RF TEST REPORT

Applicant	Freemode Go LLC dba CRKD
FCC ID	2BAXLCK25GX
Product	Guitar Controller
Model	CK25GX
Report No.	EFTA25080202-IE-05-R1V1
Issue Date	September 16, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2024)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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TABLE OF CONTENT

Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	September 9, 2025
Rev.1	Updated data.	September 16, 2025
Note: This revised report (Report No.: EFTA25080202-IE-05-R1V1) supersedes and replaces the previously issued report (Report No.: EFTA25080202-IE-05-R1). Please discard or destroy the previously issued report and dispose of it accordingly.		

Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	Peak Power Output	15.247(b)(1)	PASS
2	99% Bandwidth and 20dB Bandwidth	15.247(a)(1) C63.10 6.9	PASS
3	Frequency Separation	15.247(a)(1)	PASS
4	Time of Occupancy (Dwell Time)	15.247(a)(1)(iii)	PASS
5	Band Edge Compliance	15.247(d)	PASS
6	Number of Hopping Frequency	15.247(a)(1)(iii)	PASS
7	Spurious RF Conducted Emissions	15.247(d)	PASS
8	Unwanted Emissions	15.247(d),15.205,15.209	PASS
9	Conducted Emissions	15.207	PASS
Date of Testing: August 15, 2025 ~ September 16, 2025 Date of Sample Received: August 15, 2025			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
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E-mail:	Kain.Xu@cpt.eurofinscn.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Freemode Go LLC dba CRKD
Applicant address	3142 Constitution drive, Livermore, California 94551, United States
Manufacturer	Freemode Go LLC dba CRKD
Manufacturer address	3142 Constitution drive, Livermore, California 94551, United States

2.2 General information

EUT Description			
Model	CK25GX		
Lab internal SN	EFTA25080202-IE-05/S01		
Hardware Version	V1.3		
Software Version	V2.34		
Power Supply	Battery		
Antenna Type	Internal Antenna		
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)		
Antenna Gain	2.63 dBi		
Test Mode(s)	Basic Rate	Enhanced Data Rate(EDR)	
Modulation Type	Frequency Hopping Spread Spectrum (FHSS)		
	GFSK	π/4 DQPSK	8DPSK
Packet Type (Maximum Payload)	DH5	2DH5	3DH5
Max. Output Power	-0.13 dBm		
Operating Frequency Range(s)	2402-2480 MHz		
Operating voltage range	4.5 Vdc to 5.5 Vdc		
State voltage	DC 5V or 2*DC 1.5V AA battery		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.			

3 Applied Standards

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

Test standards:

FCC CFR47 Part 15C (2024) Radio Frequency Devices

ANSI C63.10-2020

Reference standard:

KDB 558074 D01 15.247 Meas Guidance v05r02

4 Information about the FHSS characteristics

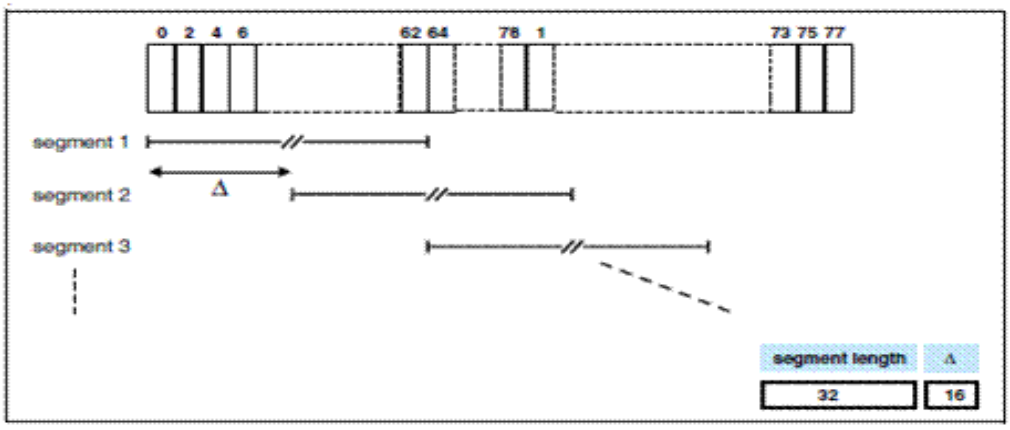
4.1 Frequency Hopping System Requirement

The Basic Rate / Enhanced Data Rate (BR/EDR) radio (physical layer or PHY) operates in the unlicensed ISM band at 2.4 GHz. The system employs a frequency hopping transceiver to combat interference and fading and provides many FHSS carriers. Basic Rate radio operation uses a shaped, binary frequency modulation to minimize transceiver complexity. The symbol rate is 1 megasymbol per second (Msym/s) supporting the bit rate of 1 megabit per second (Mb/s) or, with Enhanced Data Rate, a gross air bit rate of 2 Mb/s or 3 Mb/s. These modes are known as Basic Rate and Enhanced Data Rate respectively

Devices in a piconet use a specific frequency hopping pattern, which is algorithmically determined by certain fields in the Bluetooth address and clock of the Central. The basic hopping pattern is a pseudo-random ordering of the 79 frequencies, separated by 1 MHz, in the ISM band. The hopping pattern can be adapted – on a per-Peripheral basis – to exclude a portion of the frequencies that are used by interfering devices

Adaptive Frequency Hopping (AFH) allows Bluetooth devices to improve their immunity to interference from and avoid causing interference to other devices in the 2.4 GHz ISM band. The basic principle is that Bluetooth channels are classified into two categories, used and unused, where used channels are part of the hopping sequence and unused channels are replaced in the hopping sequence by used channels in a pseudo-random way. This classification mechanism allows for the Bluetooth device to use either all or fewer than the channels available. The minimum number of channels allowed by the Bluetooth specification is 20 on BR/EDR and 2 on LE.

The selection scheme chooses a segment of 32 hop frequencies spanning about 64 MHz and visits these hops in a pseudo-random order. Next, a different 32-hop segment is chosen, etc. In the page, Central page response, Peripheral page response, page scan, inquiry, inquiry response and inquiry scan hopping sequences, the same 32-hop segment is used all the time (the segment is selected by the address; different devices will have different paging segments). When the basic channel hopping sequence is selected, the output constitutes a pseudo-random sequence that slides through the 79 hops.



Hop selection scheme in Connection state.

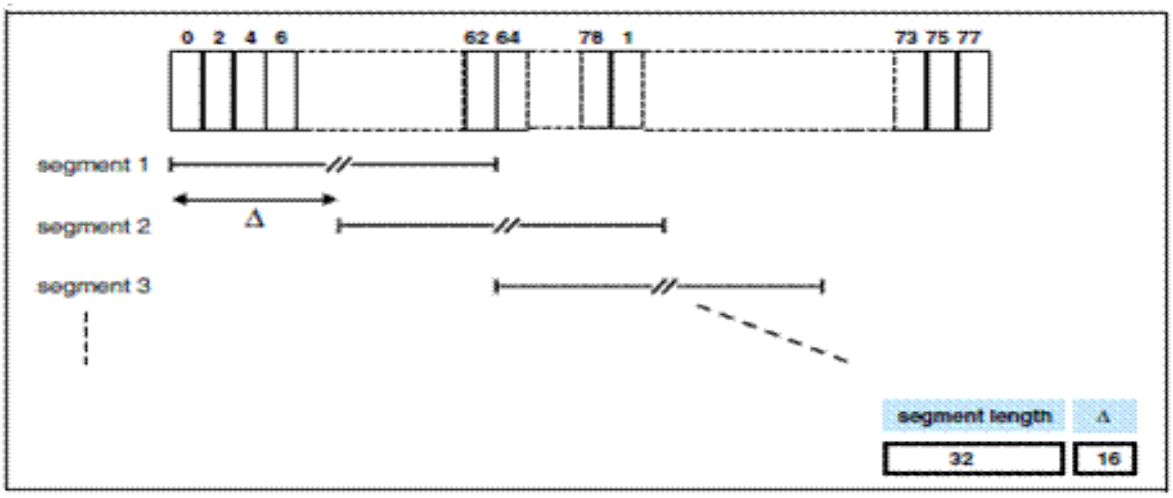
4.2 Pseudorandom Frequency Hopping Sequence

Frequency Hopping Systems. A spread spectrum system in which the carrier is modulated with the coded information in a conventional manner causing a conventional spreading of the RF energy about the frequency carrier. The frequency of the carrier is not fixed but changes at fixed intervals under the direction of a coded sequence. The wide RF bandwidth needed by such a system is not required by spreading of the RF energy about the carrier but rather to accommodate the range of frequencies to which the carrier frequency can hop. The test of a frequency hopping system is that the near term distribution of hops appears random, the long term distribution appears evenly distributed over the hop set, and sequential hops are randomly distributed in both direction and magnitude of change in the hop set.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH-enabled Bluetooth device will then communicate with other devices within its pioneer to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

The selection scheme chooses a segment of 32 hop frequencies spanning about 64 MHz and visits these hops in a pseudo-random order. Next, a different 32-hop segment is chosen, etc. In the page, master page response, slave page response, page scan, inquiry, inquiry response and inquiry scan hopping sequences, the same 32-hop segment is used all the time (the segment is selected by the address; different devices will have different paging segments).

When the basic channel hopping sequence is selected, the output constitutes a pseudo-random sequence that slides through the 79 hops. The principle is depicted in the figure below.



Hop selection scheme in CONNECTION state.

Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 40, 56, 72, 09, 01, 09, 33, 41, 33, 41, 65, 73, 53, 69, 06, 22, 04, 20, 36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 42, 58, 44, 60, 76, 13, 03, 11, 35, 43, 37, 45, 69, 77, 55, 71, 08, 24, 08, 24, 40, 56, 40, 48, 72, 01, 72, 01, 25, 33, 12, 28, 44, 60, 42, 58, 74, 11, 05, 13, 37, 45, etc.

Each frequency used equally on the average by each transmitter.

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

4.3 Equal Hopping Frequency Use

All Bluetooth units participating in the Pico net are time and hop-synchronized to the channel. Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event.

4.4 System Receiver Input Bandwidth

Each channel bandwidth is 1MHz. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

4.5 Test Configuration

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Test Cases	Test Modes
Peak Power Output -Conducted	DH5/2DH5/3DH5
Occupied Bandwidth (20dB)	DH5/2DH5/3DH5
Frequency Separation	DH5/2DH5/3DH5
Time of Occupancy (Dwell Time)	DH5/2DH5/3DH5
Band Edge Compliance	DH5/2DH5/3DH5
Number of Hopping Frequency	DH5/2DH5/3DH5
Spurious RF Conducted Emissions	DH5/2DH5/3DH5
Unwanted Emission	DH5/2DH5/3DH5
Conducted Emission	DH5/2DH5/3DH5

5 Test Case

5.1 Peak Power Output

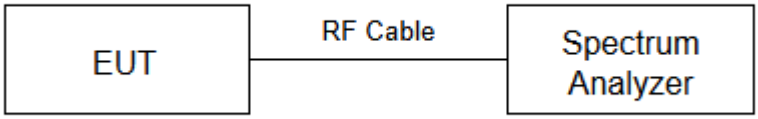
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. The EUT is set to ensure maximum power transmission at the appropriate modulation. The peak detector is used. RBW is set to 2 MHz; VBW is set to 6 MHz.

Test Setup



Limits

Rule Part 15.247 (b) (1)specifies that " For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.”

Peak Output Power	≤ 125 mW (21dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=0.44 dB.

5.2 99% Bandwidth and 20dB Bandwidth

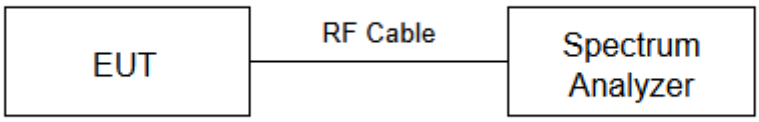
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. The occupied bandwidth is measured using spectrum analyzer. The RBW is set to 1% to 5% of the OBW, the VBW is set to 3 times the RBW; Sweep = auto; Detector function = peak; Trace = max hold.

Test Setup



Limits

No specific occupied bandwidth requirements in part 15.247(a) (1).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=936 Hz.

5.3 Frequency Separation

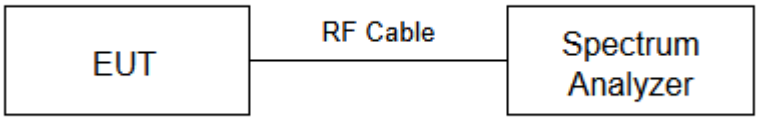
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. RBW is set to 30 kHz and VBW is set to 100 kHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a)(1)specifies that “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 2400–2483.5 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. ”

Note: The value of two-thirds of 20 dB bandwidth is always greater than 25 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=936 Hz.

5.4 Time of Occupancy (Dwell Time)

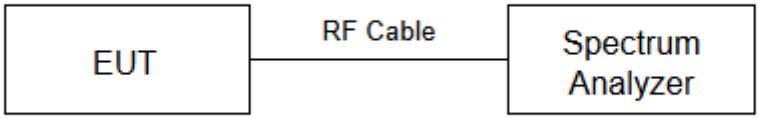
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.. RBW is set to 1MHz and VBW is set to 1MHz on spectrum analyzer. The dwell time is calculated by:
Dwell time = Pulse Time * Number of Pulses during the period（$T=0.4.N_{ch}$）
In normal mode, The selected EUT Packet type uses a slot type of DH5 packet and a hopping rate of 1600(ch*hop/s) for all channels. So the final hopping rate for all channel is 1600/5=320(ch*hop/s)
In AFH mode, The selected EUT Packet type uses a slot type of DH5 packet and a hopping rate of 800(ch*hop/s) for all channels. So the final hopping rate for all channel is 800/5=160(ch*hop/s)

Test Setup



Limits

Rule Part15.247(a) specifies that " Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed."

Dwell time	≤ 400ms

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 2.

Requirements	Uncertainty					
Dwell Time	DH5	*U*=0.70ms	2DH5	*U*=0.70ms	3DH5	*U*=0.70ms

5.5 Band Edge Compliance

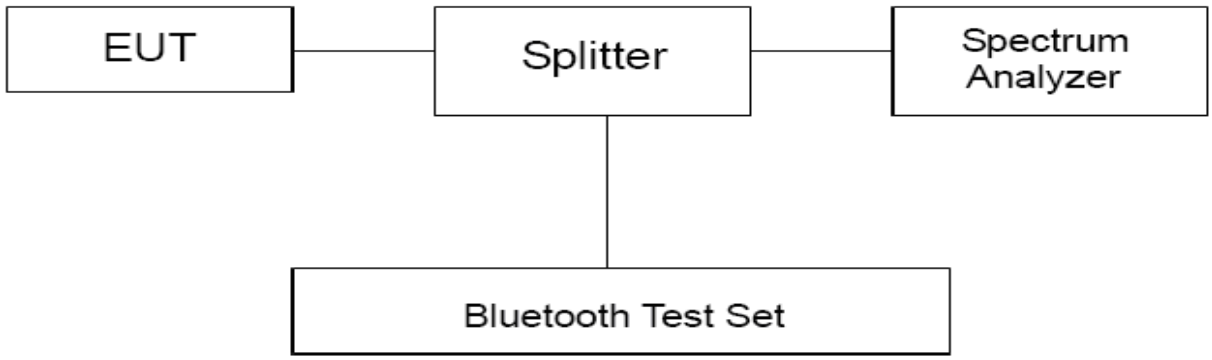
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. The lowest and highest channels were measured. The peak detector is used. RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. EUT test for Hopping On mode and Hopping Off mode.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.”

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

5.6 Number of hopping Frequency

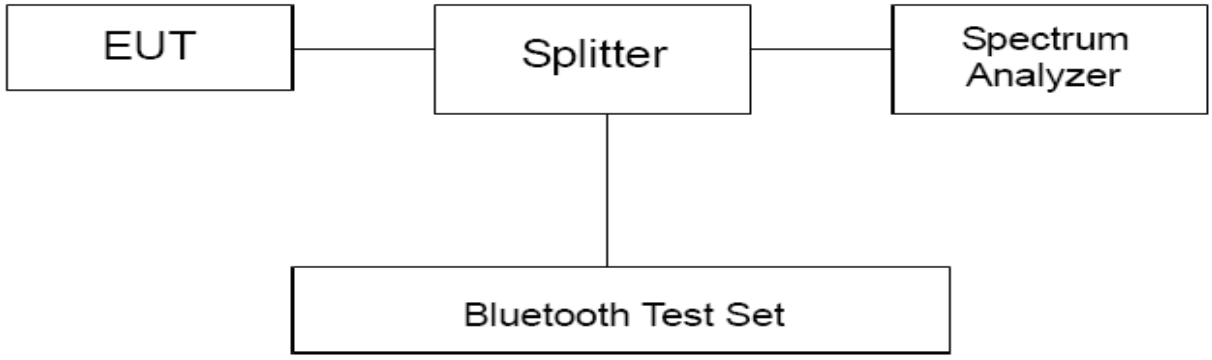
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. RBW is set to 100kHz and VBW is set to 300kHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a) (1) (iii) specifies that" Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels."

Limits	≥ 15 channels

5.7 Spurious RF Conducted Emissions

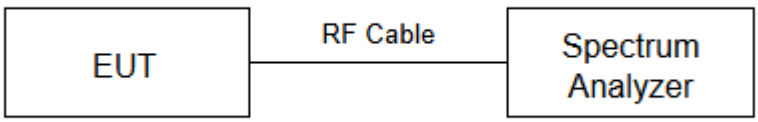
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 100kHz and VBW 300 kHz, Sweep is set to AUTO.
The test is in transmitting mode.

Test setup



Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

Test Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
DH5	2402	-2.06	-22.06
	2441	-2.74	-22.74
	2480	-2.61	-22.61
2DH5	2402	-4.36	-24.36
	2441	-4.83	-24.83
	2480	-4.50	-24.50
3DH5	2402	-4.17	-24.17
	2441	-4.47	-24.47
	2480	-4.17	-24.17

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

5.8 Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m/10m below 1GHz, 3m above 1GHz between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9kHz, VBW=30kHz,/ Sweep=AUTO

Below 1GHz

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

detector; The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit.

If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak- average correction factor, derived form the appropriate duty cycle calculation.

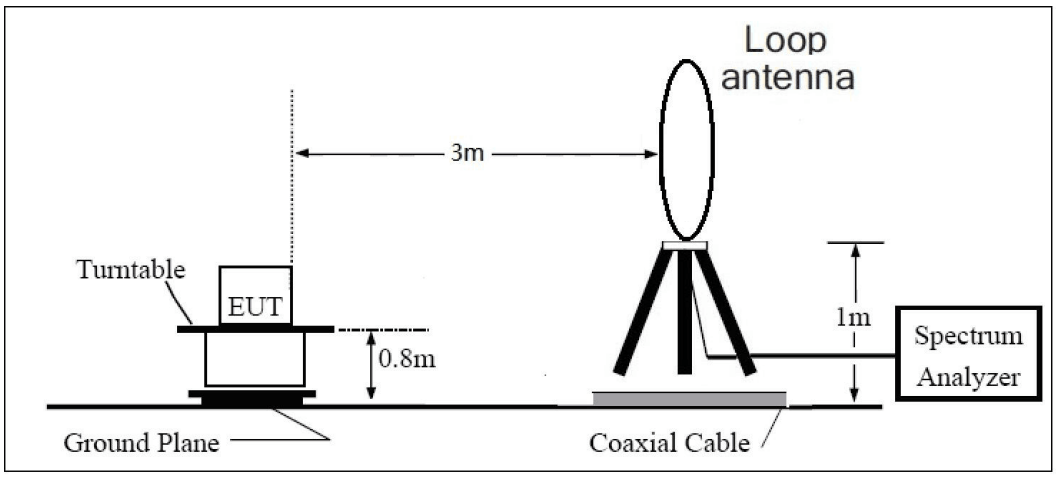
This setting method can refer to **KDB 558074 D01.**

This mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

The test is in transmitting mode.

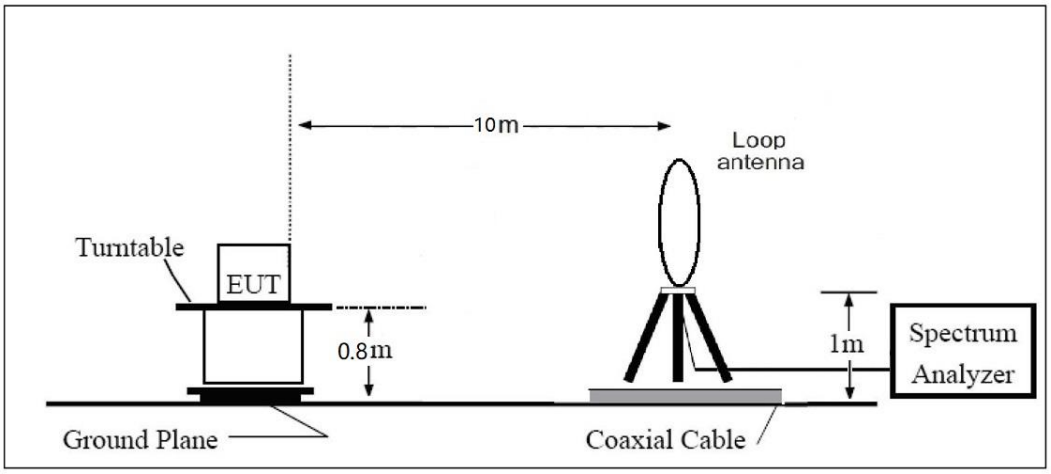
Test setup

9kHz~ 30MHz



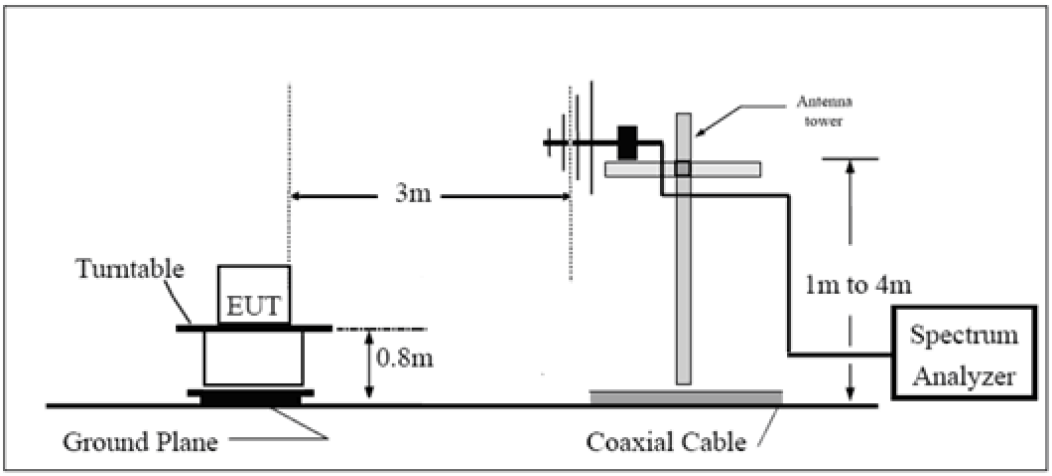
Note: Area side:2.4mX3.6m

Distance 10m



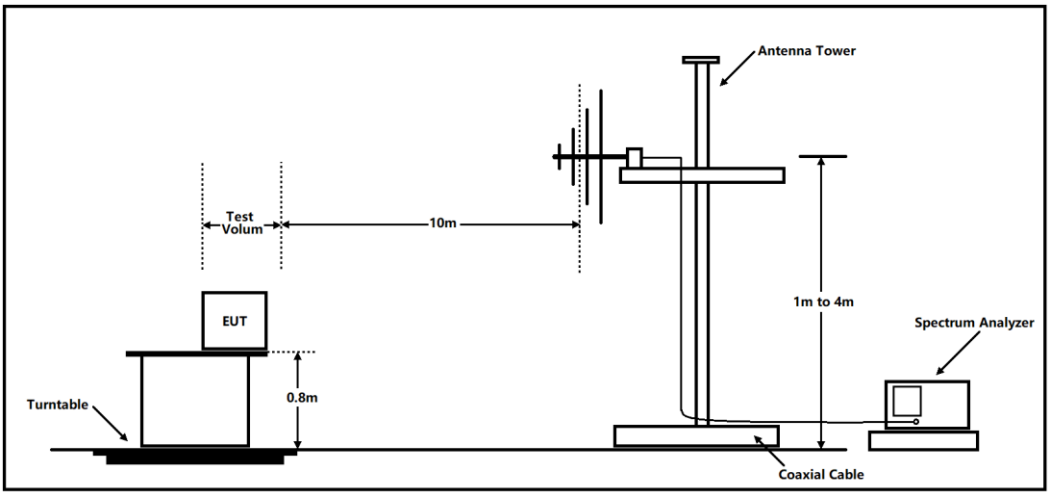
Note: Area side: 21m x 12m

30MHz~ 1GHz



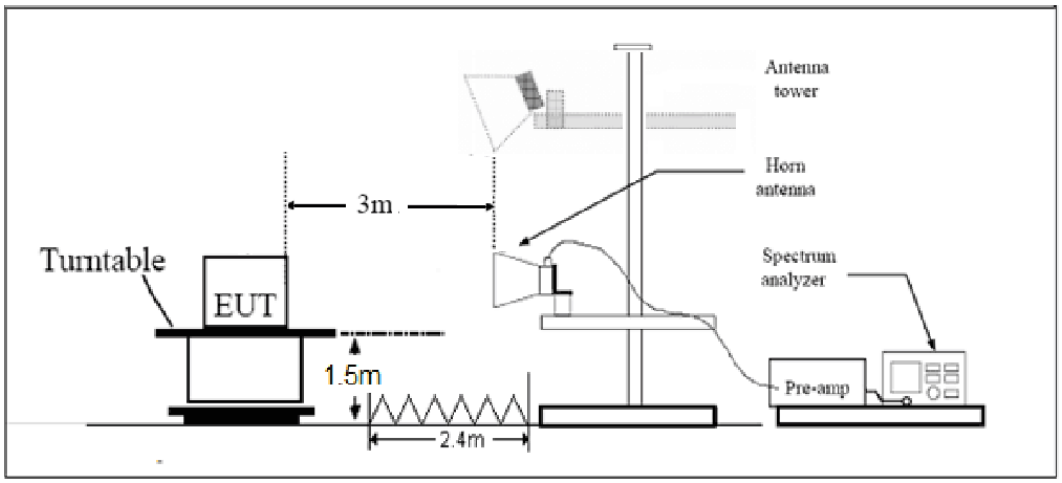
Note: Area side:2.4mX3.6m

Distance 10m



Note: Area side: 21m x 12m

Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(μV/m)	Field strength(dBμV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74dBμV/m

Average Limit=54dBμV/m

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1] 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty for 3m
9kHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB
Frequency	Uncertainty for 10m
30MHz – 200MHz	3.39 dB
200MHz – 1GHz	3.82 dB
1GHz – 18GHz	6.51 dB
18GHz – 40GHz	6.31 dB

5.9 Conducted Emission

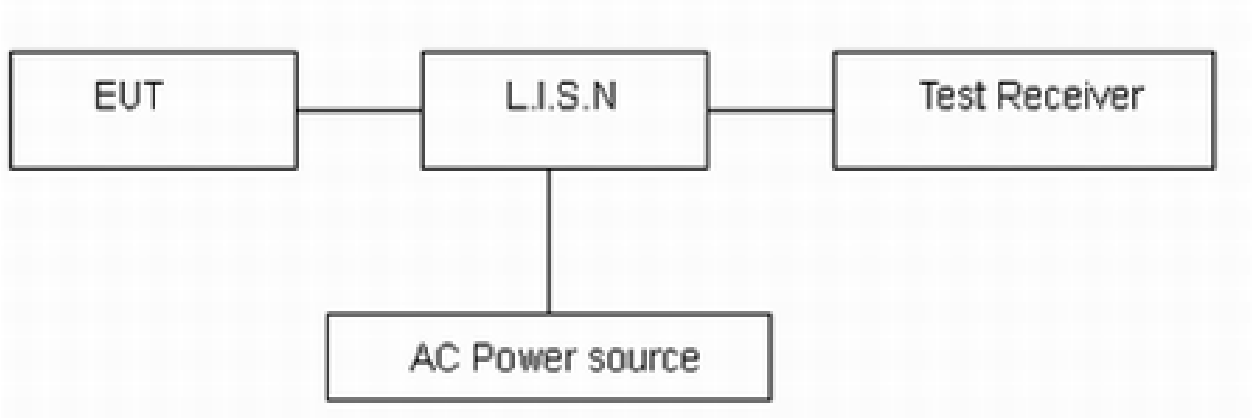
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz.The measurement result should include both L line and N line.
The test is in transmitting mode.

