

RF Test Data for Bluetooth (BR+EDR) (Conducted Measurements)

General Description of EUT	
EUT Name:	W665S3
Model:	W665S3
Sample ID:	RW-C-202502-0011-1-2#
Test Standard:	FCC Part 15.247
Environmental Conditions	
Ambient Temperature:	25°C
Ambient Humidity:	45%RH
Test Power Supply:	DC 3.3V
Test Engineer:	Rick.chen
Note: For a more detailed features description, please refer to the report TBR-C-202502-0011-1	

Contents

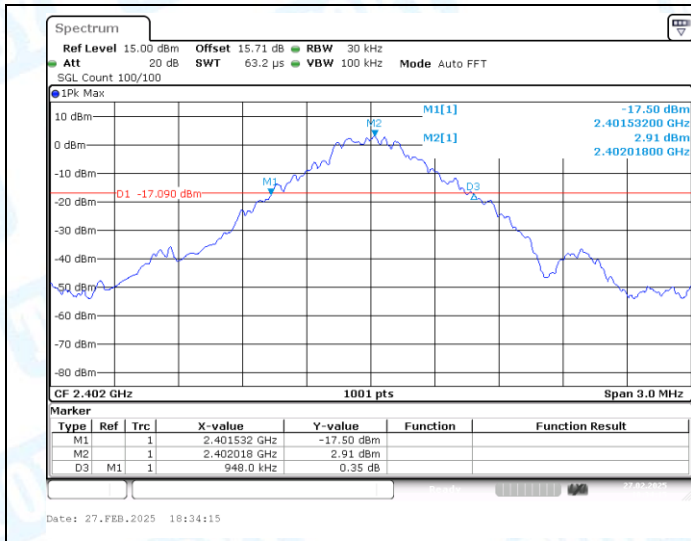
1: 20dB Emission Bandwidth	3
1.1 Test Result.....	3
1.2 Test Graphs	4
2: Occupied Channel Bandwidth	6
2.1 Test Result.....	6
2.2 Test Graphs	7
3: Maximum conducted output power	9
3.1 Test Result Peak.....	9
3.2 Test Graphs	10
4: Carrier frequency separation.....	12
4.1 Test Result.....	12
4.2 Test Graphs	13
5: Time of occupancy.....	14
5.1 Test Result.....	14
5.2 Test Graphs	15
6: Number of hopping channels	17
6.1 Test Result.....	17
6.2 Test Graphs	18
7: Band edge measurements	19
7.1 Test Result.....	19
7.2 Test Graphs	20
8: Conducted Spurious Emission	22
8.1 Test Result.....	22
8.2 Test Graphs	23
9: Duty Cycle	28
9.1 Test Result.....	28
9.2 Test Graphs	29
10: Emissions in Restricted Bands	31
10.1 Test Result.....	31
10.2 Test Graphs.....	32

1: 20dB Emission Bandwidth

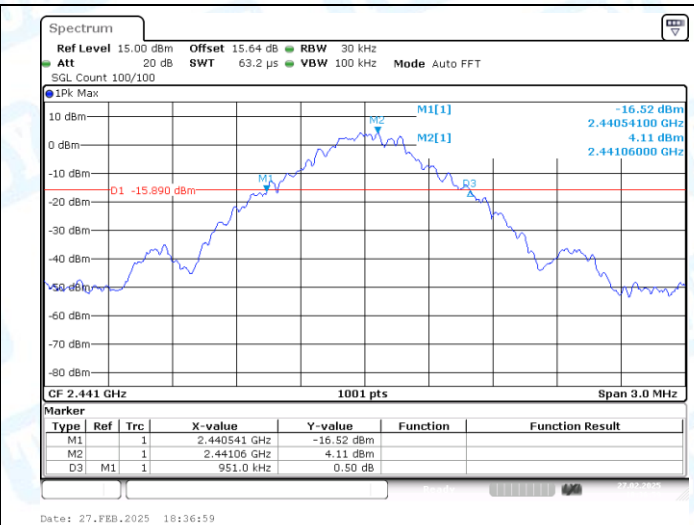
1.1 Test Result

Test Mode	Antenna	Frequency[MHz]	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.95	2401.53	2402.48	---	---
DH5	Ant1	2441	0.95	2440.54	2441.49	---	---
DH5	Ant1	2480	0.95	2479.54	2480.49	---	---
2DH5	Ant1	2402	1.28	2401.37	2402.65	---	---
2DH5	Ant1	2441	1.22	2440.38	2441.60	---	---
2DH5	Ant1	2480	1.29	2479.37	2480.66	---	---
3DH5	Ant1	2402	1.27	2401.36	2402.64	---	---
3DH5	Ant1	2441	1.27	2440.36	2441.63	---	---
3DH5	Ant1	2480	1.25	2479.37	2480.62	---	---

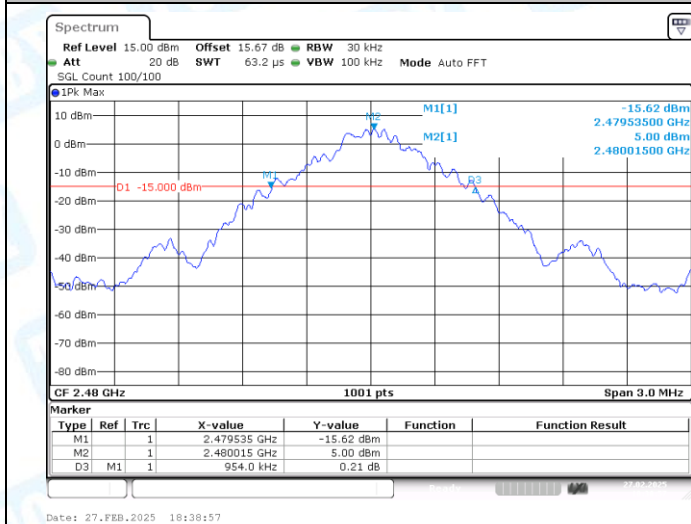
1.2 Test Graphs



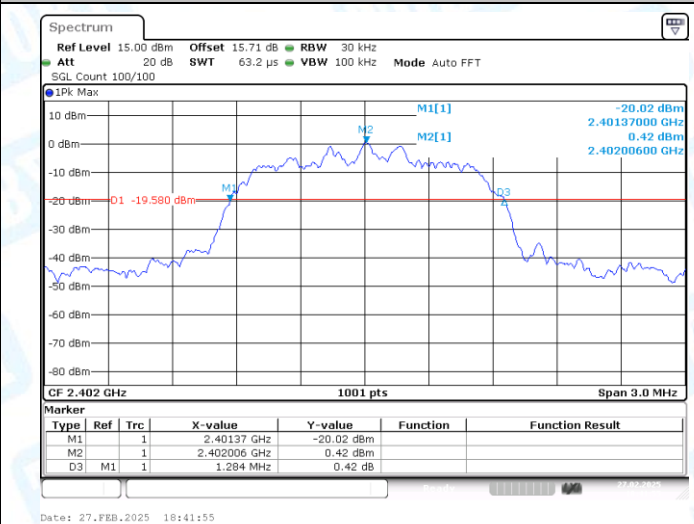
DH5-Ant1-2402



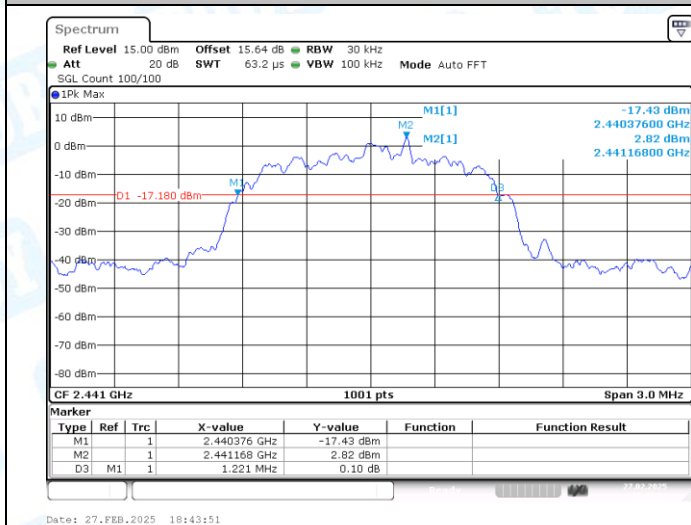
DH5-Ant1-2441



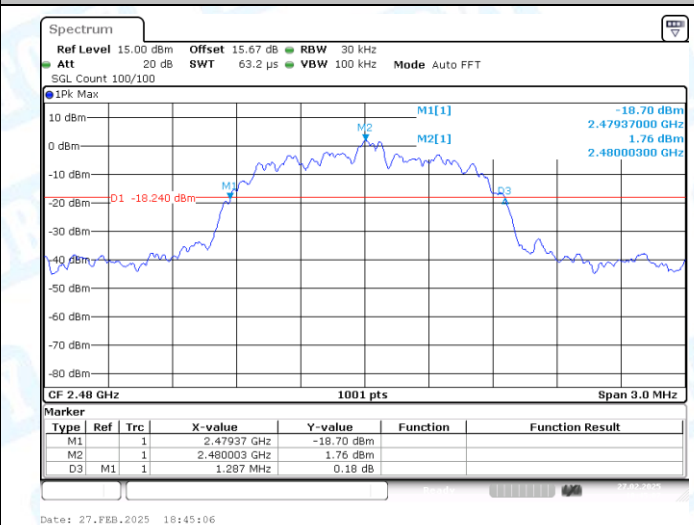
DH5-Ant1-2480



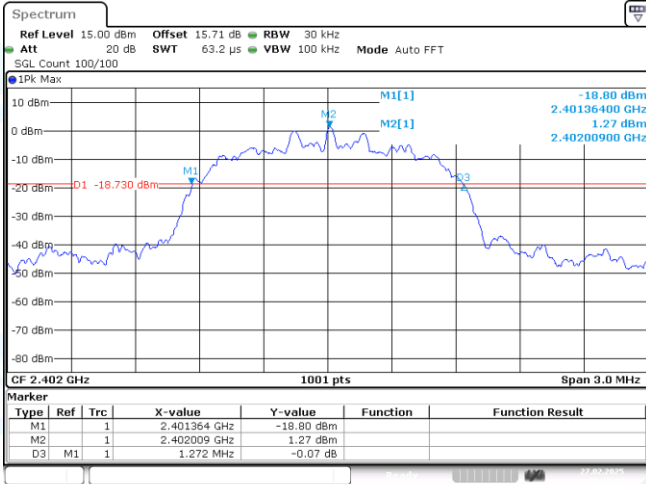
2DH5-Ant1-2402



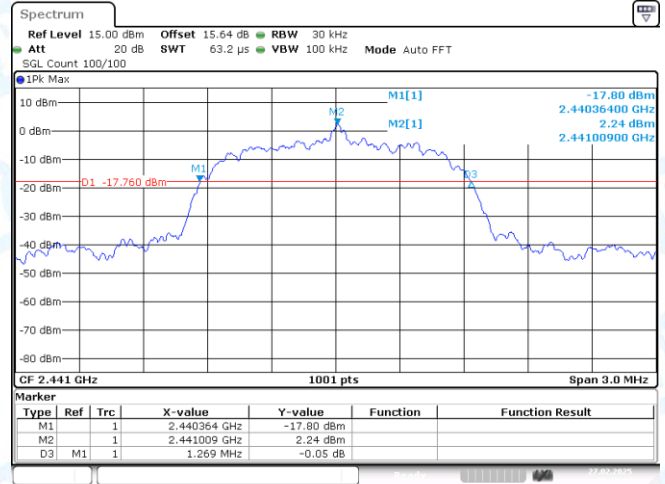
2DH5-Ant1-2441



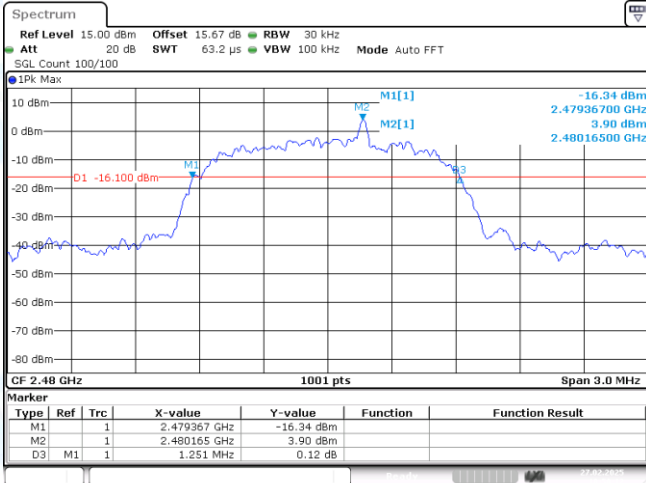
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



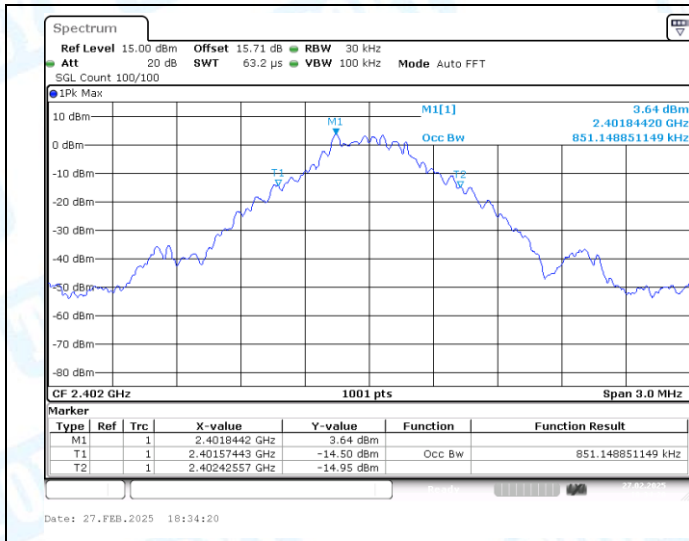
3DH5-Ant1-2480

2: Occupied Channel Bandwidth

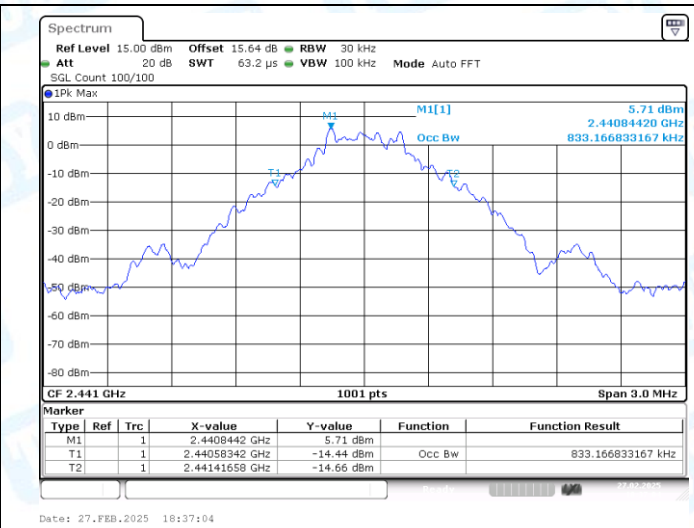
2.1 Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.851	2401.5744	2402.4256	---	---
DH5	Ant1	2441	0.833	2440.5834	2441.4166	---	---
DH5	Ant1	2480	0.842	2479.5834	2480.4256	---	---
2DH5	Ant1	2402	1.154	2401.4246	2402.5784	---	---
2DH5	Ant1	2441	1.178	2440.4156	2441.5934	---	---
2DH5	Ant1	2480	1.160	2479.4216	2480.5814	---	---
3DH5	Ant1	2402	1.151	2401.4306	2402.5814	---	---
3DH5	Ant1	2441	1.169	2440.4216	2441.5904	---	---
3DH5	Ant1	2480	1.157	2479.4246	2480.5814	---	---

