

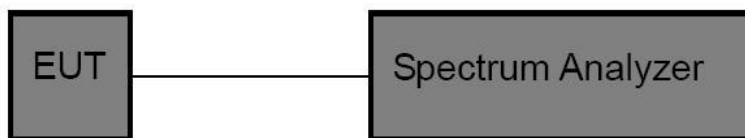


11 Number of Hopping Channel Test

11.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>15 channels

11.2 Test Setup



11.3 Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer setting:

1. Span= the frequency band of operation
2. Set the RBW = 300kHz.
3. Set the VBW = 300kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

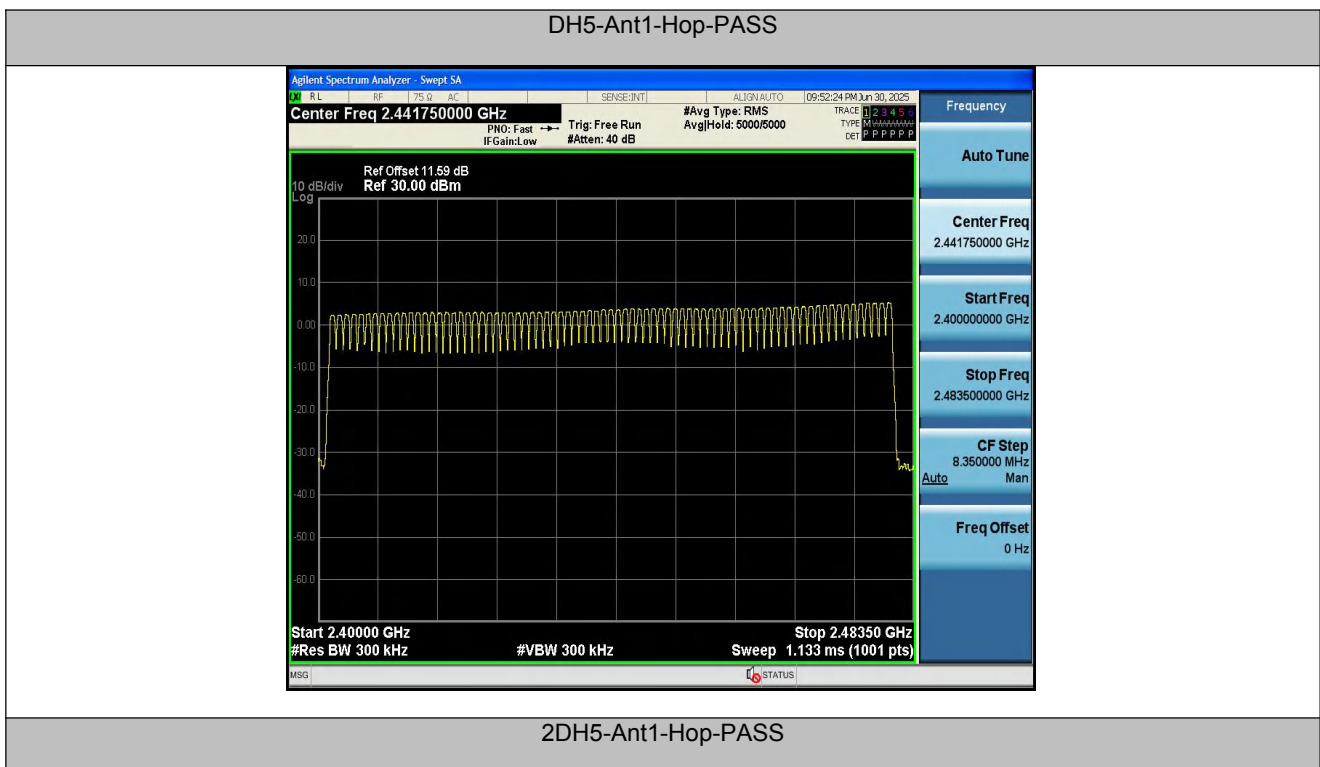


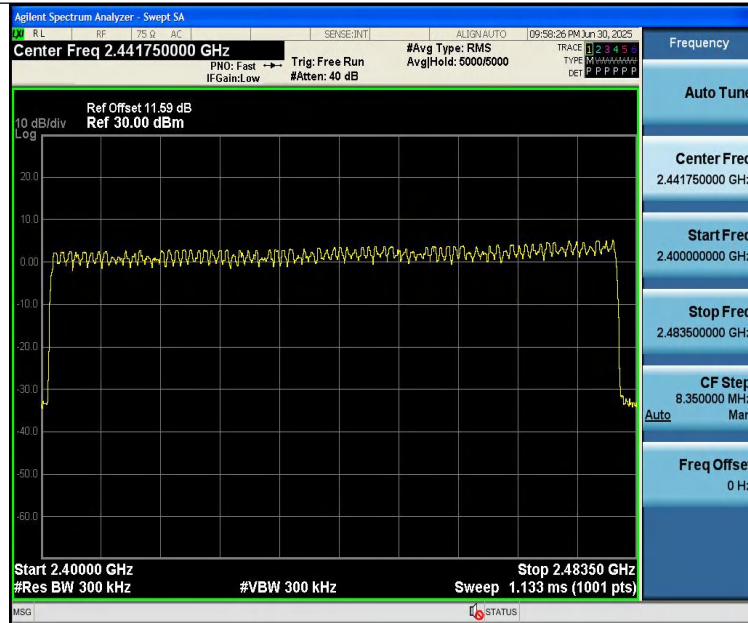
11.4 Test Data

Test Item	: Number of Hopping Frequency	Test Mode	: CH Low ~ CH High
Test Voltage	: 3.7V	Temperature	: 24.5°C
Test Result	: PASS	Humidity	: 55%RH

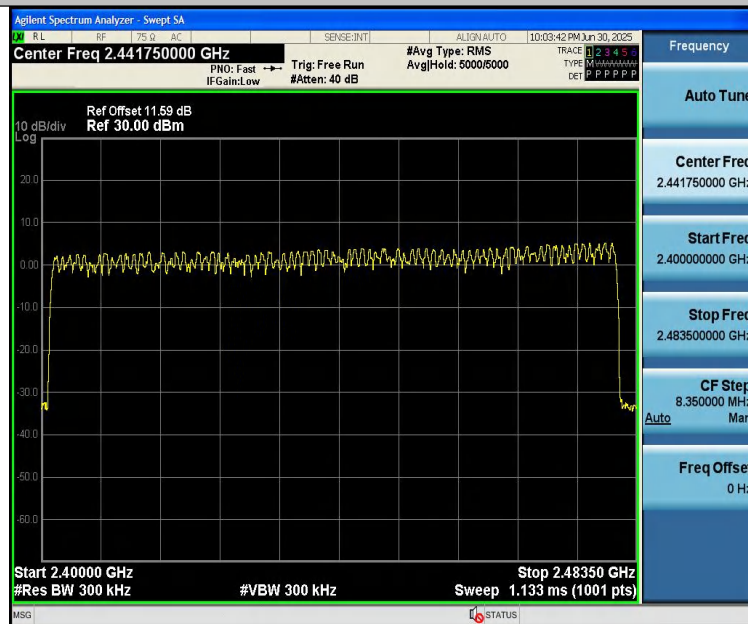
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs:





3DH5-Ant1-Hop-PASS



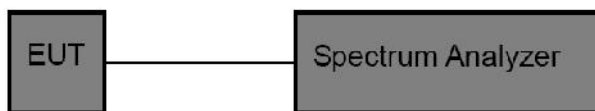


12 Dwell Time Test

12.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	0.4 sec

12.2 Test Setup



12.3 Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span= zero span, centered on a hopping channel
2. Set the RBW = 1 MHz.
3. Set the VBW = 3 MHz.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = clear write.
7. Allow trace to fully stabilize.



