



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: PeriPage Shipping Label Printer

Test Model: ALD-PB400

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng



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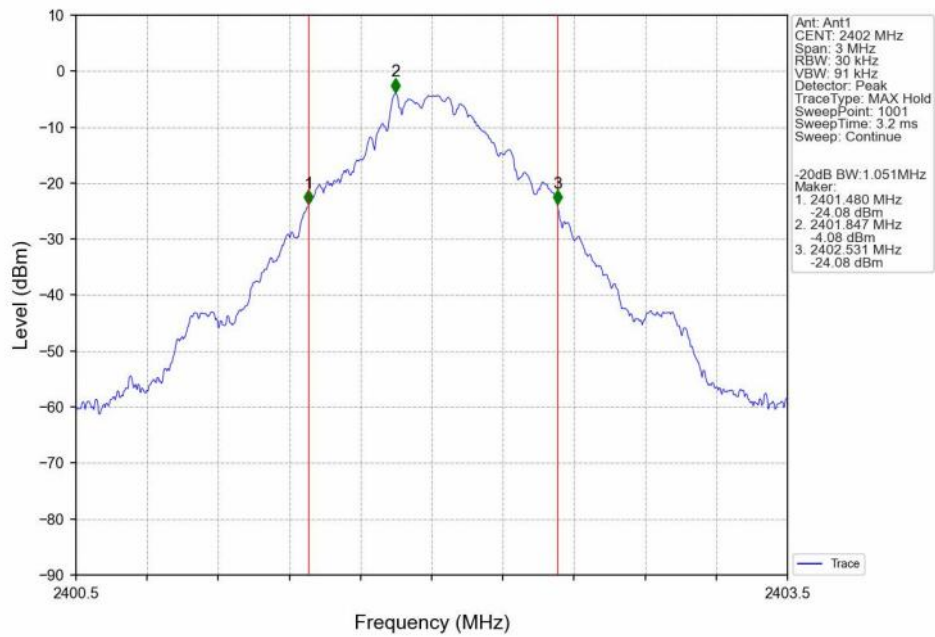
A.1 -20dB Bandwidth

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.051	/	Pass
		2441	DH5	1	1.057	/	Pass
		2480	DH5	1	1.049	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.337	/	Pass
		2441	2DH5	1	1.341	/	Pass
		2480	2DH5	1	1.343	/	Pass
8DPSK	SISO	2402	3DH5	1	1.313	/	Pass
		2441	3DH5	1	1.307	/	Pass
		2480	3DH5	1	1.299	/	Pass

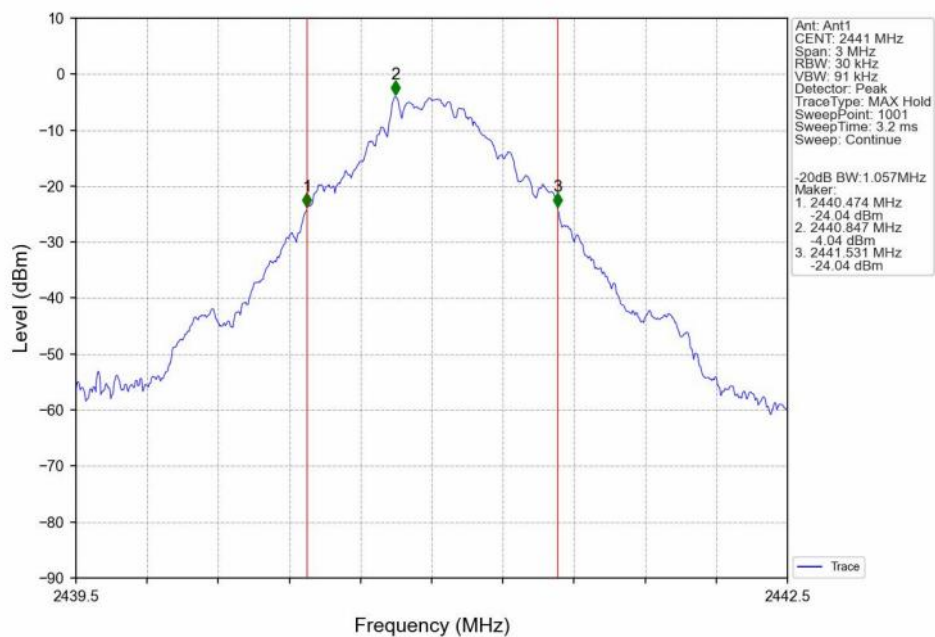




GFSK_DH5_LCH_2402MHz_Ant1_NTNV

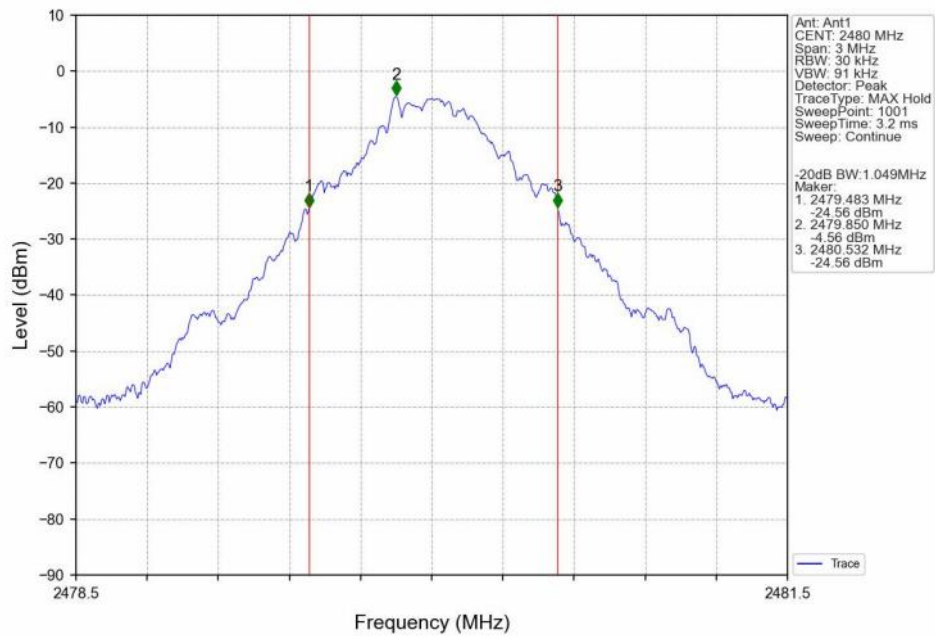


GFSK_DH5_MCH_2441MHz_Ant1_NTNV

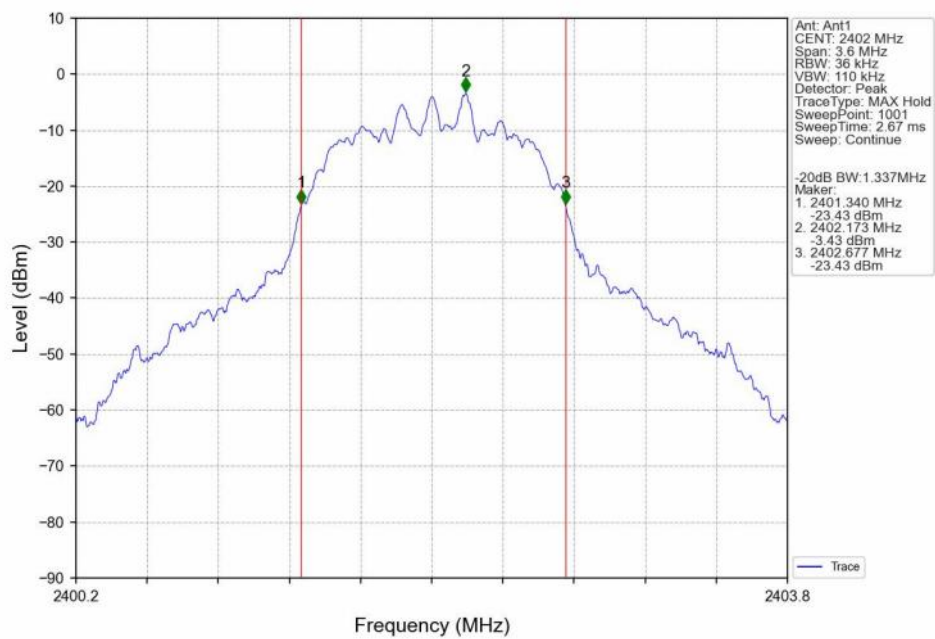




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

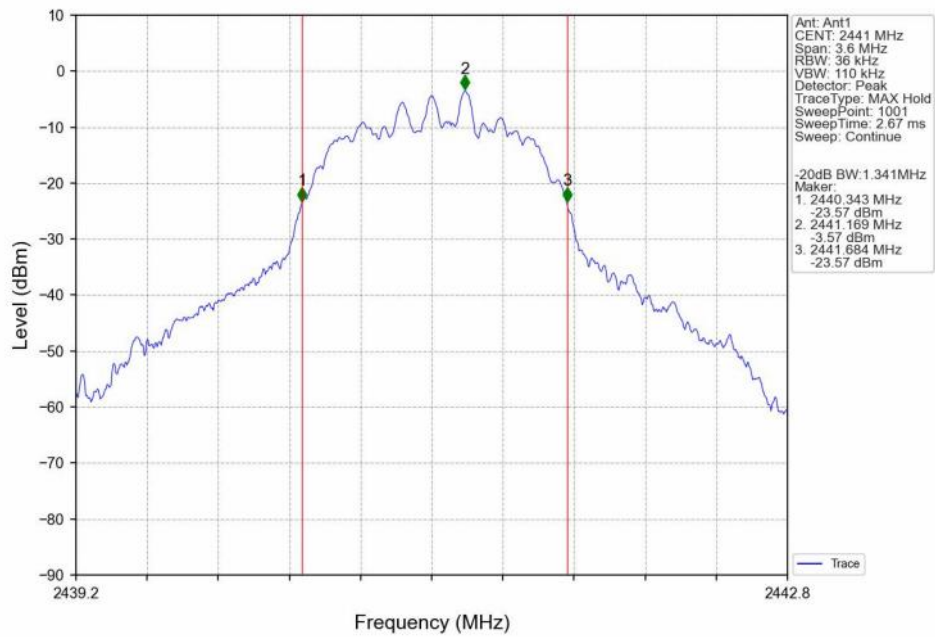


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

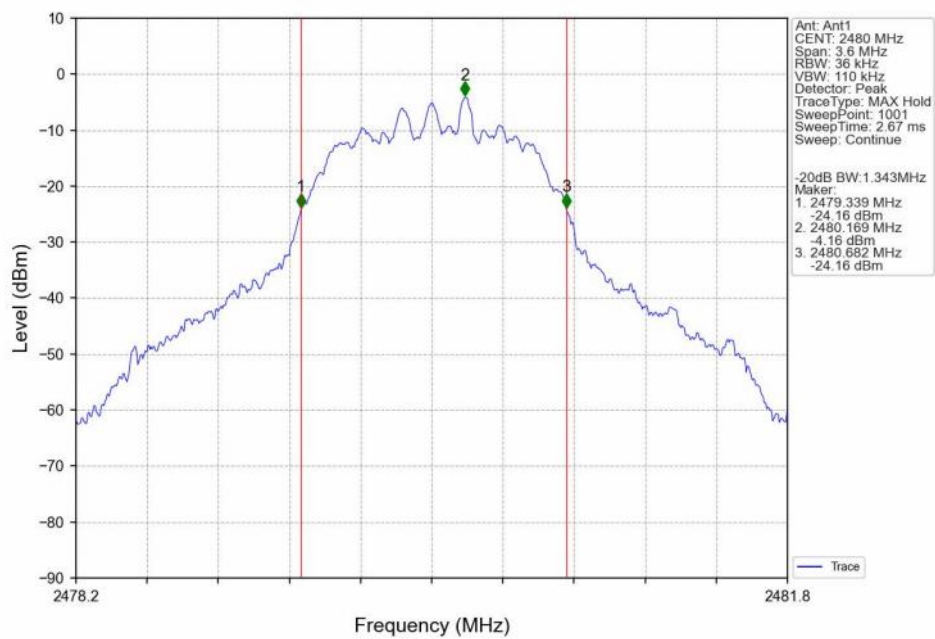




Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

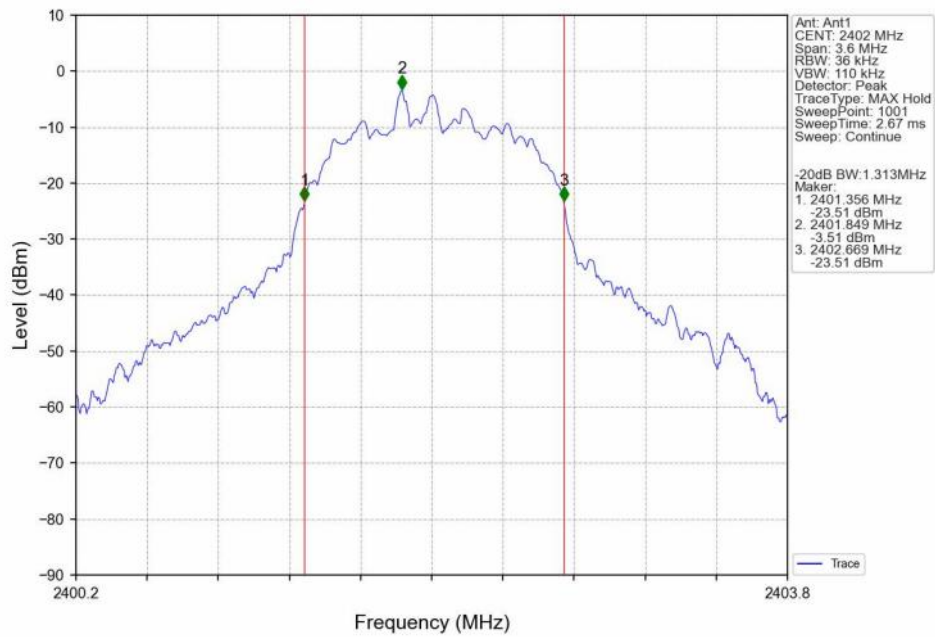


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

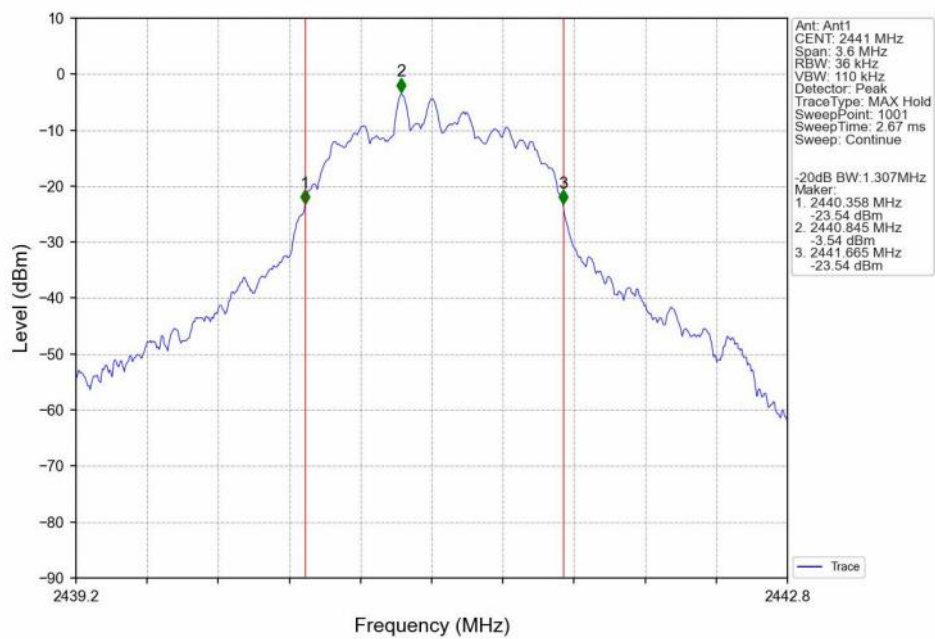




8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

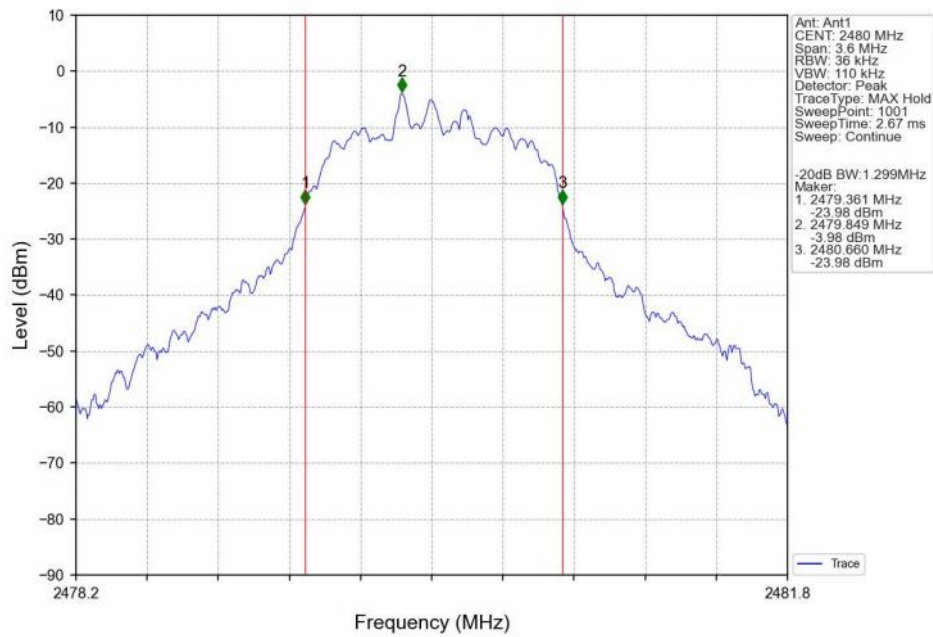


8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV

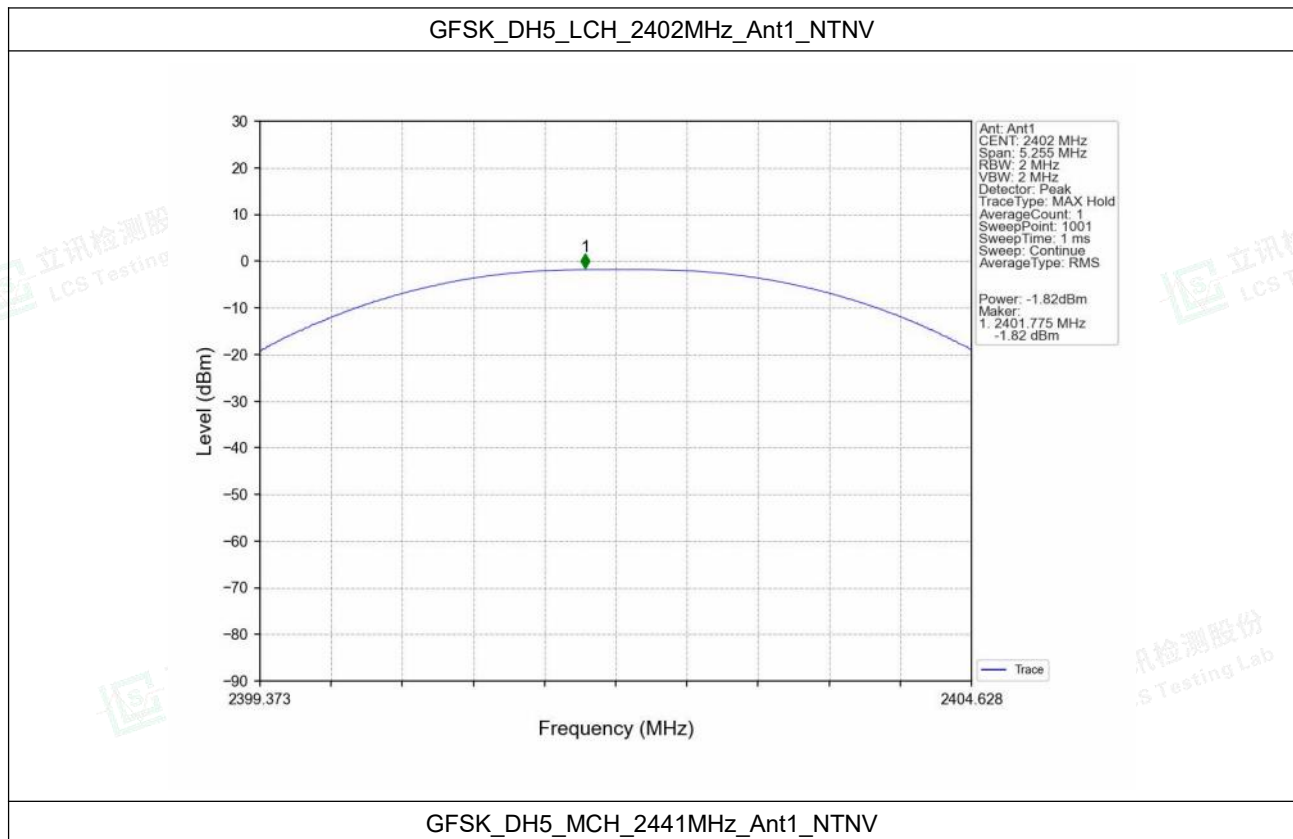


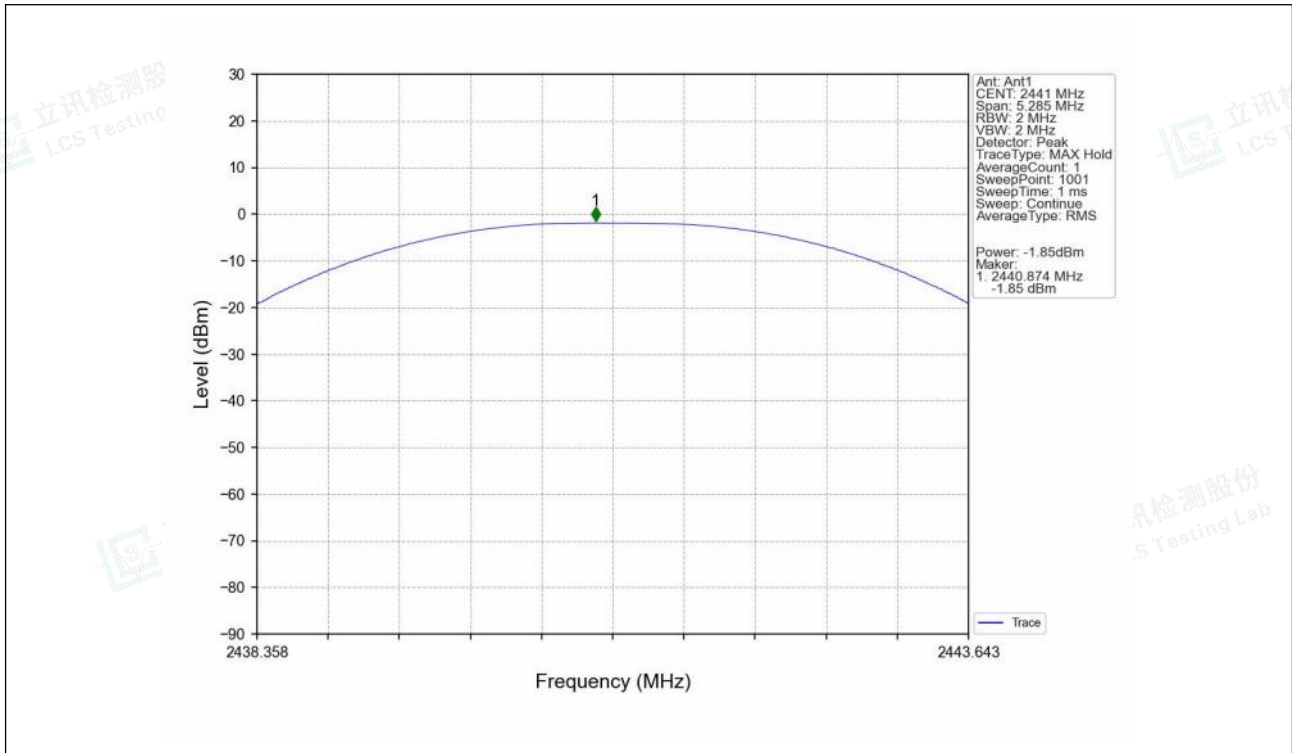


A.2 Maximum Peak Conducted Output Power

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-1.82	<=20.97	Pass
		2441	DH5	-1.85	<=20.97	Pass
		2480	DH5	-2.36	<=20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	-0.95	<=20.97	Pass
		2441	2DH5	-1.04	<=20.97	Pass
		2480	2DH5	-1.50	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-0.53	<=20.97	Pass
		2441	3DH5	-0.61	<=20.97	Pass
		2480	3DH5	-1.08	<=20.97	Pass