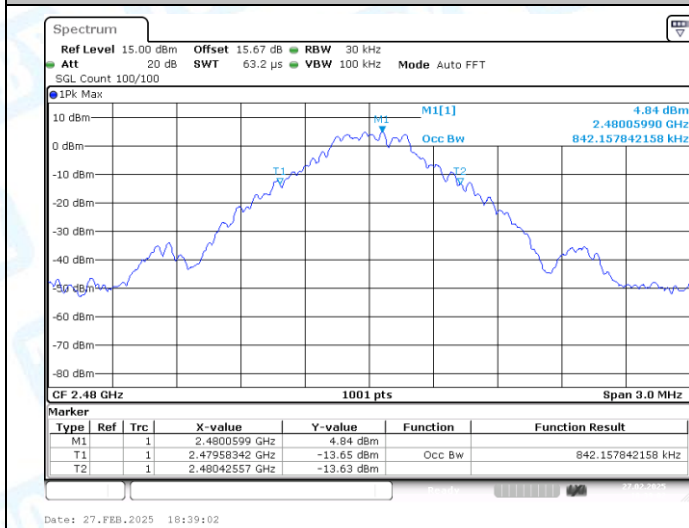
2.2 Test Graphs



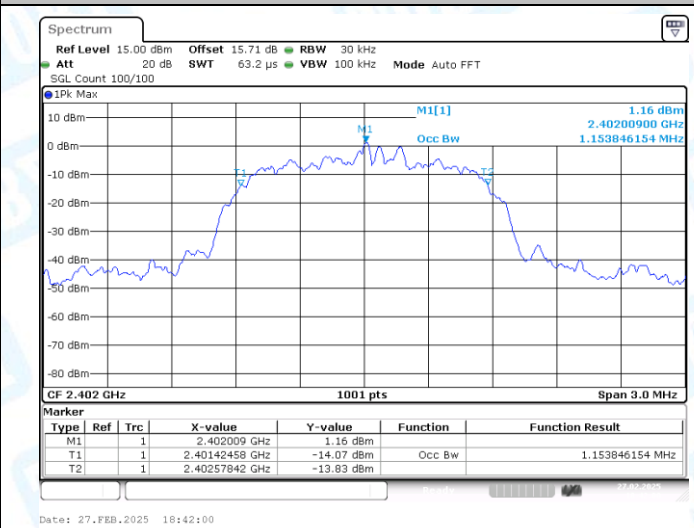
DH5-Ant1-2402



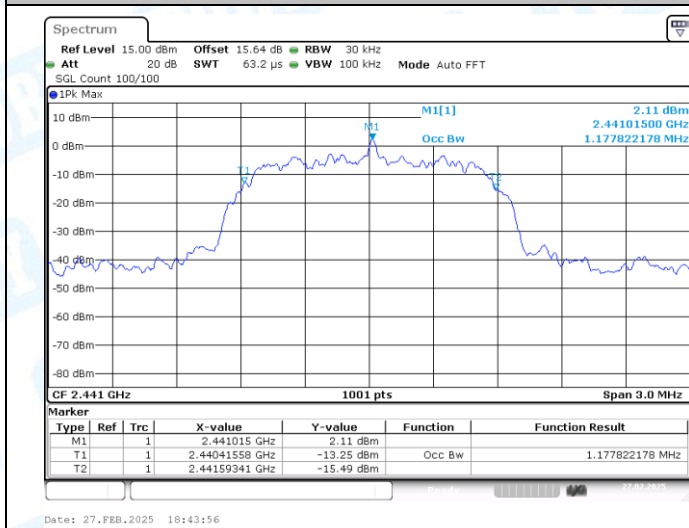
DH5-Ant1-2441



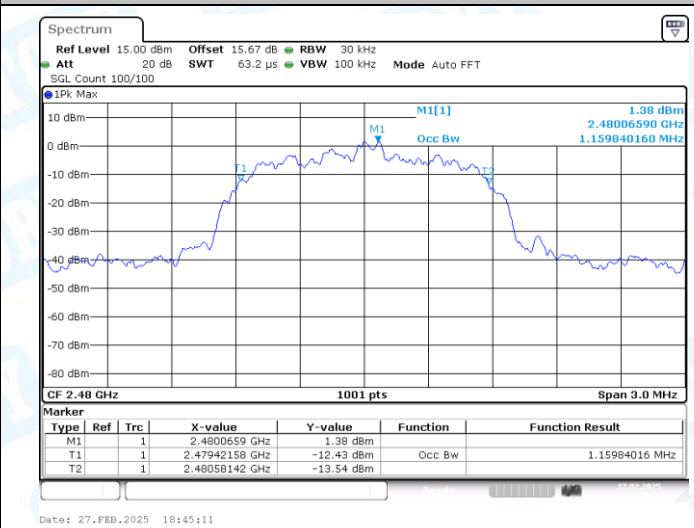
DH5-Ant1-2480



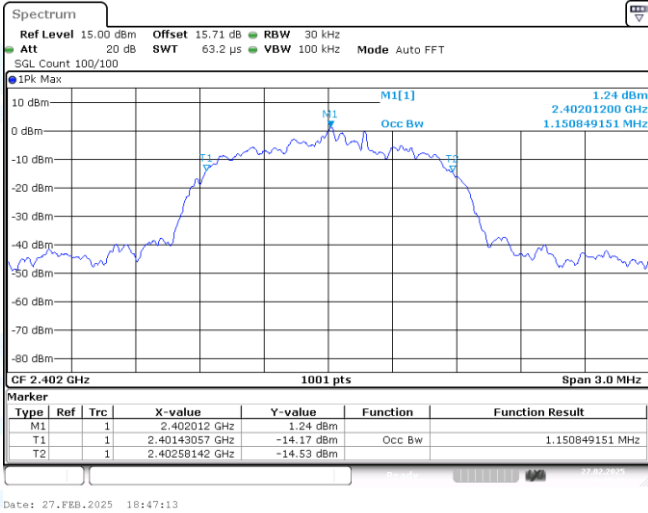
2DH5-Ant1-2402



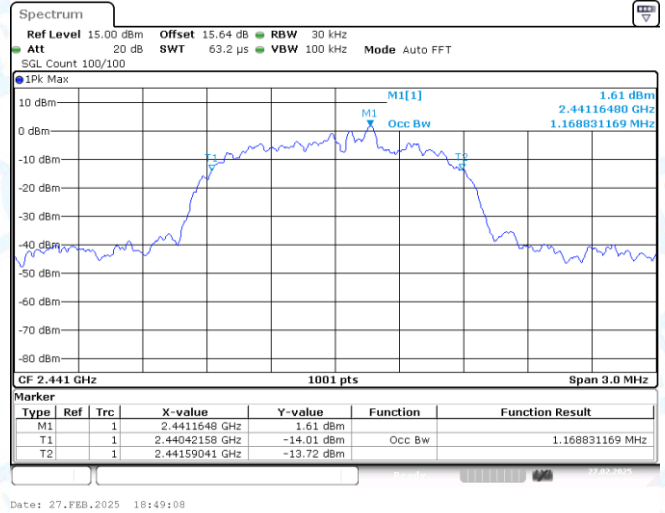
2DH5-Ant1-2441



2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



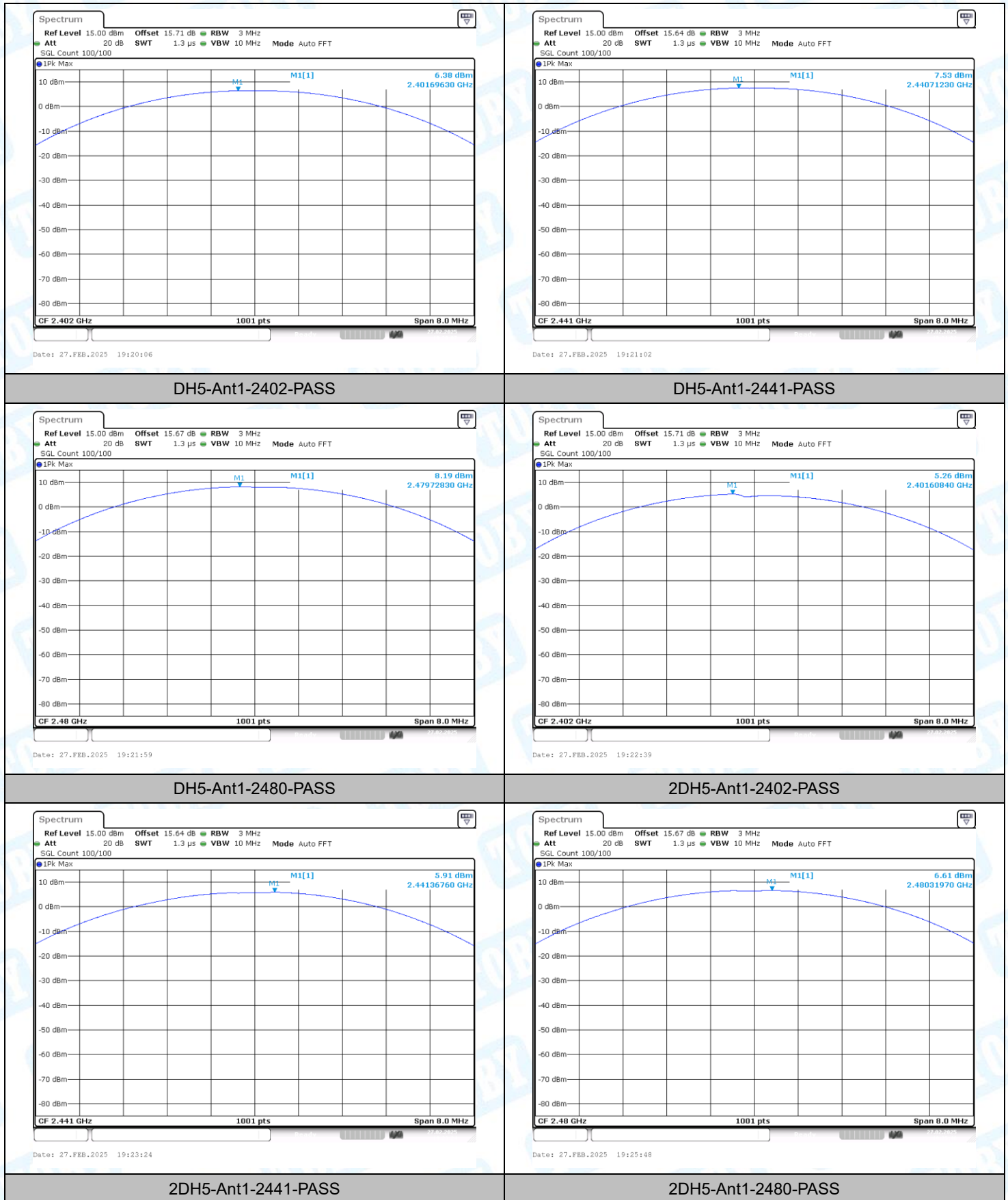
3DH5-Ant1-2480

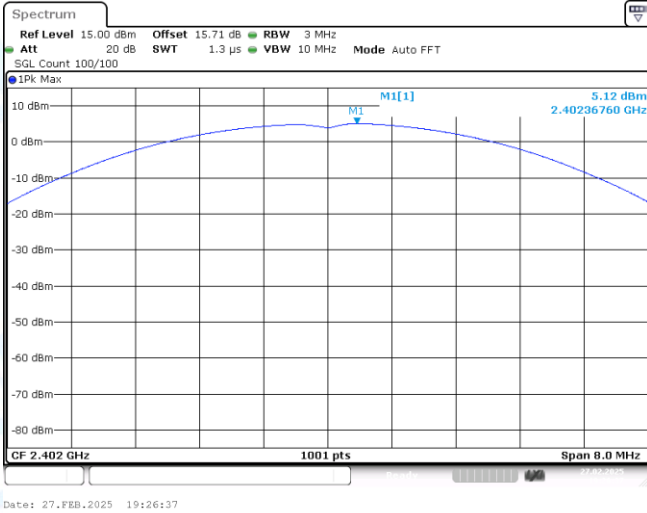
3: Maximum conducted output power

3.1 Test Result Peak

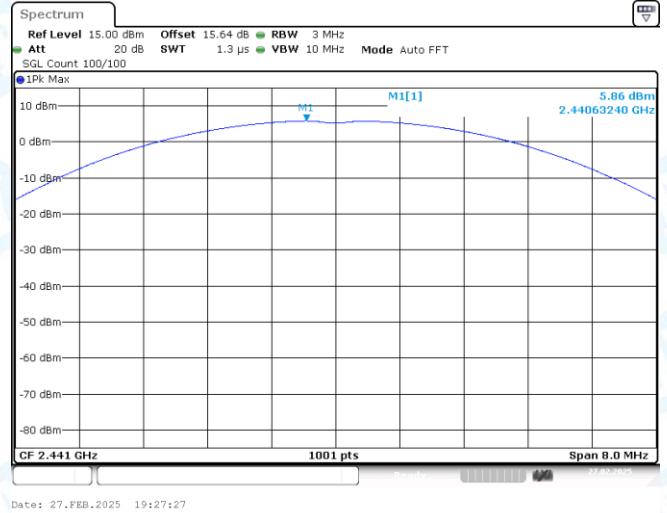
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	6.38	≤21	PASS
DH5	Ant1	2441	7.53	≤21	PASS
DH5	Ant1	2480	8.19	≤21	PASS
2DH5	Ant1	2402	5.26	≤21	PASS
2DH5	Ant1	2441	5.91	≤21	PASS
2DH5	Ant1	2480	6.61	≤21	PASS
3DH5	Ant1	2402	5.12	≤21	PASS
3DH5	Ant1	2441	5.86	≤21	PASS
3DH5	Ant1	2480	7.16	≤21	PASS

3.2 Test Graphs

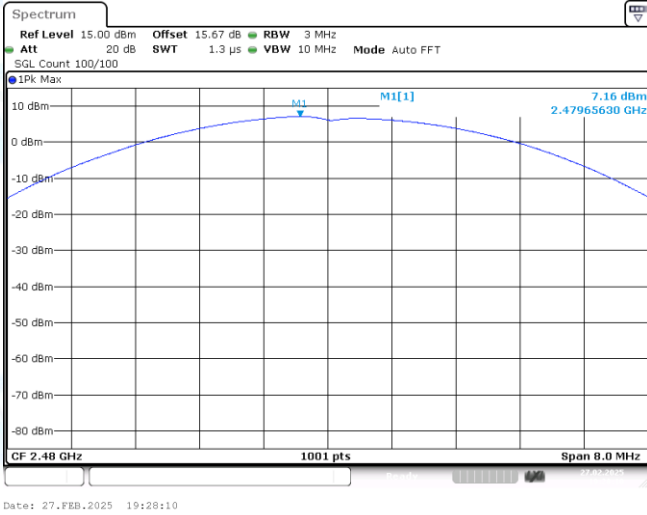




3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



3DH5-Ant1-2480-PASS

4: Carrier frequency separation

4.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.313	≥0.950	PASS
2DH5	Ant1	Hop	0.896	≥0.860	PASS
3DH5	Ant1	Hop	1.154	≥0.847	PASS

