

8.5 RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and KDB 558074 DTS 01 Meas. Guidance v03r02

8.5.2 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 Part 15.205, 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 Part 15.205, 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	2400/F(KHz)	20 log (uV/m)	30
1.705~30.0	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

Remark: 1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. Distance extrapolation factor =40log(Specific distance/ test distance)(dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor.

for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

8.5.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 2

8.5.4 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 $\geq$ RBW for peak measurement

VBW = 10Hz for Average measurement

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

VBW $\geq$ 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 $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

8.5.5 Test Results

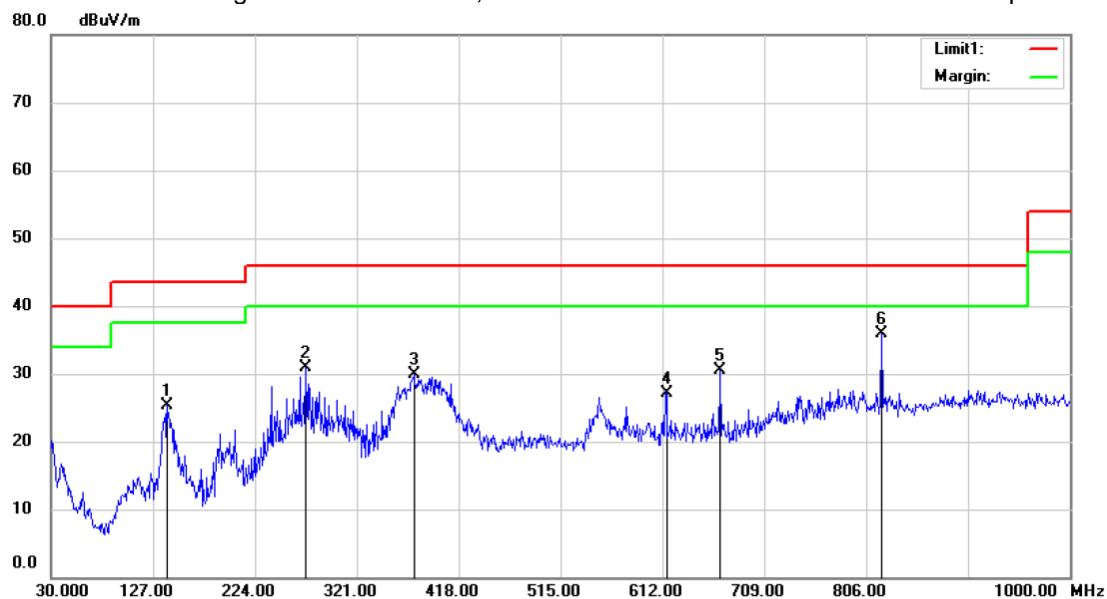
■ Spurious Emission below 30MHz (9KHz to 30MHz)

Test mode: TX Mode

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
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■ Spurious Emission Below 1GHz (30MHz to GHz)

All modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11b recorded was report as below:

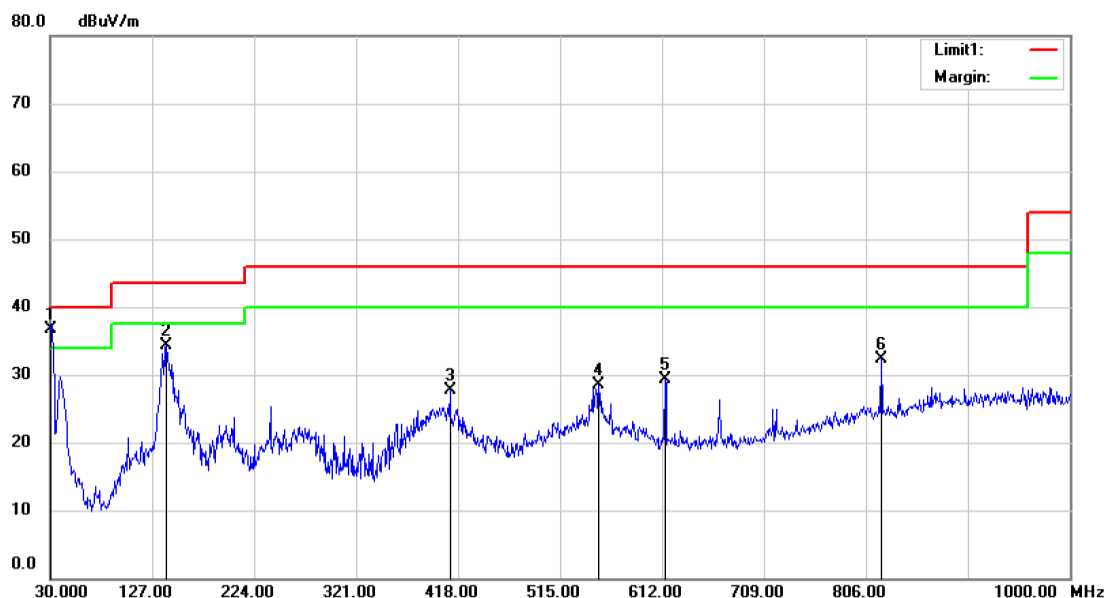


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH01
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		140.5800	43.15	-17.80	25.35	43.50	-18.15	QP		
2		272.5000	43.50	-12.65	30.85	46.00	-15.15	QP		
3		375.3200	40.13	-10.17	29.96	46.00	-16.04	QP		
4		615.8800	34.03	-6.83	27.20	46.00	-18.80	QP		
5		667.2900	36.80	-6.30	30.50	46.00	-15.50	QP		
6	*	820.5500	38.34	-2.41	35.93	46.00	-10.07	QP		

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

Operator: KK



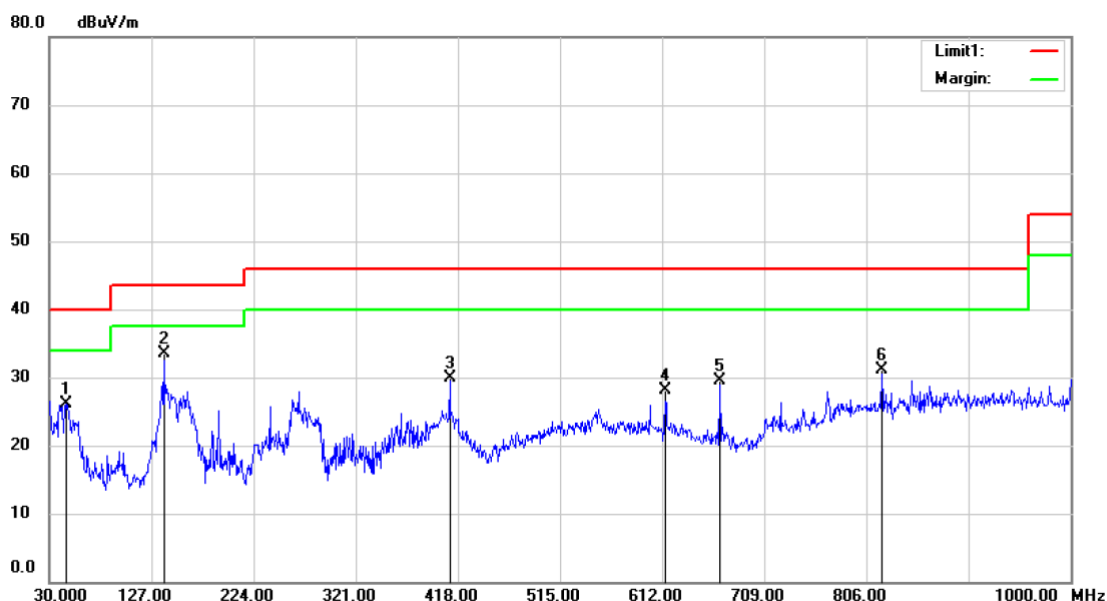
Site site #1
Limit: (RE)FCC PART 15 CLASS B
Mode:802.11b TX CH01
Note:

Polarization: **Vertical**
Power: AC 120V/60Hz
Temperature: 24 C
Humidity: 53 %

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	30.9700	52.97	-16.27	36.70	40.00	-3.30	QP		
2		140.5800	52.08	-17.80	34.28	43.50	-9.22	QP		
3		410.2400	36.89	-9.16	27.73	46.00	-18.27	QP		
4		551.8600	35.95	-7.38	28.57	46.00	-17.43	QP		
5		614.9100	36.09	-6.85	29.24	46.00	-16.76	QP		
6		820.5500	34.80	-2.41	32.39	46.00	-13.61	QP		

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

Operator: KK



Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH06
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	
1		45.5200	39.29	-13.27	26.02	40.00	-13.98	QP		
2	*	138.6400	51.21	-17.70	33.51	43.50	-9.99	QP		
3		410.2400	39.08	-9.16	29.92	46.00	-16.08	QP		
4		614.9100	34.92	-6.85	28.07	46.00	-17.93	QP		
5		667.2900	35.71	-6.30	29.41	46.00	-16.59	QP		
6		820.5500	33.43	-2.41	31.02	46.00	-14.98	QP		

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

Operator: KK



Site site #1

Polarization: **Vertical**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

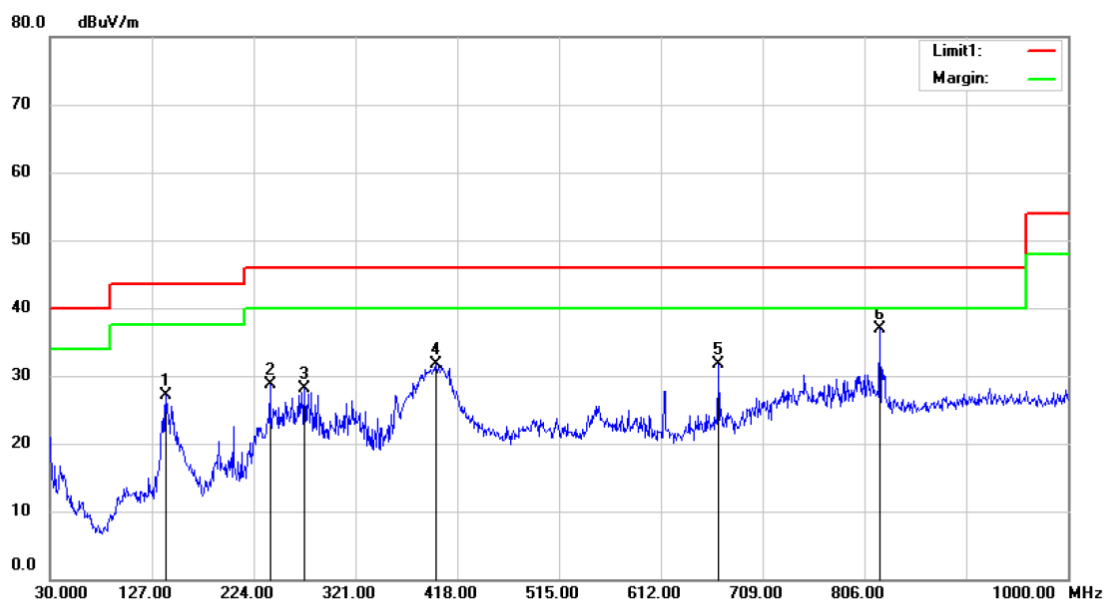
Mode:802.11b TX CH06

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	31.9400	52.58	-16.08	36.50	40.00	-3.50	QP		
2		138.6400	53.01	-17.70	35.31	43.50	-8.19	QP		
3		410.2400	37.87	-9.16	28.71	46.00	-17.29	QP		
4		551.8600	35.48	-7.38	28.10	46.00	-17.90	QP		
5		600.3600	41.62	-6.99	34.63	46.00	-11.37	QP		
6		820.5500	34.40	-2.41	31.99	46.00	-14.01	QP		