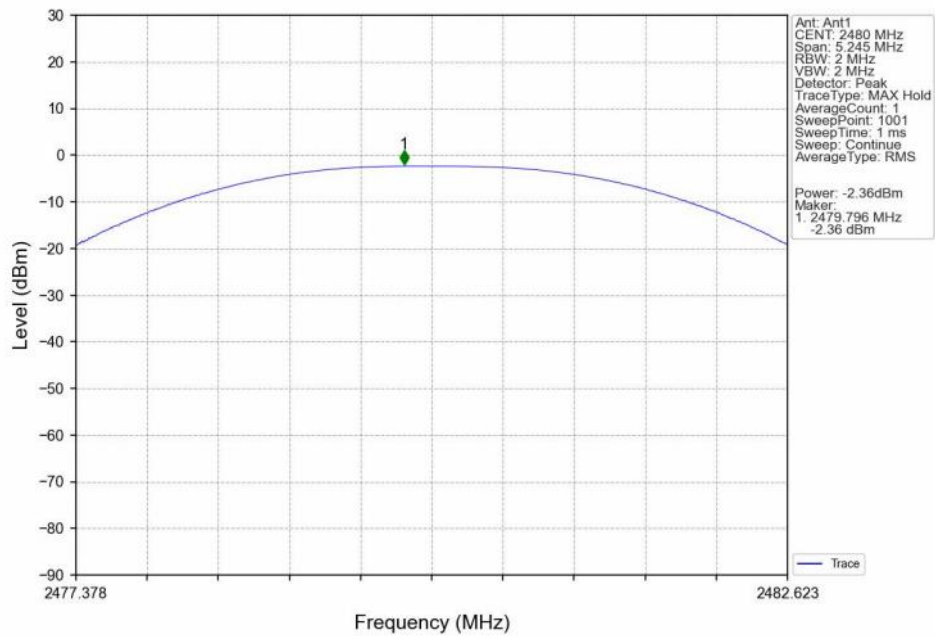
Note1: Antenna Gain: Ant1: 0.00dBi;



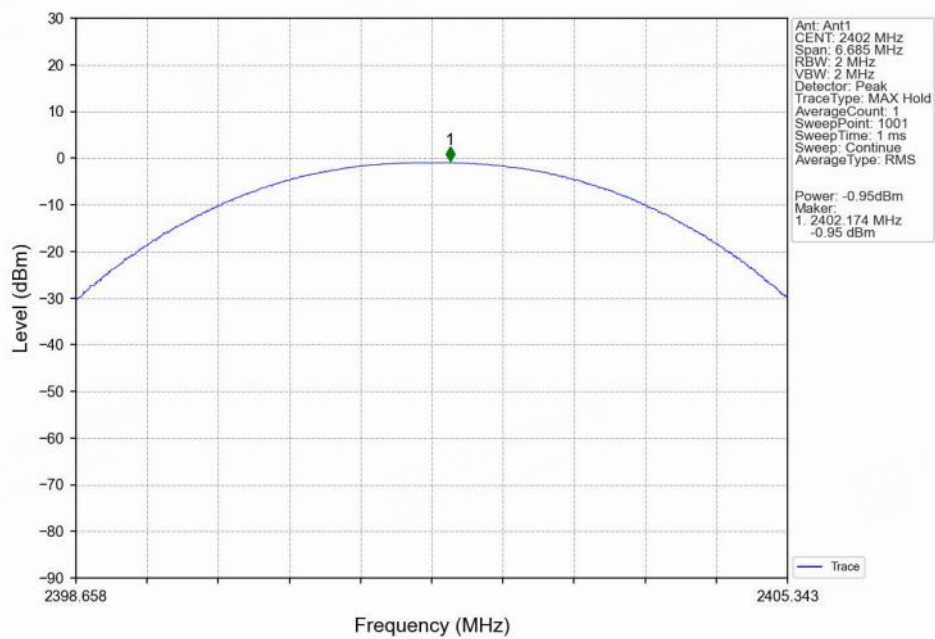




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

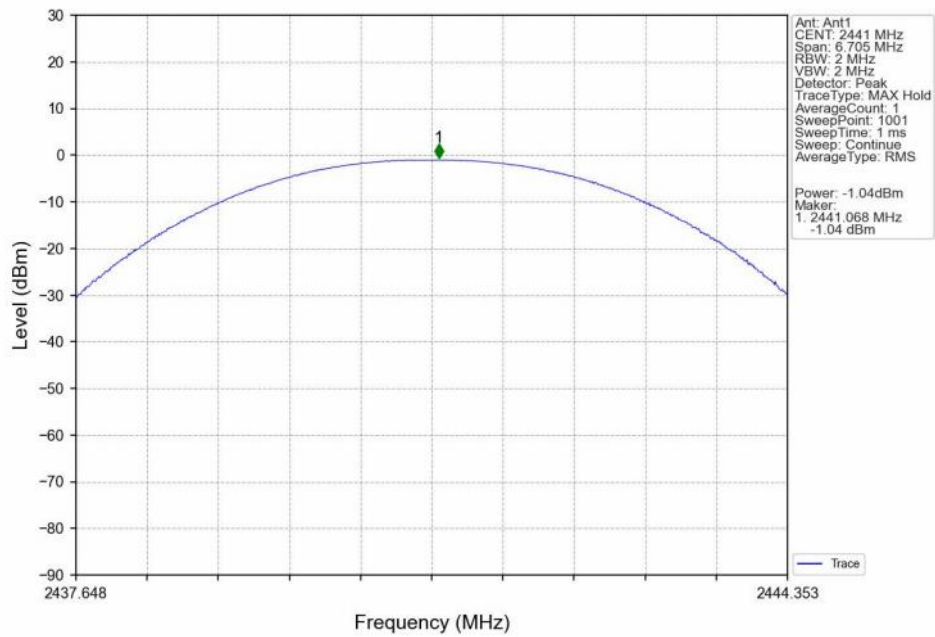


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

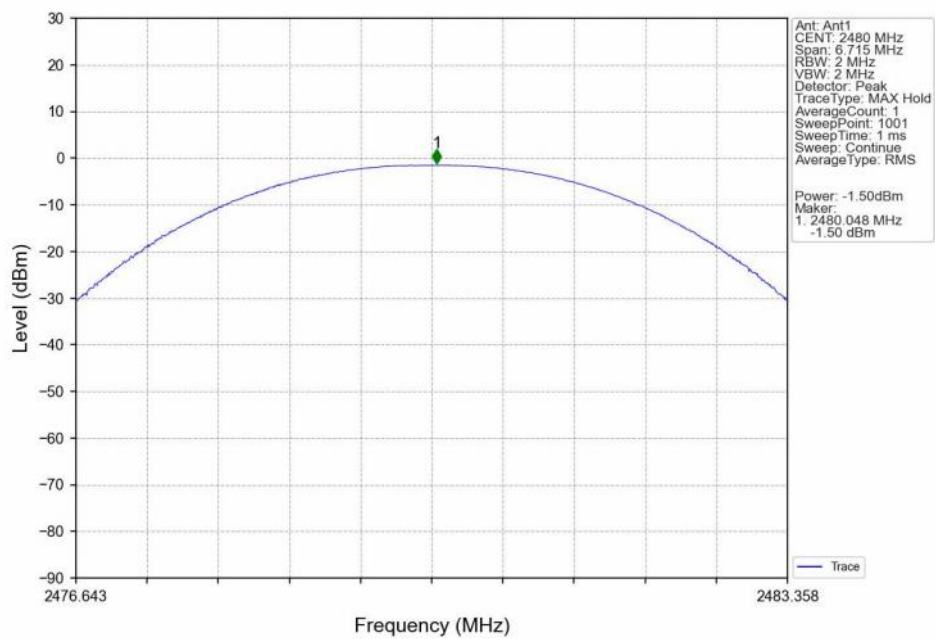




Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

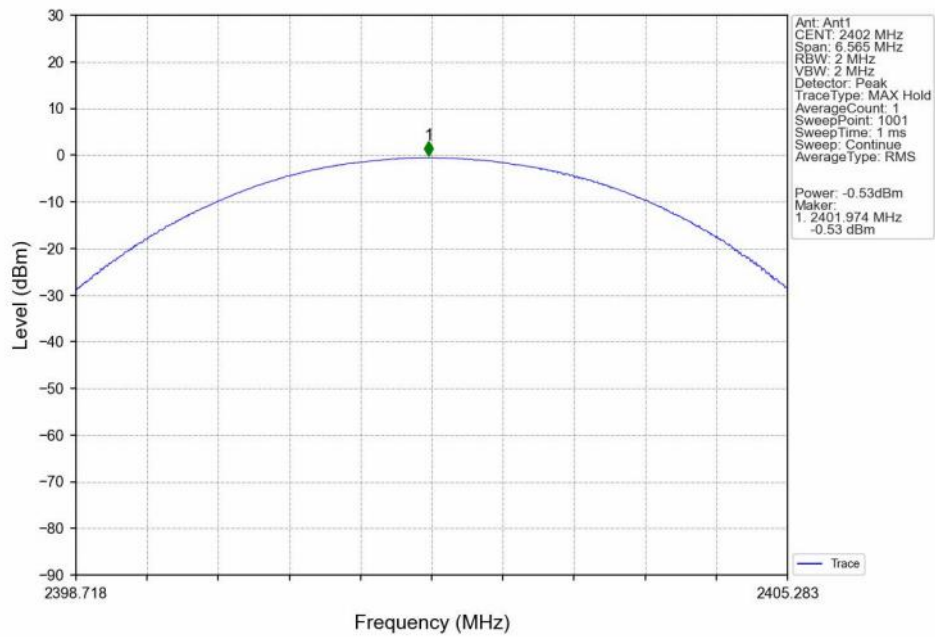


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

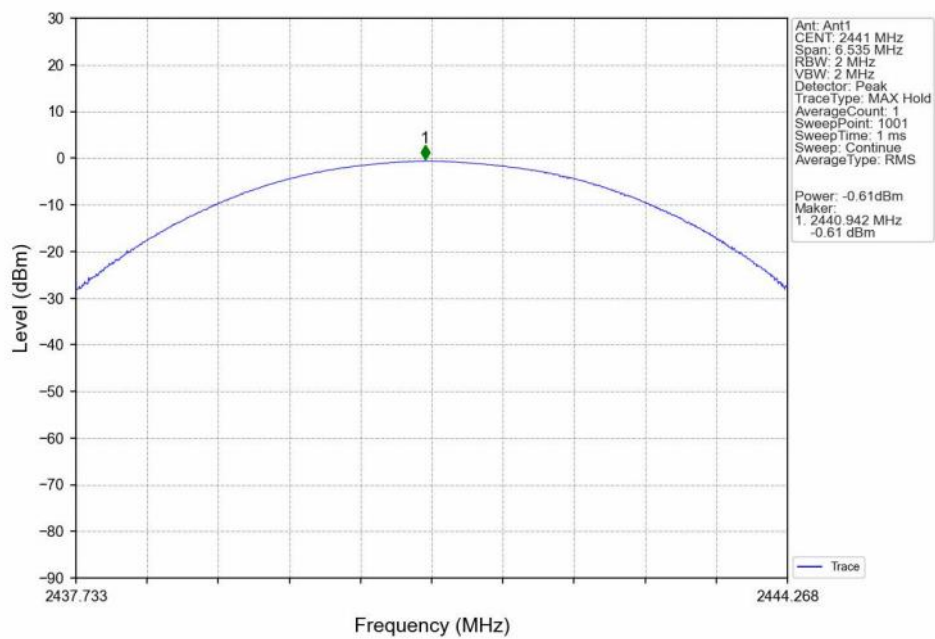


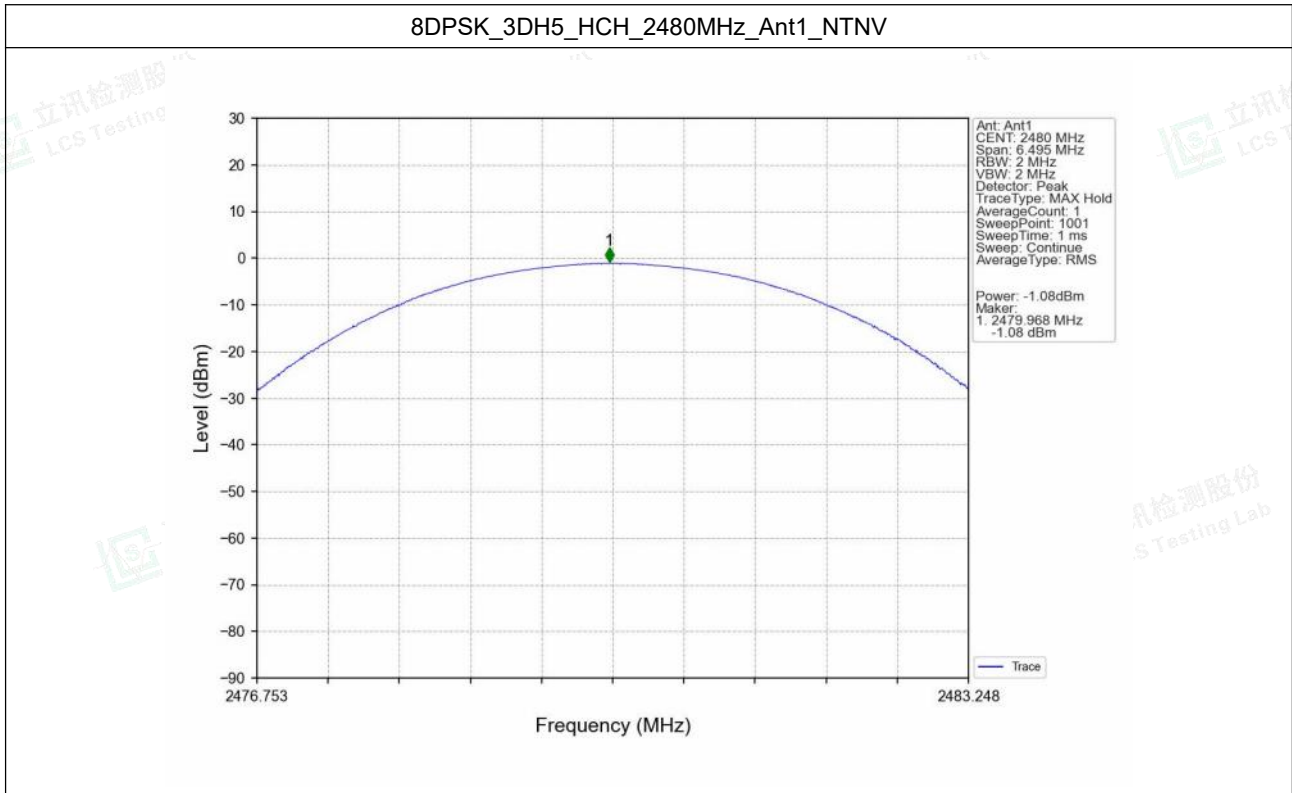


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







A.3 Carrier Frequencies Separation

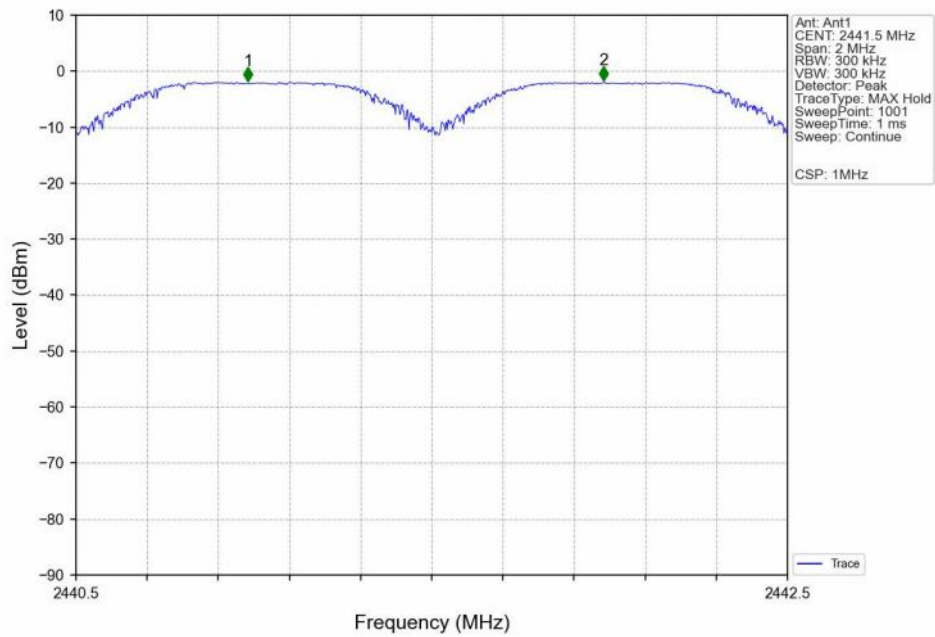
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	1.057	≥ 0.705	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.343	≥ 0.895	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.313	≥ 0.875	Pass



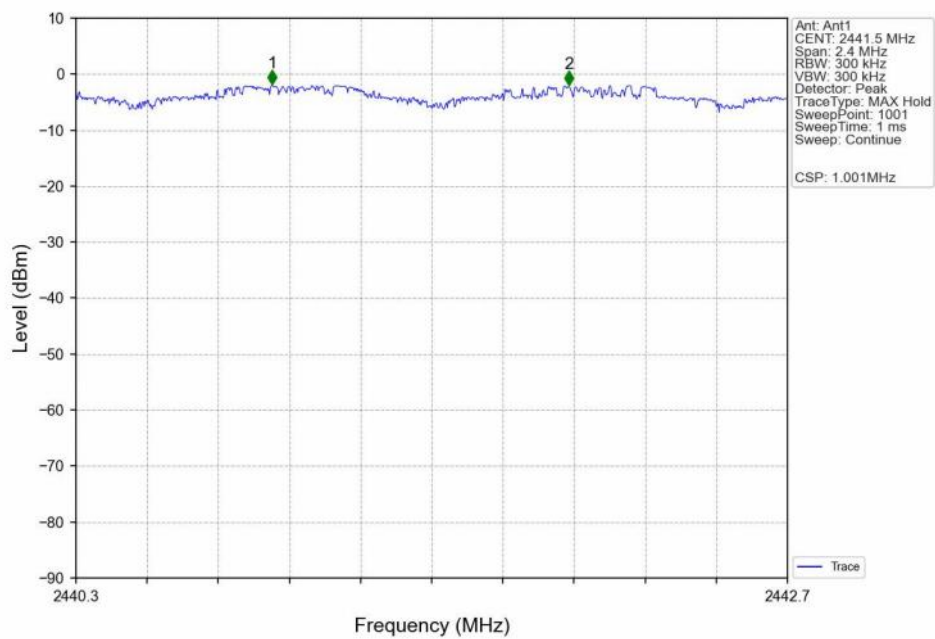
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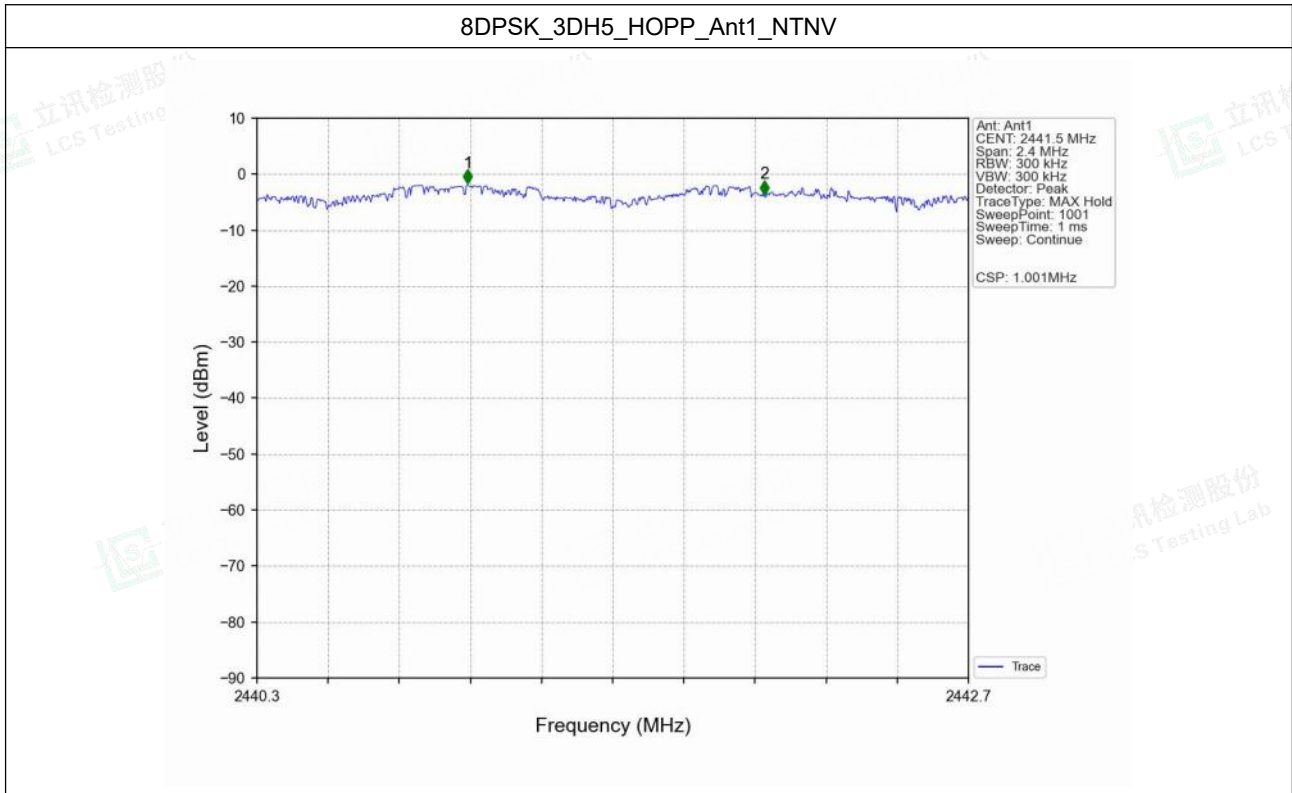


GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV







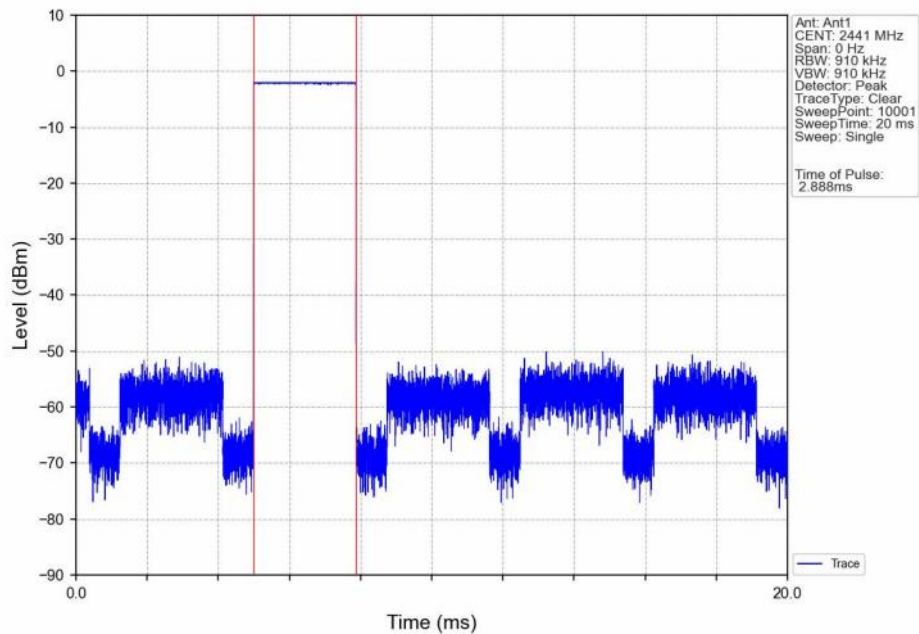
A.4 Dwell Time

Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH5	2.888	31.600	111	320.568	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	2.894	31.600	106	306.764	<=400	Pass
8DPSK	SISO	HOPP	3DH5	2.890	31.600	113	326.570	<=400	Pass

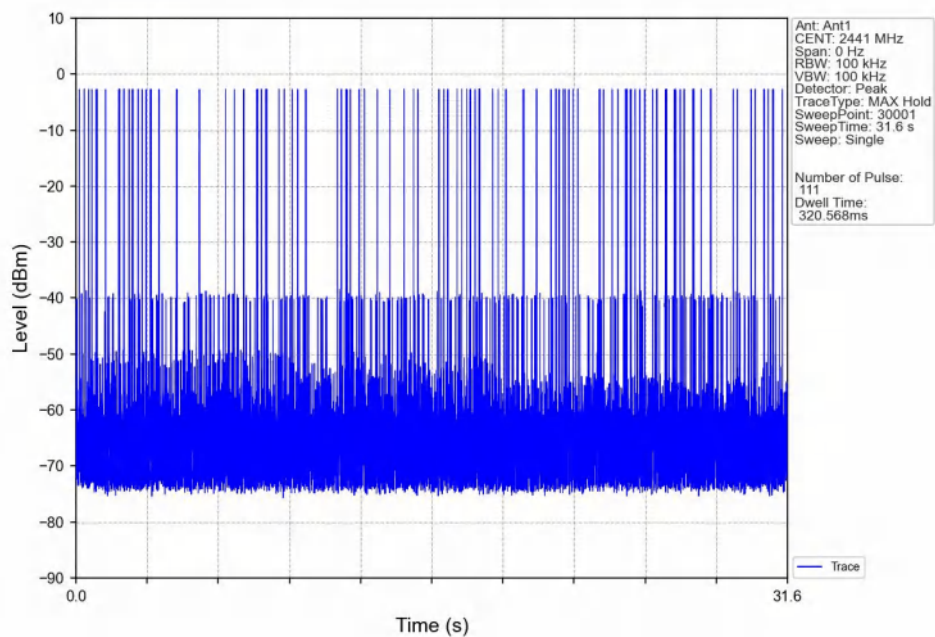




GFSK_DH5_HOPP_Ant1_NTNV

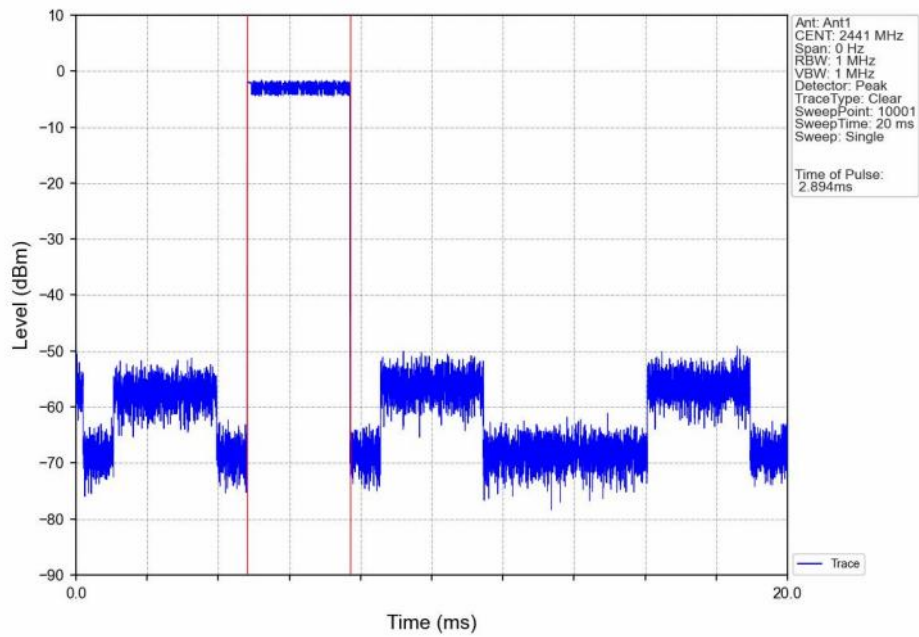


GFSK_DH5_HOPP_Ant1_NTNV

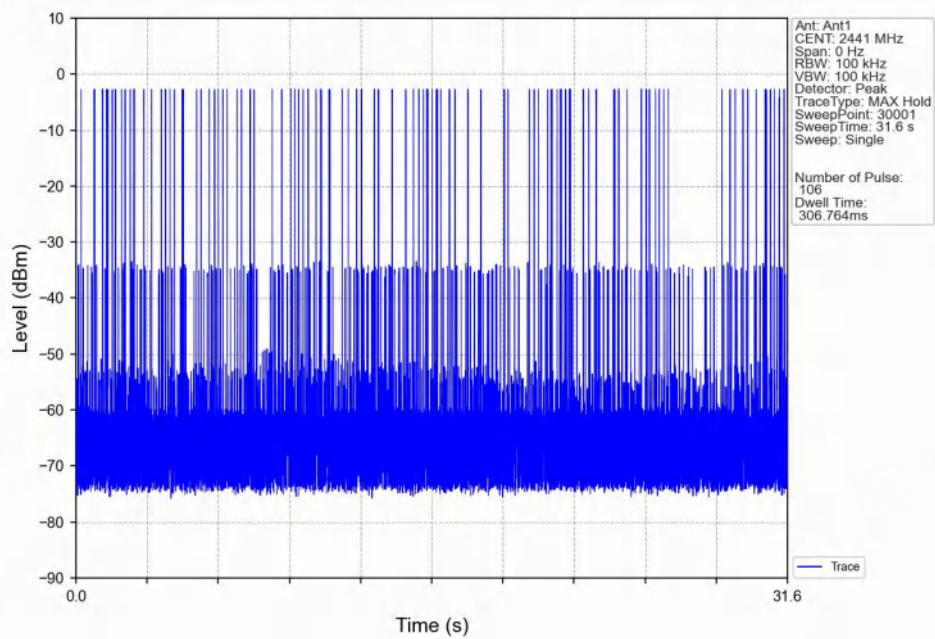




Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV

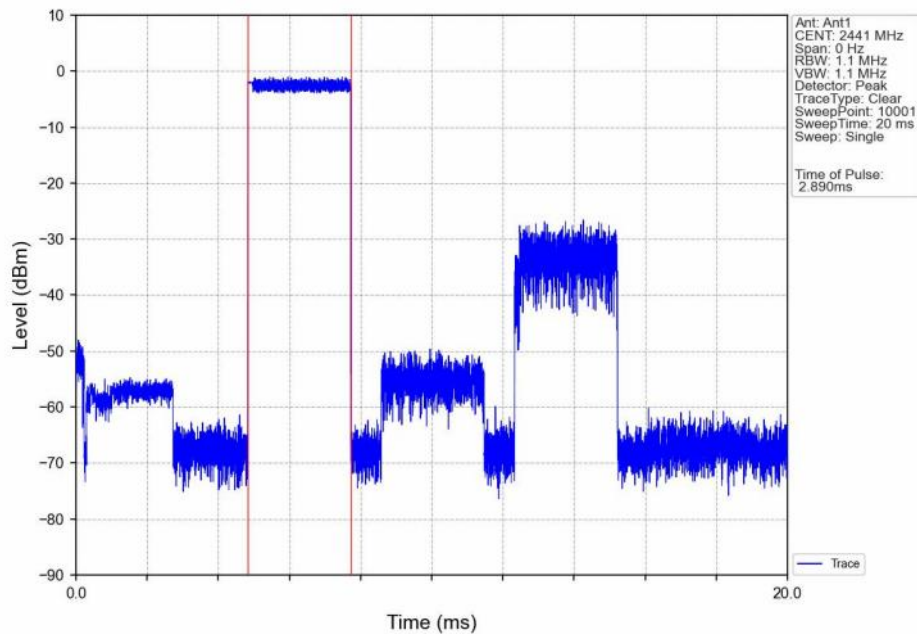


Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV

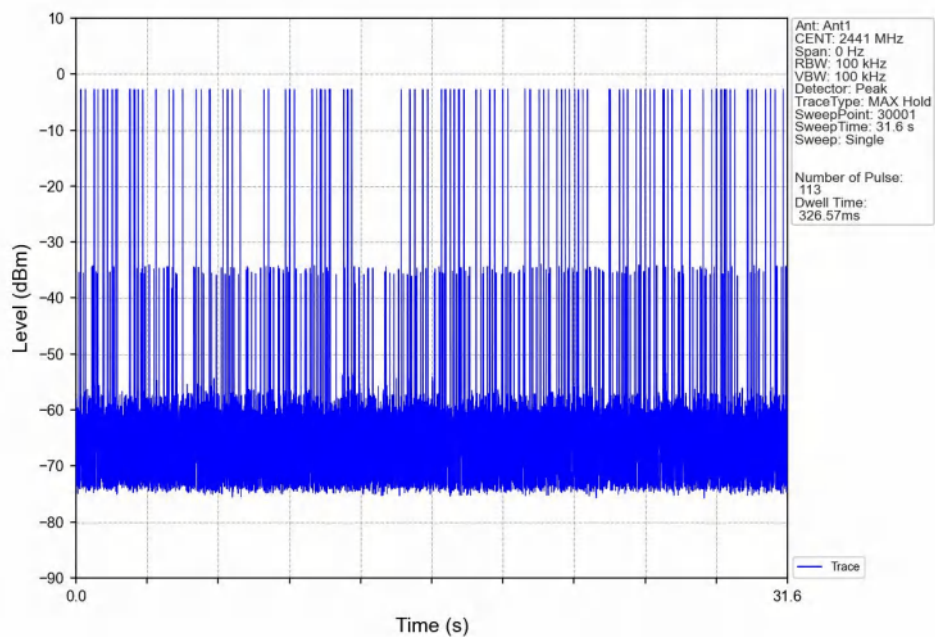




8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV





A.5 Number of Hopping Channel

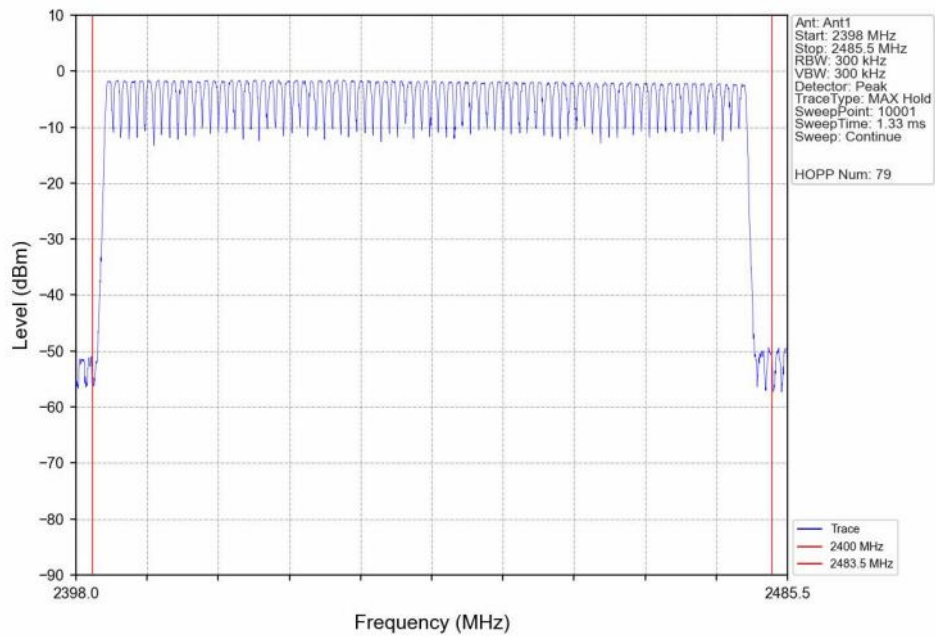
Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	≥ 15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	≥ 15	Pass
8DPSK	SISO	HOPP	3DH5	79	≥ 15	Pass



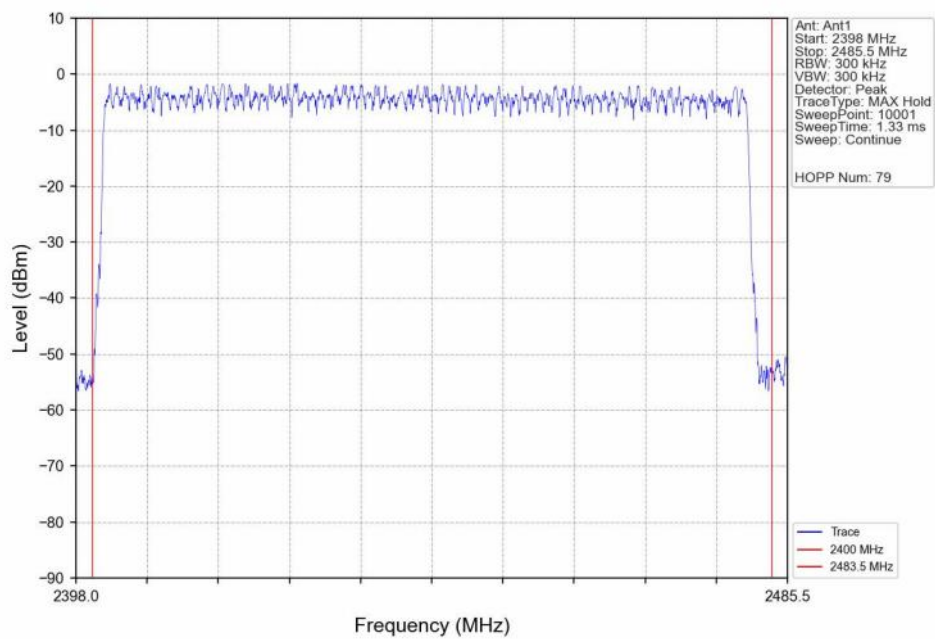
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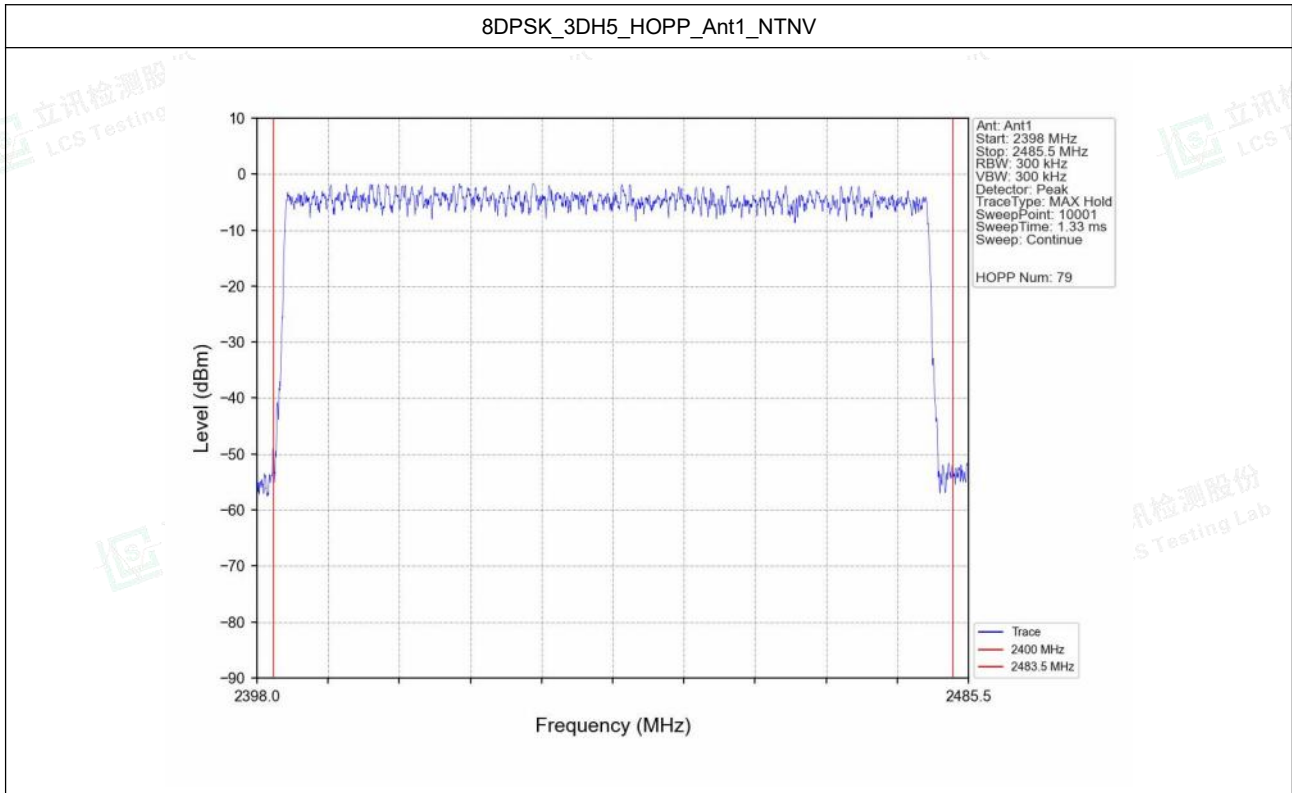


GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV







A.6 Band Edge

6.1 Test Result

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-2.13	-22.13	Pass
		2441	DH5	1	-2.13	-22.13	Pass
		2480	DH5	1	-2.13	-22.13	Pass
		HOPP	DH5	1	-2.13	-22.13	Pass
					-2.13	-22.13	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-1.99	-21.99	Pass
		2441	2DH5	1	-1.99	-21.99	Pass
		2480	2DH5	1	-1.99	-21.99	Pass
		HOPP	2DH5	1	-1.99	-21.99	Pass
					-1.99	-21.99	Pass
8DPSK	SISO	2402	3DH5	1	-1.97	-21.97	Pass
		2441	3DH5	1	-1.97	-21.97	Pass
		2480	3DH5	1	-1.97	-21.97	Pass
		HOPP	3DH5	1	-1.97	-21.97	Pass
					-1.97	-21.97	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

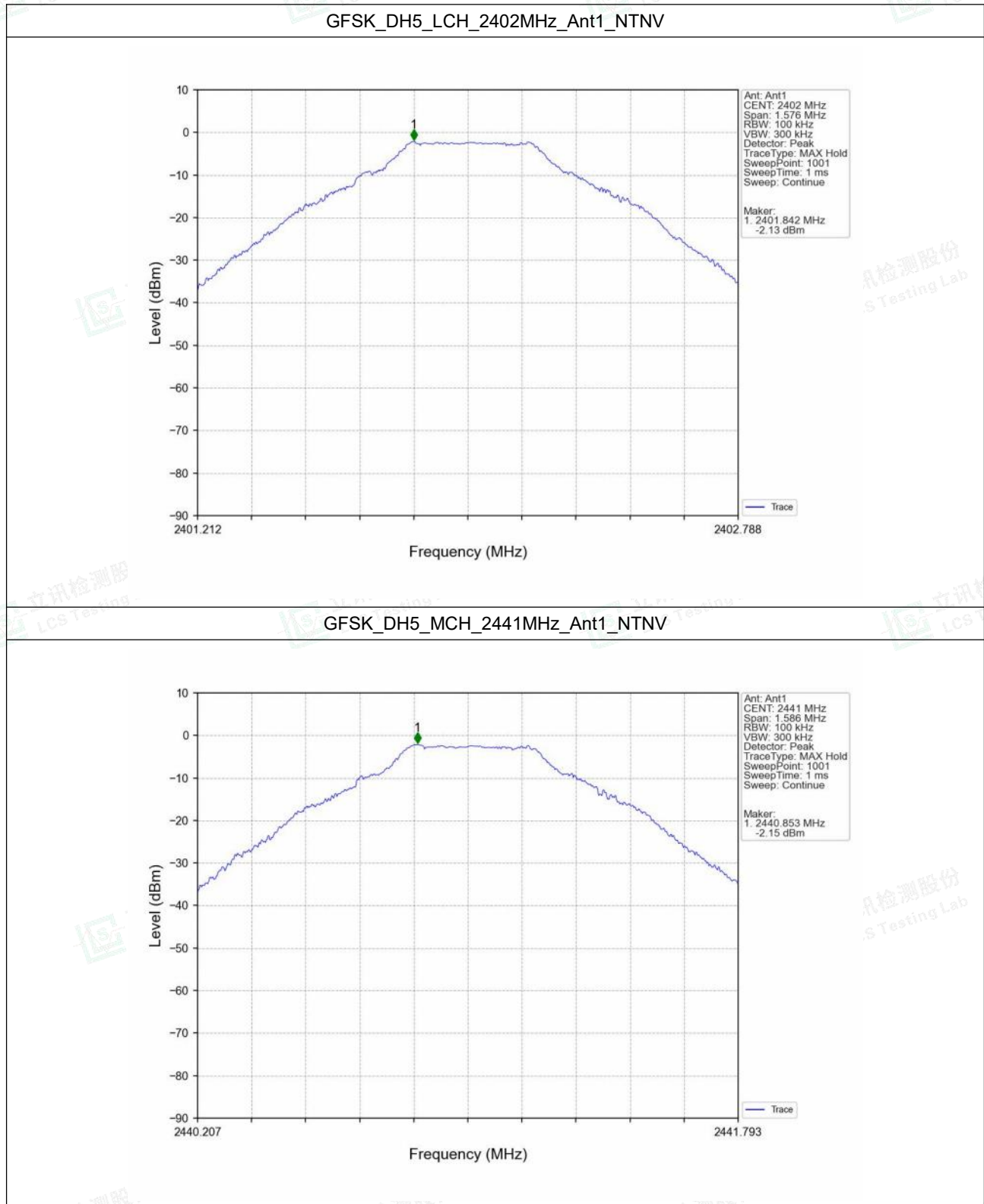


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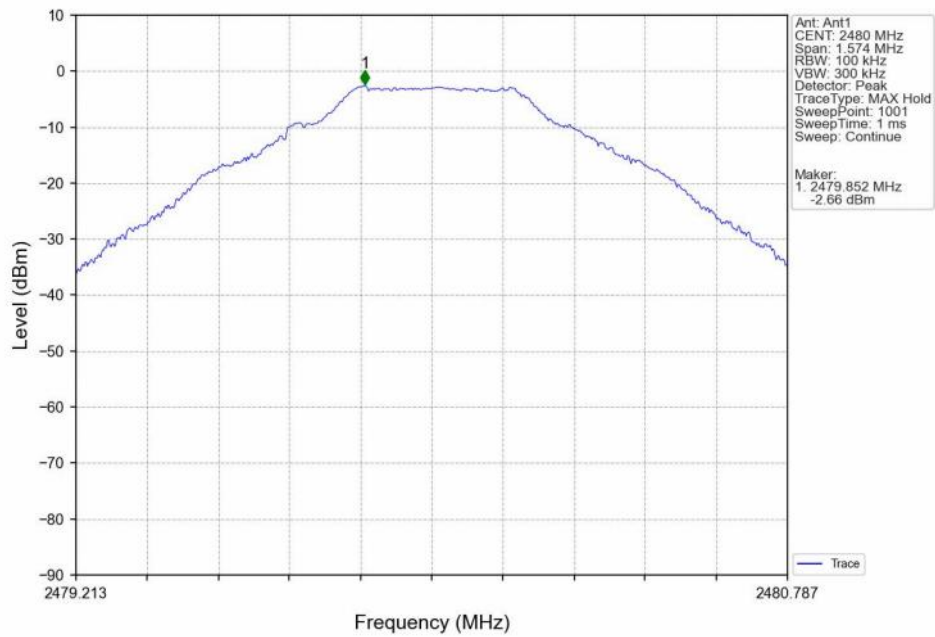
6.2 Test Graph

