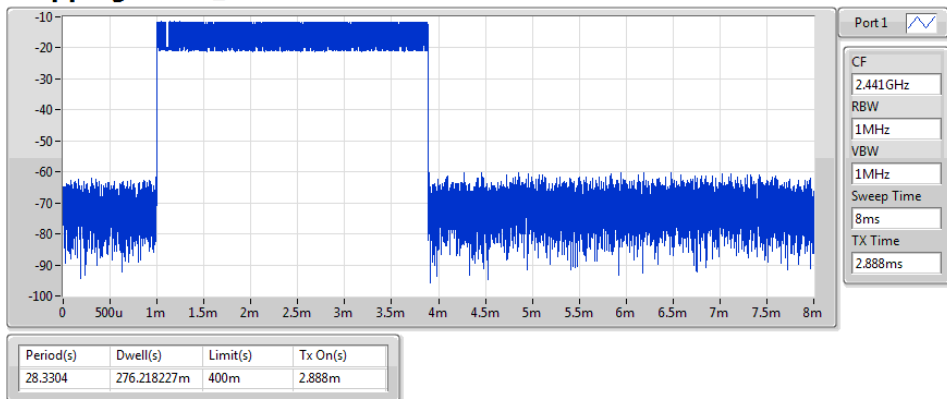
## BT-BR(1Mbps)

### Hopping Mode\_TnomVnom



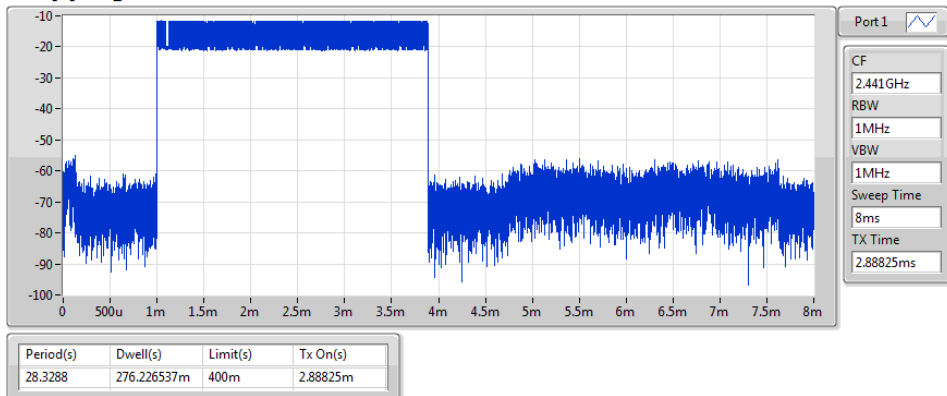
## BT-BR(1Mbps)

