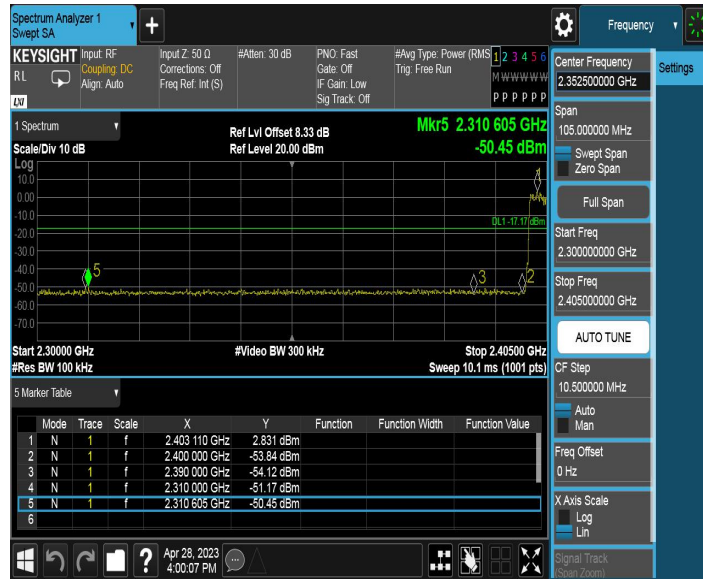
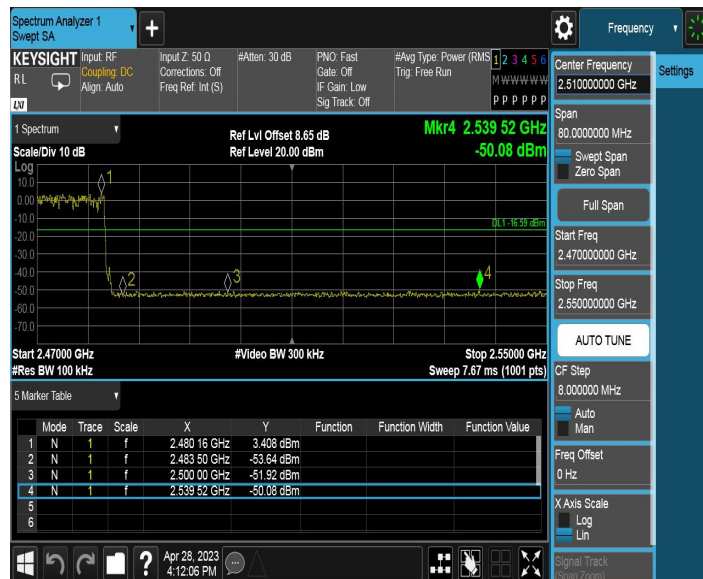


3DH5_Ant1_Low_Hop_2402



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.

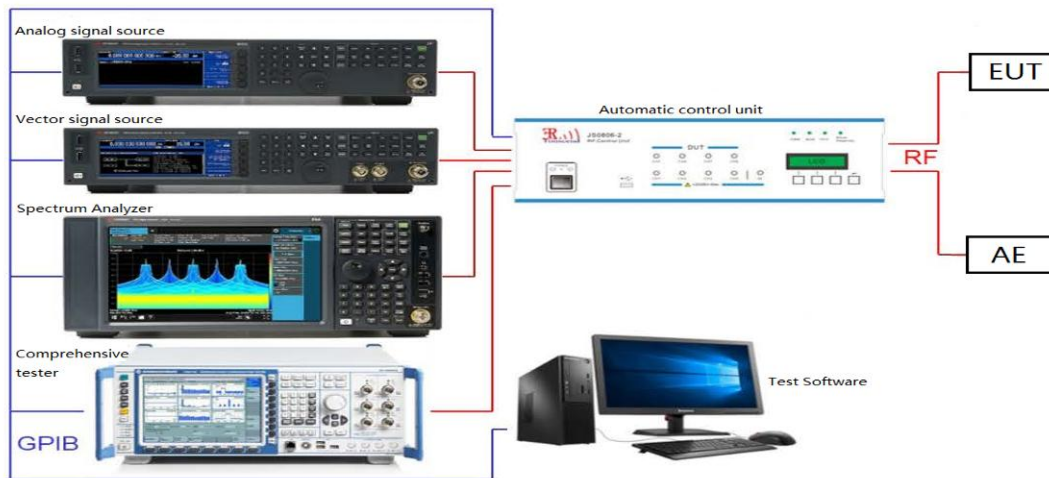
7.8.2. Test Procedure Used

ANSI C63.10-2013 - Section 7.8.8

7.8.3. Test Setting

1. Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.
Typically, several plots are required to cover this entire span.
2. RBW = 100 KHz
3. VBW $\geq$ RBW
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.

