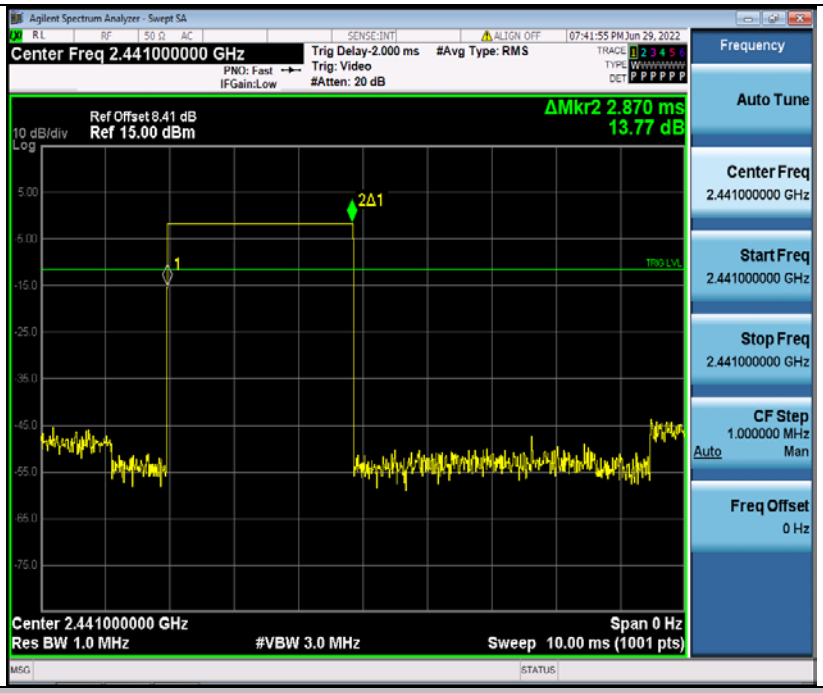
DH1_Ant1_Hop

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: 20 dB
#Avg Type: RMS
07:41:55 PM Jun 29, 2022
Frequency
Auto Tune
Ref Offset 8.41 dB
10 dB/div
Log
Ref 15.00 dBm
ΔMkr2 2.870 ms
13.77 dB
2Δ1
1
TRIG LVL
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
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
MSG
STATUS

DH5_Ant1_Hop

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

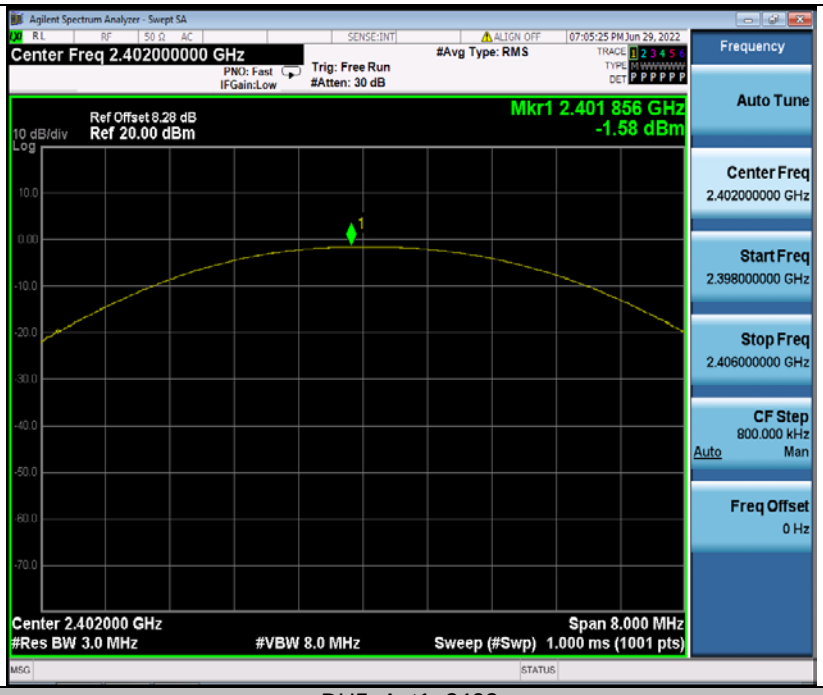
As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.
Use the following spectrum analyzer settings:
Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel(about 8MHz)
Set RBW > the 20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

Test Results

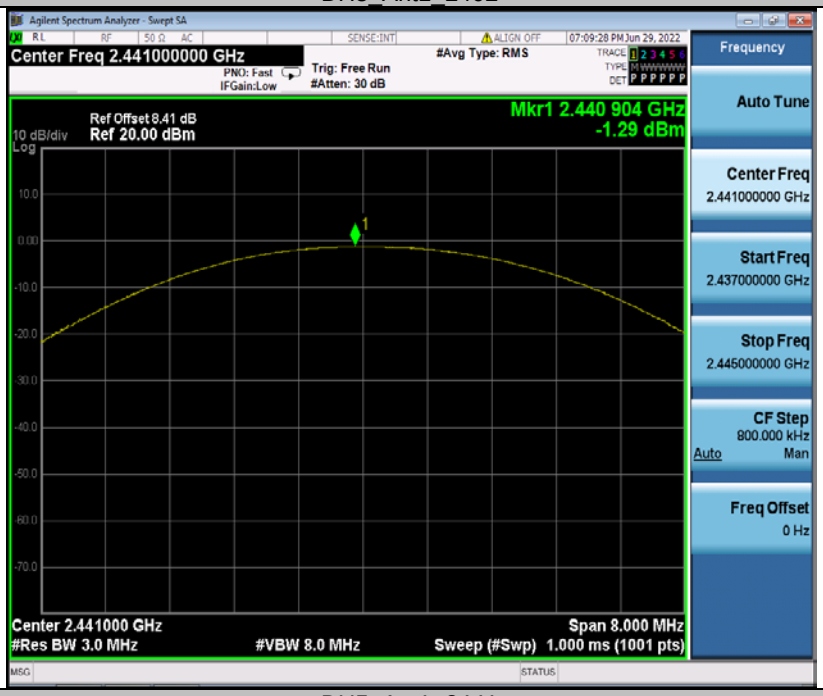
Temperature:	25˚ C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

Note: N/A

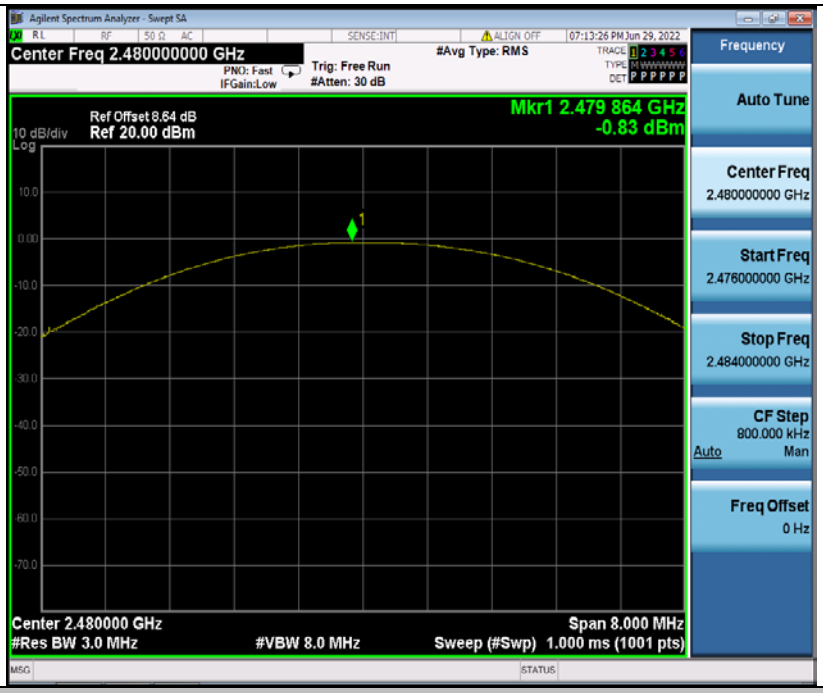
Test Mode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-1.58	≤20.97	PASS
		2441	-1.29	≤20.97	PASS
		2480	-0.83	≤20.97	PASS
2DH5	Ant1	2402	-0.72	≤20.97	PASS
		2441	-0.45	≤20.97	PASS
		2480	-0.02	≤20.97	PASS
3DH5	Ant1	2402	-0.32	≤20.97	PASS
		2441	-0.05	≤20.97	PASS
		2480	0.42	≤20.97	PASS



