Appendix Test Data

Report No.:	18220WC20090501	Test Sample No.:	1-2-2
Start Test Date:	2022.4.24	Finish Test Date:	2022.4.26
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.3℃	Relative Humidity:	57 %
Pressure:	1012 hPa		

Appendix A: 20dB Emission Bandwidth

Test Result

Test Mode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.945	2401.538	2402.483	---	PASS
		2441	0.948	2440.538	2441.486	---	PASS
		2480	0.948	2479.538	2480.486	---	PASS
2DH5	Ant1	2402	1.317	2401.340	2402.657	---	PASS
		2441	1.296	2440.343	2441.639	---	PASS
		2480	1.266	2479.367	2480.633	---	PASS

Test Graphs

DH5_Ant1_2402

DH5_Ant1_2441

DH5_Ant1_2480

2DH5_Ant1_2402

2DH5_Ant1_2441

2DH5_Ant1_2480

Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.87830	2401.560	2402.438	---	PASS
		2441	0.88835	2440.559	2441.447	---	PASS
		2480	0.88847	2479.557	2480.445	---	PASS
2DH5	Ant1	2402	1.1749	2401.412	2402.587	---	PASS
		2441	1.1884	2440.407	2441.595	---	PASS
		2480	1.1851	2479.408	2480.593	---	PASS

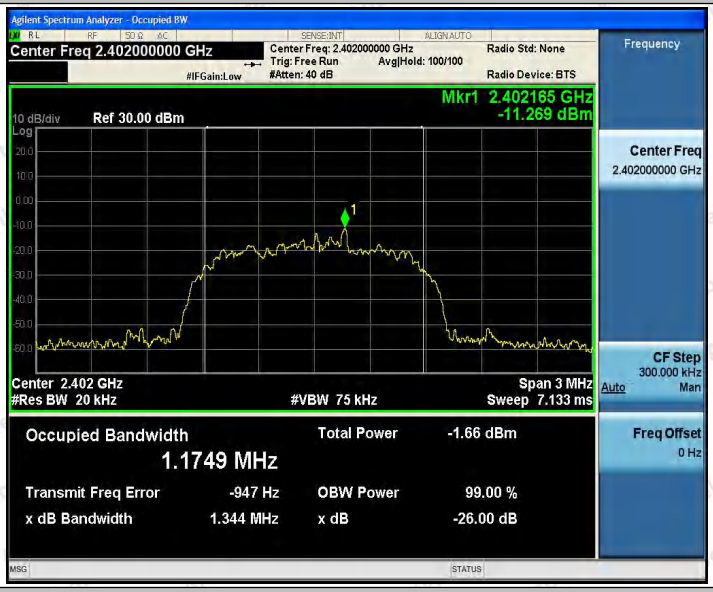
Test Graphs

DH5_Ant1_2402

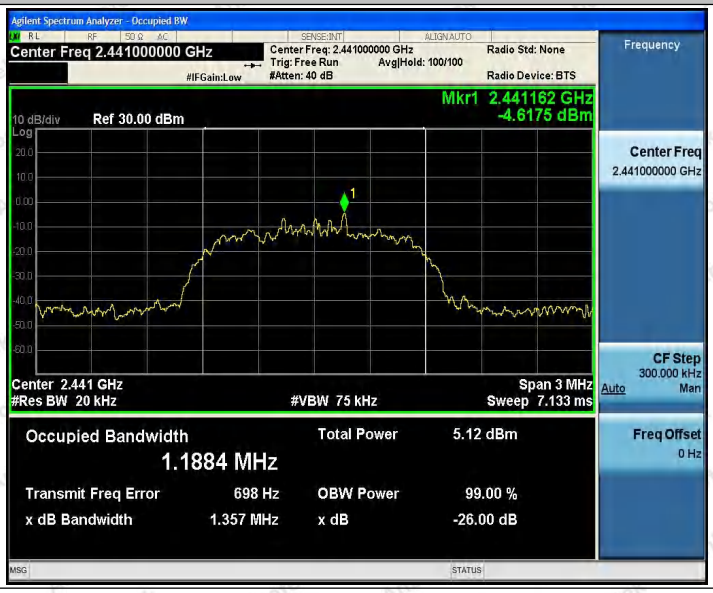
DH5_Ant1_2441

DH5_Ant1_2480

2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480

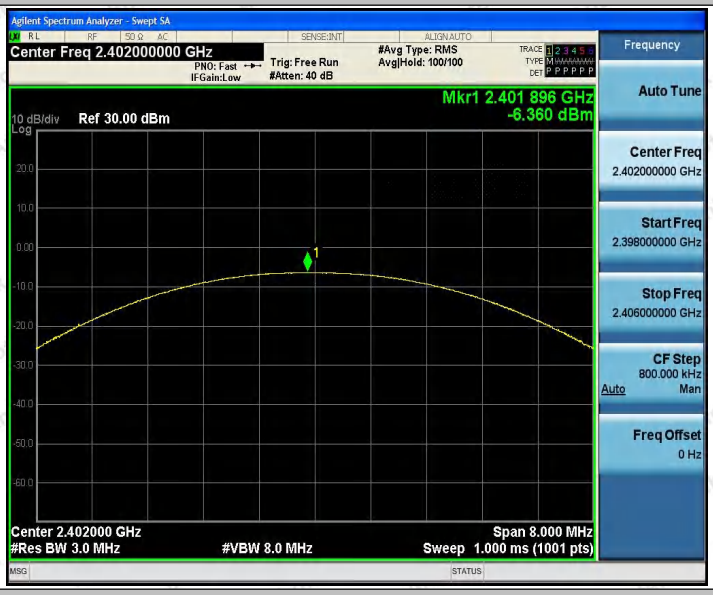
Appendix C: Maximum conducted output power

Test Result

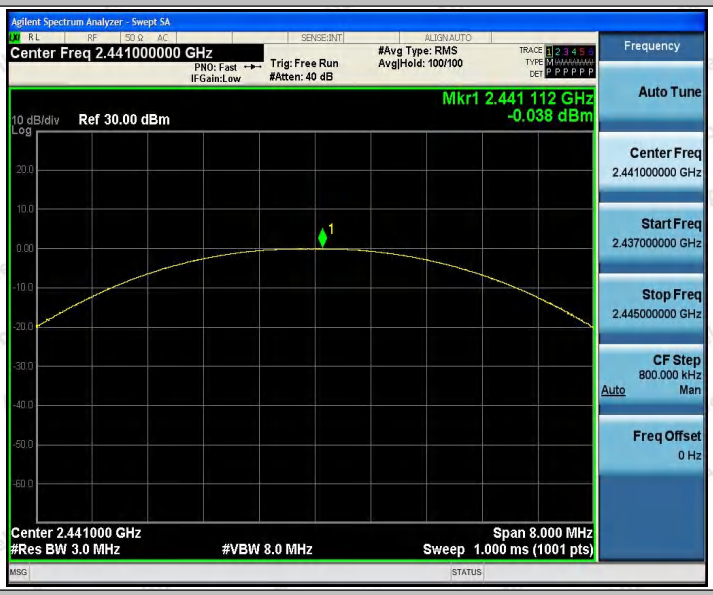
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-6.36	≤20.97	PASS
		2441	-0.04	≤20.97	PASS
		2480	0.53	≤20.97	PASS
2DH5	Ant1	2402	-6.66	≤20.97	PASS
		2441	-0.59	≤20.97	PASS
		2480	-0.2	≤20.97	PASS

