Test Mode: CH39 GFSK				Test channel: Middle				
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4882	41.00	34.38	6.69	34.09	47.98	74	-26.02	V
7323	38.59	37.22	7.78	34.53	49.06	74	-24.94	V
9764	34.64	39.46	9.35	34.8	48.65	74	-25.35	V
4882	43.40	34.38	6.69	34.09	50.38	74	-23.62	H
7323	37.12	37.22	7.78	34.53	47.59	74	-26.41	H
9764	34.80	39.46	9.35	34.8	48.81	74	-25.19	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4882	32.40	34.38	6.69	34.09	39.38	54	-14.62	V
7323	28.47	37.22	7.78	34.53	38.94	54	-15.06	V
9764	26.07	39.46	9.35	34.8	40.08	54	-13.92	V
4882	33.24	34.38	6.69	34.09	40.22	54	-13.78	H
7323	26.56	37.22	7.78	34.53	37.03	54	-16.97	H
9764	24.86	39.46	9.35	34.8	38.87	54	-15.13	H

Test Mode: CH78 GFSK				Test channel: Highest				
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4960	42.81	34.72	6.79	34.09	50.23	74	-23.77	V
7440	39.97	37.34	7.82	34.57	50.56	74	-23.44	V
9920	33.88	39.62	9.46	34.81	48.15	74	-25.85	V
4960	41.28	34.72	6.79	34.09	48.70	74	-25.30	H
7440	37.71	37.34	7.82	34.57	48.30	74	-25.70	H
9920	37.12	39.62	9.46	34.81	51.39	74	-22.61	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4960	32.52	34.72	6.79	34.09	39.94	54	-14.06	V
7440	26.67	37.34	7.82	34.57	37.26	54	-16.74	V
9920	25.09	39.62	9.46	34.81	39.36	54	-14.64	V
4960	32.98	34.72	6.79	34.09	40.40	54	-13.60	H
7440	29.48	37.34	7.82	34.57	40.07	54	-13.93	H
9920	25.37	39.62	9.46	34.81	39.64	54	-14.36	H

Note:

1. The testing has been conformed to 10*2480MHz=24800MHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

   Emission Level = Reading + Factor

   Over Limit =Emission Level-Limit

Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

Bluetooth (GFSK, Pi/4-DQPSK, 8DPSK)mode have been tested, and the worst result GFSK model was report as below

Test Mode: Low Channel 2402MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2310	48.64	28.67	6.72	37.26	46.77	74	-27.23	H	Peak
2390	59.24	28.08	6.81	37.12	57.01	74	-16.99	H	Peak
2310	48.09	28.67	6.72	37.26	46.22	74	-27.78	V	Peak
2390	54.83	28.08	6.81	37.12	52.60	74	-21.40	V	Peak
2310	40.30	28.67	6.72	37.26	38.43	54	-15.57	H	AV
2390	44.07	28.08	6.81	37.12	41.84	54	-12.16	H	AV
2310	39.28	28.67	6.72	37.26	37.41	54	-16.59	V	AV
2390	44.61	28.08	6.81	37.12	42.38	54	-11.62	V	AV

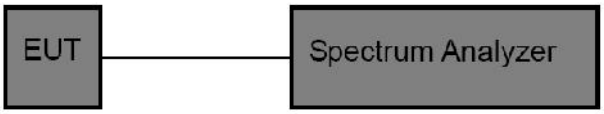
Test Mode: High Channel 2480MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2483.5	59.27	27.38	6.15	36.29	56.51	74	-17.49	H	Peak
2500	49.52	27.43	6.68	36.79	46.84	74	-27.16	H	Peak
2483.5	60.87	27.38	6.15	36.29	58.11	74	-15.89	V	Peak
2500	49.05	27.43	6.68	36.79	46.37	74	-27.63	V	Peak
2483.5	41.24	27.38	6.15	36.29	38.48	54	-15.52	H	AV
2500	40.15	27.43	6.68	36.79	37.47	54	-16.53	H	AV
2483.5	43.06	27.38	6.15	36.29	40.30	54	-13.70	V	AV
2500	39.56	27.43	6.68	36.79	36.88	54	-17.12	V	AV

8 Maximum Peak Output Power Test

8.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (b)(3)
Test Limit	125mW

8.2 Test Setup



8.3 Test Procedure

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 D01 15.247 Meas Guidance v05 section 8.3.1.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

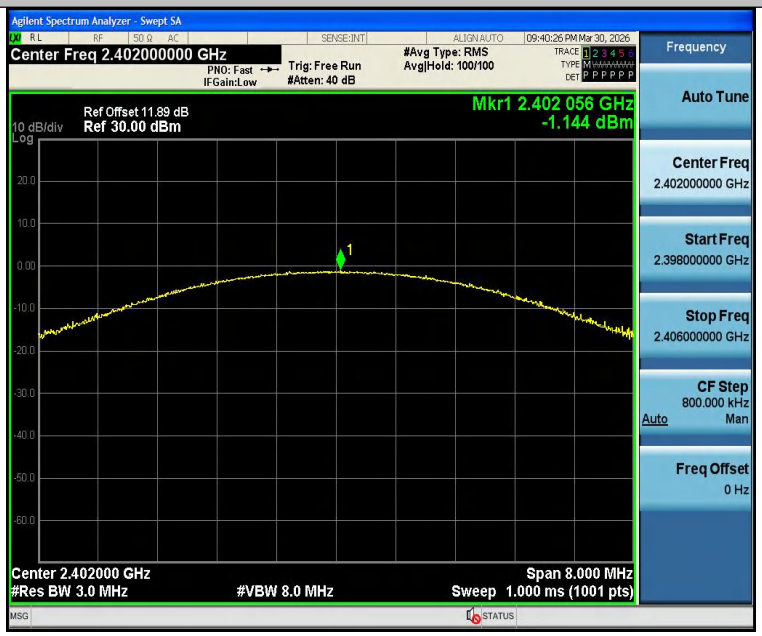
8.4 Test Data

Test Item	:	Max. peak output power	Test Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

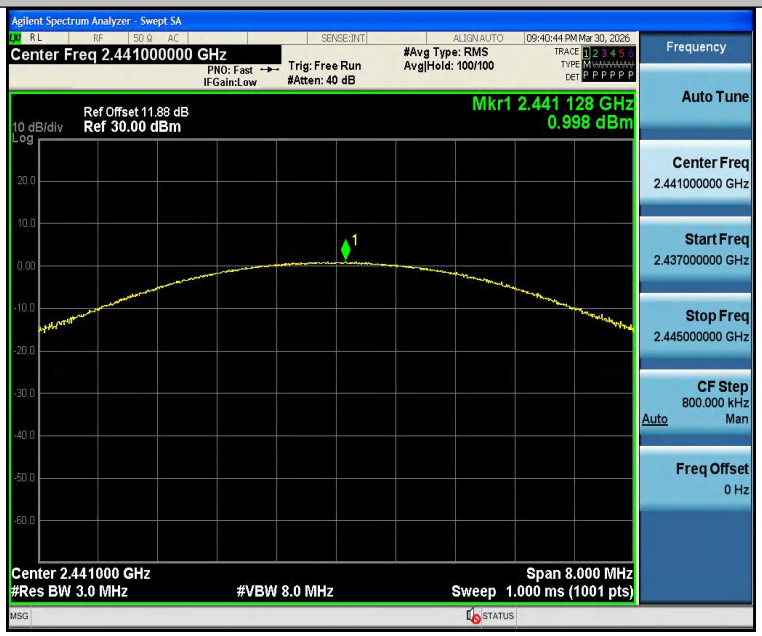
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-1.14	≤20.97	PASS
DH5	Ant1	2441	1.00	≤20.97	PASS
DH5	Ant1	2480	2.79	≤20.97	PASS
2DH5	Ant1	2402	-0.81	≤20.97	PASS
2DH5	Ant1	2441	1.33	≤20.97	PASS
2DH5	Ant1	2480	3.31	≤20.97	PASS
3DH5	Ant1	2402	-0.45	≤20.97	PASS
3DH5	Ant1	2441	1.76	≤20.97	PASS
3DH5	Ant1	2480	3.84	≤20.97	PASS

Test Graphs:

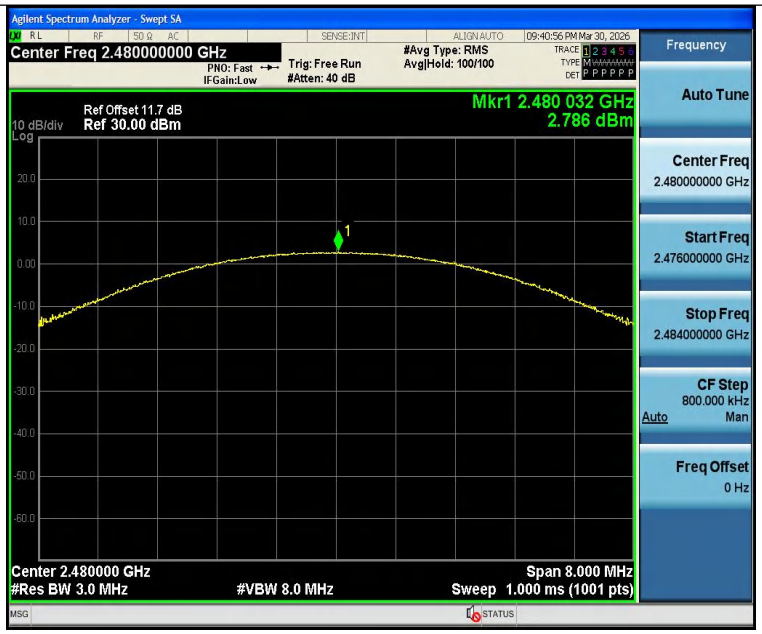
DH5-Ant1-2402-PASS



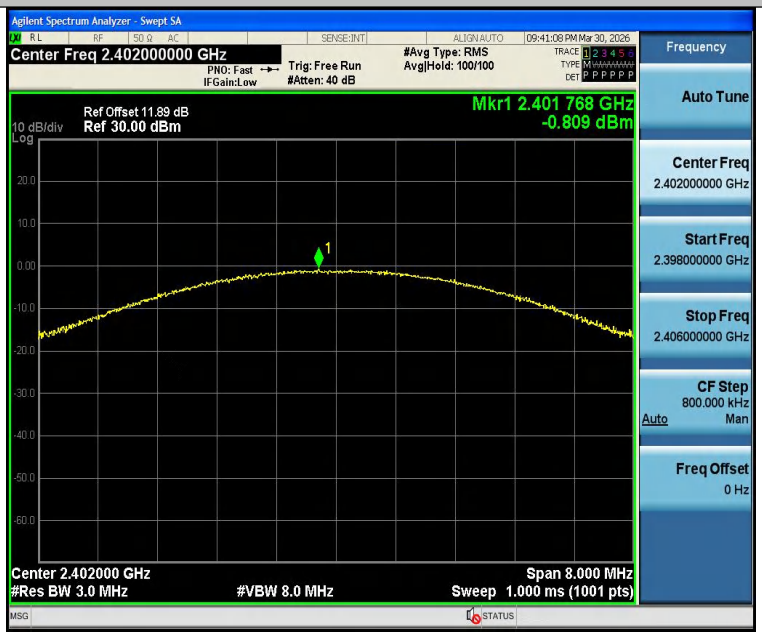
DH5-Ant1-2441-PASS



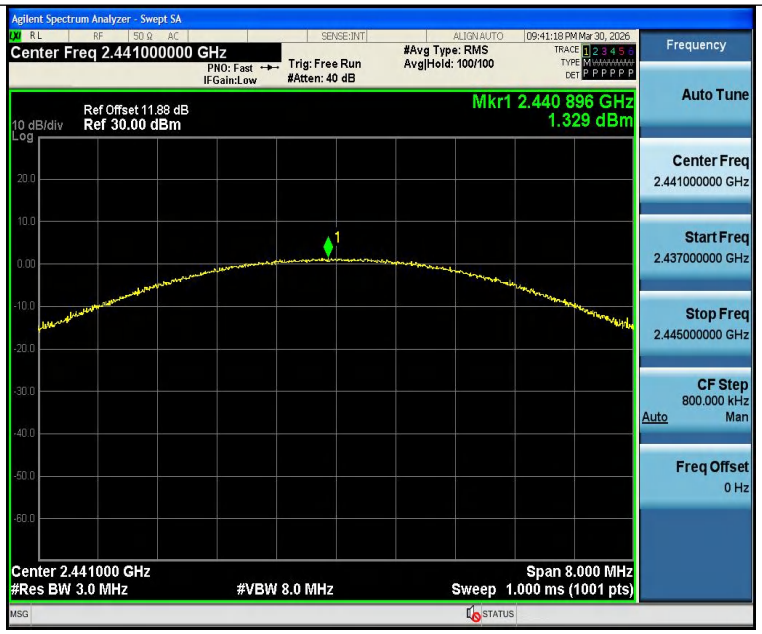
DH5-Ant1-2480-PASS



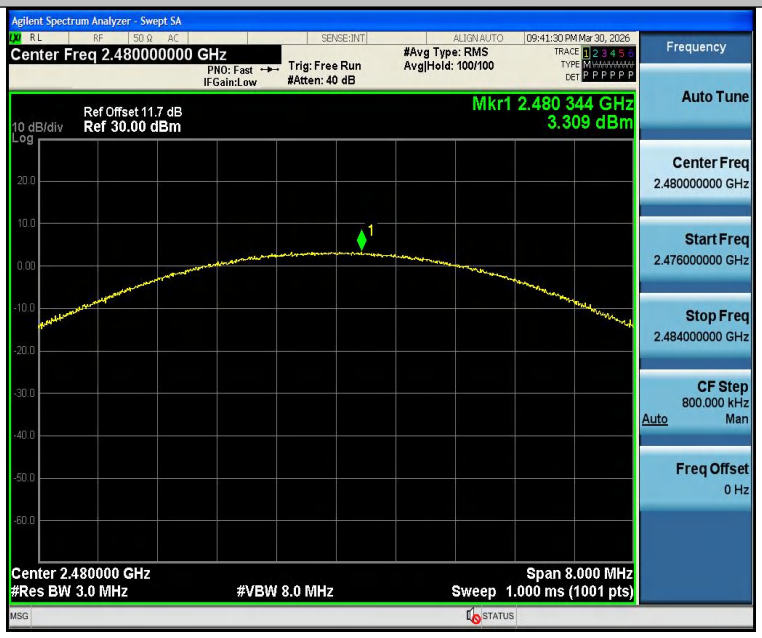
2DH5-Ant1-2402-PASS



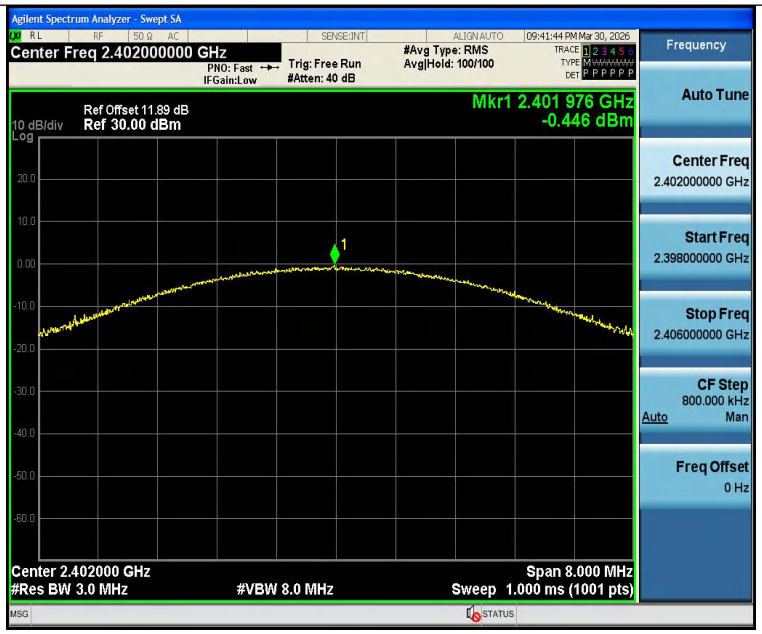
2DH5-Ant1-2441-PASS



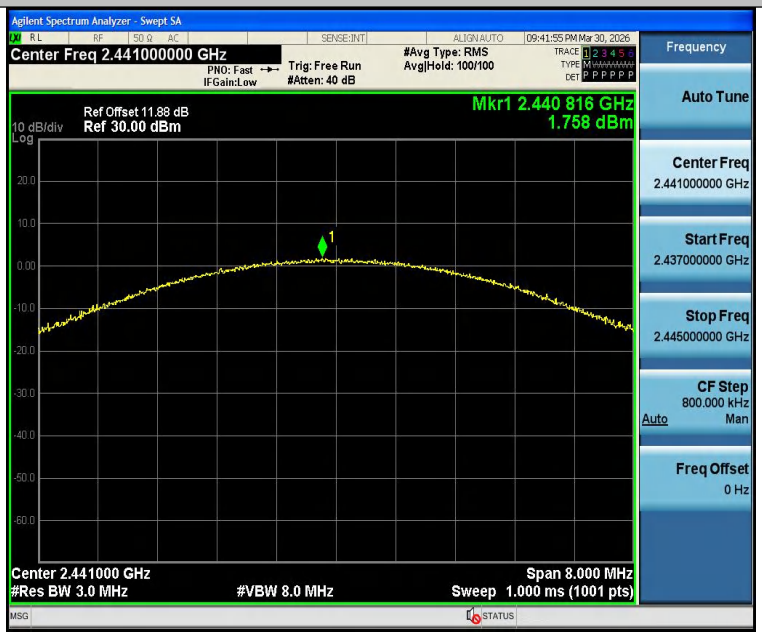
2DH5-Ant1-2480-PASS



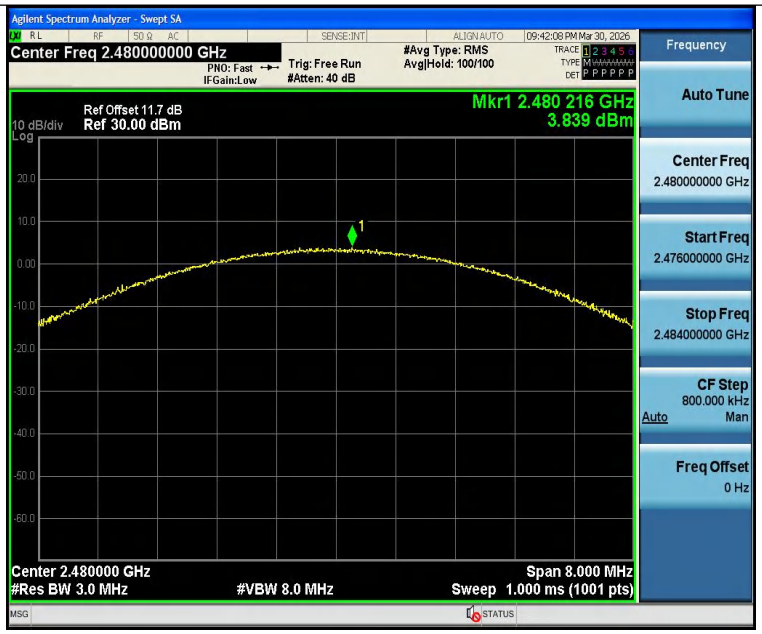
3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS



3DH5-Ant1-2480-PASS

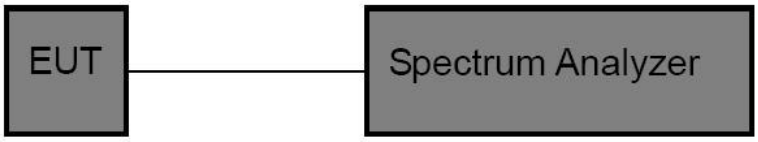

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
09:42:08 PM Mar 30, 2026
Ref Offset 11.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 2.480 216 GHz
3.839 dBm
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 8.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.476000000 GHz
Stop Freq
2.484000000 GHz
CF Step
800.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

9 20DB Occupy Bandwidth Test

9.1 Test Standard

Test Standard	FCC Part15 C Section 15.247 (a)(1)

9.2 Test Setup



9.3 Test Procedure

Using the following spectrum analyzer settings:

1. Span= approximately 2 to 3 times the 20dB bandwidth, centered on a hopping channel.
2. Set the RBW = 30 kHz.
3. Set the VBW = 100 kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

9.4 Test Data

