Appendix D for 5.6GWIFI Test Data

Product Name: SkyPortal WiFi Module

Test Model: 93973

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

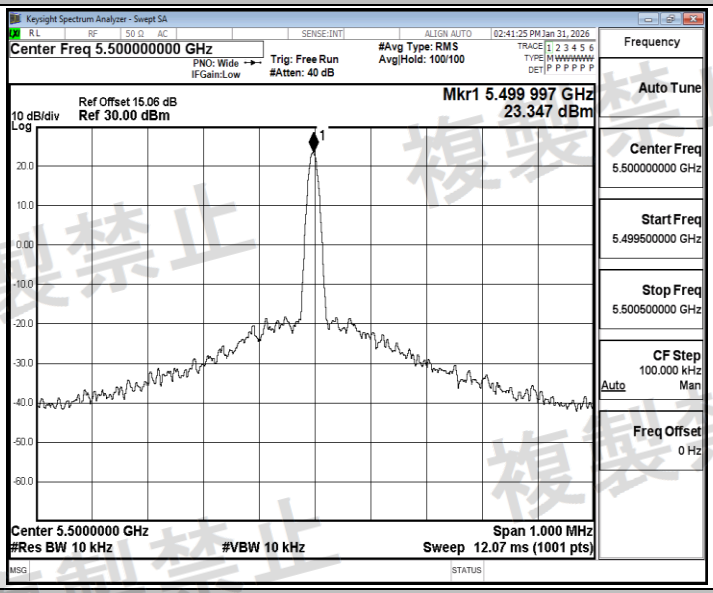
D.1 Frequency Error

Test Result

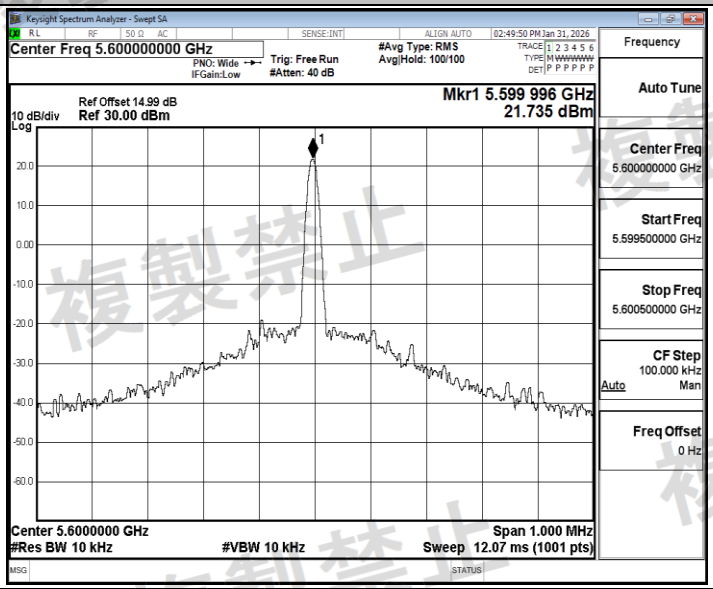
TestCondition	TestMode	Antenna	Freq(MHz)	CenterFreq [MHz]	Result [ppm]	Limit [ppm]	Verdict
NTNV	Frequency Error	Ant1	5500	5499.997	-0.54546	±20	PASS
			5600	5599.996	-0.71429	±20	PASS
			5720	5719.996	-0.69930	±20	PASS
		Ant1	5510	5509.996	-0.72595	±20	PASS
			5550	5549.997	-0.54054	±20	PASS
			5710	5709.996	-0.70053	±20	PASS

Test Graphs

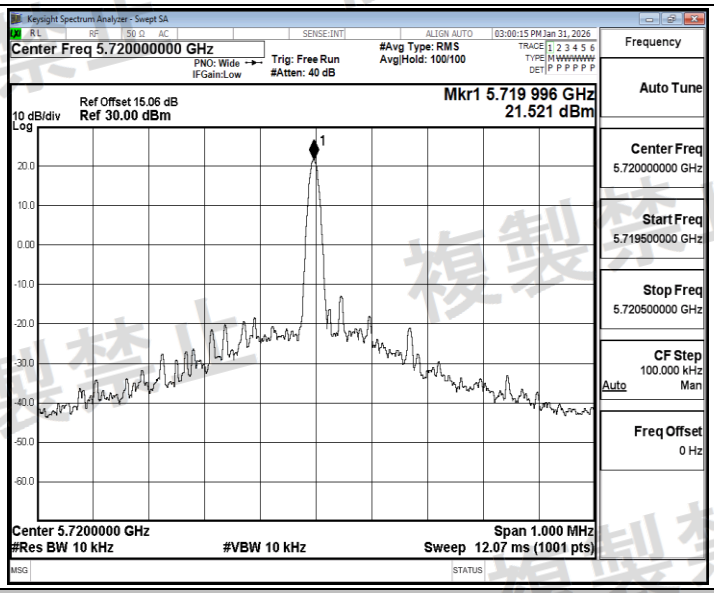
NTNV_Ant1_5500



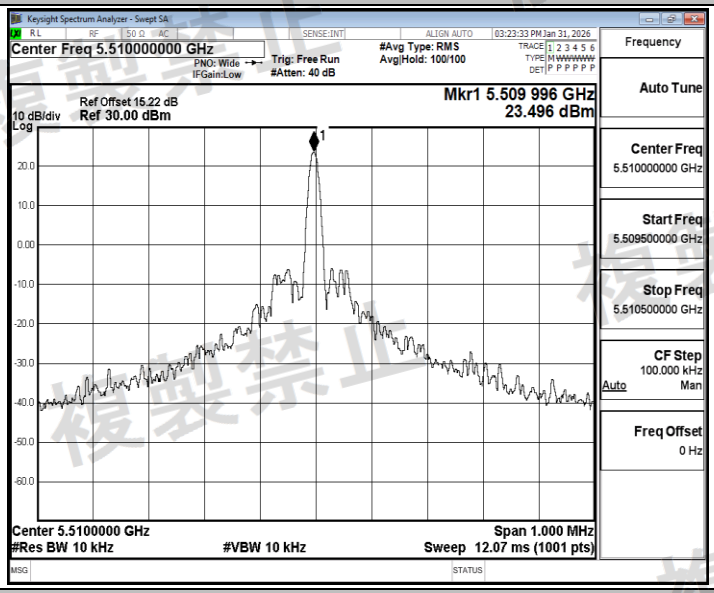
NTNV_Ant1_5600



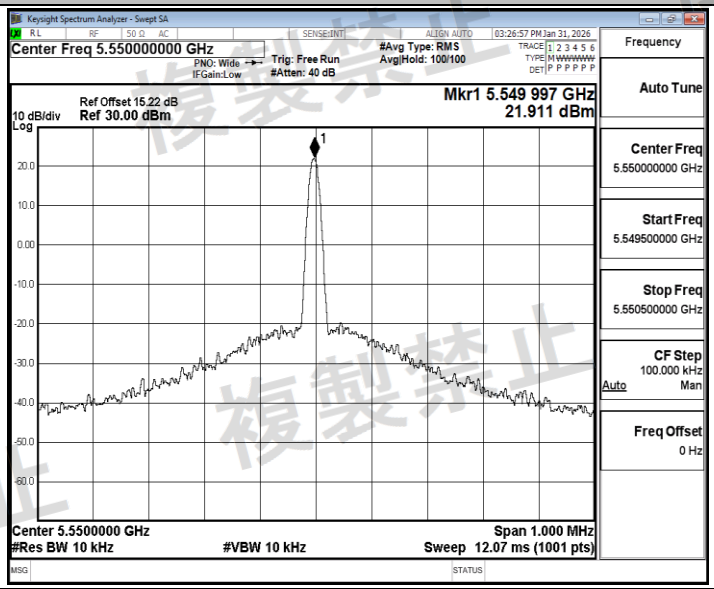
NTNV_Ant1_5720



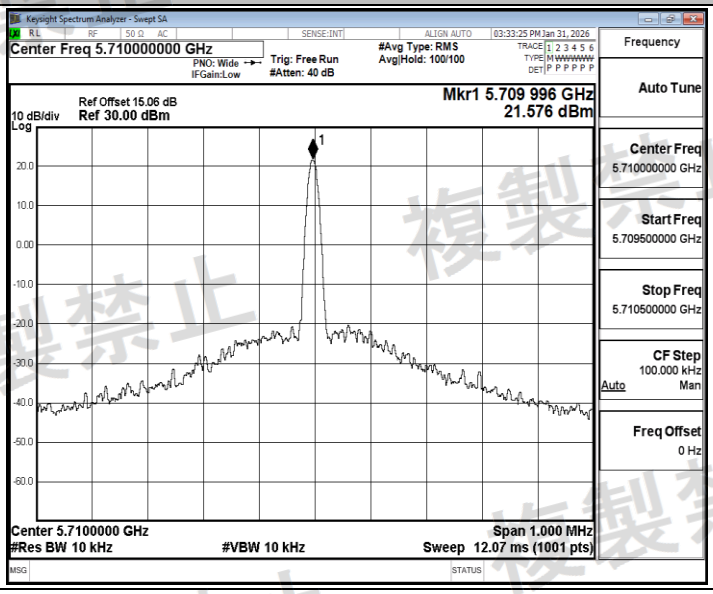
NTNV_Ant1_5510



NTNV_Ant1_5550



NTNV_Ant1_5710



D.2 Antenna Power and E.I.R.P

Antenna Power							
TestCondition	TestMode	Antenna	Frequency[MHz]	Result (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11A	Ant1	5500	5.07	3.2137	≤10	PASS
			5600	4.92	3.1046	≤10	PASS
			5720	5.04	3.1915	≤10	PASS
	11N20SISO	Ant1	5500	4.93	3.1117	≤10	PASS
			5600	5.05	3.1989	≤10	PASS
			5720	4.88	3.0761	≤10	PASS
	11N40SISO	Ant1	5510	0.15	1.0351	≤5	PASS
			5550	0.21	1.0495	≤5	PASS
			5710	0.12	1.0280	≤5	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Power (mW/MHz)	Rated Power (mW/MHz)	Result (%)	Limit (%)	Verdict
NTNV	11A	Ant1	5500	3.2137	3	7.12	-50 to +50	PASS
			5600	3.1046	3	3.49	-50 to +50	PASS
			5720	3.1915	3	6.38	-50 to +50	PASS
	11N20SISO	Ant1	5500	3.1117	3	3.72	-50 to +50	PASS
			5600	3.1989	3	6.63	-50 to +50	PASS
			5720	3.0761	3	2.54	-50 to +50	PASS
	11N40SISO	Ant1	5510	1.0351	1	3.51	-50 to +50	PASS
			5550	1.0495	1	4.95	-50 to +50	PASS
			5710	1.0280	1	2.80	-50 to +50	PASS

EIRP									
Test Condition	Test Mode	Antenna	Frequency [MHz]	Measured Power (dBm/MHz)	Antenna Gain(dBi)	EIRP Measured Power (dBm/MHz)	EIRP Measured Power (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11A	Ant1	5500	5.07	4.5	9.57	9.0573	≤25	PASS
			5600	4.92	4.5	9.42	8.7498	≤25	PASS
			5720	5.04	4.5	9.54	8.9950	≤25	PASS
	11N20 SISO	Ant1	5500	4.93	4.5	9.43	8.7700	≤25	PASS
			5600	5.05	4.5	9.55	9.0157	≤25	PASS
			5720	4.88	4.5	9.38	8.6696	≤25	PASS
	11N40 SISO	Ant1	5510	0.15	4.5	4.65	2.9174	≤12.5	PASS
			5550	0.21	4.5	4.71	2.9580	≤12.5	PASS
			5710	0.12	4.5	4.62	2.8973	≤12.5	PASS

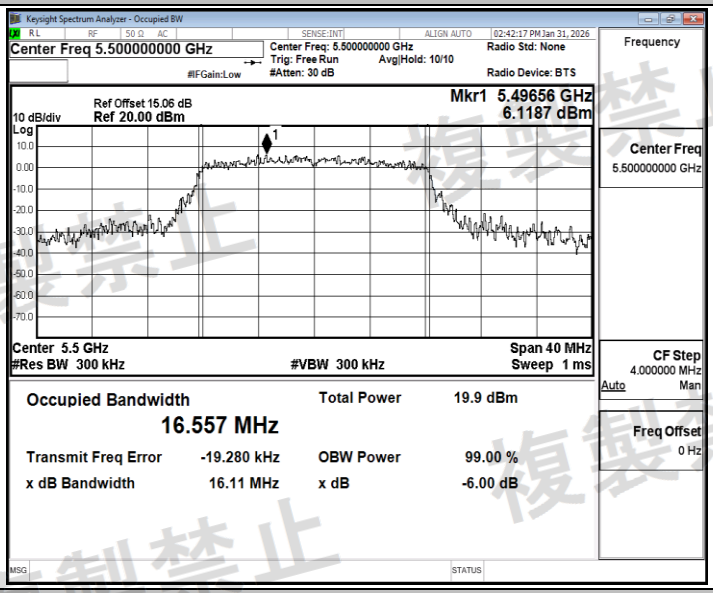
D.3 Occupied Bandwidth

Test Result

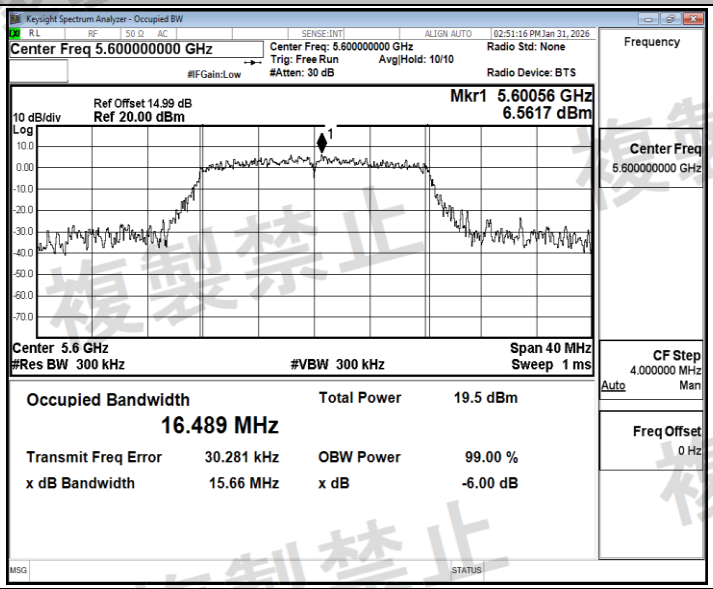
TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	11A	Ant1	5500	16.557	≤20	PASS
			5600	16.489	≤20	PASS
			5720	16.535	≤20	PASS
	11N20SISO	Ant1	5500	17.688	≤20	PASS
			5600	17.607	≤20	PASS
			5720	17.679	≤20	PASS
	11N40SISO	Ant1	5510	36.000	≤40	PASS
			5550	35.985	≤40	PASS
			5710	35.961	≤40	PASS

