

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

General Description of EUT	
Product Name:	SMART WATCH
Test Model:	KL2
Sample ID:	20211124-13_01-02
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Huangjianping
Note: For a more detailed features description, please refer to the report TB-FCC186142	

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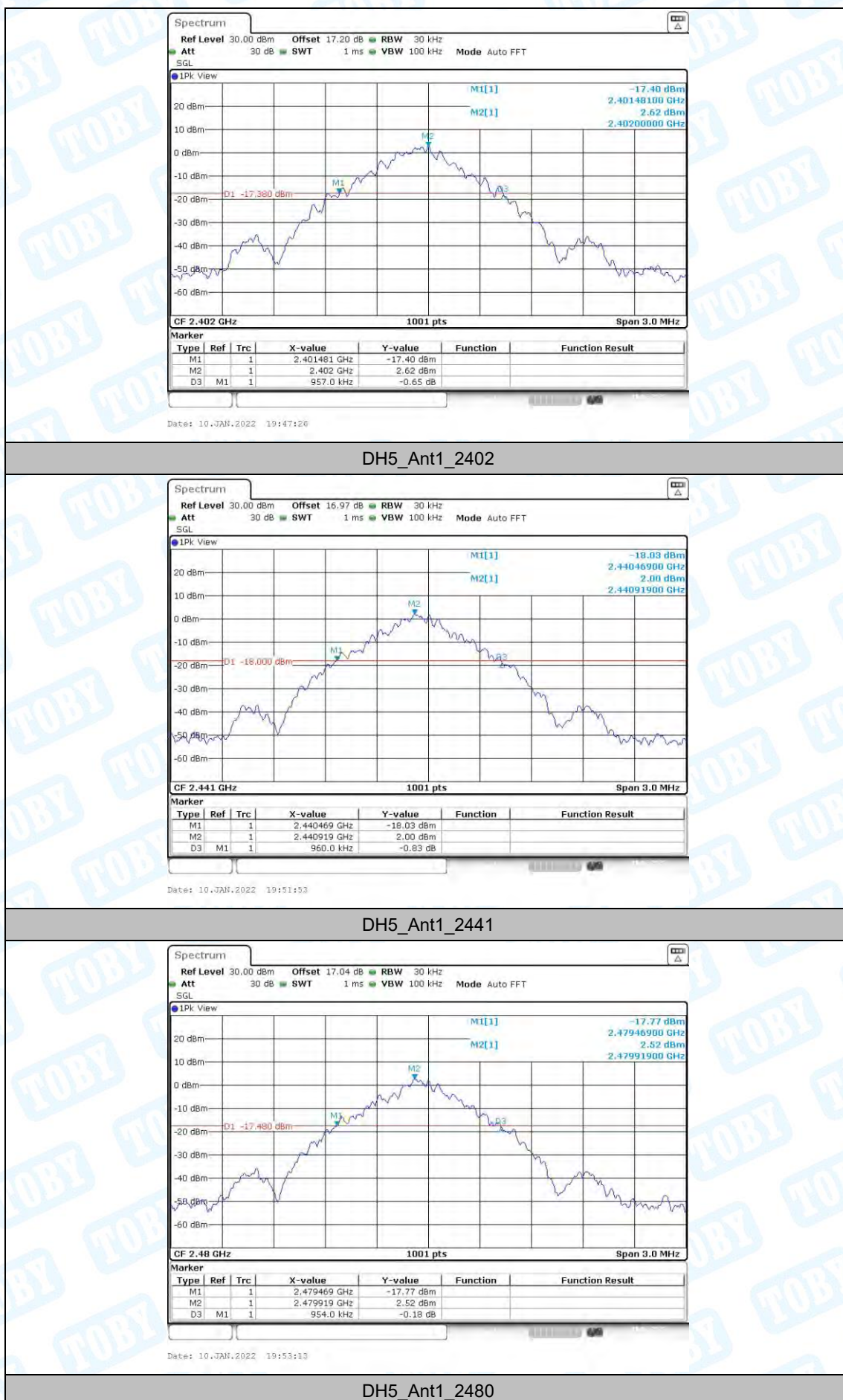
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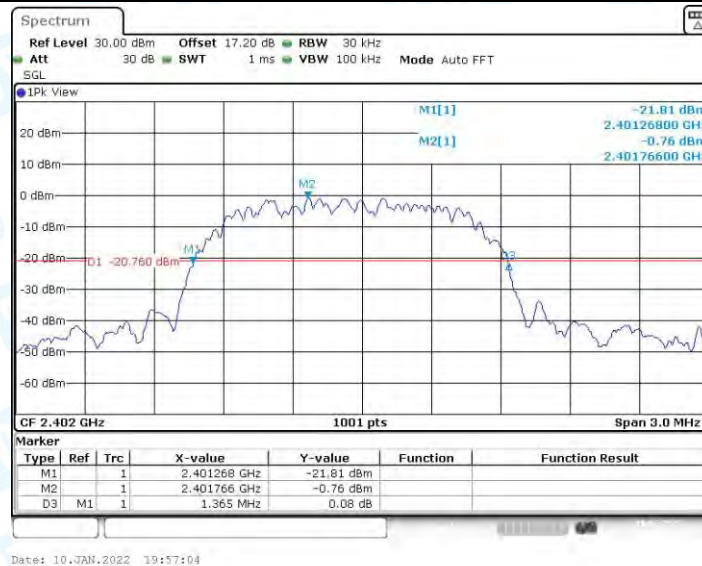
1. 20dB Emission Bandwidth

1.1. Test Result

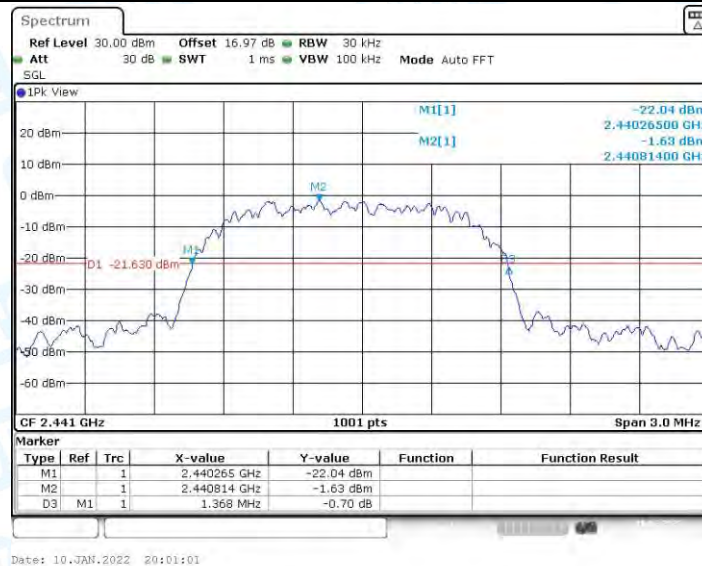
TestMode	Antenna	Channel	20db EBW[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.96	---	---
		2441	0.96	---	---
		2480	0.95	---	---
2DH5	Ant1	2402	1.36	---	---
		2441	1.37	---	---
		2480	1.35	---	---
3DH5	Ant1	2402	1.35	---	---
		2441	1.35	---	---
		2480	1.35	---	---

1.2. Test Graphs

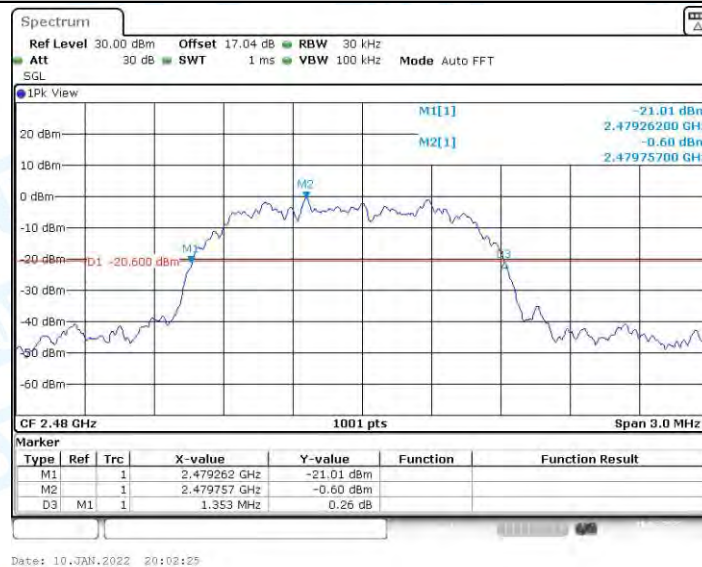




2DH5_Ant1_2402



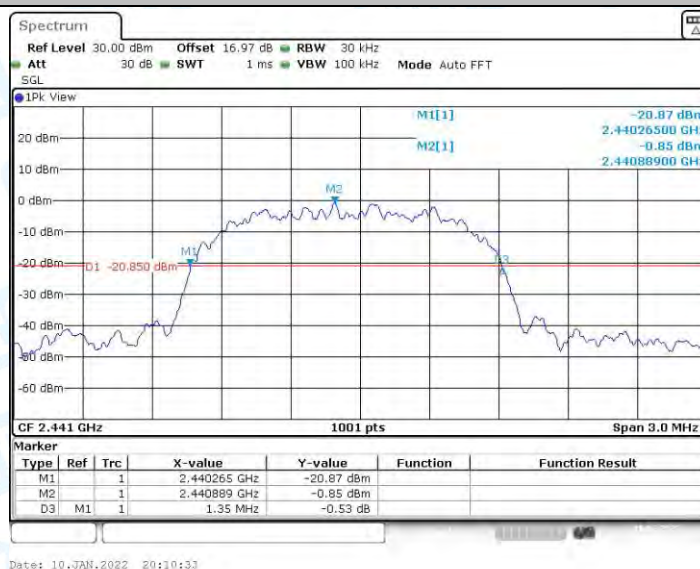
2DH5_Ant1_2441



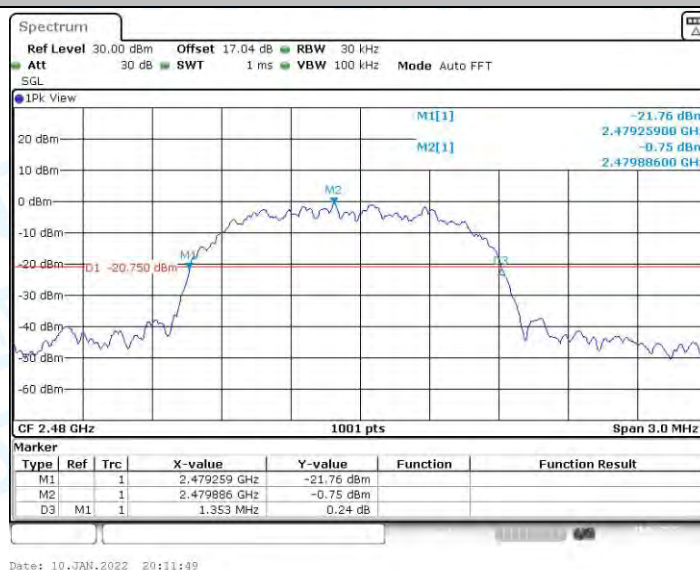
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



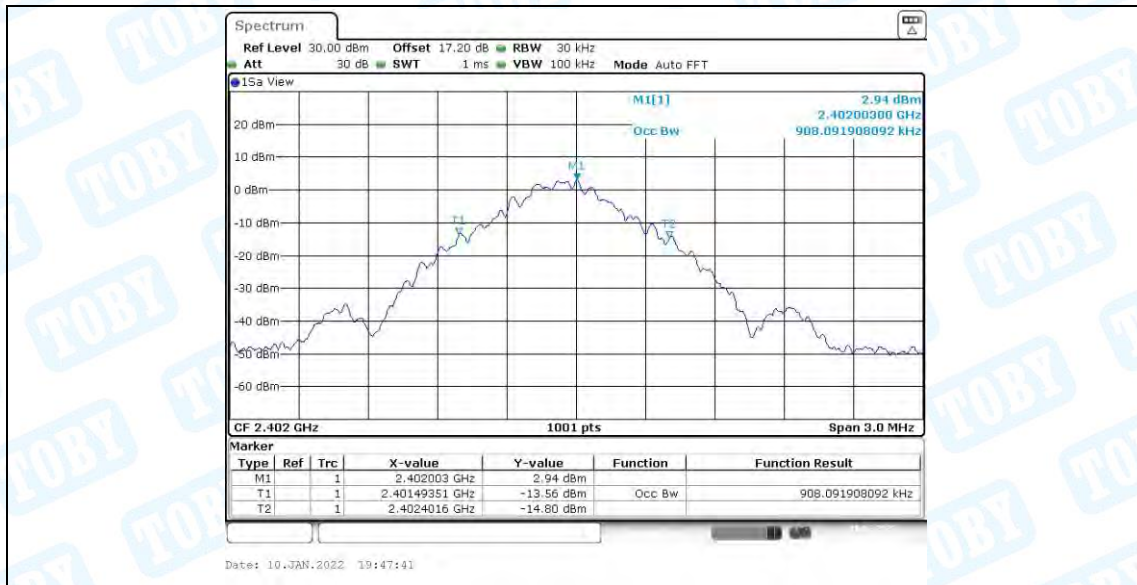
3DH5_Ant1_2480

2. Occupied Channel Bandwidth

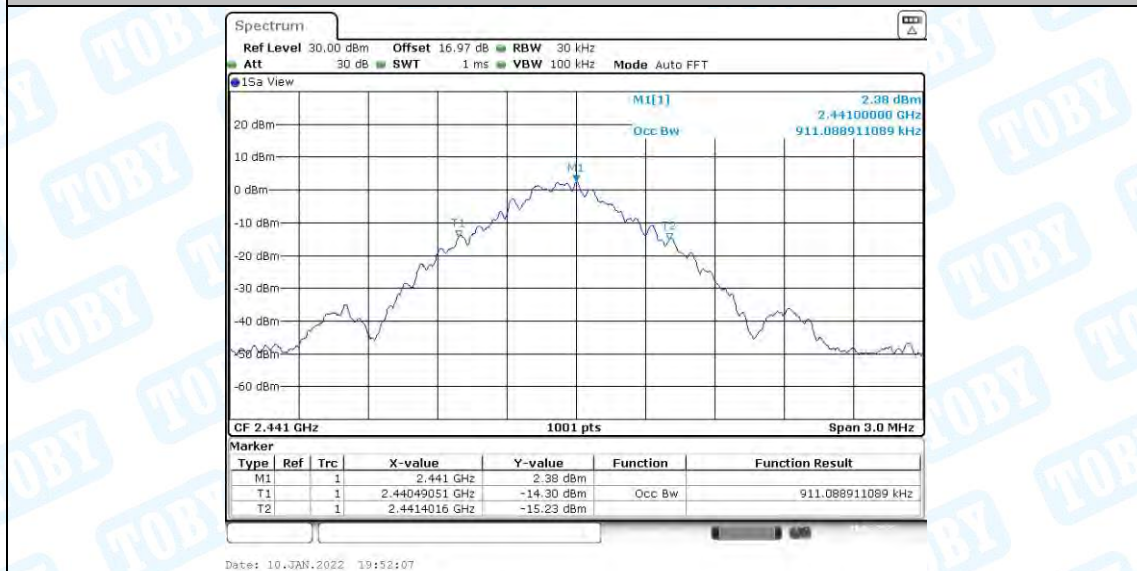
2.1. Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.908	2401.494	2402.402	---	---
		2441	0.911	2440.491	2441.402	---	---
		2480	0.908	2479.491	2480.399	---	---
2DH5	Ant1	2402	1.202	2401.344	2402.545	---	---
		2441	1.202	2440.344	2441.545	---	---
		2480	1.202	2479.341	2480.542	---	---
3DH5	Ant1	2402	1.208	2401.338	2402.545	---	---
		2441	1.205	2440.338	2441.542	---	---
		2480	1.208	2479.335	2480.542	---	---

