

TEST REPORT



Dt&C Co., Ltd.

42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC2405-0055

2. Customer

- Name (FCC) : Point Mobile Co., LTD.
- Address (FCC) : B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, South Korea, 08512

3. Use of Report : FCC Certification

4. Product Name / Model Name : MOBILE COMPUTER / PM95
FCC ID : V2X-PM95

5. FCC Regulation(s): Part 15.247
Test Method used: KDB558074 D01v05r02, ANSI C63.10-2013



6. Date of Test : 2024.03.27 ~ 2024.04.29

7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test report is not related to KOLAS accreditation.

| | | |
|-------------|---|---|
| Affirmation | Tested by | Technical Manager |
| | Name : SeungMin Gil  | Name : JaeJin Lee  |

2024 . 05 . 30 .

Dt&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

Test Report Version

| Test Report No. | Date | Description | Revised by | Reviewed by |
|-----------------|---------------|---------------|--------------|-------------|
| DRTFCC2405-0055 | May. 30, 2024 | Initial issue | SeungMin Gil | JaeJin Lee |
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1. General Information

1.1. Description of EUT

| | |
|--|--|
| Equipment Class | Spread Spectrum Transmitter(DSS) |
| Product Name | MOBILE COMPUTER |
| Model Name | PM95 |
| Add Model Name | - |
| Firmware Version Identification Number | 95.00xx |
| EUT Serial Number | Conducted: 4b486b0c , Radiated: 536a3c99 |
| Power Supply | DC 3.87 V |
| Frequency Range | 2 402 MHz ~ 2 480 MHz |
| Max. RF Output Power | 5.6 dBm (0.004 W) |
| Modulation Technique (Data rate) | GFSK(1 Mbps), $\pi/4$ DQPSK(2 Mbps), 8DPSK(3 Mbps) |
| Number of Channels | 79 |
| Antenna Specification | Antenna Type: LDS Antenna Gain: 3.51 dBi (PK) |

1.2. Declaration by the applicant / manufacturer

- NA

1.3. Testing Laboratory

| | | |
|--|---|------------------|
| Dt&C Co., Ltd. | | |
| The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042. The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014. | | |
| - FCC & IC MRA Designation No. : KR0034 | | |
| - ISED#: 5740A | | |
| www.dtnet.net | | |
| Telephone | : | + 82-31-321-2664 |
| FAX | : | + 82-31-321-1664 |

1.4. Testing Environment

| Ambient Condition | |
|---------------------|-----------------|
| ▪ Temperature | +21 °C ~ +24 °C |
| ▪ Relative Humidity | 38 % ~ 43 % |

1.5. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.4-2014 and ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

| Parameter | Measurement uncertainty |
|------------------------------------|---|
| Antenna-port conducted emission | 1.0 dB (The confidence level is about 95 %, $k = 2$) |
| AC power-line conducted emission | 3.4 dB (The confidence level is about 95 %, $k = 2$) |
| Radiated emission (1 GHz Below) | 4.8 dB (The confidence level is about 95 %, $k = 2$) |
| Radiated emission (1 GHz ~ 18 GHz) | 4.8 dB (The confidence level is about 95 %, $k = 2$) |
| Radiated emission (18 GHz Above) | 5.7 dB (The confidence level is about 95 %, $k = 2$) |

1.6. Information about the FHSS characteristics

- This Bluetooth module has been tested by a Bluetooth Qualification Lab, and we confirm the following :

A) The hopping sequence is pseudorandom

Note 1 : Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 42, 54, 72, 09, 01, 11, 33, 41, 34, 42, 65, 73, 53, 69, 06, 22, 04, 20,
36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 41, 58, 44, 60, 76, 13, 03, 11, 35, 43,
37, 45, 69, 77, 52, 71, 08, 24, 06, 24, 48, 56, 45, 46, 70, 01, 72, 06, 25, 33, 12, 28,
49, 60, 45, 58, 74, 13, 05, 18, 37, 49 etc

The System receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchroniztation with the transmitted signals.

B) All channels are used equally on average

C) The receiver input bandwidth equals the transmit bandwidth

D) The receiver hops in sequence with the transmit signal

- 15.247(g) : In accordance with the Bluetooth Industry Standard, the system is designed to comply with all of the regulations in Section 15.247 when the transmitter is presented with a continuous data (or information) system.
- 15.247(h) : In accordance with the Bluetooth Industry Standard, the system does not coordinate its channels selection / hopping sequence with other frequency hopping systems for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters.
- 15.247(h) : The EUT employs Adaptive Frequency Hopping (AFH) which identifies sources of interference namely devices operating in 802.11 WLAN and excludes them from the list of available channels. The process of re-mapping reduces the number of test channels from 79 channels to a minimum number of 20 channels.

1.7. Conclusion of worst-case and operation mode

The EUT has three types of modulation (GFSK, $\pi/4$ DQPSK and 8DPSK).
Therefore all applicable requirements were tested with all the modulations.
And packet type was tested at the worst case(DH5).

EUT Operation test setup

Bluetooth tester was used to control the transmit parameters during test.

Tested frequency information,

- Hopping Function : Enable

| | Tested Frequency (MHz) |
|--------------|------------------------|
| Hopping Band | 2 402 ~ 2 480 |

- Hopping Function : Disable

| | Tested Frequency (MHz) |
|-----------------|------------------------|
| Lowest Channel | 2 402 |
| Middle Channel | 2 441 |
| Highest Channel | 2 480 |

1.8. Test Equipment List

| Type | Manufacturer | Model | Cal.Date (yy/mm/dd) | Next.Cal.Date (yy/mm/dd) | S/N |
|-------------------------------------|------------------------|-------------------------------|------------------------|-----------------------------|----------------------|
| Spectrum Analyzer | KEYSIGHT | N9020A | 23/12/15 | 24/12/15 | MY48011146 |
| Spectrum Analyzer | Agilent Technologies | N9020A | 23/06/23 | 24/06/23 | US47360812 |
| Spectrum Analyzer | Agilent Technologies | N9020A | 23/12/15 | 24/12/15 | MY50110097 |
| DC Power Supply | Agilent Technologies | 66332A | 23/12/15 | 24/12/15 | 66332A _220926-1 |
| BlueTooth Tester | TESCOM | TC-3000C | 23/12/15 | 24/12/15 | 3000C000396 |
| Power Splitter | Anritsu | K241B | 23/12/15 | 24/12/15 | 1301183 |
| Multimeter | FLUKE | 17B+ | 23/12/15 | 24/12/15 | 36390701WS |
| Signal Generator | Rohde Schwarz | SMBV100A | 23/12/15 | 24/12/15 | 255571 |
| Signal Generator | ANRITSU | MG3695C | 23/12/15 | 24/12/15 | 173501 |
| Thermohygrometer | BODYCOM | BJ5478 | 23/12/15 | 24/12/15 | 120612-1 |
| Thermohygrometer | BODYCOM | BJ5478 | 23/12/15 | 24/12/15 | 090205-4 |
| Thermohygrometer | BODYCOM | BJ5478 | 23/06/23 | 24/06/23 | N/A |
| Loop Antenna | ETS-Lindgren | 6502 | 23/11/09 | 24/11/09 | 00060496 |
| Hybrid Antenna | Schwarzbeck | VULB 9160 | 23/12/15 | 24/12/15 | 3362 |
| Horn Antenna | ETS-Lindgren | 3117 | 23/06/23 | 24/06/23 | 00143278 |
| Horn Antenna | A.H.Systems Inc. | SAS-574 | 23/06/23 | 24/06/23 | 155 |
| PreAmplifier | tsj | MLA-0118-B01-40 | 23/12/15 | 24/12/15 | 1852267 |
| PreAmplifier | tsj | MLA-1840-J02-45 | 23/06/23 | 24/06/23 | 16966-10728 |
| PreAmplifier | H.P | 8447D | 23/12/15 | 24/12/15 | 2944A07774 |
| High Pass Filter | Wainwright Instruments | WHKX12-935-1000-15000-40SS | 23/06/23 | 24/06/23 | 8 |
| High Pass Filter | Wainwright Instruments | WHKX10-2838-3300-18000-60SS | 23/06/23 | 24/06/23 | 1 |
| High Pass Filter | Wainwright Instruments | WHNX8.0/26.5-6SS | 23/06/23 | 24/06/23 | 3 |
| Attenuator | Hefei Shunze | SS5T2.92-10-40 | 23/06/23 | 24/06/23 | 16012202 |
| Attenuator | Aeroflex/Weinschel | 56-3 | 23/06/23 | 24/06/23 | Y2370 |
| Attenuator | SMAJK | SMAJK-2-3 | 23/06/23 | 24/06/23 | 3 |
| Attenuator | SMAJK | SMAJK-2-3 | 23/06/23 | 24/06/23 | 2 |
| Power Meter & Wide Bandwidth Sensor | Anritsu | ML2496A MA2411B | 23/12/15 | 24/12/15 | 1338004 1911481 |
| EMI Test Receiver | ROHDE&SCHWARZ | ESCi7 | 24/01/29 | 25/01/29 | 100910 |
| PULSE LIMITER | ROHDE&SCHWARZ | ESH3-Z2 | 23/08/21 | 24/08/21 | 101333 |
| LISN | SCHWARZBECK | NSLK 8128 RC | 23/10/26 | 24/10/26 | 8128 RC-387 |
| Digital Thermo Hygrometer | CAS | TE-303N | 24/02/07 | 25/02/07 | 220502531 |
| Cable | DT&C | Cable | 24/01/03 | 25/01/03 | G-2 |
| Cable | HUBER+SUHNER | SUCOFLEX 100 | 24/01/03 | 25/01/03 | G-3 |
| Cable | DT&C | Cable | 24/01/03 | 25/01/03 | G-4 |
| Cable | OMT | YSS21S | 24/01/03 | 25/01/03 | G-5 |
| Cable | Junkosha | MWX241 | 24/01/03 | 25/01/03 | mmW-1 |
| Cable | Junkosha | MWX241 | 24/01/03 | 25/01/03 | mmW-4 |
| Cable | HUBER+SUHNER | SUCOFLEX100 | 24/01/03 | 25/01/03 | M-1 |
| Cable | HUBER+SUHNER | SUCOFLEX100 | 24/01/03 | 25/01/03 | M-2 |
| Cable | JUNKOSHA | MWX241/B | 24/01/03 | 25/01/03 | M-3 |
| Cable | JUNKOSHA | J12J101757-00 | 24/01/03 | 25/01/03 | M-7 |
| Cable | HUBER+SUHNER | SUCOFLEX106 | 24/01/03 | 25/01/03 | M-9 |
| Cable | Dt&C | Cable | 24/01/03 | 25/01/03 | RFC-69 |
| Test Software | tsj | Radiated Emission Measurement | NA | NA | Version 2.00.0185 |
| Test Software | tsj | Noise Terminal Measurement | NA | NA | Version 2.00.0190 |

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

2. Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions.

Conclusion: Comply

**The antenna is attached on the device by means of unique coupling method.
Therefore this E.U.T complies with the requirement of Part 15.203**

3. Summary of Test Results

| FCC part section(s) | Test Description | Limit (Using in 2 400~ 2 483.5 MHz) | Test Condition | Status Note 1 |
|---|-------------------------------------|--|-------------------|--------------------|
| 15.247(a) 15.247(b) | Maximum Peak Conducted Output Power | =< 0.125 W(conducted) | Conducted | C |
| 15.247(a) | 20 dB Bandwidth | NA | | C |
| | Carrier Frequency Separation | >= 25 kHz or >= Two thirds of the 20 dB BW, whichever is greater. | | C |
| | Number of Hopping Channels | >= 15 hops | | C |
| | Time of Occupancy | =< 0.4 seconds | | C |
| 15.247(d) | Unwanted Emissions (Conducted) | The radiated emission to any 100 kHz of out-band shall be at least 20 dB below the highest in-band spectral density. | | C |
| 15.247(d) 15.205 15.209 | Unwanted Emissions (Radiated) | Part 15.209 Limits (Refer to section 9) | Radiated | C ^{Note3} |
| 15.207 | AC Power-Line Conducted Emissions | Part 15.207 Limits (Refer to section 10) | AC Line Conducted | C |
| 15.203 | Antenna Requirement | Part 15.203 (Refer to section 2) | - | C |
| <p>Note 1: C = Comply NC = Not Comply NT = Not Tested NA = Not Applicable</p> <p>Note 2: For radiated emission tests below 30 MHz were performed on semi-anechoic chamber which is correlated with OATS.</p> <p>Note 3: This test item was performed in three orthogonal EUT positions and the worst case data was reported.</p> | | | | |

4. Maximum Peak Conducted Output Power

4.1. Test Setup

Refer to the APPENDIX I.

