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

General Description of EUT	
EUT Name:	Bluetooth FM Transmitter
Model:	BT27
Sample ID:	HC-C-202506-0151-01-01#
Environmental Conditions	
Ambient Temperature:	25℃
Ambient Humidity:	55%
Test Power Supply:	DC 5V
Test Engineer:	Rick Chen
Note: For a more detailed features description, please refer to the report TBR-C-202506-0151-2	

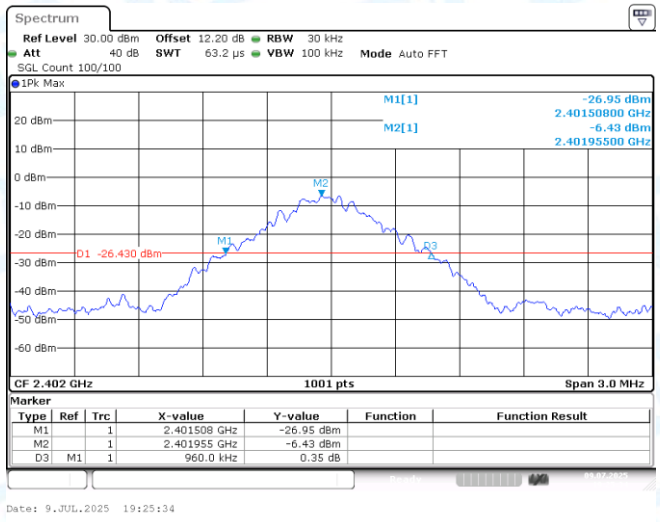
Contents

1: 20dB Emission Bandwidth

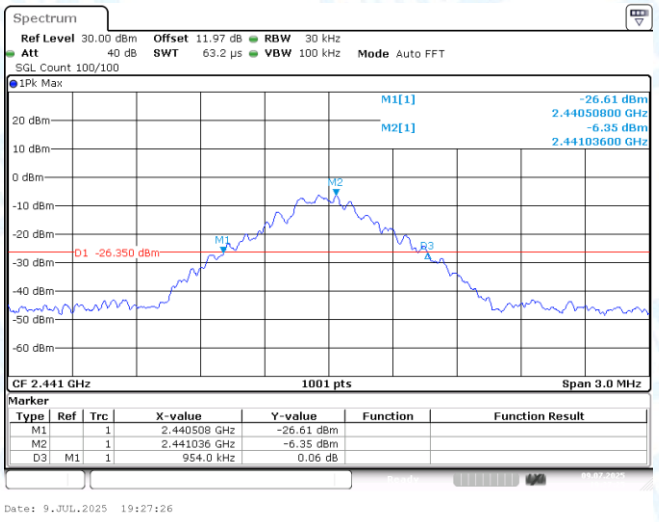
1.1 Test Result

Test Mode	Antenna	Frequency[MHz]	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.96	2401.51	2402.47	---	---
DH5	Ant1	2441	0.95	2440.51	2441.46	---	---
DH5	Ant1	2480	0.95	2479.51	2480.46	---	---
2DH5	Ant1	2402	1.31	2401.32	2402.63	---	---
2DH5	Ant1	2441	1.26	2440.36	2441.62	---	---
2DH5	Ant1	2480	1.24	2479.35	2480.59	---	---
3DH5	Ant1	2402	1.34	2401.31	2402.64	---	---
3DH5	Ant1	2441	1.30	2440.33	2441.63	---	---
3DH5	Ant1	2480	1.29	2479.33	2480.62	---	---

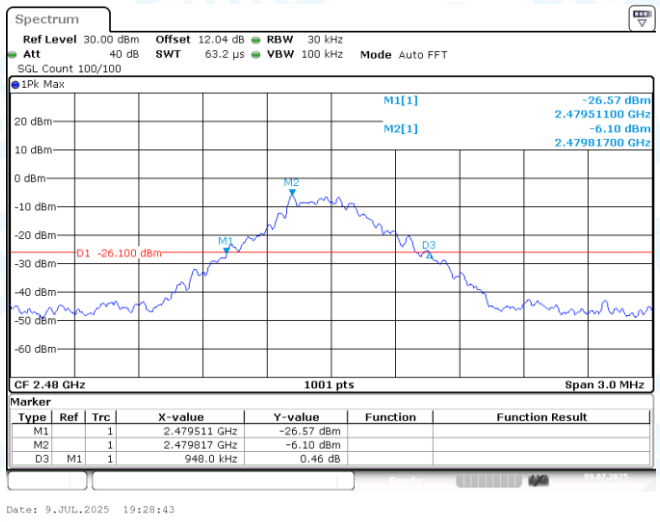
1.2 Test Graphs



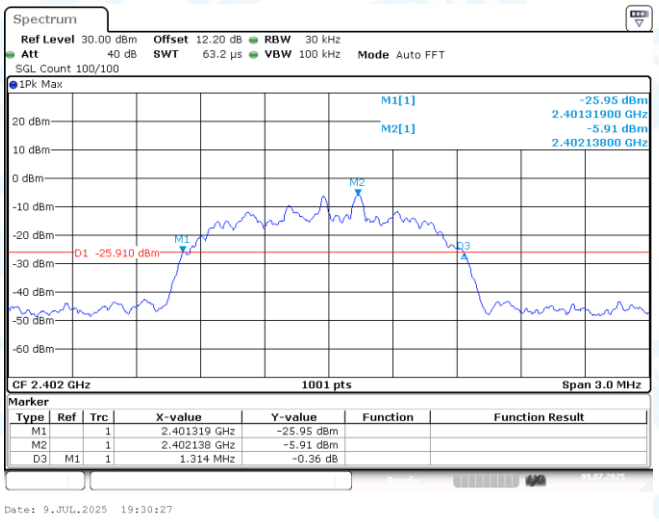
DH5-Ant1-2402



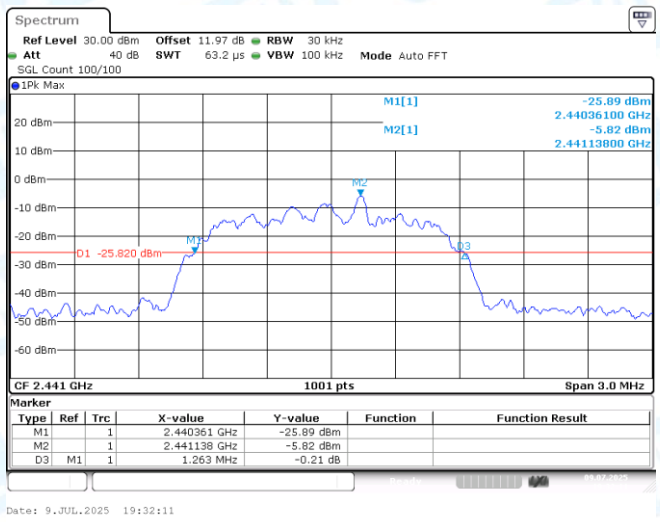
DH5-Ant1-2441



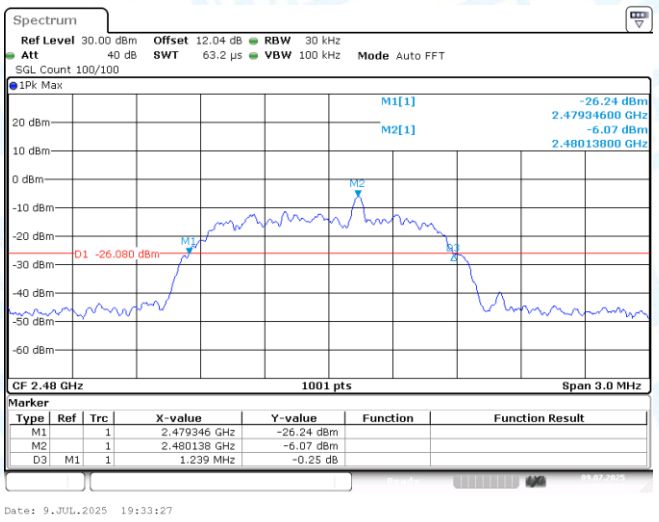
DH5-Ant1-2480



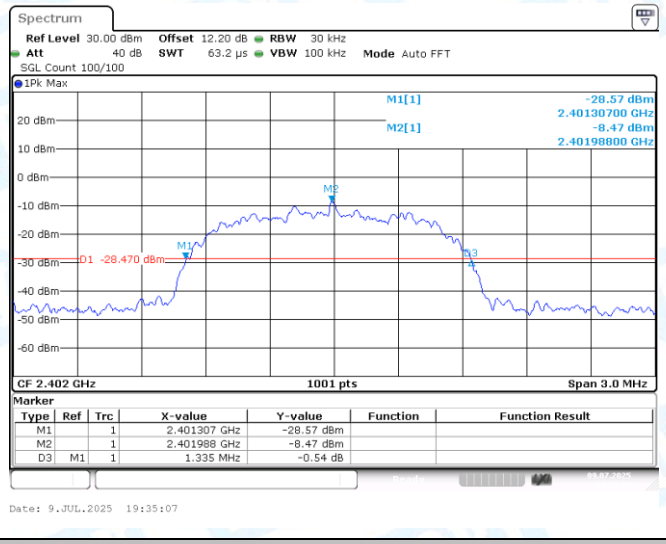
2DH5-Ant1-2402



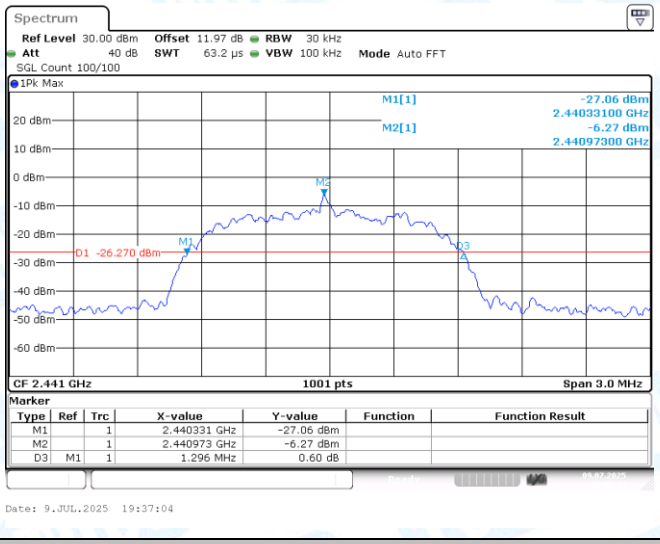
2DH5-Ant1-2441



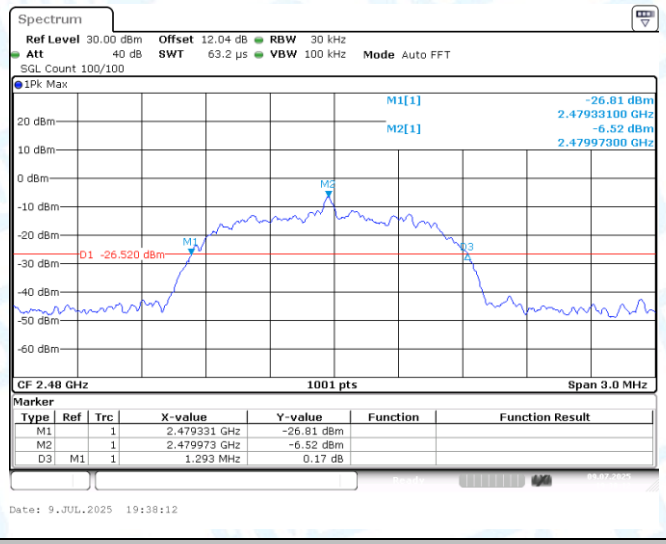
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



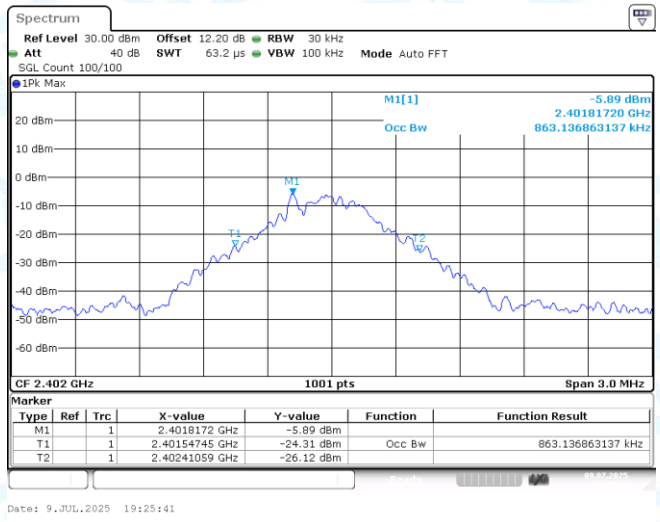
3DH5-Ant1-2480

2: Occupied Channel Bandwidth

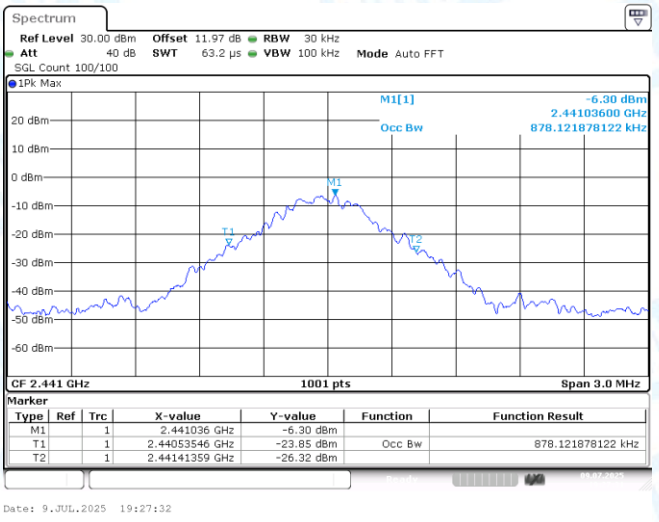
2.1 Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.86314	2401.5475	2402.4106	---	---
DH5	Ant1	2441	0.87812	2440.5355	2441.4136	---	---
DH5	Ant1	2480	0.89910	2479.5265	2480.4256	---	---
2DH5	Ant1	2402	1.1988	2401.3796	2402.5784	---	---
2DH5	Ant1	2441	1.1838	2440.3856	2441.5694	---	---
2DH5	Ant1	2480	1.1898	2479.3826	2480.5724	---	---
3DH5	Ant1	2402	1.1868	2401.3826	2402.5694	---	---
3DH5	Ant1	2441	1.2018	2440.3766	2441.5784	---	---
3DH5	Ant1	2480	1.2018	2479.3706	2480.5724	---	---