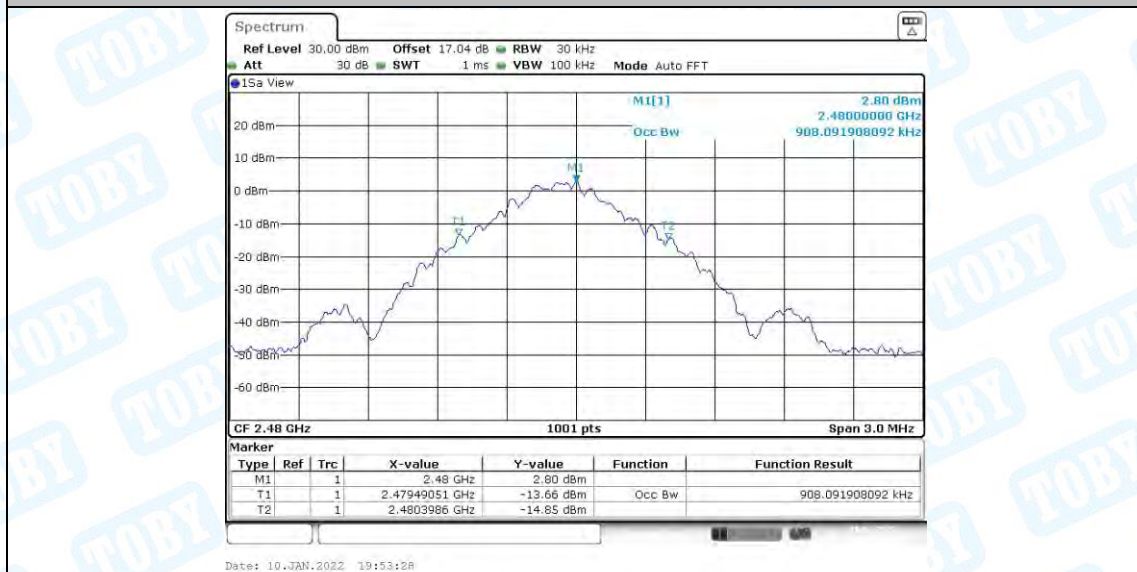
2.2. Test Graphs



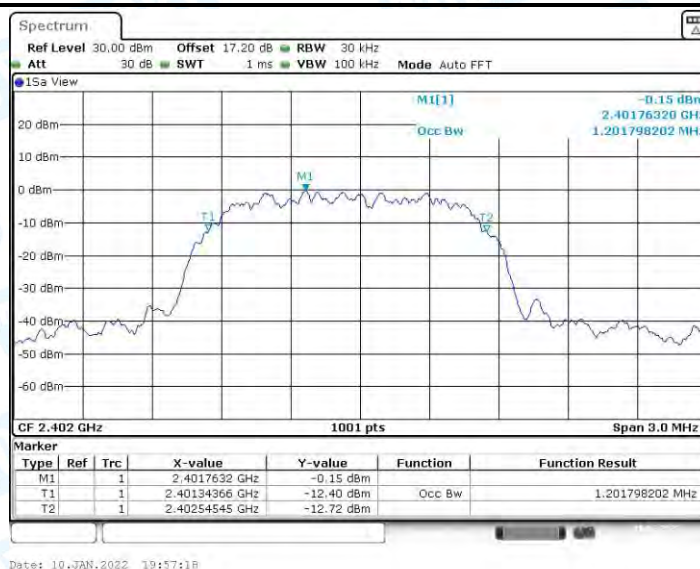
DH5_Ant1_2402



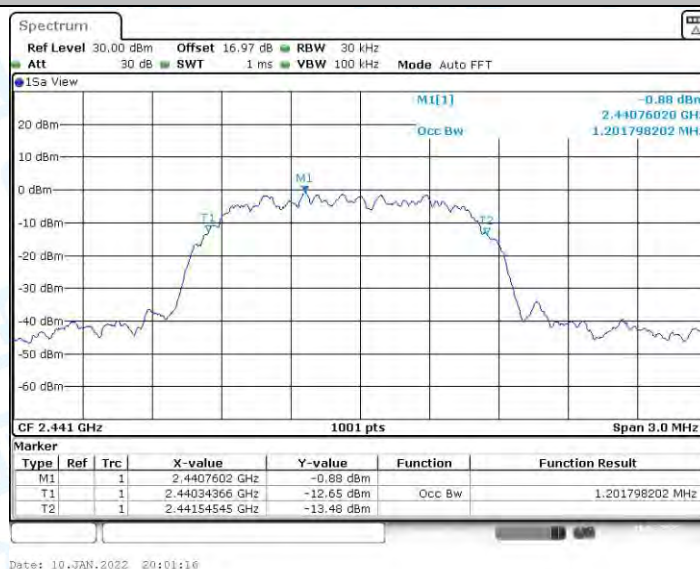
DH5_Ant1_2441



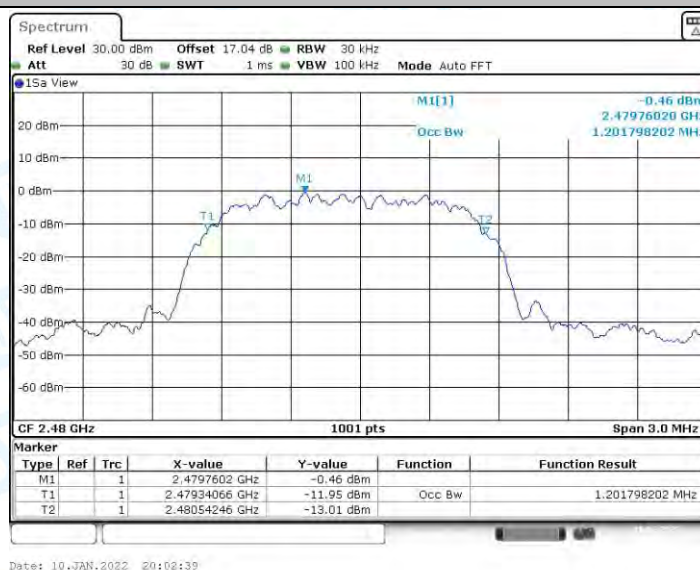
DH5_Ant1_2480



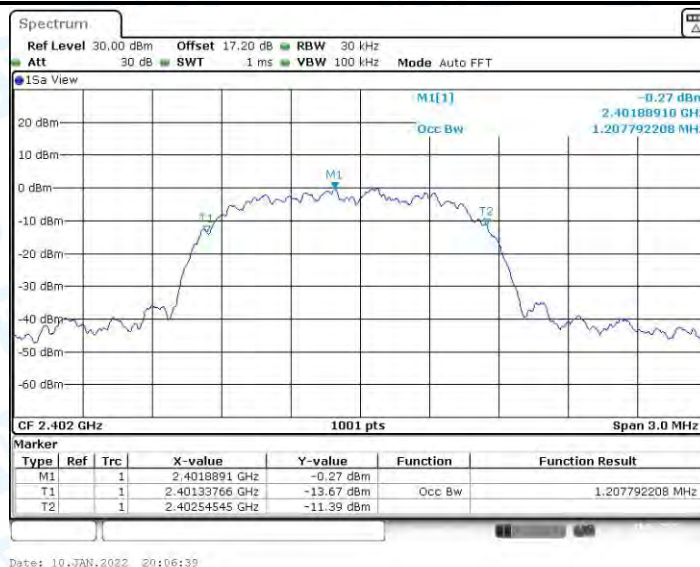
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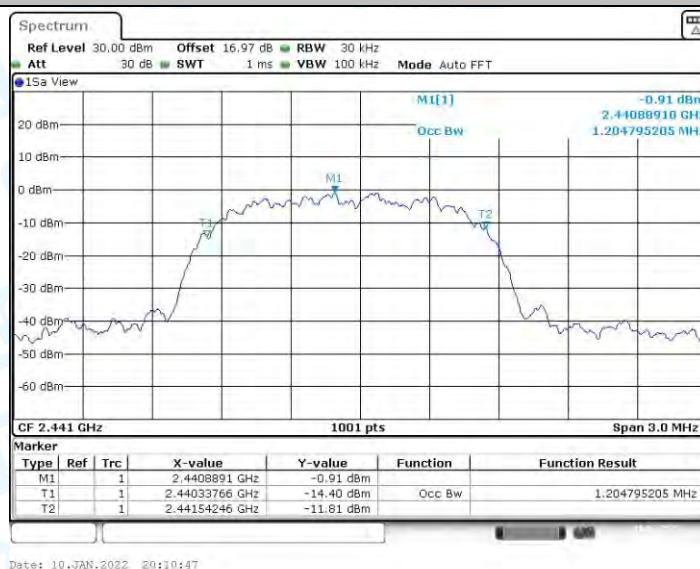
2DH5_Ant1_2441



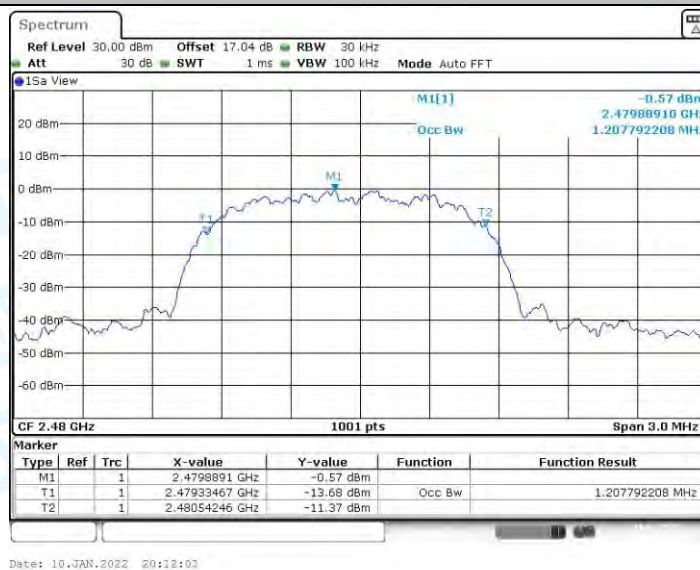
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



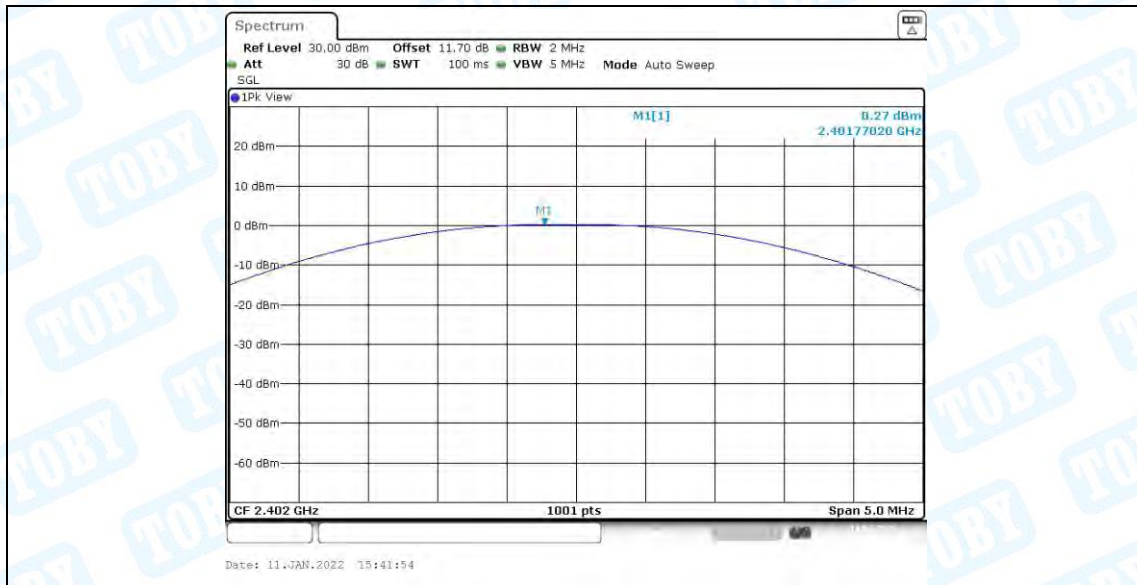
3DH5_Ant1_2480

3. Maximum conducted output power

3.1. Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	0.27	≤20.97	PASS
		2441	0.45	≤20.97	PASS
		2480	-0.61	≤20.97	PASS
2DH5	Ant1	2402	3.11	≤20.97	PASS
		2441	3.04	≤20.97	PASS
		2480	1.84	≤20.97	PASS
3DH5	Ant1	2402	3.43	≤20.97	PASS
		2441	3.47	≤20.97	PASS
		2480	2.43	≤20.97	PASS

