



FCC - TEST REPORT

Report Number : **709502507814-00D** Date of Issue: October 9, 2025

Model : **DBH D12**

Product Type : Thermal Imaging Scope

Applicant : Visir Inc.

Address : 700 International Pkwy, Ste 102, Richardson, TX 75081, United States

Production Facility : Visir Inc.

Address : 700 International Pkwy, Ste 102, Richardson, TX 75081, United States

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including
Appendices : 96



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2 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
709502507814-00D	First Issue	10/09/2025

3 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
No.16 Lane, 1951 Du Hui Road,
Shanghai 201108,
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Telephone: +86 21 6141 0123

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FCC Registration No.: 820234

FCC Designation Number: CN1183

ISED CAB identifier: CN0101

IC Registration No.: 31668

4 Description of the Equipment Under Test

Product:	Thermal Imaging Scope
Model no.:	DBH D12
FCC ID:	2A7ZZ-DBH-04
Options and accessories:	NA
Rating:	7.2V DC by (18650 rechargeable battery)
RF Transmission Frequency:	For 2.4G Wi-Fi: 802.11b/g/n-HT20: 2412~2462 MHz For BLE: 2402~2480 MHz For EDR: 2402~2480 MHz
No. of Operated Channel:	For 2.4G Wi-Fi: 11 for 802.11b/802.11g/802.11n(H20) For BLE: 40 For EDR: 79
Modulation:	For 2.4G Wi-Fi: Direct Sequence Spread Spectrum (DSSS) for 802.11b Orthogonal Frequency Division Multiplexing (OFDM) for 802.11g/n For BLE: GFSK For EDR: GFSK, $\pi/4$ DQPSK, 8DPSK
Hardware Version:	V1_0
Software Version:	V1.0.9
Data speed:	For 2.4G Wi-Fi: 11b 1-11Mbps 11g 6-54Mbps 11n(H20) 6.5-72.2Mbps For BLE: 1Mbps For EDR: 1Mbps, 2Mbps, 3Mbps

Channel list:

For 2.4G Wi-Fi:

802.11b/g/n(HT20)			
Ch	Fre(MHz)	Ch	Fre(MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

For BLE

Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

For EDR

Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MHz)
1	2402	17	2418	33	2434	49	2450	65	2466
2	2403	18	2419	34	2435	50	2451	66	2467
3	2404	19	2420	35	2436	51	2452	67	2468
4	2405	20	2421	36	2437	52	2453	68	2469
5	2406	21	2422	37	2438	53	2454	69	2470
6	2407	22	2423	38	2439	54	2455	70	2471
7	2408	23	2424	39	2440	55	2456	71	2472
8	2409	24	2425	40	2441	56	2457	72	2473
9	2410	25	2426	41	2442	57	2458	73	2474
10	2411	26	2427	42	2443	58	2459	74	2475
11	2412	27	2428	43	2444	59	2460	75	2476
12	2413	28	2429	44	2445	60	2461	76	2477
13	2414	29	2430	45	2446	61	2462	77	2478
14	2415	30	2431	46	2447	62	2463	78	2479
15	2416	31	2432	47	2448	63	2464	79	2480
16	2417	32	2433	48	2449	64	2465		

Antenna Type:

FPC antenna



Antenna Gain: 0.83 dBi

Description of the EUT: The Equipment Under Test (EUT) is a Thermal Imaging Scope with Wi-Fi & BLE/EDR Module. The EUT support Wi-Fi operated at 2.4GHz.

Test sample no.: SHA-952960-3 (Radiated sample)
SHA-952960-2 (Conducted sample)

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied.



5 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2024 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB 558074 D01 15.247 Measurement Guidance v05r02 and ANSI C63.10-2020.



6 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	---	---	☐	☐	☒
§15.247 (b) (1)	Conducted peak (average) output power	14-25	Site 1	☒	☐	☐
§15.247(a)(1)	20dB bandwidth and 99% Occupied Bandwidth	26-33	Site 1	☒	☐	☐
§15.247(a)(1)	Carrier frequency separation	34-36	Site 1	☒	☐	☐
§15.247(a)(1)(iii)	Number of hopping frequencies	37-38	Site 1	☒	☐	☐
§15.247(a)(1)(iii)	Dwell Time - Average Time of Occupancy	39-43	Site 1	☒	☐	☐
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	---	---	☐	☐	☒
§15.247(e)	Power spectral density	---	---	☐	☐	☒
§15.247(e)	Spurious RF conducted emissions	44-50	Site 1	☒	☐	☐
§15.247(d)	Band edge	51-63	Site 1	☒	☐	☐
§15.247(d) & §15.209 & §15.205	Spurious radiated emissions for transmitter	64-92	Site 1	☒	☐	☐
§15.203	Antenna requirement	See note 1		☒	☐	☐

Remark 1: N/A – Not Applicable.

Note 1: The EUT uses a FPC antenna, which gain is 0.83 dBi. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

15.203 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi



7 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2A7ZZ-DBH-04, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

This report is only for the 2.4GHz BR/EDR test report, for the 2.4G Wi-Fi test report please refer to 709502507814-00B, for the 2.4G BLE test report please refer to 709502507814-00C.

We tested it and listed the worst data in this report.

SUMMARY:

All tests according to the regulations cited on page 7 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: September 3, 2025

Testing Start Date: September 18, 2025

Testing End Date: September 28, 2025

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:

Prepared by:

Tested by:



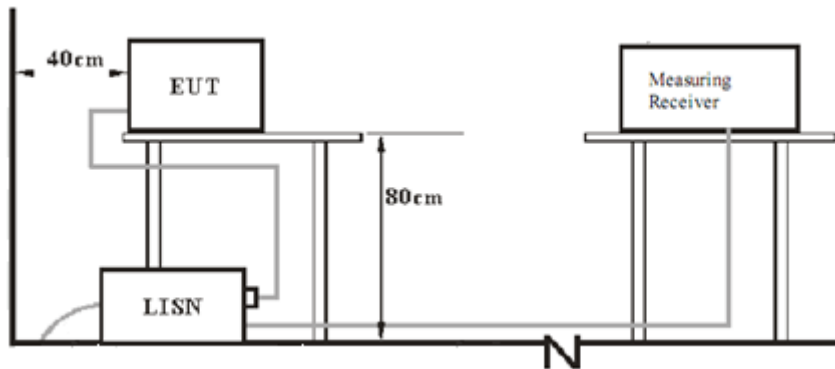
Hui TONG
Review Engineer

Wenqiang LU
Project Engineer

Tianji XU
Test Engineer

8 Test Setups

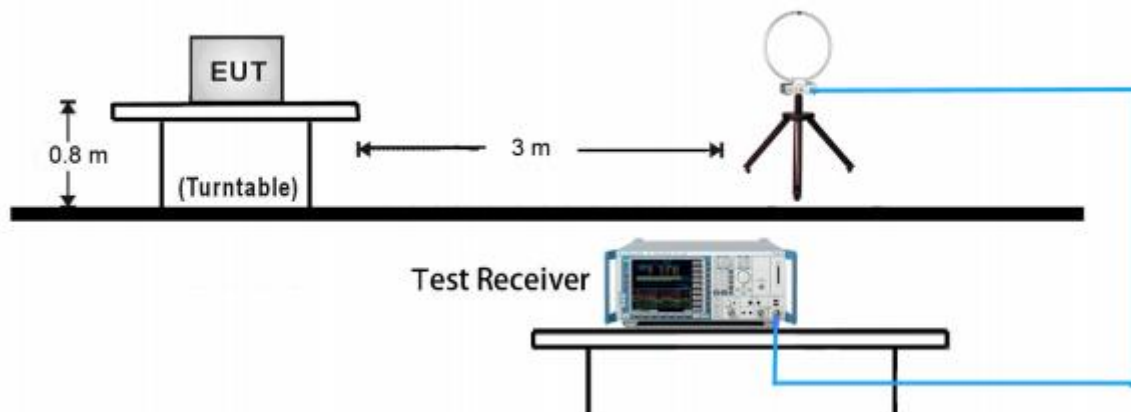
8.1 AC Power Line Conducted Emission test setups



Note: for floor-standing equipment, the supporting table (80 cm) shall be replaced by a insulating material (up to 12 mm thick).