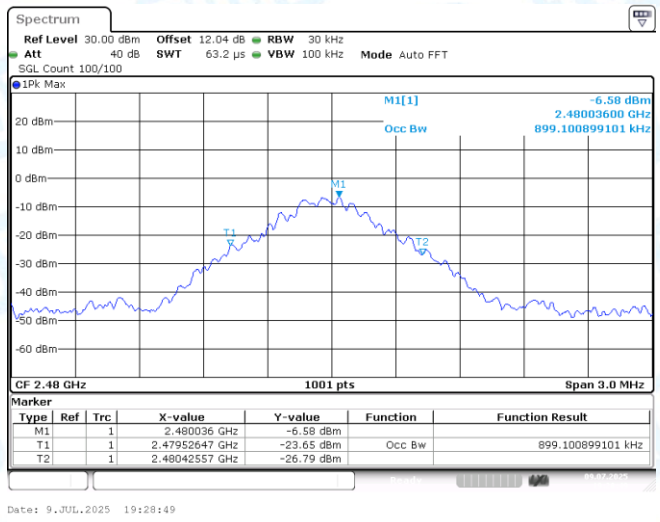
2.2 Test Graphs



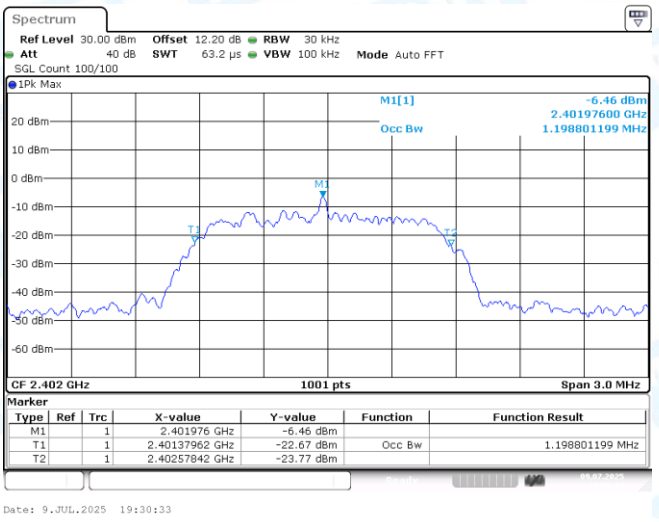
DH5-Ant1-2402



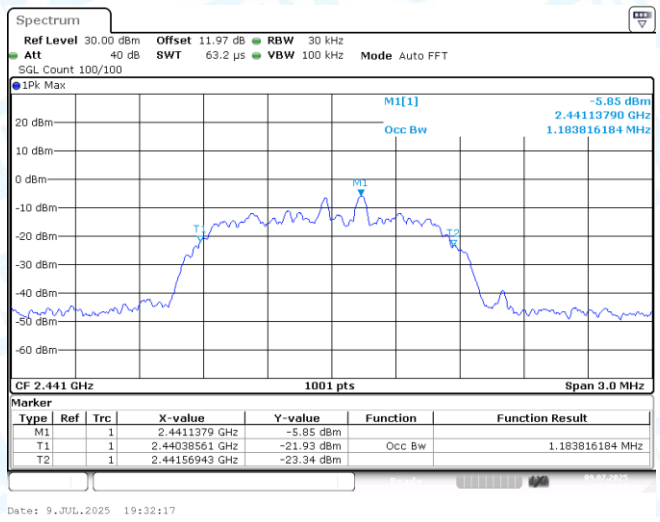
DH5-Ant1-2441



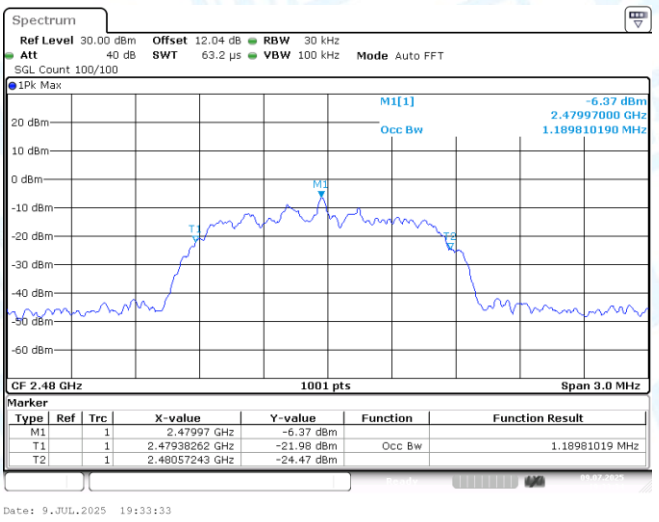
DH5-Ant1-2480



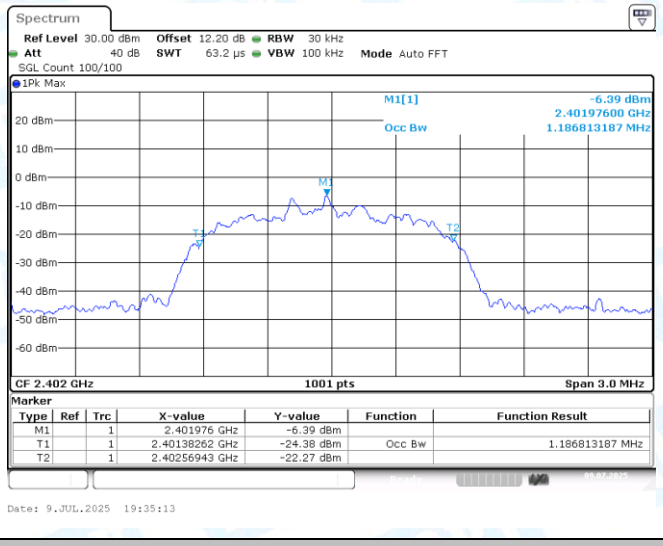
2DH5-Ant1-2402



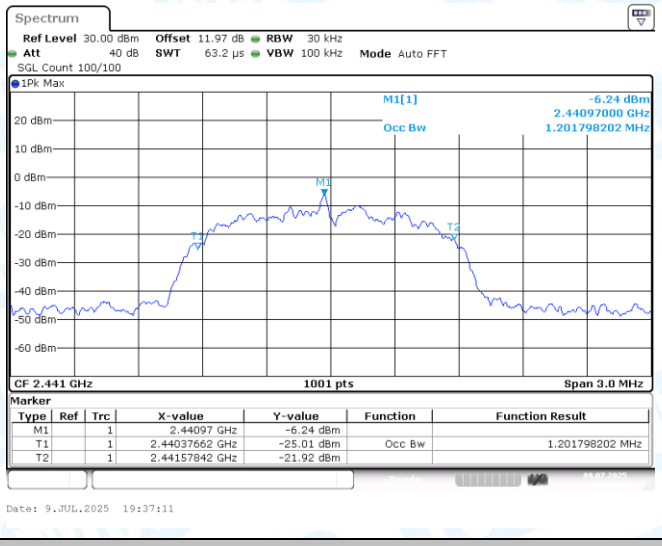
2DH5-Ant1-2441



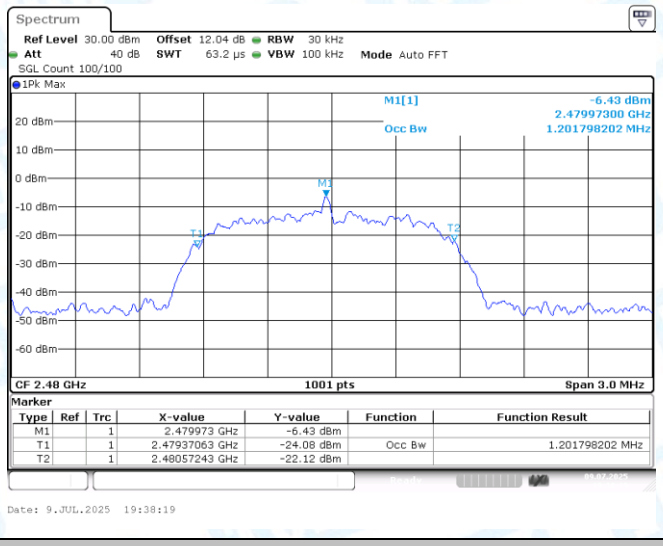
2DH5-Ant1-2480



3DH5-Ant1-2402



3DH5-Ant1-2441



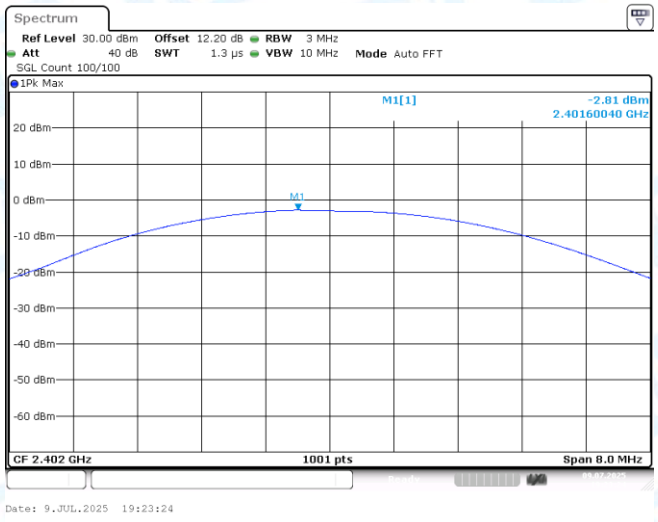
3DH5-Ant1-2480

3: Maximum conducted output power

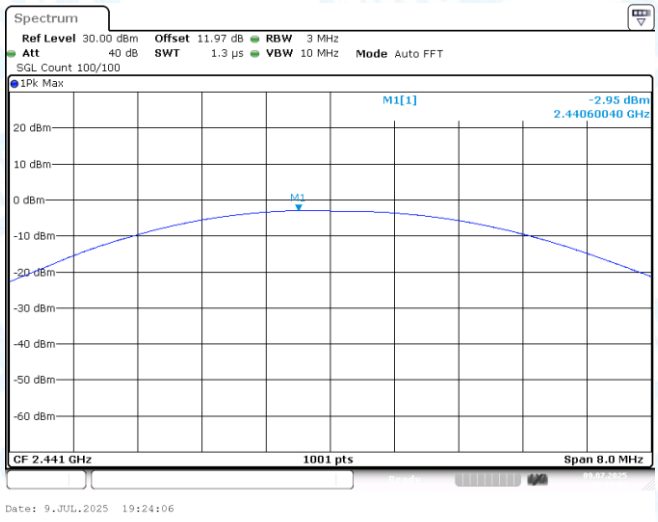
3.1 Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-2.81	≤30	PASS
DH5	Ant1	2441	-2.95	≤30	PASS
DH5	Ant1	2480	-3.20	≤30	PASS
2DH5	Ant1	2402	-2.90	≤20.97	PASS
2DH5	Ant1	2441	-2.41	≤20.97	PASS
2DH5	Ant1	2480	-2.40	≤20.97	PASS
3DH5	Ant1	2402	-2.33	≤20.97	PASS
3DH5	Ant1	2441	-2.46	≤20.97	PASS
3DH5	Ant1	2480	-2.59	≤20.97	PASS

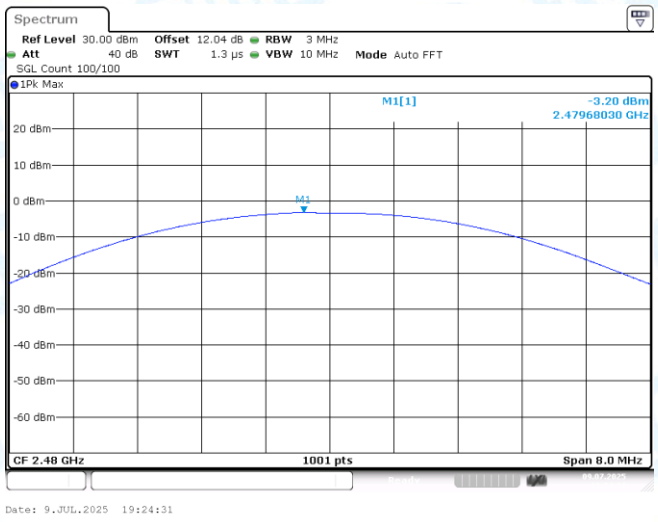
3.2 Test Graphs



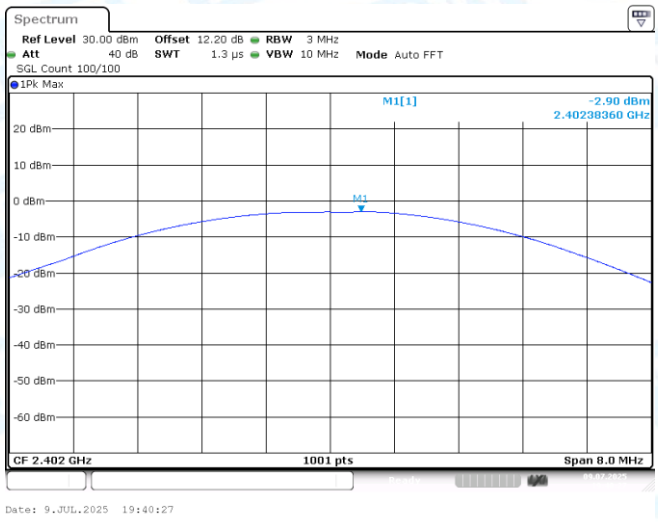
DH5-Ant1-2402-PASS



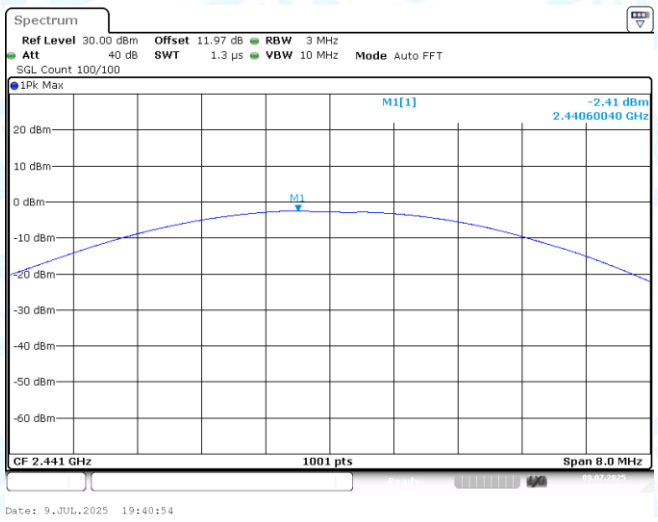
DH5-Ant1-2441-PASS



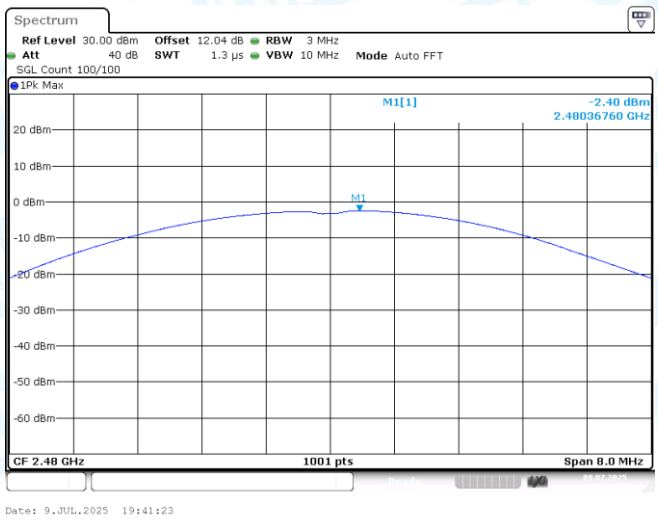
DH5-Ant1-2480-PASS



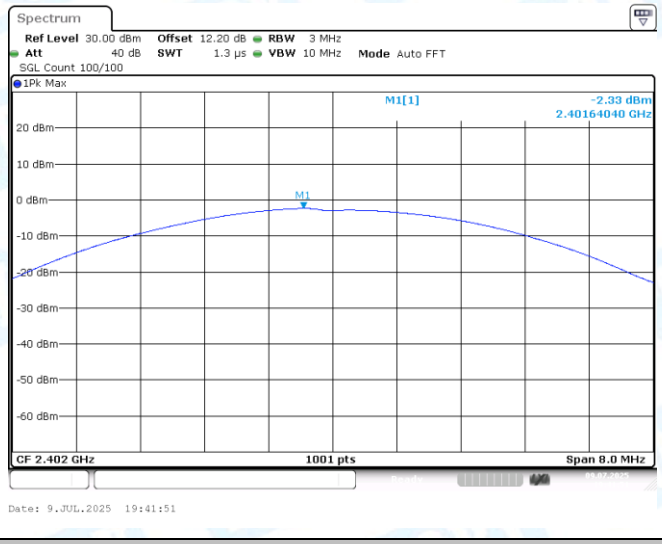
2DH5-Ant1-2402-PASS



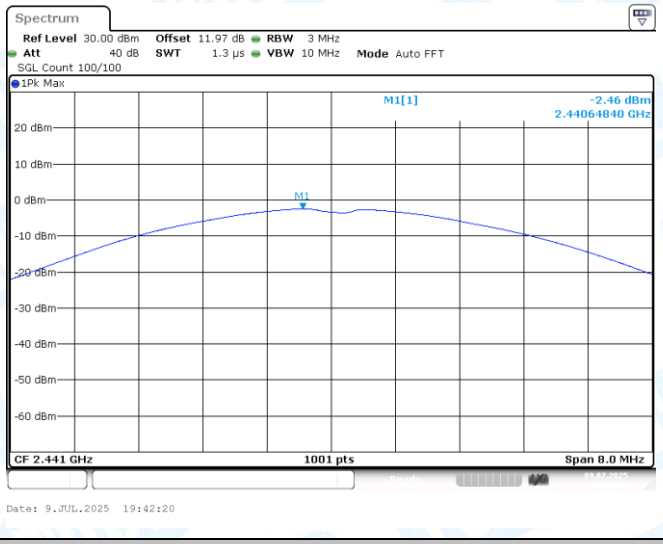
2DH5-Ant1-2441-PASS



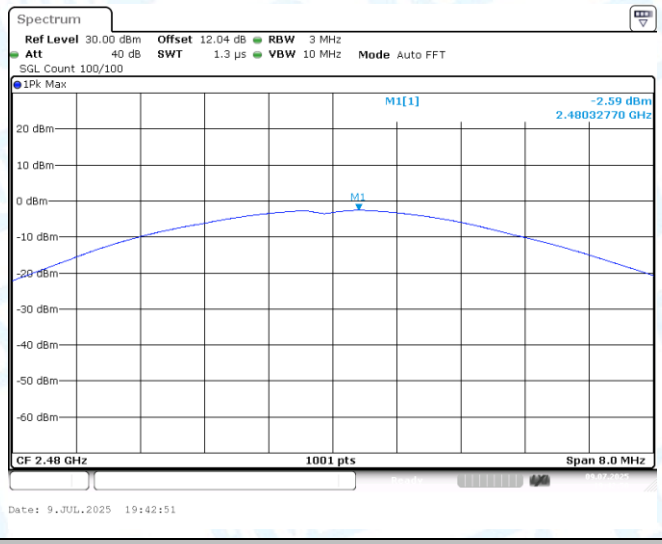
2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



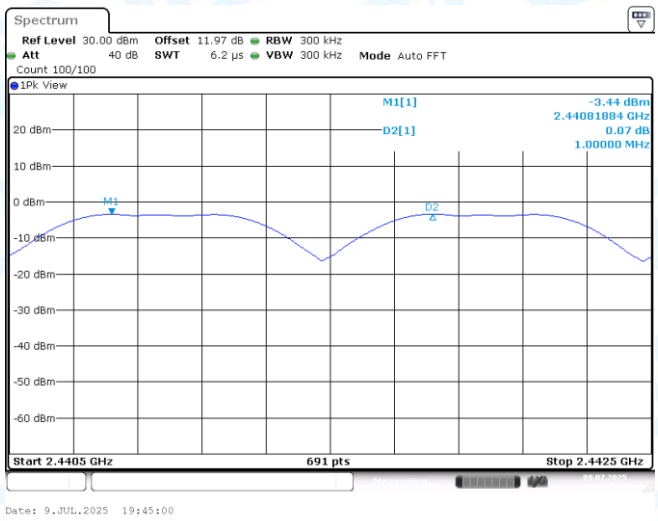
3DH5-Ant1-2480-PASS

4: Carrier frequency separation

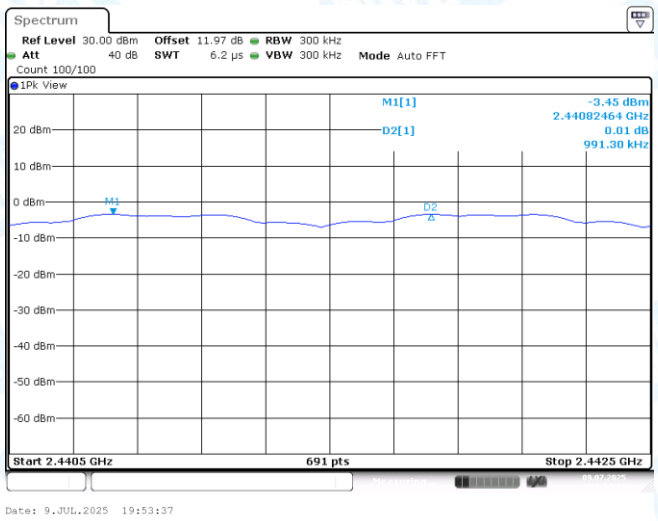
4.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1	≥0.960	PASS
2DH5	Ant1	Hop	0.991	≥0.873	PASS
3DH5	Ant1	Hop	1.003	≥0.893	PASS