Test Graphs

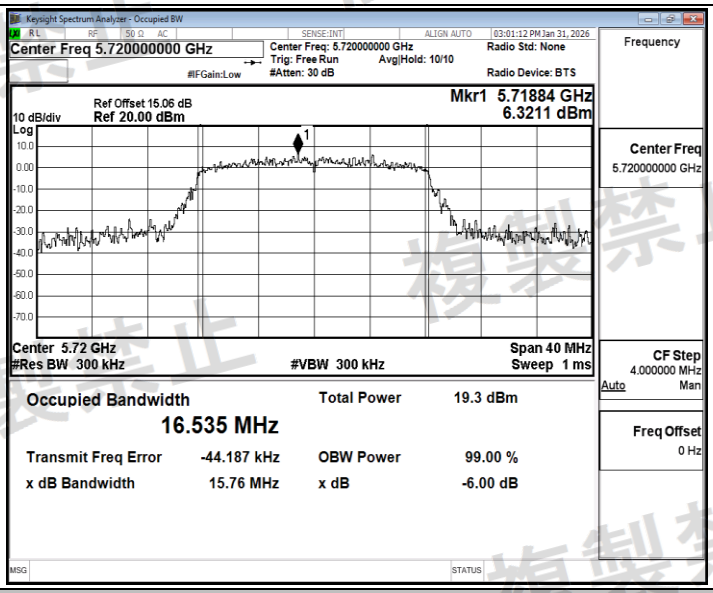
NTNV_11A_Ant1_5500



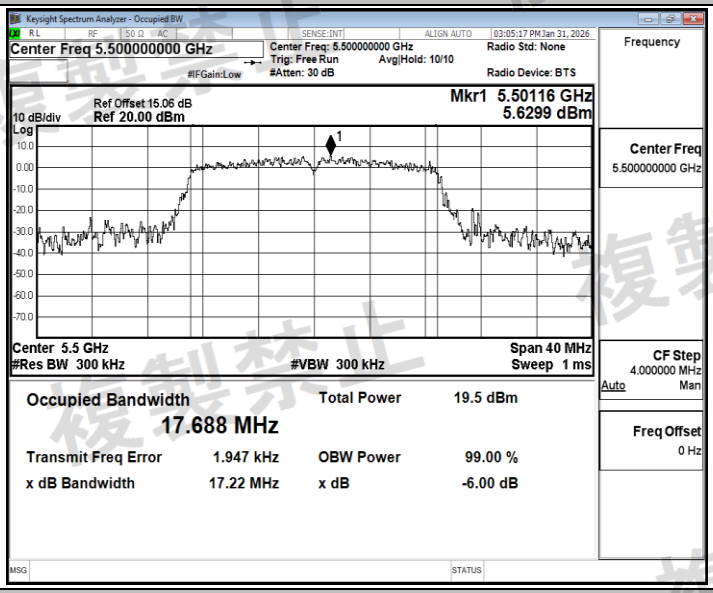
NTNV_11A_Ant1_5600



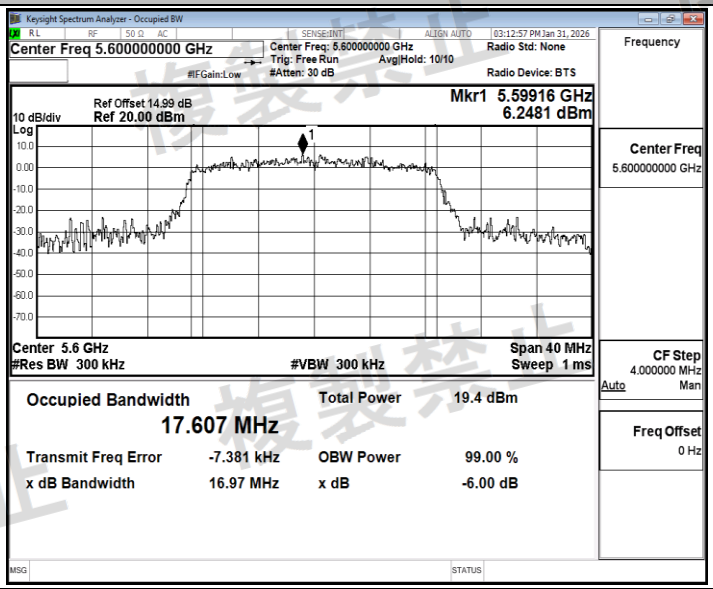
NTNV_11A_Ant1_5720



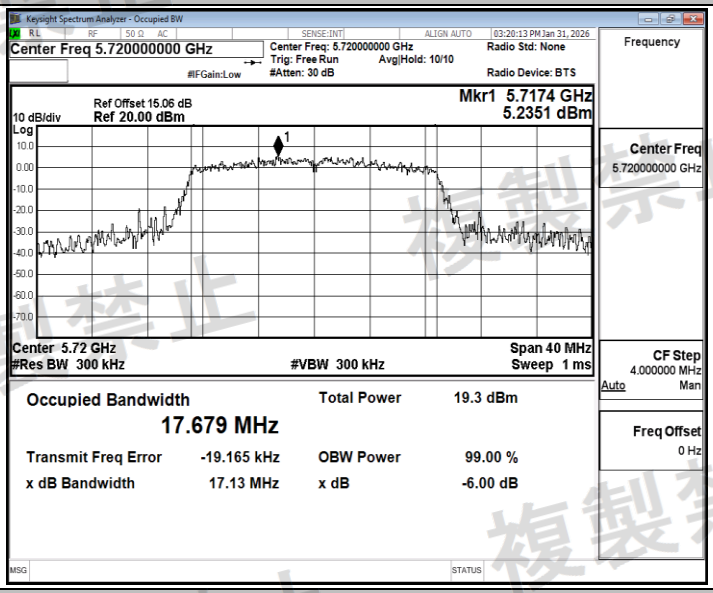
NTNV_11N20SISO_Ant1_5500



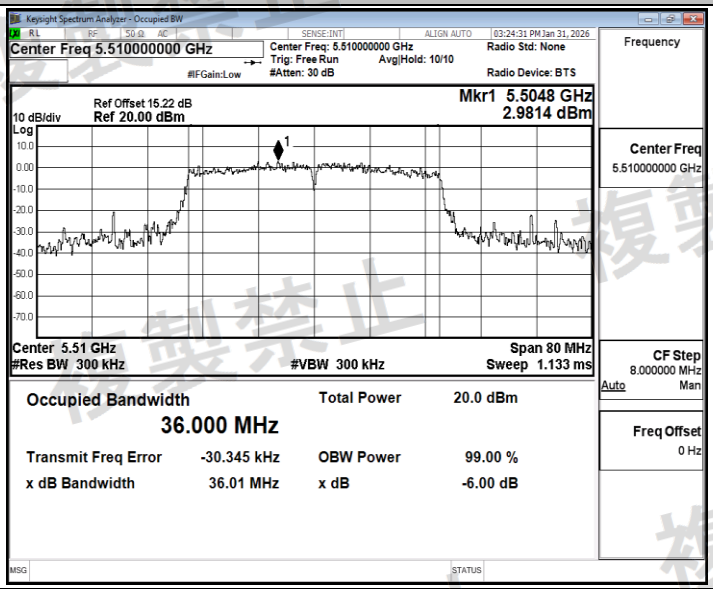
NTNV_11N20SISO_Ant1_5600



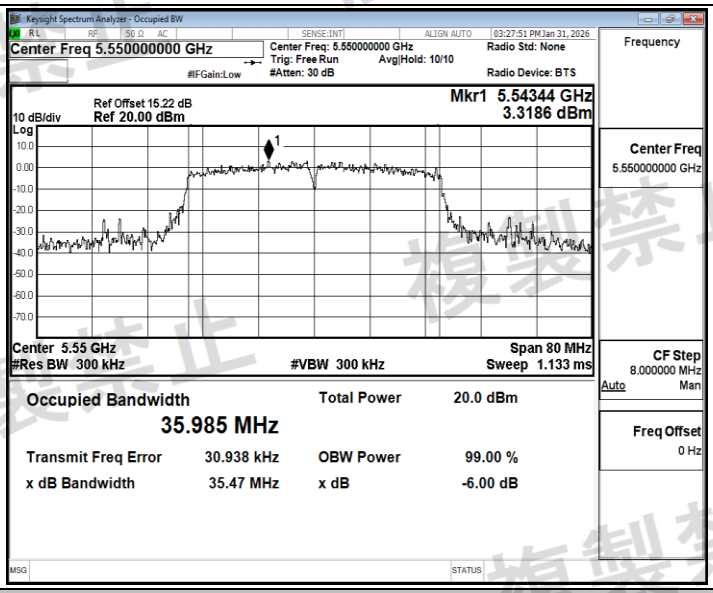
NTNV_11N20SISO_Ant1_5720



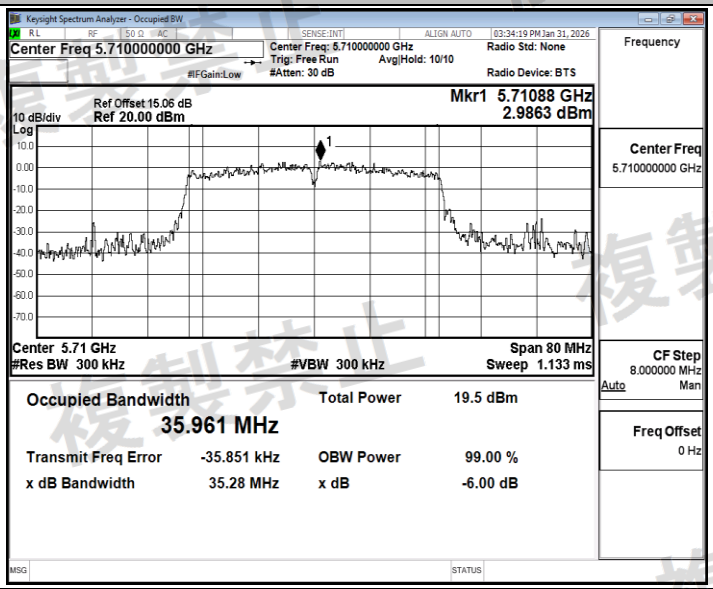
NTNV_11N40SISO_Ant1_5510



NTNV_11N40SISO_Ant1_5550



NTNV_11N40SISO_Ant1_5710



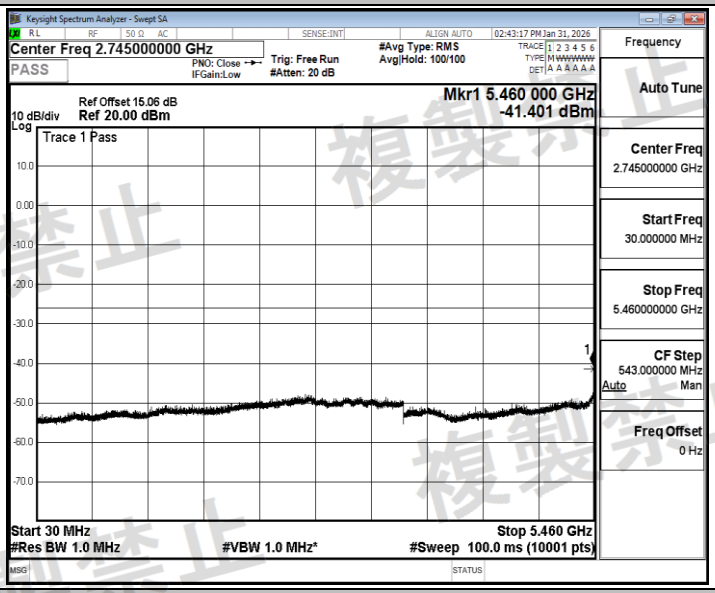
D.4 Spurious Emission of TX

Test Result

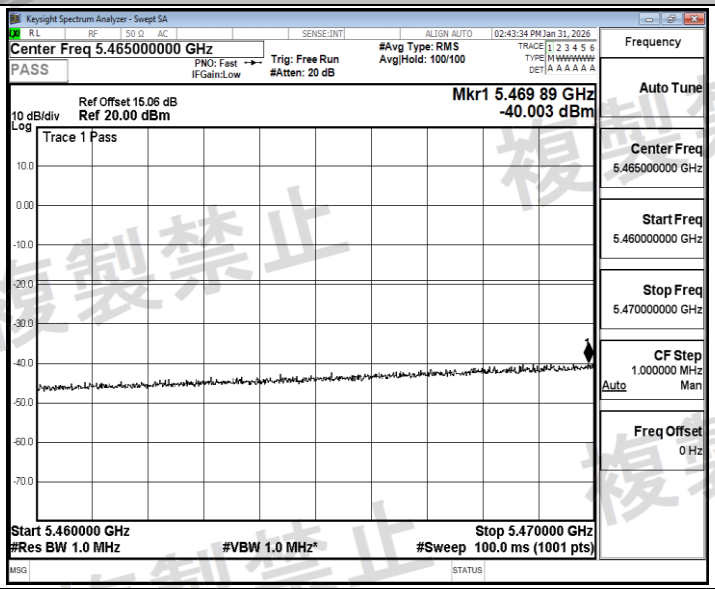
TestCondition	TestMode	Antenna	Freq(MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Gain [dBI]	EIRP [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	11A	Ant1	5500	30~5460	5460.00	-41.40	4.5	-36.90	0.20417	≤2.5	PASS
				5460~5470	5469.89	-40.00	4.5	-35.50	0.28184	≤12.5	PASS
				5745~5765	5752.22	-53.68	4.5	-49.18	0.01208	≤12.5	PASS
				5765~26000	24988.25	-37.31	4.5	-32.81	0.52360	≤2.5	PASS
			5600	30~5460	2691.24	-47.55	4.5	-43.05	0.04955	≤2.5	PASS
				5460~5470	5468.92	-52.52	4.5	-48.02	0.01578	≤12.5	PASS
				5745~5765	5763.54	-52.78	4.5	-48.28	0.01486	≤12.5	PASS
				5765~26000	25645.21	-37.09	4.5	-32.59	0.55081	≤2.5	PASS
			5720	30~5460	3025.19	-47.83	4.5	-43.33	0.04645	≤2.5	PASS
				5460~5470	5468.79	-53.50	4.5	-49.00	0.01259	≤12.5	PASS
				5745~5765	5745.88	-37.05	4.5	-32.55	0.55590	≤12.5	PASS
				5765~26000	25703.89	-36.03	4.5	-31.53	0.70307	≤2.5	PASS
	11N20 SISO	Ant1	5500	30~5460	5459.46	-42.86	4.5	-38.36	0.14588	≤2.5	PASS
				5460~5470	5469.05	-40.37	4.5	-35.87	0.25882	≤12.5	PASS
				5745~5765	5758.24	-53.48	4.5	-48.98	0.01265	≤12.5	PASS
				5765~26000	24132.31	-37.36	4.5	-32.86	0.51761	≤2.5	PASS
			5600	30~5460	2670.07	-48.11	4.5	-43.61	0.04355	≤2.5	PASS
				5460~5470	5461.65	-52.53	4.5	-48.03	0.01574	≤12.5	PASS
				5745~5765	5761.54	-52.92	4.5	-48.42	0.01439	≤12.5	PASS
				5765~26000	24958.57	-37.36	4.5	-32.86	0.51761	≤2.5	PASS
			5720	30~5460	2696.13	-47.97	4.5	-43.47	0.04498	≤2.5	PASS
				5460~5470	5469.32	-53.55	4.5	-49.05	0.01245	≤12.5	PASS
				5745~5765	5745.06	-36.65	4.5	-32.15	0.60954	≤12.5	PASS
				5765~26000	24688.77	-36.90	4.5	-32.40	0.57544	≤2.5	PASS
	11N40 SISO	Ant1	5510	30~5460	5458.91	-34.92	4.5	-30.42	0.90782	≤12.5	PASS
				5460~5470	5469.82	-34.88	4.5	-30.38	0.91622	≤50	PASS
				5770~26000	25683.74	-36.95	4.5	-32.45	0.56885	≤12.5	PASS
			5550	30~5460	5460.00	-45.52	4.5	-41.02	0.07907	≤12.5	PASS
				5460~5470	5469.83	-48.11	4.5	-43.61	0.04355	≤50	PASS
				5770~26000	25734.99	-36.53	4.5	-32.03	0.62661	≤12.5	PASS
			5710	30~5460	2698.30	-47.93	4.5	-43.43	0.04539	≤12.5	PASS
				5460~5470	5469.30	-53.36	4.5	-48.86	0.01300	≤50	PASS
				5770~26000	5782.14	-36.18	4.5	-31.68	0.67920	≤12.5	PASS