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

Operator: KK

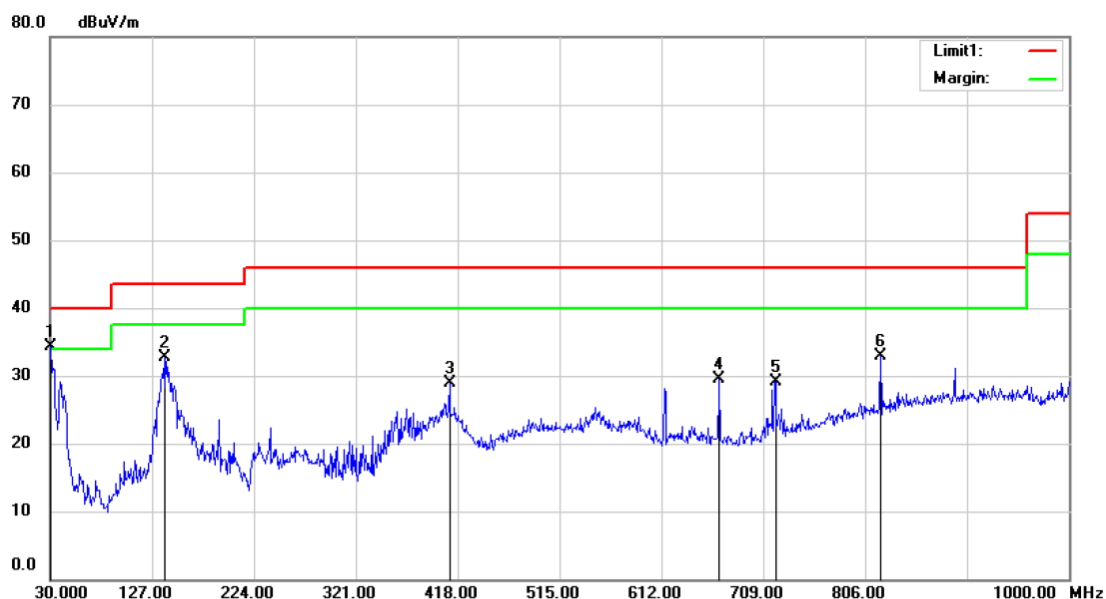


Site site #1 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:802.11b TX CH11
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		140.5800	44.86	-17.80	27.06	43.50	-16.44	QP		
2		239.5200	42.65	-13.89	28.76	46.00	-17.24	QP		
3		272.5000	40.76	-12.65	28.11	46.00	-17.89	QP		
4		397.6300	40.71	-9.00	31.71	46.00	-14.29	QP		
5		667.2900	38.07	-6.30	31.77	46.00	-14.23	QP		
6	*	820.5500	39.26	-2.41	36.85	46.00	-9.15	QP		

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

Operator: KK



Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH11
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	30.0000	50.85	-16.46	34.39	40.00	-5.61	QP		
2		138.6400	50.35	-17.70	32.65	43.50	-10.85	QP		
3		410.2400	38.02	-9.16	28.86	46.00	-17.14	QP		
4		667.2900	35.89	-6.30	29.59	46.00	-16.41	QP		
5		720.6400	34.39	-5.33	29.06	46.00	-16.94	QP		
6		820.5500	35.25	-2.41	32.84	46.00	-13.16	QP		

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

Operator: KK

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

All modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11b recorded was report as below:

Temperature:	24℃	Test Date:	May 17, 1015
Humidity:	53 %	Test By:	KING KONG
Test mode:	802.11b	Frequency:	Channel 1: 2412MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
14447.00	V	52.61	36.90	74.00	54.00	-21.39	-17.10
16164.00	V	52.77	37.70	74.00	54.00	-21.23	-16.30
17065.00	V	53.08	38.00	74.00	54.00	-20.92	-16.00
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14209.00	H	53.21	38.20	74.00	54.00	-20.79	-15.80
14940.00	H	52.90	37.60	74.00	54.00	-21.10	-16.40
15280.00	H	52.75	37.50	74.00	54.00	-21.25	-16.50

