

10. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to FCC 47 CFR §15.207 (a) and ISSED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

*Decreases with the logarithm of the frequency.

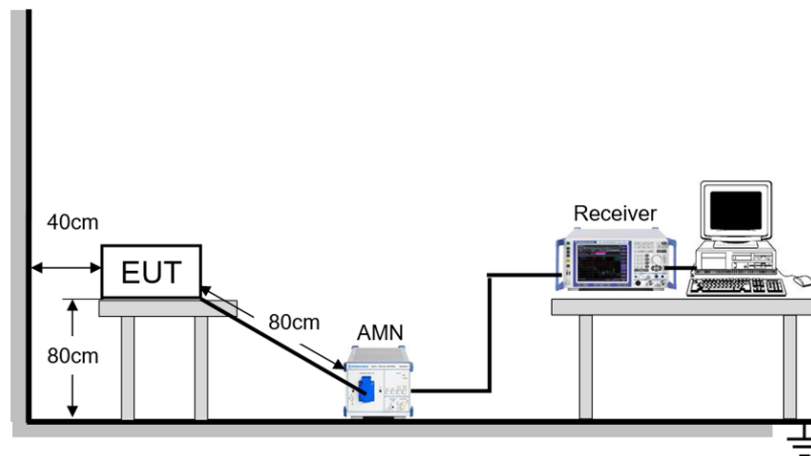
TEST PROCEDURE

Refer to ANSI C63.10-2020 clause 6.2.

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2020. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST SETUP



TEST ENVIRONMENT

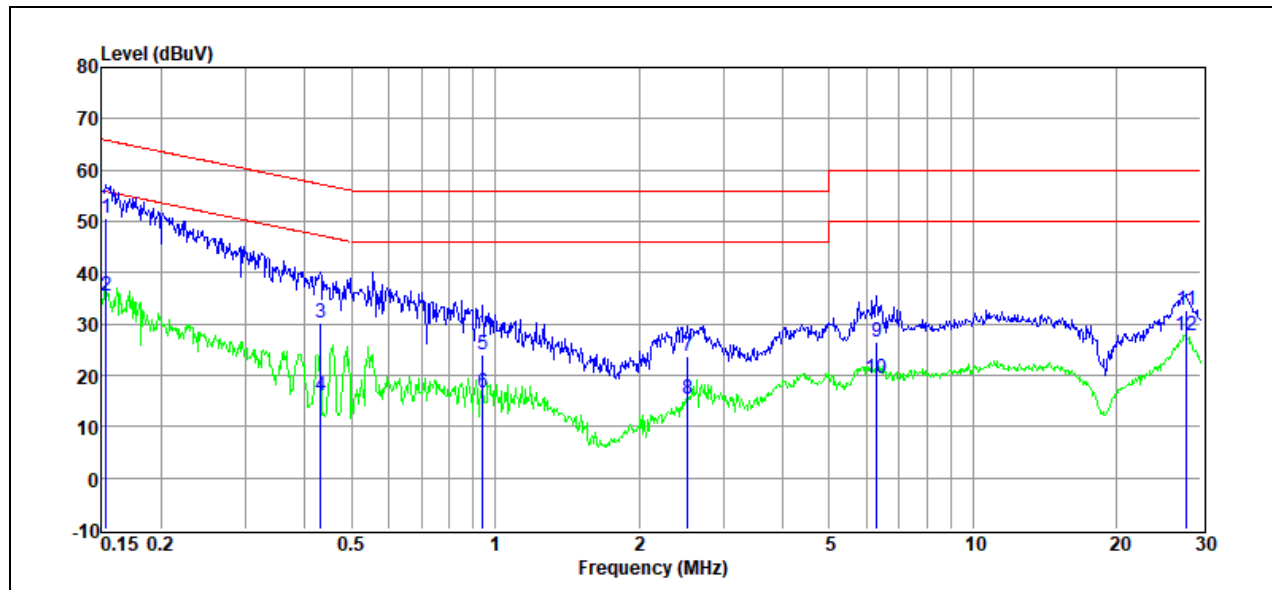
Temperature	24.1℃	Relative Humidity	56.5%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V 60Hz

TEST DATE / ENGINEER

Test Date	Mar. 02, 2026	Test By	Deacon Tan
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TEST RESULTS

Test Mode:	GFSK	Frequency(MHz):	2402
Line:	Line		



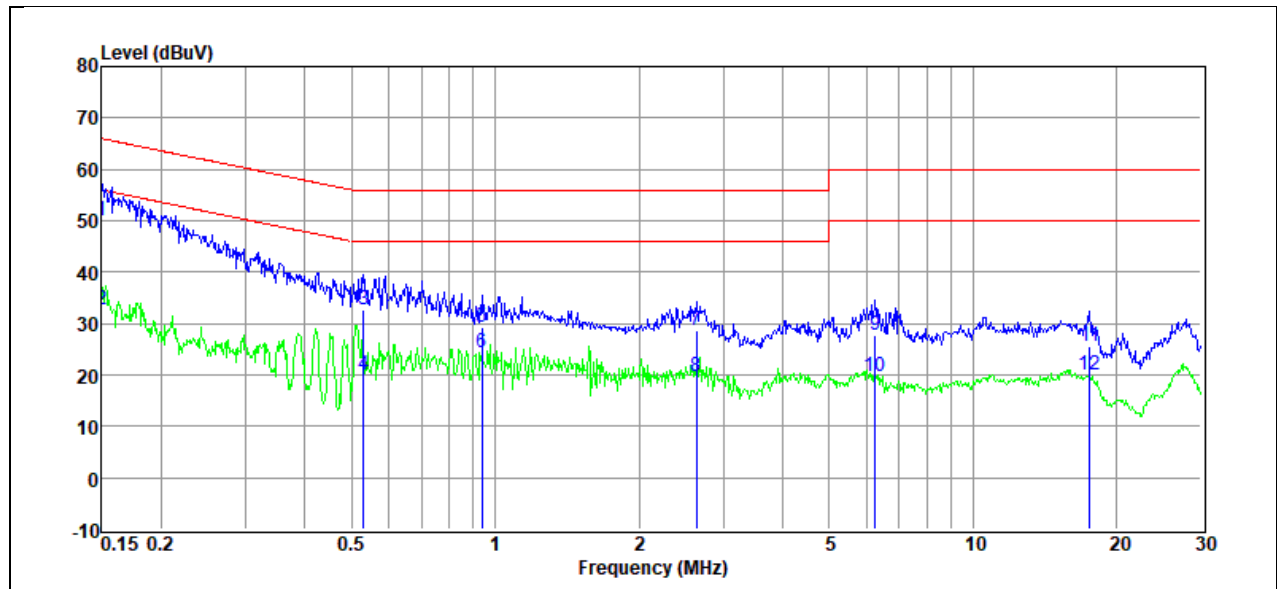
Item (Mark)	Freq. (MHz)	Read Level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBuV)	Limit Line (dBuV)	Margin (dB)	Detector	Phase
1	0.15	30.69	9.85	0.05	9.89	50.48	65.82	15.34	QP	LINE
2	0.15	15.74	9.85	0.05	9.89	35.53	55.82	20.29	Average	LINE
3	0.43	10.39	9.72	0.08	9.89	30.08	57.24	27.16	QP	LINE
4	0.43	-3.67	9.72	0.08	9.89	16.02	47.24	31.22	Average	LINE
5	0.94	4.19	9.90	0.14	9.90	24.13	56.00	31.87	QP	LINE
6	0.94	-3.31	9.90	0.14	9.90	16.63	46.00	29.37	Average	LINE
7	2.53	3.87	9.86	0.17	9.88	23.78	56.00	32.22	QP	LINE
8	2.53	-4.57	9.86	0.17	9.88	15.34	46.00	30.66	Average	LINE
9	6.29	6.62	9.94	0.21	9.85	26.62	60.00	33.38	QP	LINE
10	6.29	-0.61	9.94	0.21	9.85	19.39	50.00	30.61	Average	LINE
11	28.00	11.78	10.43	0.43	9.98	32.62	60.00	27.38	QP	LINE
12	28.00	6.92	10.43	0.43	9.98	27.76	50.00	22.24	Average	LINE

Note:

1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

Test Mode:	GFSK	Frequency(MHz):	2402
Line:	Neutral		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Margin (dB)	Detector	Phase
1	0.15	30.37	9.77	0.05	9.89	50.08	66.00	15.92	QP	NEUTRAL
2	0.15	13.02	9.77	0.05	9.89	32.73	56.00	23.27	Average	NEUTRAL
3	0.53	12.85	9.90	0.09	9.89	32.73	56.00	23.27	QP	NEUTRAL
4	0.53	0.04	9.90	0.09	9.89	19.92	46.00	26.08	Average	NEUTRAL
5	0.94	9.35	9.90	0.14	9.90	29.29	56.00	26.71	QP	NEUTRAL
6	0.94	4.30	9.90	0.14	9.90	24.24	46.00	21.76	Average	NEUTRAL
7	2.64	8.76	9.80	0.17	9.88	28.61	56.00	27.39	QP	NEUTRAL
8	2.64	-0.09	9.80	0.17	9.88	19.76	46.00	26.24	Average	NEUTRAL
9	6.25	7.95	9.86	0.21	9.85	27.87	60.00	32.13	QP	NEUTRAL
10	6.25	-0.08	9.86	0.21	9.85	19.84	50.00	30.16	Average	NEUTRAL
11	17.57	4.68	10.44	0.38	9.93	25.43	60.00	34.57	QP	NEUTRAL
12	17.57	-0.72	10.44	0.38	9.93	20.03	50.00	29.97	Average	NEUTRAL

Note:

1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

11. TEST DATA

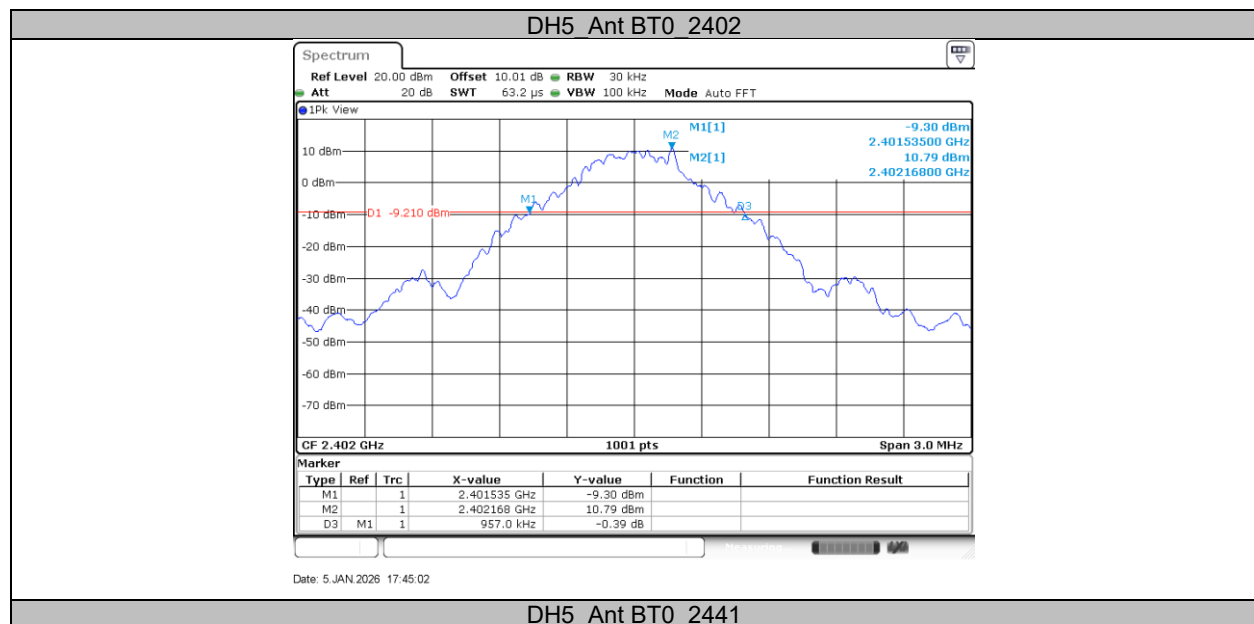
11.1. APPENDIX A: 20DB EMISSION BANDWIDTH

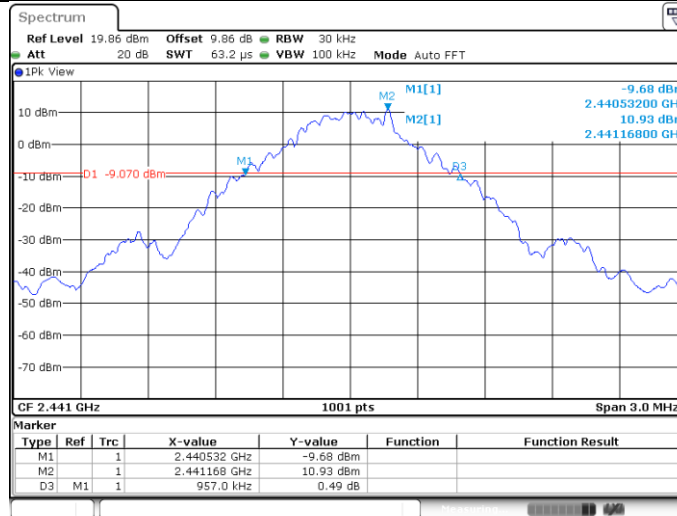
11.1.1. Test Result-Ant BT0

Test Mode	Antenna	Frequency [MHz]	20dB EBW[MHz]
DH5	Ant BT0	2402	0.96
		2441	0.96
		2480	0.96
2DH5	Ant BT0	2402	1.34
		2441	1.33
		2480	1.34
3DH5	Ant BT0	2402	1.30
		2441	1.31
		2480	1.31

Note: All the antennas had been tested, but only the worst data were recorded in the report.

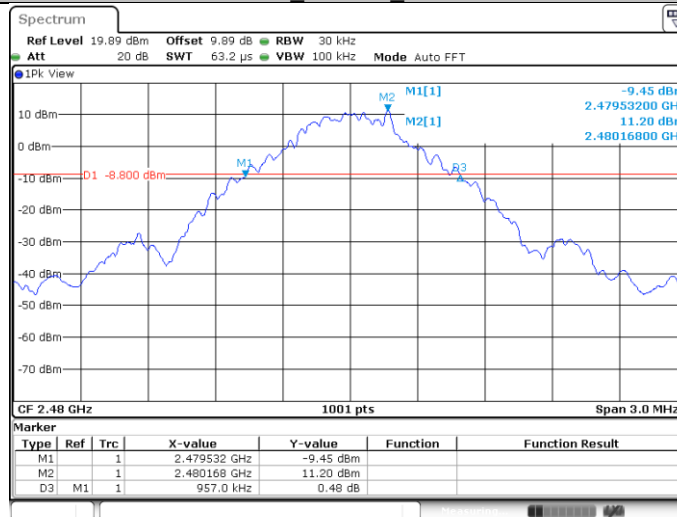
11.1.2. Test Graphs-Ant BT0





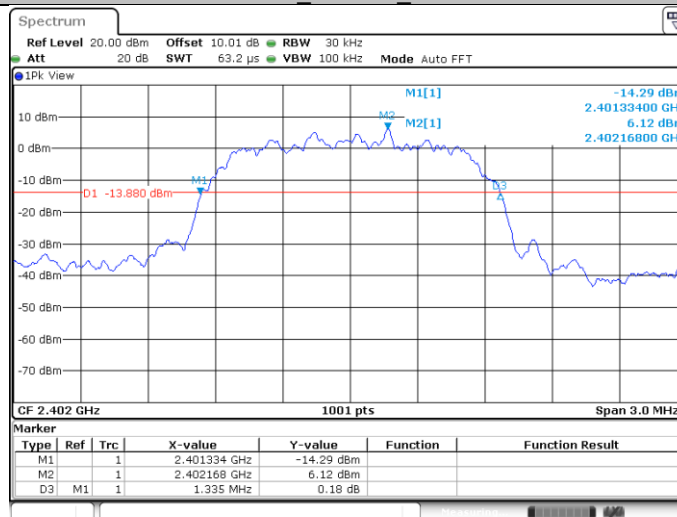
Date: 5 JAN 2026 17:47:16

DH5_Ant BT0_2480

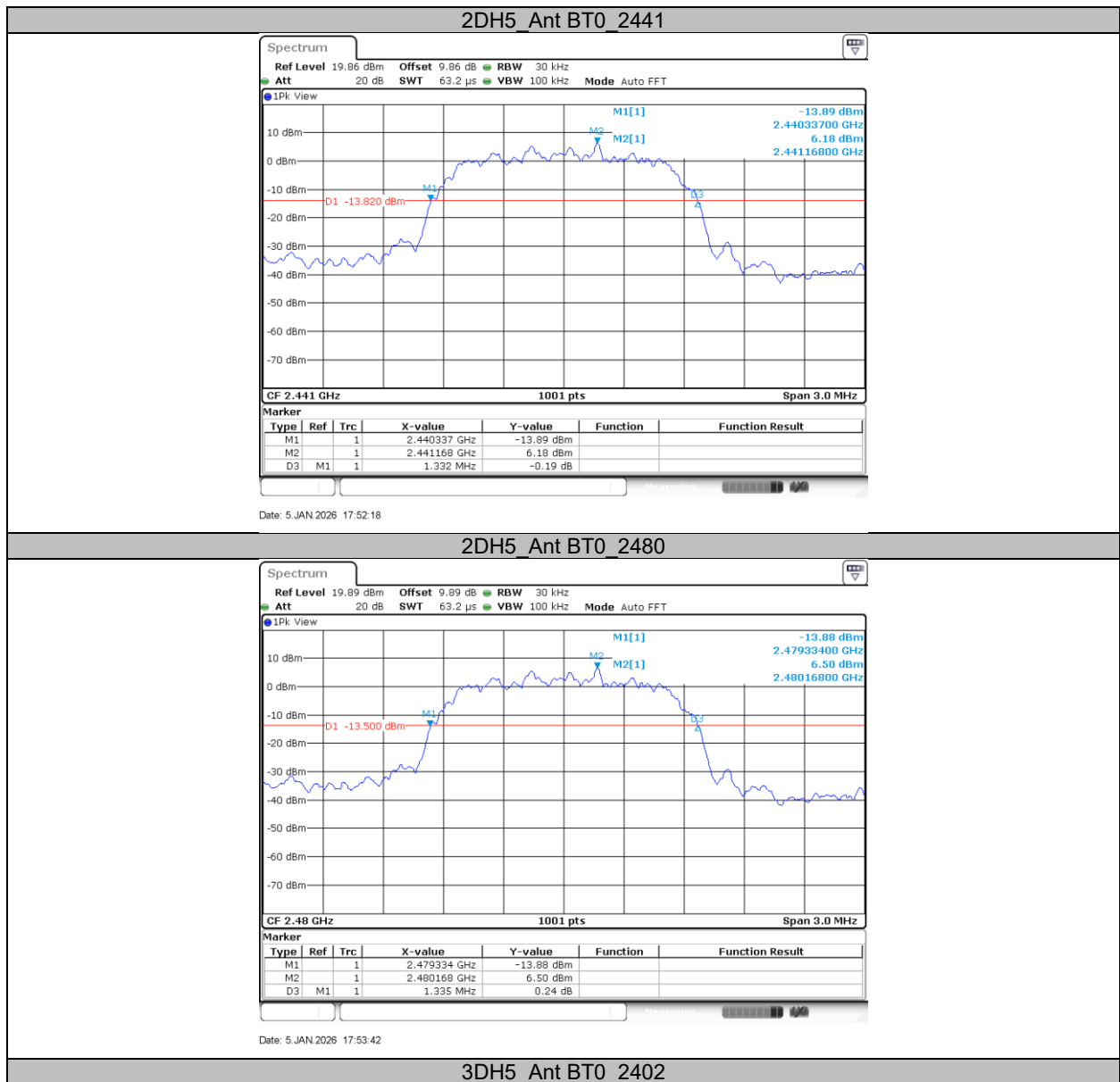


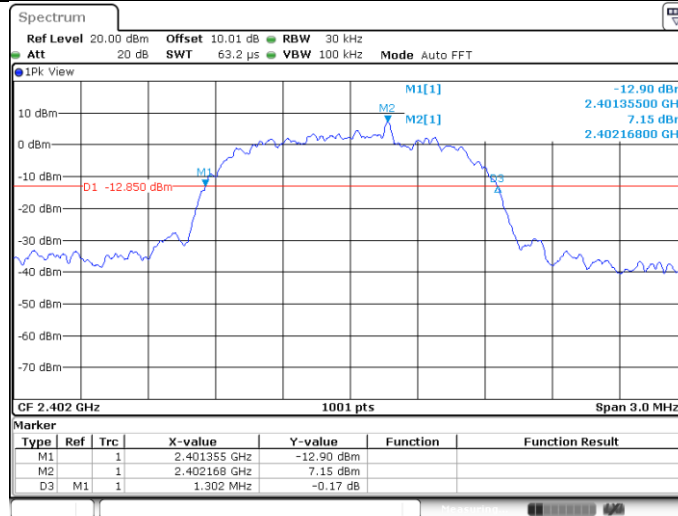
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2DH5_Ant BT0_2402