Test Graphs

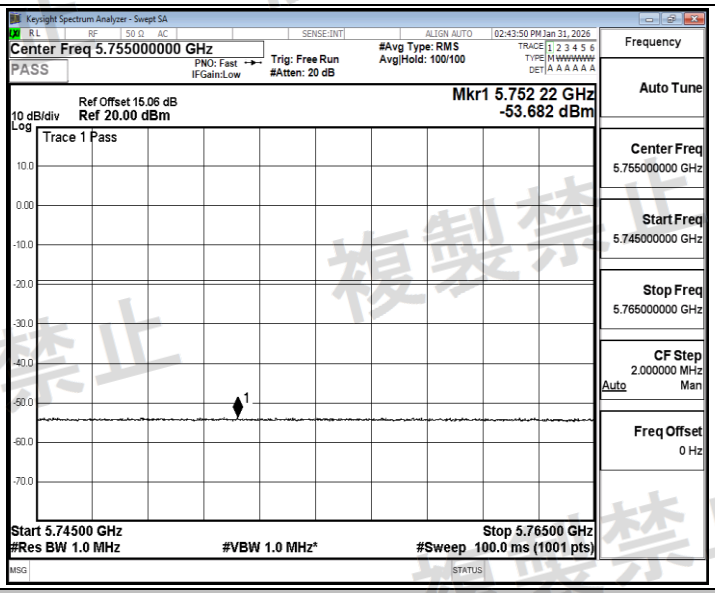
NTNV_11A_Ant1_5500_30~5460



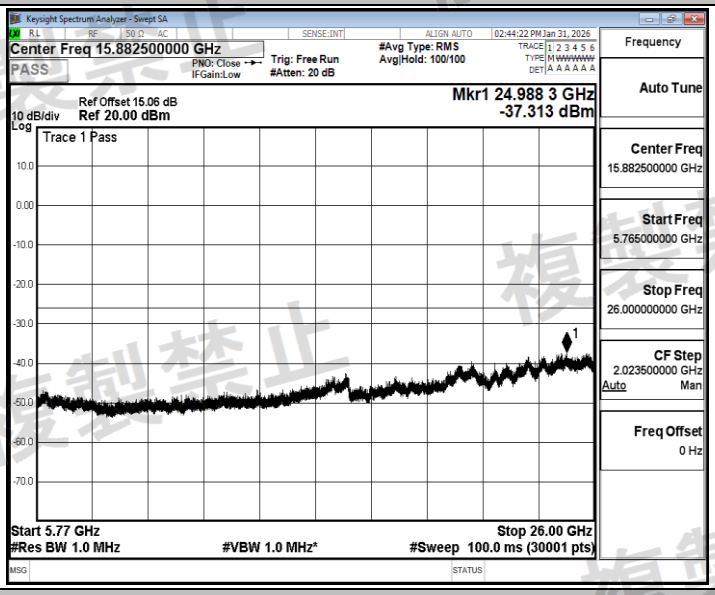
NTNV_11A_Ant1_5500_5460~5470



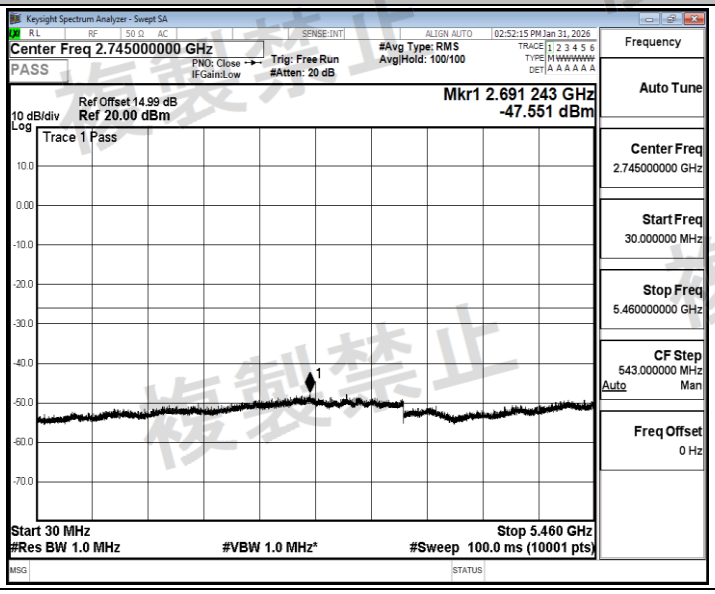
NTNV_11A_Ant1_5500_5745~5765



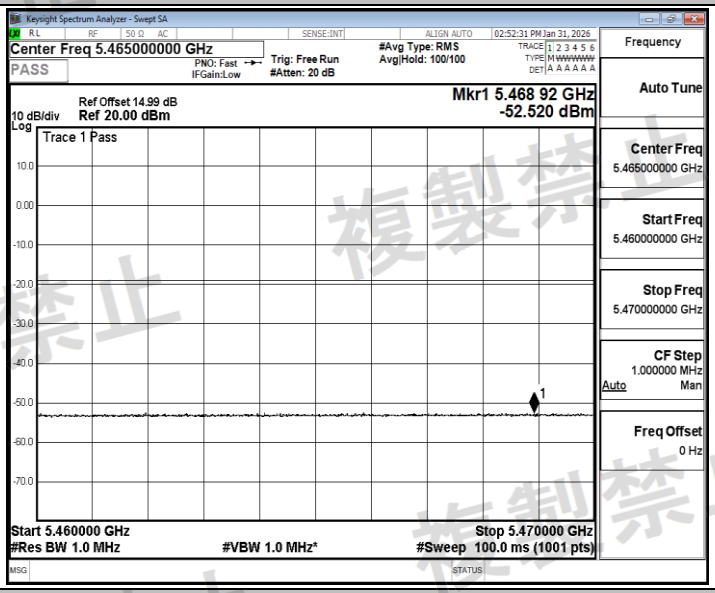
NTNV_11A_Ant1_5500_5765~26000



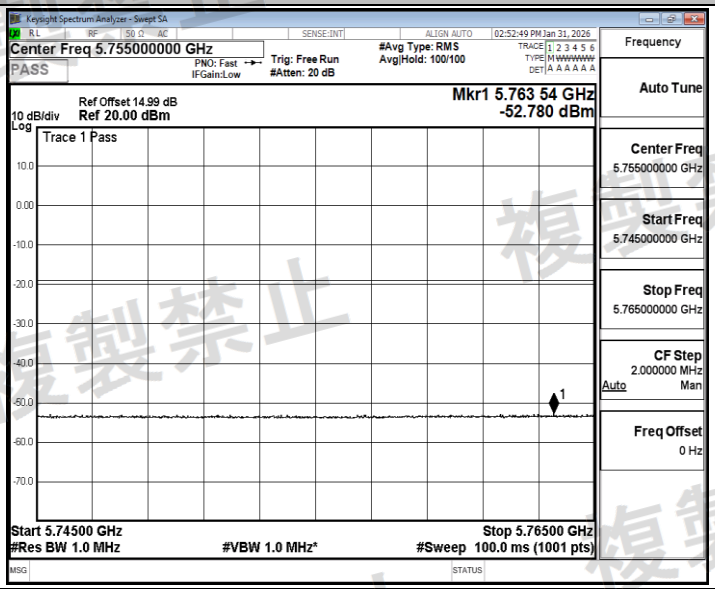
NTNV_11A_Ant1_5600_30~5460



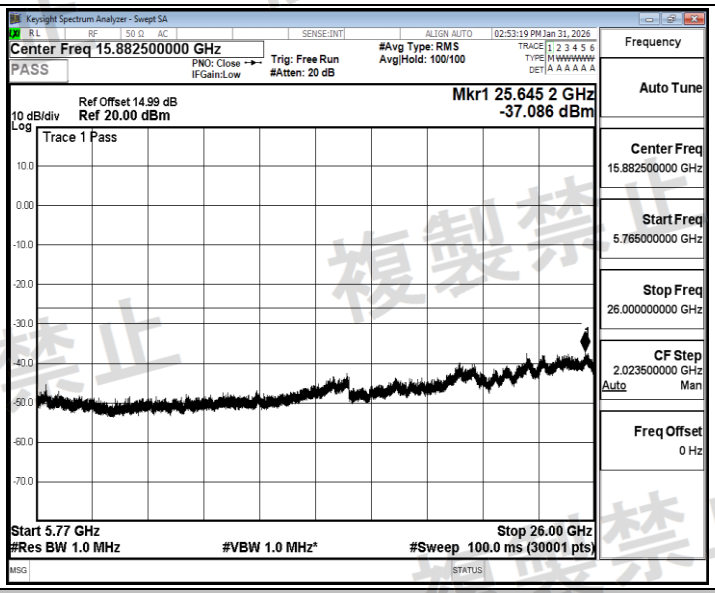
NTNV_11A_Ant1_5600_5460~5470



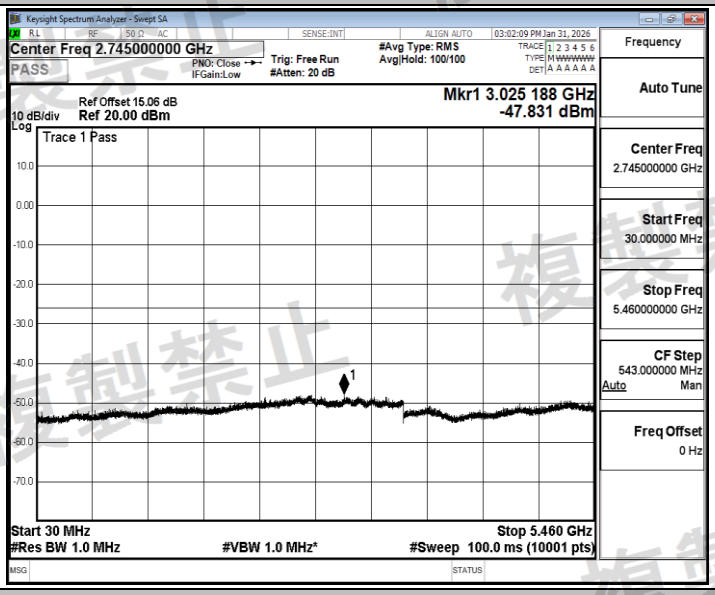
NTNV_11A_Ant1_5600_5745~5765



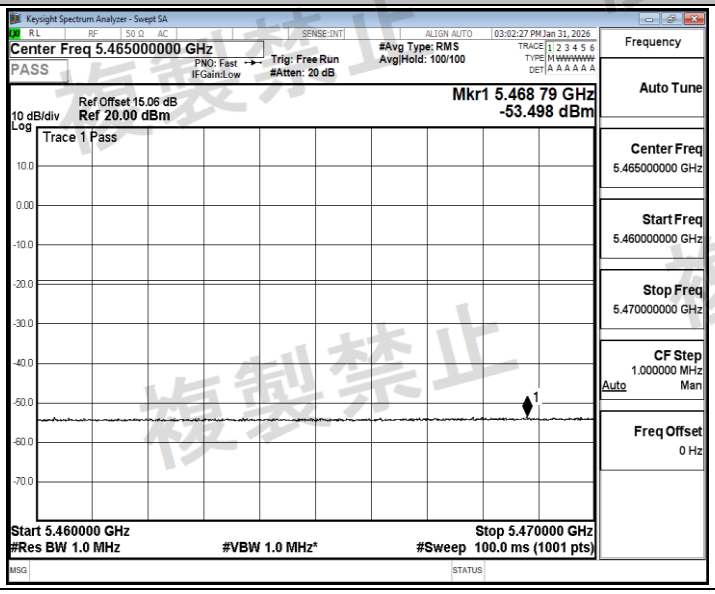
NTNV_11A_Ant1_5600_5765~26000



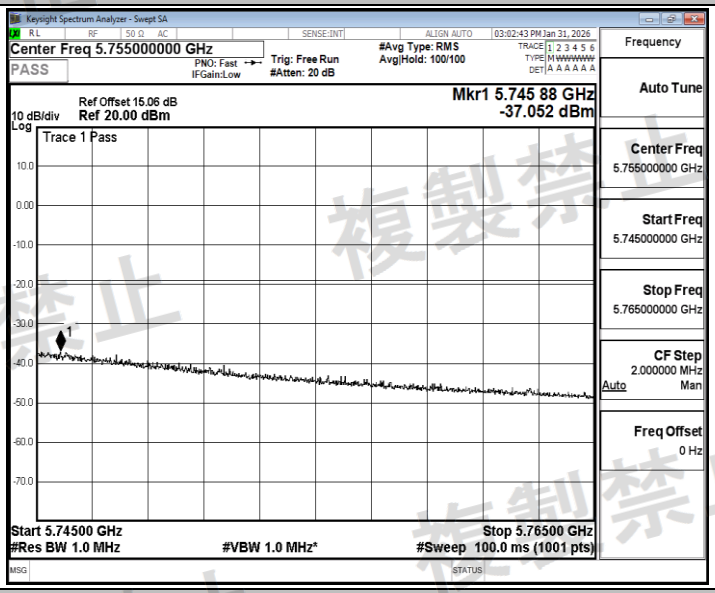
NTNV_11A_Ant1_5720_30~5460



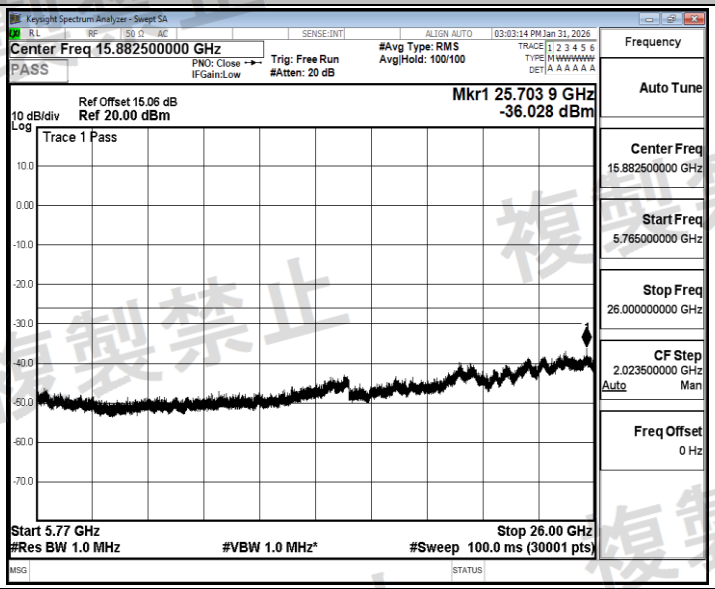
NTNV_11A_Ant1_5720_5460~5470



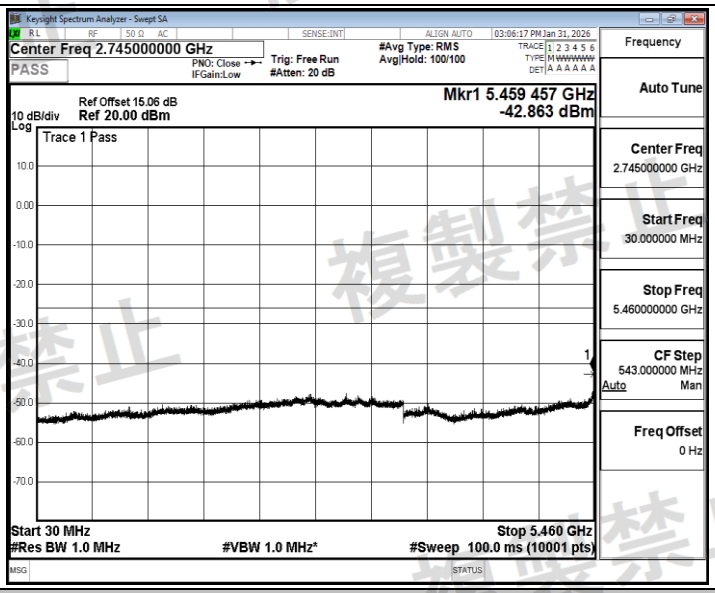
NTNV_11A_Ant1_5720_5745~5765



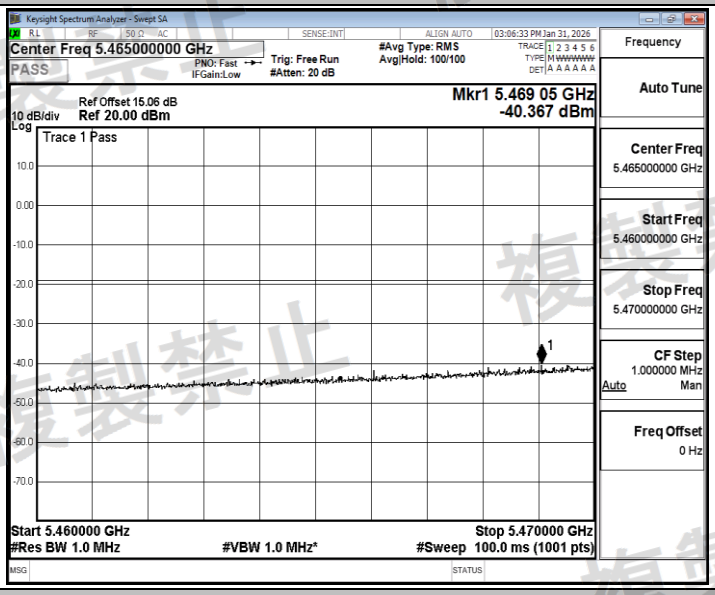
NTNV_11A_Ant1_5720_5765~26000



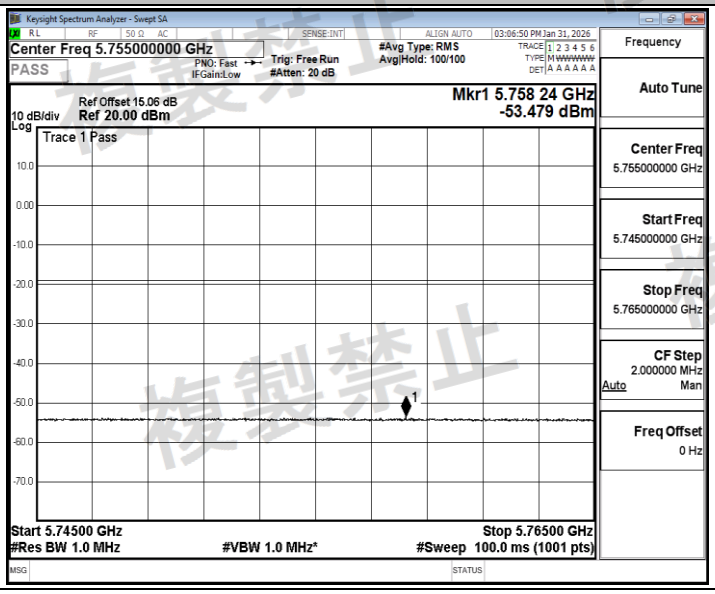
NTNV_11N20SISO_Ant1_5500_30~5460



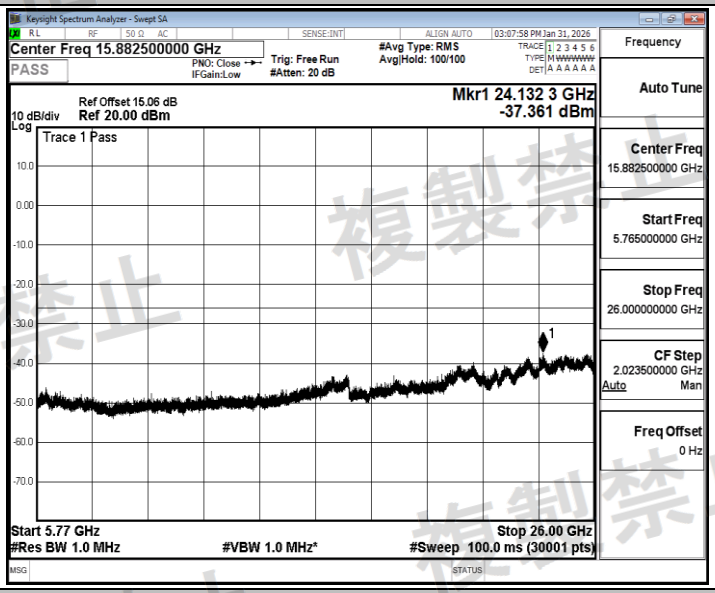
NTNV_11N20SISO_Ant1_5500_5460~5470



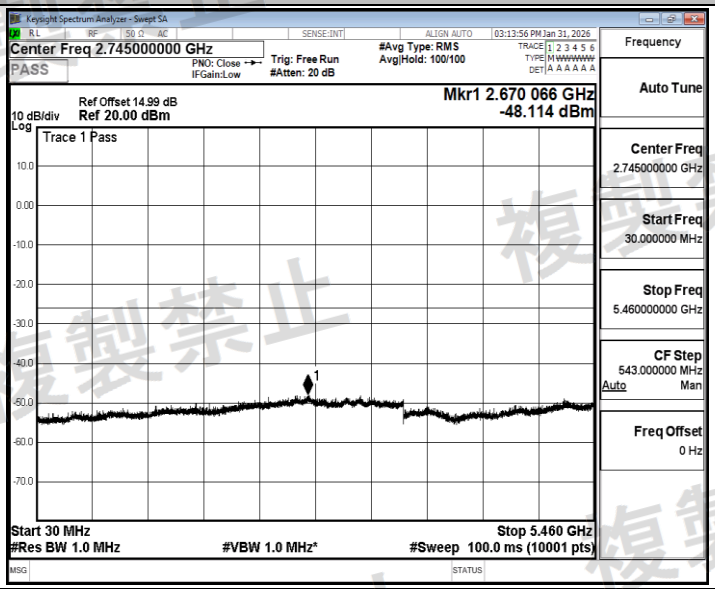
NTNV_11N20SISO_Ant1_5500_5745~5765



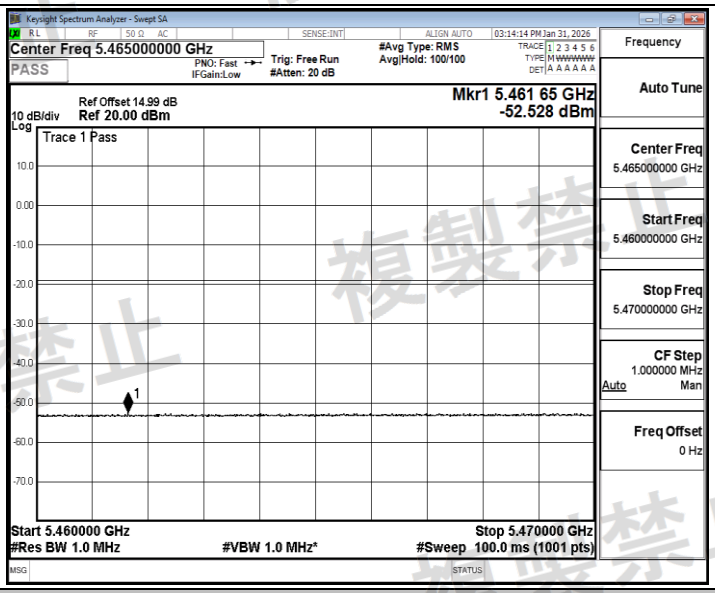
NTNV_11N20SISO_Ant1_5500_5765~26000



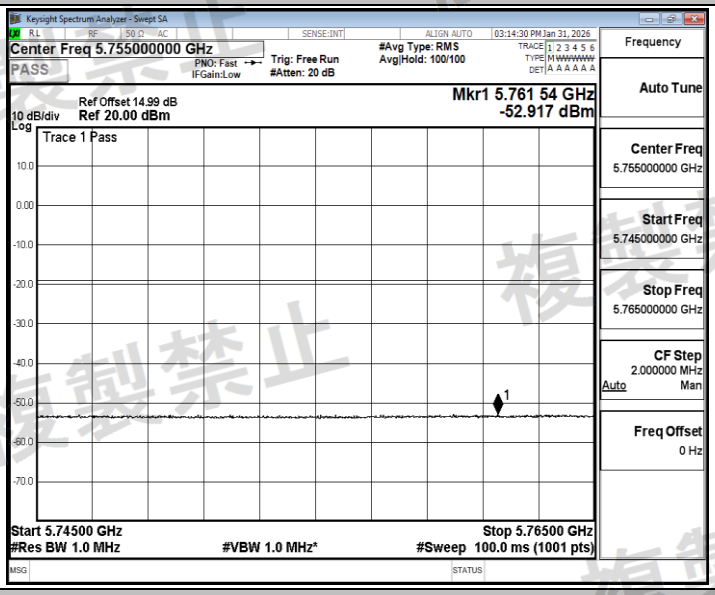
NTNV_11N20SISO_Ant1_5600_30~5460



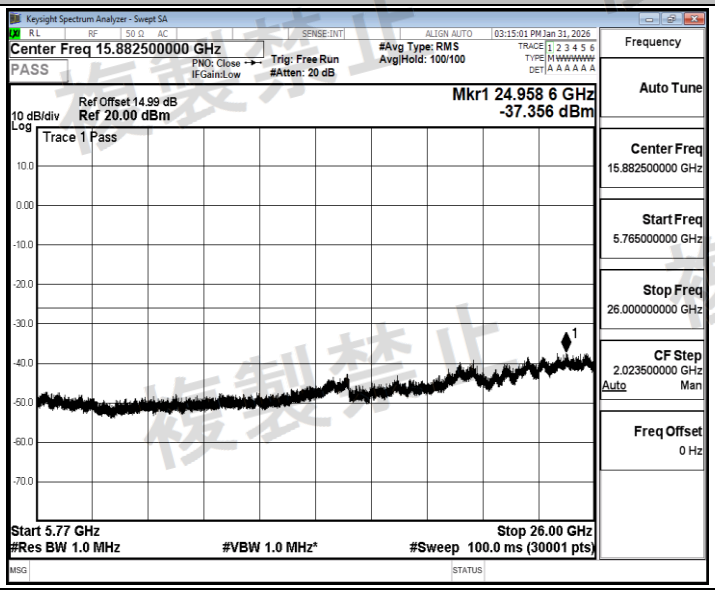
NTNV_11N20SISO_Ant1_5600_5460~5470



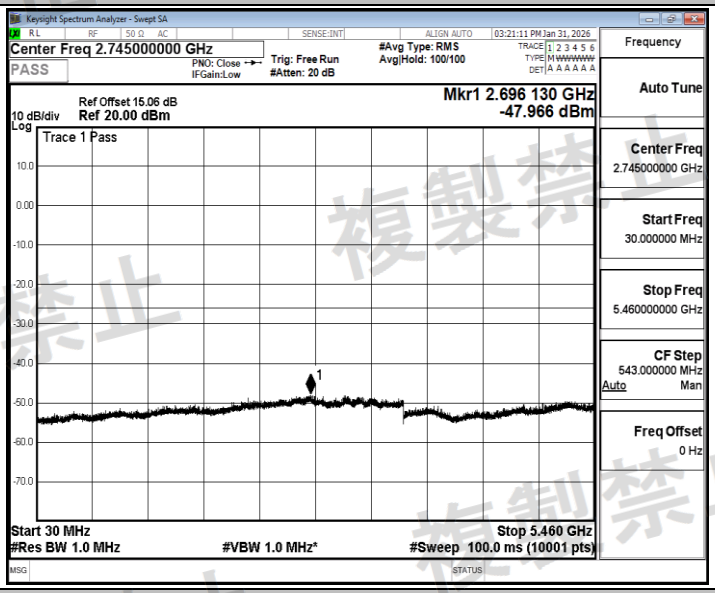