4.2 Test Graphs

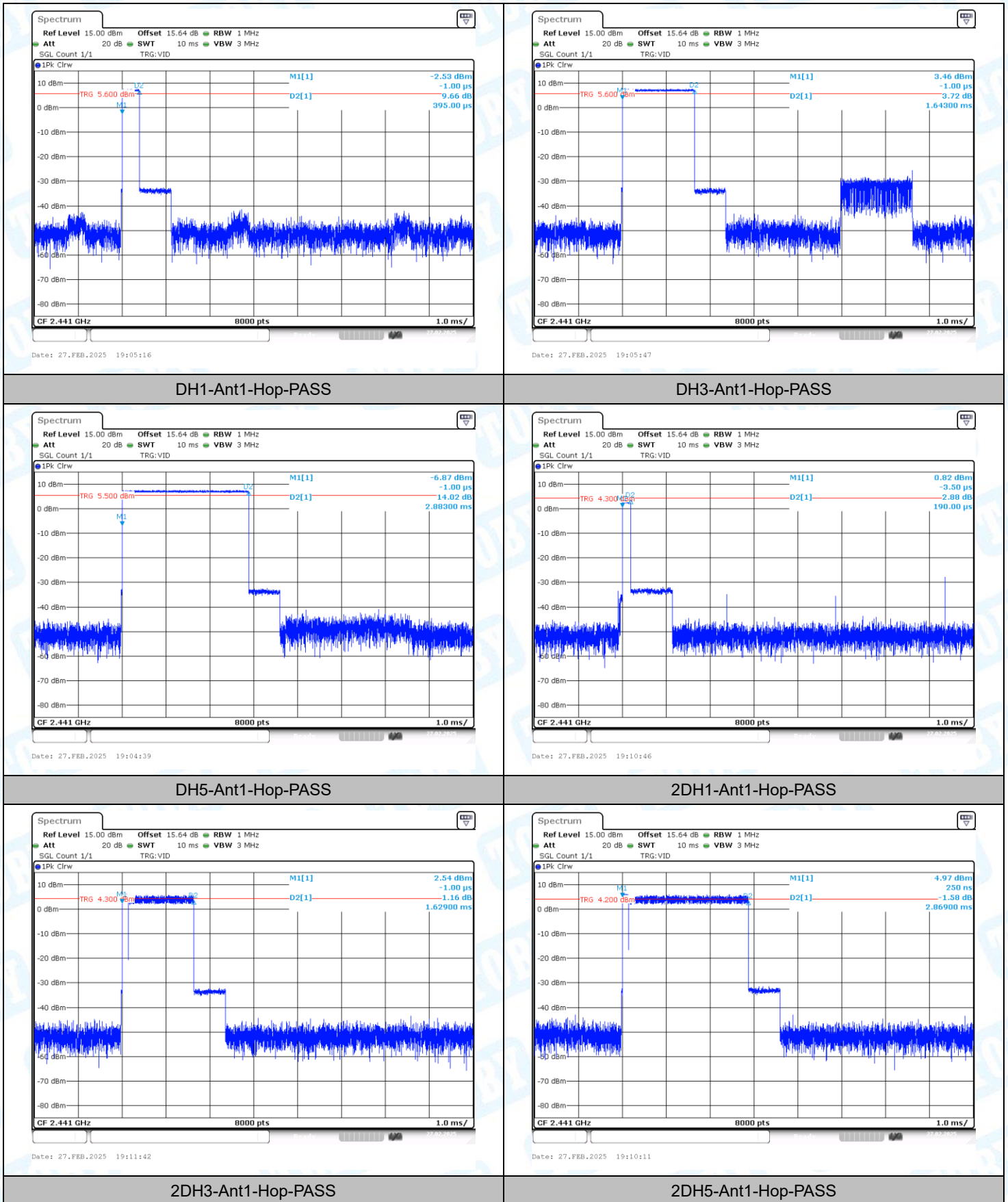


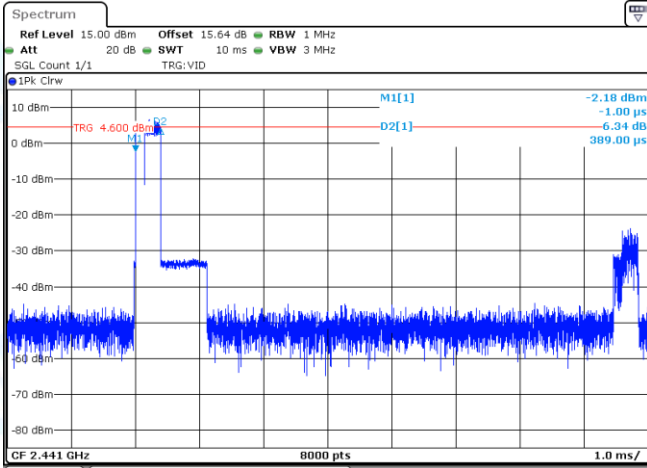
5: Time of occupancy

5.1 Test Result

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.395	320	0.126	≤0.4	PASS
DH3	Ant1	Hop	1.643	160	0.263	≤0.4	PASS
DH5	Ant1	Hop	2.883	106.67	0.308	≤0.4	PASS
2DH1	Ant1	Hop	0.190	320	0.061	≤0.4	PASS
2DH3	Ant1	Hop	1.629	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.869	106.67	0.306	≤0.4	PASS
3DH1	Ant1	Hop	0.389	320	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.625	160	0.26	≤0.4	PASS
3DH5	Ant1	Hop	2.868	106.67	0.306	≤0.4	PASS

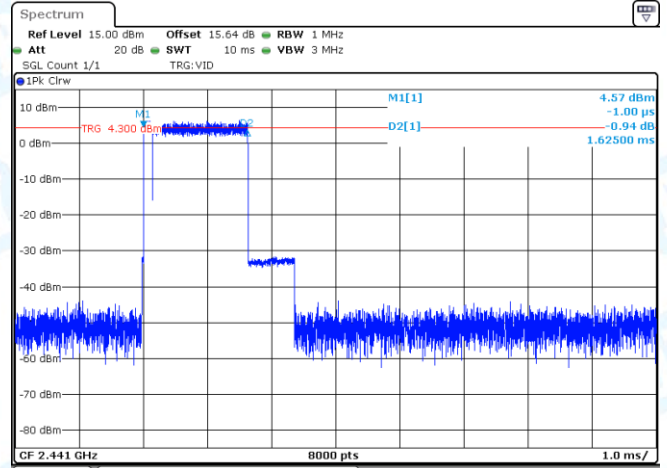
5.2 Test Graphs





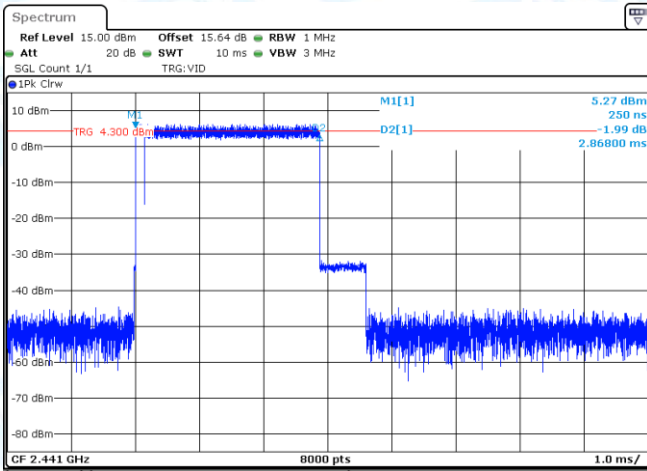
Date: 27.FEB.2025 19:16:00

3DH1-Ant1-Hop-PASS



Date: 27.FEB.2025 19:17:25

3DH3-Ant1-Hop-PASS



Date: 27.FEB.2025 19:14:38

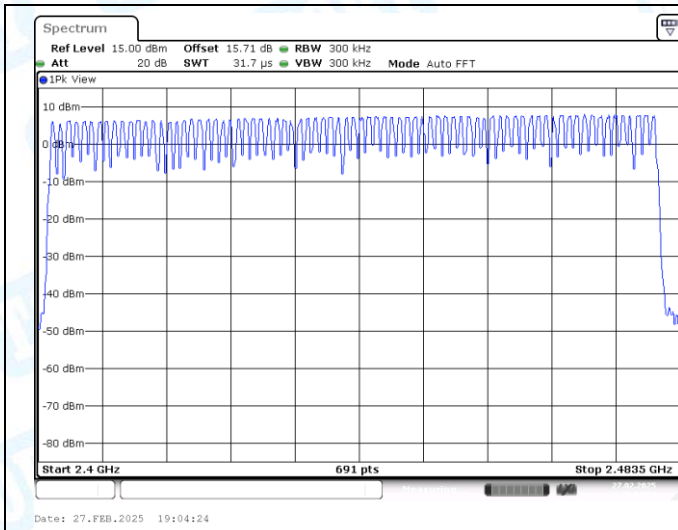
3DH5-Ant1-Hop-PASS

6: Number of hopping channels

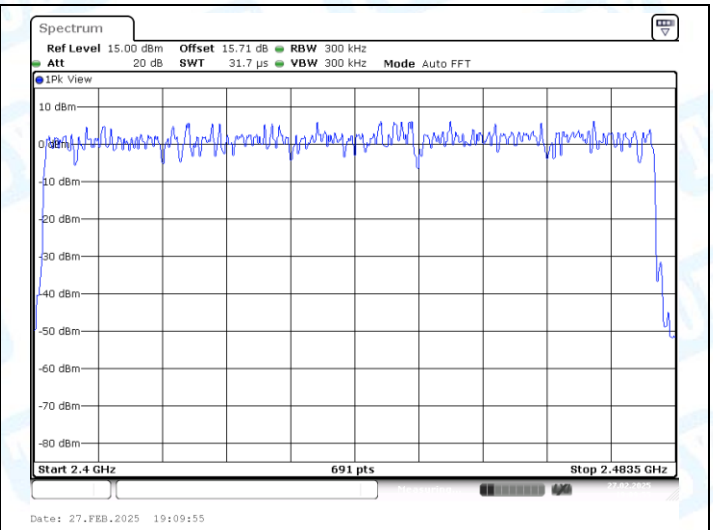
6.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

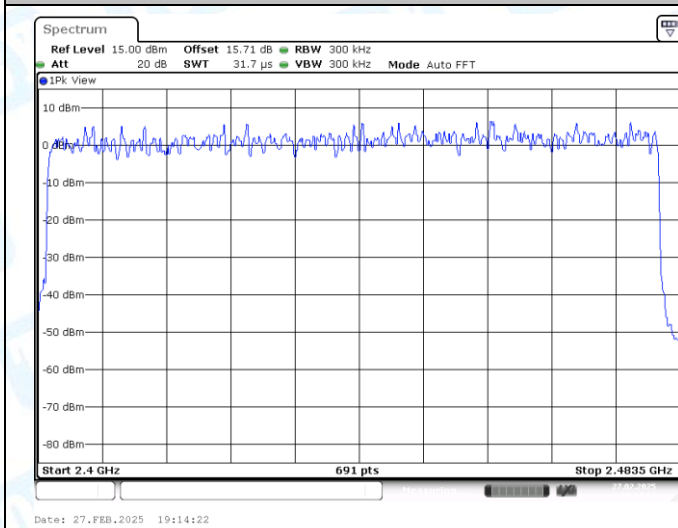
6.2 Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



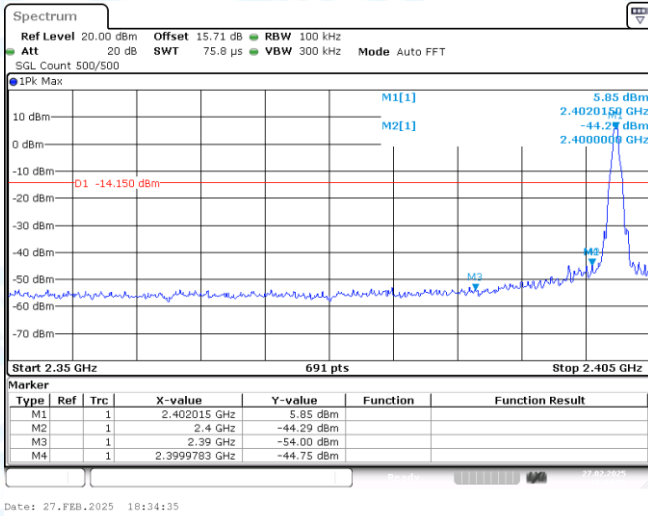
3DH5-Ant1-Hop-PASS

7: Band edge measurements

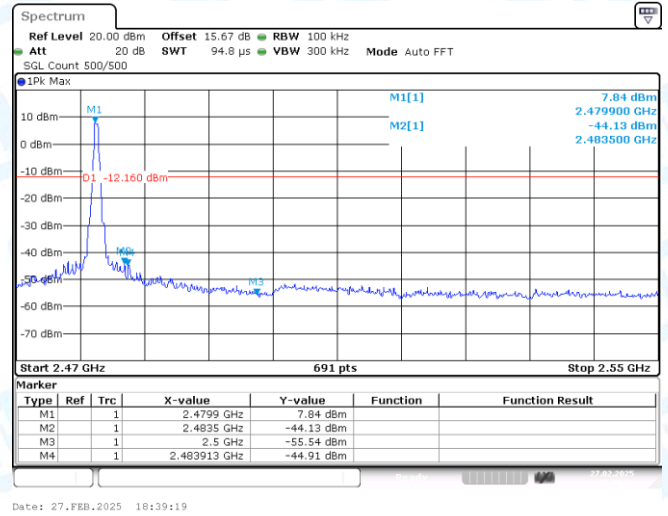
7.1 Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	5.85	-44.75	≤-14.15	PASS
DH5	Ant1	High	2480	7.84	-44.91	≤-12.16	PASS
DH5	Ant1	Low	Hop_2402	5.46	-47.35	≤-14.54	PASS
DH5	Ant1	High	Hop_2480	7.17	-49.74	≤-12.83	PASS
2DH5	Ant1	Low	2402	4.81	-46.36	≤-15.19	PASS
2DH5	Ant1	High	2480	6.20	-51.32	≤-13.8	PASS
2DH5	Ant1	Low	Hop_2402	-0.22	-52.43	≤-20.22	PASS
2DH5	Ant1	High	Hop_2480	4.53	-51.78	≤-15.47	PASS
3DH5	Ant1	Low	2402	4.79	-46.45	≤-15.21	PASS
3DH5	Ant1	High	2480	6.43	-51.25	≤-13.57	PASS
3DH5	Ant1	Low	Hop_2402	0.25	-52.51	≤-19.75	PASS
3DH5	Ant1	High	Hop_2480	6.00	-51.82	≤-14	PASS