Test Graphs

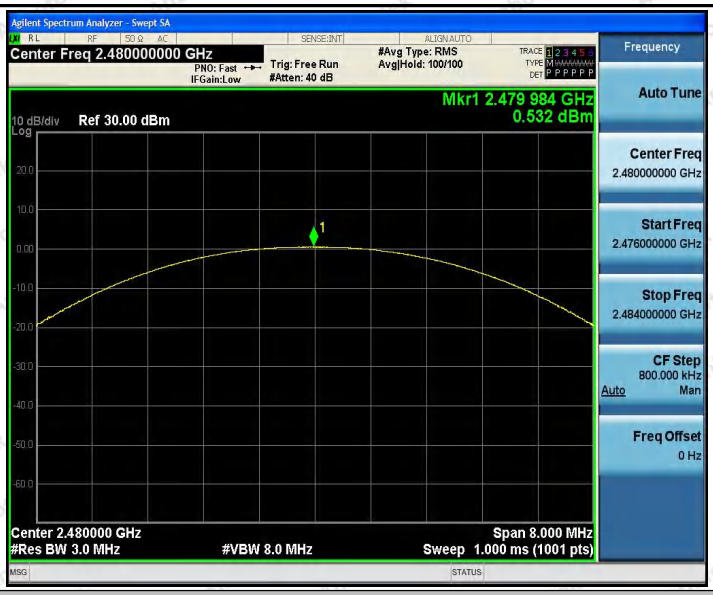
DH5_Ant1_2402



DH5_Ant1_2441

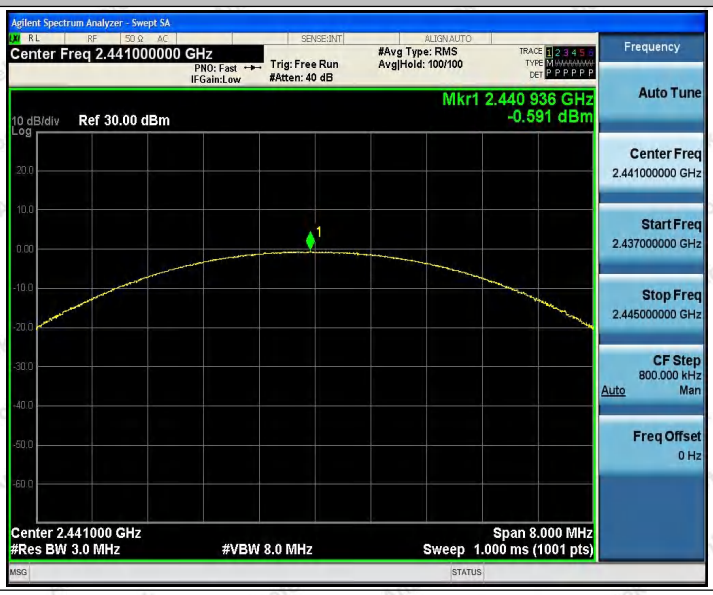


DH5_Ant1_2480

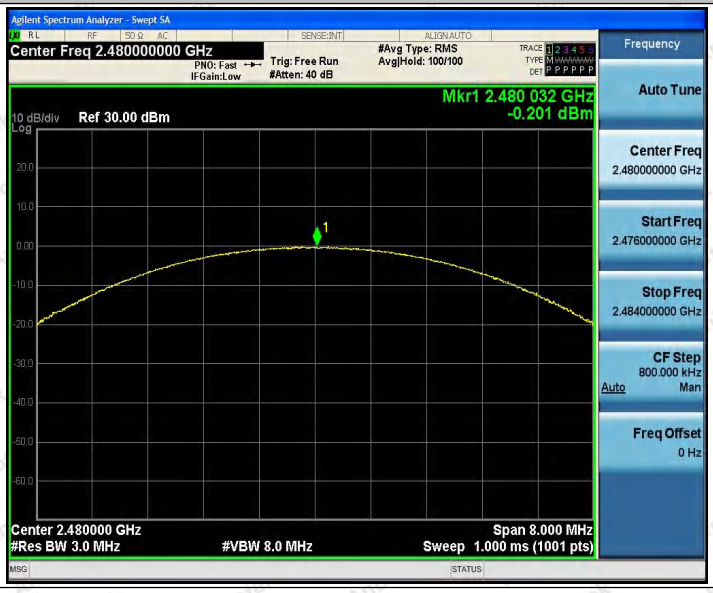


2DH5_Ant1_2402

2DH5_Ant1_2441



2DH5_Ant1_2480



Appendix D: Carrier frequency separation

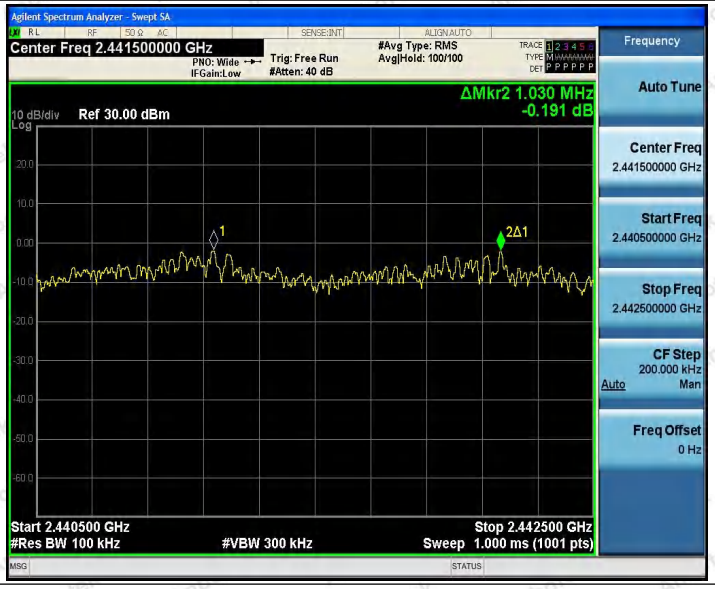
Test Result

Test Mode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.128	≥0.948	PASS
2DH5	Ant1	Hop	1.03	≥0.878	PASS

Test Graphs

DH5_Ant1_Hop

2DH5_Ant1_Hop



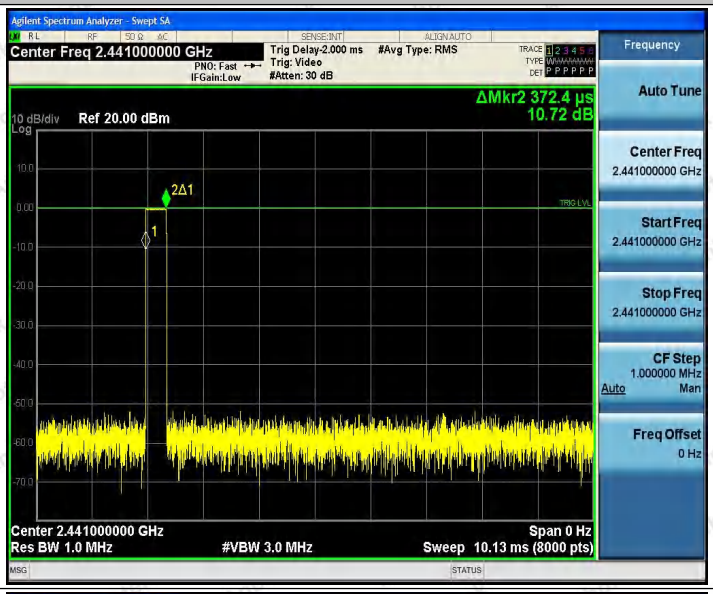
Appendix E: Time of occupancy

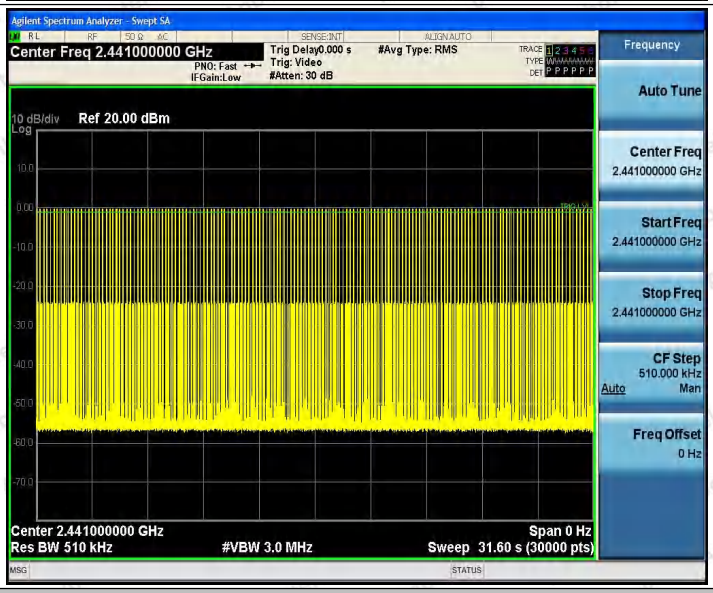
Test Result

Test Mode	Antenna	Channel	Burst Width [ms]	Total Hops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.37	314	0.117	≤0.4	PASS
DH3	Ant1	Hop	1.63	160	0.261	≤0.4	PASS
DH5	Ant1	Hop	2.88	99	0.285	≤0.4	PASS
2DH1	Ant1	Hop	0.38	314	0.119	≤0.4	PASS
2DH3	Ant1	Hop	1.63	158	0.258	≤0.4	PASS
2DH5	Ant1	Hop	2.88	116	0.334	≤0.4	PASS