4.2. Limit

■ FCC Requirements

The maximum peak output power of the intentional radiator shall not exceed the following :

1. §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2 400 MHz - 2 483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. §15.247(b)(1), For frequency hopping systems operating in the 2 400 – 2 483.5 MHz employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5 725 MHz – 5 805 MHz band : 1 Watt. For all other frequency hopping systems in the 2 400 MHz – 2 483.5 MHz band: 0.125 watts.

4.3. Test Procedure

1. The RF output power was measured with a spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency, A spectrum analyzer was used to record the shape of the transmit signal.
2. The peak output power of the fundamental frequency was measured with the spectrum analyzer using ;
Span = approximately 5 times of the 20 dB bandwidth, centered on a hopping channel
RBW \geq 20 dB BW
VBW \geq RBW
Sweep = auto
Detector function = peak
Trace = max hold

4.4. Test Results

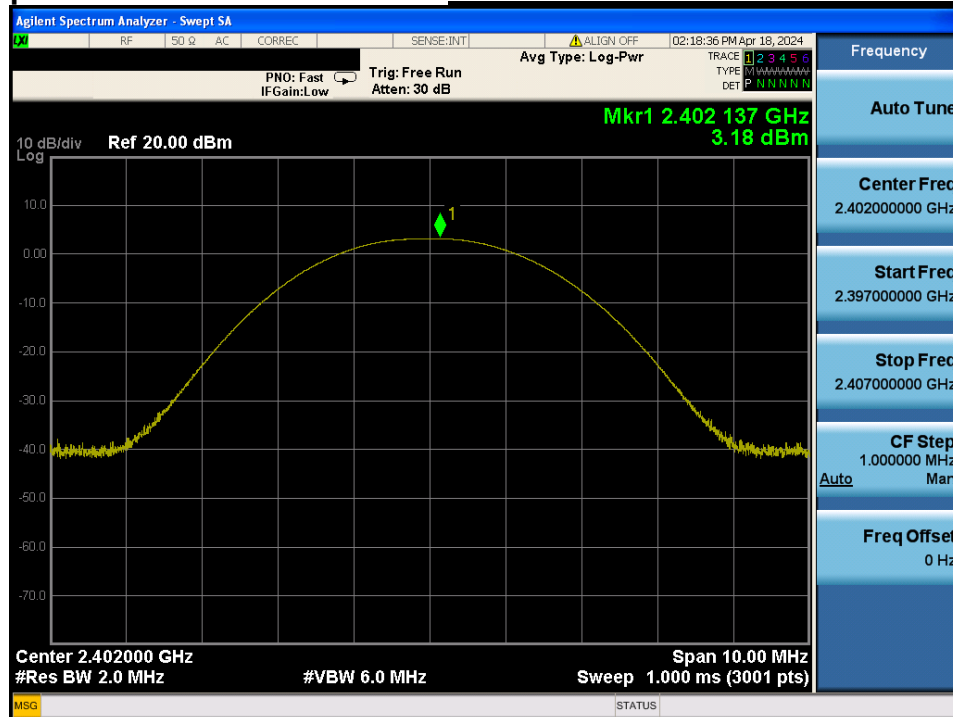
| Modulation | Tested Channel | Burst Average Output Power | | Peak Output Power | |
|---------------------------------------|----------------|----------------------------|------|-------------------|-------------|
| | | dBm | mW | dBm | mW |
| <u>GFSK</u> | Lowest | 2.75 | 1.88 | 3.18 | 2.08 |
| | Middle | 4.90 | 3.09 | 5.59 | 3.62 |
| | Highest | 4.17 | 2.61 | 4.61 | 2.89 |
| <u>$\pi/4$DQPSK</u> | Lowest | 0.85 | 1.22 | 2.88 | 1.94 |
| | Middle | 2.97 | 1.98 | 5.28 | 3.37 |
| | Highest | 2.26 | 1.68 | 4.29 | 2.69 |
| <u>8DPSK</u> | Lowest | 0.84 | 1.21 | 3.25 | 2.11 |
| | Middle | 2.99 | 1.99 | 5.60 | 3.63 |
| | Highest | 2.25 | 1.68 | 4.66 | 2.92 |

Note 1: The average output power was tested using an average power meter for reference only.

Note 2: See next pages for actual measured spectrum plots.