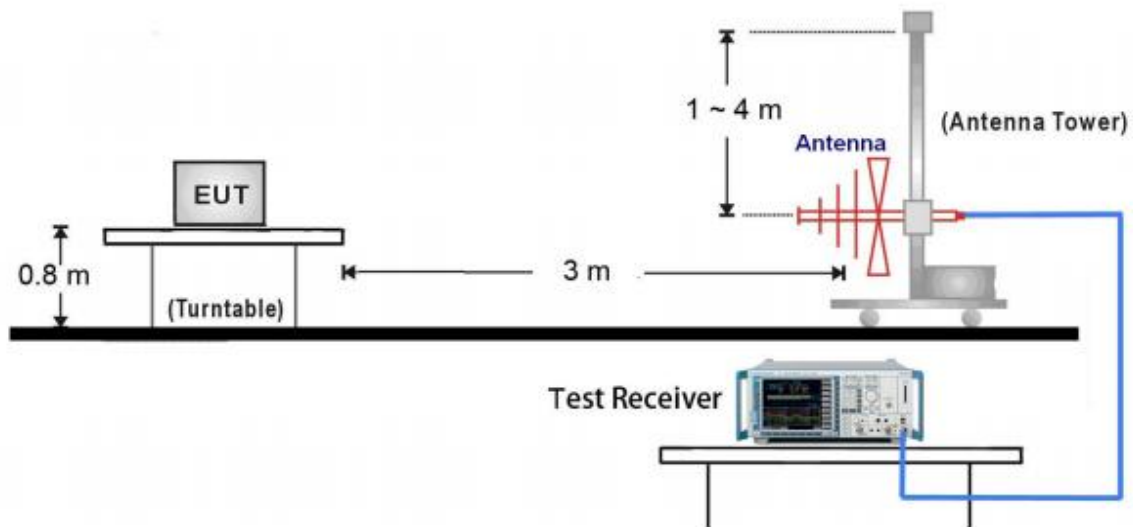
8.2 Radiated test setups

9kHz ~ 30MHz Test Setup:



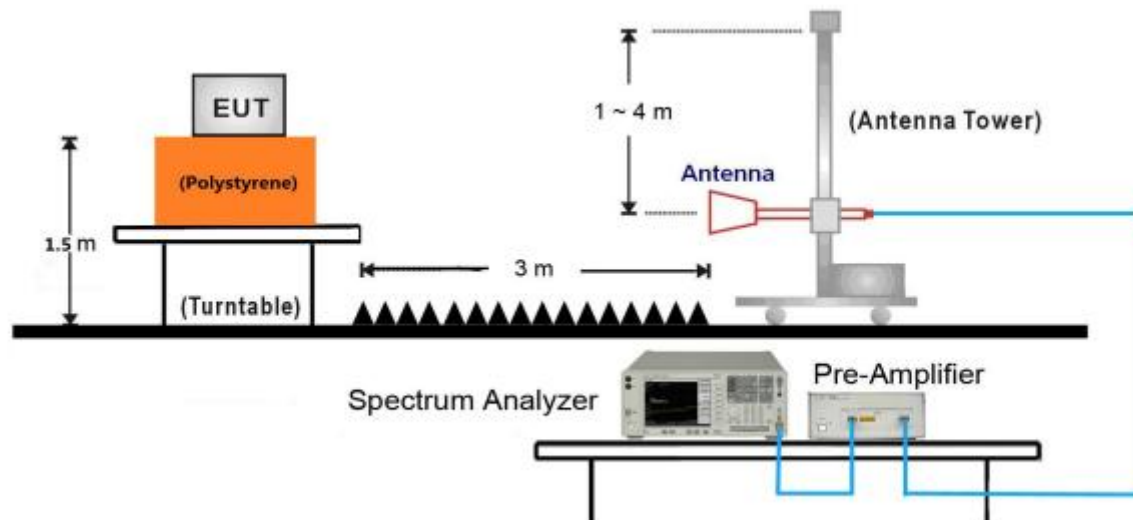
Note: for floor-standing equipment, the supporting table (80 cm) shall be replaced by a insulating material (up to 12 mm thick).

30MHz ~ 1GHz Test Setup:



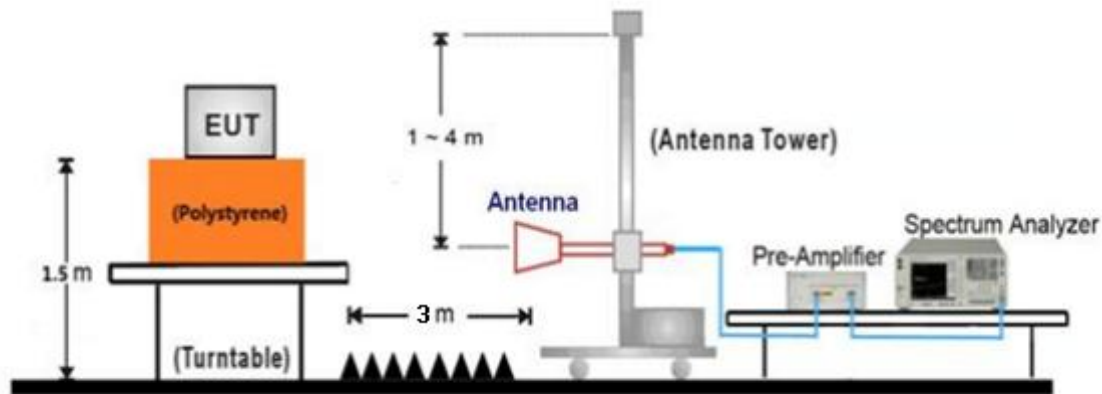
Note: for floor-standing equipment, the supporting table (80 cm) shall be replaced by a insulating material (up to 12 mm thick).

1GHz ~ 18GHz Test Setup:

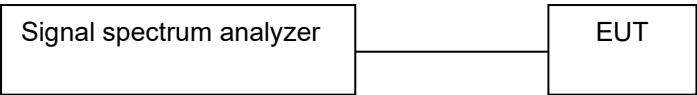




18GHz ~ 25GHz Test Setup:



8.3 Conducted RF test setups



9 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenove	E470	PF-OU5TS7 17/09

Test software: SecureCRT.exe, which used to control the EUT in continues transmitting mode.

The system was configured to hopping mode and non-hopping mode.

Hopping mode: typical working mode (normal hopping status)

Mode	Tested Channel	Modulation	Index Value (Power level setting)
DH5	1	GFSK	Draft
	40	GFSK	Draft
	79	GFSK	Draft
2DH5	1	$\pi/4$ -DQPSK	Draft
	40	$\pi/4$ -DQPSK	Draft
	79	$\pi/4$ -DQPSK	Draft
3DH5	1	8DPSK	Draft
	40	8DPSK	Draft
	79	8DPSK	Draft

The system was configured to hopping mode and non-hopping mode.

Hopping mode: typical working mode (normal hopping status)

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power

10 Technical Requirement

10.1 Conducted peak(average) output power

Test Method for conducted peak power

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following test receiver settings:
Span = approximately 5 times the 20dB bandwidth, centered on a hopping channel
RBW > the 20dB bandwidth of the emission being measured, VBW ≥ RBW,
Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power and record the results in the test report.
5. Repeat above procedures until all frequencies measured were complete.

Test Method for average power

1. Measure the duty cycle D of the transmitter output signal.
2. Set span to at least 1.5 times the OBW.
3. Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
4. Set VBW ≥ [3 × RBW].
5. Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = RMS (i.e., power averaging), if available. Otherwise, use the sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
10. Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
11. Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission).

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Conducted Peak Output Power

Bluetooth Mode GFSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-0.34	Pass
Middle channel 2441MHz	0.32	Pass
High channel 2480MHz	0.67	Pass

Bluetooth Mode $\pi/4$ -DQPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-1.08	Pass
Middle channel 2441MHz	0.9	Pass
High channel 2480MHz	1.29	Pass

Bluetooth Mode 8DPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-0.76	Pass
Middle channel 2441MHz	0.89	Pass
High channel 2480MHz	2.57	Pass

Conducted Average Output Power

Bluetooth Mode GFSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-0.45	Pass
Middle channel 2441MHz	0.22	Pass
High channel 2480MHz	0.99	Pass

Bluetooth Mode $\pi/4$ -DQPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-3.41	Pass
Middle channel 2441MHz	-1.35	Pass
High channel 2480MHz	-0.89	Pass

Bluetooth Mode 8DPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-3.43	Pass
Middle channel 2441MHz	-1.72	Pass
High channel 2480MHz	-1.83	Pass