### Hopping Mode\_TnomVmin



## BT-BR(1Mbps)

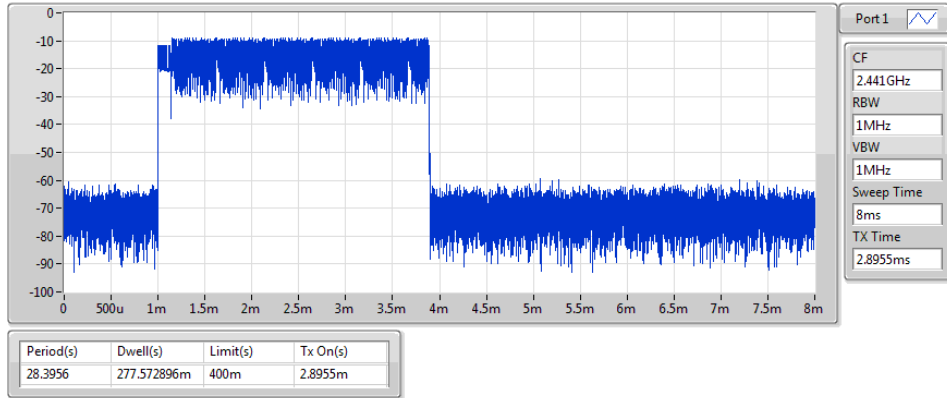
### Hopping Mode\_TnomVmax



## BT-EDR(3Mbps)

## Dwell

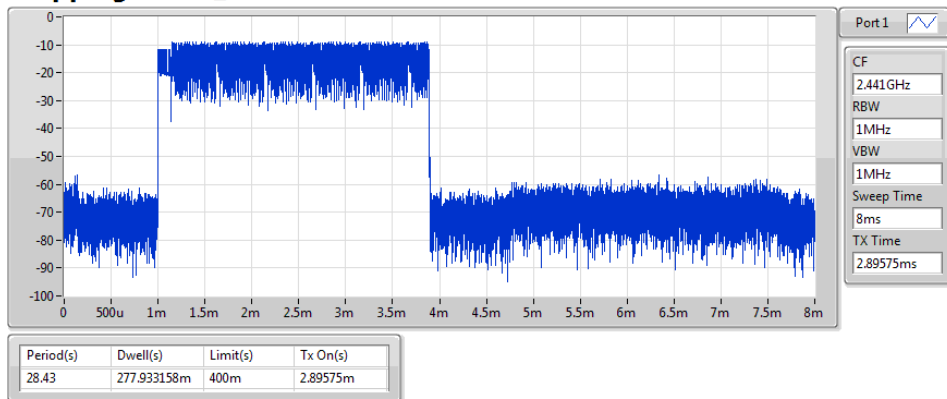
### Hopping Mode\_TnomVnom



## BT-EDR(3Mbps)

## Dwell

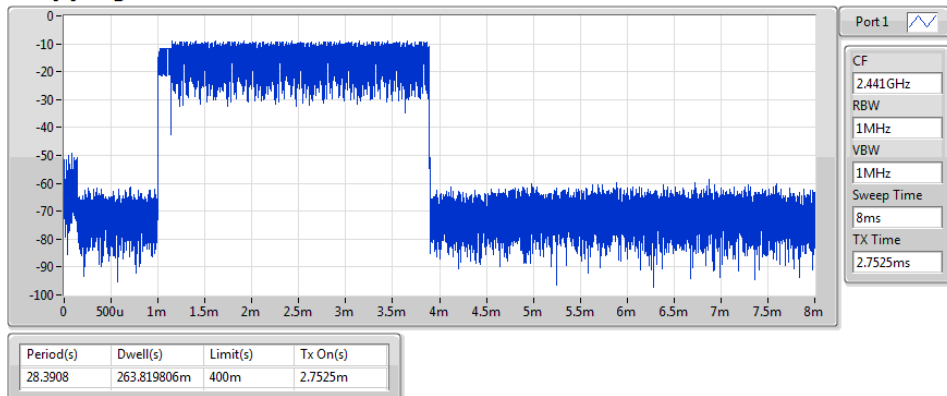
### Hopping Mode\_TnomVmin



## BT-EDR(3Mbps)

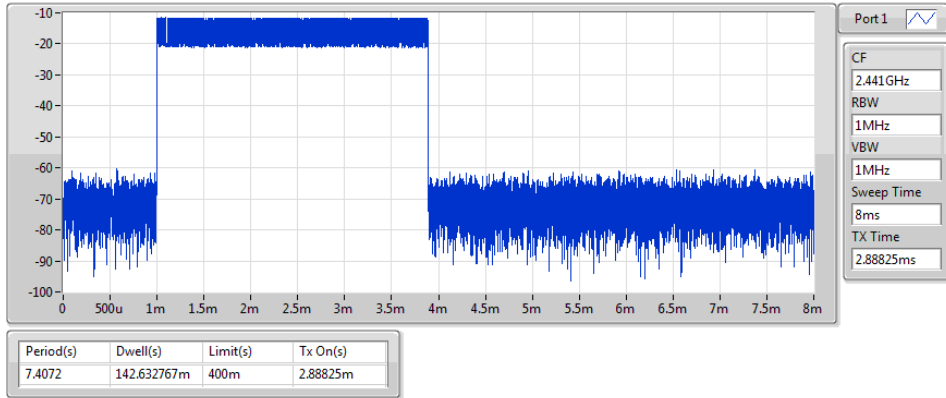
## Dwell

### Hopping Mode\_TnomVmax



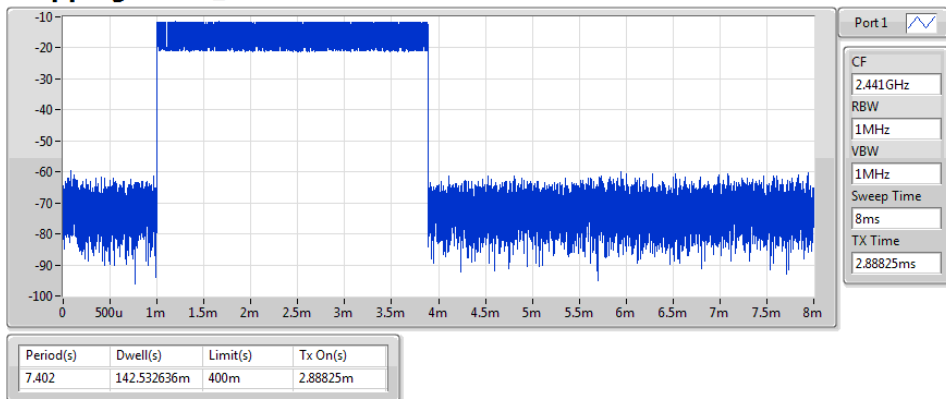
**BT-BR-AFH(1Mbps)**

**Hopping Mode\_TnomVnom**



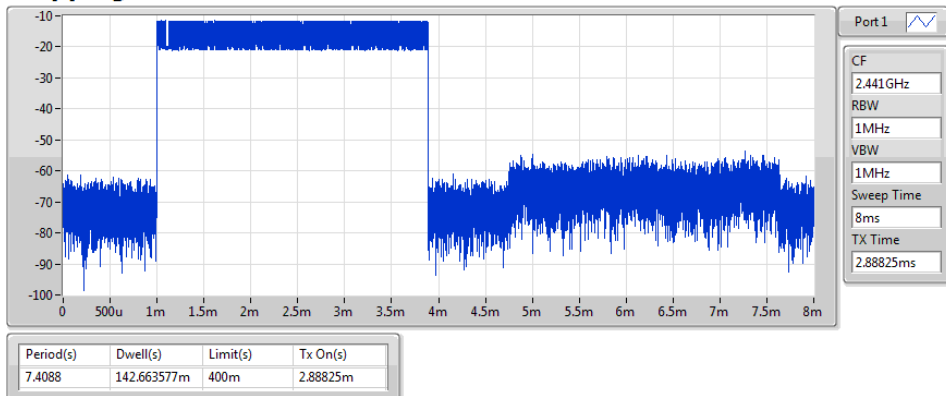
**BT-BR-AFH(1Mbps)**

**Hopping Mode\_TnomVmin**



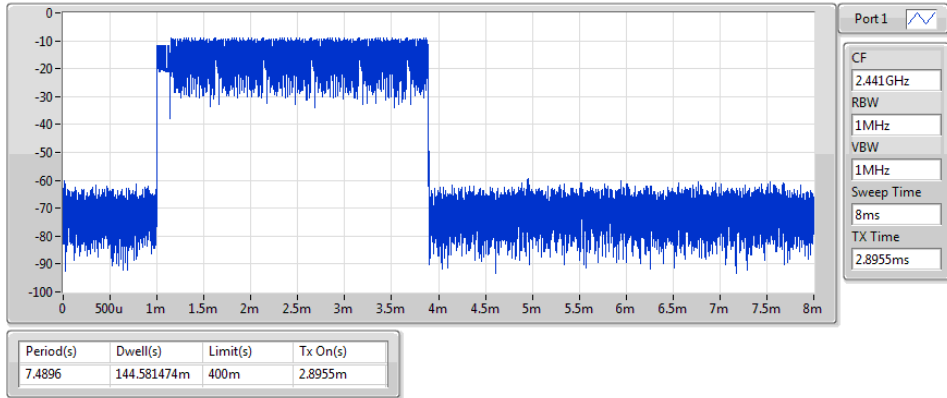
**BT-BR-AFH(1Mbps)**

**Hopping Mode\_TnomVmax**



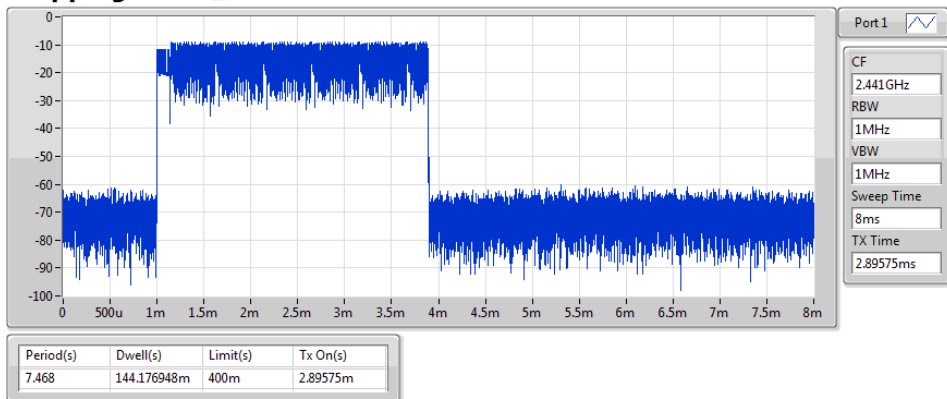
## BT-EDR-AFH(3Mbps)

### Hopping Mode\_TnomVnom



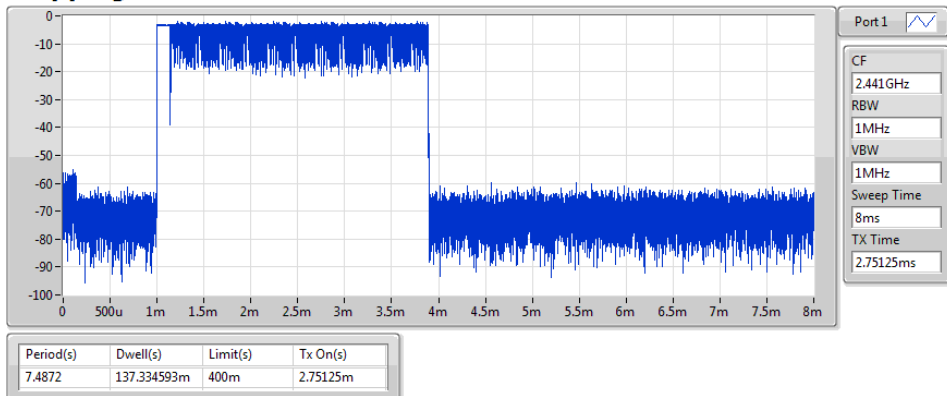
## BT-EDR-AFH(3Mbps)

### Hopping Mode\_TnomVmin



## BT-EDR-AFH(3Mbps)

### Hopping Mode\_TnomVmax





## Interference Prevention Function-FHSSResult

## Appendix G

### Summary

| Mode              | Result | ID Length         | ID Limit | Function |
|-------------------|--------|-------------------|----------|----------|
| 2.4-2.4835GHz     | -      | -                 | -        | -        |
| BT-BR(1Mbps)      | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-EDR(3Mbps)     | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-BR-AFH(1Mbps)  | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-EDR-AFH(3Mbps) | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |

### Result

| Mode                  | Result | ID Length         | ID Limit | Function |
|-----------------------|--------|-------------------|----------|----------|
| BT-BR(1Mbps)          | -      | -                 | -        | -        |