6.2.1 Ref

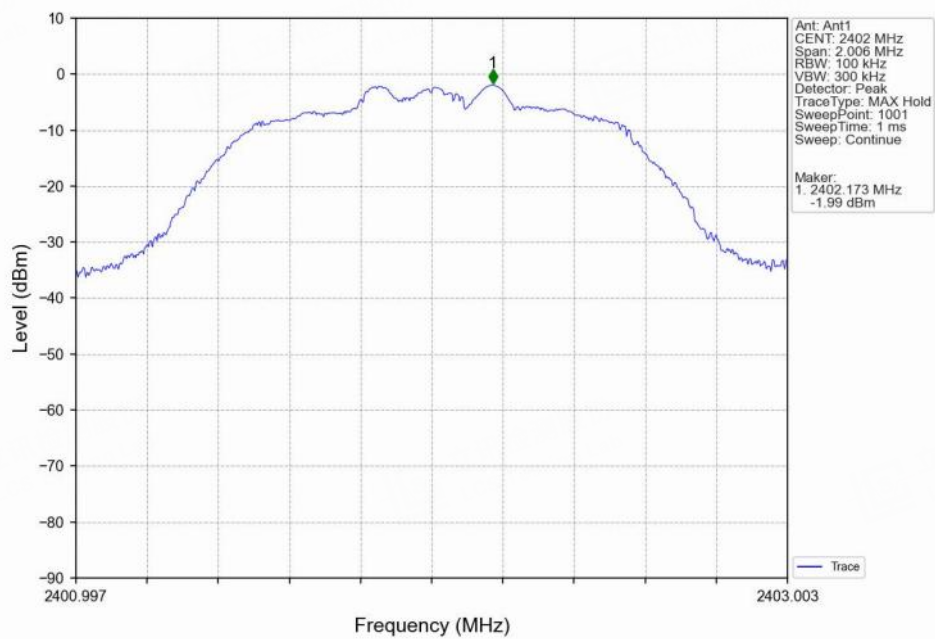




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

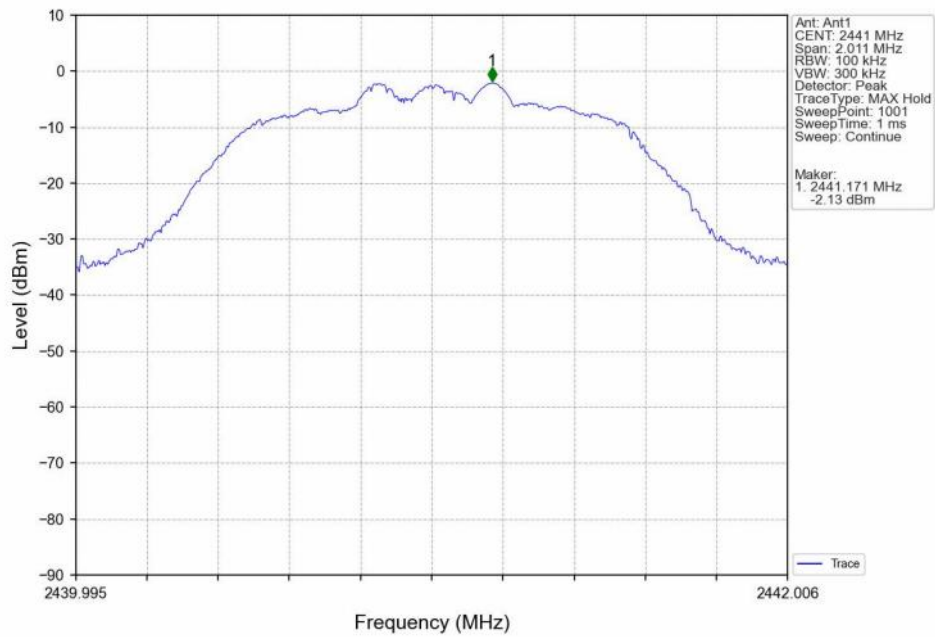


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

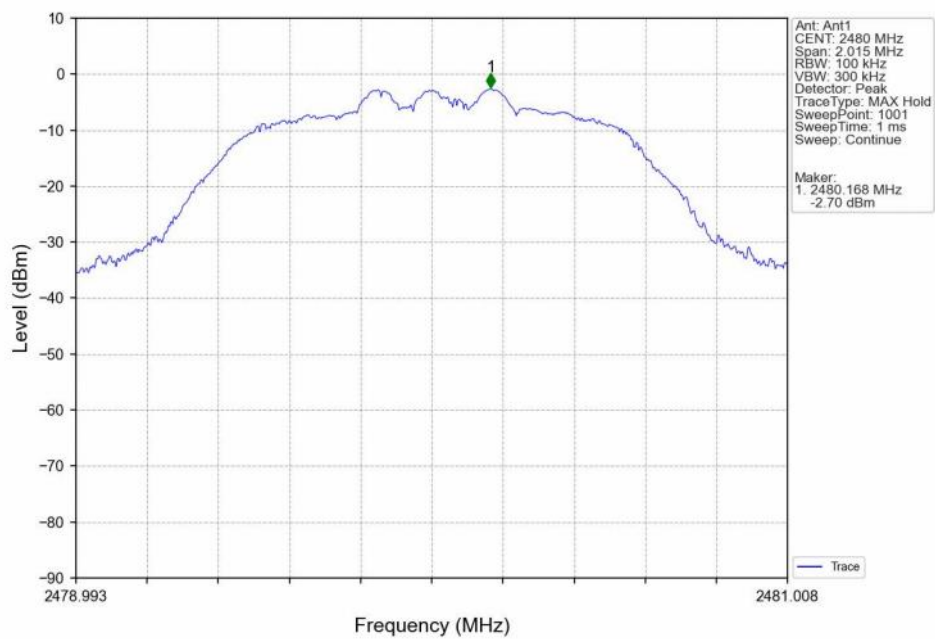




Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

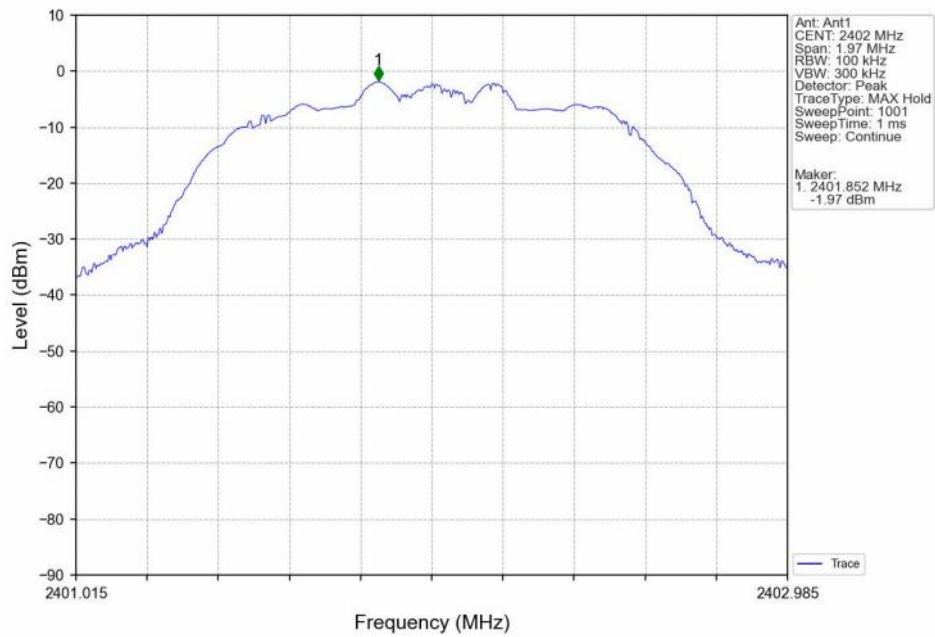


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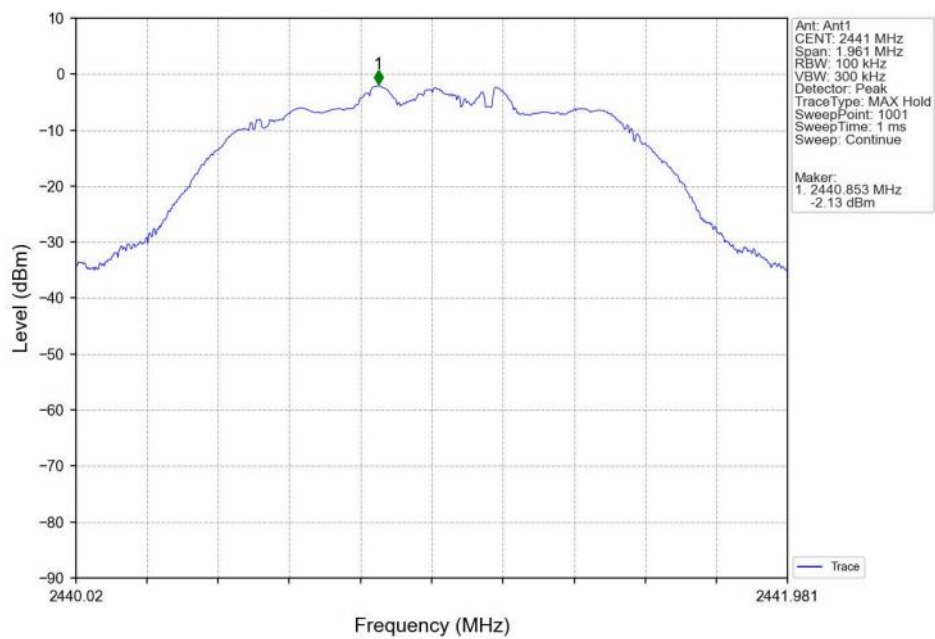


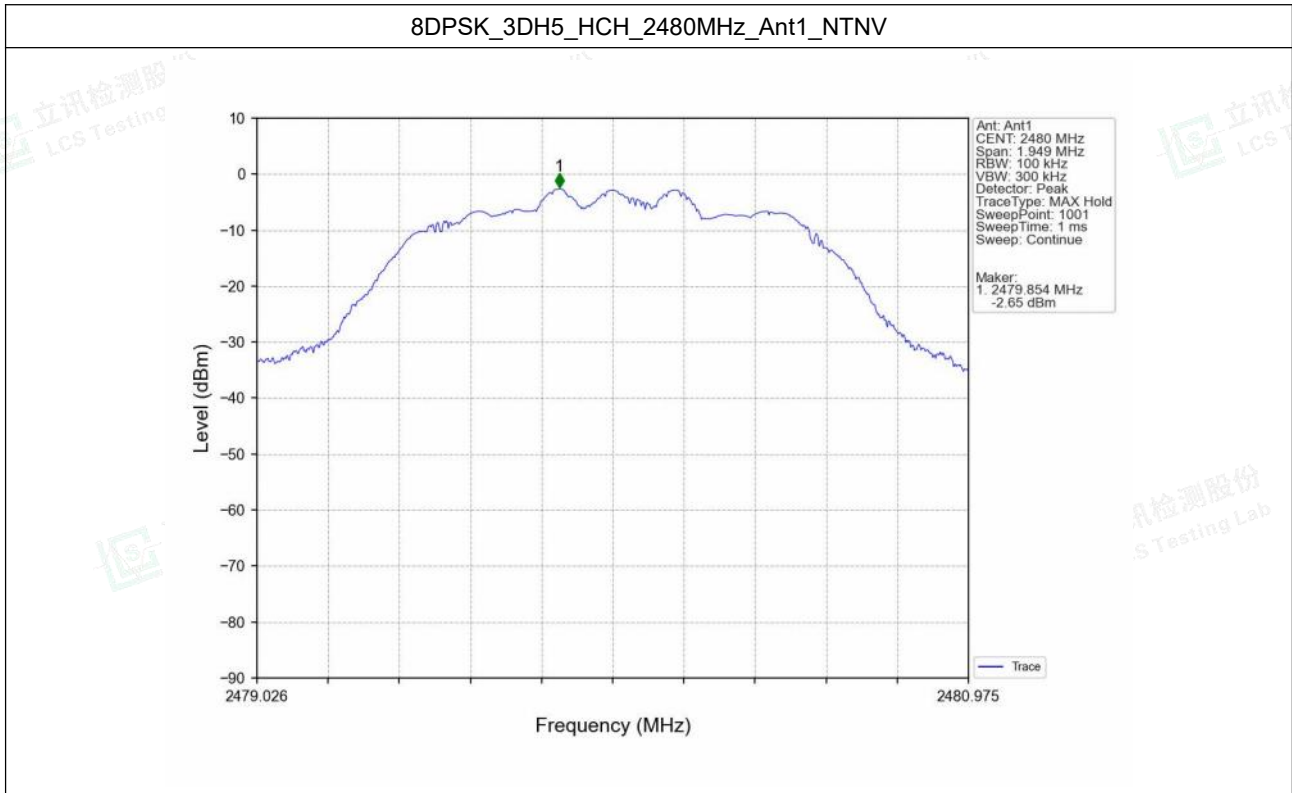


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



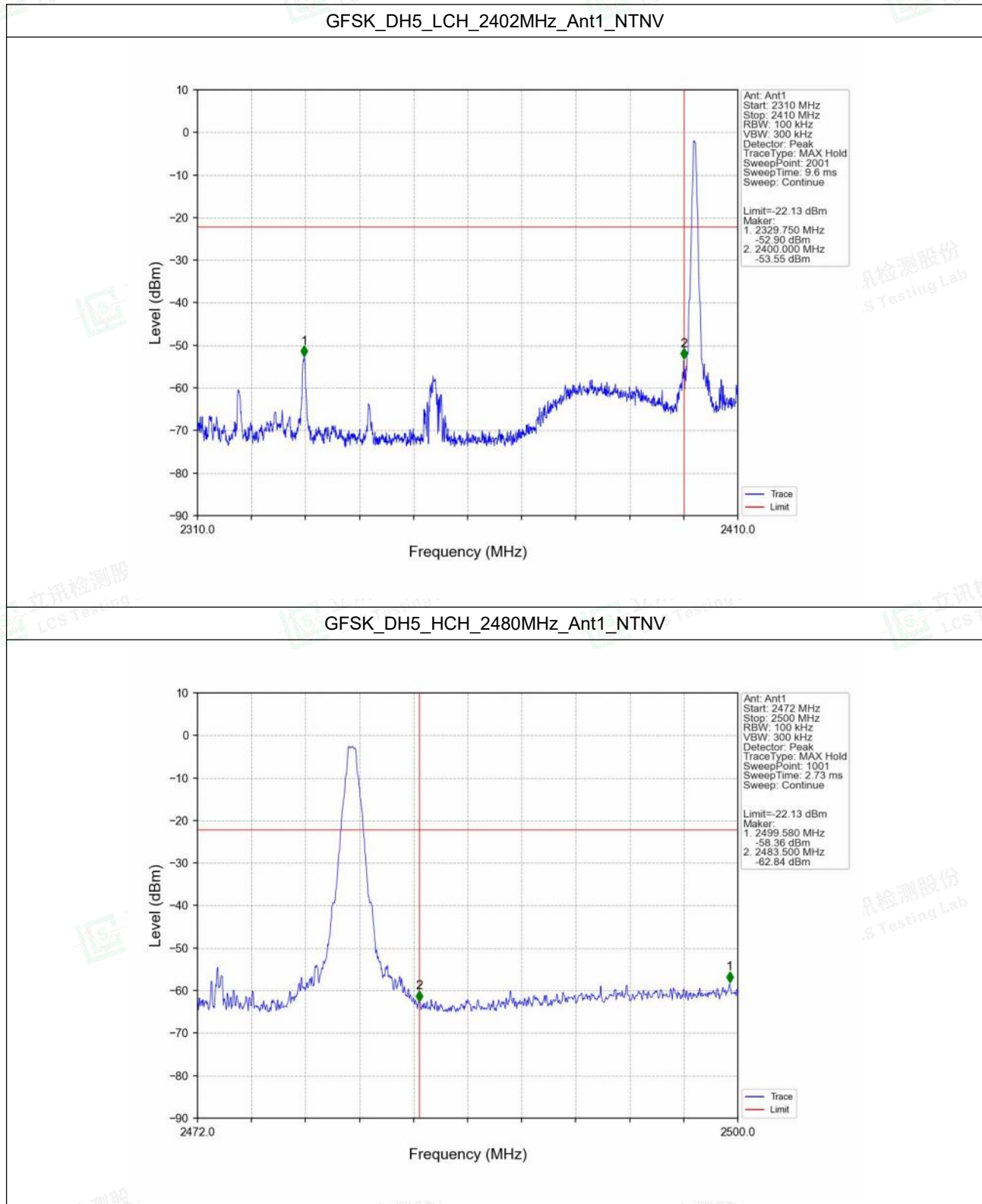
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