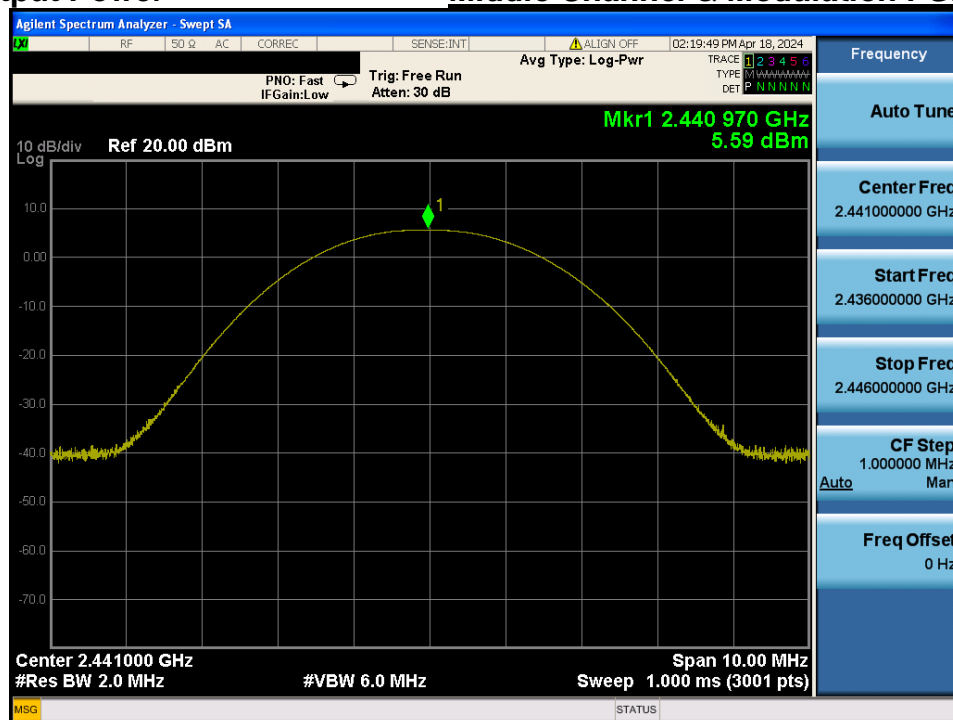
Peak Output Power

Lowest Channel & Modulation : GFSK



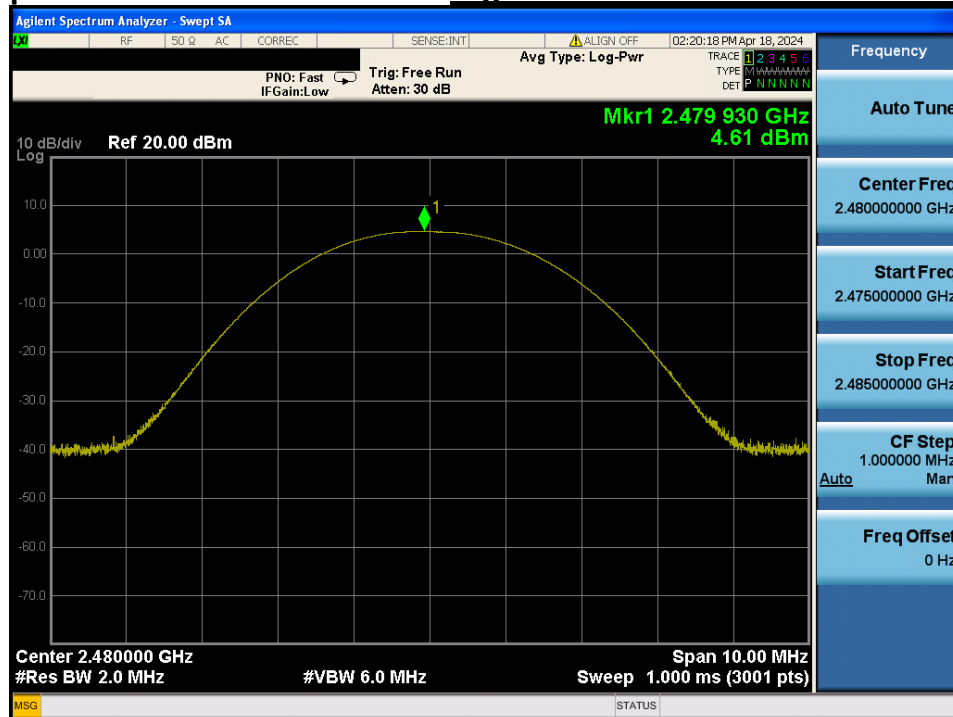
Peak Output Power

Middle Channel & Modulation : GFSK



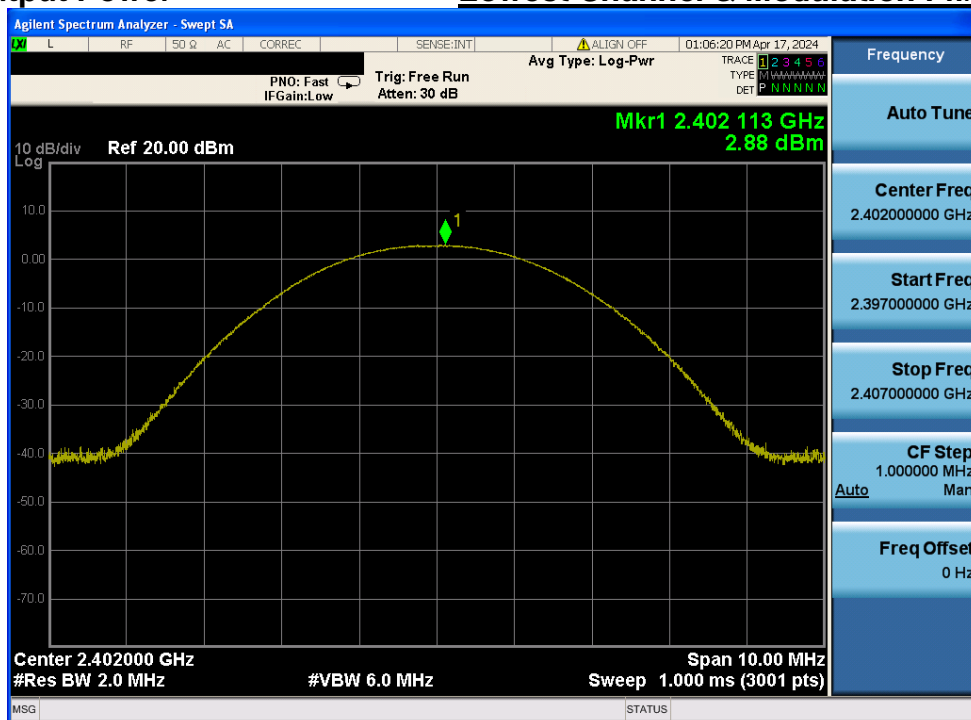
Peak Output Power

Highest Channel & Modulation : GFSK



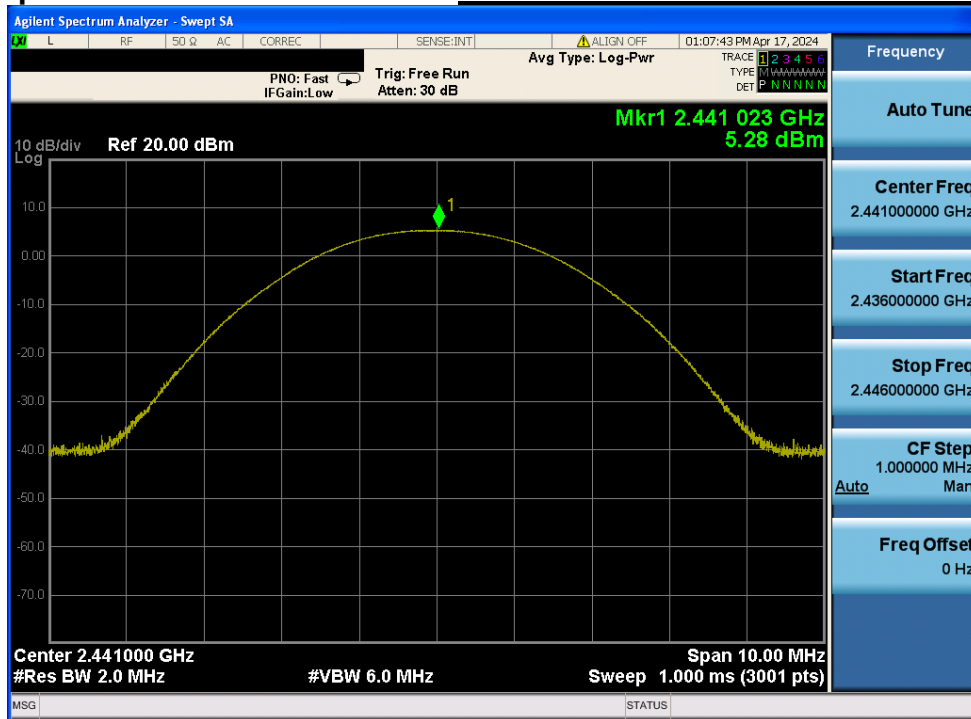
Peak Output Power

Lowest Channel & Modulation : $\pi/4$ DQPSK



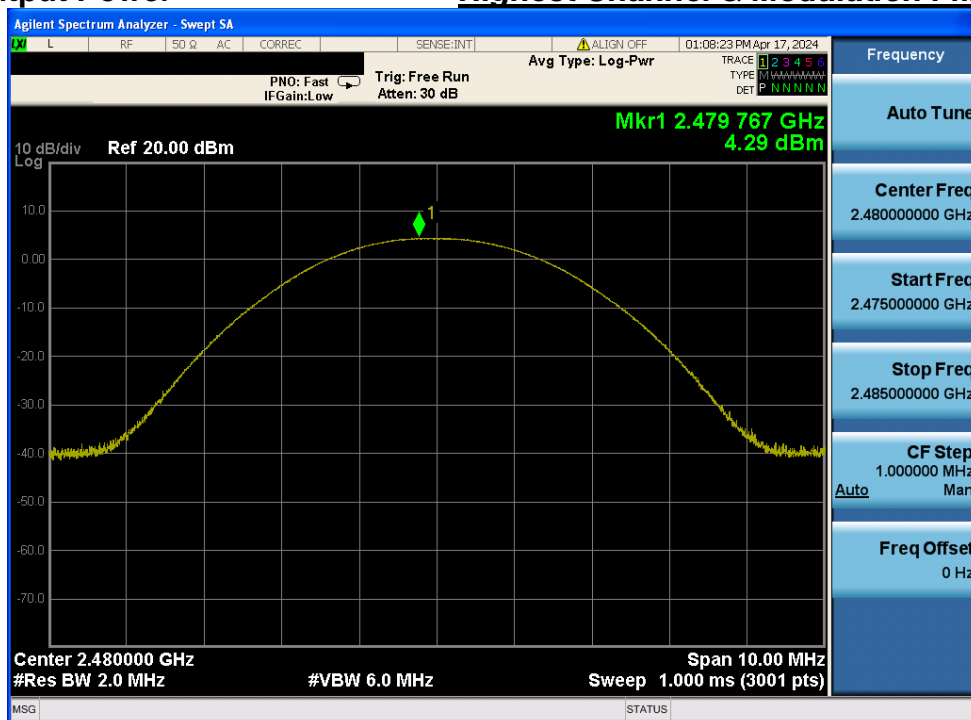
Peak Output Power

Middle Channel & Modulation : $\pi/4$ DQPSK



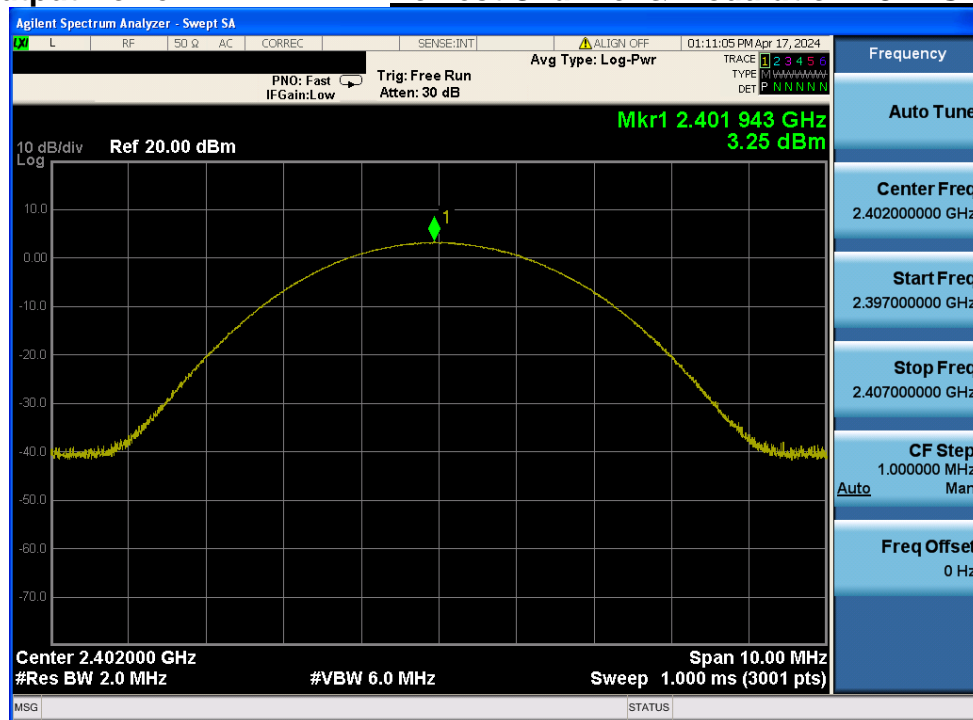
Peak Output Power

Highest Channel & Modulation : $\pi/4$ DQPSK



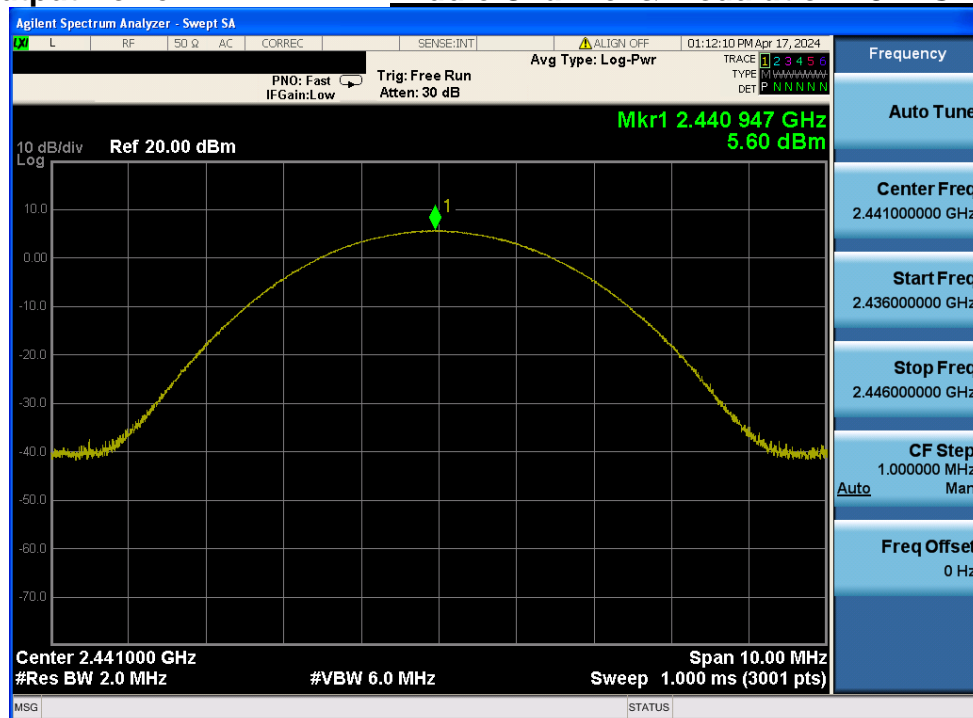
Peak Output Power

Lowest Channel & Modulation : 8DPSK



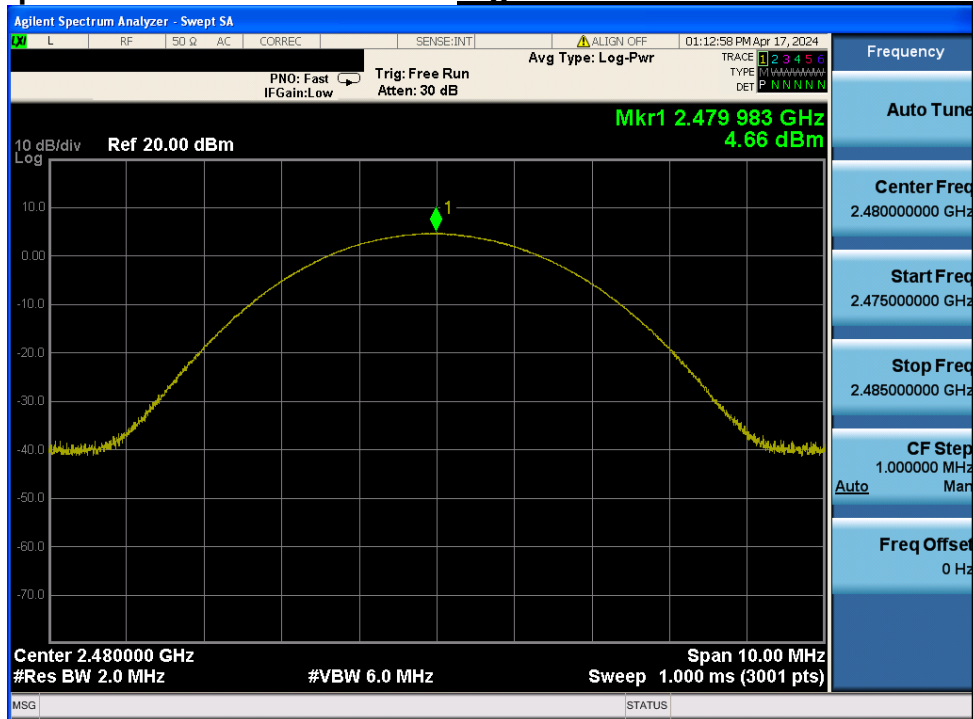
Peak Output Power

Middle Channel & Modulation : 8DPSK



Peak Output Power

Highest Channel & Modulation : 8DPSK



5. 20 dB BW

5.1. Test Setup

Refer to the APPENDIX I.

5.2. Limit

Limit : Not Applicable

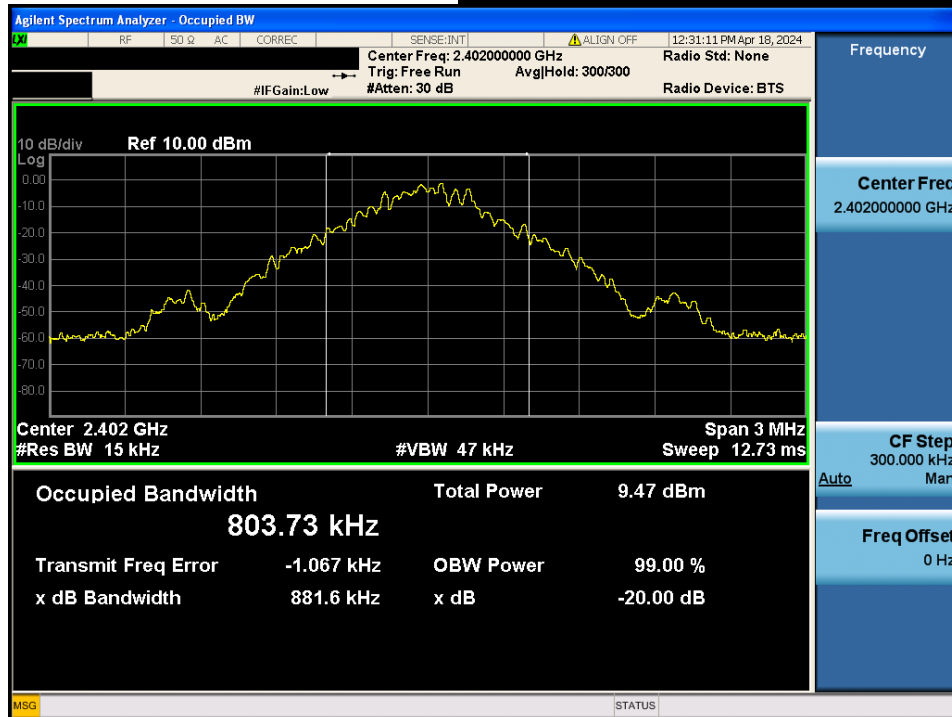
5.3. Test Procedure

1. The 20 dB bandwidth was measured with a spectrum analyzer connected to RF antenna Connector (conducted measurement) while EUT was operating in transmit mode. The analyzer center frequency was set to the EUT carrier frequency, using the analyzer.
2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using below setting:
RBW = 1 % to 5 % of the 20 dB BW
VBW $\geq 3 \times$ RBW
Span = between two times and five times the 20 dB bandwidth
Sweep = auto
Detector function = peak
Trace = max hold