Test Setup



Note: AC Power source is used to 120V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=2.69 dB.

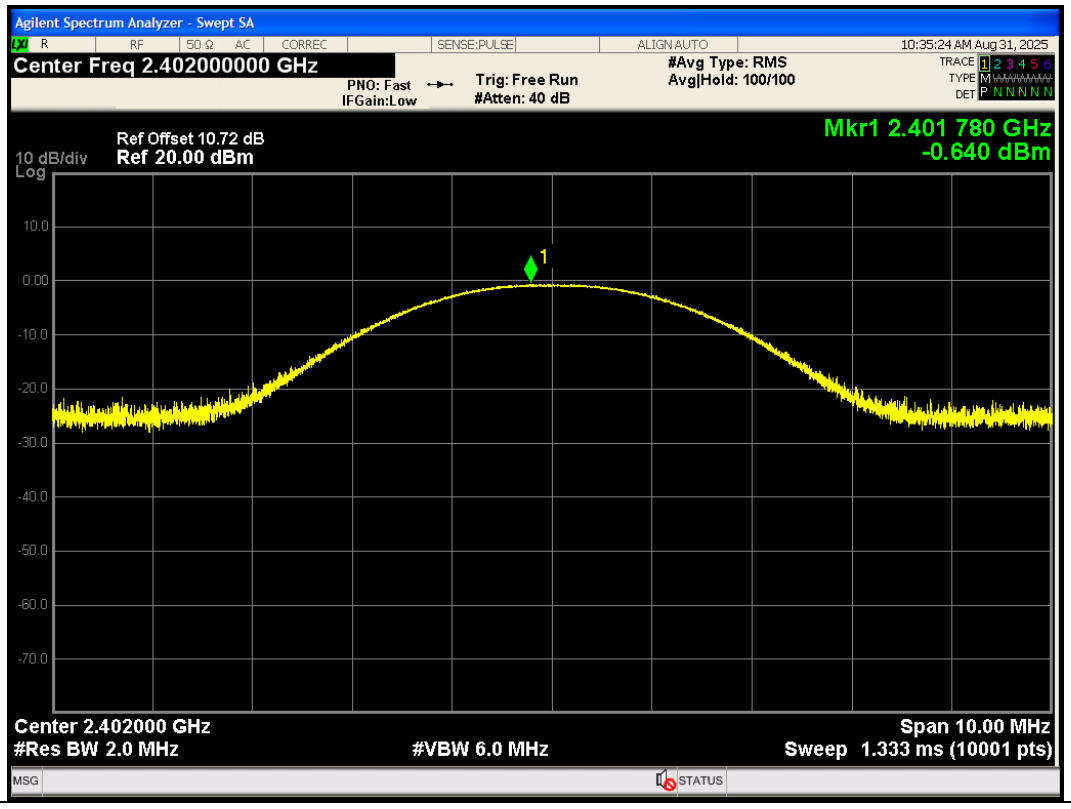
6 Test Results

6.1 Peak Power Output

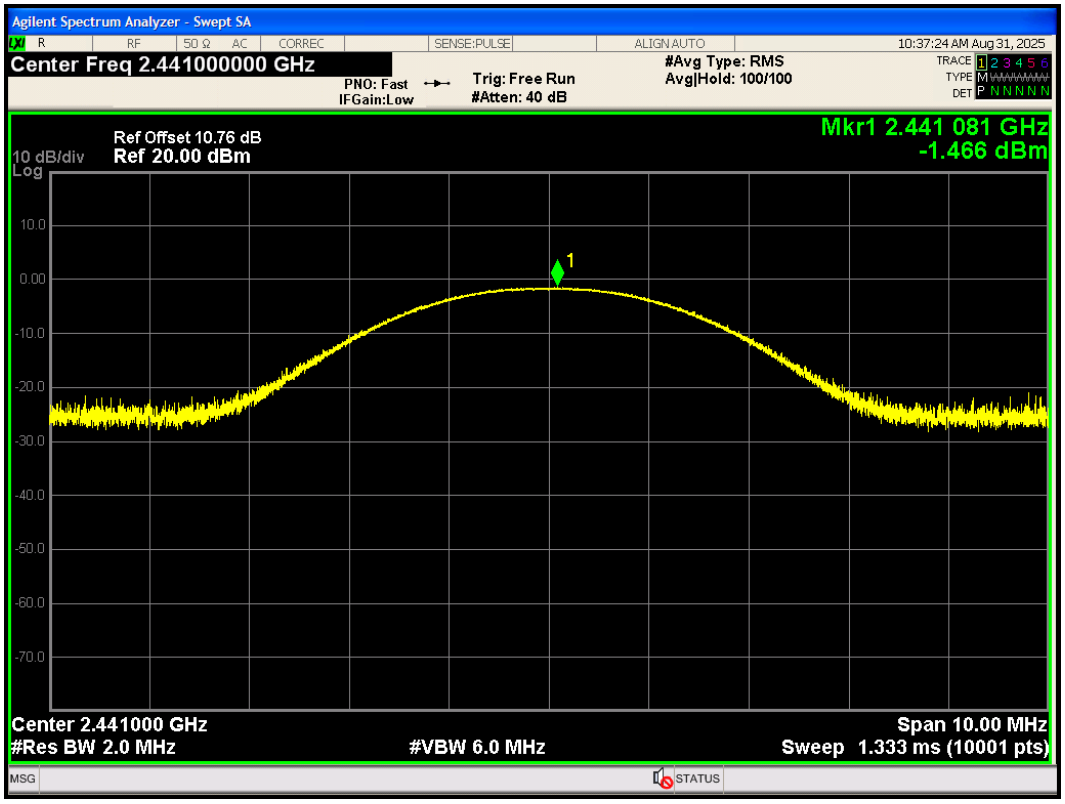
Power Index	
Channel	**Bluetooth**
CH0	default
CH39	default
CH78	default

Channel	Frequency (MHz)	Peak Output Power (dBm)			Limit (dBm)	Conclusion
		DH5	2DH5	3DH5		
0	2402	-0.64	-0.25	-0.13	21	PASS
39	2441	-1.47	-0.87	-0.46	21	PASS
78	2480	-1.41	-0.51	-0.17	21	PASS