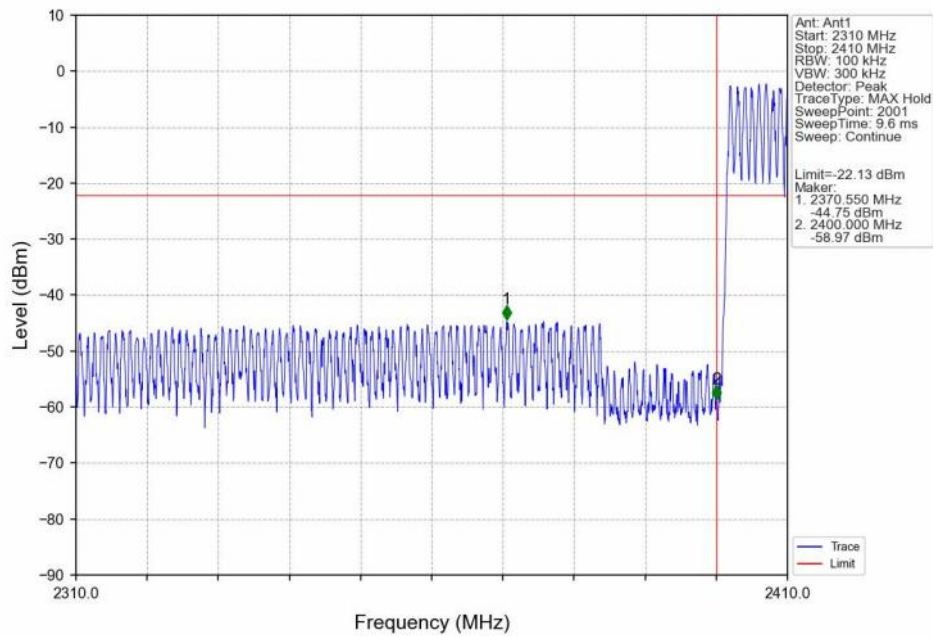


6.2.2 Band Edge

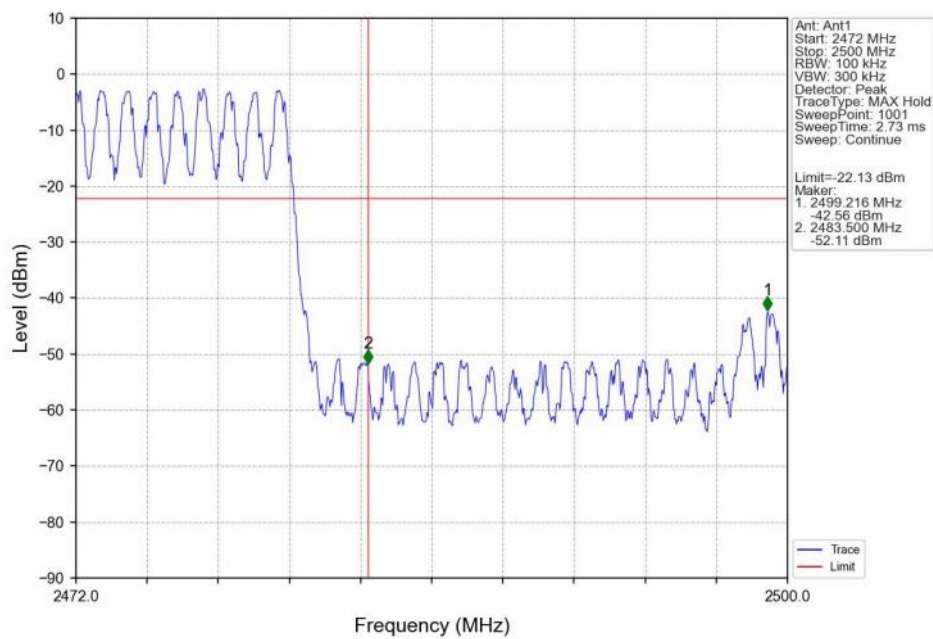




GFSK_DH5_HOPP_Ant1_NTNV

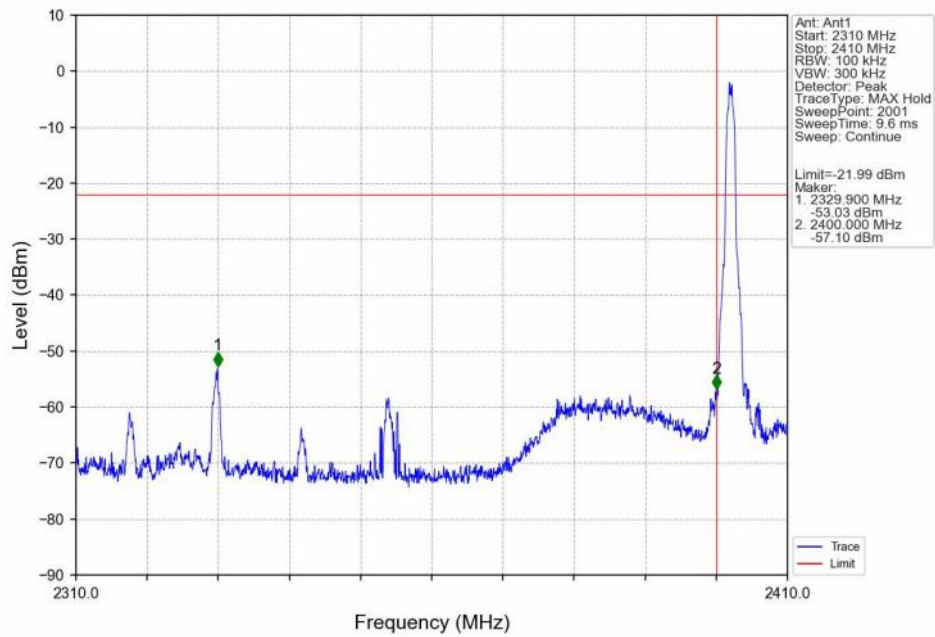


GFSK_DH5_HOPP_Ant1_NTNV

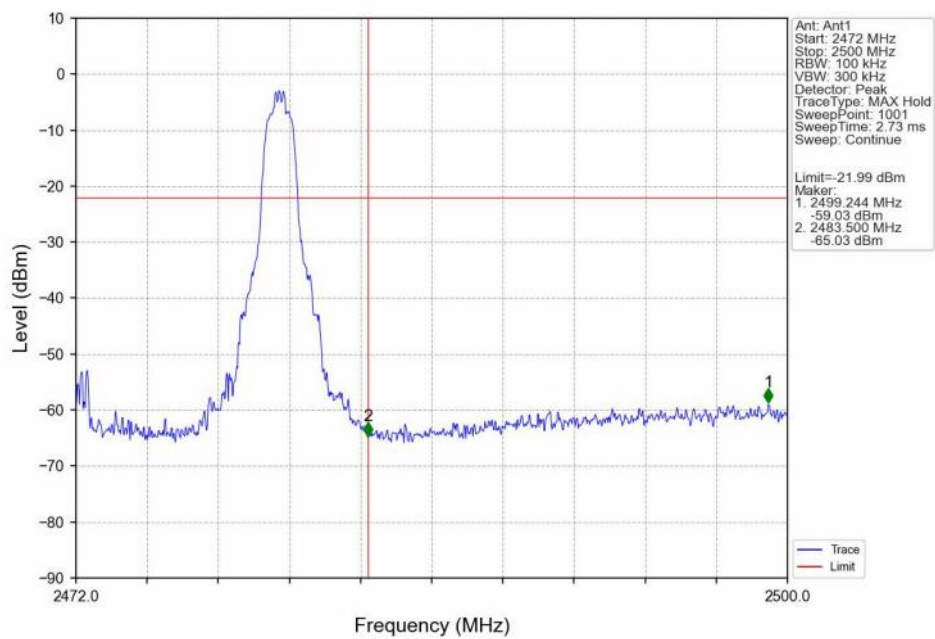




Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

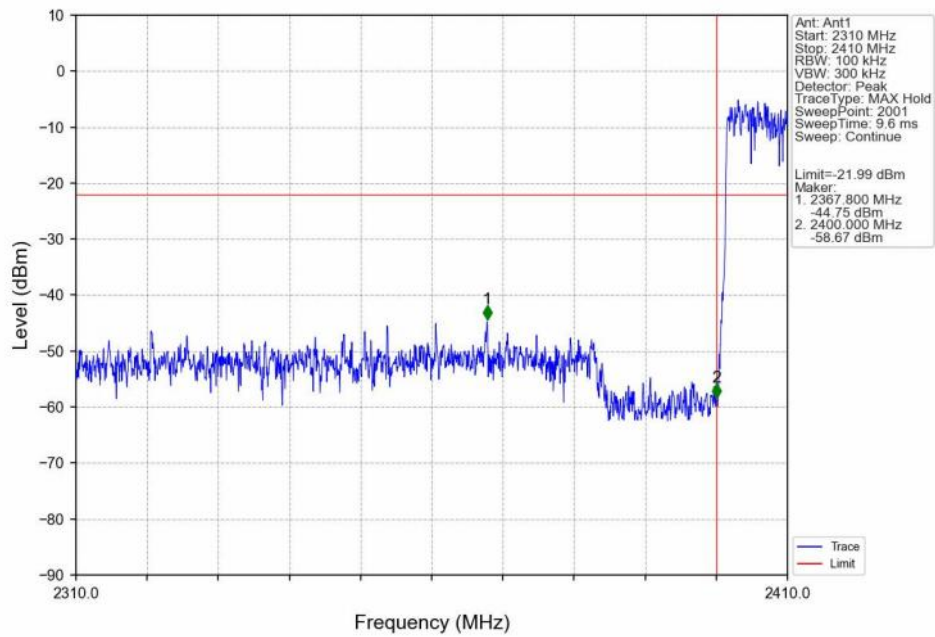


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

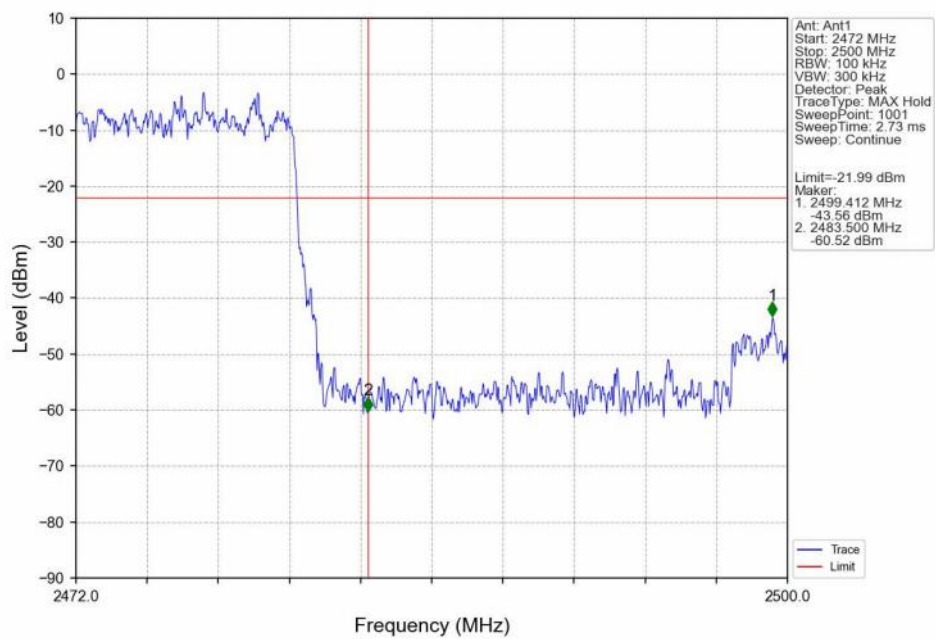




Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV

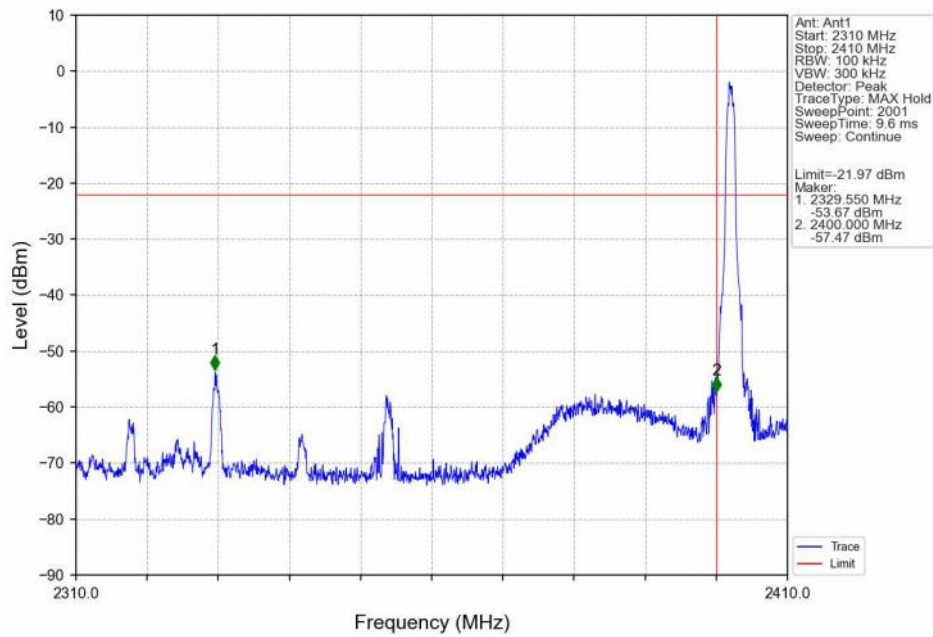


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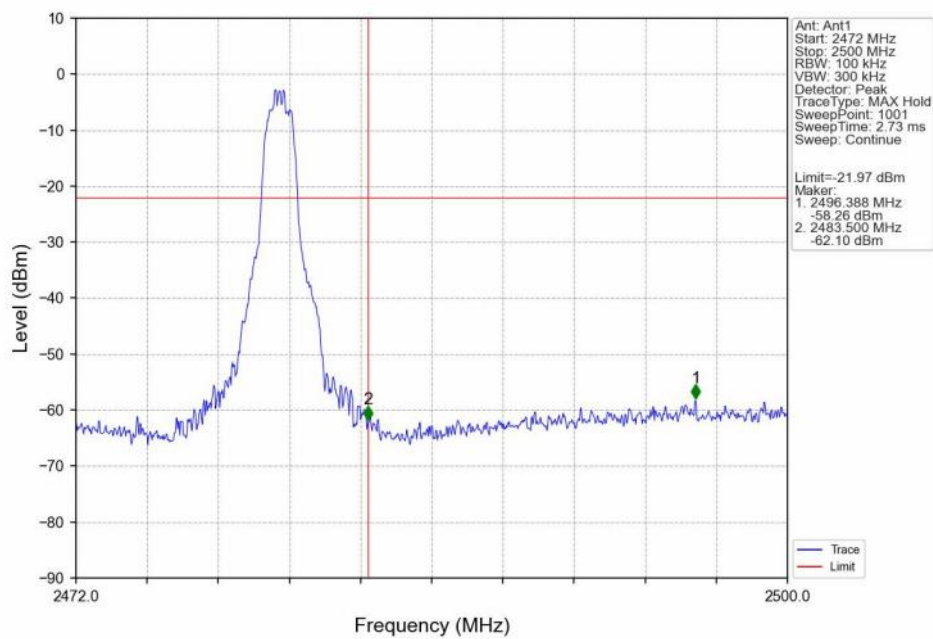




8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

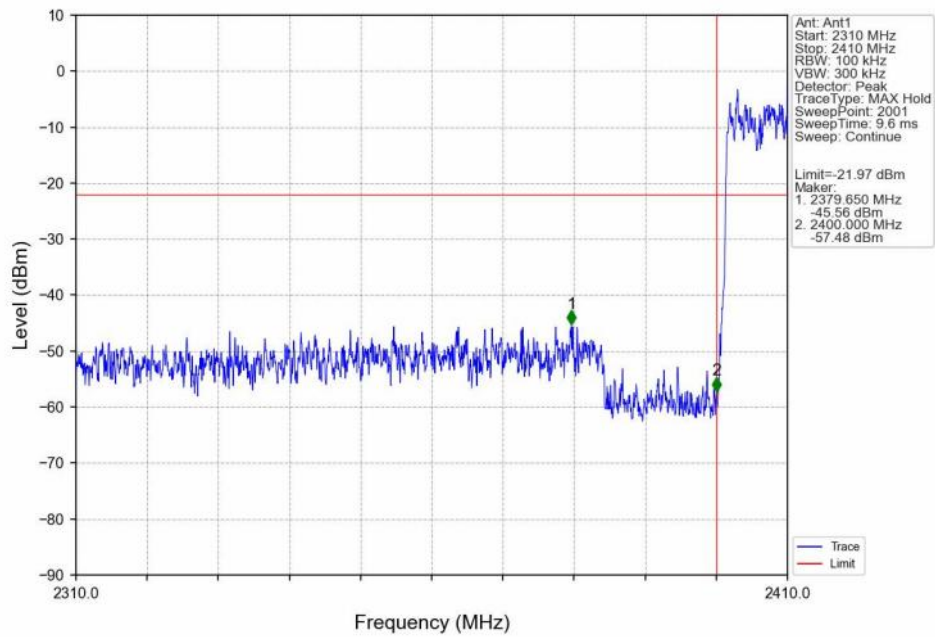


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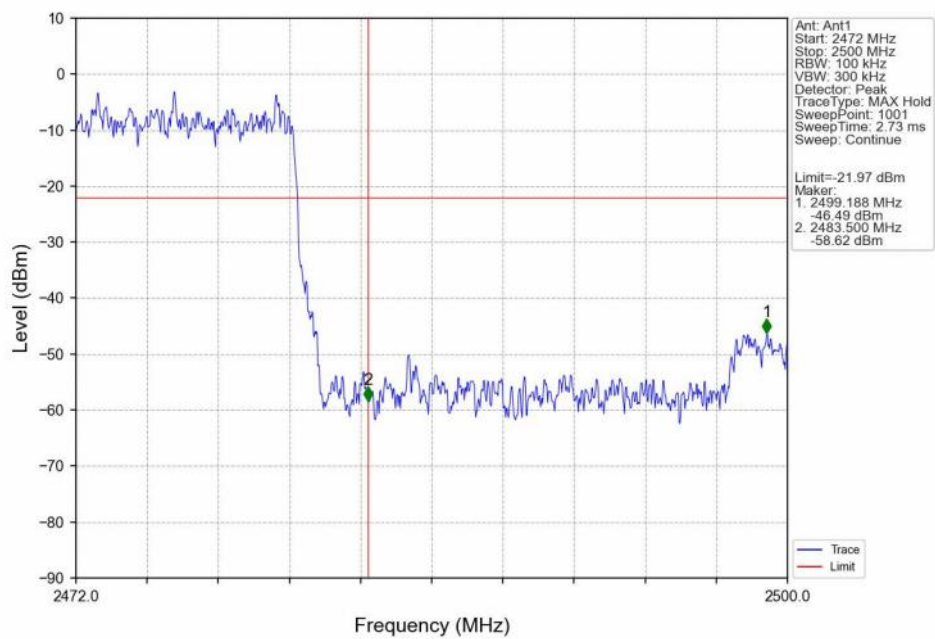




8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV





A.7 Conducted RF Spurious Emission

7.1.1 Ref

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-2.13
		2441	DH5	1	-2.15
		2480	DH5	1	-2.66
Pi/4DQPSK	SISO	2402	2DH5	1	-1.99
		2441	2DH5	1	-2.13
		2480	2DH5	1	-2.70
8DPSK	SISO	2402	3DH5	1	-1.97
		2441	3DH5	1	-2.13
		2480	3DH5	1	-2.65

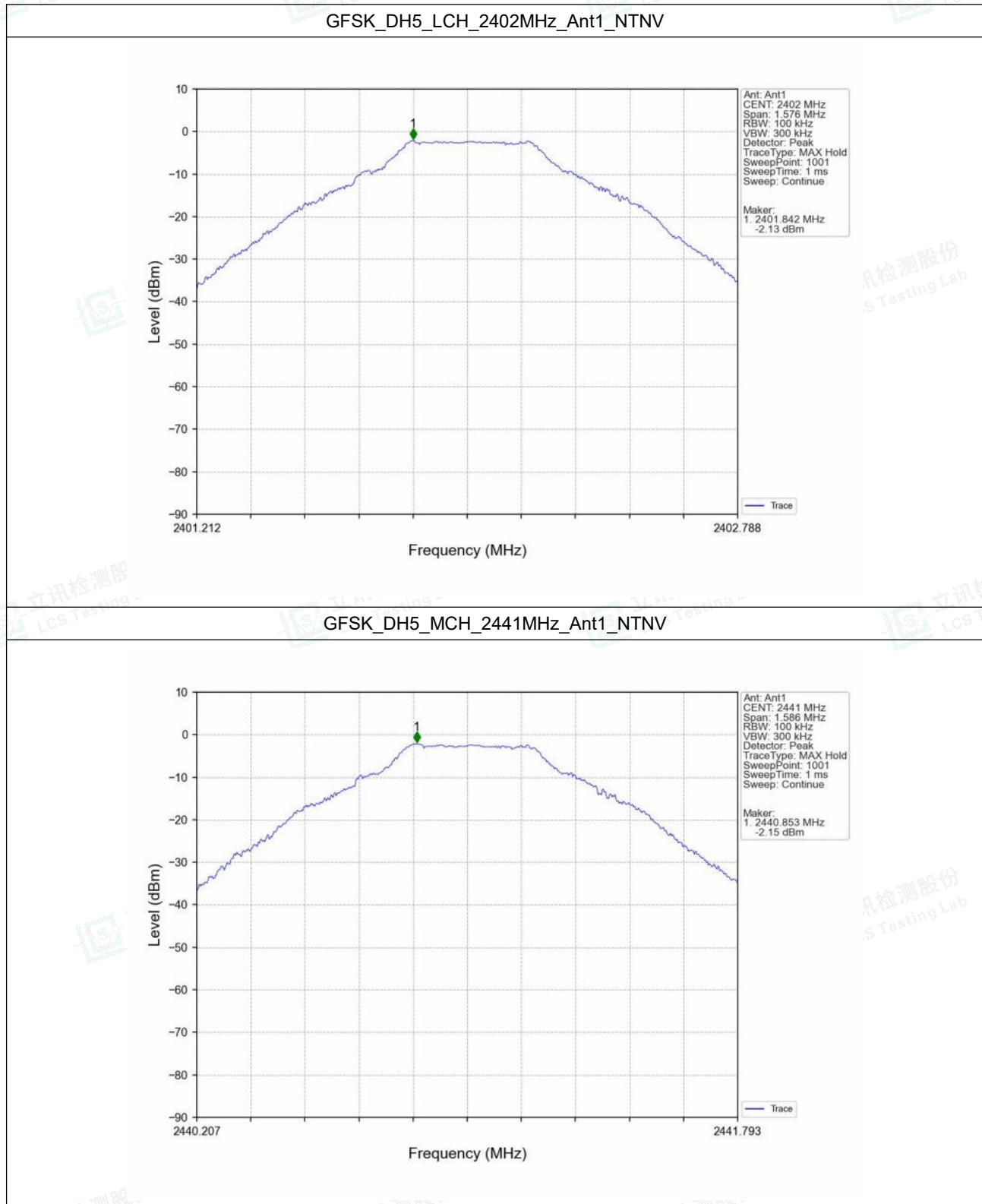
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.





7.2 Test Graph

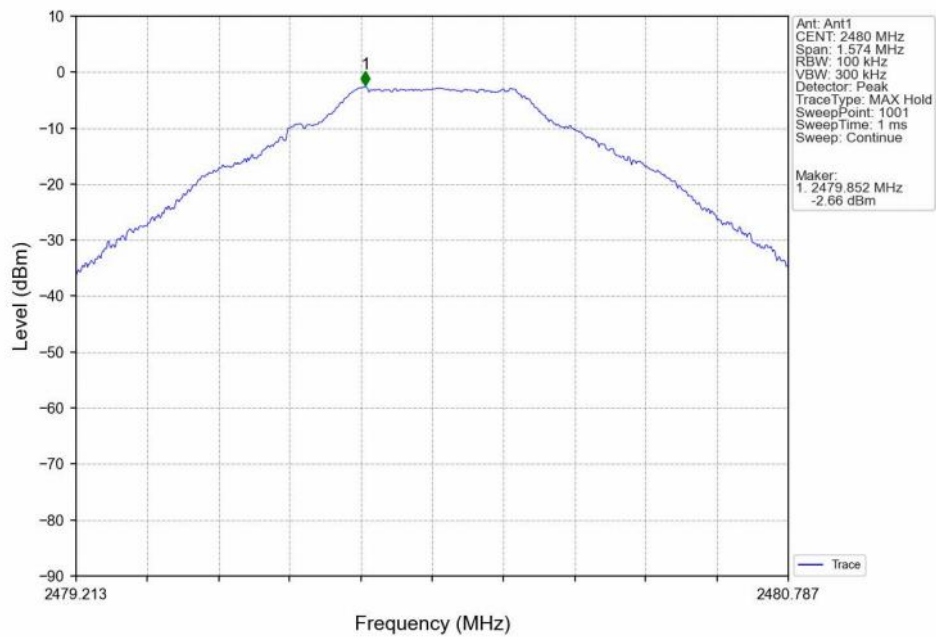
7.2.1 Ref



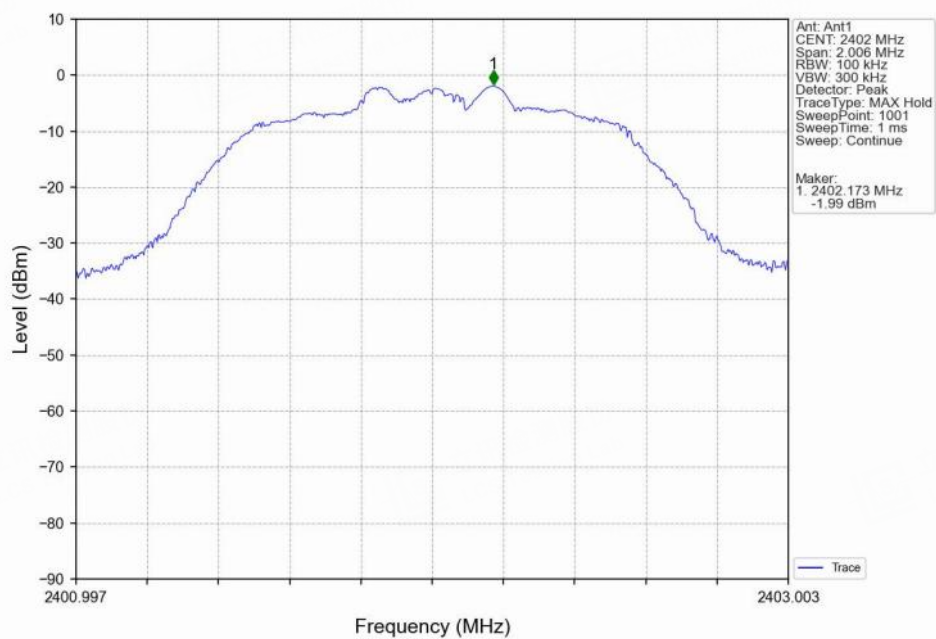
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GFSK_DH5_HCH_2480MHz_Ant1_NTNV