Test Item	:	20dB BW	Test Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.945	2401.559	2402.504	---	---
DH5	Ant1	2441	0.939	2440.559	2441.498	---	---
DH5	Ant1	2480	0.927	2479.574	2480.501	---	---
2DH5	Ant1	2402	1.260	2401.388	2402.648	---	---
2DH5	Ant1	2441	1.263	2440.397	2441.660	---	---
2DH5	Ant1	2480	1.272	2479.391	2480.663	---	---
3DH5	Ant1	2402	1.260	2401.379	2402.639	---	---
3DH5	Ant1	2441	1.320	2440.361	2441.681	---	---
3DH5	Ant1	2480	1.317	2479.367	2480.684	---	---

Test Graphs:

DH5-Ant1-2402

DH5-Ant1-2441

DH5-Ant1-2480

2DH5-Ant1-2402

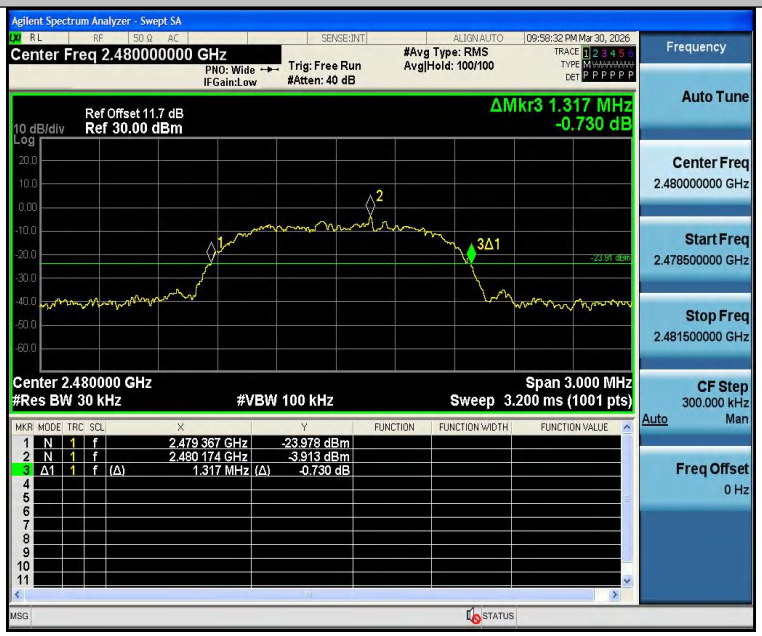
2DH5-Ant1-2441

2DH5-Ant1-2480

3DH5-Ant1-2402

3DH5-Ant1-2441

3DH5-Ant1-2480

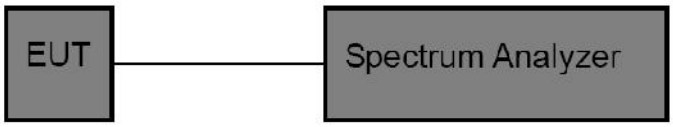


10 Carrier Frequency Separation Test

10.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>25KHz or >two-thirds of the 20 dB bandwidth

10.2 Test Setup



10.3 Test Procedure

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

1. Span= Wide enough to capture the peaks of two adjacent channels
2. Set the RBW = 300 kHz.
3. Set the VBW = 300 kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

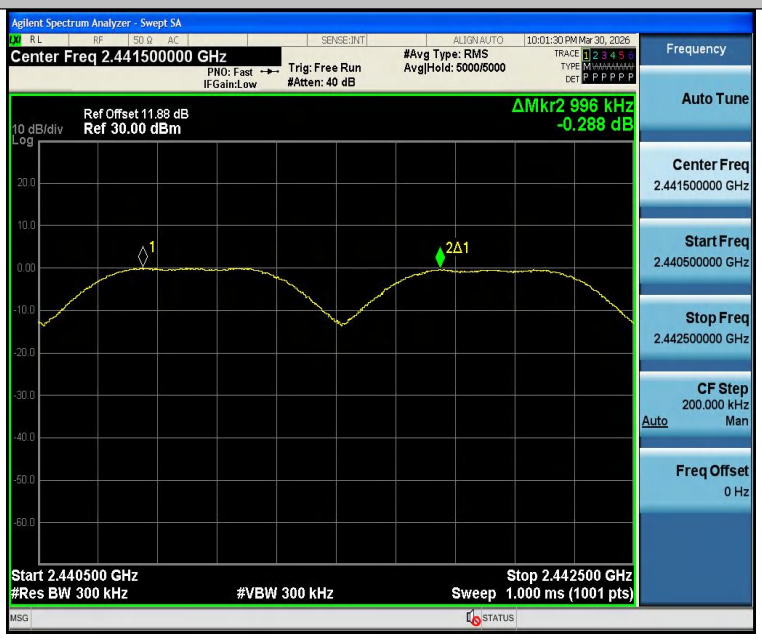
10.4 Test Data

Test Item	:	Frequency Separation	Test Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.996	≥0.630	PASS
2DH5	Ant1	Hop	1.016	≥0.848	PASS
3DH5	Ant1	Hop	0.992	≥0.880	PASS