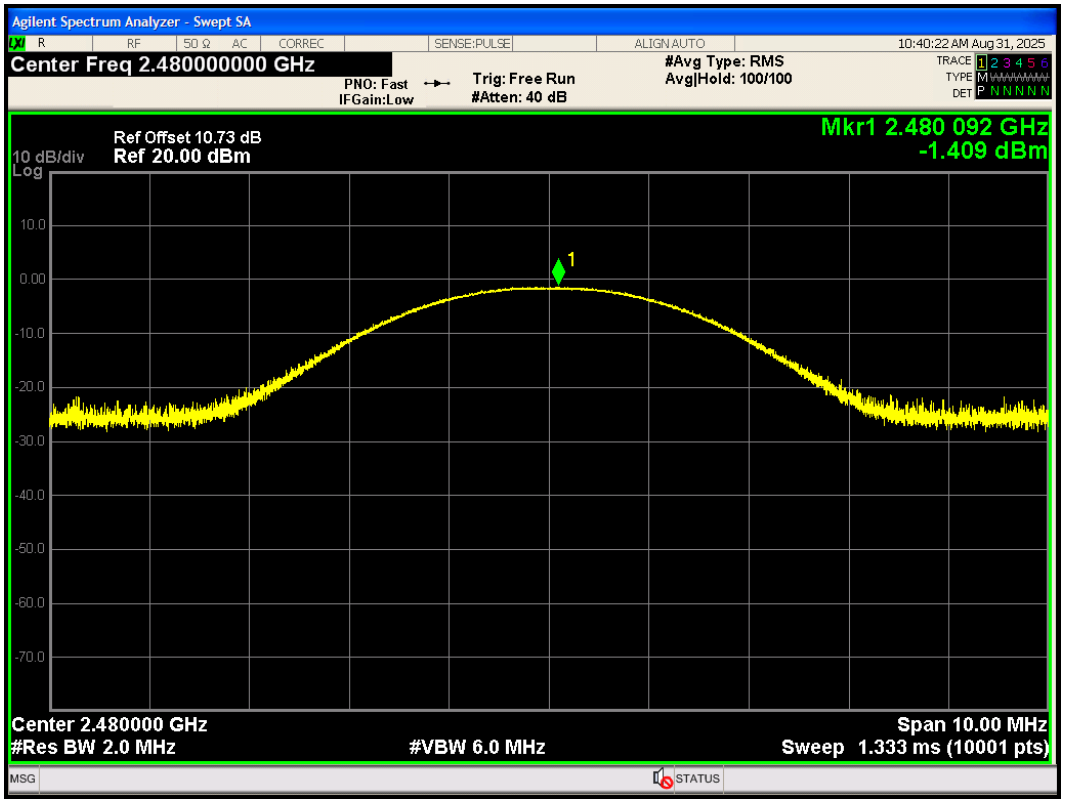
Power 1-DH5 2402MHz



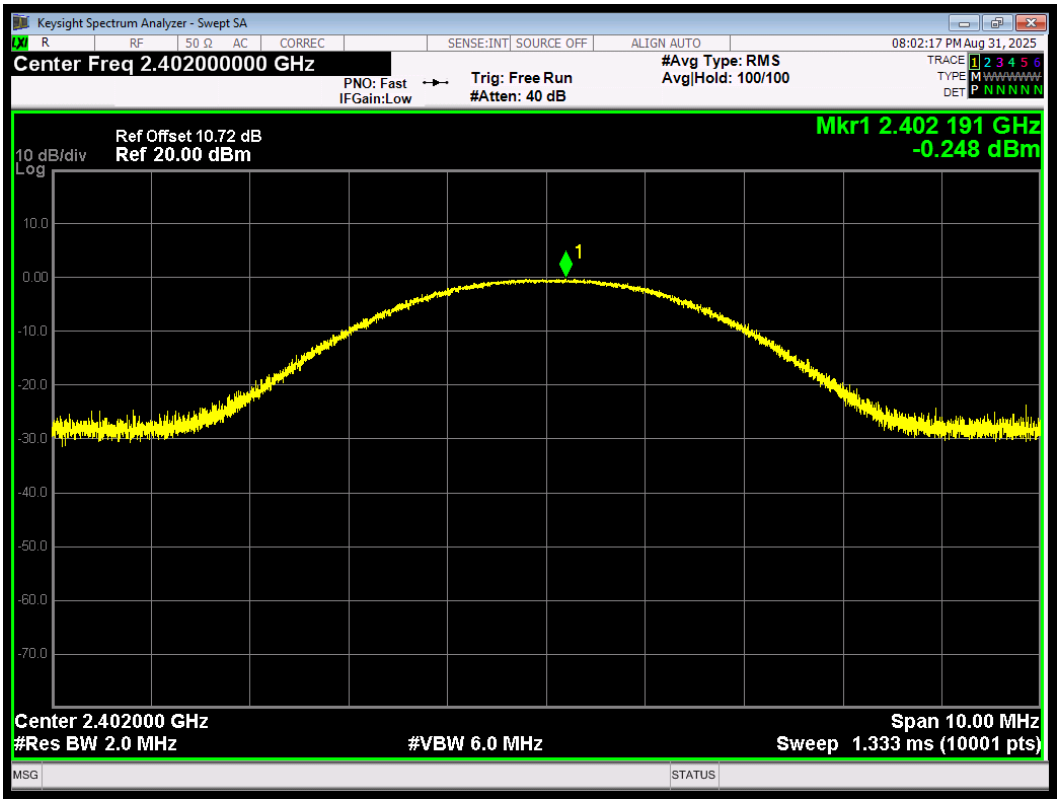
Power 1-DH5 2441MHz



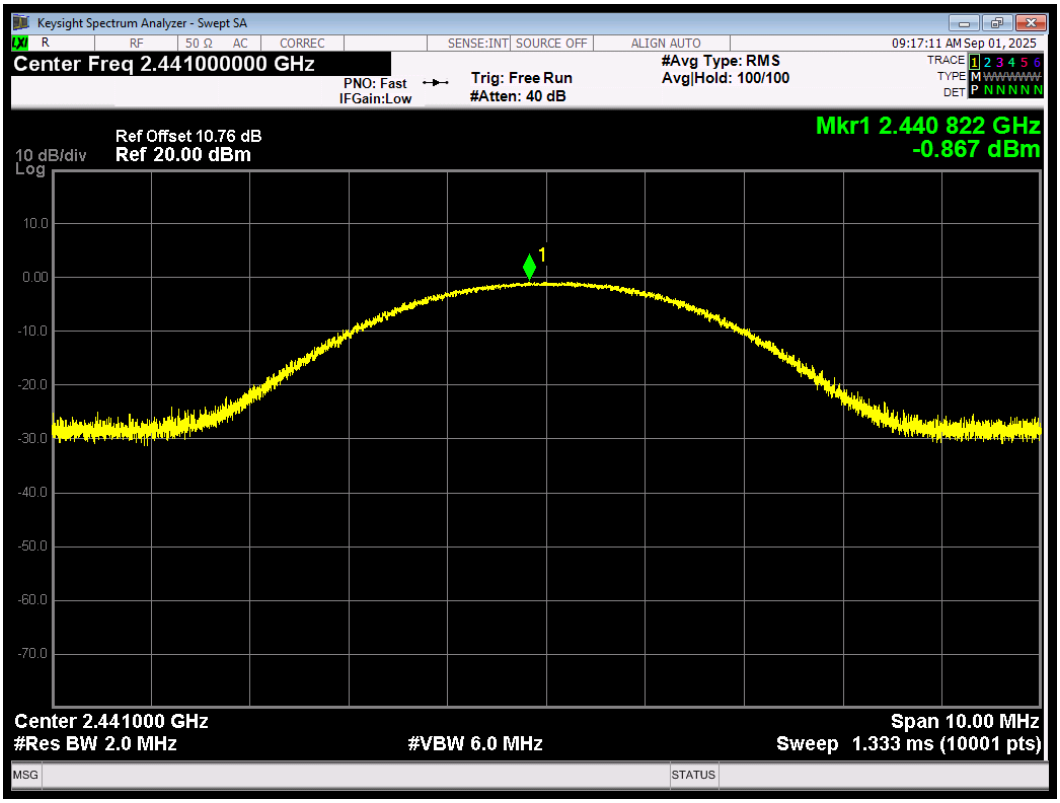
Power 1-DH5 2480MHz



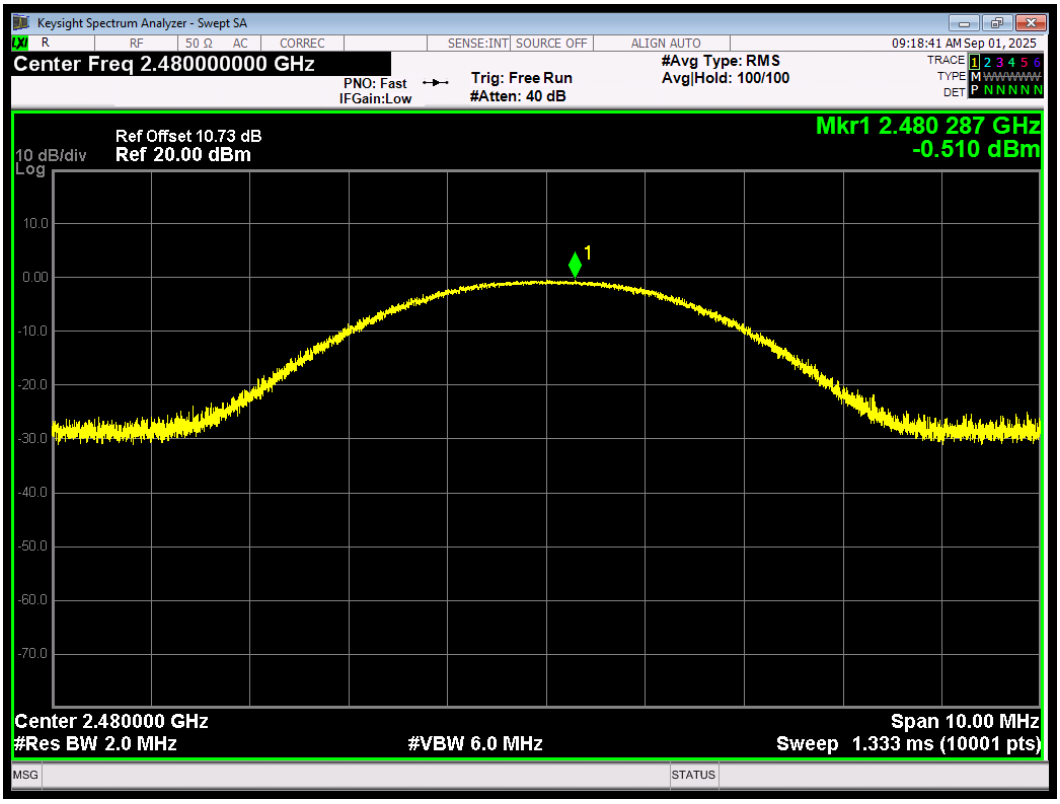
Power 2-DH5 2402MHz



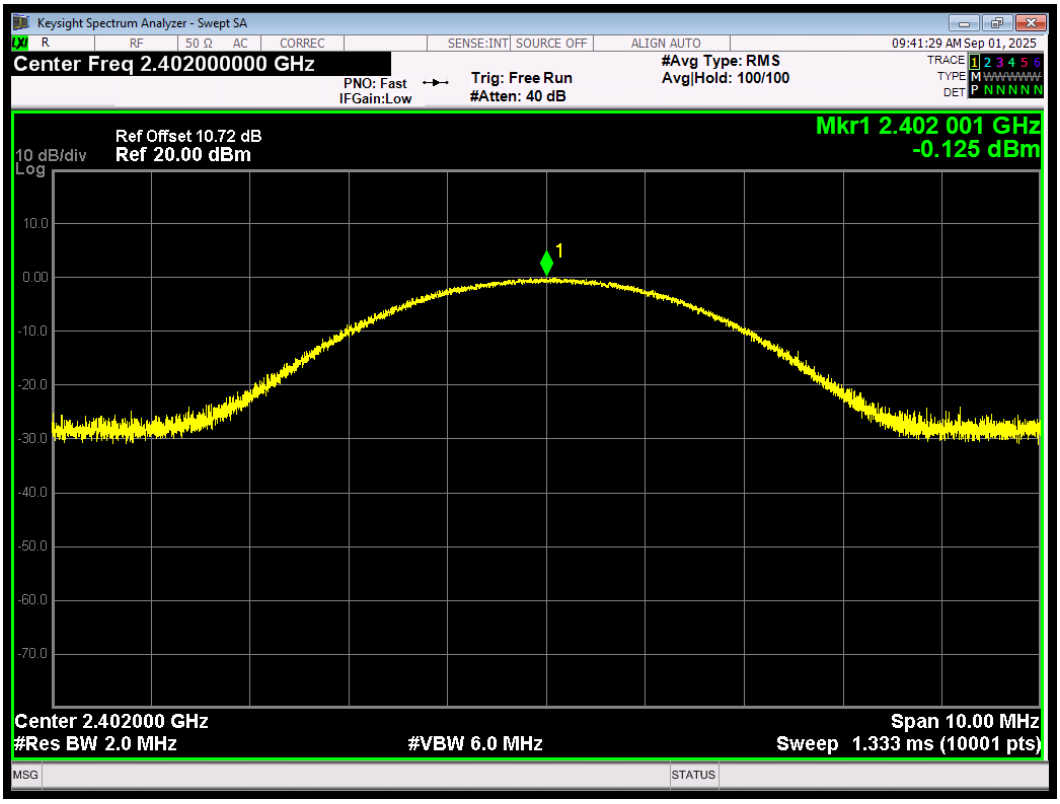
Power 2-DH5 2441MHz



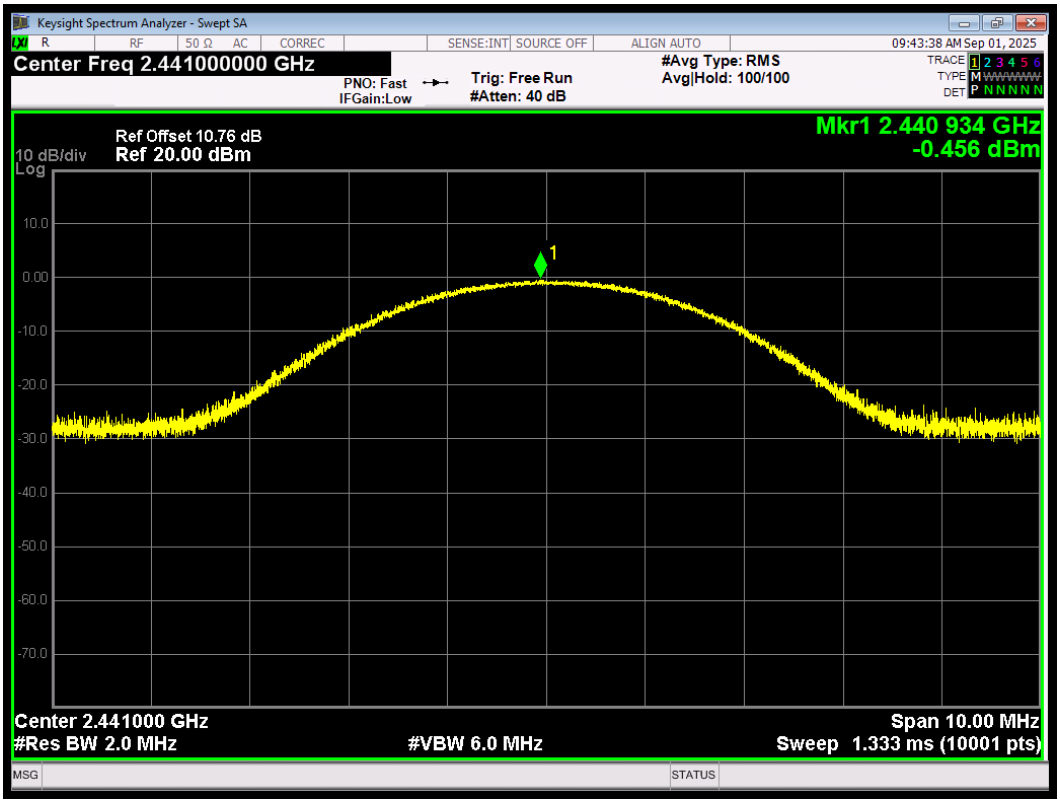
Power 2-DH5 2480MHz



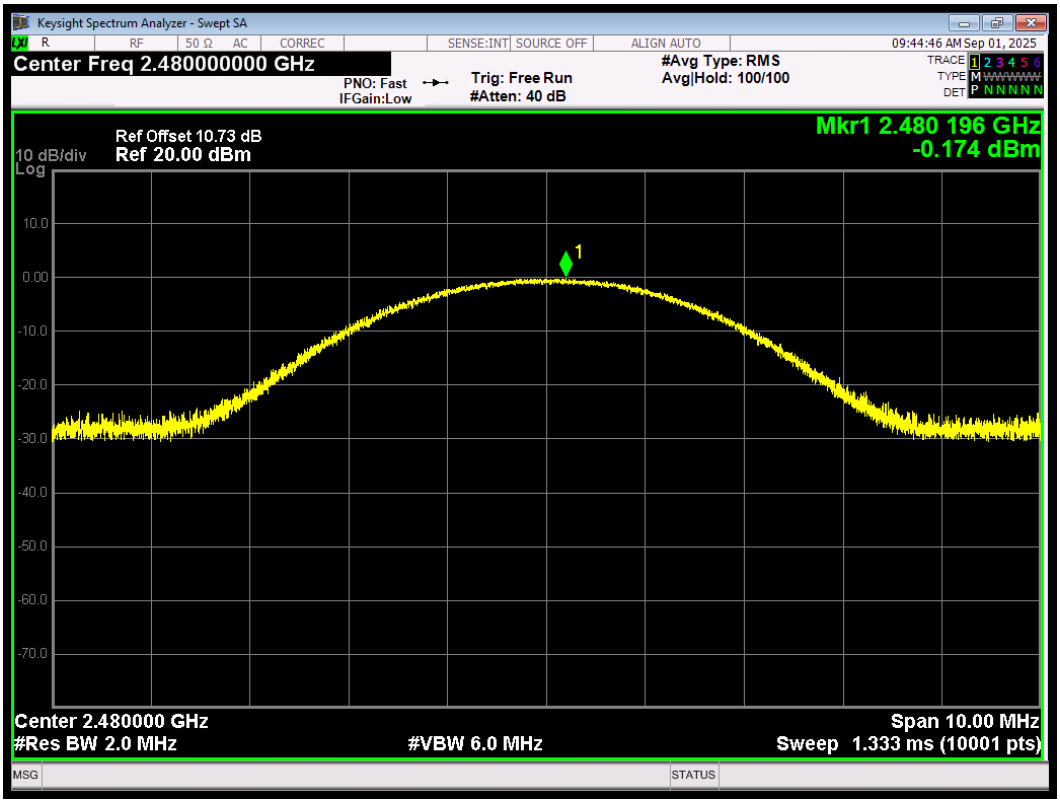
Power 3-DH5 2402MHz



Power 3-DH5 2441MHz



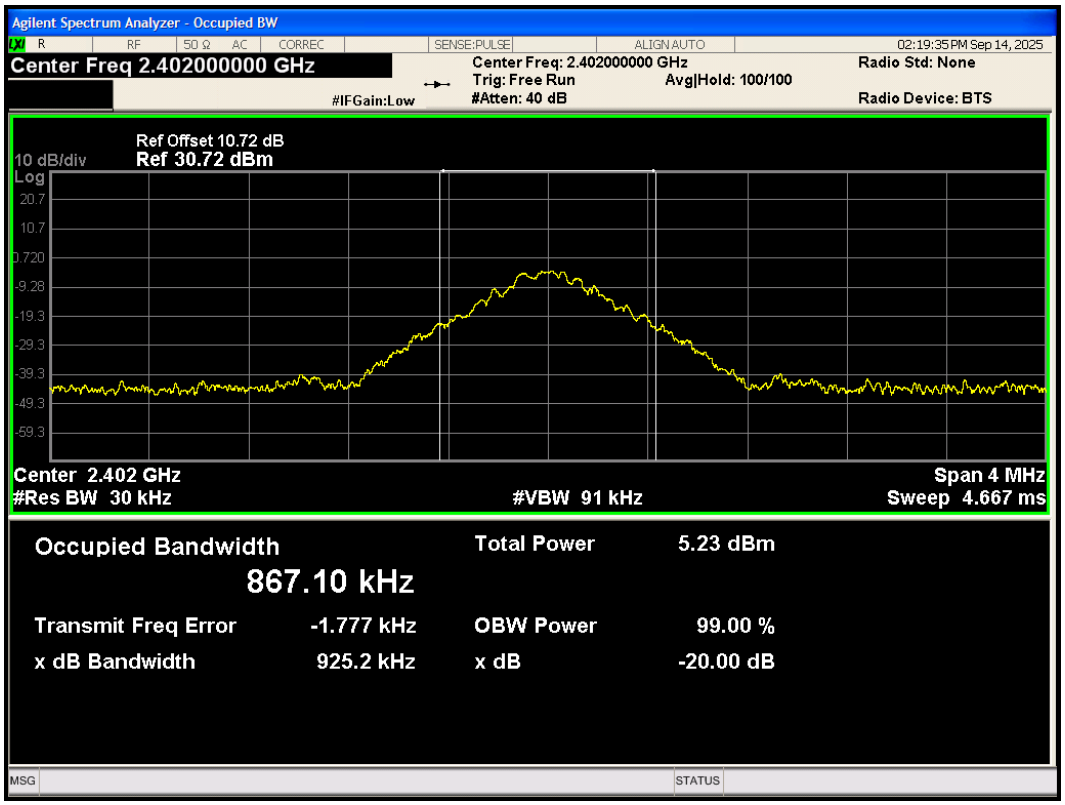
Power 3-DH5 2480MHz



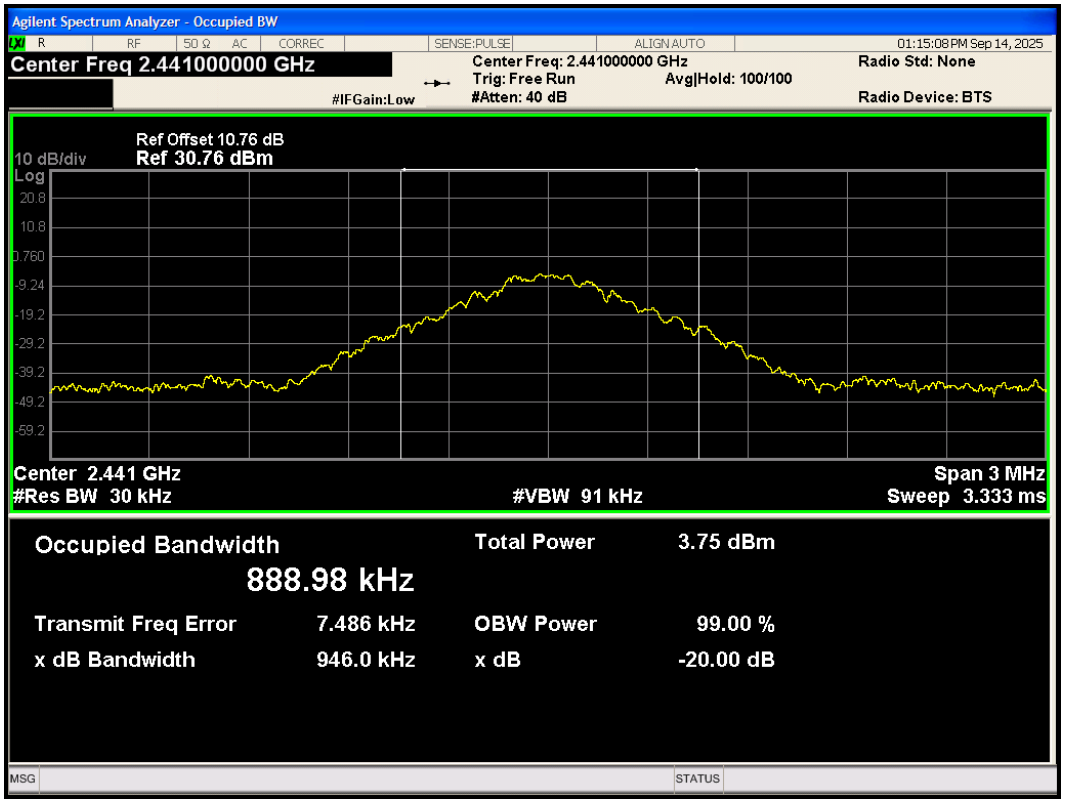
6.2 99% Bandwidth and 20dB Bandwidth

Test Mode		Channel	Frequency (MHz)	99% bandwidth(MHz)	20dB Bandwidth(MHz)
Bluetooth	DH5	0	2402	0.867	0.925
		39	2441	0.889	0.946
		78	2480	0.875	0.943
	2DH5	0	2402	1.285	1.412
		39	2441	1.312	1.450
		78	2480	1.334	1.483
	3DH5	0	2402	1.261	1.377
		39	2441	1.288	1.385
		78	2480	1.311	1.465

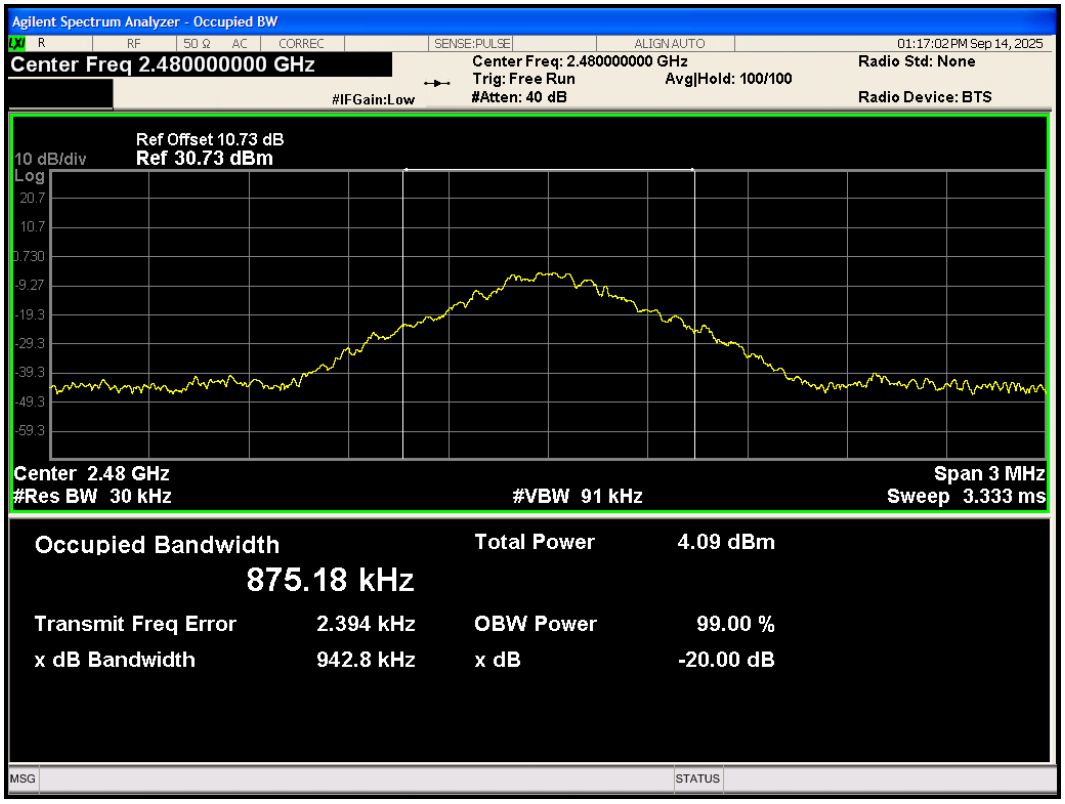
OBW 1-DH5 2402MHz



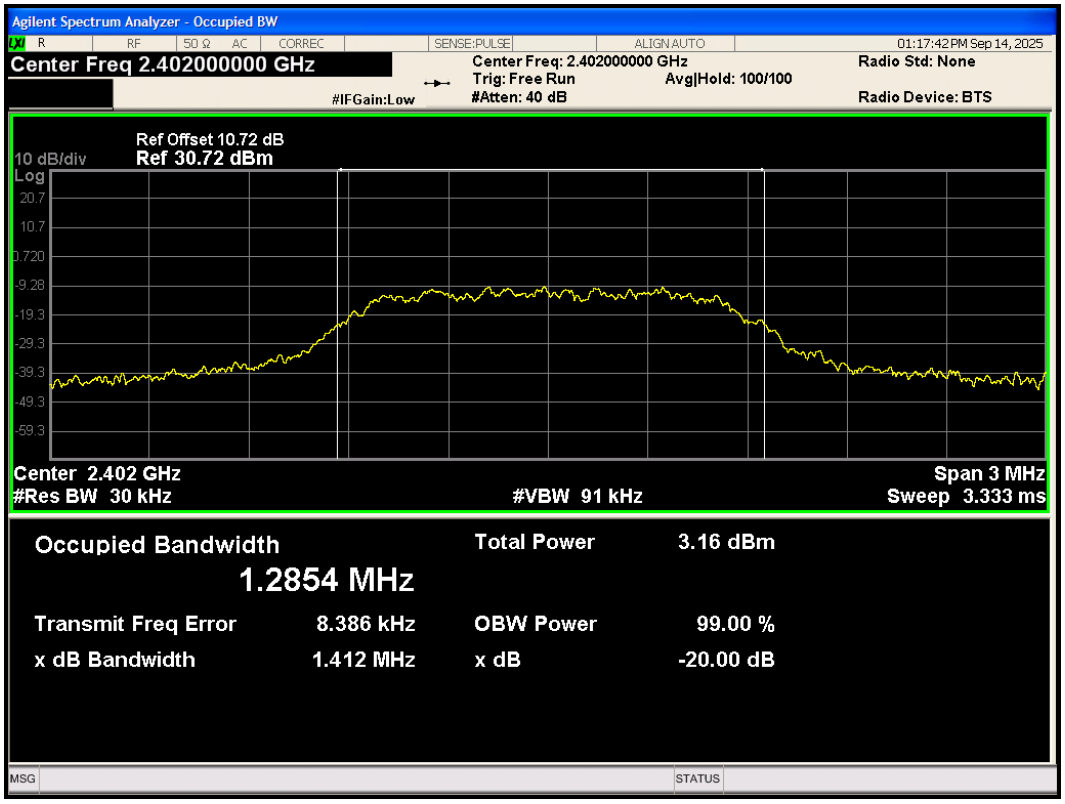
OBW 1-DH5 2441MHz



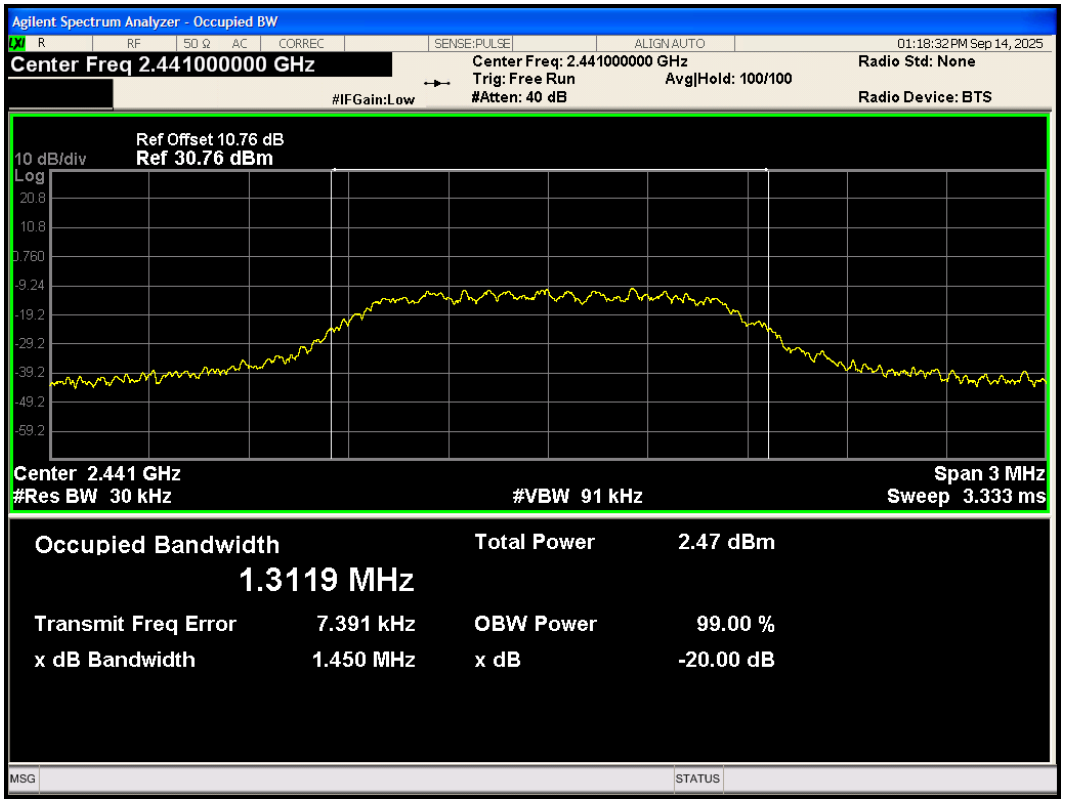
OBW 1-DH5 2480MHz



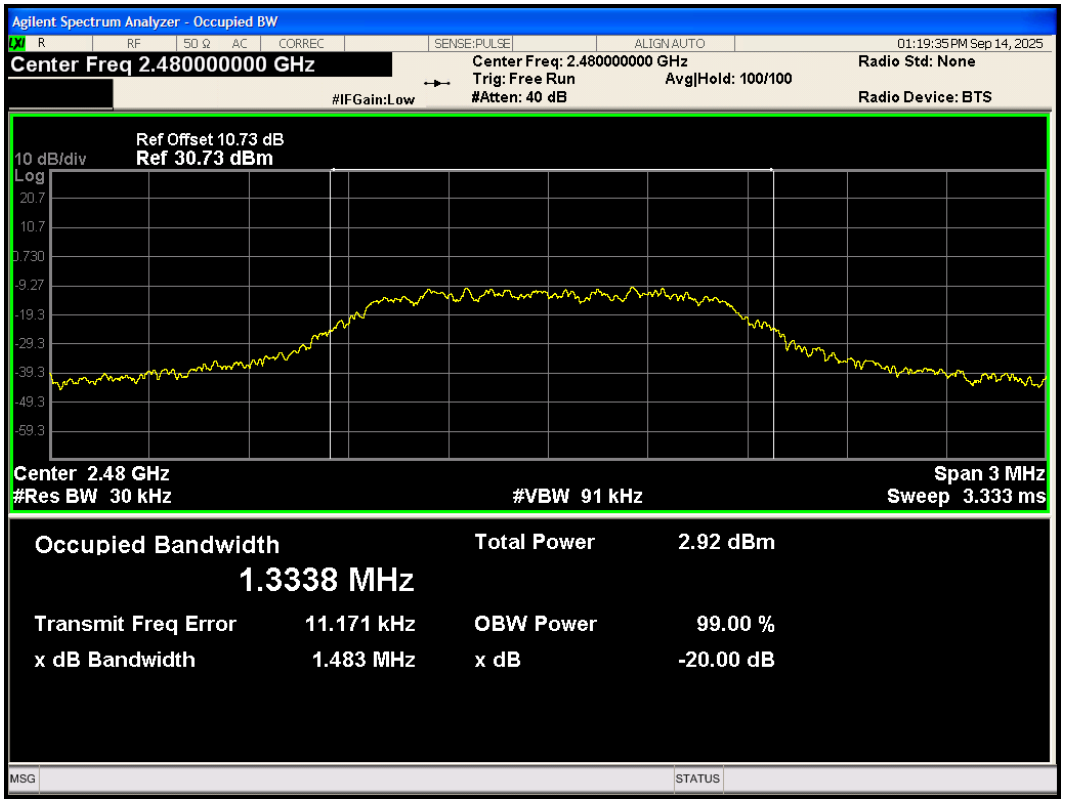
OBW 2-DH5 2402MHz



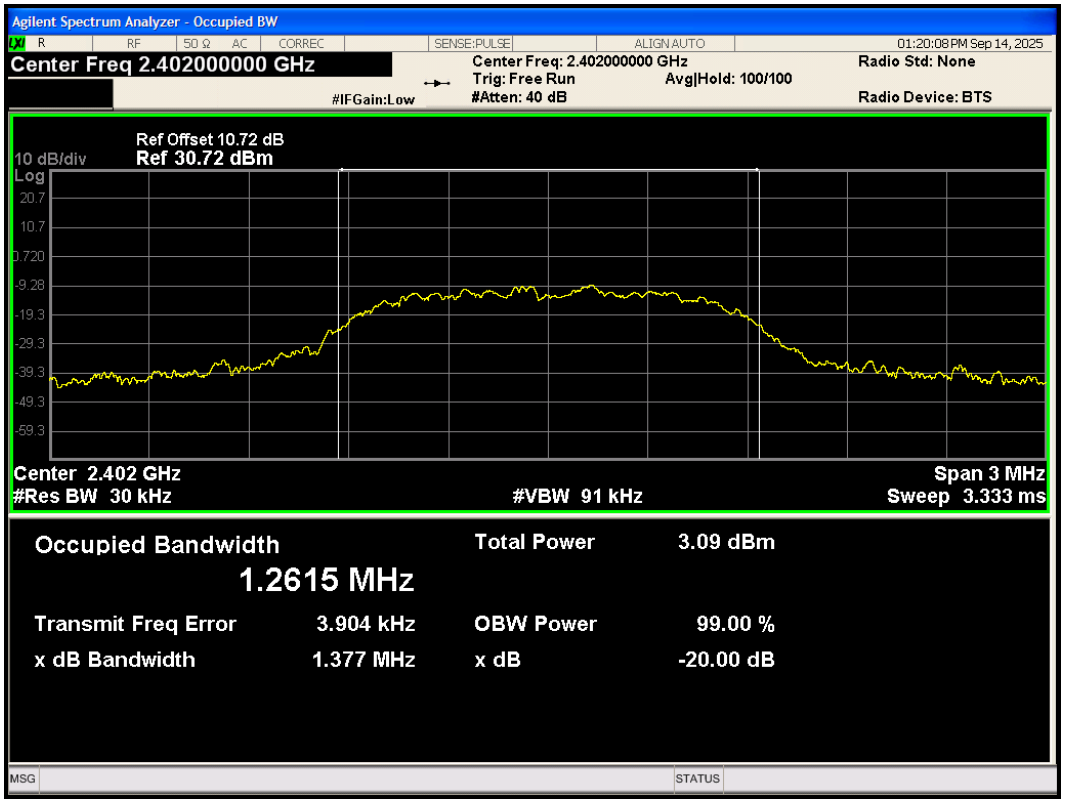
OBW 2-DH5 2441MHz



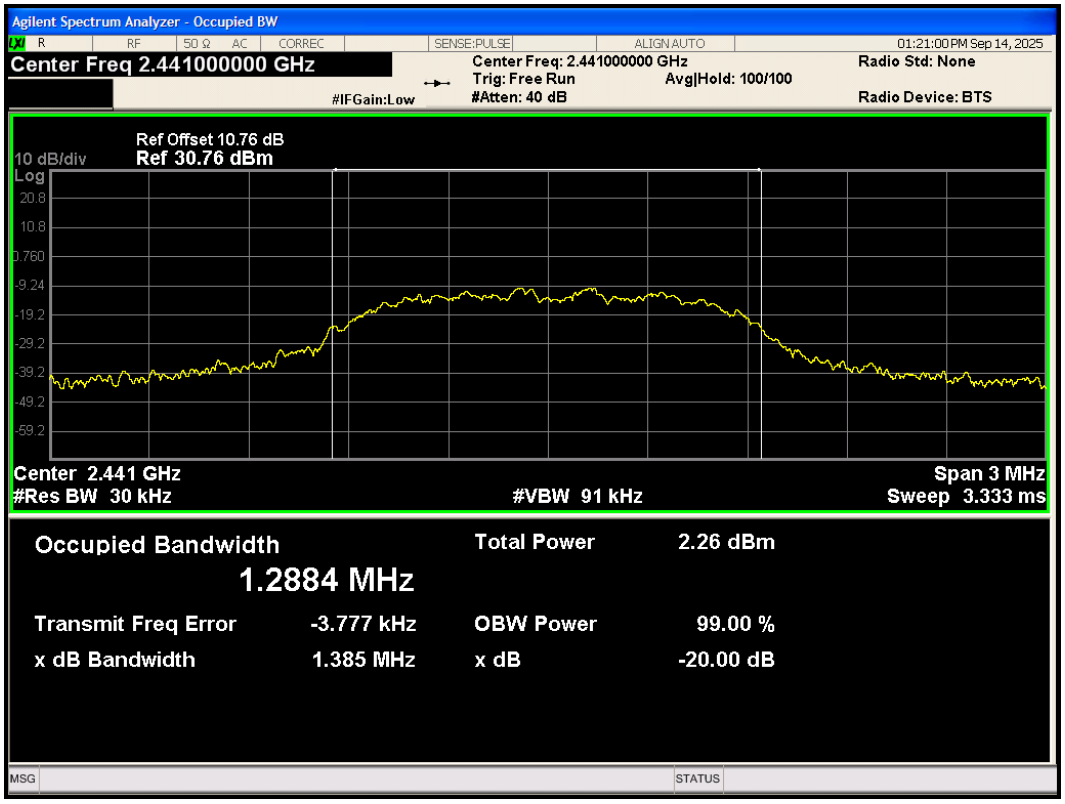
OBW 2-DH5 2480MHz



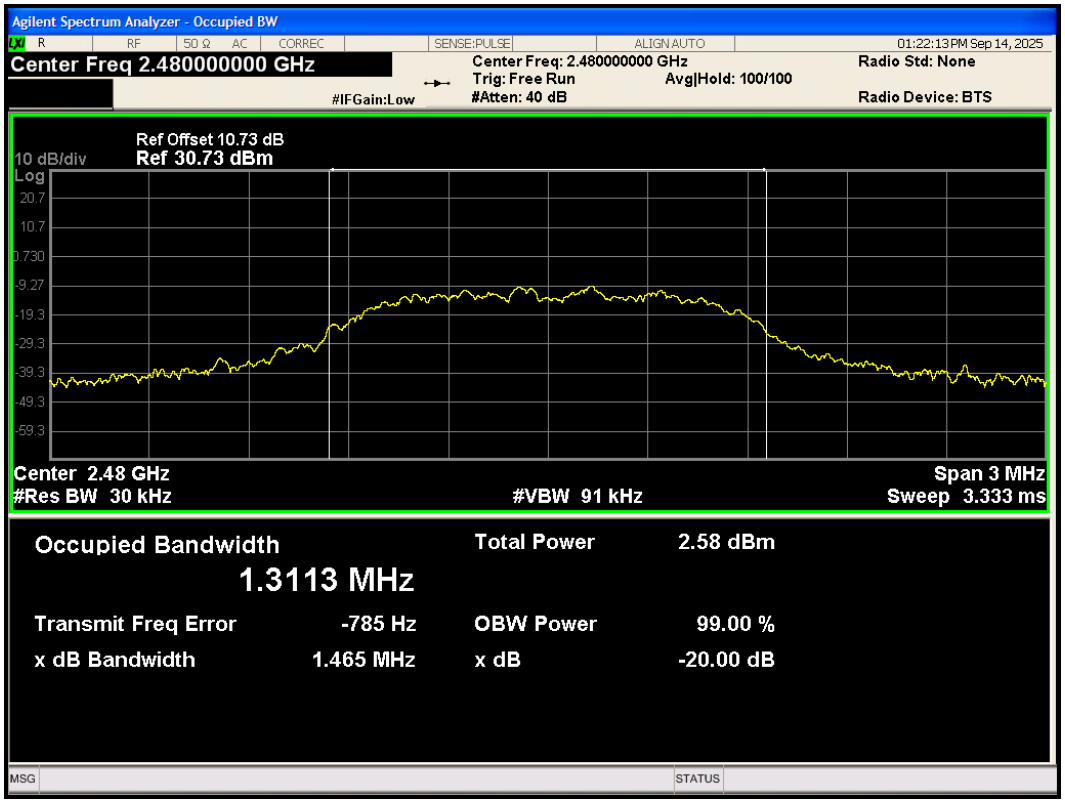
OBW 3-DH5 2402MHz



OBW 3-DH5 2441MHz



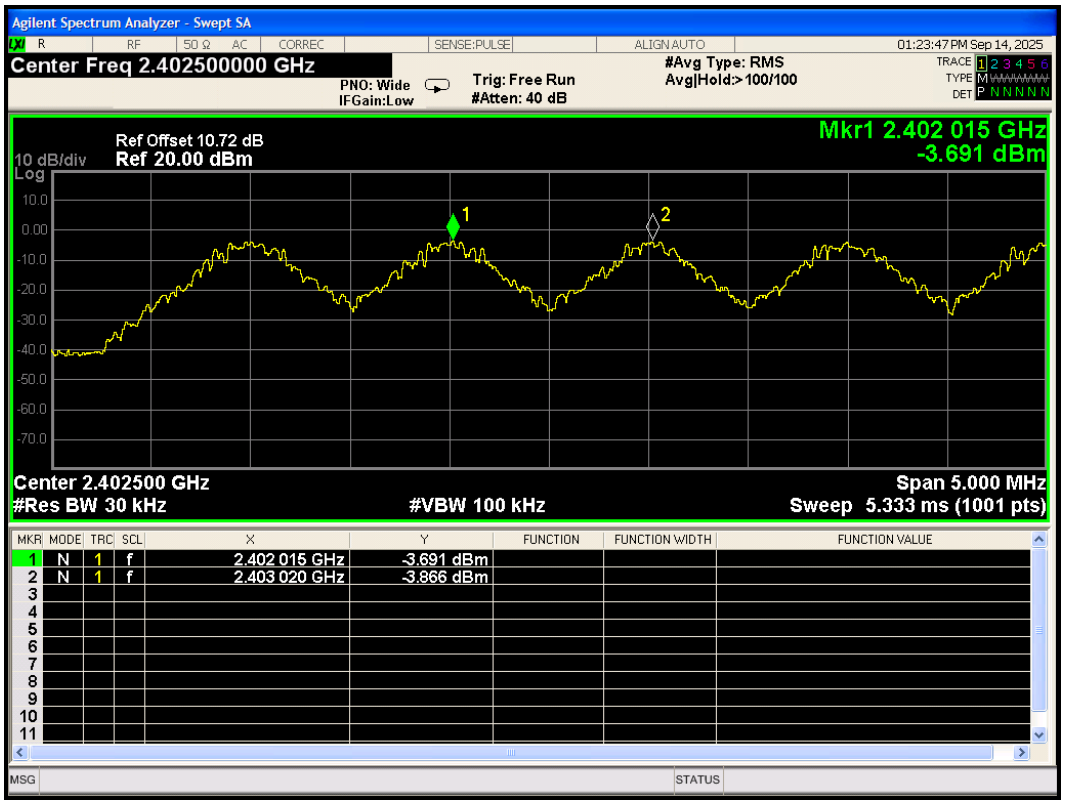
OBW 3-DH5 2480MHz



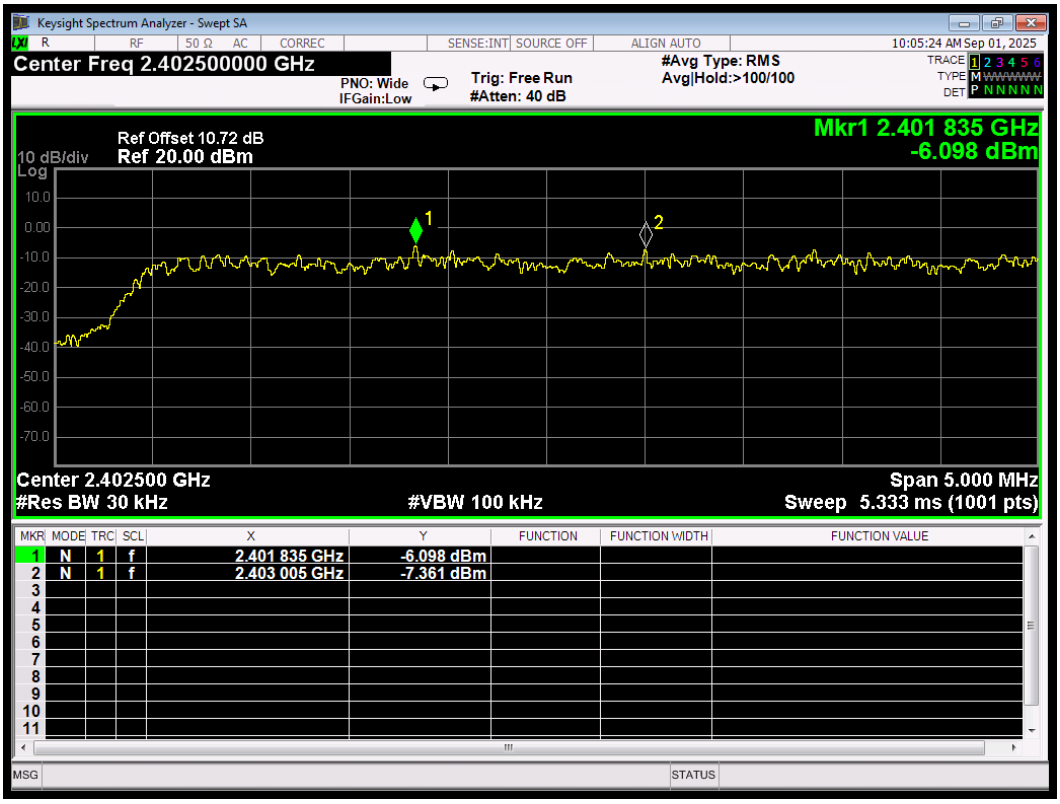
6.3 Frequency Separation

Test Mode	Carrier frequency (MHz)	Carrier frequency separation(MHz)	20dB Bandwidth(MHz)	Limit (MHz)	Conclusion
DH5	2402	1.010	0.925	0.617	PASS
2DH5	2402	1.170	1.412	0.941	PASS
3DH5	2402	0.980	1.377	0.918	PASS
Note: The limit is two-thirds of 20 dB bandwidth.					

