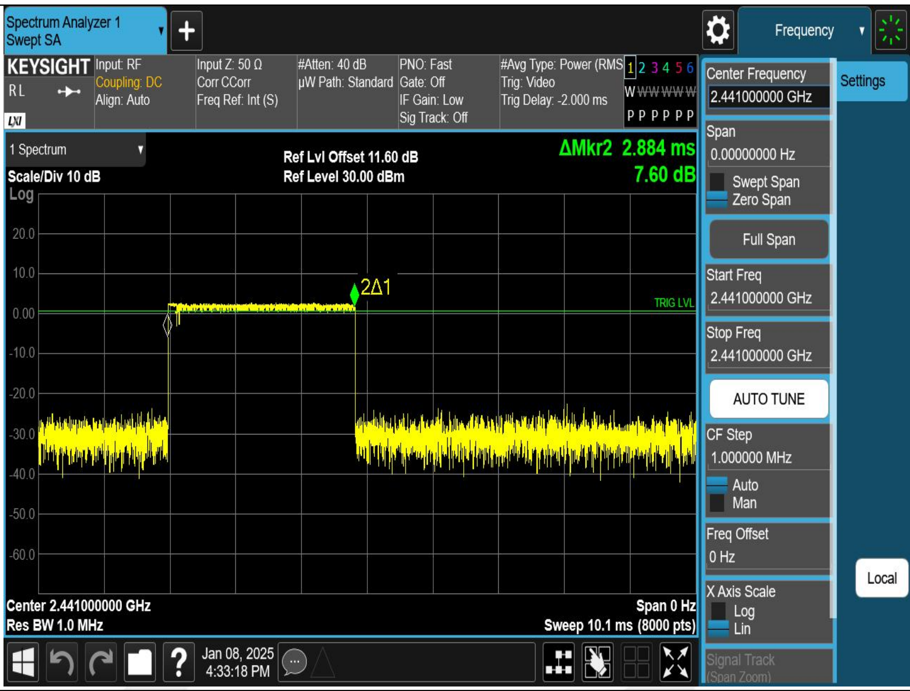
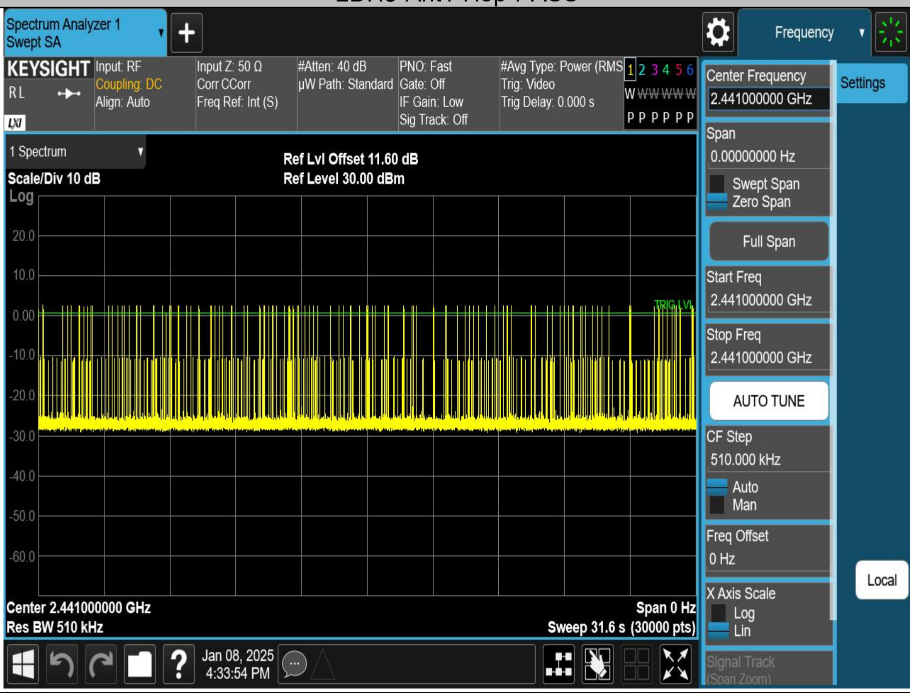
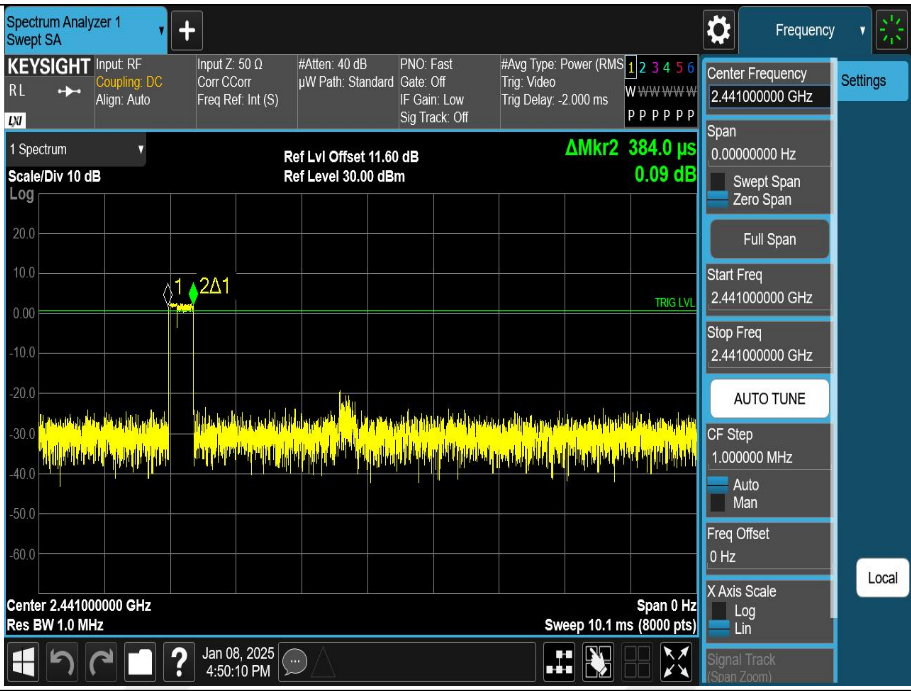
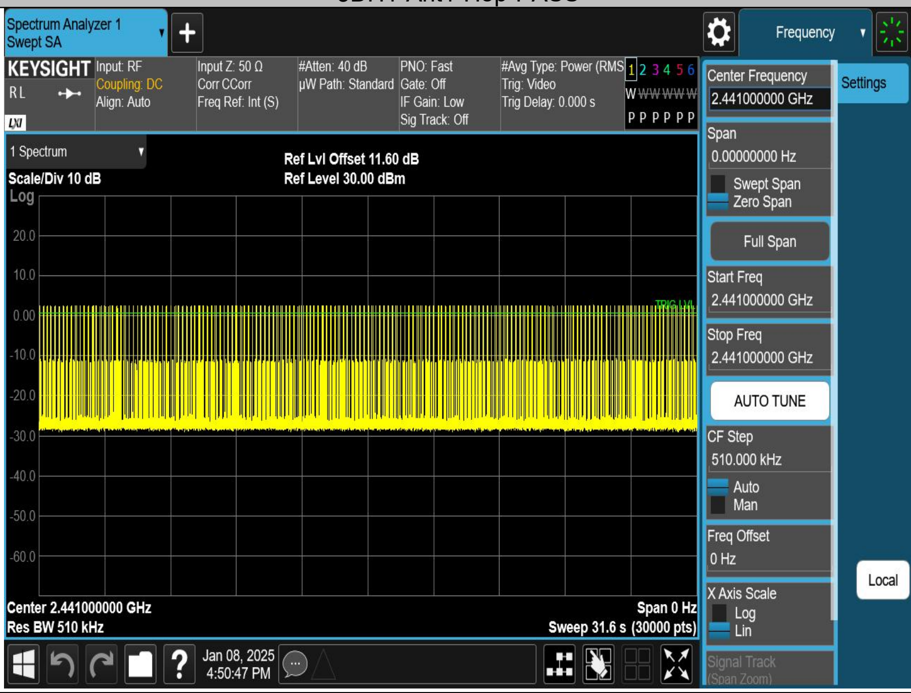


