

7.7.5.Test Result

Temperature:	23.4 °C
Relative Humidity:	63 %
ATM Pressure:	101.1 kPa
Test Data:	2025-09-24
Test Engineer:	Stone Zhang

Test Mode	Antenna	Ch Name	Frequency (MHz)	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.14	-49.10	≤-15.86	PASS
		High	2480	4.21	-49.65	≤-15.79	PASS
		Low	Hop_2402	3.08	-50.33	≤-16.93	PASS
		High	Hop_2480	3.93	-49.57	≤-16.07	PASS
2DH5	Ant1	Low	2402	4.03	-48.59	≤-15.97	PASS
		High	2480	3.78	-49.32	≤-16.22	PASS
		Low	Hop_2402	1.56	-48.96	≤-18.44	PASS
		High	Hop_2480	3.58	-49.51	≤-16.42	PASS
3DH5	Ant1	Low	2402	4.38	-48.05	≤-15.62	PASS
		High	2480	4.03	-49.17	≤-15.97	PASS
		Low	Hop_2402	1.34	-49.34	≤-18.67	PASS
		High	Hop_2480	3.59	-49.20	≤-16.41	PASS

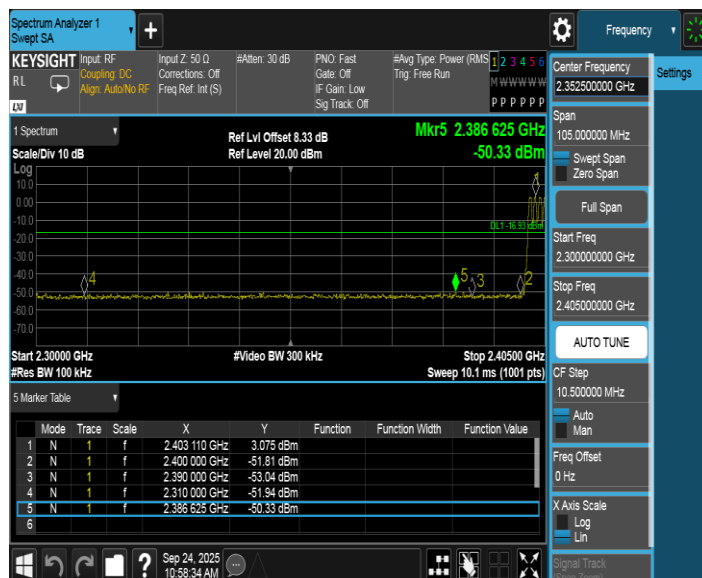
DH5_Ant1_Low_2402



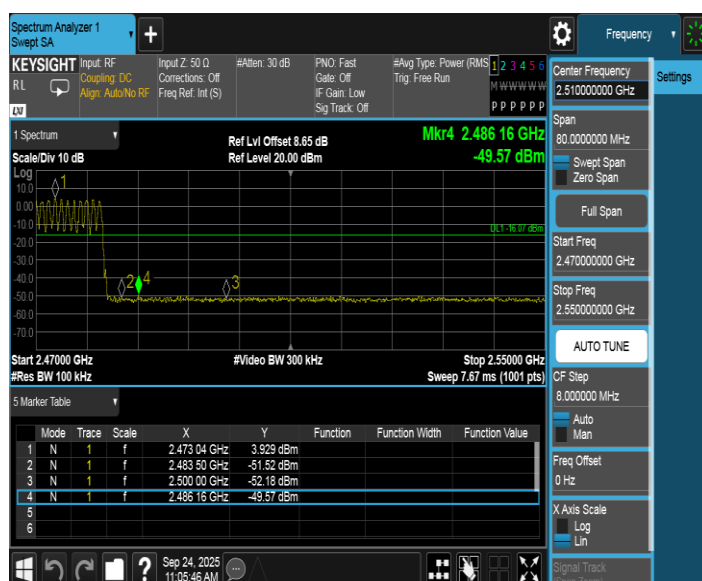
DH5_Ant1_High_2480



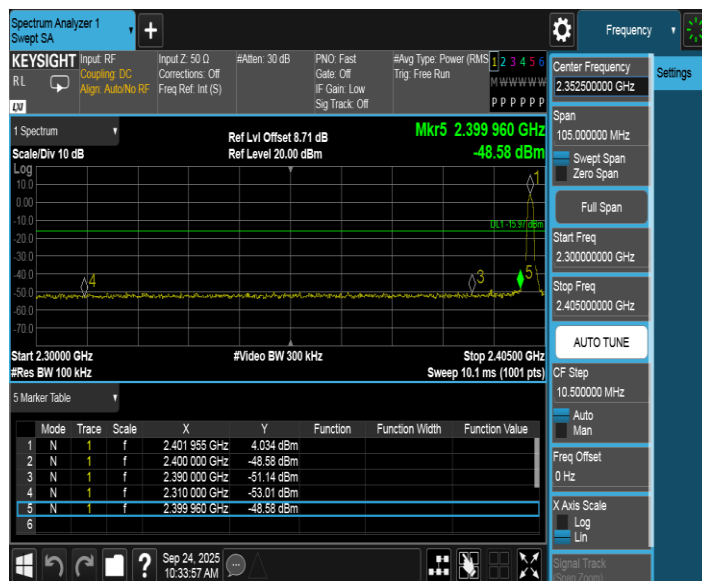
DH5_Ant1_Low_Hop_2402



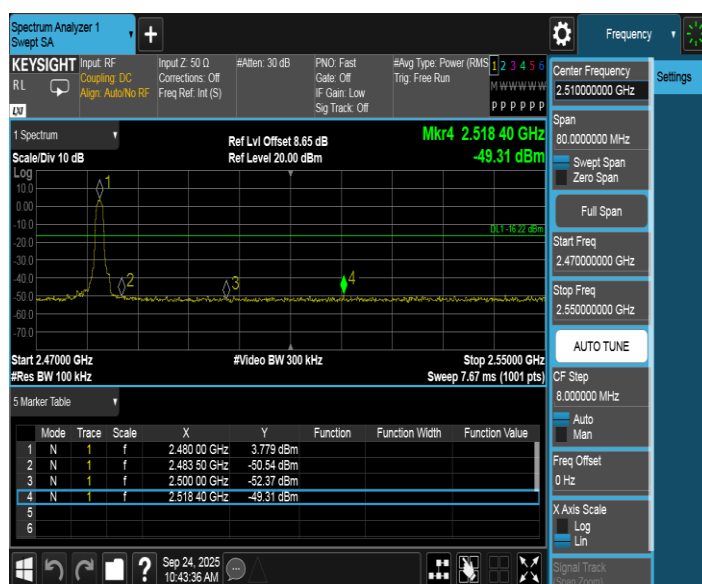