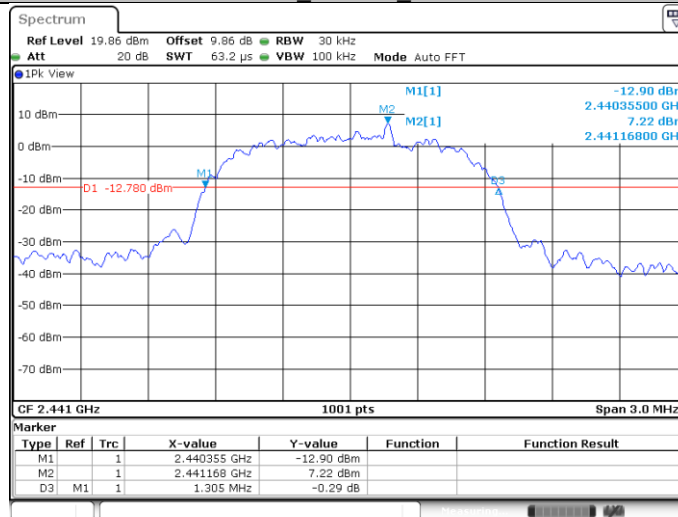
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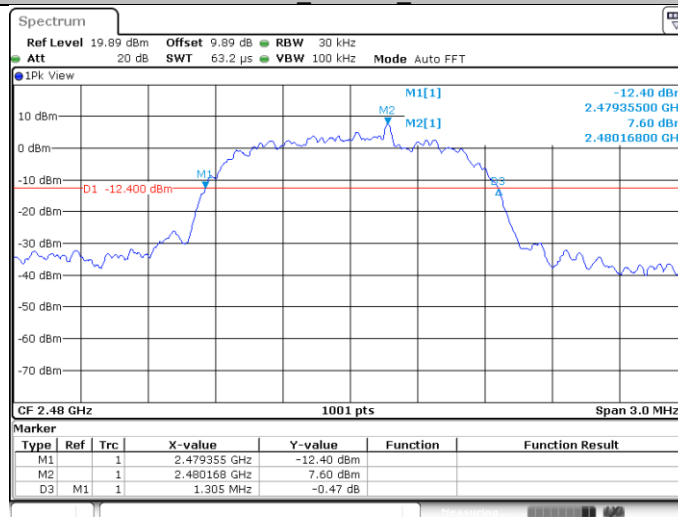
Date: 5 JAN 2026 17:55:20

3DH5_Ant BT0_2441



Date: 5 JAN 2026 17:57:25

3DH5_Ant BT0_2480



Date: 5 JAN 2026 17:58:54

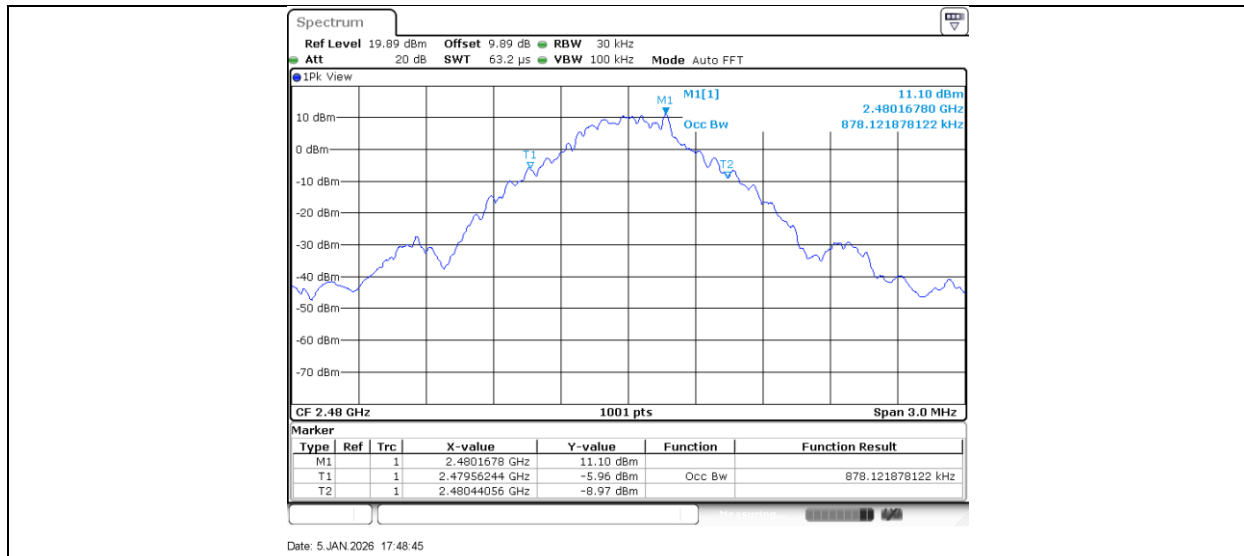
11.2. APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

11.2.1. Test Result-Ant BT0

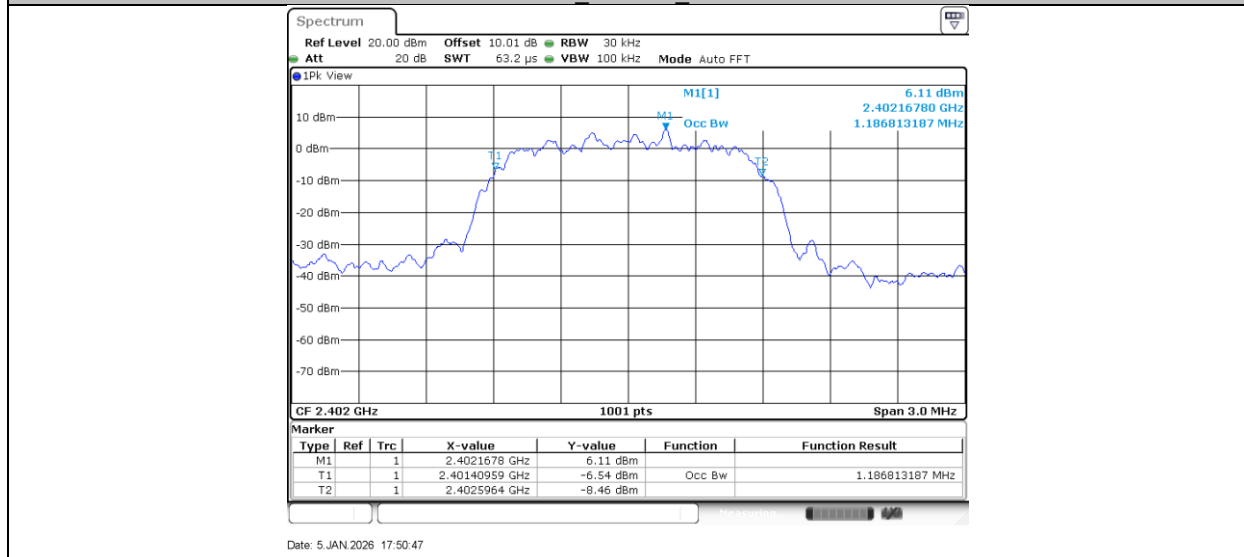
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
DH5	Ant BT0	2402	0.87812	2401.5624	2402.4406
		2441	0.88412	2440.5594	2441.4436
		2480	0.87812	2479.5624	2480.4406
2DH5	Ant BT0	2402	1.1868	2401.4096	2402.5964
		2441	1.1868	2440.4096	2441.5964
		2480	1.1898	2479.4096	2480.5994
3DH5	Ant BT0	2402	1.1838	2401.4126	2402.5964
		2441	1.1838	2440.4126	2441.5964
		2480	1.1868	2479.4126	2480.5994

11.2.2. Test Graphs-Ant BT0

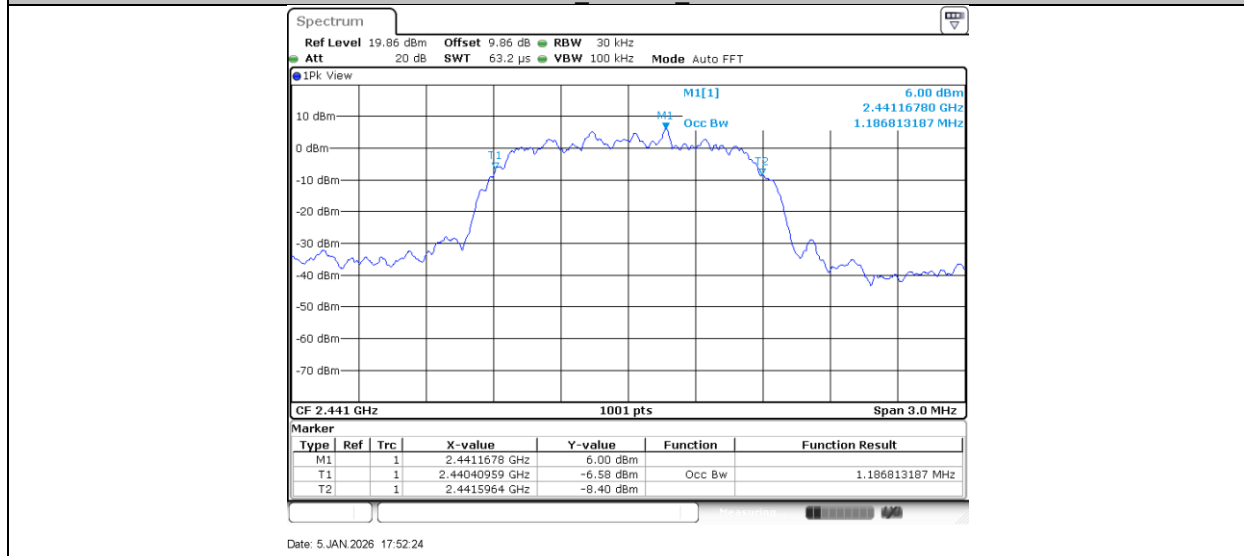


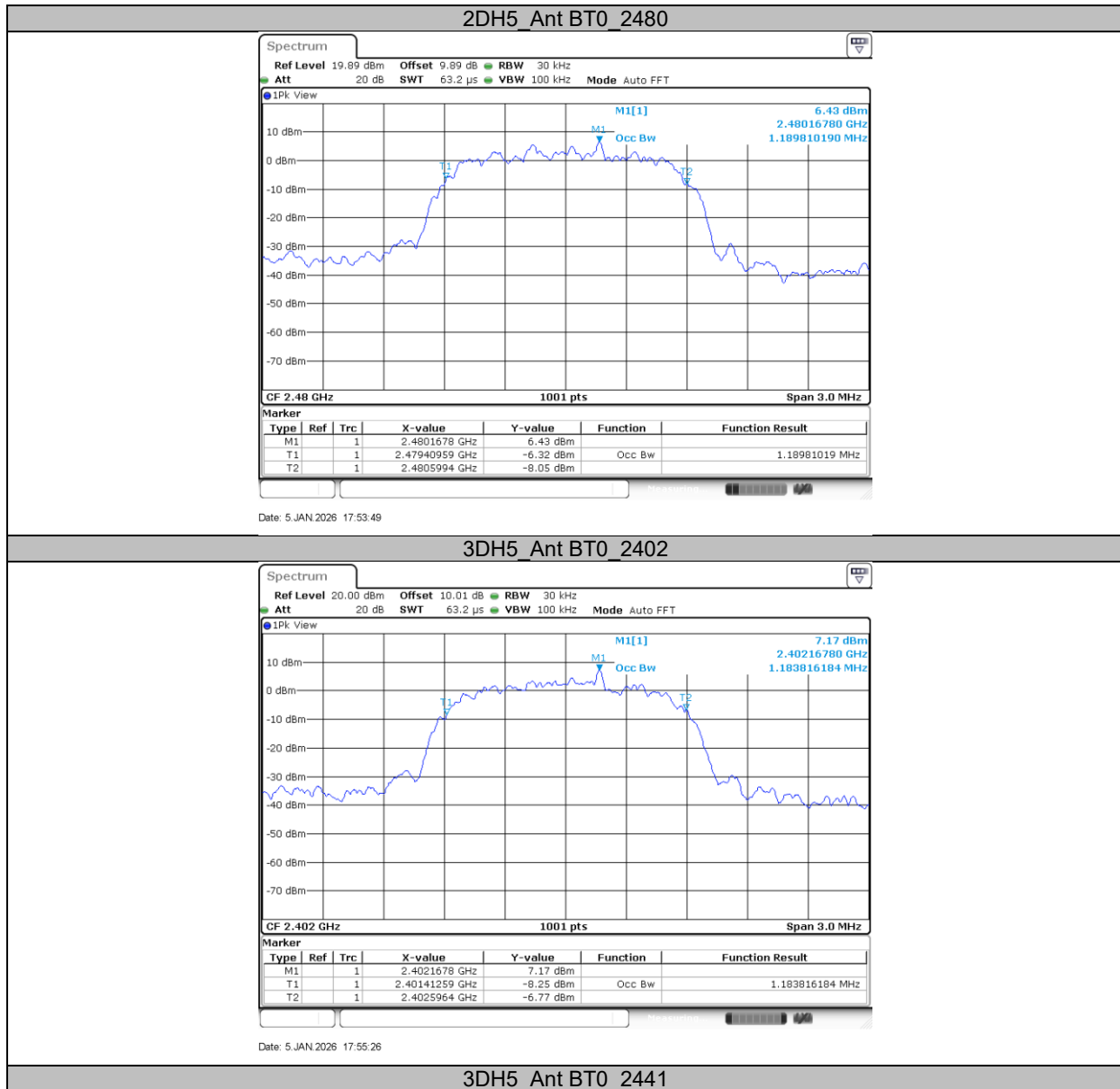


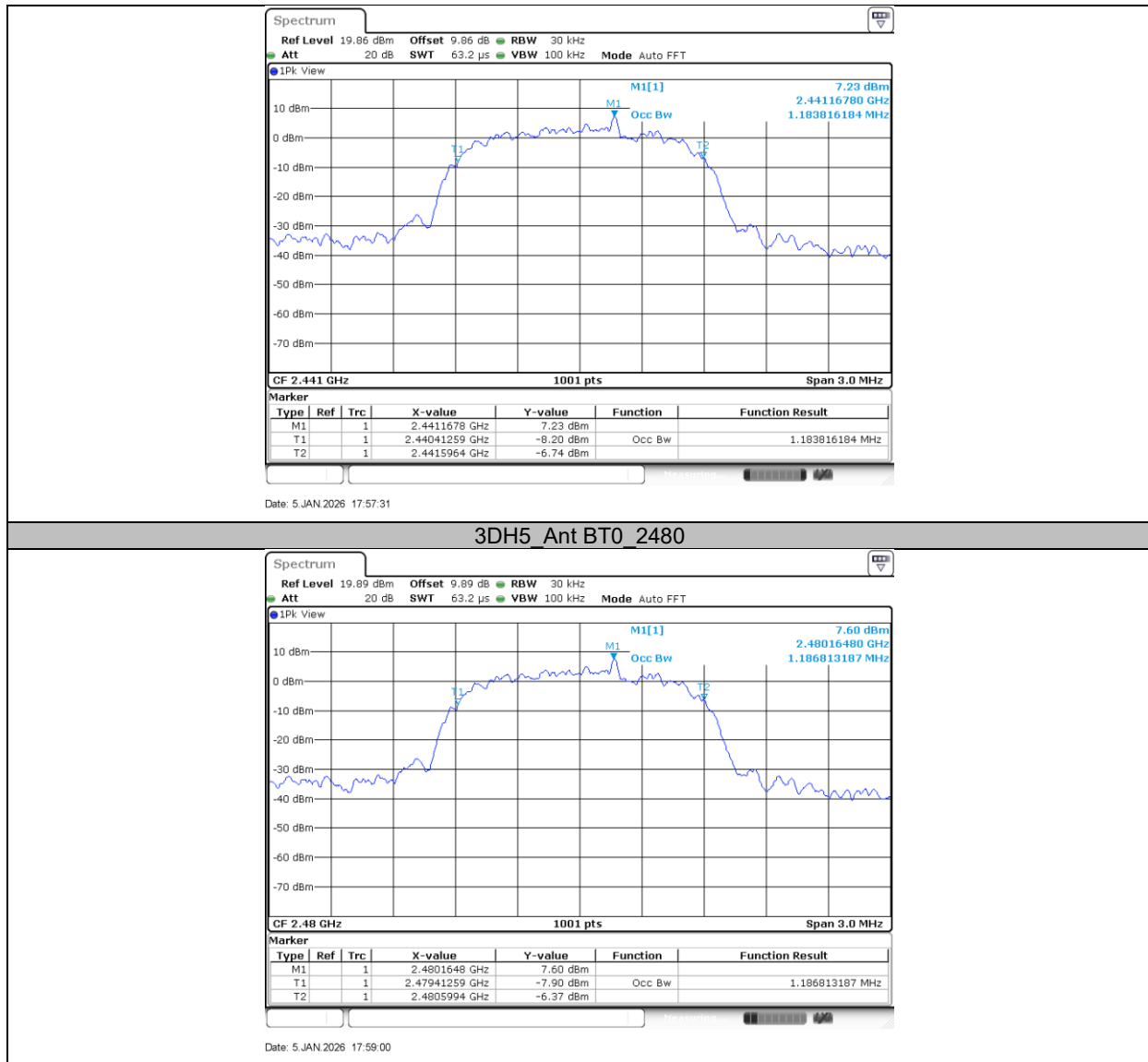
2DH5_Ant BT0_2402



2DH5_Ant BT0_2441







11.3. APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER**11.3.1. Test Result-Ant BT0**

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
DH5	Ant BT0	2402	13.08	≤20.97	15.12	≤36	PASS
		2441	14.11	≤20.97	16.15	≤36	PASS
		2480	13.93	≤20.97	15.97	≤36	PASS
2DH5	Ant BT0	2402	12.14	≤20.97	14.18	≤36	PASS
		2441	13.05	≤20.97	15.09	≤36	PASS
		2480	12.80	≤20.97	14.84	≤36	PASS
3DH5	Ant BT0	2402	12.49	≤20.97	14.53	≤36	PASS
		2441	13.22	≤20.97	15.26	≤36	PASS
		2480	13.17	≤20.97	15.21	≤36	PASS