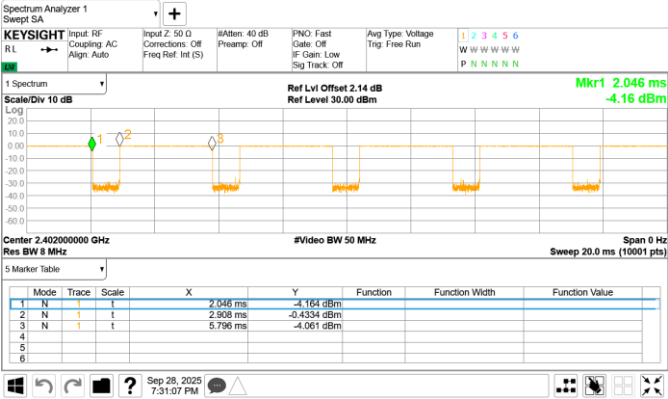
Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)
NVNT	GFSK	2402	Ant1	77.01	1.13
NVNT		2441	Ant1	77.01	1.13
NVNT		2480	Ant1	77.01	1.13
NVNT	$\pi/4$ -DQPSK	2402	Ant1	77.01	1.13
NVNT		2441	Ant1	77.07	1.13
NVNT		2480	Ant1	77.07	1.13
NVNT	8DPSK	2402	Ant1	77.12	1.13
NVNT		2441	Ant1	77.08	1.13
NVNT		2480	Ant1	77.07	1.13

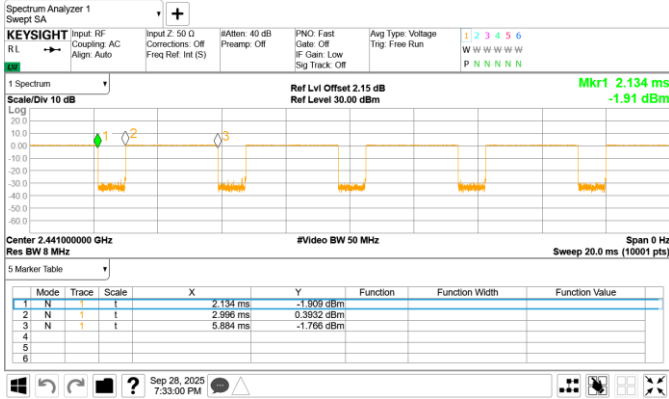


Duty Cycle (GFSK)

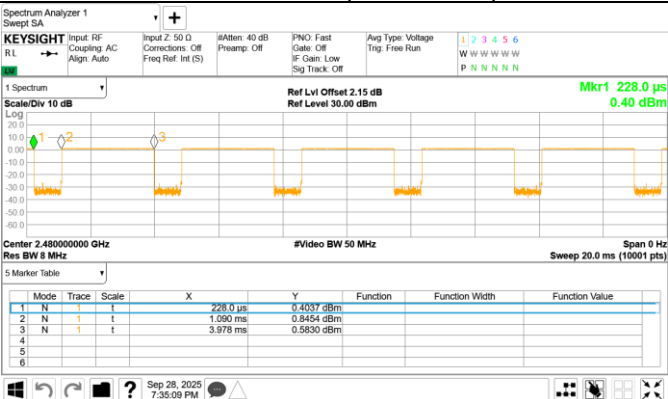
Channel 1 (2402MHz)



Channel 40 (2441MHz)



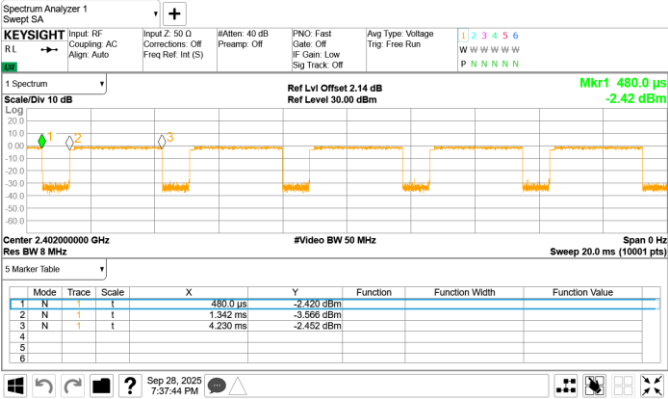
Channel 79 (2480MHz)



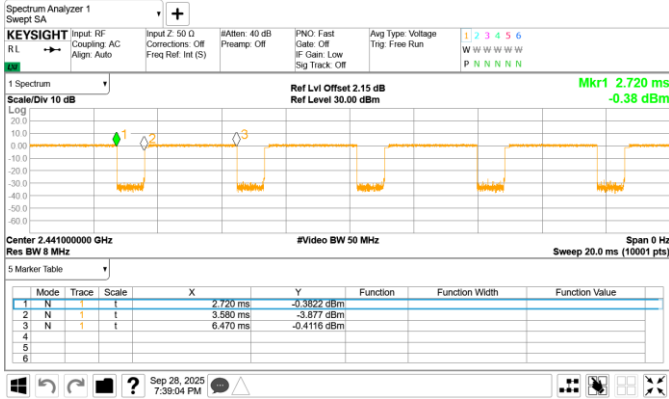


Duty Cycle ($\pi/4$ -DQPSK)

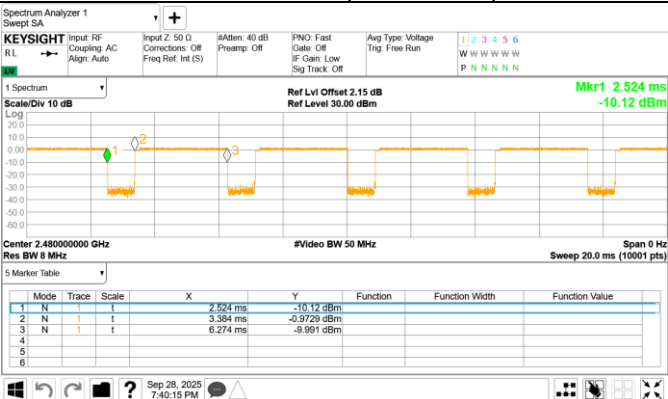
Channel 1 (2402MHz)



Channel 40 (2441MHz)



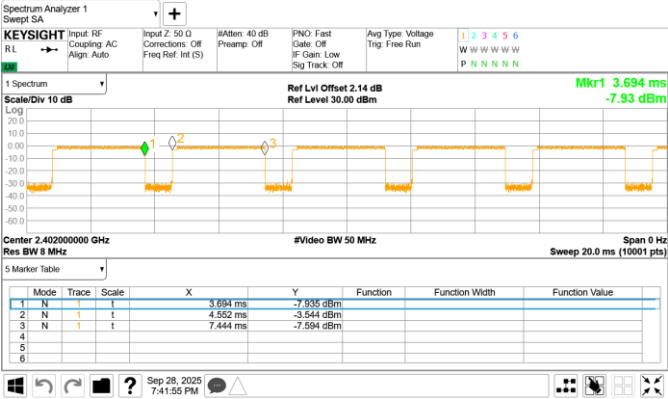
Channel 79 (2480MHz)



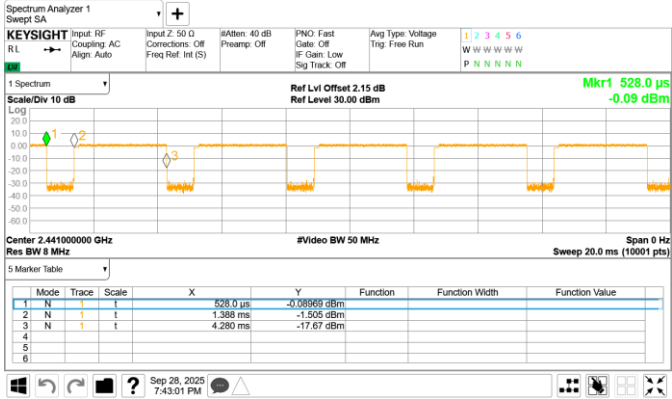


Duty Cycle (8DPSK)

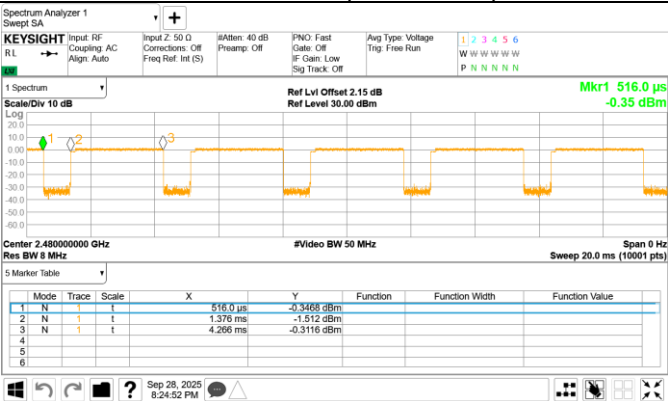
Channel 1 (2402MHz)



Channel 40 (2441MHz)