Test Graphs:

DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS

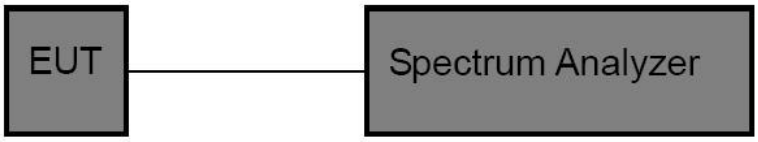
3DH5-Ant1-Hop-PASS

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

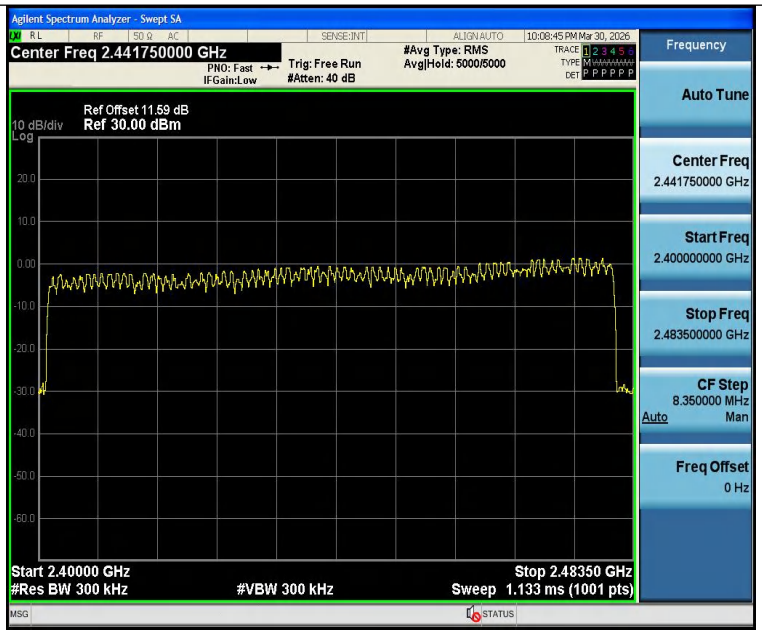
Test Item	:	Number of Hopping Frequency	Test Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

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

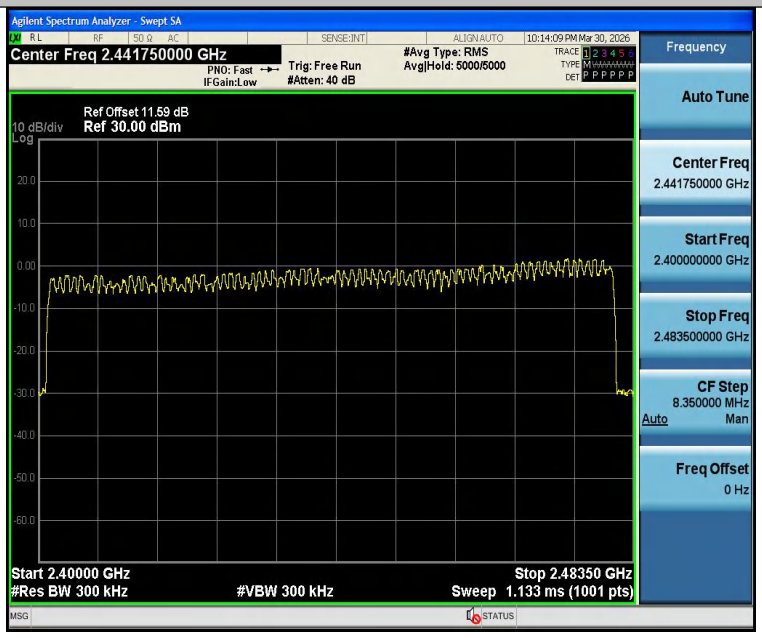
Test Graphs:

DH5-Ant1-Hop-PASS

2DH5-Ant1-Hop-PASS



3DH5-Ant1-Hop-PASS

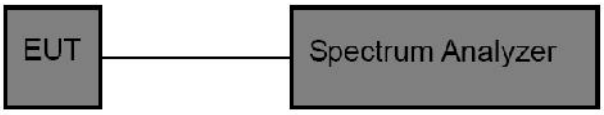


12 Dwell Time Test

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 Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.910	106.67	0.31	≤0.4	PASS
2DH5	Ant1	Hop	2.915	106.67	0.311	≤0.4	PASS
3DH5	Ant1	Hop	2.918	106.67	0.311	≤0.4	PASS
DH1	Ant1	Hop	0.405	320	0.13	≤0.4	PASS
2DH1	Ant1	Hop	0.415	320	0.133	≤0.4	PASS
3DH1	Ant1	Hop	0.417	320	0.133	≤0.4	PASS
DH3	Ant1	Hop	1.662	160	0.266	≤0.4	PASS
2DH3	Ant1	Hop	1.666	160	0.267	≤0.4	PASS
3DH3	Ant1	Hop	1.667	160	0.267	≤0.4	PASS

Note:

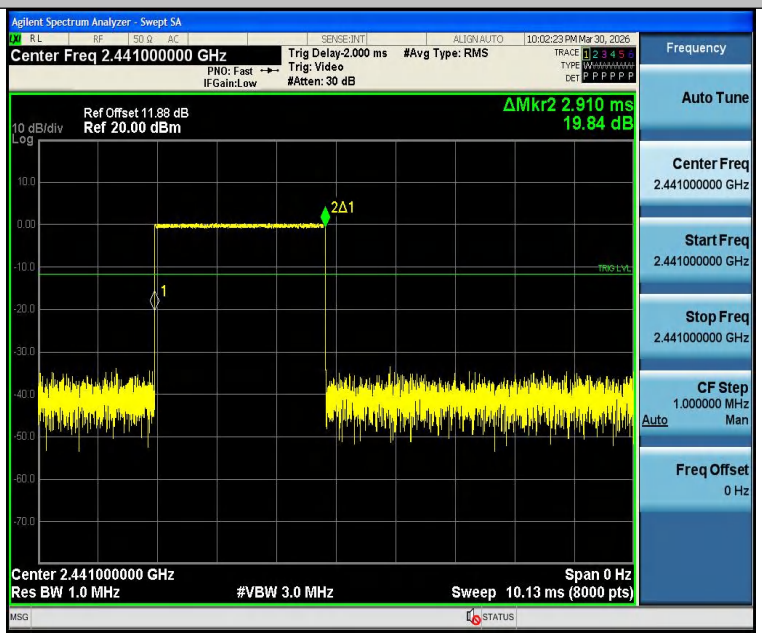
1.DH1/2DH1/3DH1 Dwell Time: Reading * (1600/2)*31.6/(channel number).

2.DH3/2DH3/3DH3 Dwell Time: Reading * (1600/4)*31.6/(channel number).

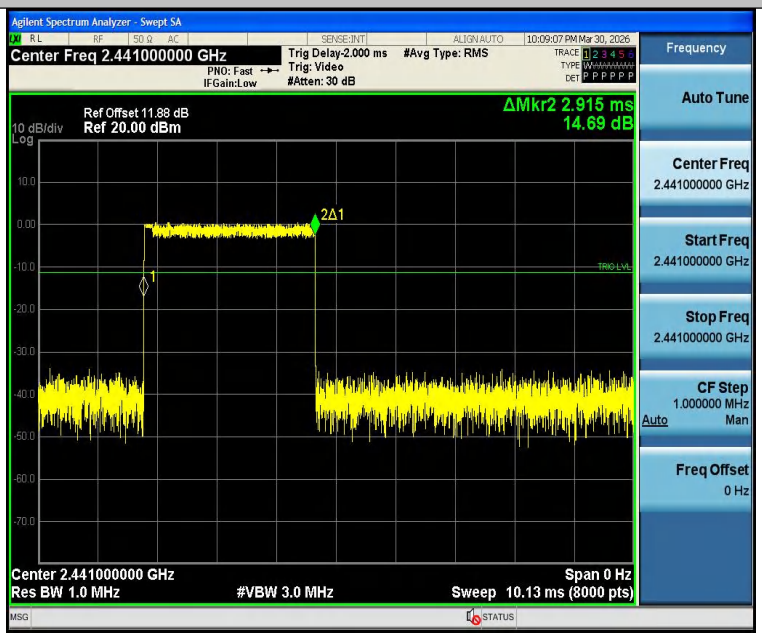
3.DH5/2DH5/3DH5 Dwell Time: Reading * (1600/6)*31.6/(channel number).