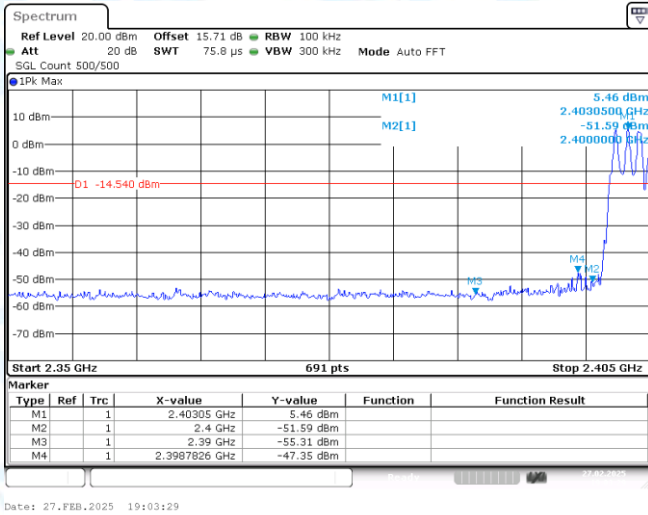
7.2 Test Graphs



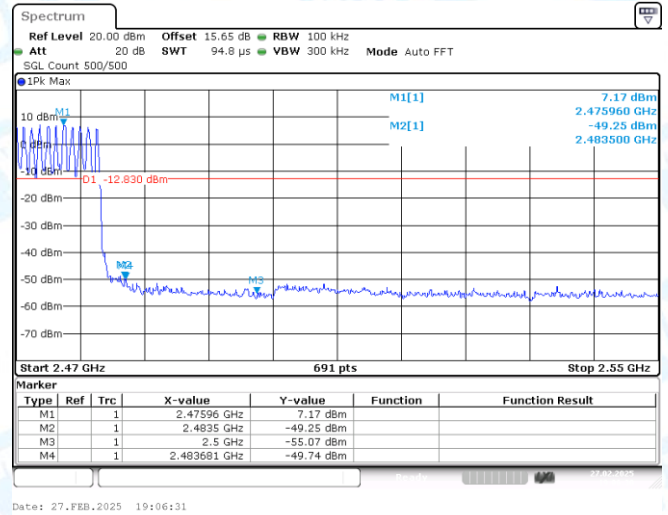
DH5-Ant1-2402-PASS



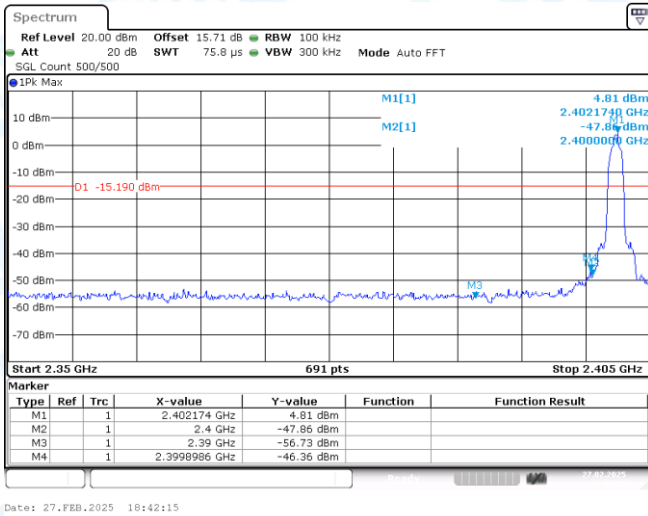
DH5-Ant1-2480-PASS



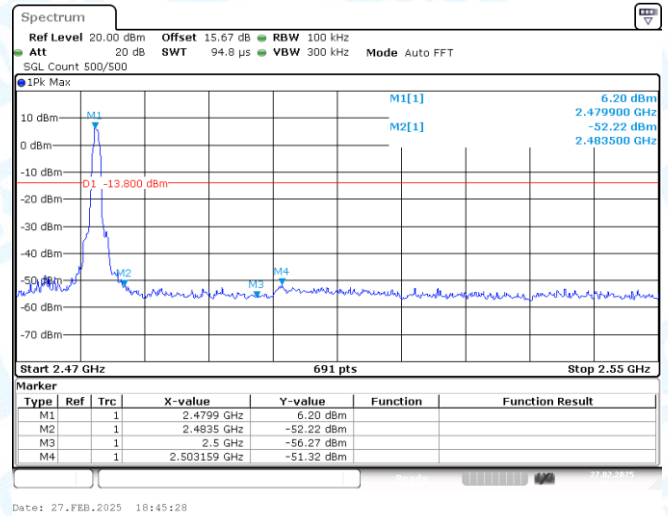
DH5-Ant1-Hop_2402-PASS



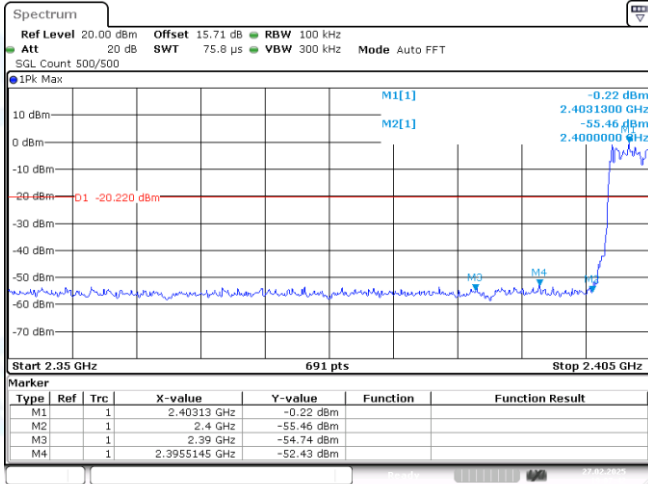
DH5-Ant1-Hop_2480-PASS



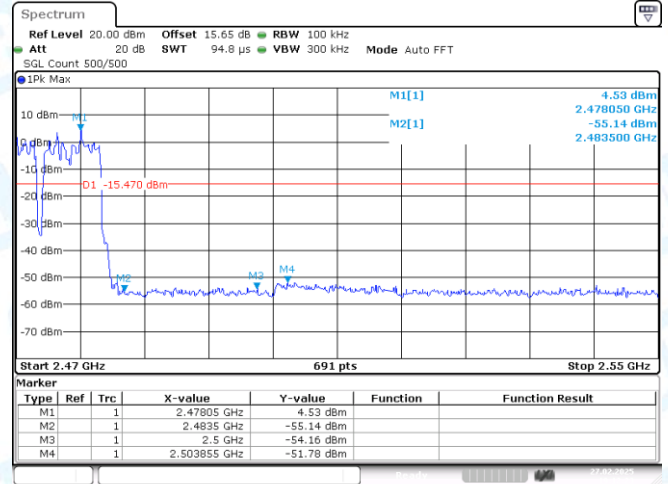
2DH5-Ant1-2402-PASS



2DH5-Ant1-2480-PASS



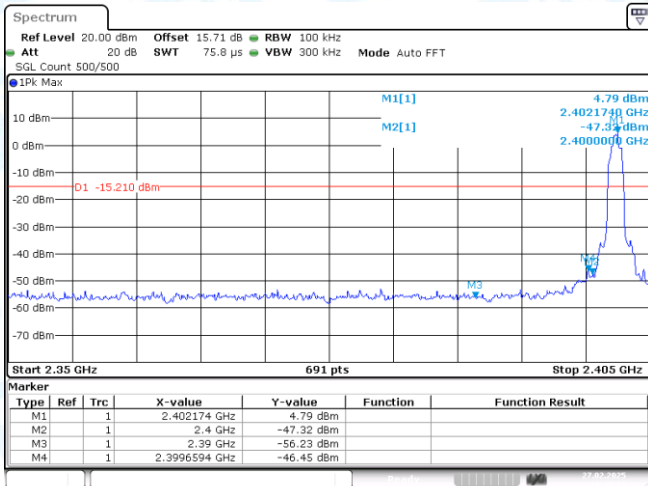
Date: 27.FEB.2025 19:07:41



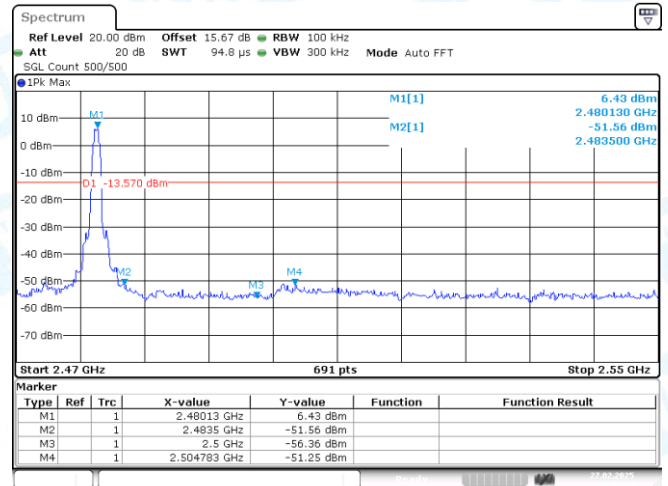
Date: 27.FEB.2025 19:12:22

2DH5-Ant1-Hop_2402-PASS

2DH5-Ant1-Hop_2480-PASS



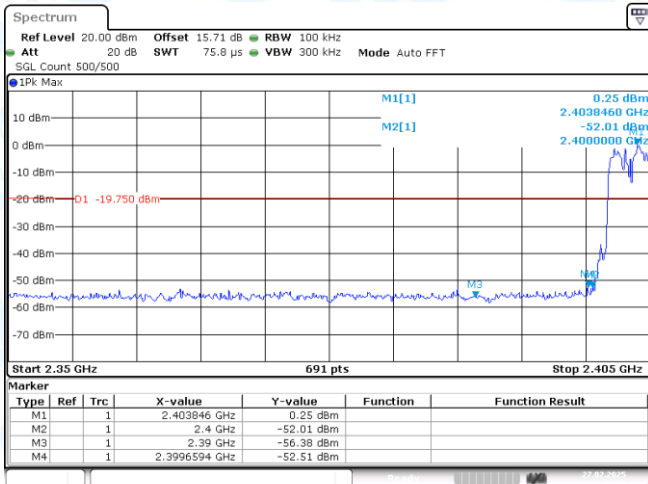
Date: 27.FEB.2025 18:47:28



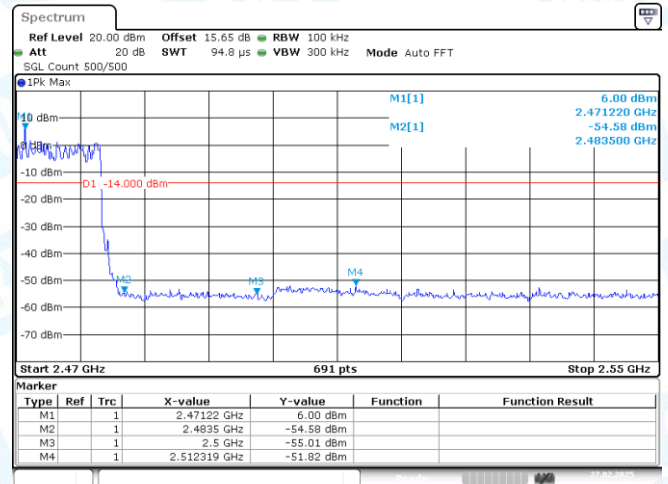
Date: 27.FEB.2025 18:50:34

3DH5-Ant1-2402-PASS

3DH5-Ant1-2480-PASS



Date: 27.FEB.2025 19:12:59



Date: 27.FEB.2025 19:18:19

3DH5-Ant1-Hop_2402-PASS

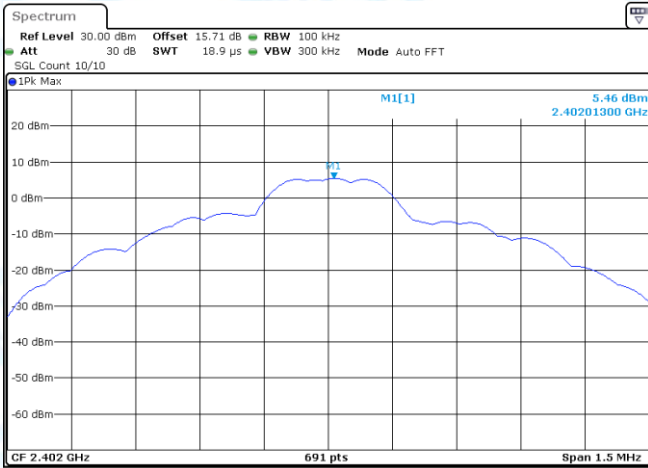
3DH5-Ant1-Hop_2480-PASS

8: Conducted Spurious Emission

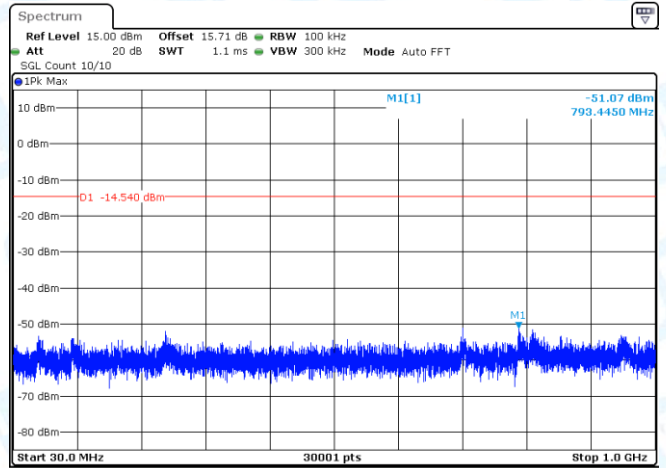
8.1 Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	5.46	5.46	---	PASS
DH5	Ant1	2402	30~1000	5.46	-51.07	≤-14.54	PASS
DH5	Ant1	2402	1000~26500	5.46	-44.94	≤-14.54	PASS
DH5	Ant1	2441	0~Reference	6.58	6.58	---	PASS
DH5	Ant1	2441	30~1000	6.58	-51.58	≤-13.42	PASS
DH5	Ant1	2441	1000~26500	6.58	-44.78	≤-13.42	PASS
DH5	Ant1	2480	0~Reference	7.15	7.15	---	PASS
DH5	Ant1	2480	30~1000	7.15	-51.48	≤-12.85	PASS
DH5	Ant1	2480	1000~26500	7.15	-45.12	≤-12.85	PASS
2DH5	Ant1	2402	0~Reference	1.61	1.61	---	PASS
2DH5	Ant1	2402	30~1000	1.61	-50.79	≤-18.39	PASS
2DH5	Ant1	2402	1000~26500	1.61	-45.47	≤-18.39	PASS
2DH5	Ant1	2441	0~Reference	0.06	0.06	---	PASS
2DH5	Ant1	2441	30~1000	0.06	-51.75	≤-19.94	PASS
2DH5	Ant1	2441	1000~26500	0.06	-46.41	≤-19.94	PASS
2DH5	Ant1	2480	0~Reference	4.10	4.10	---	PASS
2DH5	Ant1	2480	30~1000	4.10	-51.63	≤-15.9	PASS
2DH5	Ant1	2480	1000~26500	4.10	-45.73	≤-15.9	PASS
3DH5	Ant1	2402	0~Reference	2.32	2.32	---	PASS
3DH5	Ant1	2402	30~1000	2.32	-51.35	≤-17.68	PASS
3DH5	Ant1	2402	1000~26500	2.32	-45.81	≤-17.68	PASS
3DH5	Ant1	2441	0~Reference	0.93	0.93	---	PASS
3DH5	Ant1	2441	30~1000	0.93	-51.98	≤-19.07	PASS
3DH5	Ant1	2441	1000~26500	0.93	-44.86	≤-19.07	PASS
3DH5	Ant1	2480	0~Reference	0.75	0.75	---	PASS
3DH5	Ant1	2480	30~1000	0.75	-51.68	≤-19.25	PASS
3DH5	Ant1	2480	1000~26500	0.75	-45.53	≤-19.25	PASS