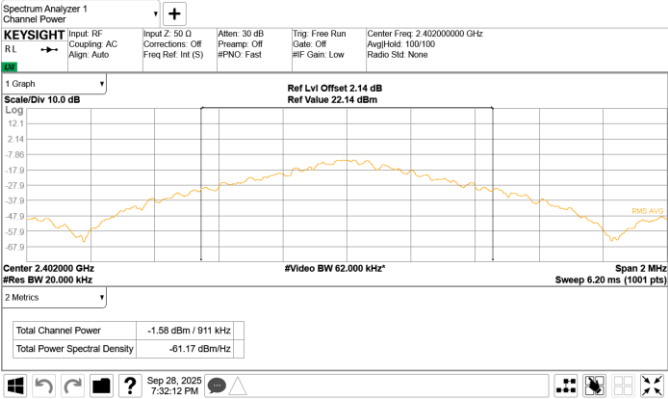
Channel 79 (2480MHz)



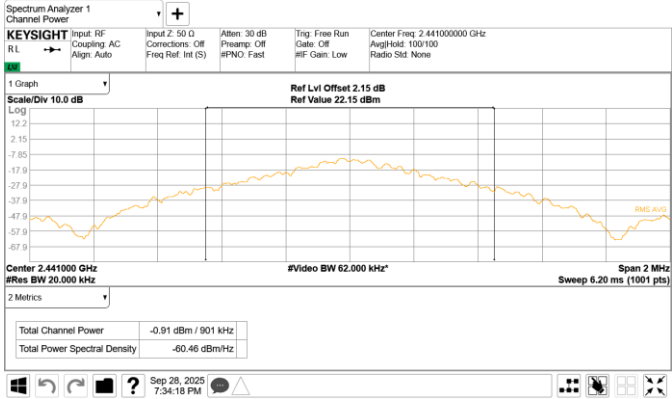


Average output power (GFSK)

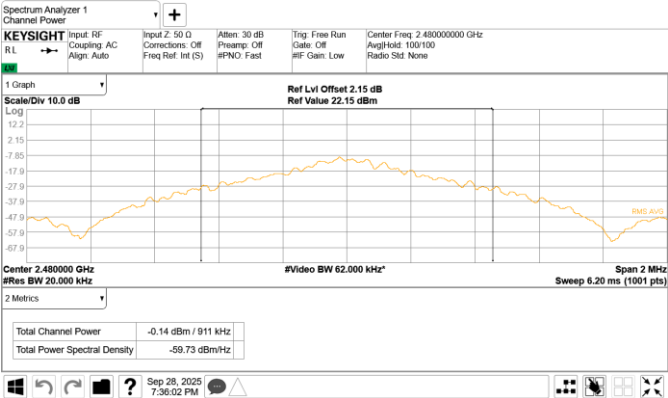
Channel 1 (2402MHz)



Channel 40 (2441MHz)



Channel 79 (2480MHz)



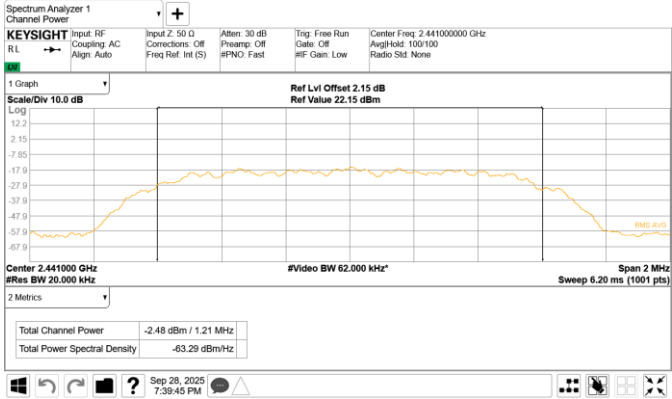


Average output power ($\pi/4$ -DQPSK)

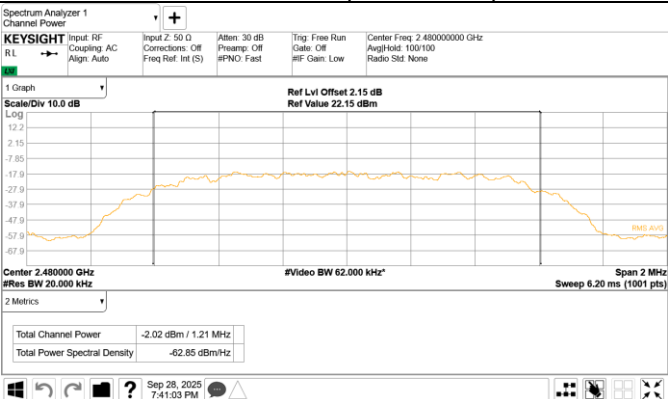
Channel 1 (2402MHz)



Channel 40 (2441MHz)



Channel 79 (2480MHz)



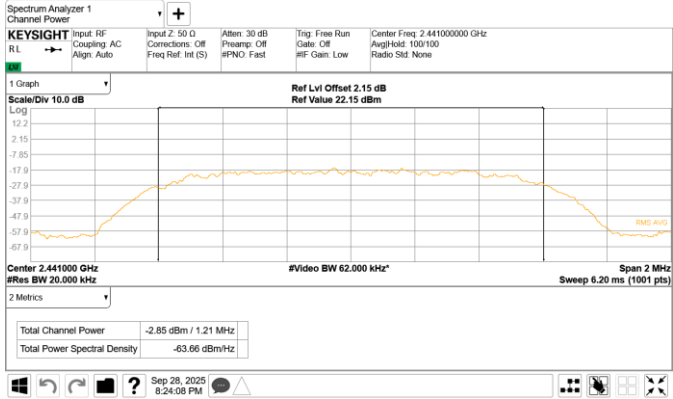


Average output power (8DPSK)

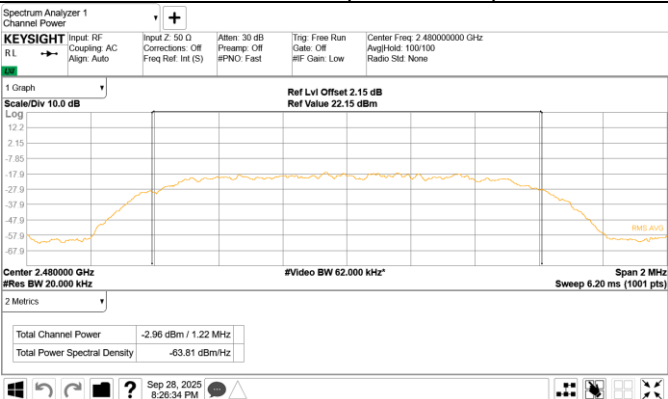
Channel 1 (2402MHz)