Test Graphs:

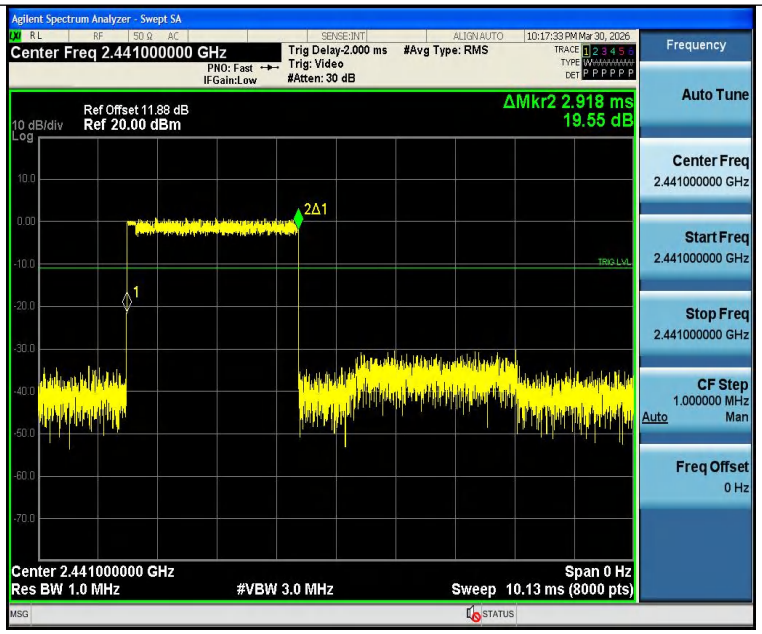
DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS

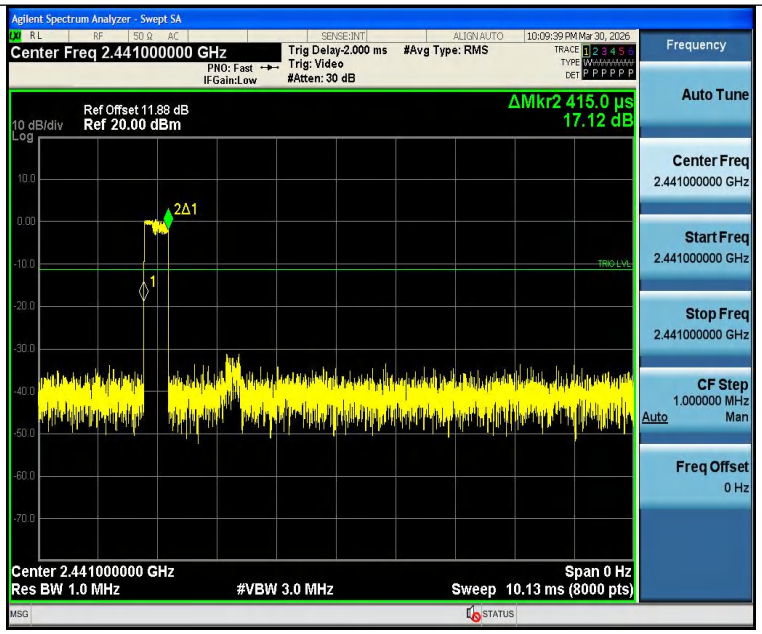


3DH5-Ant1-Hop-PASS



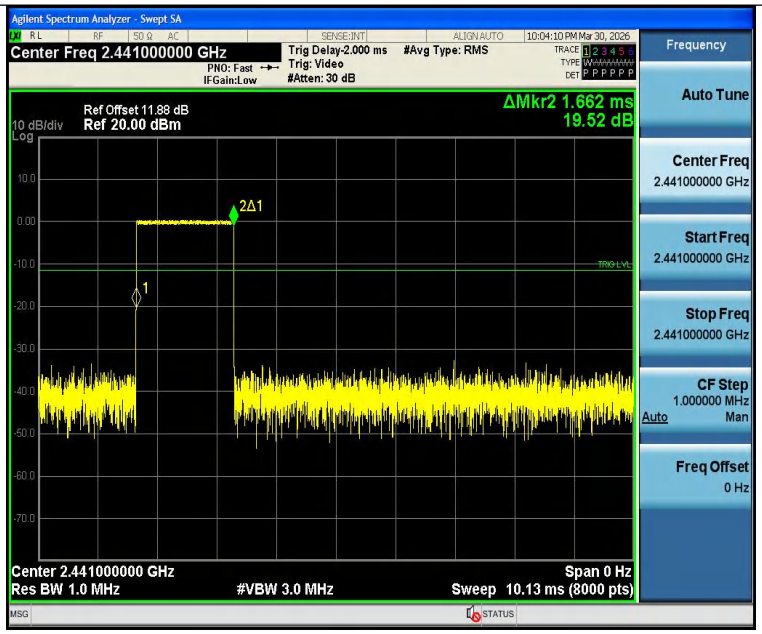
DH1-Ant1-Hop-PASS

2DH1-Ant1-Hop-PASS



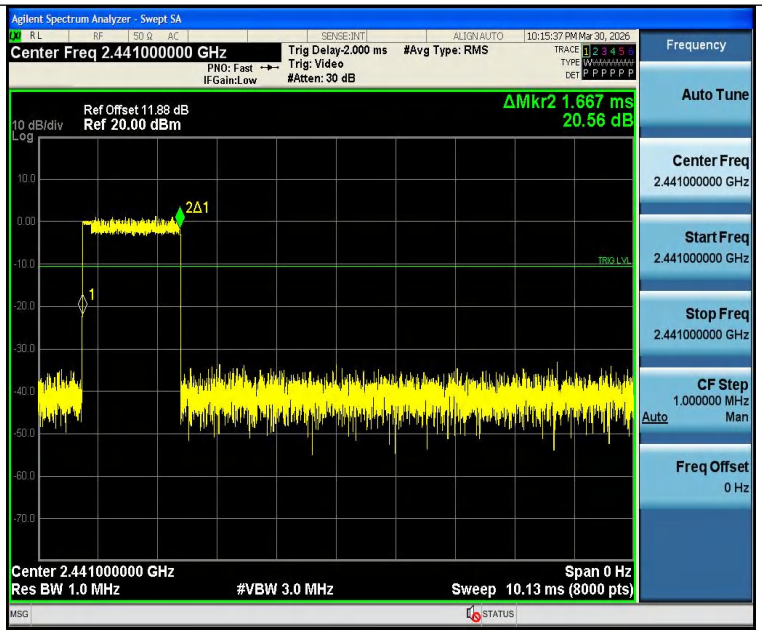
3DH1-Ant1-Hop-PASS

DH3-Ant1-Hop-PASS



2DH3-Ant1-Hop-PASS

3DH3-Ant1-Hop-PASS

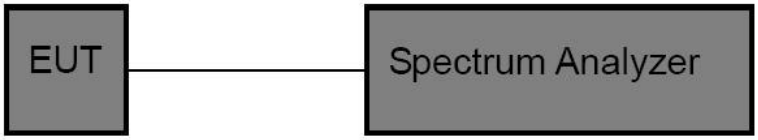

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-2.000 ms
Trig: Video
#Avg Type: RMS
#Atten: 30 dB
10:15:37 PM Mar 30, 2026
Ref Offset 11.88 dB
10 dB/div
Log
Ref 20.00 dBm
ΔMkr2 1.667 ms
20.56 dB
2Δ1
1
TRIG LVL
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 10.13 ms (8000 pts)
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

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 in 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.