| Hopping Mode_TnomVnom | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmin | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmax | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-EDR(3Mbps)         | -      | -                 | -        | -        |
| Hopping Mode_TnomVnom | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmin | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmax | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-BR-AFH(1Mbps)      | -      | -                 | -        | -        |
| Hopping Mode_TnomVnom | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmin | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmax | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| BT-EDR-AFH(3Mbps)     | -      | -                 | -        | -        |
| Hopping Mode_TnomVnom | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmin | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |
| Hopping Mode_TnomVmax | Pass   | 24:72:60:1A:25:85 | 48 bits  | Good     |



## CSE-RX Secondary Radiated Emissions-FHSS Result

## Appendix H

### Summary

| Mode          | Result | F-Start<br>(Hz) | F-Stop<br>(Hz) | RBW<br>(Hz) | Freq<br>(Hz) | Psum<br>(dBm) | Psum<br>(nW/MHz) | Limit<br>(dBm) | Limit<br>(nW/MHz) |
|---------------|--------|-----------------|----------------|-------------|--------------|---------------|------------------|----------------|-------------------|
| 2.4-2.4835GHz | -      | -               | -              | -           | -            | -             | -                | -              | -                 |
| BT-BR(1Mbps)  | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.53        | 0.02223          | -53.98         | 4                 |
| BT-EDR(3Mbps) | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.52        | 0.02228          | -53.98         | 4                 |