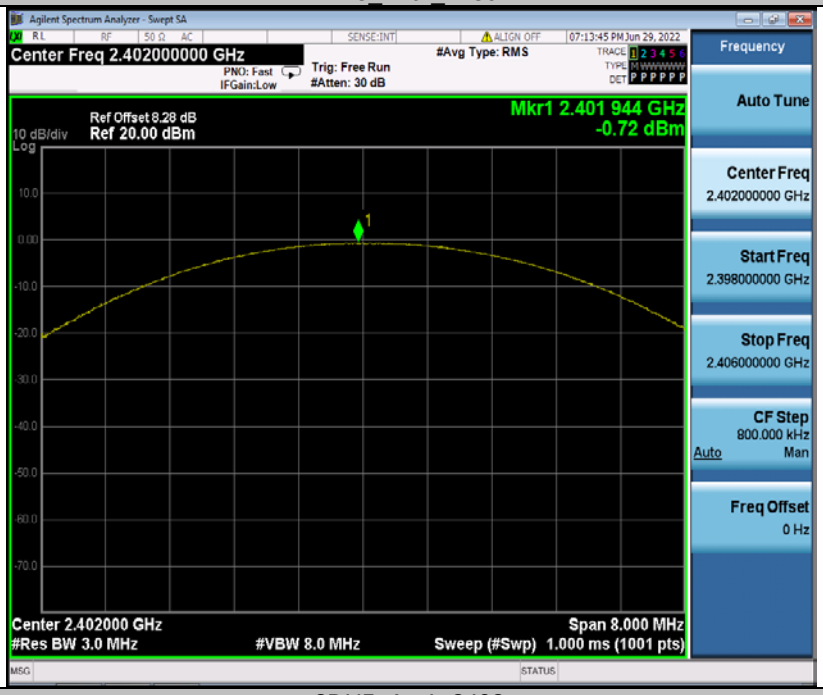
DH5_Ant1_2402



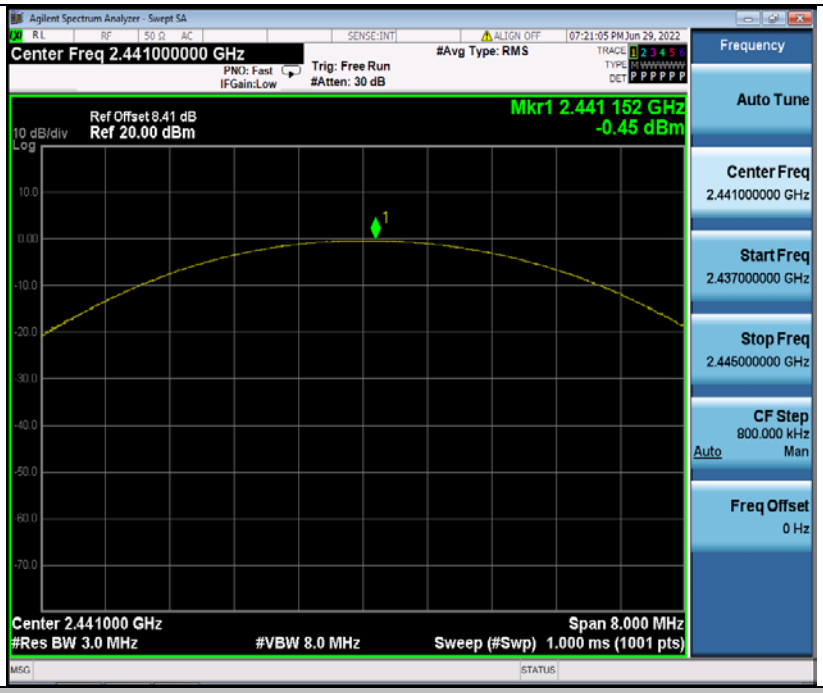
DH5_Ant1_2441



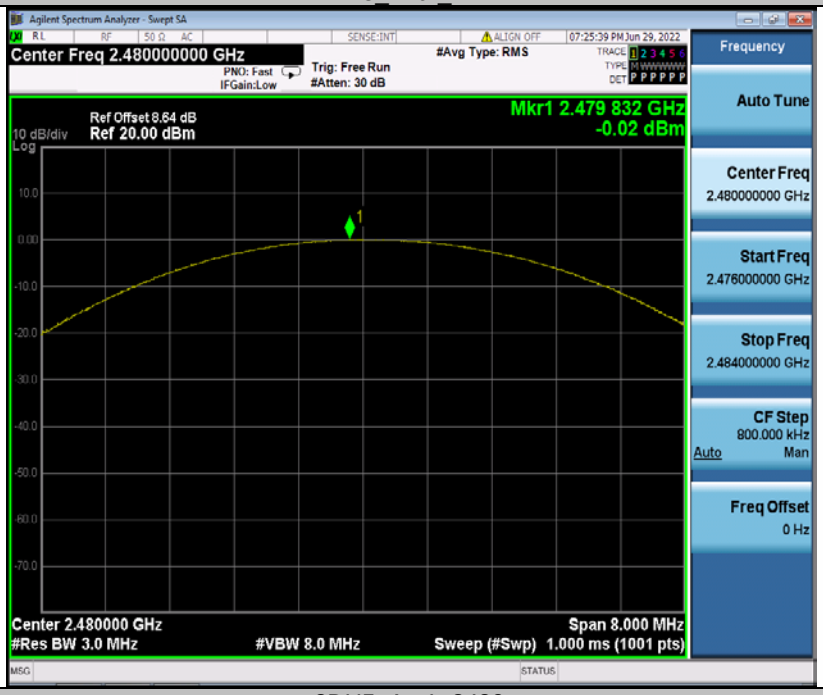
DH5_Ant1_2480



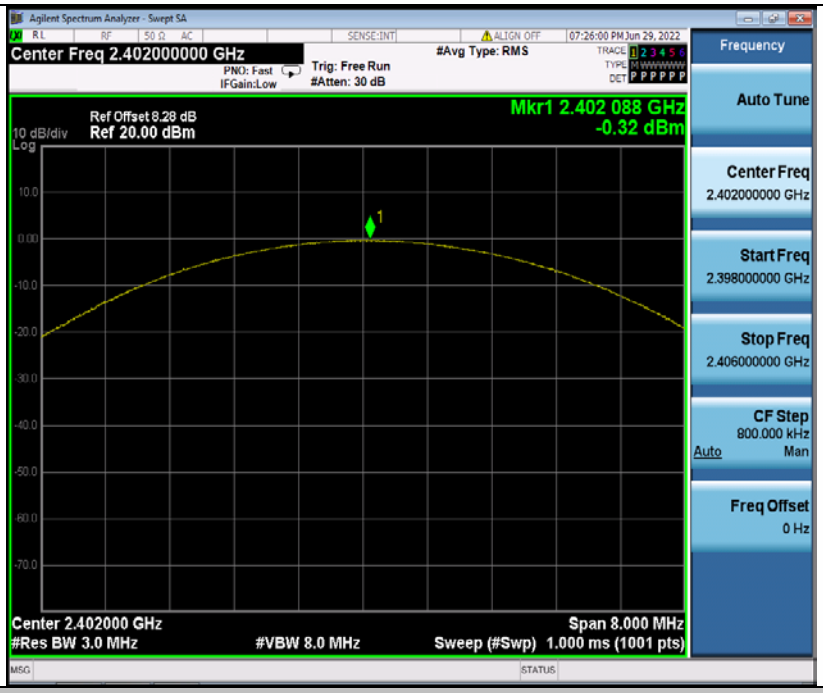
2DH5_Ant1_2402



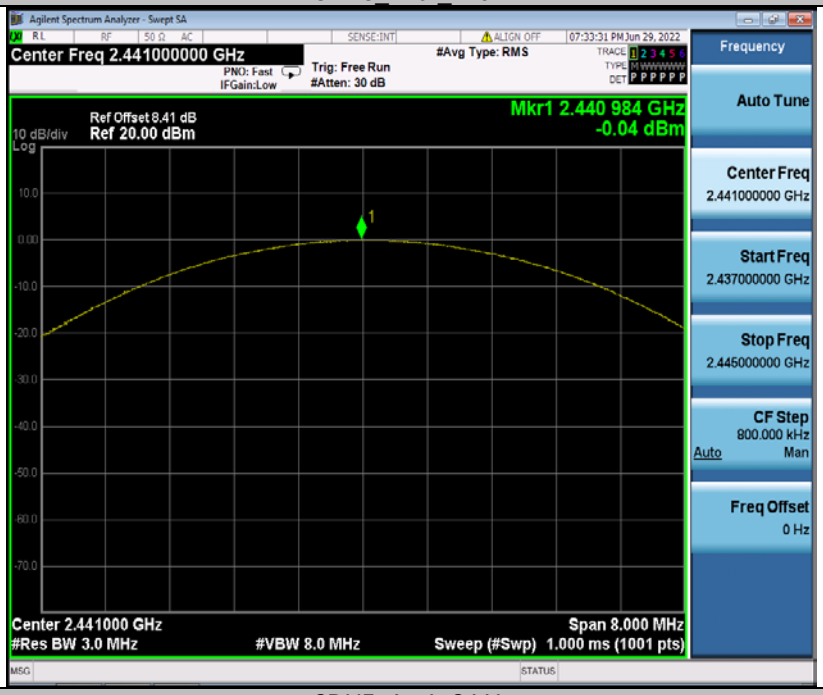
2DH5_Ant1_2441



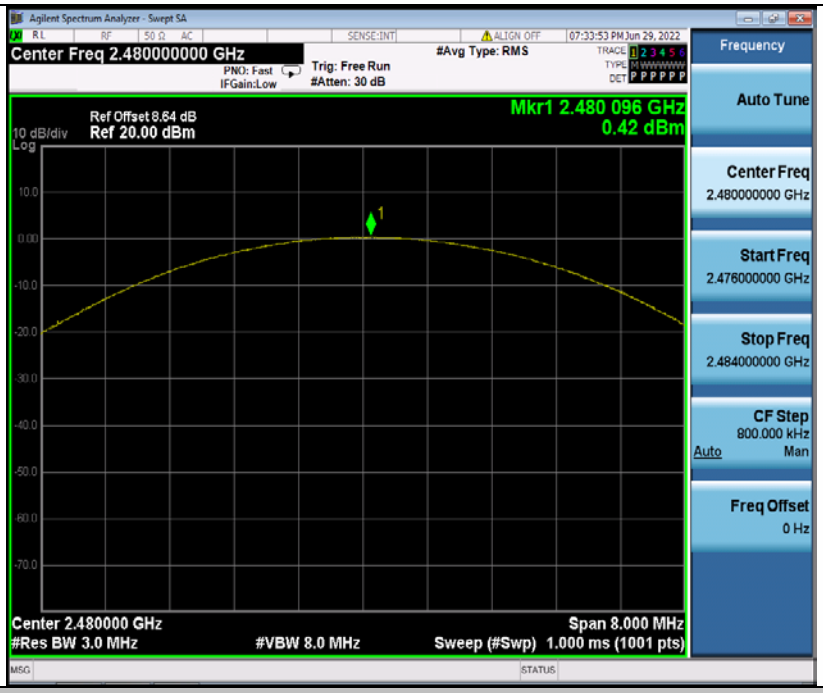
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

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 Maximumconducetedlevel.
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=100kHzSet VBW ≥3 x RBW
Set Sweep = autoSet Detector function = peakSet 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 kHzSet VBW ≥ RBW
Set Sweep = autoSet Detector function = peakSet 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.