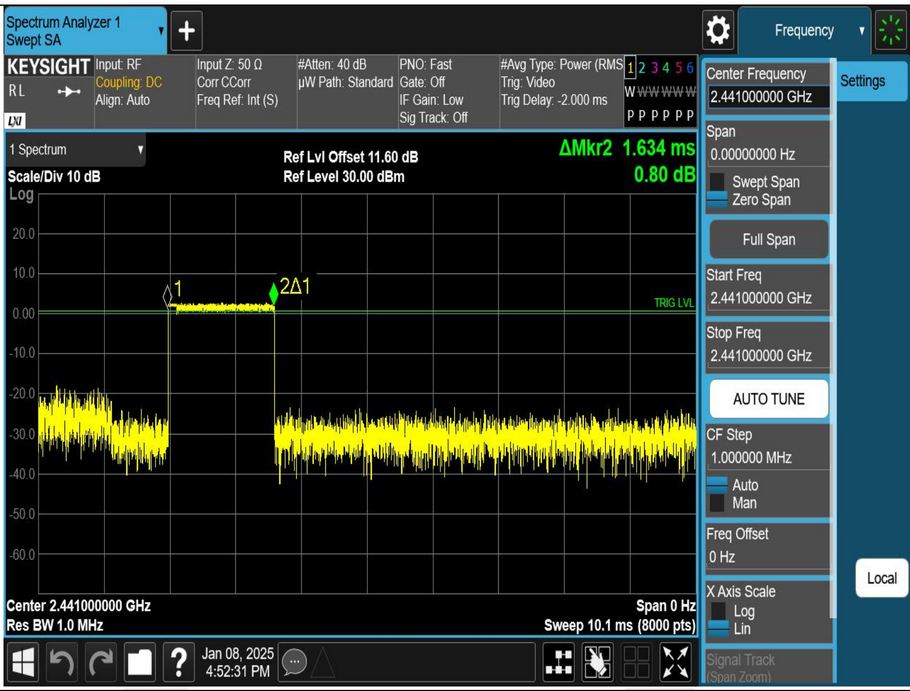
2DH5-Ant1-Hop-PASS



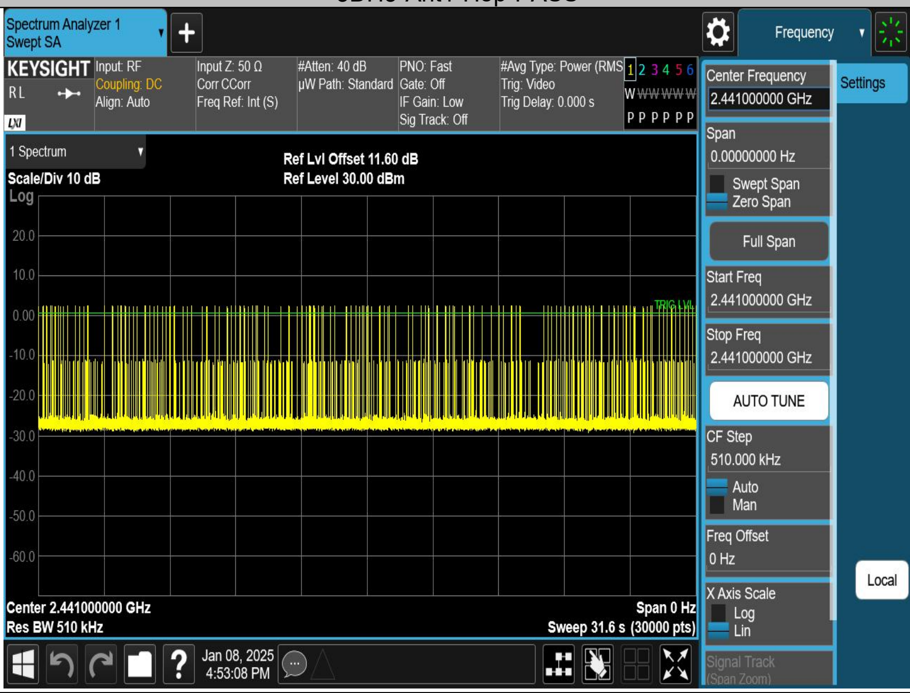


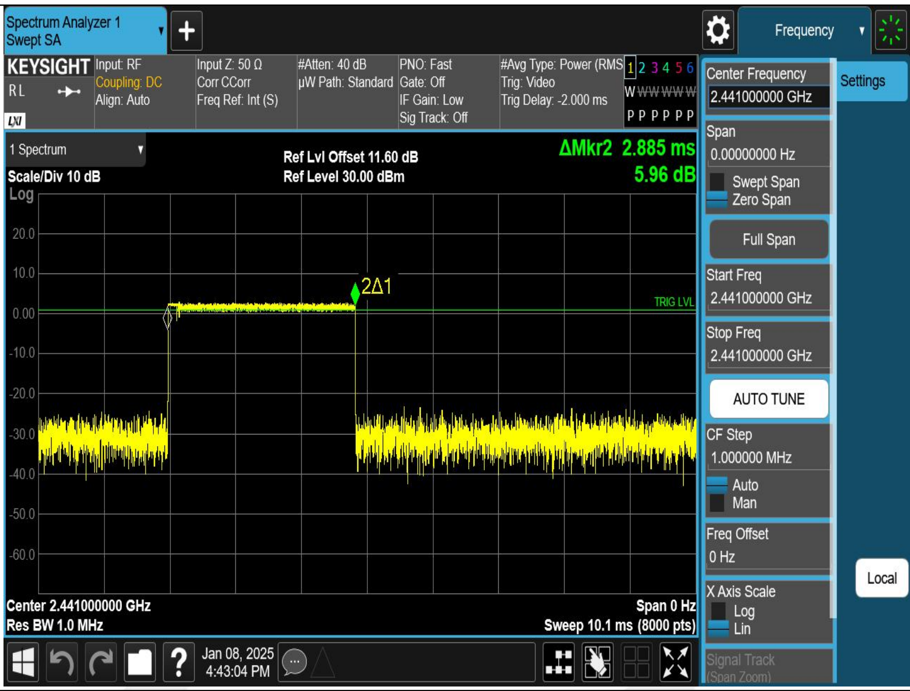
3DH1-Ant1-Hop-PASS



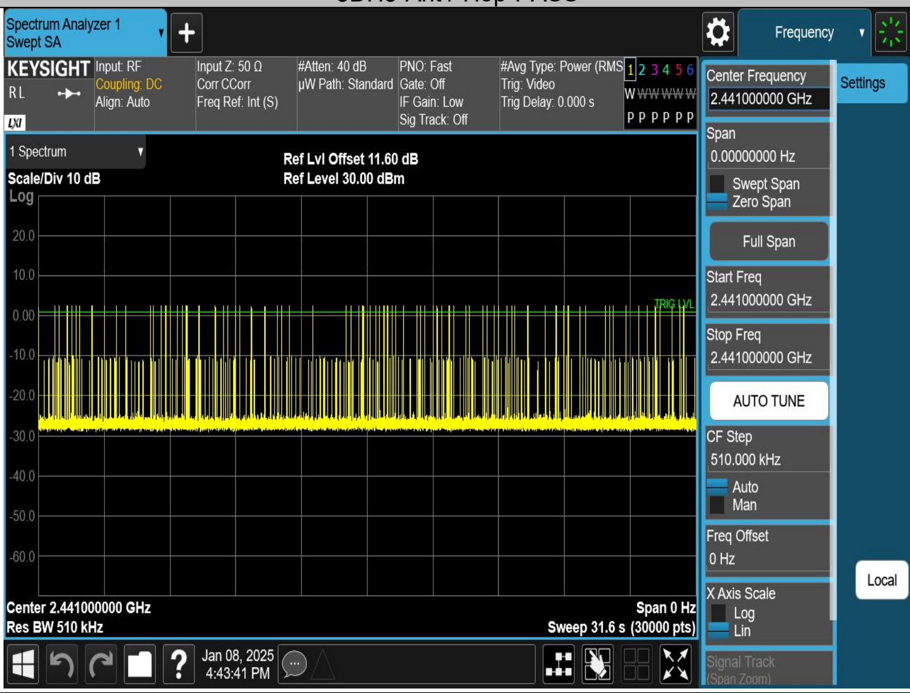


3DH3-Ant1-Hop-PASS





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-247.5.4 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

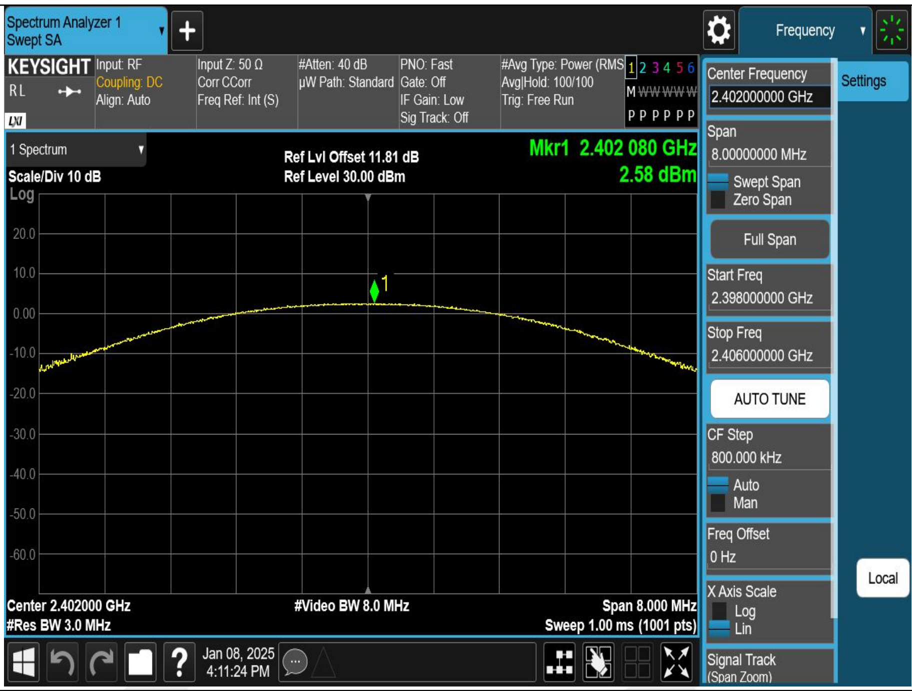
As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.
Use the following spectrum analyzer settings:
Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel (about 8MHz)
Set RBW > the 20 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

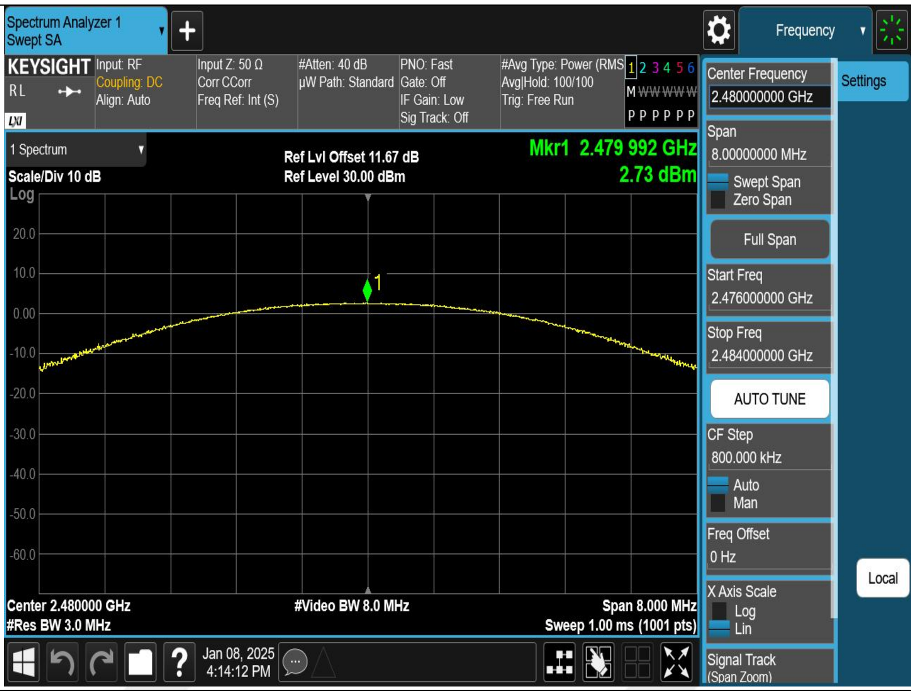
Note: N/A

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	2.58	≤20.97	PASS
DH5	Ant1	2441	3.03	≤20.97	PASS
DH5	Ant1	2480	2.73	≤20.97	PASS
2DH5	Ant1	2402	2.67	≤20.97	PASS
2DH5	Ant1	2441	3.19	≤20.97	PASS
2DH5	Ant1	2480	2.95	≤20.97	PASS
3DH5	Ant1	2402	2.85	≤20.97	PASS
3DH5	Ant1	2441	3.25	≤20.97	PASS
3DH5	Ant1	2480	3.19	≤20.97	PASS