12.4 Test Data

Test Item : Time of Occupancy

Test Voltage : 3.7V

Test Result : PASS

Test Mode : CH Low ~ CH High

Temperature : 24.5°C

Humidity : 55%RH

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.906	106.67	0.31	≤0.4	PASS
2DH5	Ant1	Hop	2.913	106.67	0.311	≤0.4	PASS
3DH5	Ant1	Hop	2.916	106.67	0.311	≤0.4	PASS
DH1	Ant1	Hop	0.404	320	0.129	≤0.4	PASS
2DH1	Ant1	Hop	0.413	320	0.132	≤0.4	PASS
3DH1	Ant1	Hop	0.415	320	0.133	≤0.4	PASS
DH3	Ant1	Hop	1.659	160	0.265	≤0.4	PASS
2DH3	Ant1	Hop	1.666	160	0.267	≤0.4	PASS
3DH3	Ant1	Hop	1.666	160	0.267	≤0.4	PASS

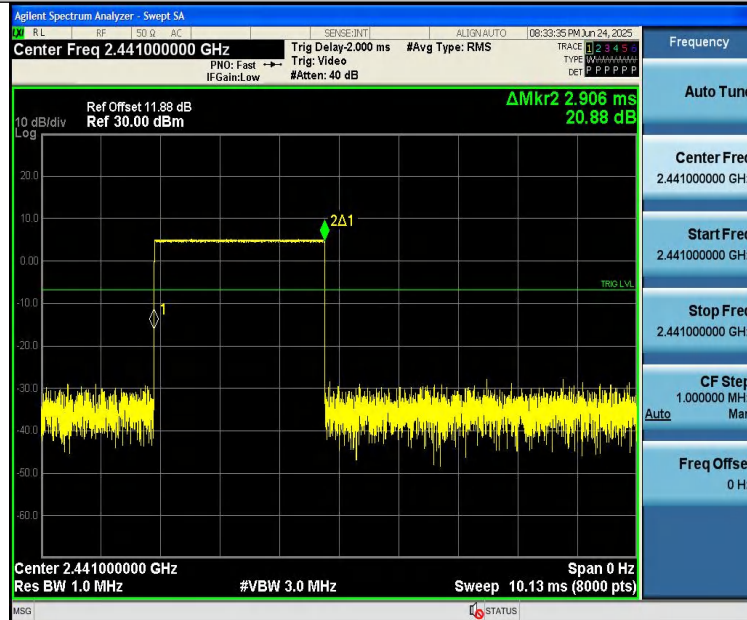
Note:

- 1.DH1/2DH1/3DH1 Dwell Time: Reading * (1600/2)*31.6/(channel number).
- 2.DH3/2DH3/3DH3 Dwell Time: Reading * (1600/4)*31.6/(channel number).
- 3.DH5/2DH5/3DH5 Dwell Time: Reading * (1600/6)*31.6/(channel number).



Test Graphs:

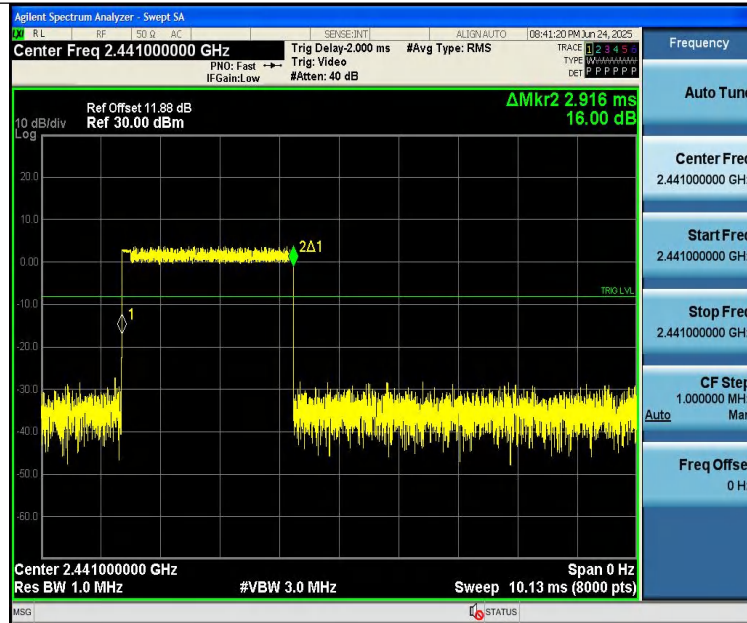
DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