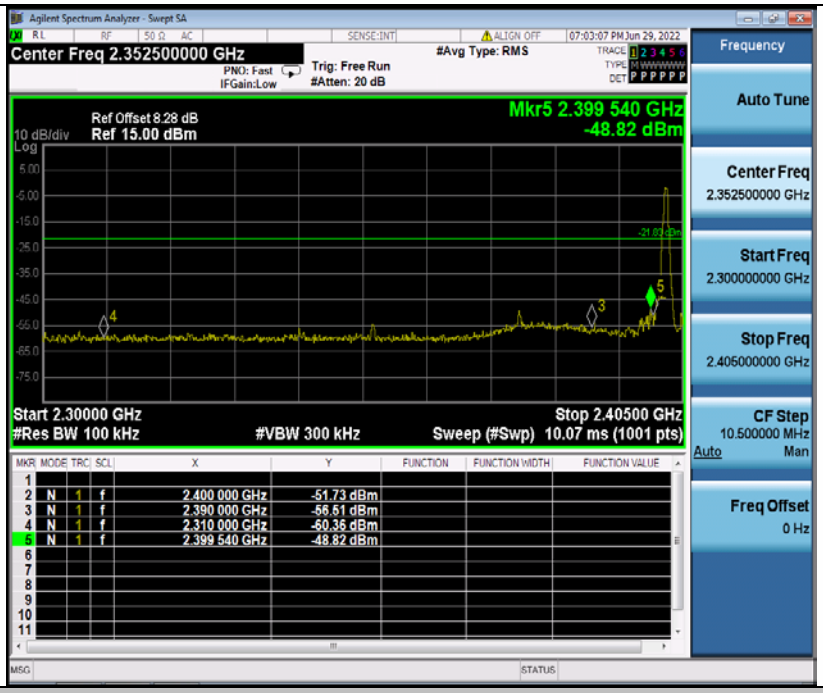
9.6.5 Test Results

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

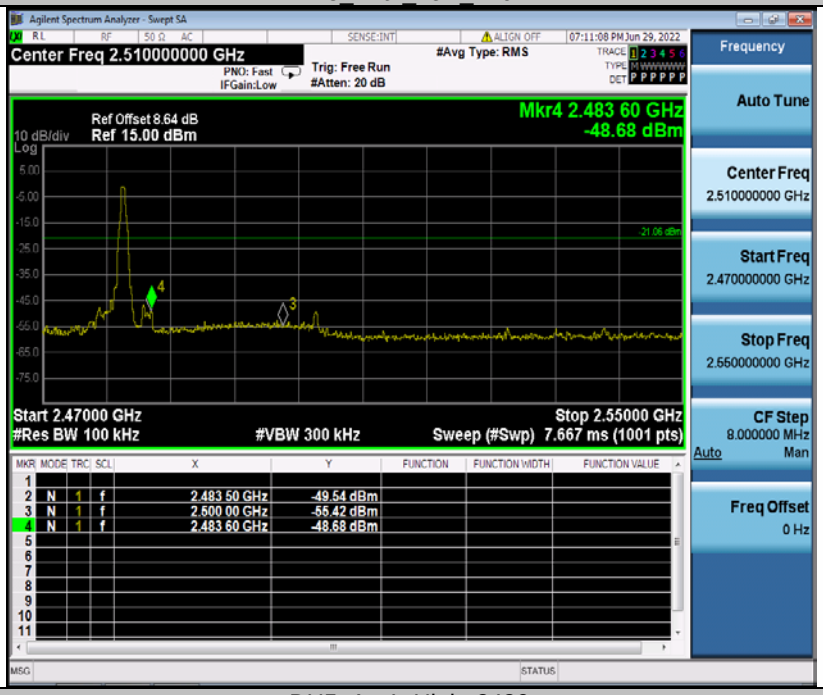
Note: N/A

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

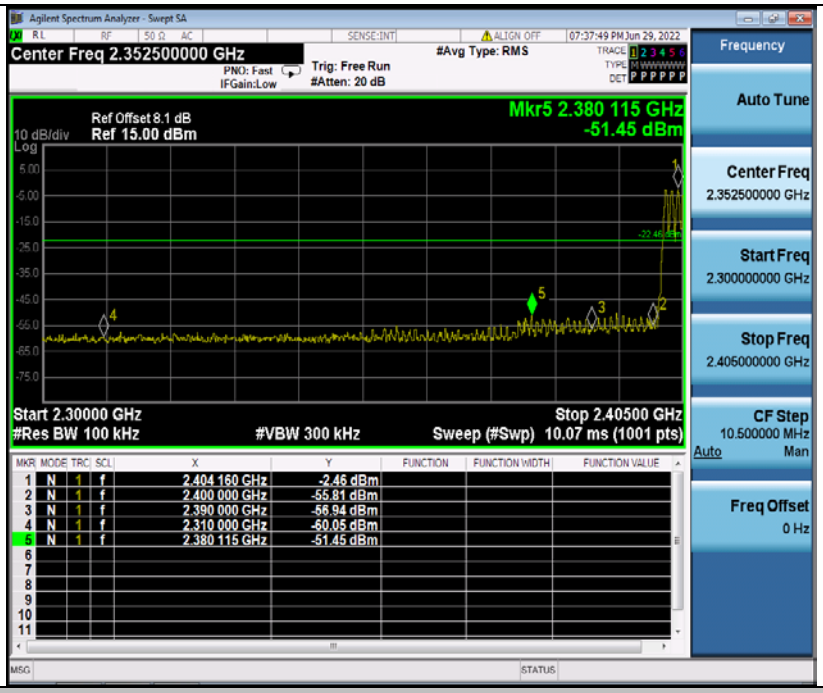
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-1.83	-48.82	≤-21.83	PASS
		High	2480	-1.06	-48.68	≤-21.06	PASS
		Low	Hop_2402	-2.46	-51.46	≤-22.46	PASS
		High	Hop_2480	-1.43	-50.69	≤-21.43	PASS



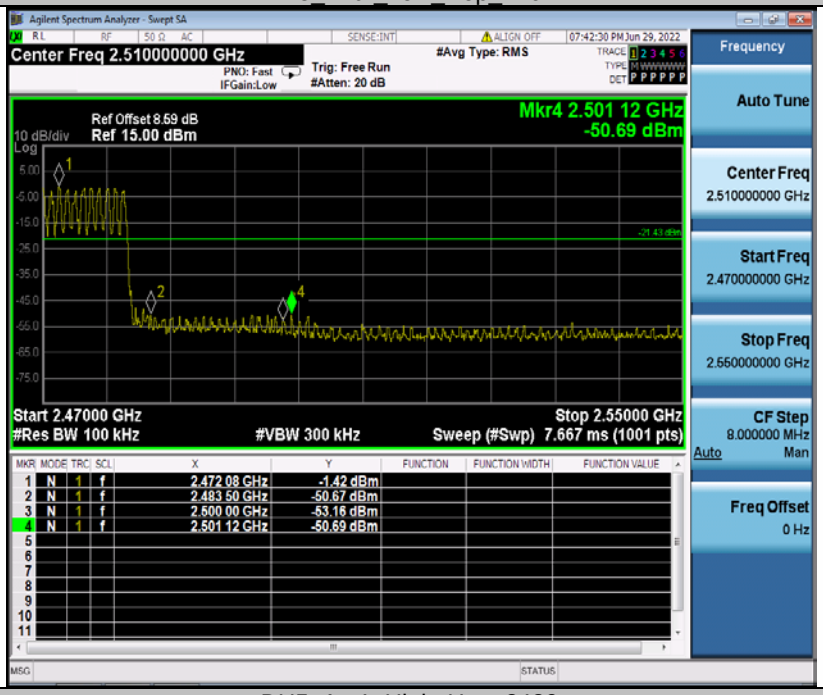
DH5_Ant1_Low_2402



DH5_Ant1_High_2480



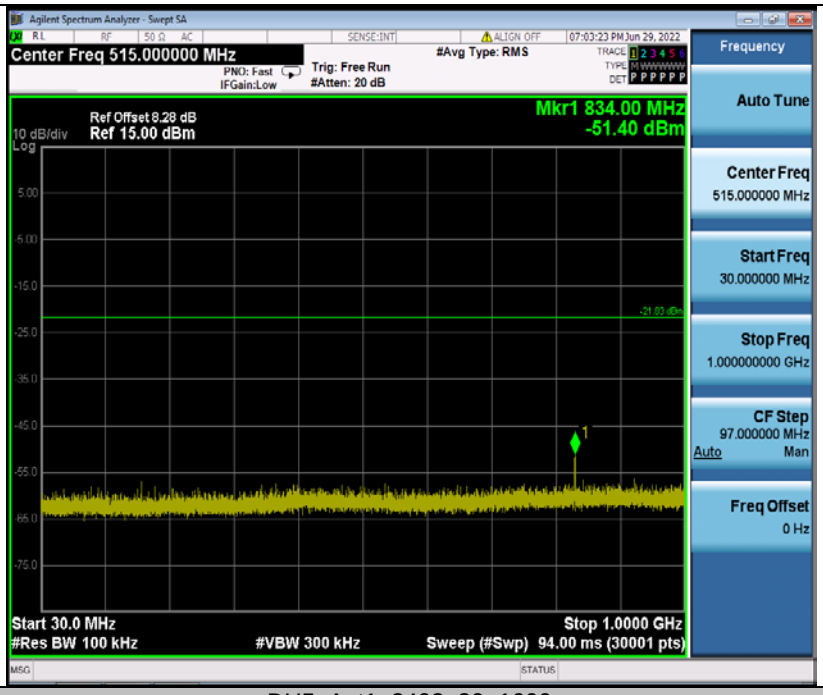
DH5_Ant1_Low_Hop_2402



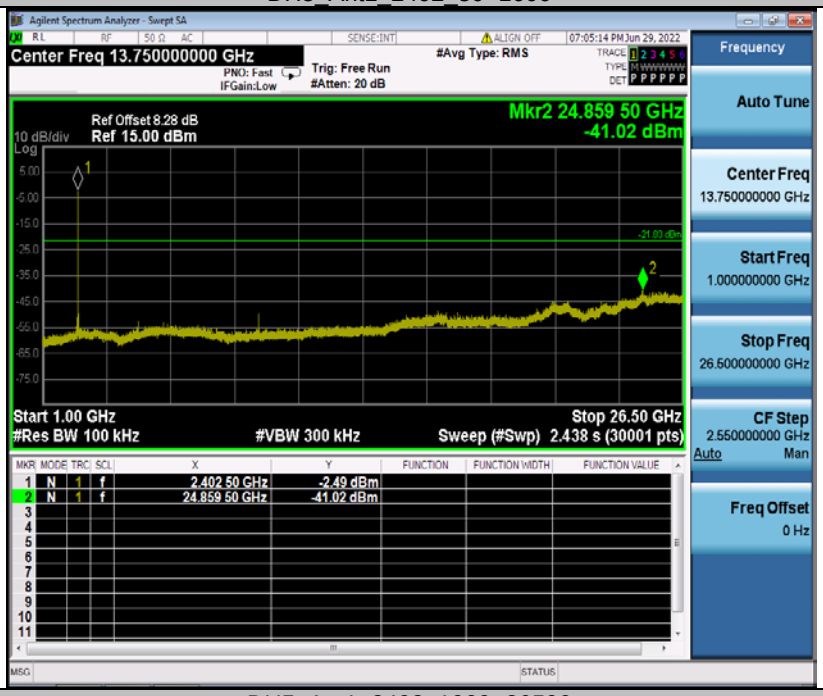
DH5_Ant1_High_Hop_2480

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

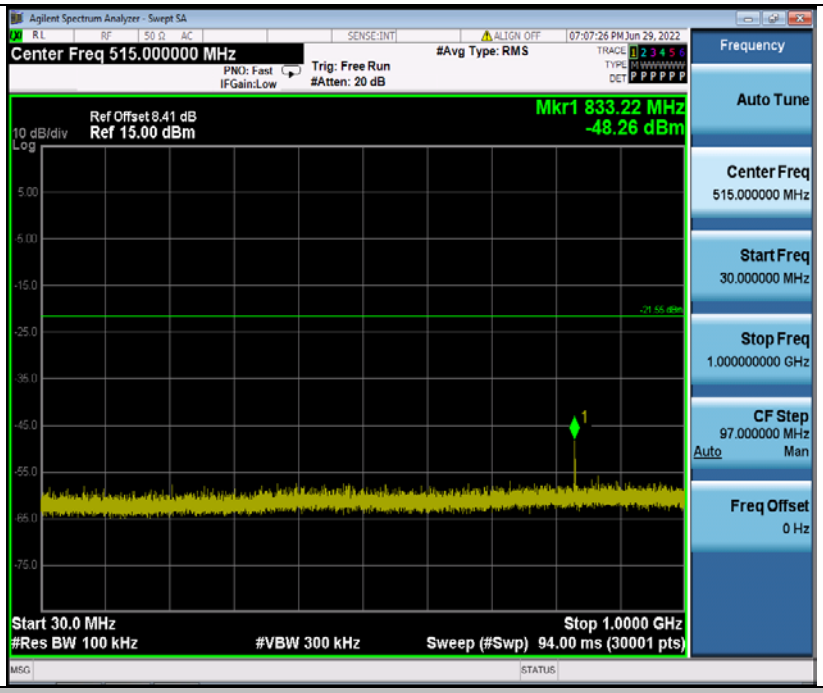
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	30~1000	-1.83	-51.4	≤-21.83	PASS
			1000~26500	-1.83	-41.02	≤-21.83	PASS
		2441	30~1000	-1.55	-48.26	≤-21.55	PASS
			1000~26500	-1.55	-40.89	≤-21.55	PASS
		2480	30~1000	-1.06	-46.09	≤-21.06	PASS
			1000~26500	-1.06	-40.38	≤-21.06	PASS