NTNV_11N20SISO_Ant1_5600_5745~5765



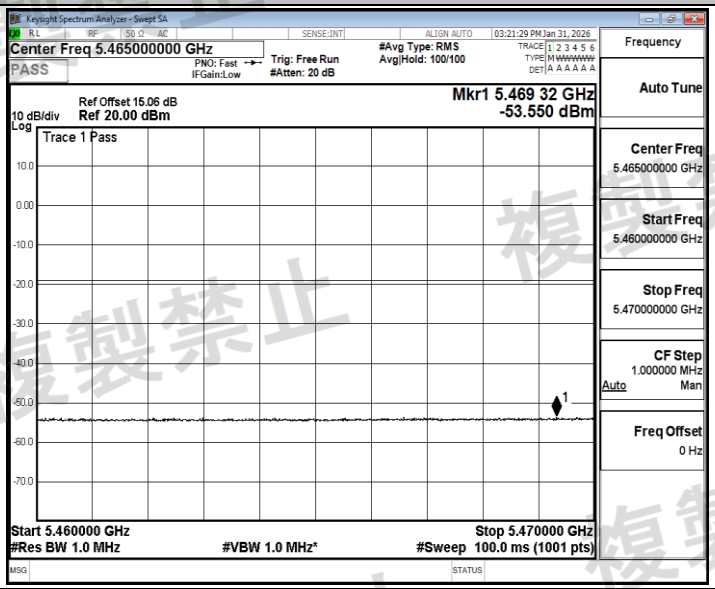
NTNV_11N20SISO_Ant1_5600_5765~26000



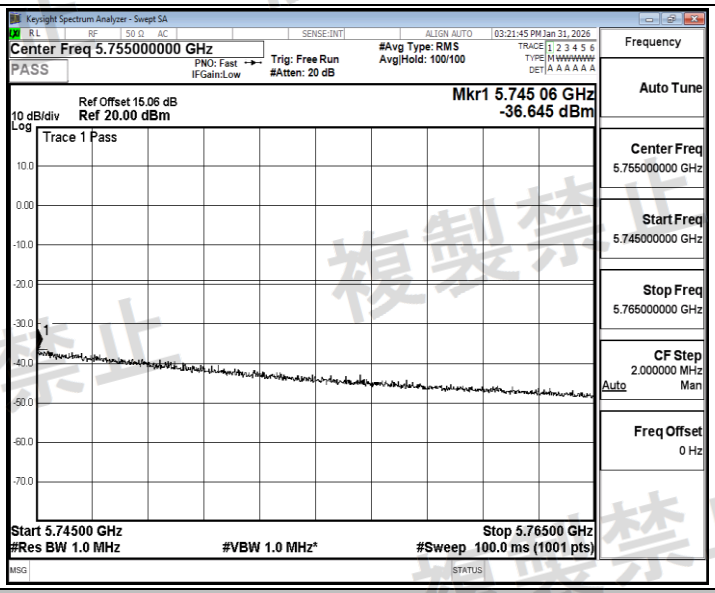
NTNV_11N20SISO_Ant1_5720_30~5460



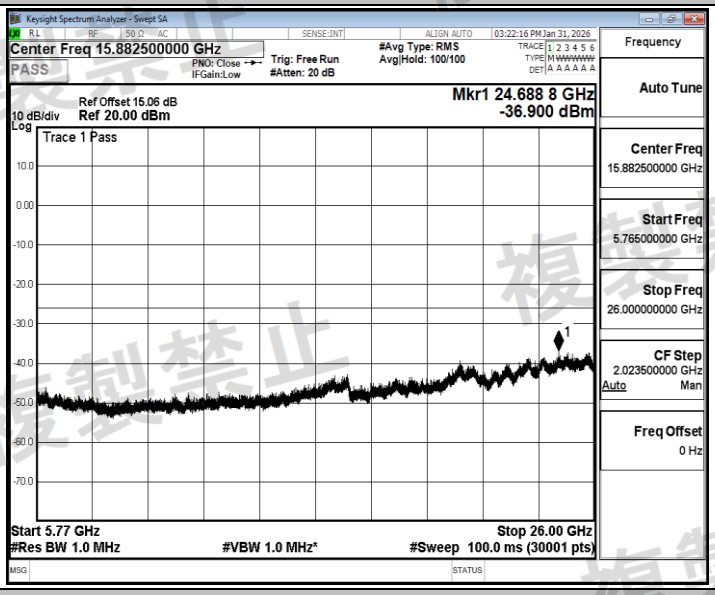
NTNV_11N20SISO_Ant1_5720_5460~5470



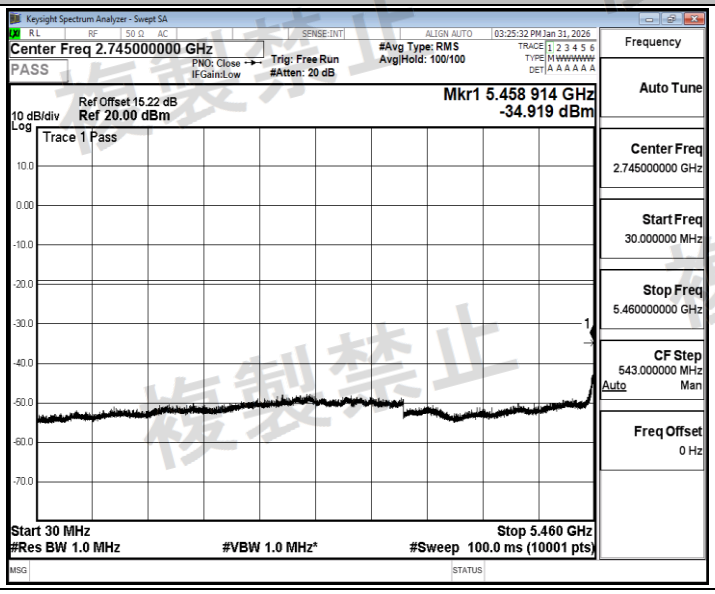
NTNV_11N20SISO_Ant1_5720_5745~5765



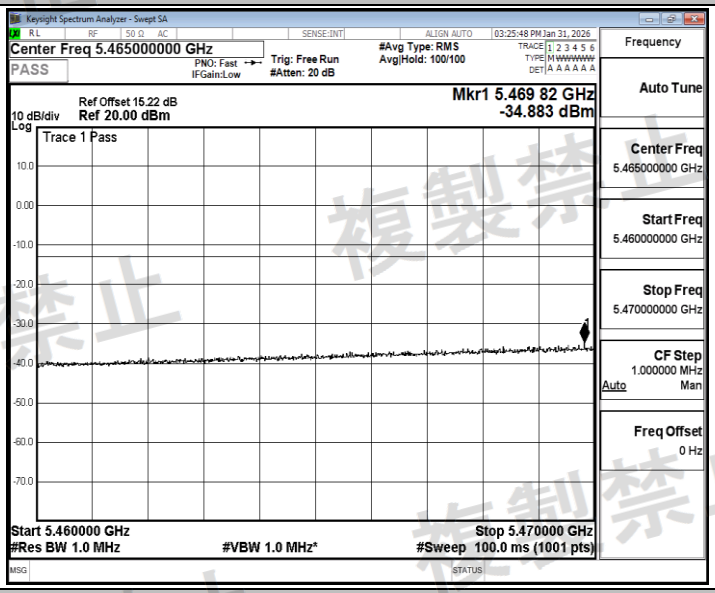
NTNV_11N20SISO_Ant1_5720_5765~26000



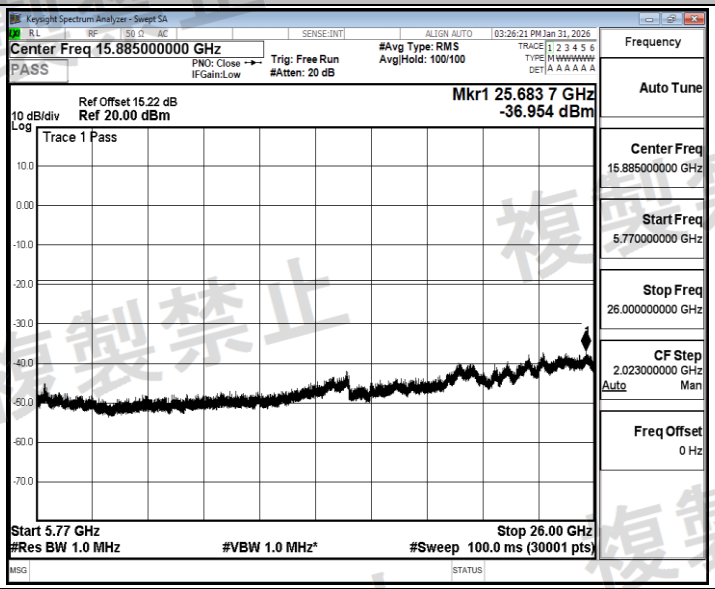
NTNV_11N40SISO_Ant1_5510_30~5460



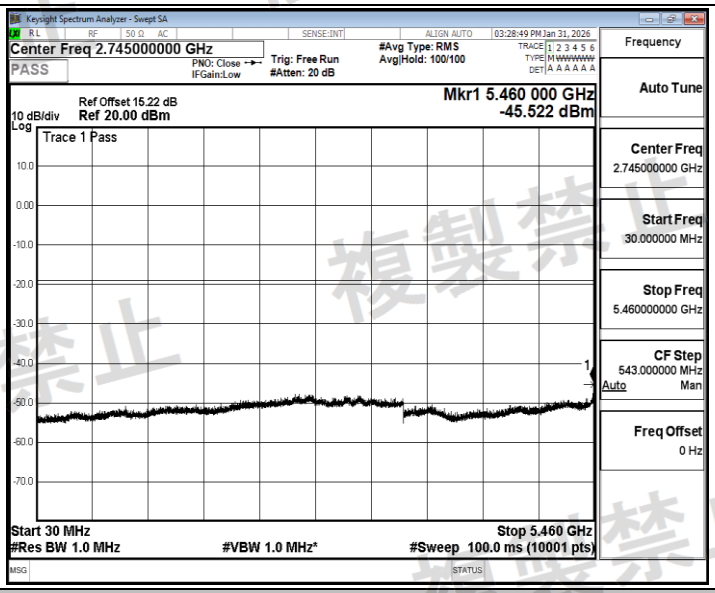
NTNV_11N40SISO_Ant1_5510_5460~5470



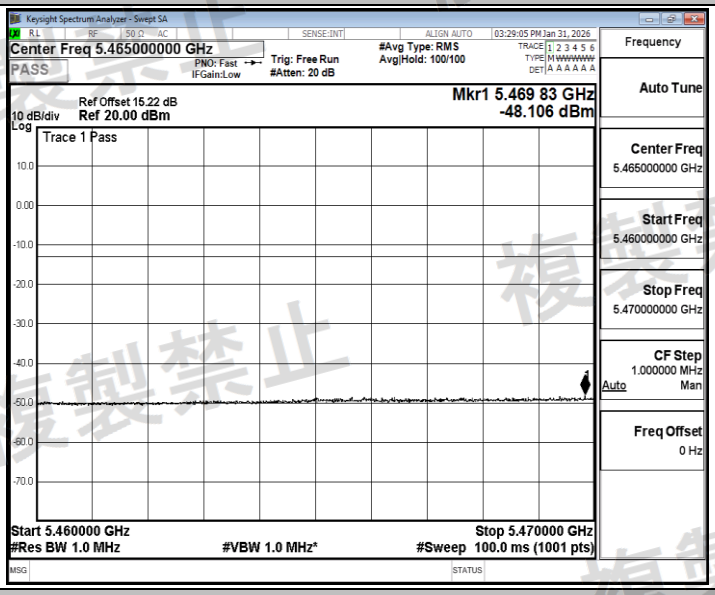
NTNV_11N40SISO_Ant1_5510_5770~26000



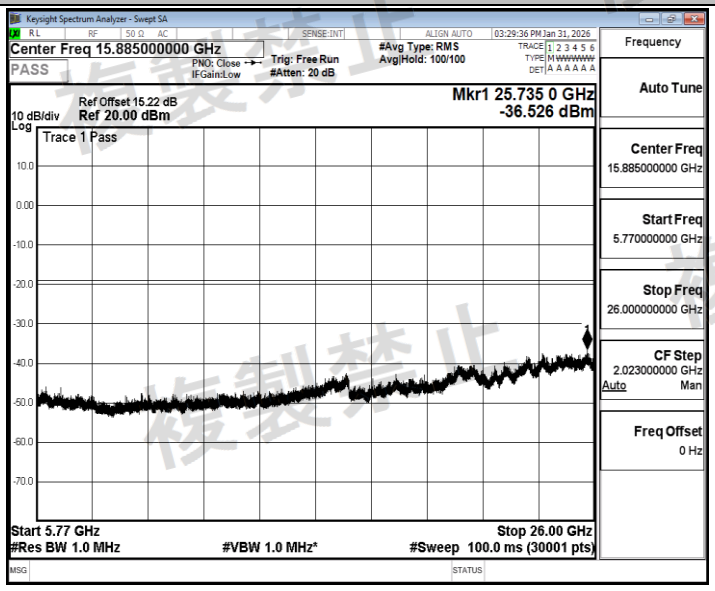
NTNV_11N40SISO_Ant1_5550_30~5460



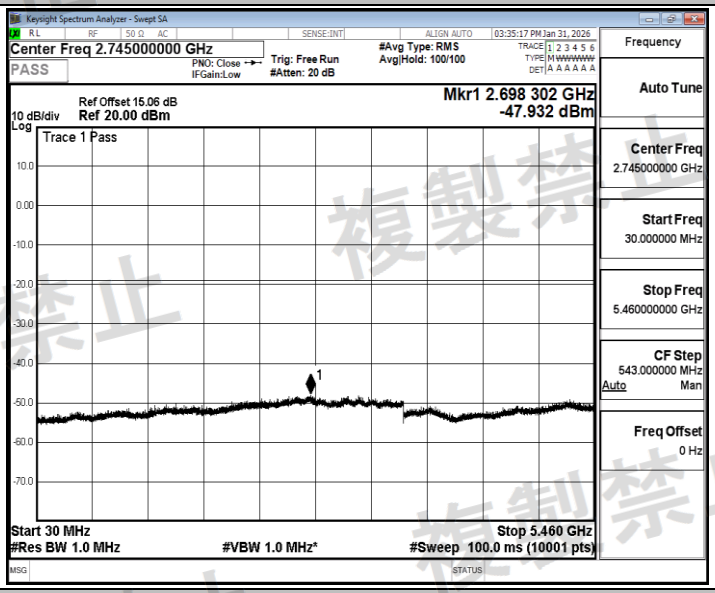
NTNV_11N40SISO_Ant1_5550_5460~5470



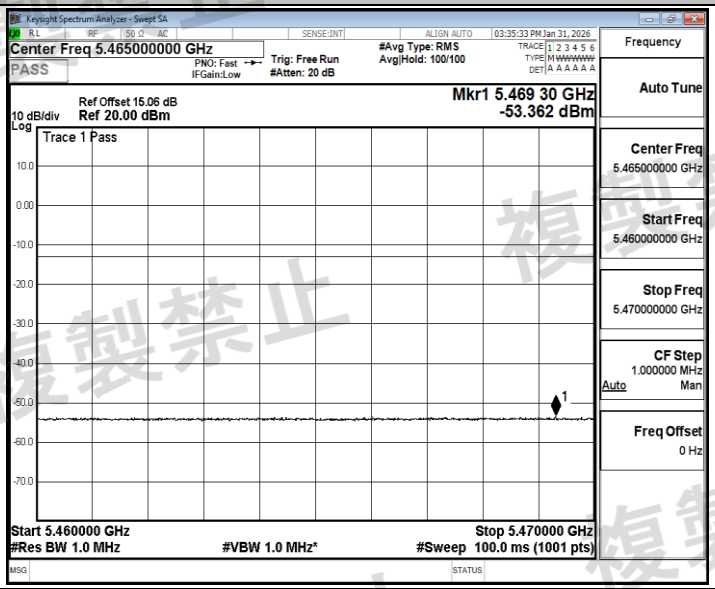
NTNV_11N40SISO_Ant1_5550_5770~26000



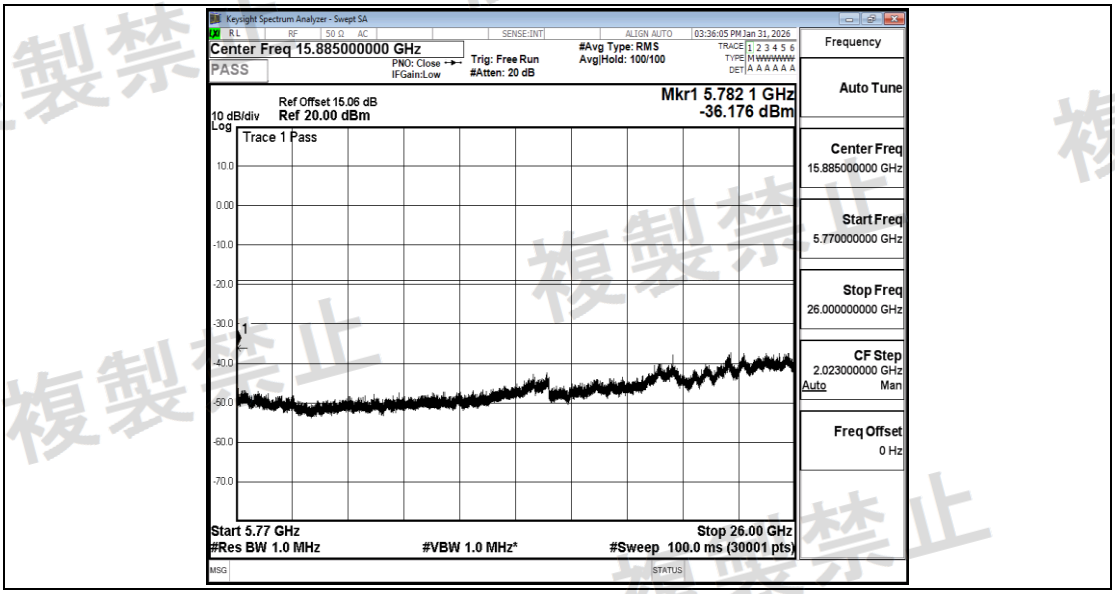
NTNV_11N40SISO_Ant1_5710_30~5460



NTNV_11N40SISO_Ant1_5710_5460~5470



NTNV_11N40SISO_Ant1_5710_5770~26000


Keysight Spectrum Analyzer - Swept SA
Center Freq 15.885000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 100/100
03:36:05 PM Jan 31, 2026
PASS
Ref Offset 15.06 dB
10 dB/div Ref 20.00 dBm
Log
Mkr1 5.782 1 GHz
-36.176 dBm
Trace 1 Pass
Start 5.77 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz*