Test mode:	802.11b	Frequency:	Channel 6: 2437MHz
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Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
15263.00	V	53.49	38.20	74.00	54.00	-20.51	-15.80
16521.00	V	52.85	38.10	74.00	54.00	-21.15	-15.90
16929.00	V	52.29	37.60	74.00	54.00	-21.71	-16.40
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
14940.00	H	52.97	36.70	74.00	54.00	-21.03	-17.30
16351.00	H	52.06	36.70	74.00	54.00	-21.94	-17.30
16606.00	H	52.20	37.30	74.00	54.00	-21.80	-16.70

Test mode:	802.11b	Frequency:	Channel 11: 2462MHz
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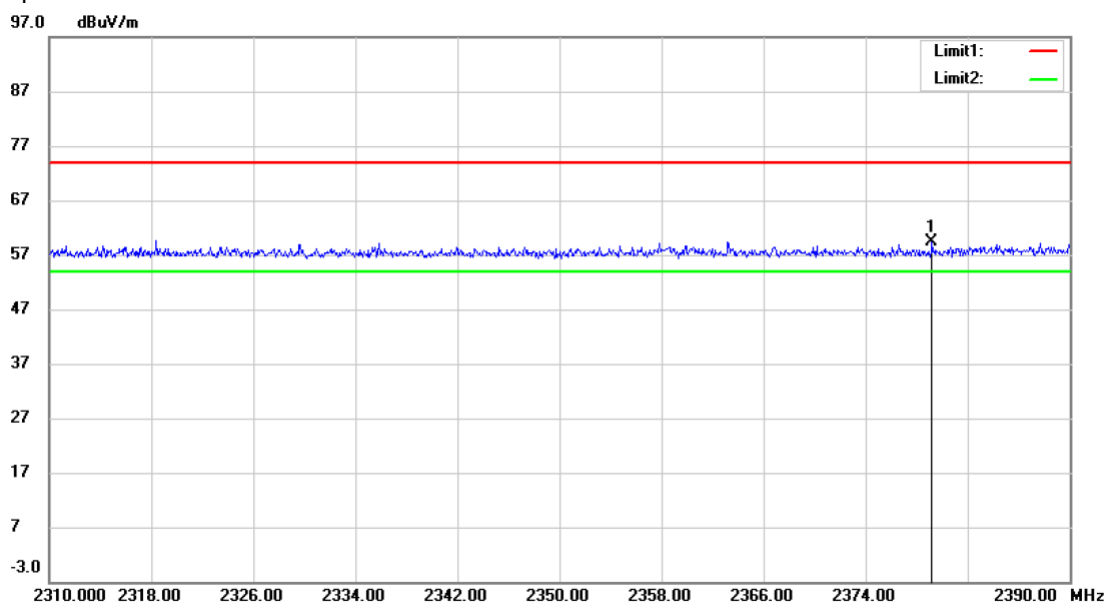
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
16419.00	V	52.20	37.20	74.00	54.00	-21.80	-16.80
16776.00	V	52.30	37.20	74.00	54.00	-21.70	-16.80
17286.00	V	52.12	36.40	74.00	54.00	-21.88	-17.60
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
14294.00	H	52.45	36.90	74.00	54.00	-21.55	-17.10
16776.00	H	52.14	37.70	74.00	54.00	-21.86	-16.30
17813.00	H	52.78	37.20	74.00	54.00	-21.22	-16.80

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).

(2) Emission Level= Reading Level+Probe Factor +Cable Loss.