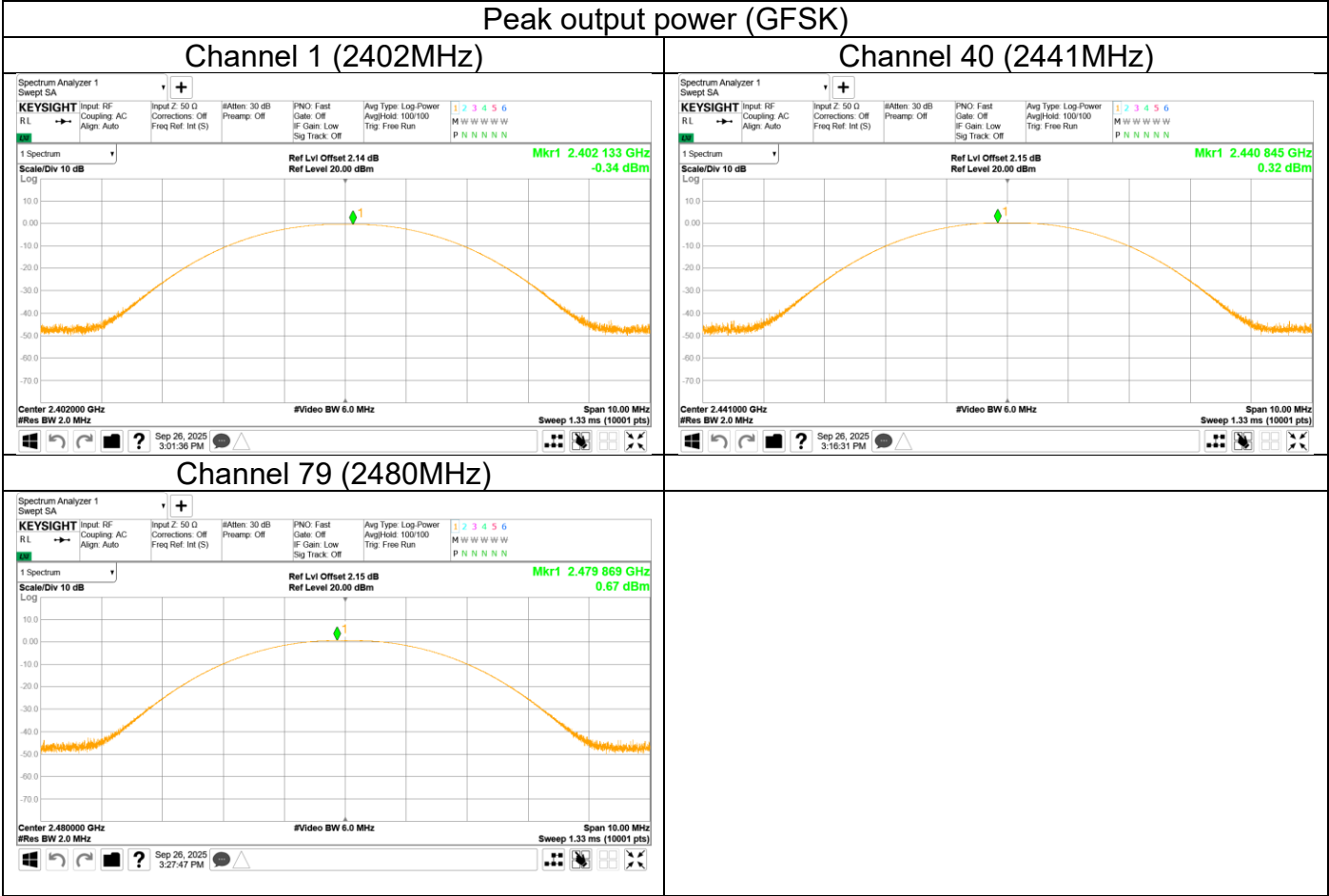


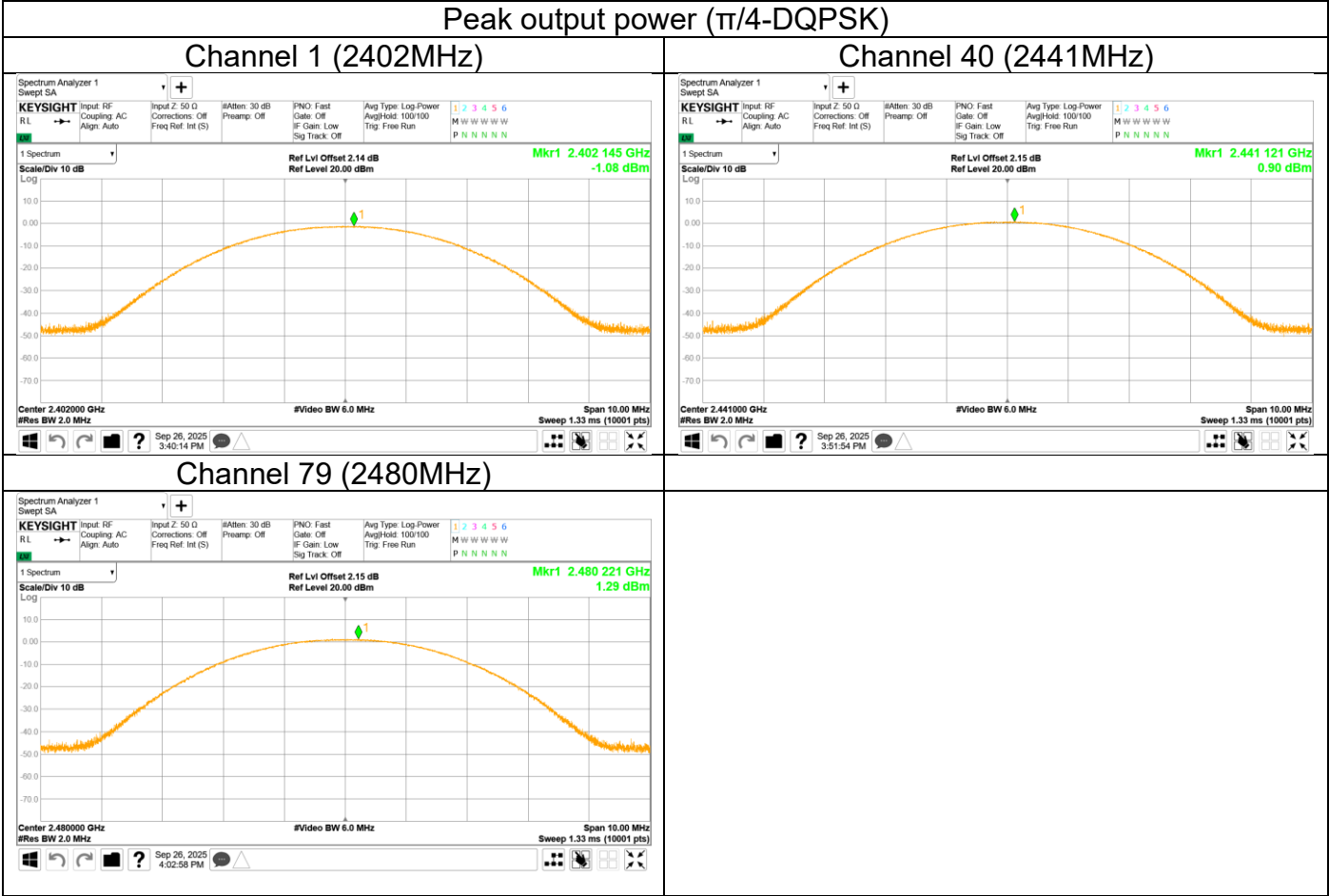
Channel 40 (2441MHz)

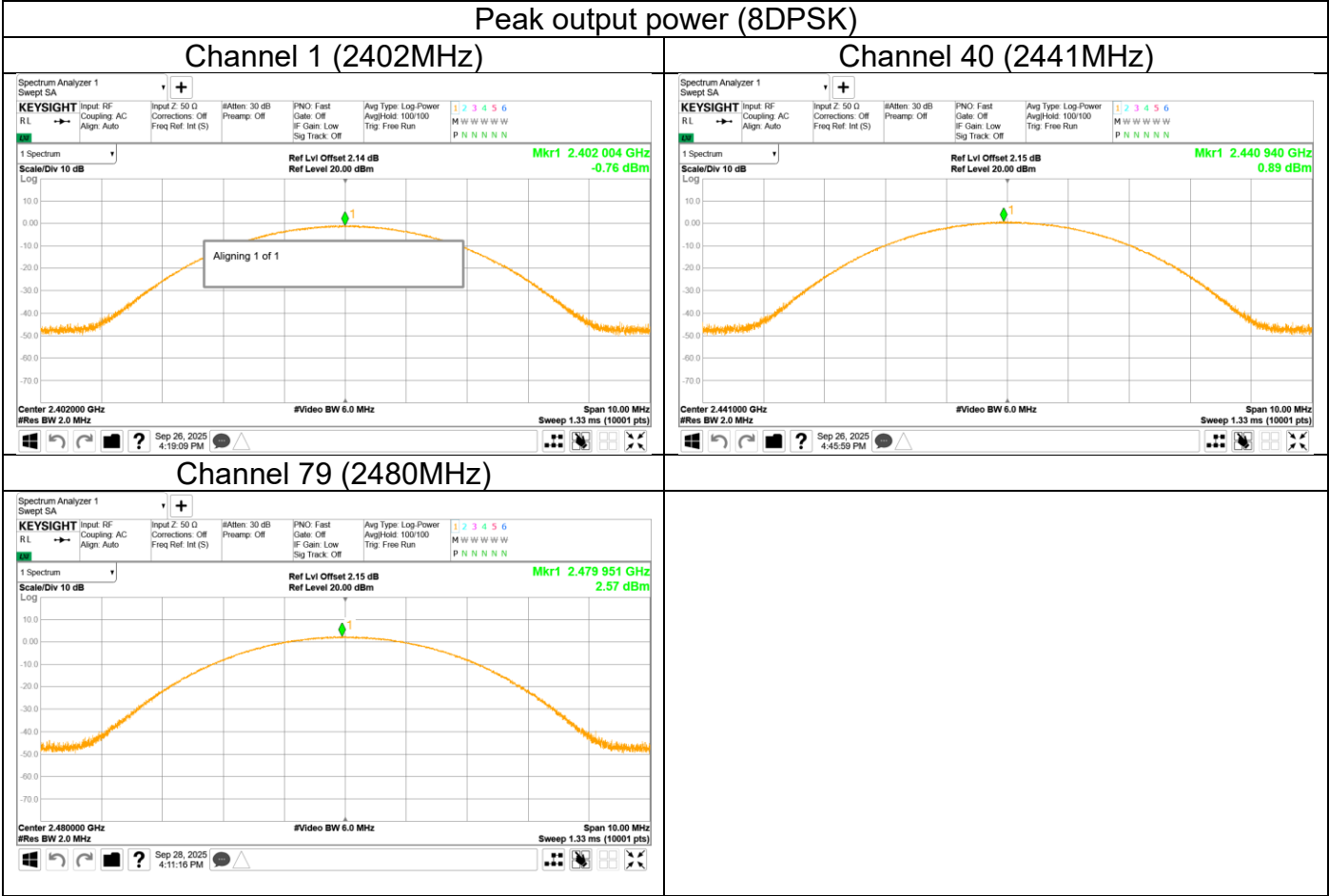


Channel 79 (2480MHz)









10.220 dB bandwidth and 99% Occupied Bandwidth

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following test receiver settings:
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
RBW $\geq 1\%$ to 5% of the 20 dB bandwidth/99% OBW, VBW ≥ 3 RBW,
Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Measure the frequency difference of two frequencies that were attenuated 20 dB/99% OBW from the reference level. Record the frequency difference as the emission bandwidth. Record the results.
5. Repeat above procedures until all frequencies measured were complete.