3.2.Test Graphs



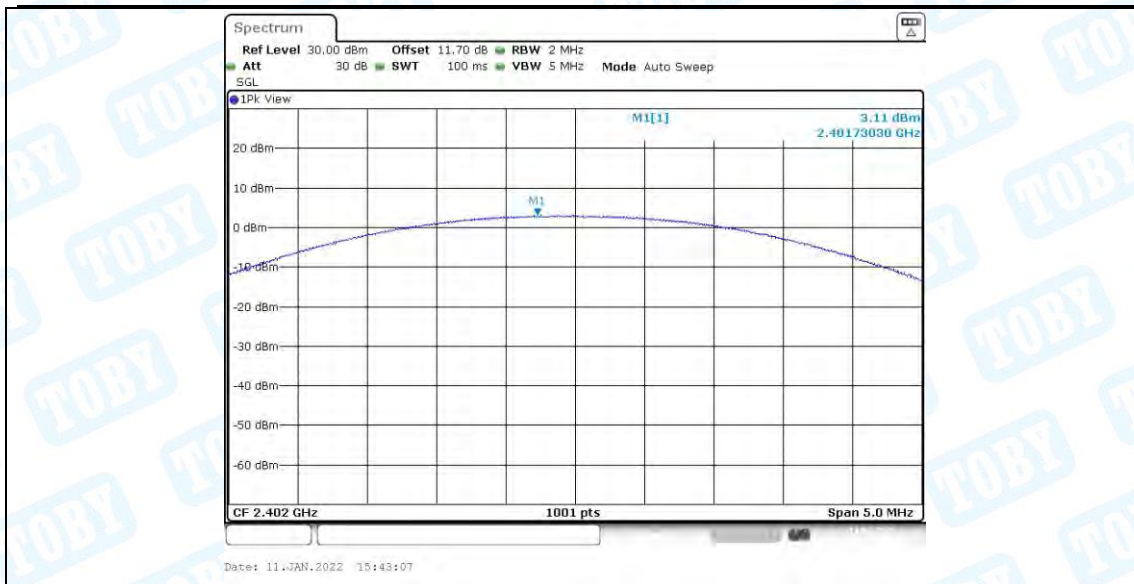
DH5_Ant1_2402



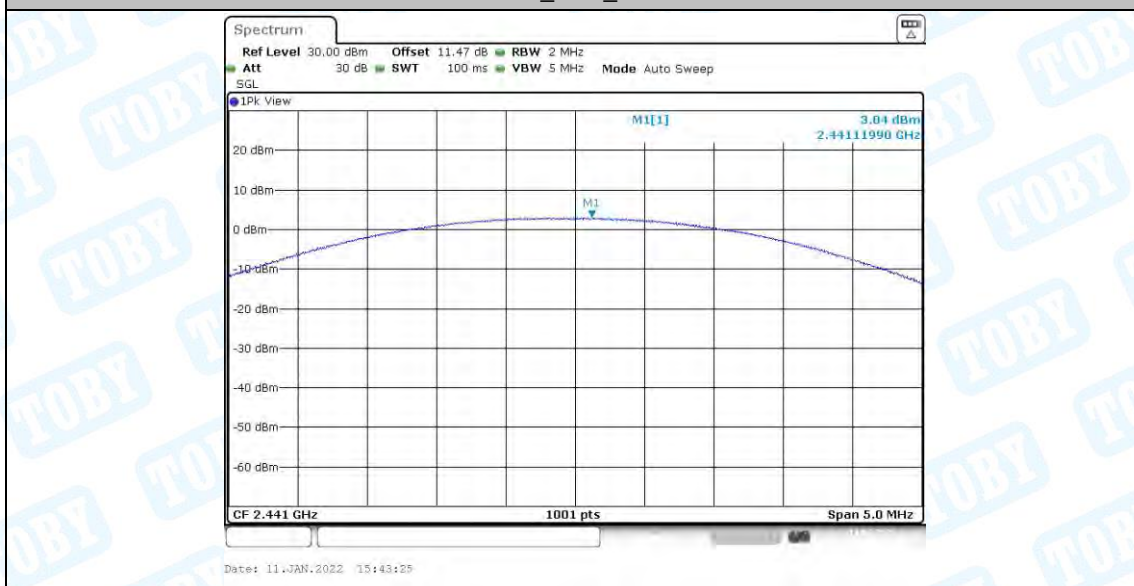
DH5_Ant1_2441



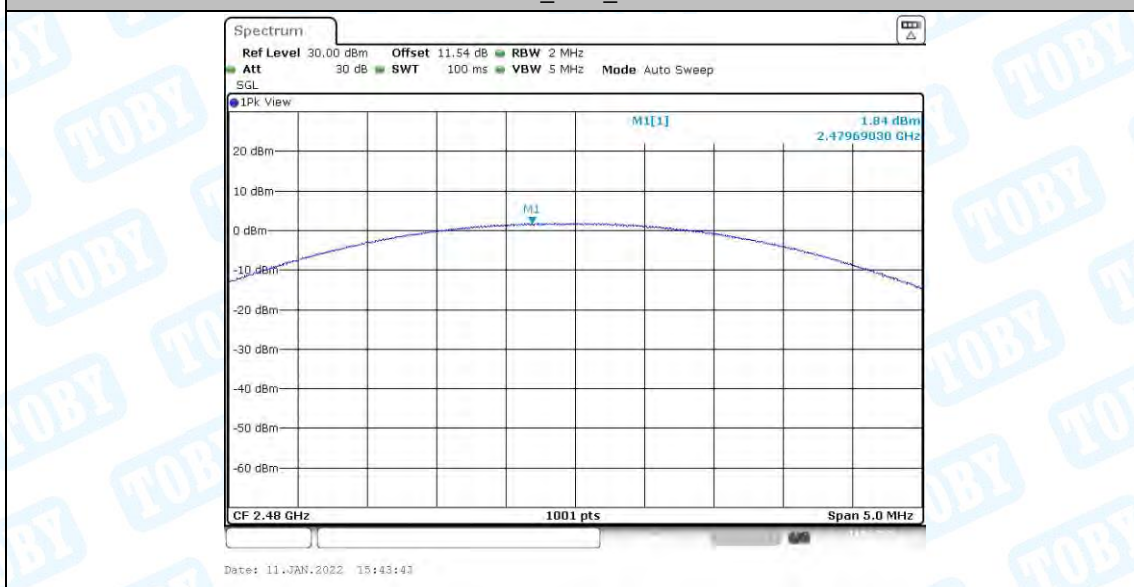
DH5_Ant1_2480



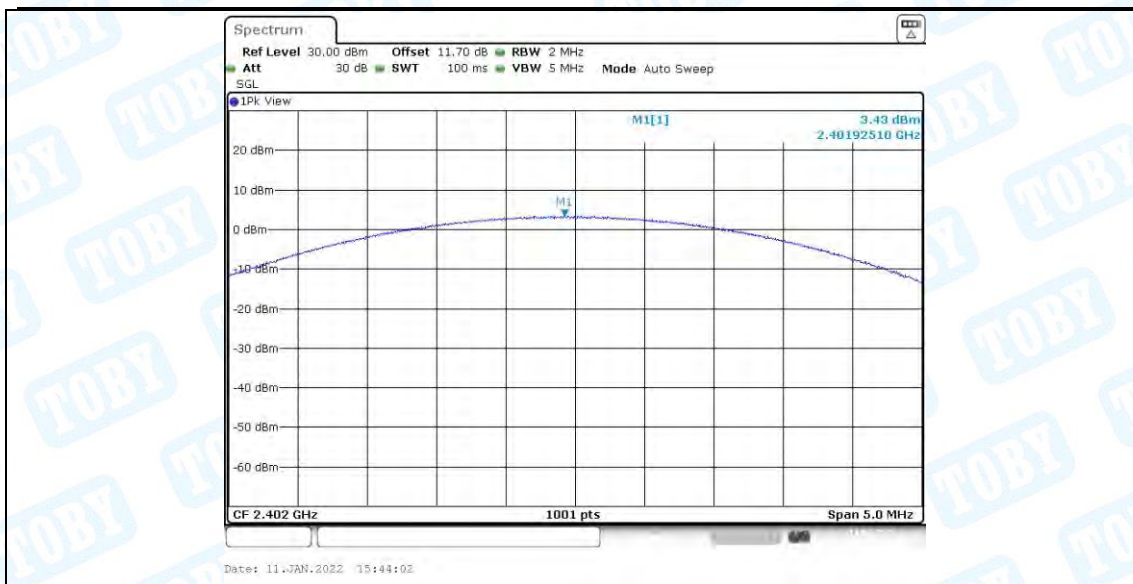
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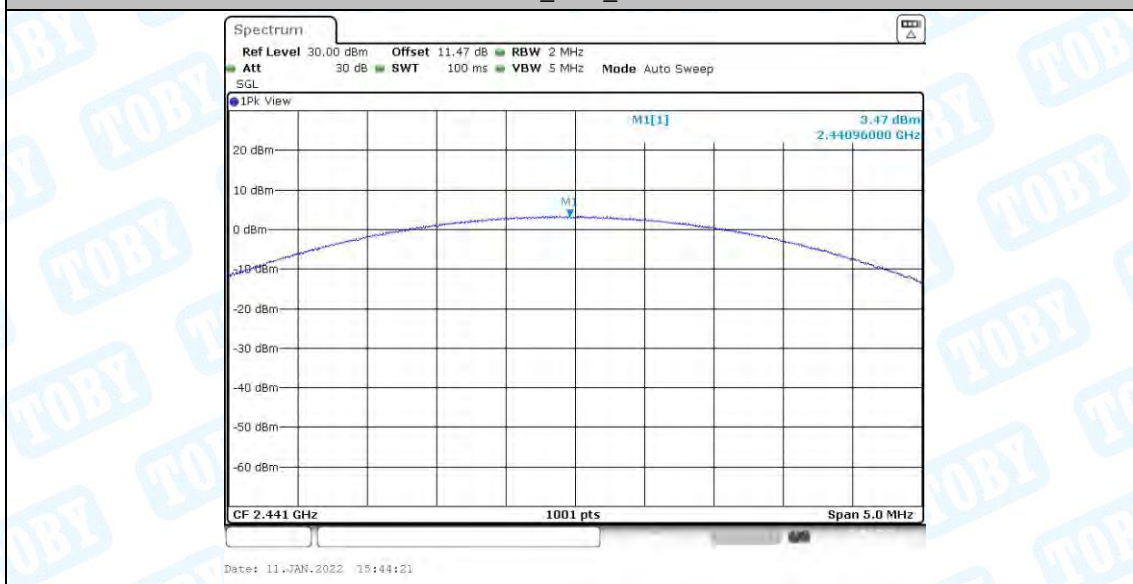
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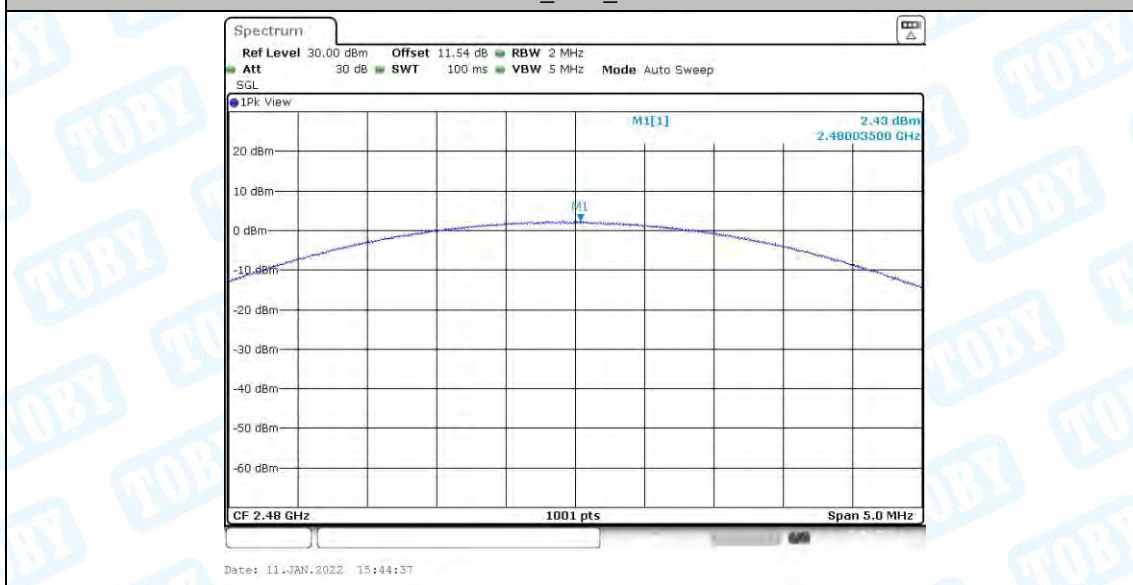
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

4. Carrier frequency separation

4.1. Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1	≥ 0.960	PASS
2DH5	Ant1	Hop	0.983	≥ 0.913	PASS
3DH5	Ant1	Hop	1.235	≥ 0.900	PASS

4.2.Test Graphs

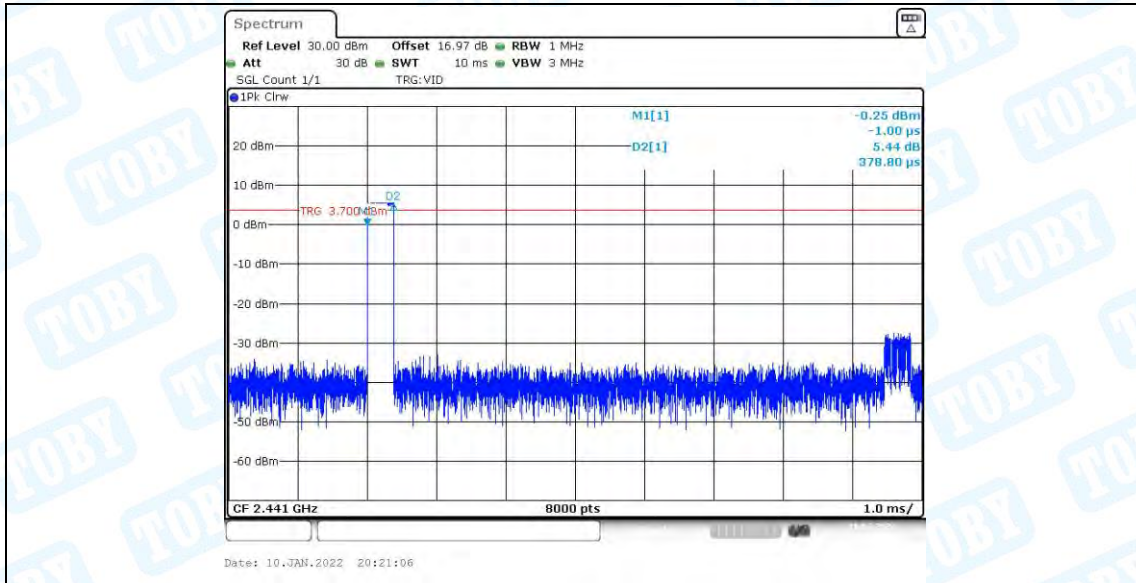


5. Time of occupancy

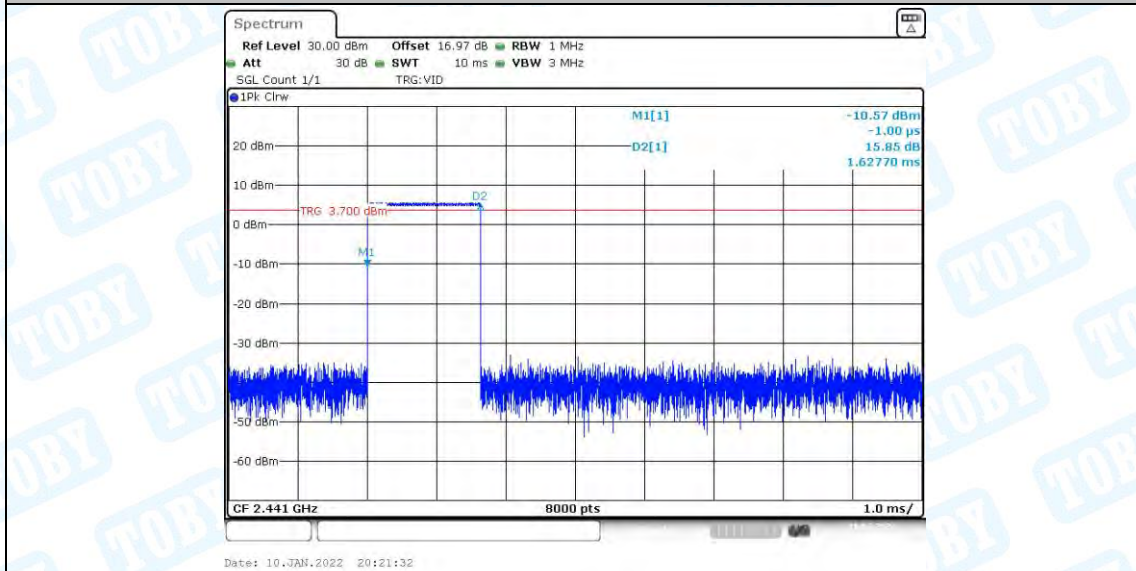
5.1. Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.38	320	0.121	≤0.4	PASS
DH3	Ant1	Hop	1.63	160	0.26	≤0.4	PASS
DH5	Ant1	Hop	2.87	106.67	0.306	≤0.4	PASS
2DH1	Ant1	Hop	0.39	320	0.124	≤0.4	PASS
2DH3	Ant1	Hop	1.63	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.87	106.67	0.306	≤0.4	PASS
3DH1	Ant1	Hop	0.39	320	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.63	160	0.261	≤0.4	PASS
3DH5	Ant1	Hop	2.87	106.67	0.307	≤0.4	PASS