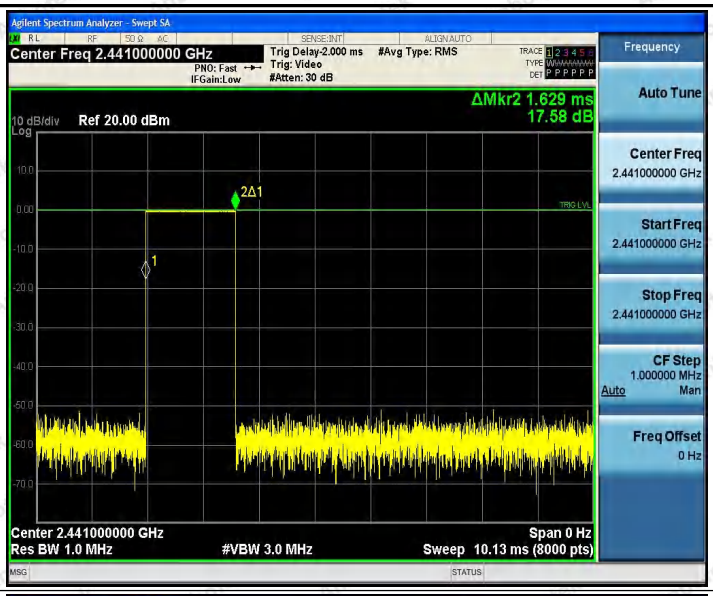
Test Graphs

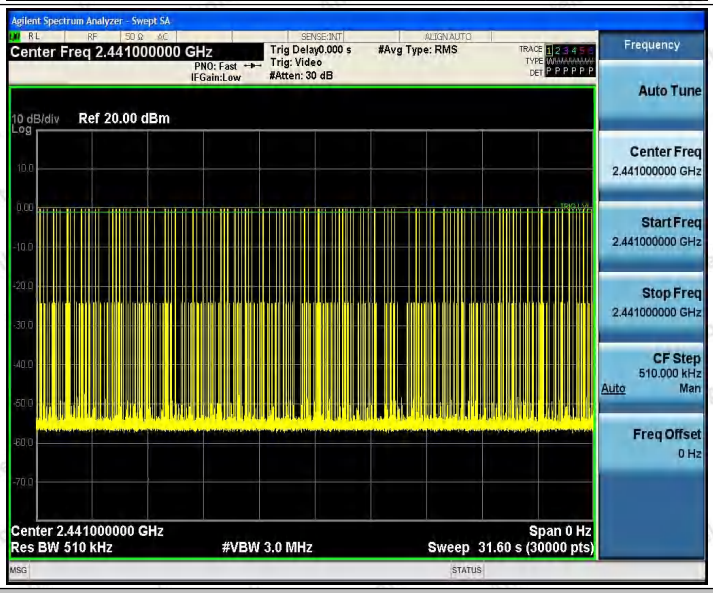
DH1_Ant1_Hop



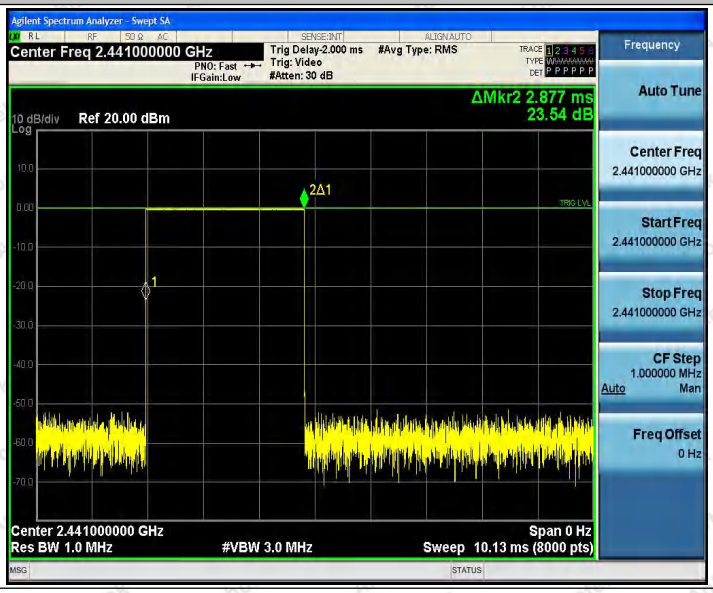


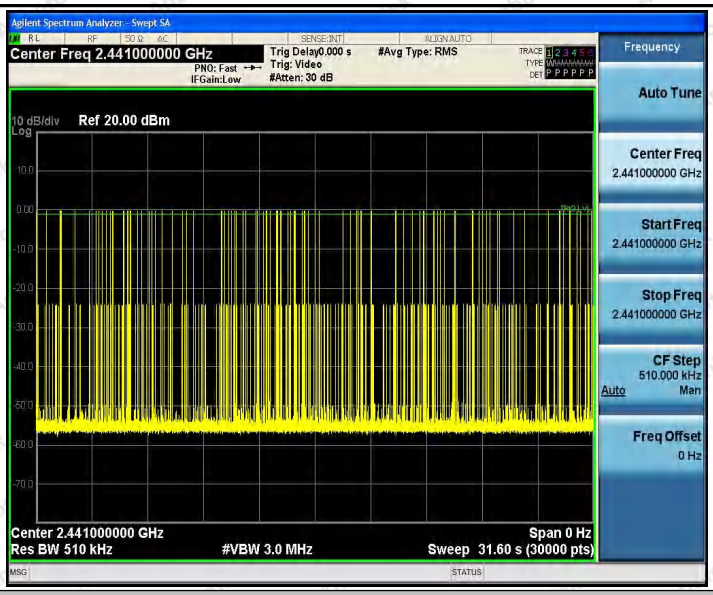
DH3_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-2.000 ms
Trig: Video
#Atten: 30 dB
#Avg Type: RMS
ΔMkr2 1.629 ms
17.58 dB
10 dB/div
Ref 20.00 dBm
Log
2Δ1
1
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

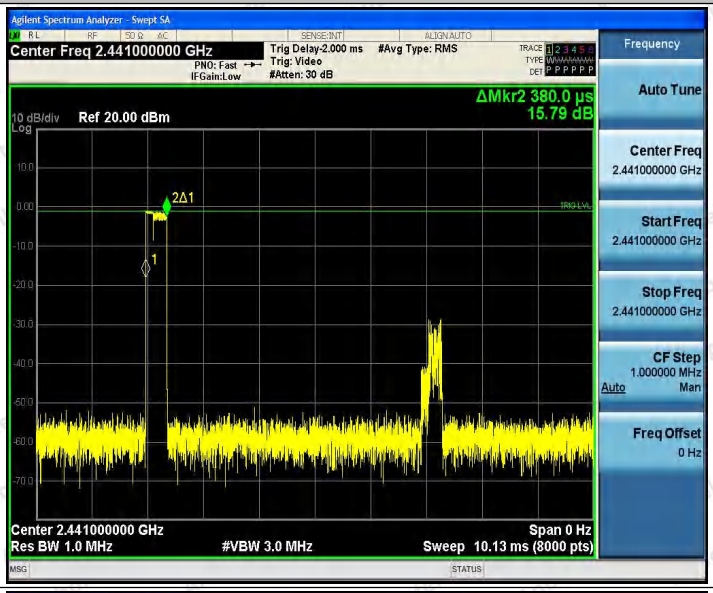

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig Delay0.000 s
Trig: Video
#Atten: 30 dB
#Avg Type: RMS
10 dB/div
Ref 20.00 dBm
Log
Center 2.441000000 GHz
Res BW 510 kHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 31.60 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz

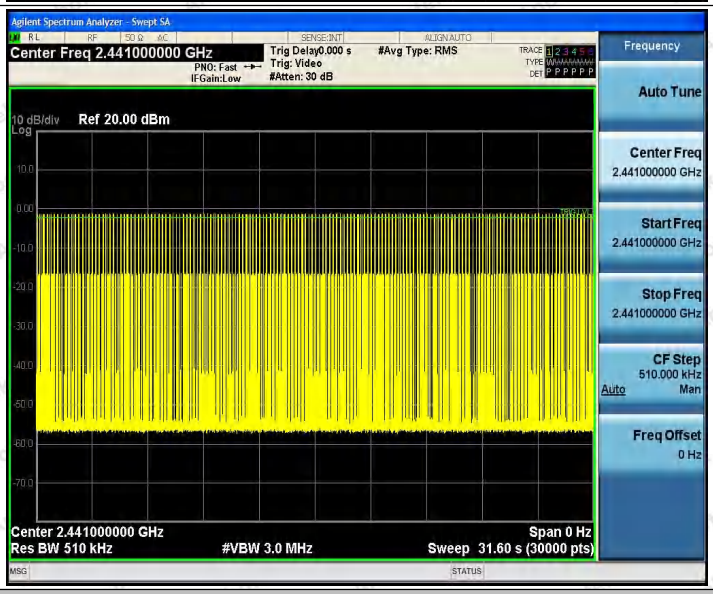
DH5_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-2.000 ms
Trig: Video
#Atten: 30 dB
#Avg Type: RMS
ΔMkr2 2.877 ms
23.54 dB
10 dB/div
Ref 20.00 dBm
Log
2Δ1
1
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