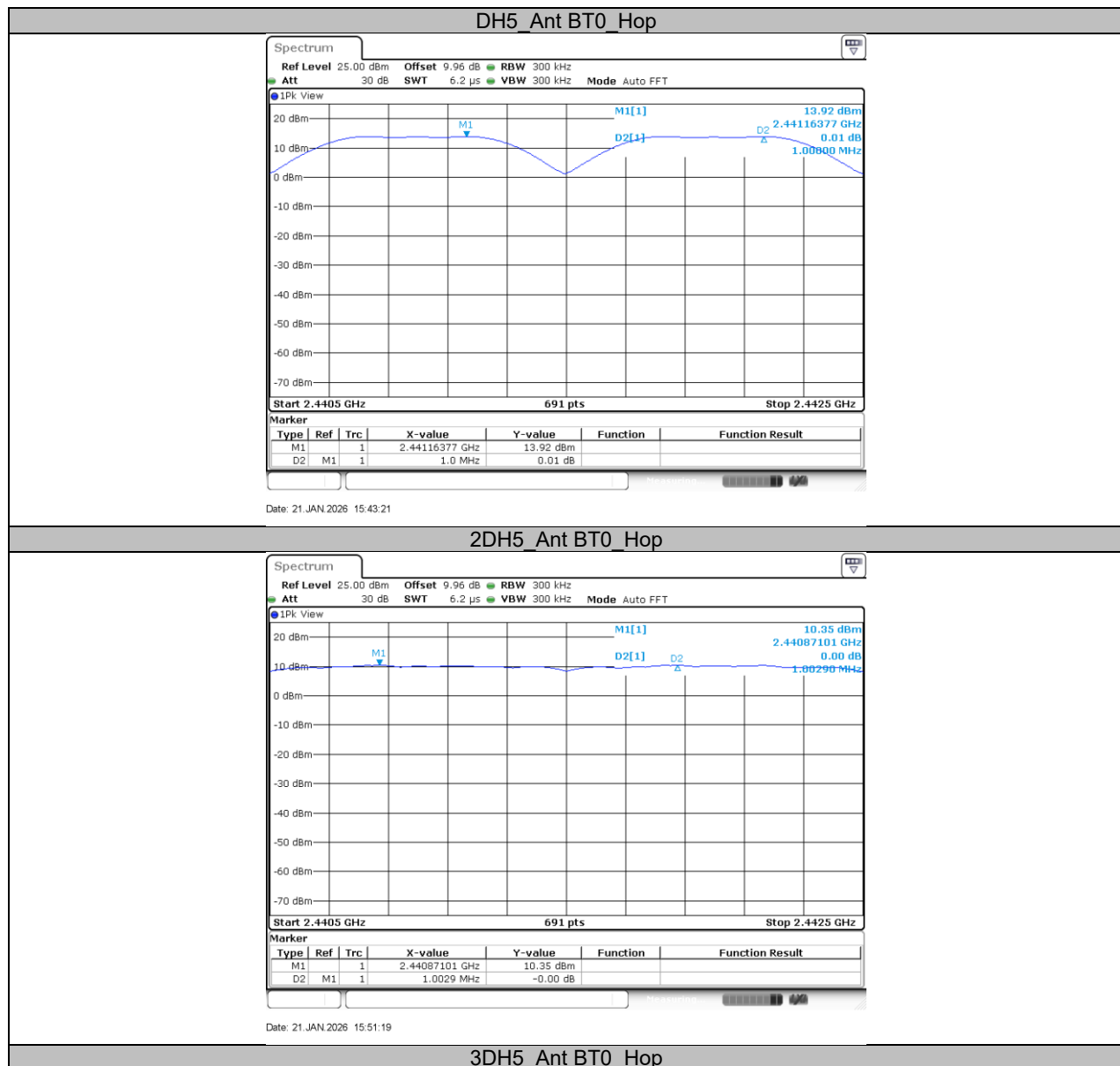
11.4. APPENDIX D: CARRIER FREQUENCY SEPARATION

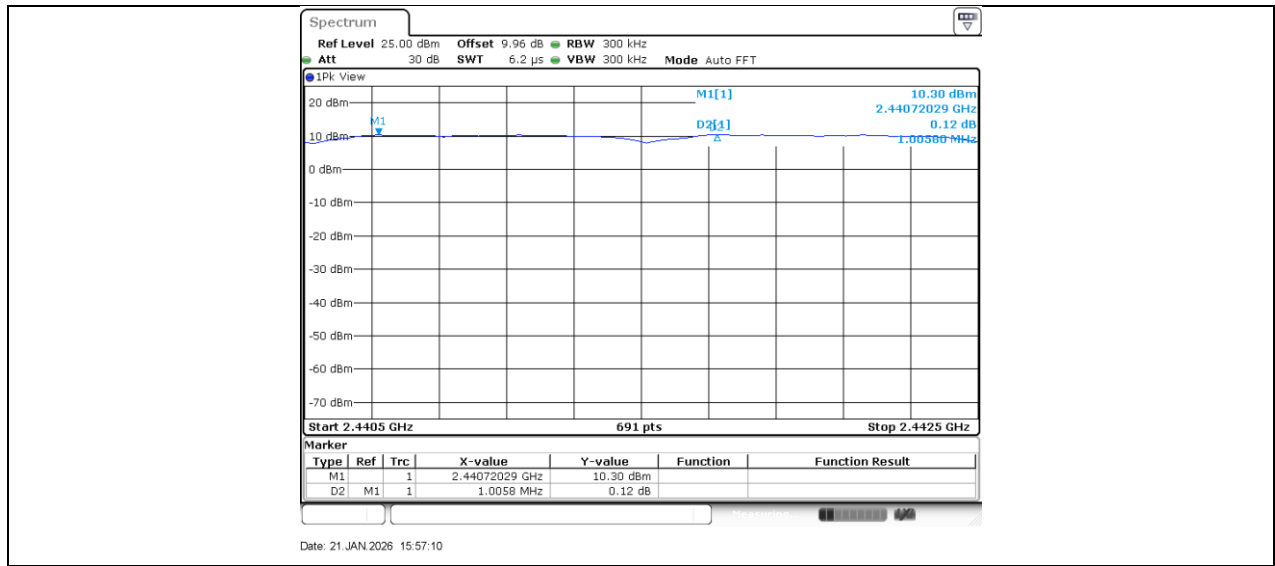
11.4.1. Test Result-Ant BT0

Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant BT0	Hop	1	≥ 0.960	PASS
2DH5	Ant BT0	Hop	1.003	≥ 0.893	PASS
3DH5	Ant BT0	Hop	1.006	≥ 0.873	PASS

Note: Since Bluetooth's frequency hopping characteristics do not differ across chains, only test data from one chain was recorded in the report.

11.4.2. Test Graphs-Ant BT0



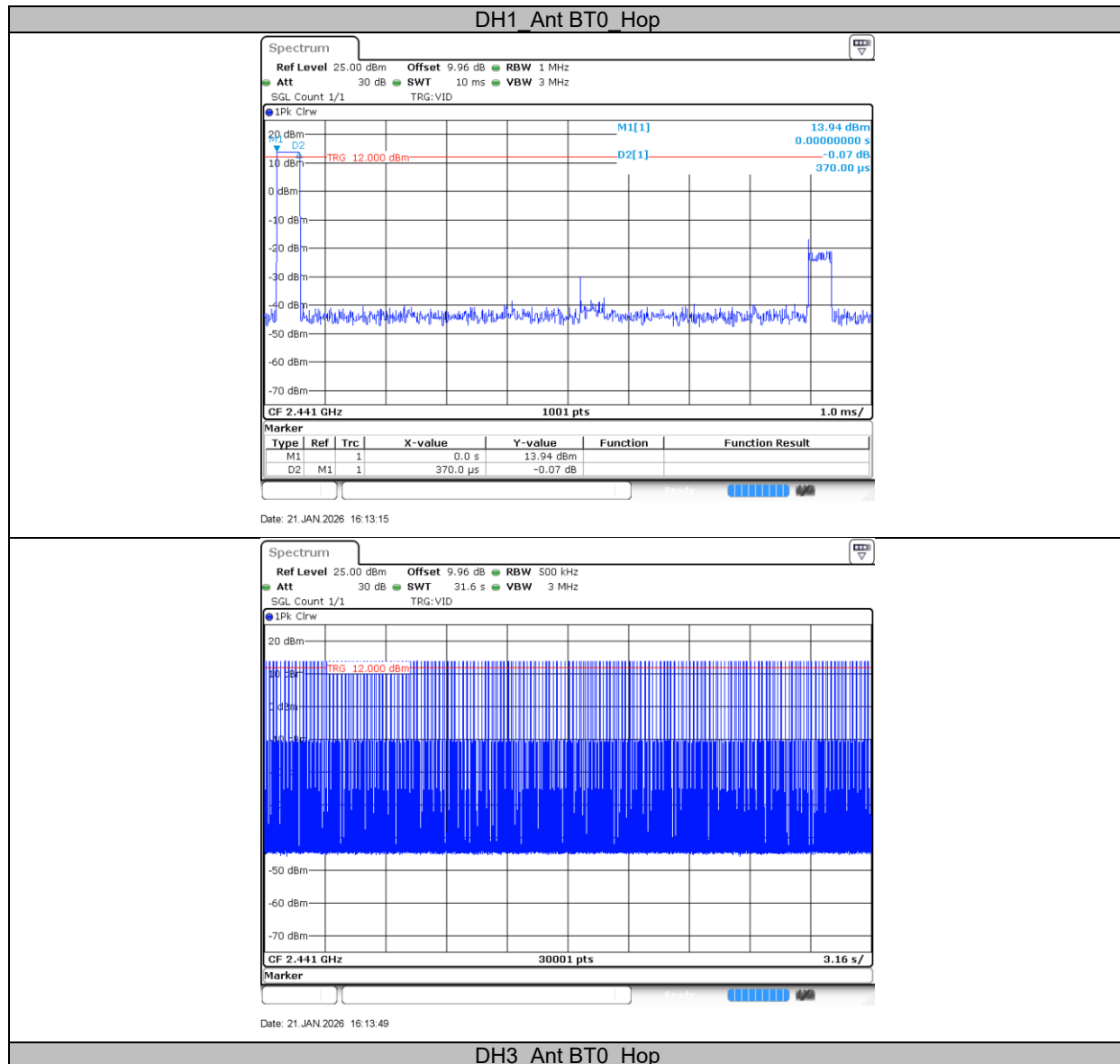


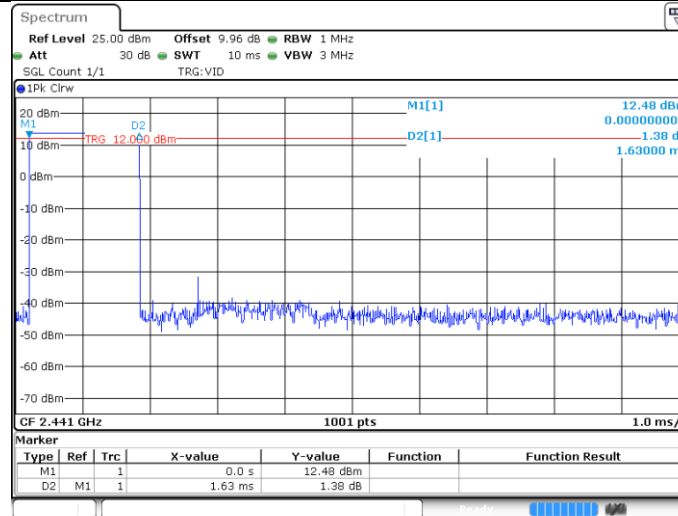
11.5. APPENDIX E: TIME OF OCCUPANCY

11.5.1. Test Result-Ant BT0

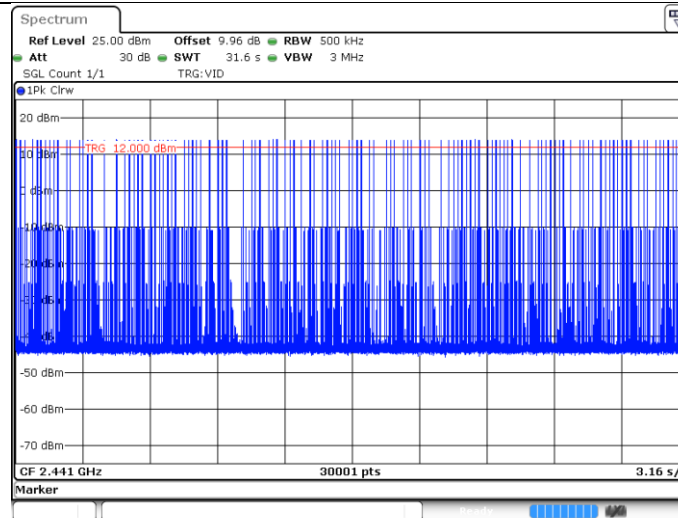
FHSS Mode						
Test Mode	Antenna	Channel	BurstWidth [ms]	Result[s]	Limit[s]	Verdict
DH1	Ant BT0	Hop	0.370	320	0.118	≤0.4
DH3	Ant BT0	Hop	1.630	163	0.266	≤0.4
DH5	Ant BT0	Hop	2.880	112	0.323	≤0.4
2DH1	Ant BT0	Hop	0.370	321	0.119	≤0.4
2DH3	Ant BT0	Hop	1.620	156	0.253	≤0.4
2DH5	Ant BT0	Hop	2.870	115	0.33	≤0.4
3DH1	Ant BT0	Hop	0.370	320	0.118	≤0.4
3DH3	Ant BT0	Hop	1.620	147	0.238	≤0.4
3DH5	Ant BT0	Hop	2.880	104	0.3	≤0.4

11.5.2. Test Graphs-Ant BT0



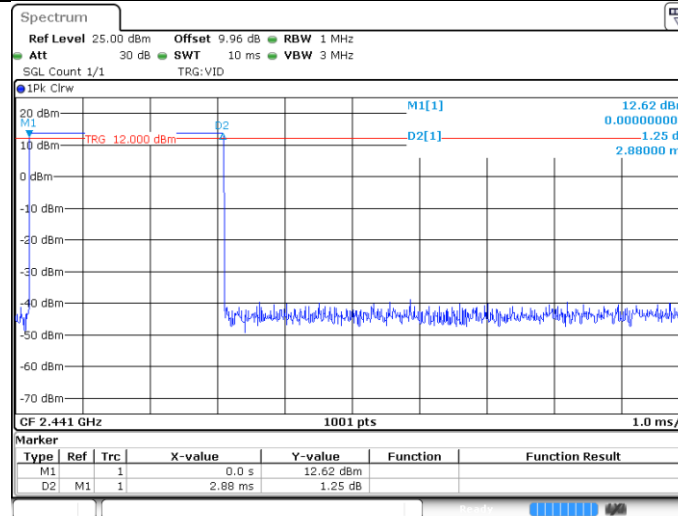


Date: 21.JAN.2026 16:01:36

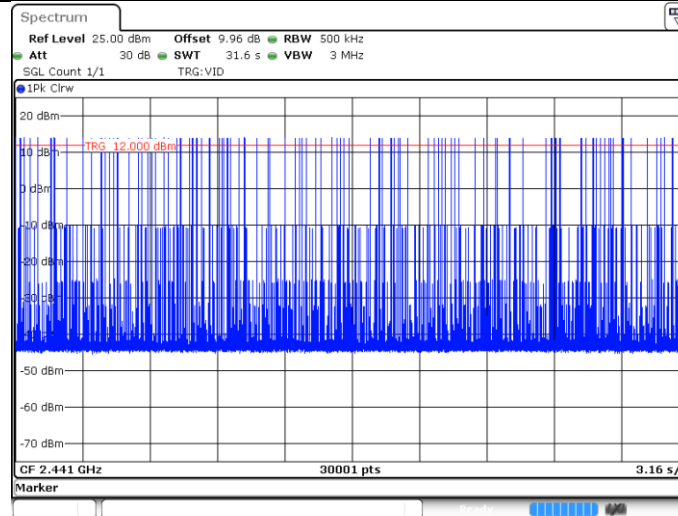


Date: 21.JAN.2026 16:02:10

DH5_Ant BT0_Hop

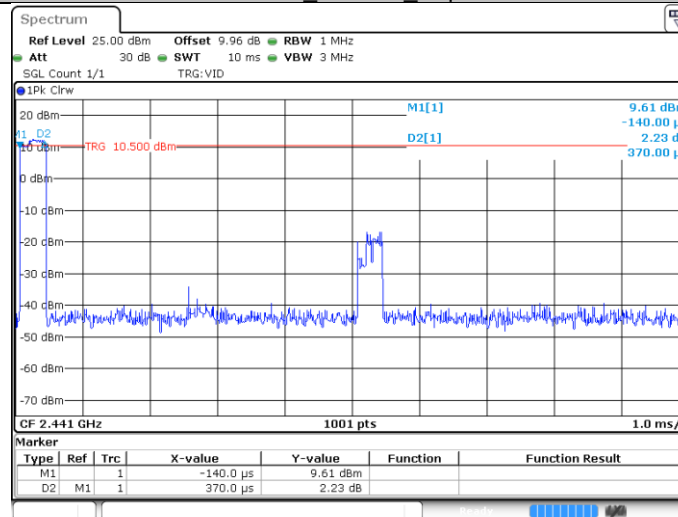


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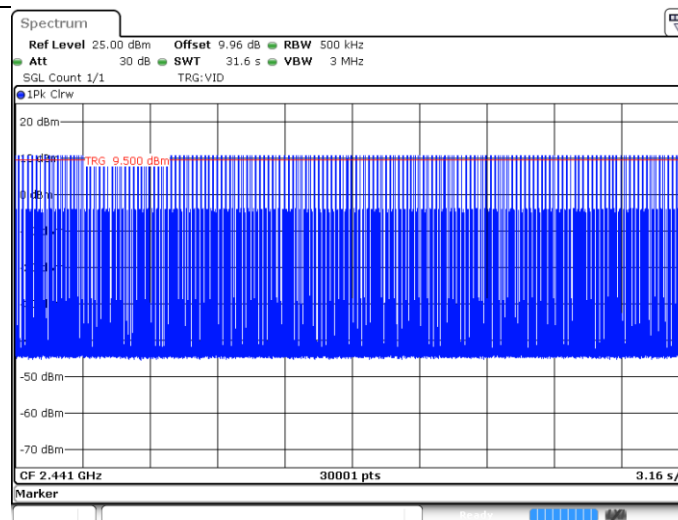