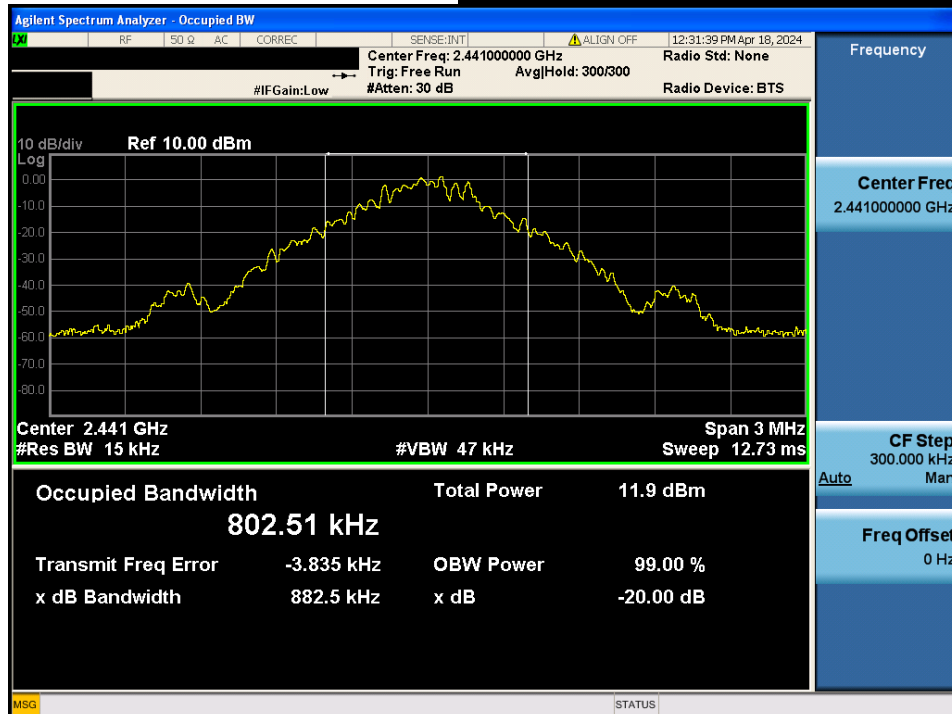
5.4. Test Results

| Modulation | Tested Channel | 20 dB BW (MHz) |
|---------------------------------------|----------------|----------------|
| <u>GFSK</u> | Lowest | 0.882 |
| | Middle | 0.883 |
| | Highest | 0.882 |
| <u>$\pi/4$DQPSK</u> | Lowest | 1.335 |
| | Middle | 1.334 |
| | Highest | 1.321 |
| <u>8DPSK</u> | Lowest | 1.313 |
| | Middle | 1.308 |
| | Highest | 1.311 |

