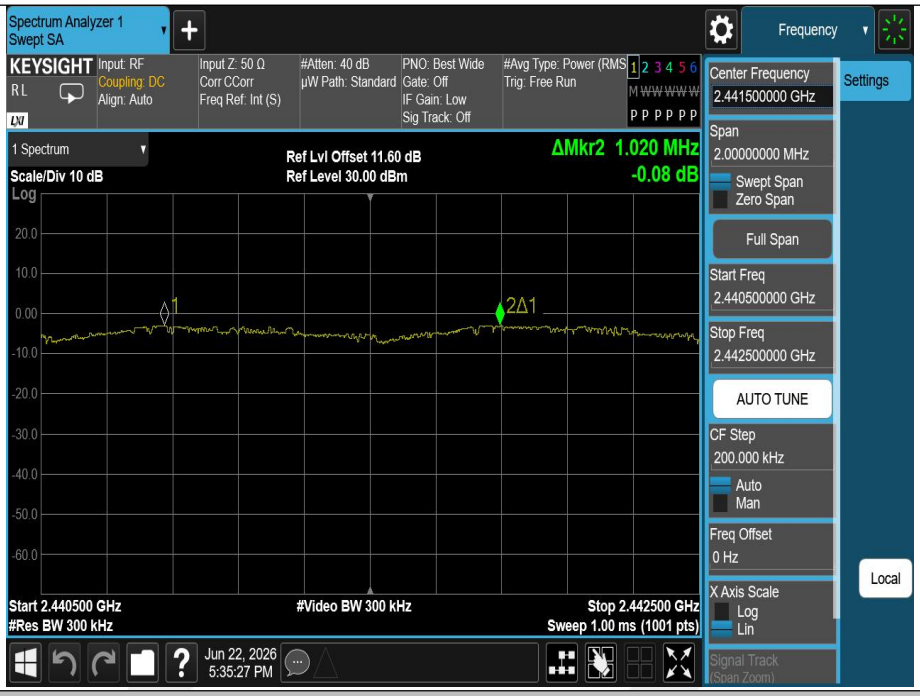


3DH5-Ant1-Hop-PASS

9.3 NUMBER OF HOPPING FREQUENCIES

9.3.1 Applicable Standard

According to FCC Part 15.247(a)(1) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02
According to IC RSS-247.6.2.3

9.3.2 Conformance Limit

Frequency hopping systems operating in the 2400-2483.5MHz band shall use at least 15 channels.

9.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.3.4 Test Procedure

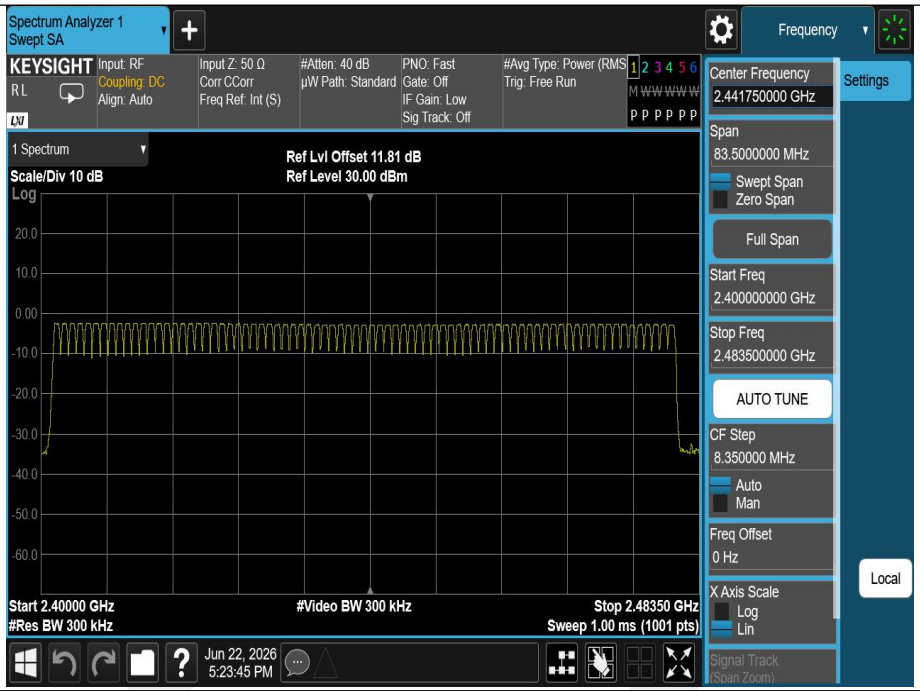
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation (2400-2483.5MHz)
RBW = 300KHz
VBW ⩾ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies.

Test Results

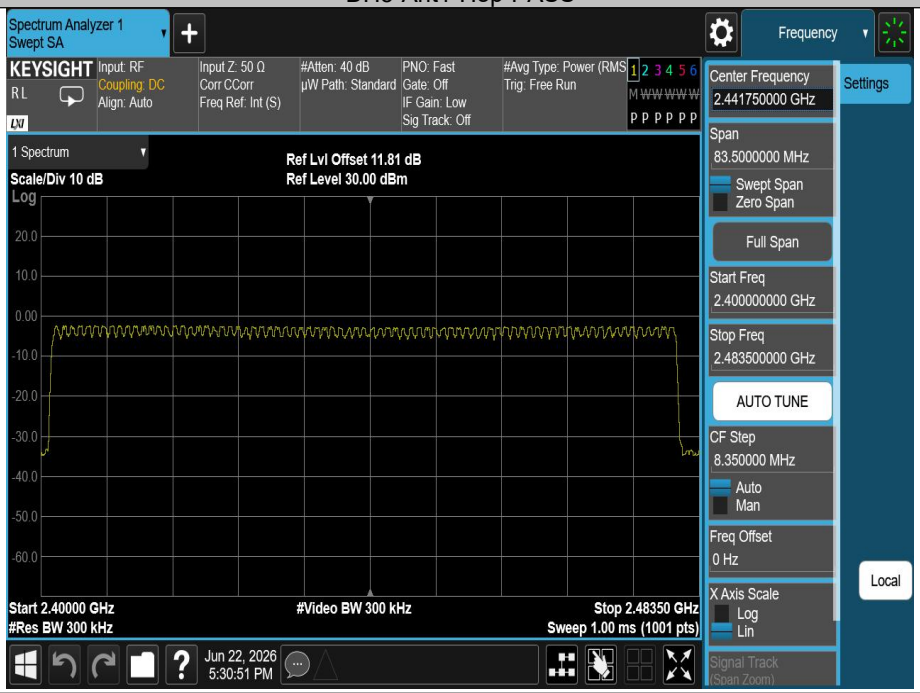
Temperature:	25° C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