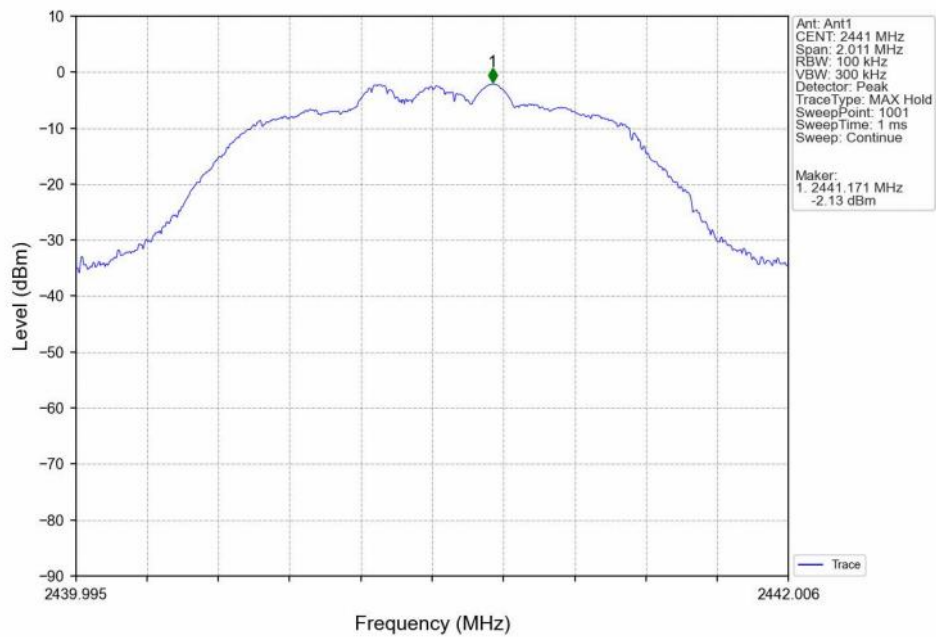


Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

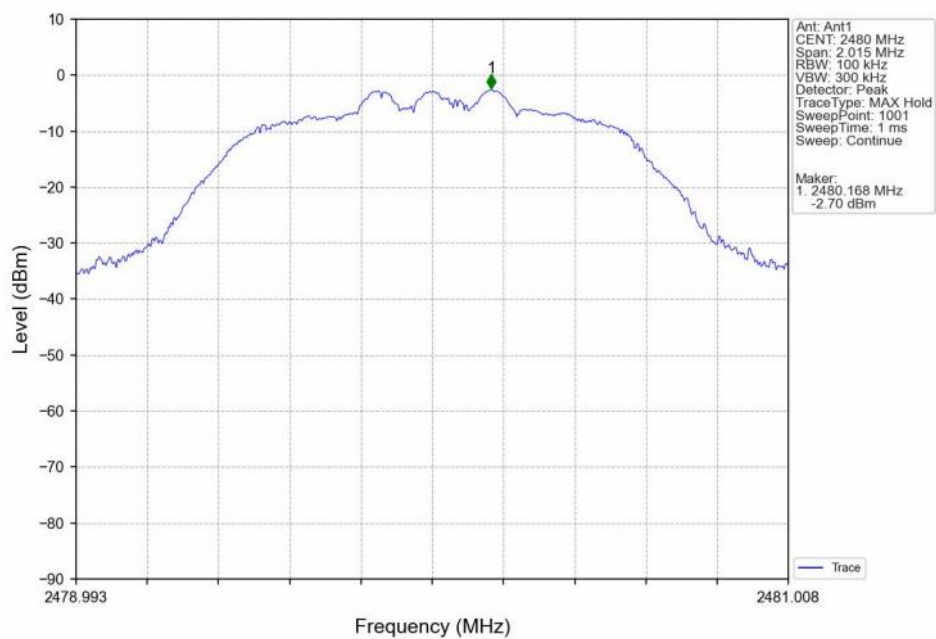




Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV

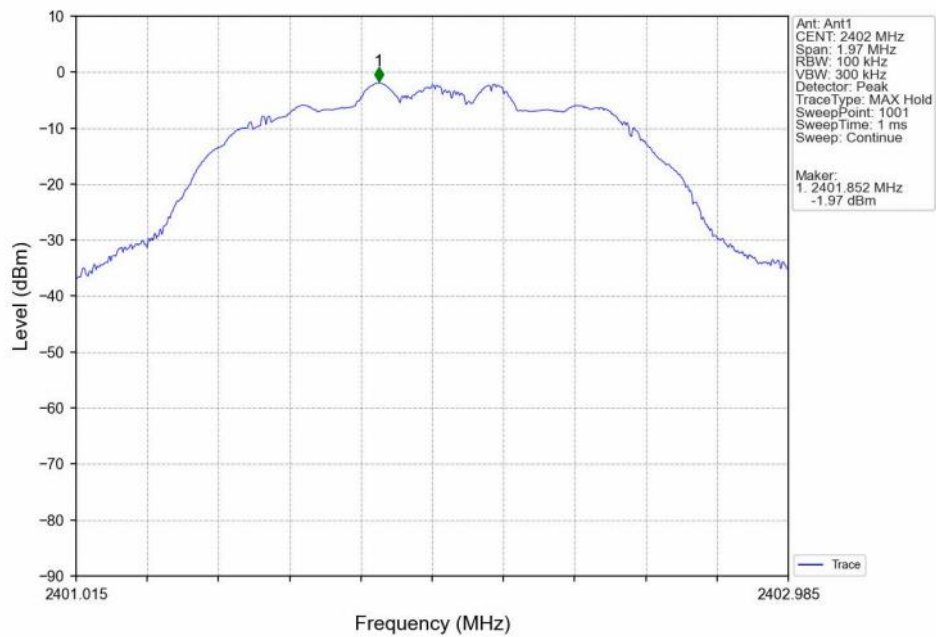


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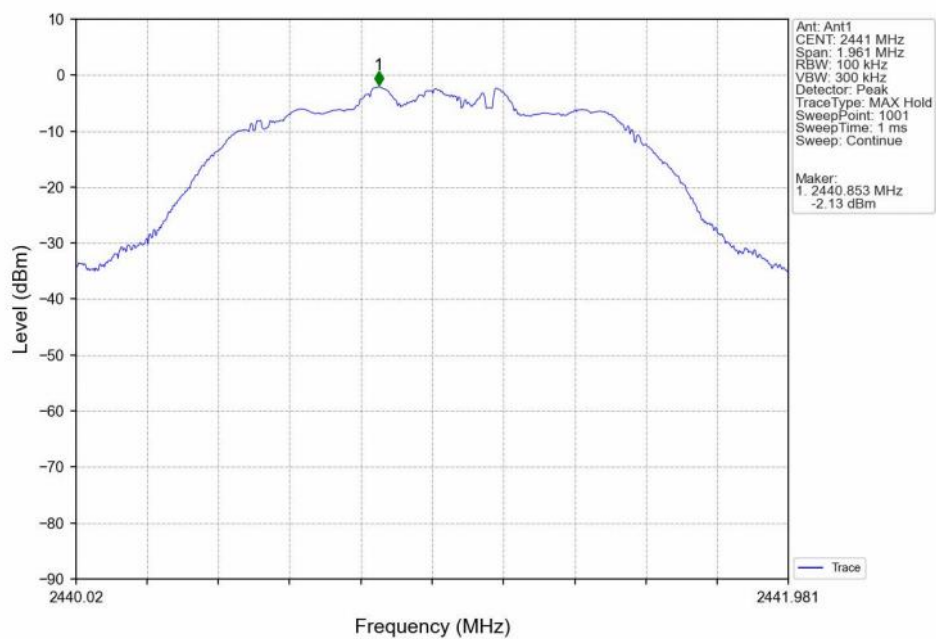


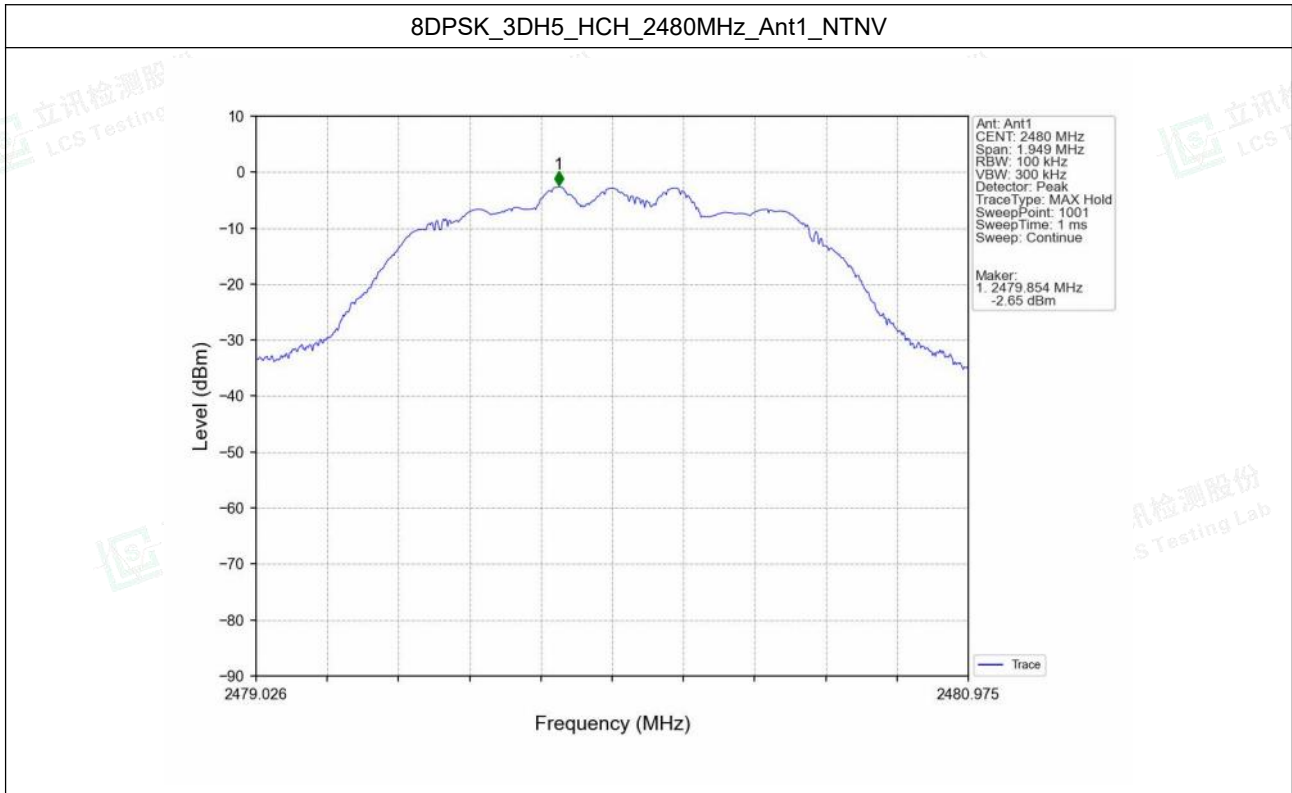


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



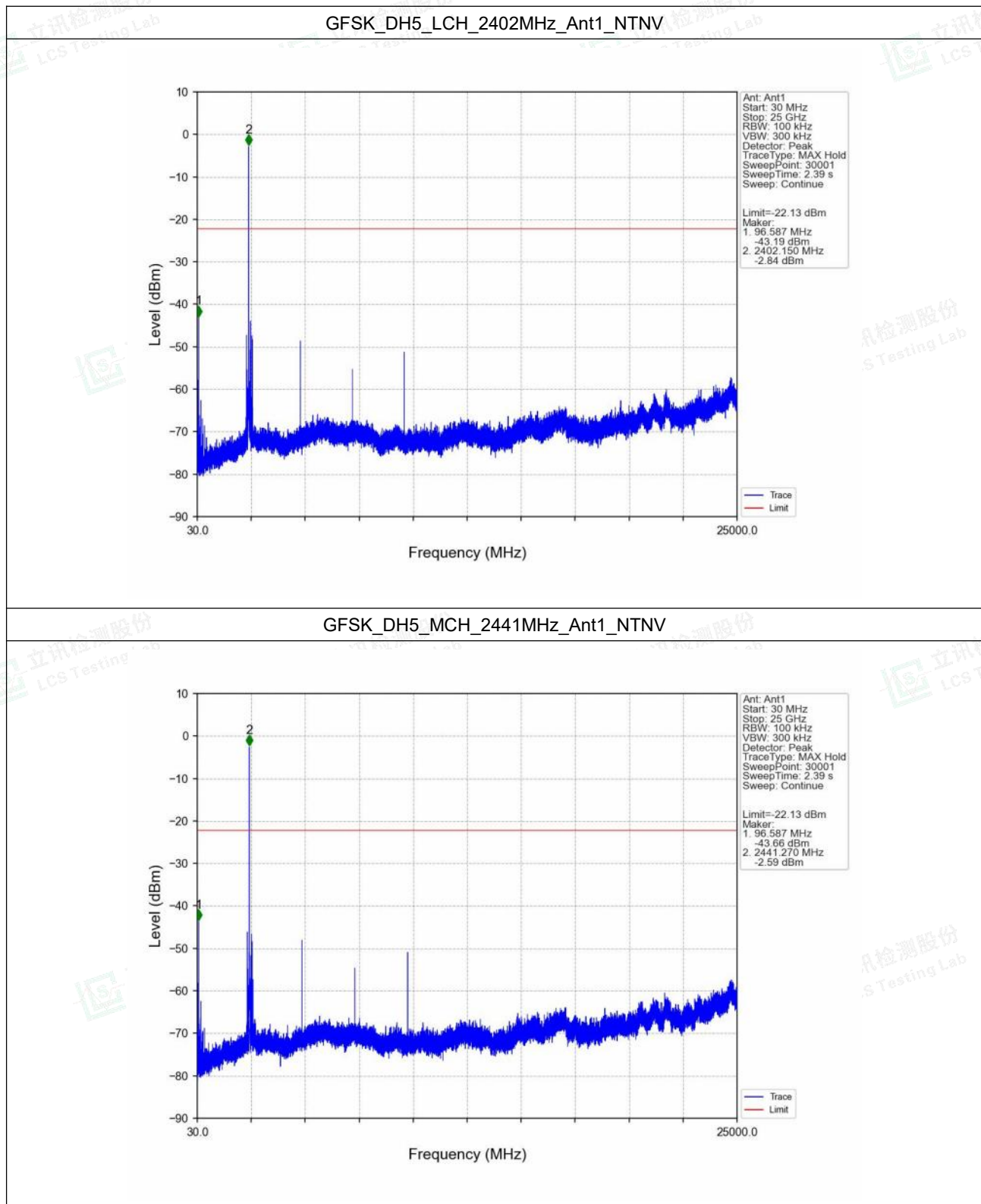
8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





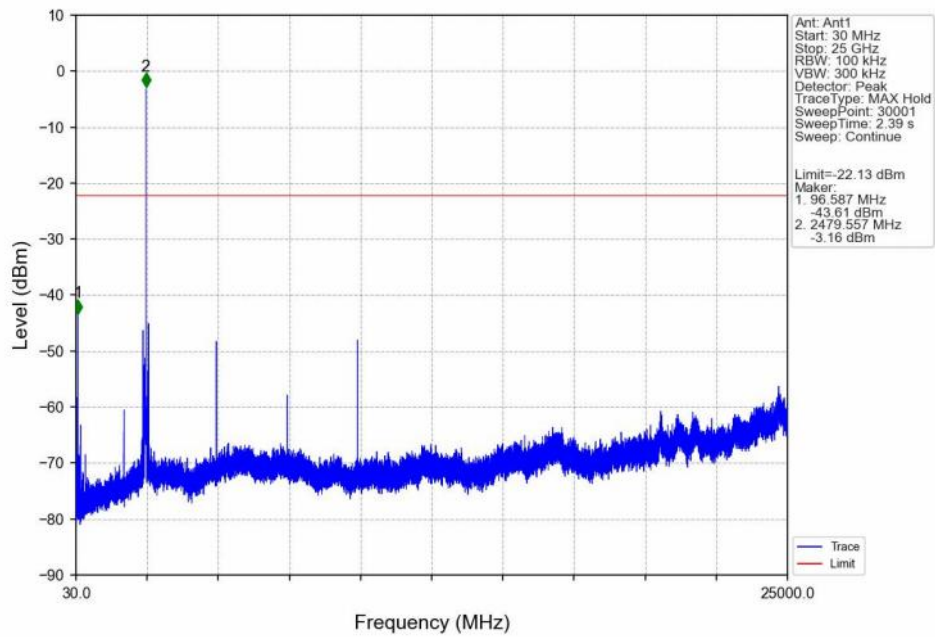


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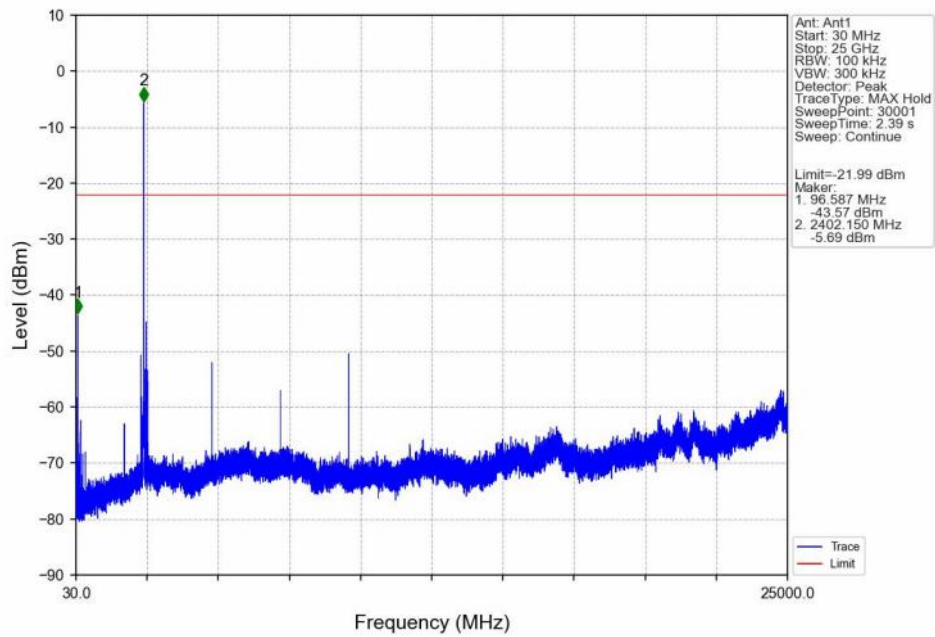


GFSK_DH5_HCH_2480MHz_Ant1_NTNV

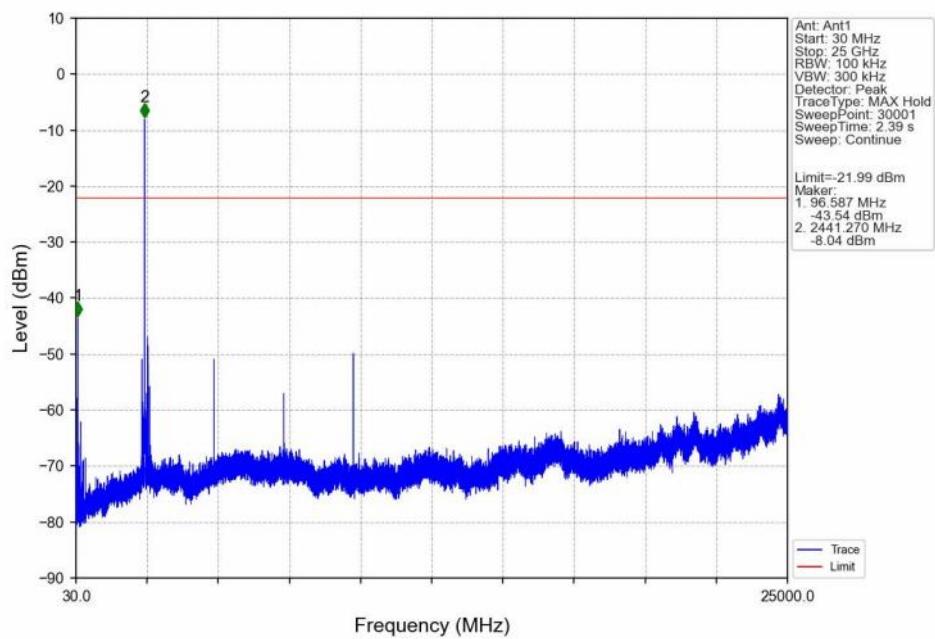




Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV

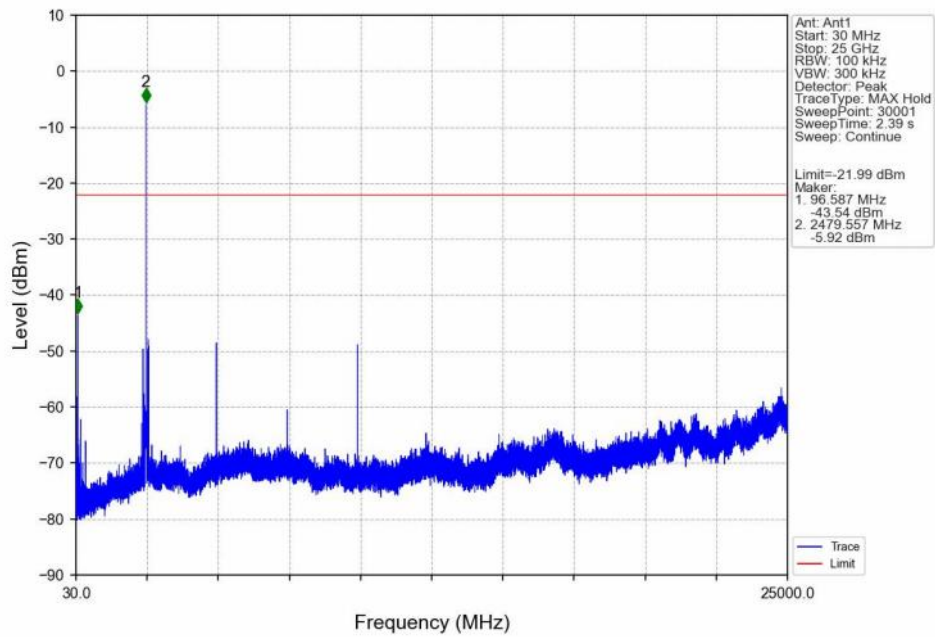


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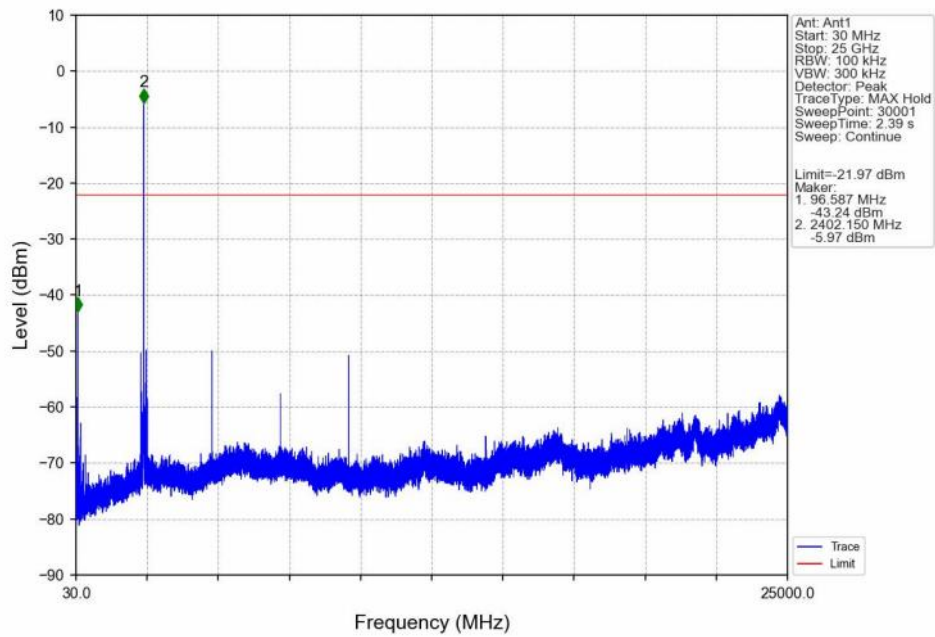