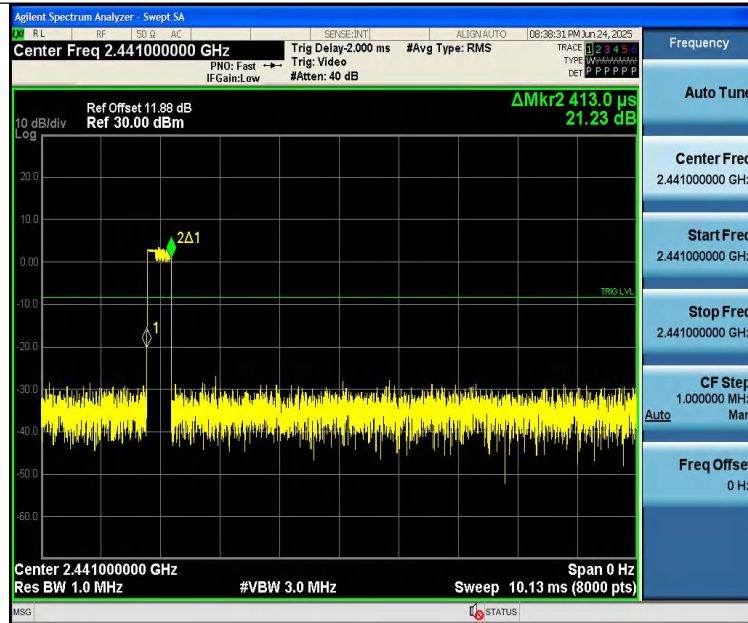
3DH5-Ant1-Hop-PASS



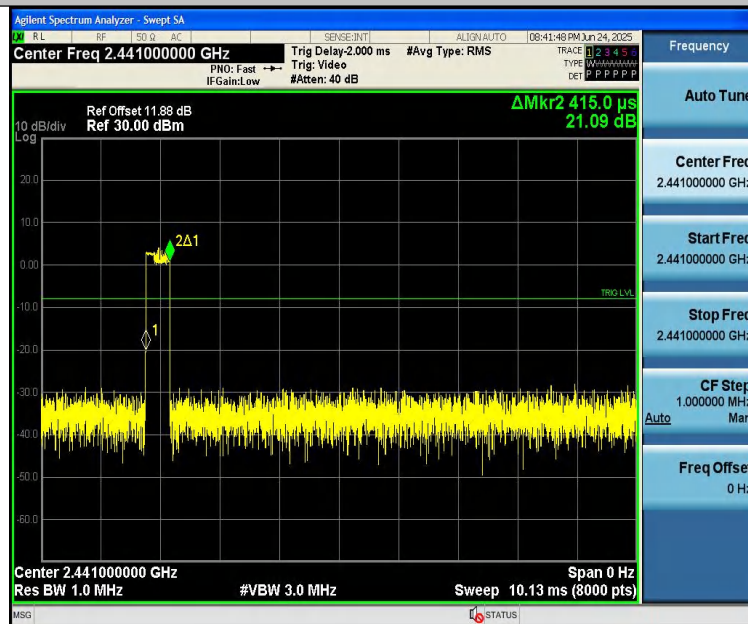
DH1-Ant1-Hop-PASS



2DH1-Ant1-Hop-PASS



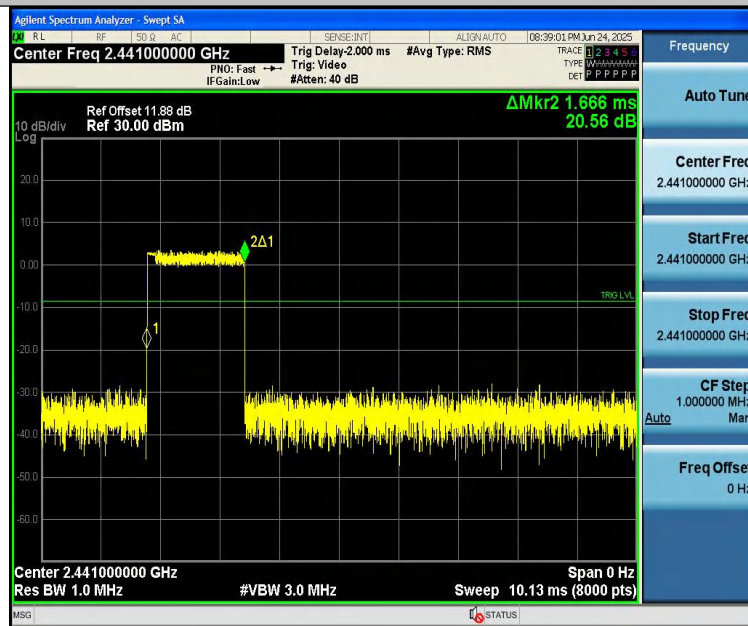
3DH1-Ant1-Hop-PASS



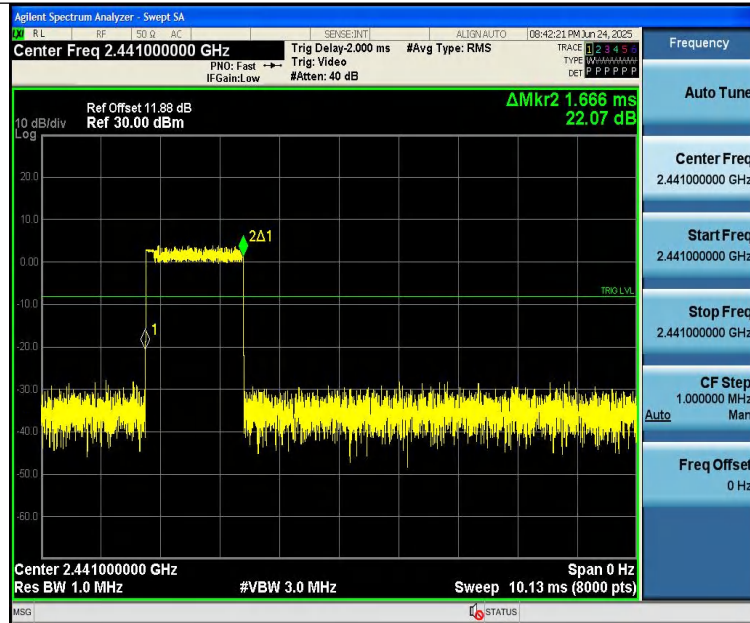
DH3-Ant1-Hop-PASS



2DH3-Ant1-Hop-PASS



3DH3-Ant1-Hop-PASS

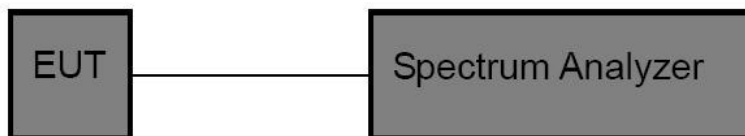


13 100kHz Bandwidth of Frequency Band Edge Requirement

13.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (d)
Test Limit	in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

13.2 Test Setup



13.3 Test Procedure

The EUT must have its hopping/Non-hopping function enabled. Using the following spectrum analyzer setting:

1. Set the RBW = 100kHz.
2. Set the VBW = 300kHz.
3. Sweep time = auto couple.
4. Detector function = peak.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.



13.4 Test Data

Test Item : Band edge
Test Voltage : 3.7V
Test Result : PASS

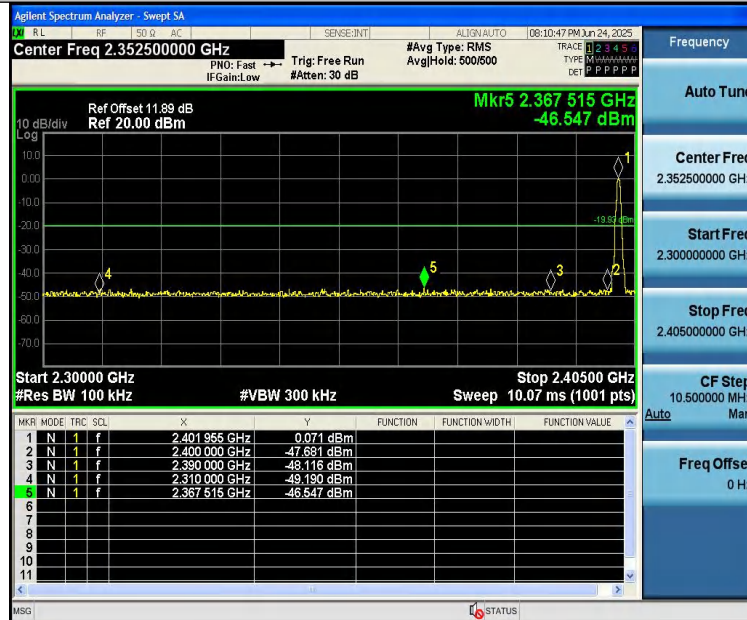
Test Mode : CH Low ~ CH High
Temperature : 24.5°C
Humidity : 55%RH

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.07	-46.55	≤-19.93	PASS
DH5	Ant1	High	2480	4.35	-45.77	≤-15.65	PASS
DH5	Ant1	Low	Hop_2402	-0.63	-46.73	≤-20.63	PASS
DH5	Ant1	High	Hop_2480	4.15	-45.77	≤-15.86	PASS
2DH5	Ant1	Low	2402	-0.10	-45.73	≤-20.1	PASS
2DH5	Ant1	High	2480	4.29	-45.78	≤-15.71	PASS
2DH5	Ant1	Low	Hop_2402	-0.69	-46.29	≤-20.69	PASS
2DH5	Ant1	High	Hop_2480	2.90	-46	≤-17.1	PASS
3DH5	Ant1	Low	2402	-0.53	-45.54	≤-20.53	PASS
3DH5	Ant1	High	2480	4.53	-45.51	≤-15.48	PASS
3DH5	Ant1	Low	Hop_2402	-1.06	-46.79	≤-21.06	PASS
3DH5	Ant1	High	Hop_2480	2.67	-45.55	≤-17.33	PASS