Stop 26.00 GHz
#Sweep 100.0 ms (30001 pts)
Frequency
Auto Tune
Center Freq
15.885000000 GHz
Start Freq
5.770000000 GHz
Stop Freq
26.000000000 GHz
CF Step
2.023000000 GHz
Auto
Man
Freq Offset
0 Hz

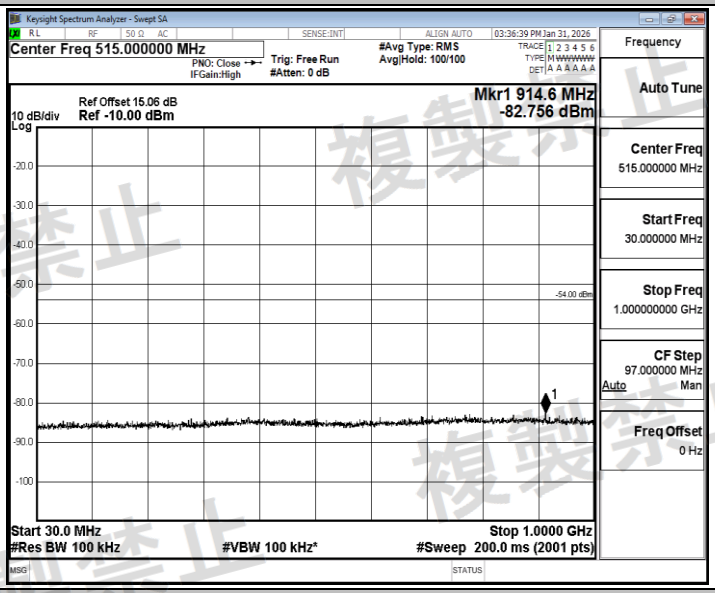
D.5 Spurious Emission of RX

Test Result

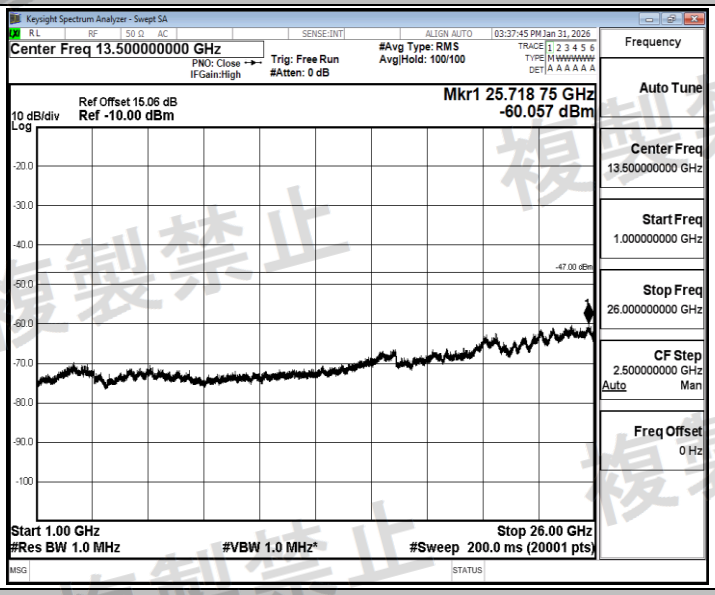
TestCondition	TestMode	Antenna	Freq(MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11A	Ant1	5500	30~1000	914.64	-82.76	≤-54	0.00530	≤4	PASS
				1000~26000	25718.75	-60.06	≤-47	0.98628	≤20	PASS
			5600	30~1000	753.14	-83.03	≤-54	0.00498	≤4	PASS
				1000~26000	24708.75	-60.32	≤-47	0.92897	≤20	PASS
			5720	30~1000	856.93	-83.11	≤-54	0.00489	≤4	PASS
				1000~26000	25652.50	-60.17	≤-47	0.96161	≤20	PASS
	11N20SISO	Ant1	5500	30~1000	816.67	-82.80	≤-54	0.00525	≤4	PASS
				1000~26000	25708.75	-60.57	≤-47	0.87700	≤20	PASS
			5600	30~1000	980.60	-82.33	≤-54	0.00585	≤4	PASS
				1000~26000	25745.00	-60.63	≤-47	0.86497	≤20	PASS
			5720	30~1000	425.76	-83.41	≤-54	0.00456	≤4	PASS
				1000~26000	25793.75	-60.12	≤-47	0.97275	≤20	PASS
	11N40SISO	Ant1	5510	30~1000	932.10	-82.52	≤-54	0.00560	≤4	PASS
				1000~26000	25763.75	-59.95	≤-47	1.01158	≤20	PASS
			5550	30~1000	882.63	-82.76	≤-54	0.00530	≤4	PASS
				1000~26000	25668.75	-59.84	≤-47	1.03753	≤20	PASS
			5710	30~1000	915.61	-82.64	≤-54	0.00545	≤4	PASS
				1000~26000	25688.75	-60.09	≤-47	0.97949	≤20	PASS