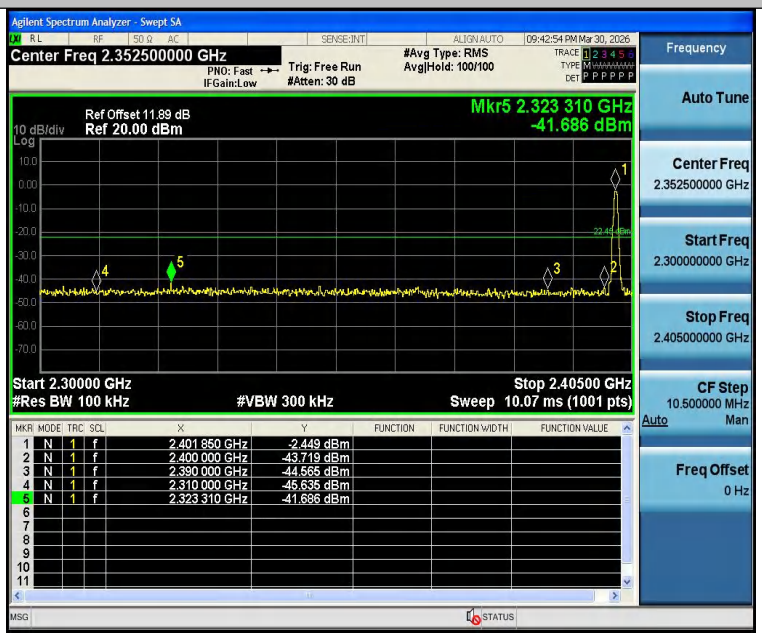
13.4 Test Data

Test Item	:	Band edge	Test Mode	:	CH Low ~ CH High
Test Voltage	:	3.7V	Temperature	:	24.5℃
Test Result	:	PASS	Humidity	:	55%RH

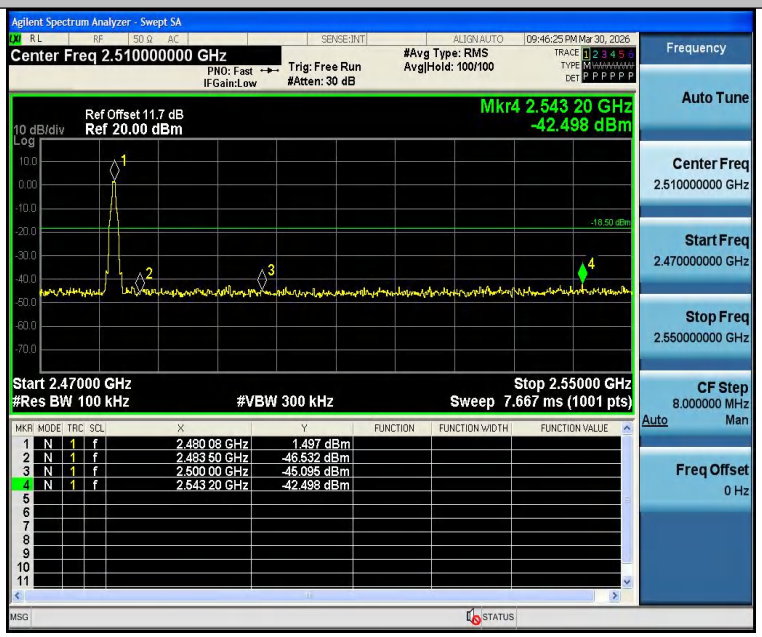
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-2.45	-41.69	≤-22.45	PASS
DH5	Ant1	High	2480	1.50	-42.5	≤-18.5	PASS
DH5	Ant1	Low	Hop_2402	-2.92	-42.61	≤-22.92	PASS
DH5	Ant1	High	Hop_2480	1.89	-41.4	≤-18.11	PASS
2DH5	Ant1	Low	2402	-2.64	-42.99	≤-22.64	PASS
2DH5	Ant1	High	2480	1.76	-42.15	≤-18.24	PASS
2DH5	Ant1	Low	Hop_2402	-4.86	-42.39	≤-24.86	PASS
2DH5	Ant1	High	Hop_2480	1.56	-41.69	≤-18.44	PASS
3DH5	Ant1	Low	2402	-2.47	-42.86	≤-22.47	PASS
3DH5	Ant1	High	2480	-0.07	-41.75	≤-20.07	PASS
3DH5	Ant1	Low	Hop_2402	-2.76	-42.26	≤-22.76	PASS
3DH5	Ant1	High	Hop_2480	1.67	-41.84	≤-18.33	PASS

Test Graphs:

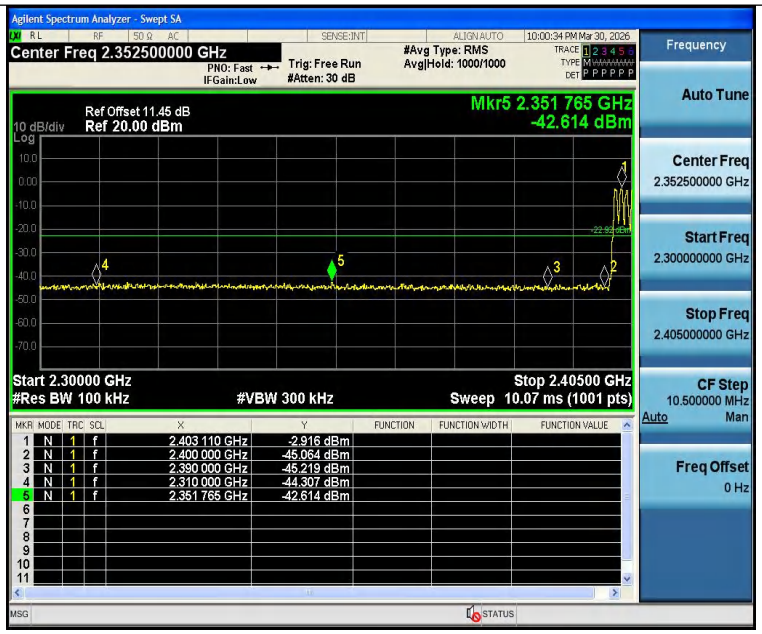
DH5-Ant1-2402-PASS



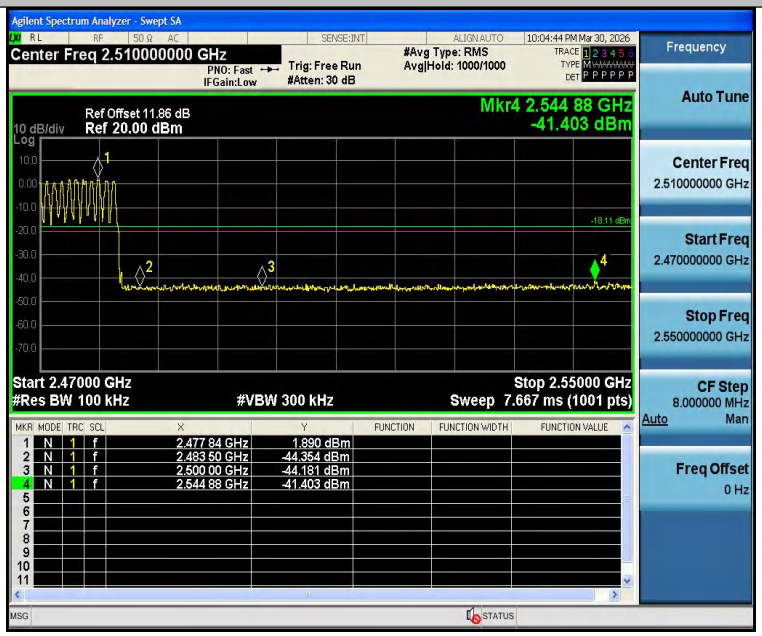
DH5-Ant1-2480-PASS



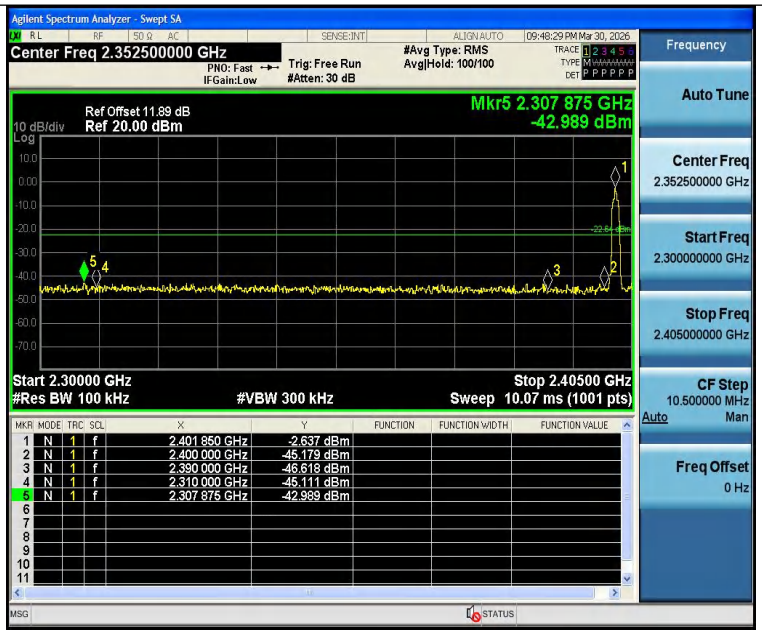
DH5-Ant1-Hop_2402-PASS



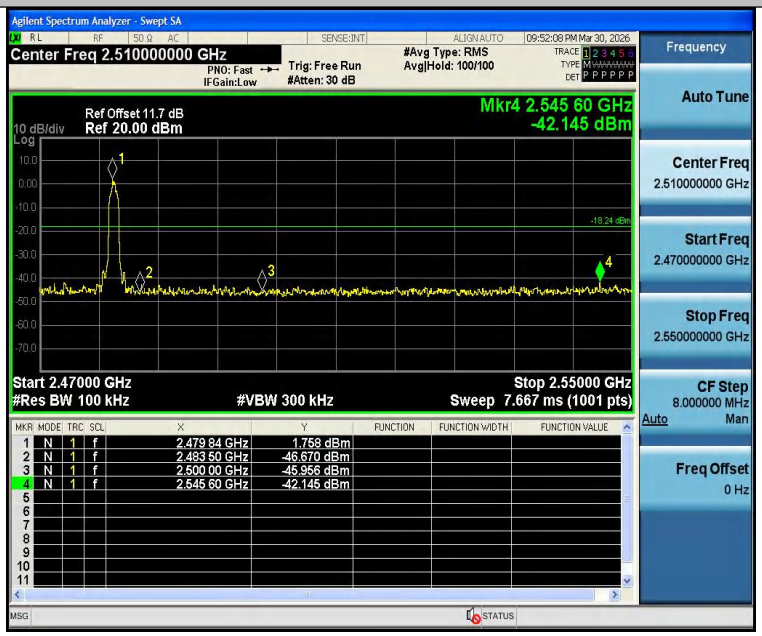
DH5-Ant1-Hop_2480-PASS



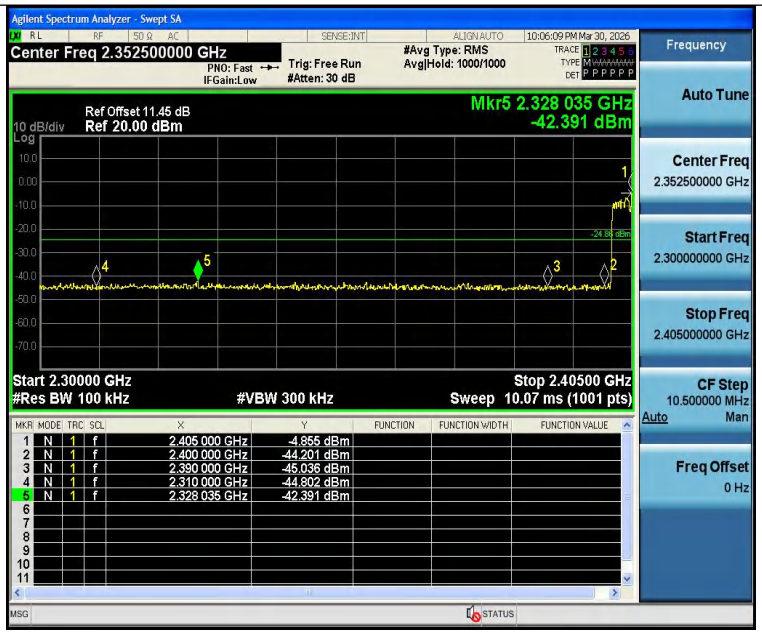
2DH5-Ant1-2402-PASS



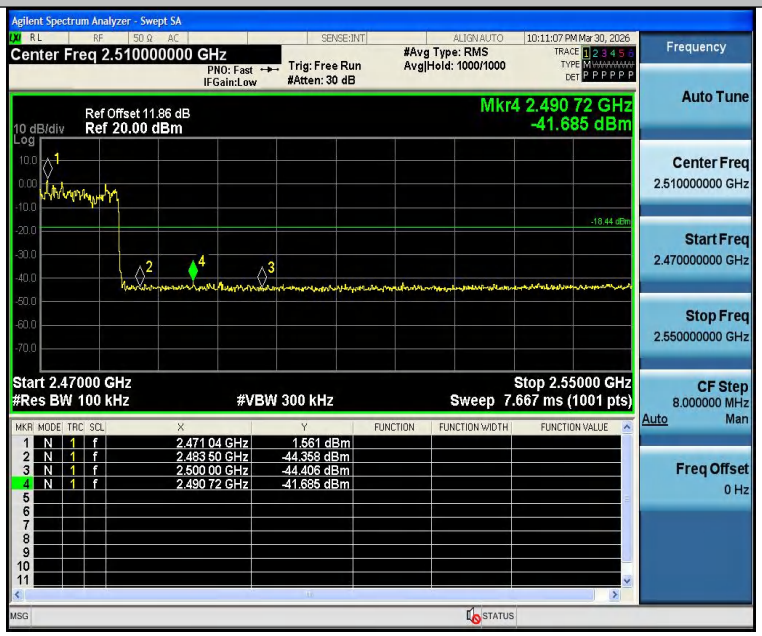
2DH5-Ant1-2480-PASS



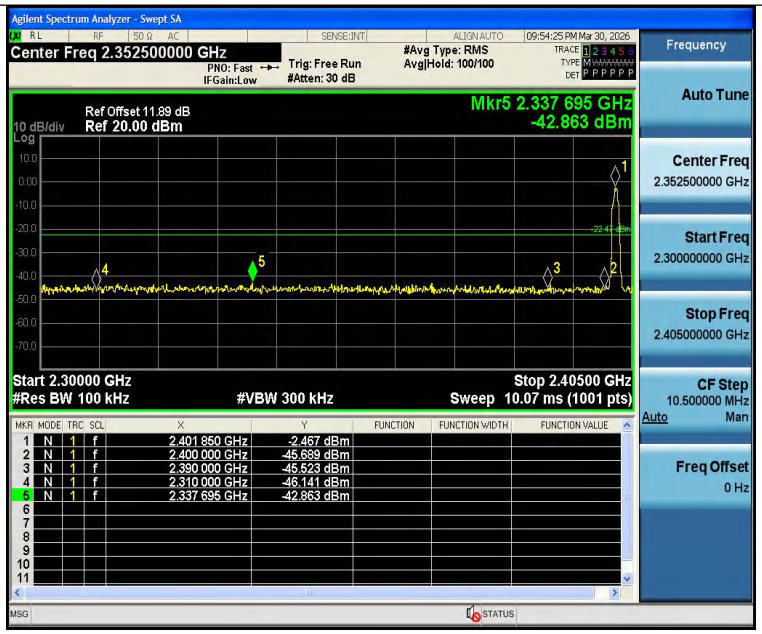
2DH5-Ant1-Hop_2402-PASS



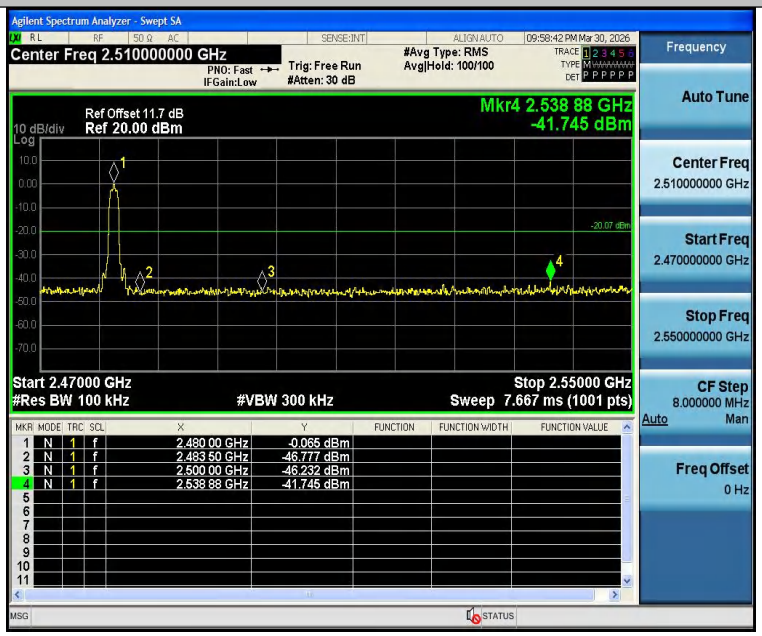
2DH5-Ant1-Hop_2480-PASS



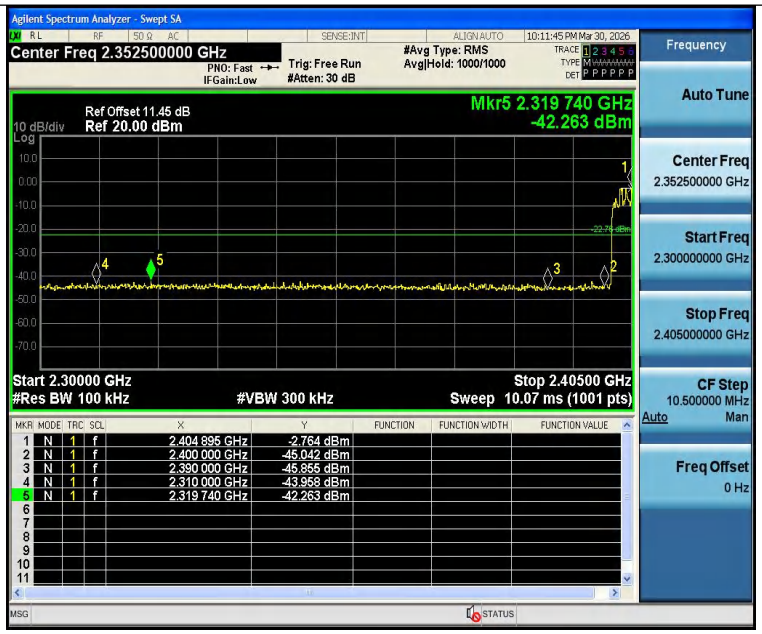
3DH5-Ant1-2402-PASS



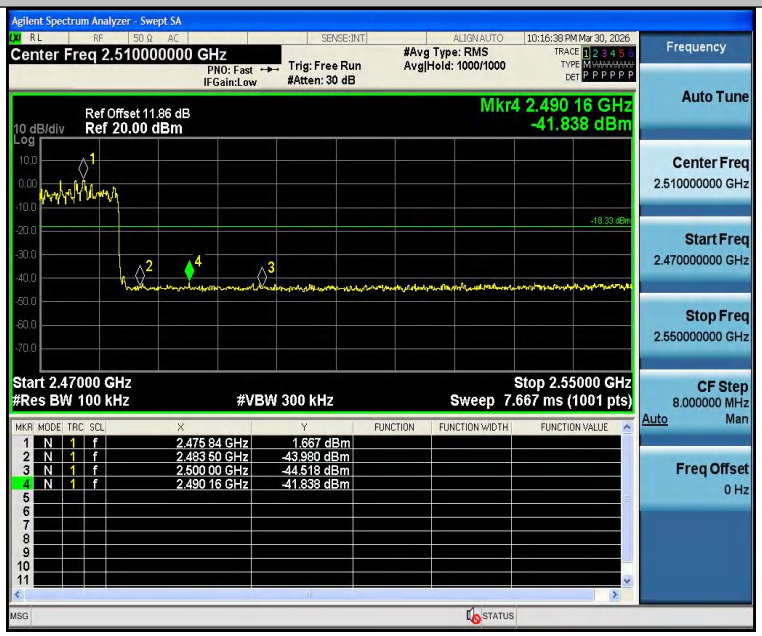
3DH5-Ant1-2480-PASS



3DH5-Ant1-Hop_2402-PASS



3DH5-Ant1-Hop_2480-PASS



Conducted Emission Method

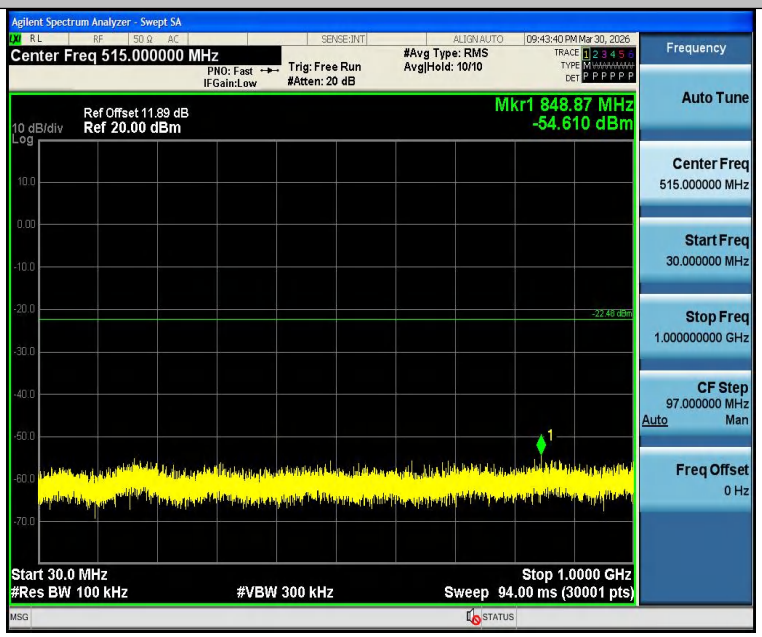
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	-2.48	-2.48	---	PASS
DH5	Ant1	2402	30~1000	-2.48	-54.61	≤-22.48	PASS
DH5	Ant1	2402	1000~26500	-2.48	-37.26	≤-22.48	PASS
DH5	Ant1	2441	0~Reference	-0.17	-0.17	---	PASS
DH5	Ant1	2441	30~1000	-0.17	-54.69	≤-20.17	PASS
DH5	Ant1	2441	1000~26500	-0.17	-36.1	≤-20.17	PASS