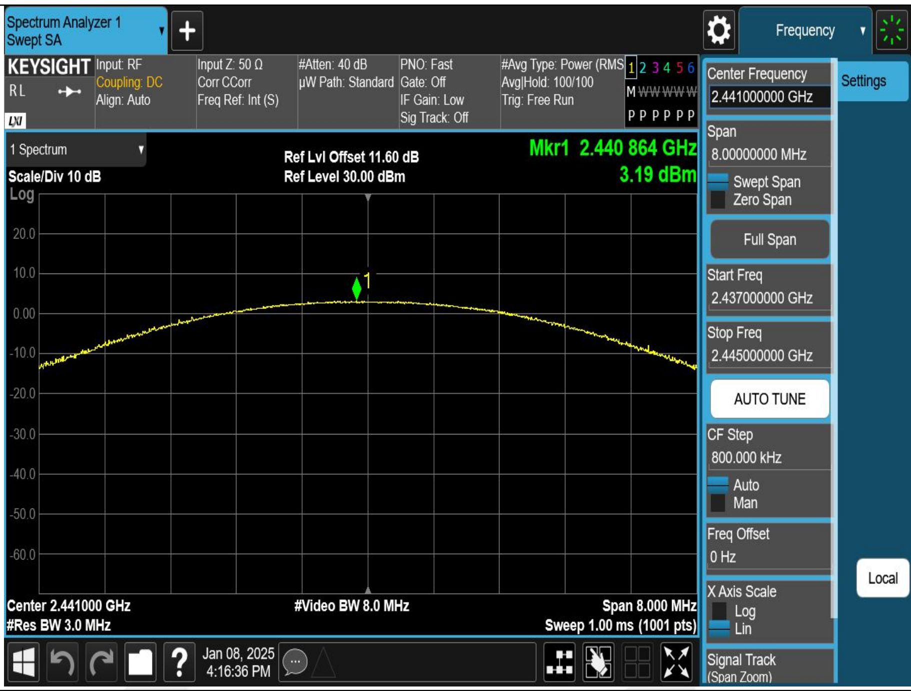
DH5-Ant1-2402-PASS

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

9.6 CONDUCTED SUPRIOUS EMISSION

9.6.1 Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02
According to IC RSS-247 5.5

9.6.2 Conformance Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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, provided the transmitter demonstrates compliance with the peak conducted power limits.

9.6.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.6.4 Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

■ **Reference level measurement**

Establish a reference level by using the following procedure:
Set instrument center frequency to DSS channel center frequency.
Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.
Set the RBW = 100 kHz. Set the VBW ≥ 3 x RBW.
Set Detector = peak. Set Sweep time = auto couple.
Set Trace mode = max hold. Allow trace to fully stabilize.
Use the peak marker function to determine the maximum Maximum conduceted level.
Note that the channel found to contain the maximum conduceted level can be used to establish the reference level.

■ **Band-edge measurement**

Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation
Set RBW ≥ 1% of the span=100kHz Set VBW ≥ 3 x RBW
Set Sweep = auto Set Detector function = peak Set Trace = max hold
Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.
Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

■ **Emission level measurement**

Use the following spectrum analyzer settings:
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.(30MHz to 25GHz). Set RBW = 100 kHz Set VBW ≥ RBW
Set Sweep = auto Set Detector function = peak Set Trace = max hold
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

9.6.5 Test Results

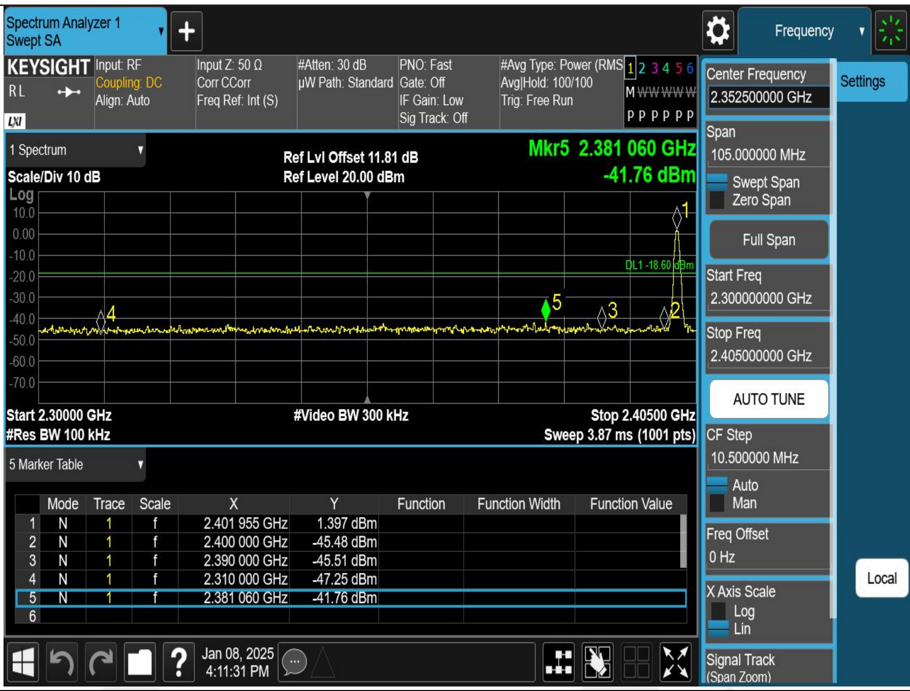
Temperature:	25˚C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

Note: N/A

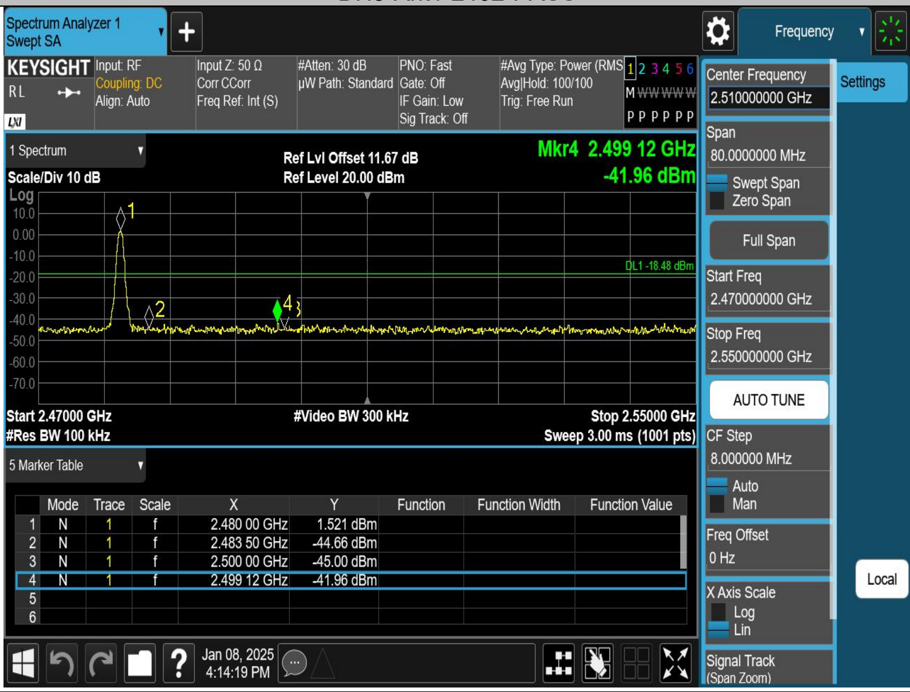
All the antenna and modes mode have been tested, and the worst result recorded was report as below:

Band edge measurements

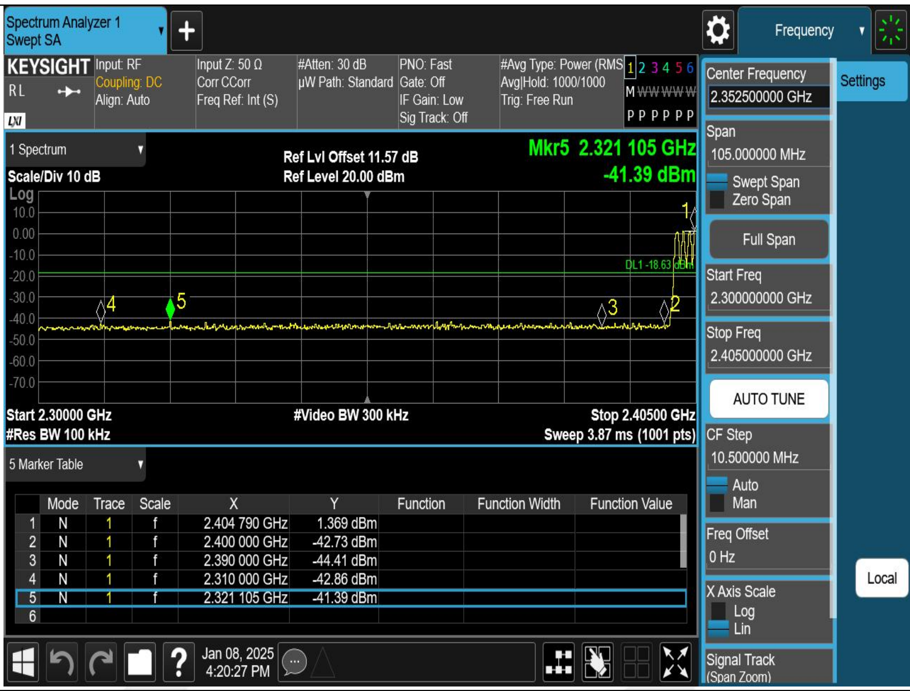
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.40	-41.76	≤-18.6	PASS
DH5	Ant1	High	2480	1.52	-41.96	≤-18.48	PASS
DH5	Ant1	Low	Hop_2402	1.37	-41.39	≤-18.63	PASS
DH5	Ant1	High	Hop_2480	1.85	-40.23	≤-18.15	PASS