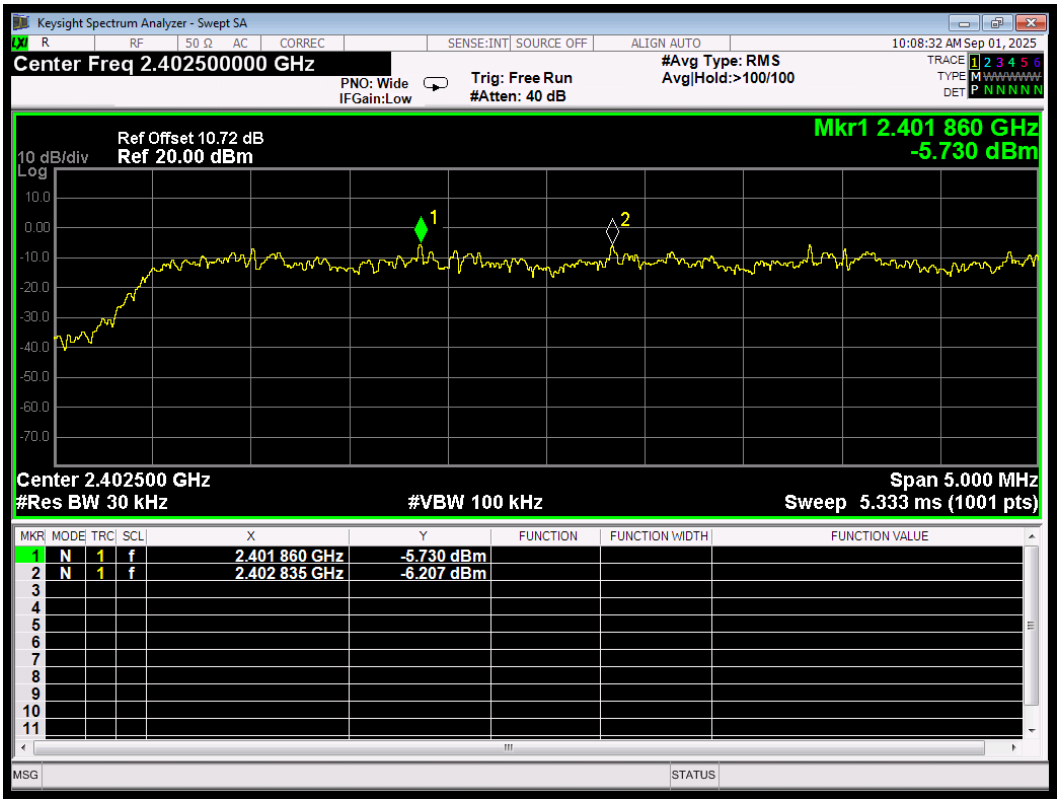
CFS 1-DH5 2402MHz



CFS 2-DH5 2402MHz



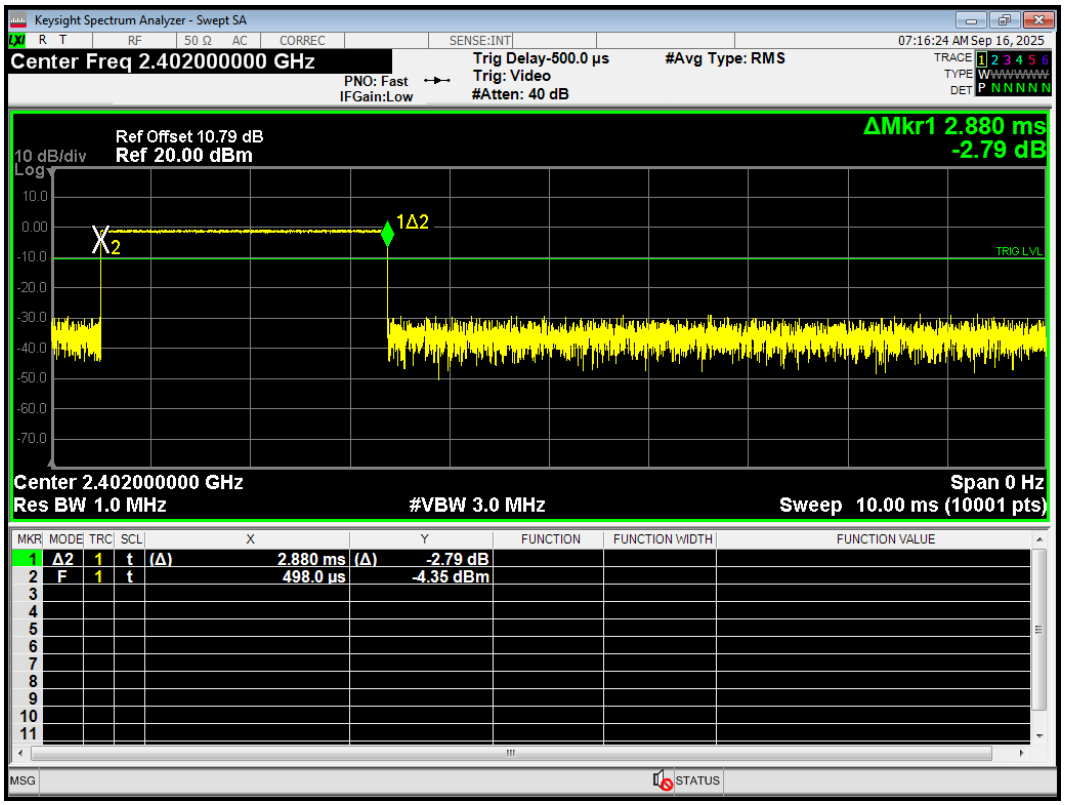
CFS 3-DH5 2402MHz



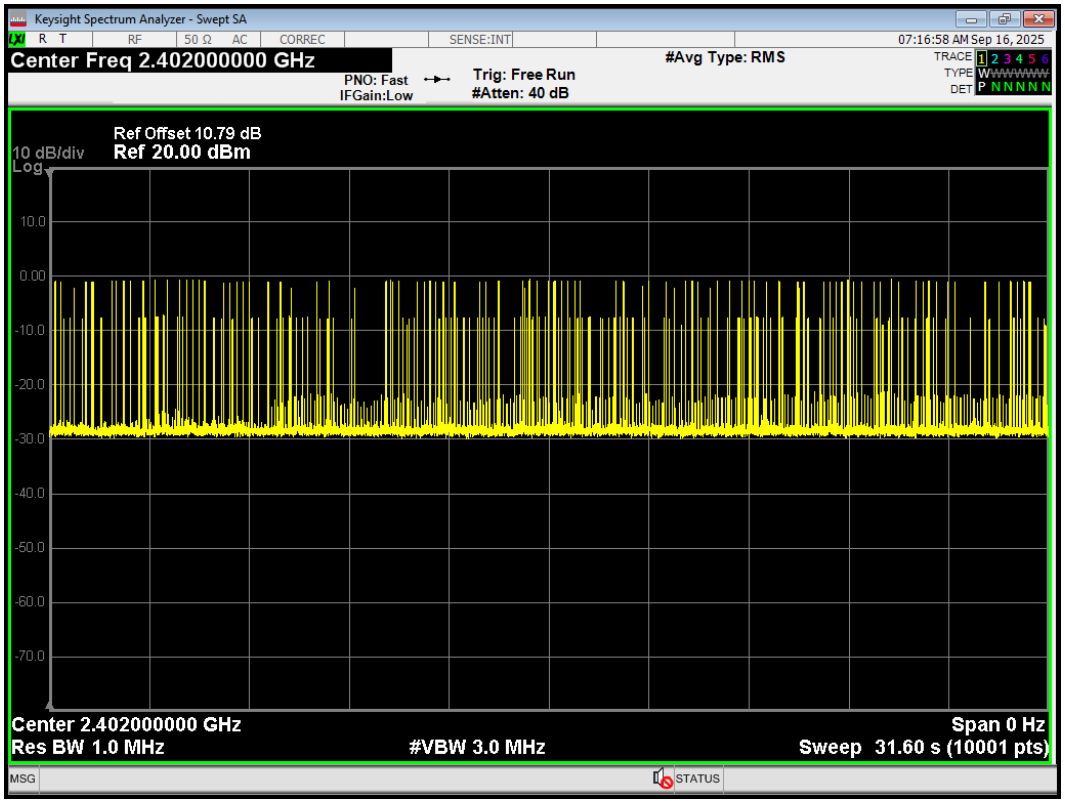
6.4 Time of Occupancy (Dwell Time)

Test Mode	Number of Pulses in 31.6 seconds	Pulse Time (ms)	Dwell time (ms)	Limit (ms)	Conclusion
DH5	107	2.880	308.160	400	PASS
2DH5	113	2.885	326.005	400	PASS
3DH5	109	2.887	314.683	400	PASS
Note: Dwell time = Pulse Time * Number of Pulses in 31.6 seconds					

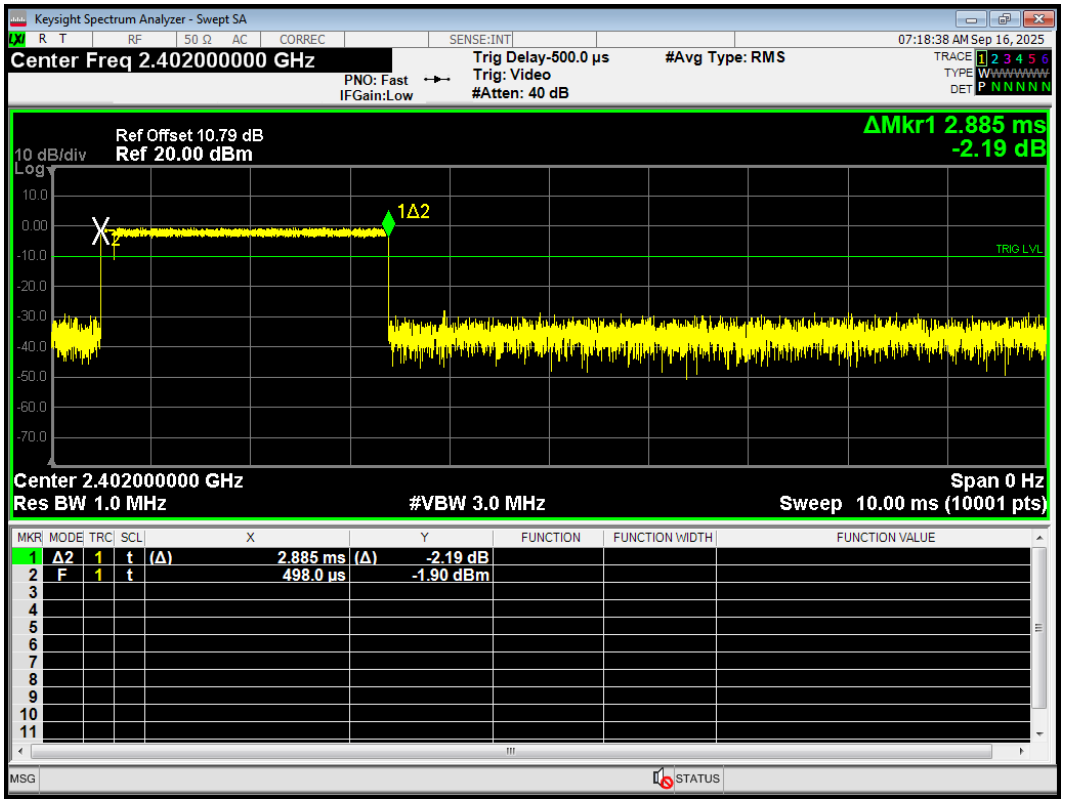
Dwell 1-DH5 2402MHz One Burst



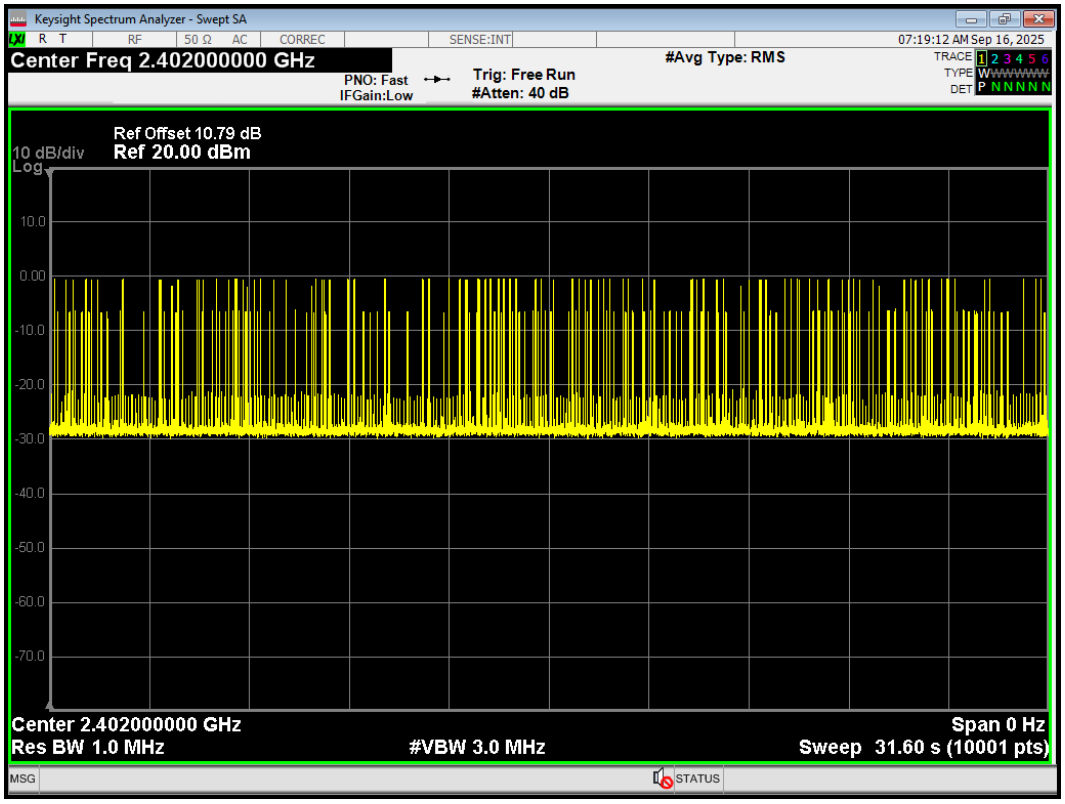
Dwell 1-DH5 2402MHz Accumulated



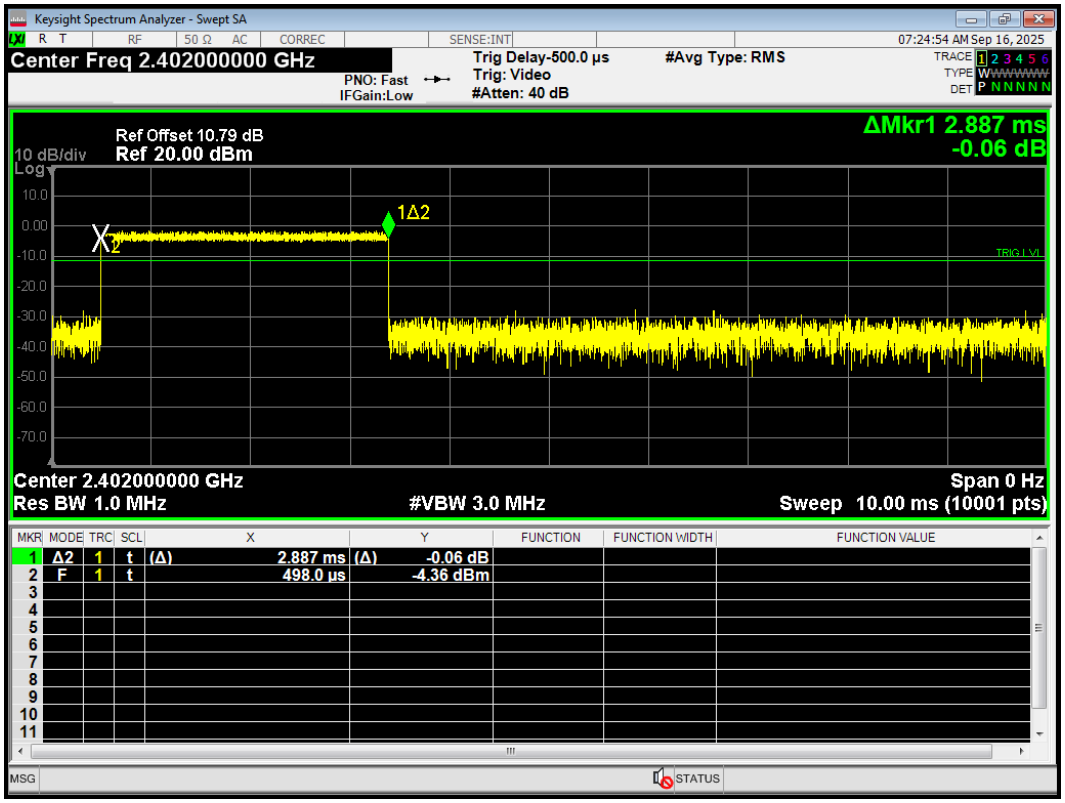
Dwell 2-DH5 2402MHz One Burst



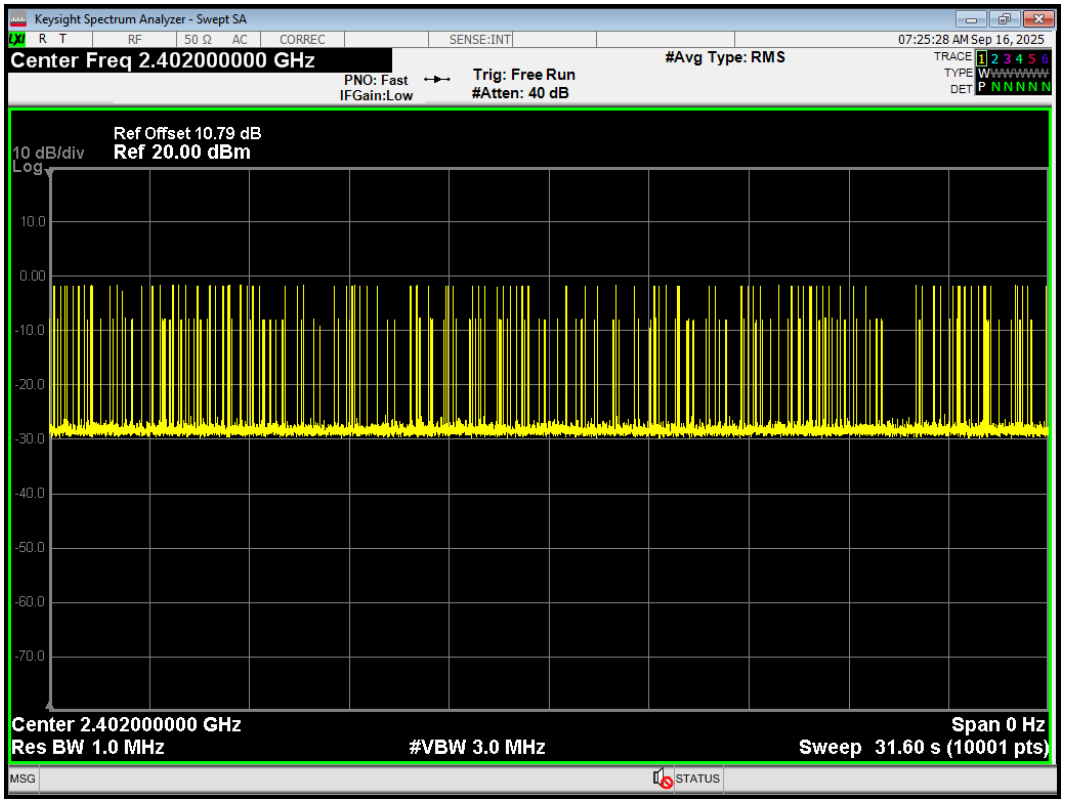
Dwell 2-DH5 2402MHz Accumulated



Dwell 3-DH5 2402MHz One Burst



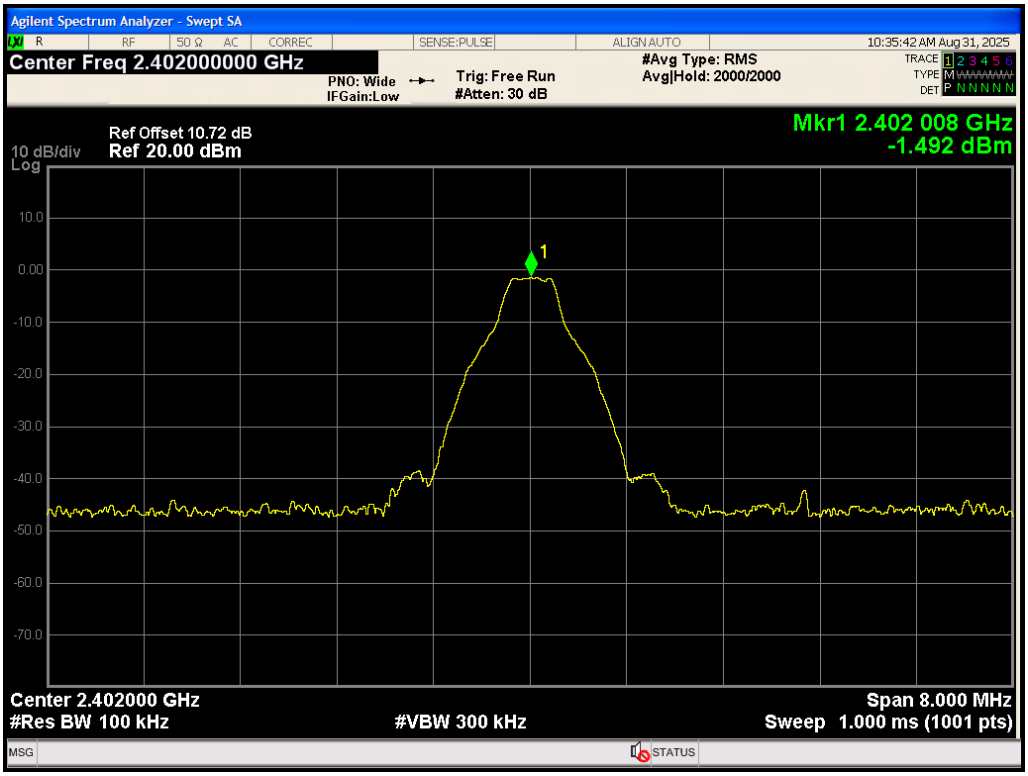
Dwell 3-DH5 2402MHz Accumulated



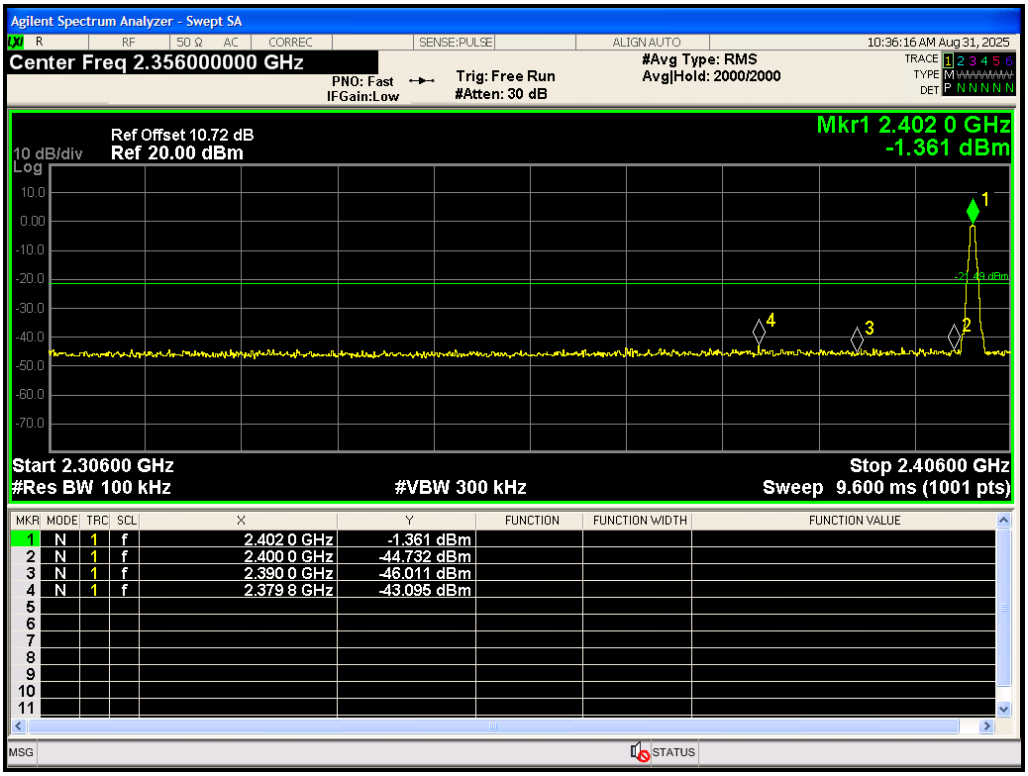
6.5 Band Edge Compliance

Hopping On

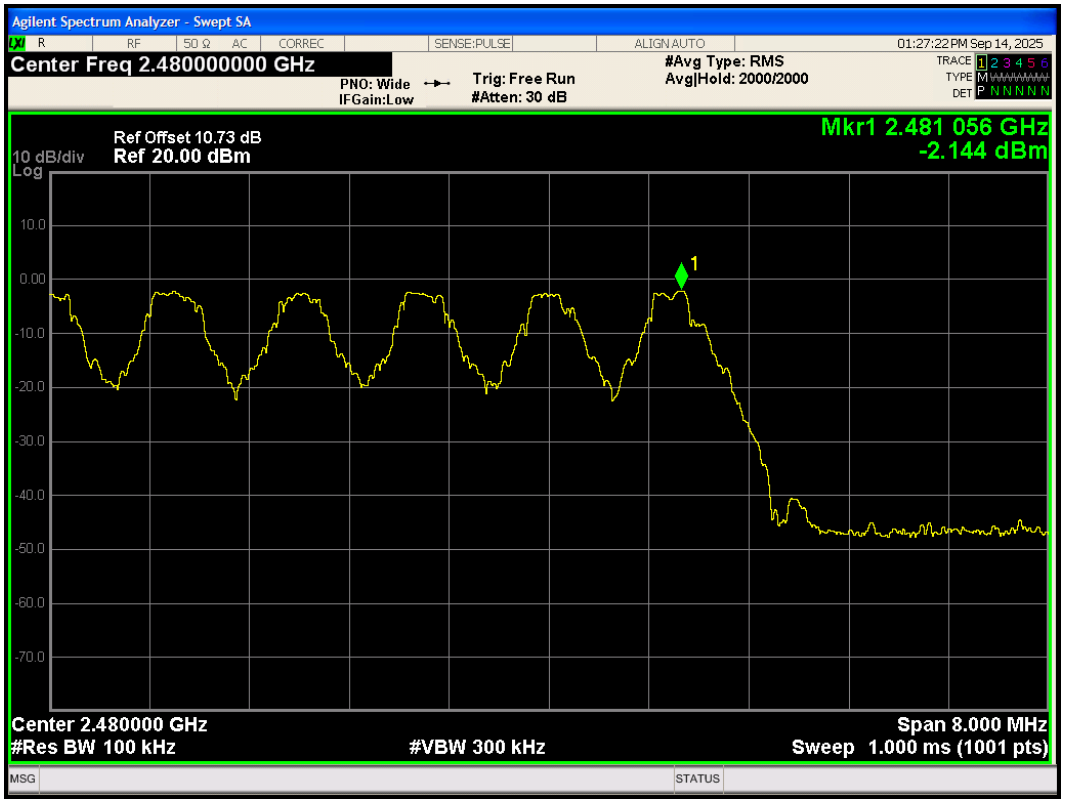
Band Edge(Hopping) 1-DH5 2402MHz Hopping Ref