(3) Data of measurement within this frequency range shown " -- " in the table above means 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

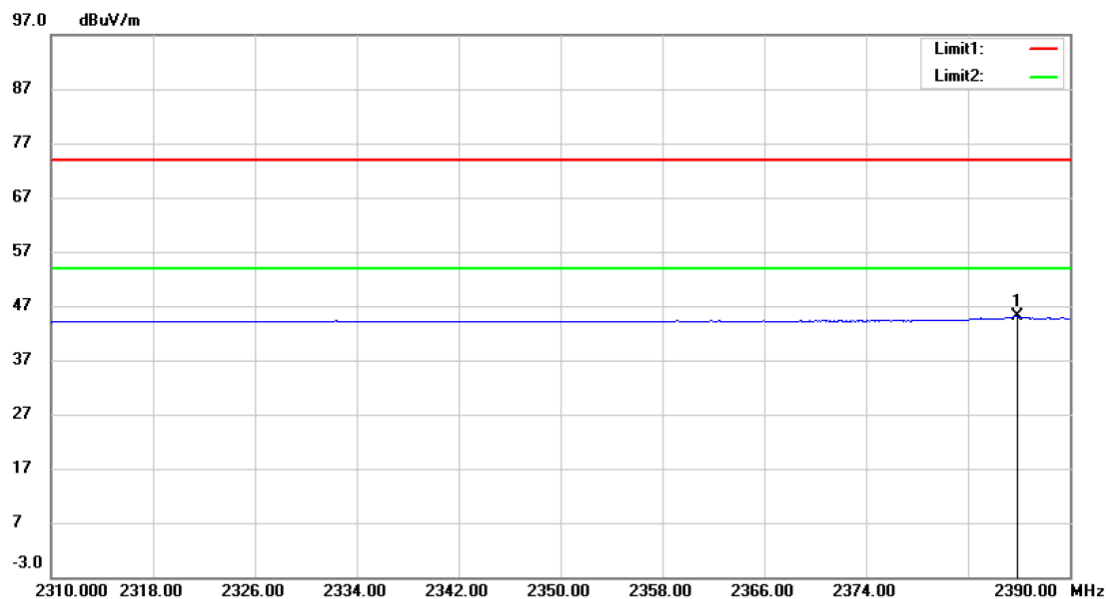


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH1
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table
		MHz	Level	Factor	ment			Height	Degree
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1	*	2379.200	28.20	31.06	59.26	74.00	-14.74	peak	

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

Operator: KK

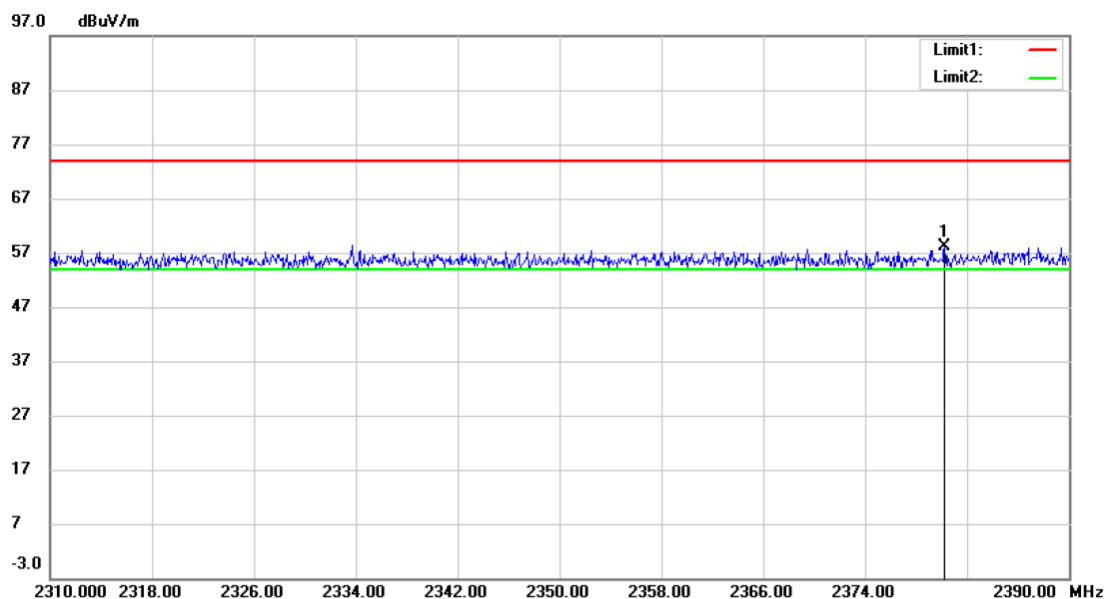


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2385.840	13.98	31.09	45.07	54.00	-8.93	AVG		Comment