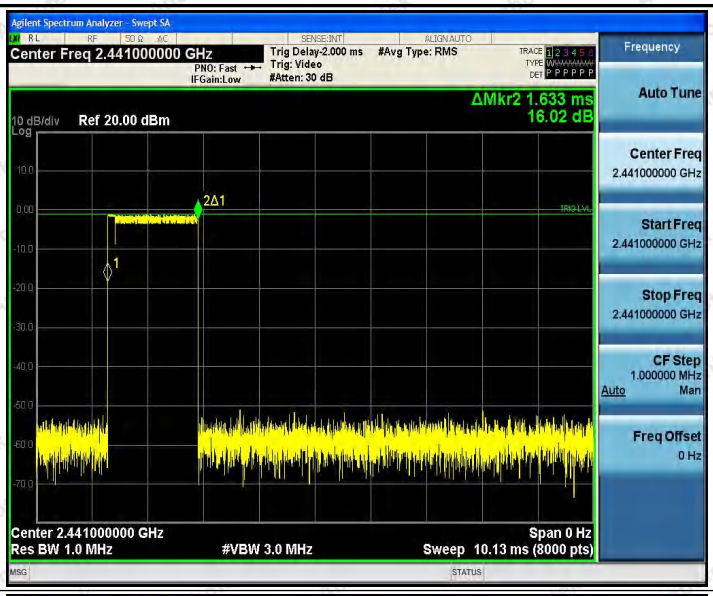


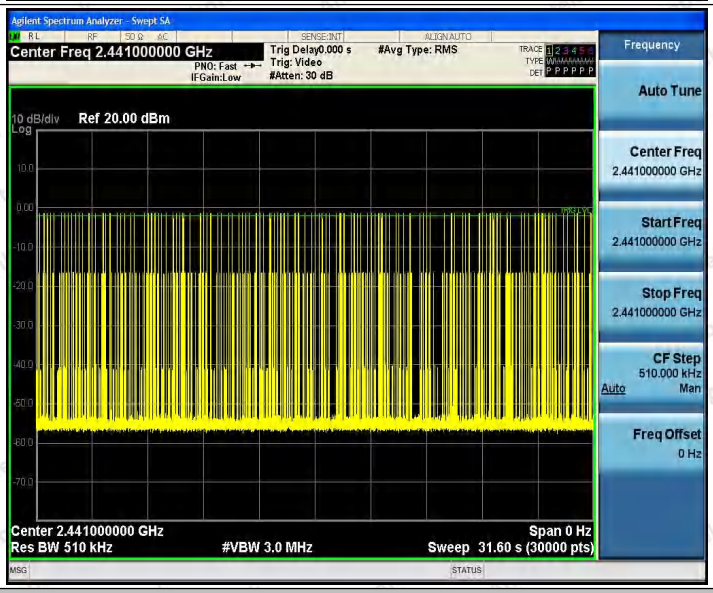
2DH1_Ant1_Hop



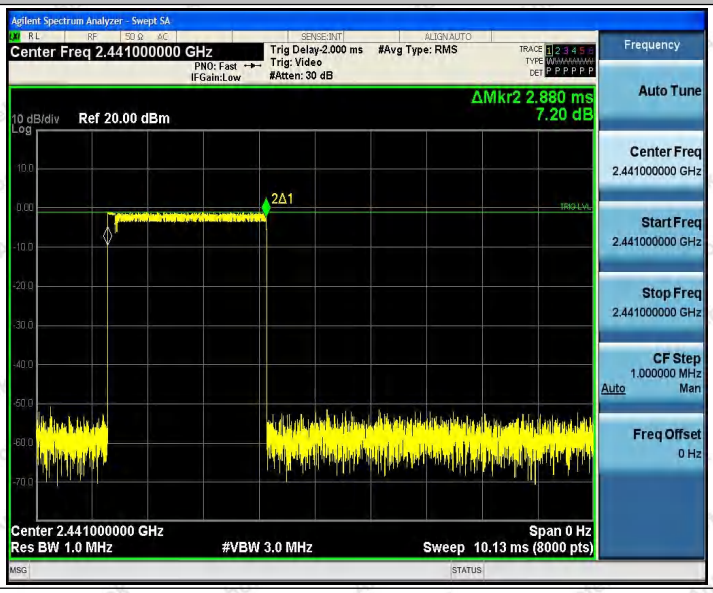


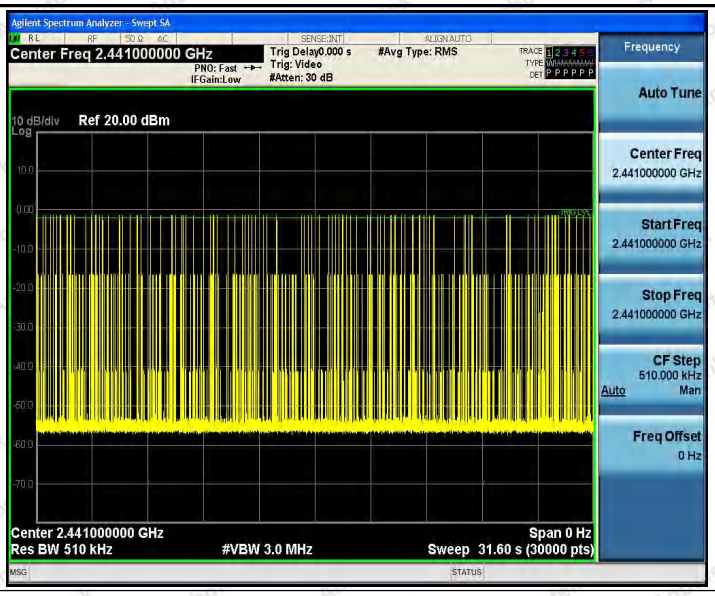
2DH3_Ant1_Hop





2DH5_Ant1_Hop




Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig Delay0.000 s
Trig: Video
#Atten: 30 dB
#Avg Type: RMS
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
10 dB/div
Log
Ref 20.00 dBm
Center 2.441000000 GHz
Res BW 510 kHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 31.60 s (30000 pts)

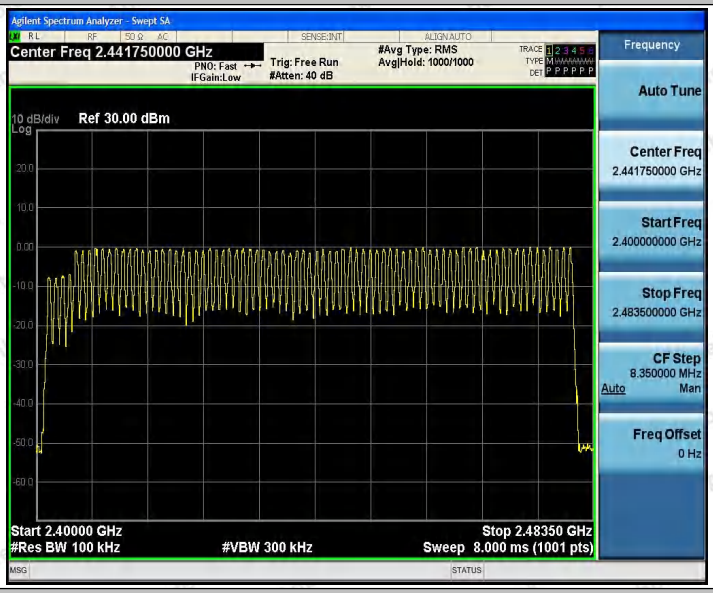
Appendix F: Number of hopping channels

Test Result

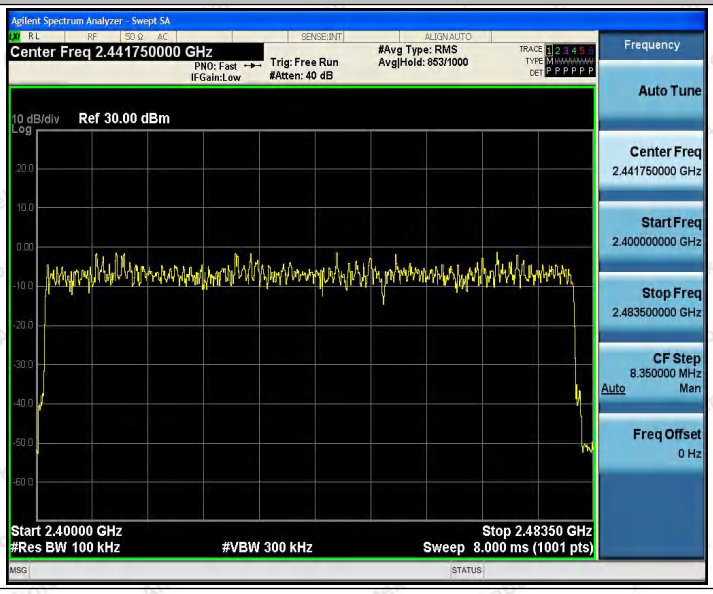
Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop



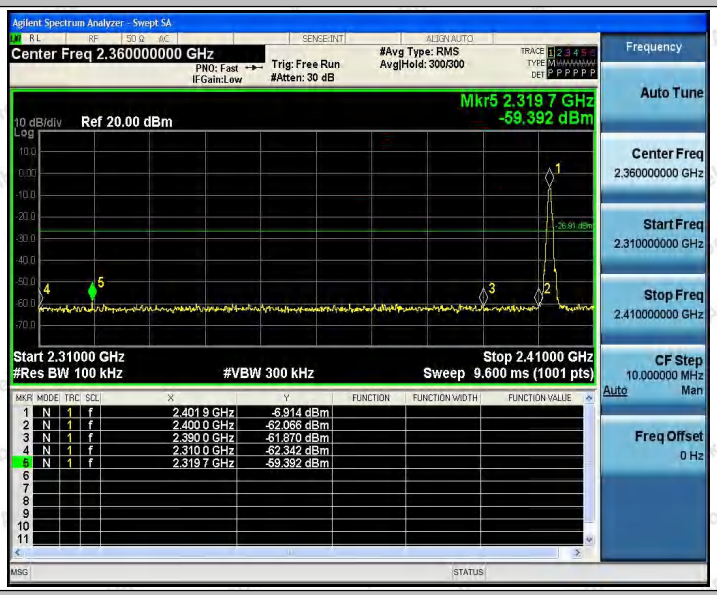
Appendix G: Band edge measurements

Test Result

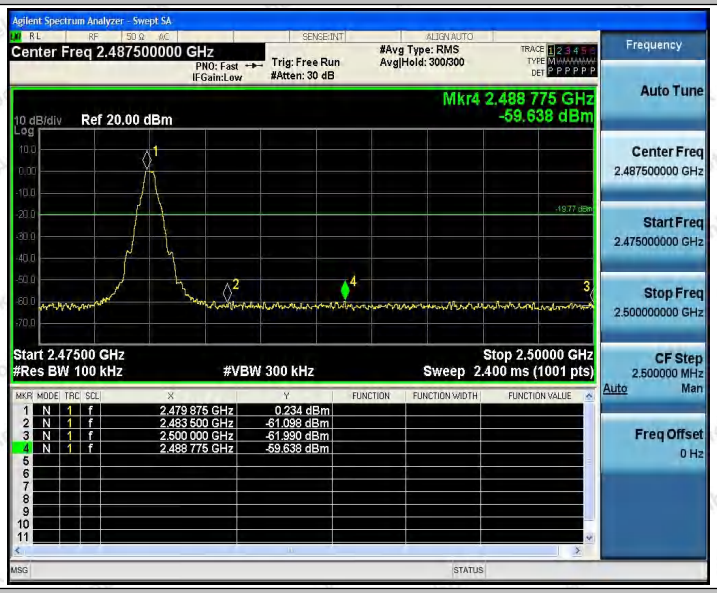
Test Mode	Antenna	Ch Name	Channel	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-6.91	-59.39	≤-26.91	PASS
		High	2480	0.23	-59.64	≤-19.77	PASS
		Low	Hop	-0.83	-59.44	≤-20.83	PASS
		High	Hop	-0.69	-61.68	≤-20.69	PASS
2DH5	Ant1	Low	2402	-8.29	-60.12	≤-28.29	PASS
		High	2480	-1.03	-59.31	≤-21.03	PASS
		Low	Hop	-2.76	-60.07	≤-22.76	PASS
		High	Hop	-0.97	-61.35	≤-20.97	PASS