Note: N/A

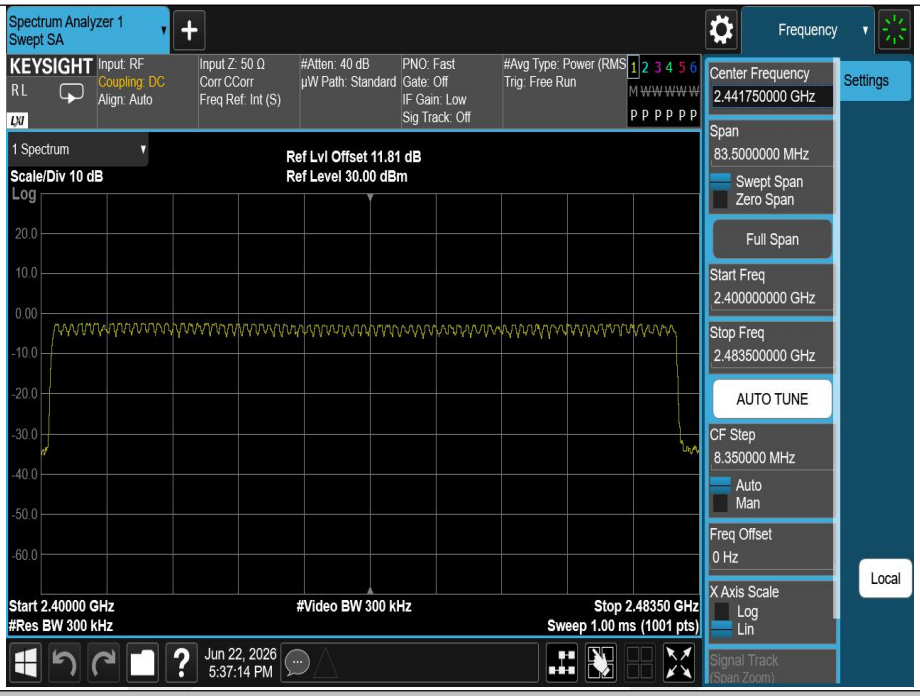
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS



DH5-Ant1-Hop-PASS



2DH5-Ant1-Hop-PASS



3DH5-Ant1-Hop-PASS

9.4 AVERAGE TIME OF OCCUPANCY (DWELL TIME)

9.4.1 Applicable Standard

According to FCC Part 15.247(a)(1) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02
According to IC RSS-247.6.2.3

9.4.2 Conformance Limit

For frequency hopping systems operating in the 2400-2483.5MHz band, the average time of occupancy on any channel shall not be greater than 0.4s within a period of 0.4s multiplied by the number of hopping channels employed.

9.4.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.4.4 Test Procedure

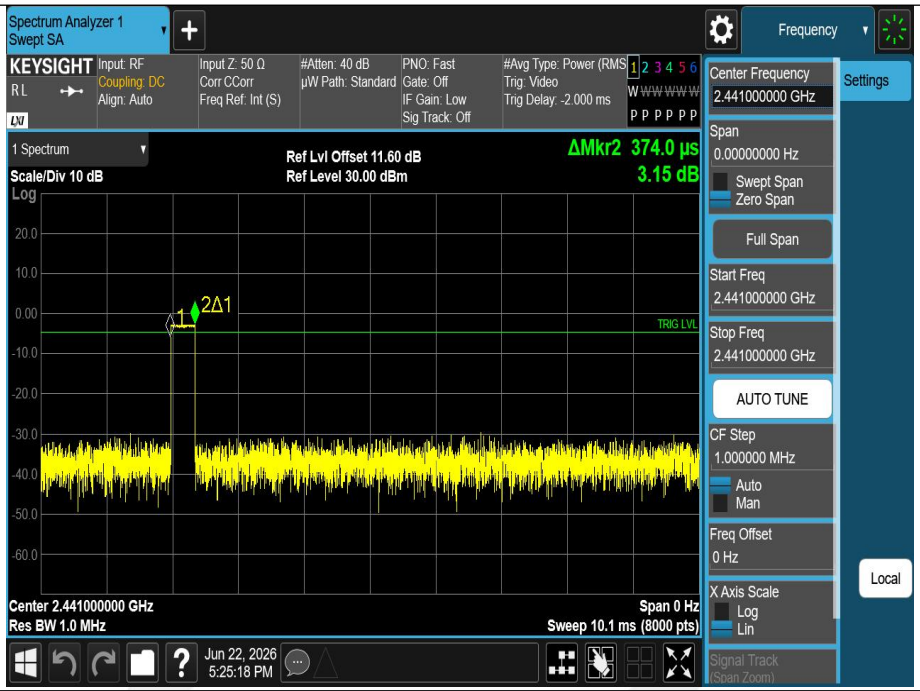
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = zero span, centered on a hopping channel
RBW = 1 MHz
VBW ≥ RBW
Sweep = as necessary to capture the entire dwell time per hopping channel
Detector function = peak
Trace = max hold
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section.

9.4.5 Test Results

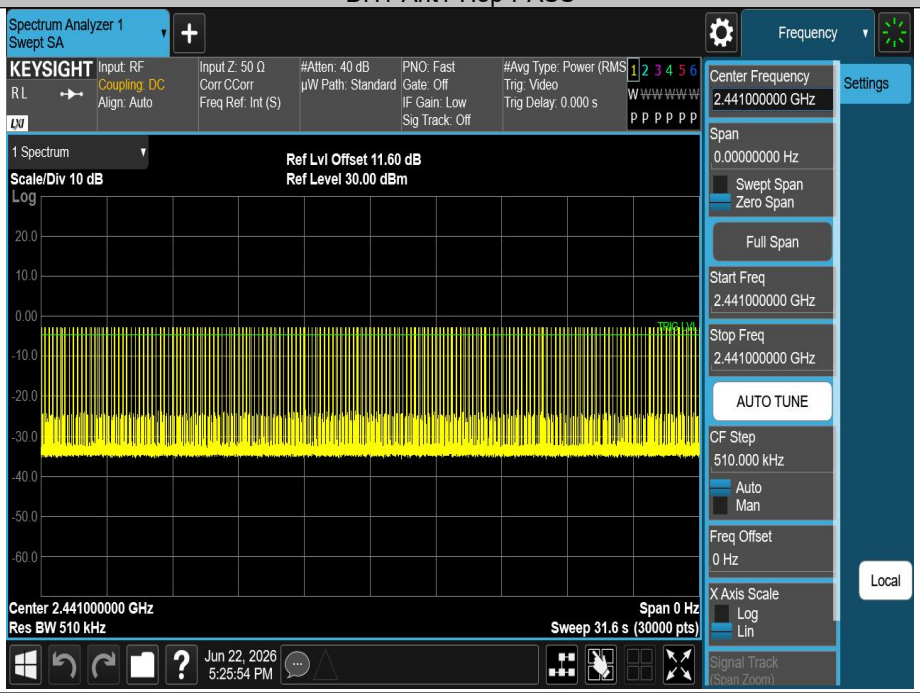
Temperature:	25° C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