Limit

Limit [kHz]

N/A

20 dB bandwidth and 99% Occupied Bandwidth

Bluetooth Mode GFSK Modulation test result

Frequency MHz	20 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz	Result
2402	1.033	0.911	--	Pass
2441	0.986	0.901	--	Pass
2480	0.98	0.911	--	Pass

20 dB bandwidth and 99% Occupied Bandwidth

Bluetooth Mode $\pi/4$ -DQPSK Modulation test result

Frequency MHz	20 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz	Result
2402	1.364	1.216	--	Pass
2441	1.365	1.205	--	Pass
2480	1.358	1.21	--	Pass

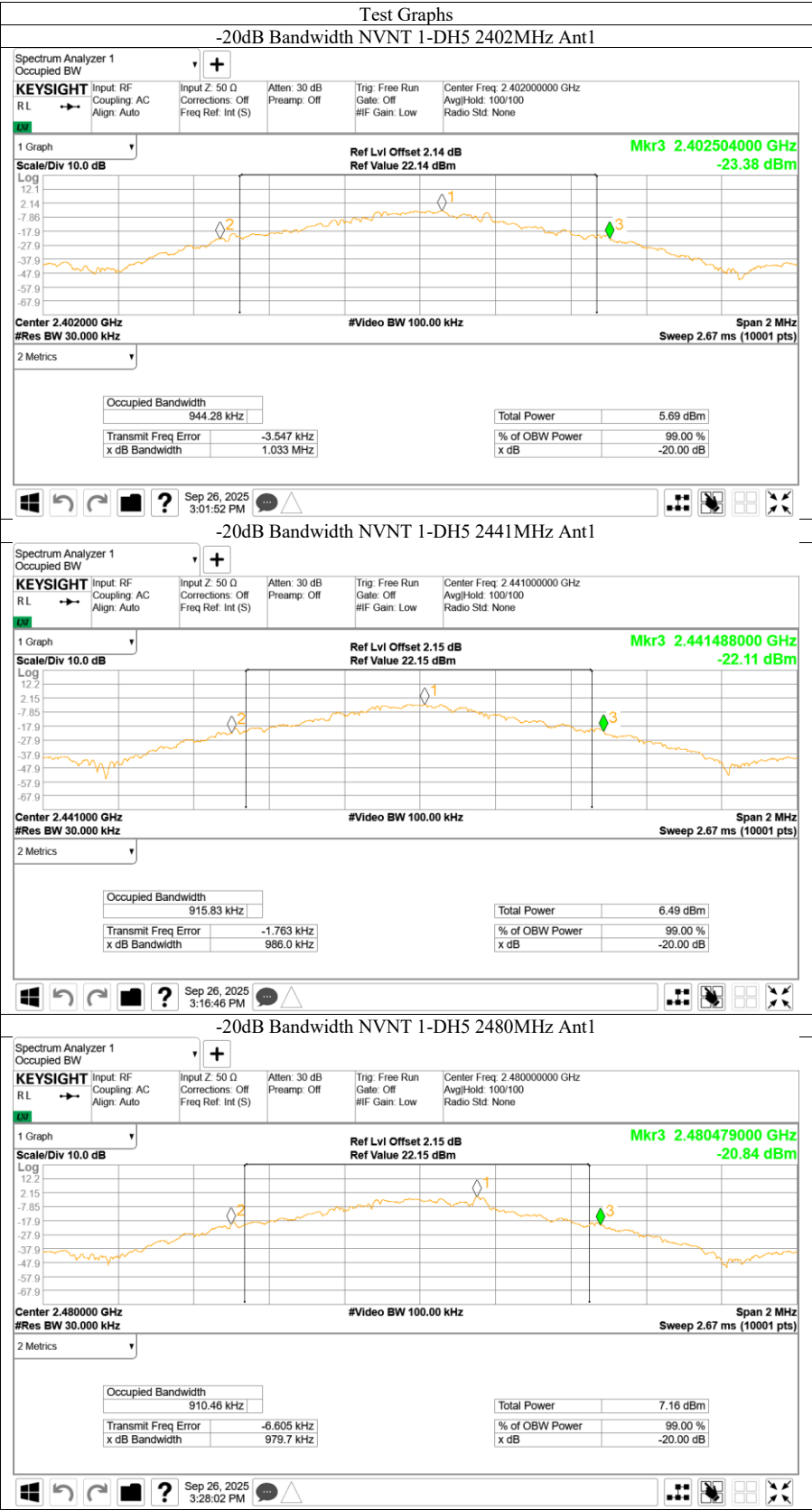
20 dB bandwidth and 99% Occupied Bandwidth

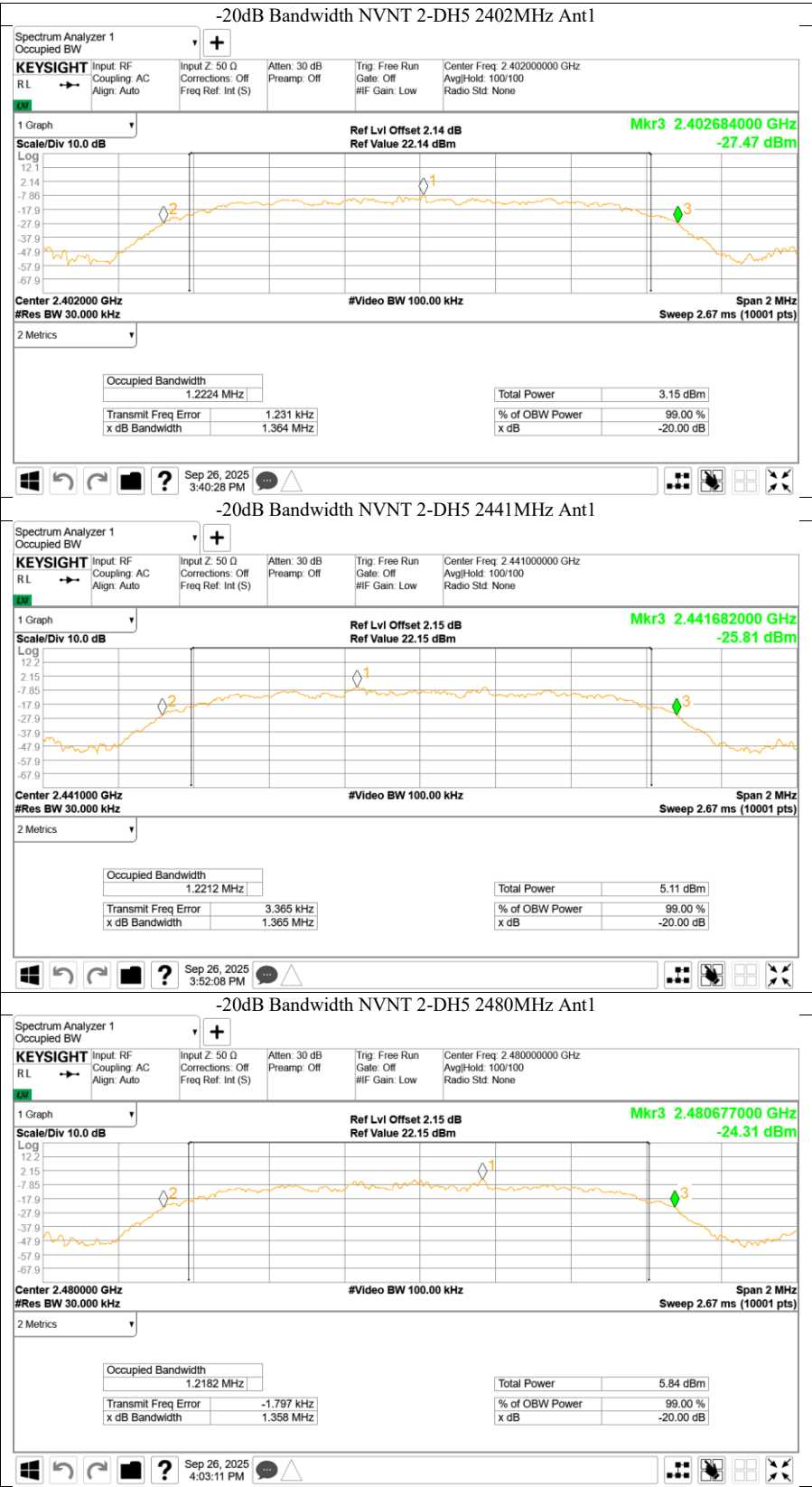
Bluetooth Mode 8DPSK Modulation test result