Test Graphs

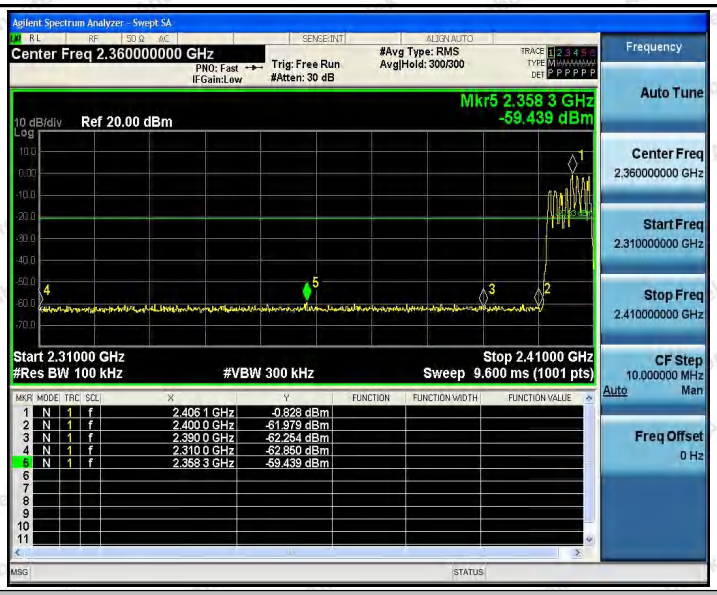
DH5_Ant1_Low_2402



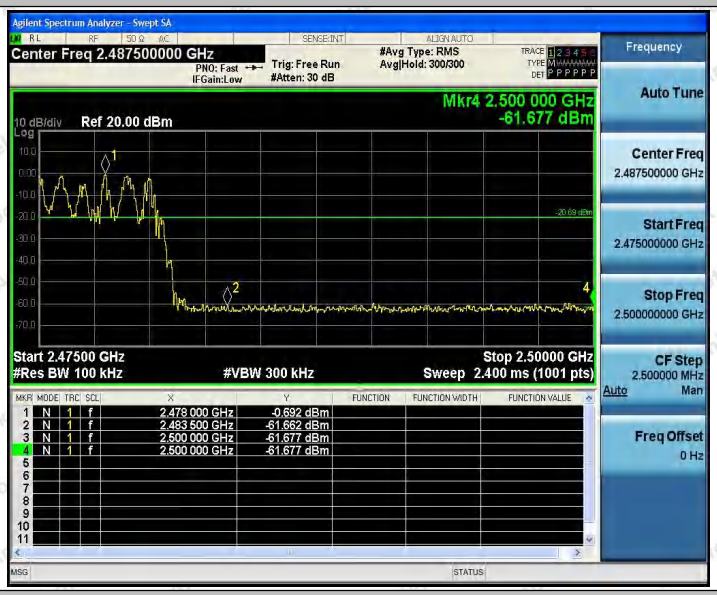
DH5_Ant1_High_2480



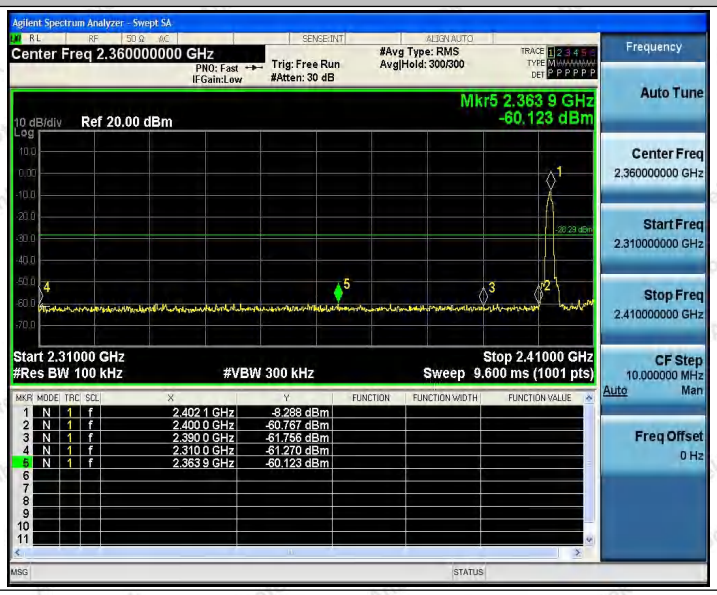
DH5_Ant1_Low_Hop



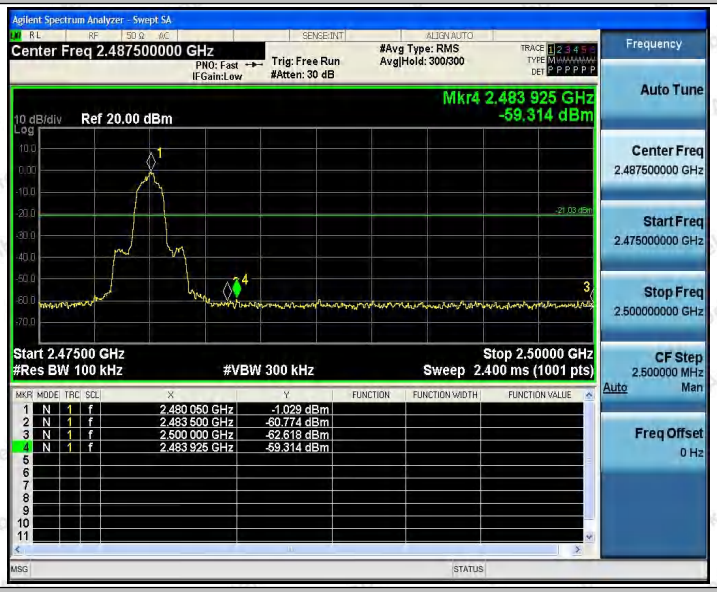
DH5_Ant1_High_Hop



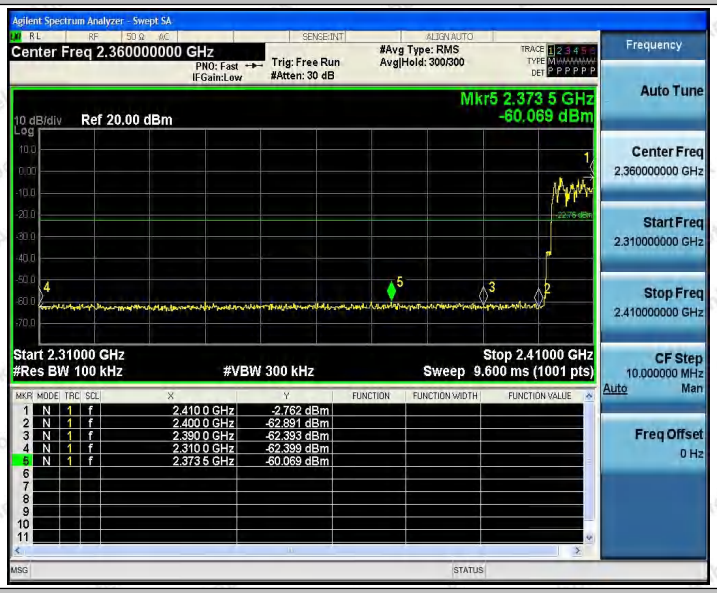
2DH5_Ant1_Low_2402



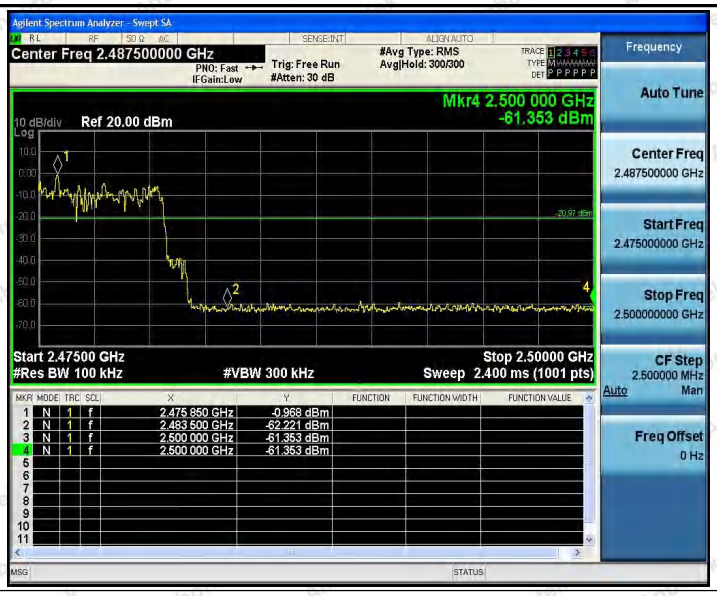
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop



2DH5_Ant1_High_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.487500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 300/300
Mkr4 2.500 000 GHz
-61.353 dBm
10 dB/div
Ref 20.00 dBm
Start 2.47500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.400 ms (1001 pts)
1 N 1 f 2.475 850 GHz -0.968 dBm
2 N 1 f 2.483 500 GHz -62.221 dBm
3 N 1 f 2.500 000 GHz -61.353 dBm
4 N 1 f 2.500 000 GHz -61.353 dBm
Frequency
Auto Tune
Center Freq
2.487500000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

Appendix H: Conducted Spurious Emission

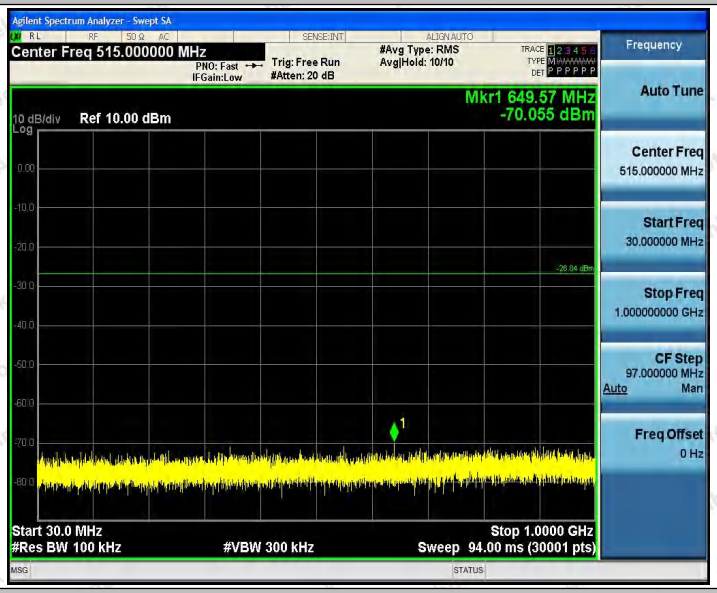
Test Result

Test Mode	Antenna	Channel	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-6.84	-6.84	---	PASS
			30~1000	-6.84	-70.06	≤-26.84	PASS
			1000~26500	-6.84	-55.55	≤-26.84	PASS
		2441	Reference	-0.78	-0.78	---	PASS
			30~1000	-0.78	-70.15	≤-20.78	PASS
			1000~26500	-0.78	-55.21	≤-20.78	PASS
		2480	Reference	-0.04	-0.04	---	PASS
			30~1000	-0.04	-70.54	≤-20.04	PASS
			1000~26500	-0.04	-55.17	≤-20.04	PASS
2DH5	Ant1	2402	Reference	-8.13	-8.13	---	PASS
			30~1000	-8.13	-70.04	≤-28.13	PASS
			1000~26500	-8.13	-55.03	≤-28.13	PASS
		2441	Reference	-2.06	-2.06	---	PASS
			30~1000	-2.06	-70.81	≤-22.06	PASS
			1000~26500	-2.06	-55.03	≤-22.06	PASS
		2480	Reference	-1.90	-1.90	---	PASS
			30~1000	-1.90	-68.43	≤-21.9	PASS
			1000~26500	-1.90	-55.61	≤-21.9	PASS