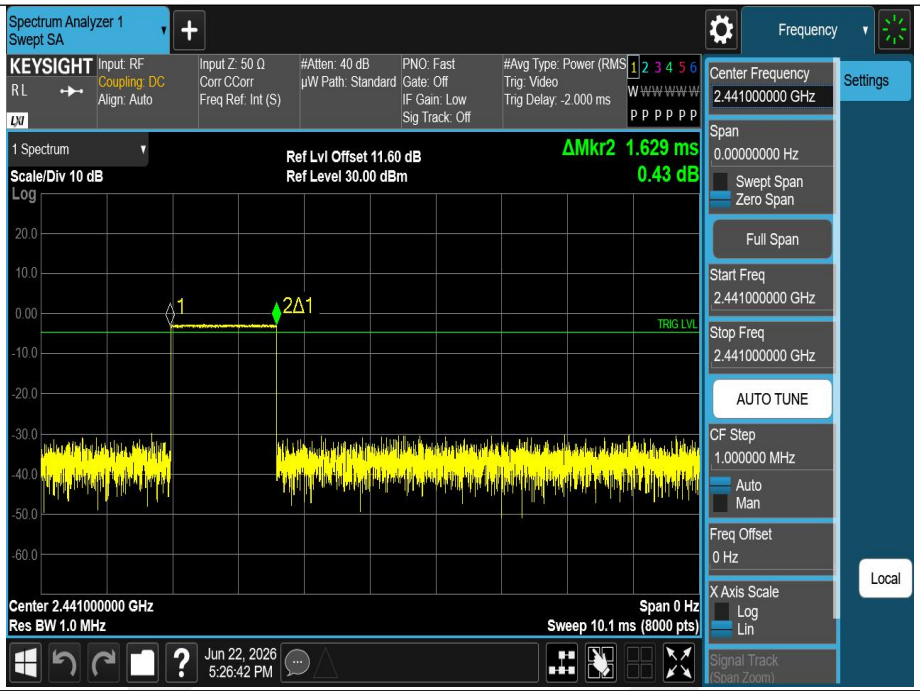
Note: Dwell Time= BurstWidth* TotalHops

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.374	316	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.629	161	0.262	≤0.4	PASS
DH5	Ant1	Hop	2.878	108	0.311	≤0.4	PASS
2DH1	Ant1	Hop	0.384	312	0.12	≤0.4	PASS
2DH3	Ant1	Hop	1.635	164	0.268	≤0.4	PASS
2DH5	Ant1	Hop	2.883	93	0.268	≤0.4	PASS
3DH1	Ant1	Hop	0.385	316	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.634	158	0.258	≤0.4	PASS
3DH5	Ant1	Hop	2.885	110	0.317	≤0.4	PASS