### Result

| Mode             | Result | F-Start<br>(Hz) | F-Stop<br>(Hz) | RBW<br>(Hz) | Freq<br>(Hz)  | Psum<br>(dBm) | Psum<br>(nW/MHz) | Limit<br>(dBm) | Limit<br>(nW/MHz) |
|------------------|--------|-----------------|----------------|-------------|---------------|---------------|------------------|----------------|-------------------|
| BT-BR(1Mbps)     | -      | -               | -              | -           | -             | -             | -                | -              | -                 |
| 2402MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M       | -77.49        | 0.01782          | -53.98         | 4                 |
| 2402MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 2.449G        | -82.09        | 0.00618          | -46.99         | 20                |
| 2402MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.63        | 0.02173          | -53.98         | 4                 |
| 2402MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.34        | 0.00925          | -46.99         | 20                |
| 2402MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.64        | 0.02168          | -53.98         | 4                 |
| 2402MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.70        | 0.00851          | -46.99         | 20                |
| 2441MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.53        | 0.02223          | -53.98         | 4                 |
| 2441MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.51        | 0.00889          | -46.99         | 20                |
| 2441MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.62        | 0.02178          | -53.98         | 4                 |
| 2441MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.32        | 0.00929          | -46.99         | 20                |
| 2441MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.59        | 0.02193          | -53.98         | 4                 |
| 2441MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.68        | 0.00855          | -46.99         | 20                |
| 2480MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.57        | 0.02203          | -53.98         | 4                 |
| 2480MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.61        | 0.00869          | -46.99         | 20                |
| 2480MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.55        | 0.02213          | -53.98         | 4                 |
| 2480MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.57        | 0.00877          | -46.99         | 20                |
| 2480MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.53        | 0.02223          | -53.98         | 4                 |
| 2480MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.29        | 0.00935          | -46.99         | 20                |
| BT-EDR(3Mbps)    | -      | -               | -              | -           | -             | -             | -                | -              | -                 |
| 2402MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.56        | 0.02208          | -53.98         | 4                 |
| 2402MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.49        | 0.00893          | -46.99         | 20                |
| 2402MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M       | -77.54        | 0.01762          | -53.98         | 4                 |
| 2402MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 12.38213<br>G | -83.42        | 0.00455          | -46.99         | 20                |
| 2402MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.55        | 0.02213          | -53.98         | 4                 |
| 2402MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.72        | 0.00847          | -46.99         | 20                |
| 2441MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.66        | 0.02158          | -53.98         | 4                 |
| 2441MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 1.59944G      | -80.72        | 0.00847          | -46.99         | 20                |
| 2441MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M       | -76.63        | 0.02173          | -53.98         | 4                 |

**CSE-RX Secondary Radiated Emissions-FHSS Result****Appendix H**

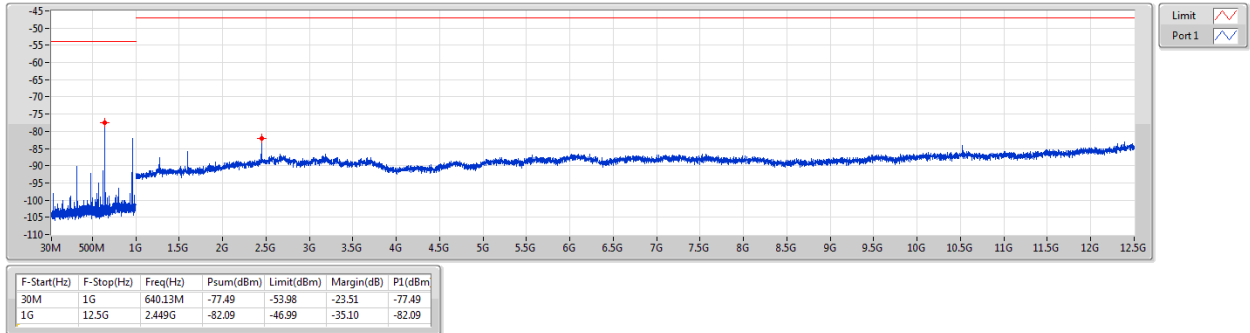
| Mode             | Result | F-Start<br>(Hz) | F-Stop<br>(Hz) | RBW<br>(Hz) | Freq<br>(Hz) | Psum<br>(dBm) | Psum<br>(nW/MHz) | Limit<br>(dBm) | Limit<br>(nW/MHz) |
|------------------|--------|-----------------|----------------|-------------|--------------|---------------|------------------|----------------|-------------------|
| 2441MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 1.59944G     | -80.22        | 0.00951          | -46.99         | 20                |
| 2441MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.61        | 0.02183          | -53.98         | 4                 |
| 2441MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G     | -80.60        | 0.00871          | -46.99         | 20                |
| 2480MHz_TnomVnom | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.52        | 0.02228          | -53.98         | 4                 |
| 2480MHz_TnomVnom | Pass   | 1G              | 12.5G          | 1M          | 1.59944G     | -80.34        | 0.00925          | -46.99         | 20                |
| 2480MHz_TnomVmin | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.68        | 0.02148          | -53.98         | 4                 |
| 2480MHz_TnomVmin | Pass   | 1G              | 12.5G          | 1M          | 1.59944G     | -80.48        | 0.00895          | -46.99         | 20                |
| 2480MHz_TnomVmax | Pass   | 30M             | 1G             | 100k        | 640.13M      | -76.61        | 0.02183          | -53.98         | 4                 |
| 2480MHz_TnomVmax | Pass   | 1G              | 12.5G          | 1M          | 1.59944G     | -80.25        | 0.00944          | -46.99         | 20                |



BT-BR(1Mbps)