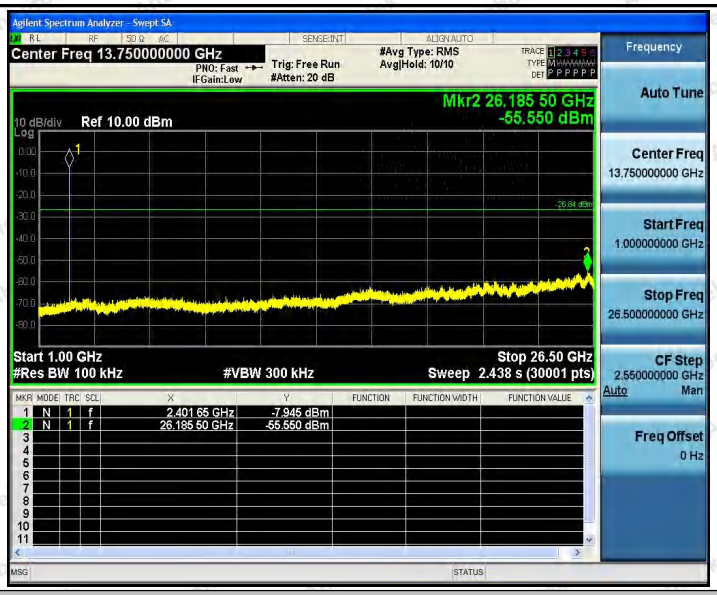
Test Graphs

DH5_Ant1_2402_0~Reference

DH5_Ant1_2402_30~1000

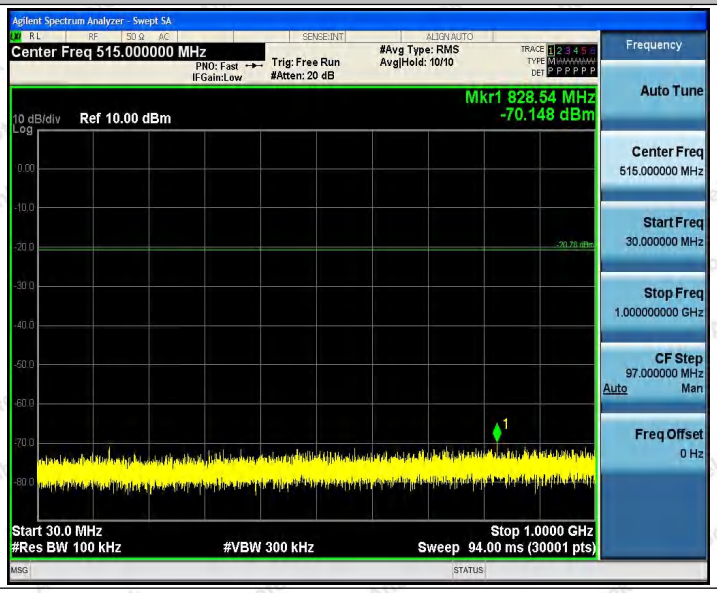


DH5_Ant1_2402_1000~26500

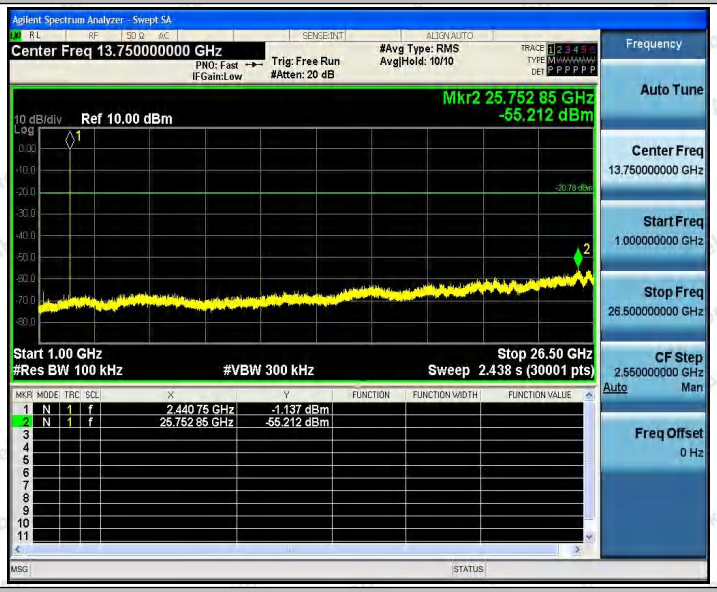


DH5_Ant1_2441_0~Reference

DH5_Ant1_2441_30~1000

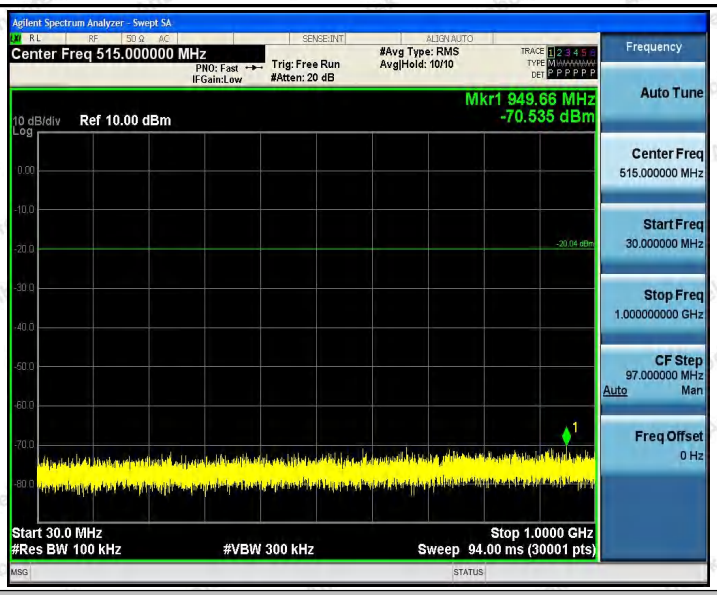


DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference

DH5_Ant1_2480_30~1000



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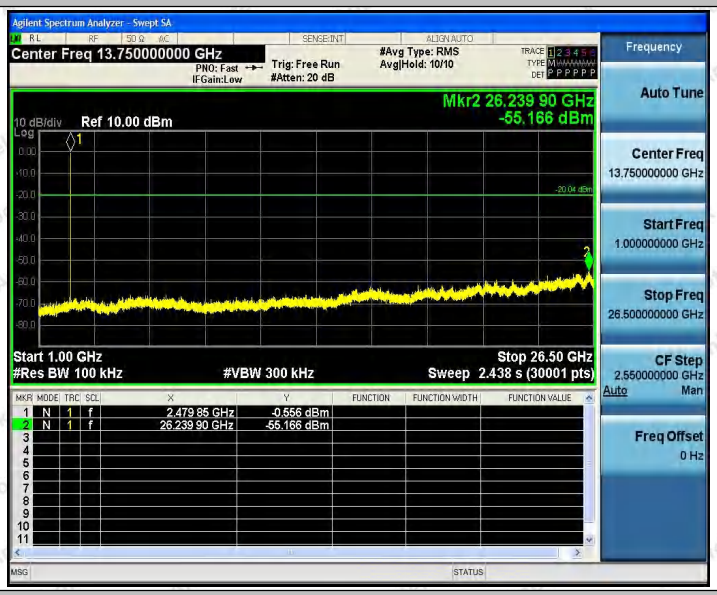

2DH5_Ant1_2402_0~Reference

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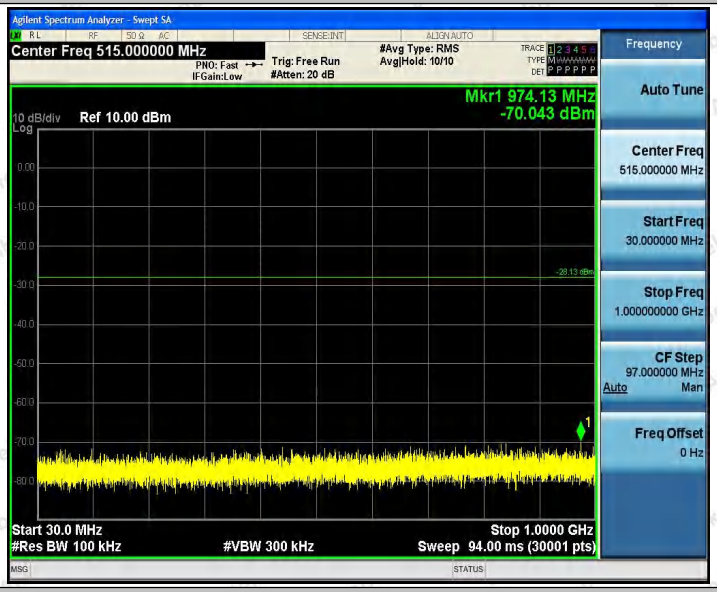
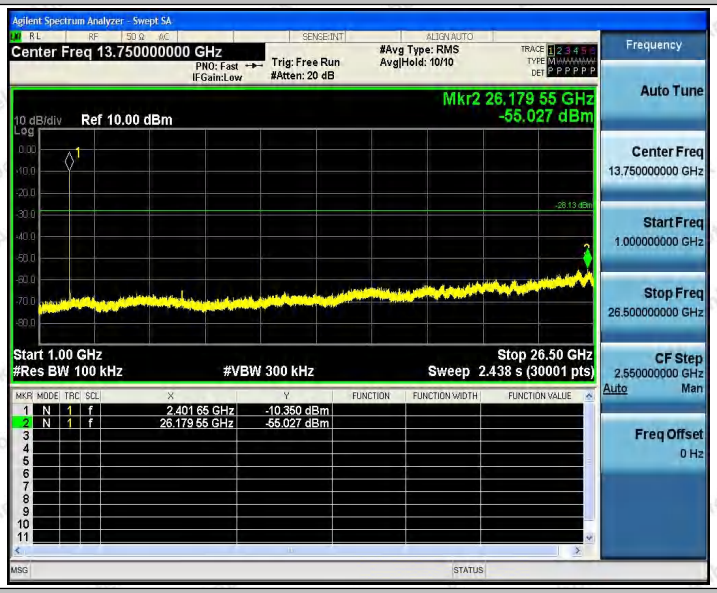