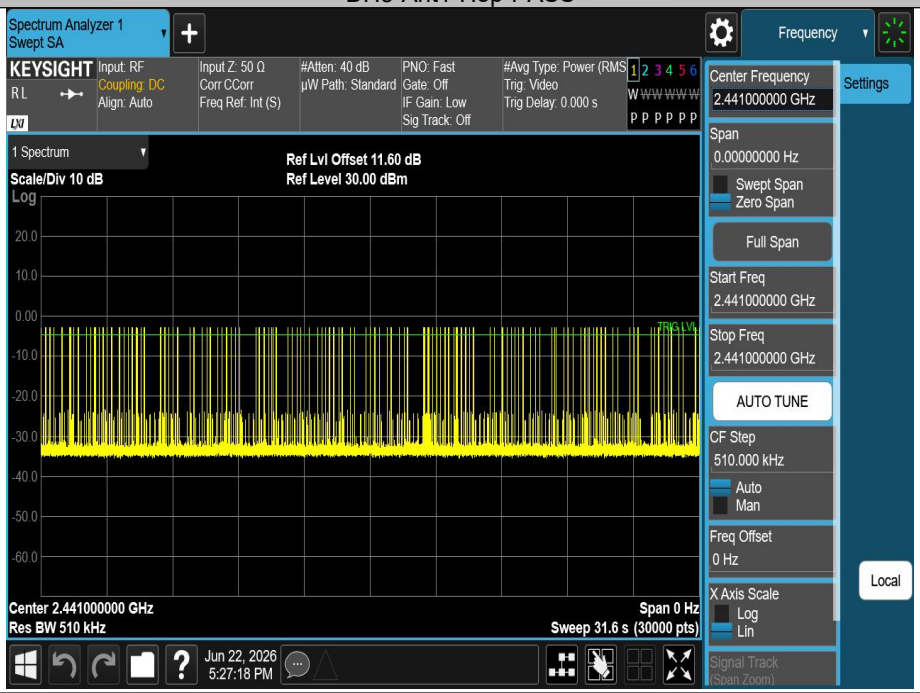


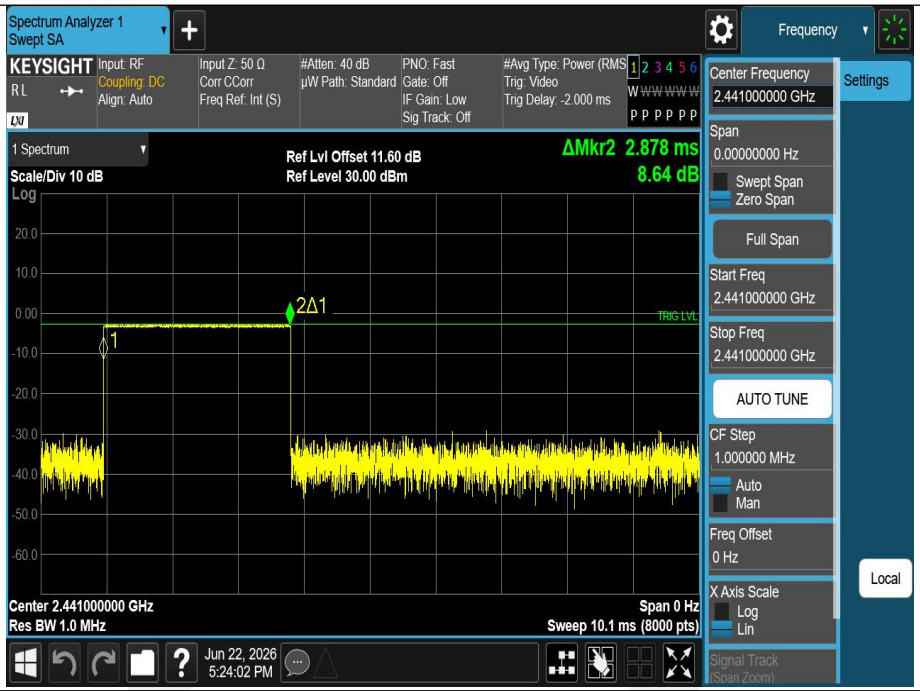
DH1-Ant1-Hop-PASS



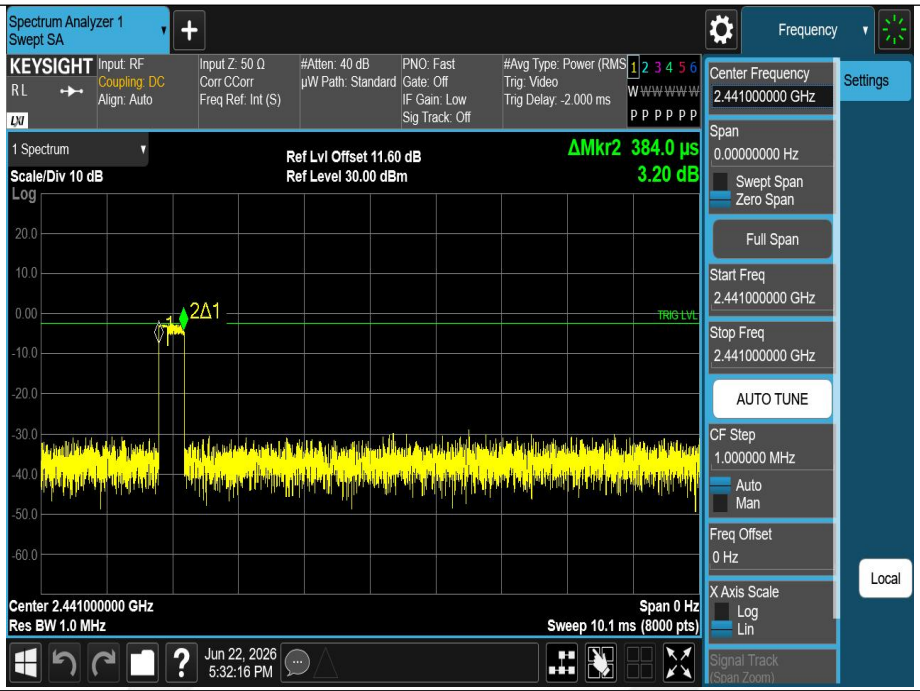


DH3-Ant1-Hop-PASS

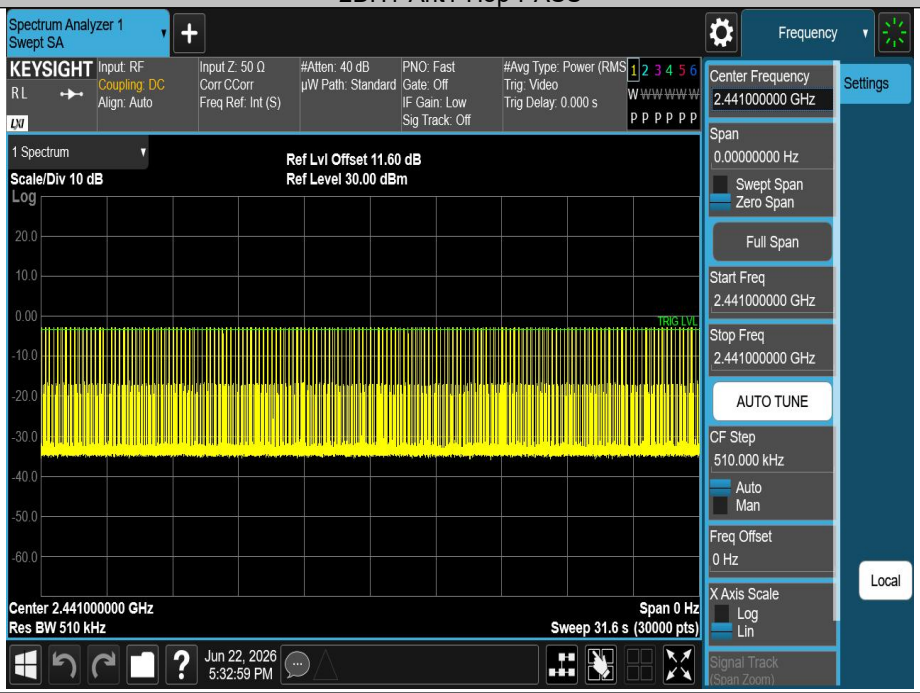


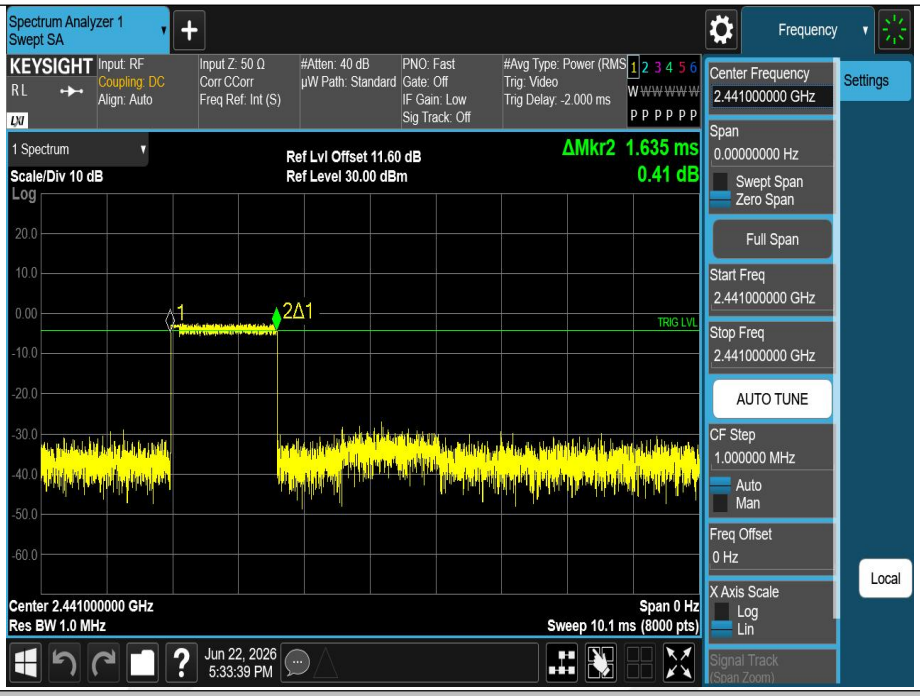


DH5-Ant1-Hop-PASS

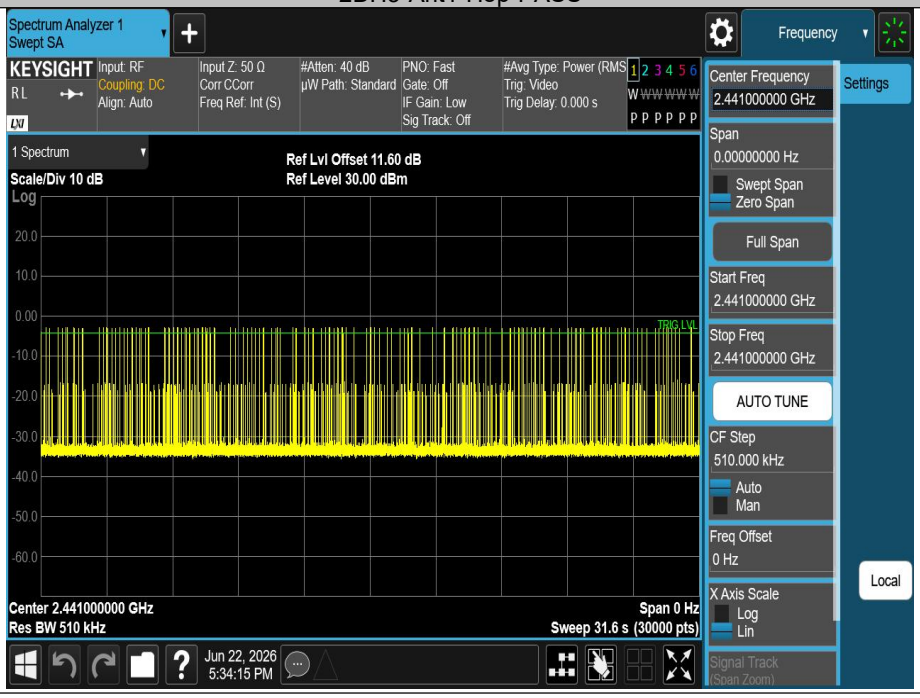


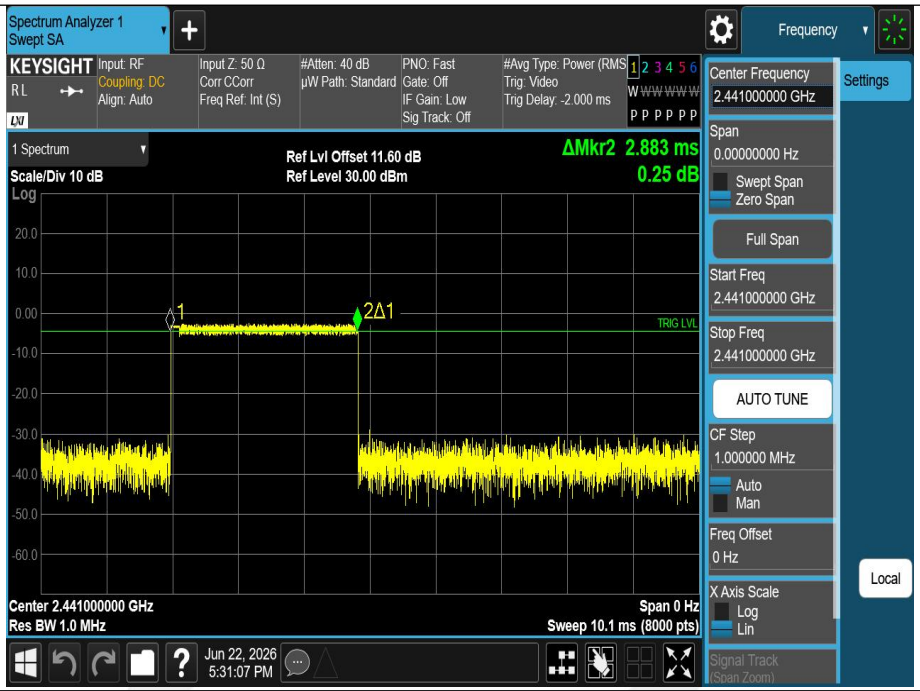
2DH1-Ant1-Hop-PASS



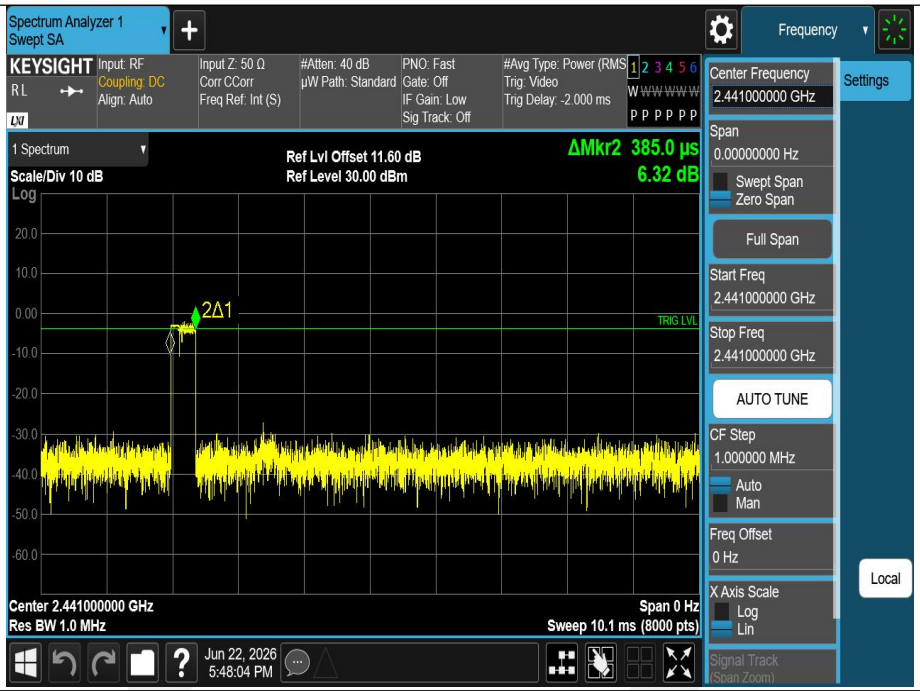


2DH3-Ant1-Hop-PASS

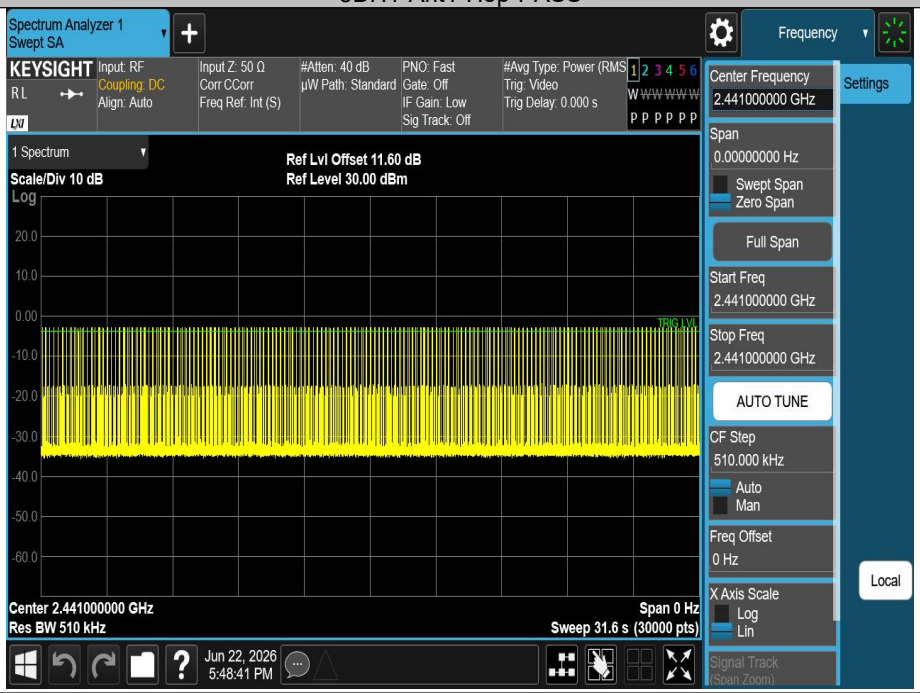