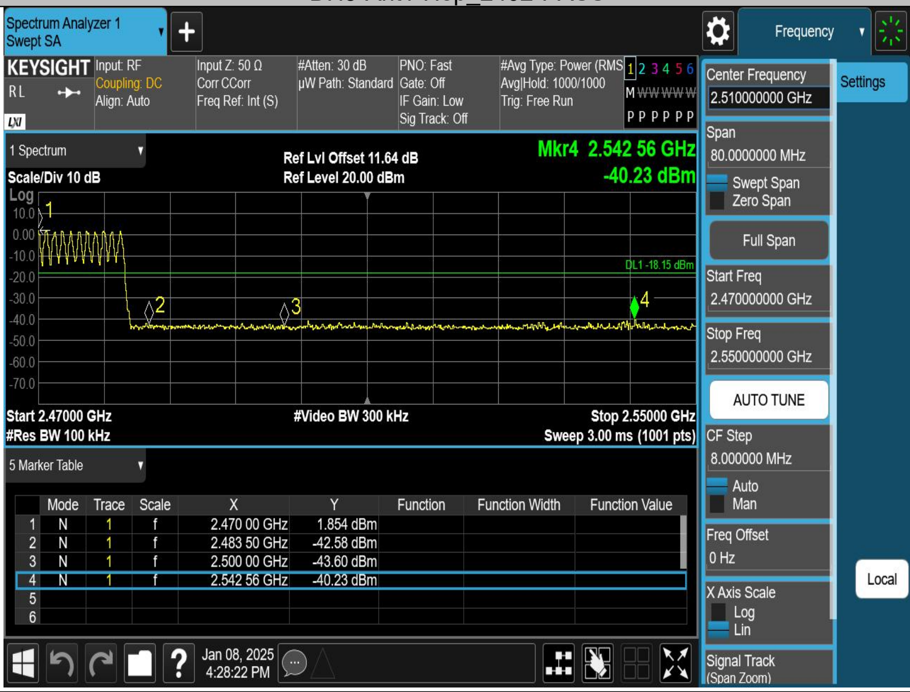
DH5-Ant1-2402-PASS



DH5-Ant1-2480-PASS



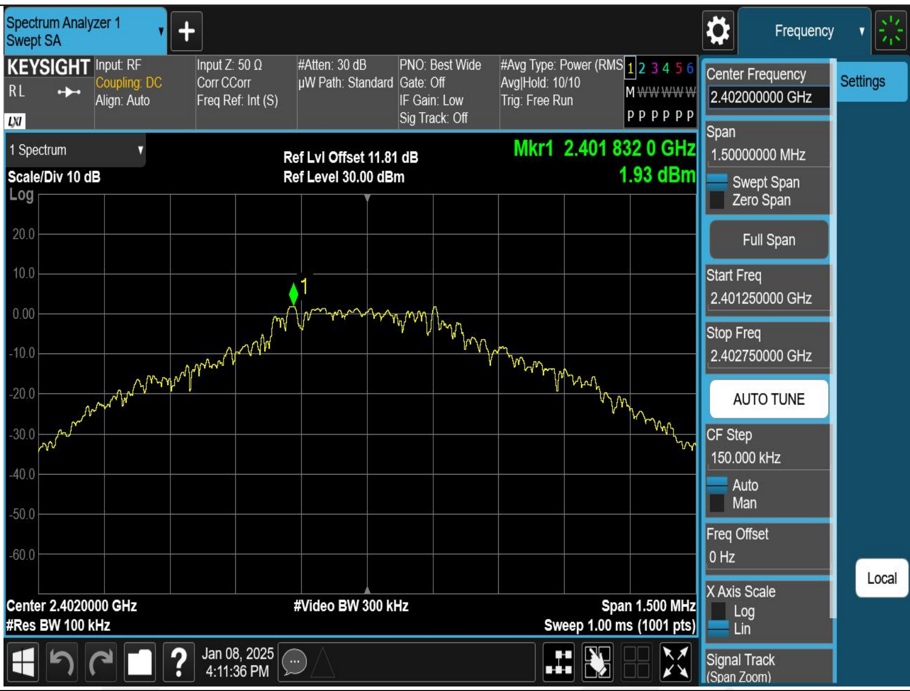
DH5-Ant1-Hop_2402-PASS



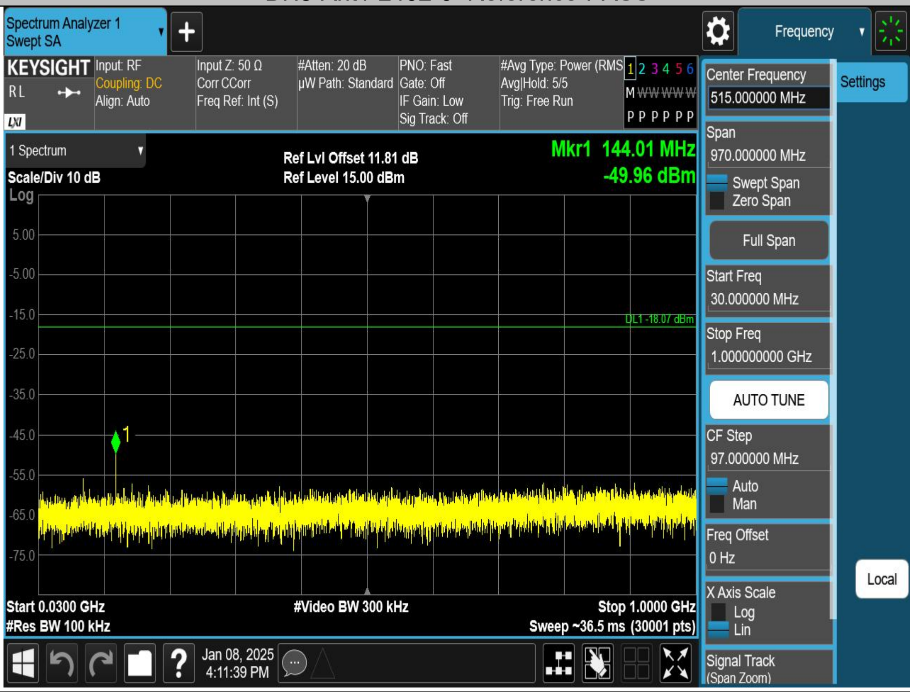
DH5-Ant1-Hop_2480-PASS

Conducted Spurious Emission

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	0~Reference	1.93	1.93	---	PASS
DH5	Ant1	2402	30~1000	1.93	-49.96	≤-18.07	PASS
DH5	Ant1	2402	1000~26500	1.93	-42.58	≤-18.07	PASS
DH5	Ant1	2441	0~Reference	1.84	1.84	---	PASS
DH5	Ant1	2441	30~1000	1.84	-50.49	≤-18.16	PASS
DH5	Ant1	2441	1000~26500	1.84	-44.13	≤-18.16	PASS
DH5	Ant1	2480	0~Reference	1.74	1.74	---	PASS
DH5	Ant1	2480	30~1000	1.74	-51.81	≤-18.26	PASS
DH5	Ant1	2480	1000~26500	1.74	-40.04	≤-18.26	PASS