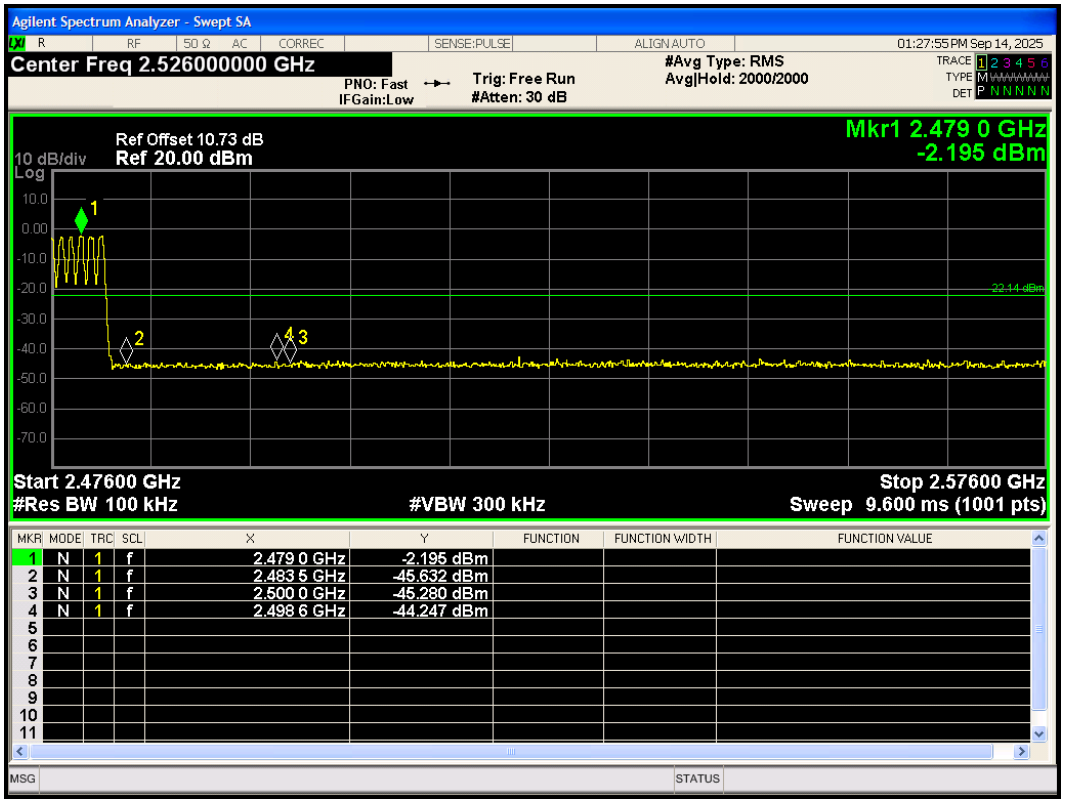
Band Edge(Hopping) 1-DH5 2402MHz Hopping Emission



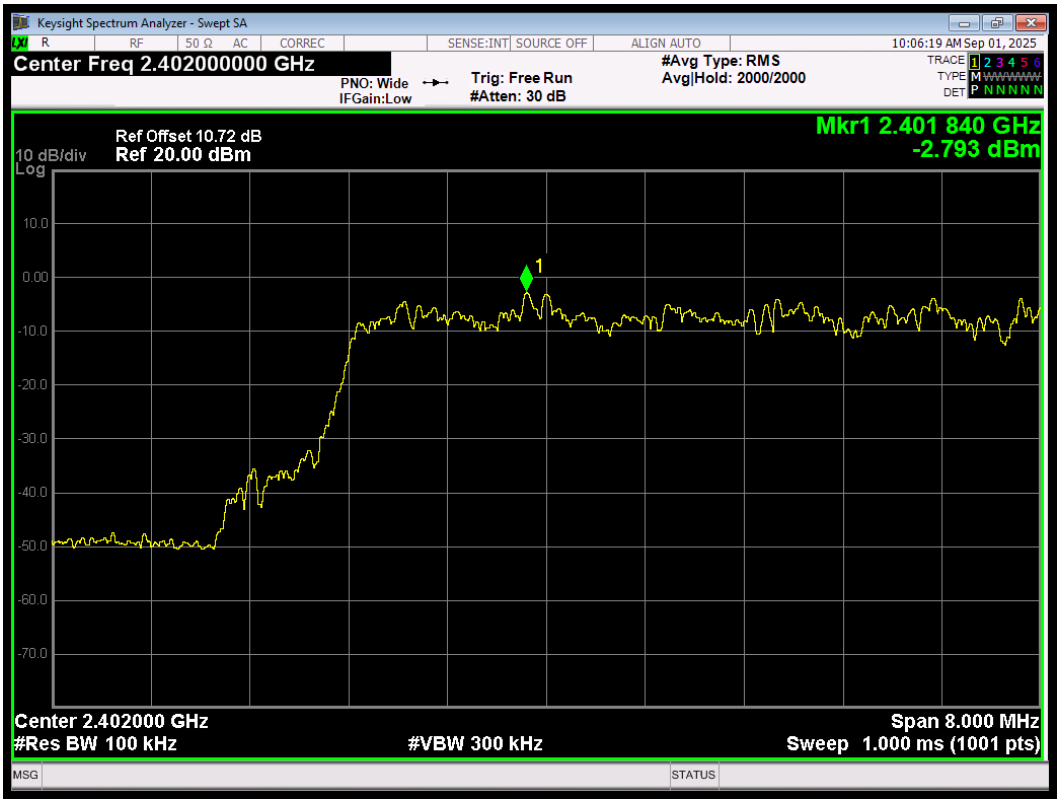
Band Edge(Hopping) 1-DH5 2480MHz Hopping Ref



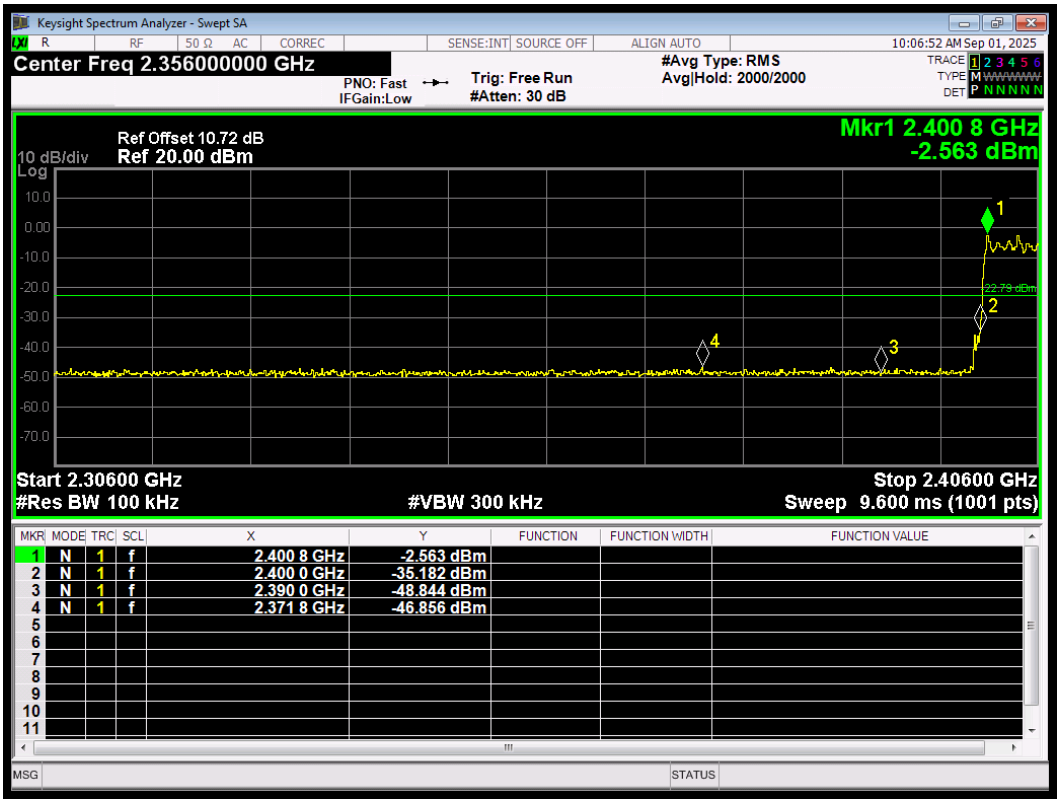
Band Edge(Hopping) 1-DH5 2480MHz Hopping Emission



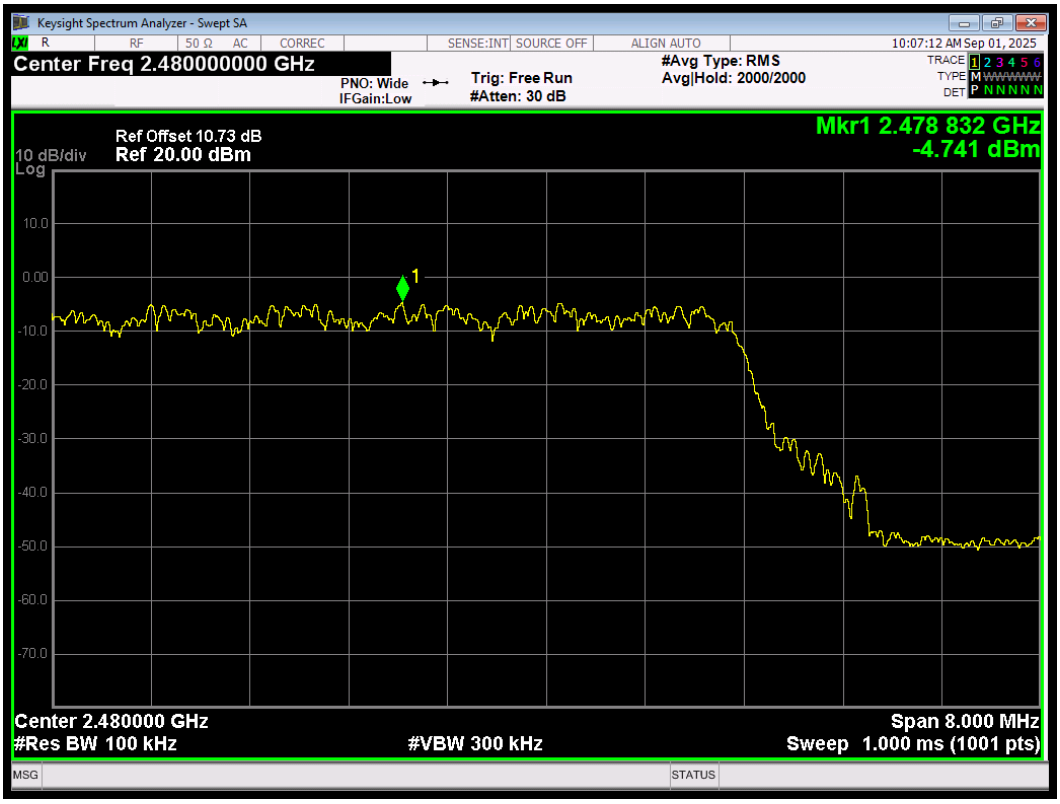
Band Edge(Hopping) 2-DH5 2402MHz Hopping Ref



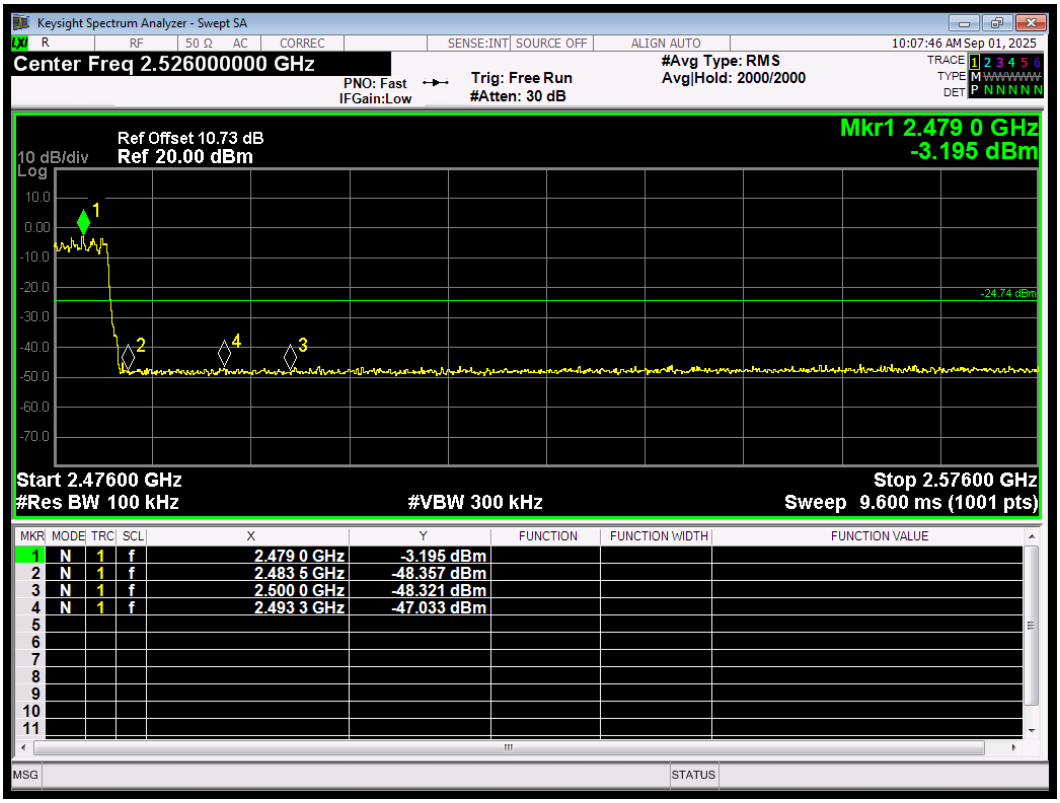
Band Edge(Hopping) 2-DH5 2402MHz Hopping Emission



Band Edge(Hopping) 2-DH5 2480MHz Hopping Ref

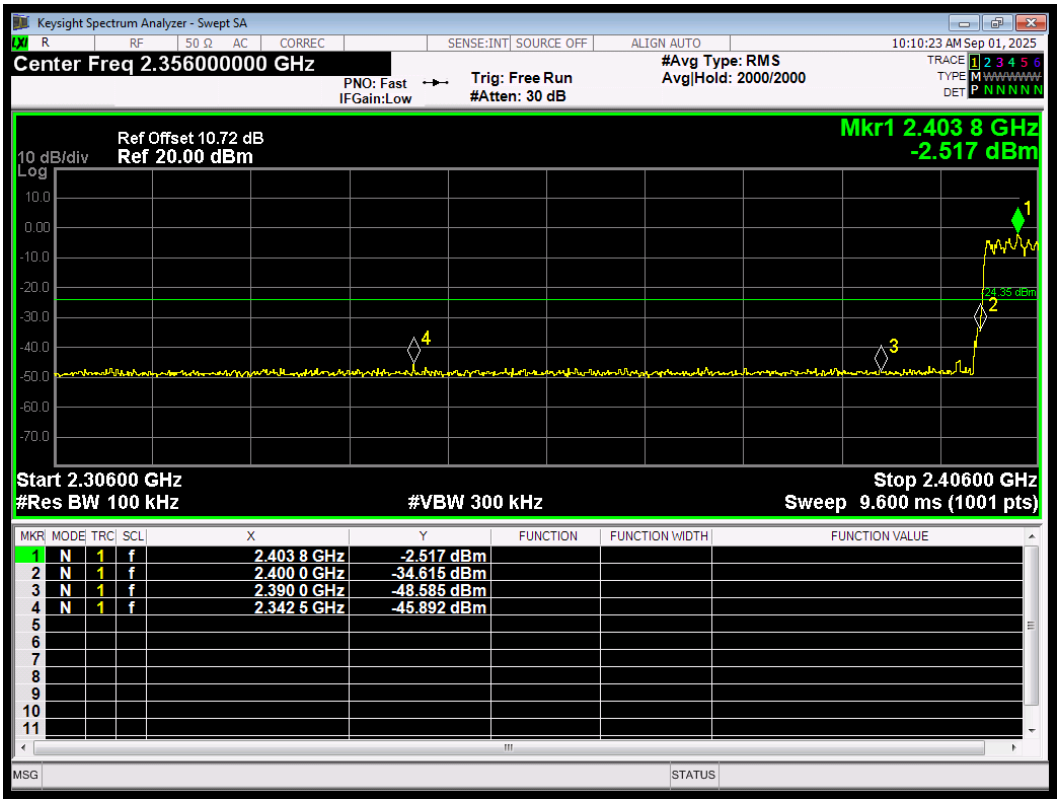


Band Edge(Hopping) 2-DH5 2480MHz Hopping Emission



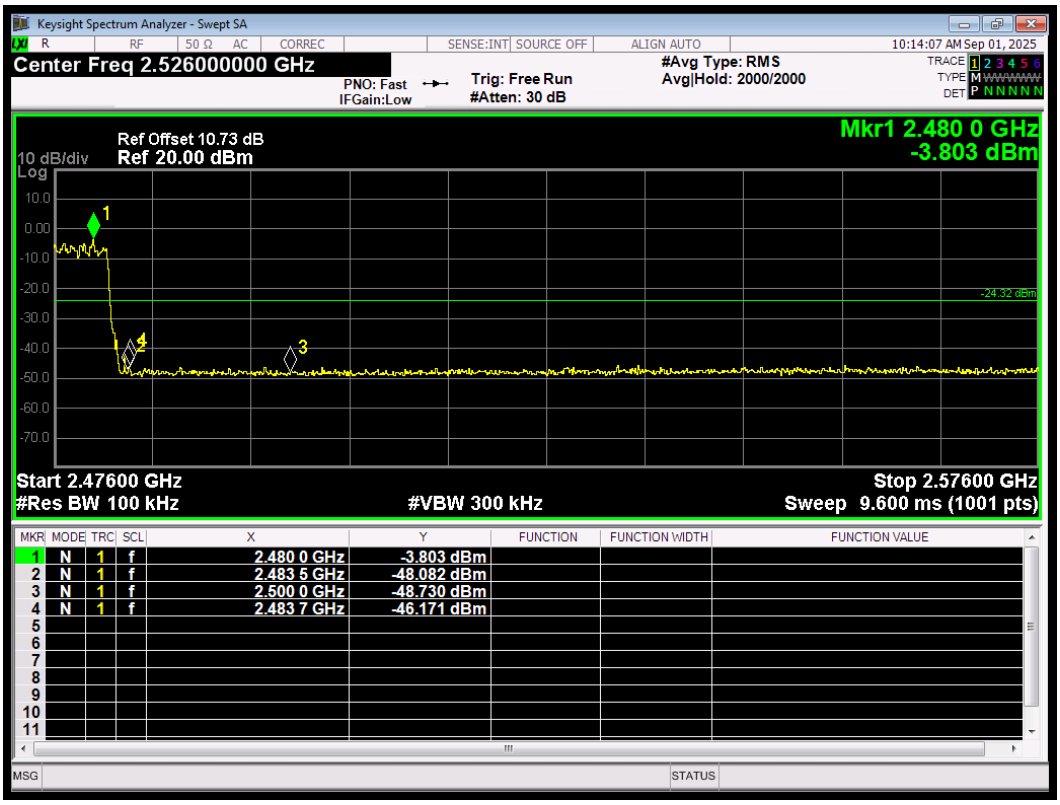
Band Edge(Hopping) 3-DH5 2402MHz Hopping Ref

Band Edge(Hopping) 3-DH5 2402MHz Hopping Emission



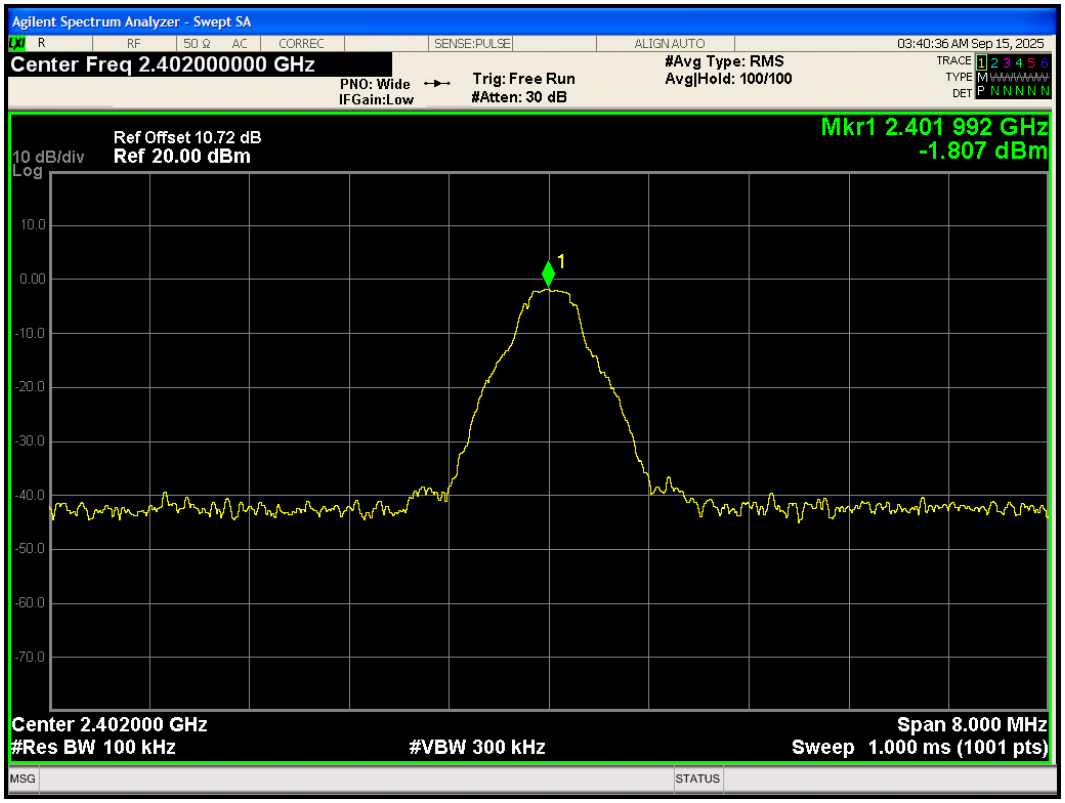
Band Edge(Hopping) 3-DH5 2480MHz Hopping Ref