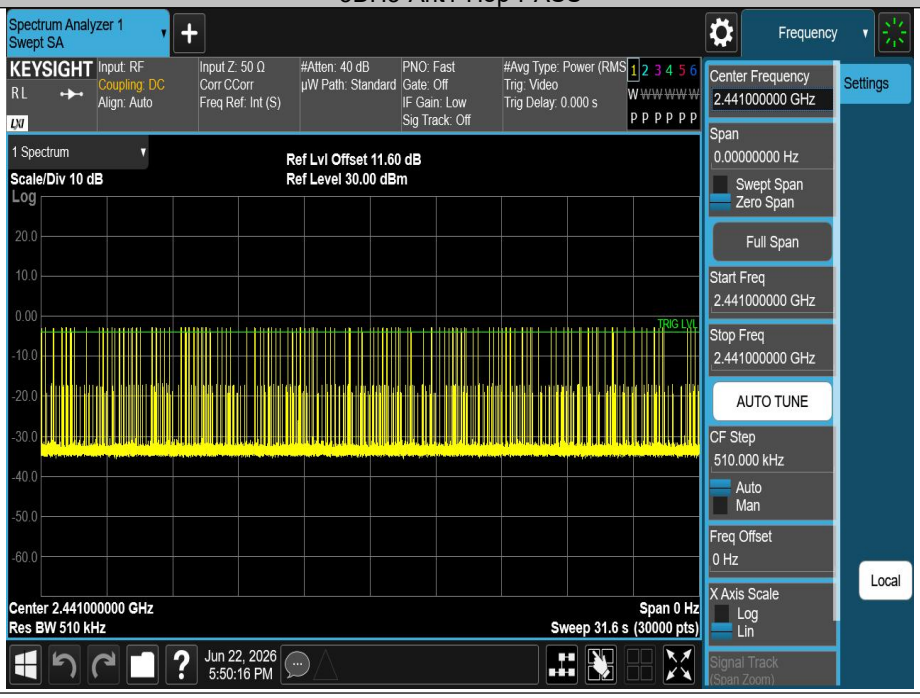
2DH5-Ant1-Hop-PASS

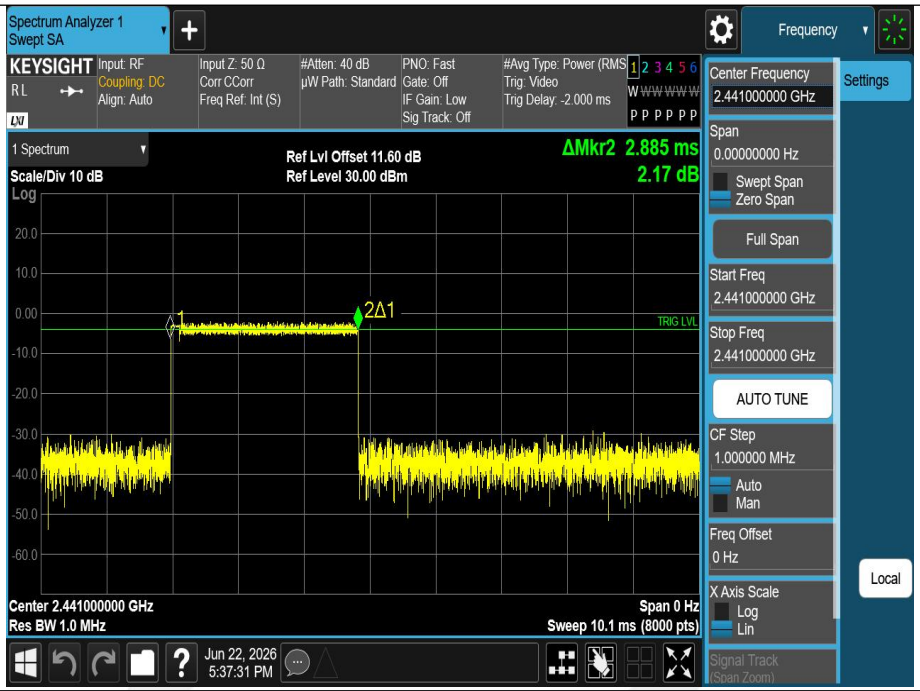


3DH1-Ant1-Hop-PASS

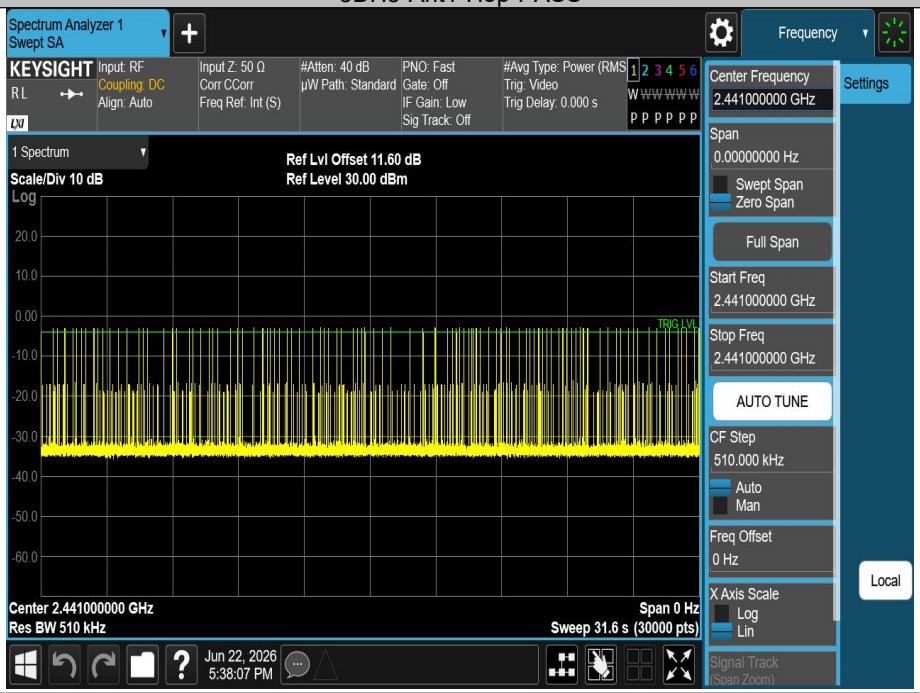


3DH3-Ant1-Hop-PASS





3DH5-Ant1-Hop-PASS



9.5 MAXIMUM PEAK CONDUCTED OUTPUT POWER

9.5.1 Applicable Standard

According to FCC Part 15.247(b)(1) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02
According to IC RSS-247.6.2.3 and RSS-Gen 6.12

9.5.2 Conformance Limit

The max For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.5.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.5.4 Test Procedure

As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.
Use the following spectrum analyzer settings:
Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel (about 8MHz)
Set RBW > the 20 dB bandwidth of the emission being measured (about 3MHz)
Set VBW ≥ RBW
Set Sweep = auto
Set Detector function = peak
Set Trace = max hold
Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission to determine the peak amplitude level.