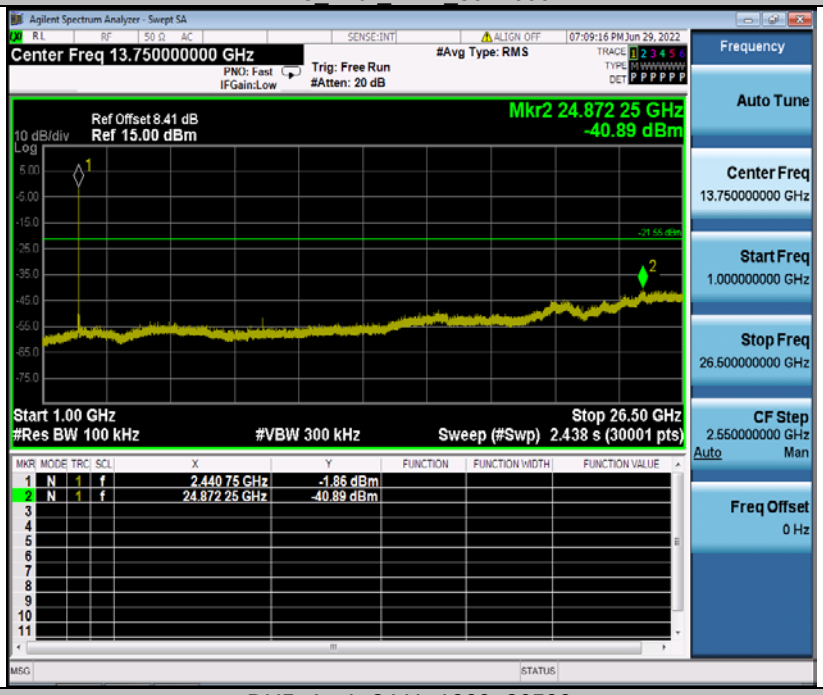
DH5_Ant1_2402_30~1000



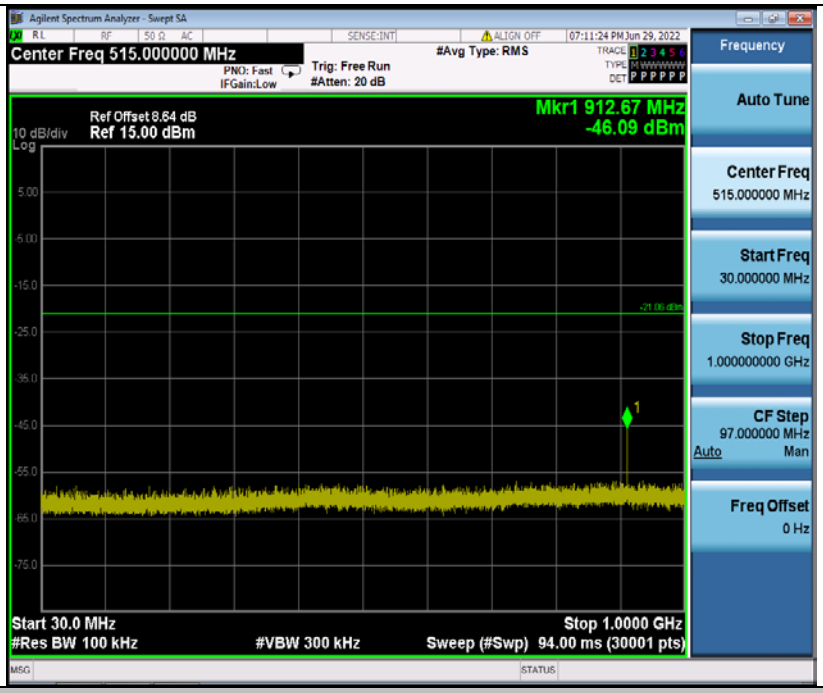
DH5_Ant1_2402_1000~26500



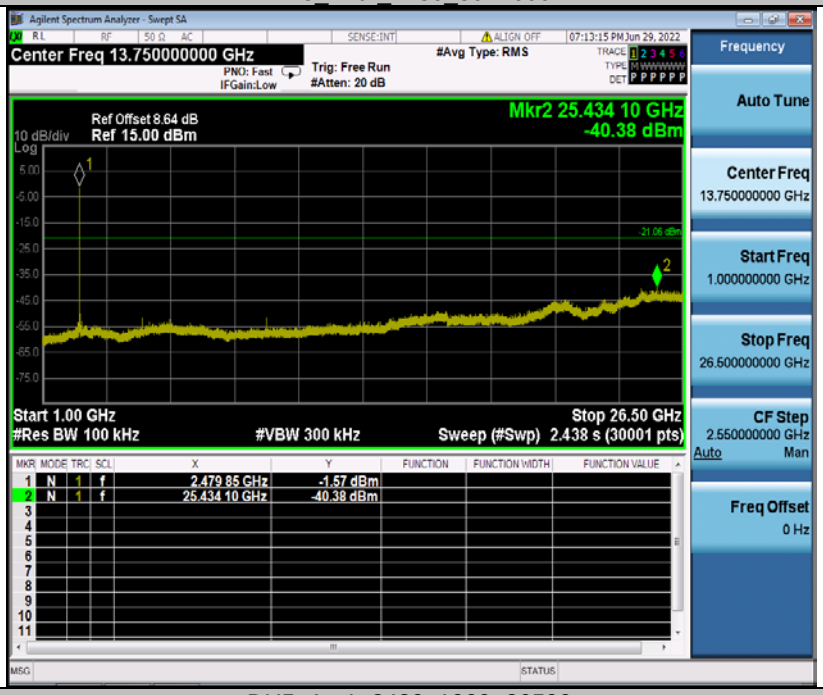
DH5_Ant1_2441_30~1000



DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500

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. H/V	Emission Level(dBuV/m) PK	Emission Level(dBuV/m) AV	Limit 3m(dBuV/m) PK	Limit 3m(dBuV/m) AV	Over(dB) PK	Over(dB) 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,GFSK) resultrecorded was report as below:

Test mode:	GFSK	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
6353.277	V	45.18	26.00	74.00	54.00	-28.82	-28.00
9361.164	V	52.87	34.55	74.00	54.00	-21.13	-19.45
17865.23	V	63.54	45.71	74.00	54.00	-10.46	-8.29
5406.184	H	44.42	26.45	74.00	54.00	-29.58	-27.55
10046.65	H	55.98	38.88	74.00	54.00	-18.02	-15.12
17893.66	H	63.34	45.77	74.00	54.00	-10.66	-8.23

Test mode:	GFSK	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
6280.247	V	46.00	28.91	74.00	54.00	-28.00	-25.09
11141.92	V	56.19	38.55	74.00	54.00	-17.81	-15.45
17935.08	V	63.84	45.15	74.00	54.00	-10.16	-8.85
6155.348	H	45.20	27.53	74.00	54.00	-28.80	-26.47
12713.44	H	57.61	38.66	74.00	54.00	-16.39	-15.34
17971.40	H	63.59	45.79	74.00	54.00	-10.41	-8.21

Test mode:	GFSK	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
6610.858	V	46.39	28.34	74.00	54.00	-27.61	-25.66
10790.12	V	55.76	38.53	74.00	54.00	-18.24	-15.47
17922.12	V	62.85	44.77	74.00	54.00	-11.15	-9.23
5446.965	H	44.54	26.51	74.00	54.00	-29.46	-27.49
11146.75	H	55.36	38.26	74.00	54.00	-18.64	-15.74
17836.86	H	63.50	45.41	74.00	54.00	-10.50	-8.59

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,GFSK, Hopping) resultrecorded was report as below:

Test mode:	GFSK	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)
2383.824	H	50.22	74.00	33.11	54.00
2388.332	V	49.51	74.00	32.22	54.00

Test mode:	GFSK	Frequency:	Channel 78: 2480MHz

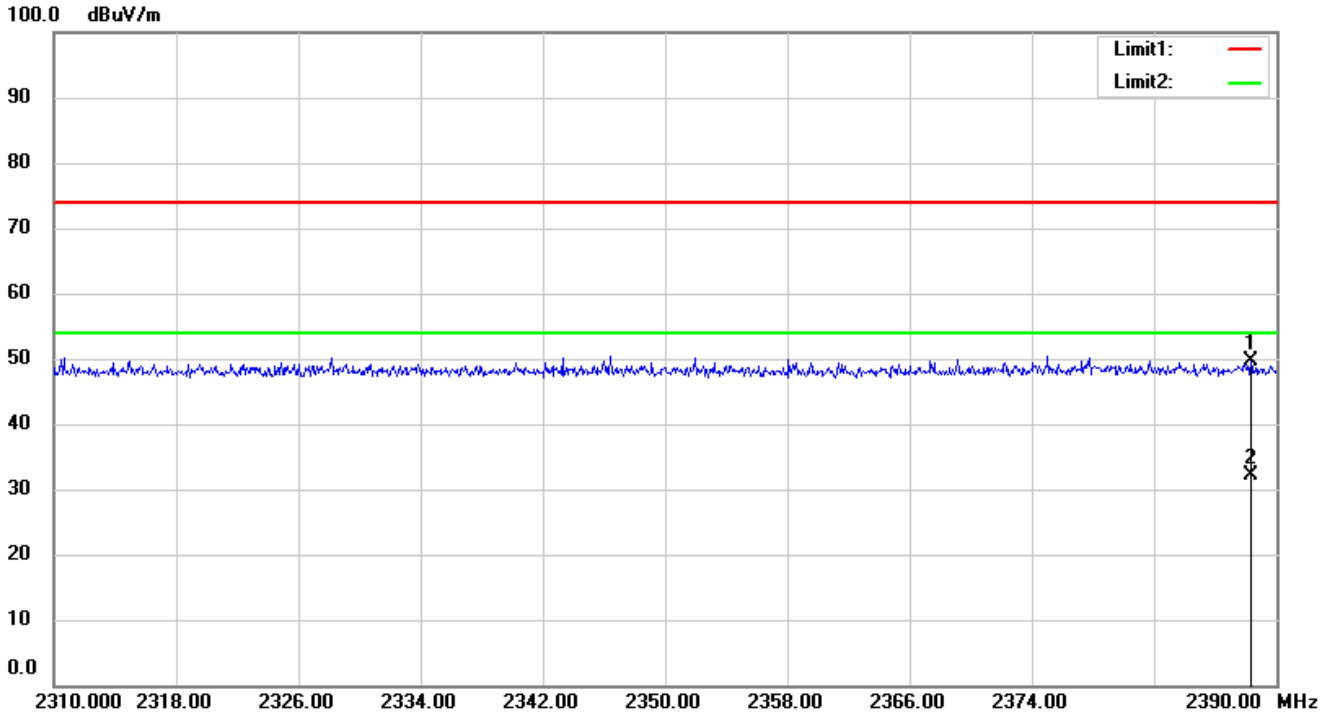
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2483.837	H	49.67	74.00	31.55	54.00
2484.469	V	49.62	74.00	31.27	54.00