Date: 21.JAN.2026 15:59:18

2DH1_Ant BT0_Hop

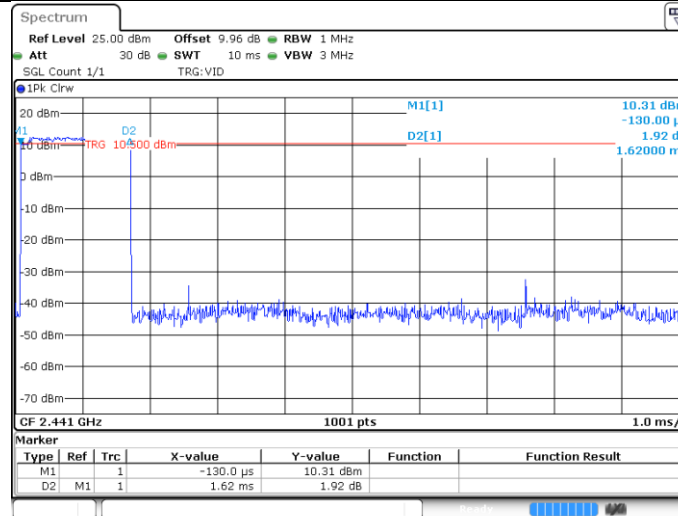


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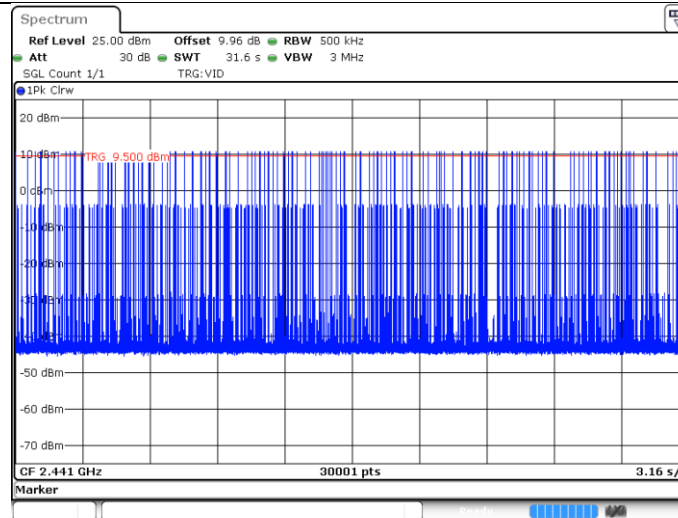


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2DH3_Ant BT0_Hop

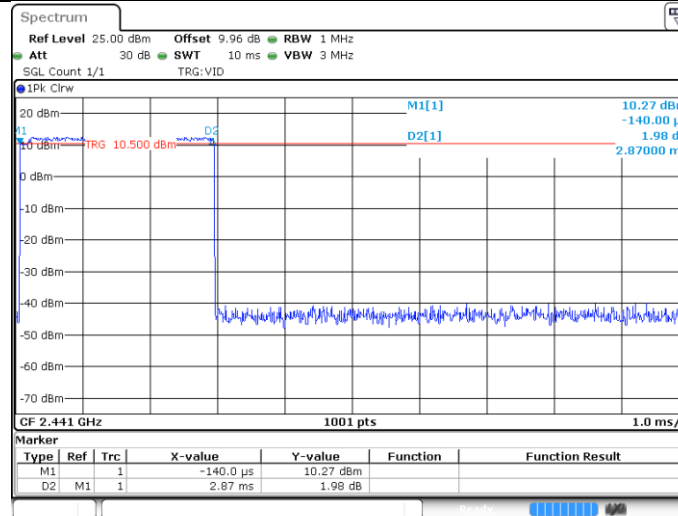


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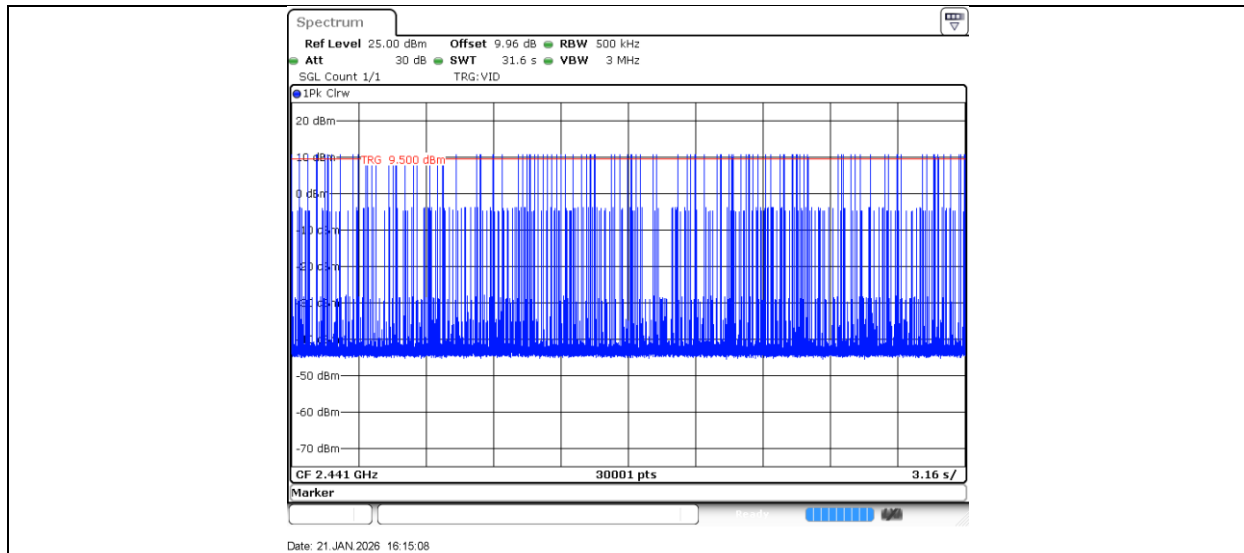


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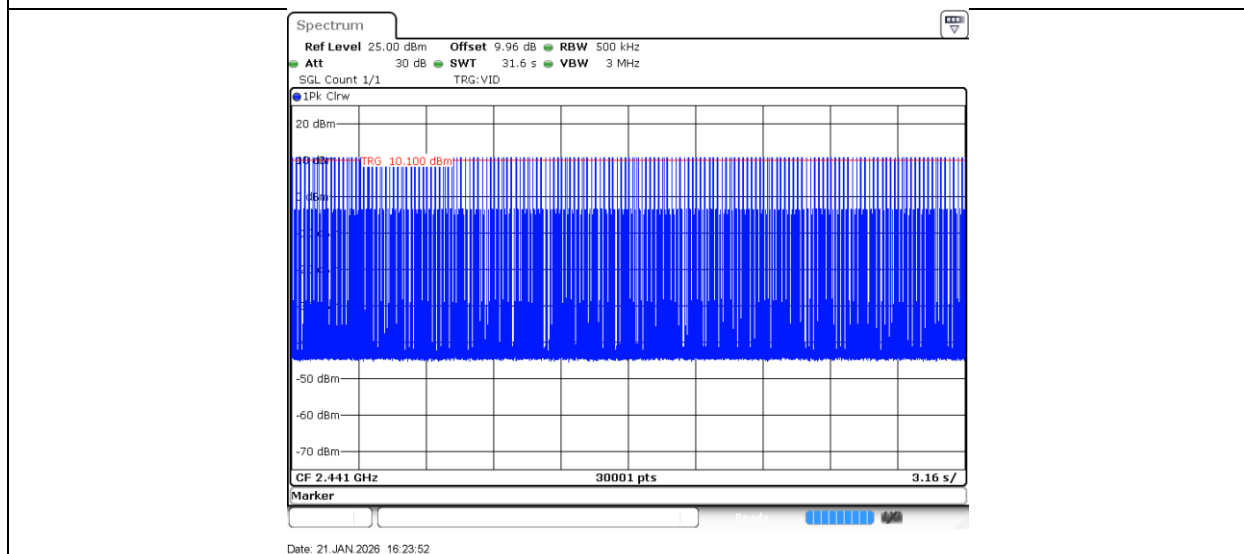
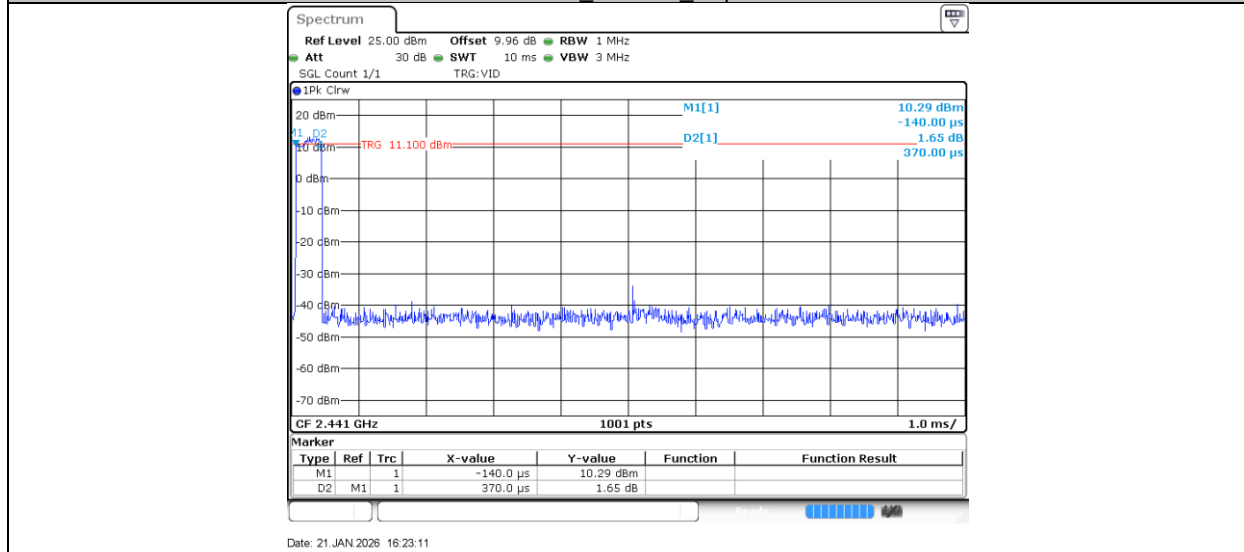
2DH5_Ant BT0_Hop