CSE-RX-FS

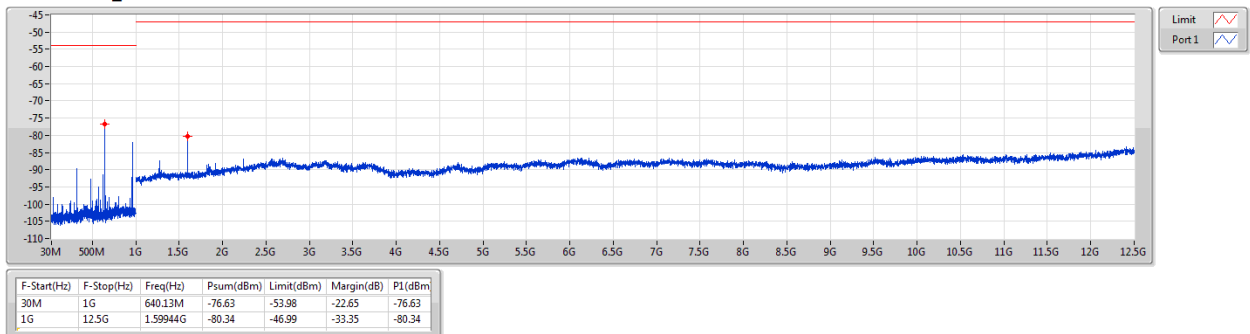
2402MHz\_TnomVnom



BT-BR(1Mbps)

CSE-RX-FS

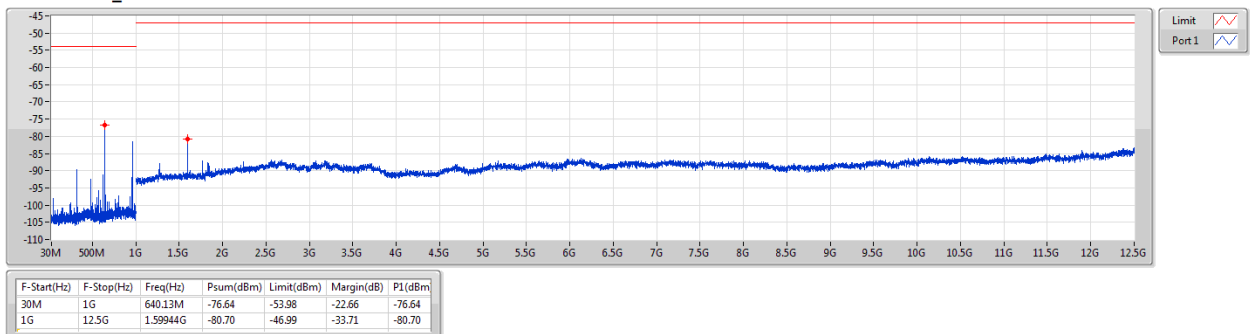
2402MHz\_TnomVmin



BT-BR(1Mbps)

CSE-RX-FS

2402MHz\_TnomVmax

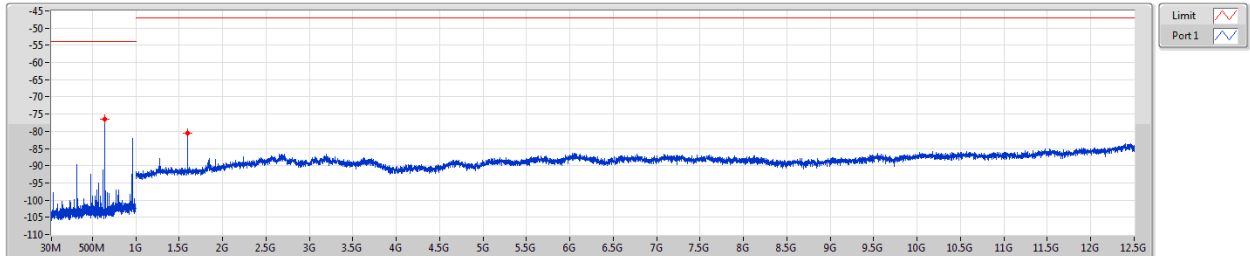




BT-BR(1Mbps)

CSE-RX-FS

2441MHz\_TnomVnom

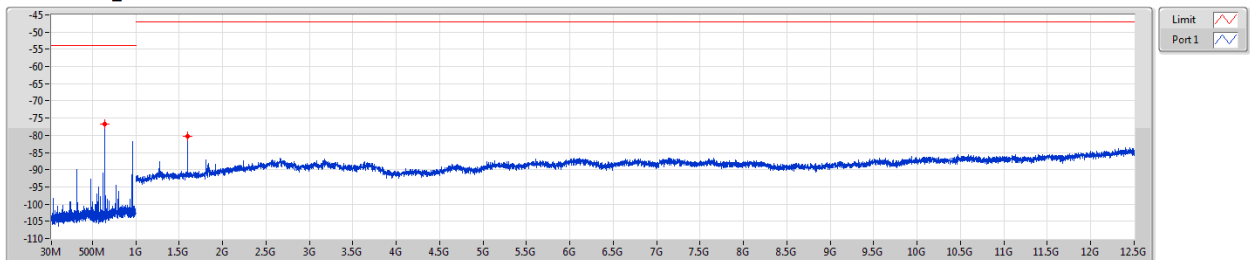


| F-Start(Hz) | F-Stop(Hz) | Freq(Hz) | Psum(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|----------|-----------|------------|------------|---------|
| 30M         | 1G         | 640.13M  | -76.53    | -53.98     | -22.55     | -76.53  |
| 1G          | 12.5G      | 1.59944G | -80.51    | -46.99     | -33.52     | -80.51  |

BT-BR(1Mbps)

CSE-RX-FS

2441MHz\_TnomVmin

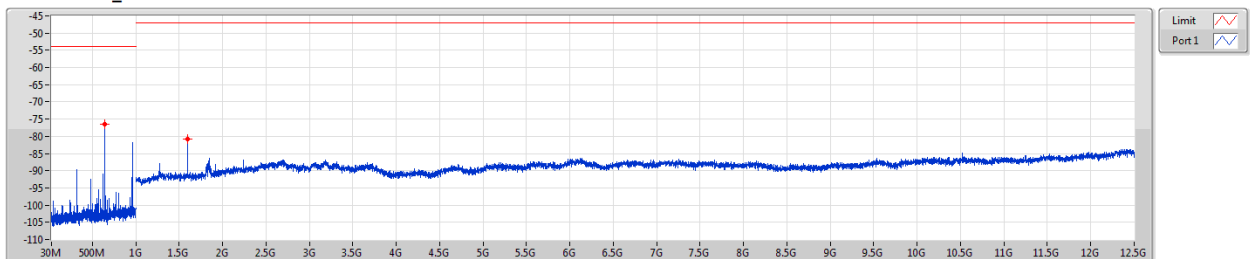


| F-Start(Hz) | F-Stop(Hz) | Freq(Hz) | Psum(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|----------|-----------|------------|------------|---------|
| 30M         | 1G         | 640.13M  | -76.62    | -53.98     | -22.64     | -76.62  |
| 1G          | 12.5G      | 1.59944G | -80.32    | -46.99     | -33.33     | -80.32  |