8.2 Test Graphs



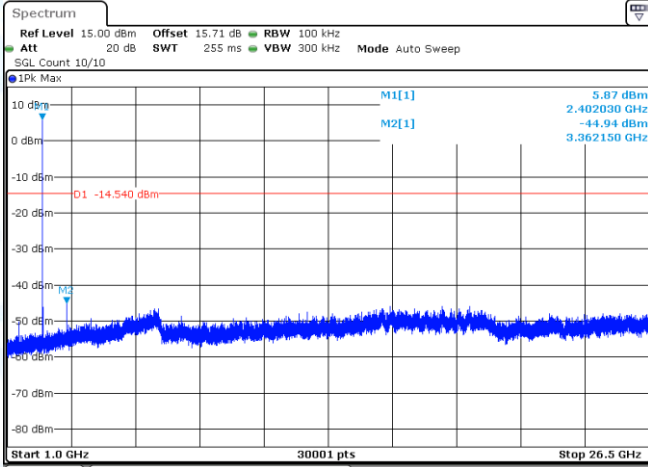
Date: 27.FEB.2025 18:35:06



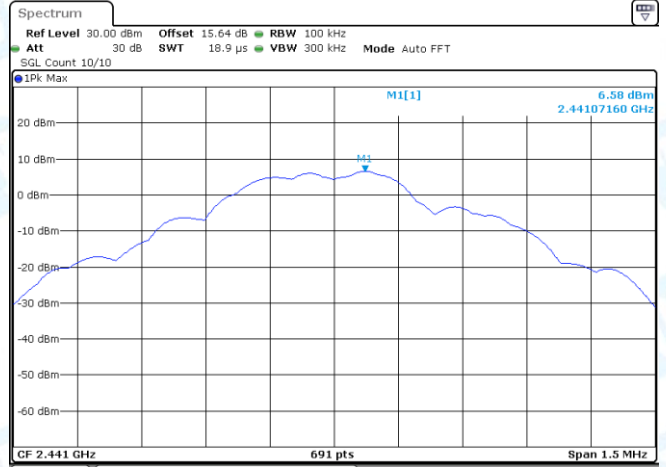
Date: 27.FEB.2025 18:35:14

DH5-Ant1-2402-0~Reference-PASS

DH5-Ant1-2402-30~1000-PASS



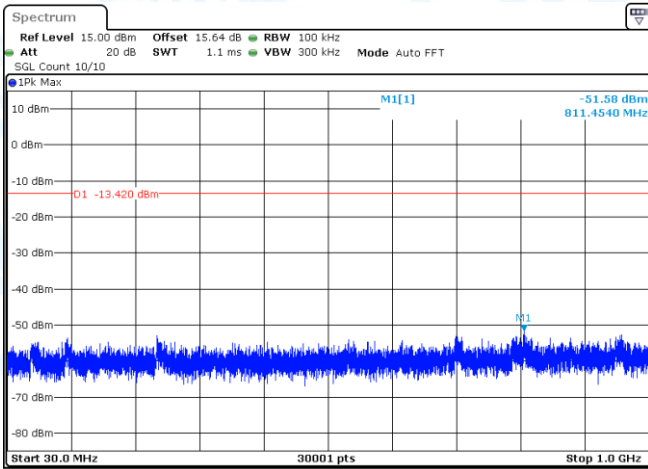
Date: 27.FEB.2025 18:35:31



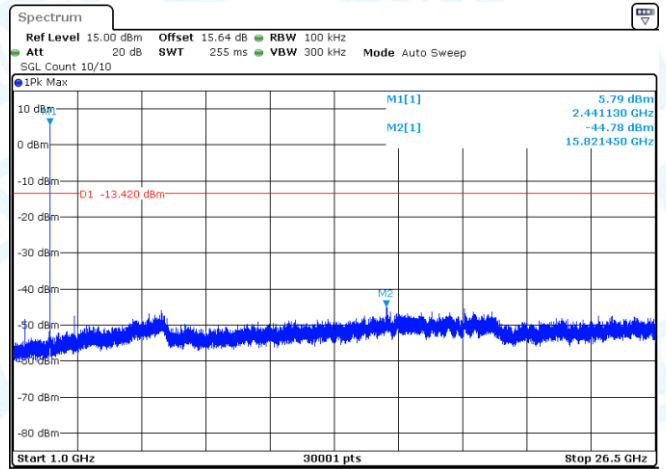
Date: 27.FEB.2025 18:37:08

DH5-Ant1-2402-1000~26500-PASS

DH5-Ant1-2441-0~Reference-PASS



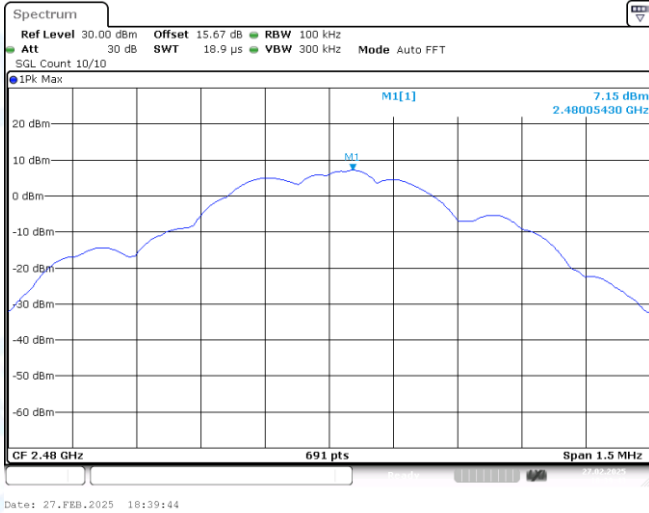
Date: 27.FEB.2025 18:37:16



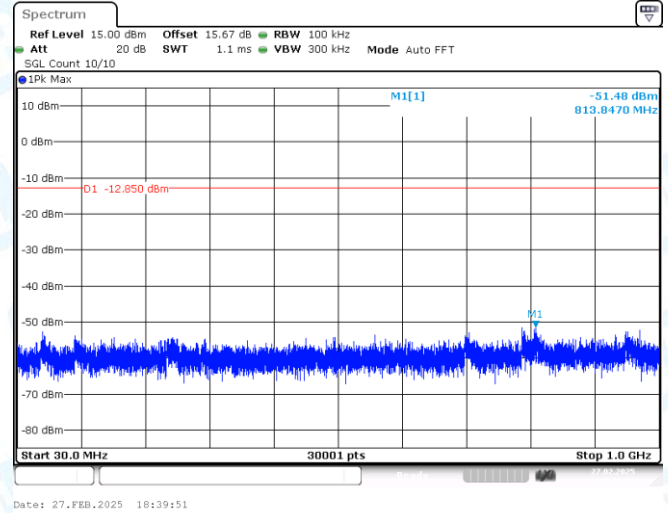
Date: 27.FEB.2025 18:37:33

DH5-Ant1-2441-30~1000-PASS

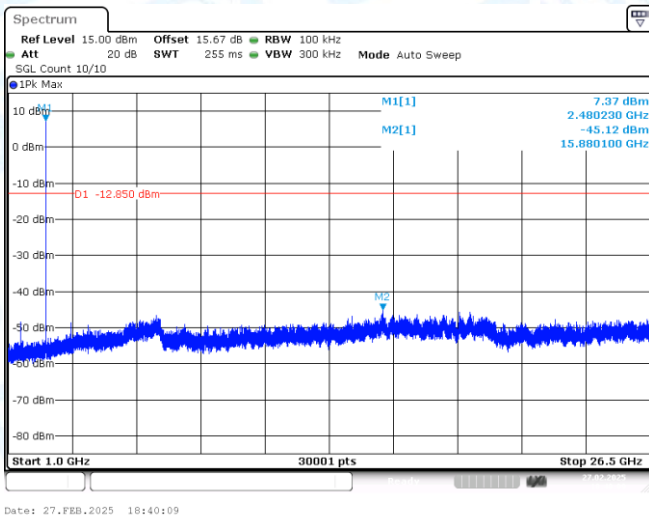
DH5-Ant1-2441-1000~26500-PASS



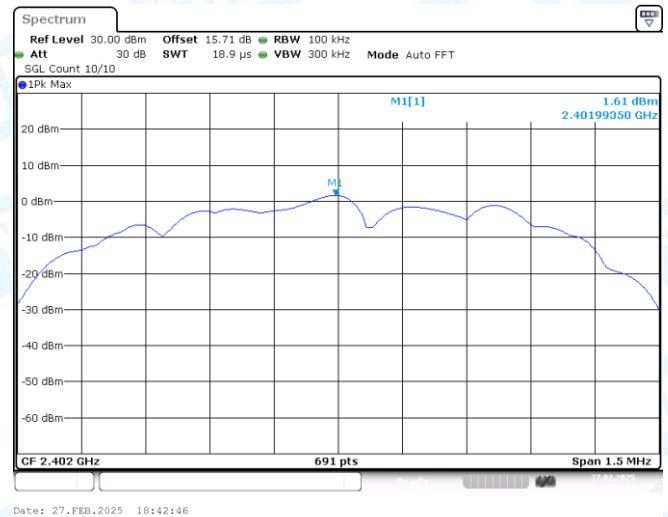
DH5-Ant1-2480-0~Reference-PASS



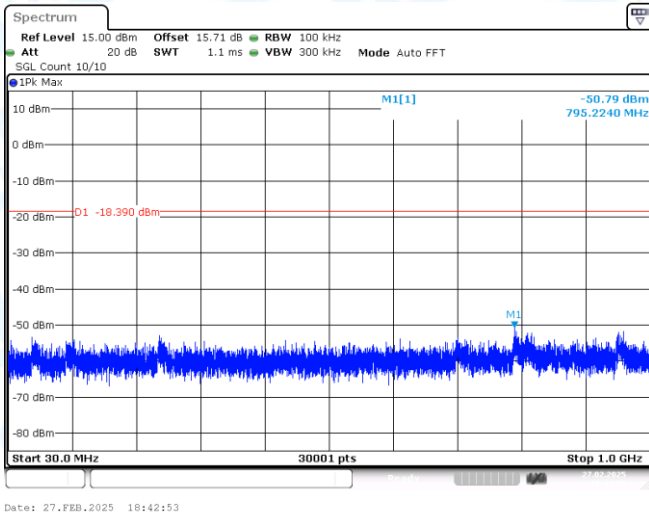
DH5-Ant1-2480-30~1000-PASS



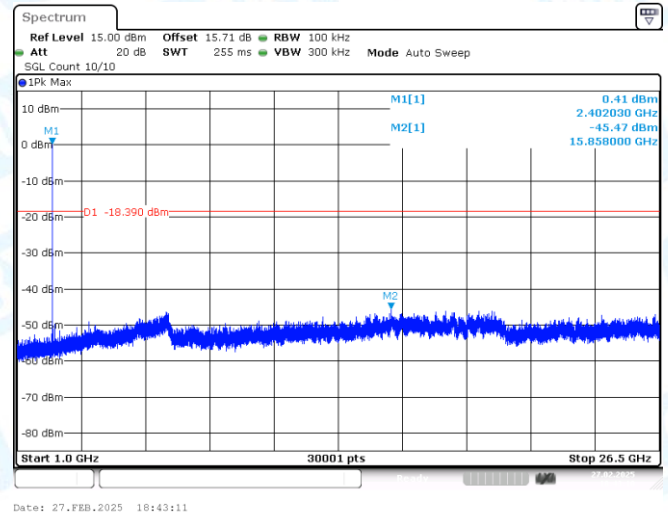
DH5-Ant1-2480-1000~26500-PASS



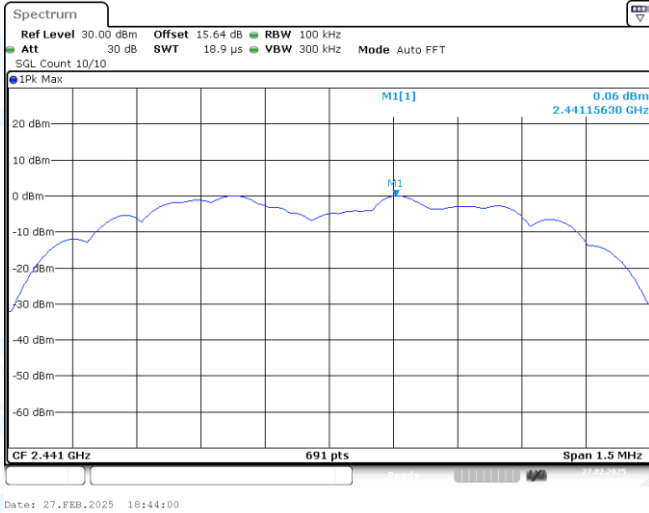
2DH5-Ant1-2402-0~Reference-PASS



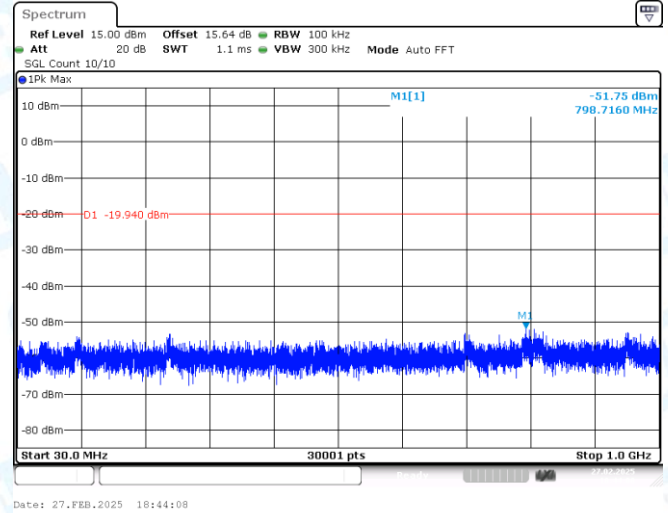
2DH5-Ant1-2402-30~1000-PASS



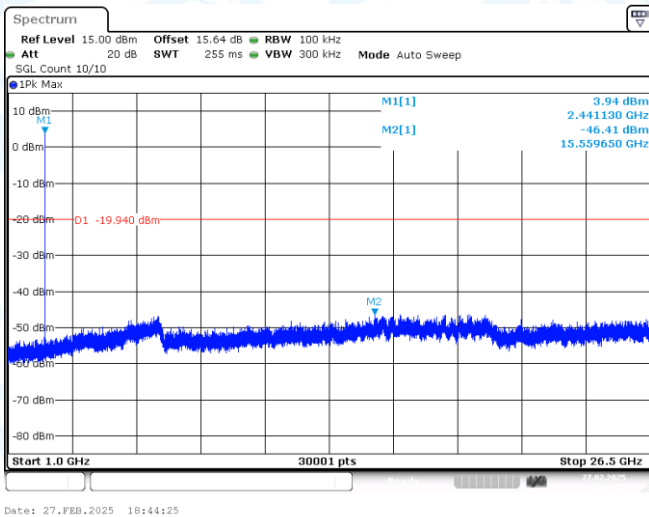
2DH5-Ant1-2402-1000~26500-PASS



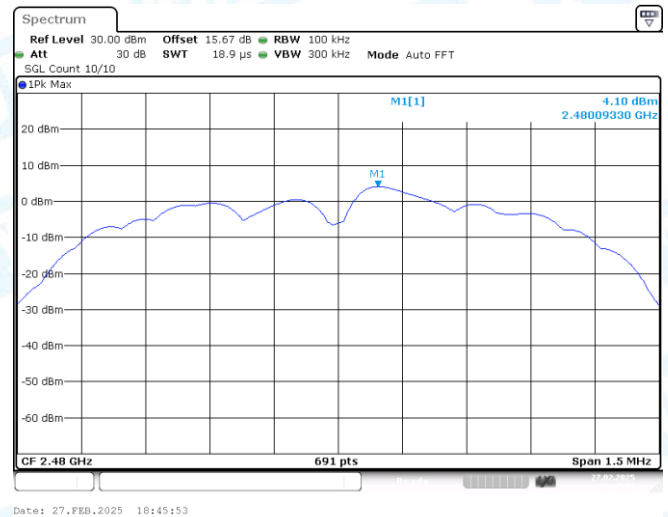
2DH5-Ant1-2441-0~Reference-PASS



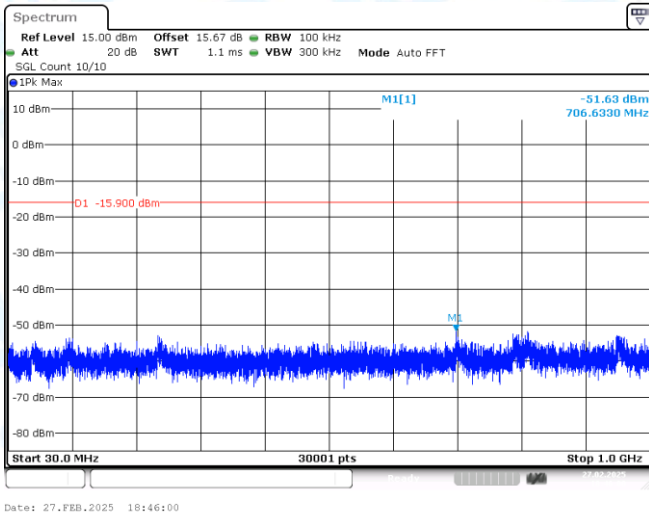
2DH5-Ant1-2441-30~1000-PASS



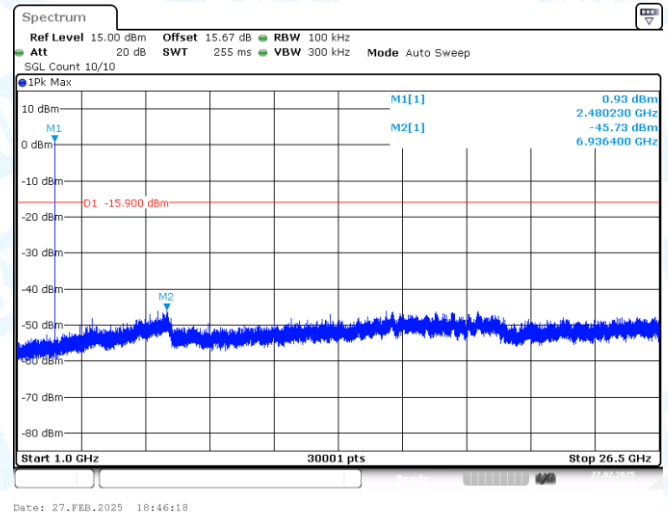
2DH5-Ant1-2441-1000~26500-PASS