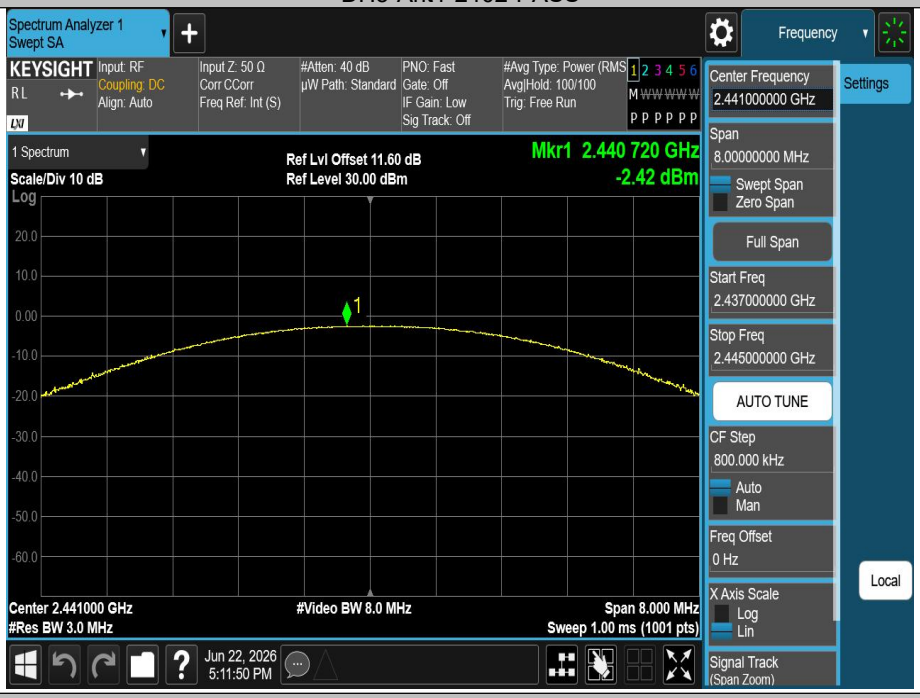
Test Results

Temperature:	25° C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

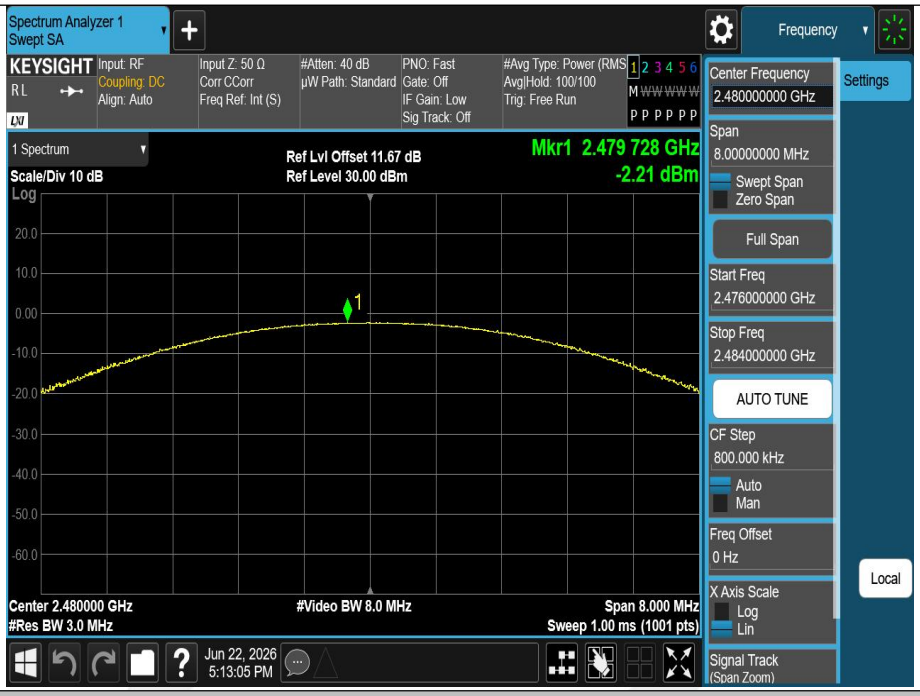
Note: N/A

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-1.81	≤20.97	PASS
DH5	Ant1	2441	-2.42	≤20.97	PASS
DH5	Ant1	2480	-2.21	≤20.97	PASS
2DH5	Ant1	2402	-1.23	≤20.97	PASS
2DH5	Ant1	2441	-1.62	≤20.97	PASS
2DH5	Ant1	2480	-1.59	≤20.97	PASS
3DH5	Ant1	2402	-0.93	≤20.97	PASS
3DH5	Ant1	2441	-1.47	≤20.97	PASS
3DH5	Ant1	2480	-1.15	≤20.97	PASS