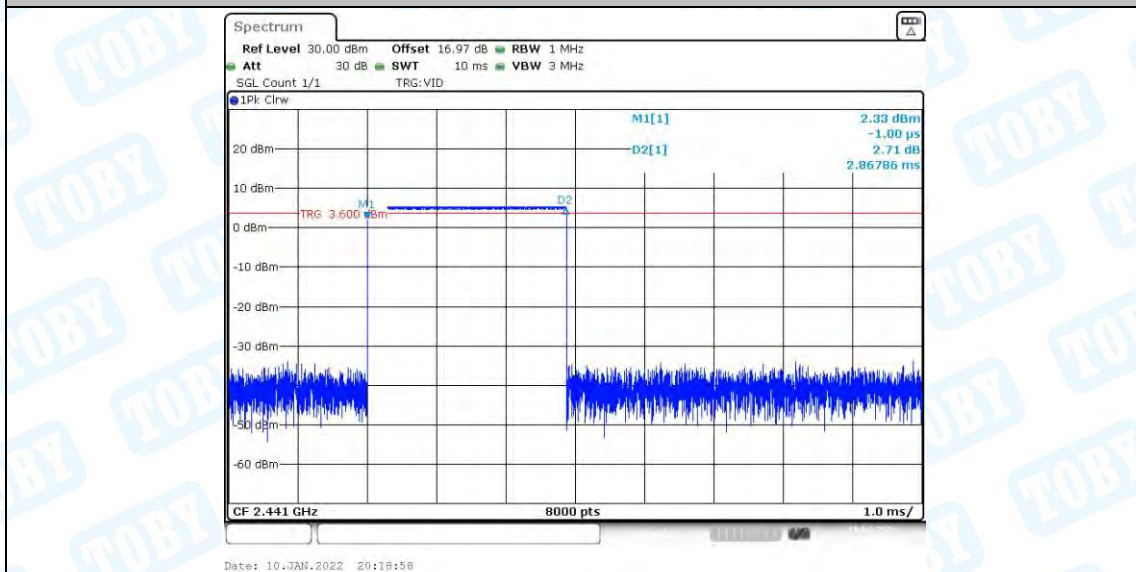
5.2.Test Graphs



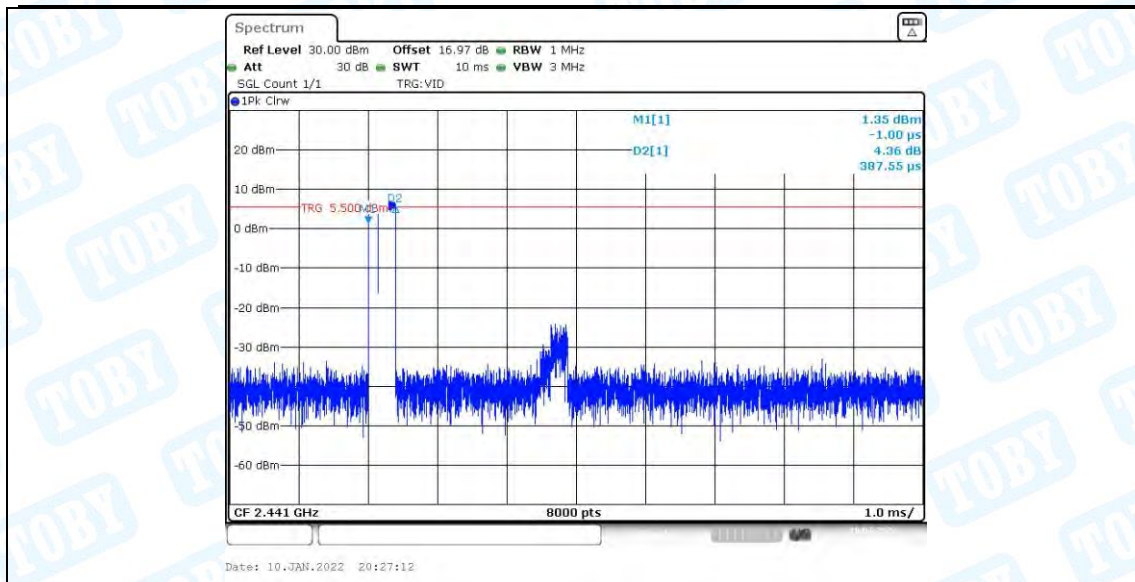
DH1_Ant1_Hop



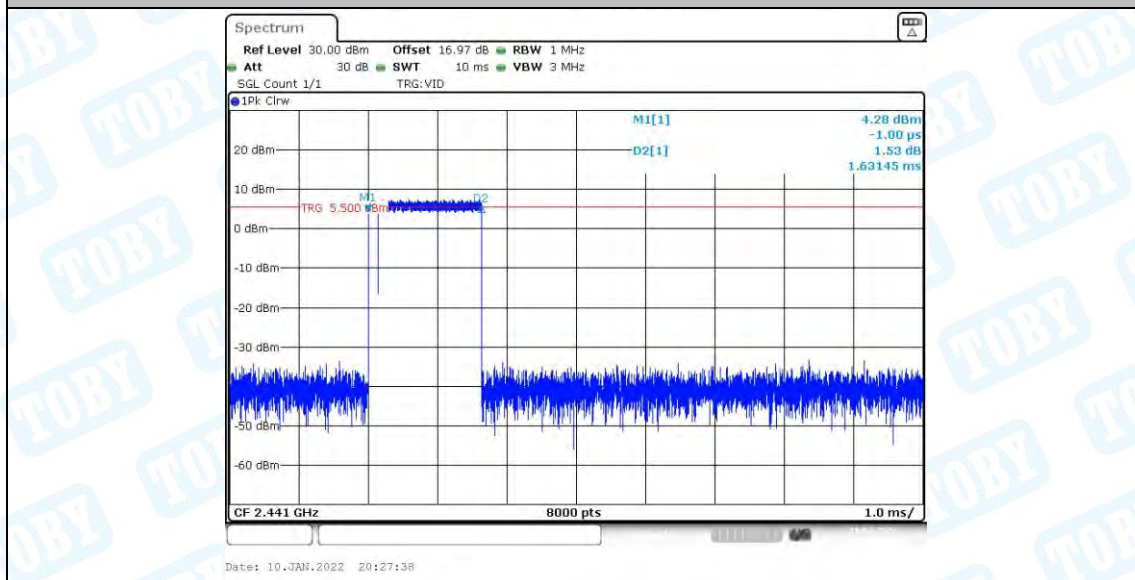
DH3_Ant1_Hop



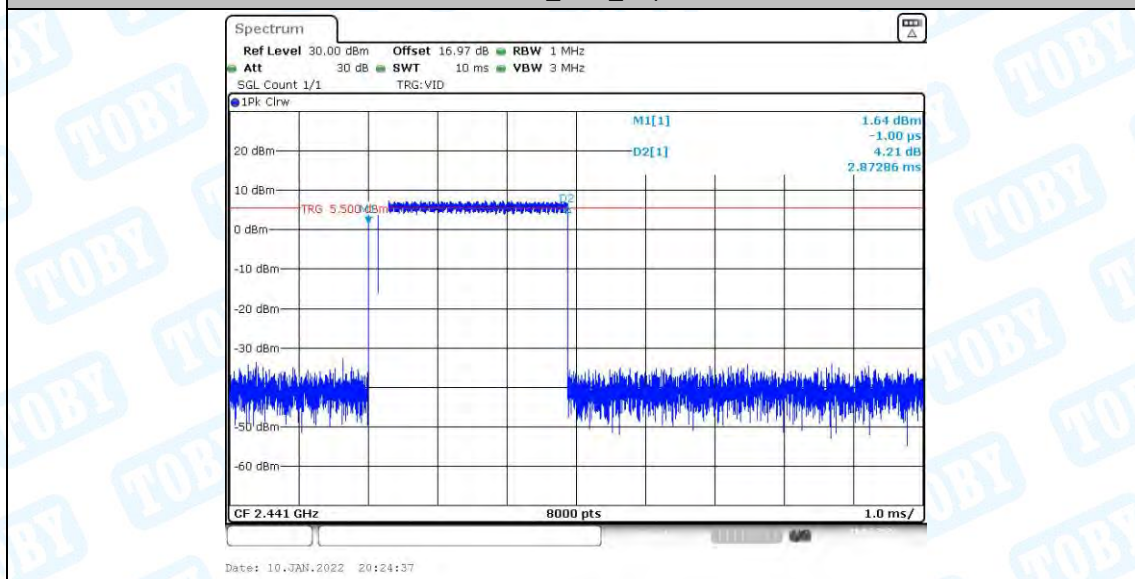
DH5_Ant1_Hop



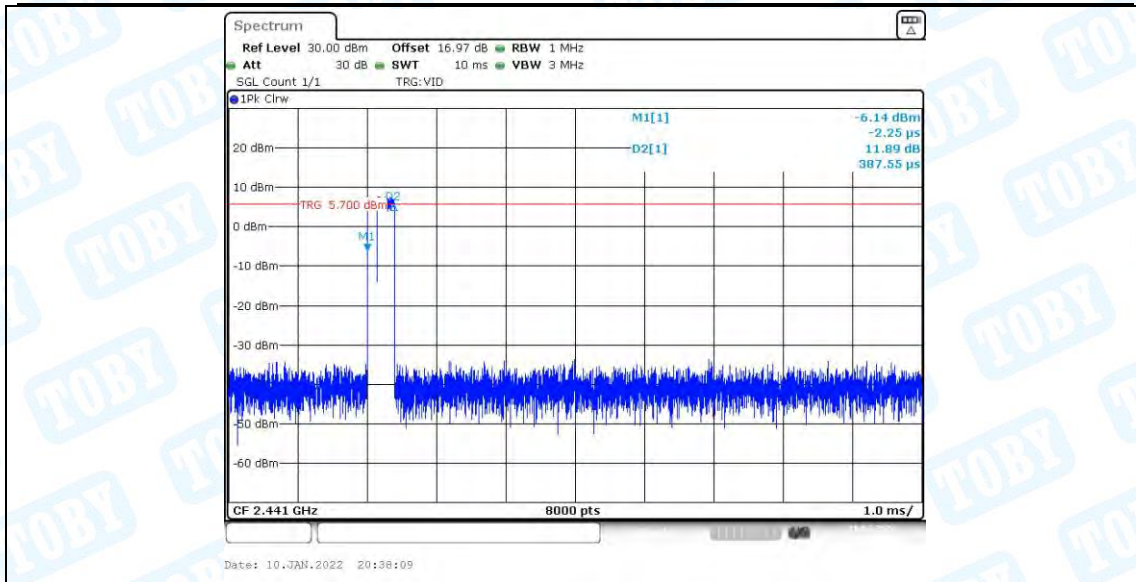
2DH1_Ant1_Hop



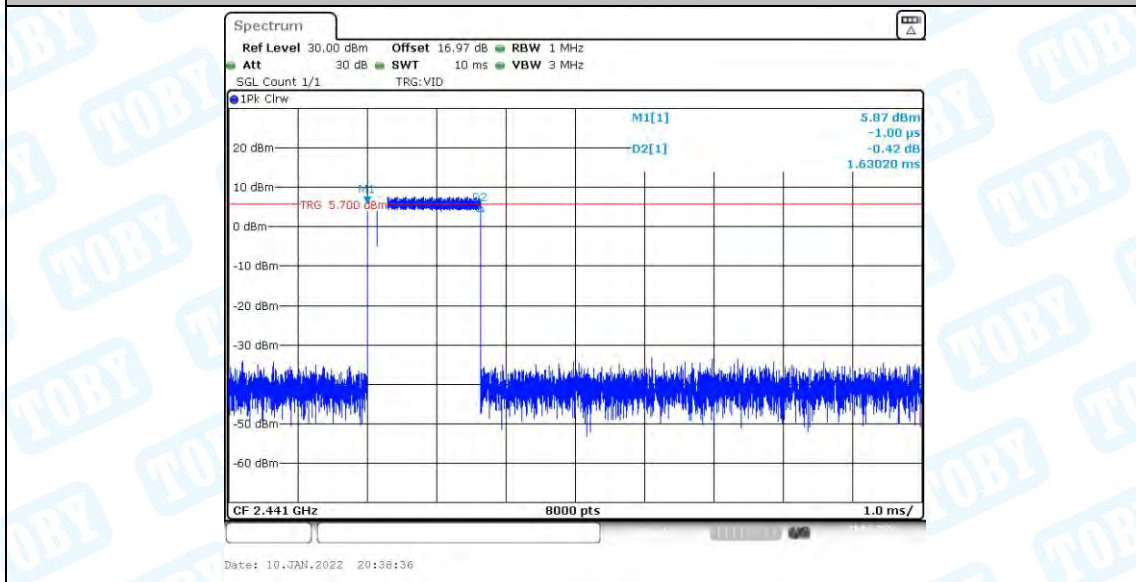
2DH3_Ant1_Hop



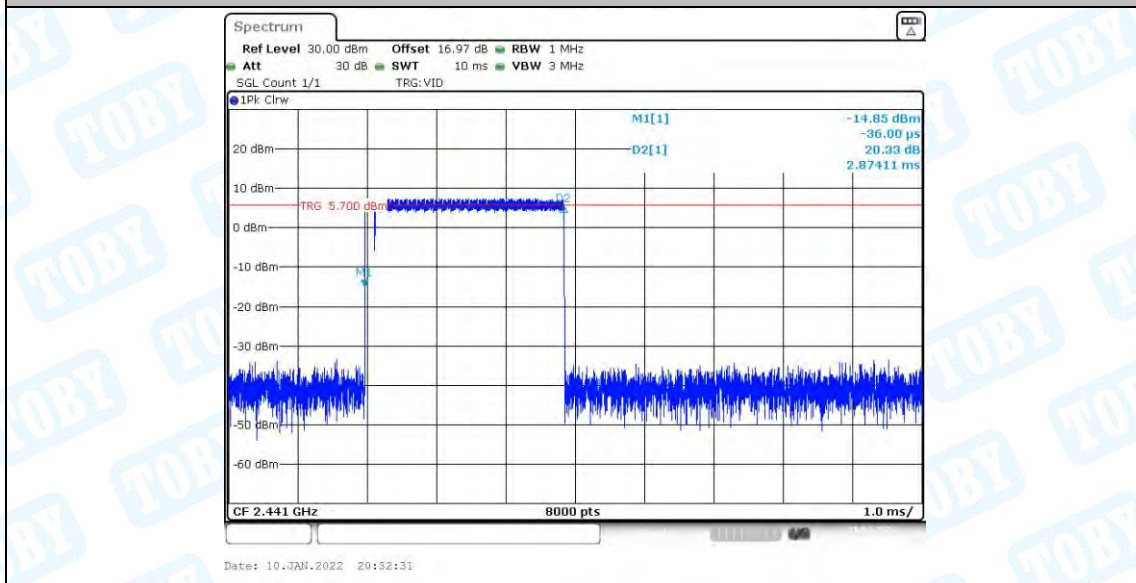
2DH5_Ant1_Hop



3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop

6. Number of hopping channels

6.1. Test Result

TestMode	Antenna	Channel	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

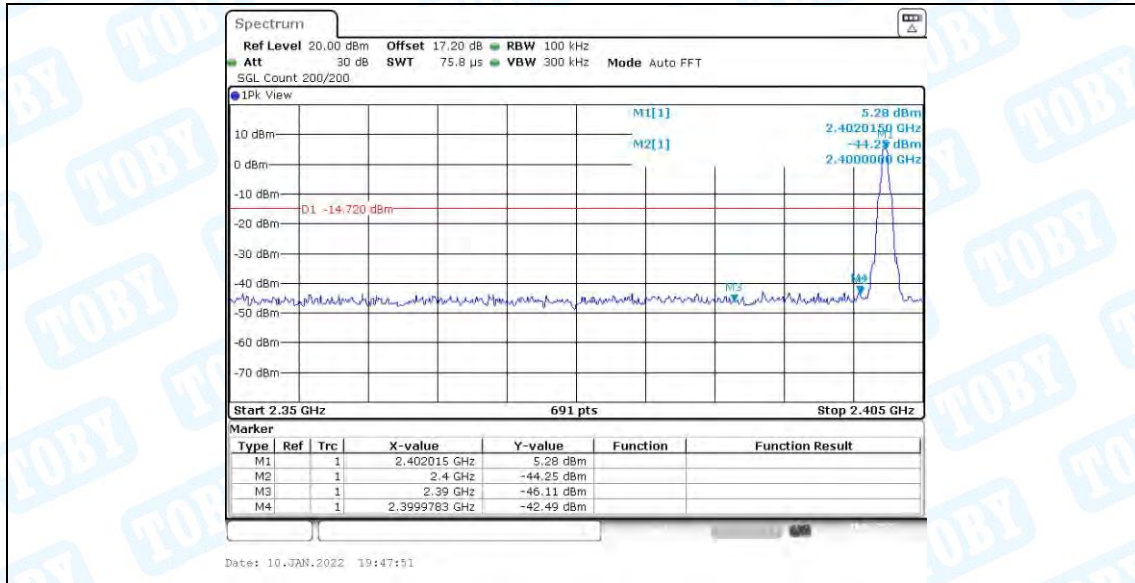


7. Band edge measurements

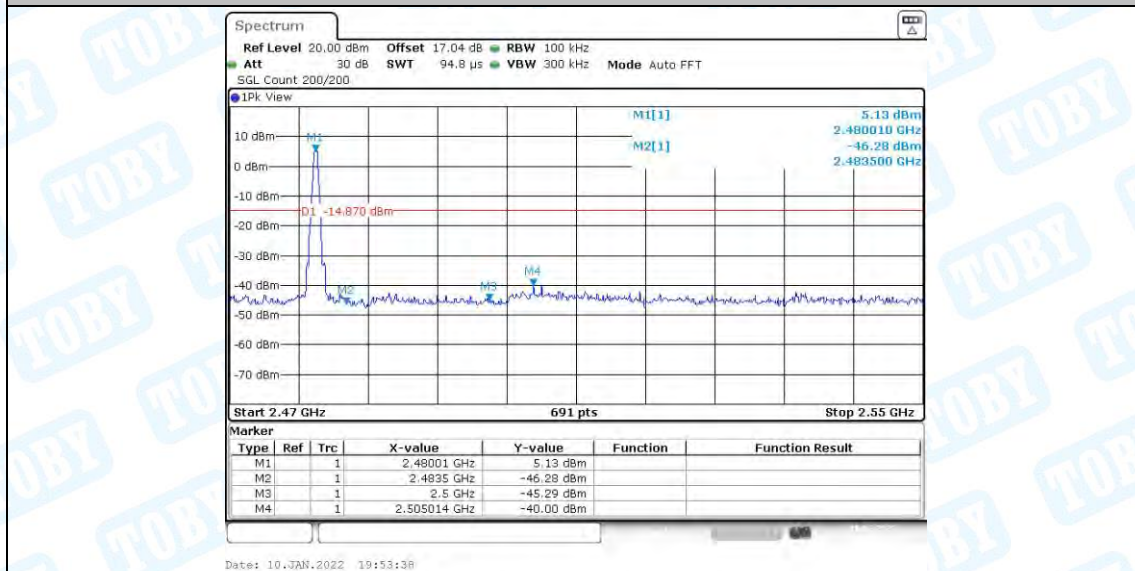
7.1. Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	5.28	-42.49	≤ -14.72	PASS
		High	2480	5.13	-40	≤ -14.87	PASS
		Low	Hop_2402	5.10	-42.53	≤ -14.9	PASS
		High	Hop_2480	4.93	-41.4	≤ -15.07	PASS
2DH5	Ant1	Low	2402	3.99	-42.61	≤ -16.01	PASS
		High	2480	4.17	-41.11	≤ -15.83	PASS
		Low	Hop_2402	2.18	-42.96	≤ -17.82	PASS
		High	Hop_2480	5.04	-41.44	≤ -14.96	PASS
3DH5	Ant1	Low	2402	3.71	-43.03	≤ -16.29	PASS
		High	2480	3.72	-41.22	≤ -16.28	PASS
		Low	Hop_2402	4.15	-42.51	≤ -15.85	PASS
		High	Hop_2480	5.15	-41.21	≤ -14.85	PASS