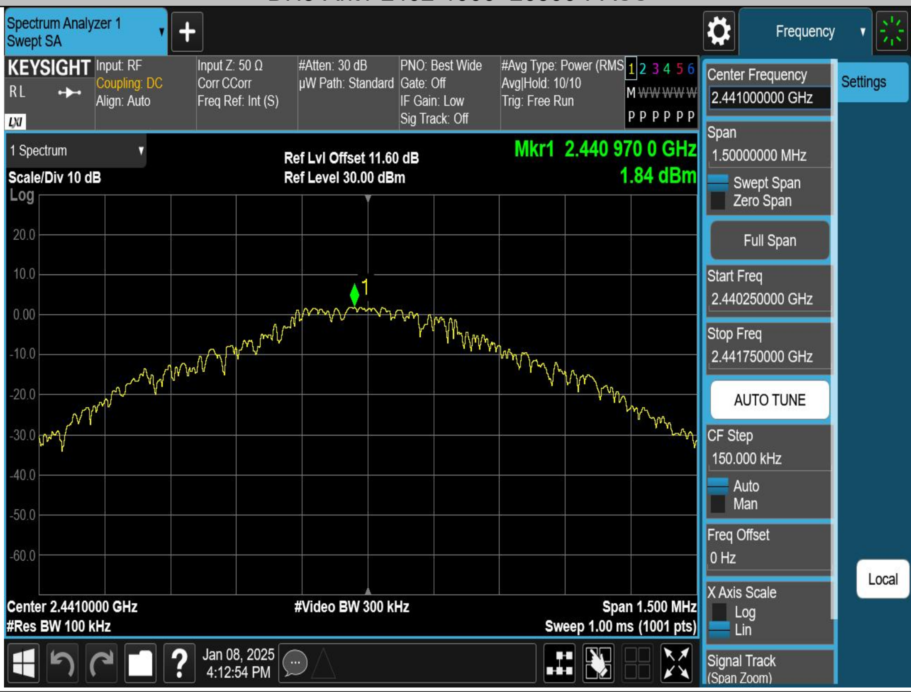


DH5-Ant1-2402-0~Reference-PASS



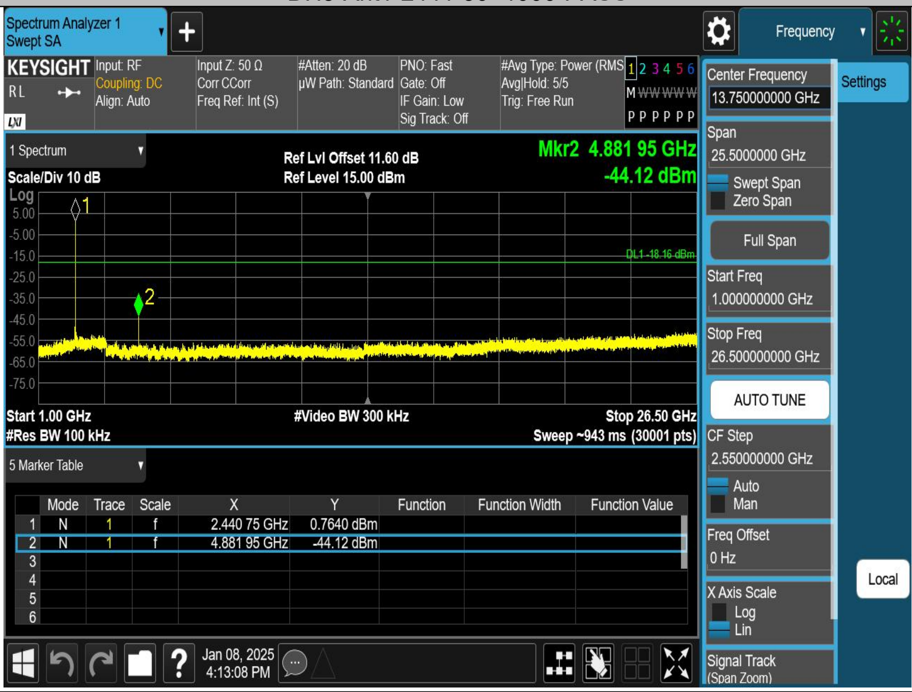
DH5-Ant1-2402-30~1000-PASS

DH5-Ant1-2402-1000~26500-PASS



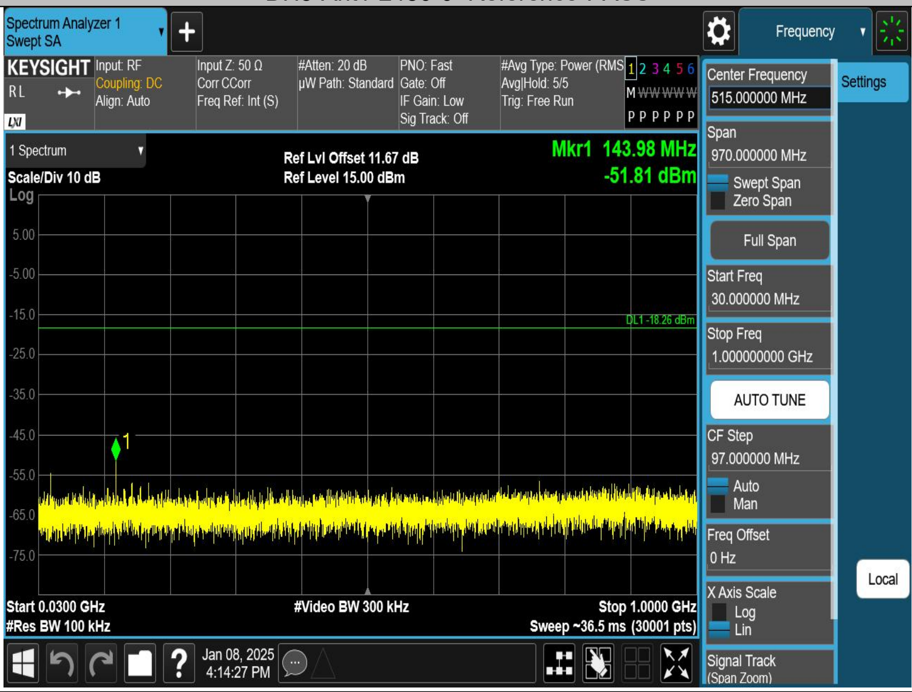
DH5-Ant1-2441-0~Reference-PASS

DH5-Ant1-2441-30~1000-PASS



DH5-Ant1-2441-1000~26500-PASS

DH5-Ant1-2480-0~Reference-PASS



DH5-Ant1-2480-30~1000-PASS

DH5-Ant1-2480-1000~26500-PASS

9.7 RADIATED SPURIOUS EMISSION

9.7.1 Applicable Standard

According to FCC Part 15.247(d), 15.205, 15.209 and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02
According to IC RSS-Gen and RSS-247

9.7.2 Conformance Limit

According to FCC Part 15.247(d): 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) (see §15.205(c)).
According to FCC Part15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

According to FCC Part15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

9.7.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 2

9.7.4 Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:
For Above 1GHz:
The EUT was placed on a turn table which is 1.5m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz
VBW ≥ RBW
Sweep = auto

Detector function = peak
Trace = max hold
For Below 1GHz:
The EUT was placed on a turn table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Span = wide enough to fully capture the emission being measured
RBW = 100 kHz for
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
For Below 30MHz:
The EUT was placed on a turn table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Span = wide enough to fully capture the emission being measured
RBW = 9kHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
For Below 150KHz:
The EUT was placed on a turn table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Span = wide enough to fully capture the emission being measured
RBW = 200Hz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

9.7.5 Test Results

■ Spurious Emission below 30MHz (9KHz to 30MHz)

Temperature:	22° C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission Above 1GHz (1GHz to 25GHz)

All the antenna(Antenna 1) and modes(GFSK, π/4-DQPSK, 8DPSK) mode have been tested, and the worst(Antenna 1, 8DPSK) result recorded was report as below:

Test mode:	8DPSK	Frequency:	Channel 0: 2402MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
8914.89	V	57.27	44.09	74.00	54.00	-16.73	-9.91
13143.13	V	57.47	44.63	74.00	54.00	-16.53	-9.37
15318.92	V	56.98	44.17	74.00	54.00	-17.02	-9.83
9491.94	H	57.02	43.97	74.00	54.00	-16.98	-10.03
10826.05	H	57.51	44.66	74.00	54.00	-16.49	-9.34
12842.71	H	57.43	44.49	74.00	54.00	-16.57	-9.51

Test mode:	8DPSK	Frequency:	Channel 39: 2441MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
9599.55	V	56.54	43.78	74.00	54.00	-17.46	-10.22
10726.38	V	56.59	43.84	74.00	54.00	-17.41	-10.16
15112.22	V	56.79	43.92	74.00	54.00	-17.21	-10.08
10188.47	H	57.51	44.64	74.00	54.00	-16.49	-9.36
14462.66	H	57.57	44.68	74.00	54.00	-16.43	-9.32
16291.67	H	57.62	44.45	74.00	54.00	-16.38	-9.55

Test mode:	8DPSK	Frequency:	Channel 78: 2480MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
7082.65	V	56.71	43.89	74.00	54.00	-17.29	-10.11
13666.11	V	56.87	44.04	74.00	54.00	-17.13	-9.96
14792.42	V	57.21	44.37	74.00	54.00	-16.79	-9.63
9459.08	H	56.81	43.86	74.00	54.00	-17.19	-10.14
10596.95	H	57.28	44.37	74.00	54.00	-16.72	-9.63
16581.46	H	56.76	44.04	74.00	54.00	-17.24	-9.96

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz
All the antenna(Antenna 1) and modes(GFSK, π/4-DQPSK, 8DPSK, Hopping) mode have been tested, and the worst(Antenna 1, 8DPSK, Hopping) result recorded was report as below:

Test mode: 8DPSK Frequency: Channel 0: 2402MHz

Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2311.512	H	44.38	74.00	31.62	54.00
2387.192	V	43.96	74.00	31.13	54.00

Test mode: 8DPSK Frequency: Channel 78: 2480MHz

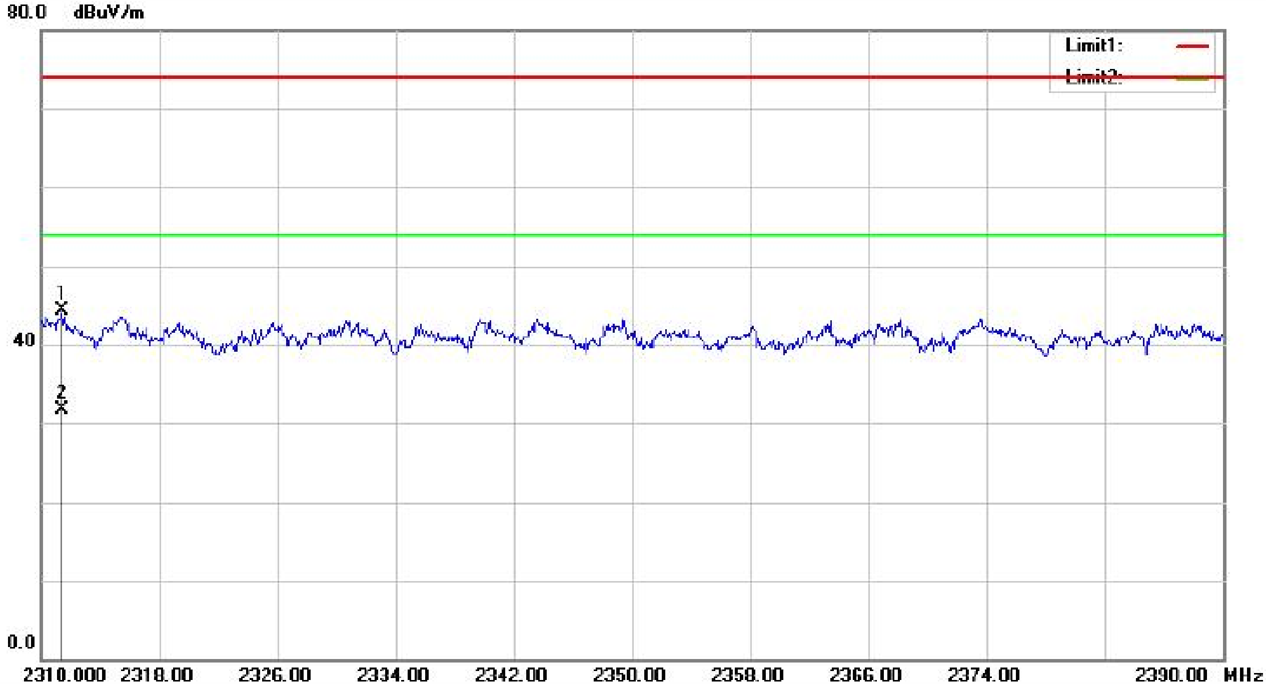
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2497.673	H	43.88	74.00	31.10	54.00
2495.230	V	44.13	74.00	31.10	54.00