7.8.4. Test Setup



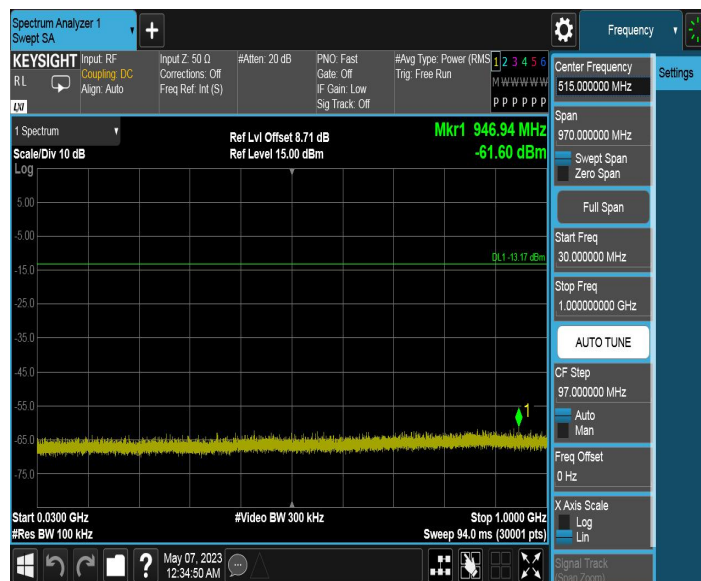
7.8.5. Test Result

Test Mode	Antenna	Channel	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	6.83	6.83	---	PASS
			30~1000	6.83	-61.6	≤-13.17	PASS
			1000~26500	6.83	-47.61	≤-13.17	PASS
		2441	Reference	6.16	6.16	---	PASS
			30~1000	6.16	-61.41	≤-13.84	PASS
			1000~26500	6.16	-48.55	≤-13.84	PASS
		2480	Reference	6.90	6.90	---	PASS
			30~1000	6.90	-61.23	≤-13.1	PASS
			1000~26500	6.90	-48.68	≤-13.1	PASS
2DH5	Ant1	2402	Reference	5.78	5.78	---	PASS
			30~1000	5.78	-61.34	≤-14.22	PASS
			1000~26500	5.78	-46.46	≤-14.22	PASS
		2441	Reference	5.24	5.24	---	PASS
			30~1000	5.24	-61.49	≤-14.76	PASS
			1000~26500	5.24	-47.01	≤-14.76	PASS
		2480	Reference	5.35	5.35	---	PASS
			30~1000	5.35	-61.19	≤-14.65	PASS
			1000~26500	5.35	-47.37	≤-14.65	PASS
3DH5	Ant1	2402	Reference	5.79	5.79	---	PASS
			30~1000	5.79	-61.25	≤-14.21	PASS
			1000~26500	5.79	-46.38	≤-14.21	PASS
		2441	Reference	5.41	5.41	---	PASS
			30~1000	5.41	-61.47	≤-14.59	PASS
			1000~26500	5.41	-47.38	≤-14.59	PASS
		2480	Reference	5.49	5.49	---	PASS
			30~1000	5.49	-61.48	≤-14.51	PASS
			1000~26500	5.49	-47.24	≤-14.51	PASS