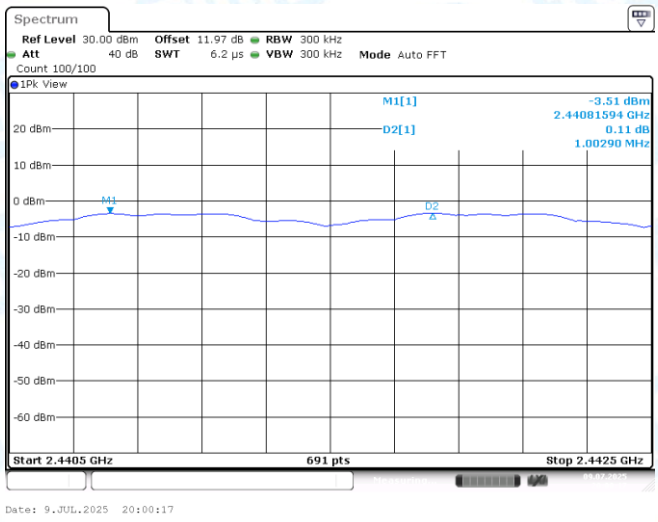
4.2 Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



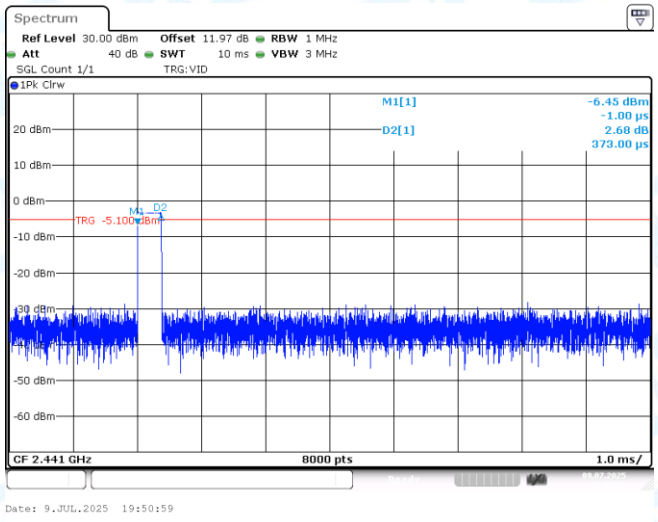
3DH5-Ant1-Hop-PASS

5: Time of occupancy

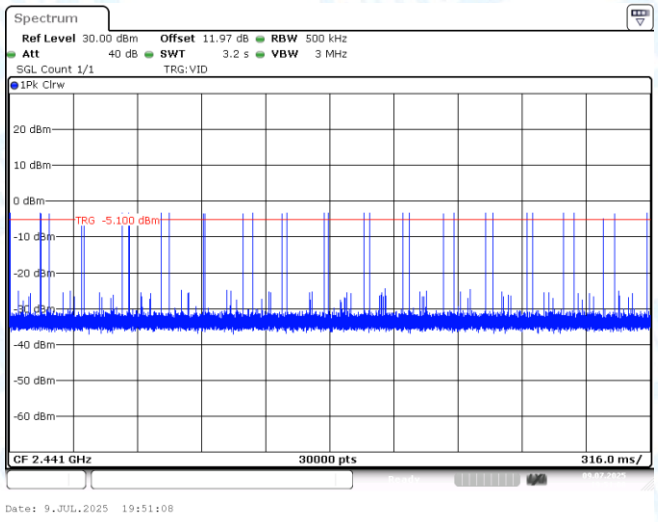
5.1 Test Result

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.373	330	0.123	≤0.4	PASS
DH3	Ant1	Hop	1.621	160	0.259	≤0.4	PASS
DH5	Ant1	Hop	2.862	100	0.286	≤0.4	PASS
2DH1	Ant1	Hop	0.383	330	0.126	≤0.4	PASS
2DH3	Ant1	Hop	1.628	190	0.309	≤0.4	PASS
2DH5	Ant1	Hop	2.868	80	0.229	≤0.4	PASS
3DH1	Ant1	Hop	0.384	330	0.127	≤0.4	PASS
3DH3	Ant1	Hop	1.625	190	0.309	≤0.4	PASS
3DH5	Ant1	Hop	2.869	120	0.344	≤0.4	PASS