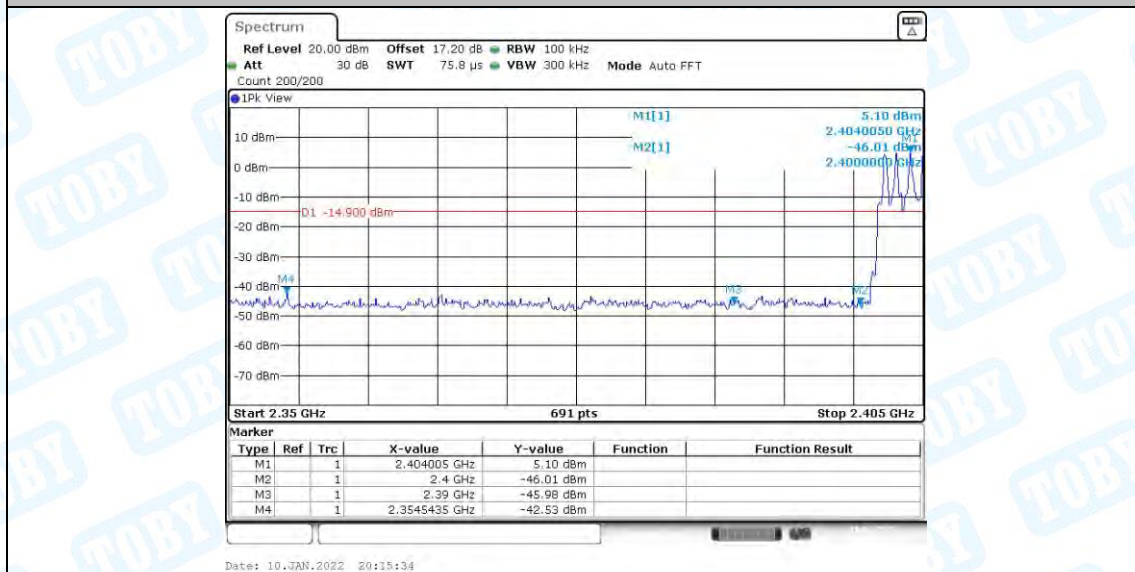
7.2.Test Graphs



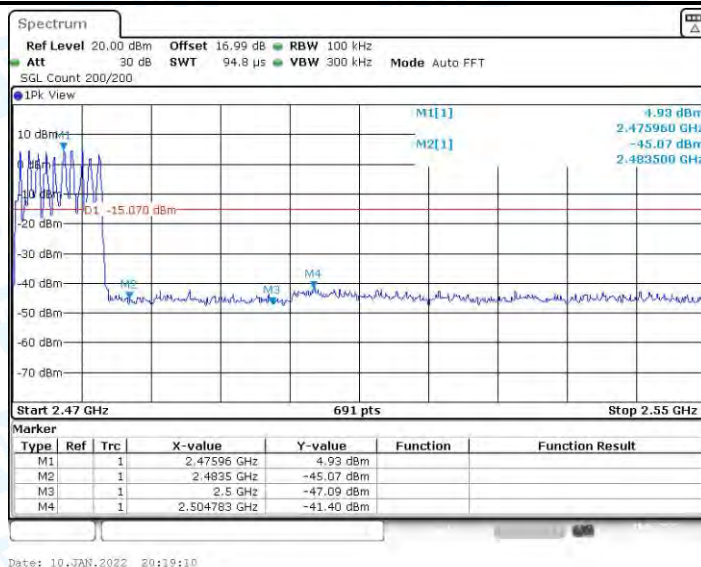
DH5_Ant1_Low_2402



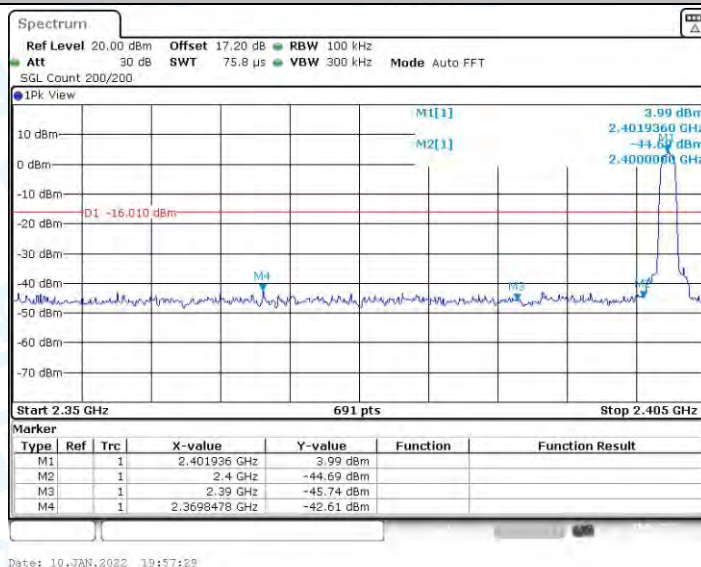
DH5_Ant1_High_2480



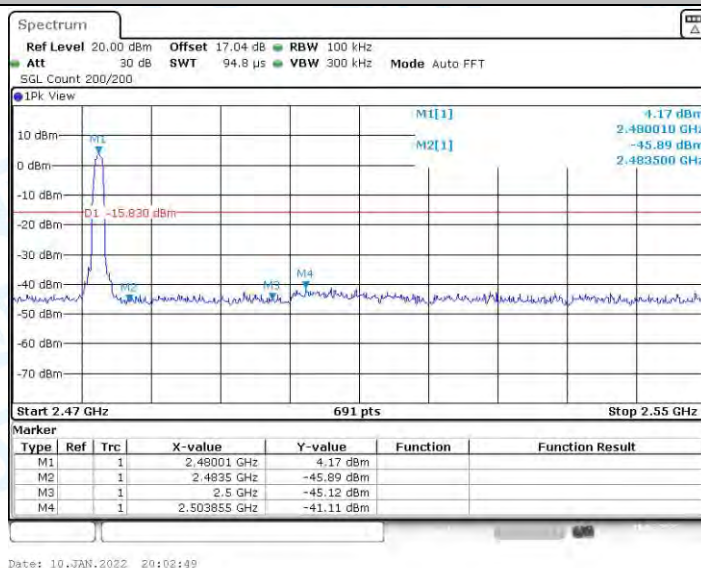
DH5_Ant1_Low_Hop_2402



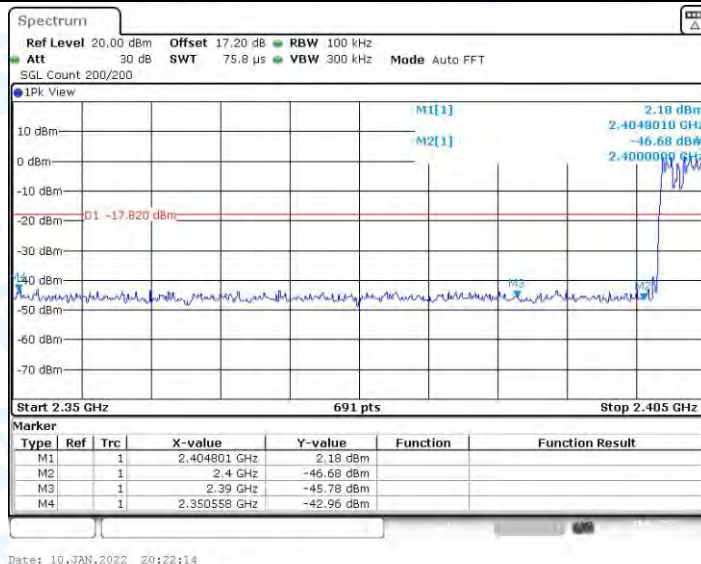
DH5_Ant1_High_Hop_2480



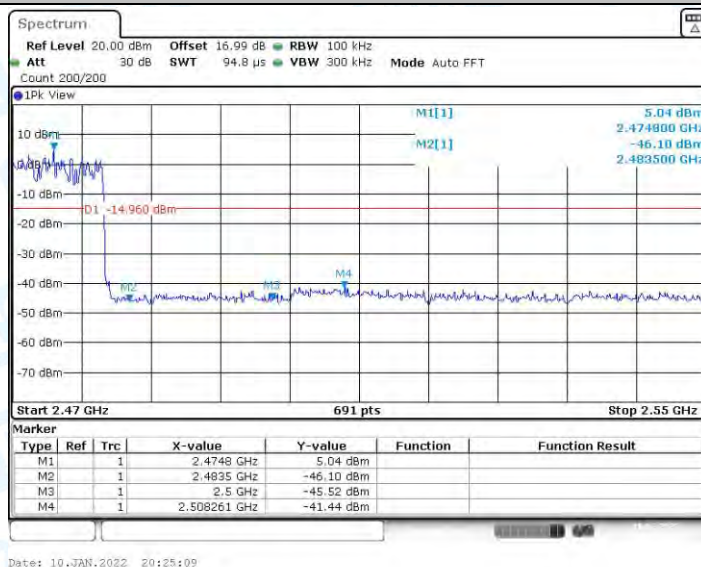
2DH5_Ant1_Low_2402



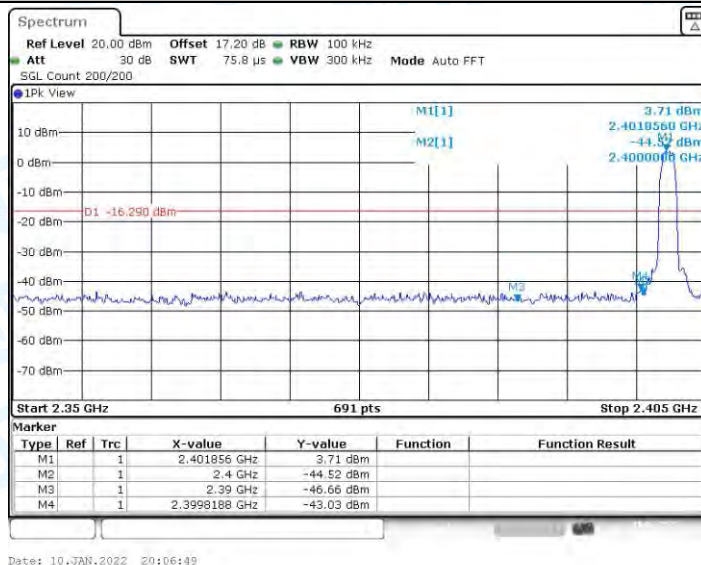
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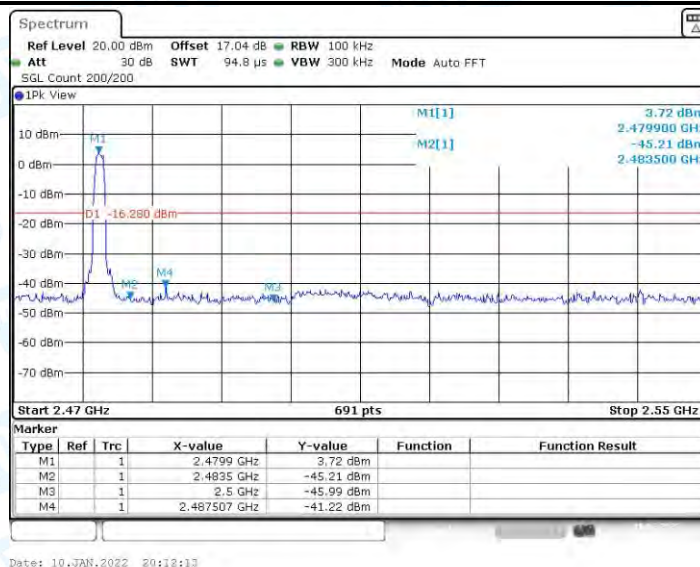
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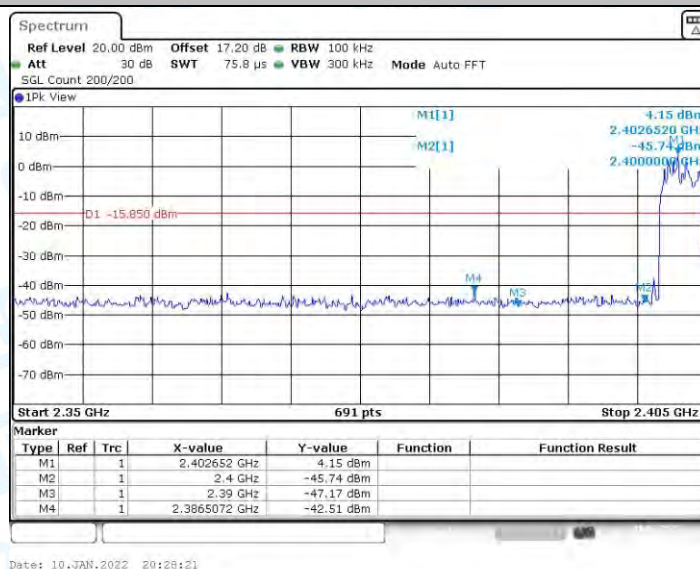
2DH5_Ant1_High_Hop_2480



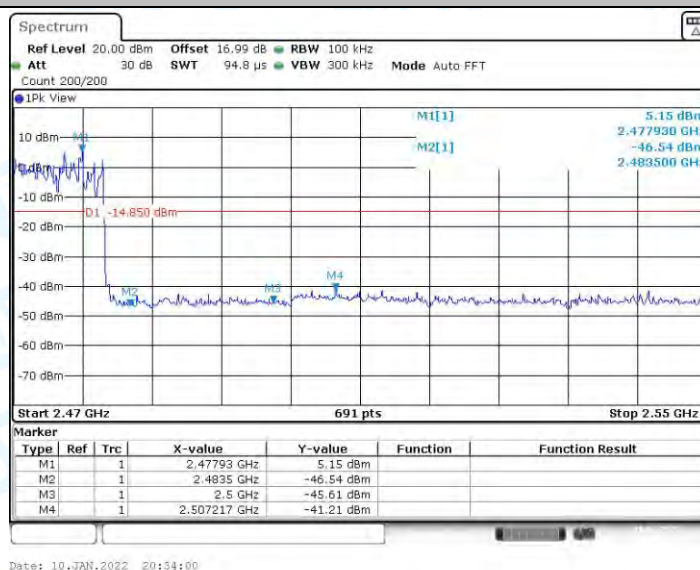
3DH5_Ant1_Low_2402



3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

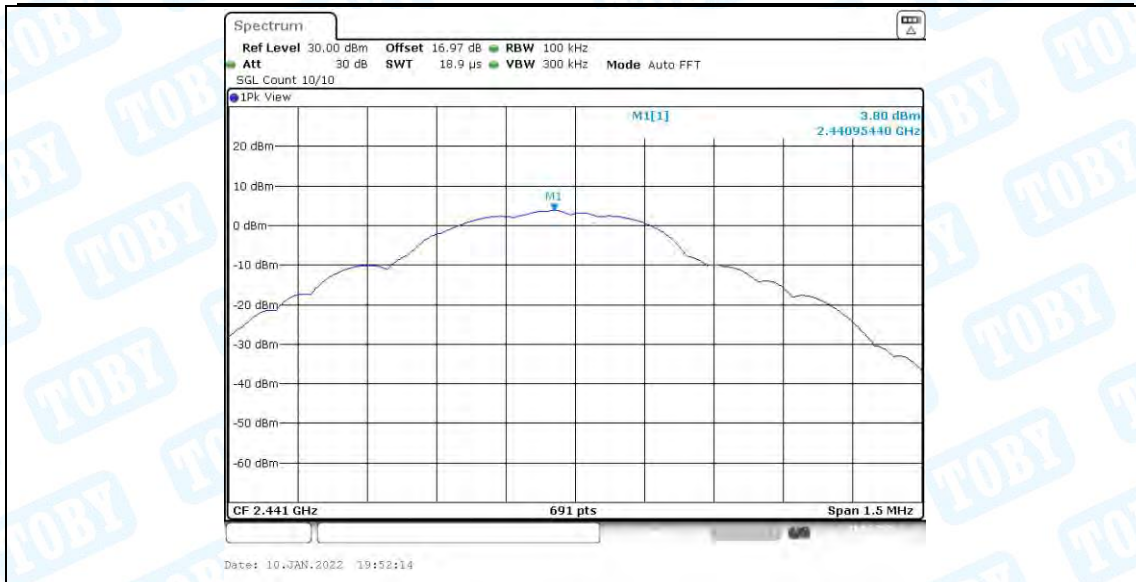
8. Conducted Spurious Emission

8.1. Test Result

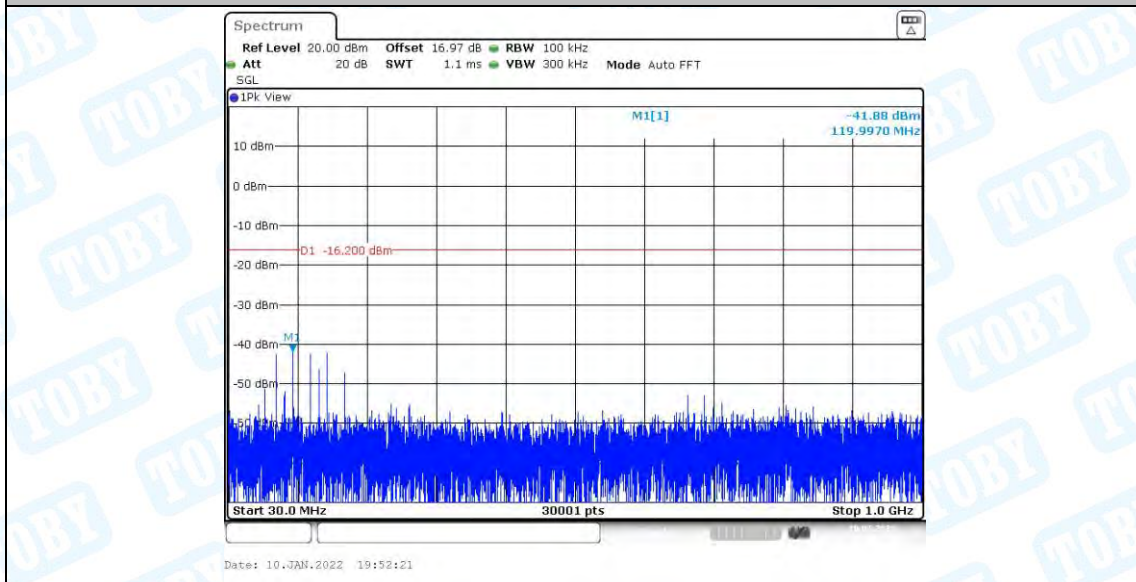
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.78	4.78	---	PASS
			30~1000	4.78	-42.86	≤-15.22	PASS
			1000~26500	4.78	-45.19	≤-15.22	PASS
		2441	Reference	3.80	3.80	---	PASS
			30~1000	3.80	-41.88	≤-16.2	PASS
			1000~26500	3.80	-45.63	≤-16.2	PASS
		2480	Reference	5.04	5.04	---	PASS
			30~1000	5.04	-41.98	≤-14.96	PASS
			1000~26500	5.04	-45.56	≤-14.96	PASS
2DH5	Ant1	2402	Reference	2.54	2.54	---	PASS
			30~1000	2.54	-41.25	≤-17.46	PASS
			1000~26500	2.54	-44.82	≤-17.46	PASS
		2441	Reference	1.31	1.31	---	PASS
			30~1000	1.31	-40.78	≤-18.69	PASS
			1000~26500	1.31	-45.55	≤-18.69	PASS
		2480	Reference	2.25	2.25	---	PASS
			30~1000	2.25	-41.98	≤-17.75	PASS
			1000~26500	2.25	-44.79	≤-17.75	PASS
3DH5	Ant1	2402	Reference	2.29	2.29	---	PASS
			30~1000	2.29	-42.87	≤-17.71	PASS
			1000~26500	2.29	-44.21	≤-17.71	PASS
		2441	Reference	2.04	2.04	---	PASS
			30~1000	2.04	-41.68	≤-17.96	PASS
			1000~26500	2.04	-45.32	≤-17.96	PASS
		2480	Reference	2.87	2.87	---	PASS
			30~1000	2.87	-42.5	≤-17.13	PASS
			1000~26500	2.87	-45.27	≤-17.13	PASS