Band Edge(Hopping) 3-DH5 2480MHz Hopping Emission

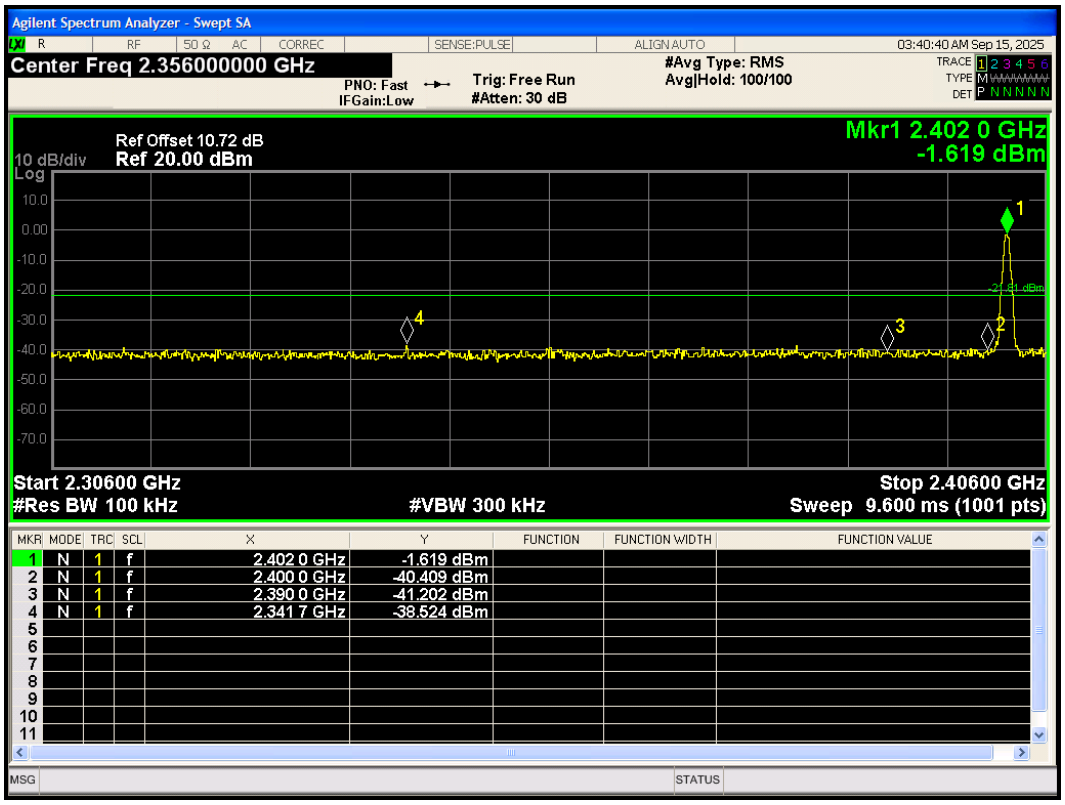


Hopping Off

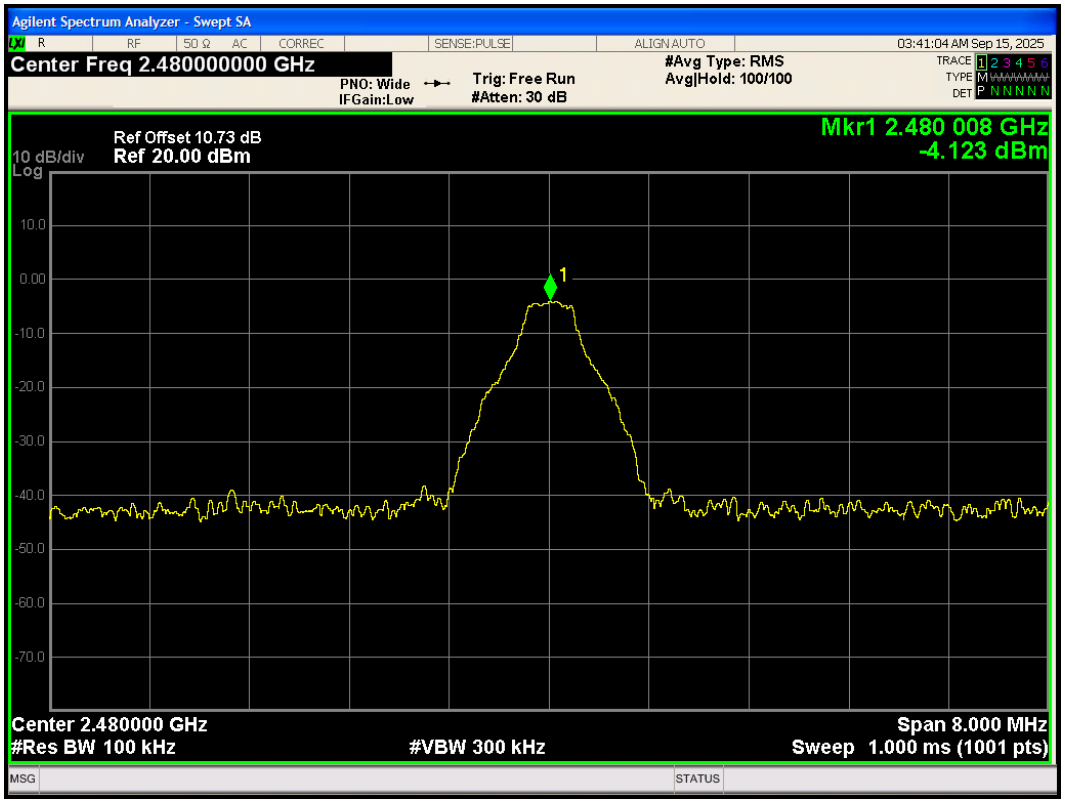
Band Edge 1-DH5 2402MHz No-Hopping Ref



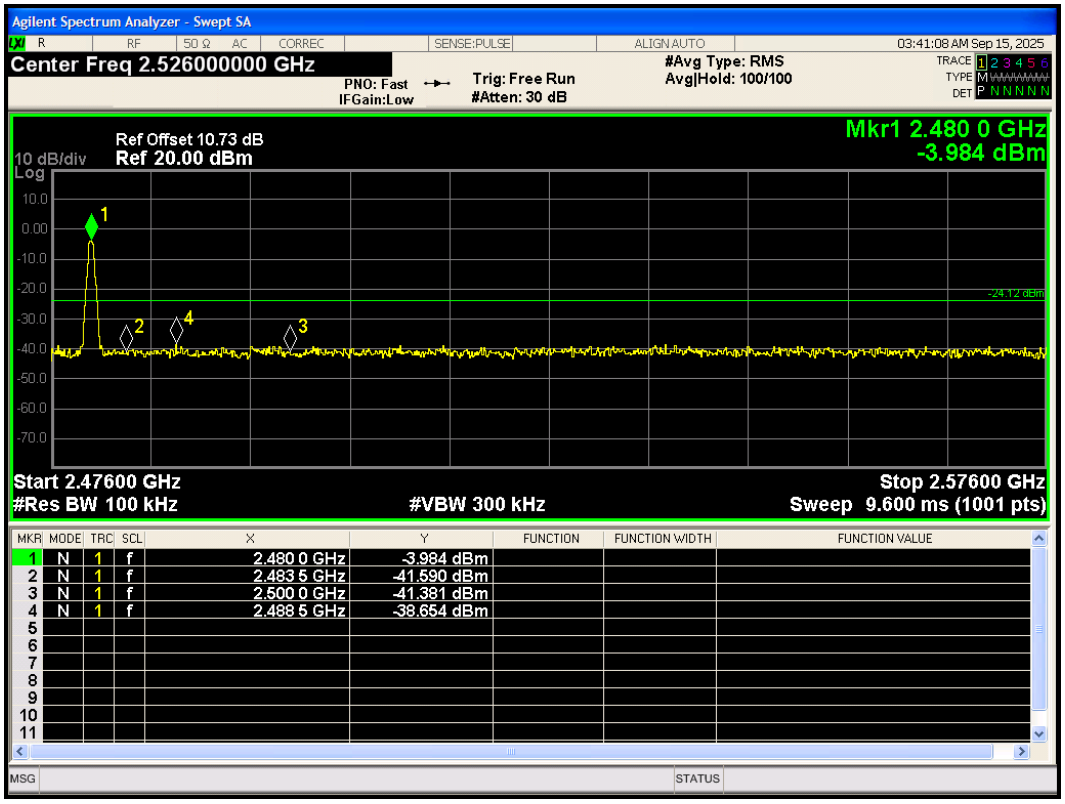
Band Edge 1-DH5 2402MHz No-Hopping Emission



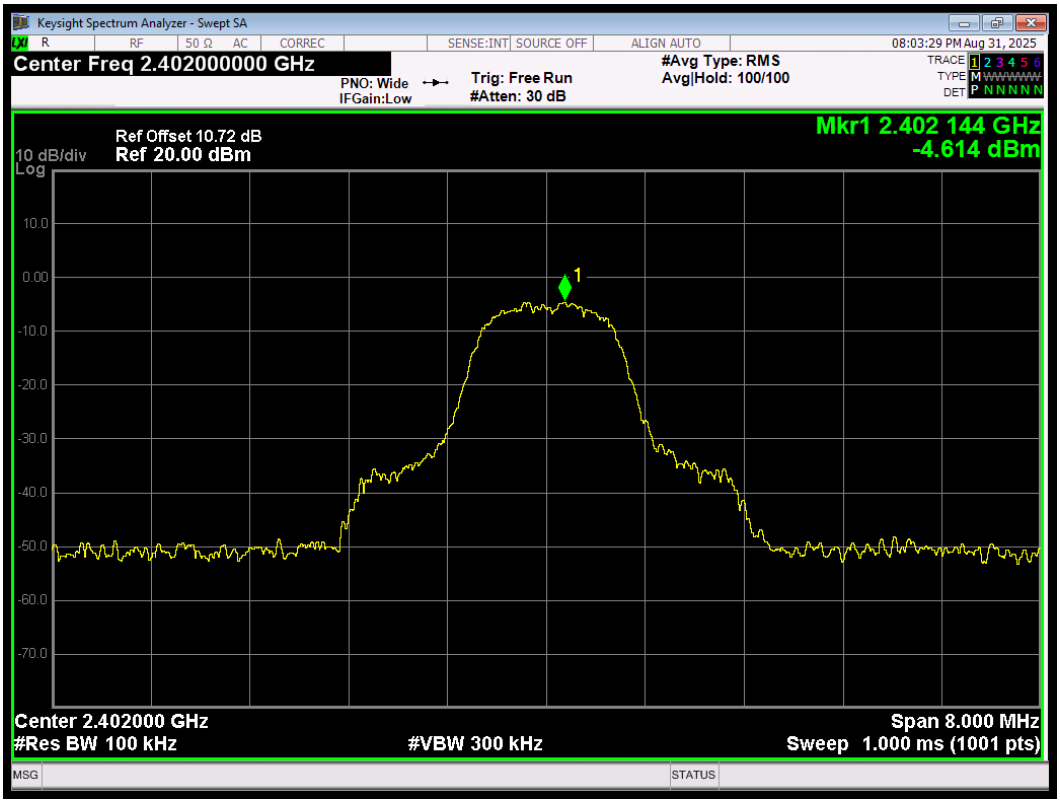
Band Edge 1-DH5 2480MHz No-Hopping Ref



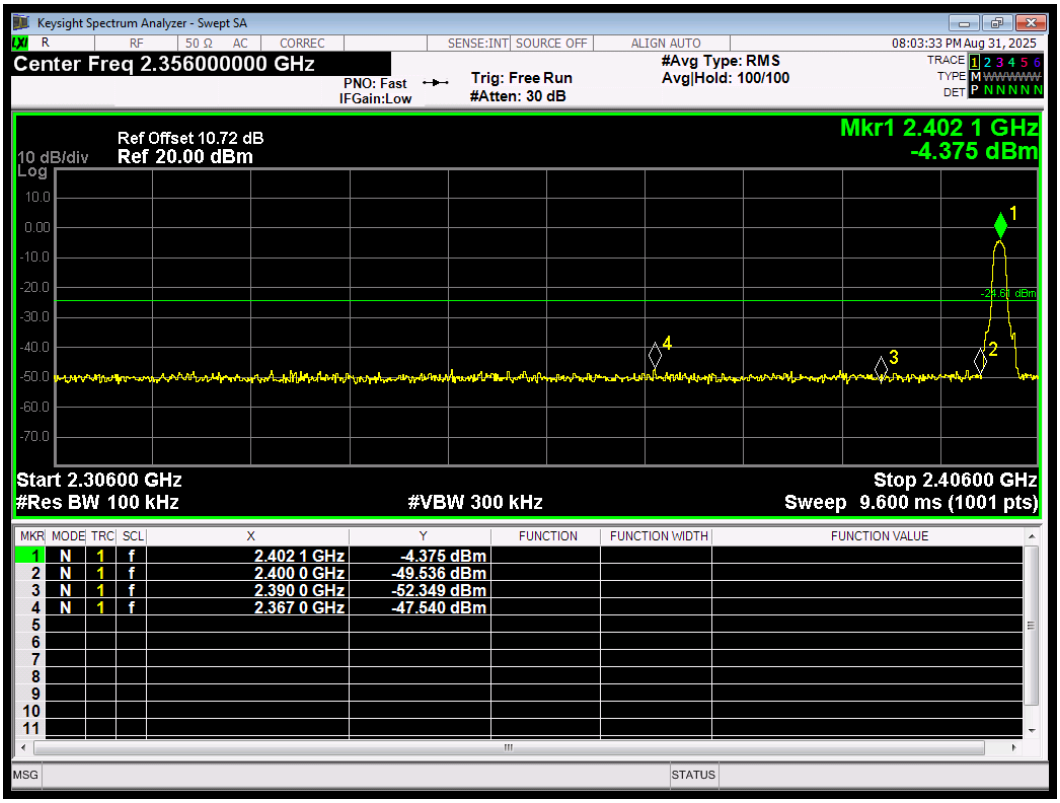
Band Edge 1-DH5 2480MHz No-Hopping Emission



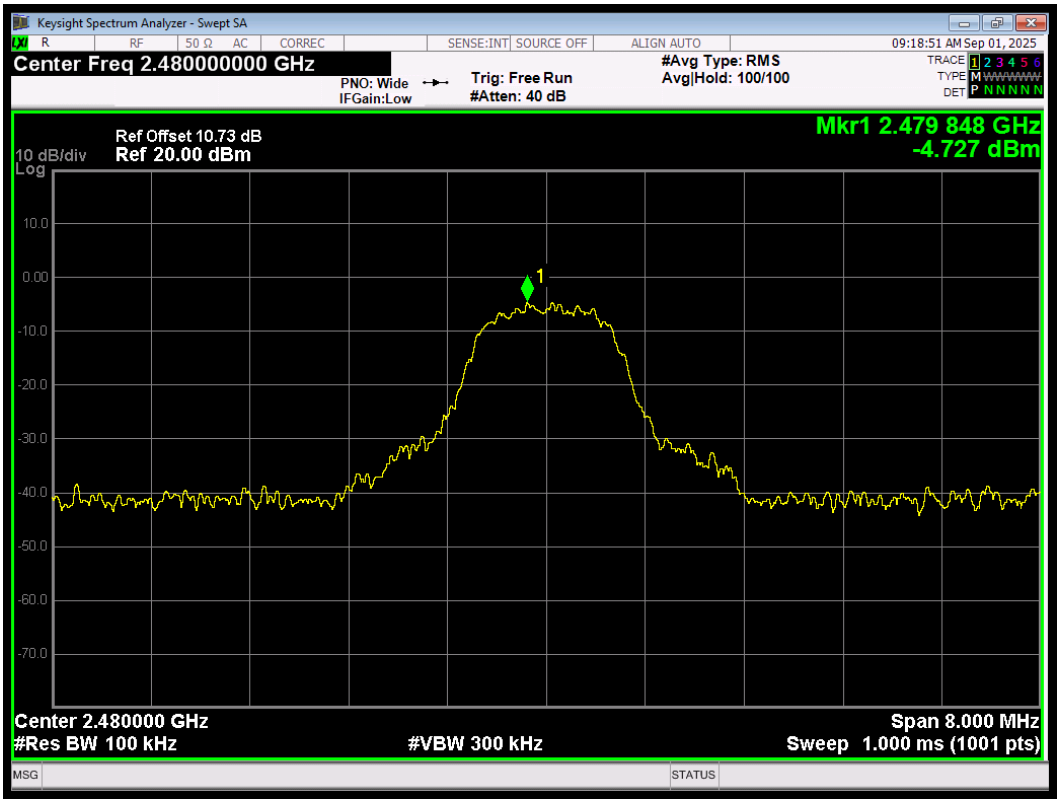
Band Edge 2-DH5 2402MHz No-Hopping Ref



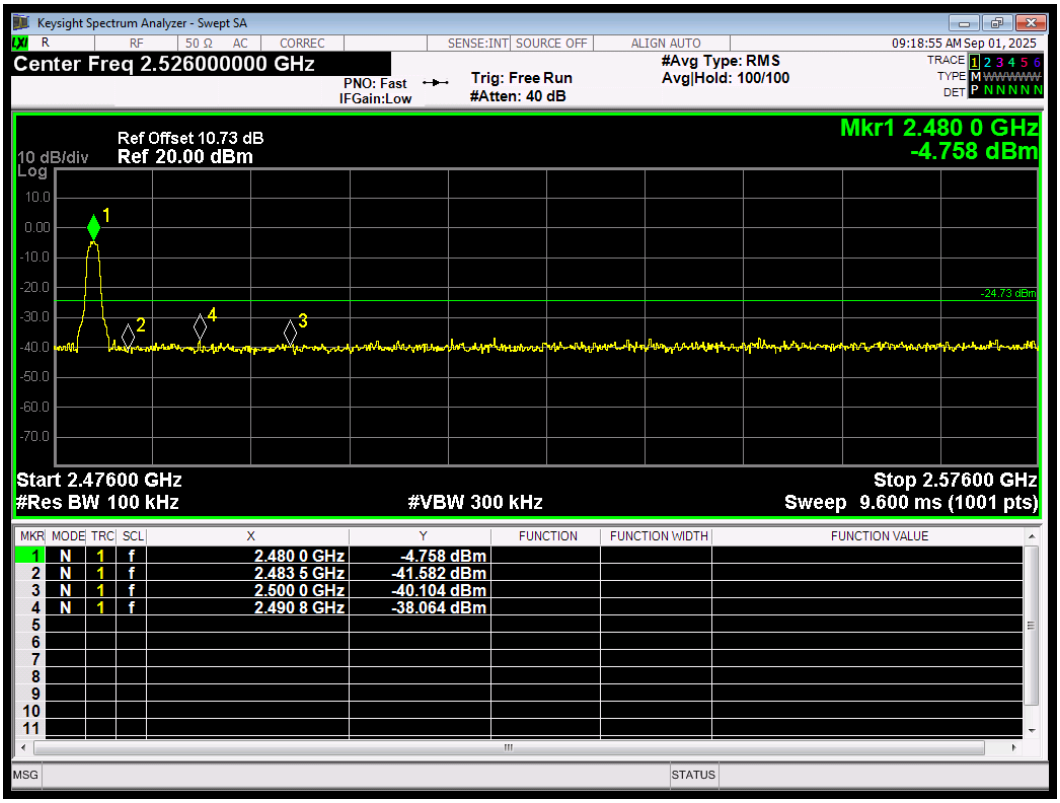
Band Edge 2-DH5 2402MHz No-Hopping Emission



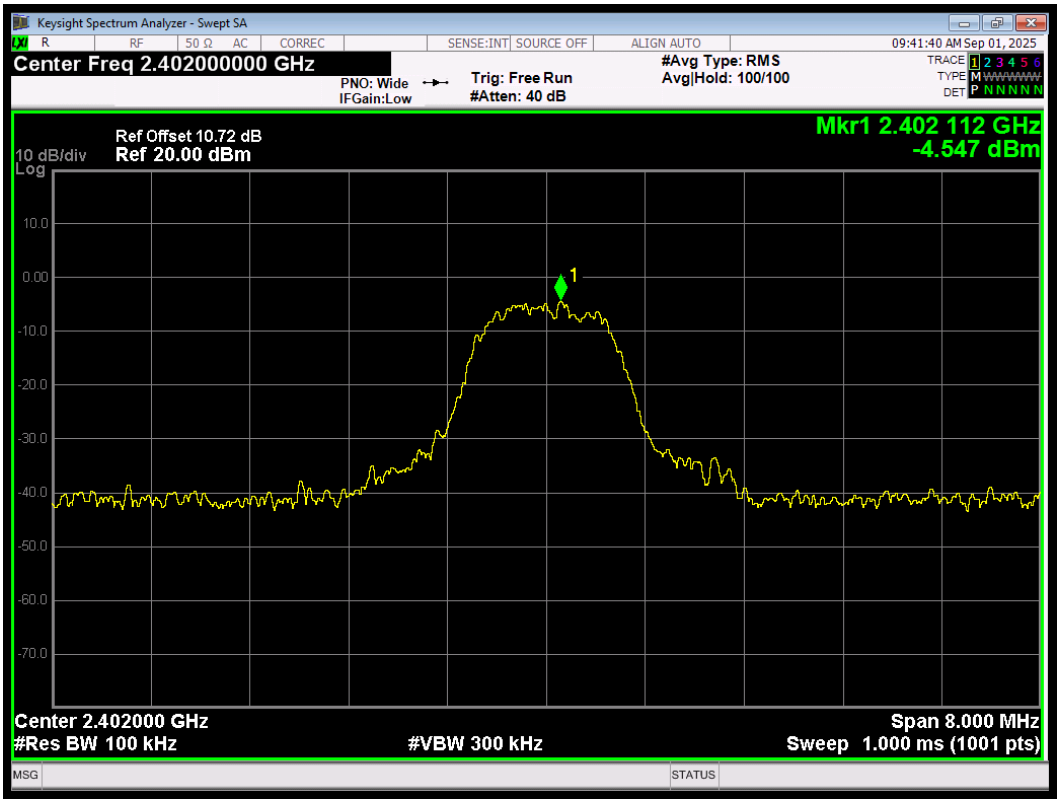
Band Edge 2-DH5 2480MHz No-Hopping Ref



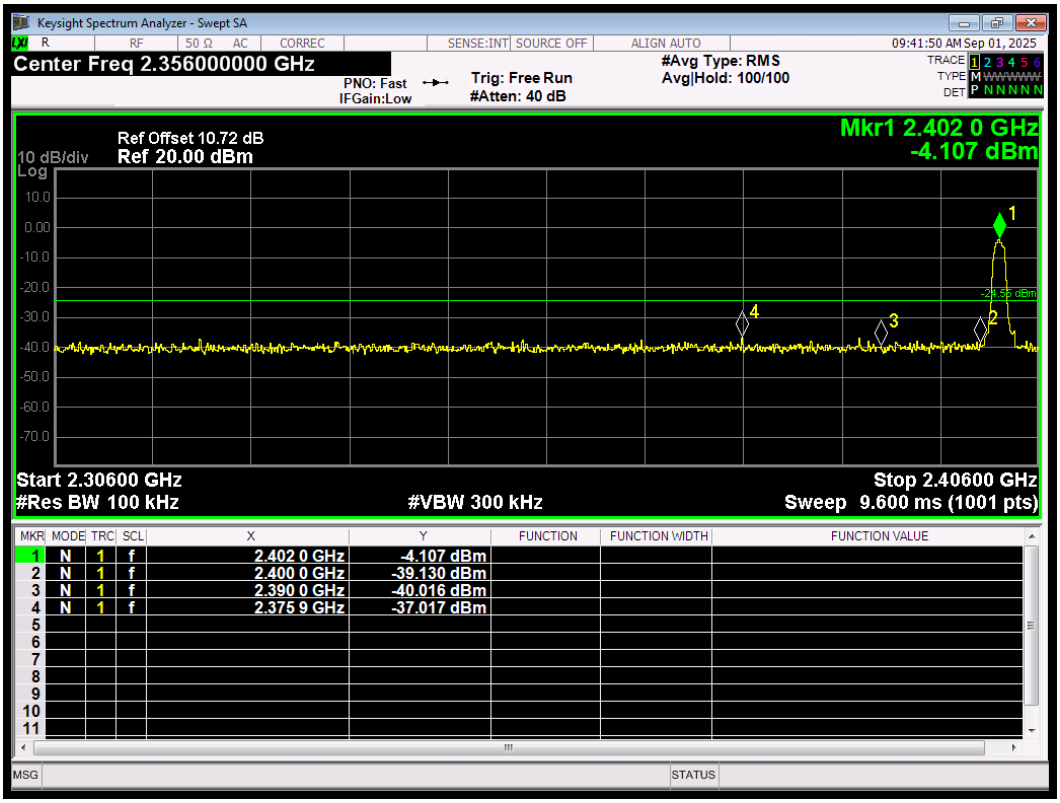
Band Edge 2-DH5 2480MHz No-Hopping Emission



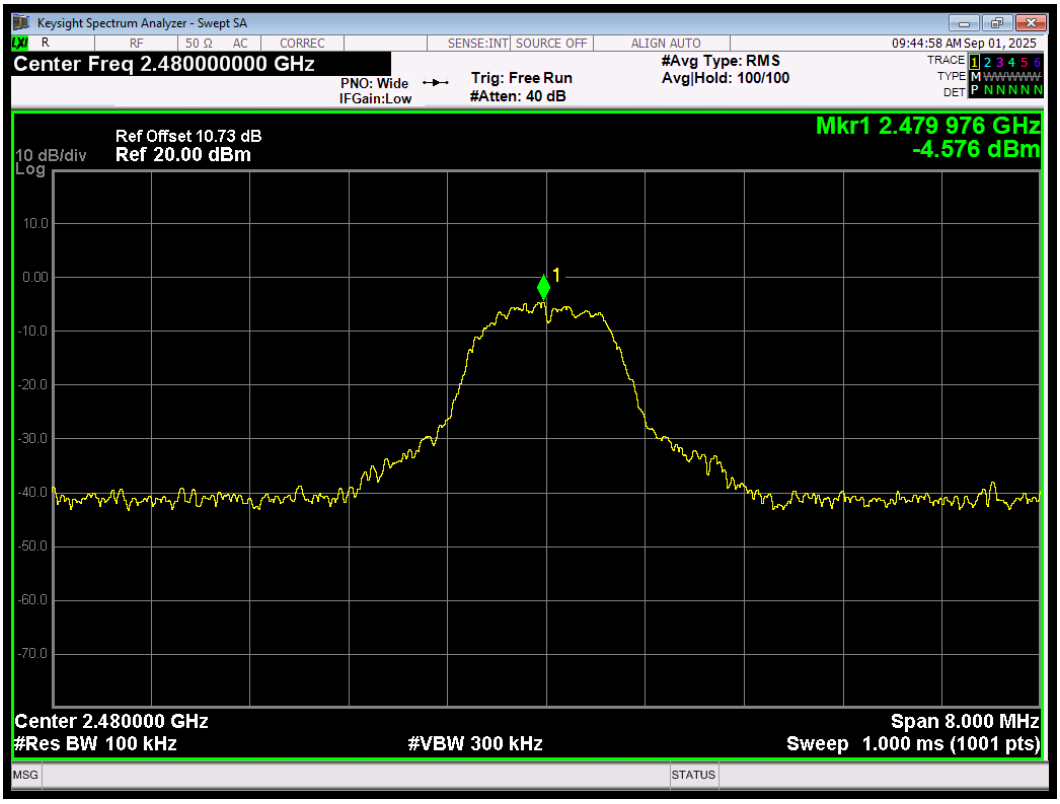
Band Edge 3-DH5 2402MHz No-Hopping Ref



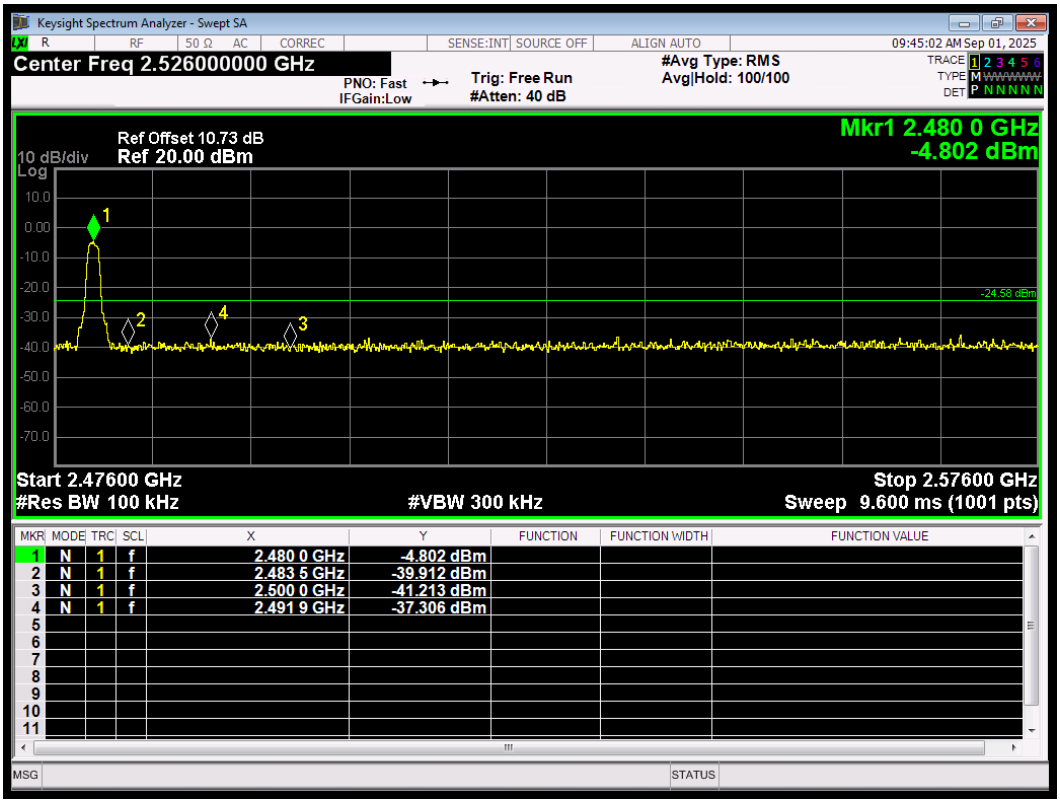
Band Edge 3-DH5 2402MHz No-Hopping Emission