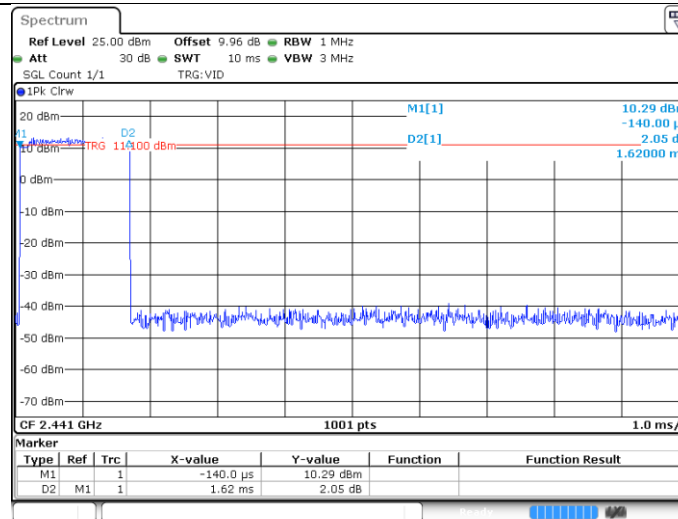
Date: 21.JAN.2026 16:14:27



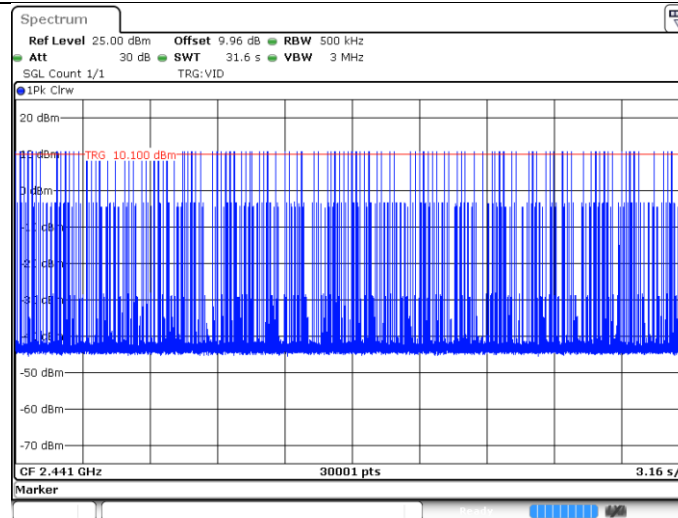
3DH1_Ant BT0_Hop



3DH3_Ant BT0_Hop

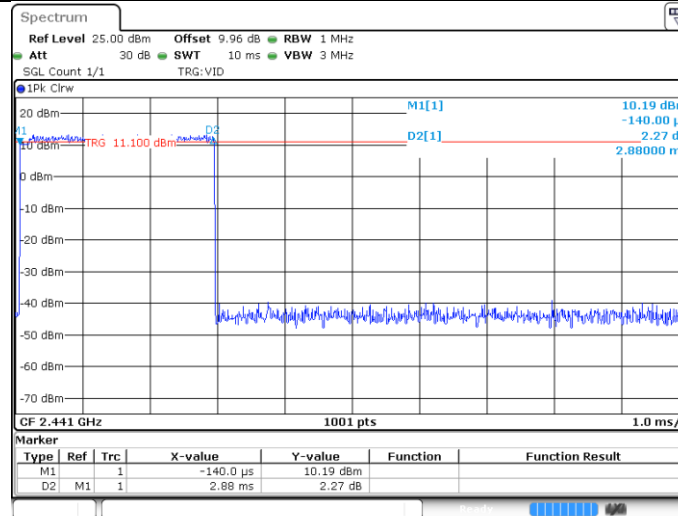


Date: 21.JAN.2026 16:21:54

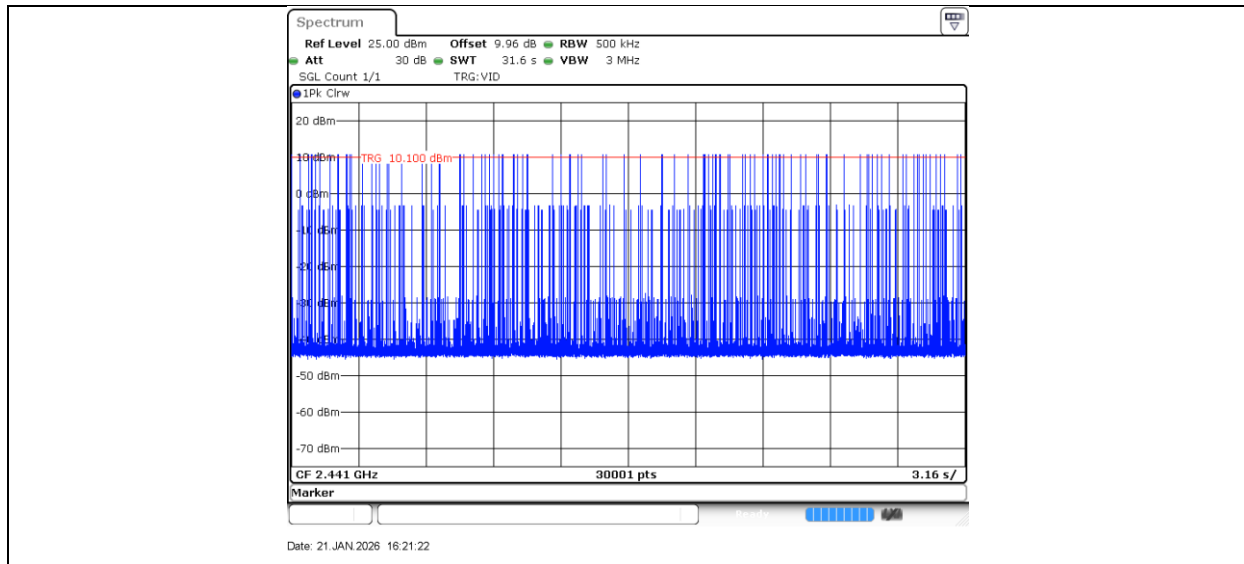


Date: 21.JAN.2026 16:22:34

3DH5_Ant BT0_Hop



Date: 21.JAN.2026 16:20:42

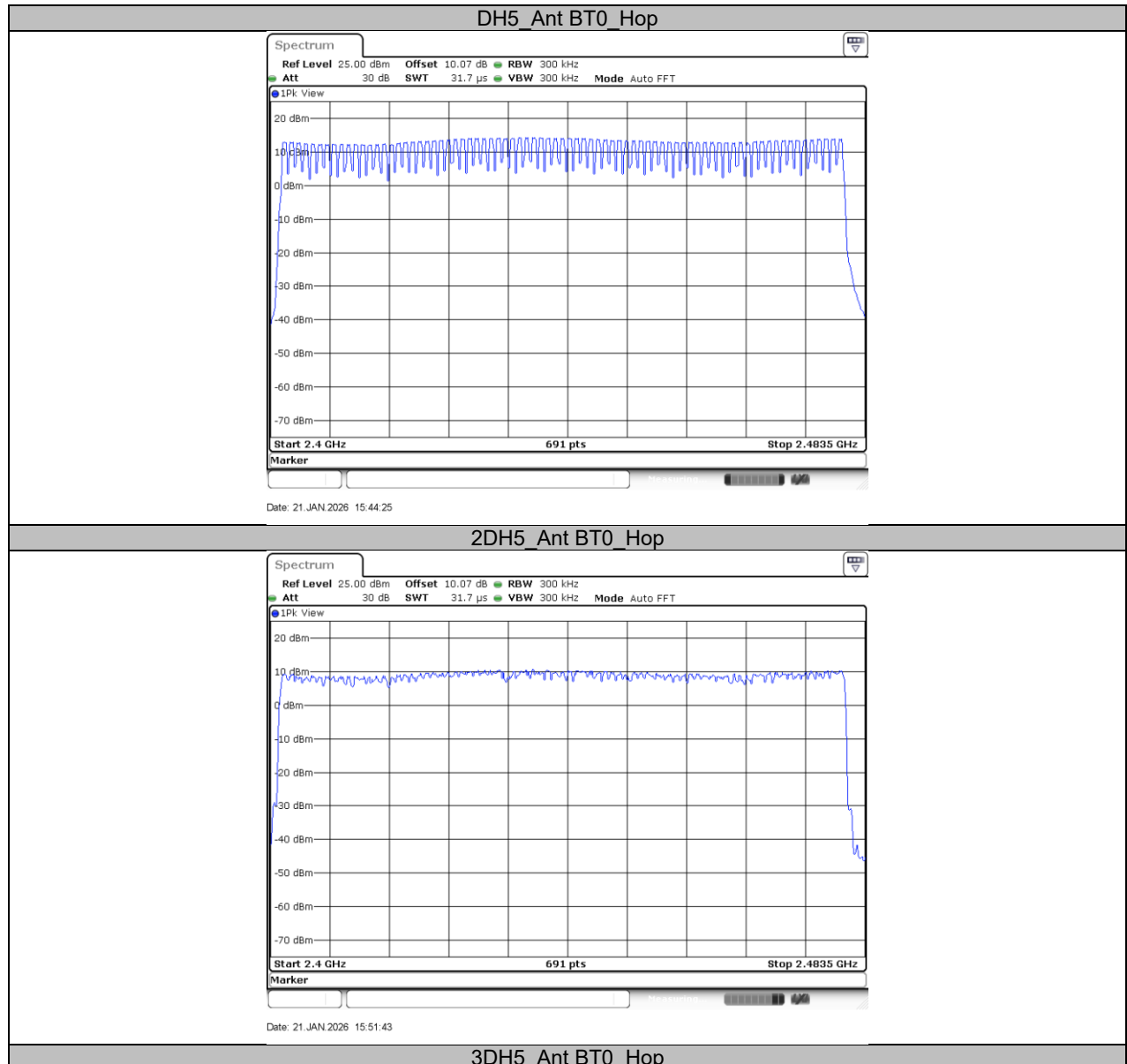


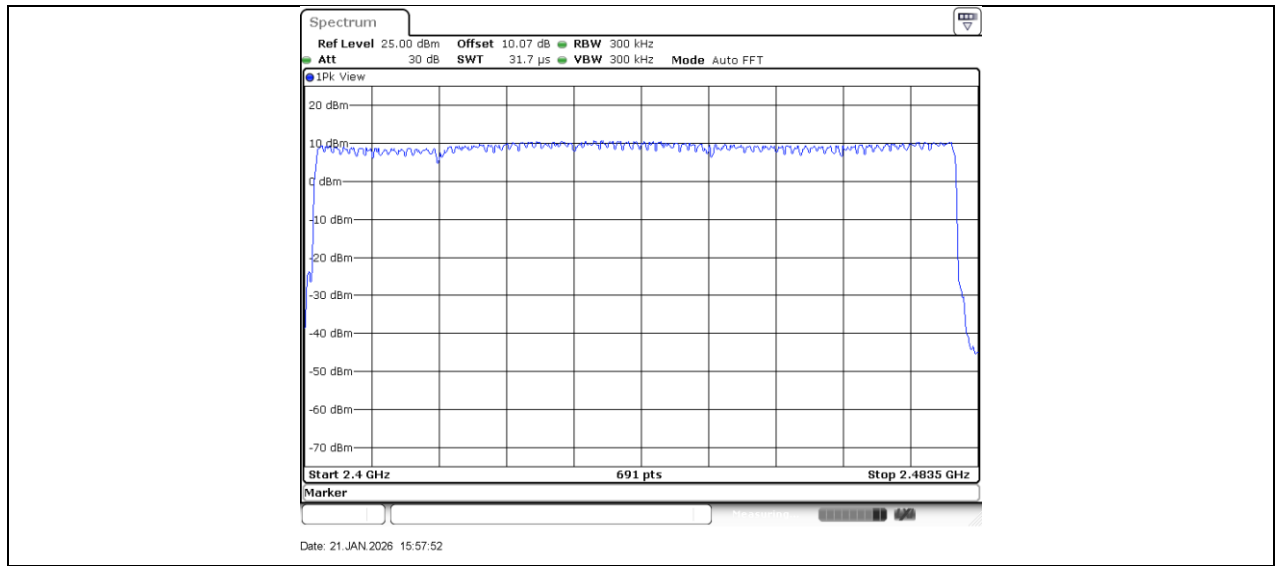
11.6. APPENDIX F: NUMBER OF HOPPING CHANNELS

11.6.1. Test Result-Ant BT0

Test Mode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant BT0	Hop	79	≥15	PASS
2DH5	Ant BT0	Hop	79	≥15	PASS
3DH5	Ant BT0	Hop	79	≥15	PASS

11.6.2. Test Graphs-Ant BT0



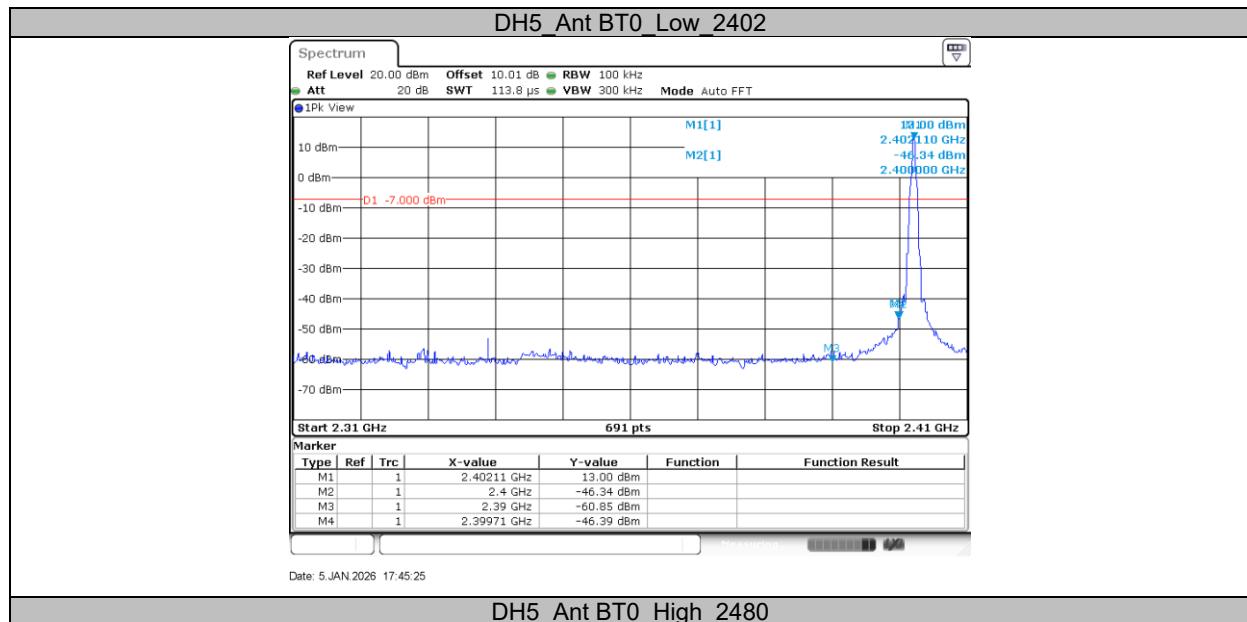


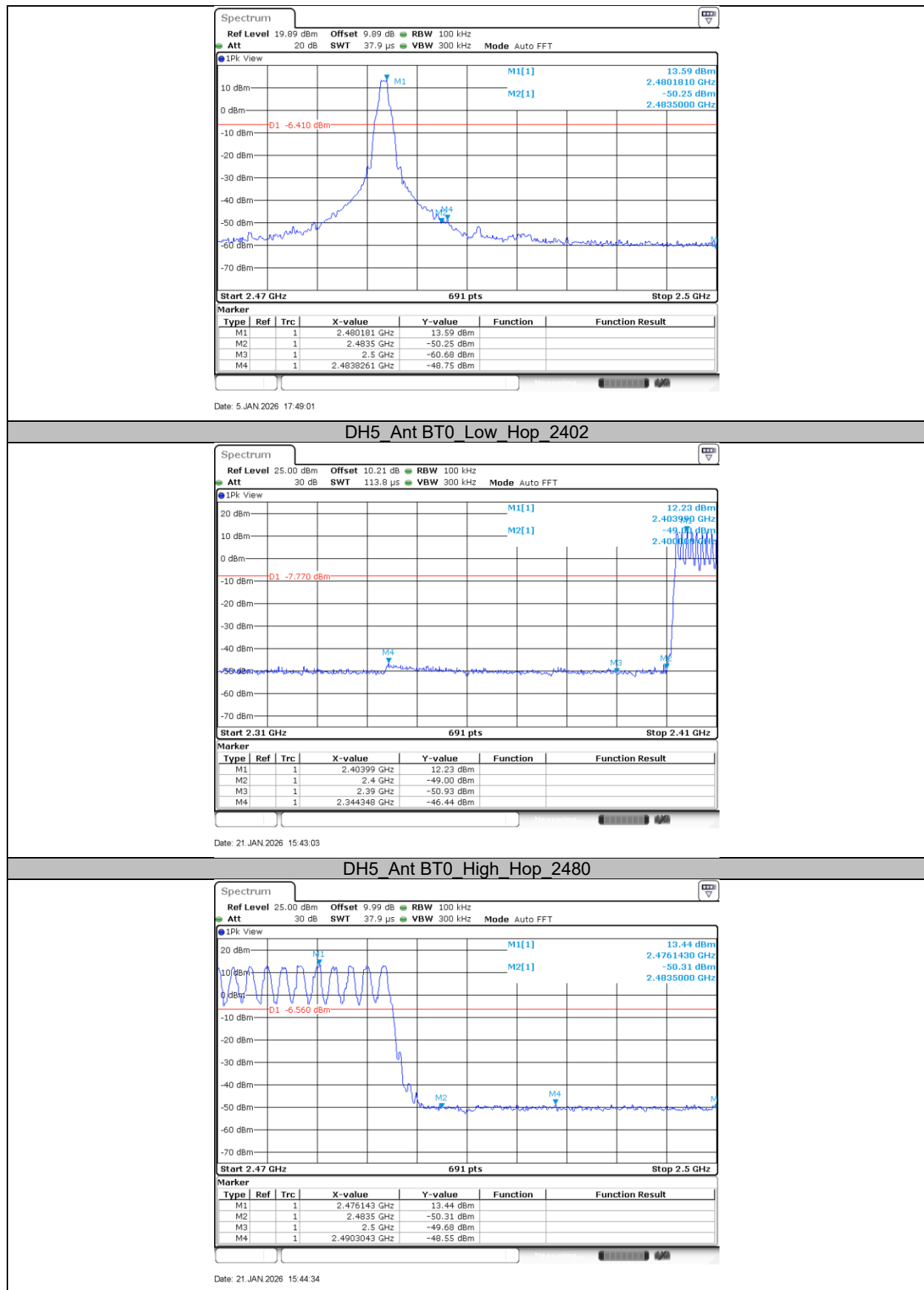
11.7. APPENDIX G: BAND EDGE MEASUREMENTS

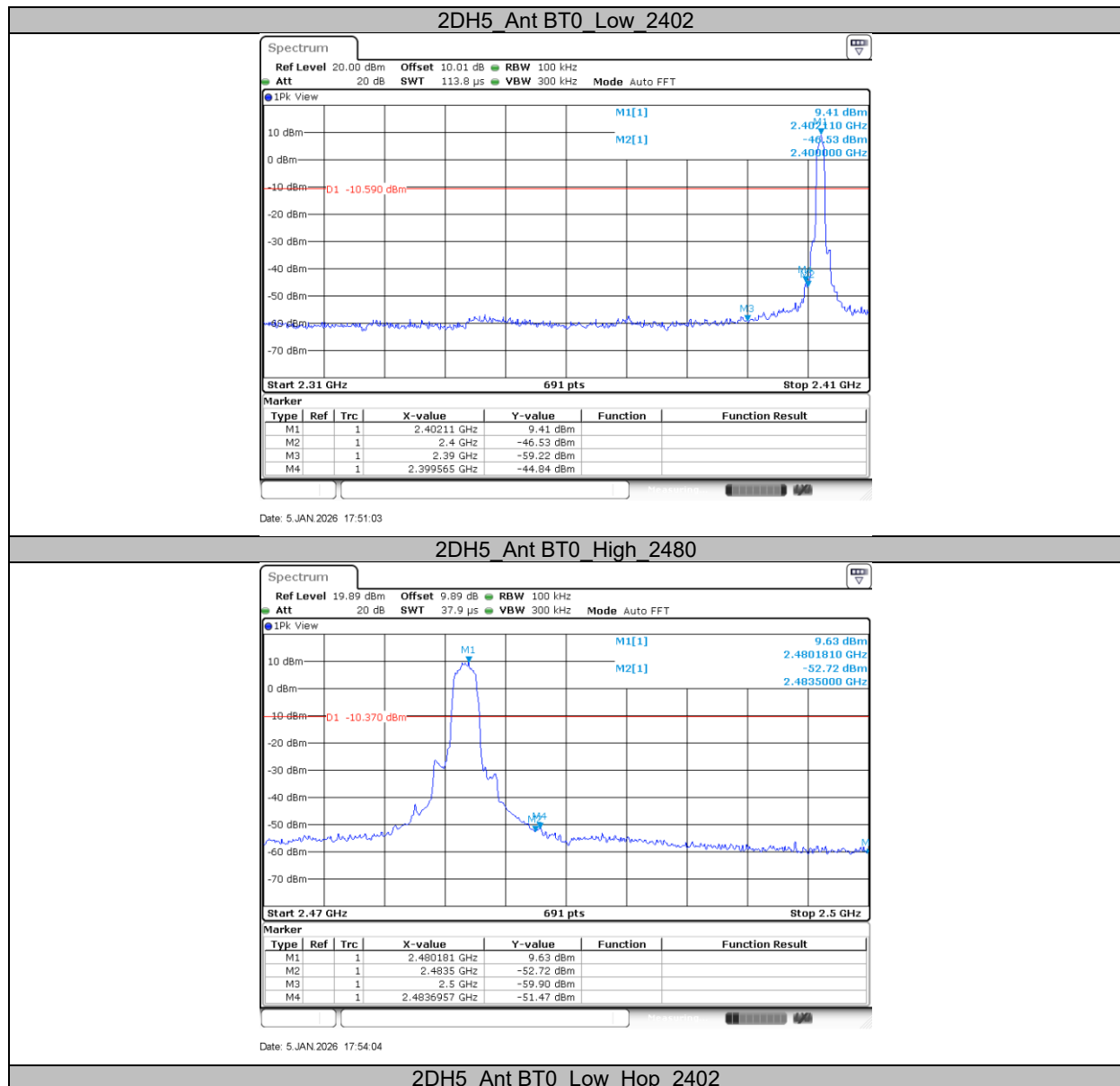
11.7.1. Test Result-Ant BT0

Mode	Freq. (MHz)	Verdict
GFSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass
$\pi/4$ -DQPSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass
8DPSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass