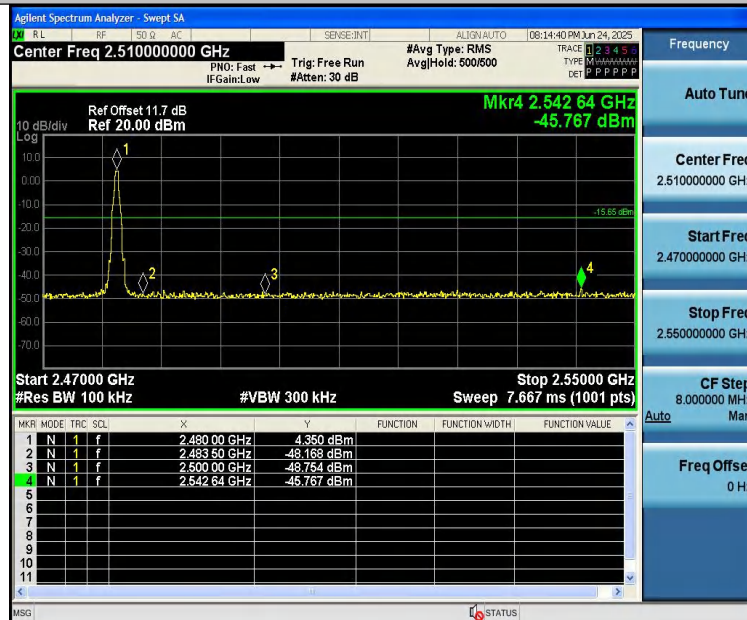


Test Graphs:

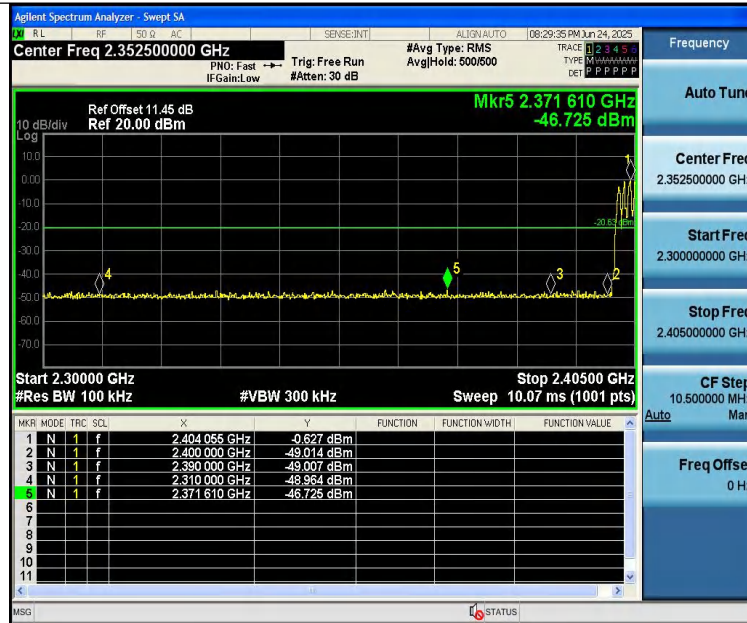
DH5-Ant1-2402-PASS



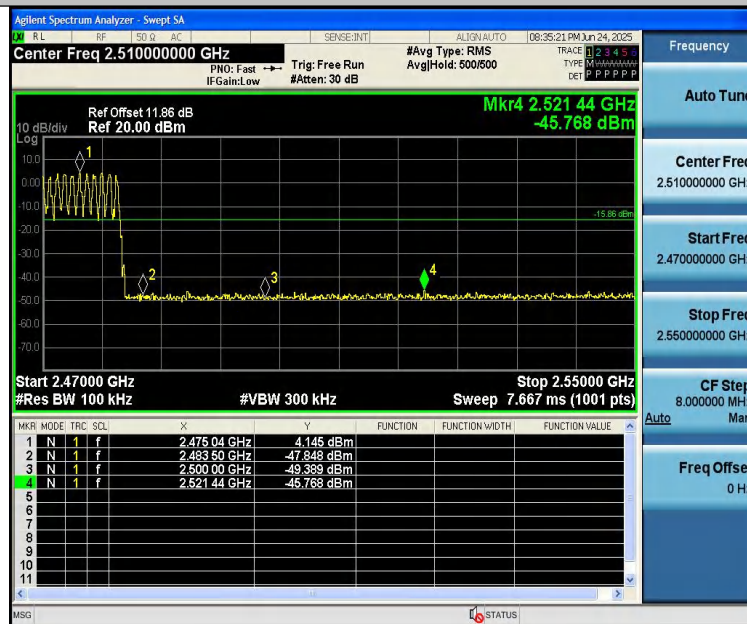
DH5-Ant1-2480-PASS



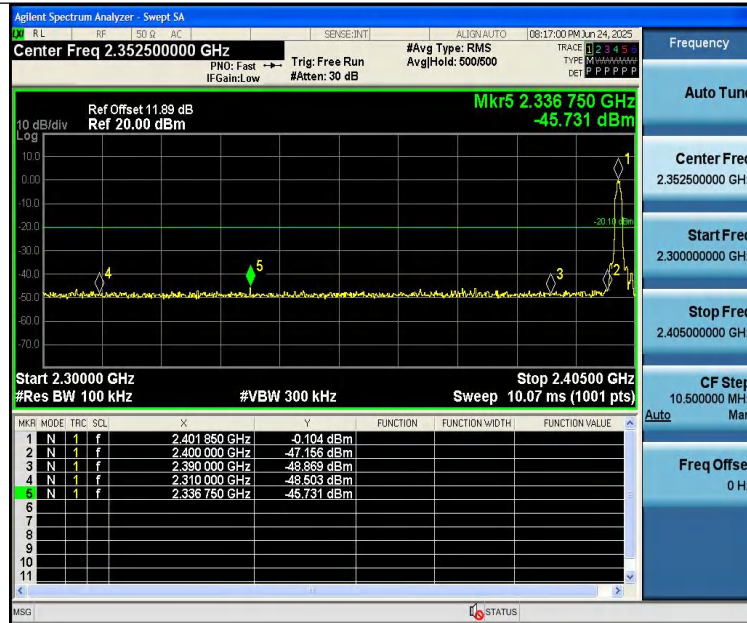
DH5-Ant1-Hop_2402-PASS



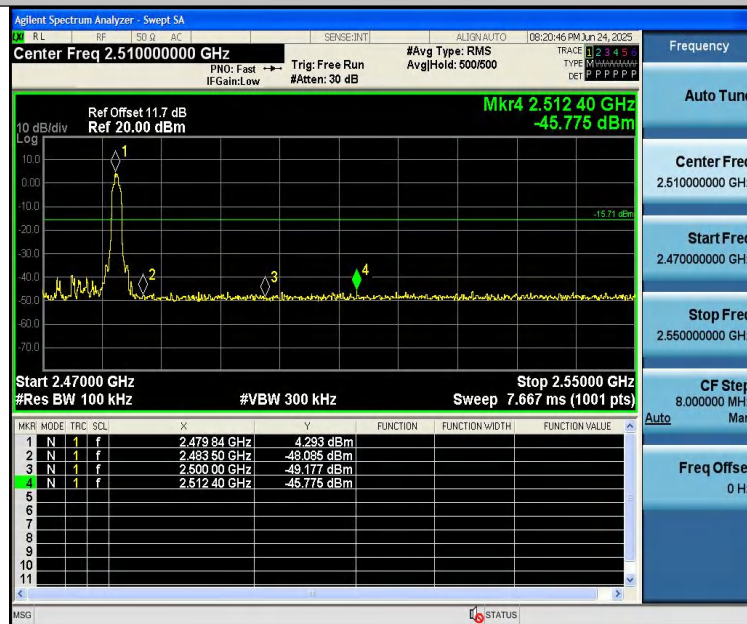
DH5-Ant1-Hop_2480-PASS



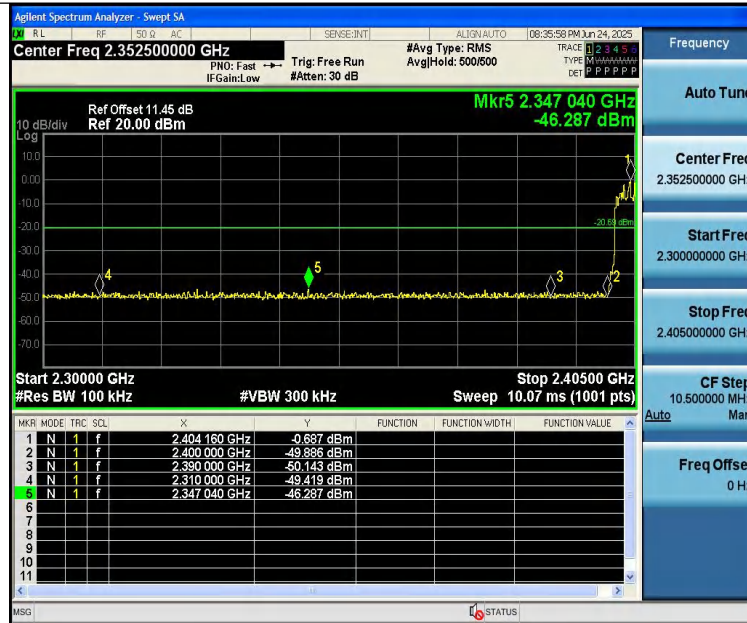
2DH5-Ant1-2402-PASS



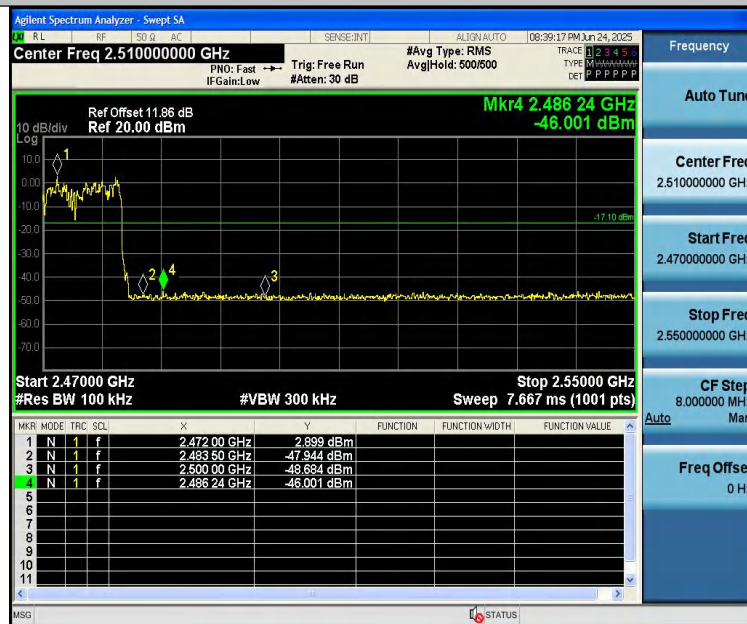
2DH5-Ant1-2480-PASS



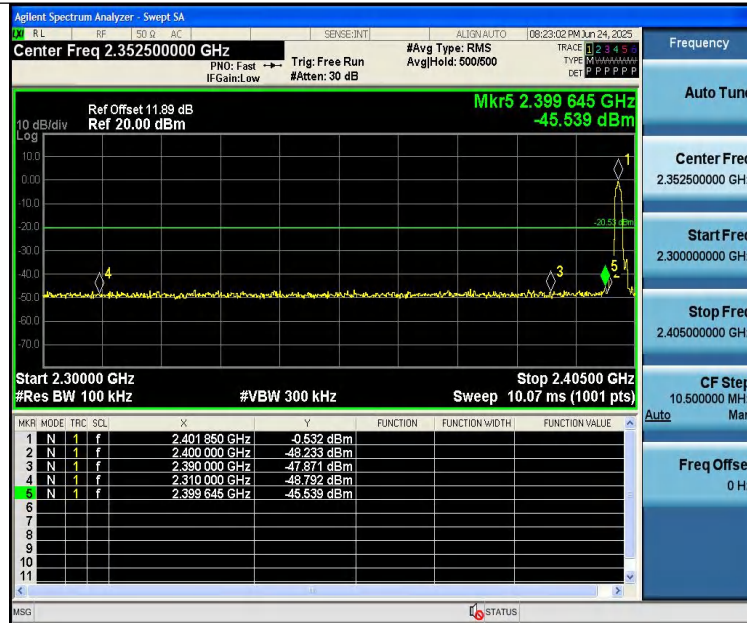
2DH5-Ant1-Hop_2402-PASS



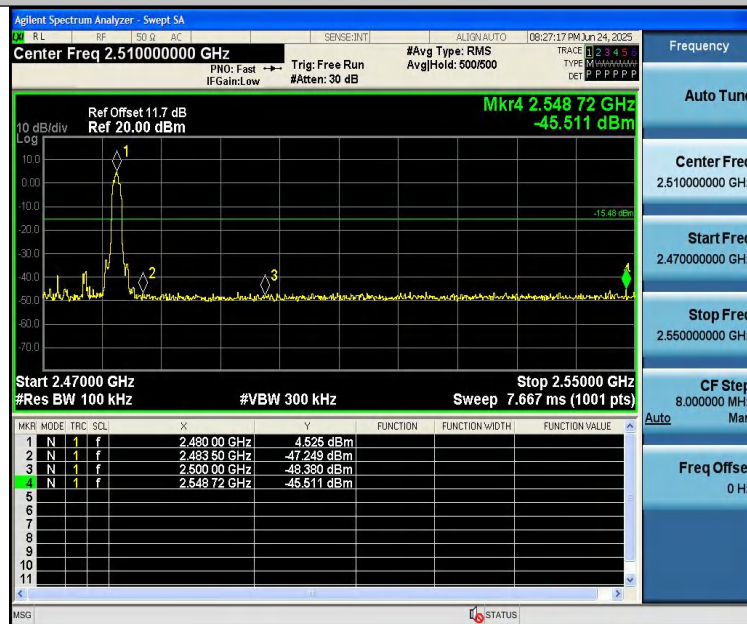
2DH5-Ant1-Hop_2480-PASS



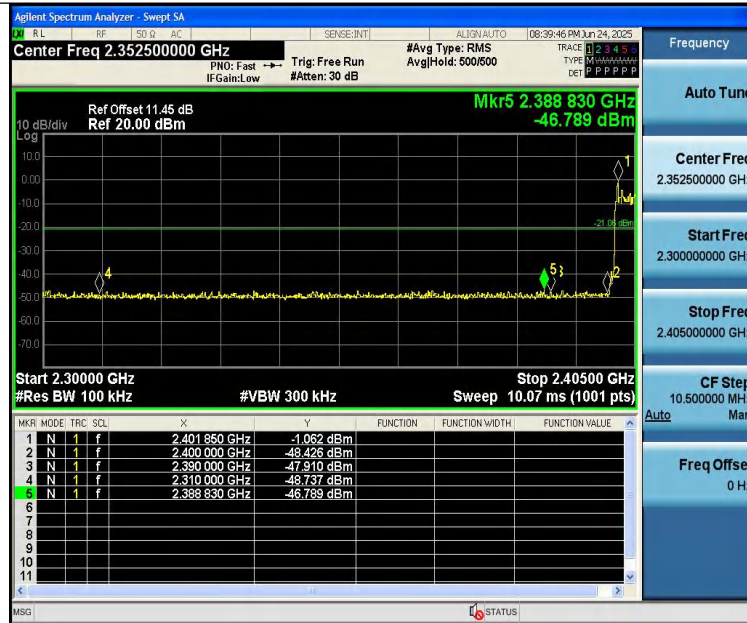
3DH5-Ant1-2402-PASS



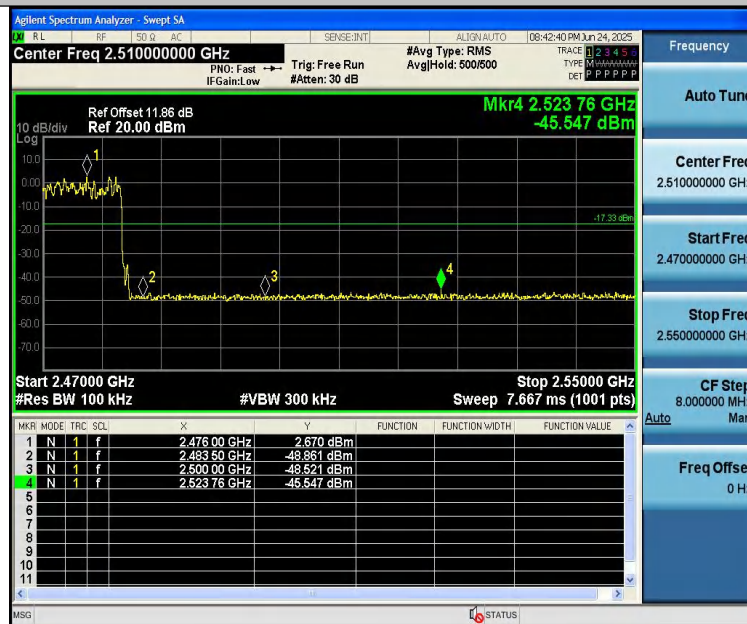
3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS





Conducted Emission Method

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-0.12	-0.12	---	PASS
DH5	Ant1	2402	30~1000	-0.12	-57.33	≤ -20.12	PASS
DH5	Ant1	2402	1000~26500	-0.12	-41.46	≤ -20.12	PASS
DH5	Ant1	2441	0~Reference	2.58	2.58	---	PASS
DH5	Ant1	2441	30~1000	2.58	-57.57	≤ -17.42	PASS
DH5	Ant1	2441	1000~26500	2.58	-42.07	≤ -17.42	PASS
DH5	Ant1	2480	0~Reference	4.30	4.30	---	PASS