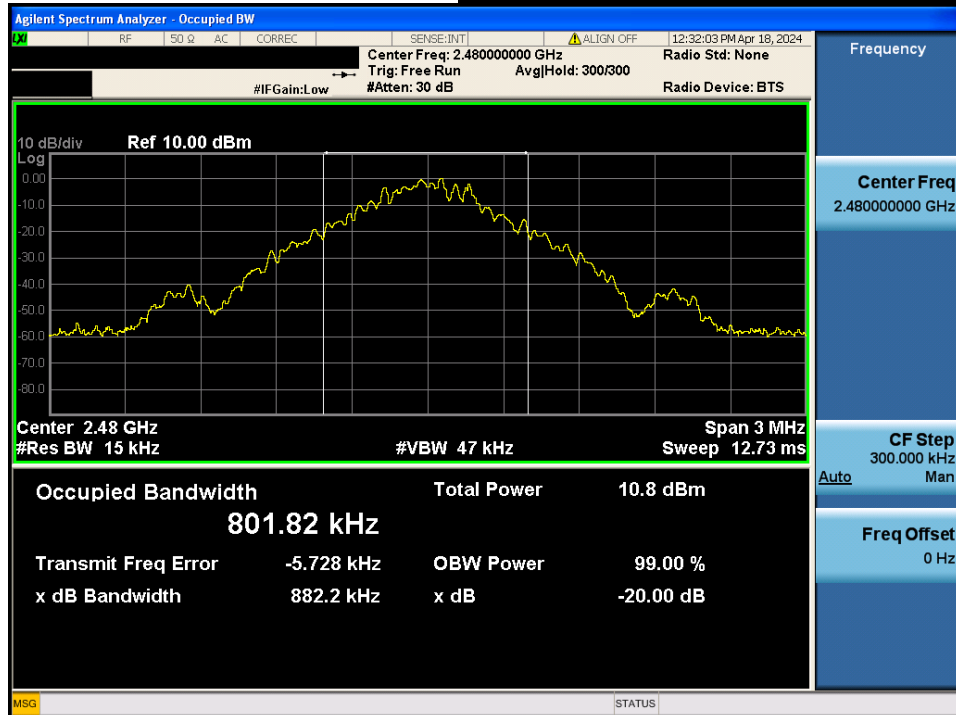
20 dB BW

Lowest Channel & Modulation : GFSK

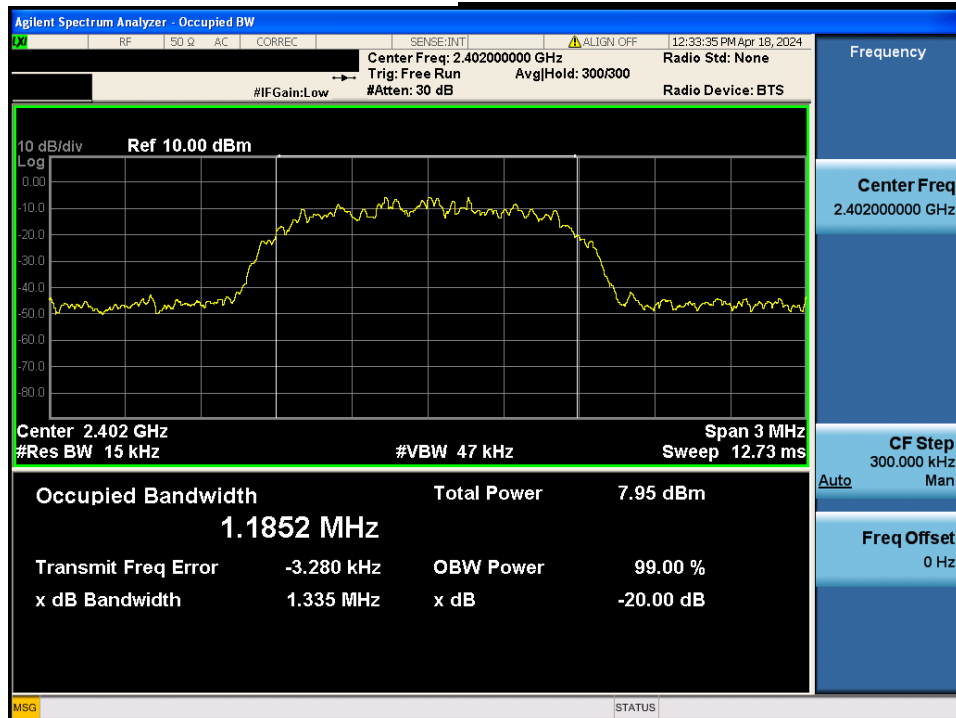
20 dB BW

Middle Channel & Modulation : GFSK

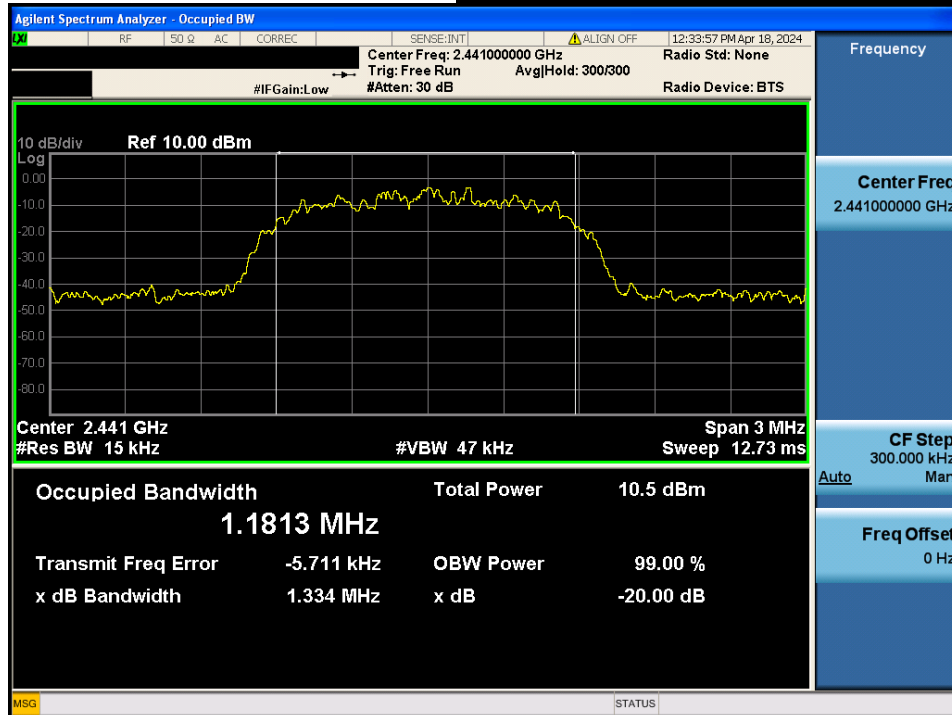
20 dB BW

Highest Channel & Modulation : GFSK

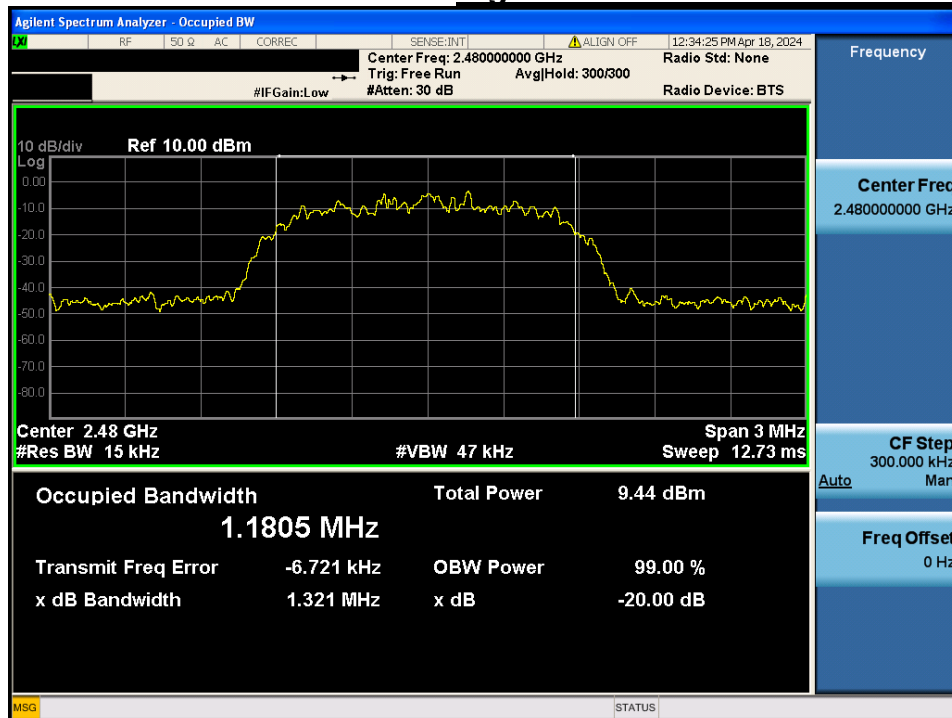
20 dB BW

Lowest Channel & Modulation : $\pi/4$ DQPSK

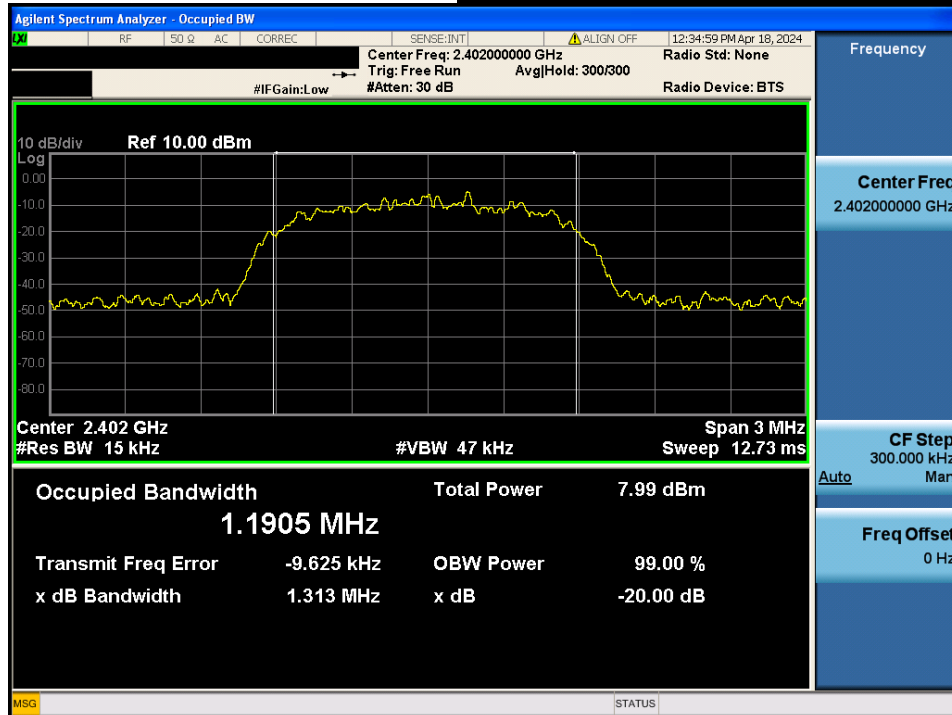
20 dB BW

Middle Channel & Modulation : $\pi/4$ DQPSK

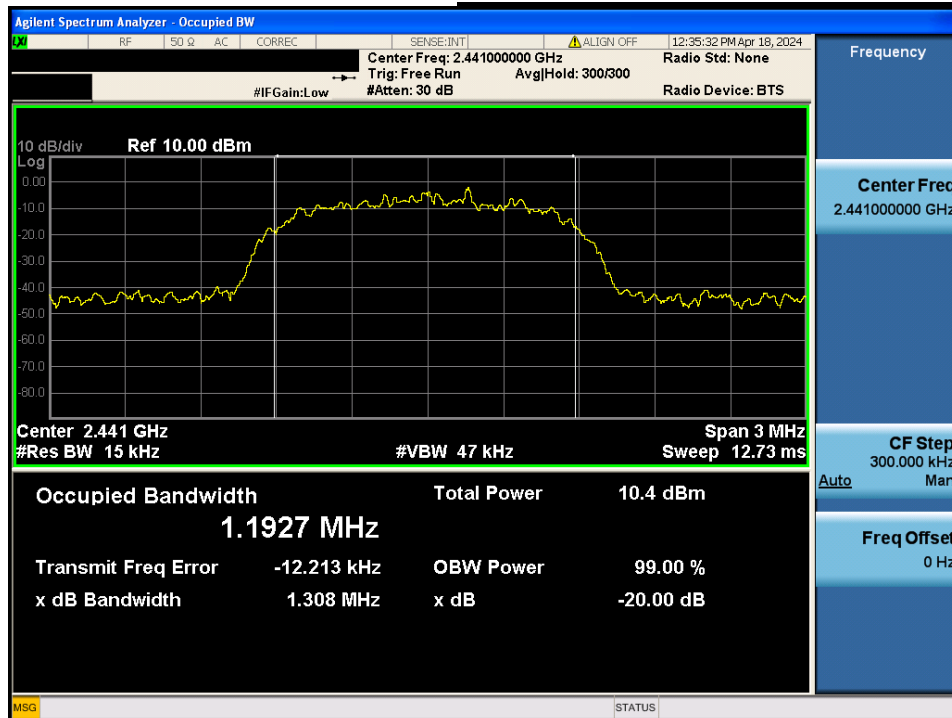
20 dB BW

Highest Channel & Modulation : $\pi/4$ DQPSK

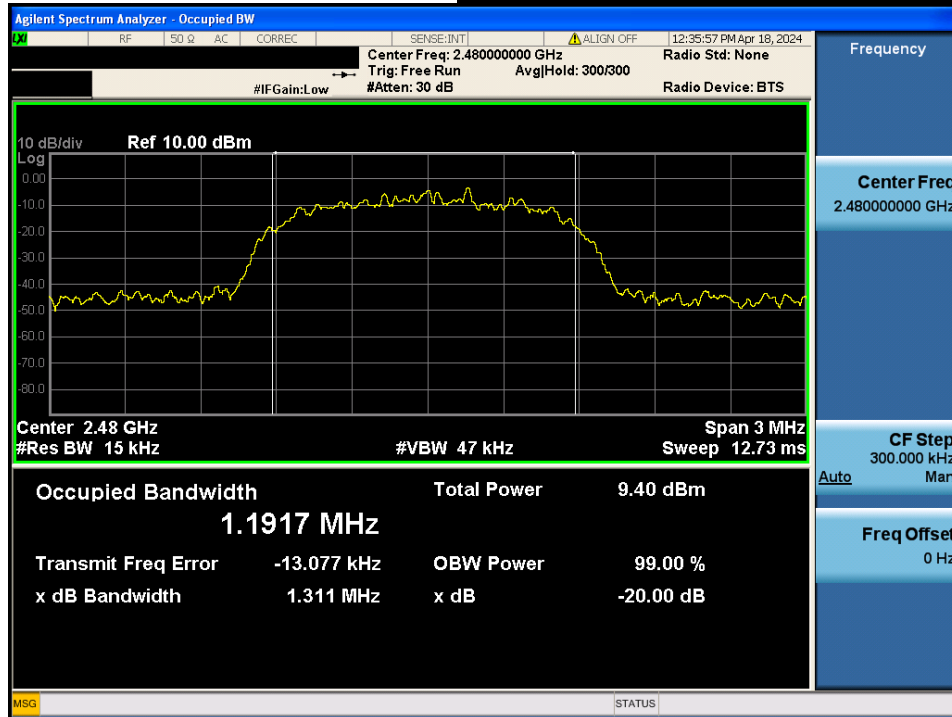
20 dB BW

Lowest Channel & Modulation : 8DPSK

20 dB BW

Middle Channel & Modulation : 8DPSK

20 dB BW

Highest Channel & Modulation : 8DPSK

6. Carrier Frequency Separation

6.1. Test Setup

Refer to the APPENDIX I.

6.2. Limit

Limit : ≥ 25 kHz or \geq Two-Thirds of the 20 dB BW whichever is greater.

6.3. Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

After the trace being stable, the reading value between the peaks of the adjacent channels using the marker-delta function was recorded as the measurement results.

The spectrum analyzer is set to :

Span = wide enough to capture the peaks of two adjacent channels

RBW = Start with the RBW set to approximately 30 % of the channel spacing; adjust as necessary to best identify the center of each individual channel.

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

6.4. Test Results

FH mode

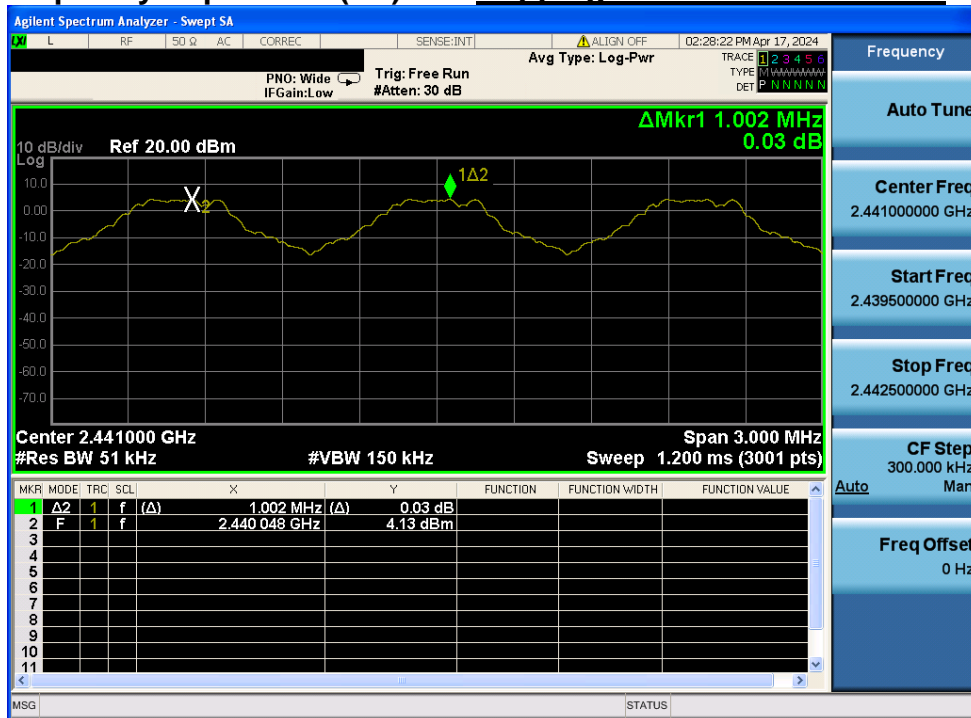
| Hopping Mode | Modulation | Peak of reference channel(MHz) | Peak of adjacent Channel(MHz) | Test Result (MHz) |
|--------------|---------------|--------------------------------|-------------------------------|-------------------|
| Enable | GFSK | 2 440.048 | 2 441.050 | 1.002 |
| | $\pi/4$ DQPSK | 2 439.987 | 2 440.986 | 0.999 |
| | 8DPSK | 2 441.147 | 2 442.145 | 0.998 |

AFH mode

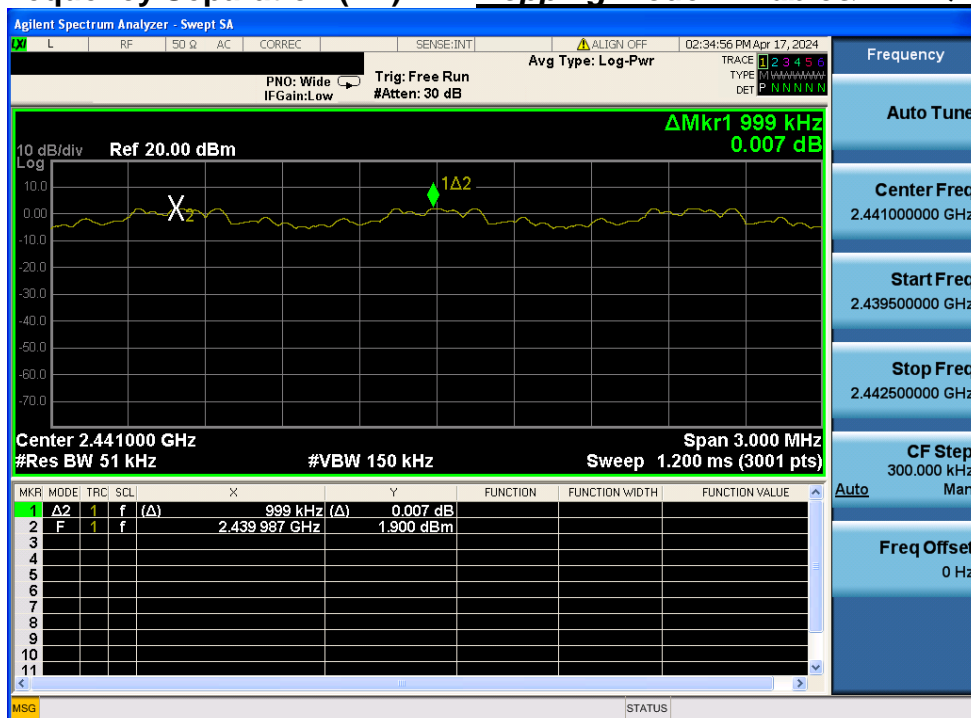
| Hopping Mode | Modulation | Peak of reference channel(MHz) | Peak of adjacent Channel(MHz) | Test Result (MHz) |
|--------------|---------------|--------------------------------|-------------------------------|-------------------|
| Enable | GFSK | 2 441.048 | 2 442.048 | 1.000 |
| | $\pi/4$ DQPSK | 2 439.986 | 2 440.987 | 1.001 |
| | 8DPSK | 2 440.146 | 2 441.146 | 1.000 |

Note 1 : See next pages for actual measured spectrum

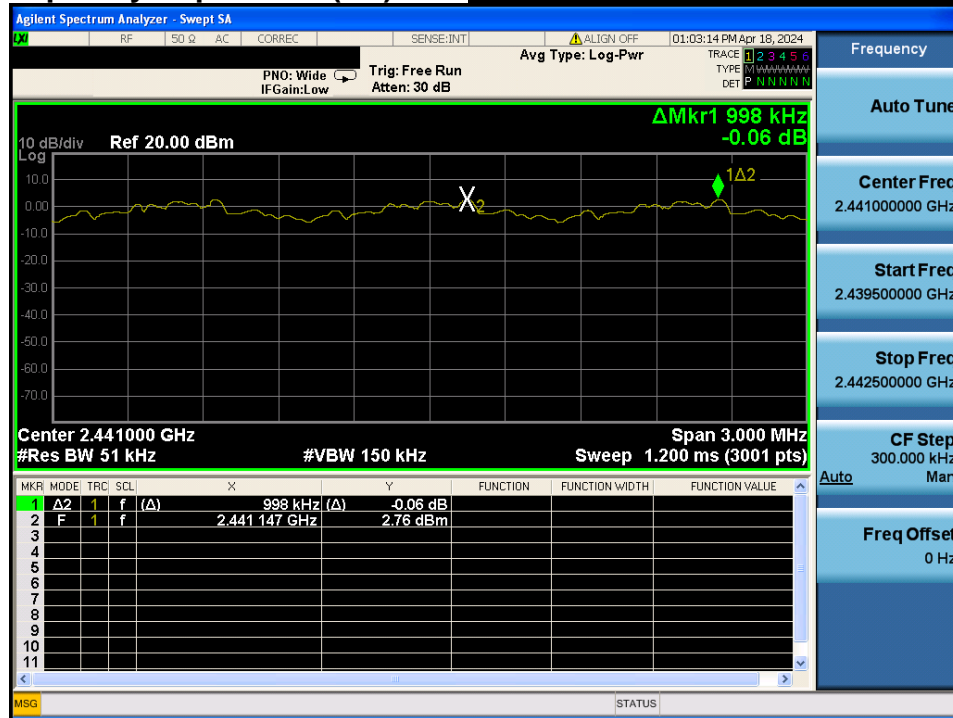
Carrier Frequency Separation (FH)