Band Edge 3-DH5 2480MHz No-Hopping Ref



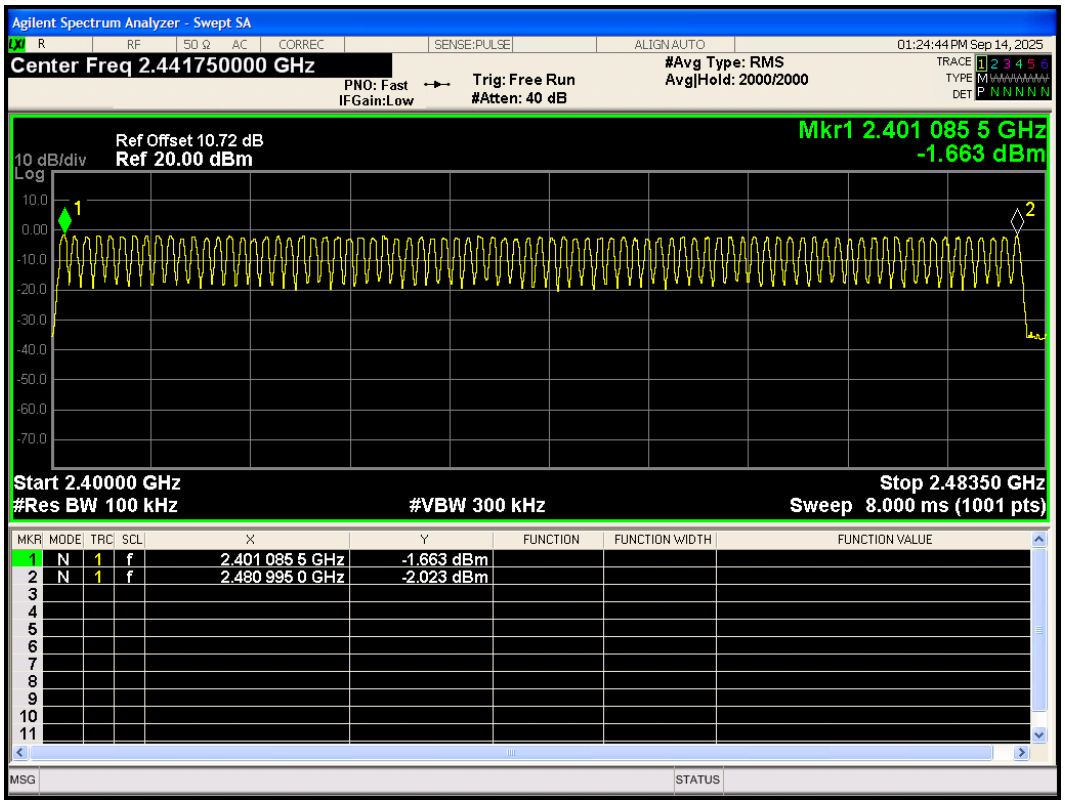
Band Edge 3-DH5 2480MHz No-Hopping Emission



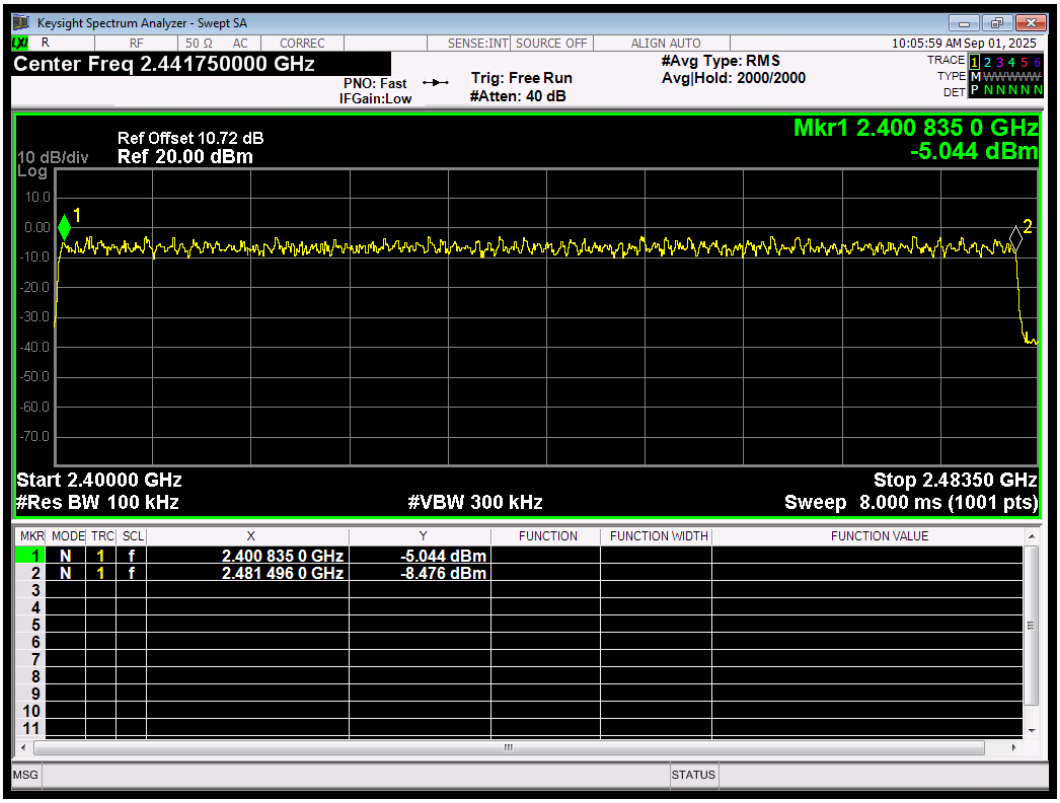
6.6 Number of hopping Frequency

Test Mode		Number of hopping channels	conclusion
Bluetooth	DH5	79	PASS
	2DH5	79	PASS
	3DH5	79	PASS