8.2.Test Graphs

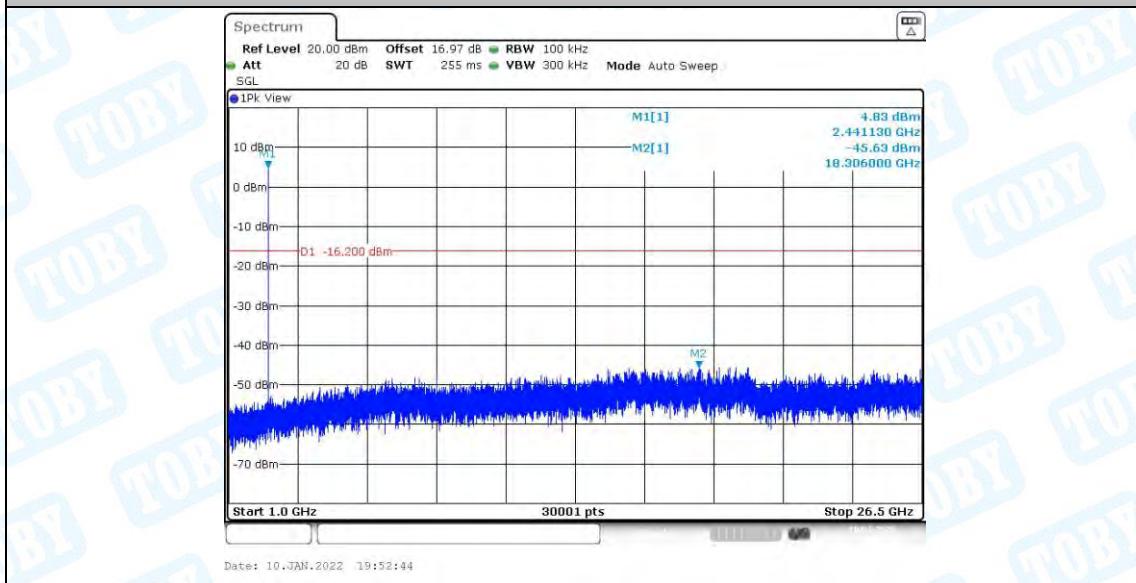




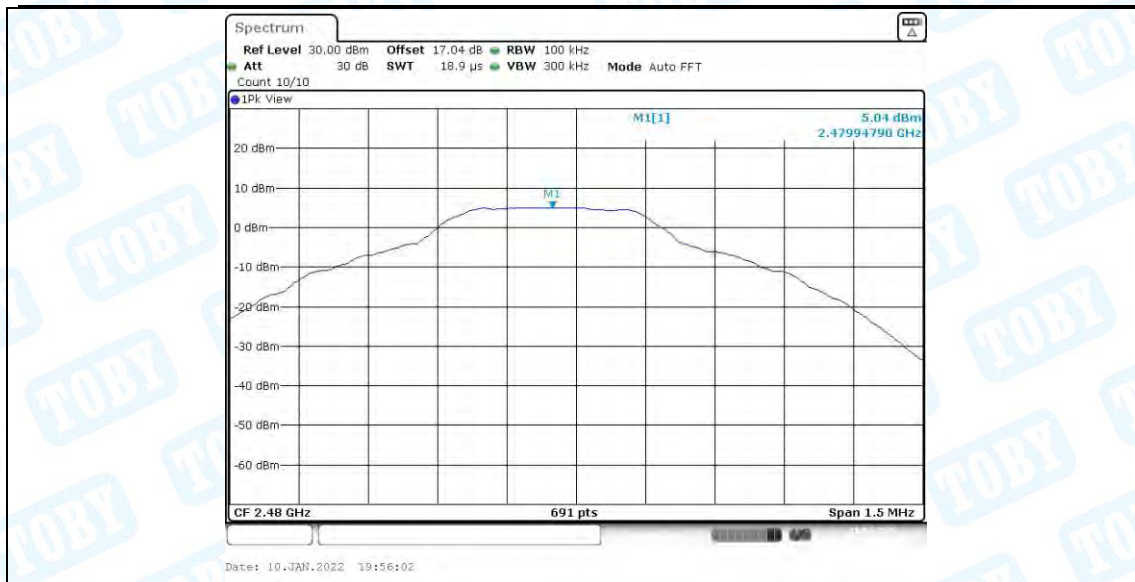
DH5_Ant1_2441_0~Reference



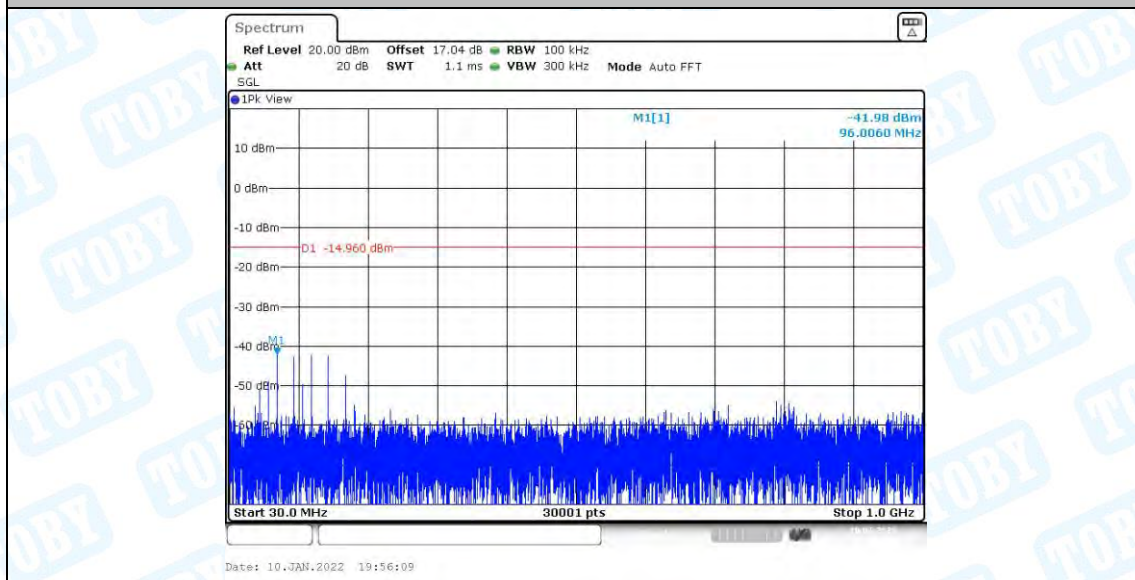
DH5_Ant1_2441_30~1000



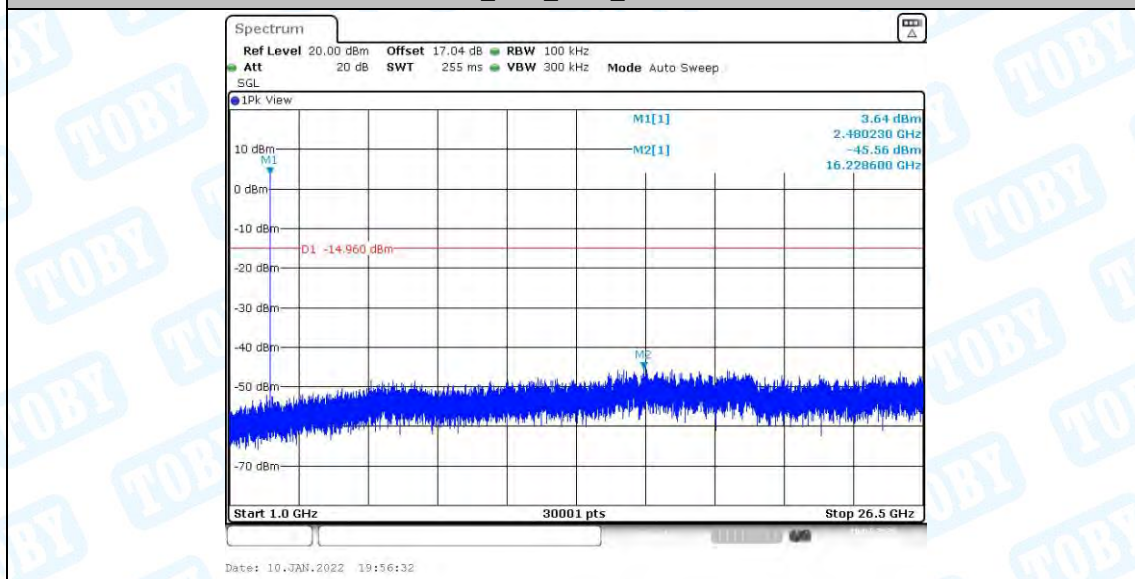
DH5_Ant1_2441_1000~26500



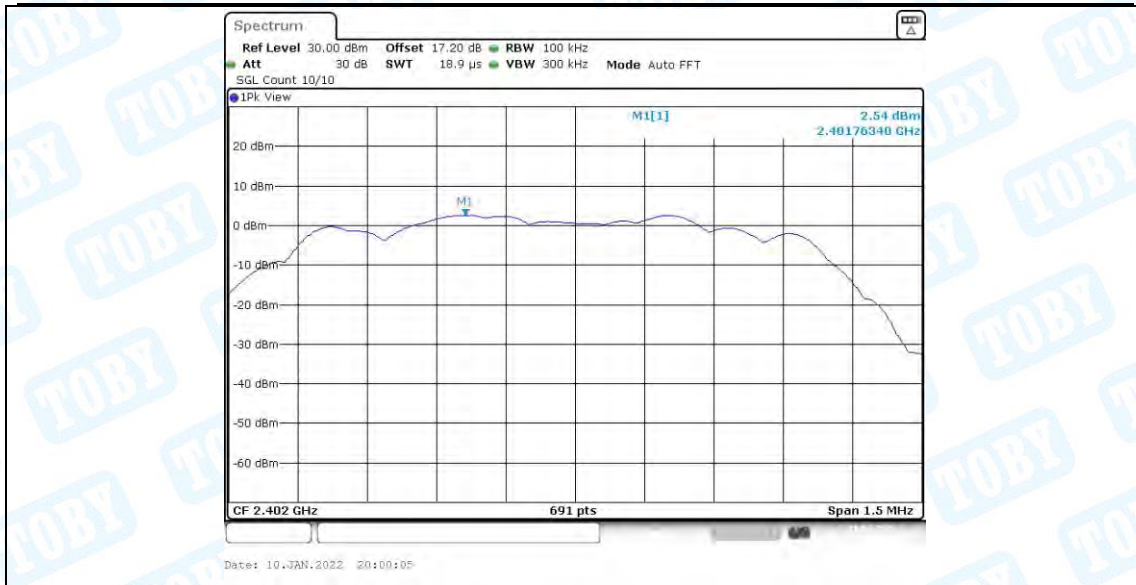
DH5_Ant1_2480_0~Reference



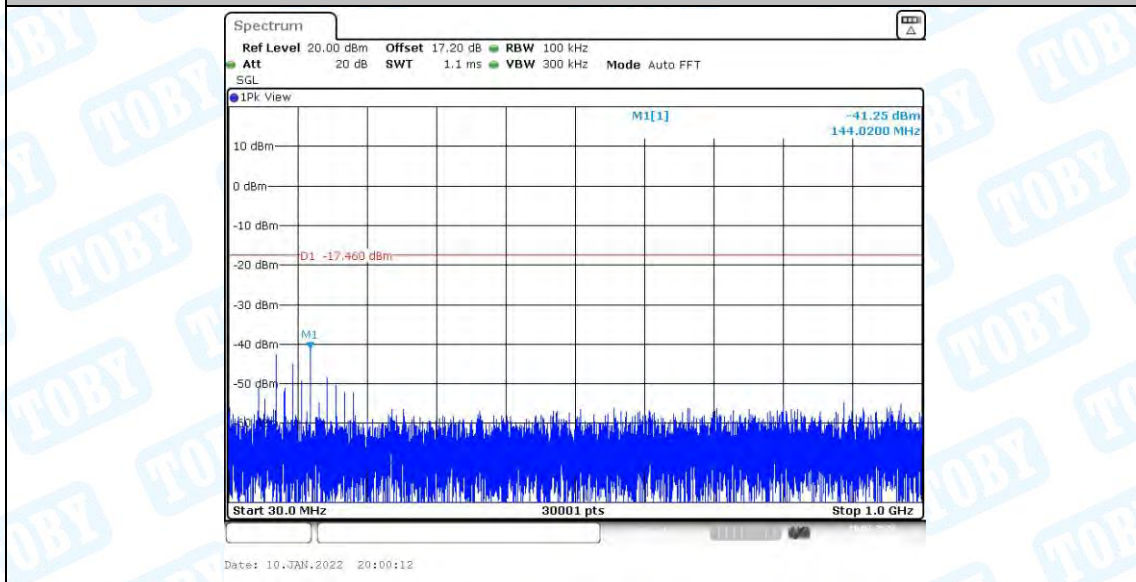
DH5_Ant1_2480_30~1000



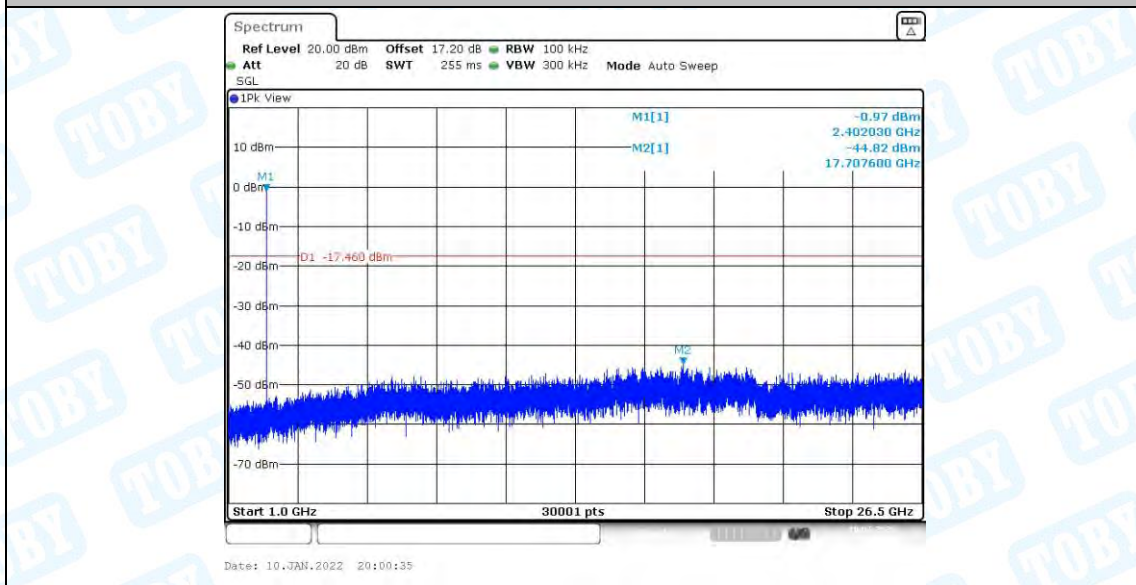
DH5_Ant1_2480_1000~26500



2DH5_Ant1_2402_0~Reference



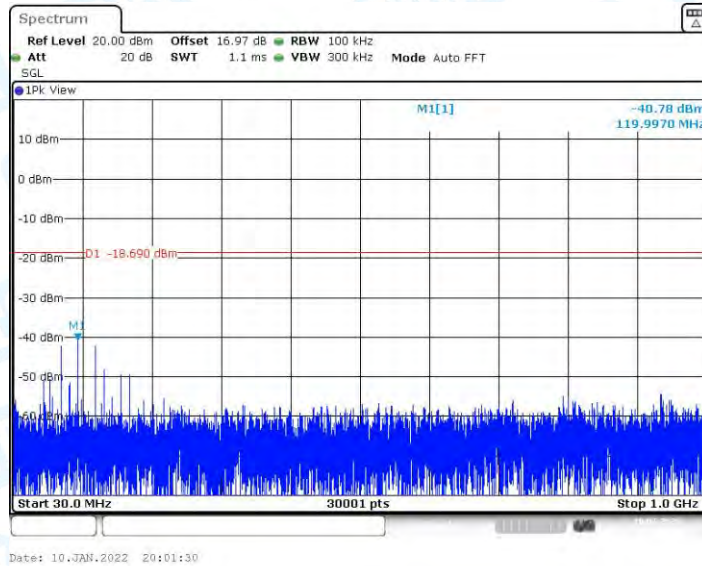
2DH5_Ant1_2402_30~1000



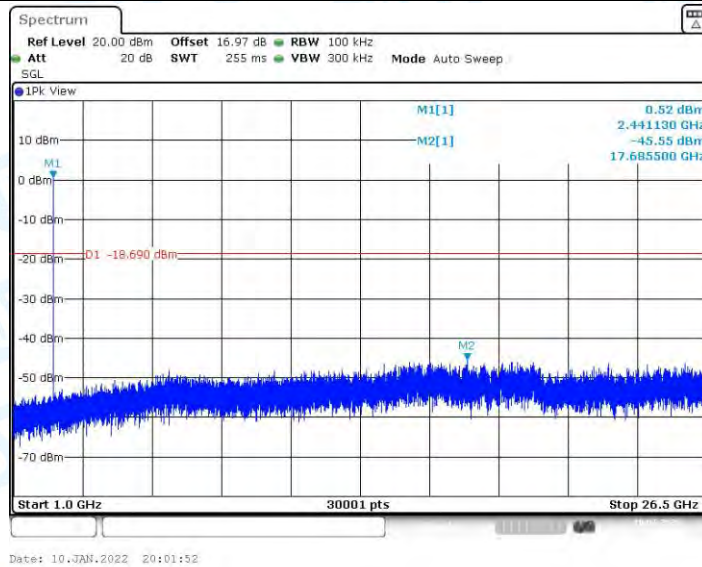
2DH5_Ant1_2402_1000~26500



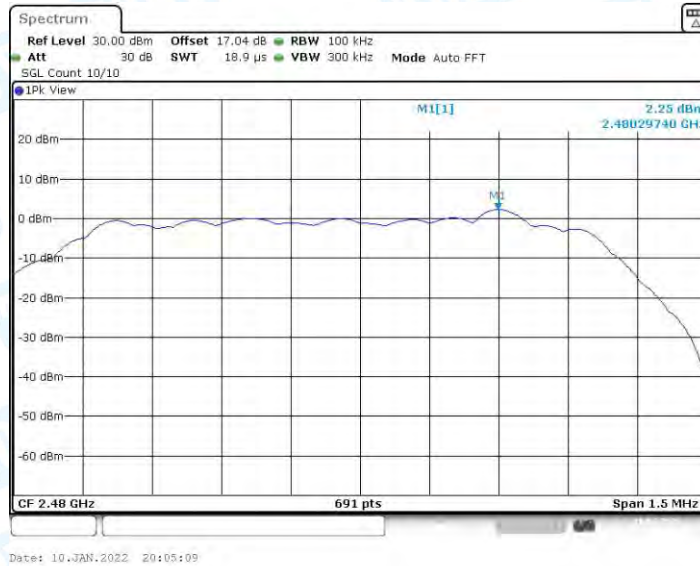
2DH5_Ant1_2441_0~Reference



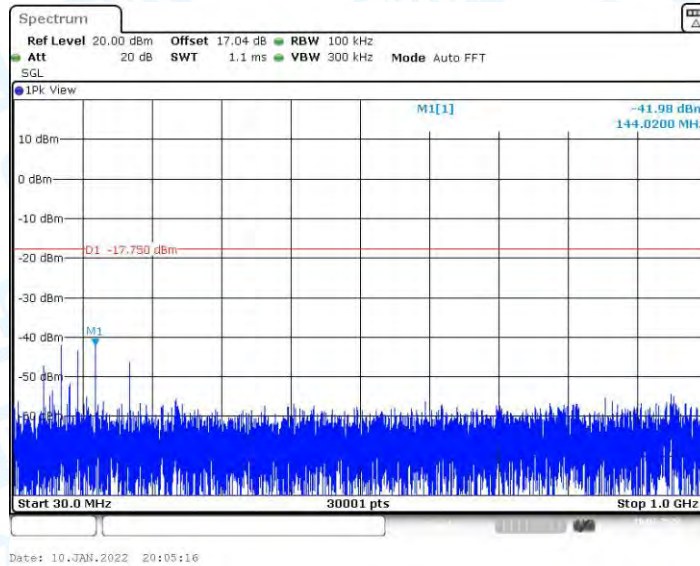
2DH5_Ant1_2441_30~1000



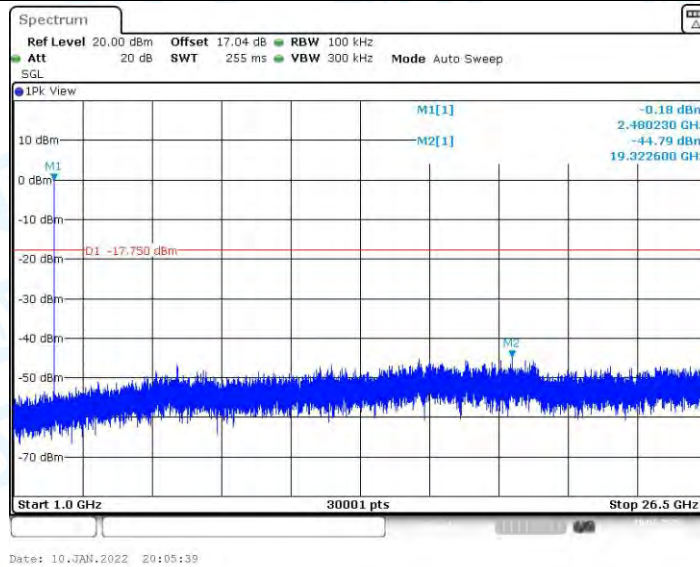
2DH5_Ant1_2441_1000~26500



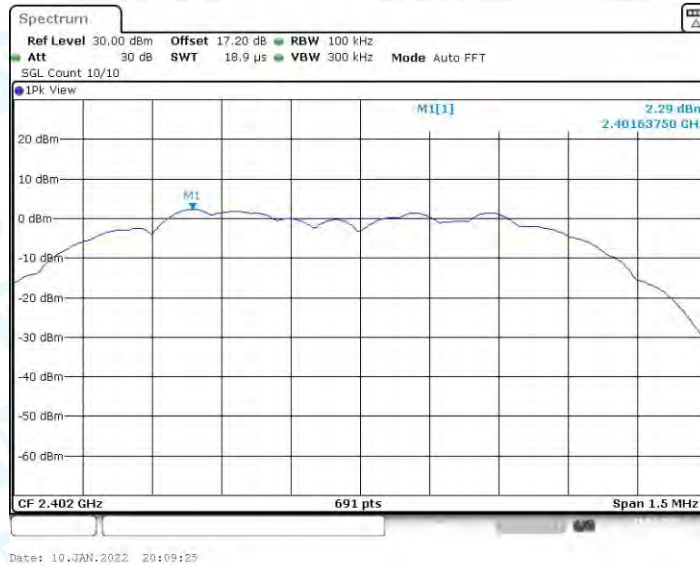
2DH5_Ant1_2480_0~Reference



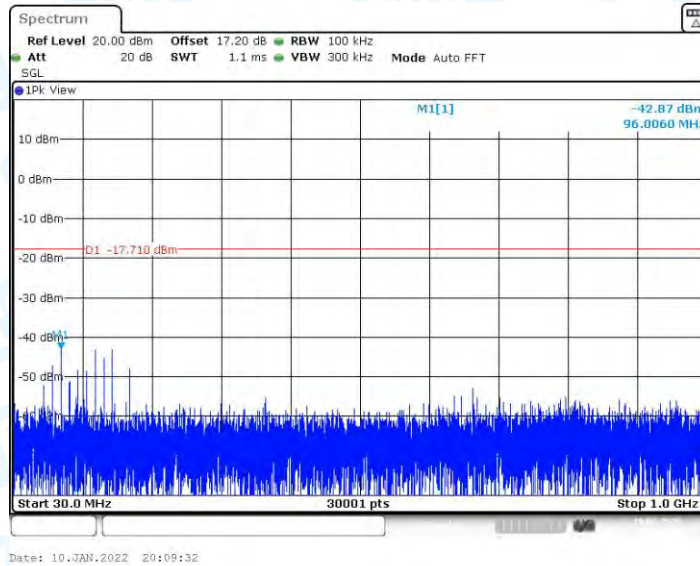
2DH5_Ant1_2480_30~1000



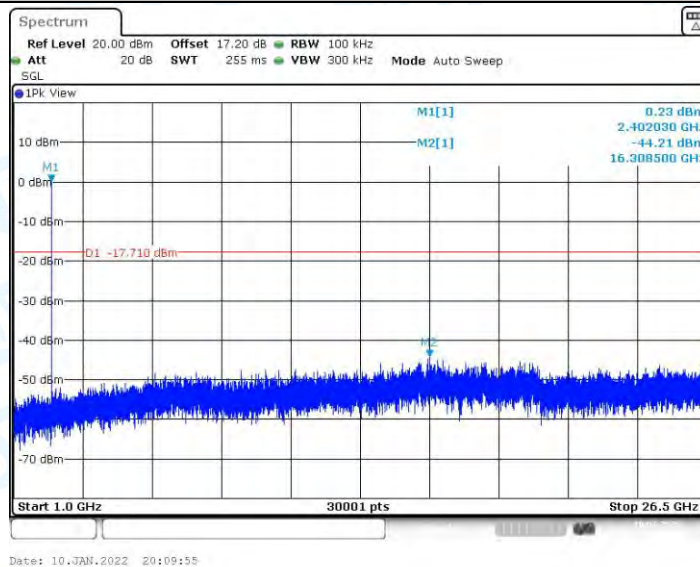
2DH5_Ant1_2480_1000~26500



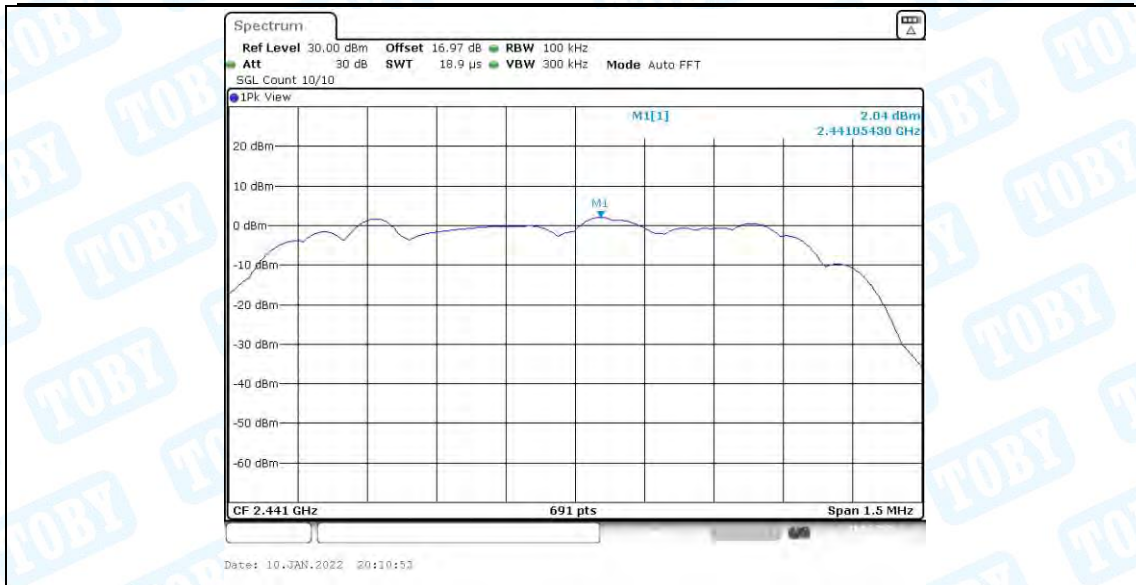
3DH5_Ant1_2402_0~Reference



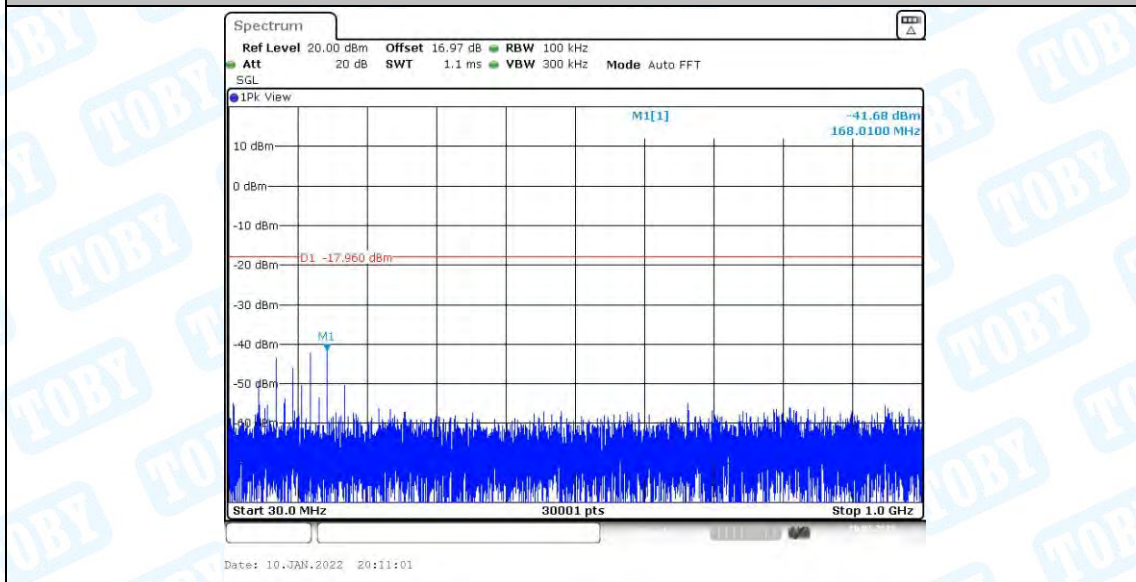
3DH5_Ant1_2402_30~1000



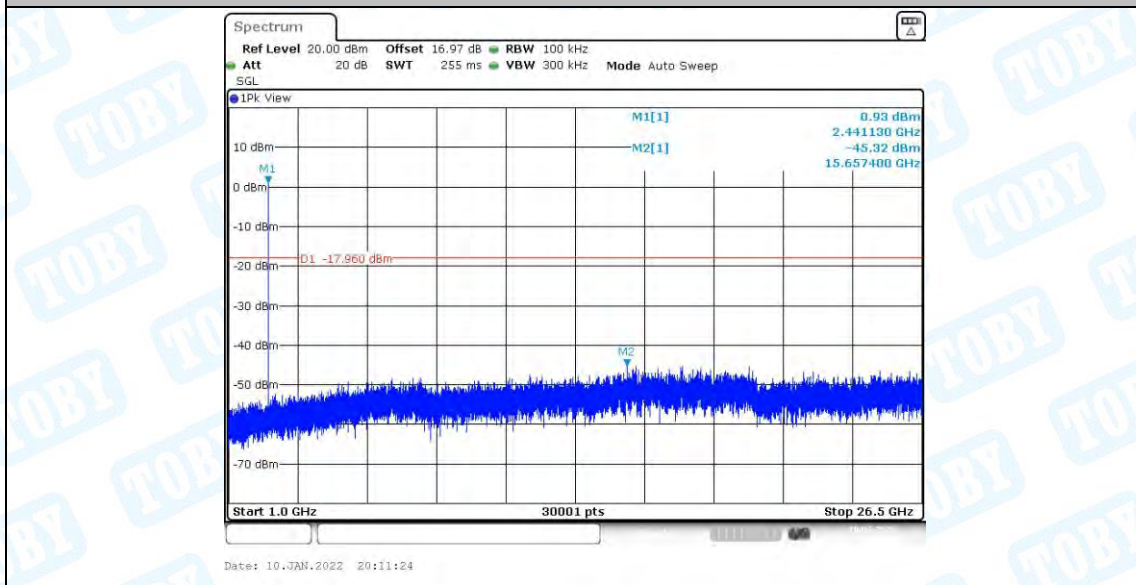
3DH5_Ant1_2402_1000~26500



3DH5_Ant1_2441_0~Reference



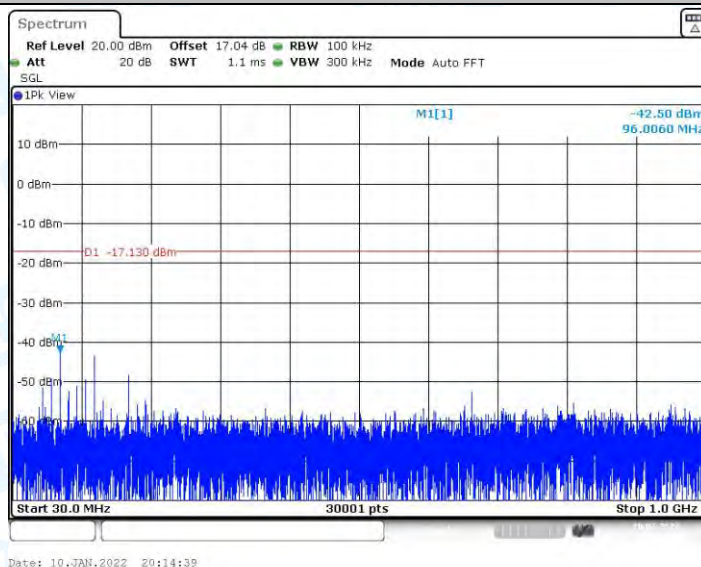
3DH5_Ant1_2441_30~1000



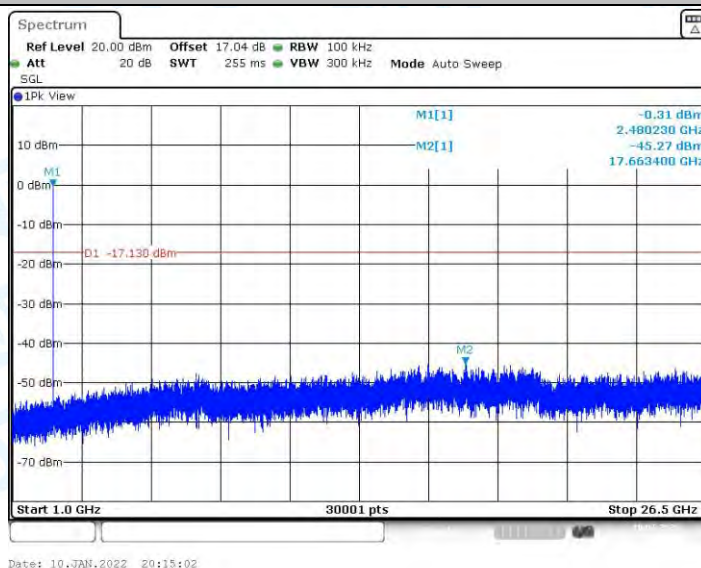
3DH5_Ant1_2441_1000~26500



3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500

9. Emissions in Restricted Bands