DH5-Ant1-2402-PASS

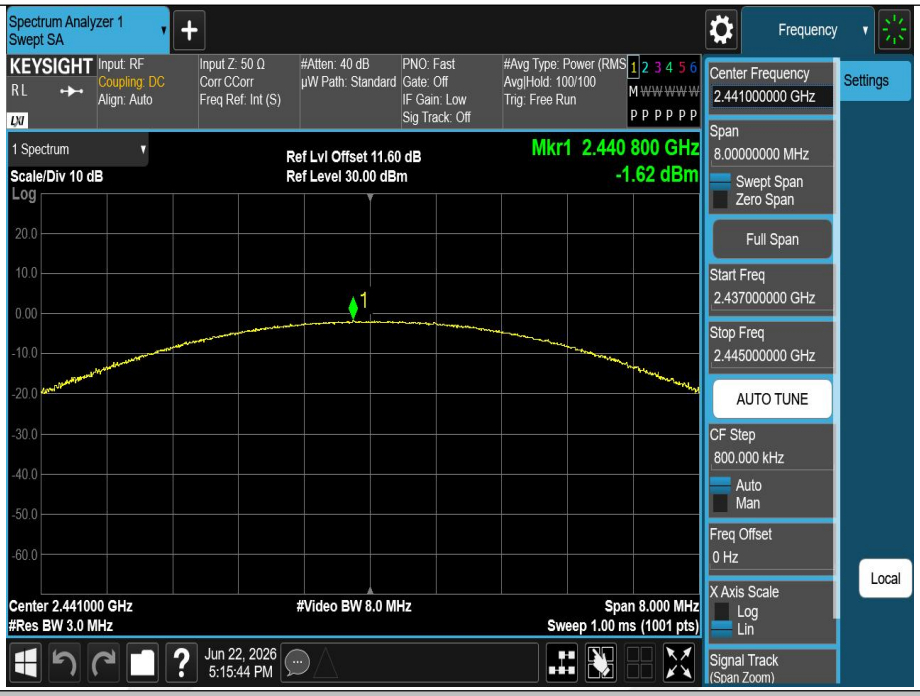


DH5-Ant1-2441-PASS

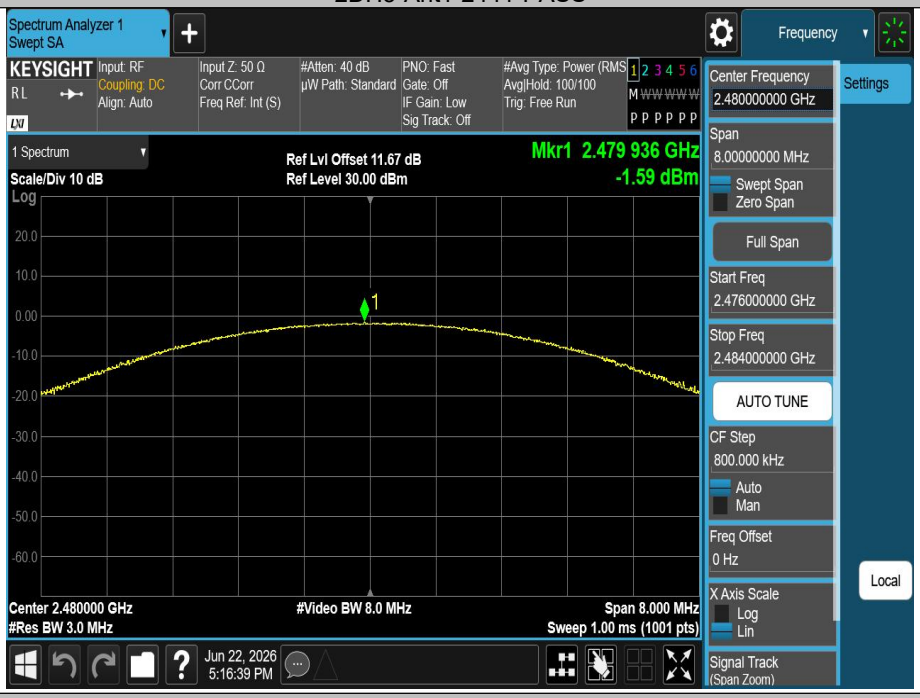


DH5-Ant1-2480-PASS

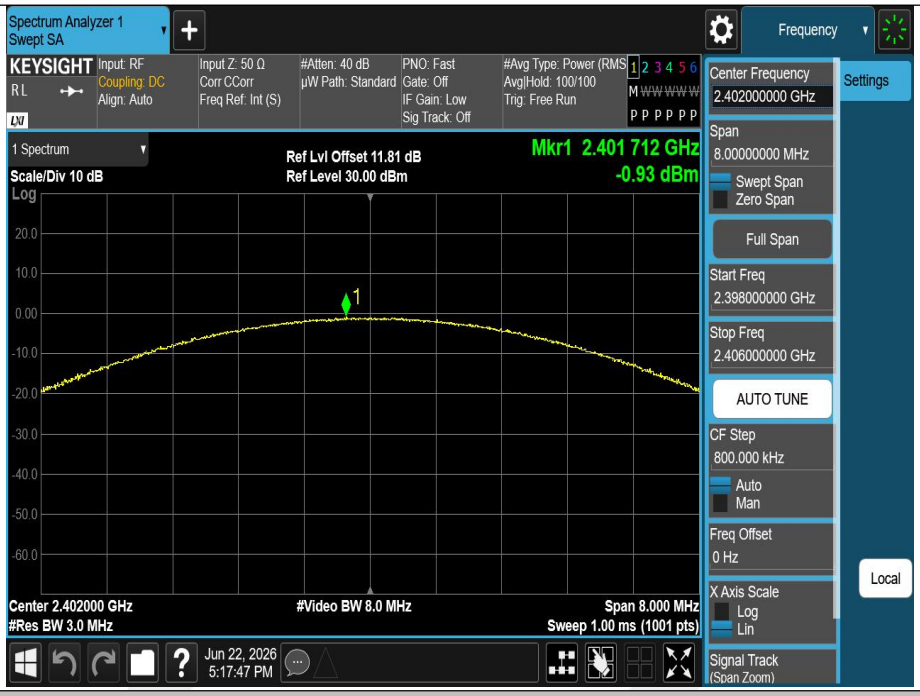
2DH5-Ant1-2402-PASS



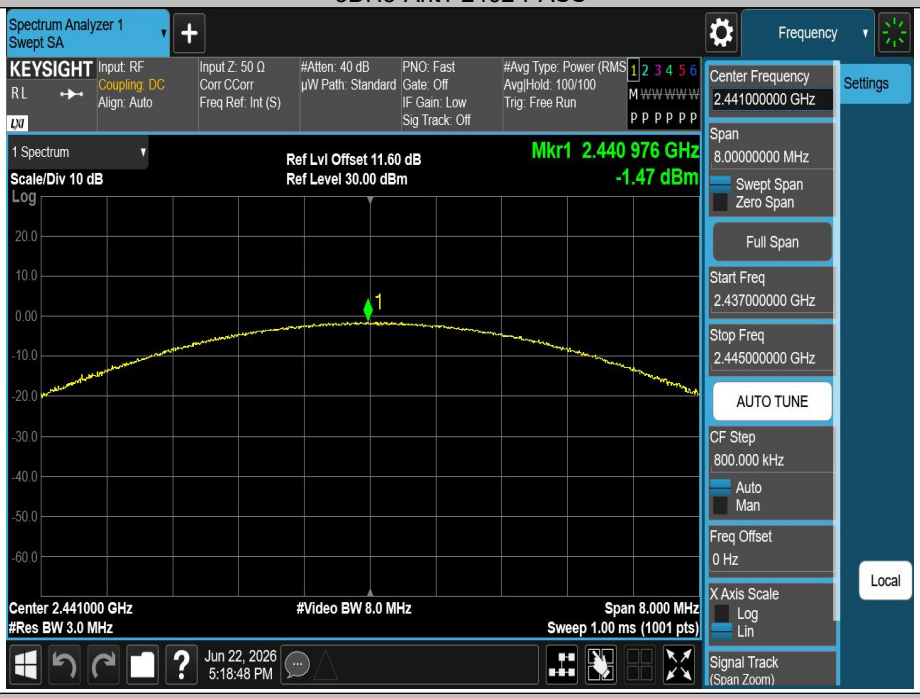
2DH5-Ant1-2441-PASS



2DH5-Ant1-2480-PASS



3DH5-Ant1-2402-PASS



3DH5-Ant1-2441-PASS

3DH5-Ant1-2480-PASS