DH5	Ant1	2480	30~1000	4.30	-56.97	≤ -15.7	PASS
DH5	Ant1	2480	1000~26500	4.30	-42.59	≤ -15.7	PASS
2DH5	Ant1	2402	0~Reference	-0.08	-0.08	---	PASS
2DH5	Ant1	2402	30~1000	-0.08	-57.75	≤ -20.08	PASS
2DH5	Ant1	2402	1000~26500	-0.08	-41.06	≤ -20.08	PASS
2DH5	Ant1	2441	0~Reference	2.56	2.56	---	PASS
2DH5	Ant1	2441	30~1000	2.56	-57.25	≤ -17.44	PASS
2DH5	Ant1	2441	1000~26500	2.56	-42.19	≤ -17.44	PASS
2DH5	Ant1	2480	0~Reference	3.92	3.92	---	PASS
2DH5	Ant1	2480	30~1000	3.92	-57.87	≤ -16.08	PASS
2DH5	Ant1	2480	1000~26500	3.92	-41.8	≤ -16.08	PASS
3DH5	Ant1	2402	0~Reference	-0.11	-0.11	---	PASS
3DH5	Ant1	2402	30~1000	-0.11	-56.58	≤ -20.11	PASS
3DH5	Ant1	2402	1000~26500	-0.11	-42.38	≤ -20.11	PASS
3DH5	Ant1	2441	0~Reference	2.55	2.55	---	PASS
3DH5	Ant1	2441	30~1000	2.55	-57.19	≤ -17.45	PASS
3DH5	Ant1	2441	1000~26500	2.55	-42.07	≤ -17.45	PASS
3DH5	Ant1	2480	0~Reference	4.31	4.31	---	PASS
3DH5	Ant1	2480	30~1000	4.31	-56.34	≤ -15.69	PASS
3DH5	Ant1	2480	1000~26500	4.31	-41.51	≤ -15.69	PASS

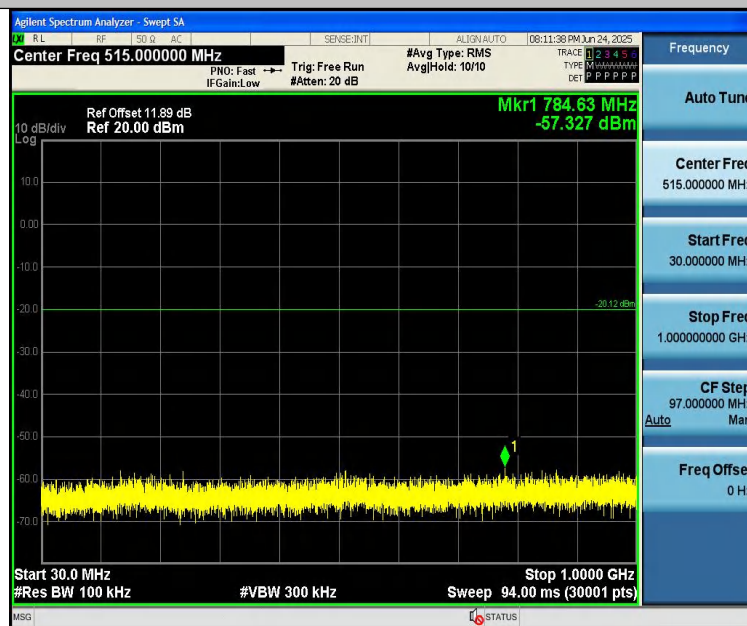


Test Graphs:

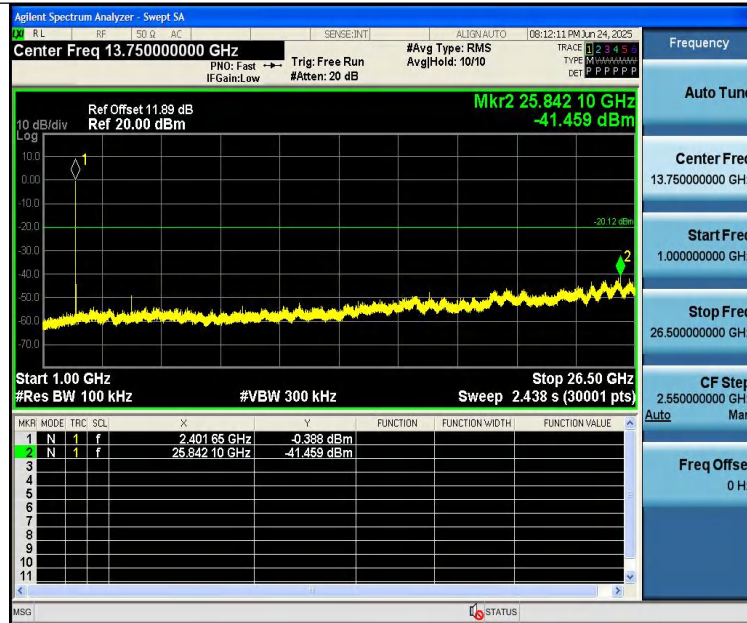
DH5-Ant1-2402-0~Reference-PASS



DH5-Ant1-2402-30~1000-PASS



DH5-Ant1-2402-1000~26500-PASS



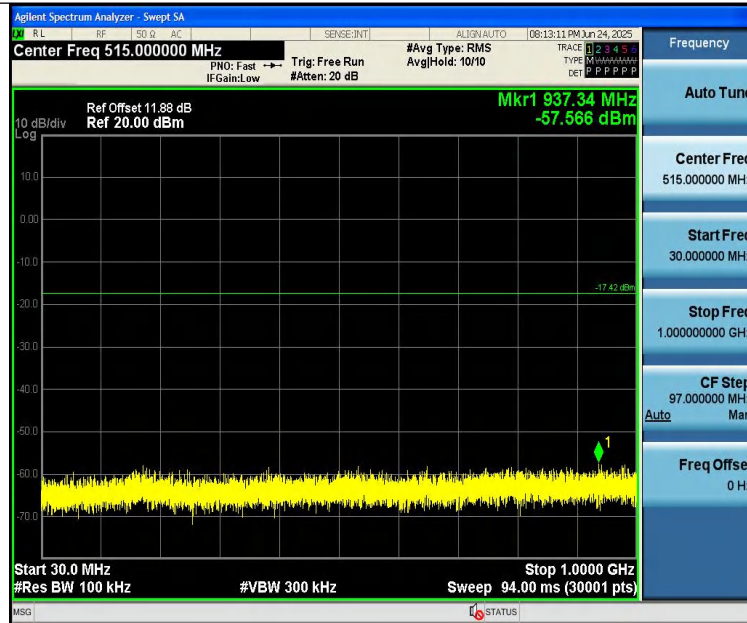
DH5-Ant1-2441-0~Reference-PASS



DH5-Ant1-2441-30~1000-PASS



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DH5-Ant1-2441-1000~26500-PASS