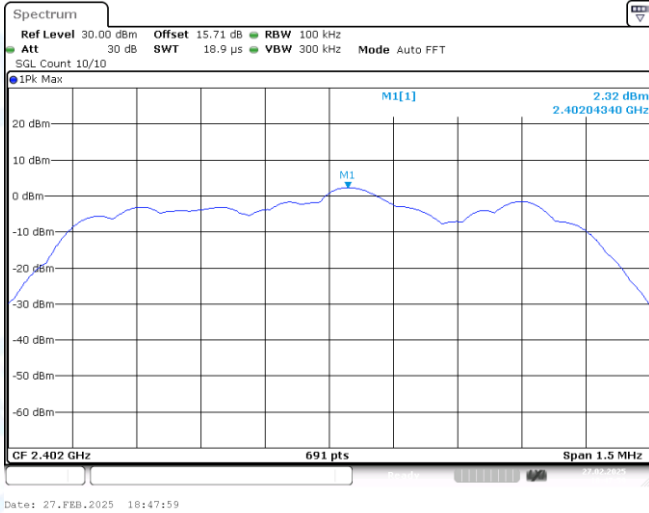
2DH5-Ant1-2480-0~Reference-PASS



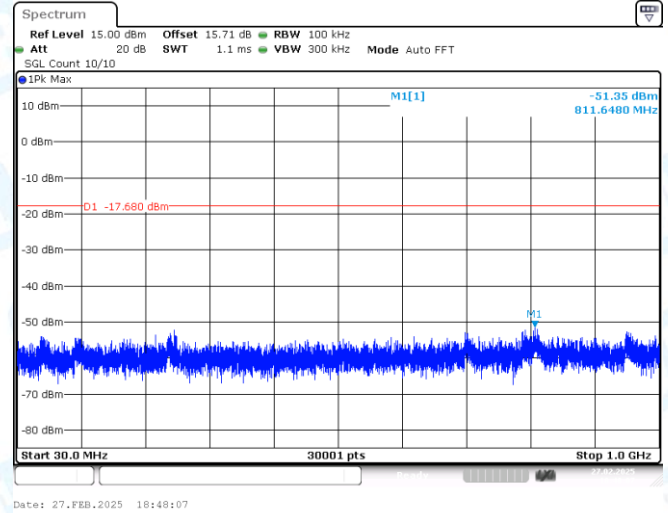
2DH5-Ant1-2480-30~1000-PASS



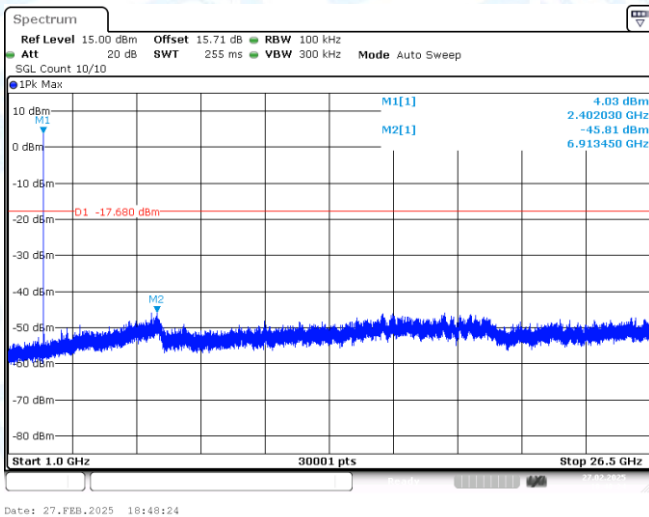
2DH5-Ant1-2480-1000~26500-PASS



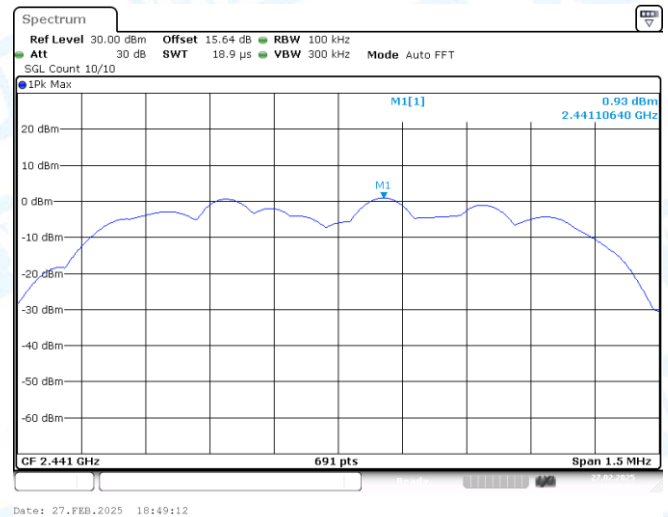
3DH5-Ant1-2402-0~Reference-PASS



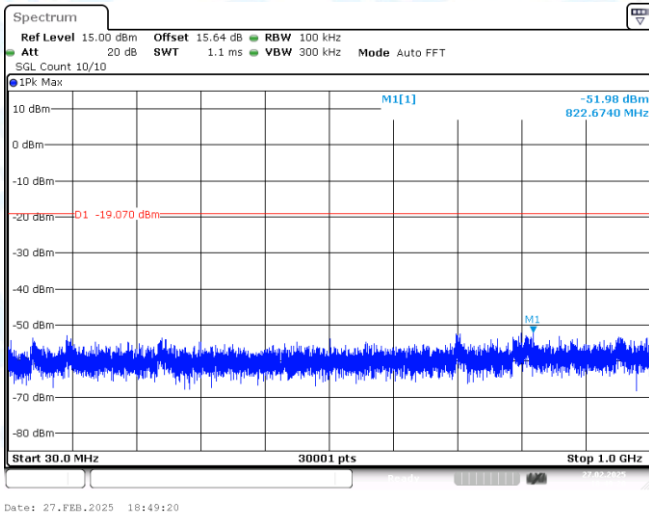
3DH5-Ant1-2402-30~1000-PASS



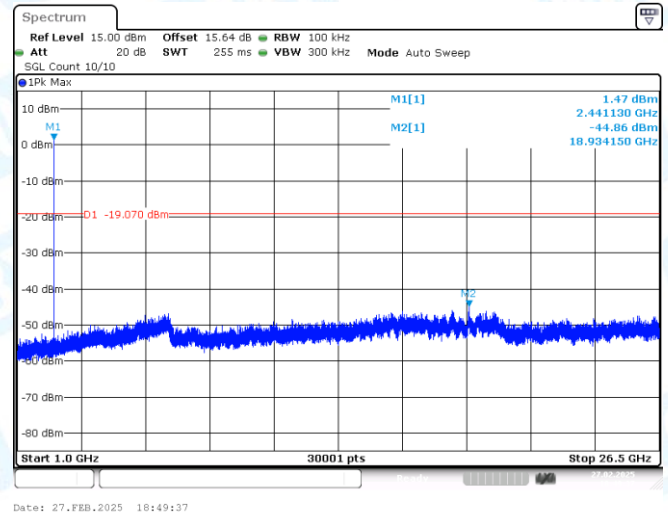
3DH5-Ant1-2402-1000~26500-PASS



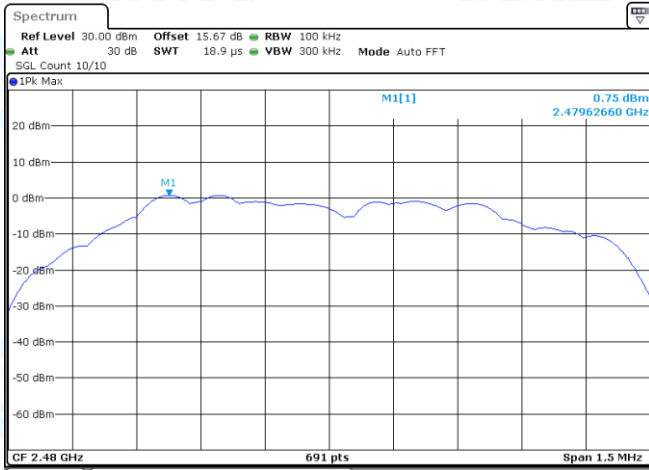
3DH5-Ant1-2441-0~Reference-PASS



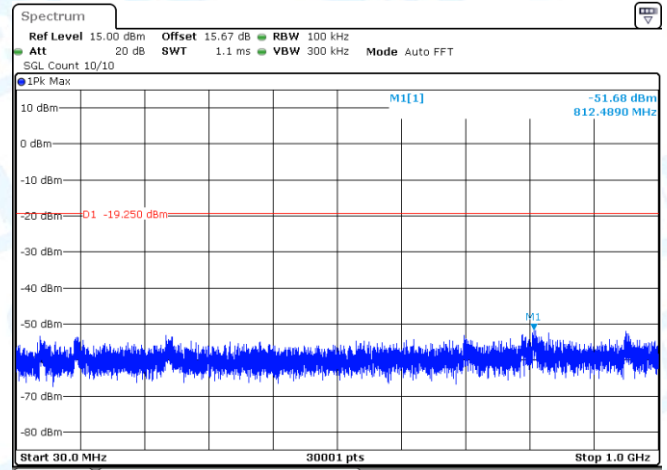
3DH5-Ant1-2441-30~1000-PASS



3DH5-Ant1-2441-1000~26500-PASS



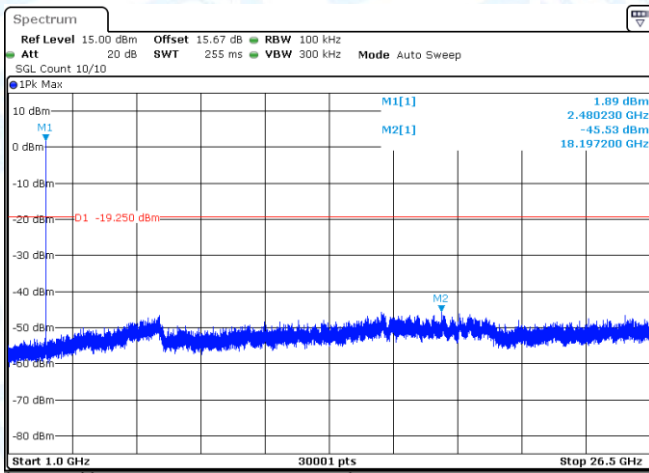
Date: 27.FEB.2025 18:50:58



Date: 27.FEB.2025 18:51:06

3DH5-Ant1-2480-0~Reference-PASS

3DH5-Ant1-2480-30~1000-PASS



Date: 27.FEB.2025 18:51:23

3DH5-Ant1-2480-1000~26500-PASS

9: Duty Cycle

9.1 Test Result

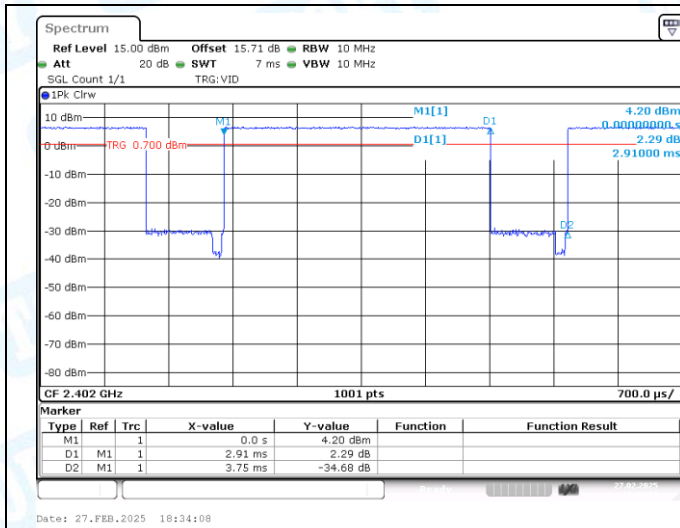
TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factory	1/T [kHz]
DH5	Ant1	2402	2.91	3.75	77.60	1.10	0.34
DH5	Ant1	2441	2.90	3.75	77.33	1.12	0.34
DH5	Ant1	2480	2.91	3.75	77.60	1.10	0.34
2DH5	Ant1	2402	2.90	3.76	77.13	1.13	0.34
2DH5	Ant1	2441	2.89	3.75	77.07	1.13	0.35
2DH5	Ant1	2480	2.89	3.75	77.07	1.13	0.35
3DH5	Ant1	2402	2.89	3.75	77.07	1.13	0.35
3DH5	Ant1	2441	2.89	3.75	77.07	1.13	0.35
3DH5	Ant1	2480	2.89	3.75	77.07	1.13	0.35