2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference

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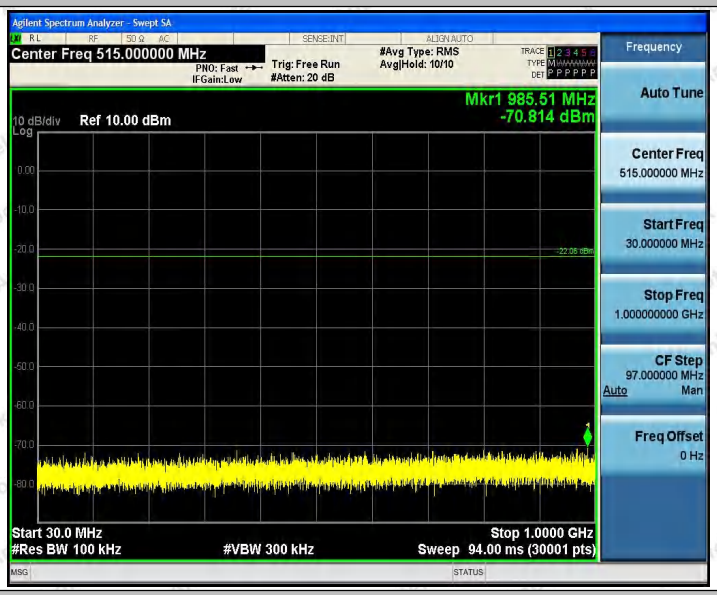
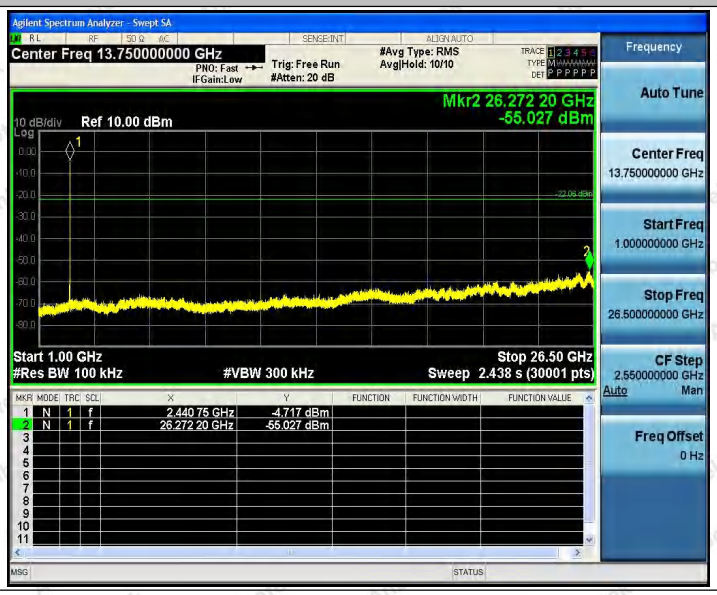


2DH5_Ant1_2441_1000~26500



2DH5_Ant1_2480_0~Reference

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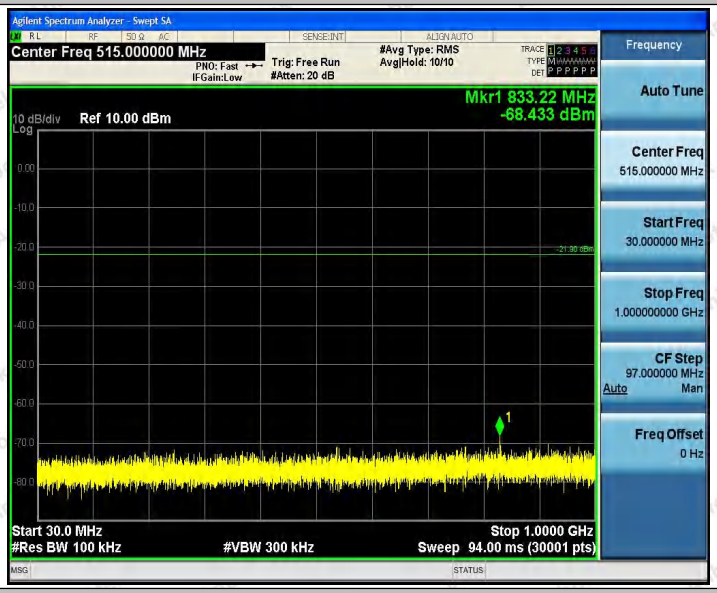
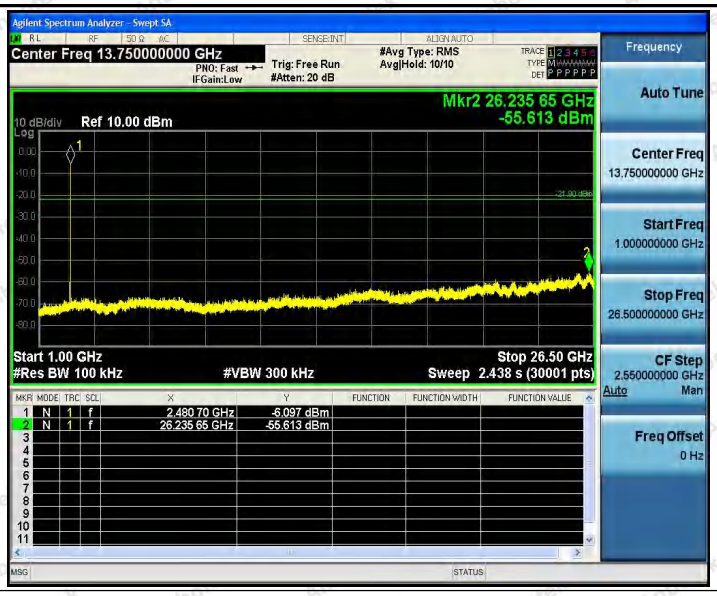


2DH5_Ant1_2480_1000~26500


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
Frequency
Auto Tune
Mkr2 26.235 65 GHz
-55.613 dBm
10 dB/div
Ref 10.00 dBm
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
1 N 1 f 2.480 70 GHz -6.097 dBm
2 N 1 f 26.235 65 GHz -55.613 dBm
MSG
STATUS

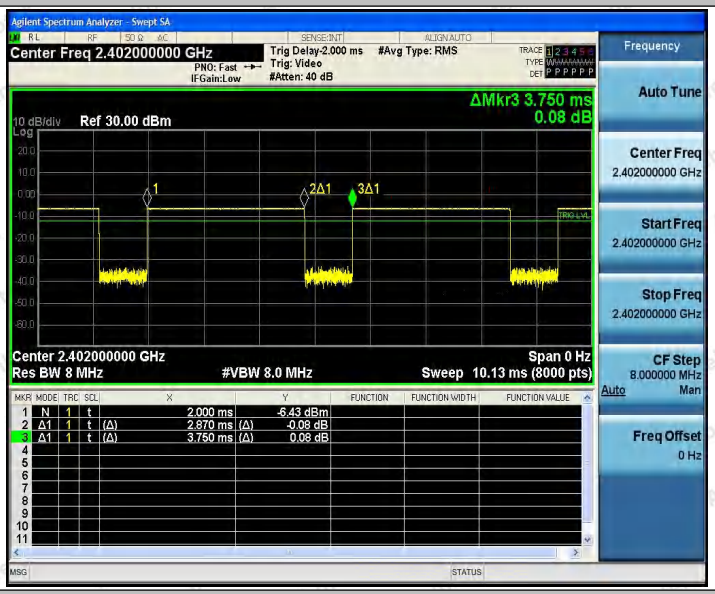
Appendix I: Duty Cycle

Test Result

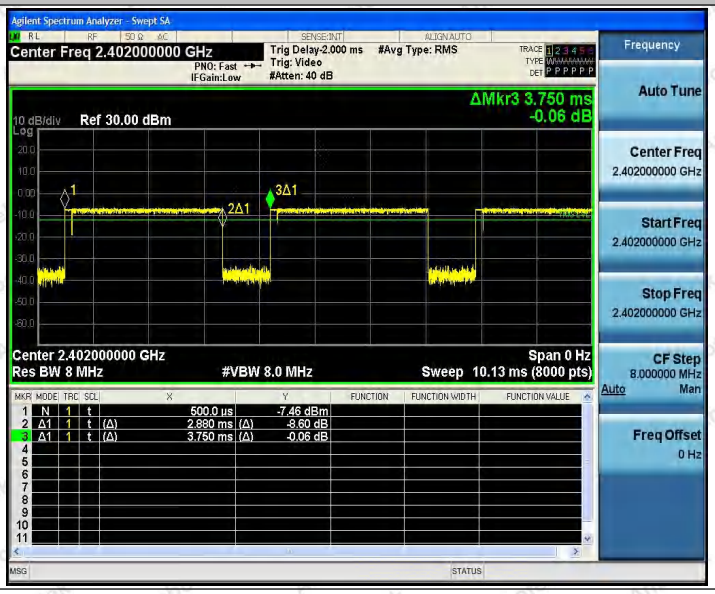
Test Mode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	X Factor	Limit	Verdict
DH5	Ant1	2402	2.87	3.75	0.7653	76.53	1.16	---	PASS
2DH5	Ant1	2402	2.88	3.75	0.7680	76.80	1.15	---	PASS

Test Graphs

DH5_Ant1_2402



2DH5_Ant1_2402



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