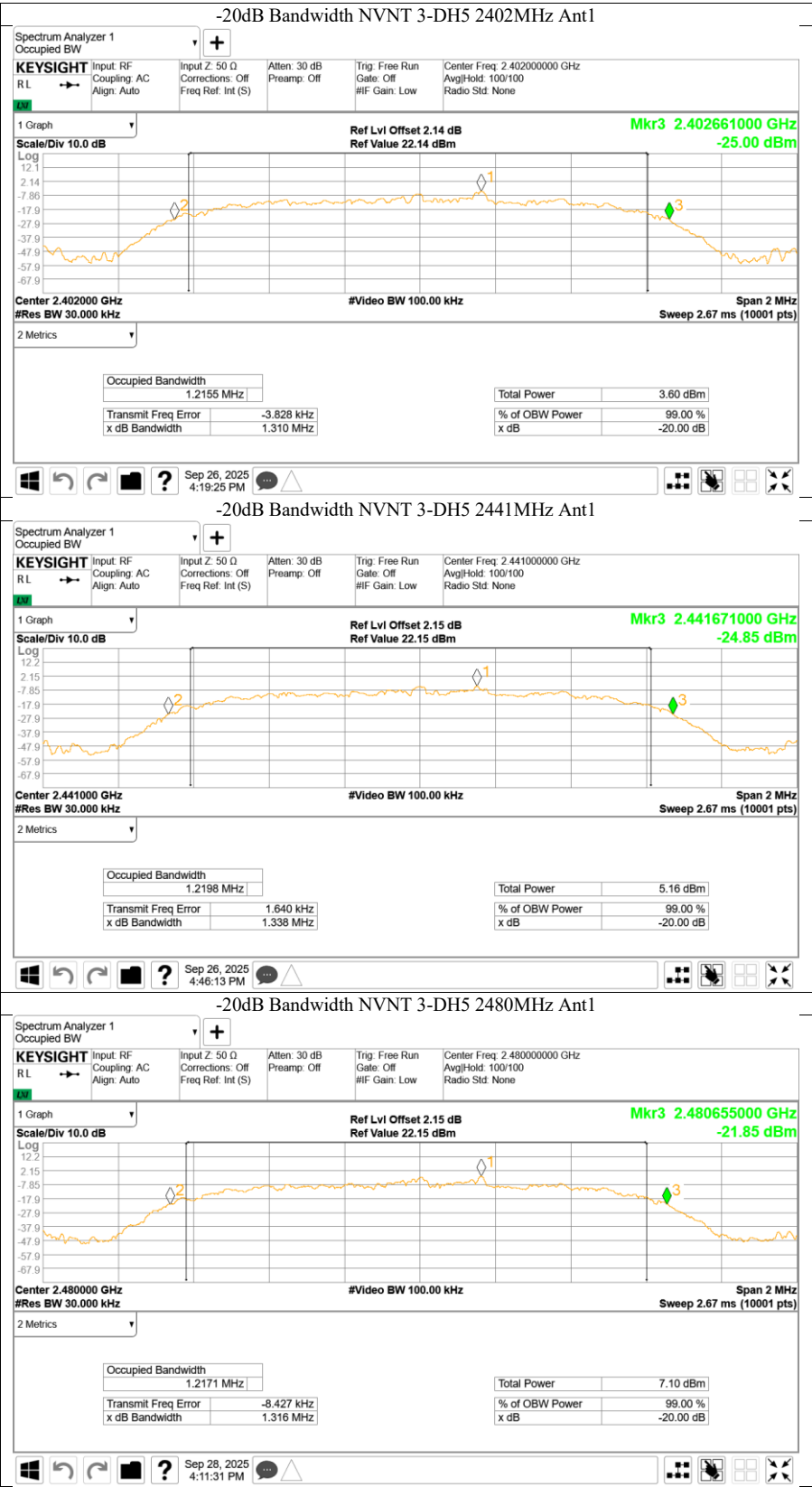
Frequency MHz	20 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz	Result
2402	1.31	1.208	--	Pass
2441	1.338	1.206	--	Pass
2480	1.316	1.216	--	Pass