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

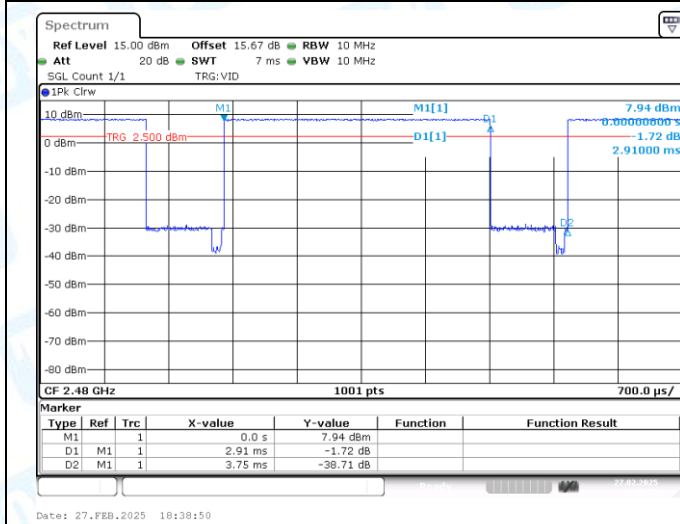
2, DC Factory=10*Log₁₀(1/Duty Cycle)

3, 1/T=1/ Transmission Duration

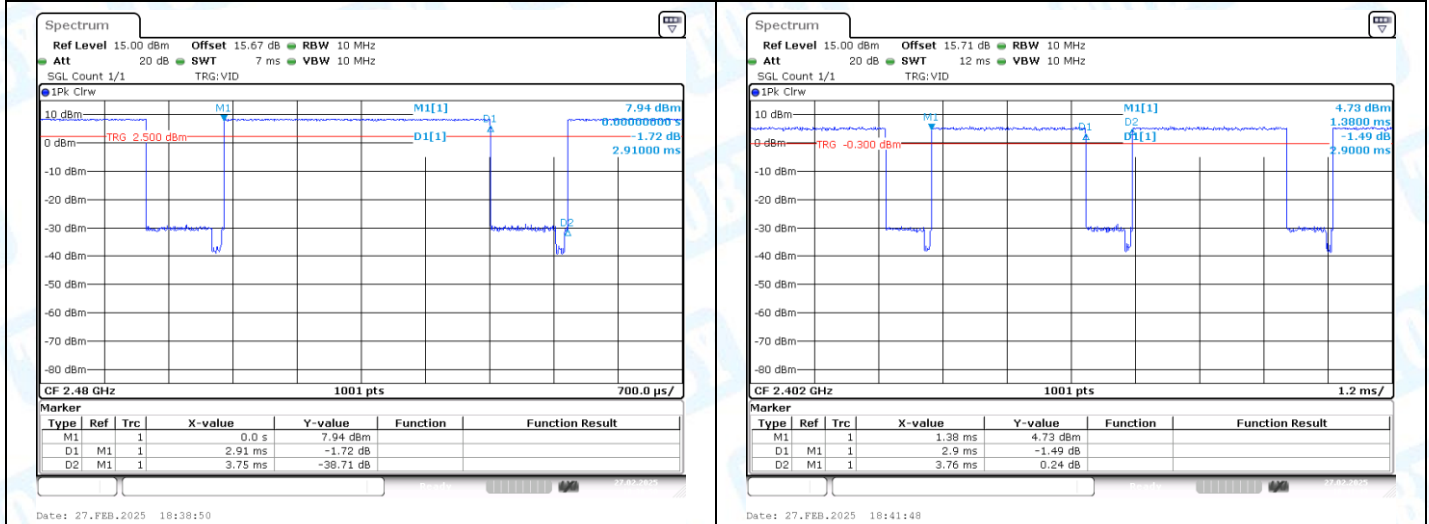
9.2 Test Graphs



NTNV-DH5-Ant1-2402

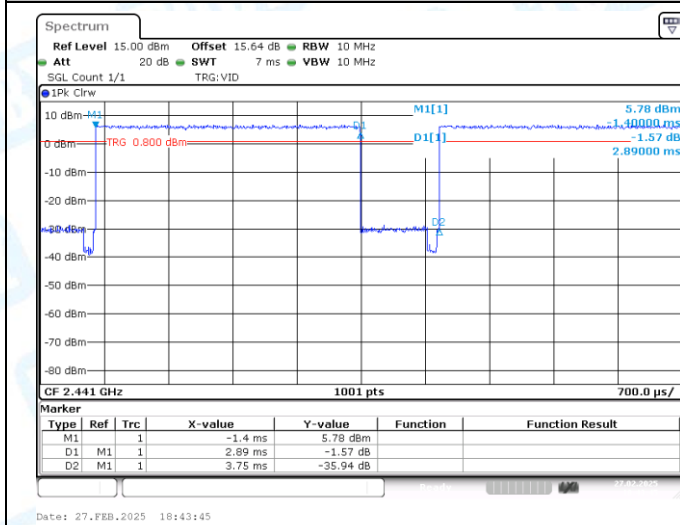


NTNV-DH5-Ant1-2441

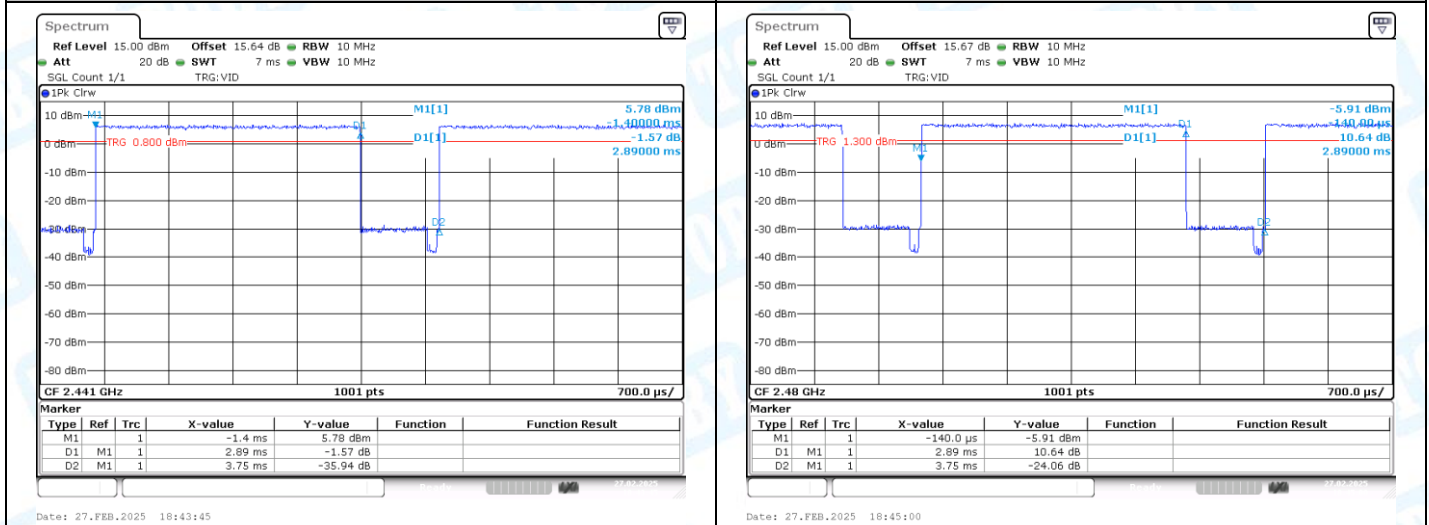


NTNV-DH5-Ant1-2480

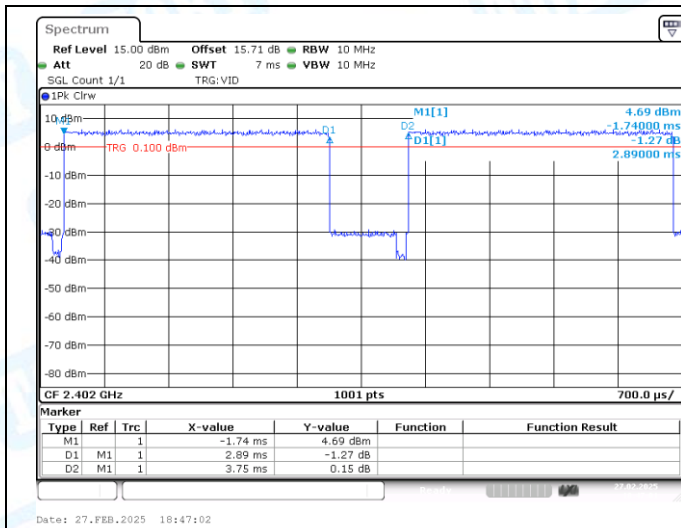
NTNV-2DH5-Ant1-2402



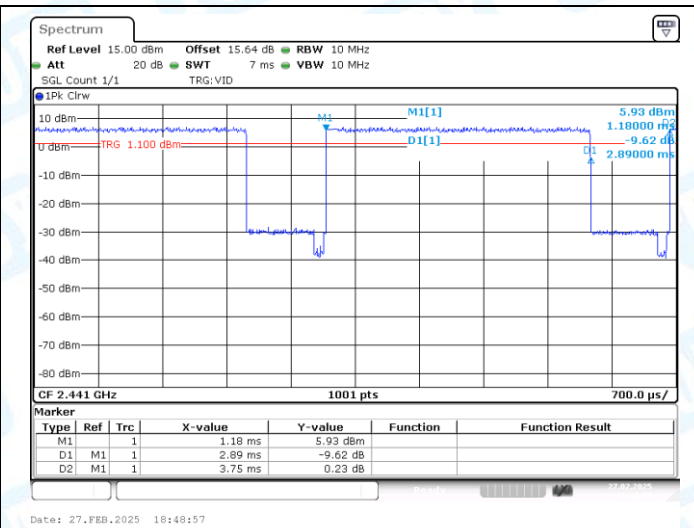
NTNV-2DH5-Ant1-2441



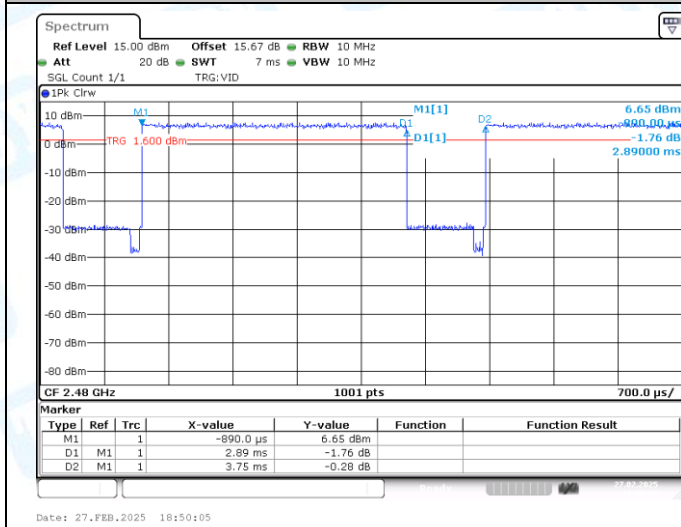
NTNV-2DH5-Ant1-2480



NTVN-3DH5-Ant1-2402



NTVN-3DH5-Ant1-2441



NTVN-3DH5-Ant1-2480

10: Emissions in Restricted Bands

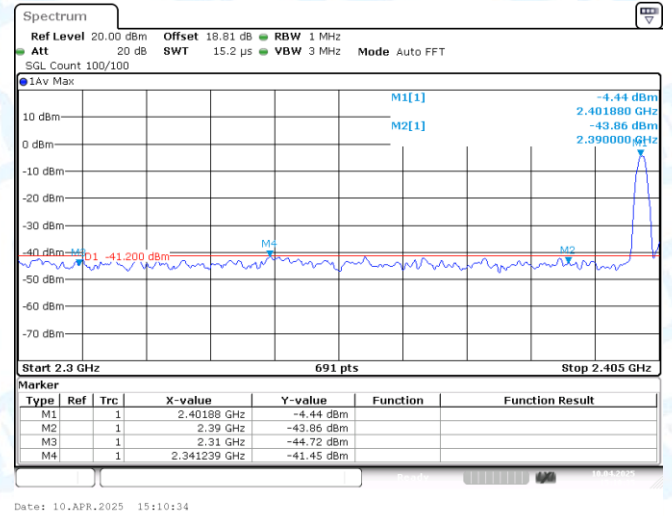
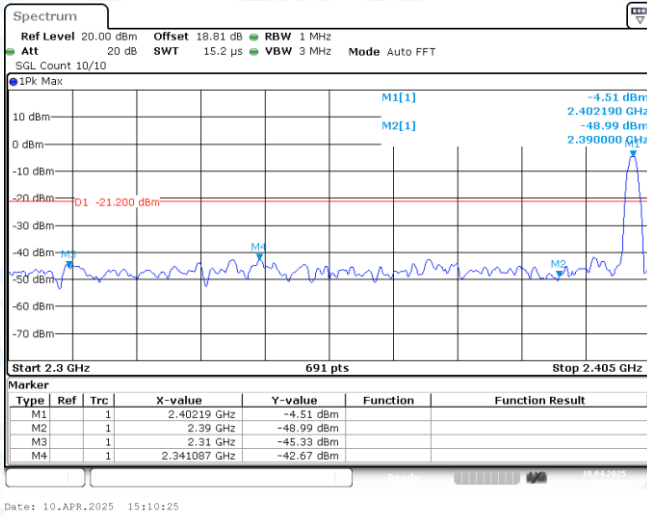
10.1 Test Result