DH5_Ant1_High_Hop_2480



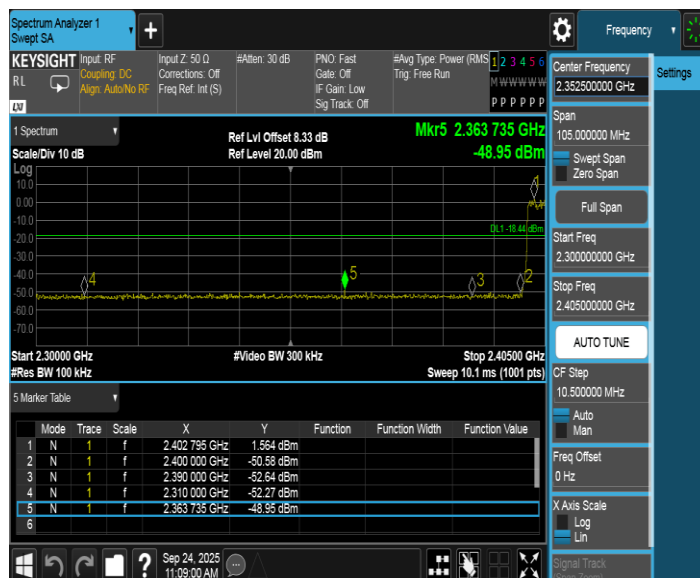
2DH5_Ant1_Low_2402



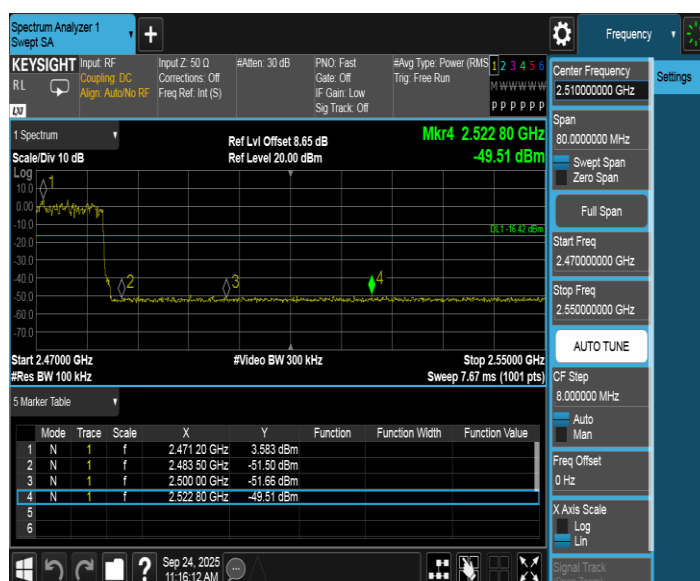
2DH5_Ant1_High_2480



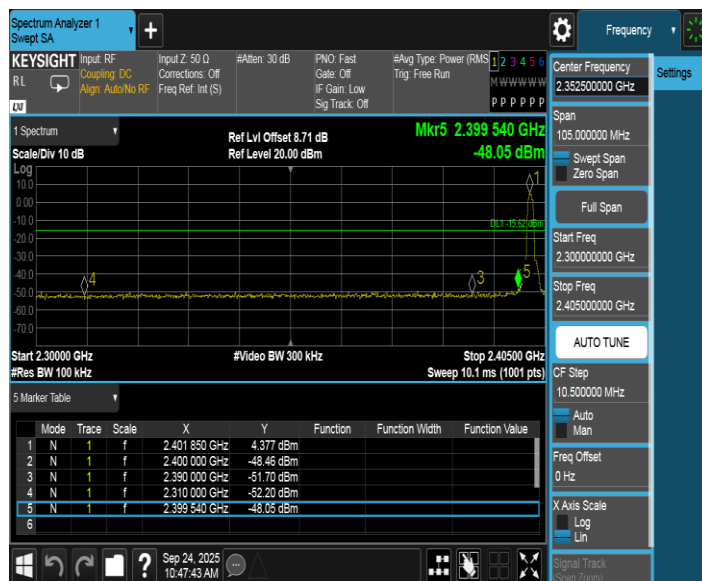
2DH5_Ant1_Low_Hop_2402



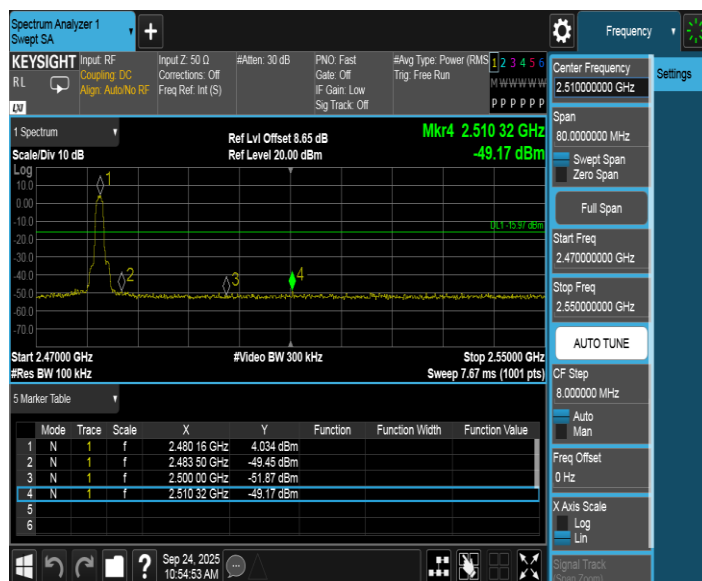
2DH5_Ant1_High_Hop_2480



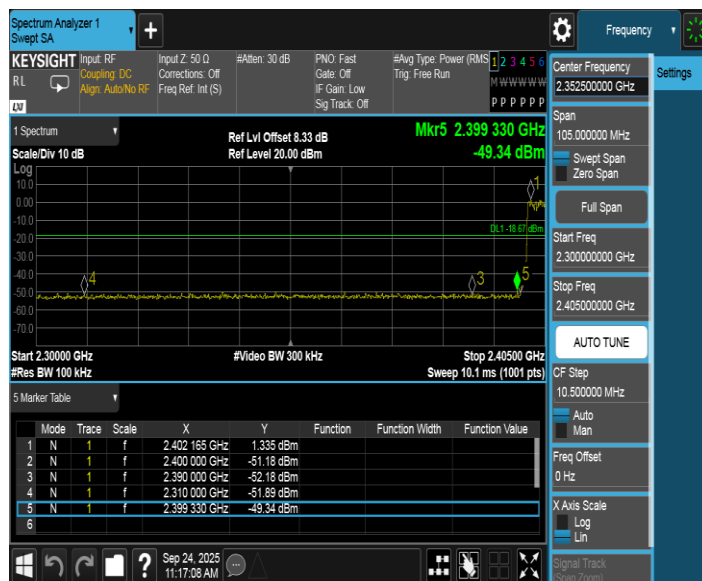
3DH5_Ant1_Low_2402



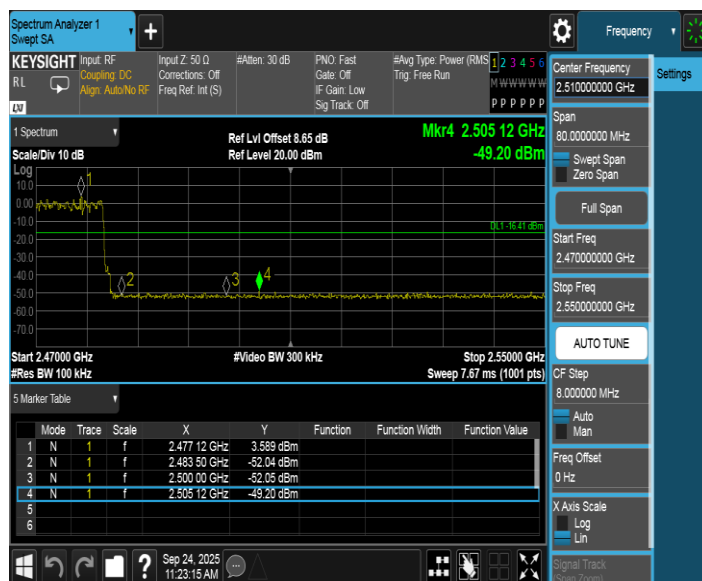
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