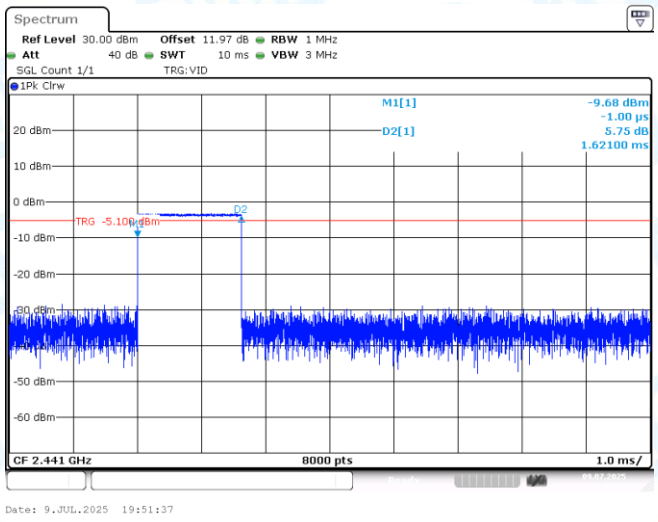
5.2 Test Graphs



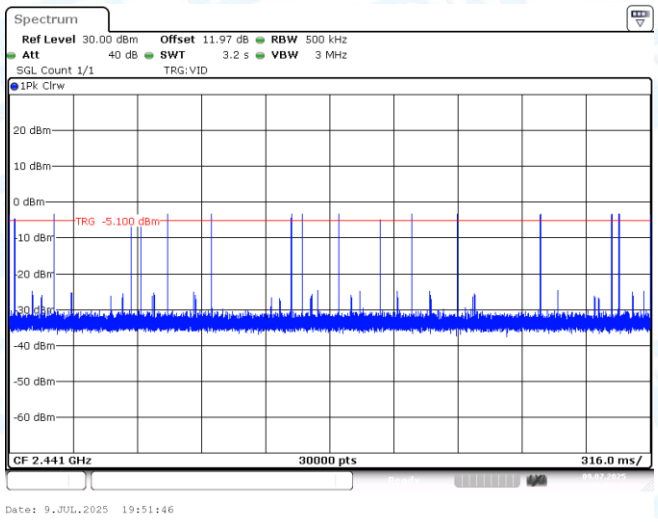
DH1-Ant1-Hop-PASS



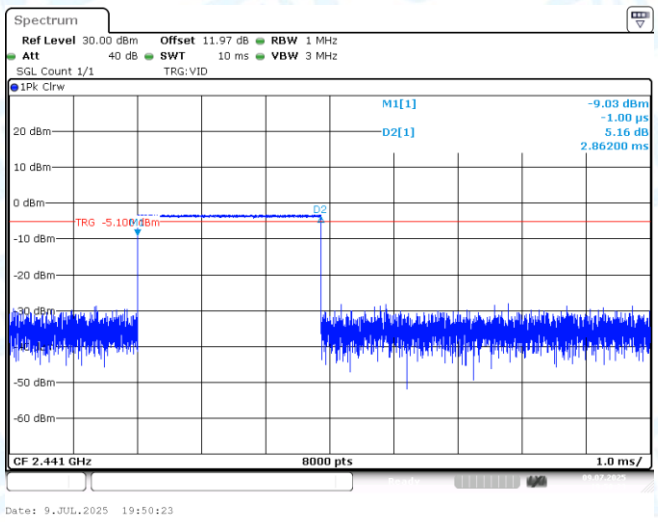
DH1-Ant1-Hop-PASS



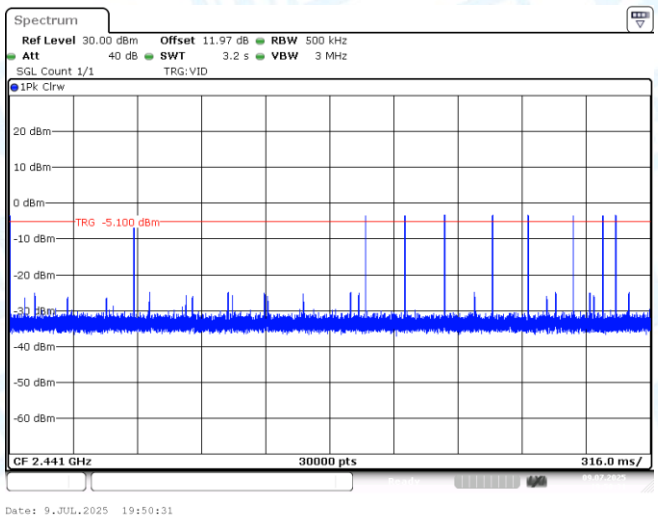
DH3-Ant1-Hop-PASS



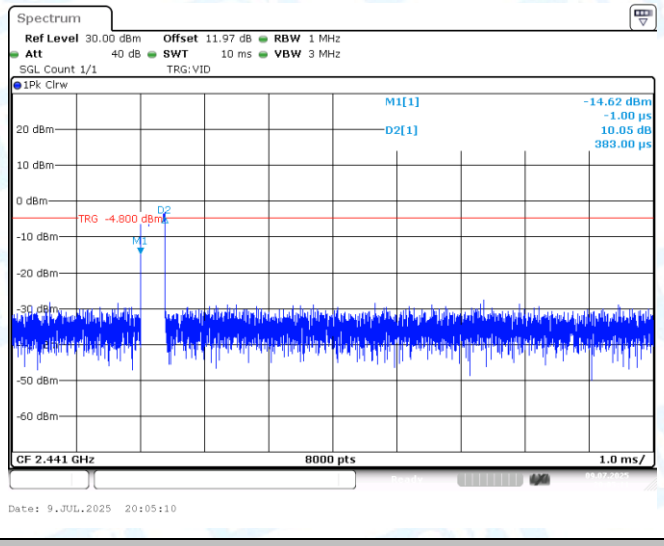
DH3-Ant1-Hop-PASS



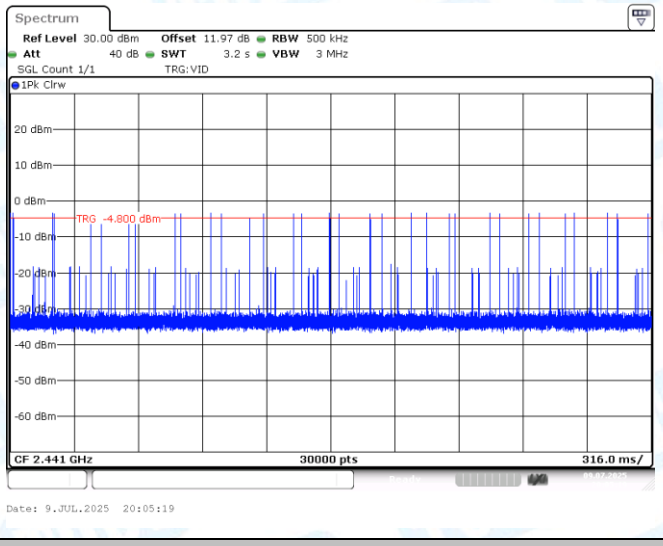
DH5-Ant1-Hop-PASS



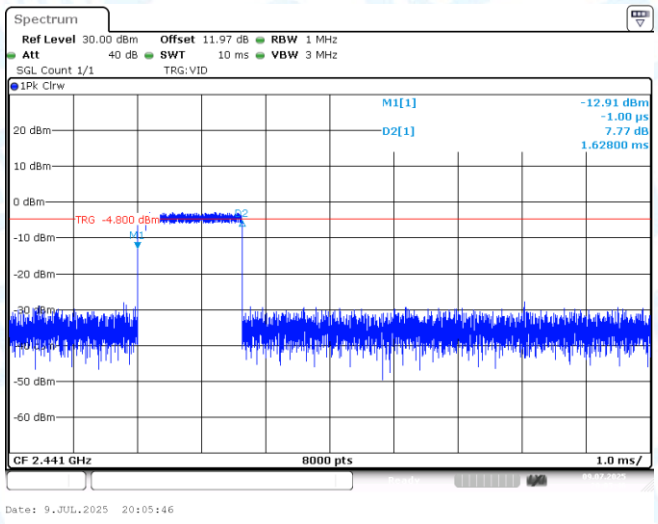
DH5-Ant1-Hop-PASS



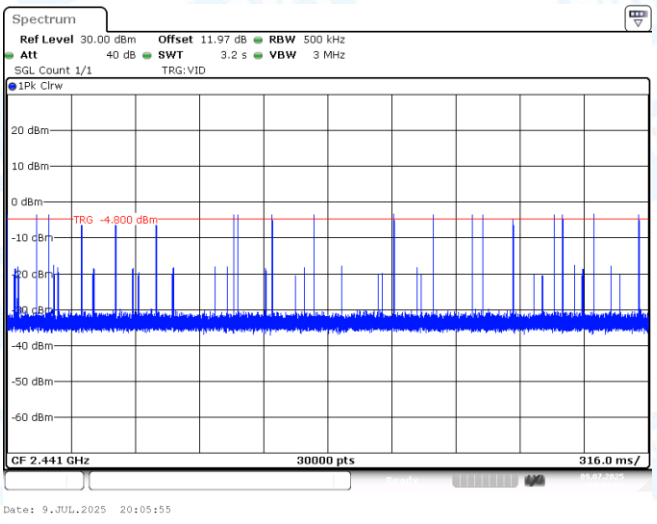
2DH1-Ant1-Hop-PASS



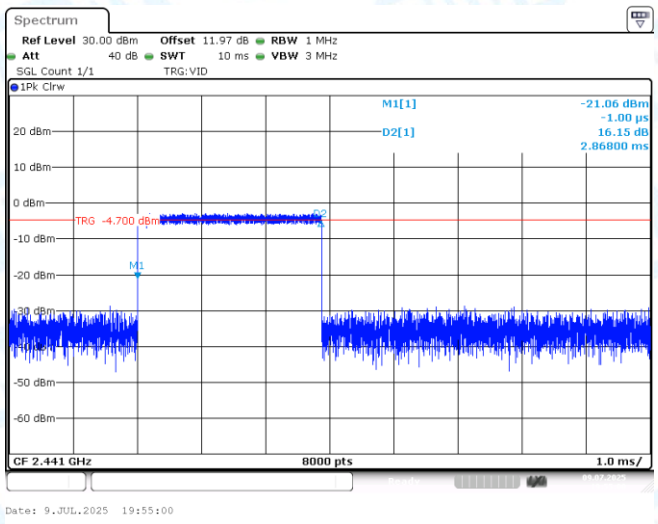
2DH1-Ant1-Hop-PASS



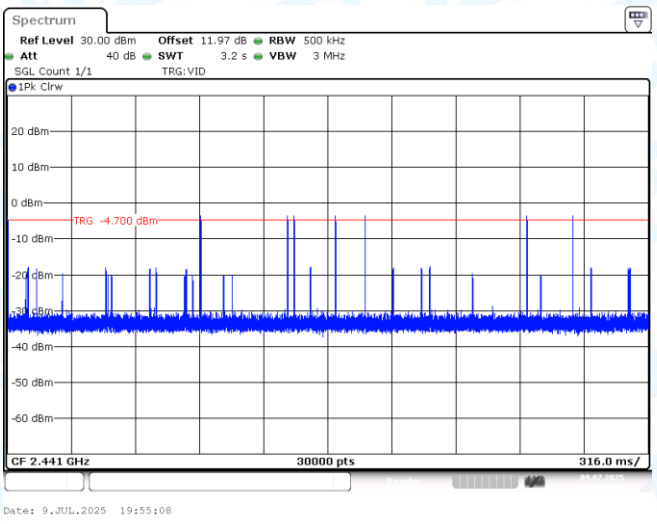
2DH3-Ant1-Hop-PASS



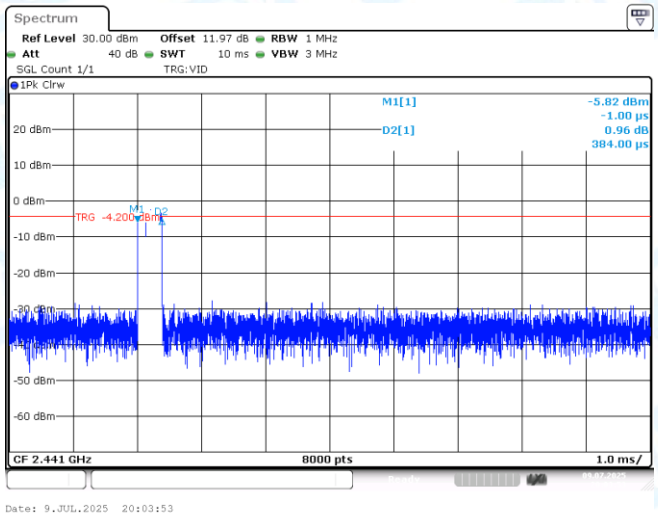
2DH3-Ant1-Hop-PASS



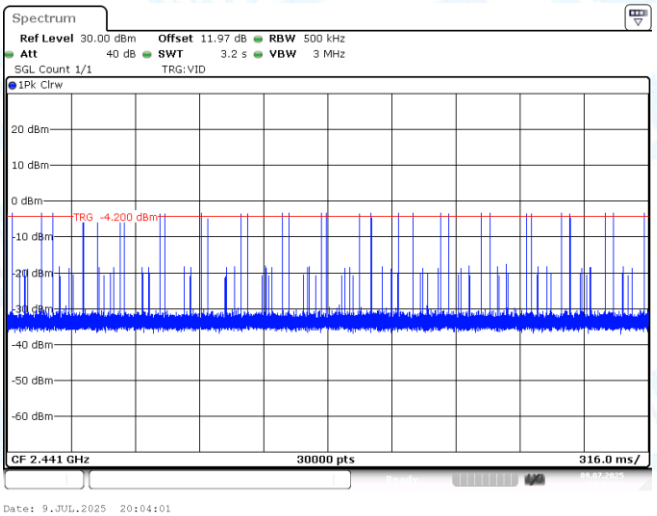
2DH5-Ant1-Hop-PASS



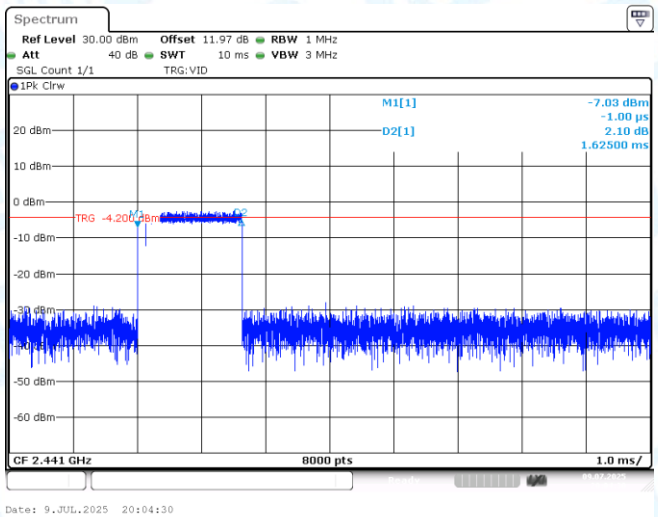
2DH5-Ant1-Hop-PASS



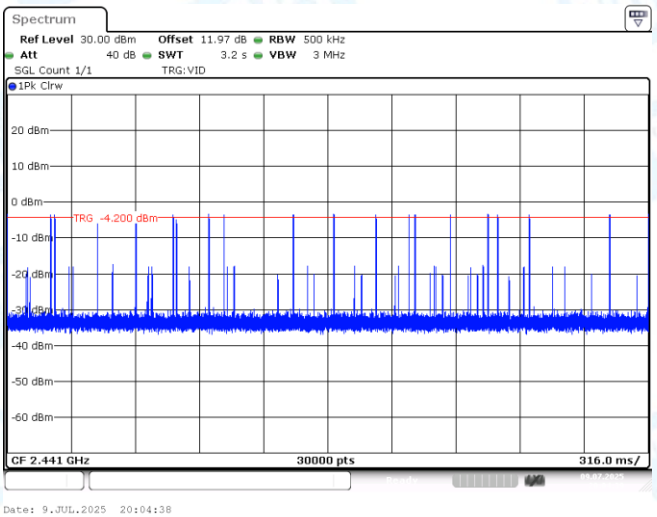
3DH1-Ant1-Hop-PASS



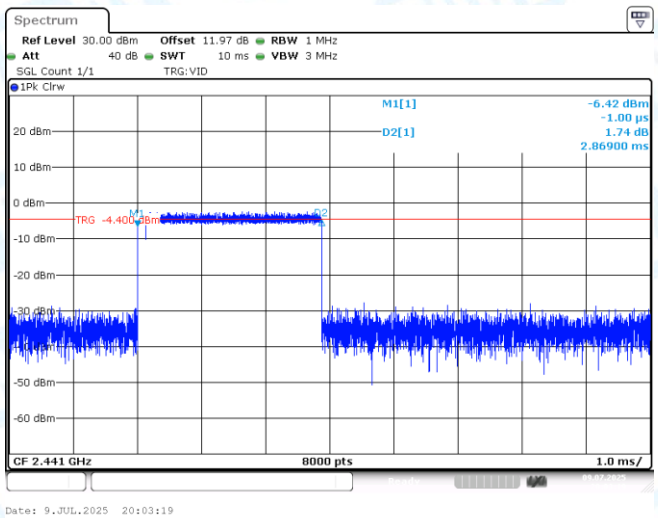
3DH1-Ant1-Hop-PASS



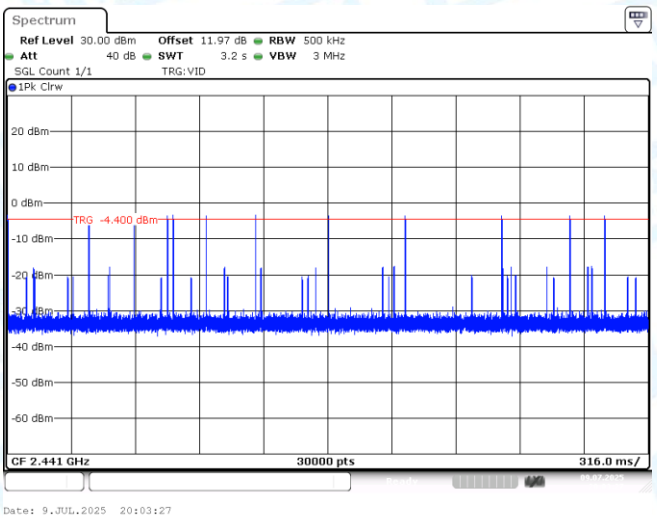
3DH3-Ant1-Hop-PASS



3DH3-Ant1-Hop-PASS



3DH5-Ant1-Hop-PASS



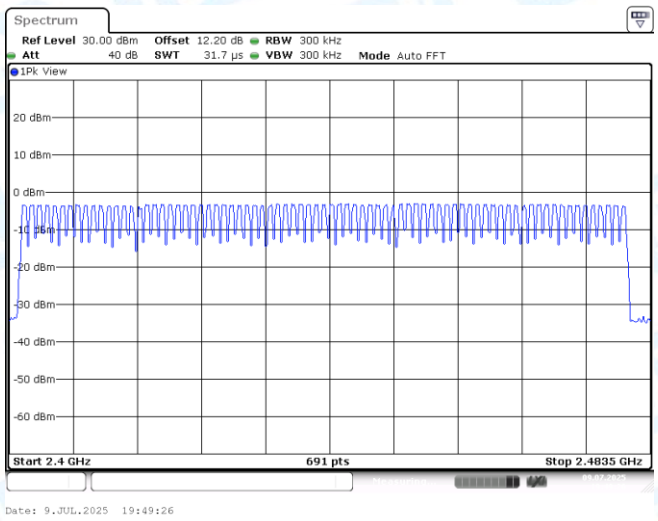
3DH5-Ant1-Hop-PASS

6: Number of hopping channels

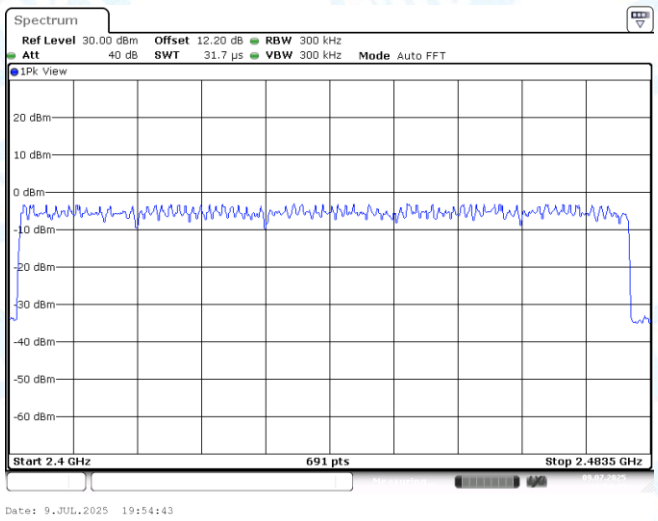
6.1 Test Result

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

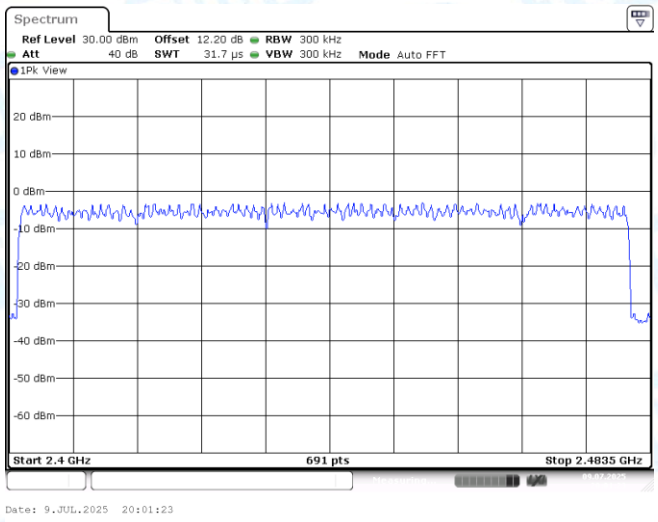
6.2 Test Graphs



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



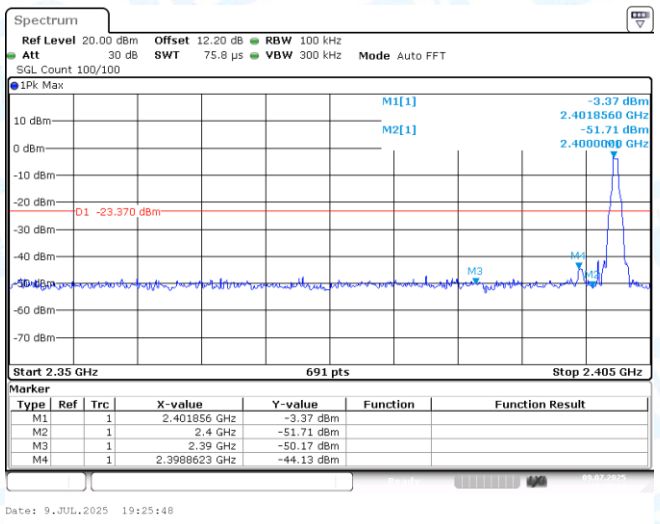
3DH5-Ant1-Hop-PASS

7: Band edge measurements

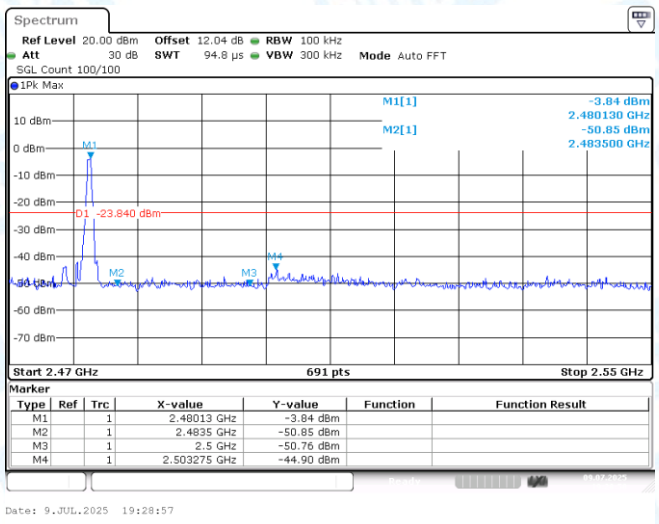
7.1 Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-3.37	-44.13	≤-23.37	PASS
DH5	Ant1	High	2480	-3.84	-44.9	≤-23.84	PASS
DH5	Ant1	Low	Hop_2402	-4.27	-44.52	≤-24.27	PASS
DH5	Ant1	High	Hop_2480	-4.19	-45.3	≤-24.19	PASS
2DH5	Ant1	Low	2402	-5.31	-44.69	≤-25.31	PASS
2DH5	Ant1	High	2480	-4.17	-45.78	≤-24.17	PASS
2DH5	Ant1	Low	Hop_2402	-8.39	-46.81	≤-28.39	PASS
2DH5	Ant1	High	Hop_2480	-3.78	-45.53	≤-23.78	PASS
3DH5	Ant1	Low	2402	-5.48	-44.35	≤-25.48	PASS
3DH5	Ant1	High	2480	-4.01	-46.59	≤-24.01	PASS
3DH5	Ant1	Low	Hop_2402	-6.94	-45.83	≤-26.94	PASS
3DH5	Ant1	High	Hop_2480	-6.23	-45.65	≤-26.23	PASS