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

Operator: KK

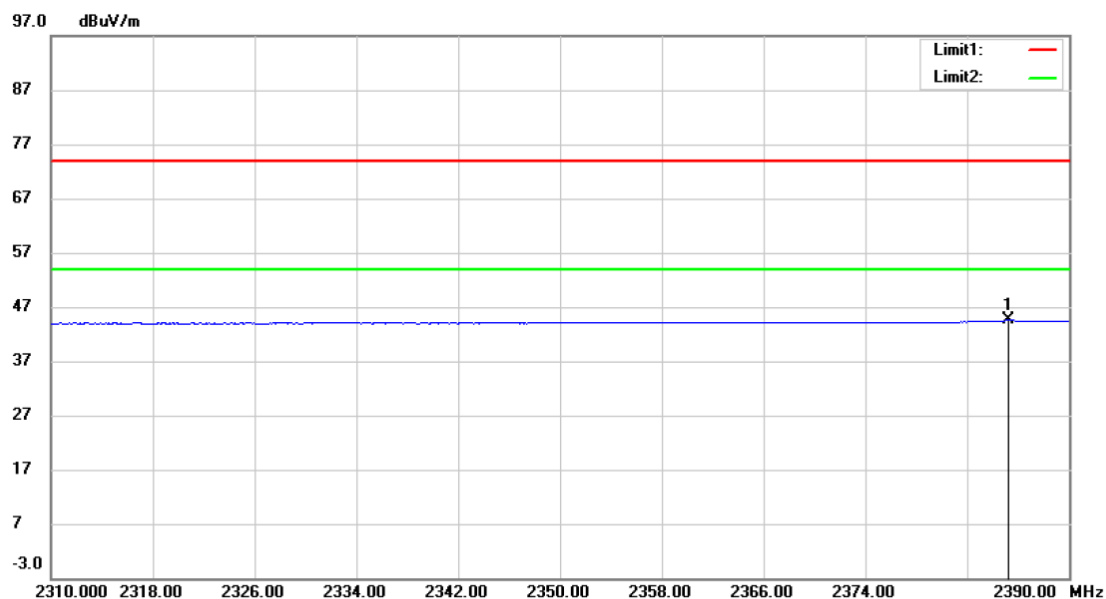


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2380.240	27.08	31.06	58.14	74.00	-15.86	peak		