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

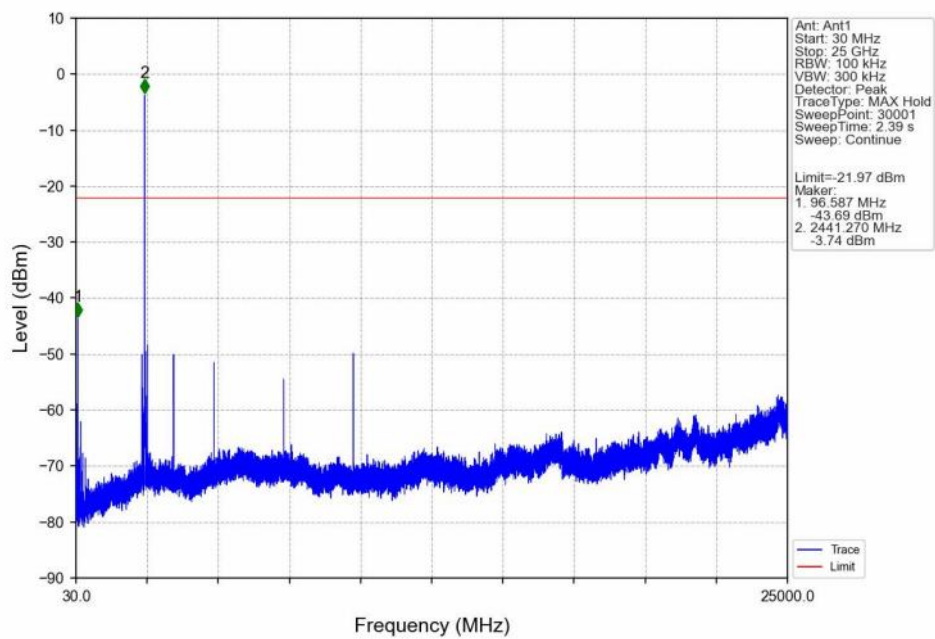




8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

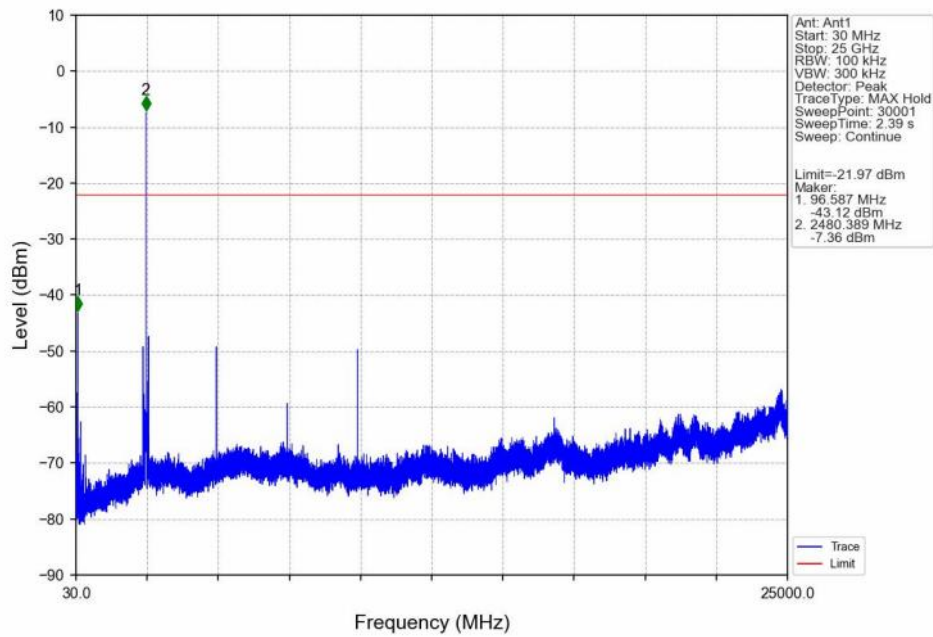


8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV





A.8 Duty Cycle

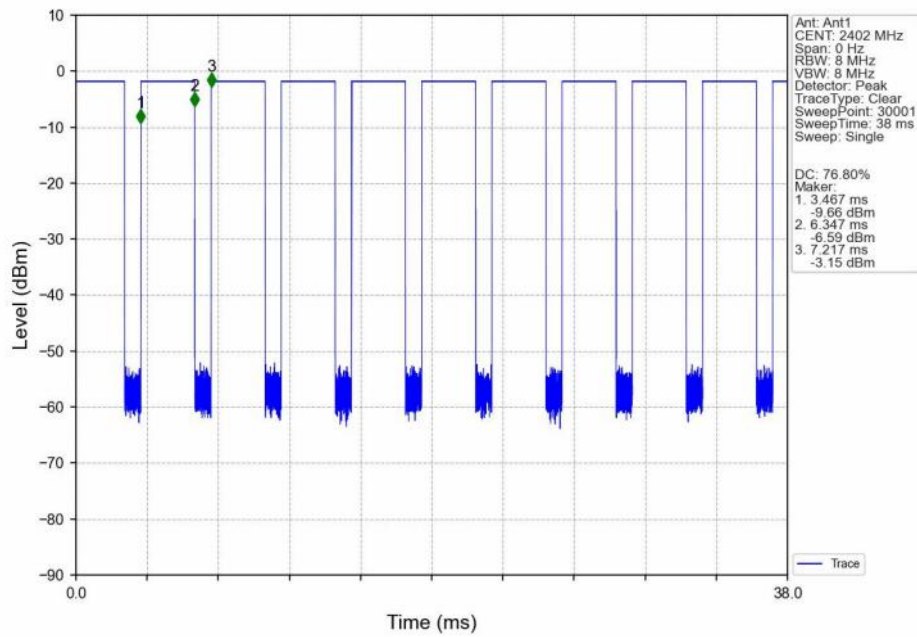
Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.880	3.750	76.80	1.15	0.03
		2441	DH5	2.879	3.749	76.79	1.15	0.03
		2480	DH5	2.887	3.750	76.99	1.14	0.01
Pi/4DQPSK	SISO	2402	2DH5	2.887	3.751	76.97	1.14	0.03
		2441	2DH5	2.886	3.750	76.96	1.14	0.01
		2480	2DH5	2.886	3.750	76.96	1.14	0.03
8DPSK	SISO	2402	3DH5	2.888	3.751	76.99	1.14	0.03
		2441	3DH5	2.888	3.751	76.99	1.14	0.03
		2480	3DH5	2.888	3.751	76.99	1.14	0.03



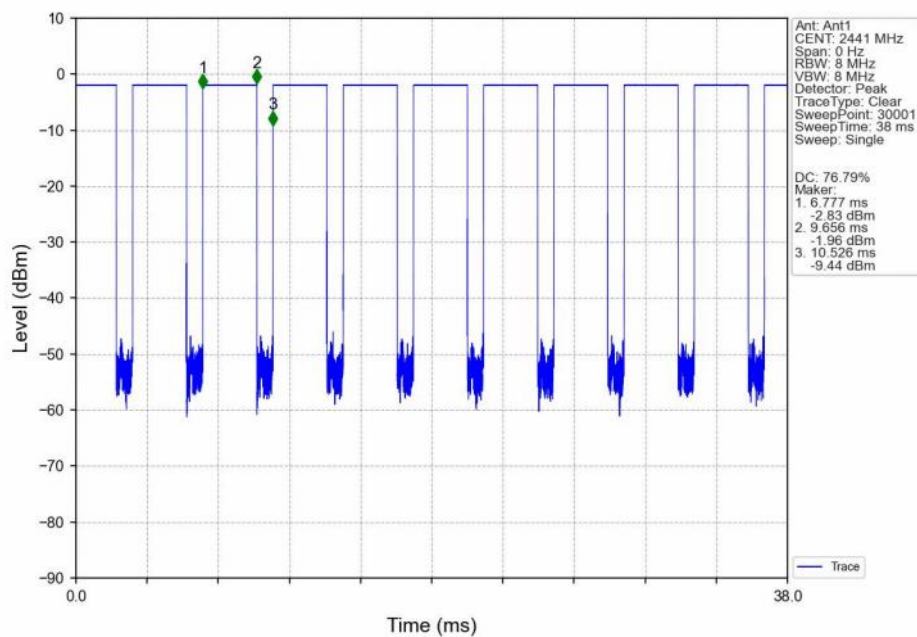
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Baoan District, Shenzhen, 518000, China
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GFSK_DH5_LCH_2402MHz_Ant1_NTNV

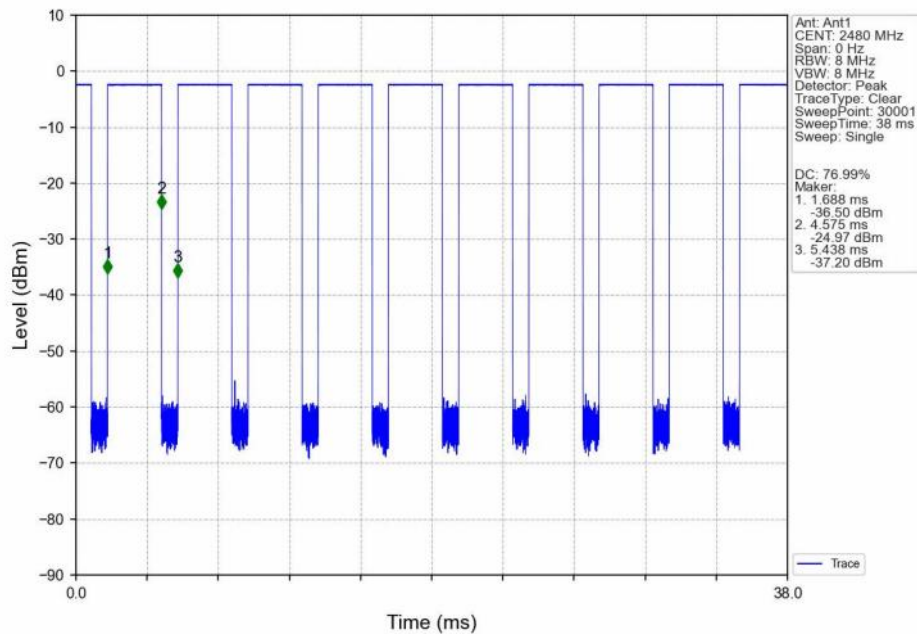


GFSK_DH5_MCH_2441MHz_Ant1_NTNV

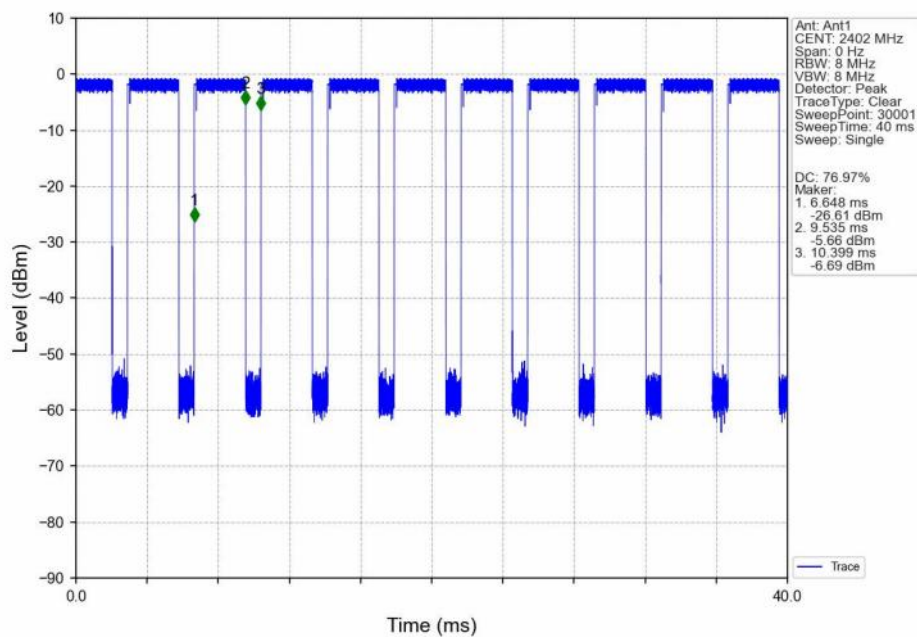




GFSK_DH5_HCH_2480MHz_Ant1_NTNV

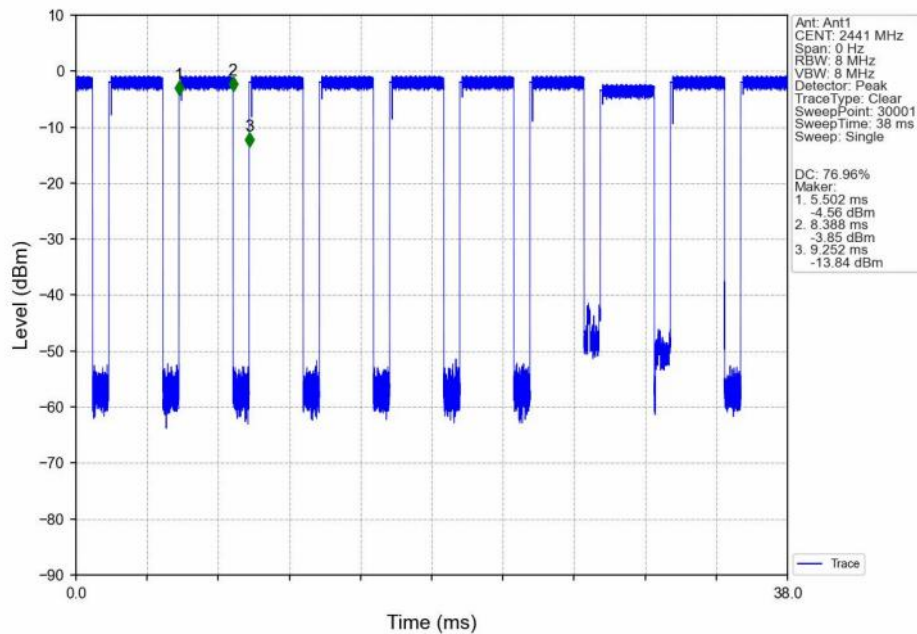


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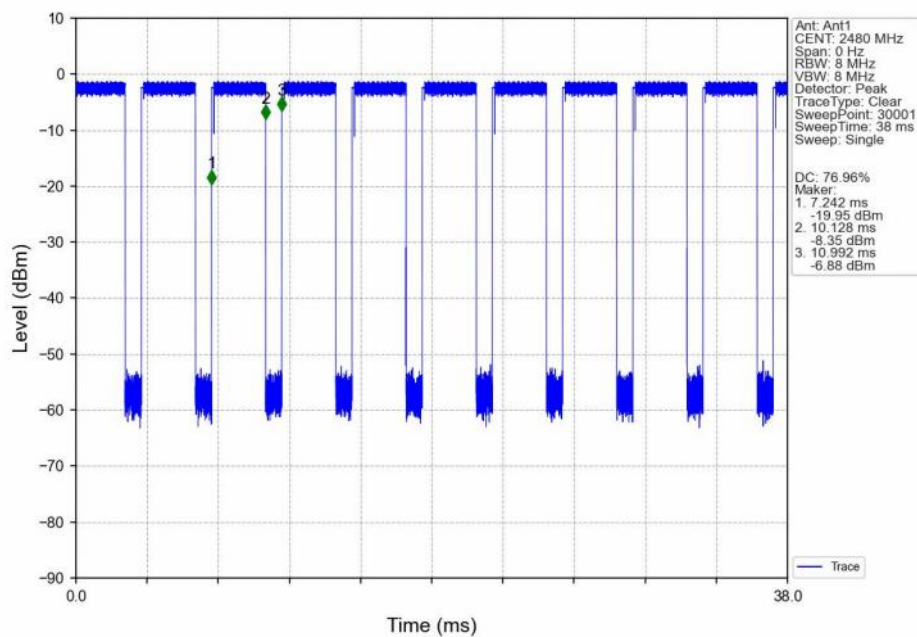




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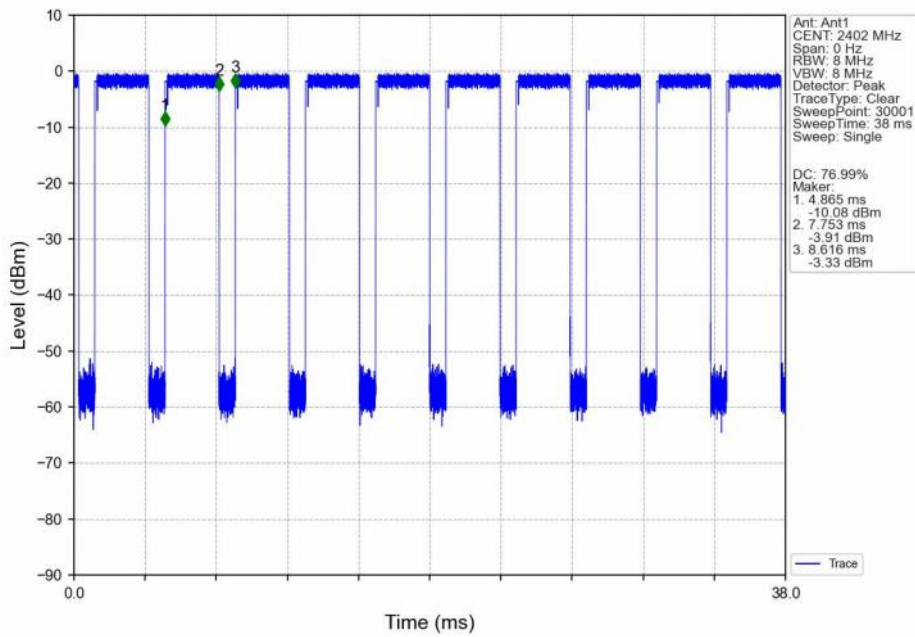


Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

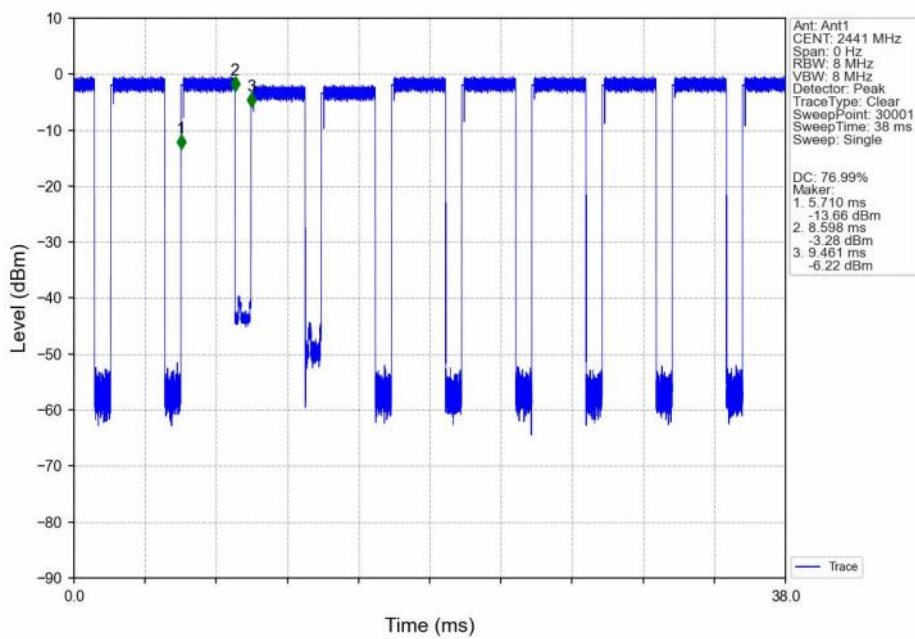


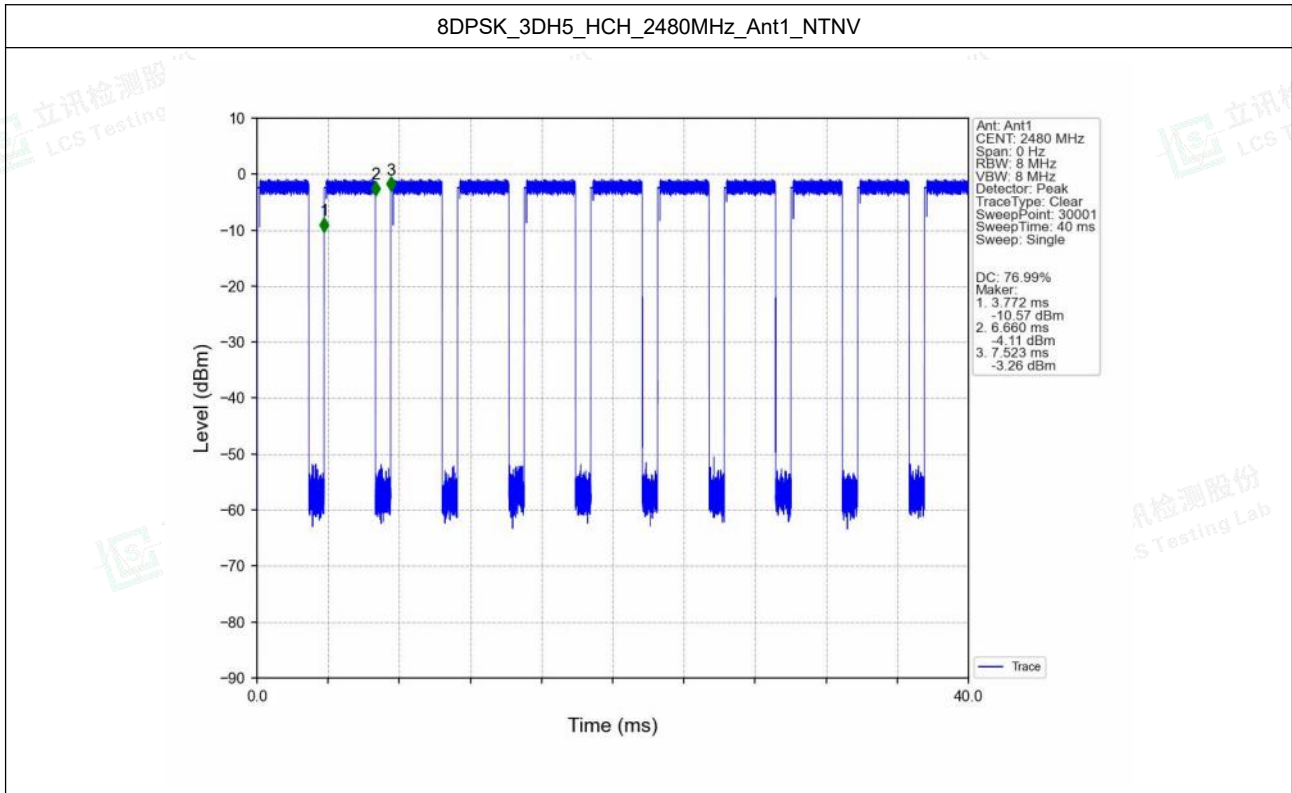


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV







A.9 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.77	2	-	47.49	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.13	2	1.15	39.28	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2374.896	-47.81	2	-	49.45	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2311.44	-57.67	2	1.15	40.74	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.66	2	-	45.60	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.79	2	1.15	39.62	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-51.15	2	-	46.11	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.84	2	1.14	40.56	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2490.496	-47.21	2	-	50.05	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.432	-56.99	2	1.14	41.41	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-51.19	2	-	46.07	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.21	2	1.14	40.19	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.91	2	-	47.35	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-59.07	2	1.14	39.33	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2350.128	-48.06	2	-	49.20	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2379.312	-57.77	2	1.14	40.63	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.55	2	-	46.71	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-59.01	2	1.14	39.39	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-47.07	2	-	50.19	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.6	2	1.14	40.80	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.576	-47.05	2	-	50.21	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.56	-57.22	2	1.14	41.18	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-51.79	2	-	45.47	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.93	2	1.14	40.47	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.67	2	-	45.59	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.98	2	1.14	39.42	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2383.92	-47.13	2	-	50.13	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2376.528	-57.72	2	1.14	40.68	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.07	2	-	47.19	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-57.91	2	1.14	40.49	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.66	2	-	47.60	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-58.28	2	1.14	40.12	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.584	-46.85	2	-	50.41	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2494.192	-57.07	2	1.14	41.33	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.46	2	-	47.80	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.24	2	1.14	40.16	Average	54	Pass