BT-BR(1Mbps)

CSE-RX-FS

2441MHz\_TnomVmax



| F-Start(Hz) | F-Stop(Hz) | Freq(Hz) | Psum(dBm) | Limit(dBm) | Margin(dB) | P1(dBm) |
|-------------|------------|----------|-----------|------------|------------|---------|
| 30M         | 1G         | 640.13M  | -76.59    | -53.98     | -22.61     | -76.59  |
| 1G          | 12.5G      | 1.59944G | -80.68    | -46.99     | -33.69     | -80.68  |



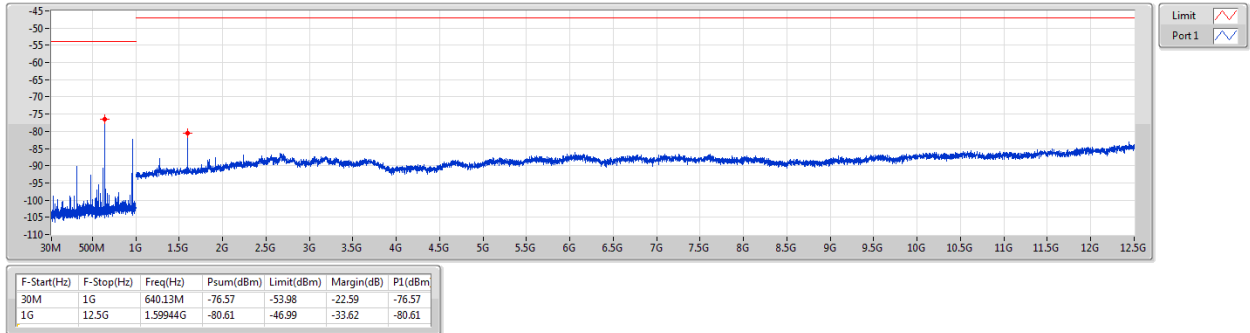
## CSE-RX Secondary Radiated Emissions-FHSS Result

Appendix H

BT-BR(1Mbps)

CSE-RX-FS

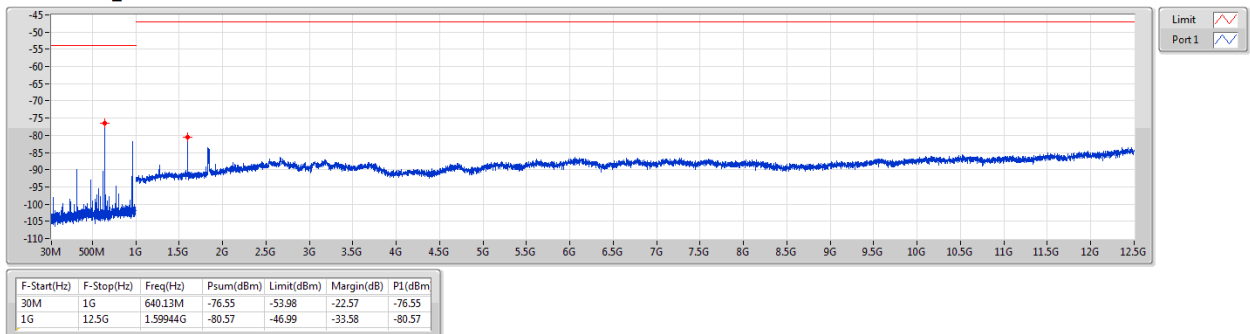
2480MHz\_TnomVnom



BT-BR(1Mbps)

CSE-RX-FS

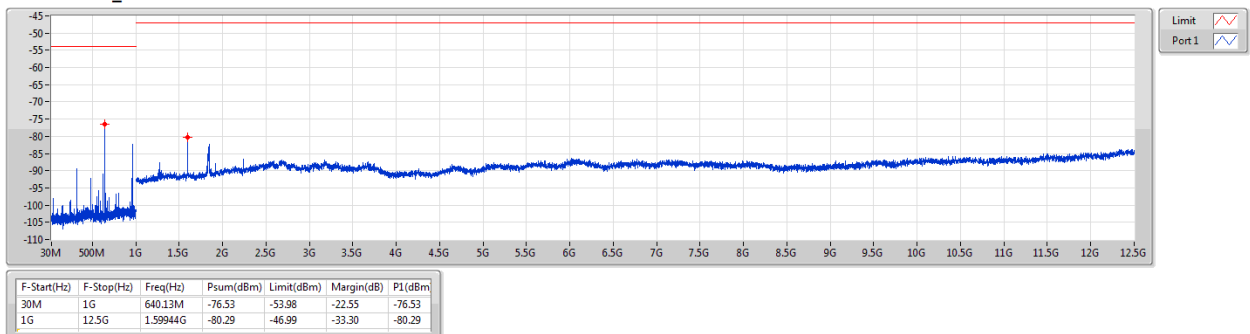
2480MHz\_TnomVmin



BT-BR(1Mbps)