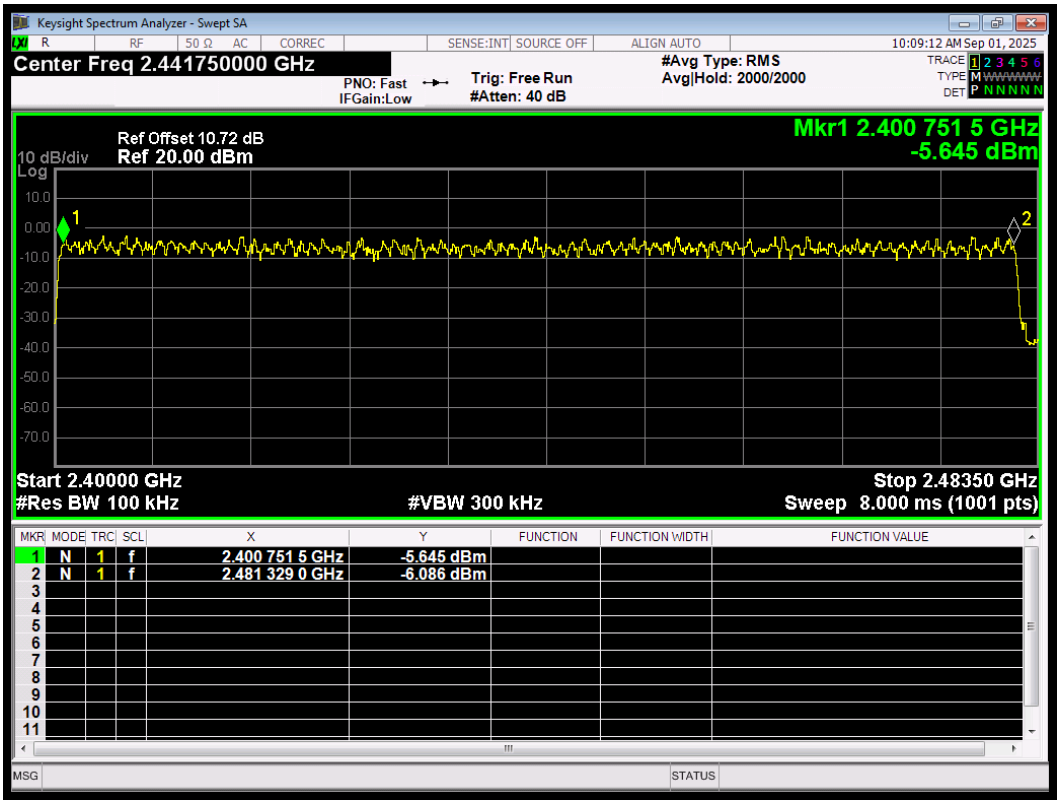
Hopping No. 1-DH5 2402MHz



Hopping No. 2-DH5 2402MHz

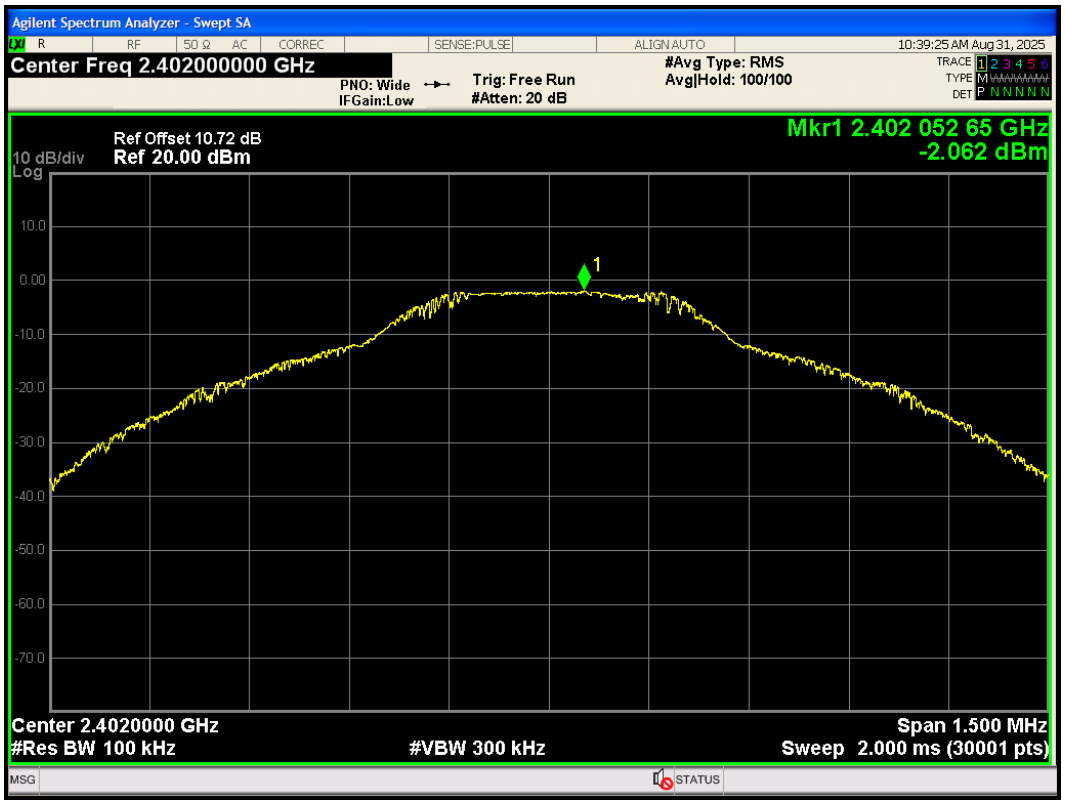


Hopping No. 3-DH5 2402MHz

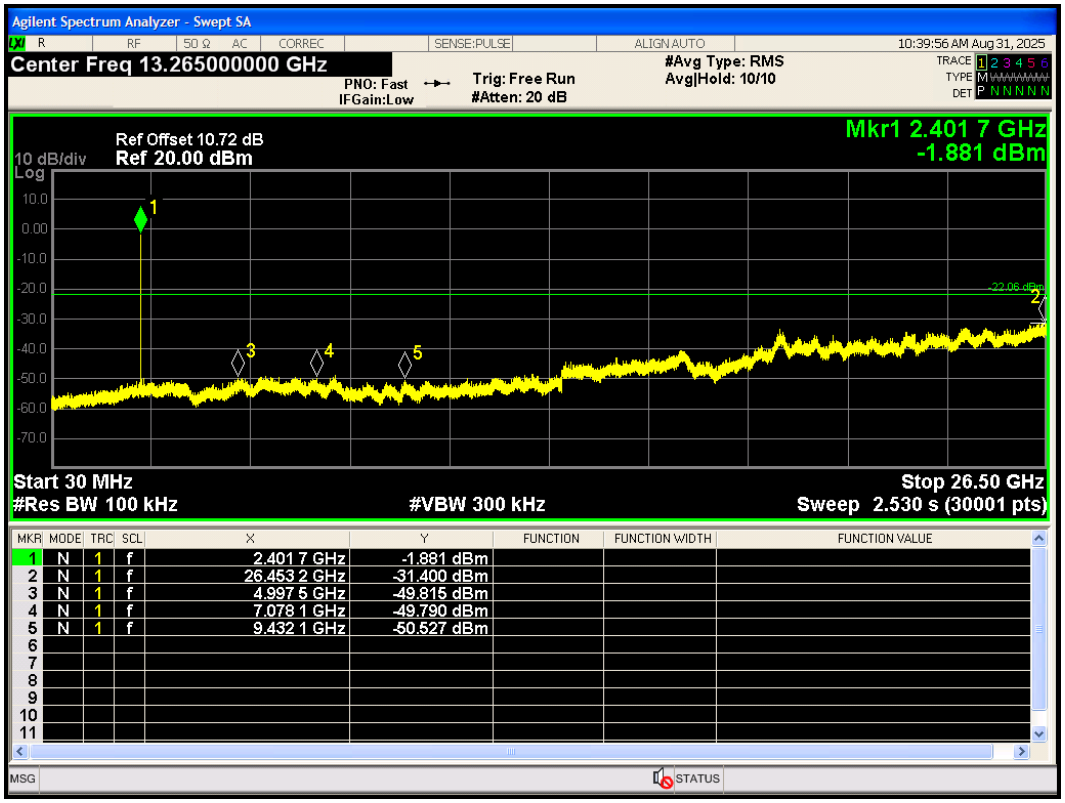


6.7 Spurious RF Conducted Emissions

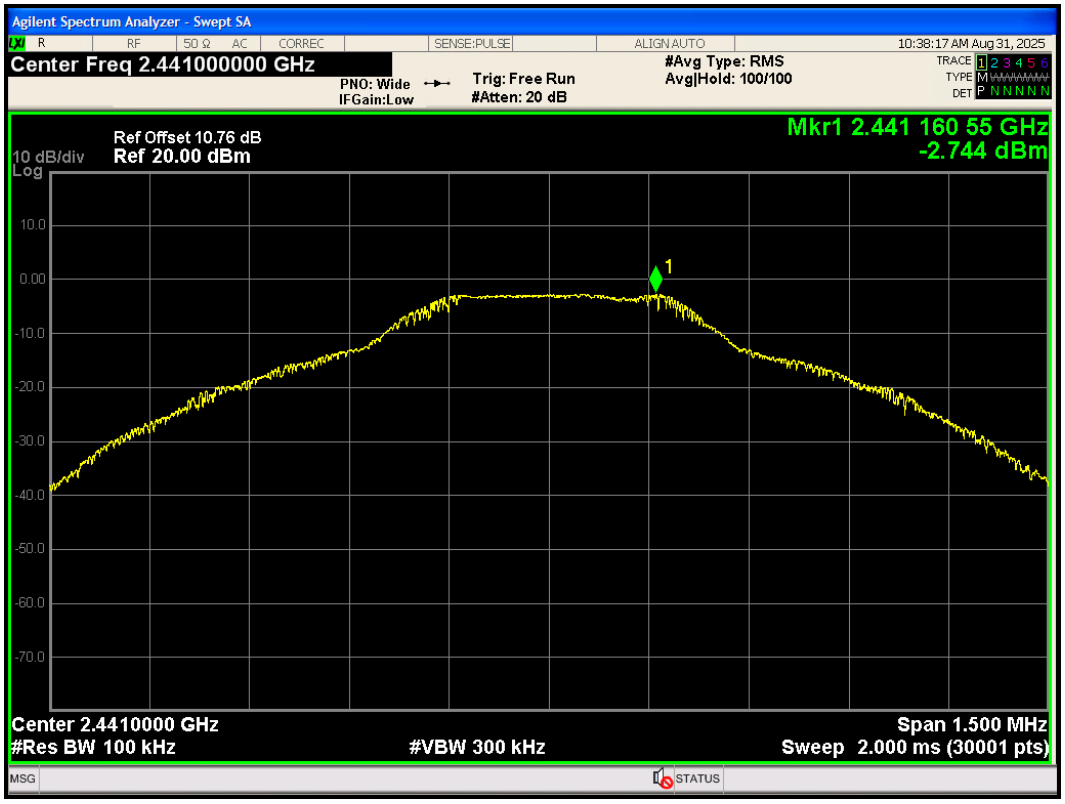
Tx. Spurious 1-DH5 2402MHz Ref



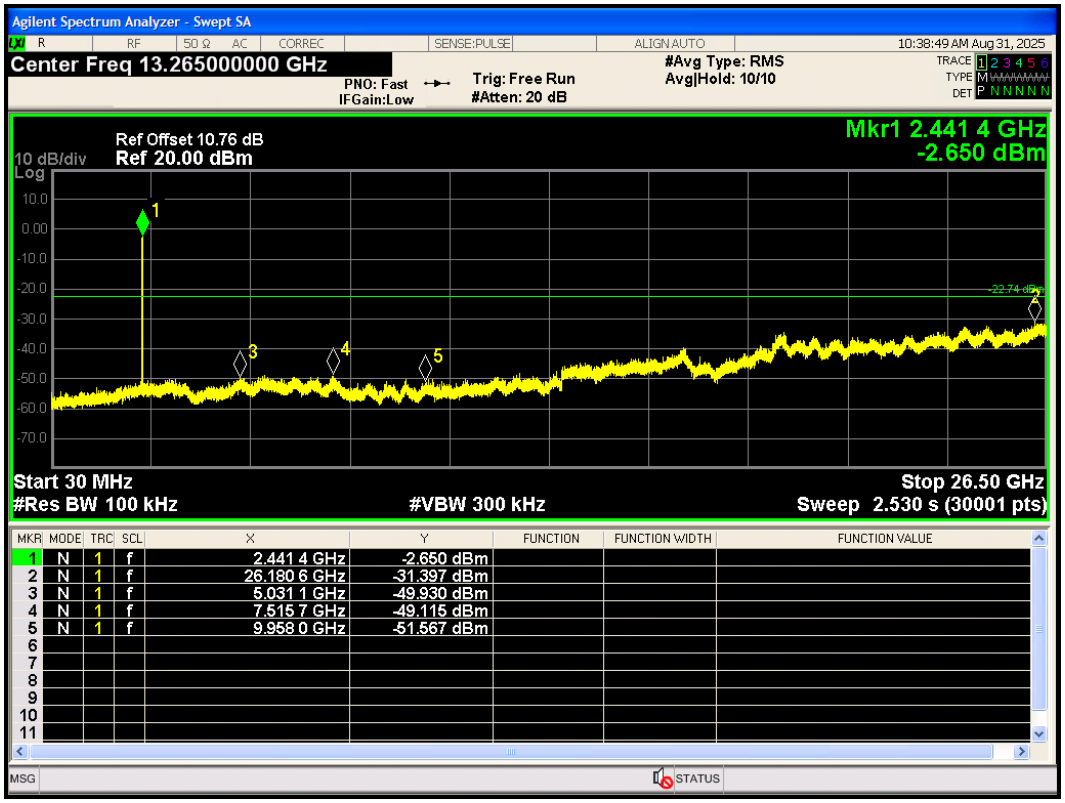
Tx. Spurious 1-DH5 2402MHz Emission



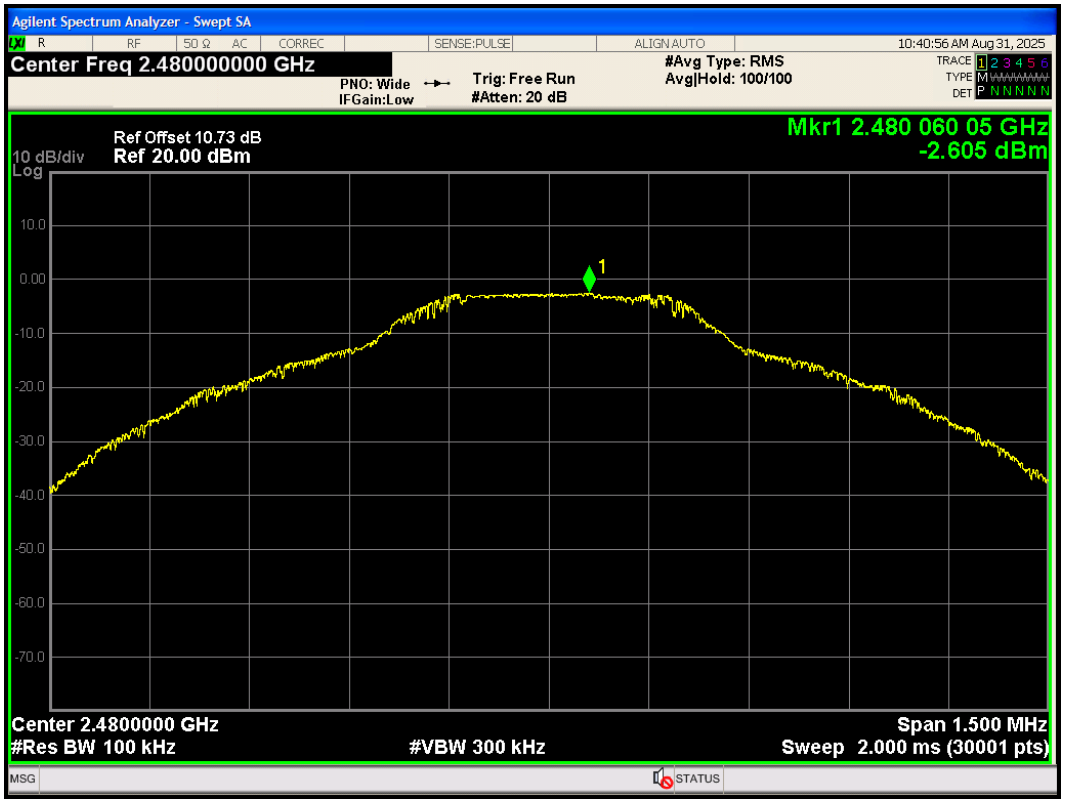
Tx. Spurious 1-DH5 2441MHz Ref



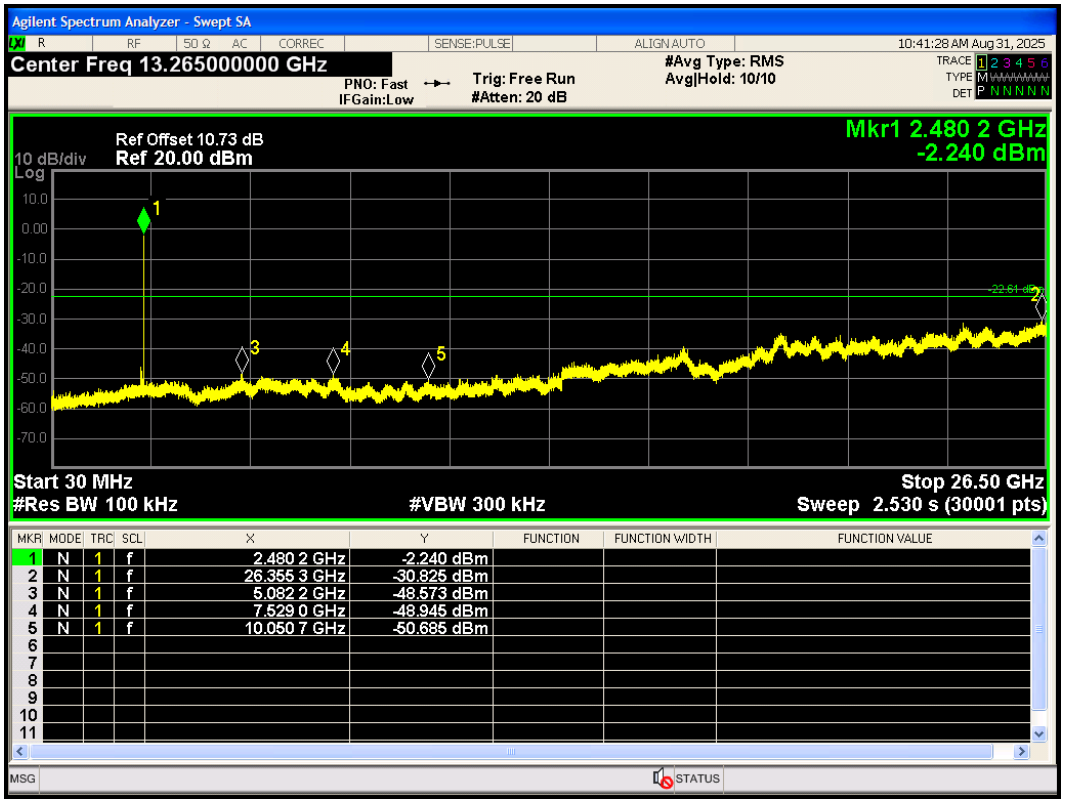
Tx. Spurious 1-DH5 2441MHz Emission



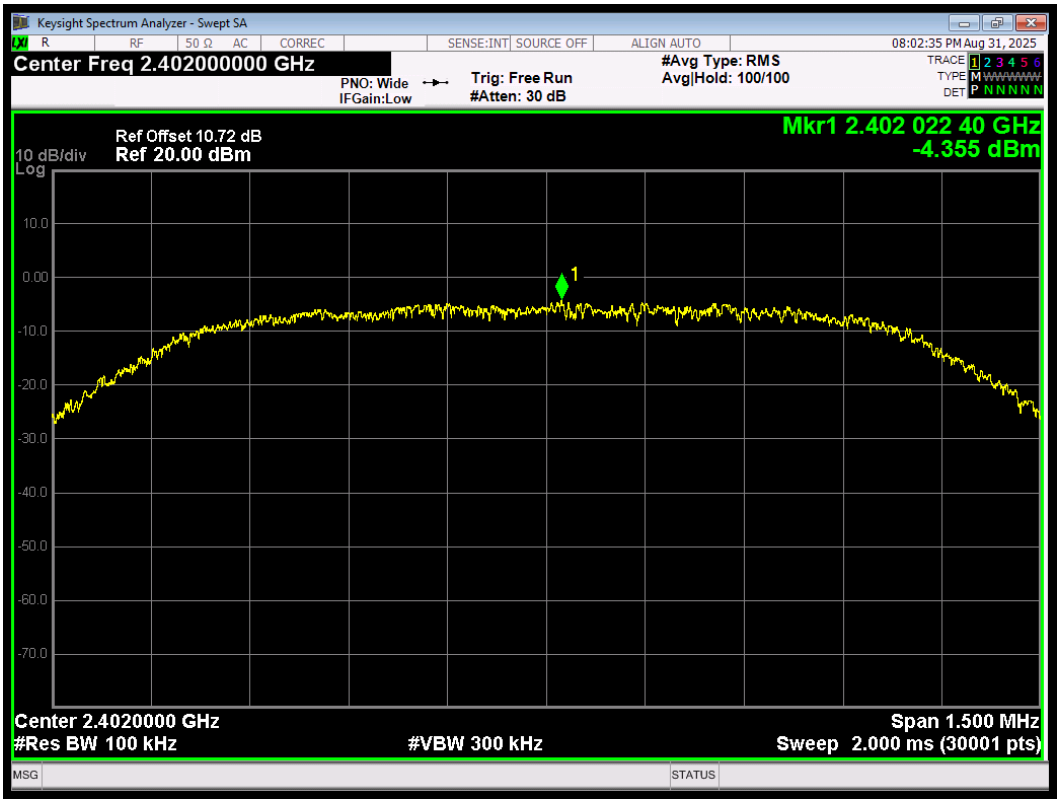
Tx. Spurious 1-DH5 2480MHz Ref



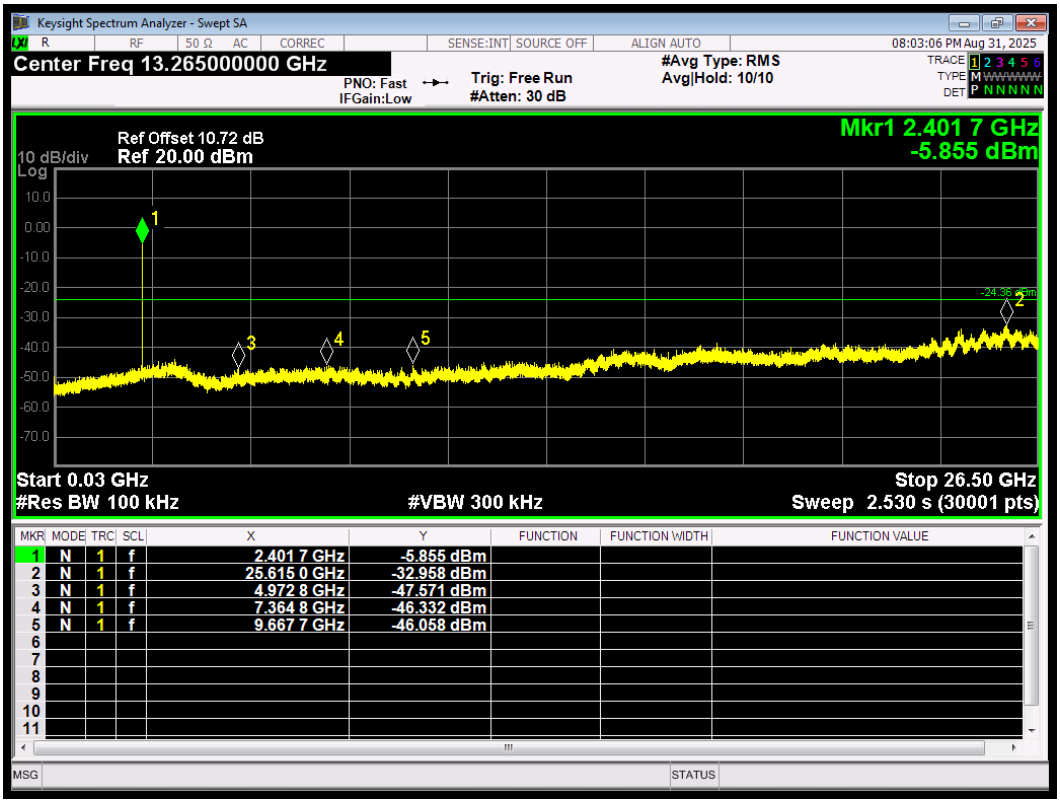
Tx. Spurious 1-DH5 2480MHz Emission



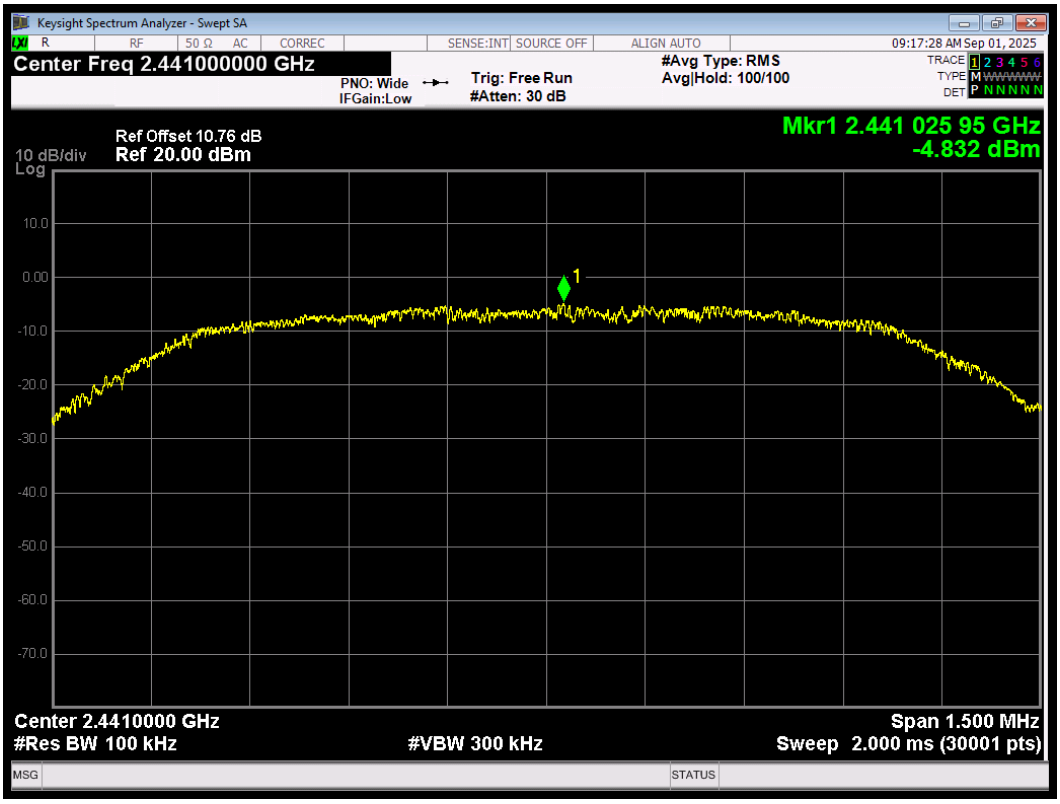
Tx. Spurious 2-DH5 2402MHz Ref



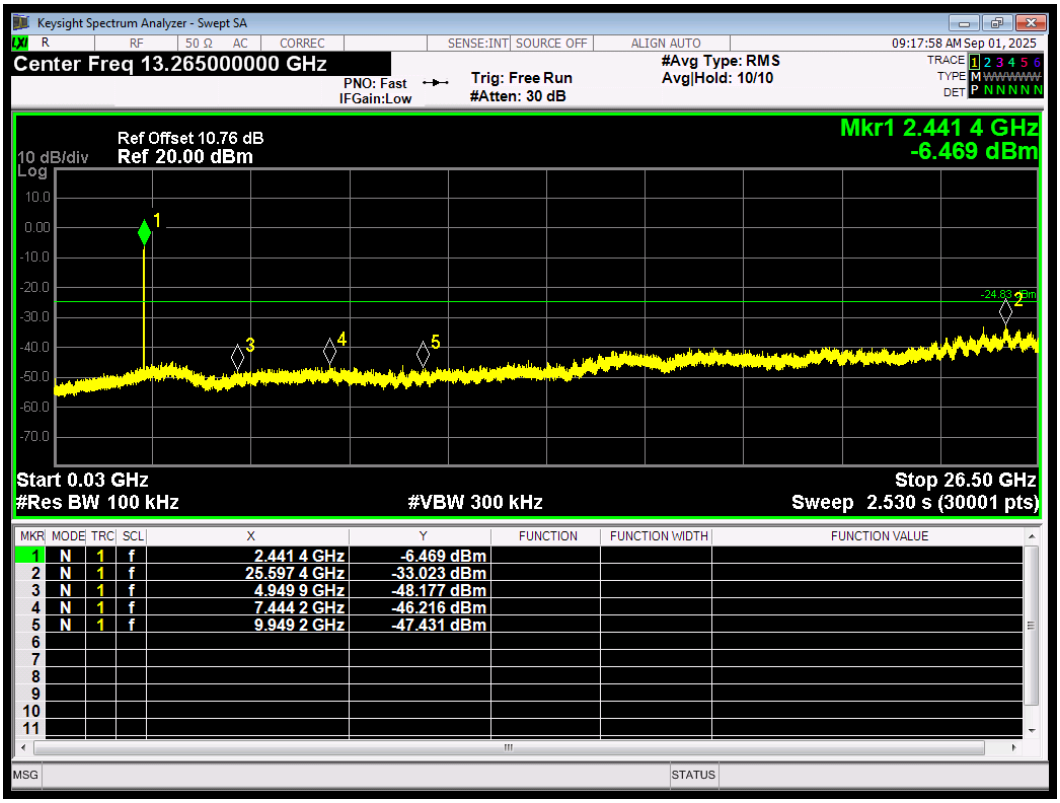
Tx. Spurious 2-DH5 2402MHz Emission



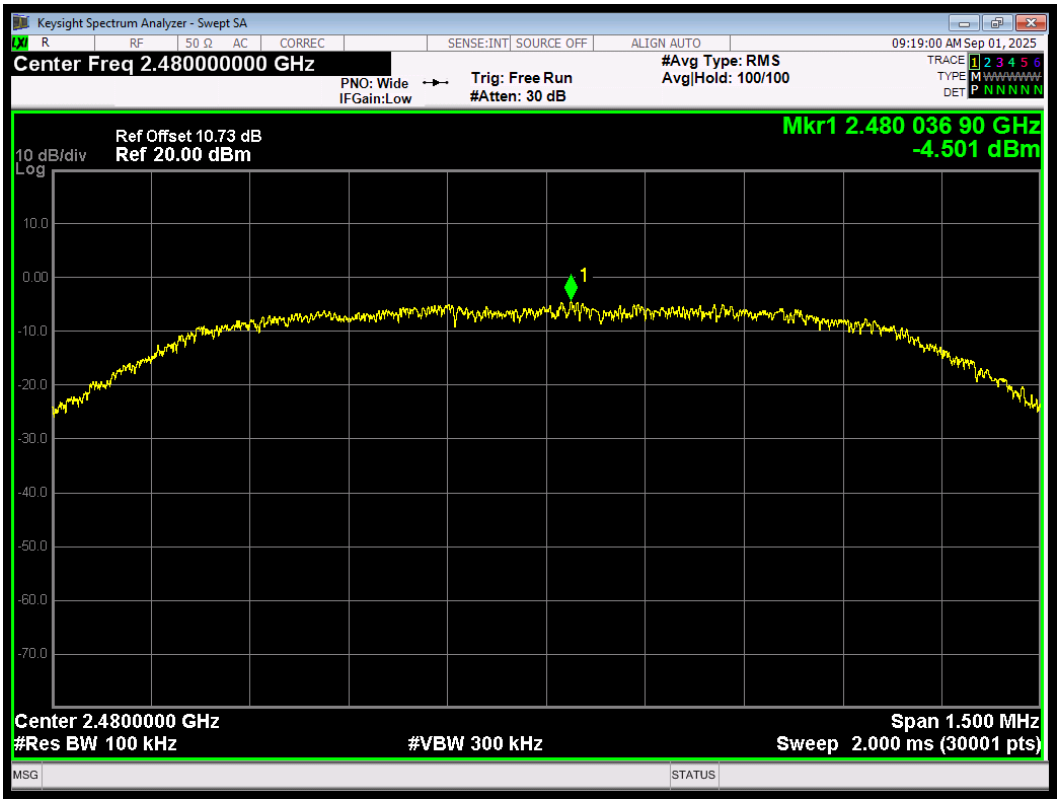
Tx. Spurious 2-DH5 2441MHz Ref



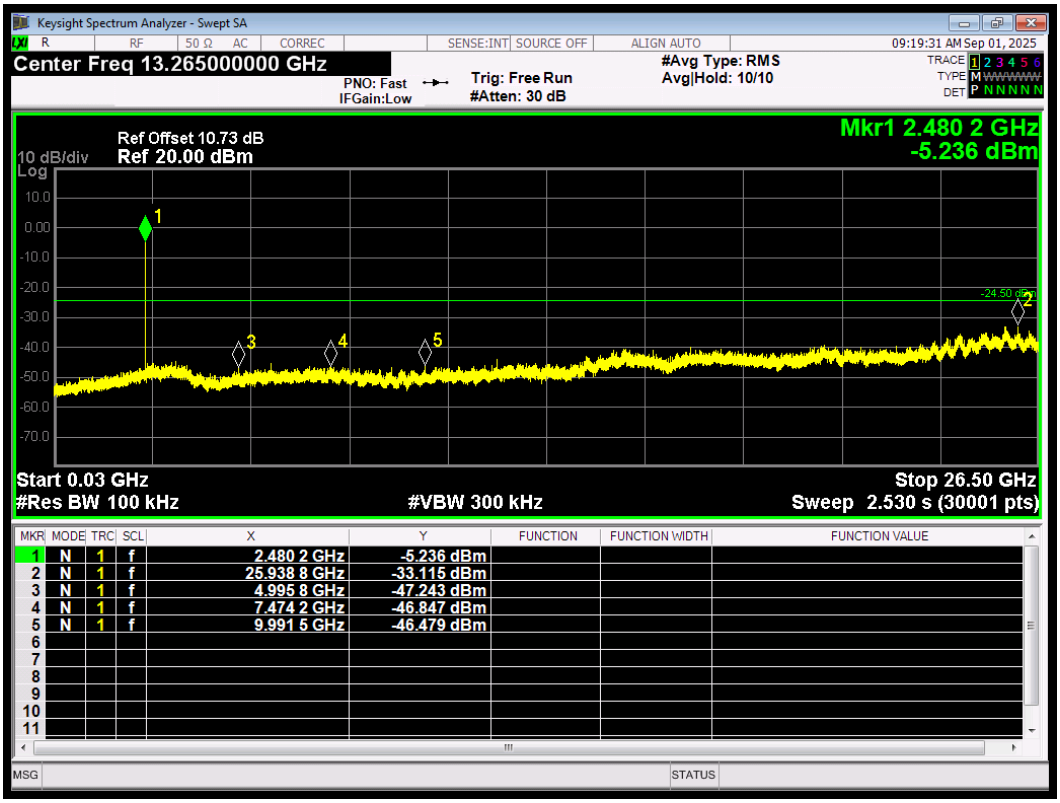
Tx. Spurious 2-DH5 2441MHz Emission



Tx. Spurious 2-DH5 2480MHz Ref

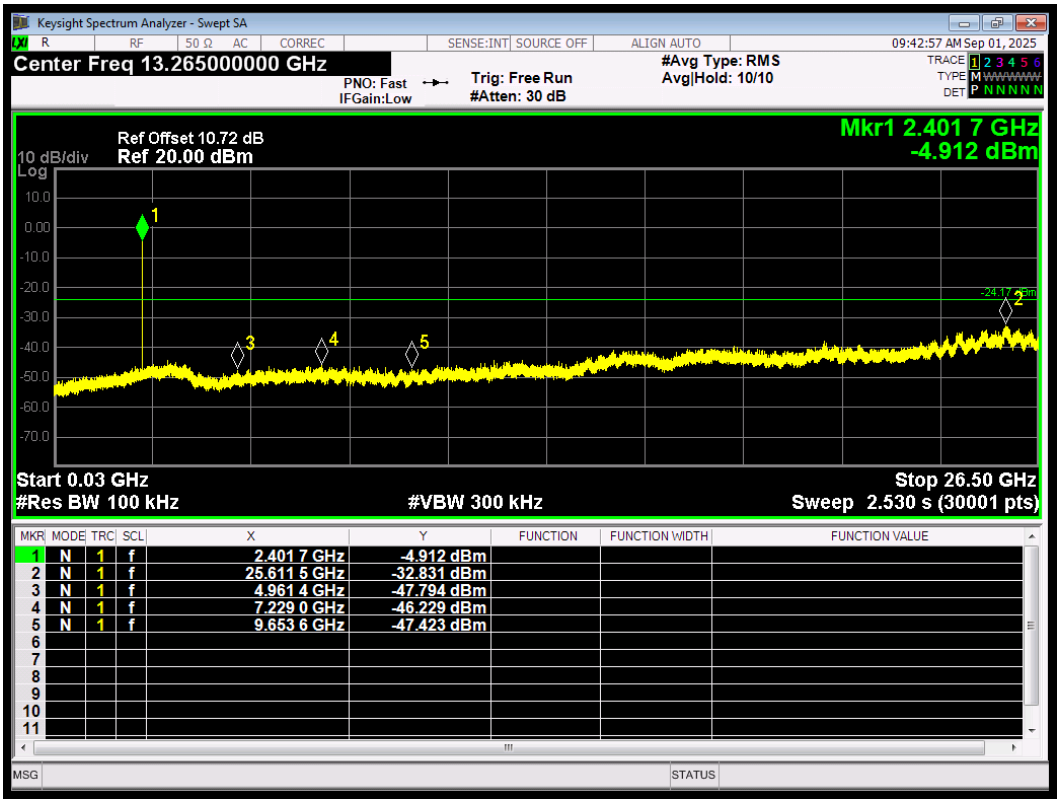


Tx. Spurious 2-DH5 2480MHz Emission



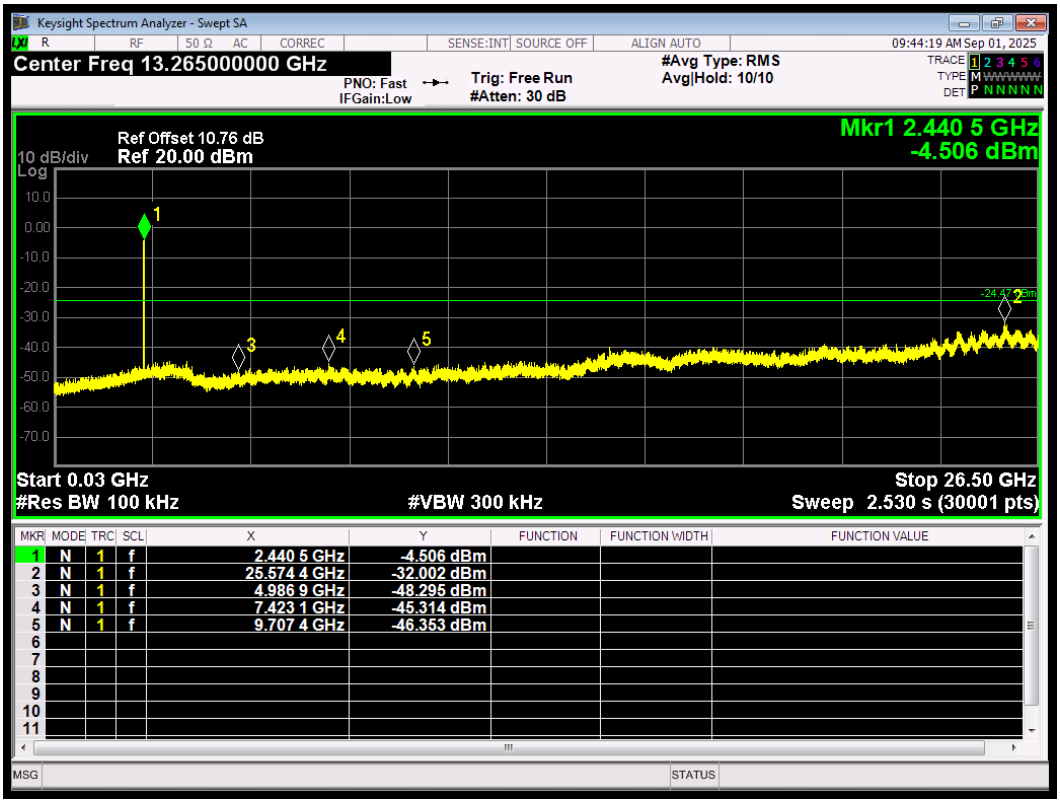
Tx. Spurious 3-DH5 2402MHz Ref

Tx. Spurious 3-DH5 2402MHz Emission

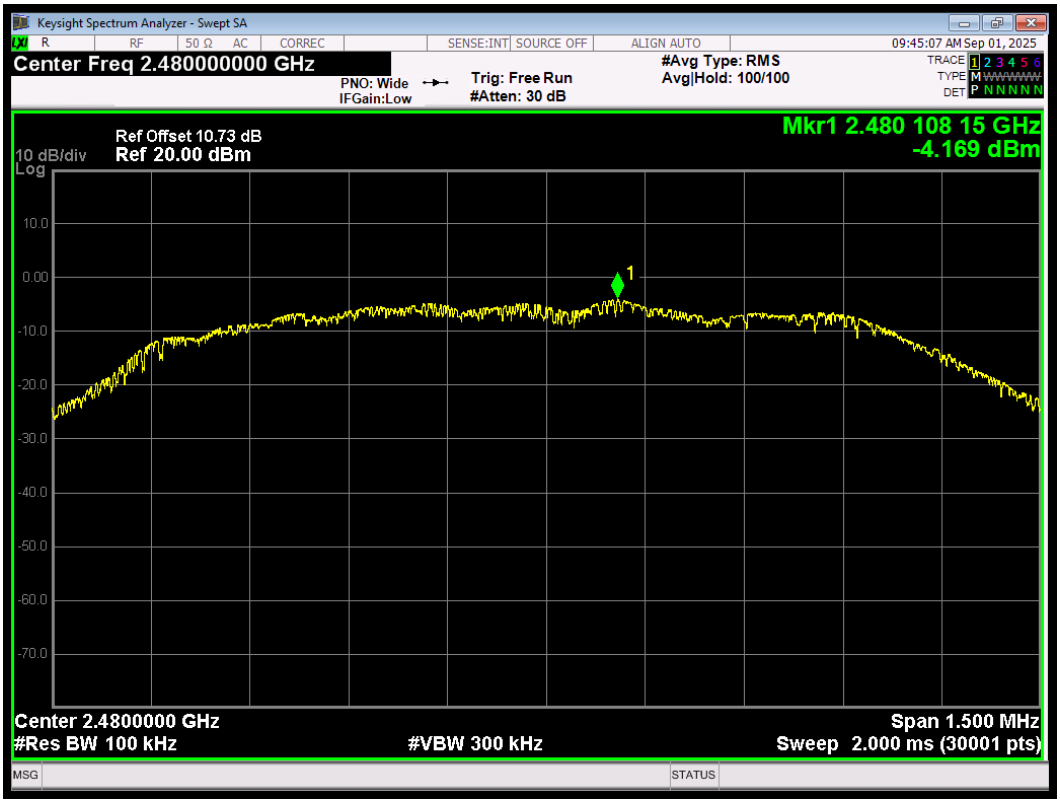


Tx. Spurious 3-DH5 2441MHz Ref

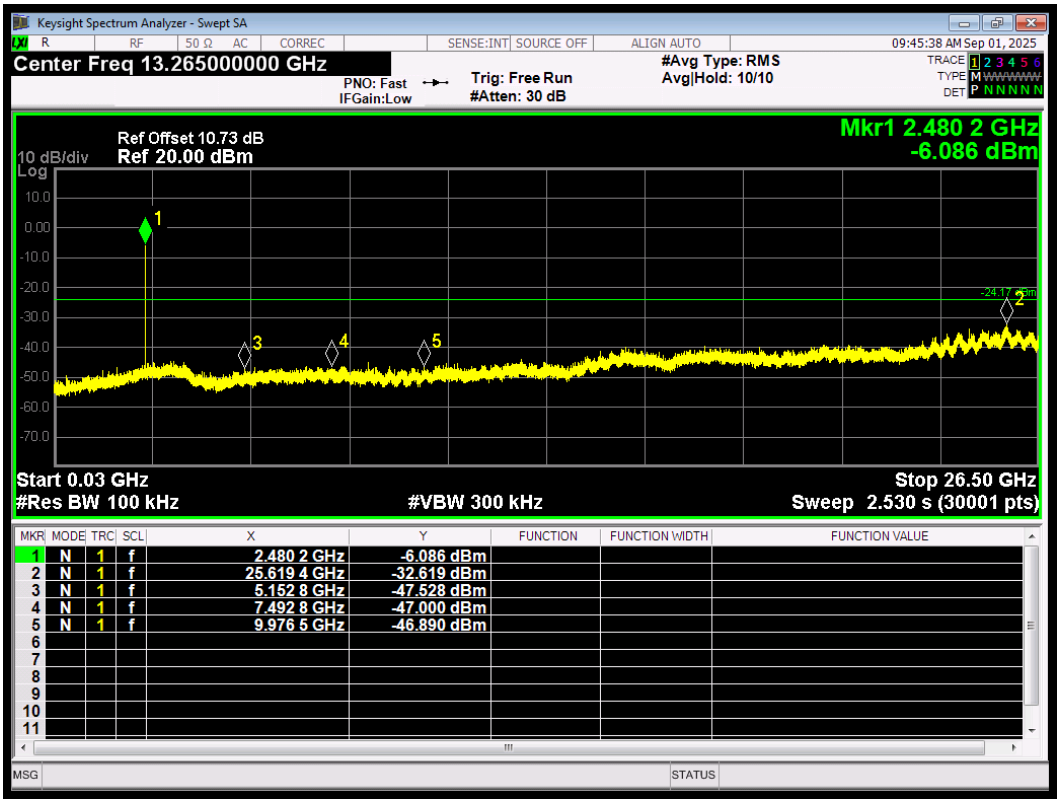
Tx. Spurious 3-DH5 2441MHz Emission



Tx. Spurious 3-DH5 2480MHz Ref



Tx. Spurious 3-DH5 2480MHz Emission



6.8 Unwanted Emission

The detailed test data see *ANNEX A EFTA25080202-IE-05-SRD-FCC* Test Result.

6.9 Conducted Emission

The detailed test data see *ANNEX A EFTA25080202-IE-05-SRD-FCC* Test Result.

7 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	KEYSIGHT	N9020A	MY51330870	2025-05-06	2026-05-05
Attenuator	HASCO	HA18A-10	0003	/	/
EMI Test Receiver	R&S	ESCI3	100948	2025-05-07	2026-05-06
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2023-07-14	2026-07-13
Signal Analyzer	R&S	FSV40	101298	2025-05-07	2026-05-06
Horn Antenna	R&S	HF 907	102723	2023-11-24	2026-11-23
Amplifier	R&S	SCU18	10034	2025-05-06	2026-05-05
Horn Antenna	ETS-Lindgren	3160-09	00102643	2024-09-24	2027-09-23
Software	R&S	EMC32	9.26.01	/	/
Artificial main network	R&S	ENV216	102191	2024-12-02	2026-12-01
EMI Test Receiver	R&S	ESR	101667	2025-05-06	2026-05-05
Software	R&S	EMC32	10.35.10	/	/

8 The EUT Appearance

Refer to *EUT Appearance*.

9 Test Setup Photos

Refer to *Part15C Test Setup.*

******** END OF REPORT ********