Test mode:	GFSK	Frequency:	Hopping

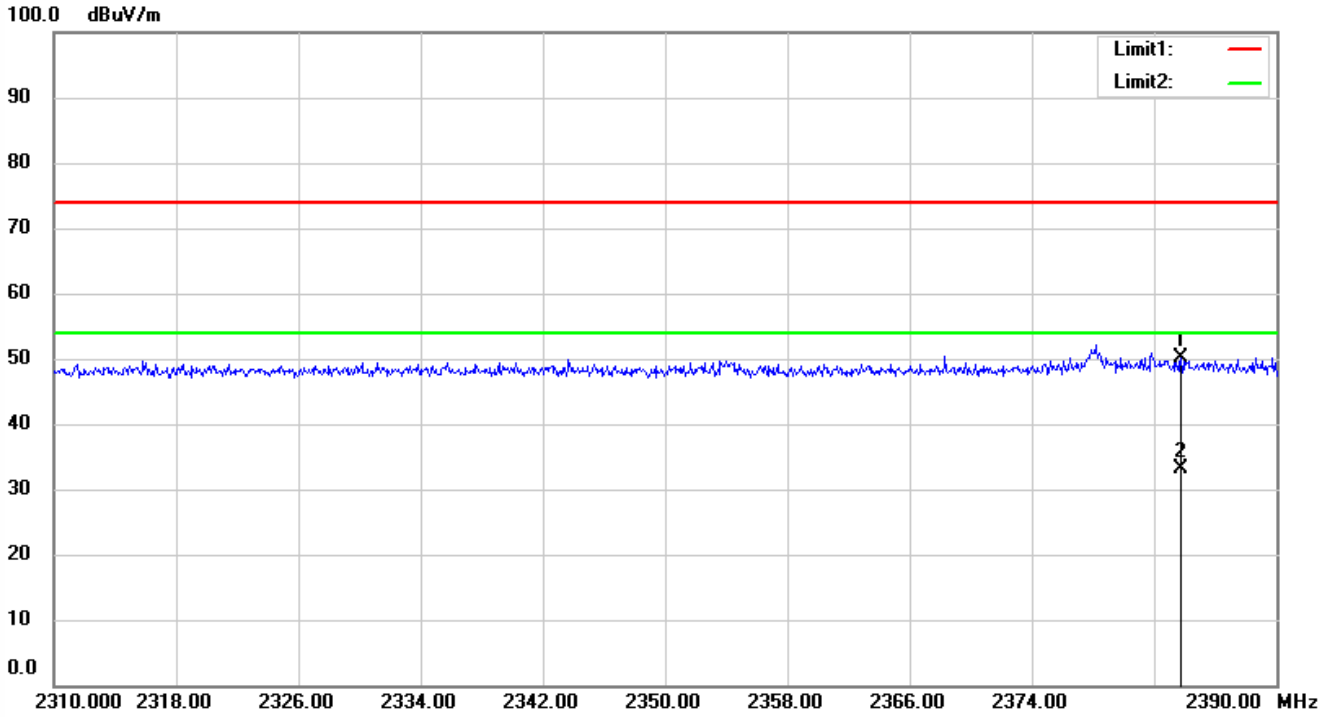
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2400.0	H	49.49	74.00	31.44	54.00
2483.5	H	51.29	74.00	33.25	54.00
2400.0	V	48.15	74.00	30.26	54.00
2483.5	V	48.58	74.00	30.55	54.00

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.

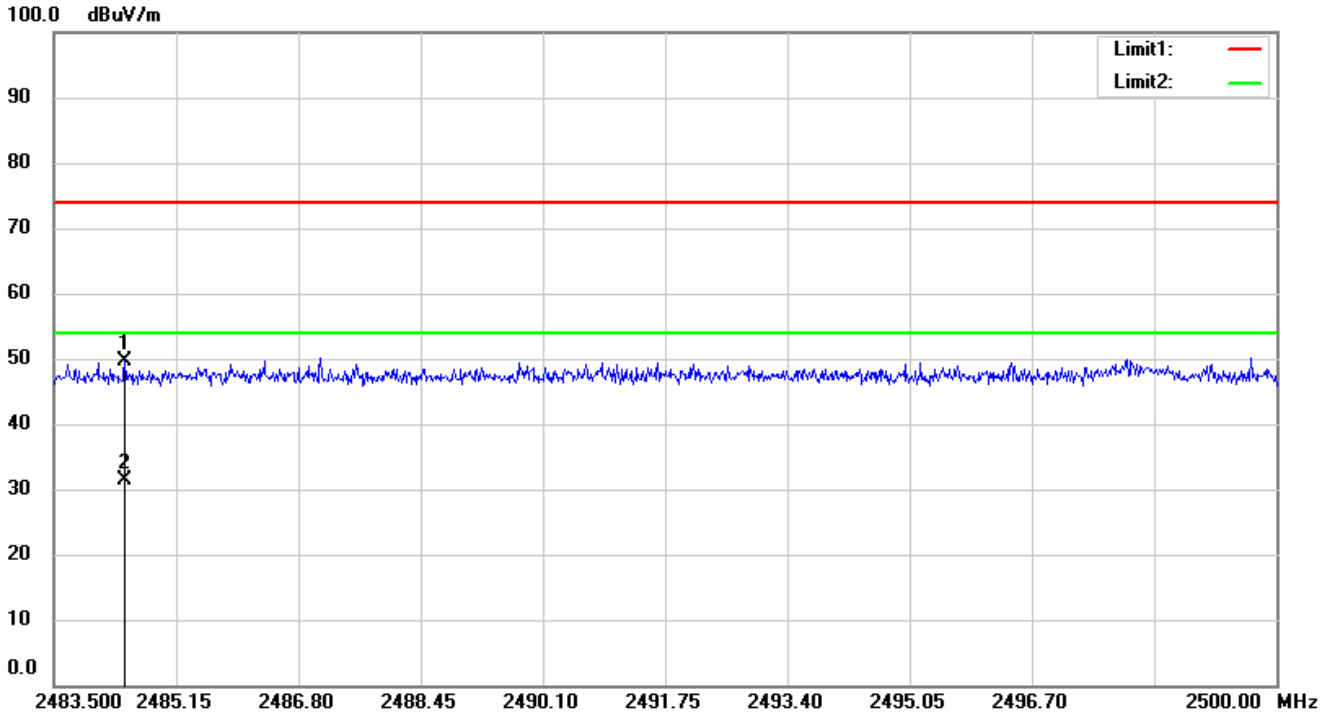
Test Model	Spurious Emission in Restricted Band 2310-2390MHz		
	Channel 0: 2402MHz	GFSK	V



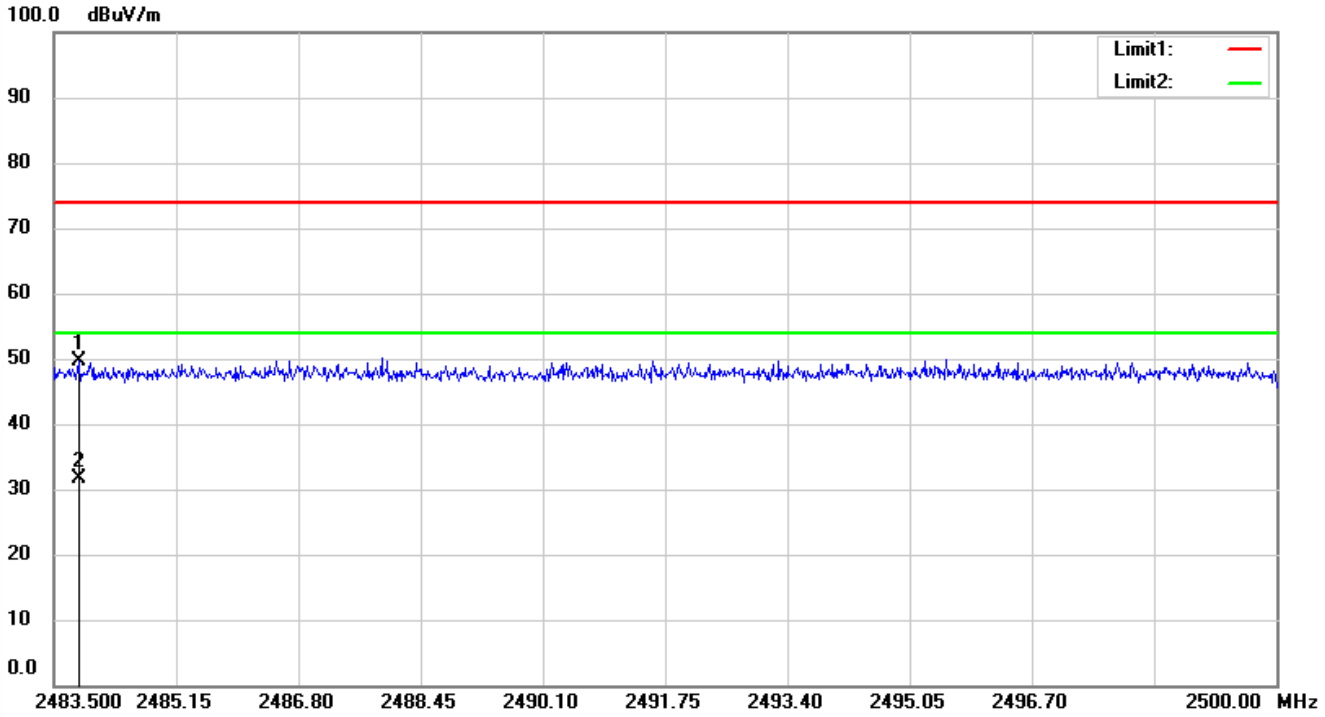
Test Model	Spurious Emission in Restricted Band 2310-2390MHz		
	Channel 0: 2402MHz	GFSK	H