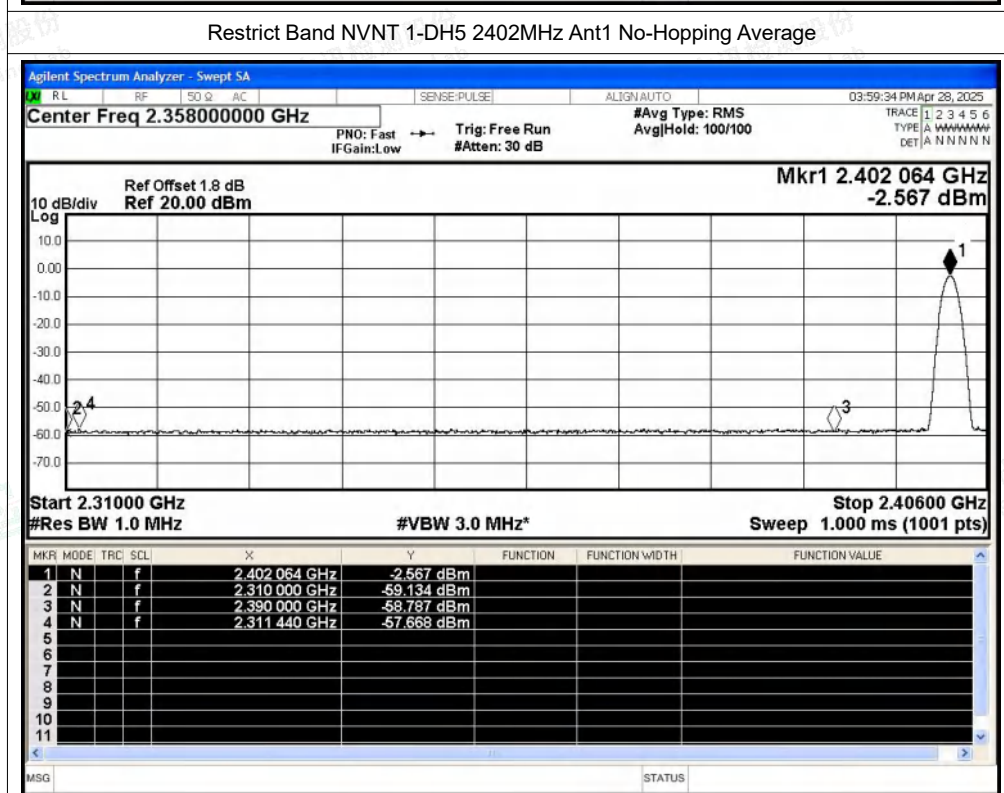
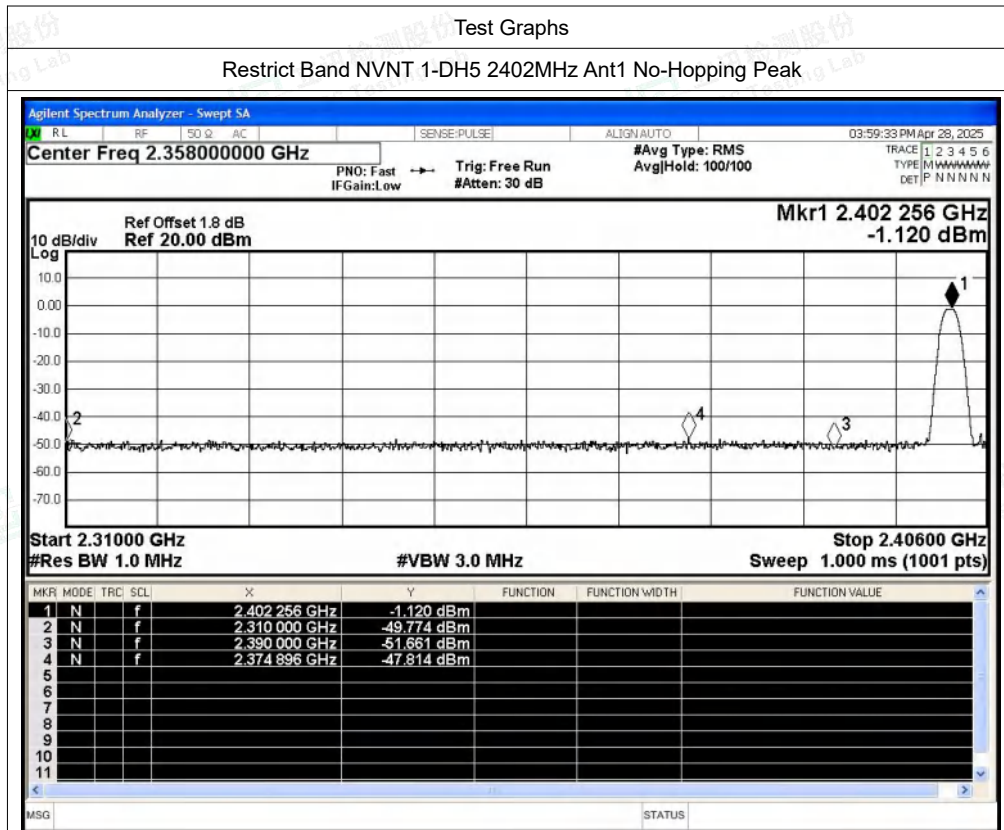


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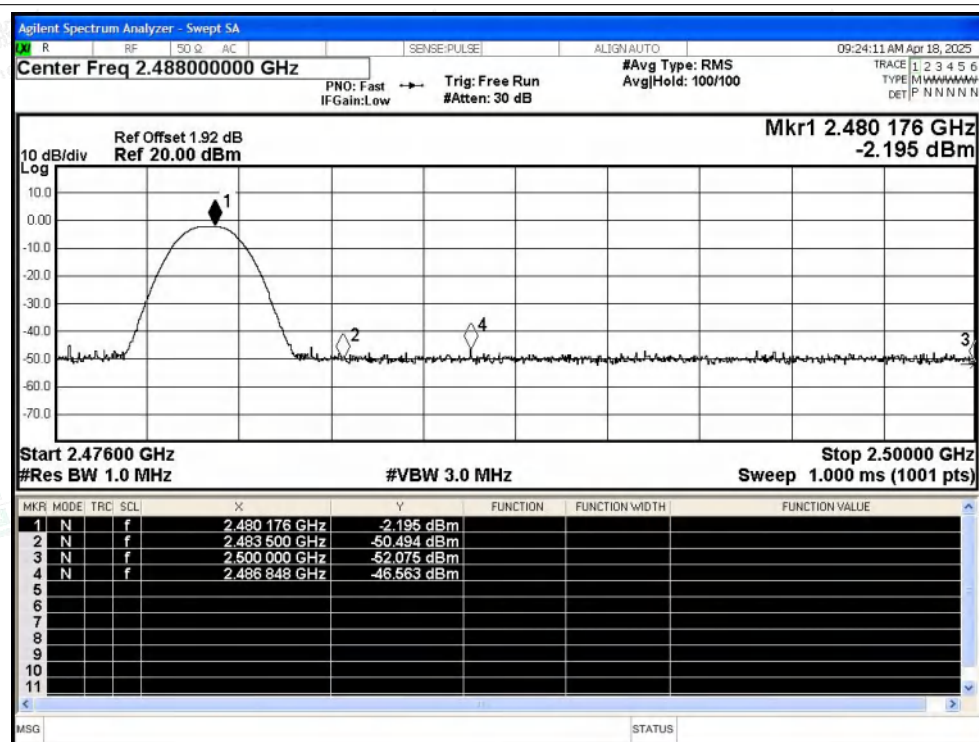
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Scan code to check authenticity

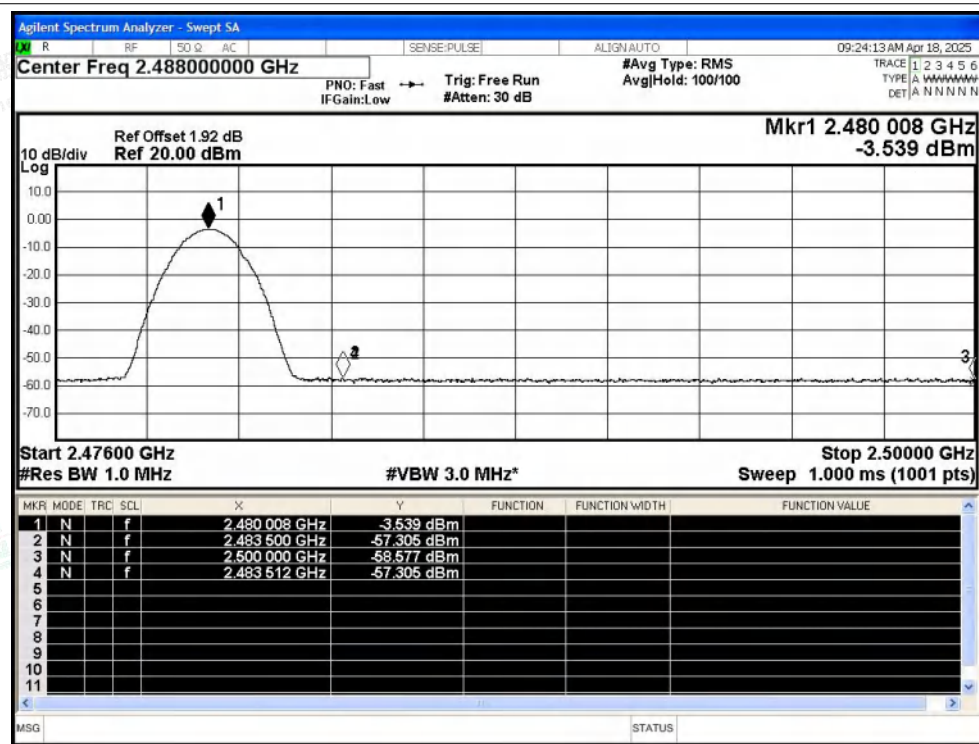




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

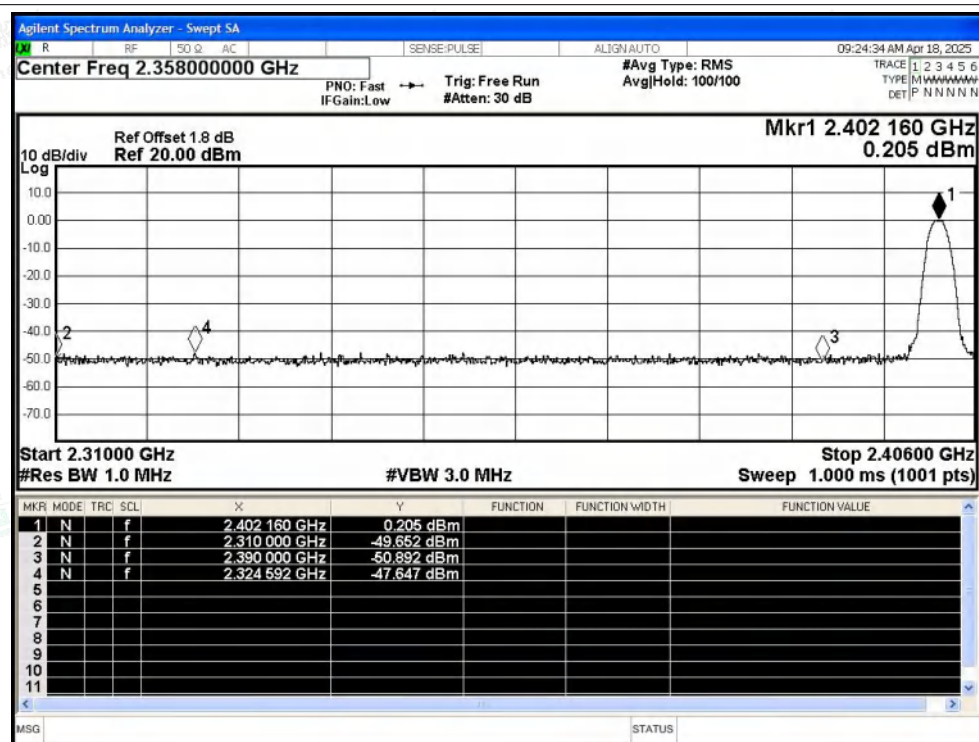


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

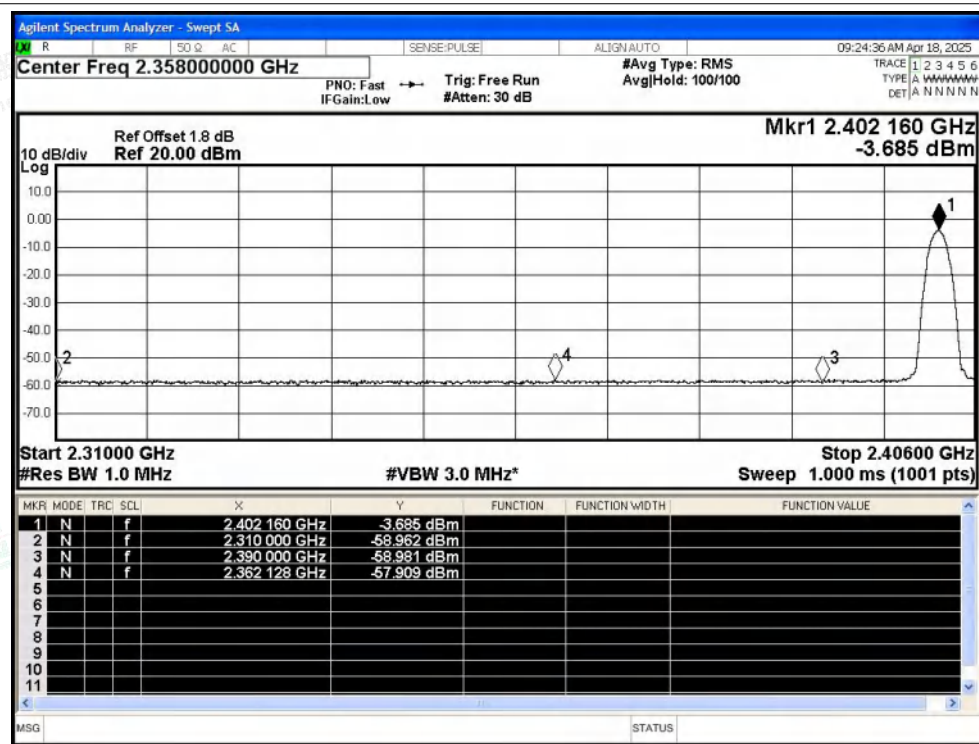




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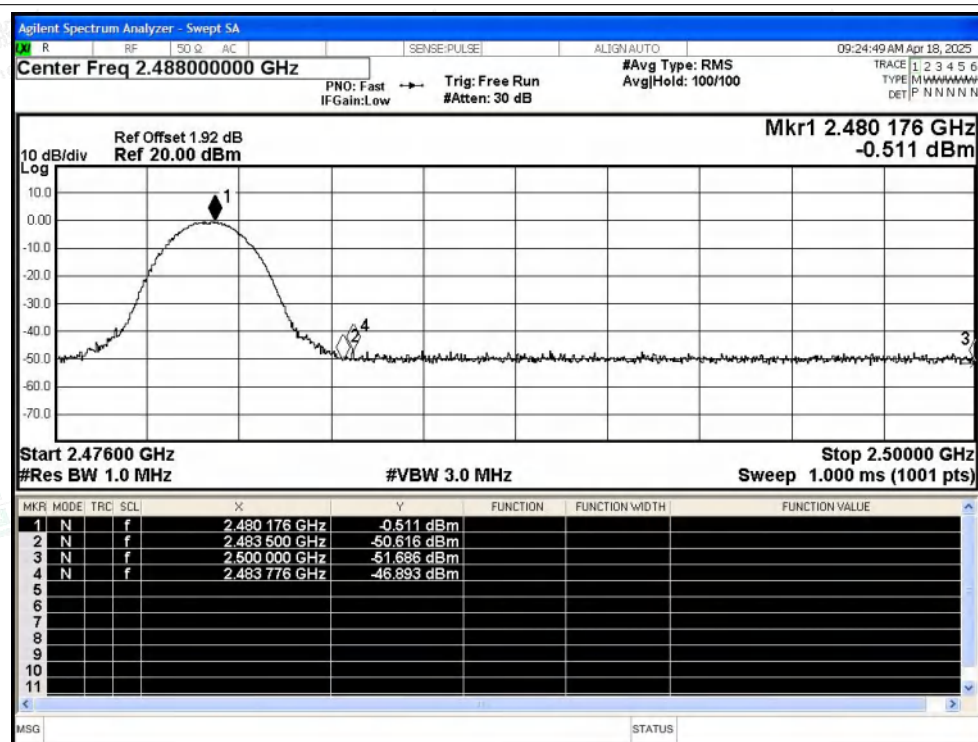


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

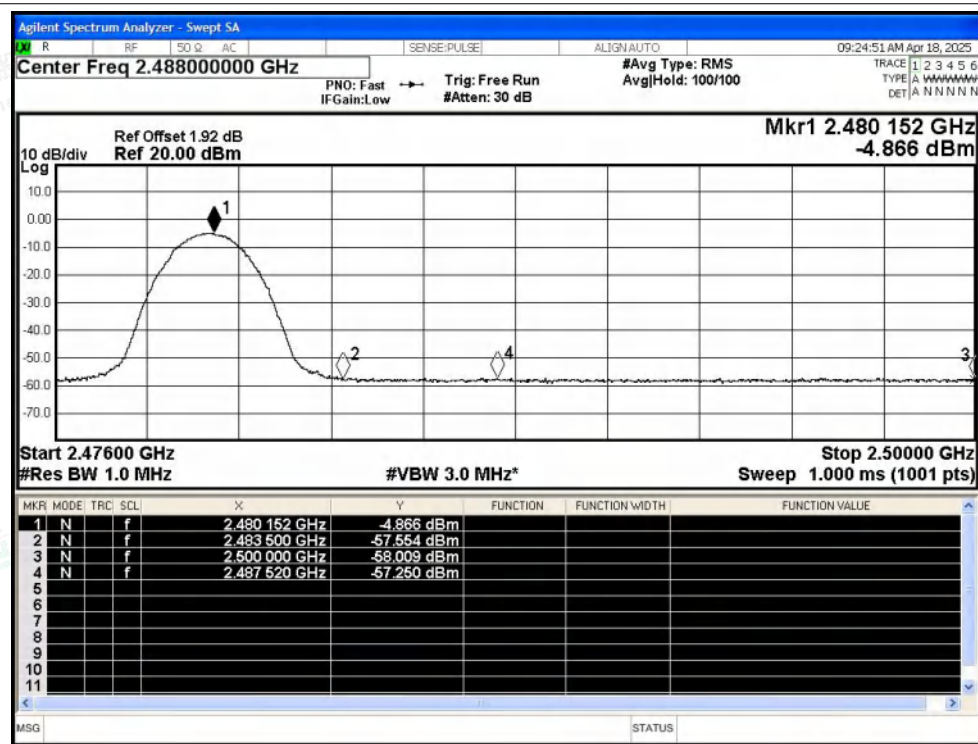


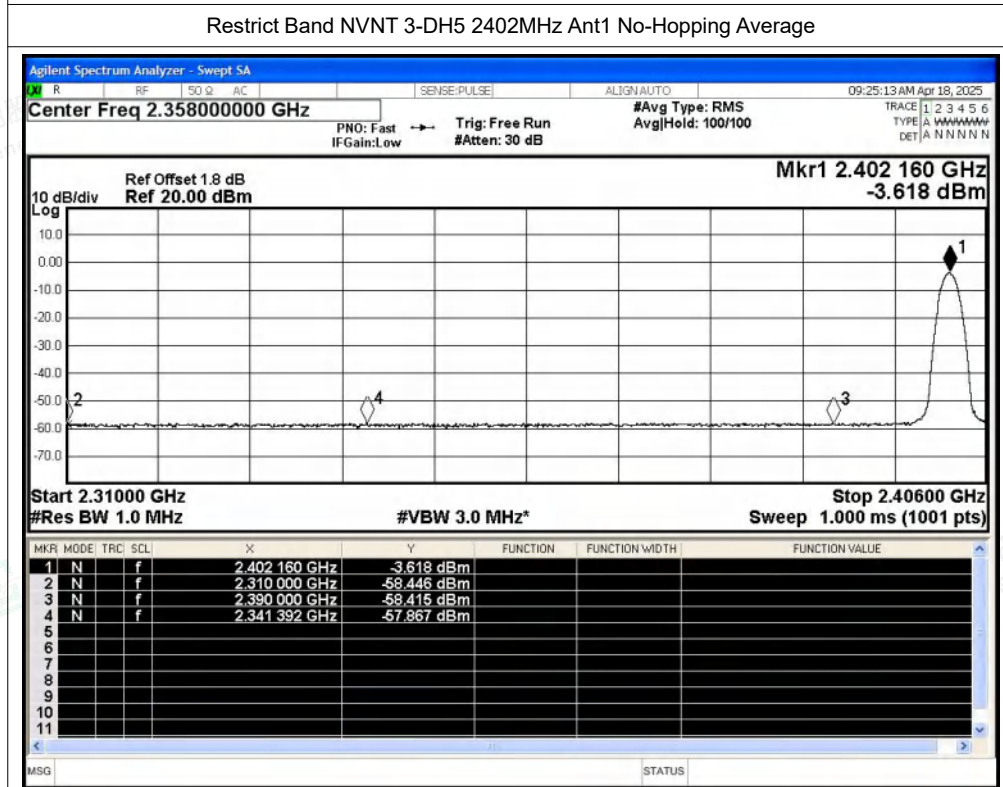
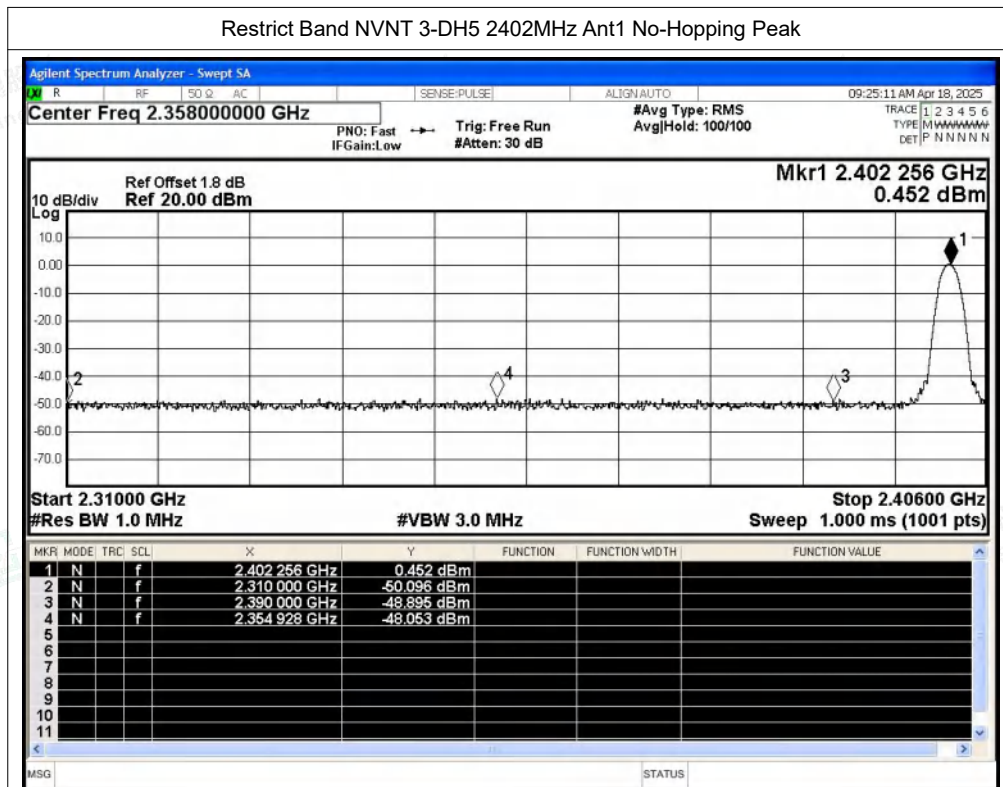


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



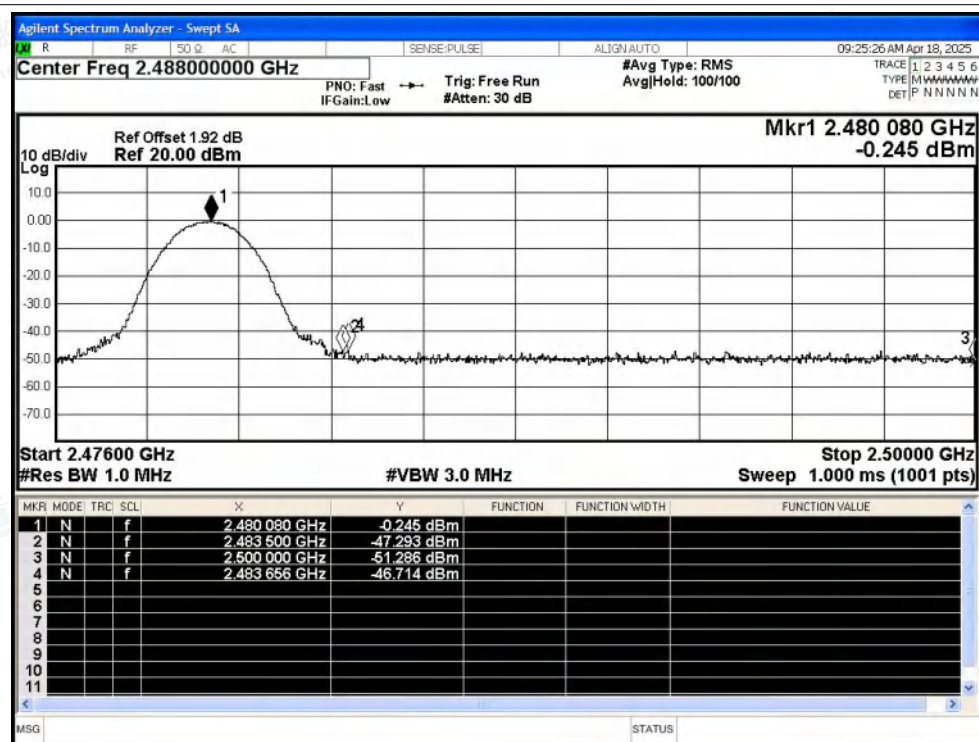
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average







Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