DH5_Ant1_2402_0~Reference



DH5_Ant1_2402_30~1000



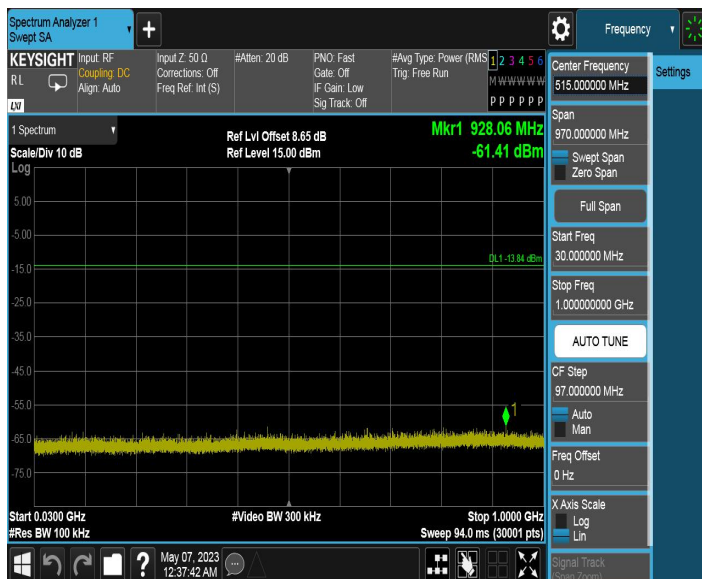
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



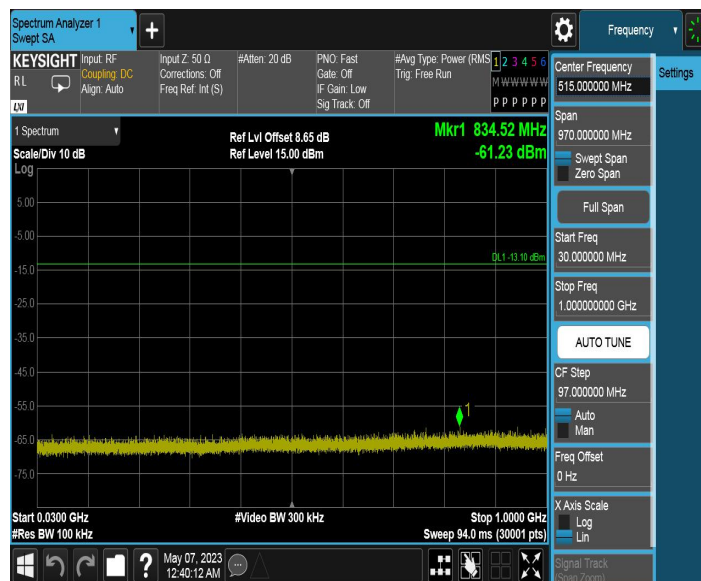
DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference



DH5_Ant1_2480_30~1000



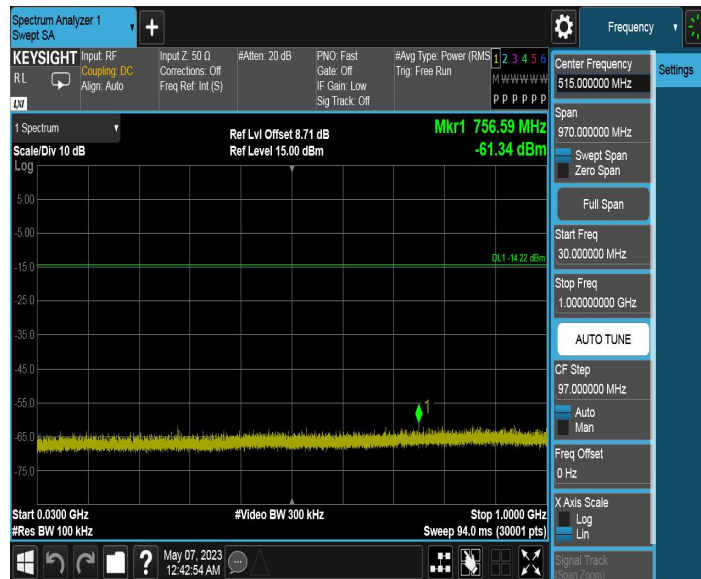
DH5_Ant1_2480_1000~26500



2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



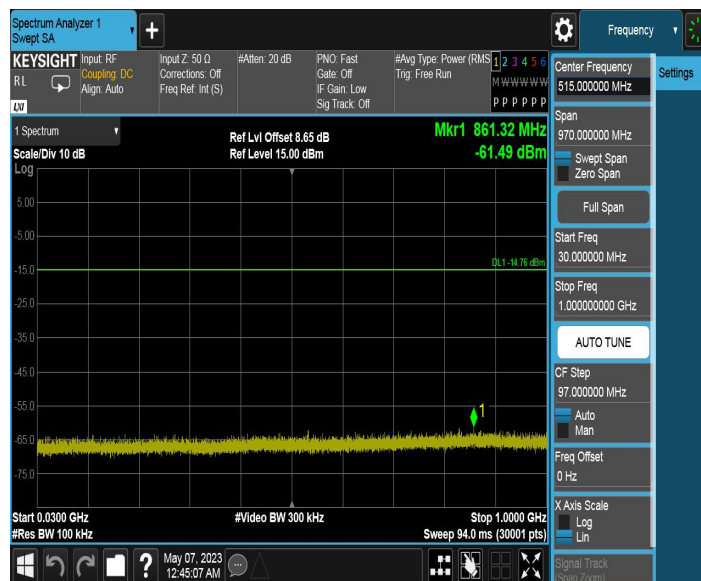
2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000



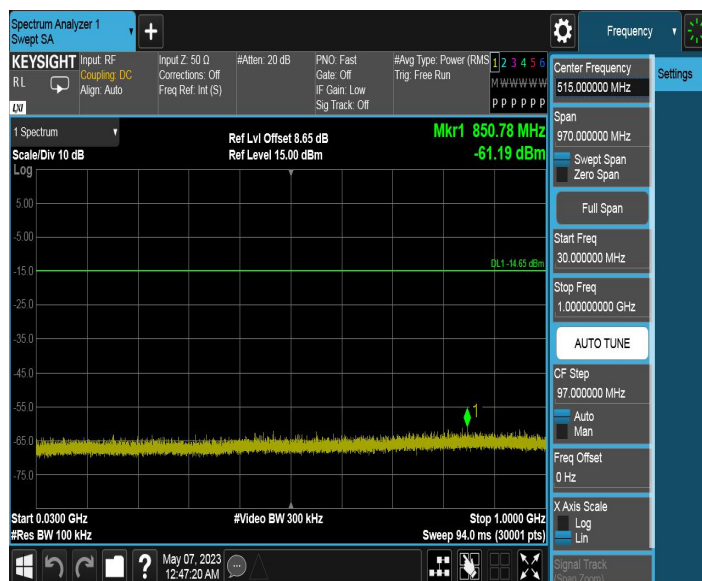
2DH5_Ant1_2441_1000~26500



2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



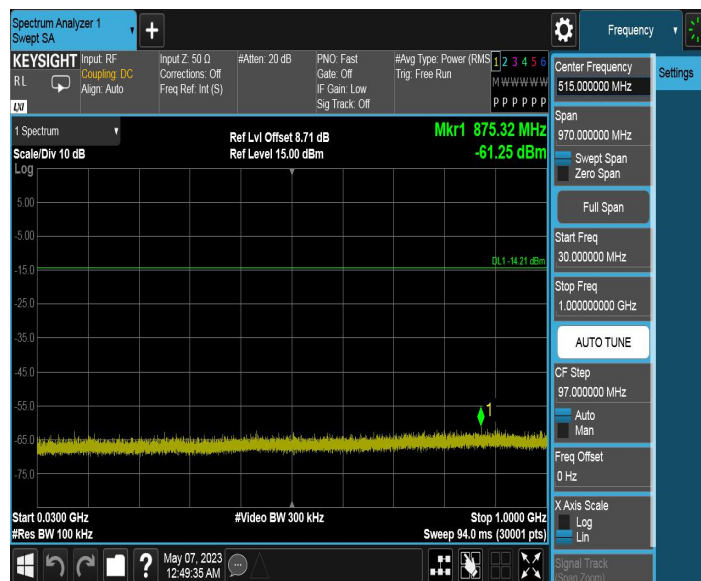
2DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference