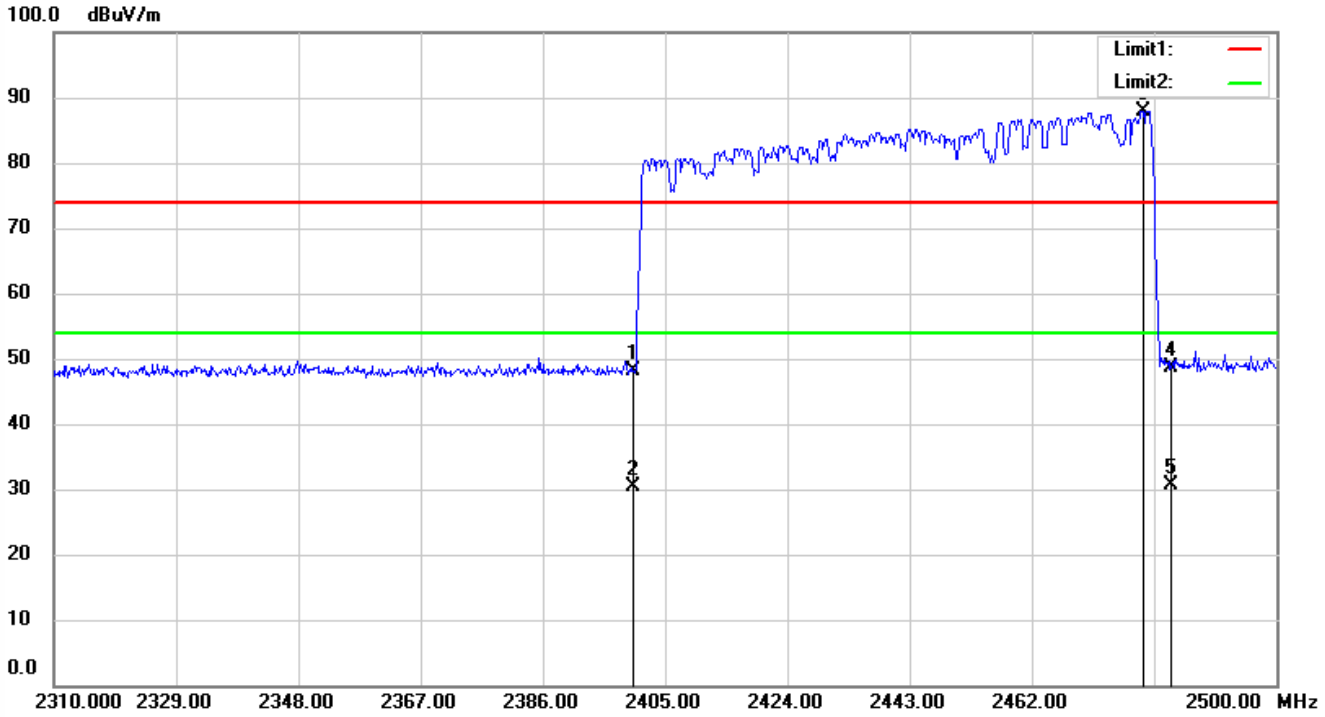
Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz Channel 78: 2480MHz GFSK V



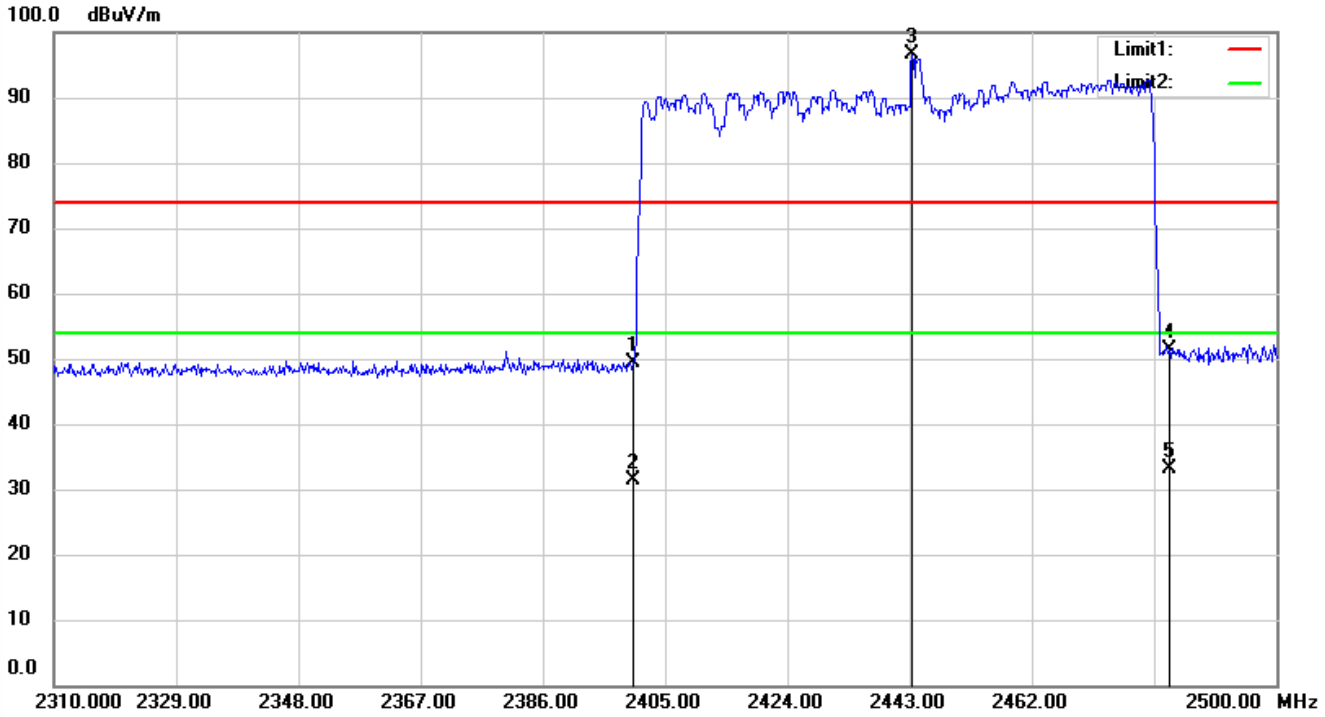
Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz Channel 78: 2480MHz GFSK H



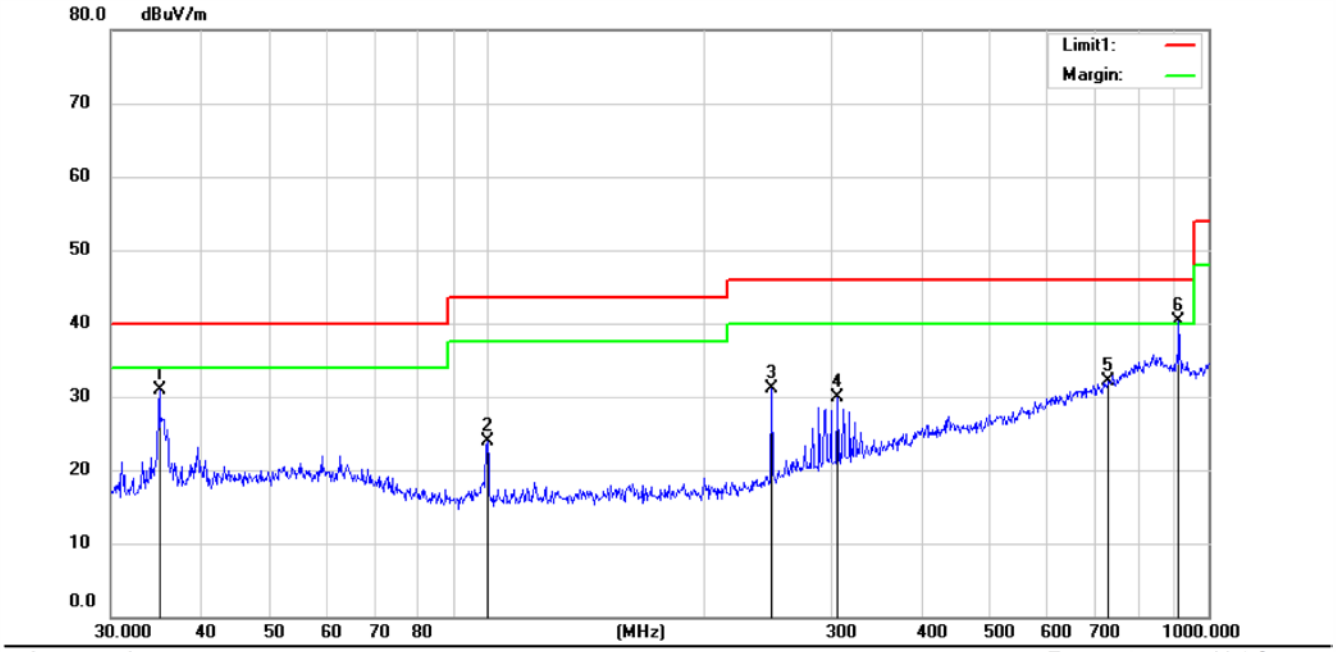
Test Model	Spurious Emission in Restricted Band2310-2390MHz and 2400-2483.5MHz		
Hopping		GFSK	V



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



- 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,GFSK) resultrecorded was report as below:



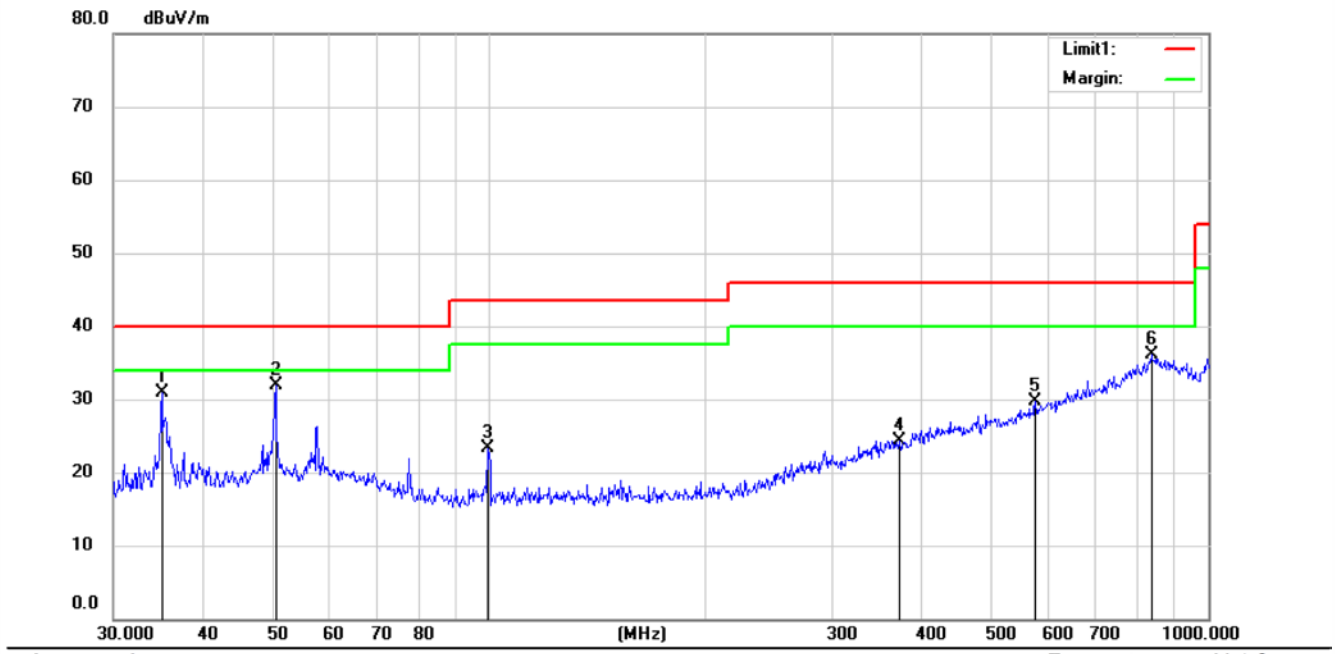
Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 43 %