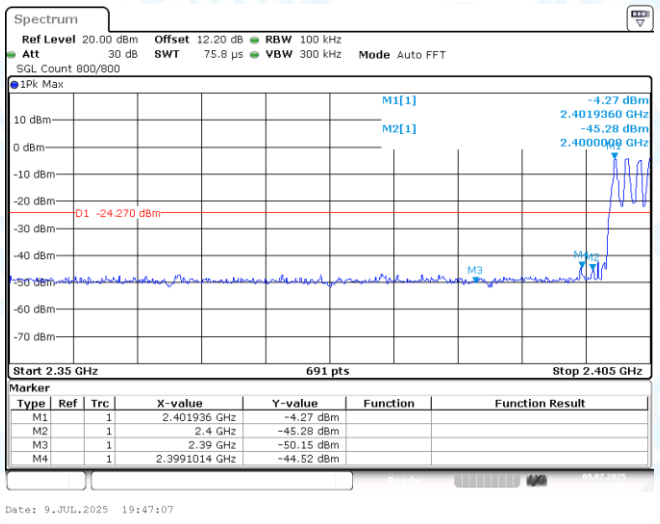
7.2 Test Graphs



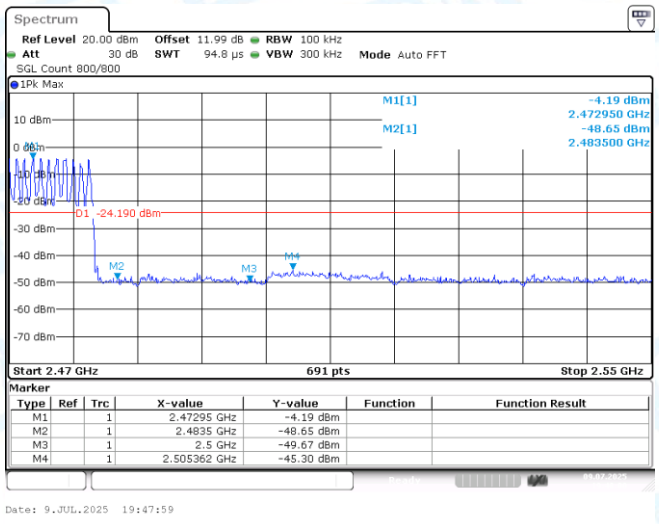
DH5-Ant1-2402-PASS



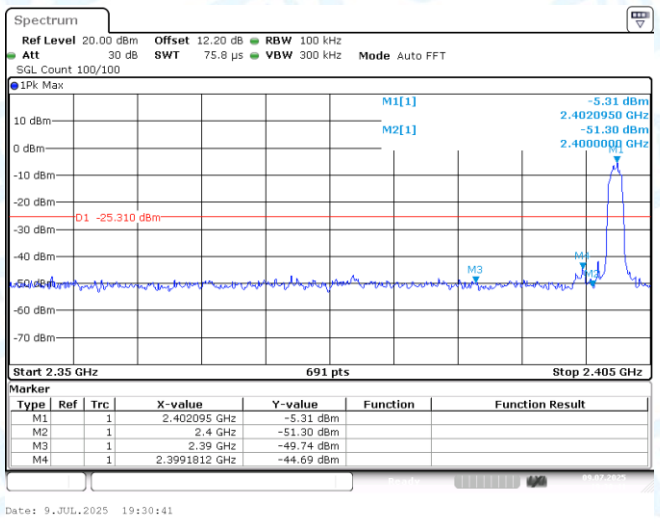
DH5-Ant1-2480-PASS



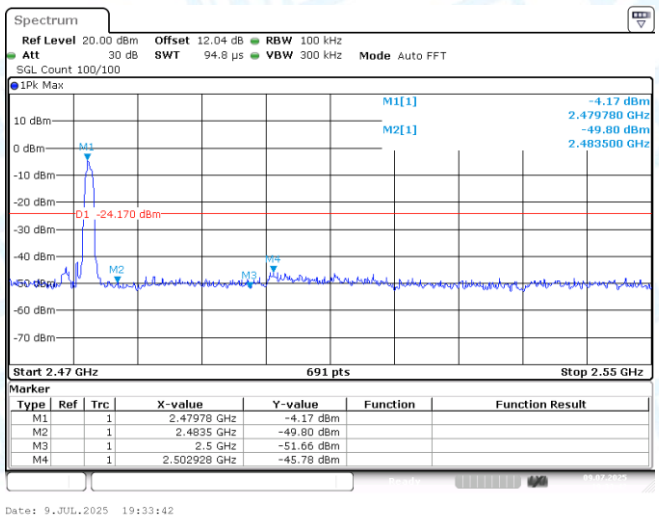
DH5-Ant1-Hop_2402-PASS



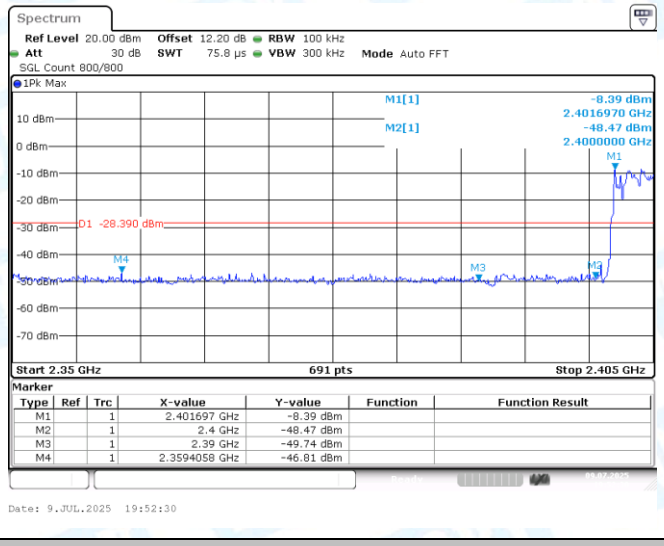
DH5-Ant1-Hop_2480-PASS



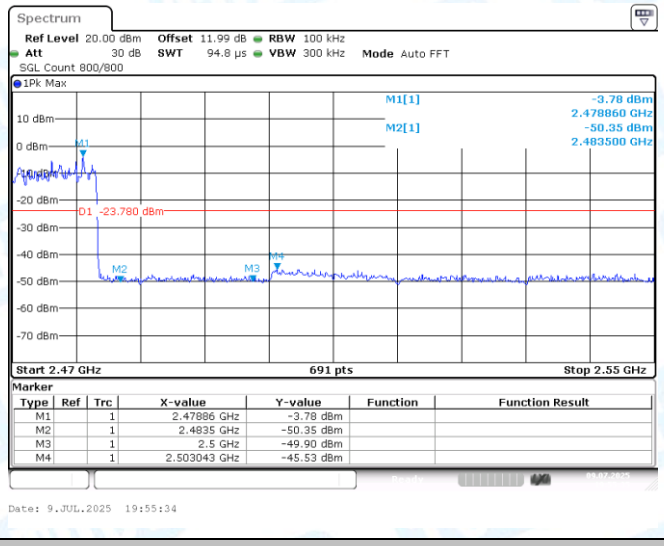
2DH5-Ant1-2402-PASS



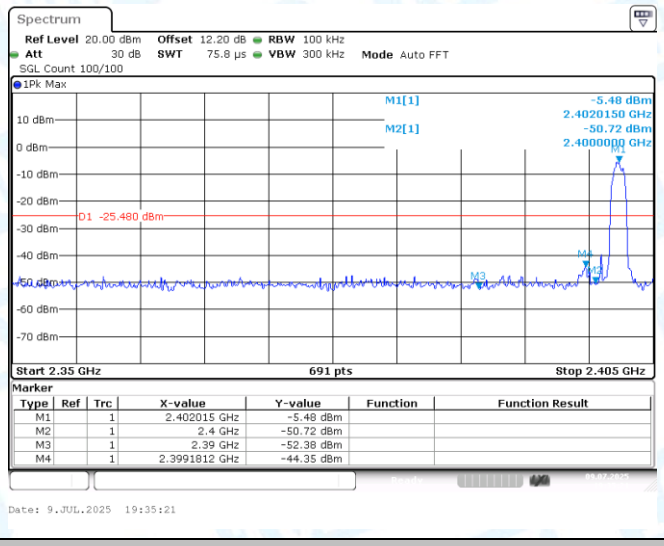
2DH5-Ant1-2480-PASS



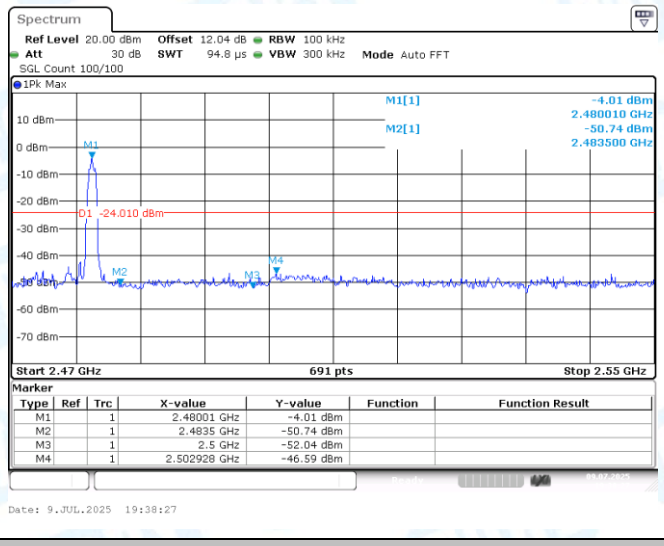
2DH5-Ant1-Hop_2402-PASS



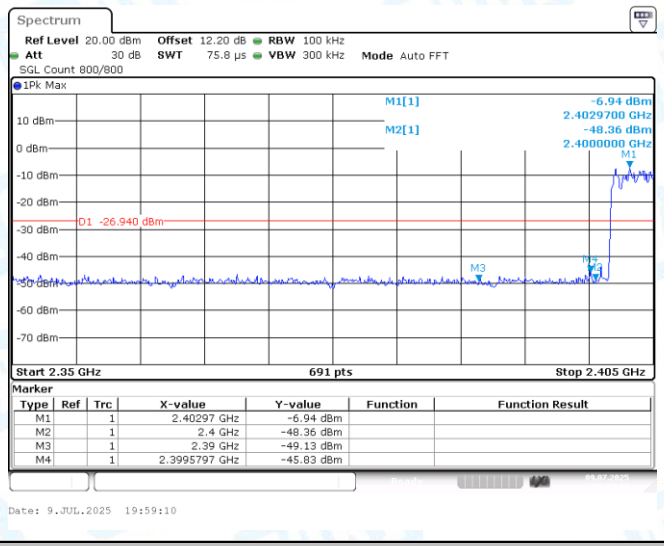
2DH5-Ant1-Hop_2480-PASS



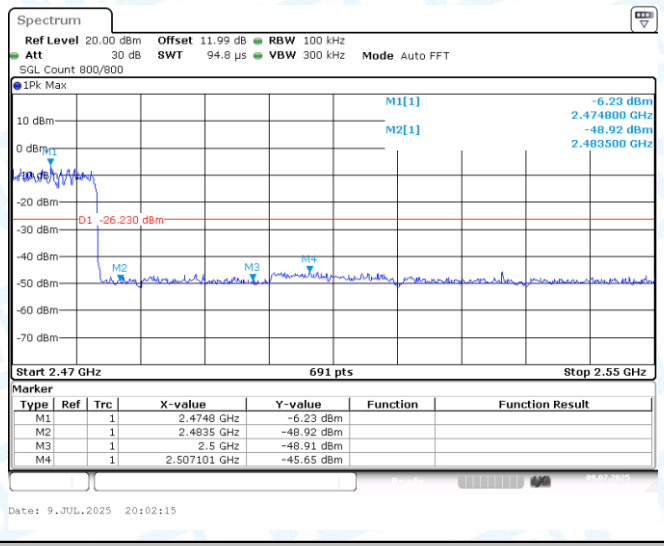
3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



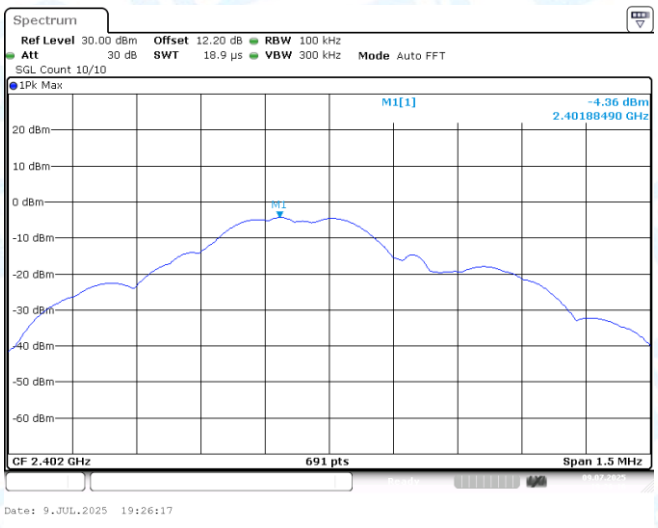
3DH5-Ant1-Hop_2480-PASS

8: Conducted Spurious Emission

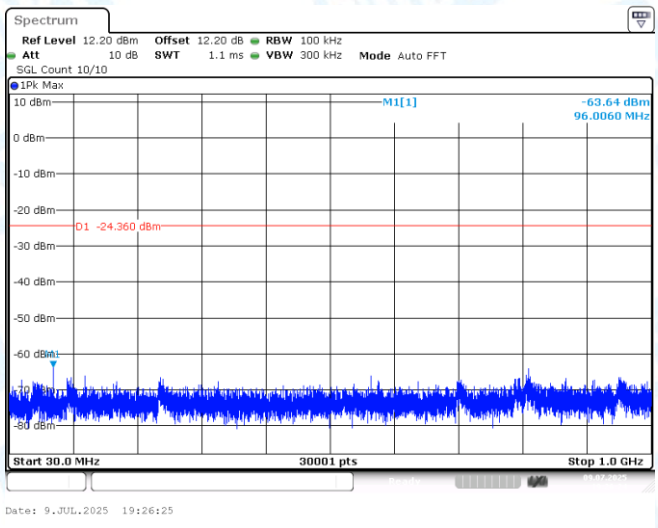
8.1 Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-4.36	-4.36	---	PASS
DH5	Ant1	2402	30~1000	-4.36	-63.64	≤-24.36	PASS
DH5	Ant1	2402	1000~26500	-4.36	-48.76	≤-24.36	PASS
DH5	Ant1	2441	0~Reference	-4.33	-4.33	---	PASS
DH5	Ant1	2441	30~1000	-4.33	-59.49	≤-24.33	PASS
DH5	Ant1	2441	1000~26500	-4.33	-48.49	≤-24.33	PASS
DH5	Ant1	2480	0~Reference	-4.24	-4.24	---	PASS
DH5	Ant1	2480	30~1000	-4.24	-60.73	≤-24.24	PASS
DH5	Ant1	2480	1000~26500	-4.24	-48.72	≤-24.24	PASS
2DH5	Ant1	2402	0~Reference	-5.47	-5.47	---	PASS
2DH5	Ant1	2402	30~1000	-5.47	-64.97	≤-25.47	PASS
2DH5	Ant1	2402	1000~26500	-5.47	-48.81	≤-25.47	PASS
2DH5	Ant1	2441	0~Reference	-7.76	-7.76	---	PASS
2DH5	Ant1	2441	30~1000	-7.76	-63.92	≤-27.76	PASS
2DH5	Ant1	2441	1000~26500	-7.76	-47.89	≤-27.76	PASS
2DH5	Ant1	2480	0~Reference	-5.20	-5.20	---	PASS
2DH5	Ant1	2480	30~1000	-5.20	-63.61	≤-25.2	PASS
2DH5	Ant1	2480	1000~26500	-5.20	-47.77	≤-25.2	PASS
3DH5	Ant1	2402	0~Reference	-8.50	-8.50	---	PASS
3DH5	Ant1	2402	30~1000	-8.50	-49.31	≤-28.5	PASS
3DH5	Ant1	2402	1000~26500	-8.50	-48.66	≤-28.5	PASS
3DH5	Ant1	2441	0~Reference	-9.38	-9.38	---	PASS
3DH5	Ant1	2441	30~1000	-9.38	-63.52	≤-29.38	PASS
3DH5	Ant1	2441	1000~26500	-9.38	-48.06	≤-29.38	PASS
3DH5	Ant1	2480	0~Reference	-8.03	-8.03	---	PASS
3DH5	Ant1	2480	30~1000	-8.03	-57.75	≤-28.03	PASS
3DH5	Ant1	2480	1000~26500	-8.03	-48.41	≤-28.03	PASS