Test Graphs

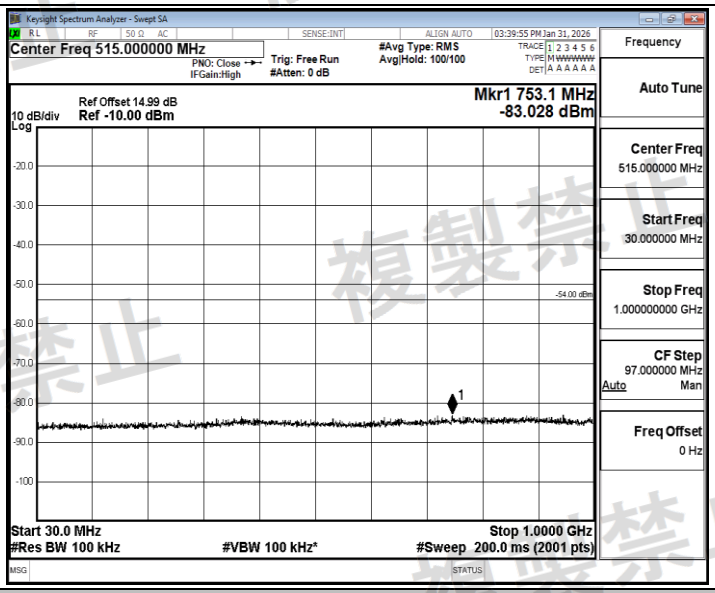
NTNV_11A_Ant1_5500_30~1000



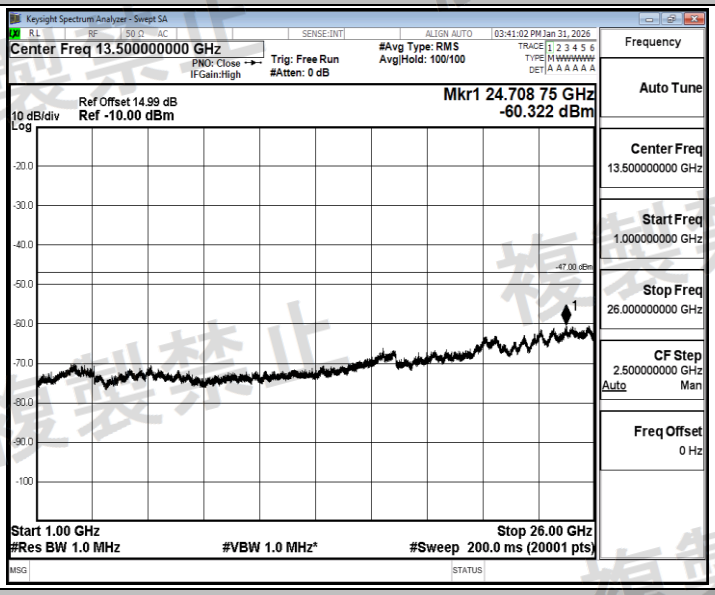
NTNV_11A_Ant1_5500_1000~26000



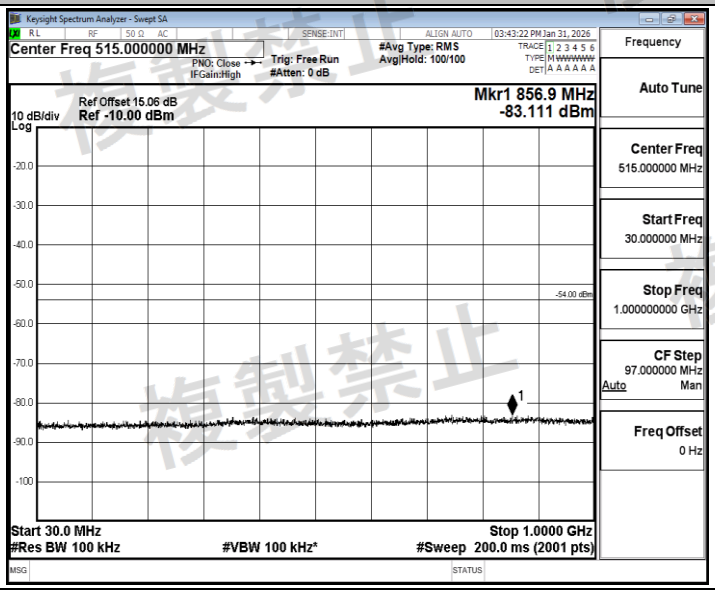
NTNV_11A_Ant1_5600_30~1000



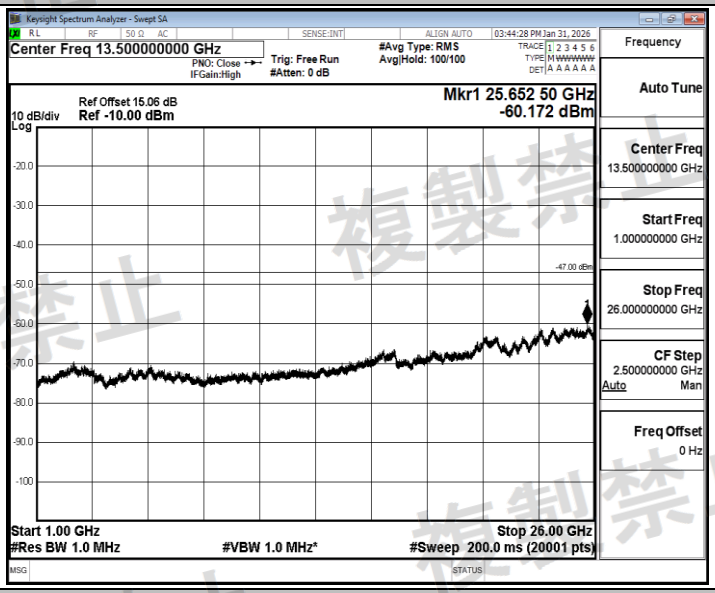
NTNV_11A_Ant1_5600_1000~26000



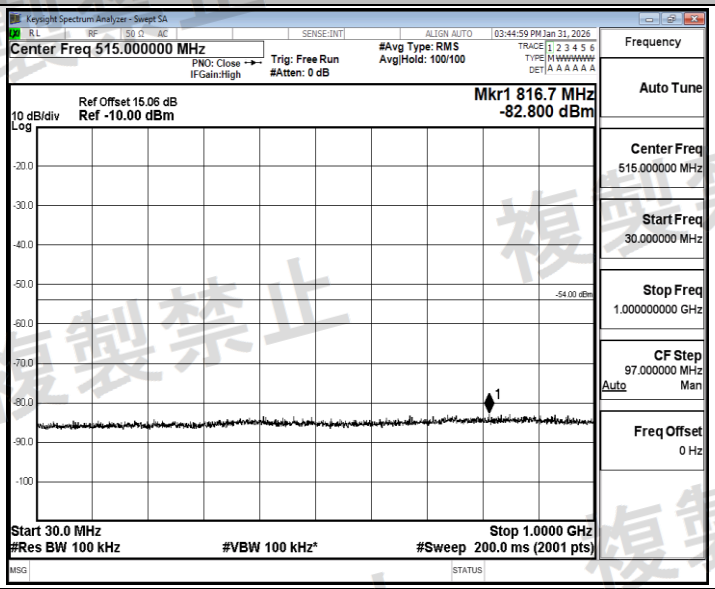
NTNV_11A_Ant1_5720_30~1000



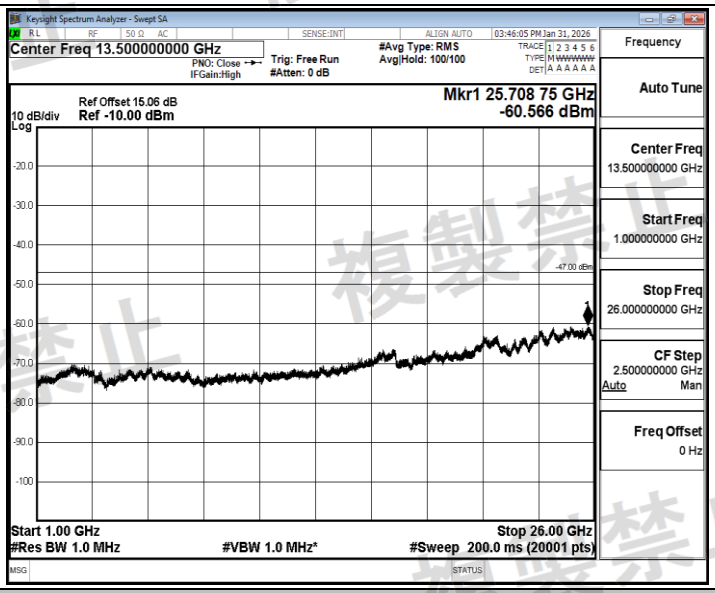
NTNV_11A_Ant1_5720_1000~26000



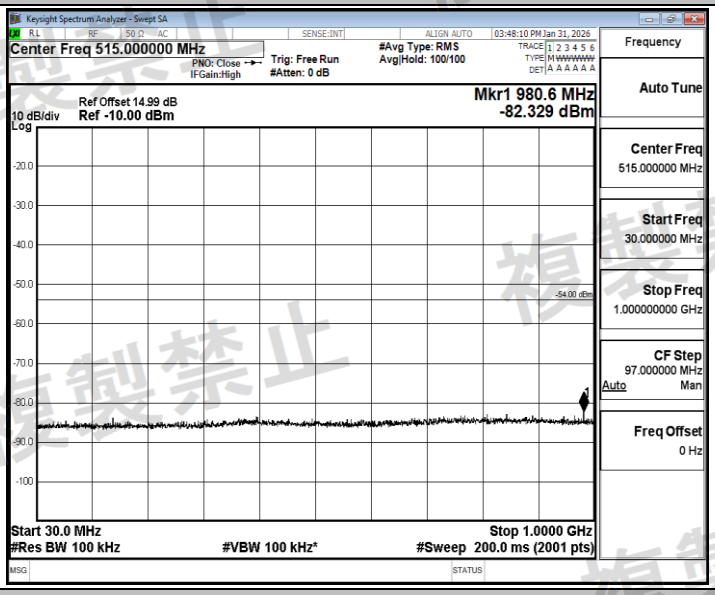
NTNV_11N20SISO_Ant1_5500_30~1000



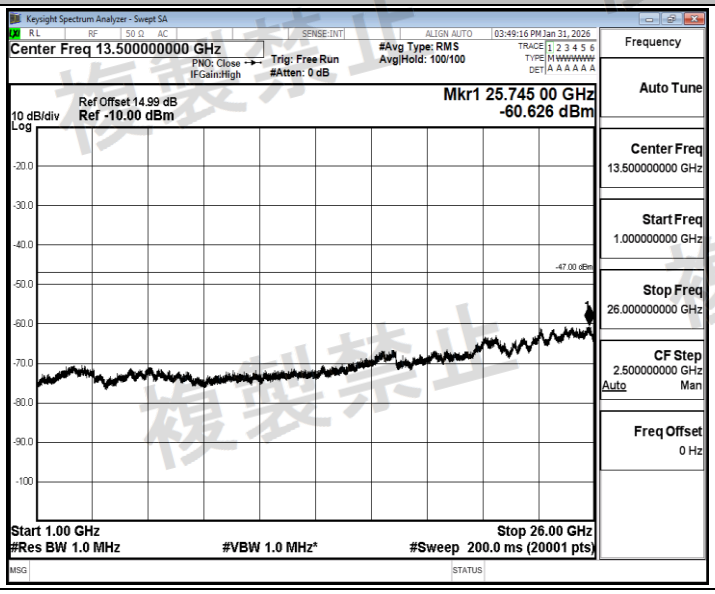
NTNV_11N20SISO_Ant1_5500_1000~26000



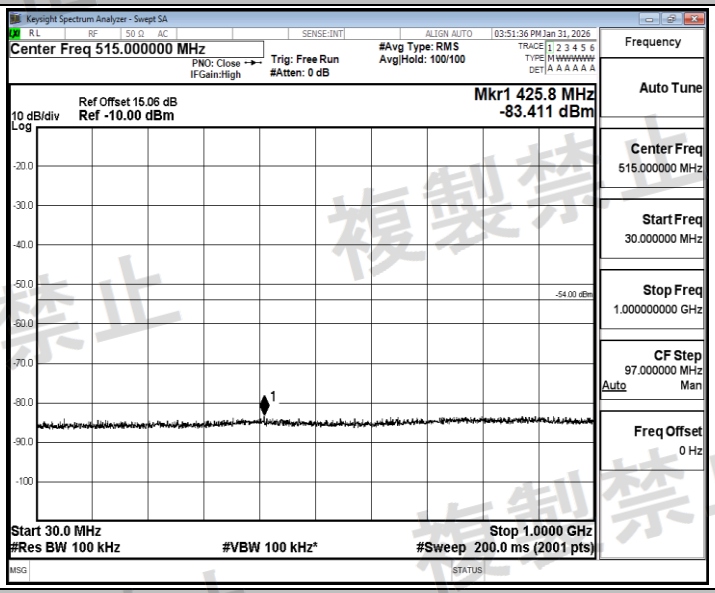
NTNV_11N20SISO_Ant1_5600_30~1000



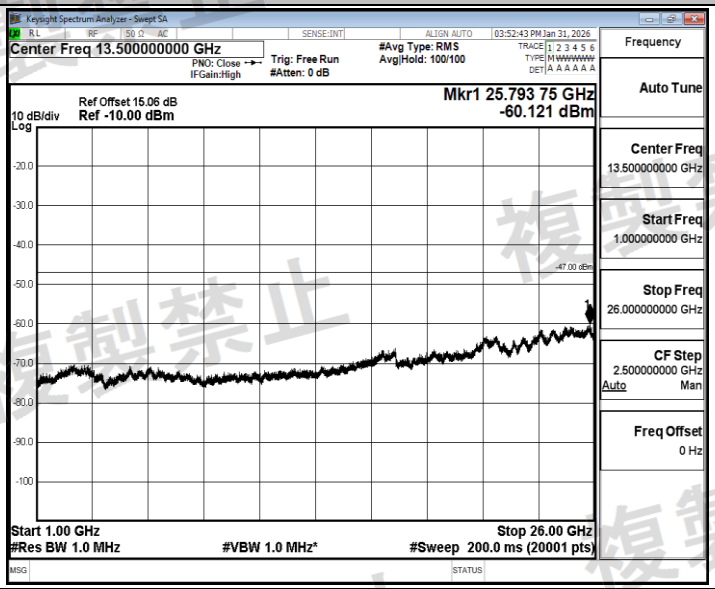
NTNV_11N20SISO_Ant1_5600_1000~26000



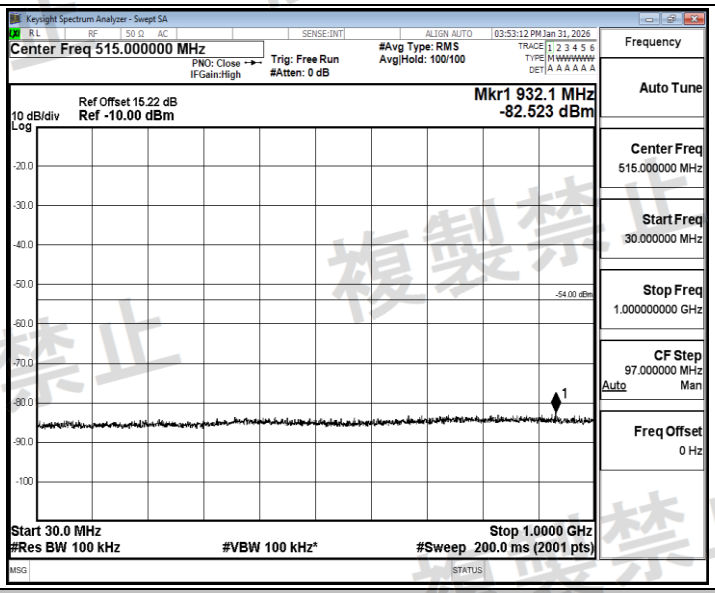
NTNV_11N20SISO_Ant1_5720_30~1000



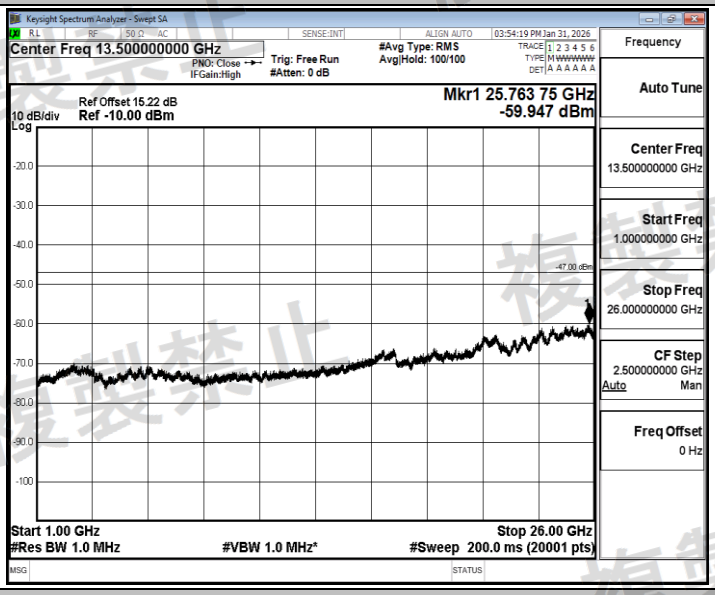
NTNV_11N20SISO_Ant1_5720_1000~26000



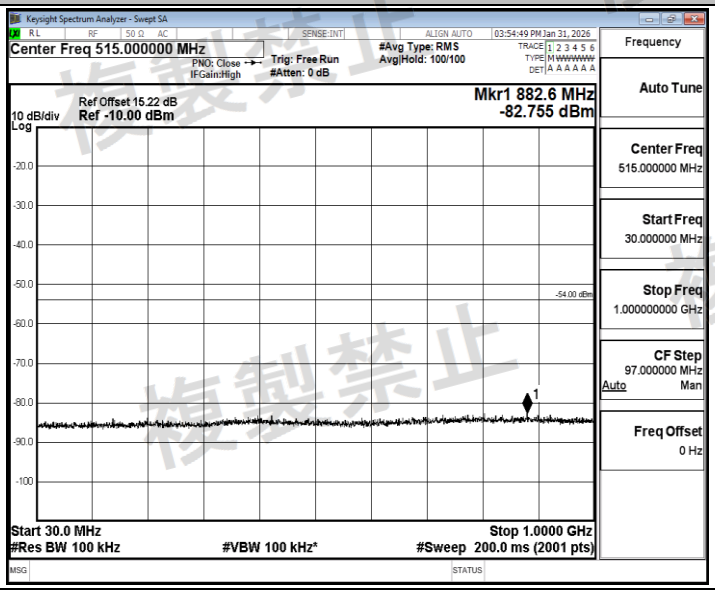
NTNV_11N40SISO_Ant1_5510_30~1000



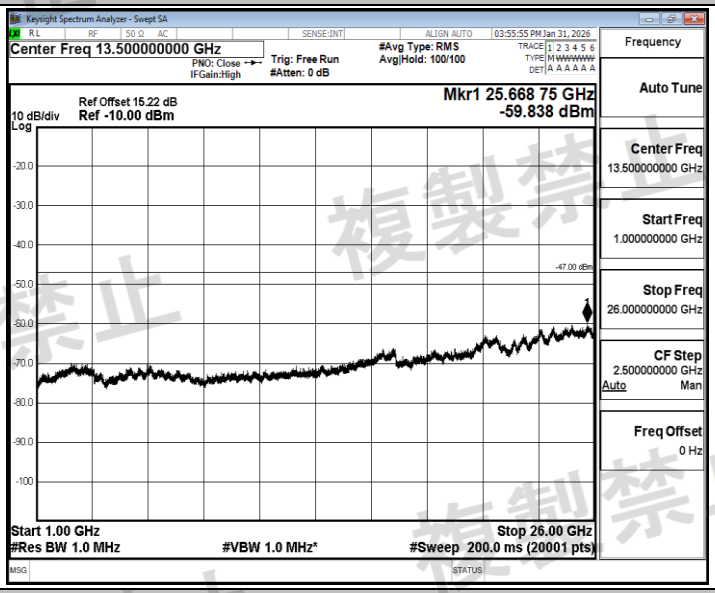
NTNV_11N40SISO_Ant1_5510_1000~26000



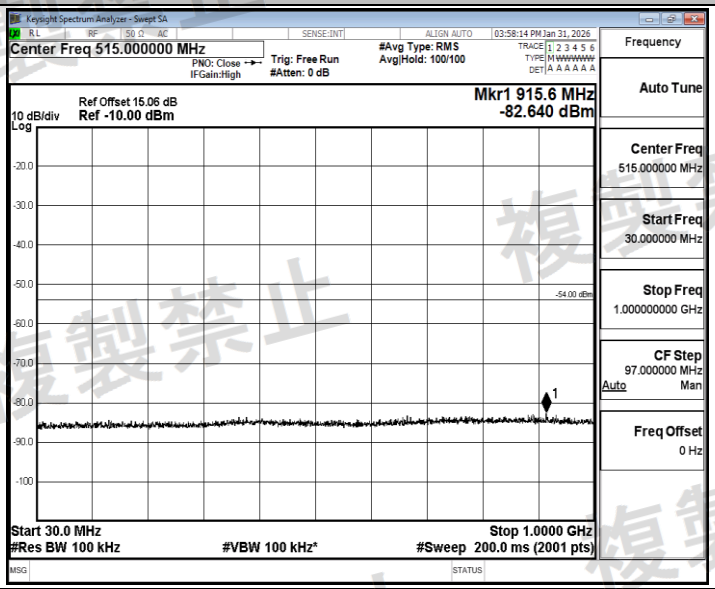