Hopping mode : Enable&GFSK

Carrier Frequency Separation (FH)

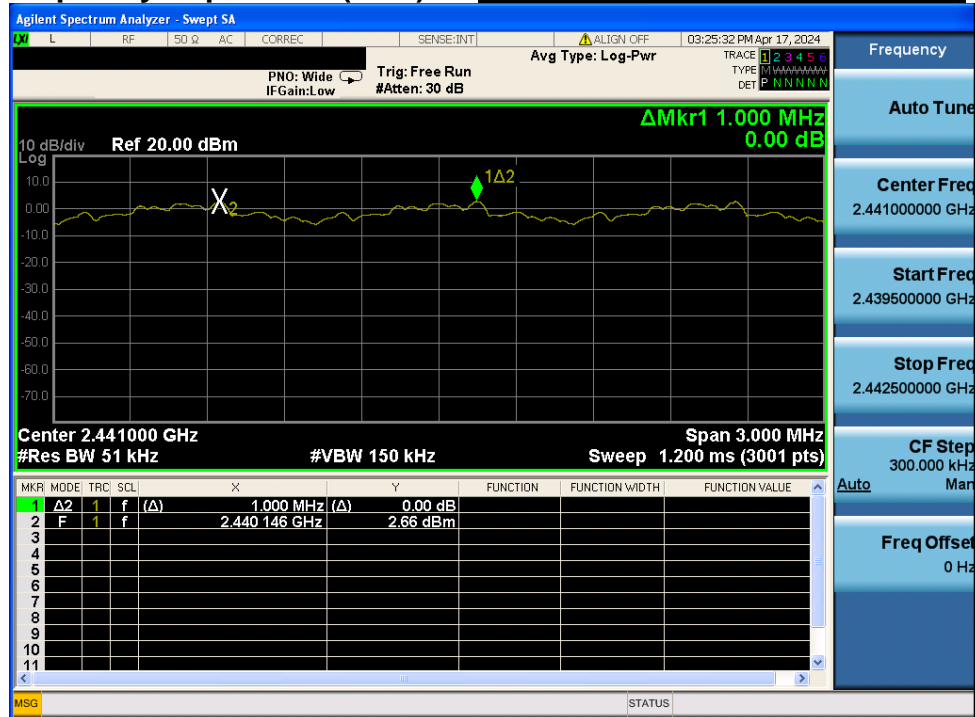
Hopping mode : Enable& $\pi/4$ DQPSK

Carrier Frequency Separation (FH) *Hopping mode : Enable&8DPSK*



Carrier Frequency Separation (AFH) Hopping mode : Enable&GFSK**Carrier Frequency Separation (AFH) Hopping mode : Enable& $\pi/4$ DQPSK**

Carrier Frequency Separation (AFH) *Hopping mode : Enable&8DPSK*



7. Number of Hopping Channels

7.1. Test Setup

Refer to the APPENDIX I.

7.2. Limit

Limit : ≥ 15 hops

7.3. Test Procedure

The number of hopping frequencies was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

To get higher resolution, two frequency ranges for FH mode within the 2 400 MHz ~ 2 483.5 MHz were examined.

The spectrum analyzer is set to :

Span for FH mode = 50 MHz Start Frequency = 2 391.5 MHz, Stop Frequency = 2 441.5 MHz

Start Frequency = 2 441.5 MHz, Stop Frequency = 2 491.5 MHz

Span for AFH mode = 30 MHz Start Frequency = 2 426.0 MHz, Stop Frequency = 2 456.0 MHz

RBW = To identify clearly the individual channels, set the RBW to less than 30 % of the channel spacing or the 20 dB bandwidth, whichever is smaller.

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

7.4. Test Results

FH mode

| Hopping mode | Modulation | Test Result (Total Hops) |
|--------------|---------------|--------------------------|
| Enable | GFSK | 79 |
| | $\pi/4$ DQPSK | 79 |
| | 8DPSK | 79 |

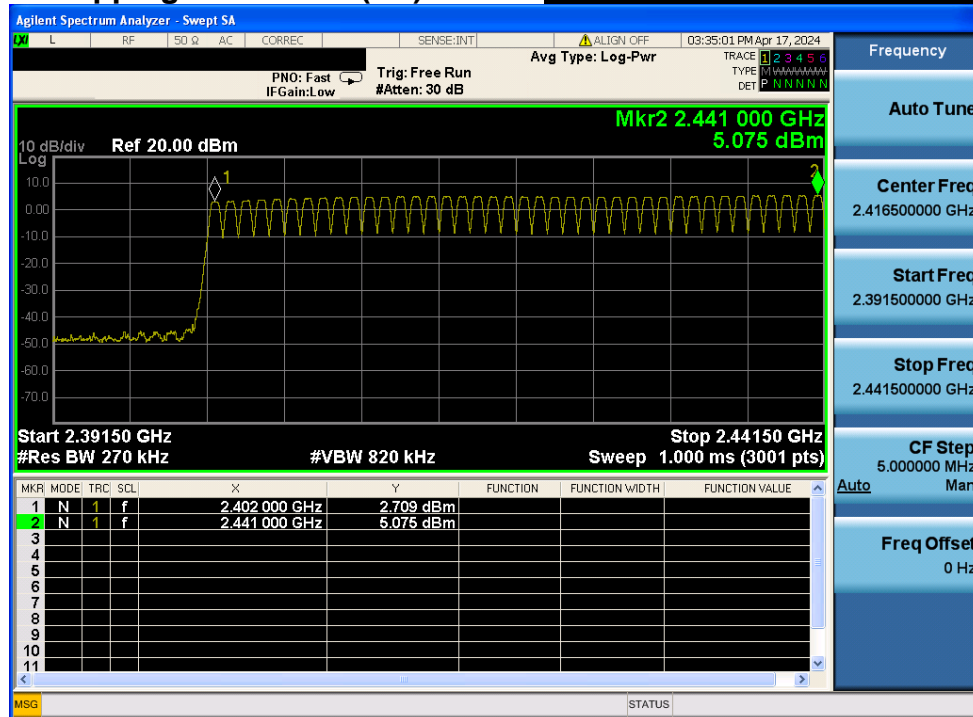
AFH mode

| Hopping mode | Modulation | Test Result (Total Hops) |
|--------------|---------------|--------------------------|
| Enable | GFSK | 20 |
| | $\pi/4$ DQPSK | 20 |
| | 8DPSK | 20 |

Note 1 : See next pages for actual measured spectrum plots.

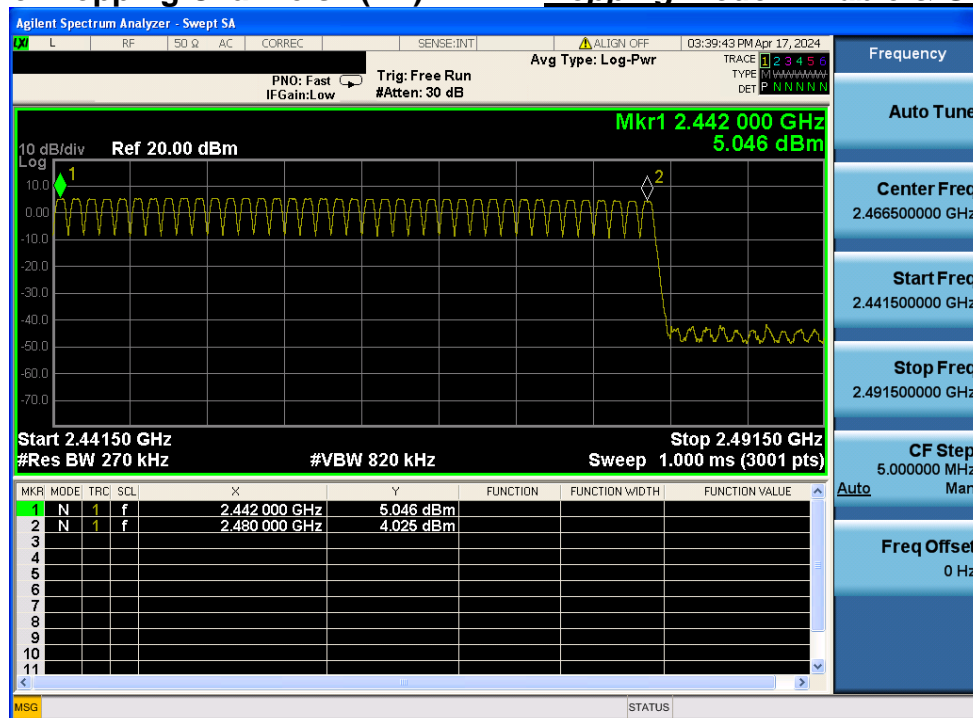
Number of Hopping Channels 1(FH)

Hopping mode : Enable & GFSK



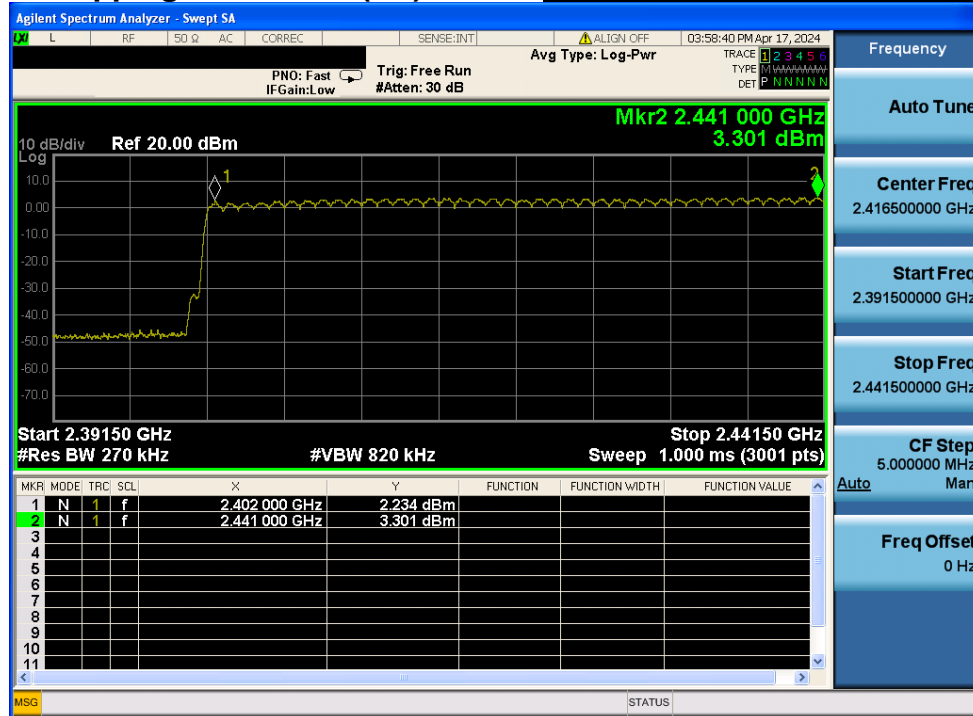
Number of Hopping Channels 2(FH)