Test mode: 8DPSK Frequency: Hopping

Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2384.670	H	44.83	74.00	32.09	54.00
2400.000	H	45.50	74.00	32.36	54.00
2483.500	H	47.78	74.00	34.64	54.00
2393.581	V	44.33	74.00	31.41	54.00
2400.000	V	52.15	74.00	38.91	54.00
2483.500	V	43.46	74.00	30.58	54.00

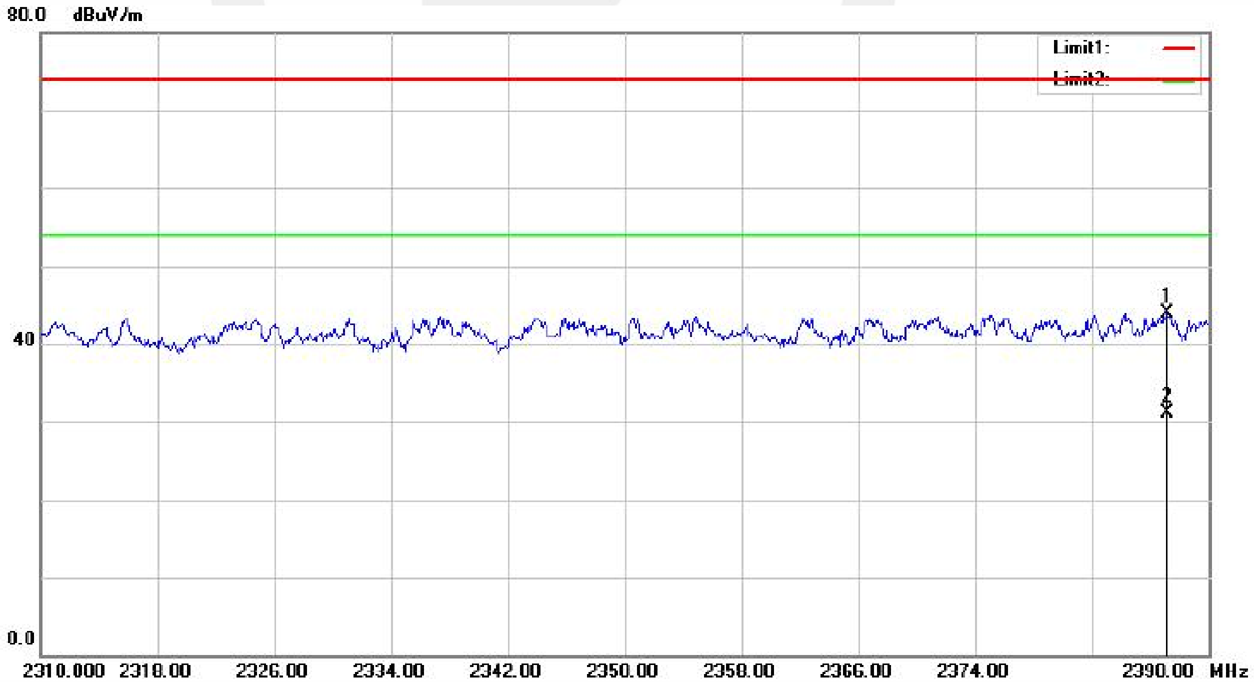
Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Test Model	Spurious Emission in Restricted Band 2310-2390MHz Channel 0: 2402MHz	8DPSK	H



Site site #1 Polarization: *Horizontal* Temperature: 22.5

Test Model	Spurious Emission in Restricted Band 2310-2390MHz Channel 0: 2402MHz	8DPSK	V

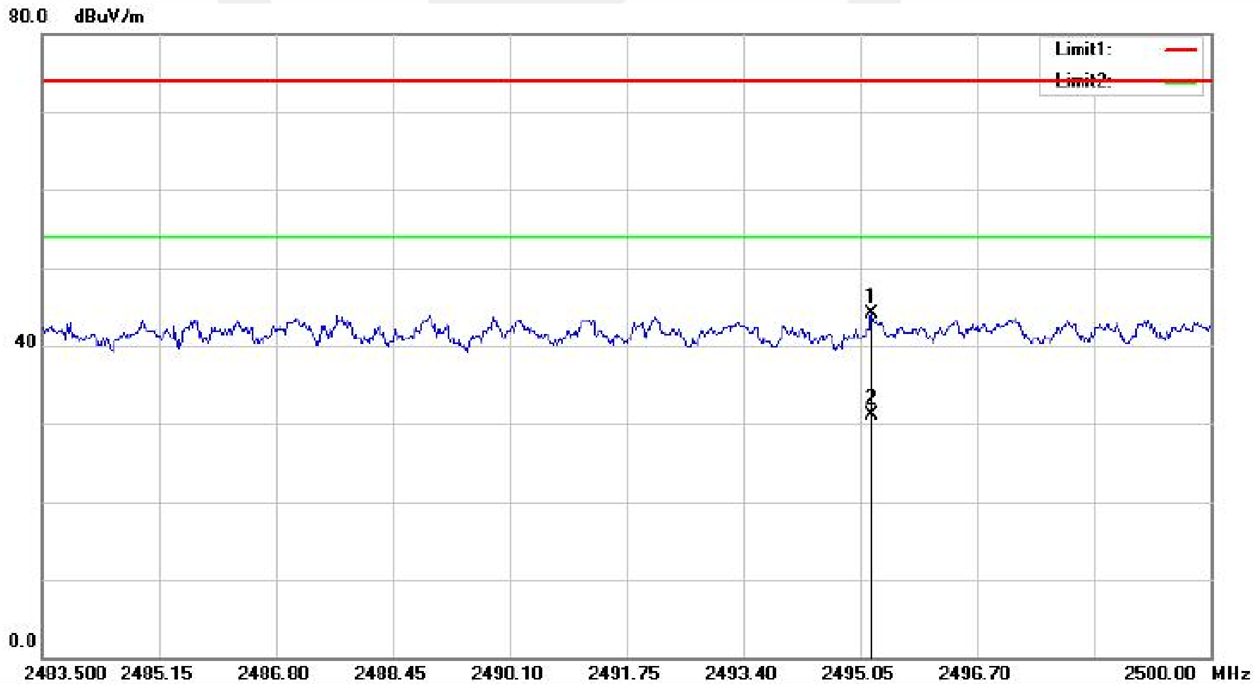


Site site #1 Polarization: *Vertical* Temperature: 22.5

Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz Channel 78: 2480MHz	8DPSK	H

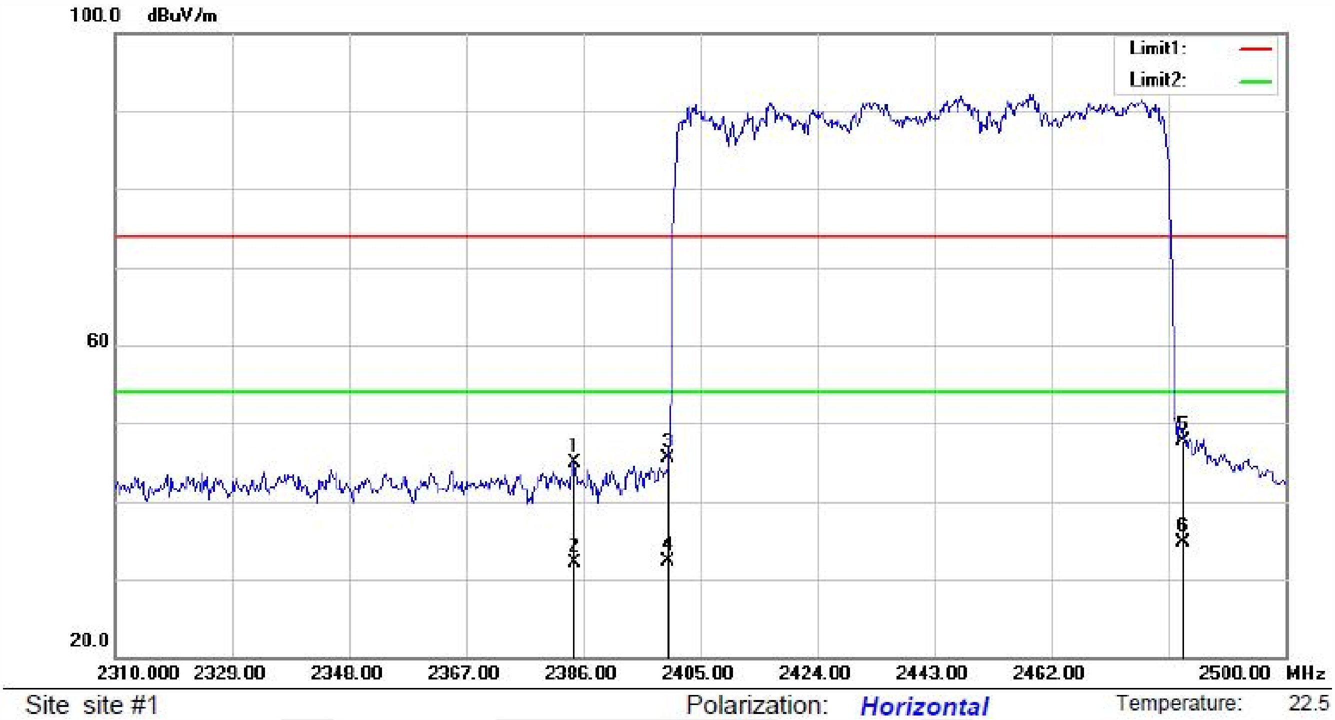
Site site #1 Polarization: *Horizontal* Temperature: 22.5

Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz Channel 78: 2480MHz	8DPSK	V