7.8. Conducted Spurious Emissions Measurement

7.8.1. Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

7.8.2. Test Procedure Used

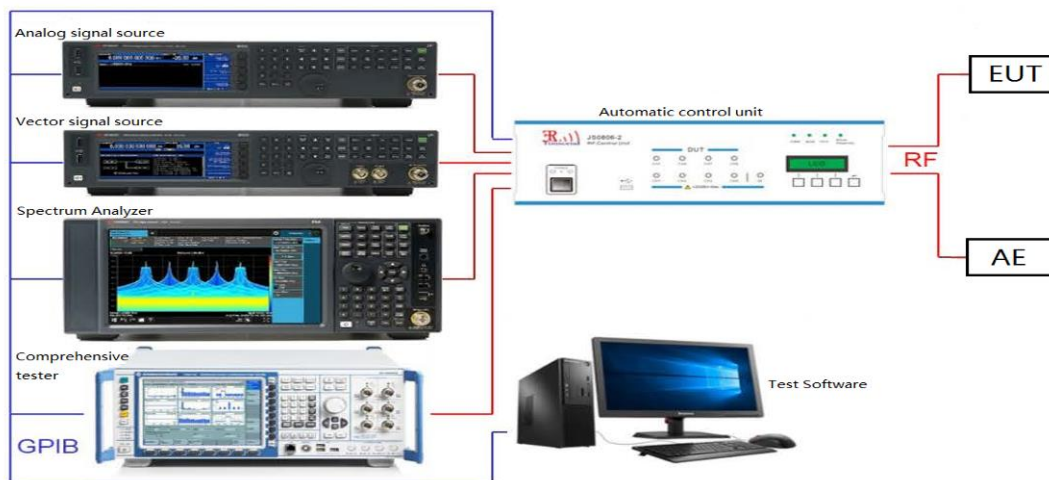
ANSI C63.10-2020 - Section 7.8.7

7.8.3. Test Setting

1. Span = The frequency range of testing shall span 30 MHz to 10 times the operating frequency and this may be done in a single sweep or, to aid resolution, across a number of sweeps.
2. RBW = 100 kHz
3. VBW = 300 kHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize
8. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this section.
9. The limit is based on the highest in-band level across all channels measured using the same

instrument settings (resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector). To help clearly demonstrate compliance a display line may be set at the required offset (typically 20 dB) below the highest in-band level. Where the highest in-band level is not clearly identified in the out-of-band measurements a separate spectral plot showing the in-band level shall be provided.

7.8.4.Test Setup



7.8.5.Test Result

Temperature:	23.4 °C
Relative Humidity:	63 %
ATM Pressure:	101.1 kPa
Test Data:	2025-09-24
Test Engineer:	Stone Zhang

Test Mode	Antenna	Frequency (MHz)	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.21	4.21	---	PASS
			30~1000	4.21	-39.47	≤-15.79	PASS
			1000~26500	4.21	-25.57	≤-15.79	PASS
		2441	Reference	4.56	4.56	---	PASS
			30~1000	4.56	-41.18	≤-15.44	PASS
			1000~26500	4.56	-25.48	≤-15.44	PASS
		2480	Reference	4.08	4.08	---	PASS
			30~1000	4.08	-41.35	≤-15.92	PASS
			1000~26500	4.08	-30.1	≤-15.92	PASS
2DH5	Ant1	2402	Reference	4.13	4.13	---	PASS
			30~1000	4.13	-31.26	≤-15.87	PASS
			1000~26500	4.13	-20.5	≤-15.87	PASS
		2441	Reference	4.49	4.49	---	PASS
			30~1000	4.49	-40.83	≤-15.51	PASS
			1000~26500	4.49	-21.08	≤-15.51	PASS
		2480	Reference	3.90	3.90	---	PASS
			30~1000	3.90	-37.55	≤-16.10	PASS
			1000~26500	3.90	-29.32	≤-16.10	PASS
3DH5	Ant1	2402	Reference	4.34	4.34	---	PASS
			30~1000	4.34	-36.14	≤-15.66	PASS
			1000~26500	4.34	-28.91	≤-15.66	PASS
		2441	Reference	4.59	4.59	---	PASS
			30~1000	4.59	-34.79	≤-15.41	PASS
			1000~26500	4.59	-21.58	≤-15.41	PASS
		2480	Reference	4.03	4.03	---	PASS
			30~1000	4.03	-41.48	≤-15.97	PASS
			1000~26500	4.03	-22.54	≤-15.97	PASS

DH5_Ant1_2402_0~Reference



DH5_Ant1_2402_30~1000



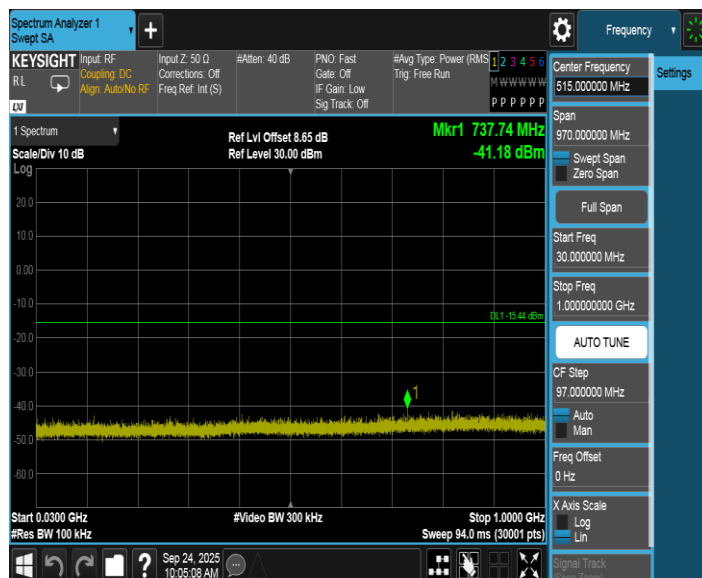
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