Mode:BT 2402

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.0048	40.03	-9.20	30.83	40.00	-9.17	QP			
2		99.9653	34.26	-10.43	23.83	43.50	-19.67	QP			
3		247.7905	38.46	-7.36	31.10	46.00	-14.90	QP			
4		306.0822	35.05	-5.20	29.85	46.00	-16.15	QP			
5		727.1240	28.53	3.51	32.04	46.00	-13.96	QP			
6	*	911.2630	35.06	5.34	40.40	46.00	-5.60	QP			



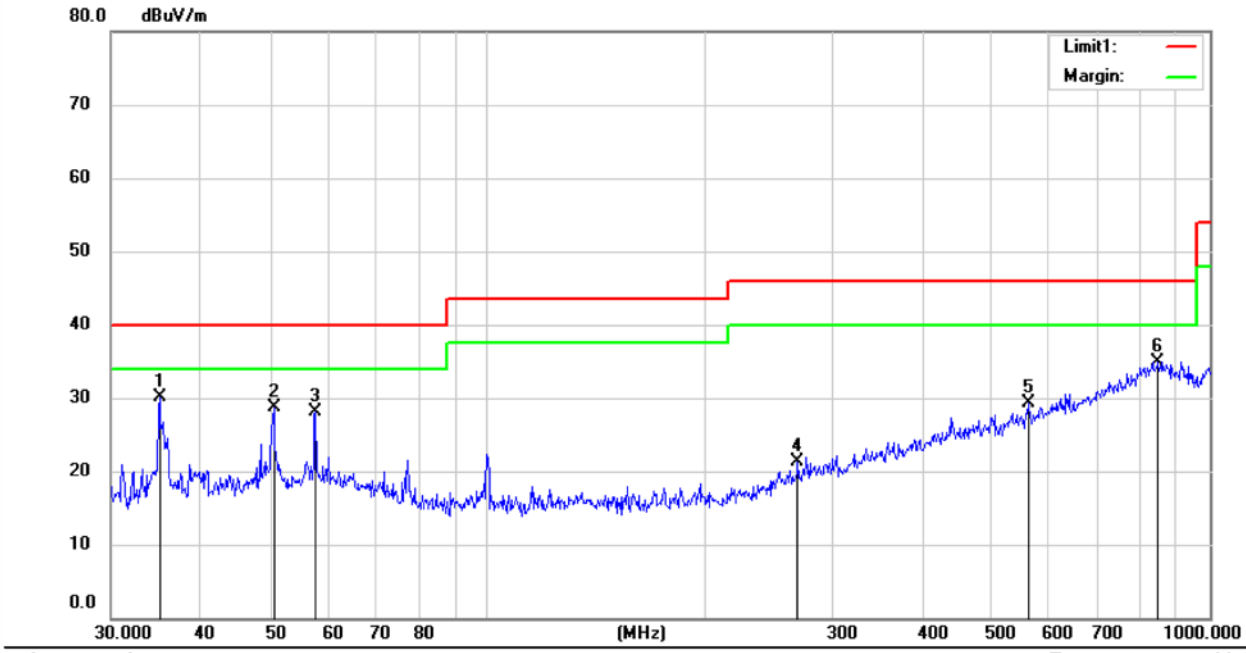
Site 3m Chamber #1 Polarization: *Vertical* Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 43 %

Mode:BT 2402

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.0355	40.12	-9.19	30.93	40.00	-9.07	QP			
2	*	50.4310	39.42	-7.49	31.93	40.00	-8.07	QP			
3		99.8340	33.73	-10.42	23.31	43.50	-20.19	QP			
4		373.1477	27.77	-3.38	24.39	46.00	-21.61	QP			
5		575.6342	29.32	0.36	29.68	46.00	-16.32	QP			
6		834.7794	29.57	6.44	36.01	46.00	-9.99	QP			



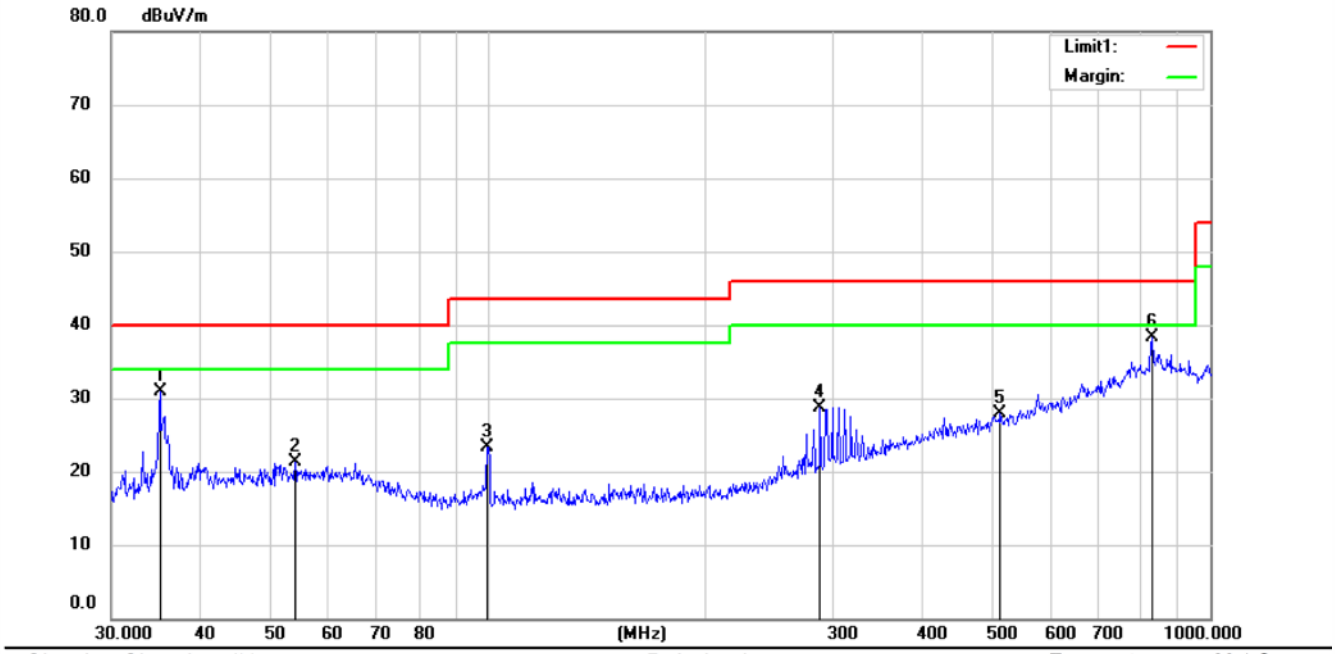
Site 3m Chamber #1 Polarization: *Vertical* Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 43 %

Mode:BT 2441

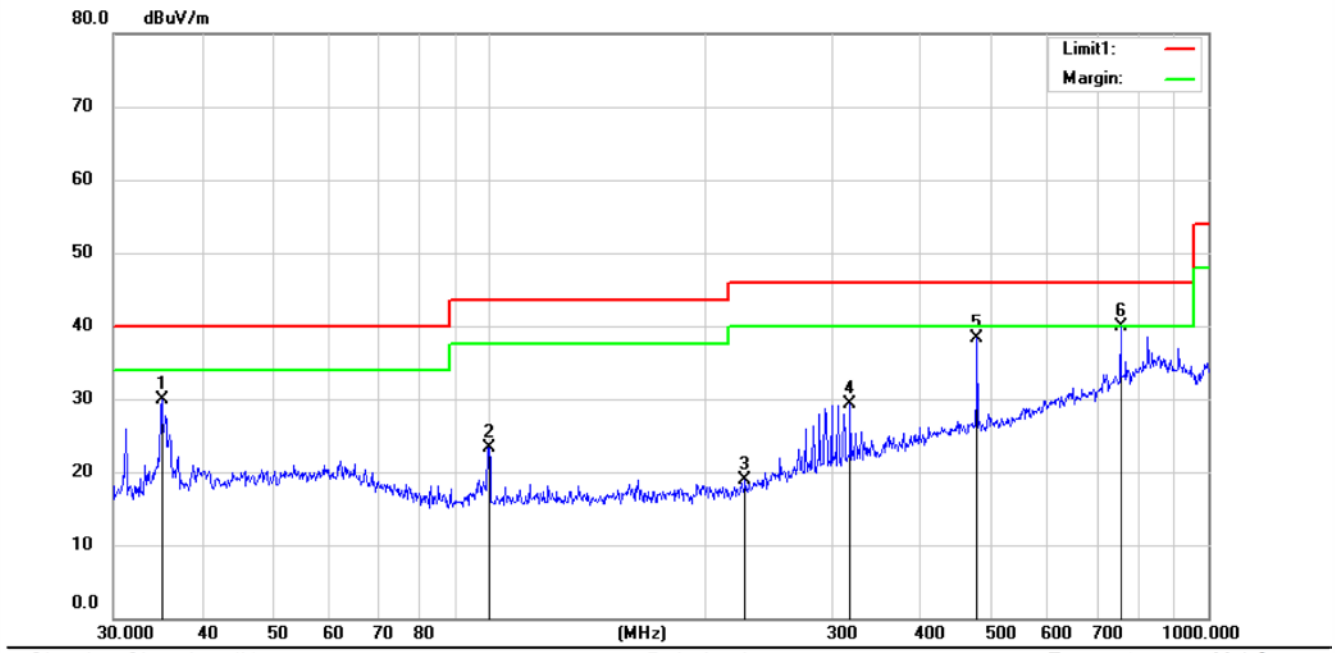
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	35.0048	39.27	-9.20	30.07	40.00	-9.93	QP			
2		50.4310	36.14	-7.49	28.65	40.00	-11.35	QP			
3		57.5940	35.70	-7.58	28.12	40.00	-11.88	QP			
4		268.8386	27.67	-6.33	21.34	46.00	-24.66	QP			
5		561.9230	29.25	0.07	29.32	46.00	-16.68	QP			
6		849.5445	28.18	6.73	34.91	46.00	-11.09	QP			



Site 3m Chamber #1
Polarization: *Horizontal*
Temperature: 28.1 C
Limit: (RE)FCC PART 15 CLASS B
Power: AC 120V/60Hz
Humidity: 43 %
Mode:BT 2441
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.0355	40.00	-9.19	30.81	40.00	-9.19	QP			
2		53.9527	28.83	-7.47	21.36	40.00	-18.64	QP			
3		99.7902	33.66	-10.42	23.24	43.50	-20.26	QP			
4		287.9904	34.28	-5.49	28.79	46.00	-17.21	QP			
5		513.4081	29.14	-1.22	27.92	46.00	-18.08	QP			
6	*	830.4002	32.03	6.37	38.40	46.00	-7.60	QP			