3DH5_Ant1_2402_30~1000



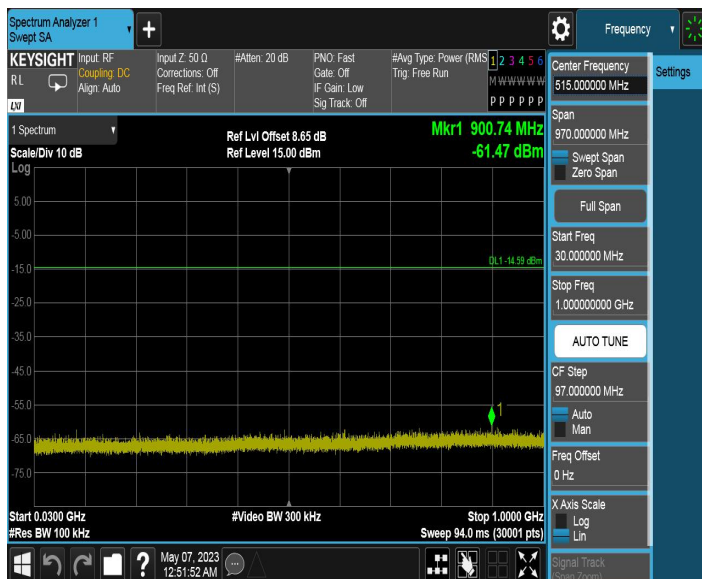
3DH5_Ant1_2402_1000~26500



3DH5_Ant1_2441_0~Reference



3DH5_Ant1_2441_30~1000



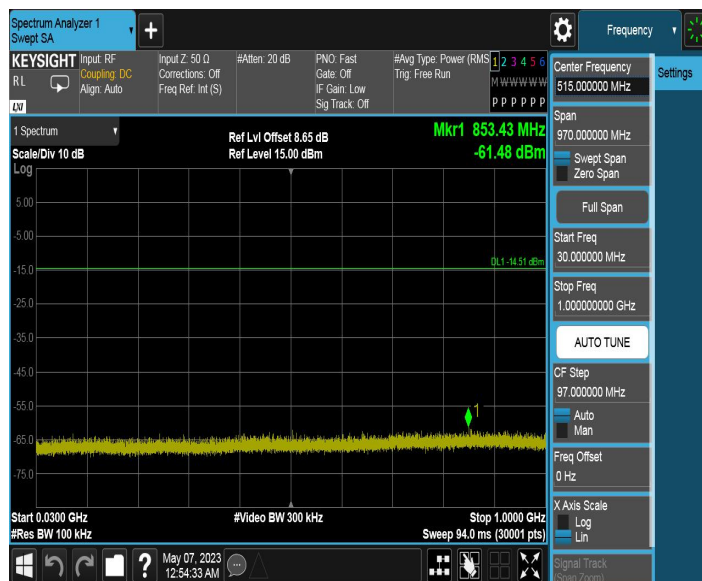
3DH5_Ant1_2441_1000~26500



3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



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

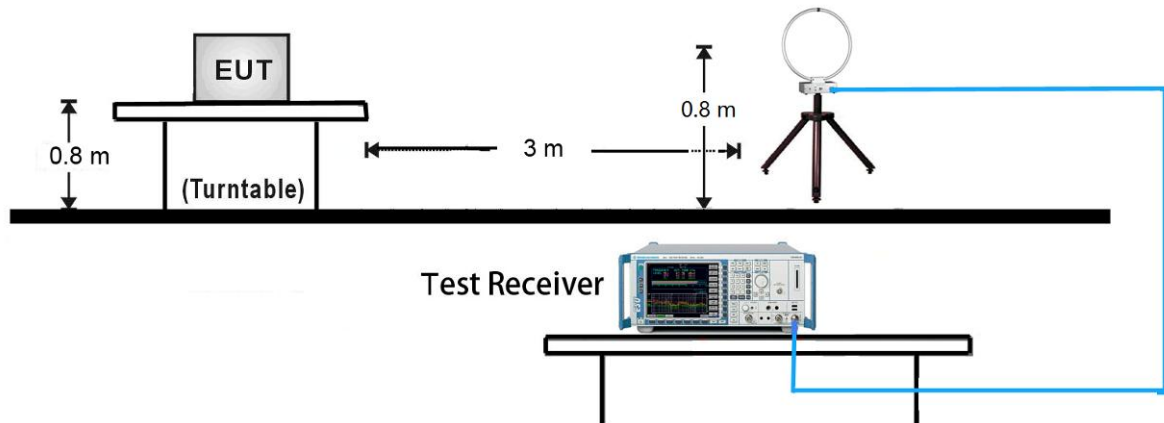
Average Measurements above 1GHz (Method VB)