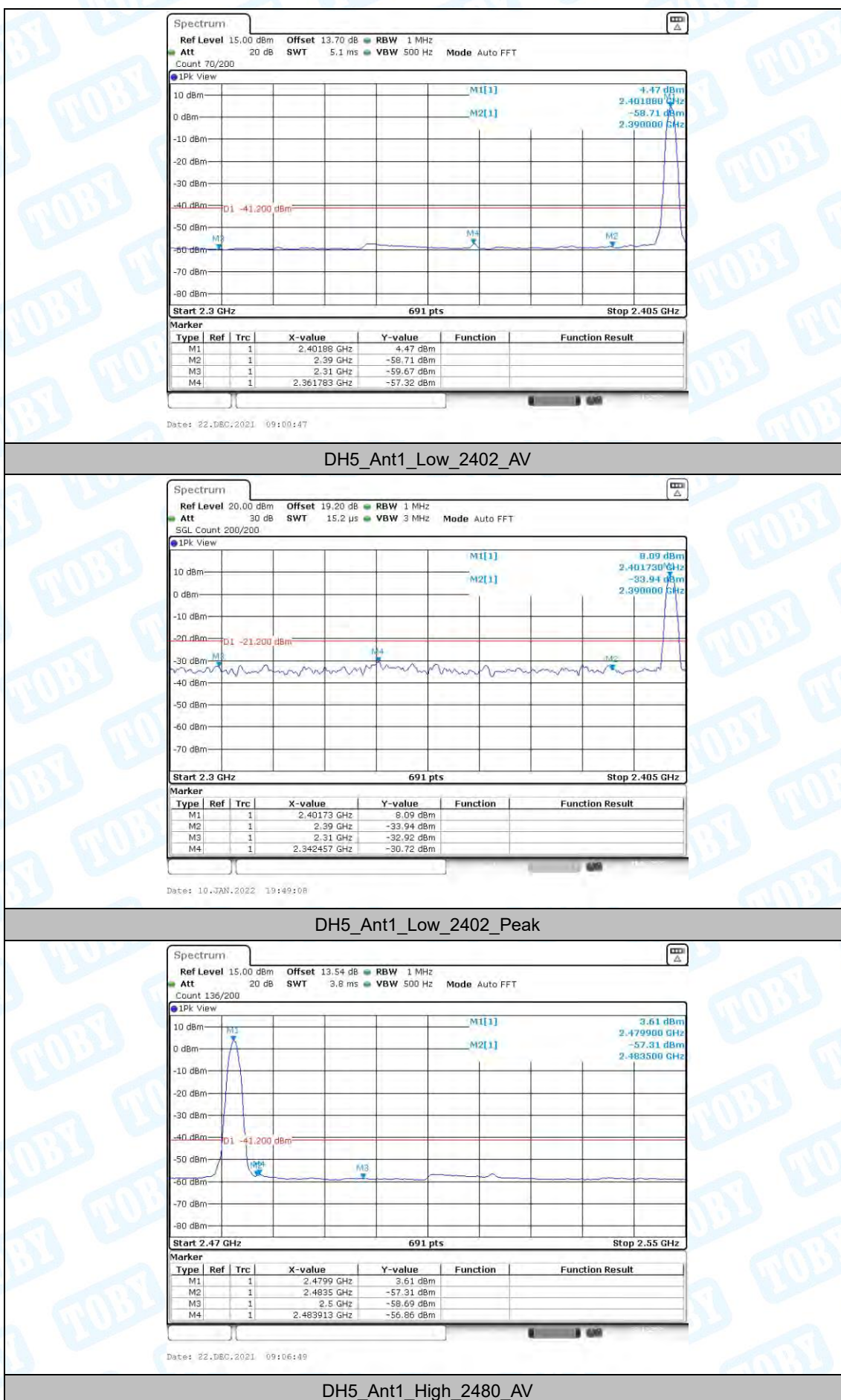
9.1. Test Result

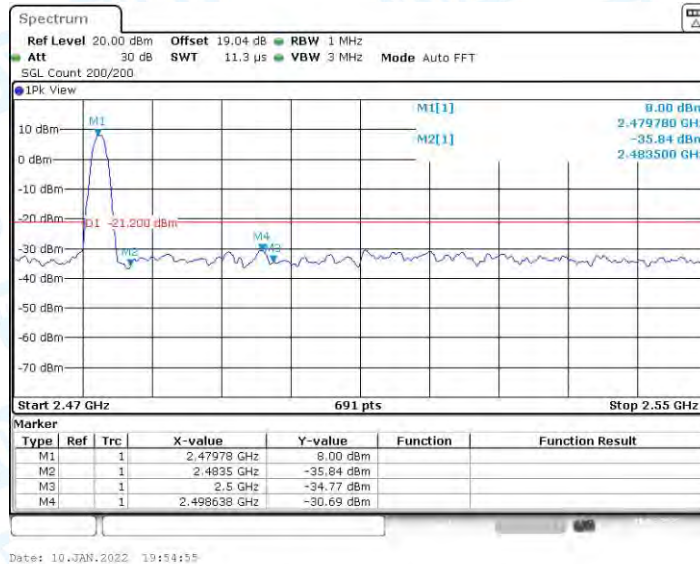
TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-59.67	≤-41.20	PASS
				AV	2361.783	-57.32	≤-41.20	PASS
				AV	2390.000	-58.71	≤-41.20	PASS
				Peak	2310.000	-32.92	≤-21.20	PASS
				Peak	2342.457	-30.72	≤-21.20	PASS
				Peak	2390.000	-33.94	≤-21.20	PASS
		High	2480	AV	2483.500	-57.31	≤-41.20	PASS
				AV	2483.913	-56.86	≤-41.20	PASS
				AV	2500.000	-58.69	≤-41.20	PASS
				Peak	2483.500	-35.84	≤-21.20	PASS
				Peak	2498.638	-30.69	≤-21.20	PASS
				Peak	2500.000	-34.77	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2483.500	-57.31	≤-41.20	PASS
				AV	2483.913	-56.86	≤-41.20	PASS
				AV	2500.000	-58.69	≤-41.20	PASS
				Peak	2310.000	-34.16	≤-21.20	PASS
				Peak	2342.913	-30.8	≤-21.20	PASS
				Peak	2390.000	-33.6	≤-21.20	PASS
		High	2480	AV	2483.500	-57.26	≤-41.20	PASS
				AV	2483.913	-56.75	≤-41.20	PASS
				AV	2500.000	-58.64	≤-41.20	PASS
				Peak	2483.500	-35.76	≤-21.20	PASS
				Peak	2499.681	-30.24	≤-21.20	PASS
				Peak	2500.000	-30.83	≤-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-59.6	≤-41.20	PASS
				AV	2340.326	-57.26	≤-41.20	PASS
				AV	2390.000	-58.58	≤-41.20	PASS
				Peak	2310.000	-34.29	≤-21.20	PASS
				Peak	2387.348	-30.26	≤-21.20	PASS
				Peak	2390.000	-34.96	≤-21.20	PASS
		High	2480	AV	2483.500	-57.26	≤-41.20	PASS
				AV	2483.913	-56.92	≤-41.20	PASS
				AV	2500.000	-58.77	≤-41.20	PASS
				Peak	2483.500	-34.89	≤-21.20	PASS
				Peak	2495.971	-31.21	≤-21.20	PASS
				Peak	2500.000	-34.43	≤-21.20	PASS

Note:

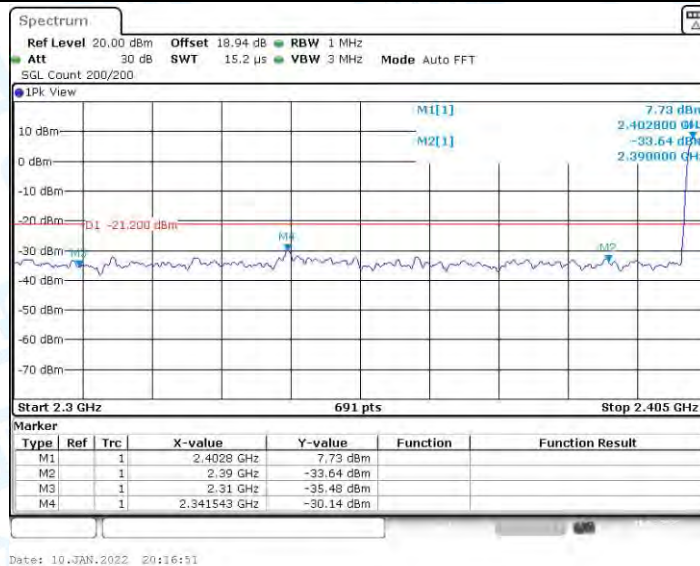
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

9.2. Test Graphs

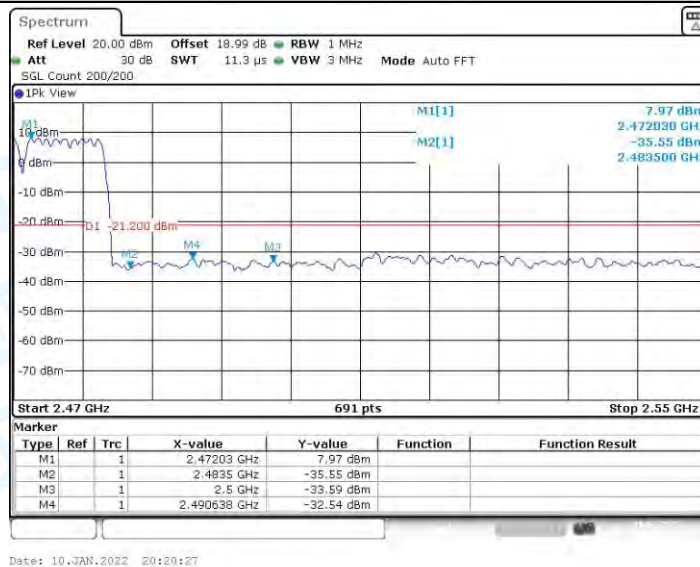




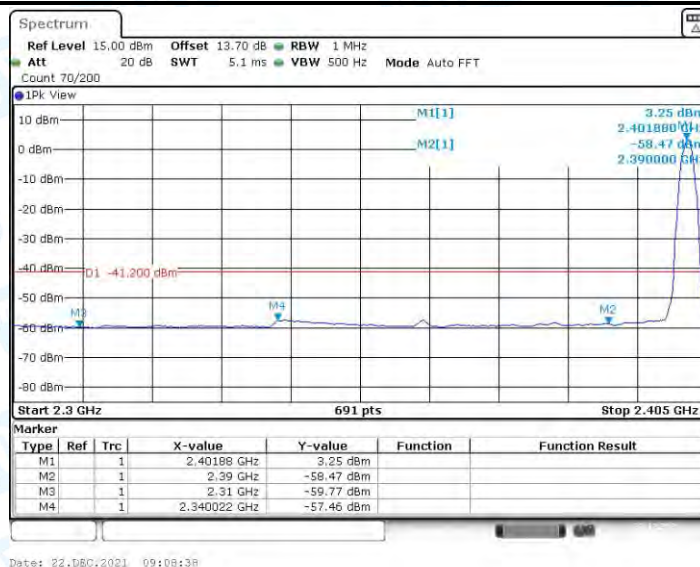
DH5_Ant1_High_2480_Peak



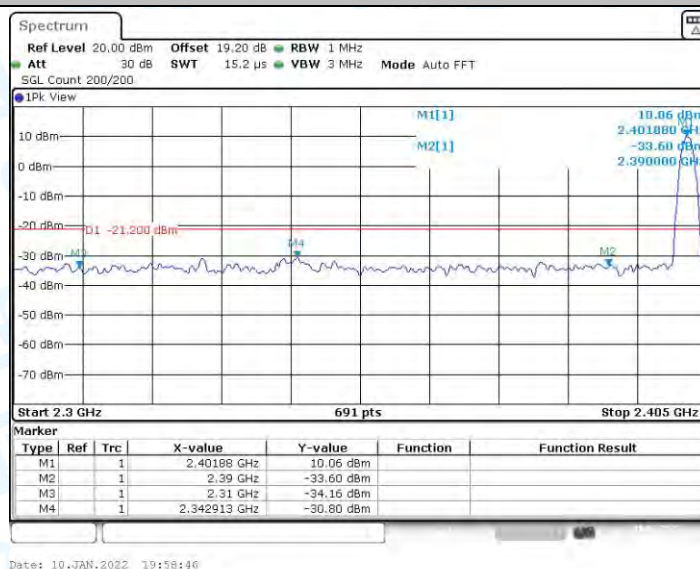
DH5_Ant1_Low_Hop_2402_Peak



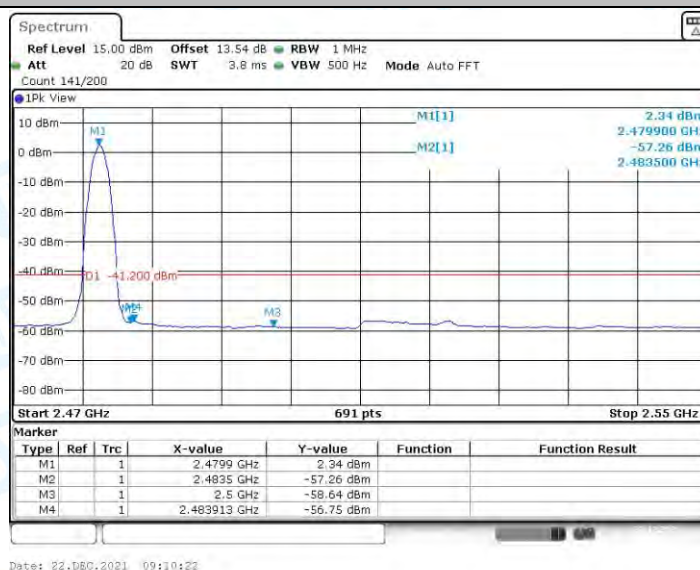
DH5_Ant1_High_Hop_2480_Peak



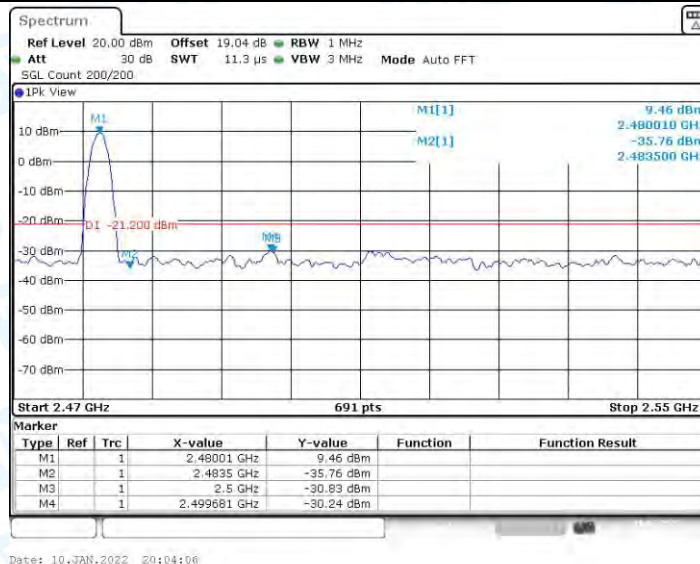
2DH5_Ant1_Low_2402_AV



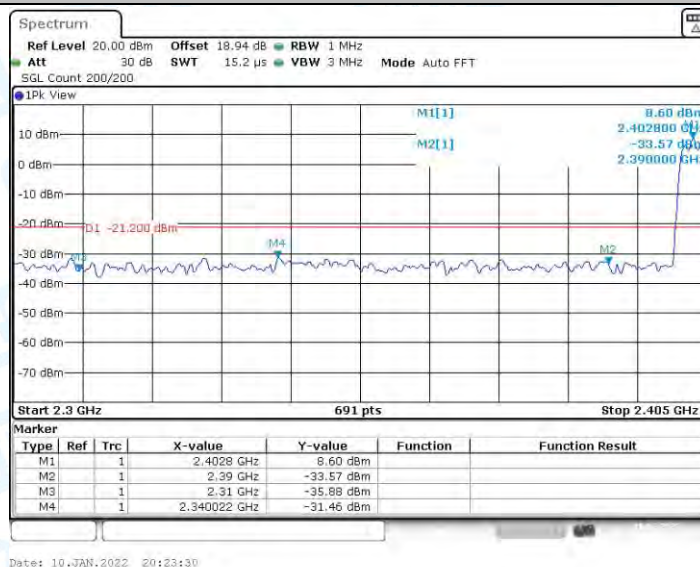
2DH5_Ant1_Low_2402_Peak



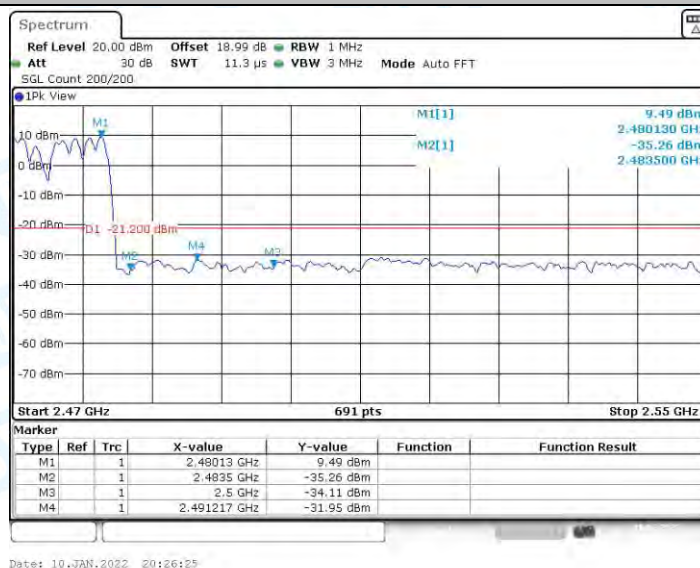
2DH5_Ant1_High_2480_AV



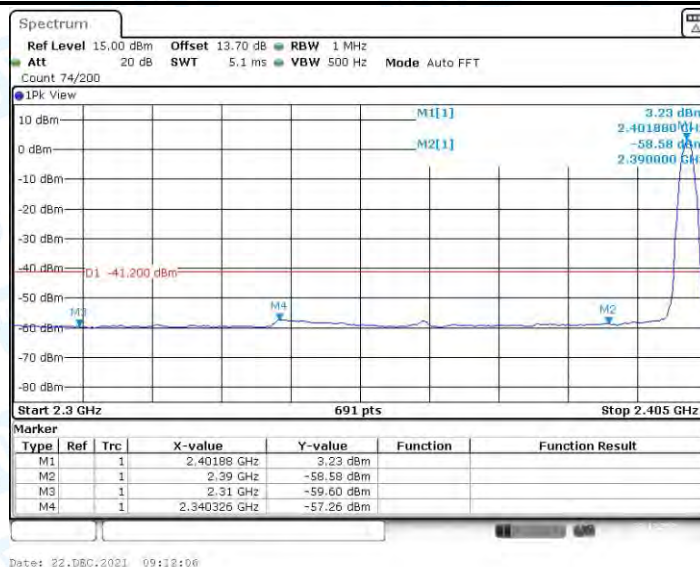
2DH5_Ant1_High_2480_Peak



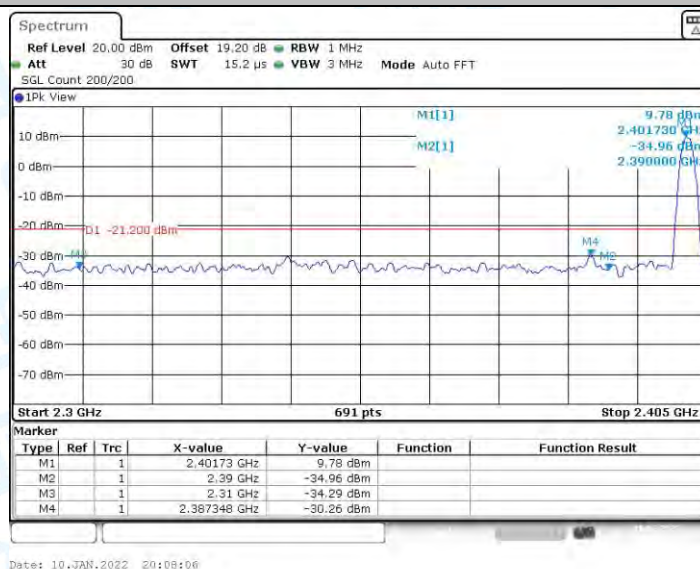
2DH5_Ant1_Low_Hop_2402_Peak



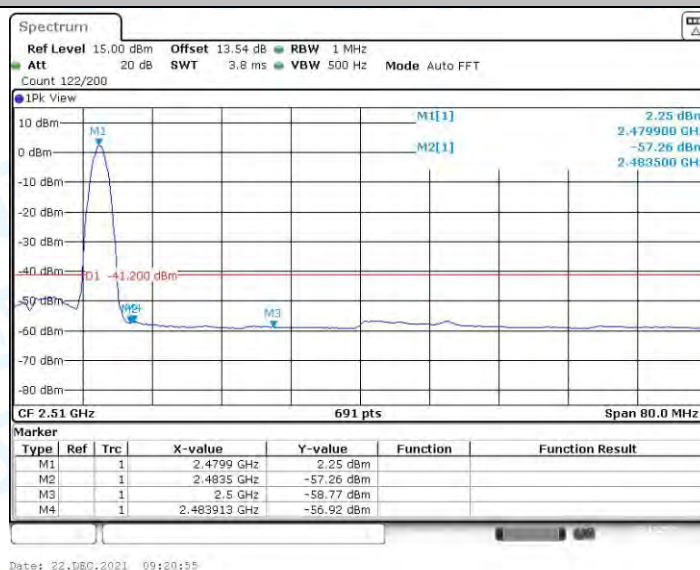
2DH5_Ant1_High_Hop_2480_Peak



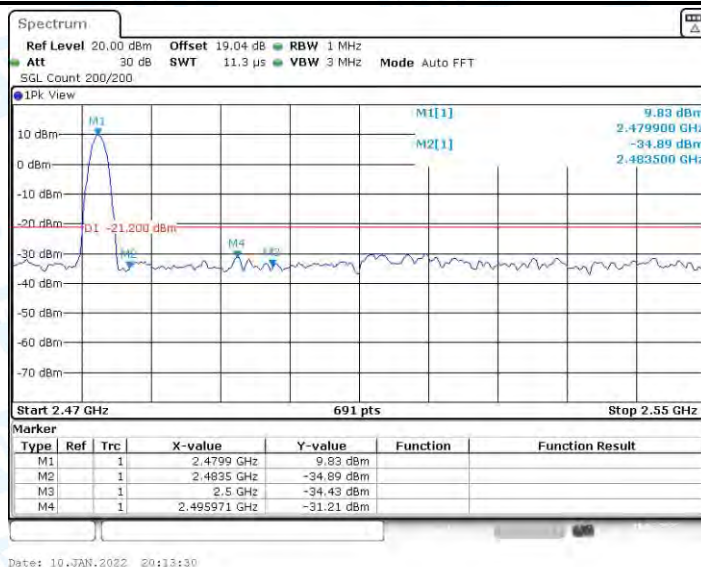
3DH5_Ant1_Low_2402_AV



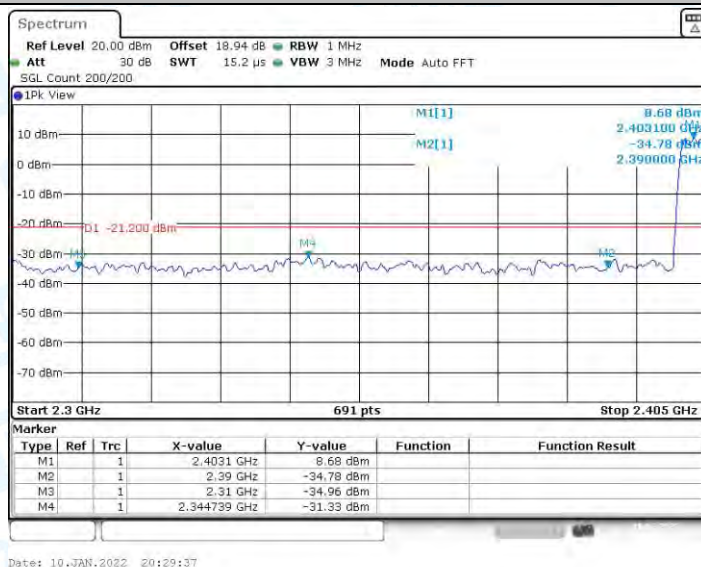
3DH5_Ant1_Low_2402_Peak



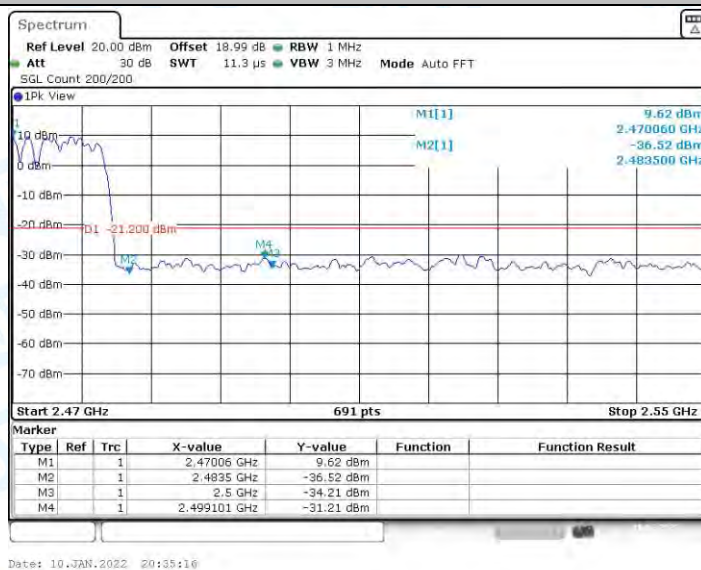
3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak



3DH5_Ant1_High_Hop_2480_Peak

-----End of the report-----