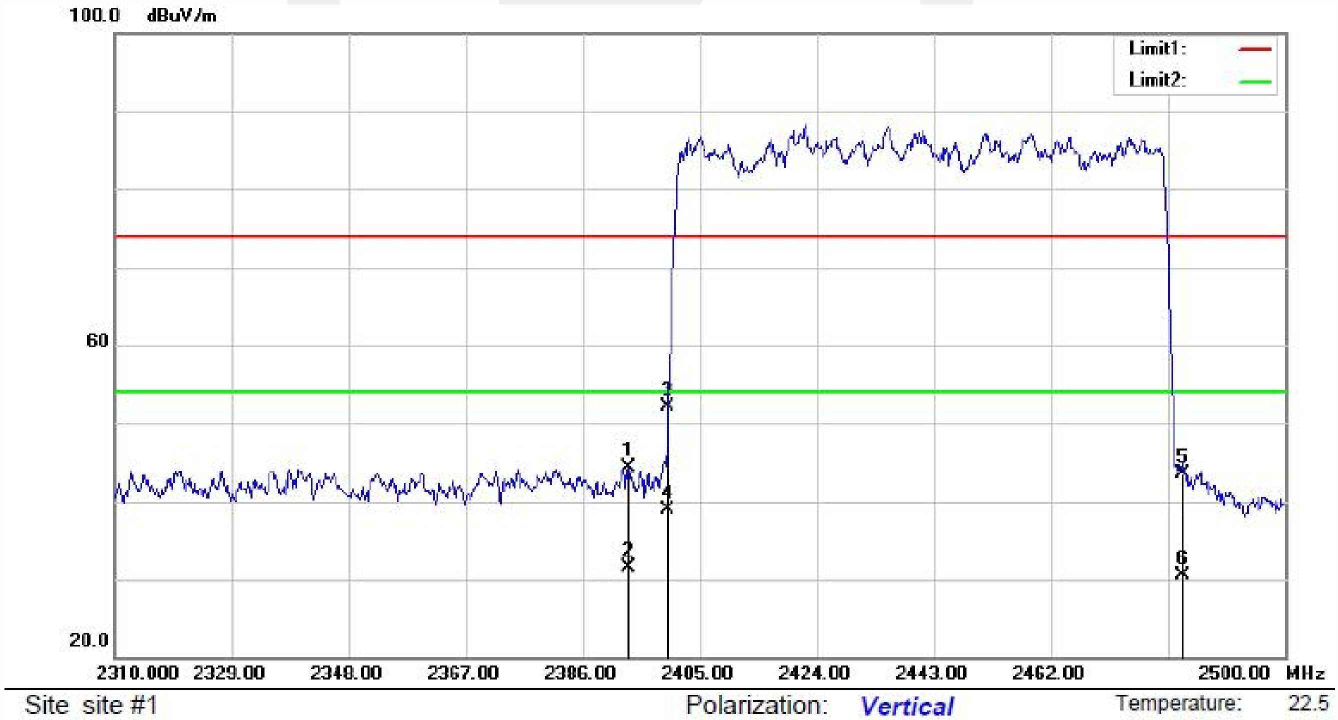


Site site #1 Polarization: *Vertical* Temperature: 22.5

Test Model	Spurious Emission in Restricted Band 2310-2390MHz and 2400-2483.5MHz Hopping 8DPSK H

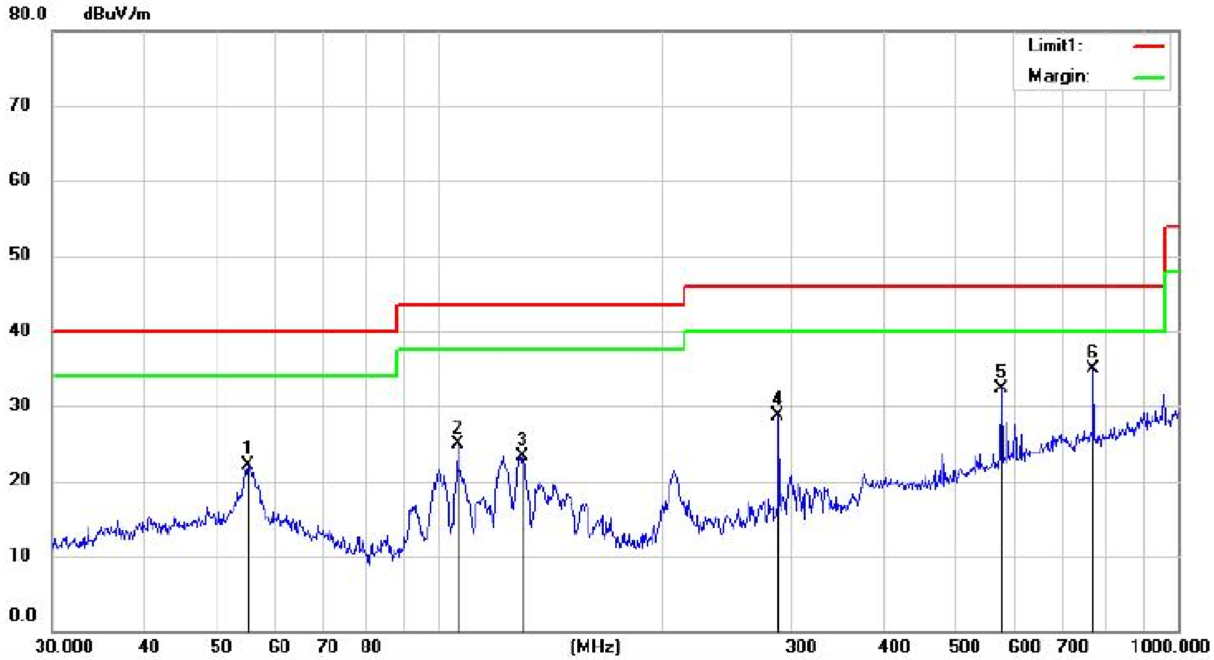


Test Model	Spurious Emission in Restricted Band 2310-2390MHz and 2400-2483.5MHz Hopping 8DPSK V



■ Spurious Emission below 1GHz (30MHz to 1GHz)

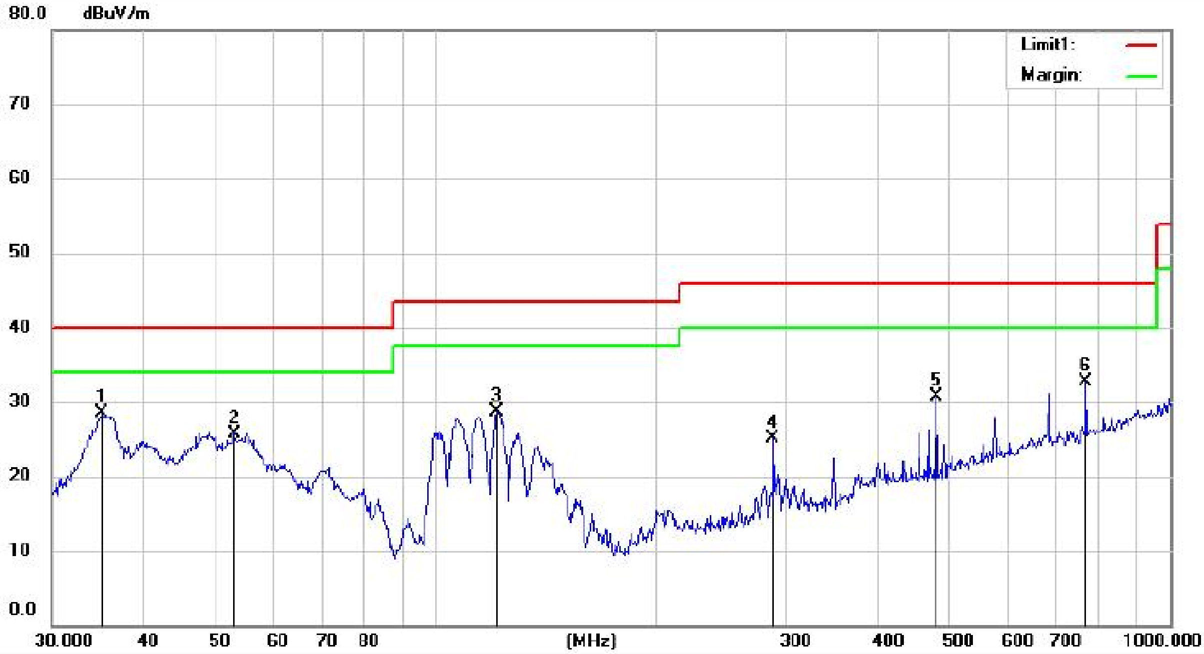
All the antenna(Antenna 1) and modes(GFSK, π/4-DQPSK, 8DPSK) mode have been tested, and the worst(Antenna 1, 8DPSK) result recorded was report as below:



Site Chamber #1 | Polarization: *Horizontal* | Temperature: 20.6 C

No.	Mk.	Freq.	Reading Level	Ant. Factor	Pre Amp Gain	Cable loss	Measure-ment	Limit	Over		HI	Degree	
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Detector	cm	deg.	Comment
1		55.2207	38.26	13.45	30.5	0.92	22.13	40.00	-17.87	QP			
2		106.0126	43.21	11.5	30.86	1.12	24.97	43.50	-18.53	QP			
3		129.9225	44.37	8.41	30.73	1.3	23.35	43.50	-20.15	QP			
4		287.9904	42.82	13.68	29.89	2.15	28.76	46.00	-17.24	QP			
5		576.6443	39.71	19.49	29.92	3.1	32.38	46.00	-13.62	QP			
6	*	768.7481	40.24	21.07	30.2	3.79	34.90	46.00	-11.10	QP			

*:Maximum data x:Over limit !:over margin Operator: Ccyf



Site Chamber #1 Polarization: *Vertical* Temperature: 20.6 C

No.	Mk.	Freq.	Reading Level	Ant. Factor	Pre Amp Gain	Cable loss	Measure-ment	Limit	Over	Detector	HI	Degree	Comment
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Detector	cm	deg.	Comment
1	*	35.1277	46.98	11.54	30.55	0.6	28.57	40.00	-11.43	QP			
2		53.1313	41.69	13.69	30.49	0.86	25.75	40.00	-14.25	QP			
3		121.1231	48.54	9.64	30.78	1.23	28.63	43.50	-14.87	QP			
4		287.9904	39.11	13.68	29.89	2.15	25.05	46.00	-20.95	QP			
5		480.5276	40.18	17.45	29.81	2.79	30.61	46.00	-15.39	QP			
6		768.7481	38.11	21.07	30.2	3.79	32.77	46.00	-13.23	QP			

*:Maximum data x:Over limit !:over margin Operator: Ccyf

Remark:
1. Measurement (dBμV/m) = Antenna Factor(dB) -Amp Factor(dB) +Cable Loss(dB) + Reading(dBμV/m)
2. Over (dB) = Measurement (dBμV/m) - Limit (dBμV/m)

9.8 CONDUCTED EMISSION TEST

9.8.1 Applicable Standard

According to FCC Part 15.207
According to IC RSS-Gen 8.8

9.8.2 Conformance Limit

Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50
Note: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.		