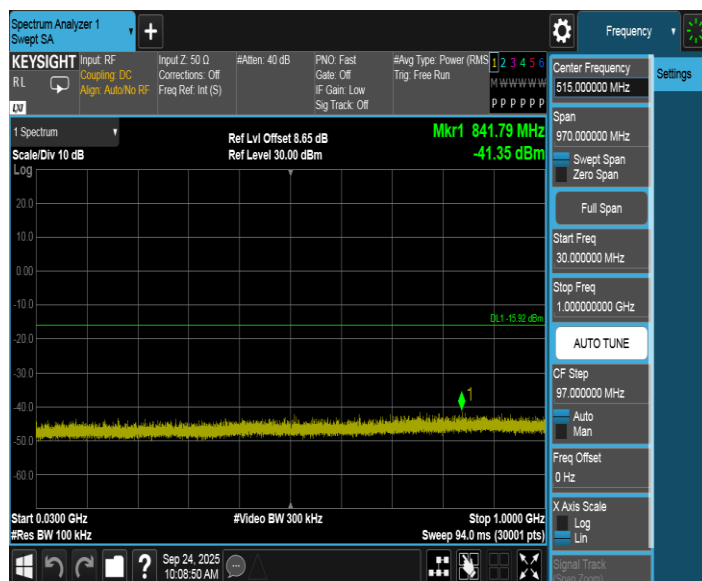
DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference



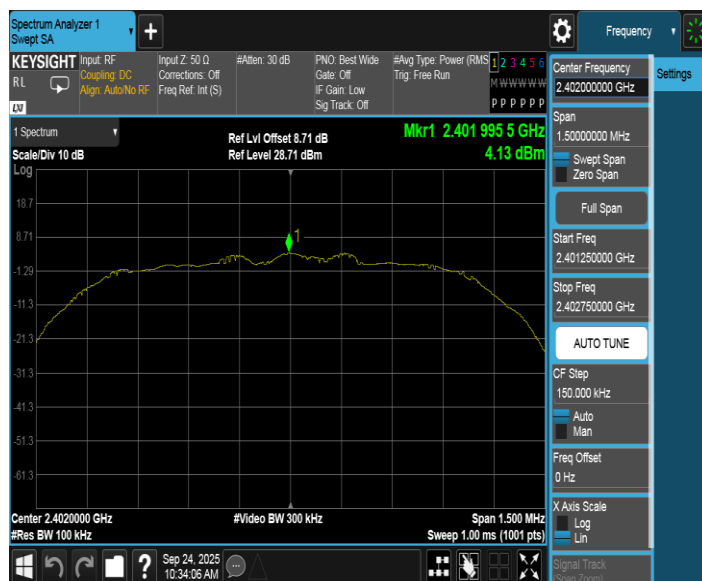
DH5_Ant1_2480_30~1000



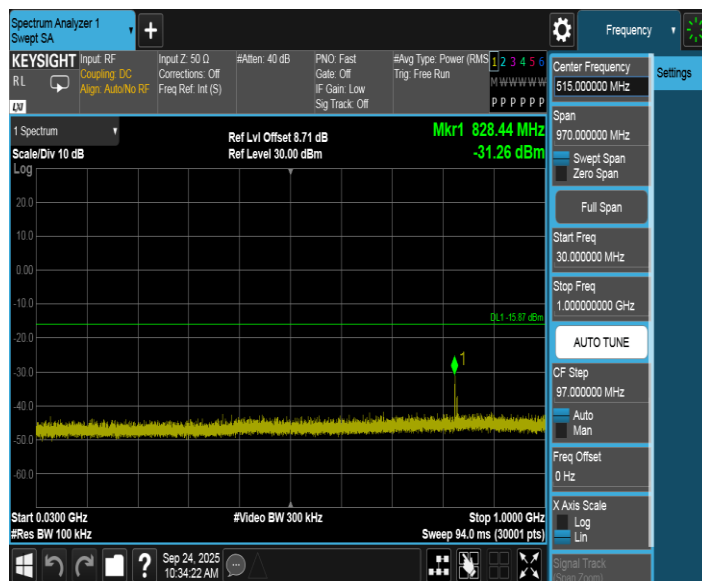
DH5_Ant1_2480_1000~26500



2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



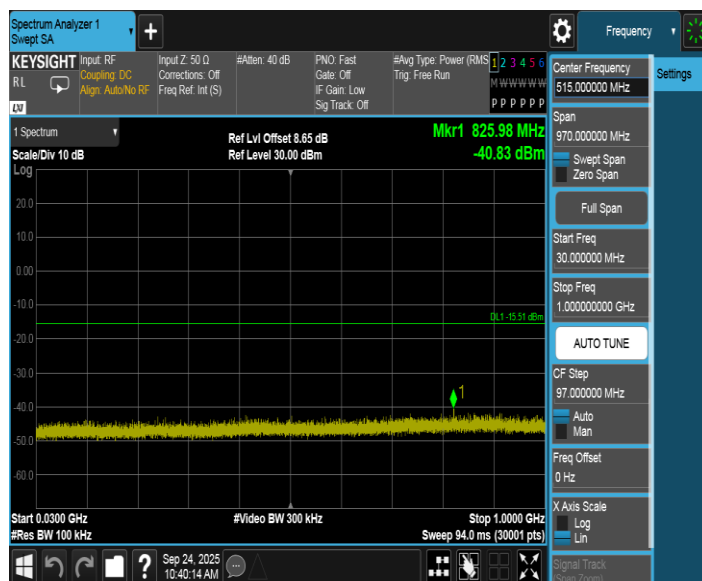
2DH5_Ant1_2402_1000~26500



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



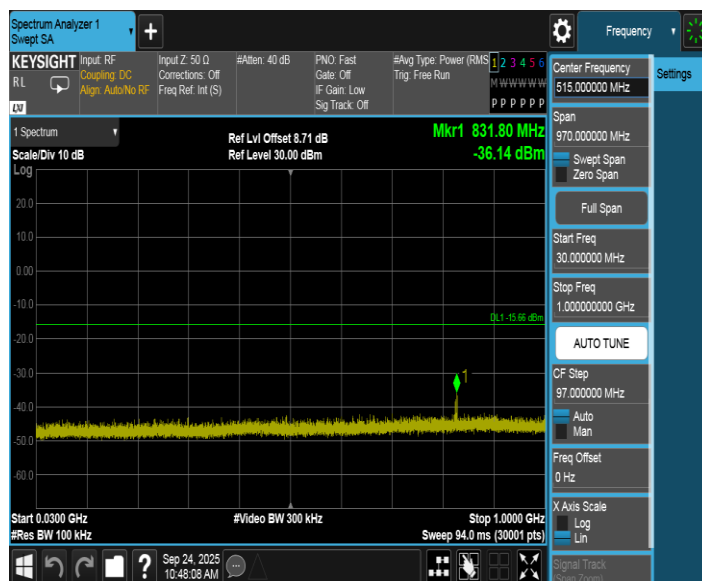
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference



3DH5_Ant1_2402_30~1000



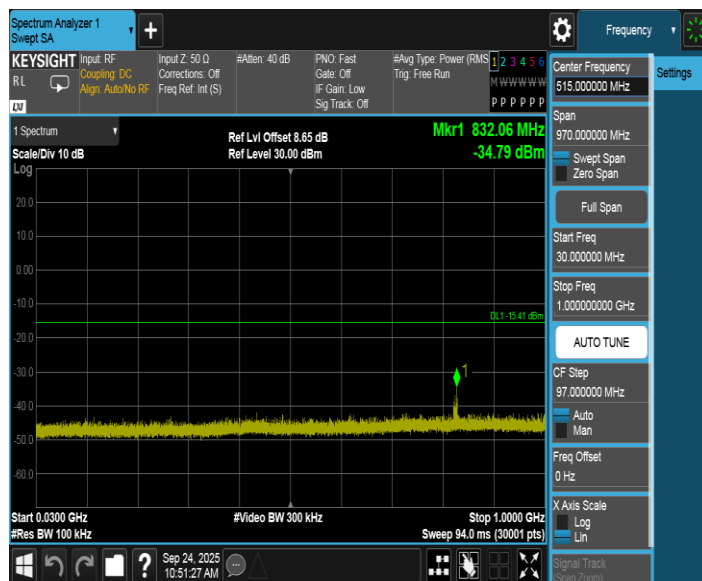
3DH5_Ant1_2402_1000~26500



3DH5_Ant1_2441_0~Reference



3DH5_Ant1_2441_30~1000



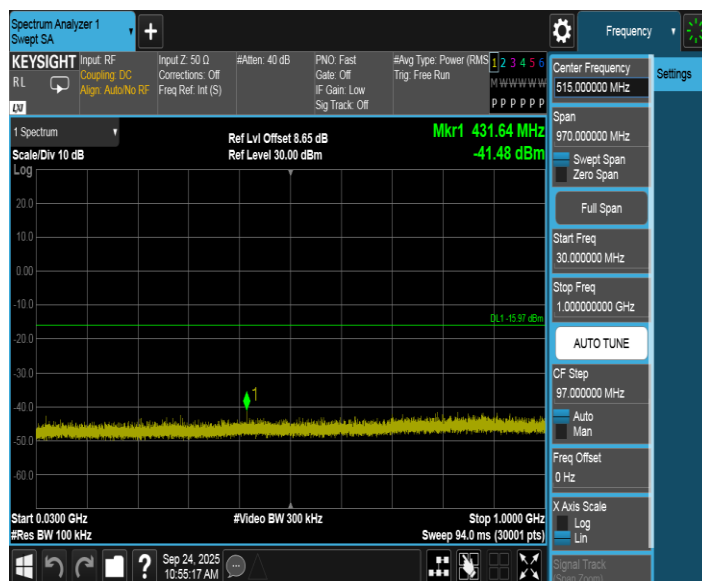
3DH5_Ant1_2441_1000~26500

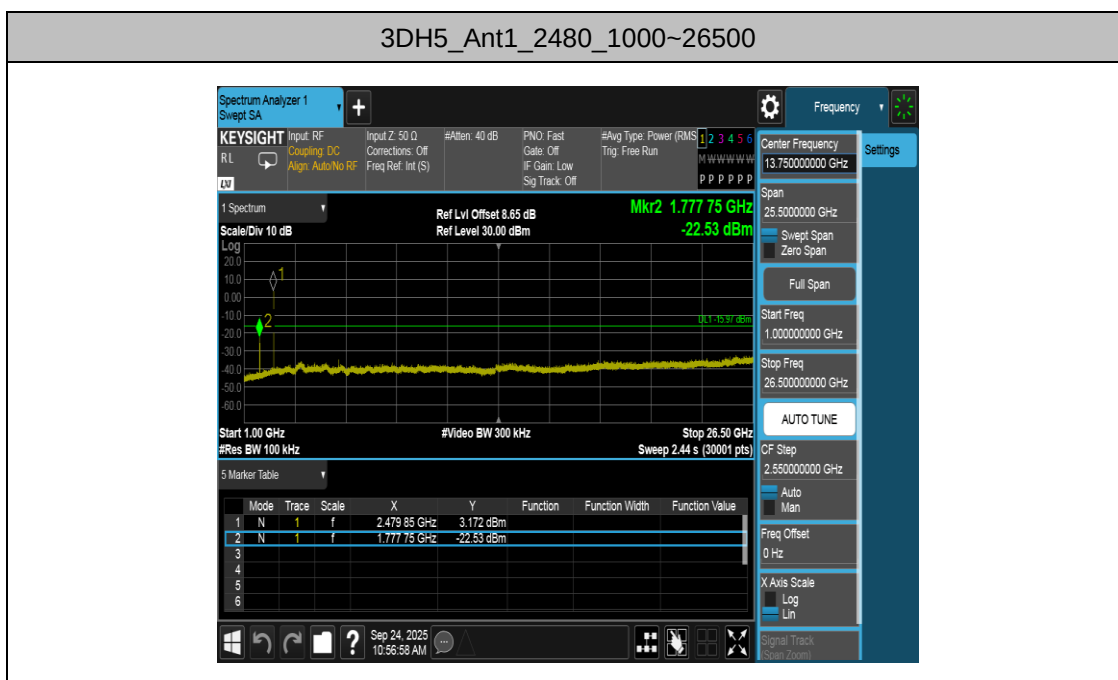


3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000





7.9. Radiated Spurious Emission Measurement

7.9.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.9.2. Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.9.3.Test Setting

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

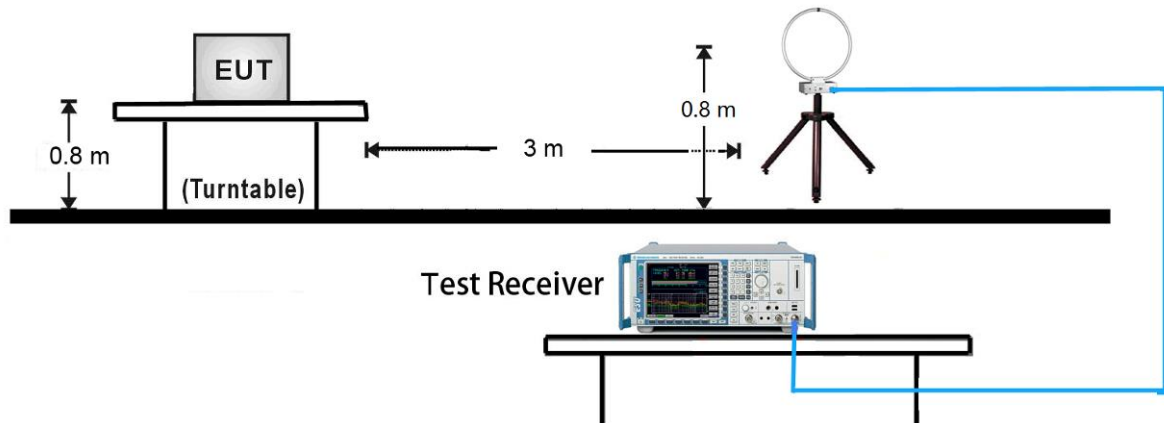
Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto

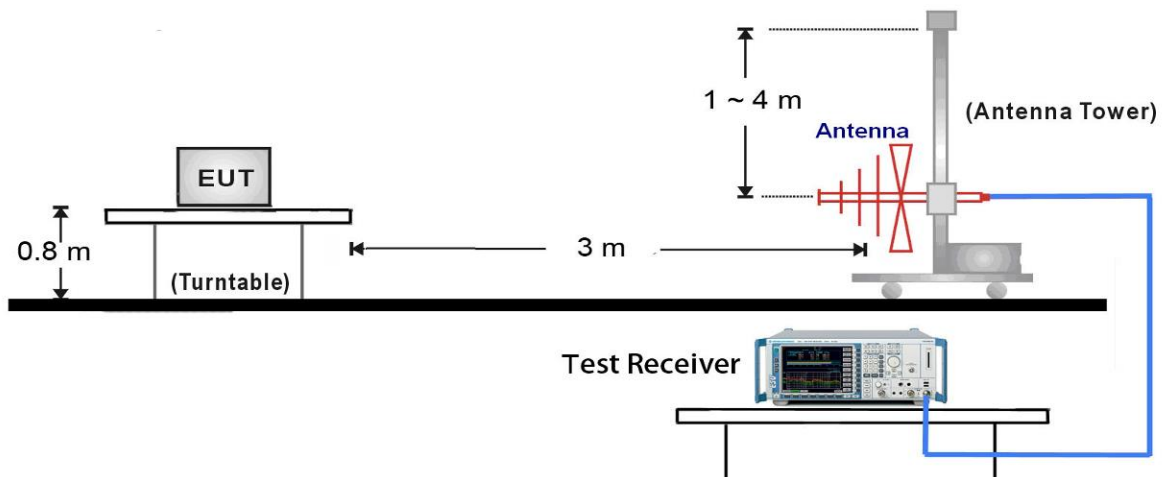
6. Trace mode = max hold
7. Trace was allowed to stabilize