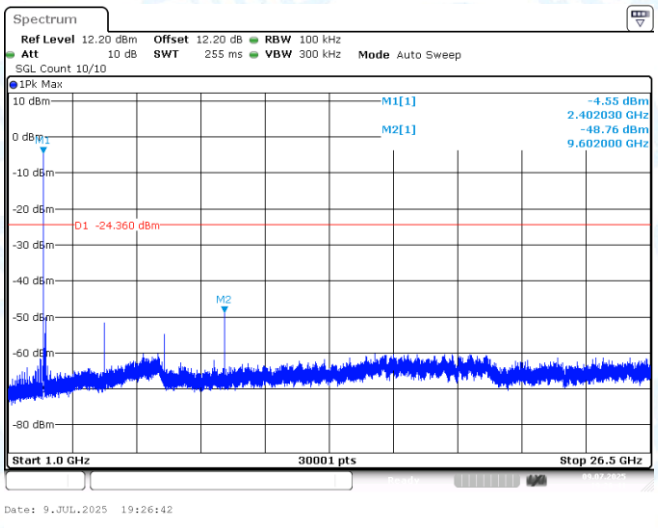
8.2 Test Graphs



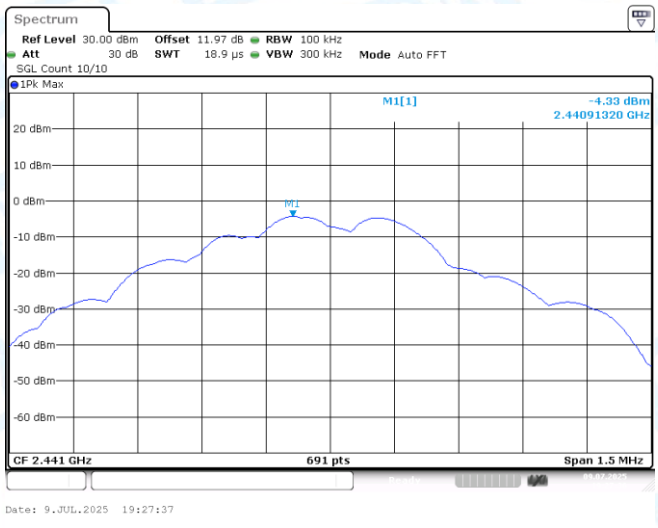
DH5-Ant1-2402-0~Reference-PASS



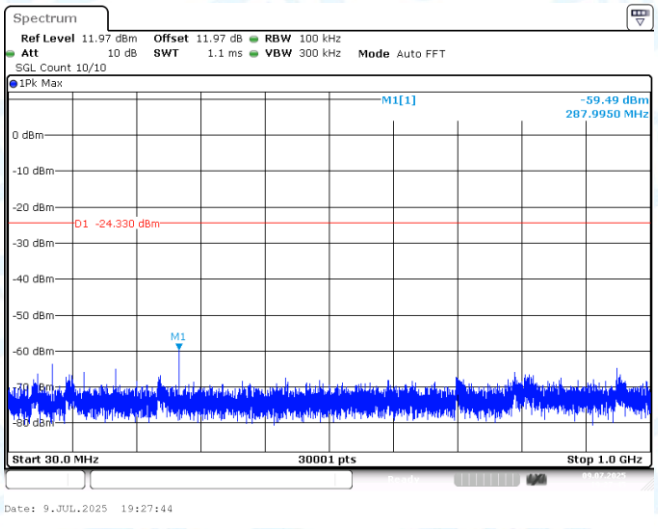
DH5-Ant1-2402-30~1000-PASS



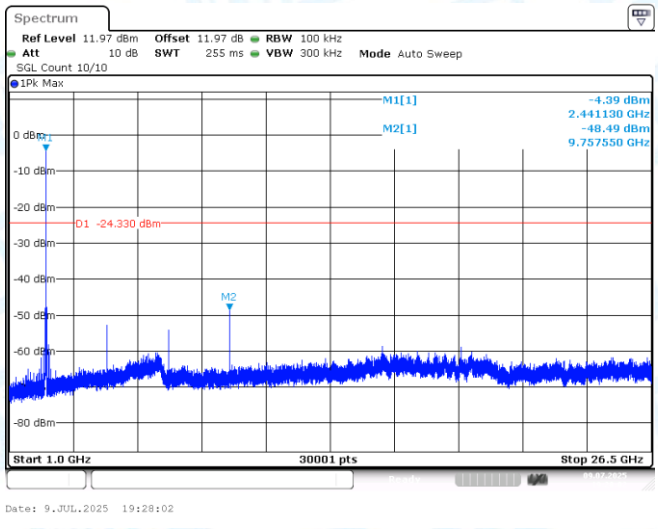
DH5-Ant1-2402-1000~26500-PASS



DH5-Ant1-2441-0~Reference-PASS

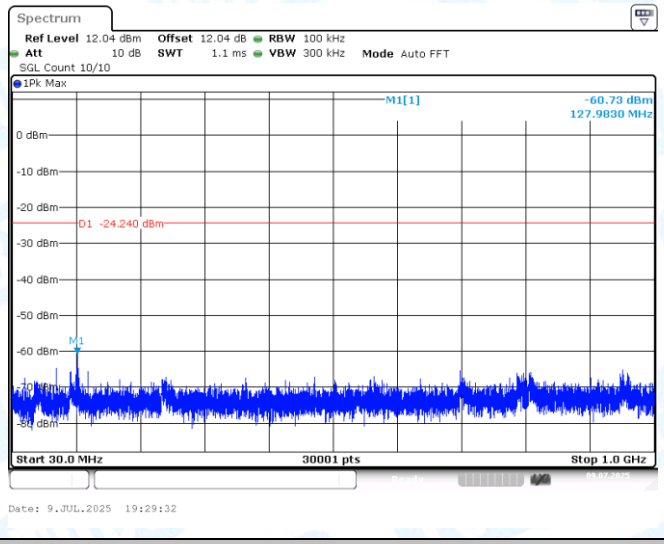


DH5-Ant1-2441-30~1000-PASS

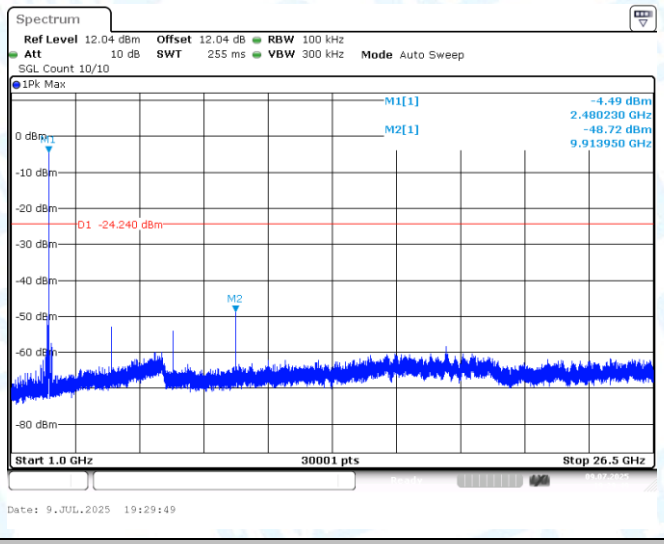


DH5-Ant1-2441-1000~26500-PASS

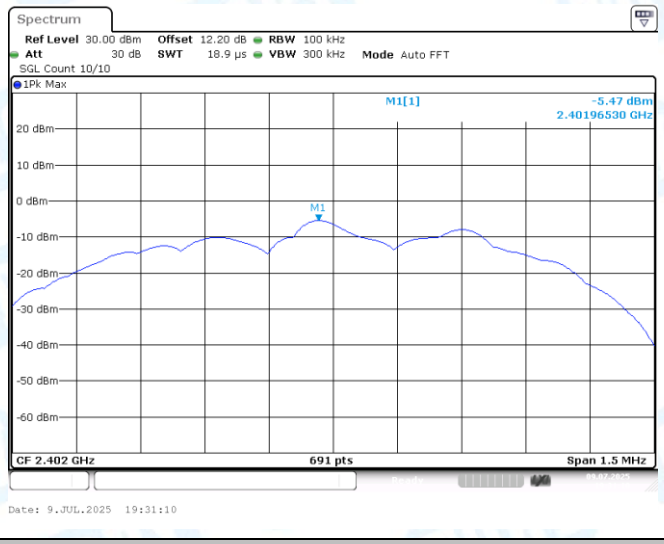
DH5-Ant1-2480-0~Reference-PASS



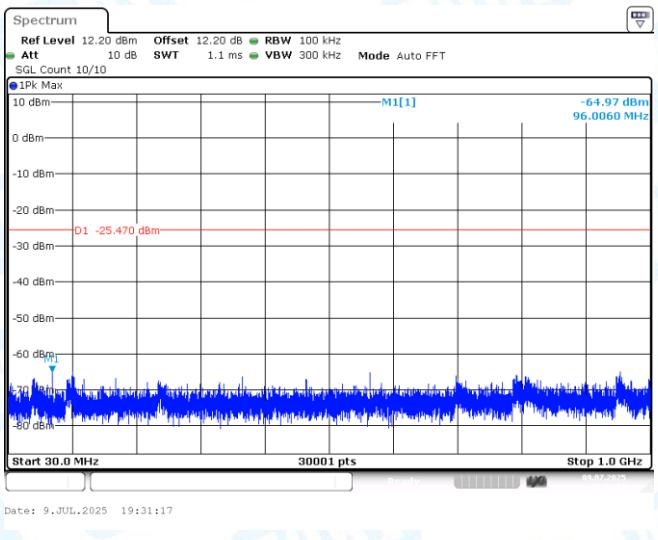
DH5-Ant1-2480-30~1000-PASS



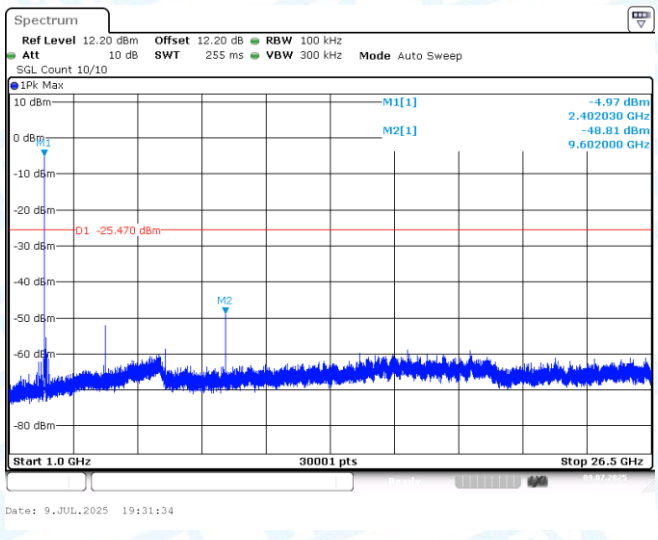
DH5-Ant1-2480-1000~26500-PASS



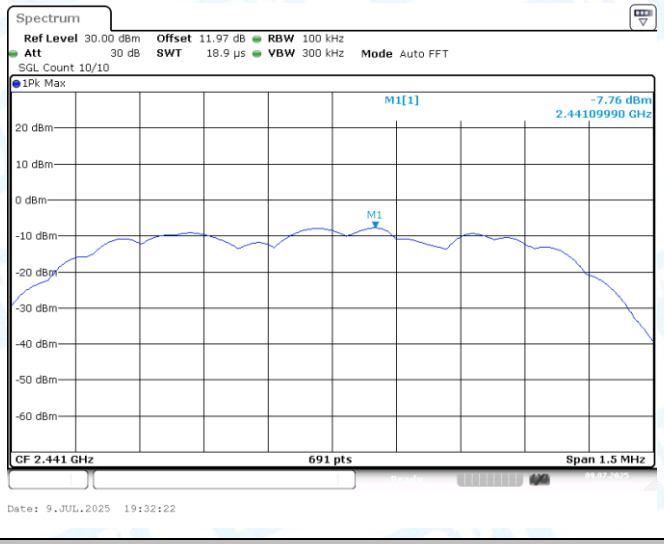
2DH5-Ant1-2402-0~Reference-PASS



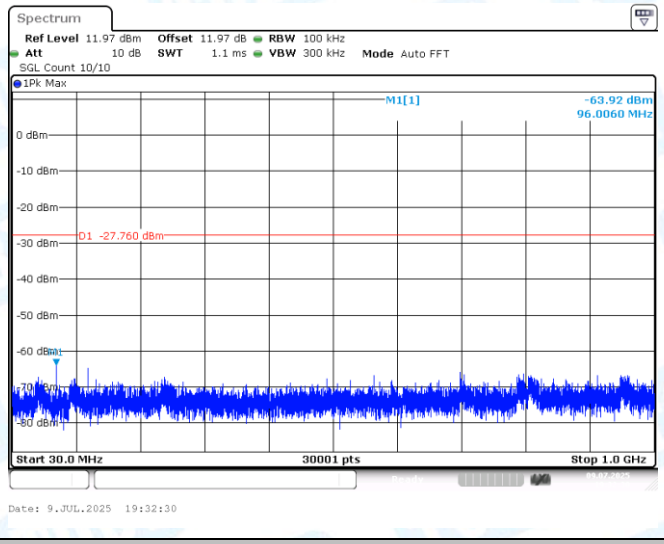
2DH5-Ant1-2402-30~1000-PASS



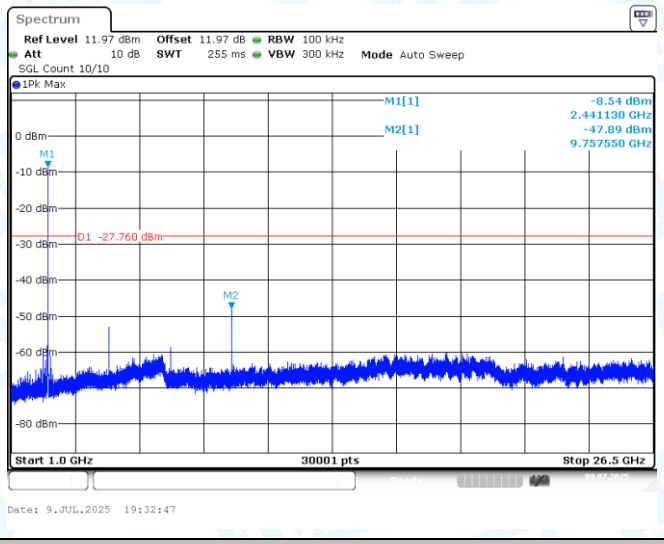
2DH5-Ant1-2402-1000~26500-PASS



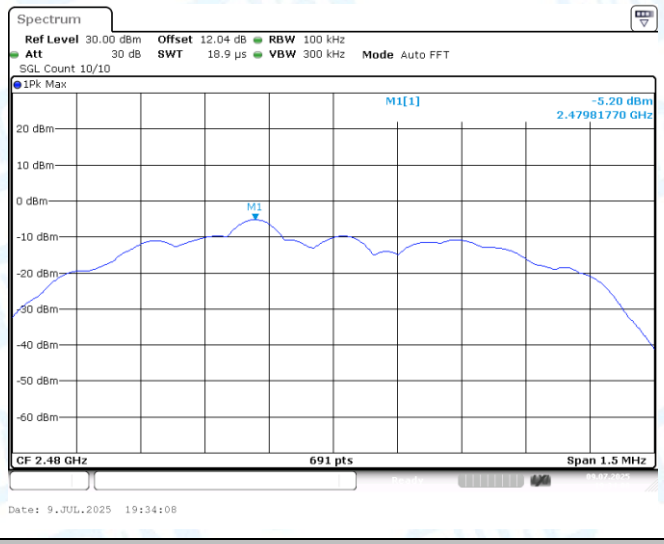
2DH5-Ant1-2441-0~Reference-PASS



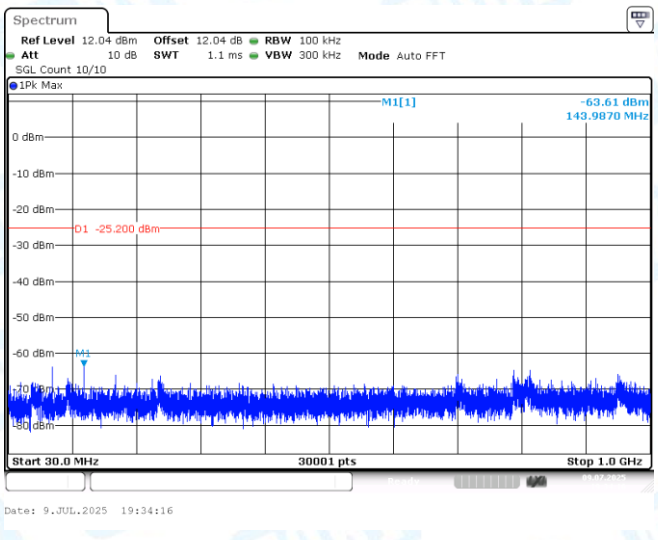
2DH5-Ant1-2441-30~1000-PASS



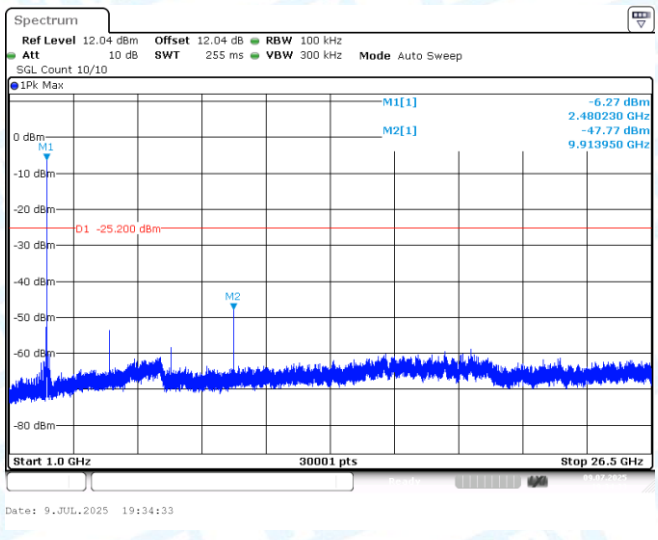
2DH5-Ant1-2441-1000~26500-PASS



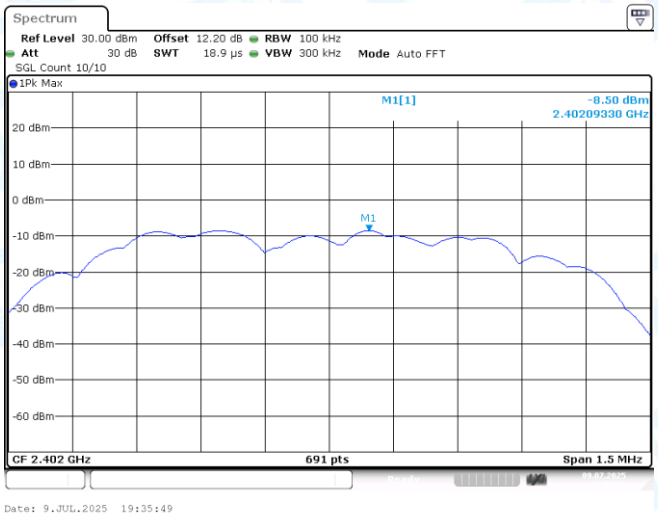
2DH5-Ant1-2480-0~Reference-PASS



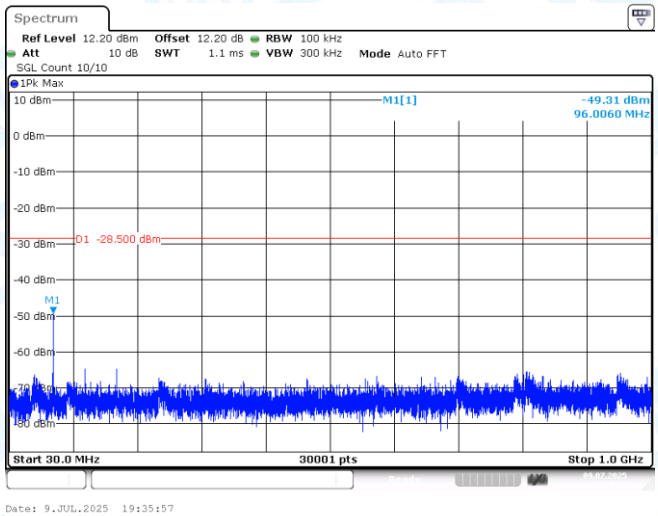
2DH5-Ant1-2480-30~1000-PASS



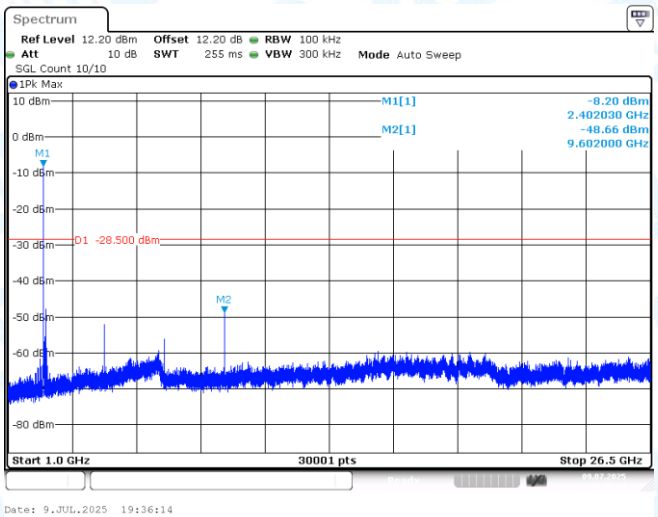
2DH5-Ant1-2480-1000~26500-PASS



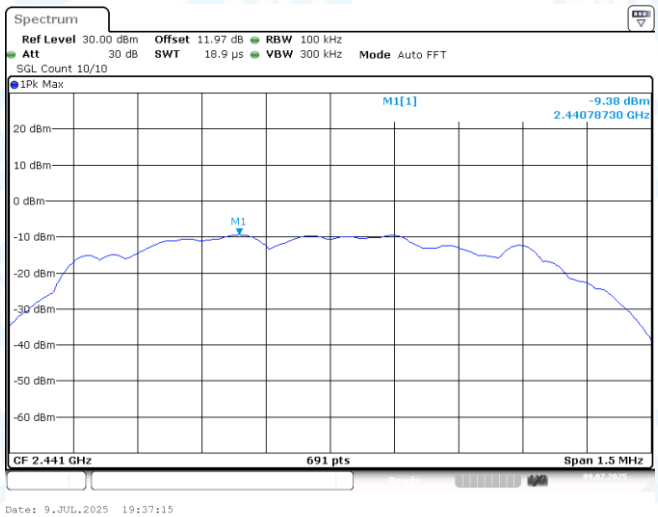
3DH5-Ant1-2402-0~Reference-PASS



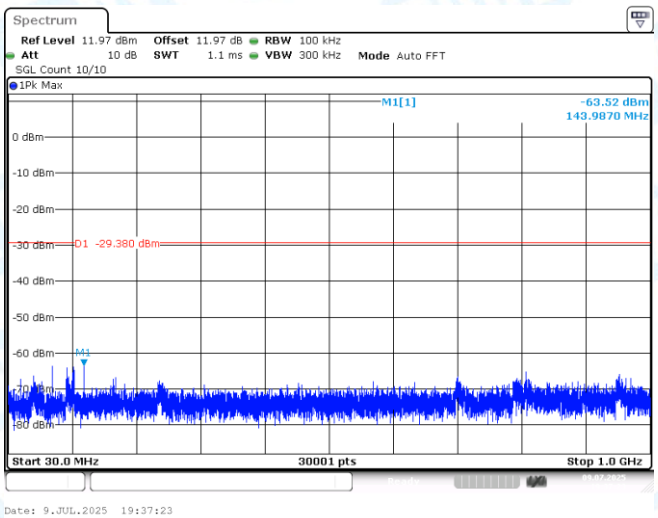
3DH5-Ant1-2402-30~1000-PASS



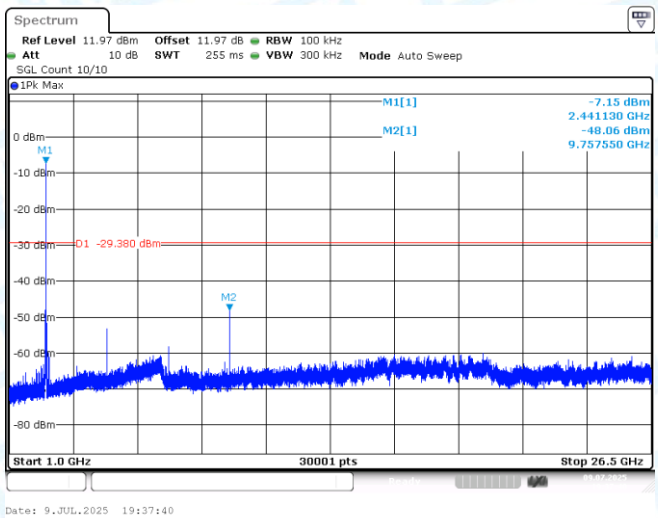