Hopping mode : Enable & GFSK



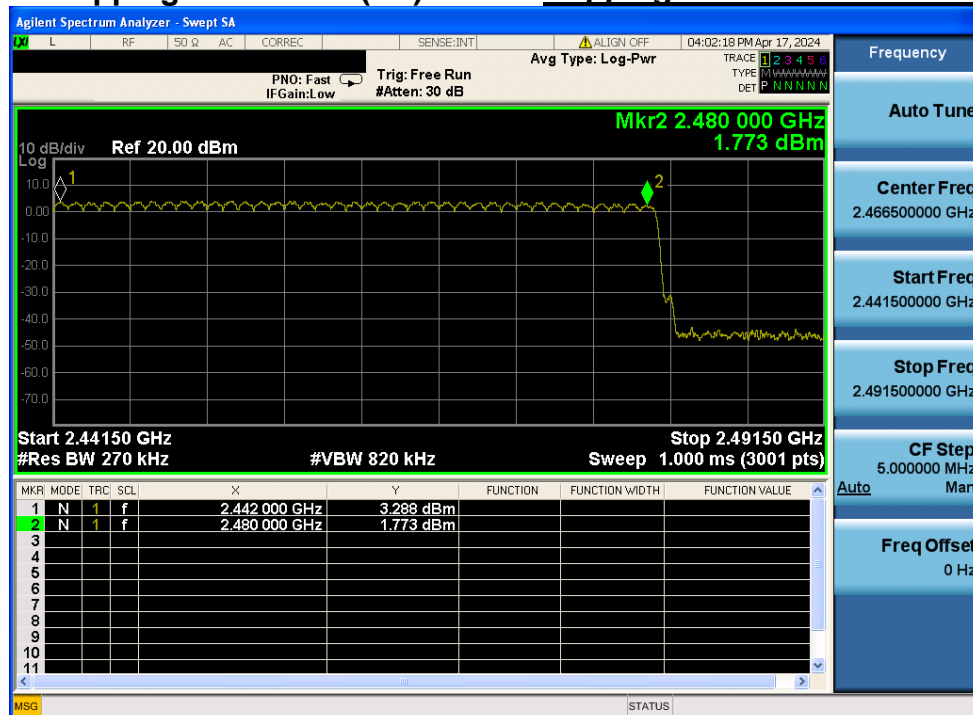
Number of Hopping Channels 1(FH)

Hopping mode : Enable & $\pi/4$ DQPSK

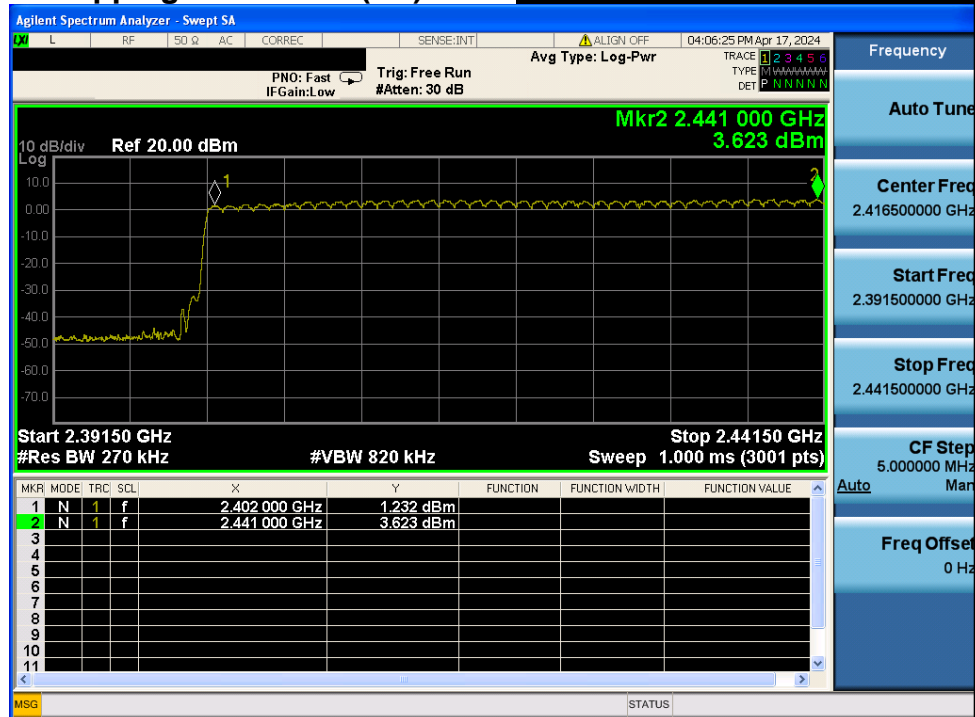


Number of Hopping Channels 2(FH)

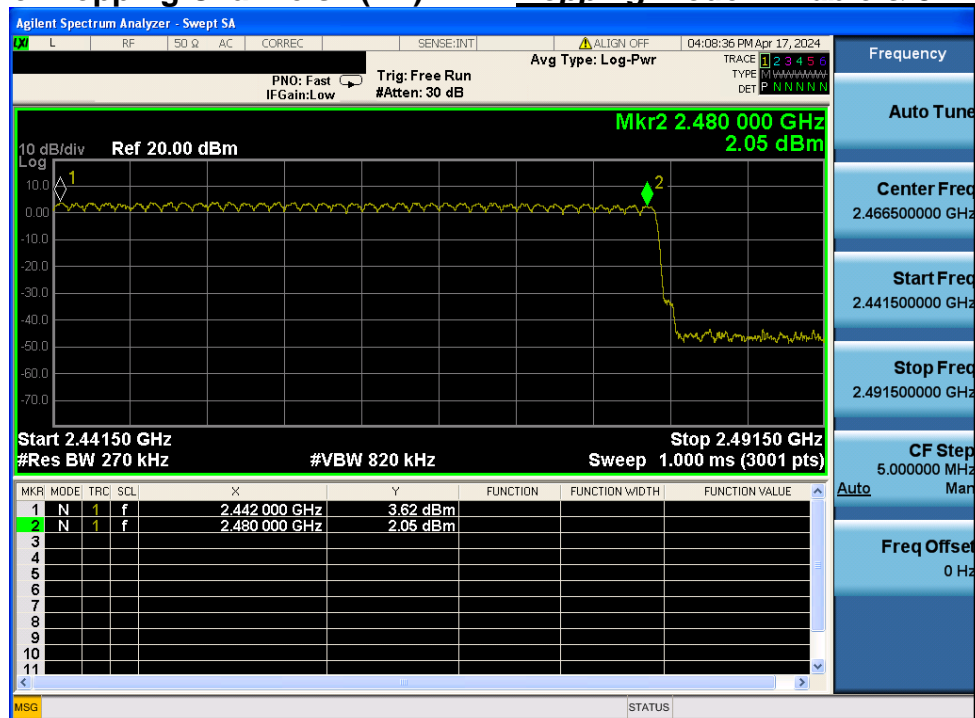
Hopping mode : Enable & $\pi/4$ DQPSK



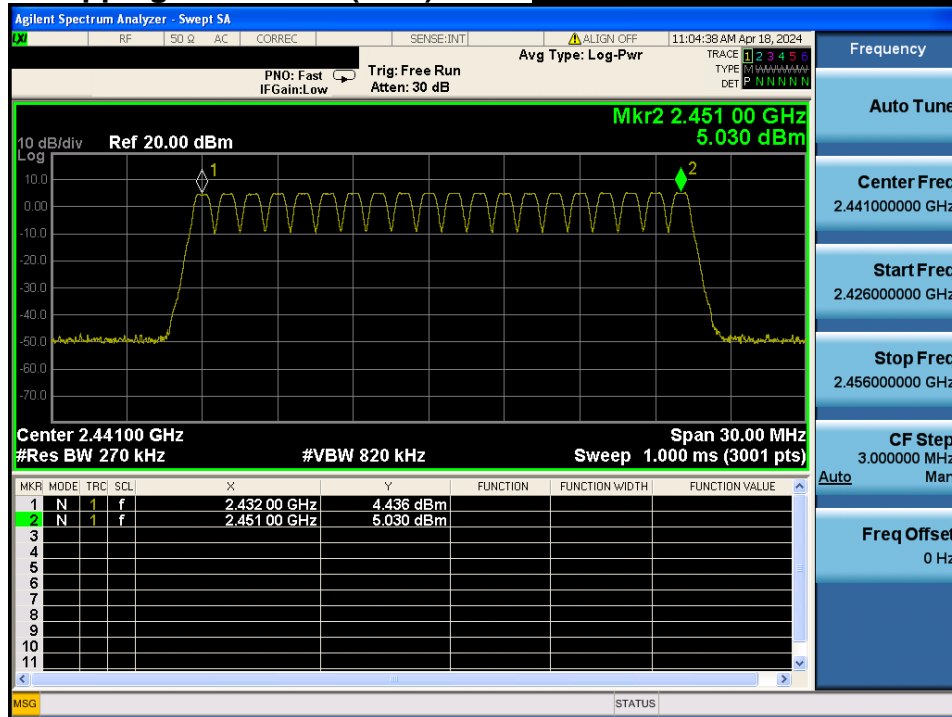
Number of Hopping Channels 1(FH)

Hopping mode : Enable&8DPSK

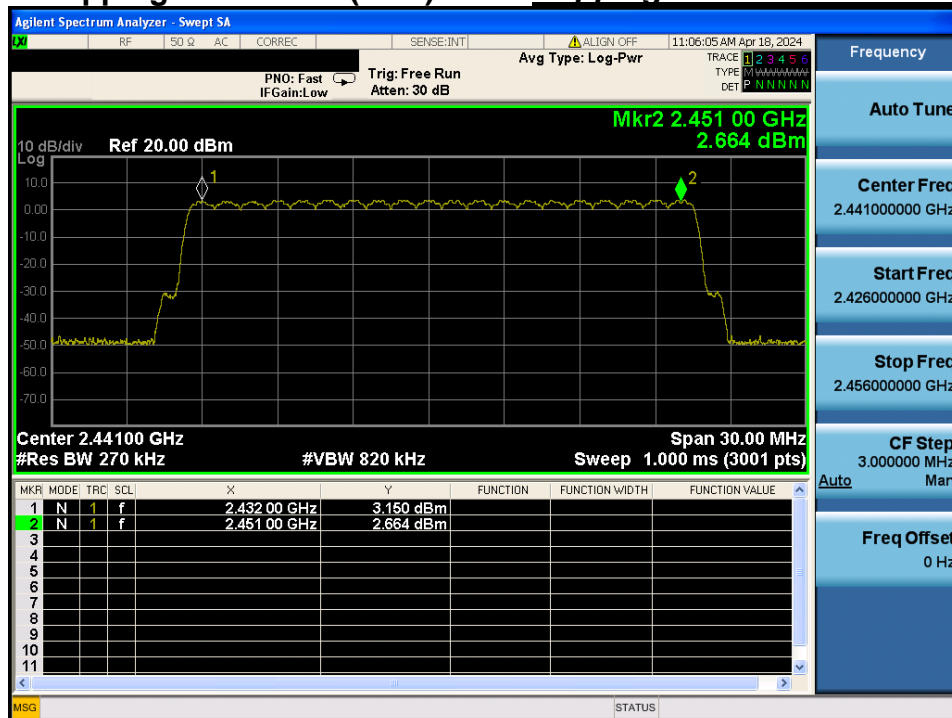
Number of Hopping Channels 2(FH)

Hopping mode : Enable & 8DPSK

Number of Hopping Channels 1(AFH)

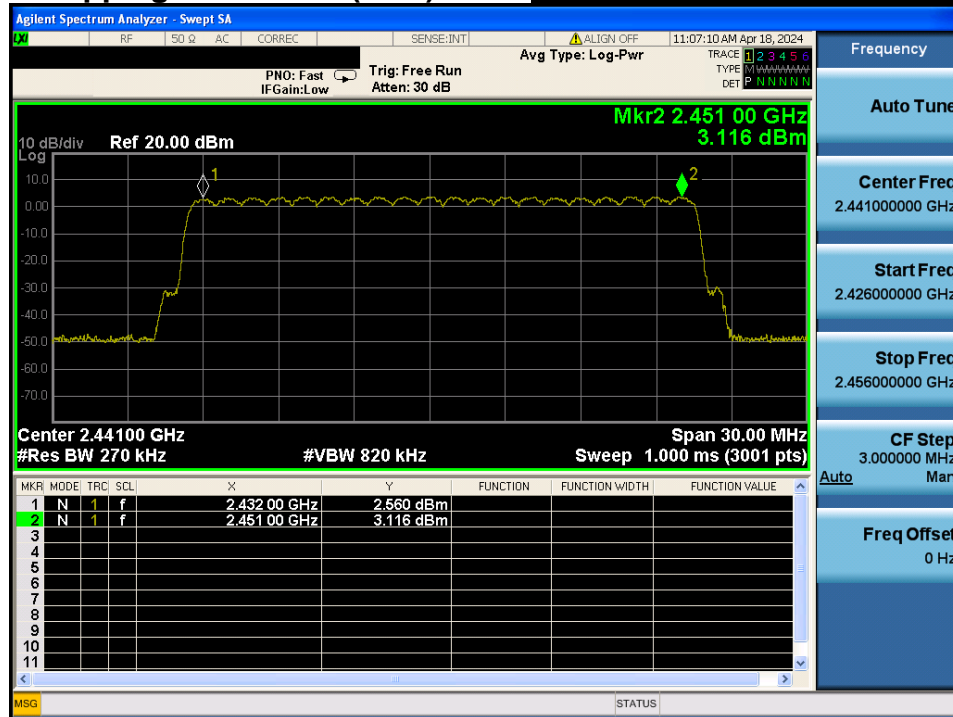
Hopping mode : Enable &GFSK

Number of Hopping Channels 1(AFH)

Hopping mode : Enable & $\pi/4$ DQPSK

Number of Hopping Channels 1(AFH)

Hopping mode : Enable & 8DPSK



8. Time of Occupancy

8.1. Test Setup

Refer to the APPENDIX I.