CSE-RX-FS

2480MHz\_TnomVmax





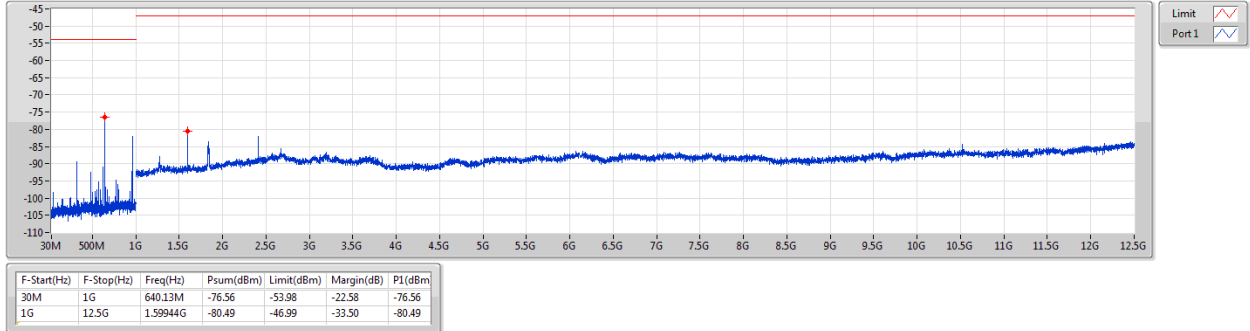
## CSE-RX Secondary Radiated Emissions-FHSS Result

Appendix H

BT-EDR(3Mbps)

CSE-RX-FS

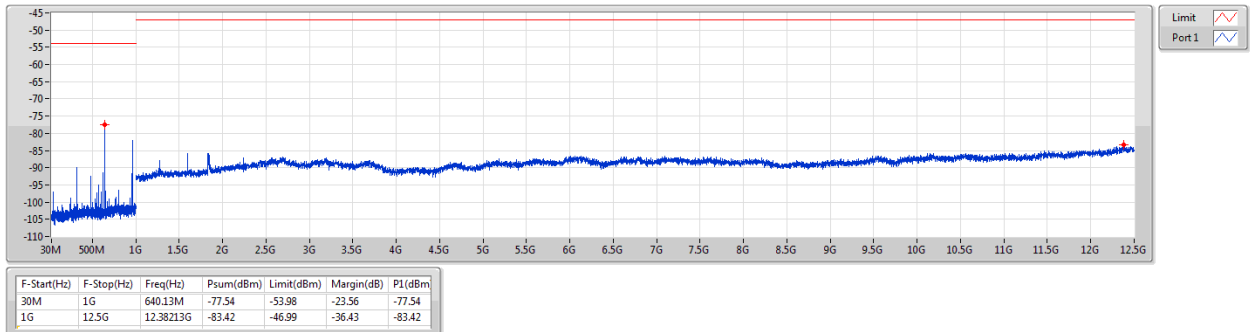
2402MHz\_TnomVnom



BT-EDR(3Mbps)

CSE-RX-FS

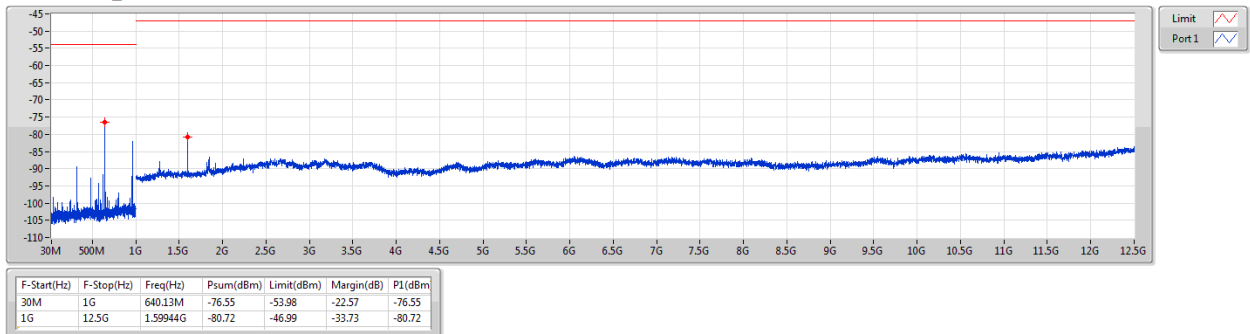
2402MHz\_TnomVmin



BT-EDR(3Mbps)

CSE-RX-FS

2402MHz\_TnomVmax





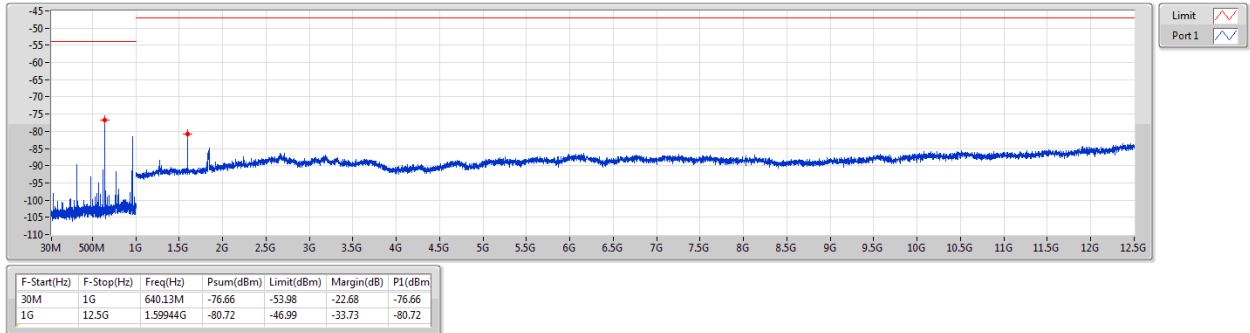
## CSE-RX Secondary Radiated Emissions-FHSS Result

Appendix H

BT-EDR(3Mbps)