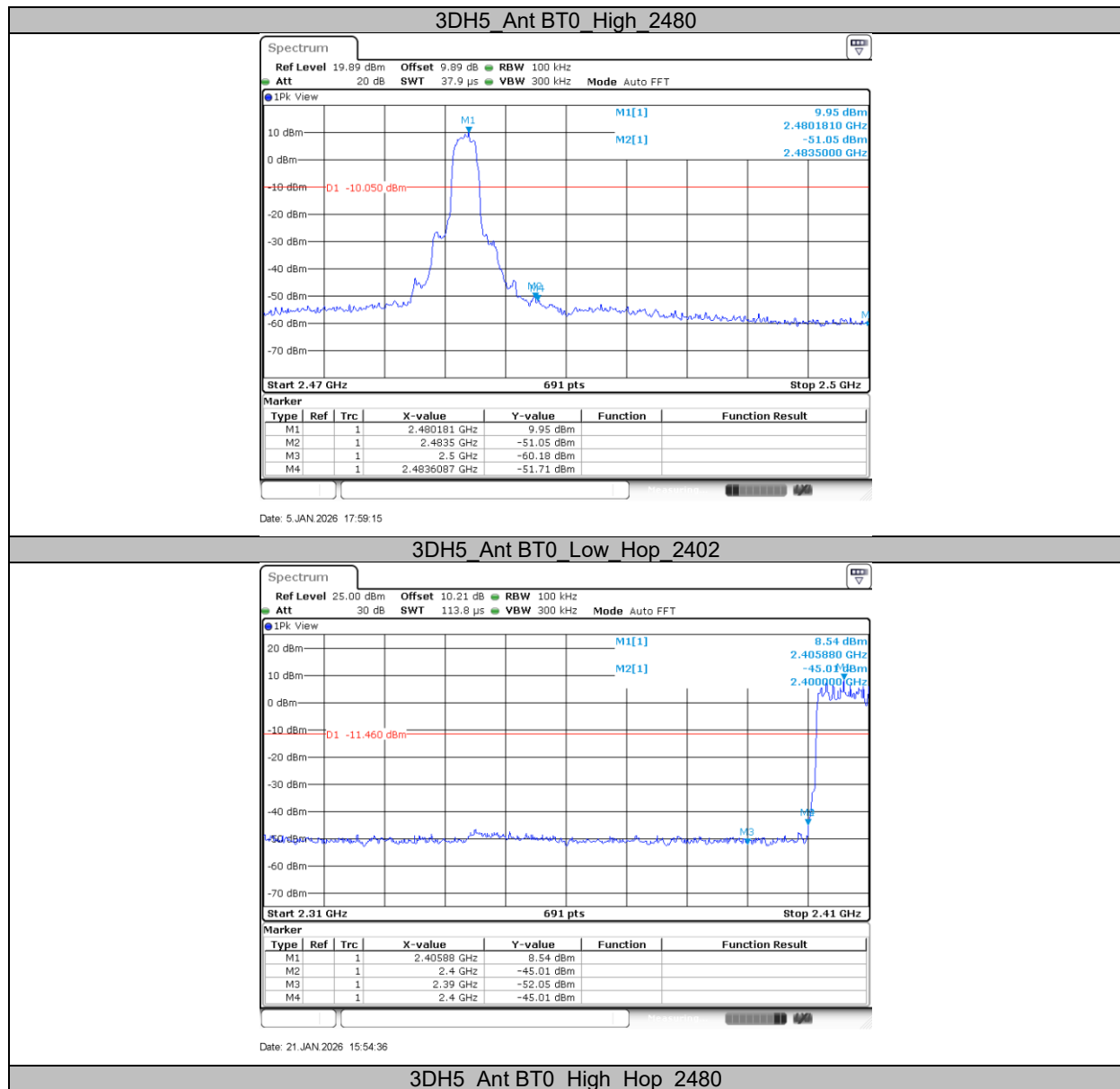
11.7.2. Test Graphs-Ant BT0

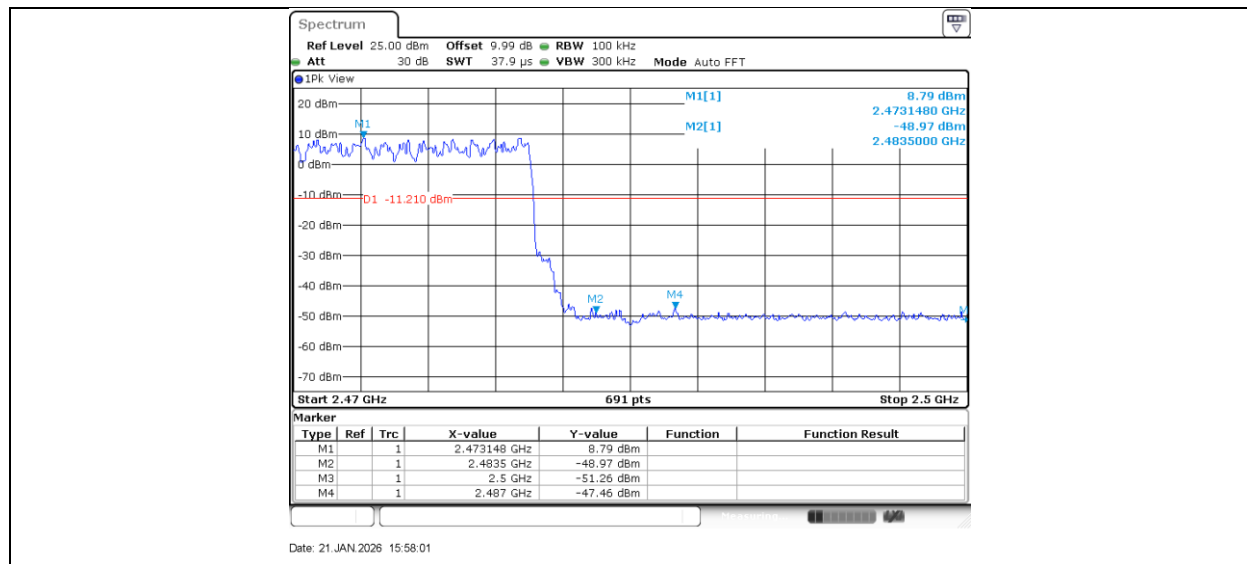








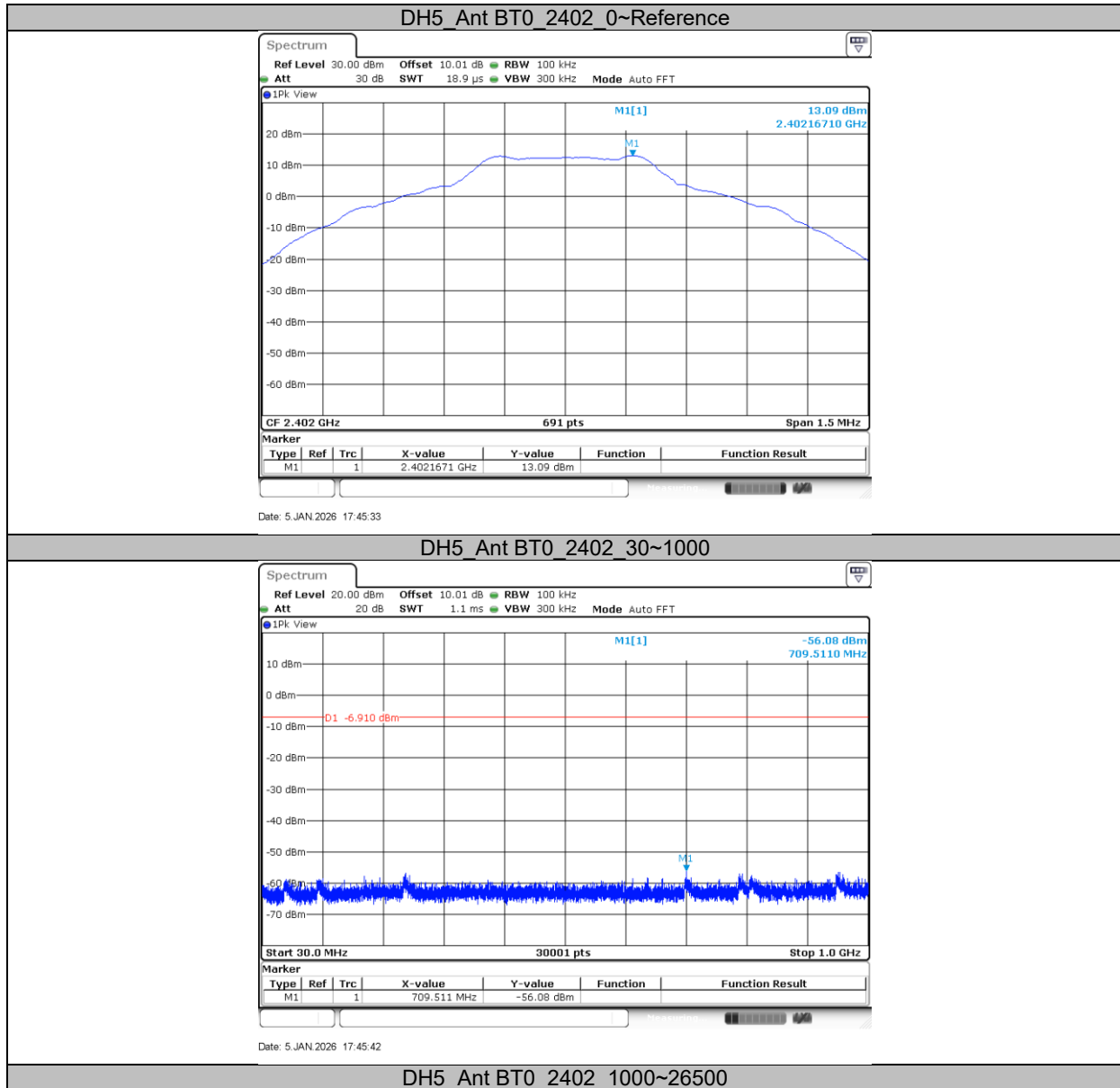


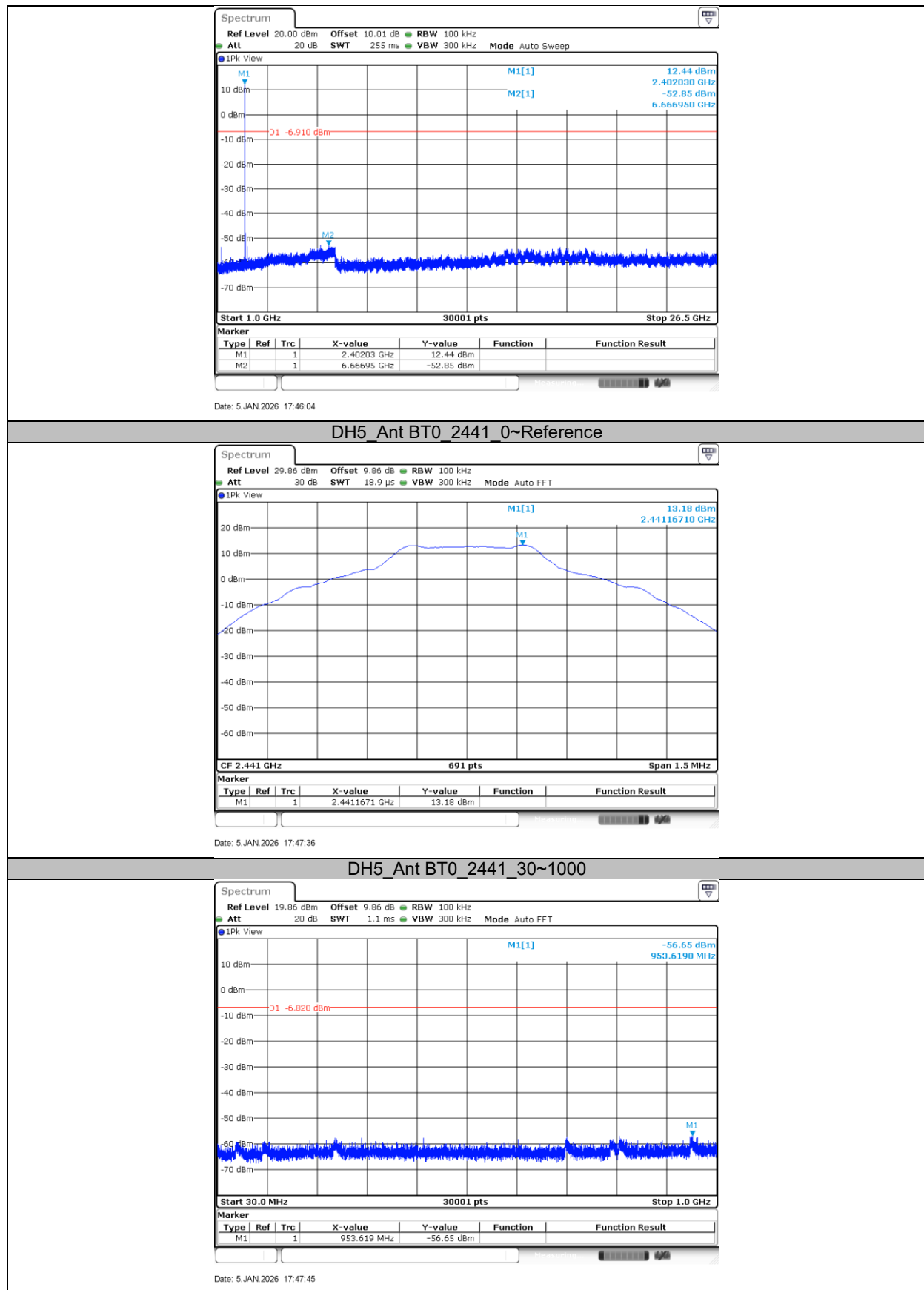


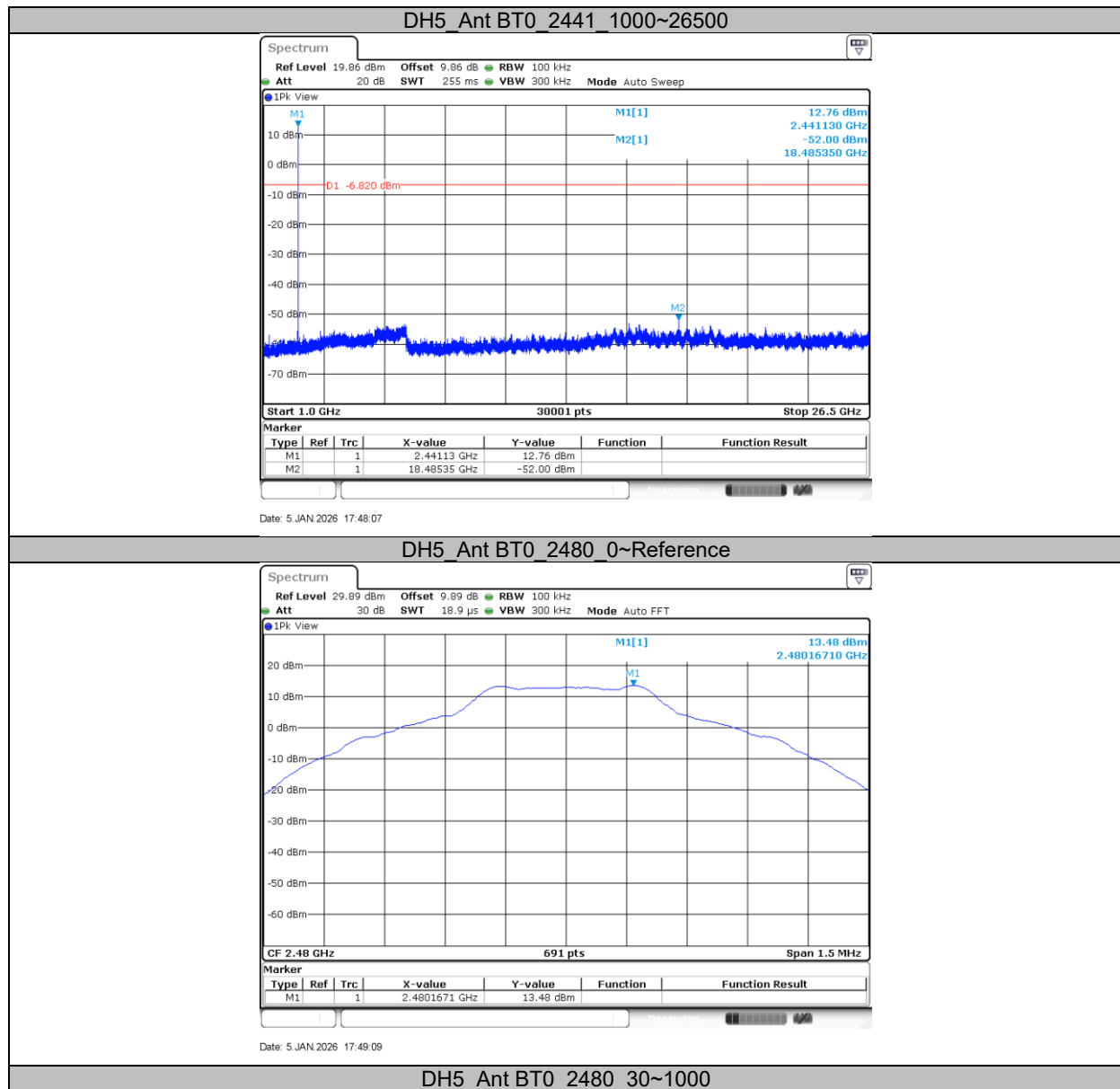
Note: To reduce report size, only one low and high channel test plots are recorded in the report as reference for test settings.

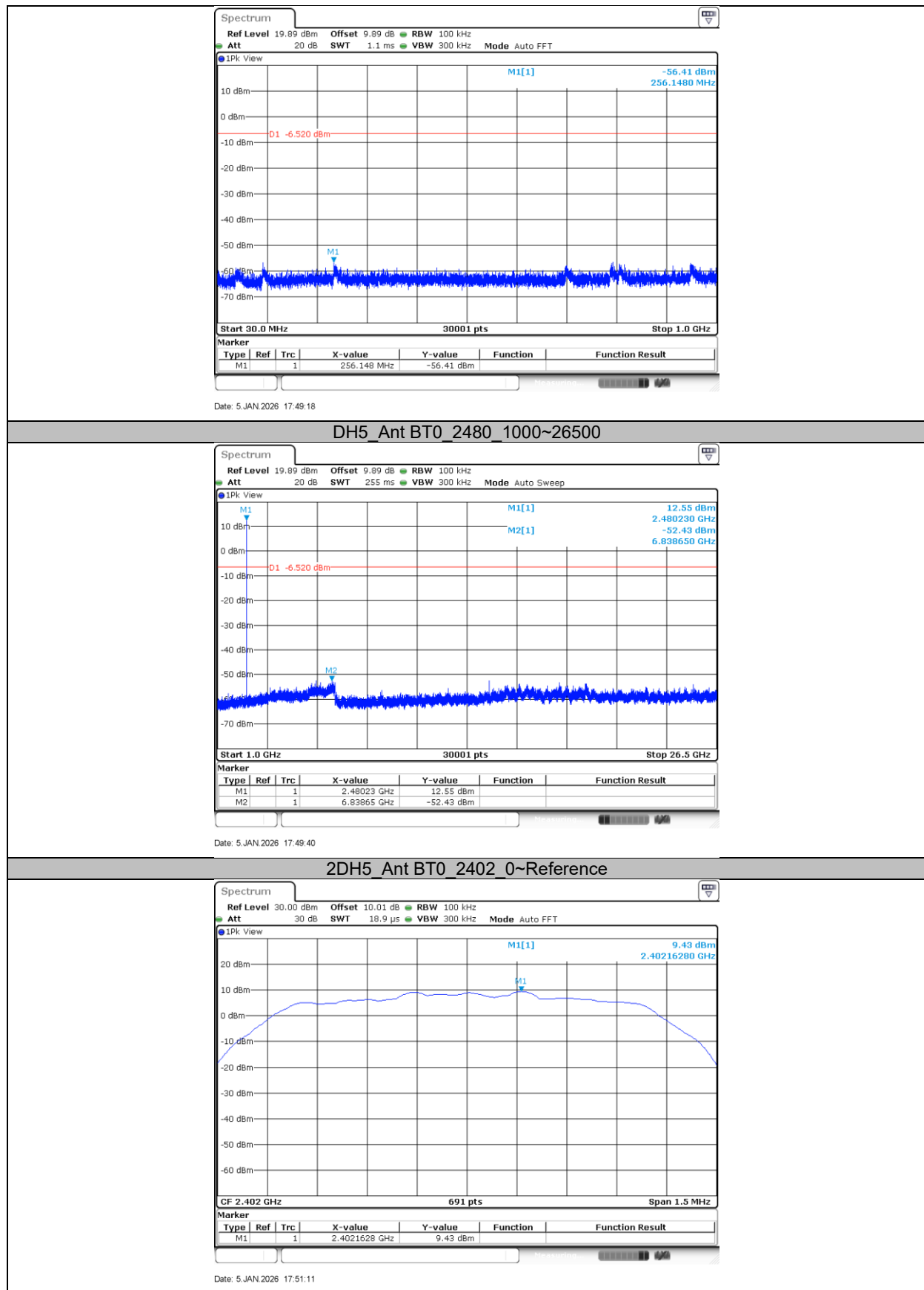
11.8. APPENDIX H: CONDUCTED SPURIOUS EMISSION