DH5	Ant1	2480	0~Reference	1.84	1.84	---	PASS
DH5	Ant1	2480	30~1000	1.84	-54.96	≤-18.16	PASS
DH5	Ant1	2480	1000~26500	1.84	-28.37	≤-18.16	PASS
2DH5	Ant1	2402	0~Reference	-3.49	-3.49	---	PASS
2DH5	Ant1	2402	30~1000	-3.49	-54.43	≤-23.49	PASS
2DH5	Ant1	2402	1000~26500	-3.49	-41.08	≤-23.49	PASS
2DH5	Ant1	2441	0~Reference	-0.45	-0.45	---	PASS
2DH5	Ant1	2441	30~1000	-0.45	-55.22	≤-20.45	PASS
2DH5	Ant1	2441	1000~26500	-0.45	-36.67	≤-20.45	PASS
2DH5	Ant1	2480	0~Reference	1.49	1.49	---	PASS
2DH5	Ant1	2480	30~1000	1.49	-54.74	≤-18.51	PASS
2DH5	Ant1	2480	1000~26500	1.49	-28.34	≤-18.51	PASS
3DH5	Ant1	2402	0~Reference	-3.22	-3.22	---	PASS
3DH5	Ant1	2402	30~1000	-3.22	-54.56	≤-23.22	PASS
3DH5	Ant1	2402	1000~26500	-3.22	-42.14	≤-23.22	PASS
3DH5	Ant1	2441	0~Reference	-0.26	-0.26	---	PASS
3DH5	Ant1	2441	30~1000	-0.26	-54.71	≤-20.26	PASS
3DH5	Ant1	2441	1000~26500	-0.26	-38.4	≤-20.26	PASS
3DH5	Ant1	2480	0~Reference	1.54	1.54	---	PASS
3DH5	Ant1	2480	30~1000	1.54	-54	≤-18.46	PASS
3DH5	Ant1	2480	1000~26500	1.54	-34.88	≤-18.46	PASS

Test Graphs:

DH5-Ant1-2402-0~Reference-PASS

DH5-Ant1-2402-30~1000-PASS



DH5-Ant1-2402-1000~26500-PASS