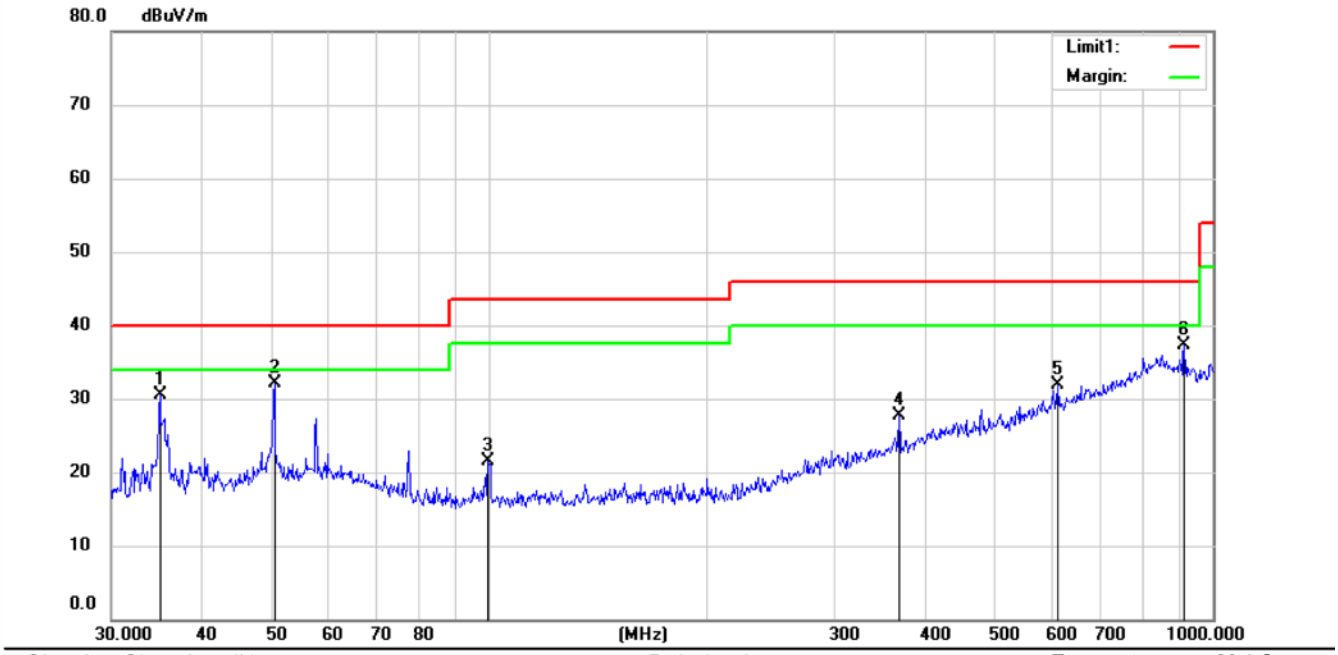
Site 3m Chamber #1 Polarization: *Horizontal* Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 43 %

Mode:BT 2480

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.0355	39.15	-9.19	29.96	40.00	-10.04	QP			
2		99.9215	33.81	-10.43	23.38	43.50	-20.12	QP			
3		227.2918	27.45	-8.57	18.88	46.00	-27.12	QP			
4		317.9796	34.05	-4.78	29.27	46.00	-16.73	QP			
5		477.3786	40.09	-1.79	38.30	46.00	-7.70	QP			
6	*	755.7185	35.80	4.11	39.91	46.00	-6.09	QP			



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 43 %

Mode: BT 2480

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		35.0355	39.64	-9.19	30.45	40.00	-9.55	QP			
2	*	50.4310	39.60	-7.49	32.11	40.00	-7.89	QP			
3		99.7902	31.97	-10.42	21.55	43.50	-21.95	QP			
4		368.5960	31.12	-3.44	27.68	46.00	-18.32	QP			
5		611.5280	30.87	1.08	31.95	46.00	-14.05	QP			
6		913.6627	31.95	5.31	37.26	46.00	-8.74	QP			

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

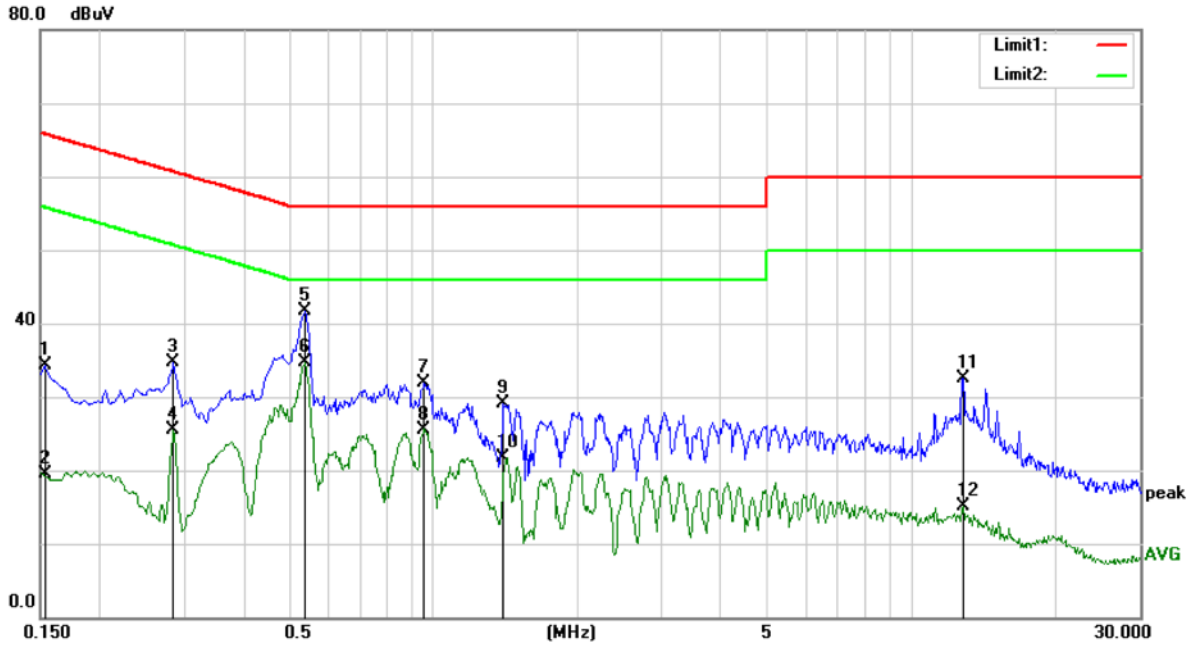
9.8.4 Test Procedure

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:



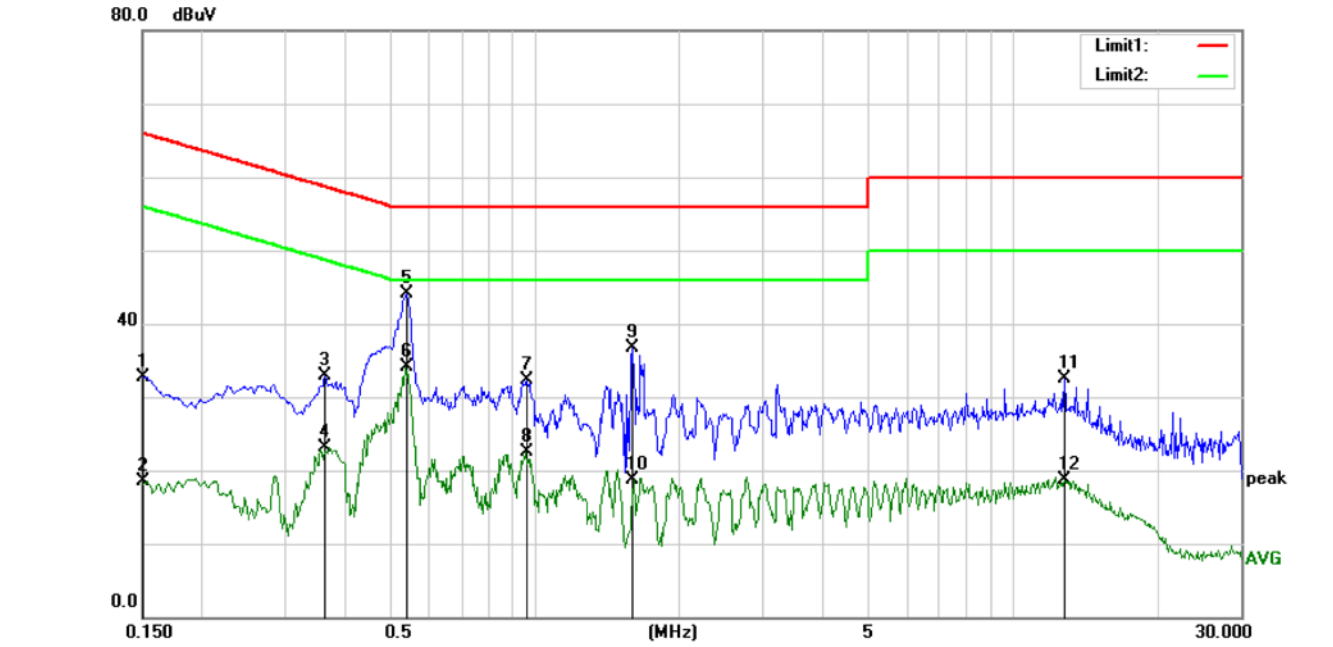
Site Conduction #2 Phase: N Temperature: 25.1

Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 45 %

Mode: BT mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1540	24.19	10.09	34.28	65.78	-31.50	QP	
2		0.1540	9.34	10.09	19.43	55.78	-36.35	AVG	
3		0.2860	24.52	10.09	34.61	60.64	-26.03	QP	
4		0.2860	15.44	10.09	25.53	50.64	-25.11	AVG	
5		0.5380	31.66	10.11	41.77	56.00	-14.23	QP	
6	*	0.5380	24.66	10.11	34.77	46.00	-11.23	AVG	
7		0.9540	21.67	10.17	31.84	56.00	-24.16	QP	
8		0.9540	15.43	10.17	25.60	46.00	-20.40	AVG	
9		1.4020	18.87	10.14	29.01	56.00	-26.99	QP	
10		1.4020	11.60	10.14	21.74	46.00	-24.26	AVG	
11		12.8100	21.94	10.49	32.43	60.00	-27.57	QP	
12		12.8100	4.57	10.49	15.06	50.00	-34.94	AVG	



Site Conduction #2 Phase: *L1* Temperature: 25.1

Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 45 %

Mode: BT mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	22.64	10.09	32.73	66.00	-33.27	QP	
2		0.1500	8.41	10.09	18.50	56.00	-37.50	AVG	
3		0.3620	22.84	10.10	32.94	58.68	-25.74	QP	
4		0.3620	13.08	10.10	23.18	48.68	-25.50	AVG	
5		0.5380	33.92	10.11	44.03	56.00	-11.97	QP	
6	*	0.5380	24.03	10.11	34.14	46.00	-11.86	AVG	
7		0.9620	22.04	10.18	32.22	56.00	-23.78	QP	
8		0.9620	12.32	10.18	22.50	46.00	-23.50	AVG	
9		1.5940	26.50	10.15	36.65	56.00	-19.35	QP	
10		1.5940	8.51	10.15	18.66	46.00	-27.34	AVG	
11		12.8140	22.08	10.49	32.57	60.00	-27.43	QP	
12		12.8140	8.15	10.49	18.64	50.00	-31.36	AVG	

9.9 ANTENNA APPLICATION

9.9.1 Antenna Requirement

Standard	Requirement
FCC CRF Part15.203	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 documentInternal 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 ***