CSE-RX-FS

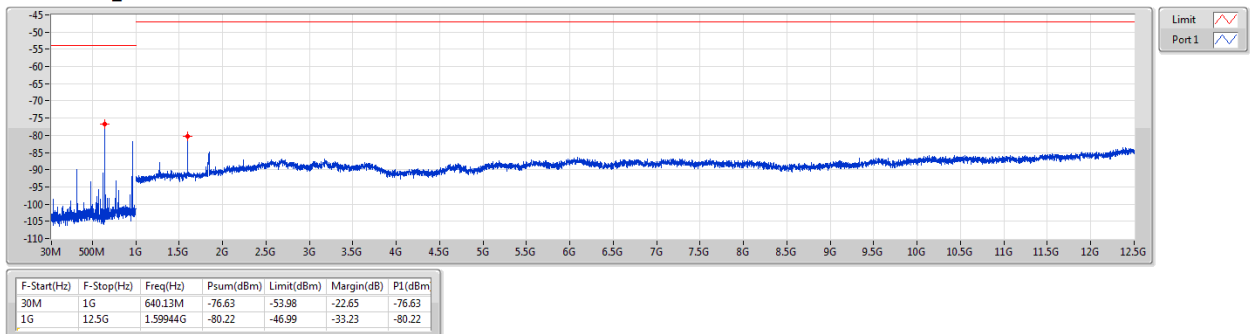
2441MHz\_TnomVnom



BT-EDR(3Mbps)

CSE-RX-FS

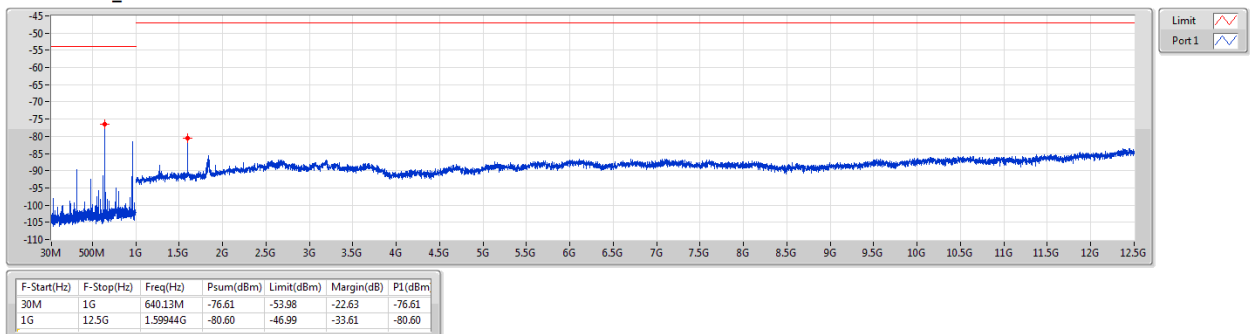
2441MHz\_TnomVmin



BT-EDR(3Mbps)

CSE-RX-FS

2441MHz\_TnomVmax

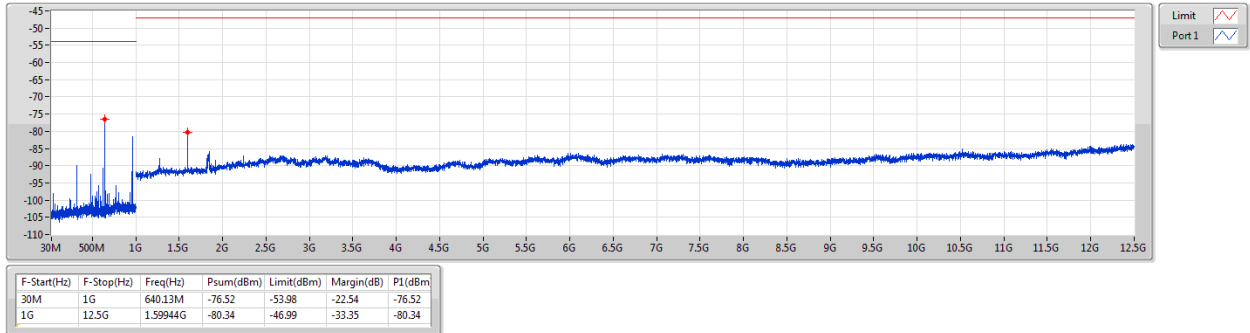




BT-EDR(3Mbps)

CSE-RX-FS

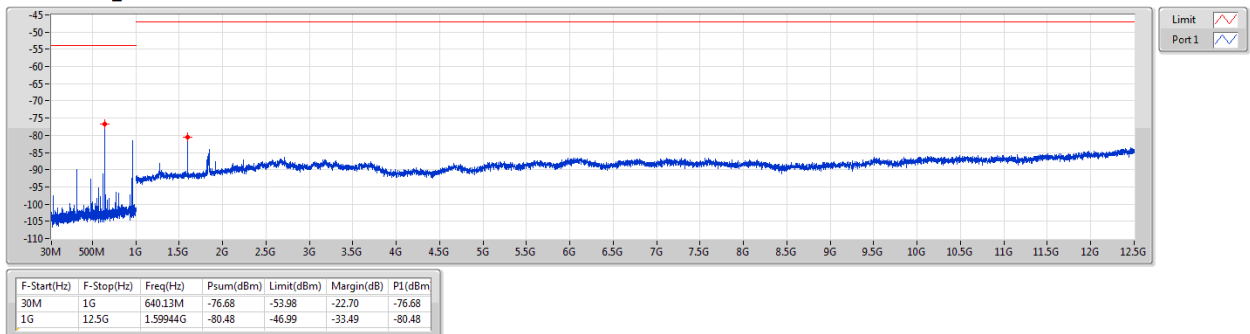
2480MHz\_TnomVnom



BT-EDR(3Mbps)

CSE-RX-FS

2480MHz\_TnomVmin



BT-EDR(3Mbps)

CSE-RX-FS

2480MHz\_TnomVmax