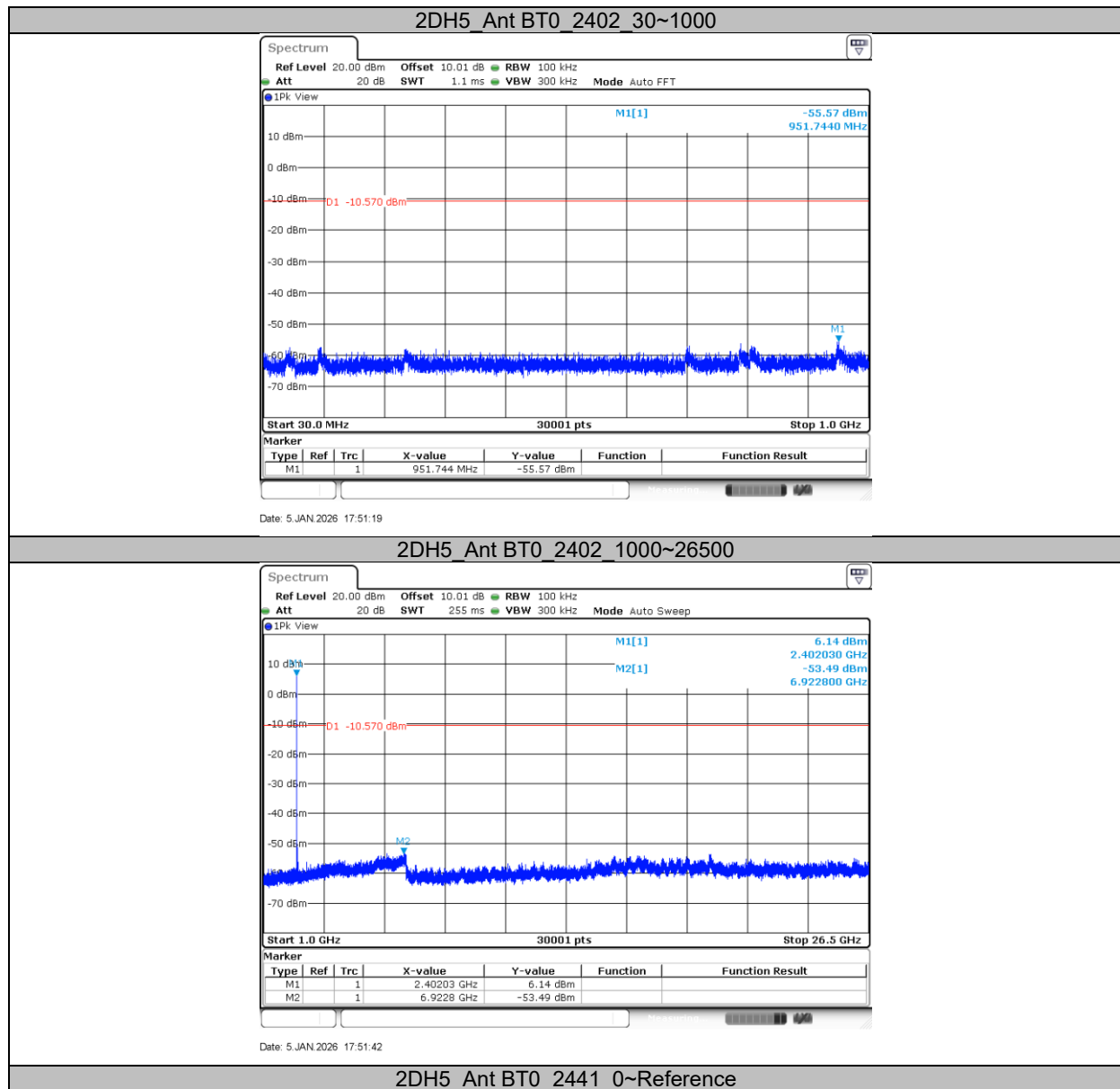
11.8.1. Test Result-Ant BT0

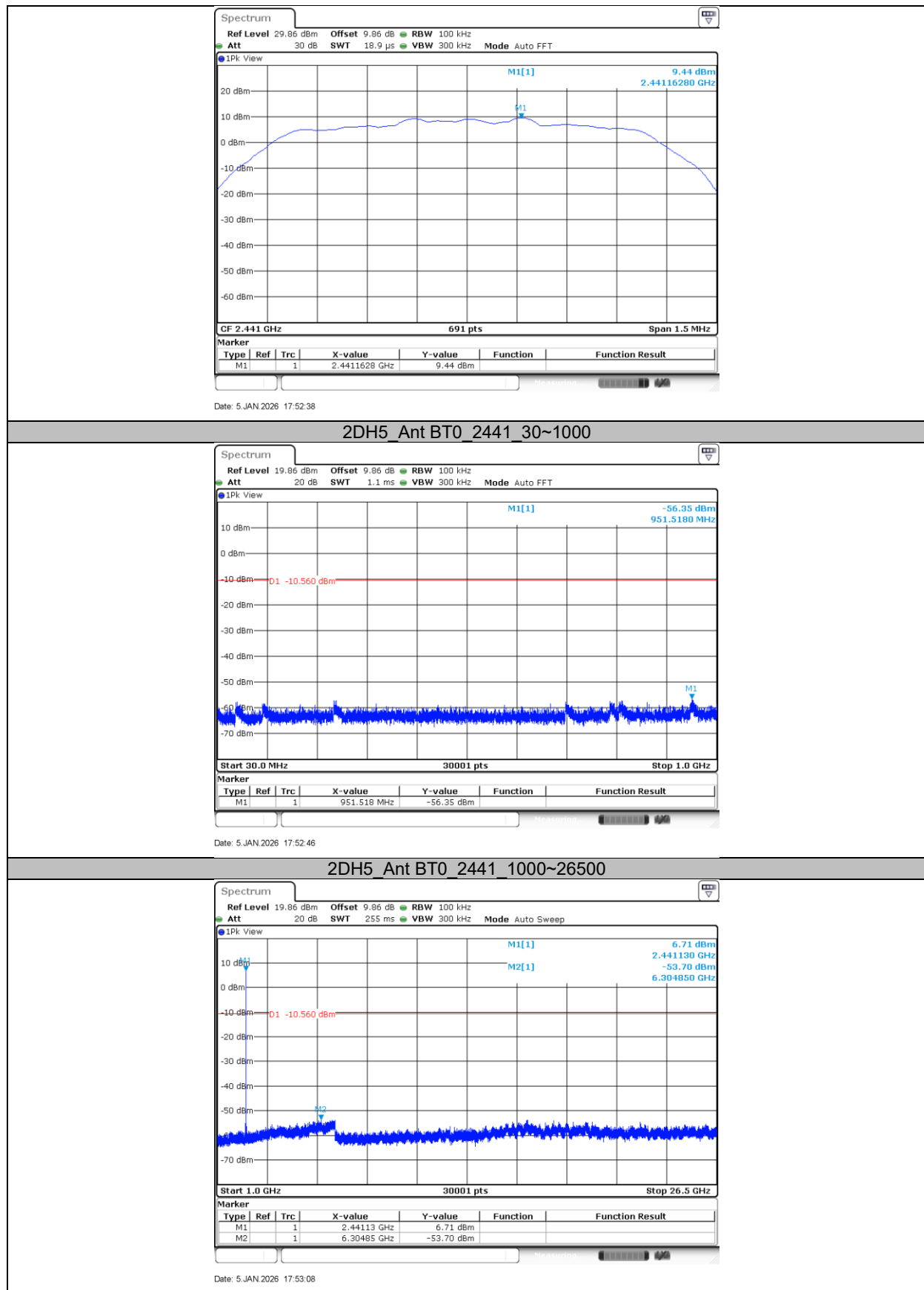


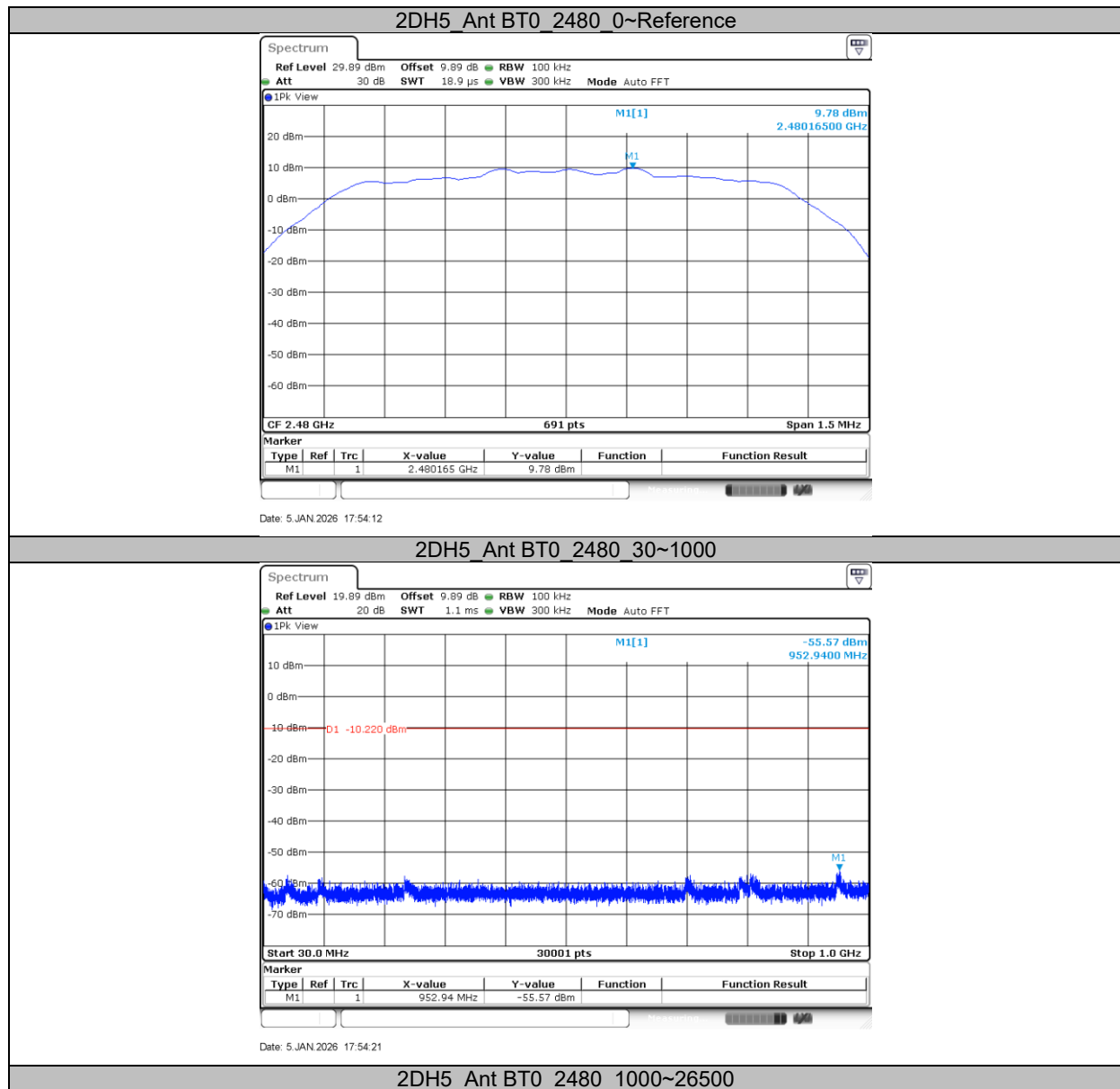


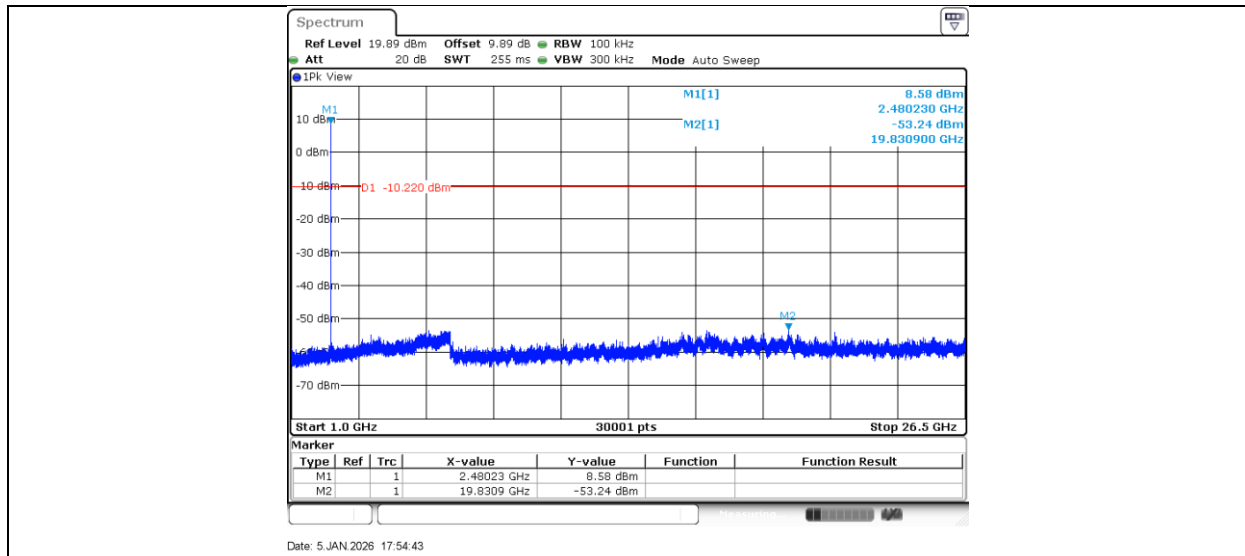




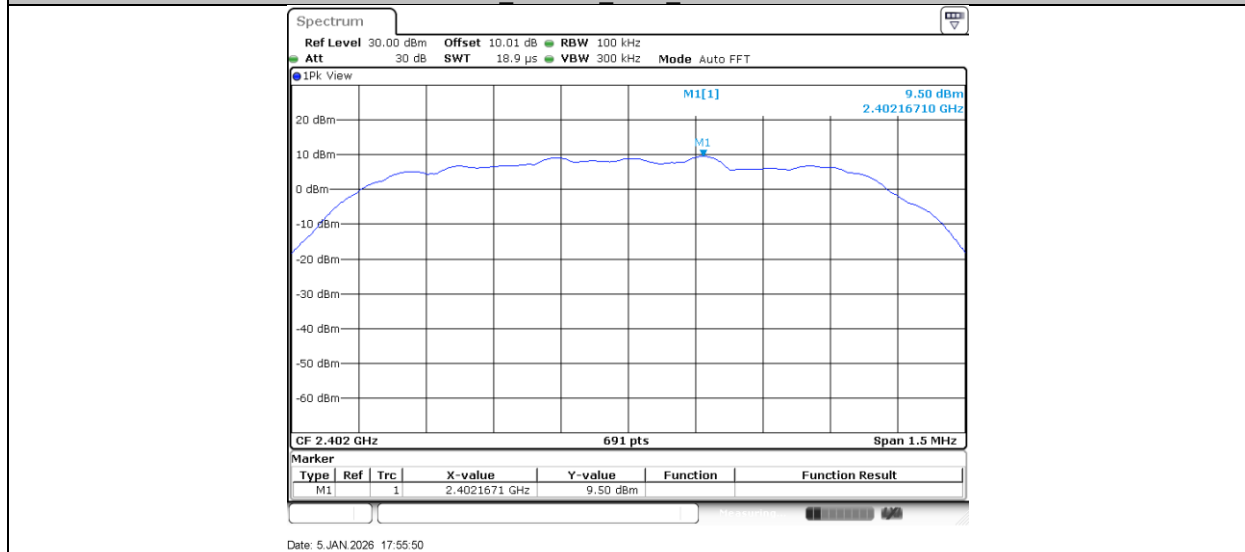




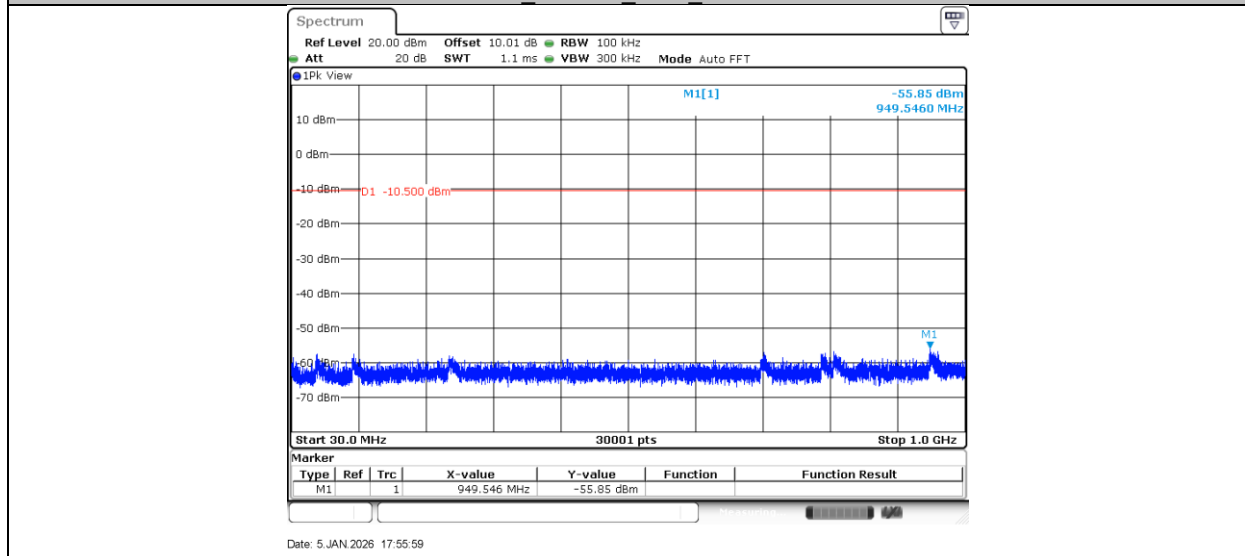


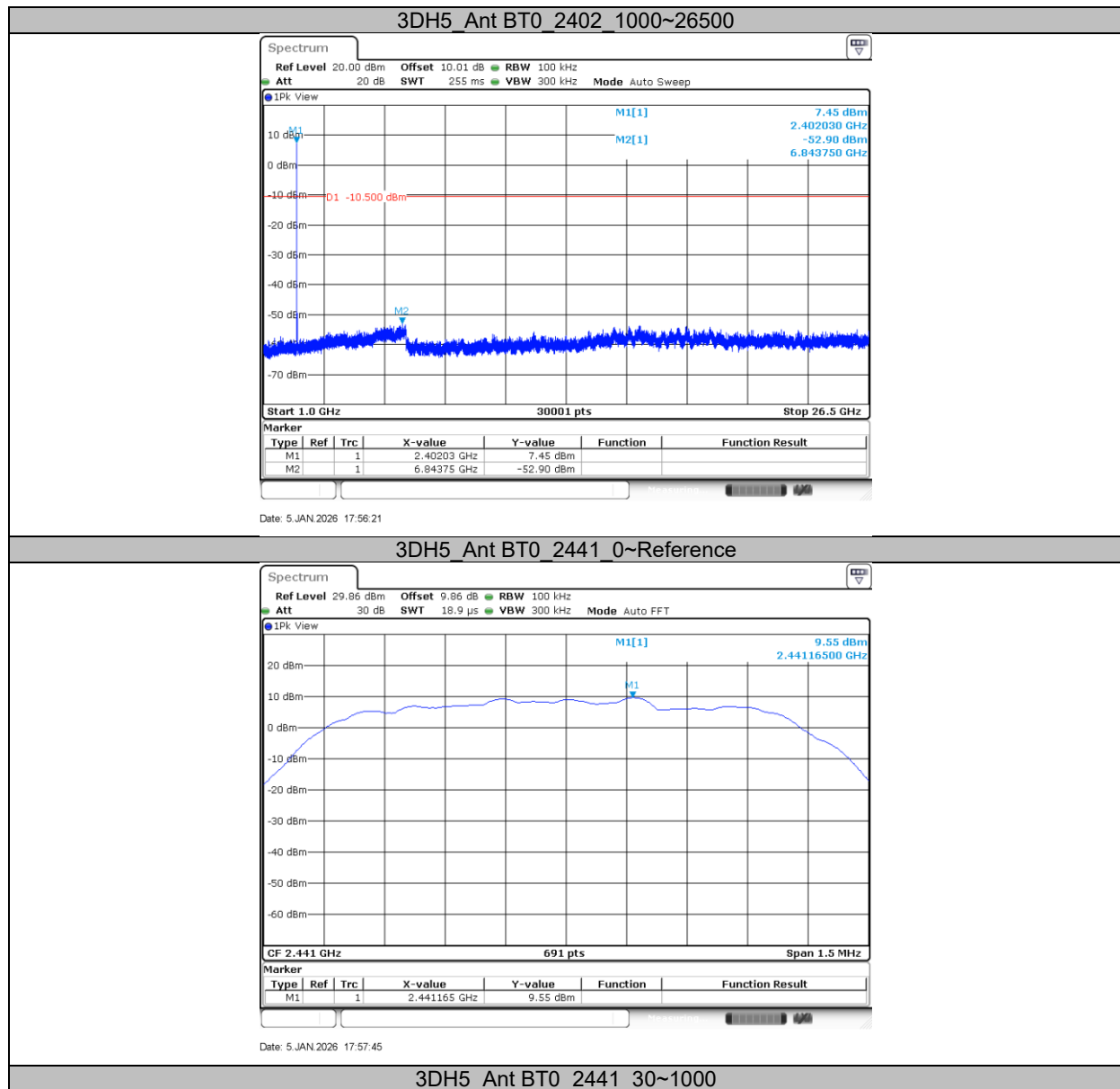


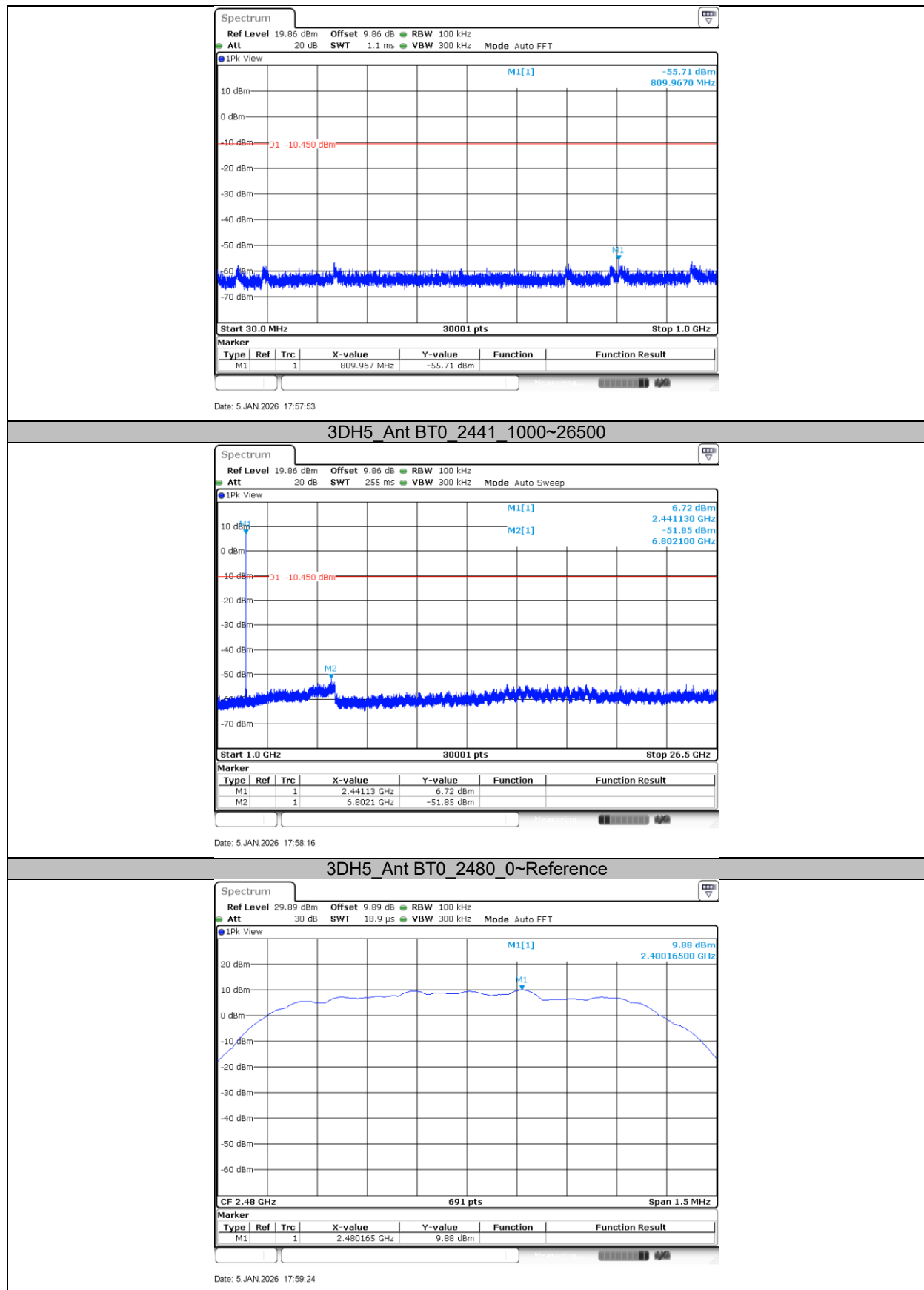
3DH5_Ant BT0_2402_0~Reference

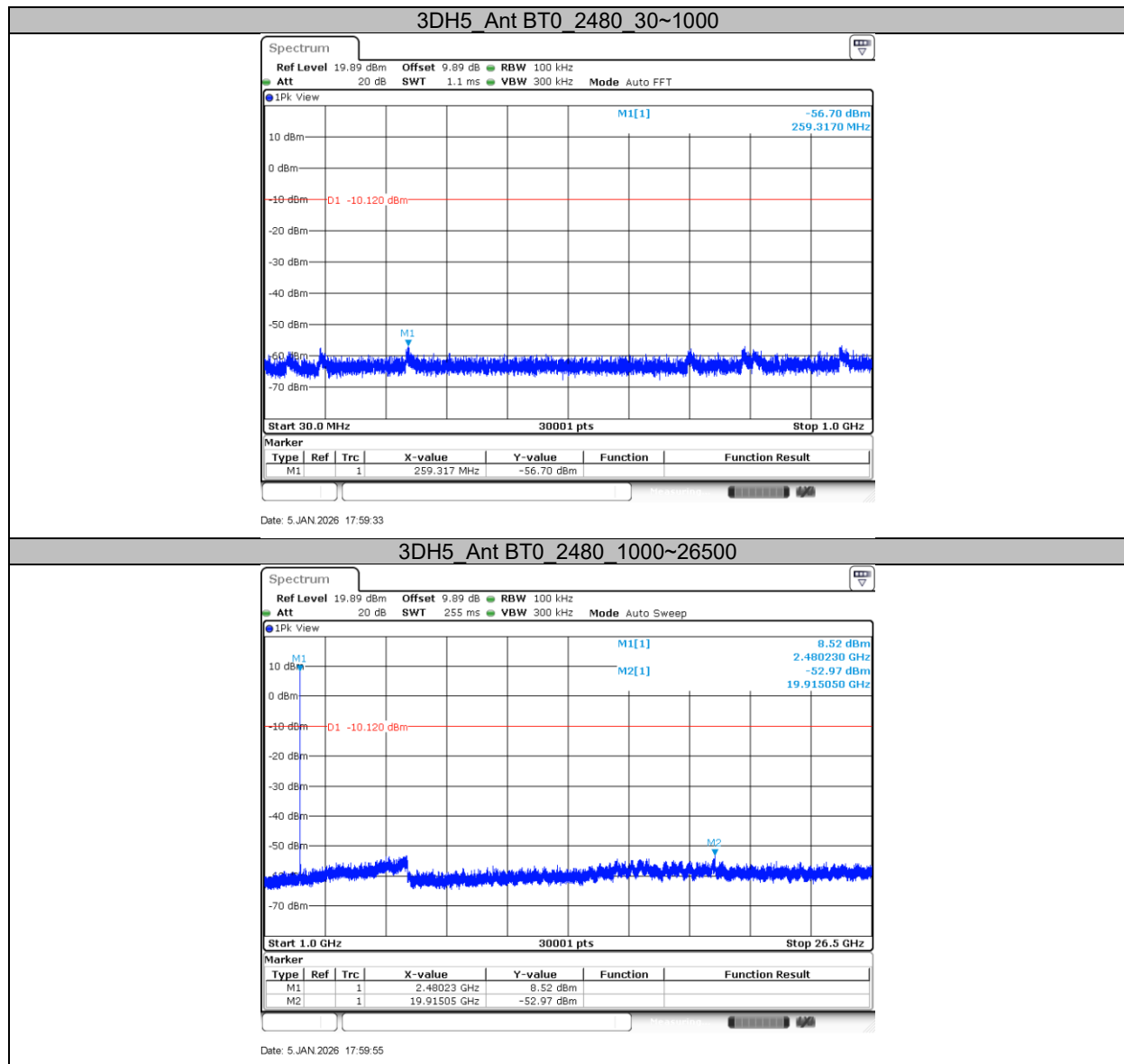


3DH5_Ant BT0_2402_30~1000









Note: To reduce report size, only low, middle and high channel test plot is recorded in the report as reference for test settings.

11.9. APPENDIX I: DUTY CYCLE

11.9.1. Test Result-Ant BT0

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
DH5	Ant BT0	2402	2.89	3.75	77.07	1.13