NTNV_11N40SISO_Ant1_5550_30~1000



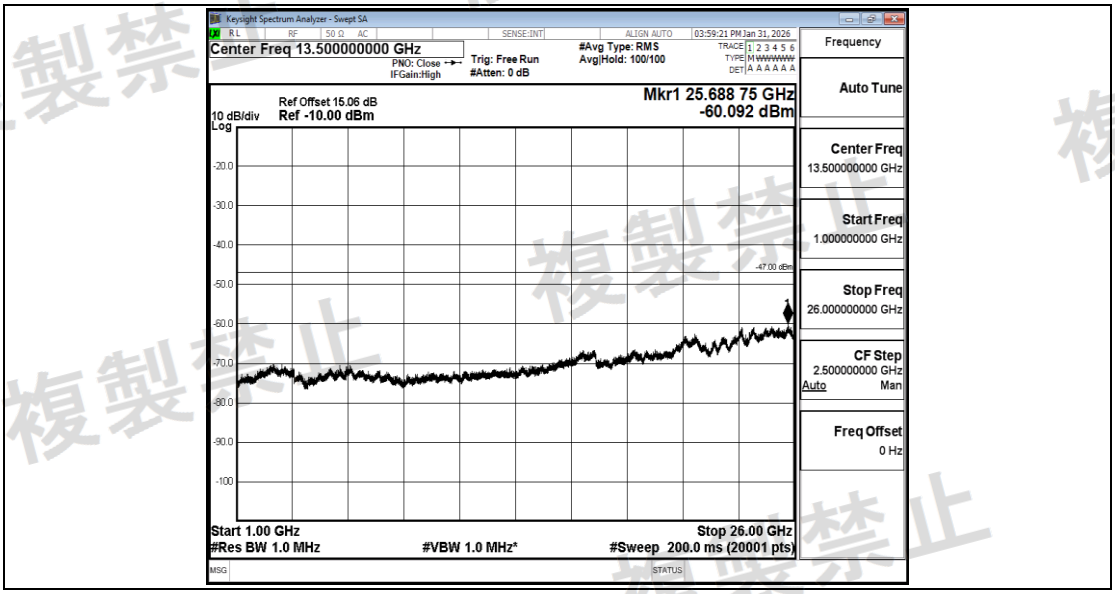
NTNV_11N40SISO_Ant1_5550_1000~26000



NTNV_11N40SISO_Ant1_5710_30~1000



NTNV_11N40SISO_Ant1_5710_1000~26000


Keysight Spectrum Analyzer - Swept SA
Center Freq 13.500000000 GHz
PNO: Close
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 100/100
03:59:21 PM Jan 31, 2026
Ref Offset 15.06 dB
10 dB/div Ref -10.00 dBm
Log
Mkr1 25.688 75 GHz
-60.092 dBm
-47.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz*
Stop 26.00 GHz
#Sweep 200.0 ms (20001 pts)
Frequency
Auto Tune
Center Freq
13.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.000000000 GHz
CF Step
2.500000000 GHz
Auto
Man
Freq Offset
0 Hz

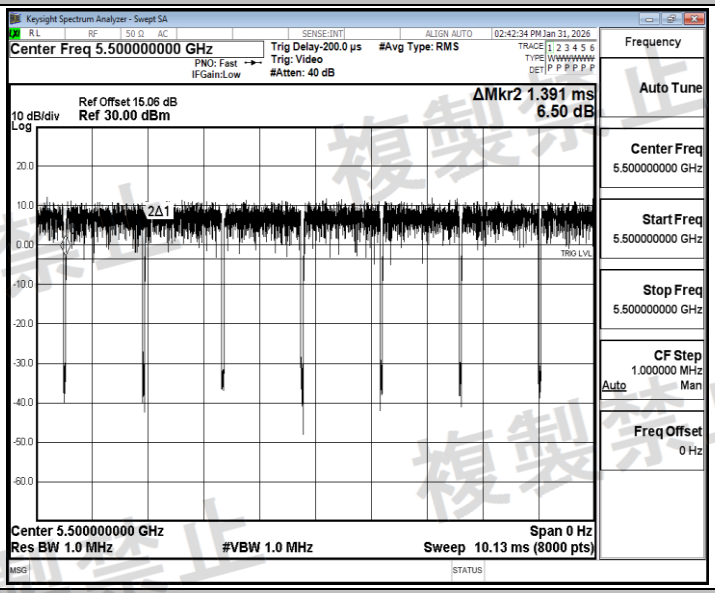
D.6 Transmission Burst Length

Test Result

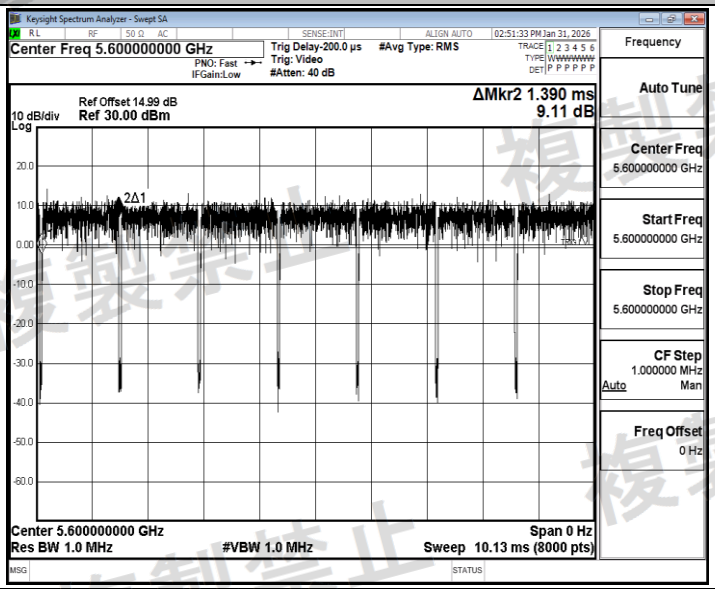
TestCondition	TestMode	Antenna	Freq(MHz)	Result [ms]	Limit [ms]	Verdict
NTNV	11A	Ant1	5500	1.39	≤8	PASS
			5600	1.39	≤8	PASS
			5720	1.39	≤8	PASS
	11N20SISO	Ant1	5500	1.30	≤8	PASS
			5600	1.30	≤8	PASS
			5720	1.30	≤8	PASS
	11N40SISO	Ant1	5510	0.64	≤8	PASS
			5550	0.64	≤8	PASS
			5710	0.64	≤8	PASS