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

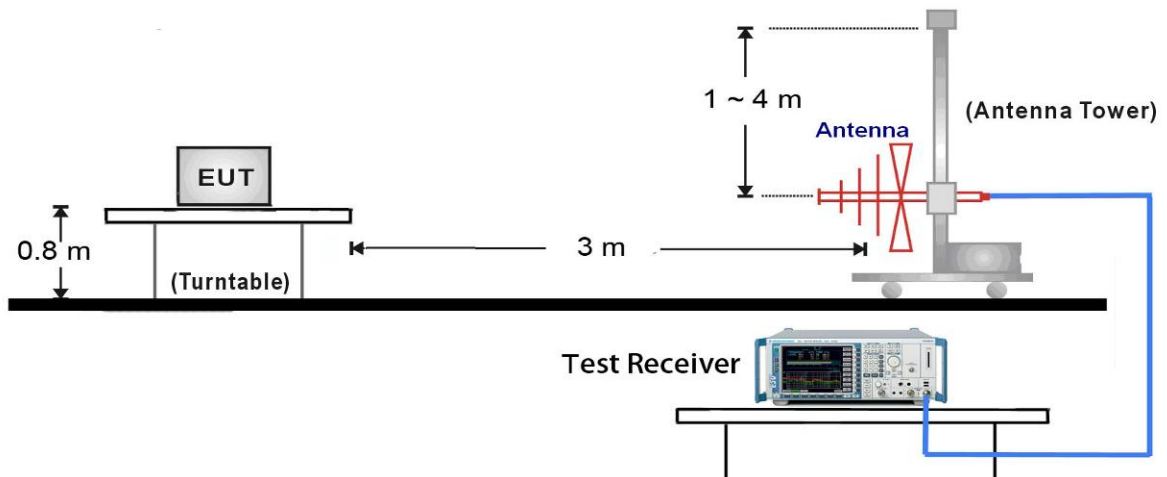
6. Trace mode = max hold
7. Trace was allowed to stabilize

7.9.4. Test Setup

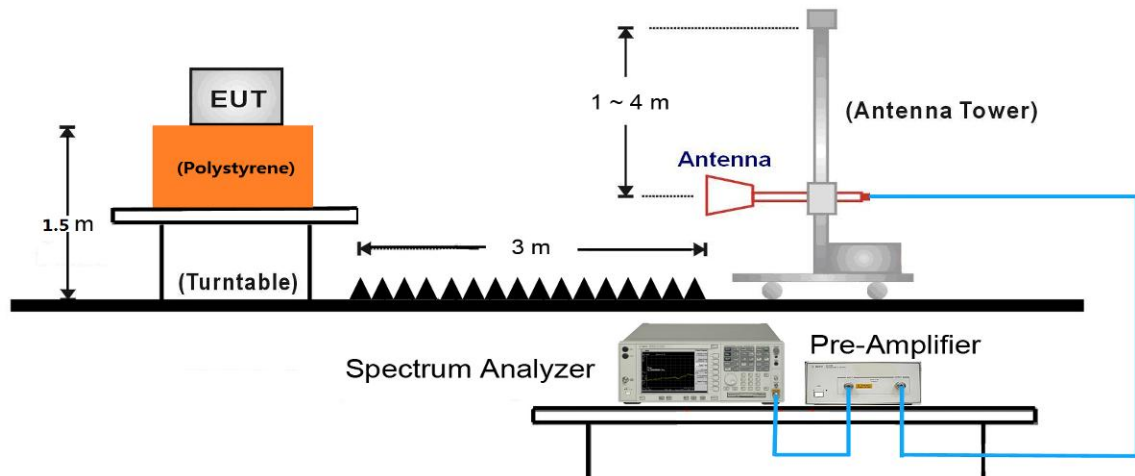
9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



1GHz ~ 25GHz Test Setup:



7.9.5. Test Result

Test Mode:	DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	00	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4580.0000	43.23	6.96	74.00	30.77	Peak	Horizontal
7595.0000	51.66	15.03	74.00	22.34	Peak	Horizontal
10745.0000	55.55	19.15	74.00	18.45	Peak	Horizontal
12305.0000	57.10	19.70	74.00	16.90	Peak	Horizontal
3200.0000	42.85	3.81	74.00	31.15	Peak	Vertical
4490.0000	42.98	6.91	74.00	31.02	Peak	Vertical
6330.0000	46.49	12.04	74.00	27.51	Peak	Vertical
7430.0000	50.55	15.00	74.00	23.45	Peak	Vertical

Test Mode:	DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	39	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4730.0000	43.30	6.97	74.00	30.70	Peak	Horizontal
7475.0000	51.06	15.05	74.00	22.94	Peak	Horizontal
8365.0000	51.23	15.58	74.00	22.77	Peak	Horizontal
11320.0000	55.46	18.81	74.00	18.54	Peak	Horizontal
4220.0000	41.63	5.74	74.00	32.37	Peak	Vertical
7320.0000	50.55	14.88	74.00	23.45	Peak	Vertical
10855.0000	55.44	19.09	74.00	18.56	Peak	Vertical
14785.0000	60.86	22.86	74.00	13.14	Peak	Vertical

Test Mode:	DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	78	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4345.0000	43.04	6.31	74.00	30.96	Peak	Horizontal
7375.0000	50.78	15.00	74.00	23.22	Peak	Horizontal
9990.0000	53.37	17.77	74.00	20.63	Peak	Horizontal
10690.0000	55.60	19.07	74.00	18.40	Peak	Horizontal
4500.0000	42.92	6.98	74.00	31.08	Peak	Vertical
6310.0000	46.90	11.94	74.00	27.10	Peak	Vertical
7950.0000	51.51	15.67	74.00	22.49	Peak	Vertical
10825.0000	54.41	18.84	74.00	19.59	Peak	Vertical

Test Mode:	2DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	00	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4700.0000	43.60	6.97	74.00	30.40	Peak	Horizontal
7195.0000	49.72	14.72	74.00	24.28	Peak	Horizontal
9120.0000	53.29	16.34	74.00	20.71	Peak	Horizontal
10700.0000	54.80	19.14	74.00	19.20	Peak	Horizontal
3200.0000	43.81	3.81	74.00	30.19	Peak	Vertical
5255.0000	45.01	8.74	74.00	28.99	Peak	Vertical
7335.0000	50.75	15.00	74.00	23.25	Peak	Vertical
8265.0000	51.60	15.44	74.00	22.40	Peak	Vertical

Test Mode:	2DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	39	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4210.0000	42.18	5.69	74.00	31.82	Peak	Horizontal
6715.0000	47.06	13.10	74.00	26.94	Peak	Horizontal
8345.0000	52.38	15.82	74.00	21.62	Peak	Horizontal
10975.0000	56.41	19.48	74.00	17.59	Peak	Horizontal
4010.0000	42.12	5.15	74.00	31.88	Peak	Vertical
5755.0000	45.31	10.22	74.00	28.69	Peak	Vertical
8310.0000	51.55	15.58	74.00	22.45	Peak	Vertical
10560.0000	55.54	19.10	74.00	18.46	Peak	Vertical

Test Mode:	2DH5 - Ant 1	Test Date:	2023-05-05
Test Channel:	78	Test Engineer:	Amos Xia
Remark:	Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. This is the worst case of Radiated Emission for 1-18GHz.		

Frequency (MHz)	Level (dBμV)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4565.0000	42.88	7.03	74.00	31.12	Peak	Horizontal
7355.0000	50.37	15.09	74.00	23.63	Peak	Horizontal
10750.0000	54.94	19.16	74.00	19.06	Peak	Horizontal
12055.0000	56.04	19.80	74.00	17.96	Peak	Horizontal
4550.0000	43.40	7.10	74.00	30.60	Peak	Vertical
7360.0000	50.96	15.07	74.00	23.04	Peak	Vertical
8735.0000	52.36	15.74	74.00	21.64	Peak	Vertical
11335.0000	55.67	18.77	74.00	18.33	Peak	Vertical