7.9.4.Test Setup

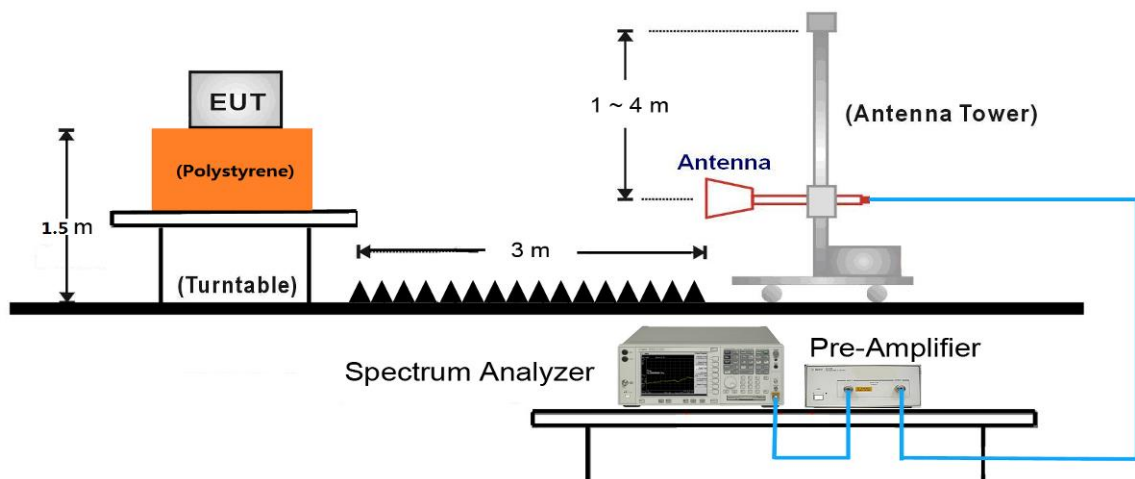
9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



1GHz ~ 25GHz Test Setup:

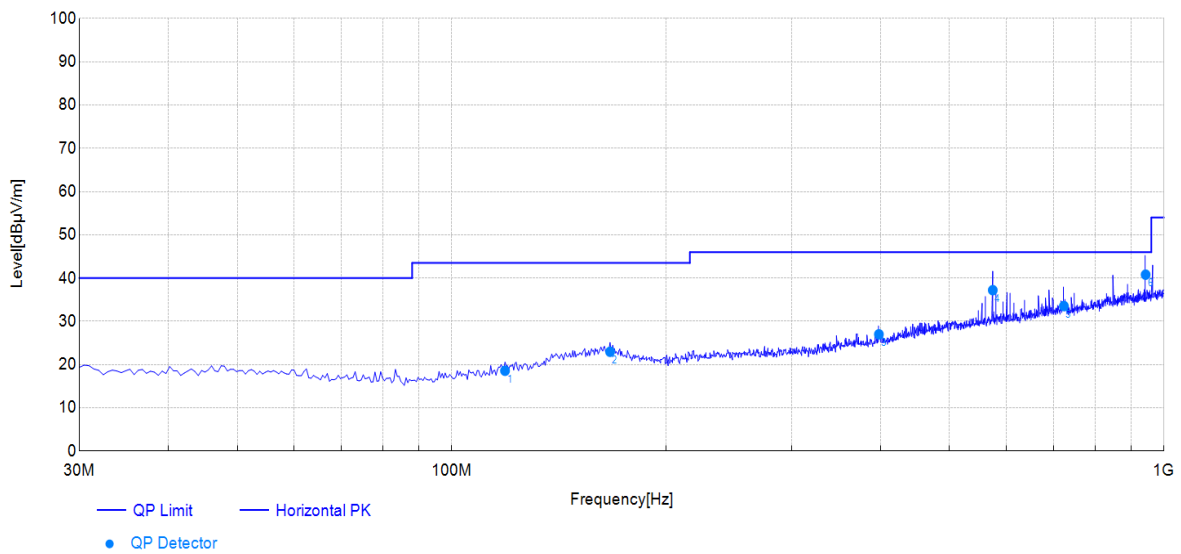


7.9.5.Test Result

The worst case of Radiated Emission below 1GHz:

30MHz – 1GHz Test Data

EUT:	RADIO	Polarity:	Horizontal
Model:	HA1030A	SN:	N/A
Mode:	Transmit at BT_DH5 Channel 00	Voltage:	DC 24V
Environment:	Temp: 22.4°C; Humi:53%	Engineer:	Stone Zhang



Final Data List										
NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBμV]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pol	Verdict
1	118.80	14.24	4.33	18.57	43.50	24.93	100	251	Horizontal	PASS
2	166.84	17.68	5.28	22.96	43.50	20.54	100	200	Horizontal	PASS
3	397.81	19.19	7.81	27.00	46.00	19.00	100	321	Horizontal	PASS
4	574.93	23.15	14.05	37.20	46.00	8.80	100	26	Horizontal	PASS
5	723.41	25.22	8.32	33.54	46.00	12.46	100	196	Horizontal	PASS
6	942.26	28.68	12.11	40.79	46.00	5.21	100	360	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

(3) The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.