3DH5-Ant1-2402-1000~26500-PASS



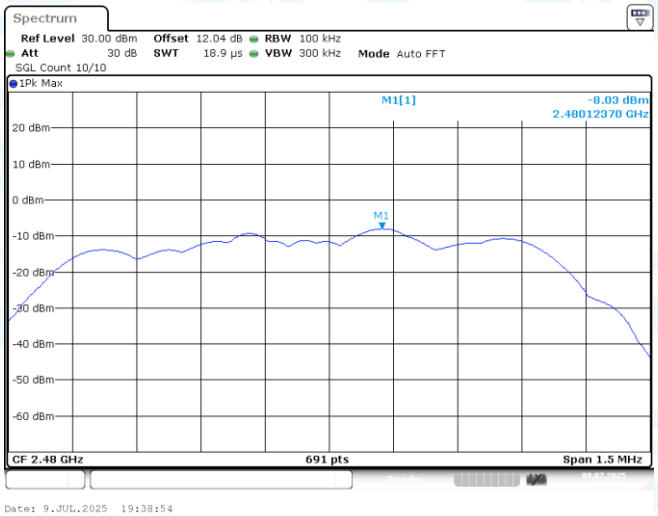
3DH5-Ant1-2441-0~Reference-PASS



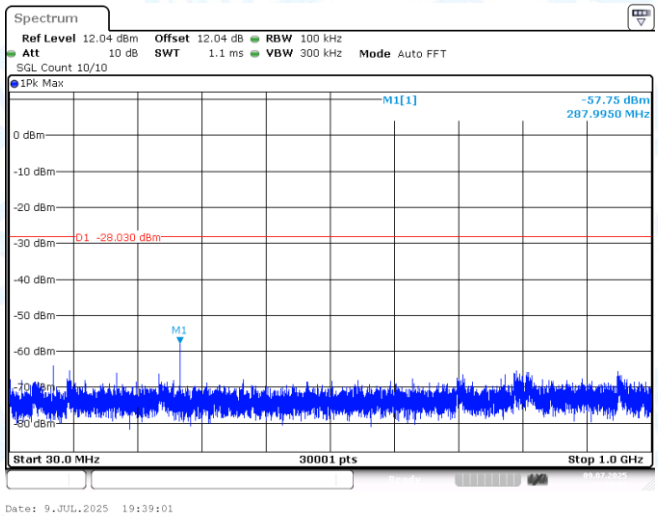
3DH5-Ant1-2441-30~1000-PASS



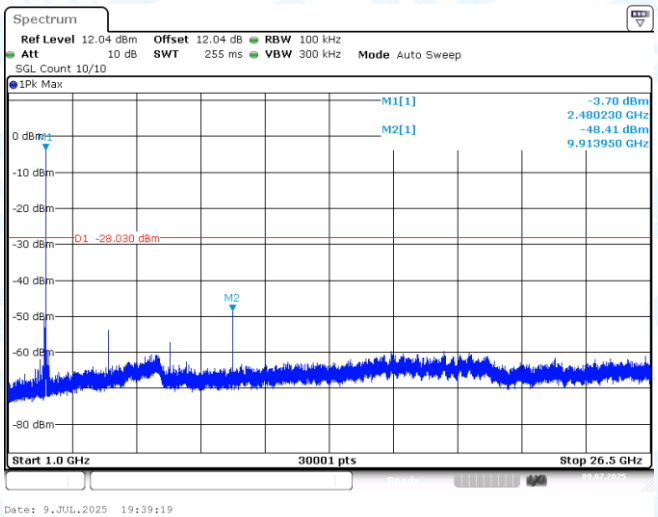
3DH5-Ant1-2441-1000~26500-PASS



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



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



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

9: Duty Cycle

9.1 Test Result

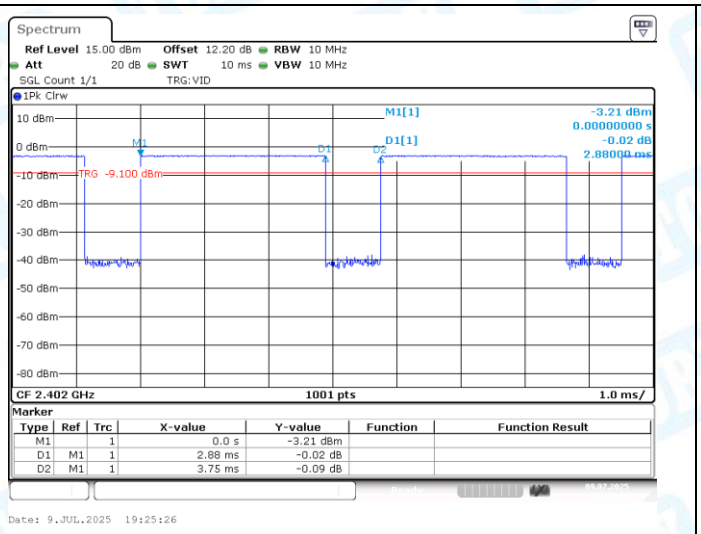
TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factory	1/T [kHz]
DH5	Ant1	2402	2.88	3.75	76.80	1.15	0.35
DH5	Ant1	2441	2.88	3.75	76.80	1.15	0.35
DH5	Ant1	2480	2.88	3.75	76.80	1.15	0.35
2DH5	Ant1	2402	2.89	3.75	77.07	1.13	0.35
2DH5	Ant1	2441	2.90	3.76	77.13	1.13	0.34
2DH5	Ant1	2480	2.89	3.75	77.07	1.13	0.35
3DH5	Ant1	2402	2.90	3.76	77.13	1.13	0.34
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

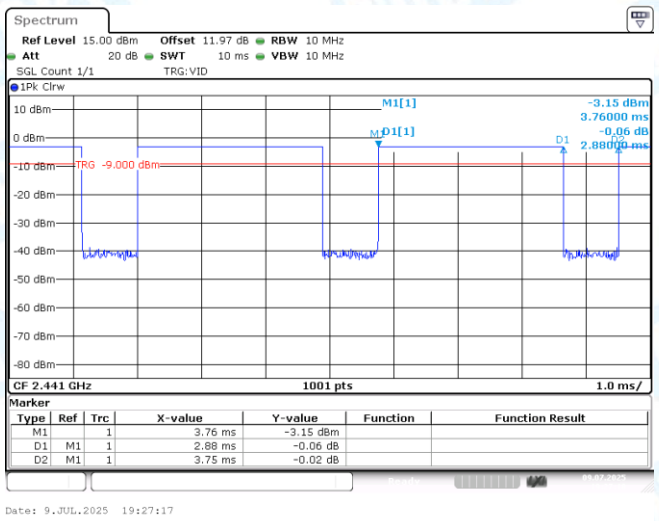
2, DC Factory=$10*\mathrm{Log}_{10}(1/\text{Duty Cycle})$

3, 1/T=1/ Transmission Duration

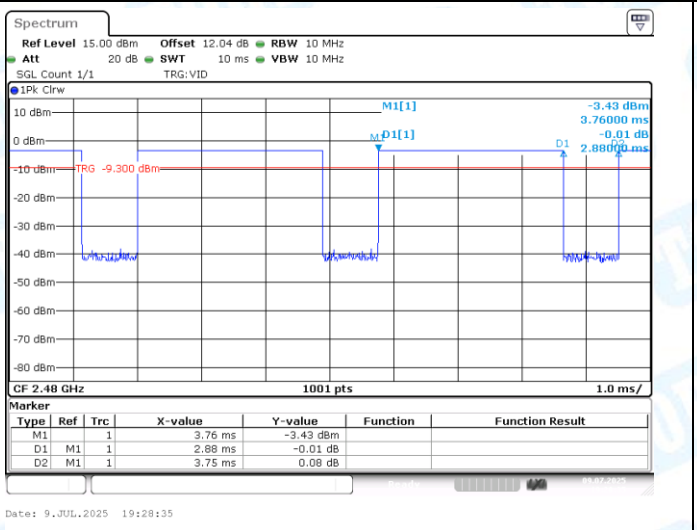
9.2 Test Graphs



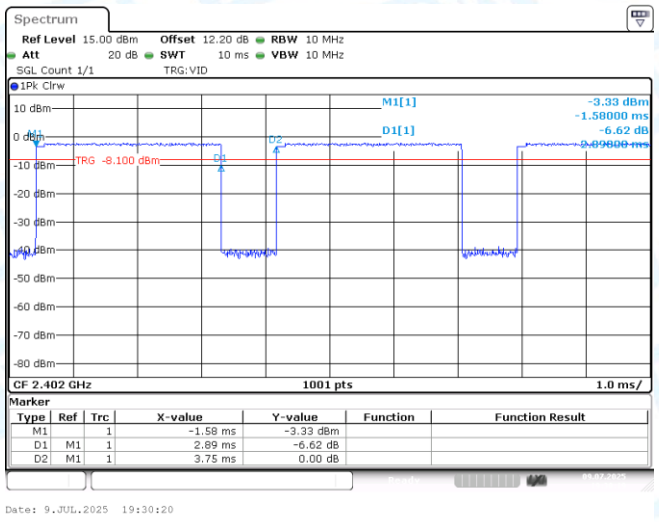
NTNV-DH5-Ant1-2402



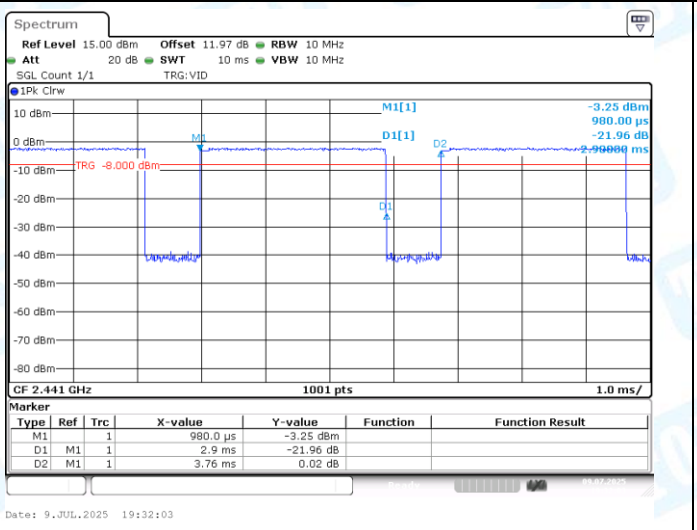
NTNV-DH5-Ant1-2441



NTNV-DH5-Ant1-2480



NTNV-2DH5-Ant1-2402



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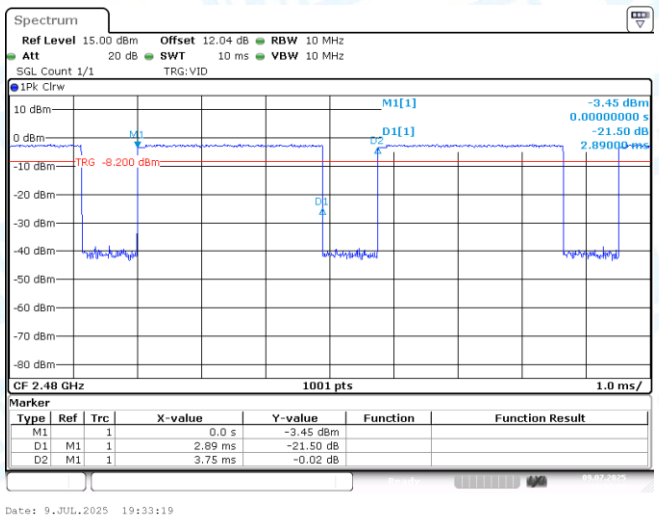

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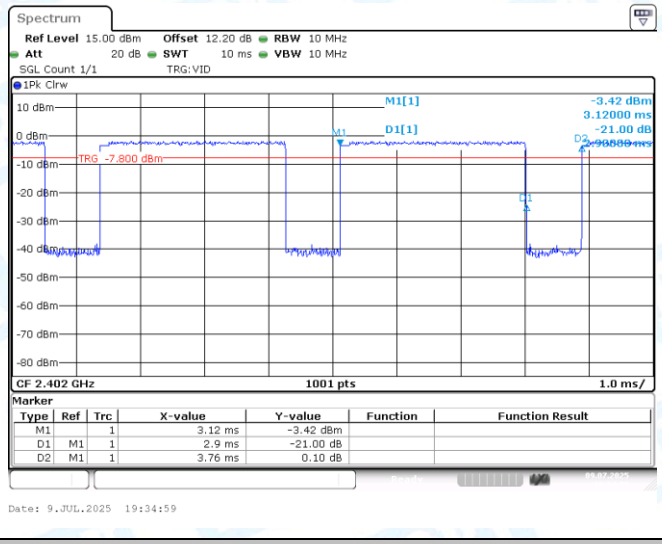
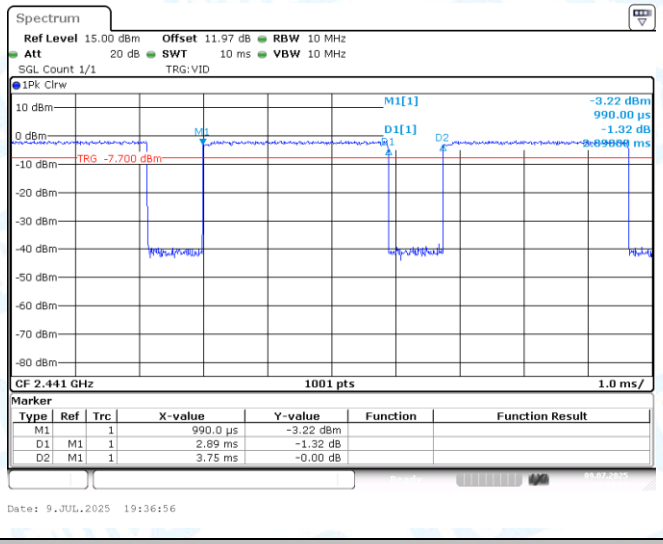
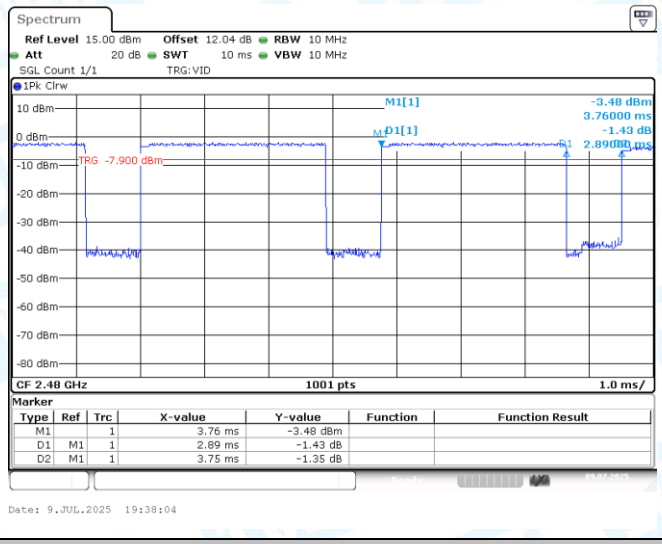


NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441



NTNV-3DH5-Ant1-2480

10: Emissions in Restricted Bands

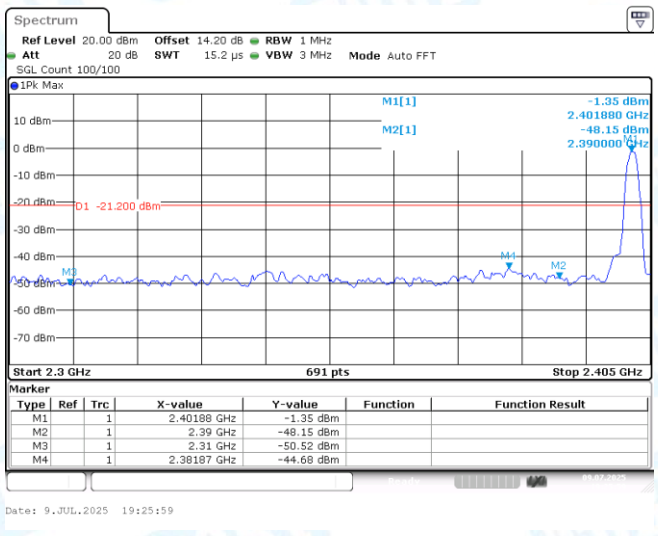
10.1 Test Result

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	-48.15	≤-21.20	47.05	≤74	PASS
DH5	Ant1	Low	2402	Peak	2310.000	-50.52	≤-21.20	44.68	≤74	PASS
DH5	Ant1	Low	2402	Peak	2381.870	-44.68	≤-21.20	50.52	≤74	PASS
DH5	Ant1	Low	2402	AV	2390.000	-55.73	≤-41.20	39.47	≤54	PASS
DH5	Ant1	Low	2402	AV	2310.000	-55.99	≤-41.20	39.21	≤54	PASS
DH5	Ant1	Low	2402	AV	2380.500	-53.16	≤-41.20	42.04	≤54	PASS
DH5	Ant1	High	2480	Peak	2483.500	-49.3	≤-21.20	45.90	≤74	PASS
DH5	Ant1	High	2480	Peak	2500.000	-47.25	≤-21.20	47.95	≤74	PASS
DH5	Ant1	High	2480	Peak	2497.246	-44.76	≤-21.20	50.44	≤74	PASS
DH5	Ant1	High	2480	AV	2483.500	-53.79	≤-41.20	41.41	≤54	PASS
DH5	Ant1	High	2480	AV	2500.000	-53.77	≤-41.20	41.43	≤54	PASS
DH5	Ant1	High	2480	AV	2498.174	-52.94	≤-41.20	42.26	≤54	PASS
2DH5	Ant1	Low	2402	Peak	2390.000	-46.46	≤-21.20	48.74	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2310.000	-48.49	≤-21.20	46.71	≤74	PASS
2DH5	Ant1	Low	2402	Peak	2386.587	-44.47	≤-21.20	50.73	≤74	PASS
2DH5	Ant1	Low	2402	AV	2390.000	-54.9	≤-41.20	40.30	≤54	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-56.55	≤-41.20	38.65	≤54	PASS
2DH5	Ant1	Low	2402	AV	2379.587	-53.14	≤-41.20	42.06	≤54	PASS
2DH5	Ant1	High	2480	Peak	2483.500	-49.42	≤-21.20	45.78	≤74	PASS
2DH5	Ant1	High	2480	Peak	2500.000	-47.19	≤-21.20	48.01	≤74	PASS
2DH5	Ant1	High	2480	Peak	2497.246	-45.06	≤-21.20	50.14	≤74	PASS
2DH5	Ant1	High	2480	AV	2483.500	-55.66	≤-41.20	39.54	≤54	PASS
2DH5	Ant1	High	2480	AV	2500.000	-53.53	≤-41.20	41.67	≤54	PASS
2DH5	Ant1	High	2480	AV	2498.174	-53.39	≤-41.20	41.81	≤54	PASS
3DH5	Ant1	Low	2402	Peak	2390.000	-47.32	≤-21.20	47.88	≤74	PASS
3DH5	Ant1	Low	2402	Peak	2310.000	-49.06	≤-21.20	46.14	≤74	PASS
3DH5	Ant1	Low	2402	Peak	2380.652	-43.79	≤-21.20	51.41	≤74	PASS
3DH5	Ant1	Low	2402	AV	2390.000	-56.02	≤-41.20	39.18	≤54	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-56.4	≤-41.20	38.80	≤54	PASS
3DH5	Ant1	Low	2402	AV	2387.196	-53.34	≤-41.20	41.86	≤54	PASS
3DH5	Ant1	High	2480	Peak	2483.500	-47.7	≤-21.20	47.50	≤74	PASS
3DH5	Ant1	High	2480	Peak	2500.000	-46.14	≤-21.20	49.06	≤74	PASS
3DH5	Ant1	High	2480	Peak	2498.174	-44.76	≤-21.20	50.44	≤74	PASS
3DH5	Ant1	High	2480	AV	2483.500	-54.89	≤-41.20	40.31	≤54	PASS
3DH5	Ant1	High	2480	AV	2500.000	-53.82	≤-41.20	41.38	≤54	PASS
3DH5	Ant1	High	2480	AV	2497.362	-52.14	≤-41.20	43.06	≤54	PASS

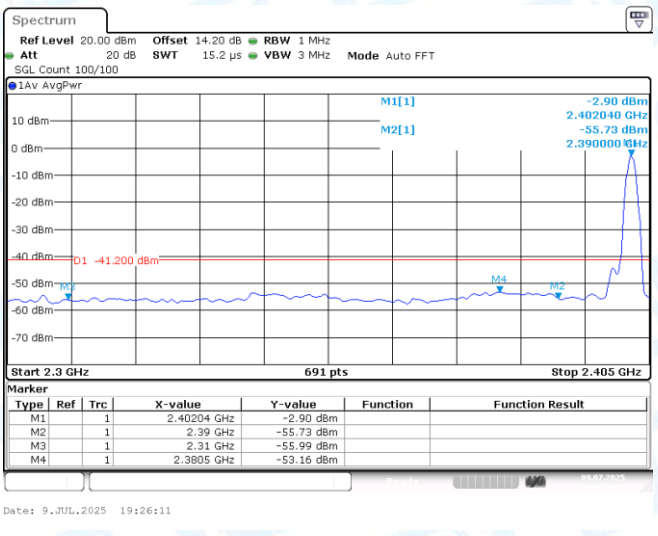
Note：

1. The Antenna Gain is compensated in the graph.
2. 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.

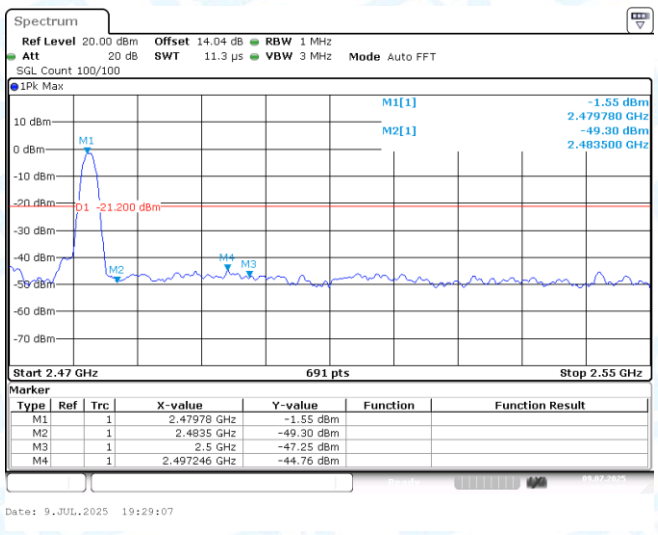
10.2 Test Graphs



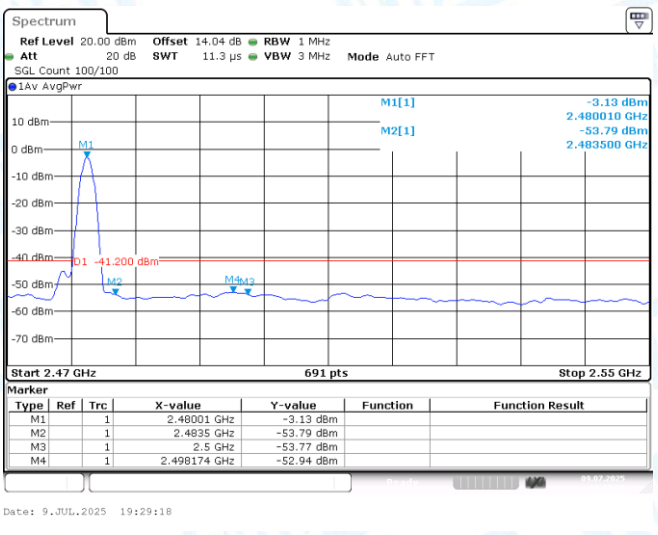
DH5-Ant1-2402-PASS



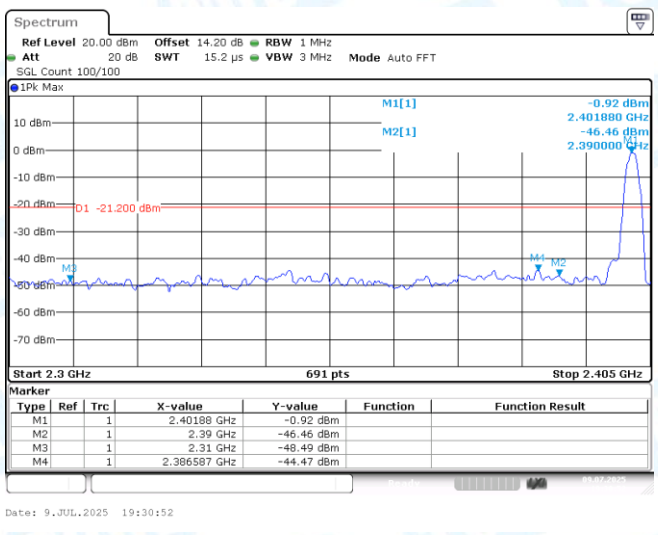
DH5-Ant1-2402-PASS



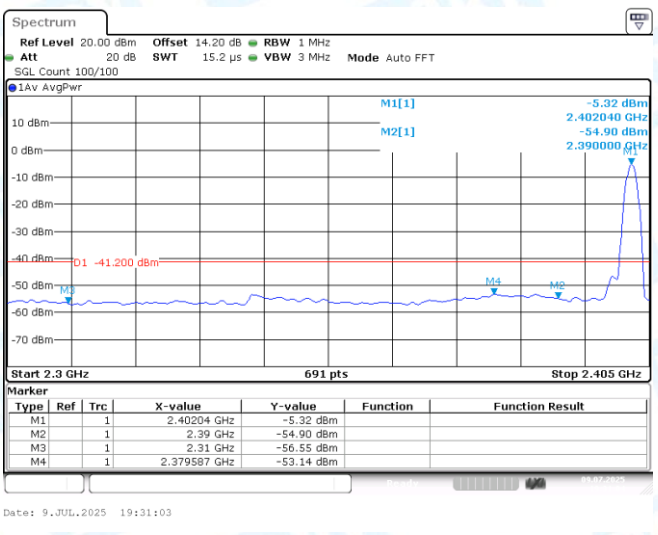
DH5-Ant1-2480-PASS



DH5-Ant1-2480-PASS



2DH5-Ant1-2402-PASS



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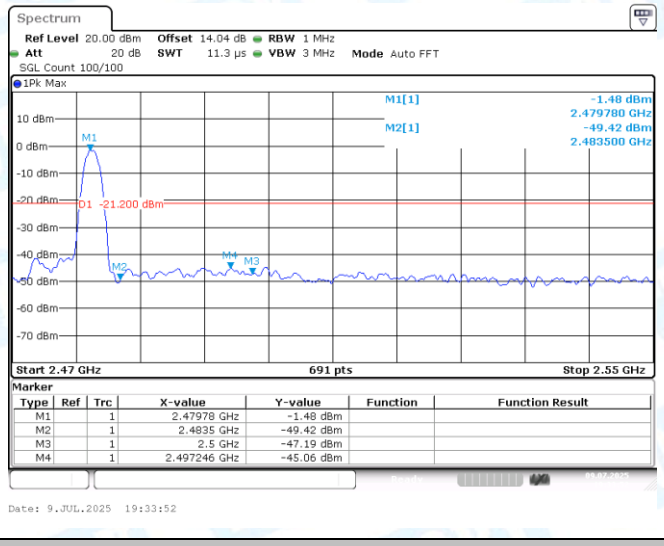

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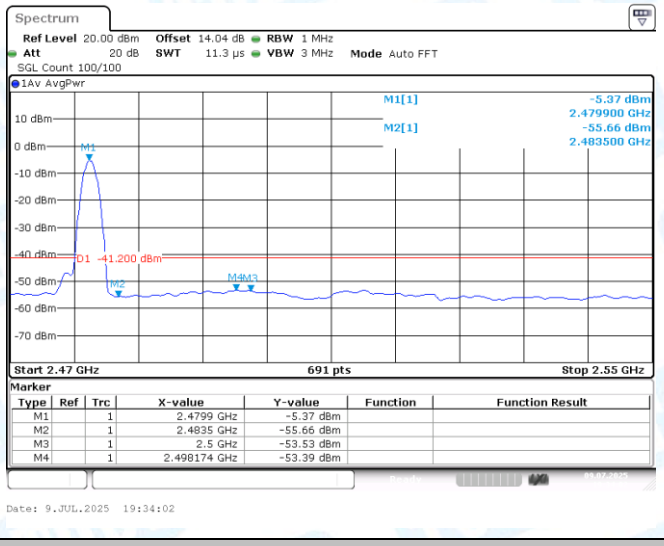
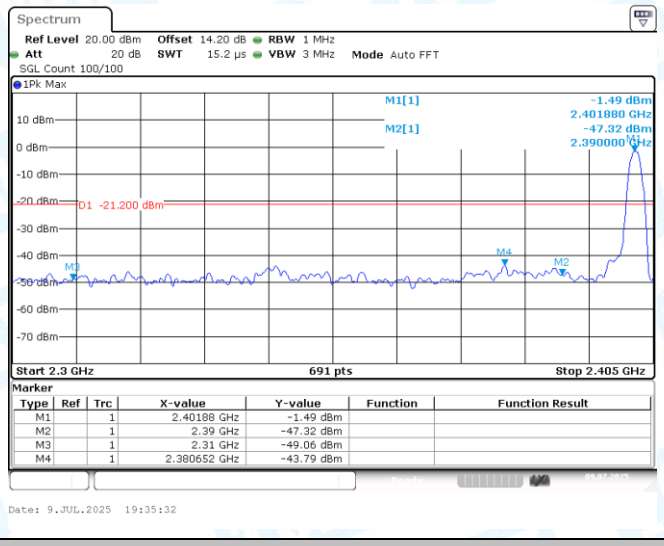
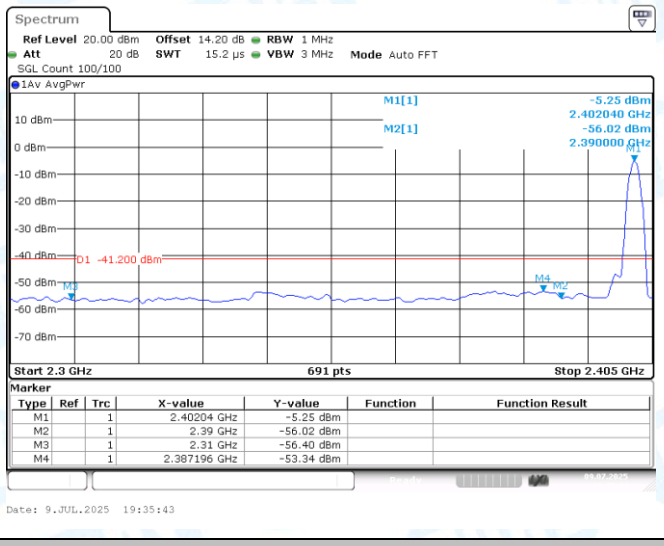


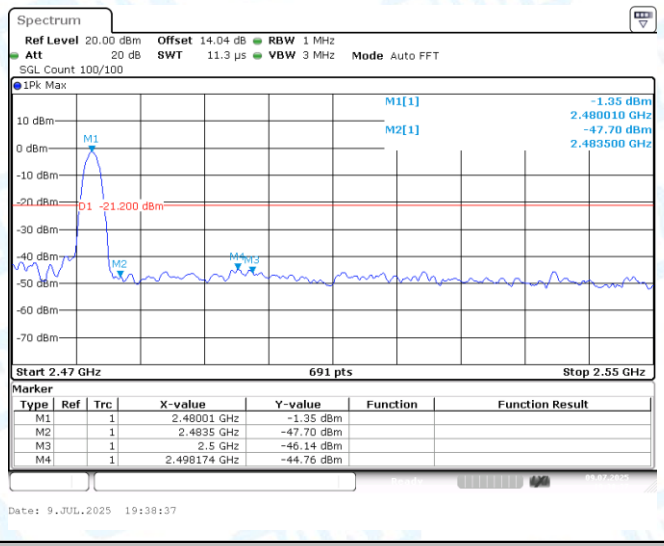
2DH5-Ant1-2480-PASS



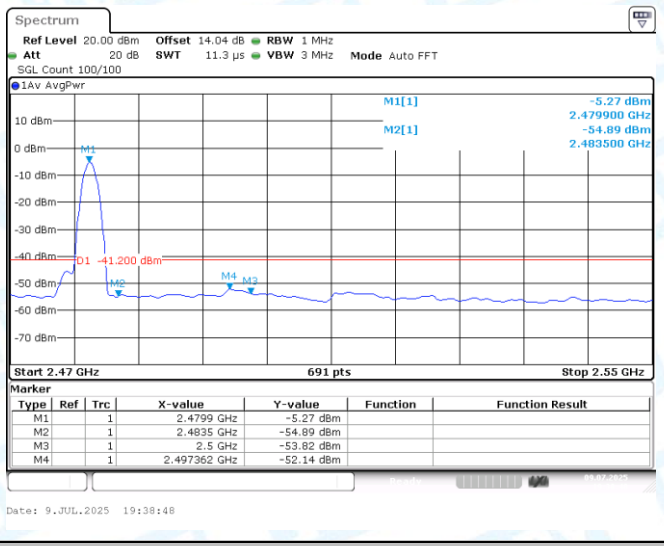
3DH5-Ant1-2402-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2480-PASS



3DH5-Ant1-2480-PASS

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