-20dB Bandwidth

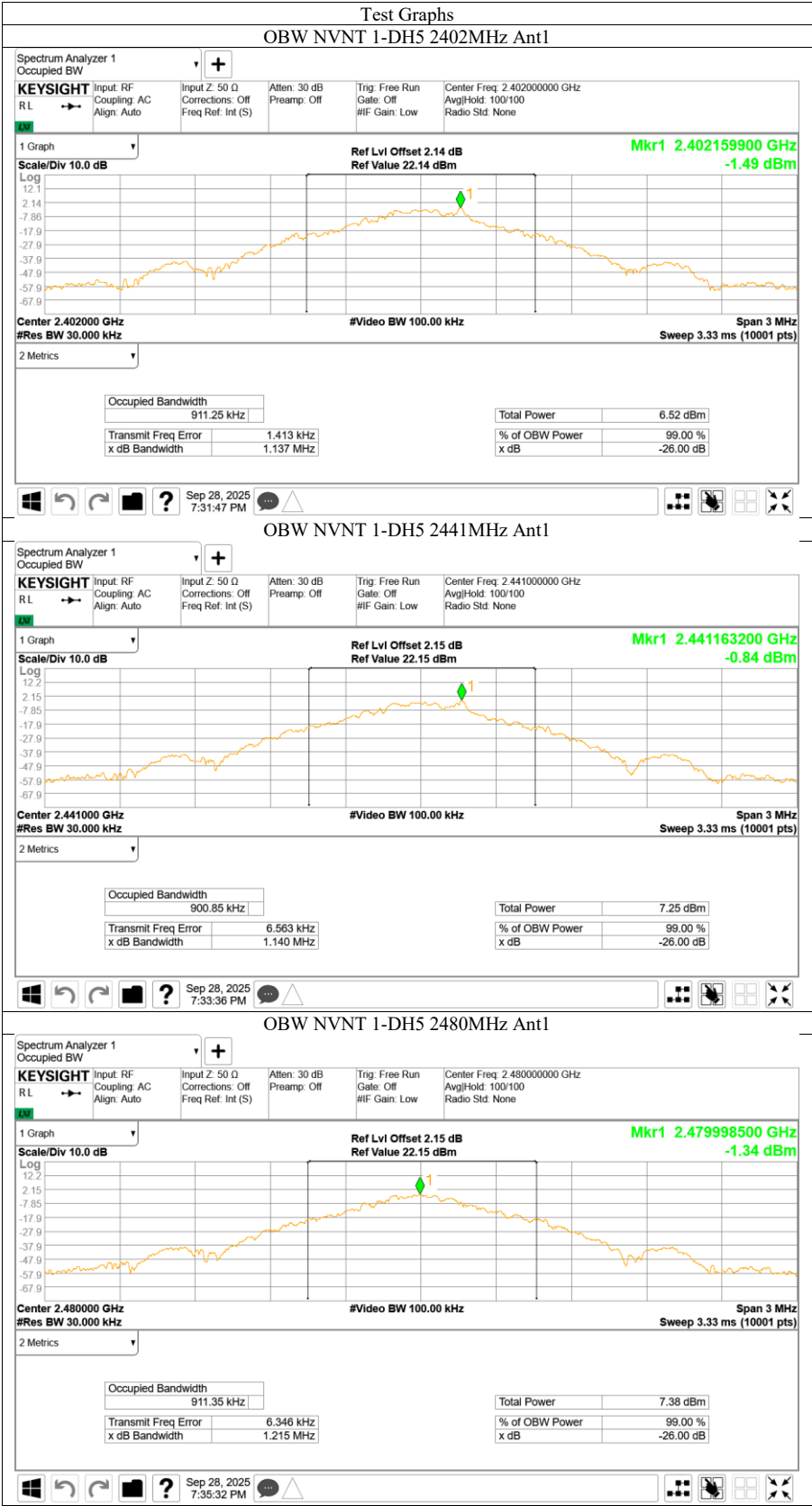


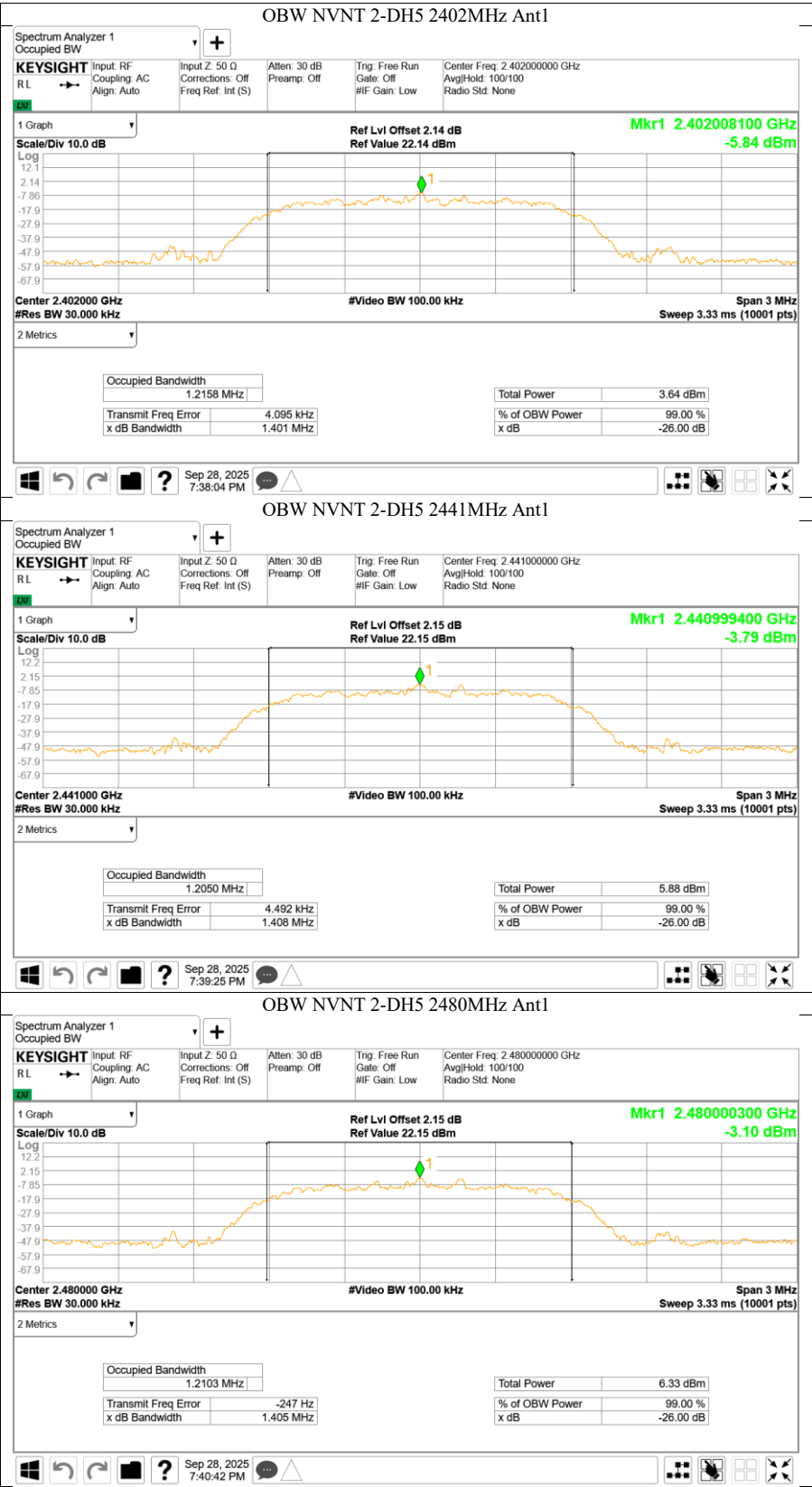


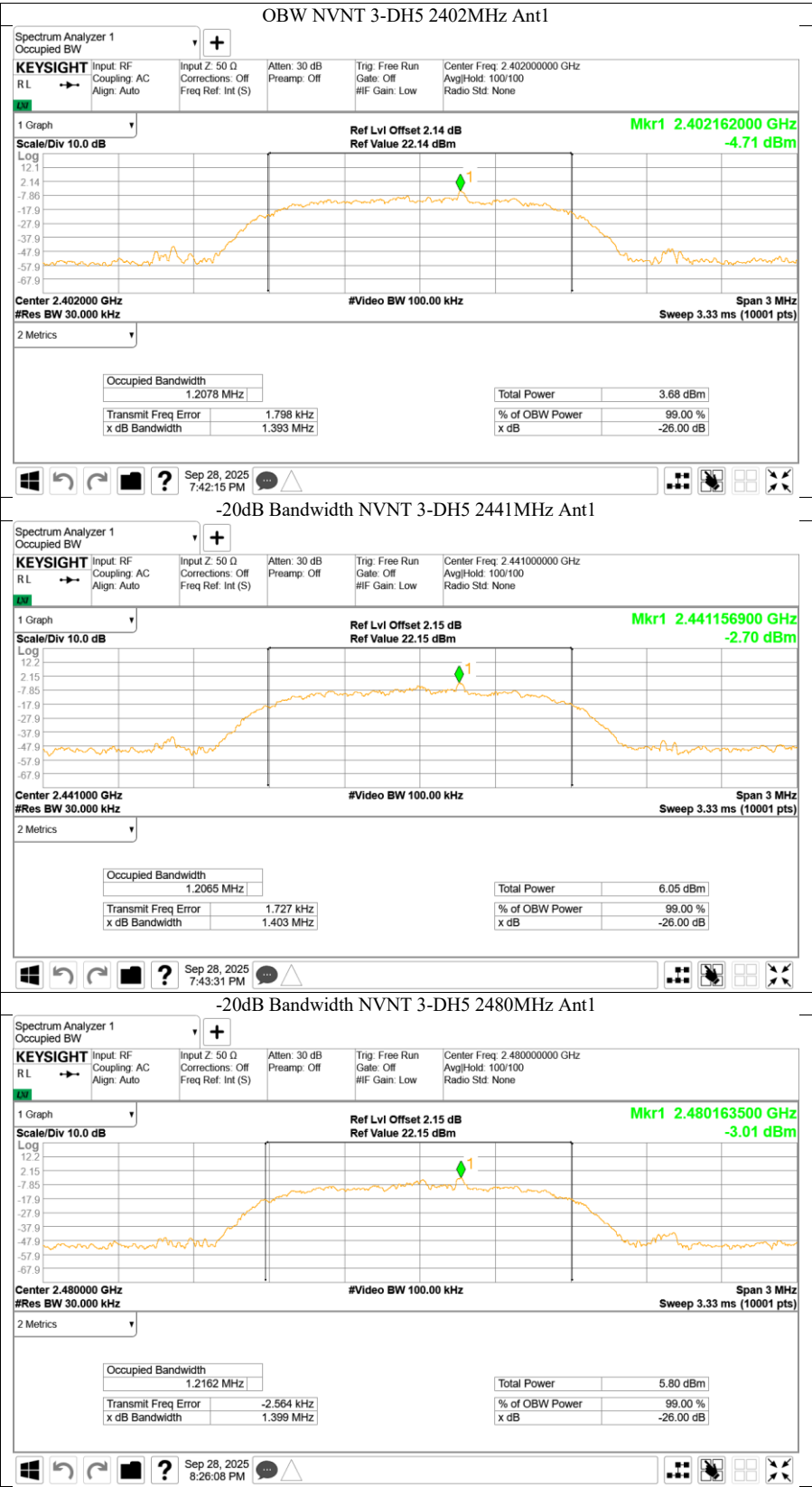




99% Occupied Bandwidth







10.3 Carrier Frequency Separation

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit to hopping mode.
3. Use the following spectrum analyzer settings:
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.
4. By using the Max-Hold function record the separation of two adjacent channels.
5. Measure the frequency difference of these two adjacent channels by spectrum analyzer marker function. Record the results.
6. Repeat above procedures until all frequencies measured were complete.

Limit

Limit
kHz

$\geq 25\text{kHz}$ or $2/3$ of the 20 dB bandwidth which is greater

Limit

Modulation	Frequency MHz	2/3 of 20 dB Bandwidth MHz
GFSK	2441	0.657
$\pi/4$ -DQPSK	2441	0.91
8DPSK	2441	0.892