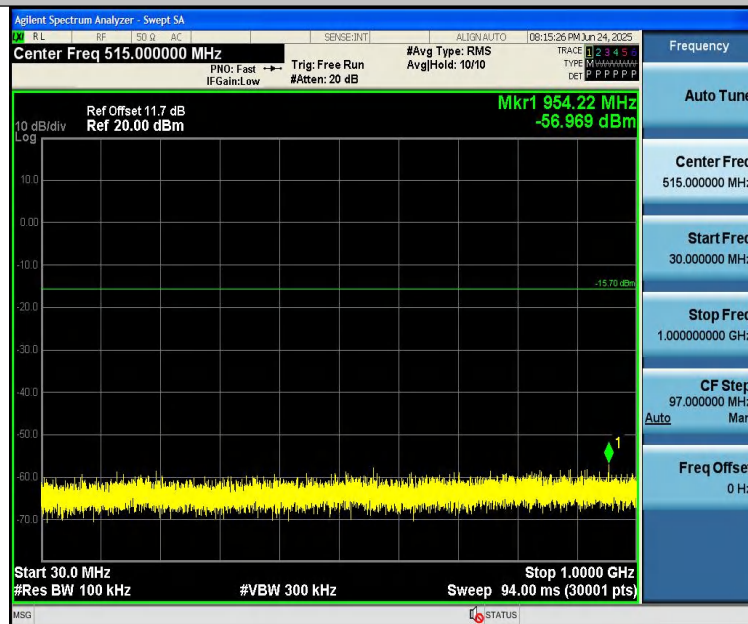
DH5-Ant1-2480-0~Reference-PASS



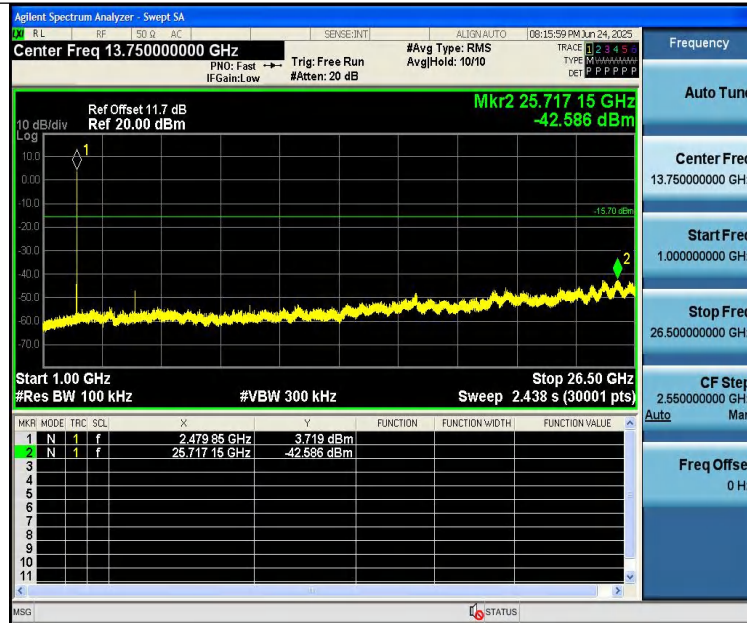
Report No.: PTC25062319901E-FC01



DH5-Ant1-2480-30~1000-PASS



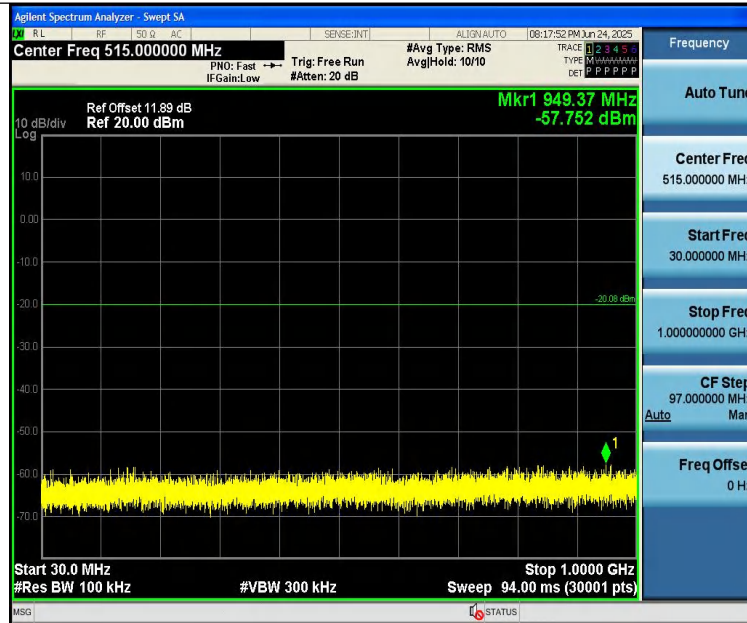
DH5-Ant1-2480-1000~26500-PASS



2DH5-Ant1-2402-0~Reference-PASS



2DH5-Ant1-2402-30~1000-PASS



2DH5-Ant1-2402-1000~26500-PASS



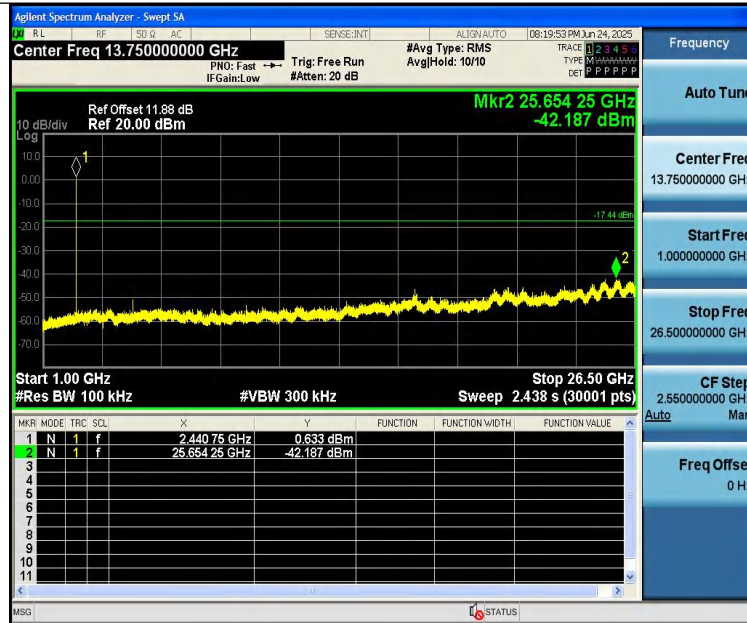
2DH5-Ant1-2441-0~Reference-PASS



2DH5-Ant1-2441-30~1000-PASS



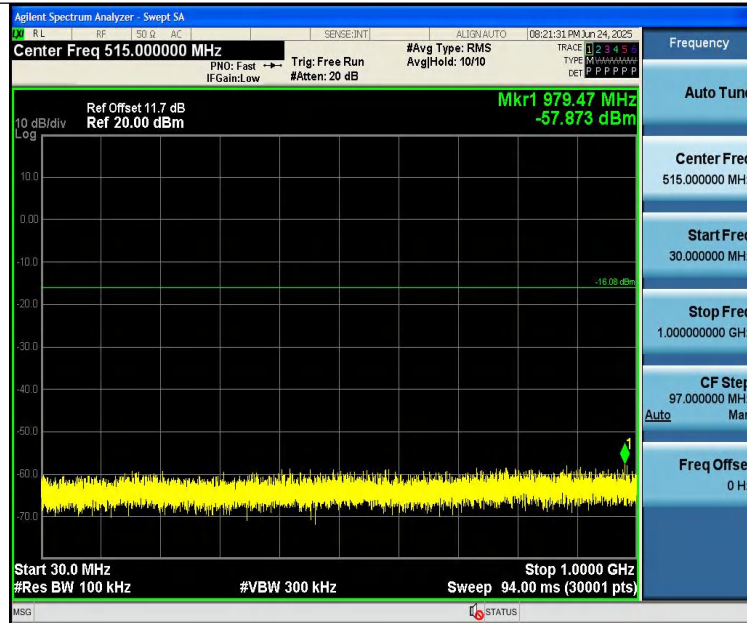
2DH5-Ant1-2441-1000~26500-PASS



2DH5-Ant1-2480-0~Reference-PASS



2DH5-Ant1-2480-30~1000-PASS



2DH5-Ant1-2480-1000~26500-PASS



3DH5-Ant1-2402-0~Reference-PASS



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3DH5-Ant1-2402-30~1000-PASS



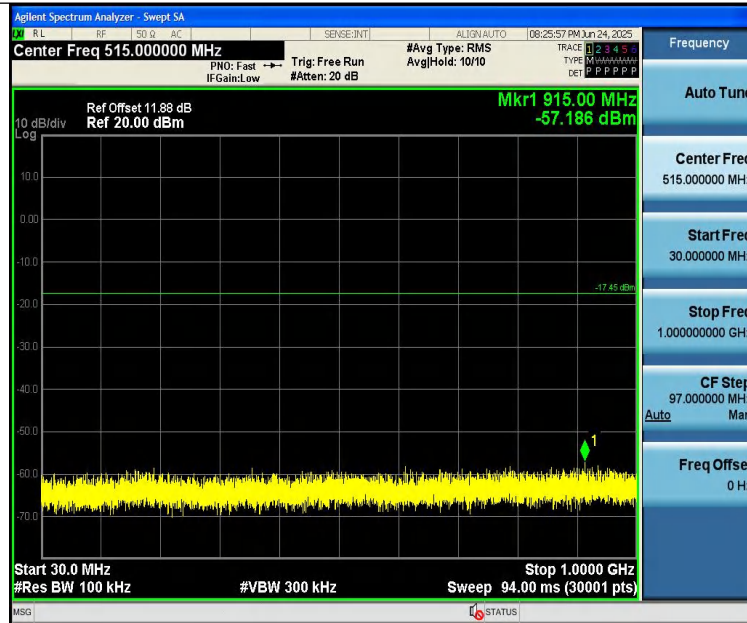
3DH5-Ant1-2402-1000~26500-PASS



3DH5-Ant1-2441-0~Reference-PASS



3DH5-Ant1-2441-30~1000-PASS



3DH5-Ant1-2441-1000~26500-PASS



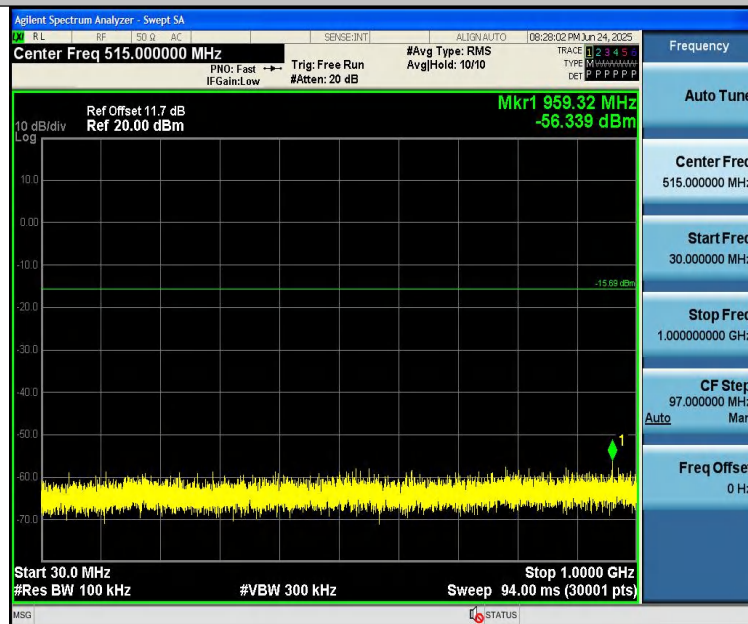
3DH5-Ant1-2480-0~Reference-PASS



Report No.: PTC25062319901E-FC01



3DH5-Ant1-2480-30~1000-PASS



3DH5-Ant1-2480-1000~26500-PASS