9.8.3 Test Configuration

Test according to clause 7.3 conducted emission test setup

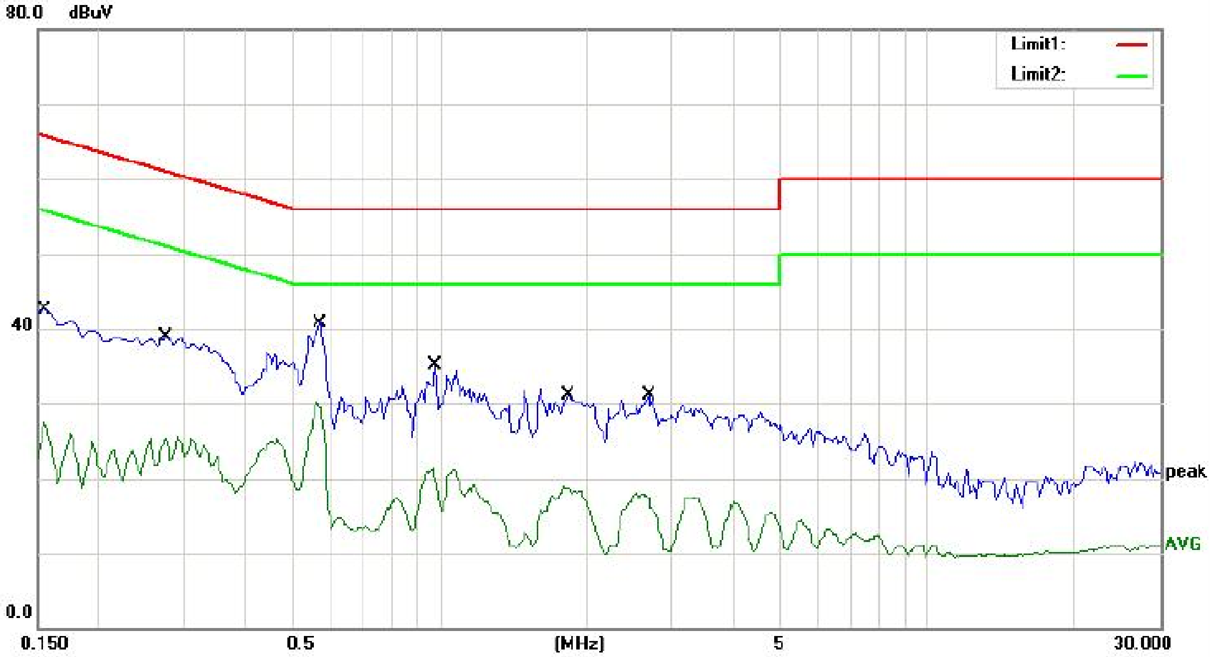
9.8.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

9.8.5 Test Results

Pass

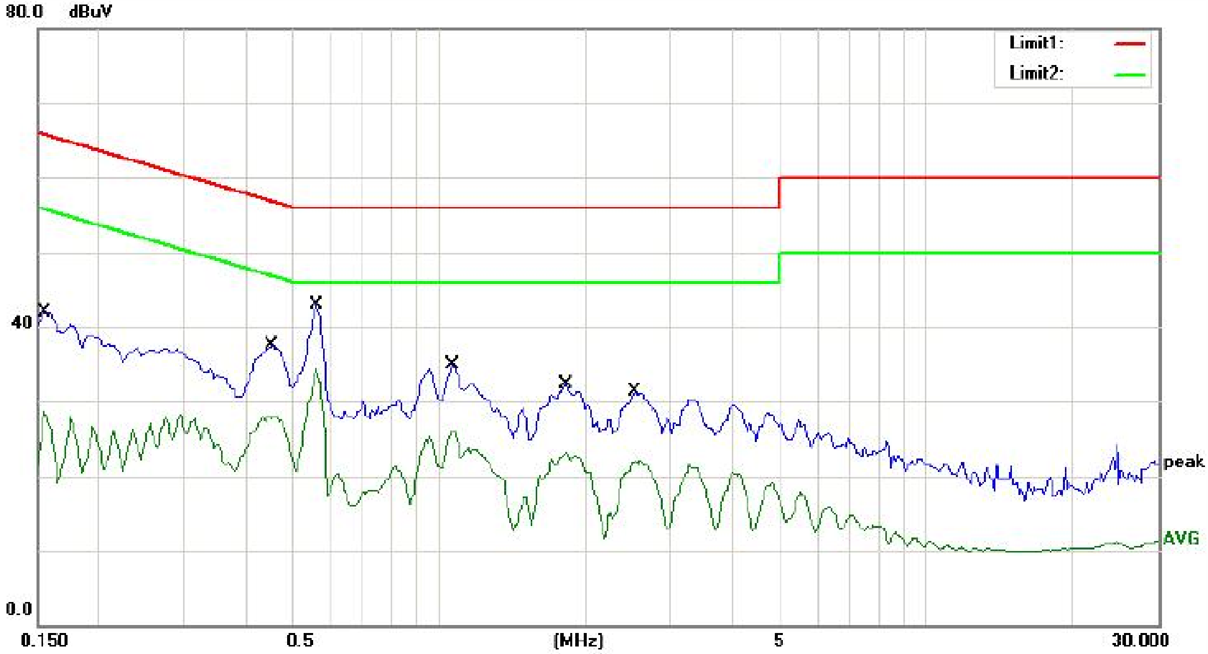
The AC120V &240V voltage have been tested, and the worst result recorded was report as below:



Site site #1 Phase: L1 Temperature: 24.1

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	42.60	0.00	42.60	65.73	-23.13	QP	
2		0.1550	27.47	0.00	27.47	55.73	-28.26	AVG	
3		0.2750	38.82	0.00	38.82	60.97	-22.15	QP	
4		0.2750	25.53	0.00	25.53	50.97	-25.44	AVG	
5	*	0.5700	40.72	0.00	40.72	56.00	-15.28	QP	
6		0.5700	30.28	0.00	30.28	46.00	-15.72	AVG	
7		0.9800	35.09	0.00	35.09	56.00	-20.91	QP	
8		0.9800	21.21	0.00	21.21	46.00	-24.79	AVG	
9		1.8300	31.12	0.00	31.12	56.00	-24.88	QP	
10		1.8300	18.81	0.00	18.81	46.00	-27.19	AVG	
11		2.6800	31.05	0.00	31.05	56.00	-24.95	QP	
12		2.6800	18.17	0.00	18.17	46.00	-27.83	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:



Site site #1 Phase: N Temperature: 24.1

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	41.96	0.00	41.96	65.73	-23.77	QP	
2		0.1550	28.64	0.00	28.64	55.73	-27.09	AVG	
3		0.4550	37.51	0.00	37.51	56.78	-19.27	QP	
4		0.4550	27.96	0.00	27.96	46.78	-18.82	AVG	
5		0.5600	42.90	0.00	42.90	56.00	-13.10	QP	
6	*	0.5600	34.22	0.00	34.22	46.00	-11.78	AVG	
7		1.0700	34.82	0.00	34.82	56.00	-21.18	QP	
8		1.0700	26.12	0.00	26.12	46.00	-19.88	AVG	
9		1.8200	32.24	0.00	32.24	56.00	-23.76	QP	
10		1.8200	23.18	0.00	23.18	46.00	-22.82	AVG	
11		2.5200	31.35	0.00	31.35	56.00	-24.65	QP	
12		2.5200	22.05	0.00	22.05	46.00	-23.95	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

Remark:
1. Measurement (dBμV) = AMN Factor (dB) + Cable Loss (dB) + Reading (dBμV)
2. Over (dB) = Measurement (dBμV) - Limit (dBμV)

9.9 ANTENNA APPLICATION

9.9.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
FCC 47 CFR Part 15.247 (b)	If transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
RSS-Gen Section 6.8	The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.
RSS-247 Section 5.4	If the transmitter employs an antenna system that emits multiple directional beams, but does not emit multiple directional beams simultaneously, the total output power conducted to the array or arrays that comprise the device (i.e. the sum of the power supplied to all antennas, antenna elements, staves, etc., and summed across all carriers or frequency channels) shall not exceed the applicable output power limit. However, the total conducted output power shall be reduced by 1 dB below the specified limits for each 3 dB that the directional gain of the antenna/antenna array exceeds 6 dBi. The directional antenna gain shall be computed as the sum of 10 log (number of array elements or staves) plus the directional gain of the element or stave having the highest gain.

9.9.2 Result

PASS.

Note: ☑ Antenna use a permanently attached antenna which is not replaceable.
☐ Not using a standard antenna jack or electrical connector for antenna replacement
☐ The antenna has to be professionally installed (please provide method of installation)

Please refer to the attached document Internal Photos to show the antenna connector.

Detail of factor for radiated emission

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

*** End of Report ***

声 明

Statement

1. 本报告无授权批准人签字及“检验检测专用章”无效；

   This report will be void without authorized signature or special seal for testing report.

2. 未经许可本报告不得部分复制；

   This report shall not be copied partly without authorization.

3. 本报告的检测结果仅对送测样品有效，委托方对样品的代表性和资料的真实性负责；

   The test results or observations are applicable only to tested sample. Client shall be responsible for representativeness of the sample and authenticity of the material.

4. 本检测报告中检测项目标注有特殊符号则该项目不在资质认定范围内，仅作为客户委托、科研、教学或内部质量控制等目的使用；

   The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.

5. 本检测报告以实测值进行符合性判定，未考虑不确定度所带来的风险，本实验室不承担相关责任，特别约定、标准或规范中有明确规定的除外；

   The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.

6. 对本检测报告若有异议，请于收到报告之日起 20 日内提出；

   Objections shall be raised within 20 days from the date receiving the report.

东莞市信测科技有限公司 地址:广东省东莞市松山湖高新技术产业开发区新城大道9号中大海洋生物科技研发基地A区2号办公楼负一层、第二层 网址:Http://www.emtek.com.cn 邮箱:E-mail: project@emtek.com.cn
EMTEK (Dongguan) Co., Ltd. Add: -1&2/F .,Building 2,Zone A,Zhongda Marine Biotechnology Research and Development Base ,No.9, Xincheng Avenue,Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong,China Http://www.emtek.com.cn E-mail: project@emtek.com.cn