		2441	2.89	3.75	77.07	1.13
		2480	2.89	3.75	77.07	1.13
2DH5	Ant BT0	2402	2.89	3.75	77.07	1.13
		2441	2.89	3.75	77.07	1.13
		2480	2.89	3.76	76.86	1.14
3DH5	Ant BT0	2402	2.90	3.75	77.33	1.12
		2441	2.90	3.76	77.13	1.13
		2480	2.89	3.75	77.07	1.13

Note:

Duty Cycle Correction Factor=10log (1/x).

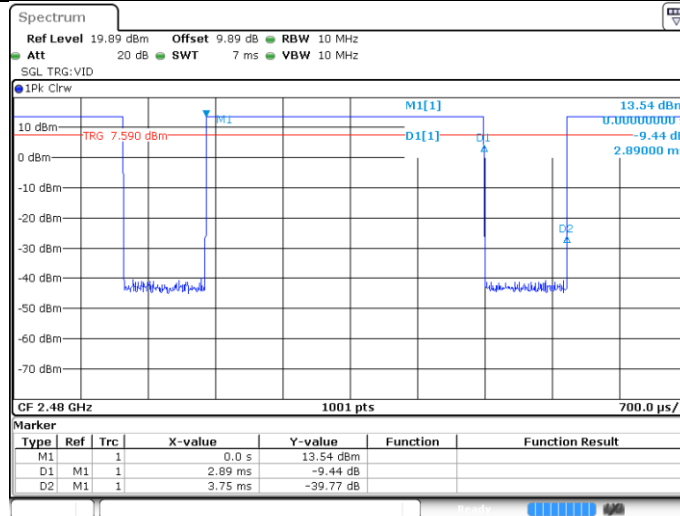
Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.

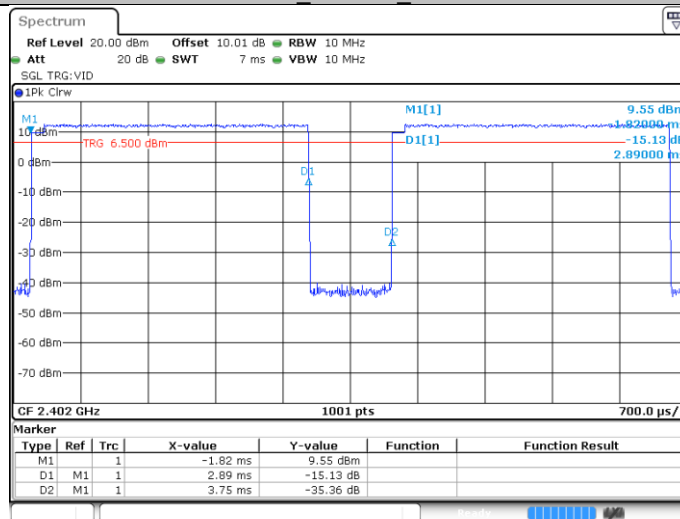
11.9.2. Test Graphs-Ant BT0





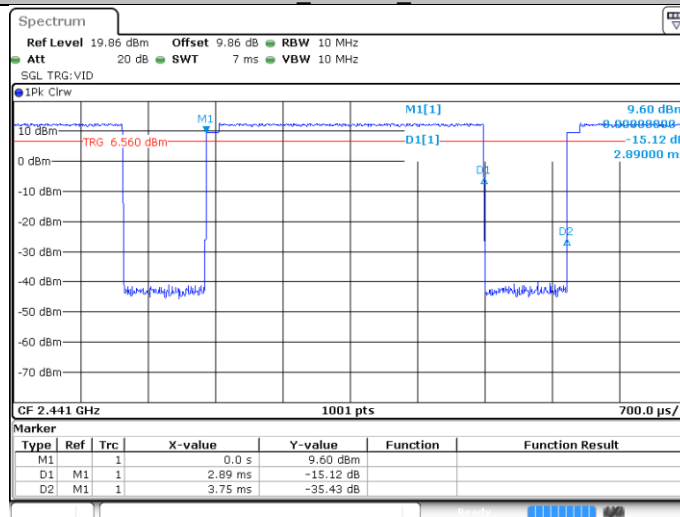
Date: 5 JAN 2026 17:48:31

2DH5_Ant BT0_2402

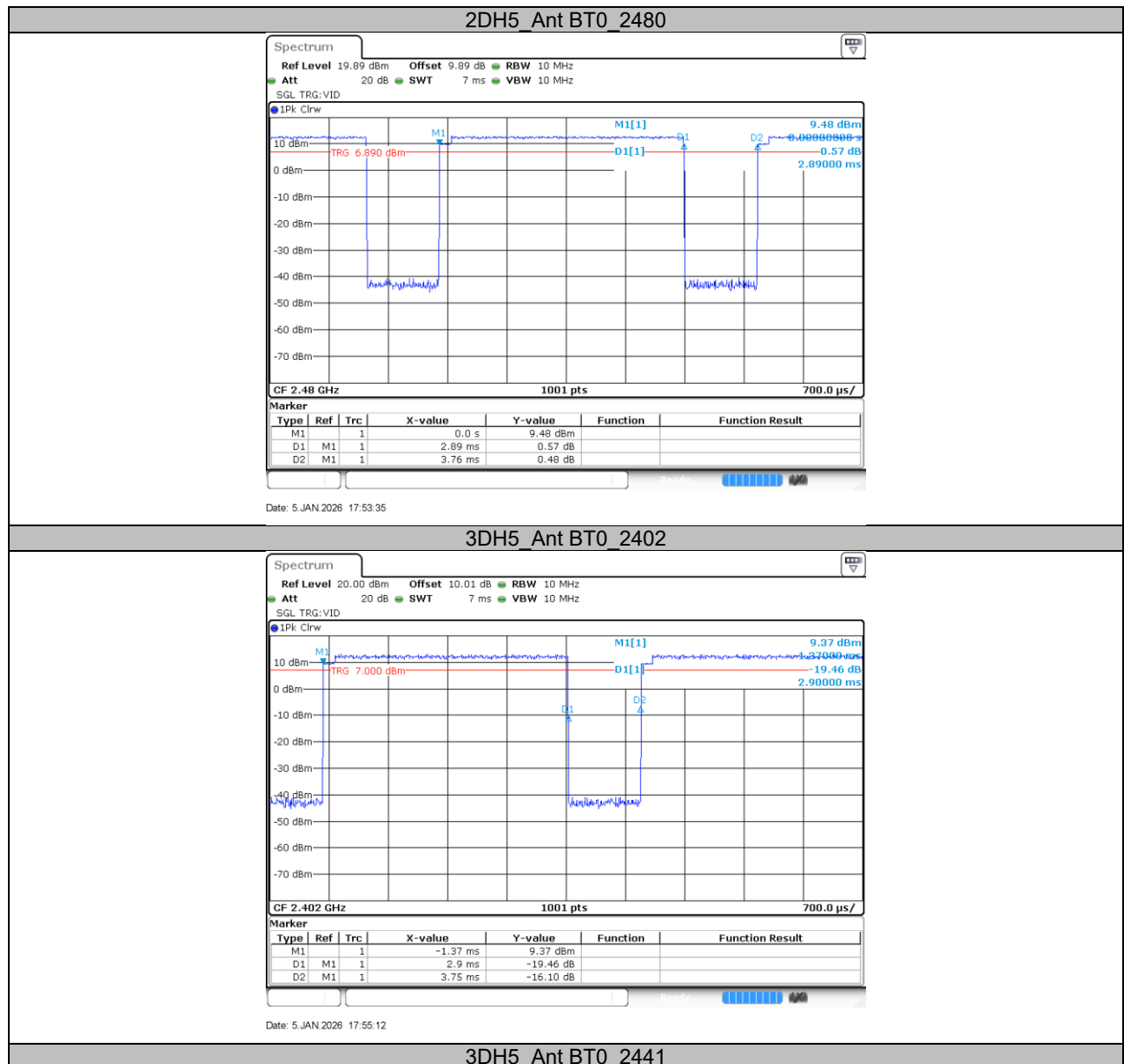


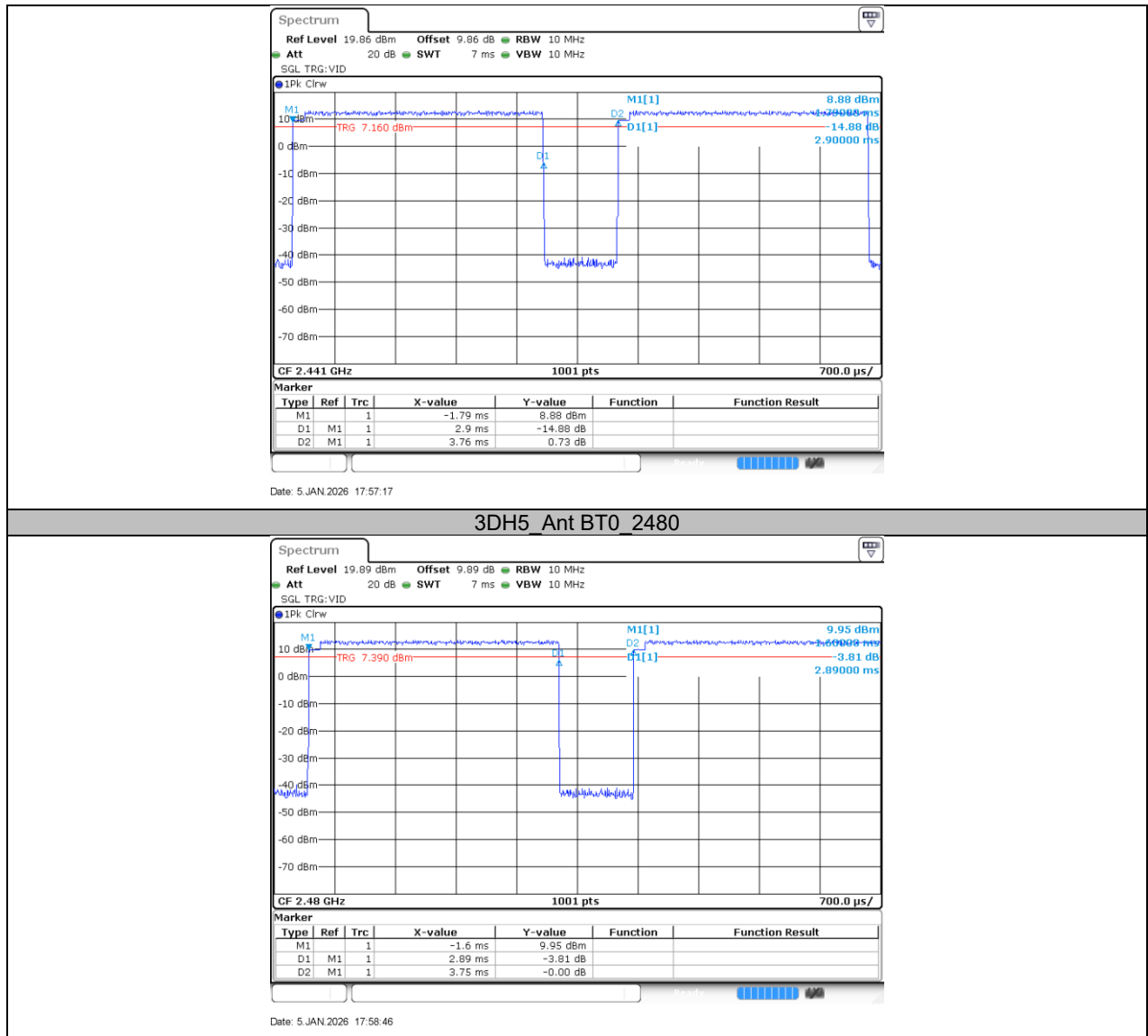
Date: 5 JAN 2026 17:50:34

2DH5_Ant BT0_2441



Date: 5 JAN 2026 17:52:10





END OF REPORT