Test Graphs

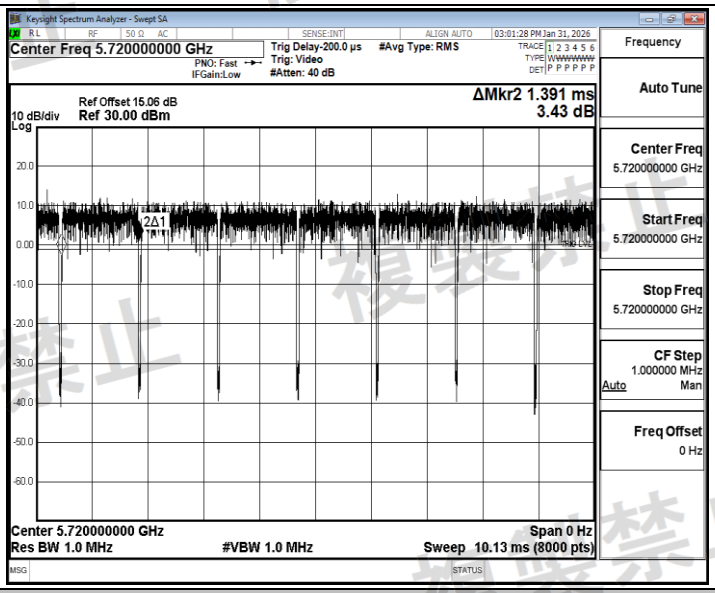
NTNV_11A_Ant1_5500



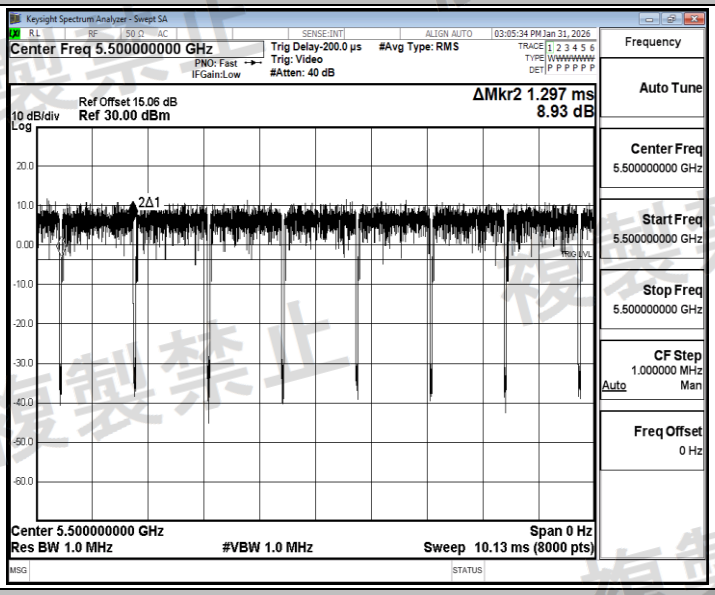
NTNV_11A_Ant1_5600



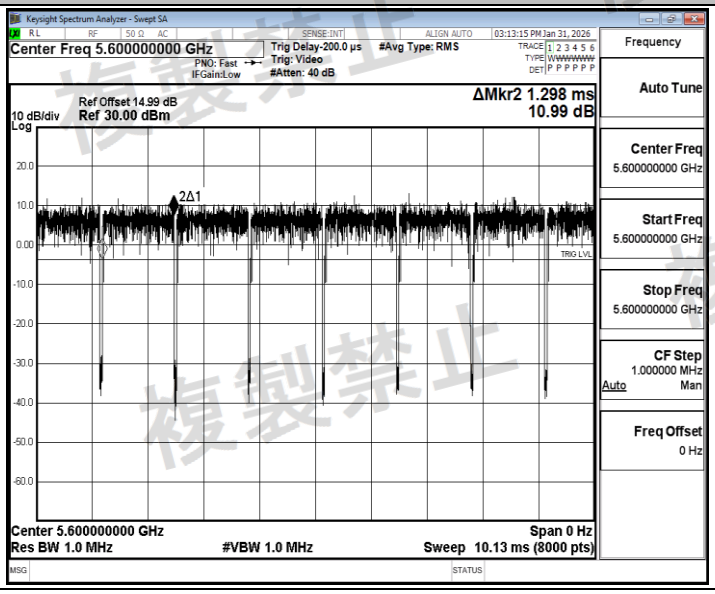
NTNV_11A_Ant1_5720



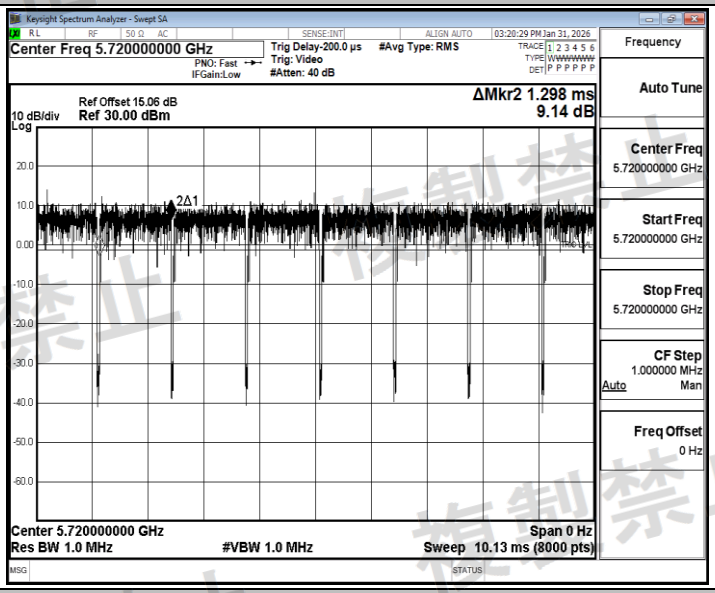
NTNV_11N20SISO_Ant1_5500



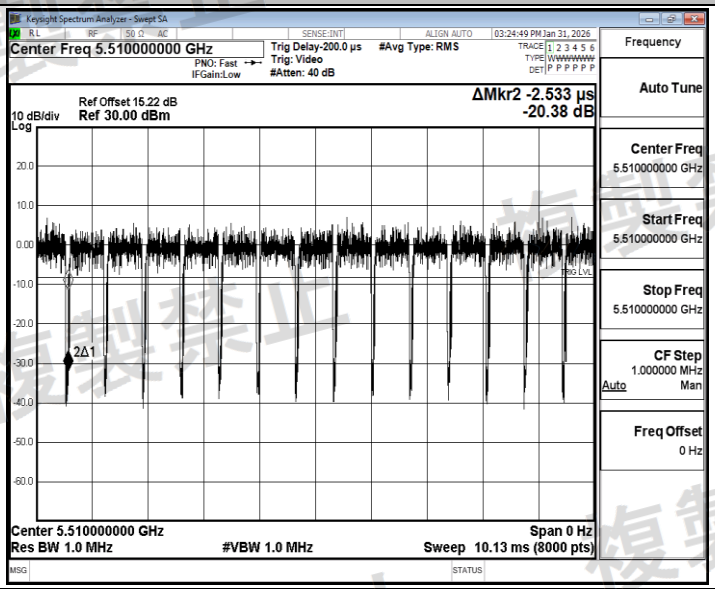
NTNV_11N20SISO_Ant1_5600



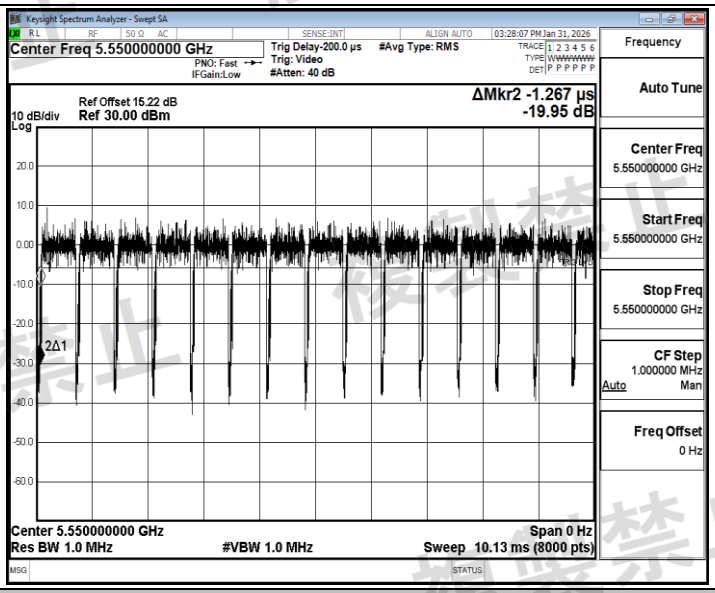
NTNV_11N20SISO_Ant1_5720



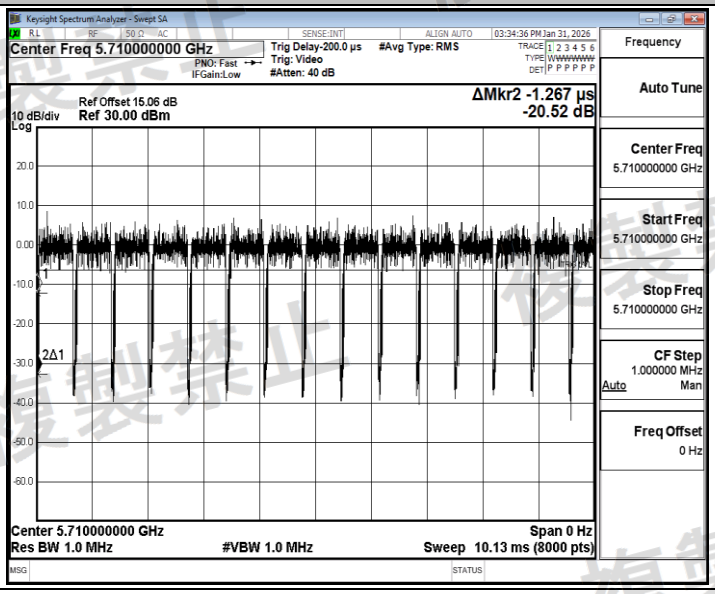
NTNV_11N40SISO_Ant1_5510



NTNV_11N40SISO_Ant1_5550



NTNV_11N40SISO_Ant1_5710



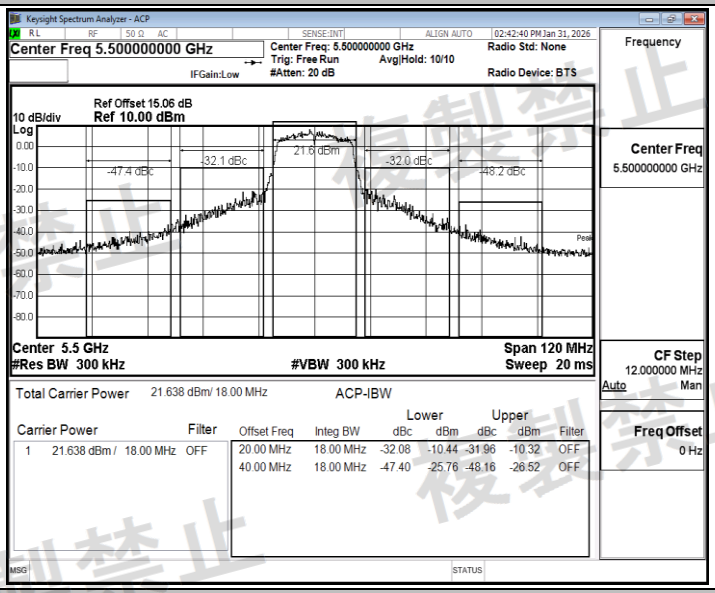
D.7 Adjacent Channel Power Tolerance

Test Result

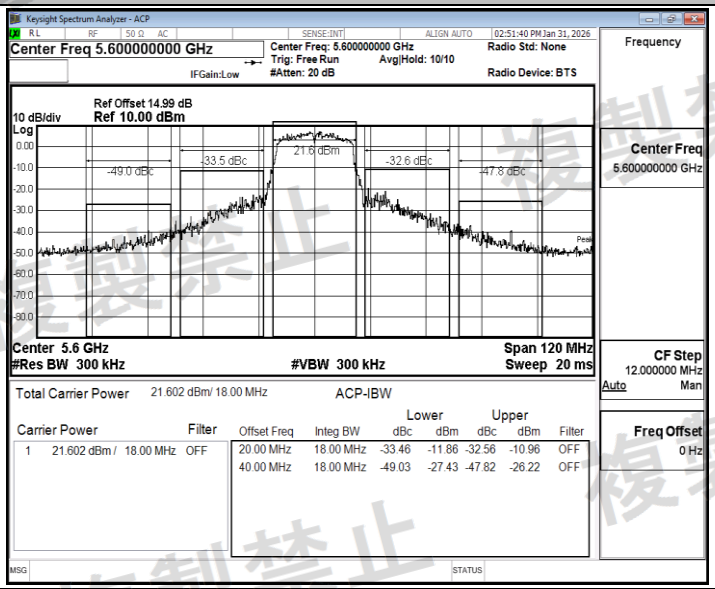
TestCondition	TestMode	Antenna	Freq(MHz)	Offset [MHz]	Result [dBc]	Limit [dBc]	Verdict
NTNV	11A	Ant1	5500	-40	-47.40	≤-40	PASS
				-20	-32.08	≤-25	PASS
				+20	-31.96	≤-25	PASS
				+40	-48.16	≤-40	PASS
			5600	-40	-49.03	≤-40	PASS
				-20	-33.46	≤-25	PASS
				+20	-32.56	≤-25	PASS
				+40	-47.82	≤-40	PASS
			5720	-40	-48.43	≤-40	PASS
				-20	-32.93	≤-25	PASS
				+20	-32.23	≤-25	PASS
				+40	-47.13	≤-40	PASS
	11N20SISO	Ant1	5500	-40	-47.56	≤-40	PASS
				-20	-31.86	≤-25	PASS
				+20	-32.78	≤-25	PASS
				+40	-48.64	≤-40	PASS
			5600	-40	-47.84	≤-40	PASS
				-20	-31.37	≤-25	PASS
				+20	-31.13	≤-25	PASS
				+40	-46.66	≤-40	PASS
			5720	-40	-47.91	≤-40	PASS
				-20	-33.02	≤-25	PASS
				+20	-32.54	≤-25	PASS
				+40	-47.10	≤-40	PASS
	11N40SISO	Ant1	5510	-80	-46.74	≤-40	PASS
				-40	-31.50	≤-25	PASS
				+40	-31.61	≤-25	PASS
				+80	-47.81	≤-40	PASS
			5550	-80	-46.29	≤-40	PASS
				-40	-30.94	≤-25	PASS
				+40	-31.49	≤-25	PASS
				+80	-47.01	≤-40	PASS
			5710	-80	-48.18	≤-40	PASS
				-40	-33.37	≤-25	PASS
				+40	-31.46	≤-25	PASS
				+80	-46.60	≤-40	PASS

Test Graphs

NTNV_11A_Ant1_5500



NTNV_11A_Ant1_5600



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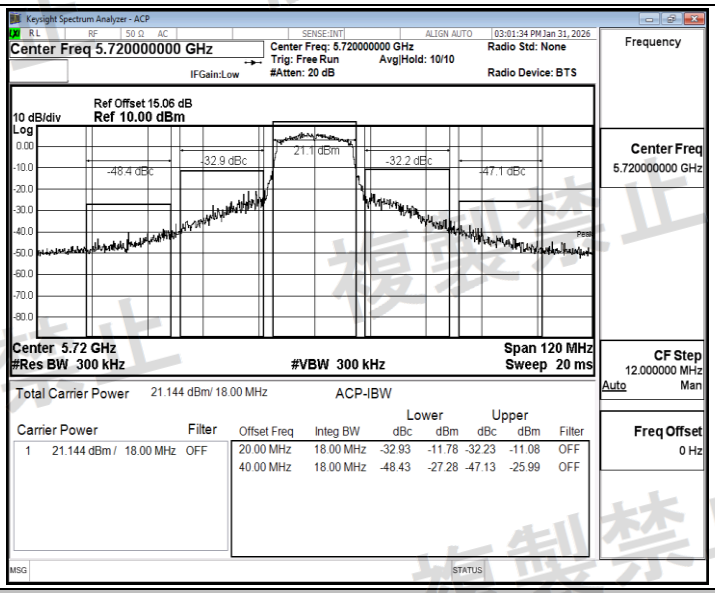
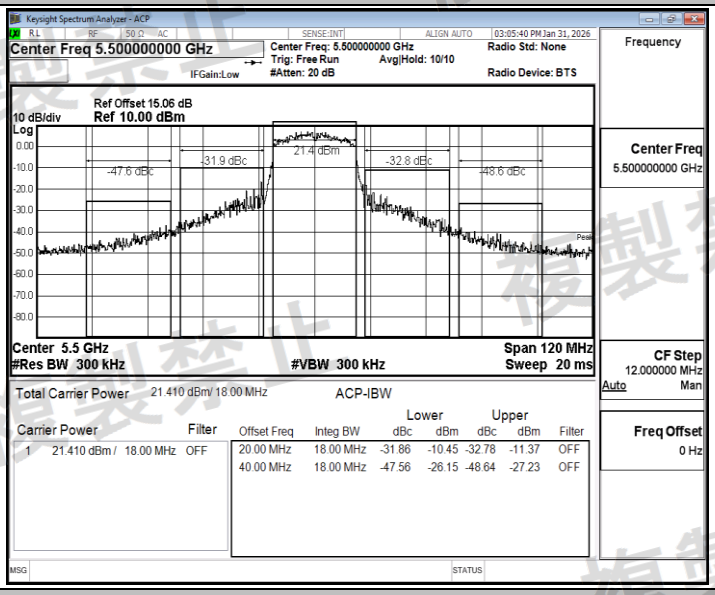


NTNV_11N20SISO_Ant1_5500



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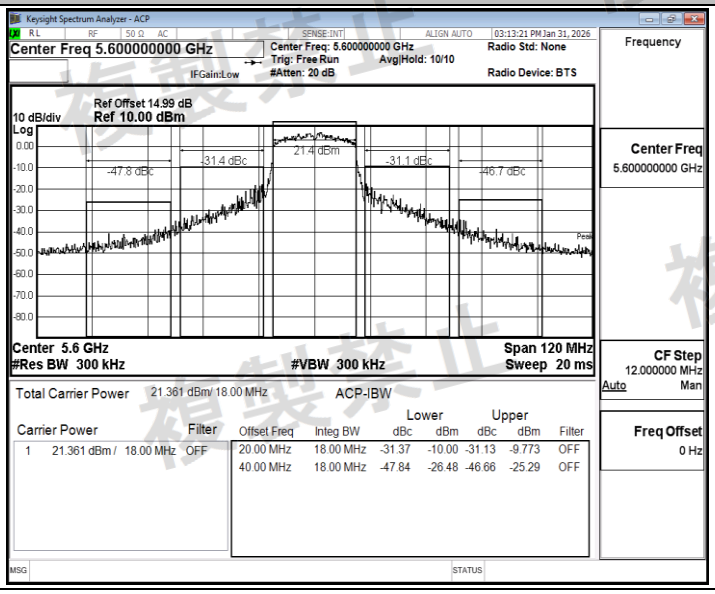

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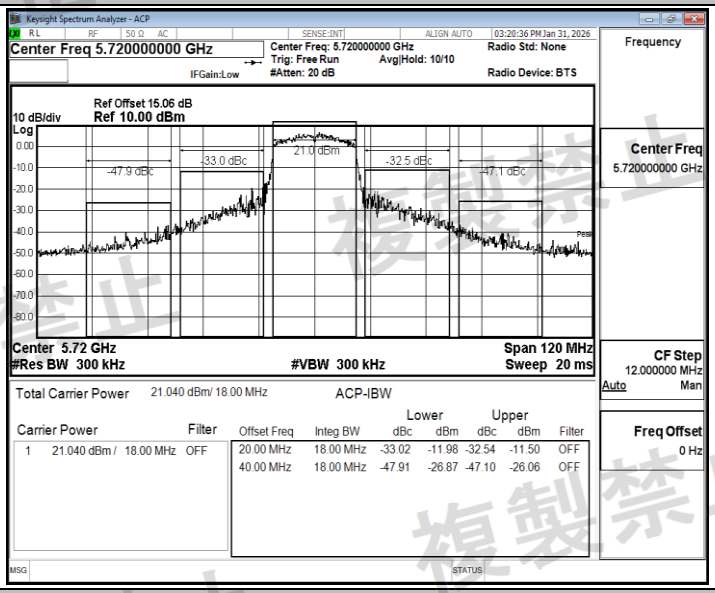

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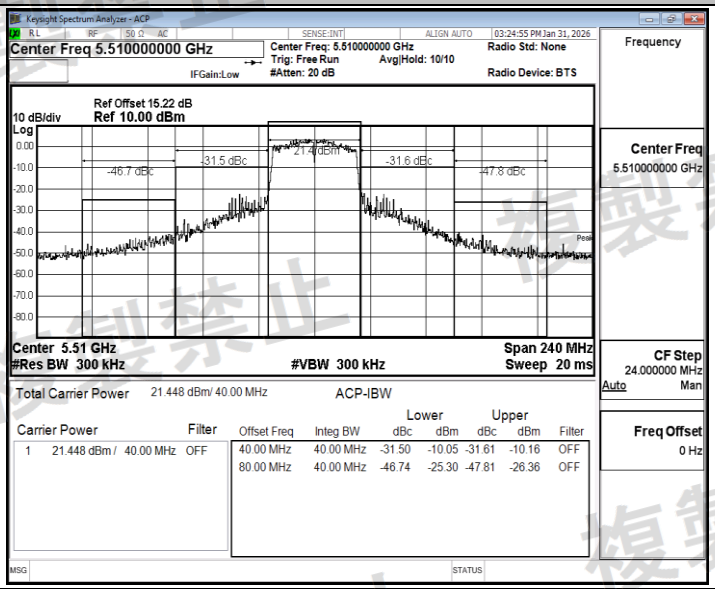

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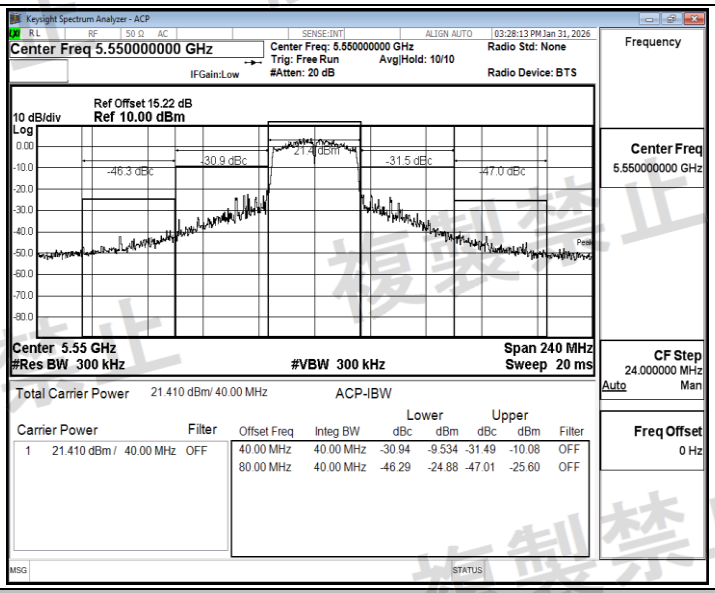
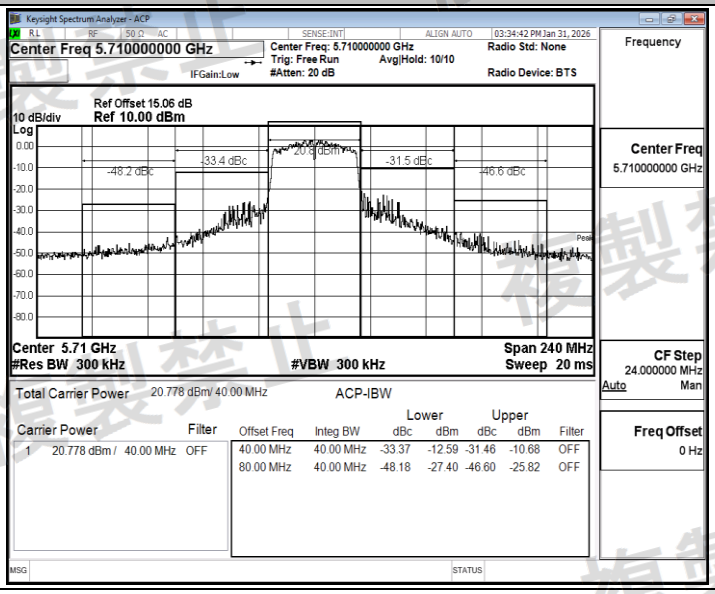
NTNV_11N40SISO_Ant1_5710