Test Mode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	Peak	2390.000	-48.99	≤-21.20	46.21	≤74	PASS
DH5	Ant1	Low	2402	Peak	2310.000	-45.33	≤-21.20	49.87	≤74	PASS
DH5	Ant1	Low	2402	Peak	2341.087	-42.67	≤-21.20	52.53	≤74	PASS
DH5	Ant1	Low	2402	AV	2390.000	-43.86	≤-41.20	51.34	≤54	PASS
DH5	Ant1	Low	2402	AV	2310.000	-44.72	≤-41.20	50.48	≤54	PASS
DH5	Ant1	Low	2402	AV	2341.239	-41.45	≤-41.20	53.75	≤54	PASS
DH5	Ant1	High	2480	Peak	2483.500	-45.79	≤-21.20	49.41	≤74	PASS
DH5	Ant1	High	2480	Peak	2500.000	-50.04	≤-21.20	45.16	≤74	PASS
DH5	Ant1	High	2480	Peak	2486.580	-43.13	≤-21.20	52.07	≤74	PASS
DH5	Ant1	High	2480	AV	2483.500	-46.49	≤-41.20	48.71	≤54	PASS
DH5	Ant1	High	2480	AV	2500.000	-43.61	≤-41.20	51.59	≤54	PASS
DH5	Ant1	High	2480	AV	2497.478	-41.89	≤-41.20	53.31	≤54	PASS
2DH5	Ant1	Low	2402	Peak	2390.000	-45.75	≤-21.20	49.45	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2310.000	-46.74	≤-21.20	48.46	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2331.500	-41.85	≤-21.20	53.35	≤74	PASS
2DH5	Ant1	Low	2402	AV	2390.000	-44.74	≤-41.20	50.46	≤54	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-45.38	≤-41.20	49.82	≤54	PASS
2DH5	Ant1	Low	2402	AV	2345.043	-41.55	≤-41.20	53.65	≤54	PASS
2DH5	Ant1	High	2480	Peak	2483.500	-46.21	≤-21.20	48.99	≤74	PASS
2DH5	Ant1	High	2480	Peak	2500.000	-45.6	≤-21.20	49.60	≤74	PASS
2DH5	Ant1	High	2480	Peak	2493.420	-42.86	≤-21.20	52.34	≤74	PASS
2DH5	Ant1	High	2480	AV	2483.500	-45.62	≤-41.20	49.58	≤54	PASS
2DH5	Ant1	High	2480	AV	2500.000	-44.61	≤-41.20	50.59	≤54	PASS
2DH5	Ant1	High	2480	AV	2489.478	-41.79	≤-41.20	53.41	≤54	PASS
3DH5	Ant1	Low	2402	Peak	2390.000	-47.63	≤-21.20	47.57	≤74	PASS
3DH5	Ant1	Low	2402	Peak	2310.000	-45.4	≤-21.20	49.80	≤74	PASS
3DH5	Ant1	Low	2402	Peak	2345.043	-42.31	≤-21.20	52.89	≤74	PASS
3DH5	Ant1	Low	2402	AV	2390.000	-44.92	≤-41.20	50.28	≤54	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-45.36	≤-41.20	49.84	≤54	PASS
3DH5	Ant1	Low	2402	AV	2342.000	-41.27	≤-41.20	53.93	≤54	PASS
3DH5	Ant1	High	2480	Peak	2483.500	-48.29	≤-21.20	46.91	≤74	PASS
3DH5	Ant1	High	2480	Peak	2500.000	-45.54	≤-21.20	49.66	≤74	PASS
3DH5	Ant1	High	2480	Peak	2497.594	-43.64	≤-21.20	51.56	≤74	PASS
3DH5	Ant1	High	2480	AV	2483.500	-45.84	≤-41.20	49.36	≤54	PASS
3DH5	Ant1	High	2480	AV	2500.000	-45.06	≤-41.20	50.14	≤54	PASS
3DH5	Ant1	High	2480	AV	2489.130	-41.4	≤-41.20	53.80	≤54	PASS

Note:

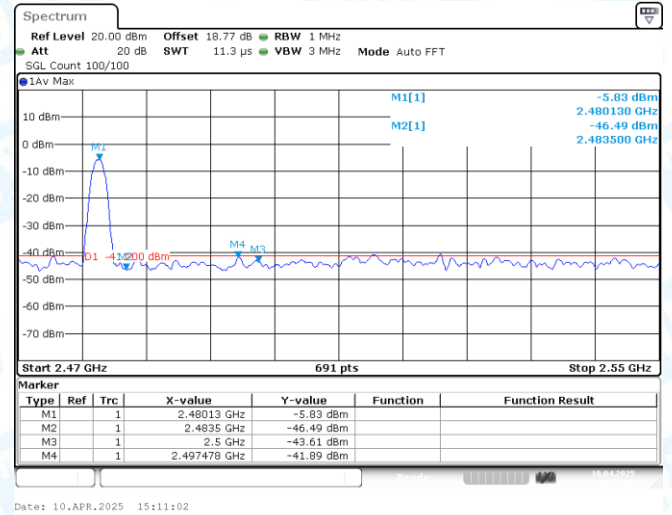
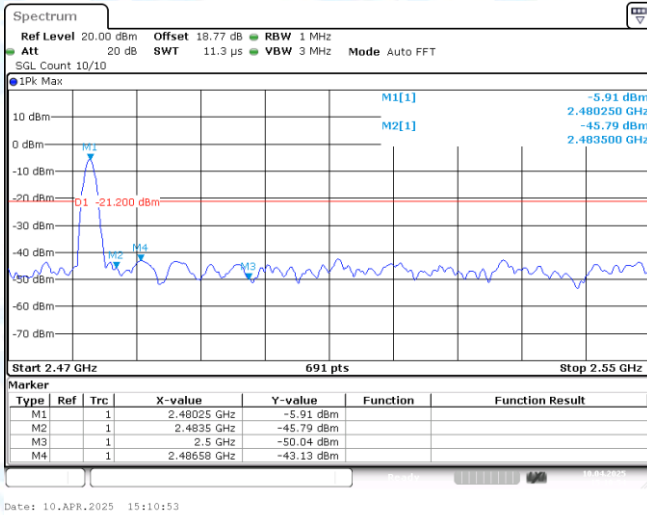
- The Antenna Gain is compensated in the graph.
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

10.2 Test Graphs



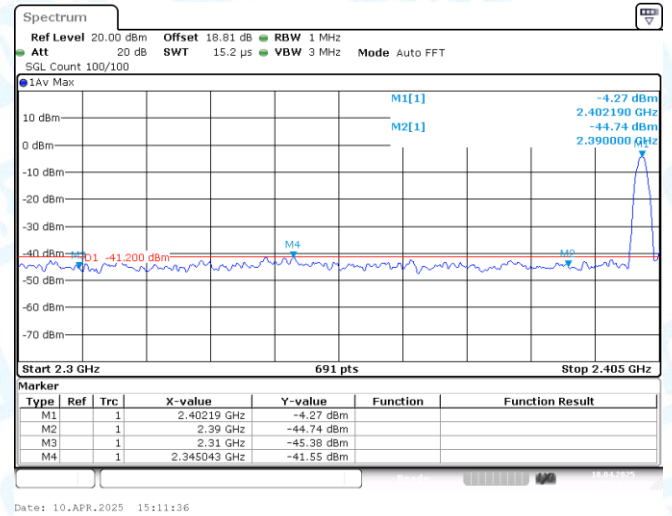
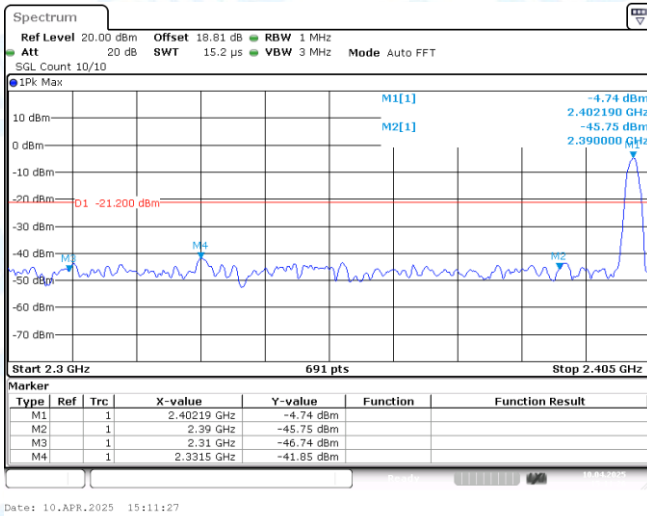
DH5-Ant1-2402-PASS

DH5-Ant1-2402-PASS



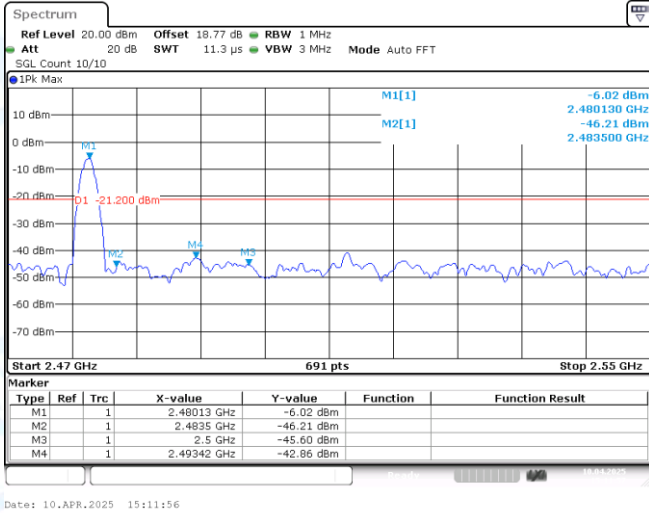
DH5-Ant1-2480-PASS

DH5-Ant1-2480-PASS

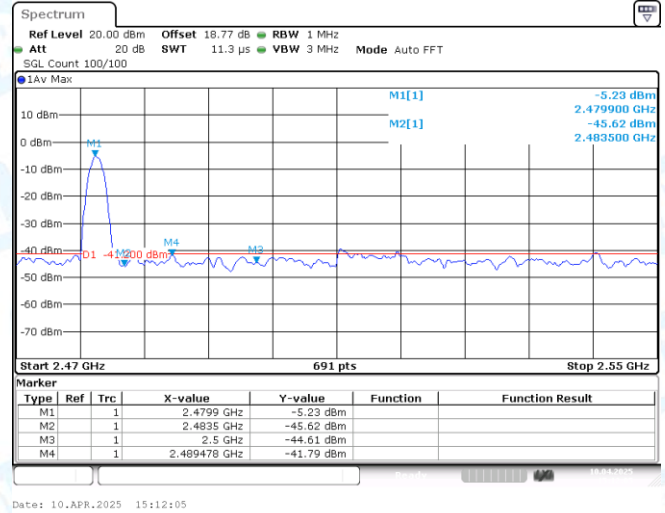


2DH5-Ant1-2402-PASS

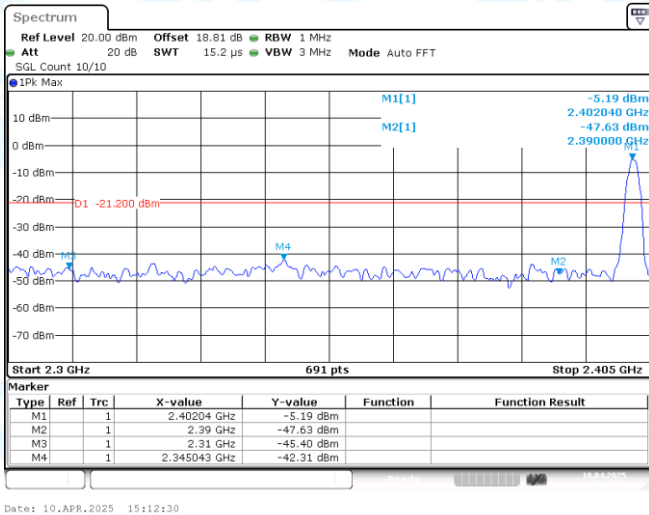
2DH5-Ant1-2402-PASS



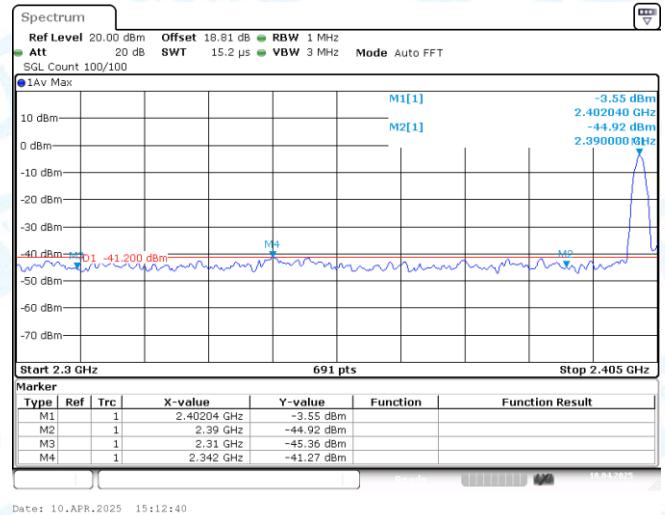
2DH5-Ant1-2480-PASS



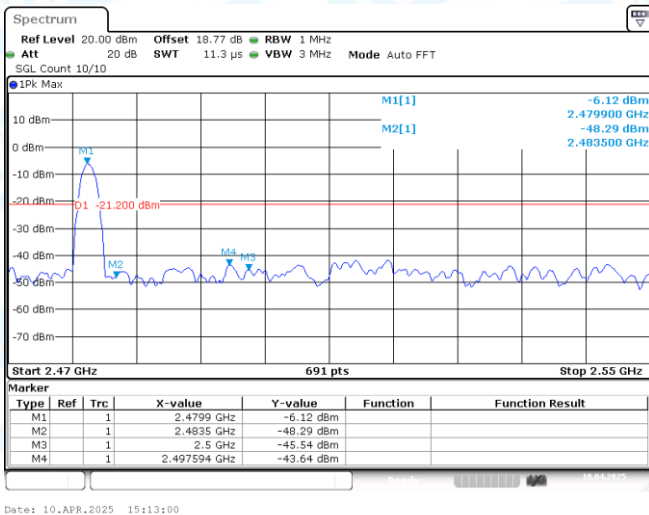
2DH5-Ant1-2480-PASS



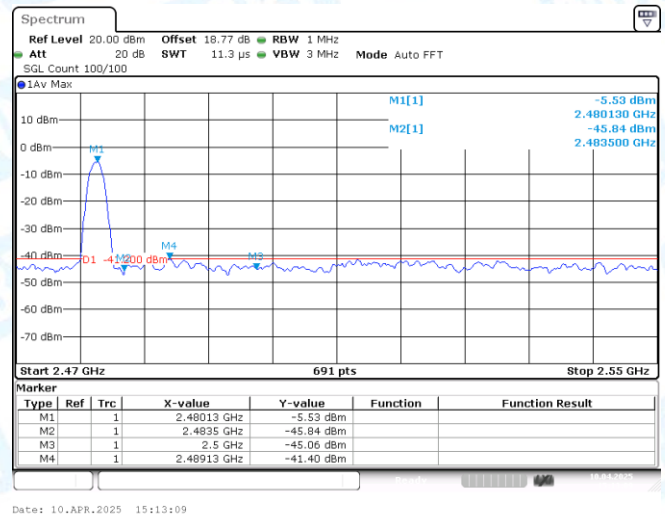
3DH5-Ant1-2402-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-2480-PASS

-----END OF THE REPORT-----