8.2. Limit

The maximum permissible time of occupancy is 400 ms within a period of 400 ms multiplied by the number of hopping channels employed.

8.3. Test Procedure

The dwell time was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

The spectrum analyzer is set to :

Center frequency = 2 441 MHz

Span = zero

RBW = 1 MHz (RBW shall be \leq channel spacing and where possible RBW should be set $\gg 1/T$, where T is the expected dwell time per channel)

VBW \geq RBW

Detector function = peak

Trace = max hold

8.4. Test Results

FH mode

| Hopping mode | Packet Type | Number of hopping Channels | Burst On Time (ms) | Period (ms) | Test Result (sec) |
|--------------|-------------|----------------------------|--------------------|-------------|-------------------|
| Enable | DH 5 | 79 | 2.880 | 3.750 | 0.307 |
| | 2 DH 5 | 79 | 2.880 | 3.750 | 0.307 |
| | 3 DH 5 | 79 | 2.880 | 3.750 | 0.307 |

AFH mode

| Hopping mode | Packet Type | Number of hopping Channels | Burst On Time (ms) | Period (ms) | Test Result (sec) |
|--------------|-------------|----------------------------|--------------------|-------------|-------------------|
| Enable | DH 5 | 20 | 2.880 | 3.750 | 0.154 |
| | 2 DH 5 | 20 | 2.880 | 3.750 | 0.154 |
| | 3 DH 5 | 20 | 2.880 | 3.750 | 0.154 |

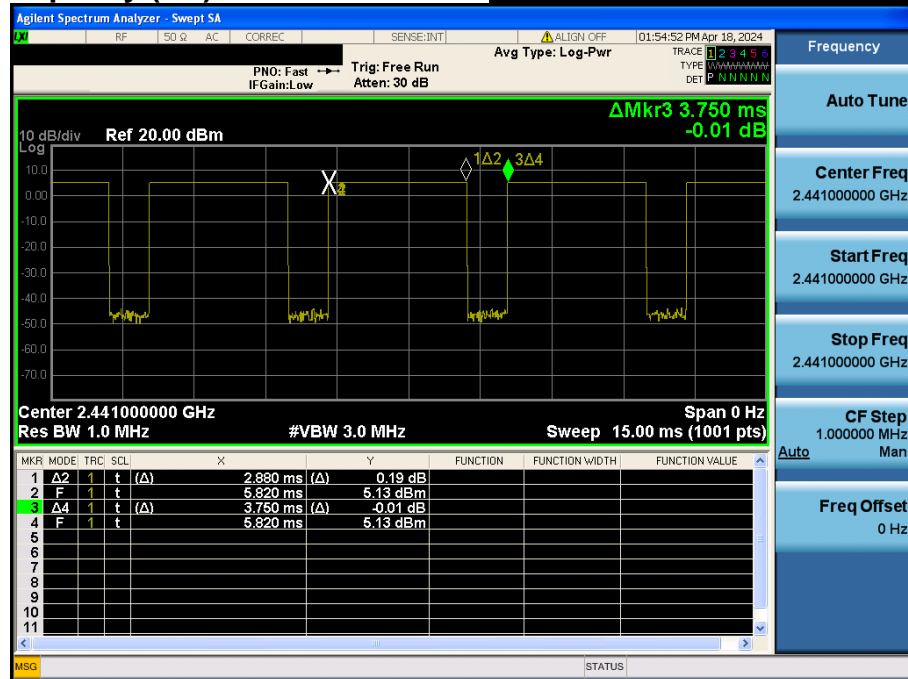
Note 1 : Dwell Time = $0.4 \times \text{Hopping channel} \times \text{Burst ON time} \times$

$((\text{Hopping rate} \div \text{Time slots}) \div \text{Hopping channel})$

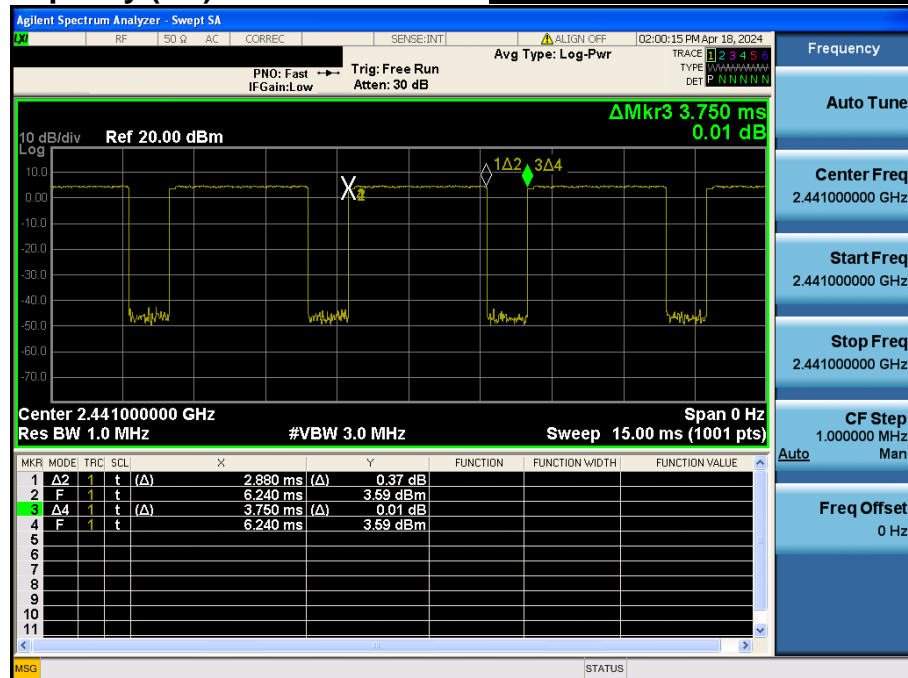
- Time slots for DH5 = 6 slots (TX = 5 slots / RX = 1 slot)
- Hopping Rate = 1 600 for FH mode & 800 for AFH mode

Note 2 : See next pages for actual measured spectrum plots.

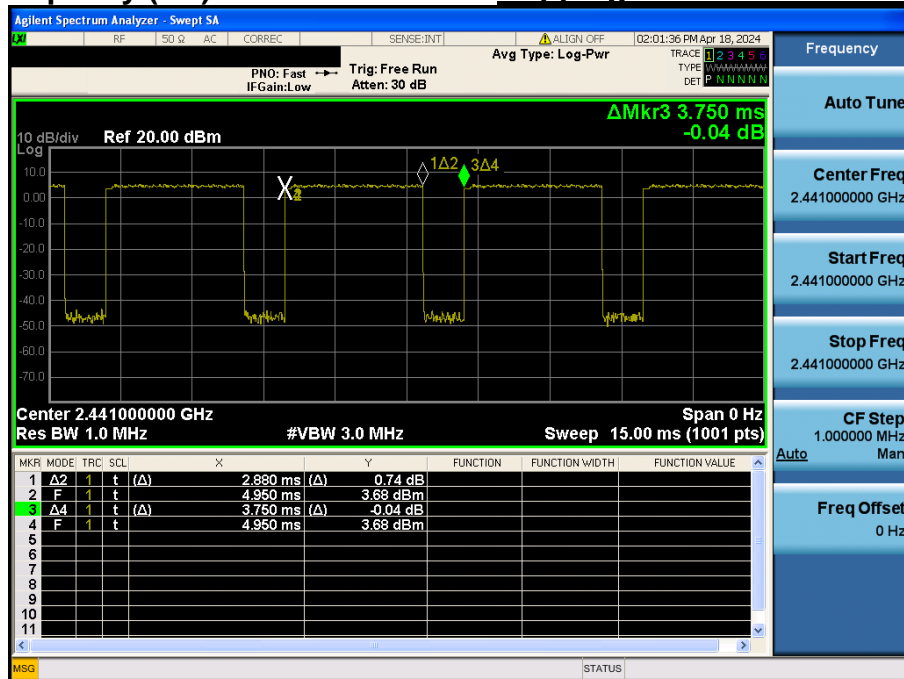
Time of Occupancy (FH)

Hopping mode : Enable&DH5

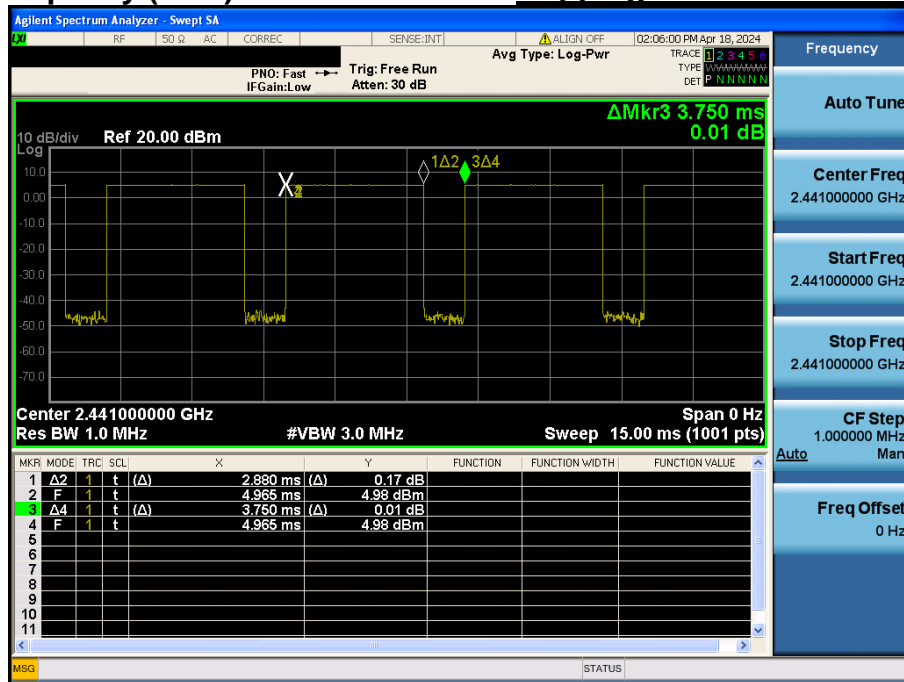
Time of Occupancy (FH)

Hopping mode : Enable&2-DH5

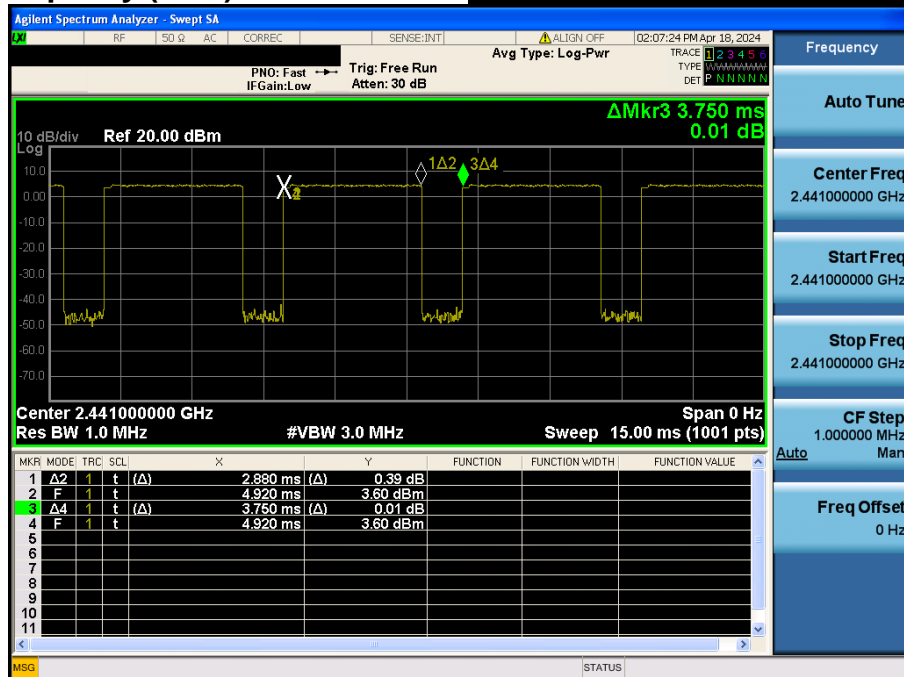
Time of Occupancy (FH)

Hopping mode : Enable&3-DH5

Time of Occupancy (AFH)

Hopping mode : Enable&DH5

Time of Occupancy (AFH)

Hopping mode : Enable&2-DH5

Time of Occupancy (AFH)

Hopping mode : Enable&3-DH5