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

Operator: KK

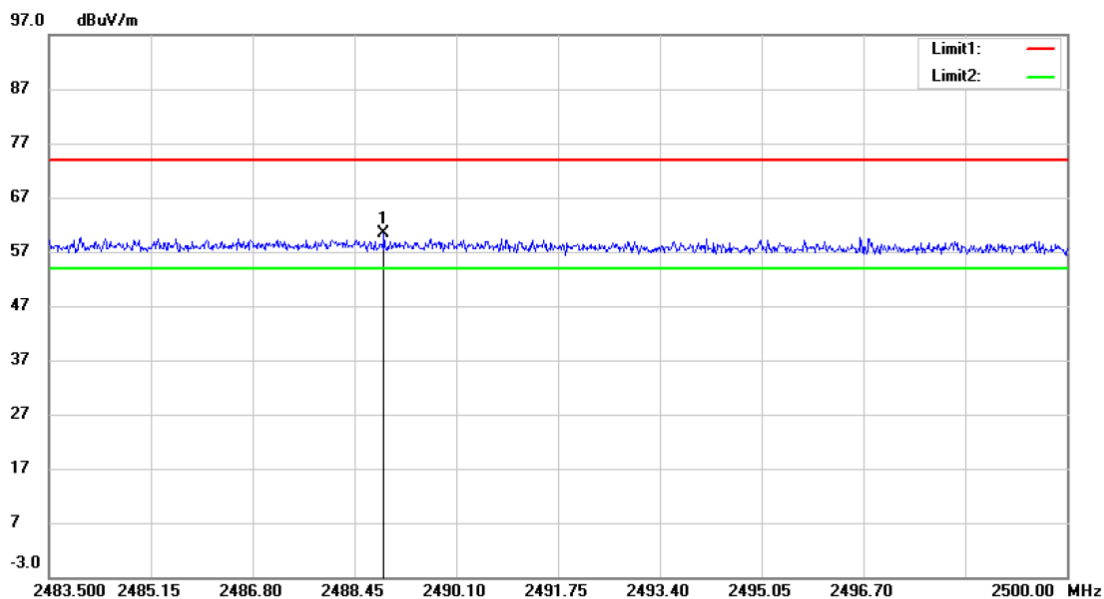


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2385.200	13.47	31.09	44.56	54.00	-9.44	AVG		

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

Operator: KK

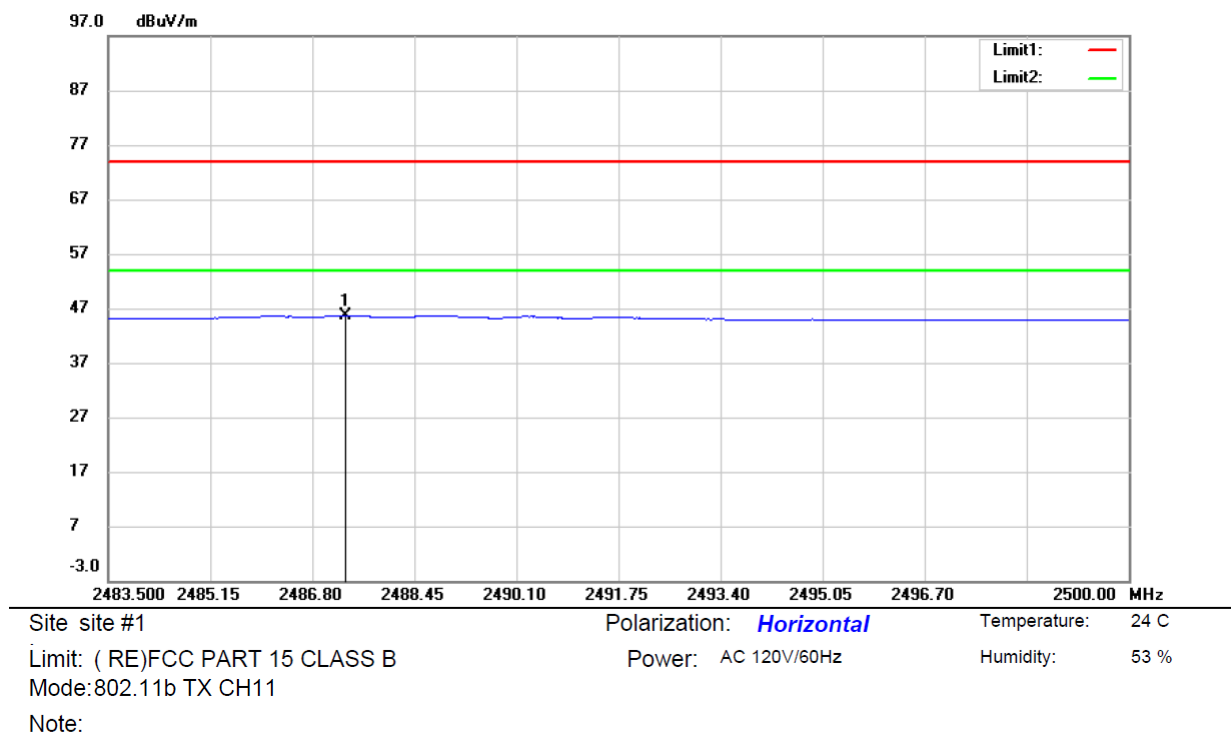


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH11
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2488.928	28.74	31.55	60.29	74.00	-13.71	peak		

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

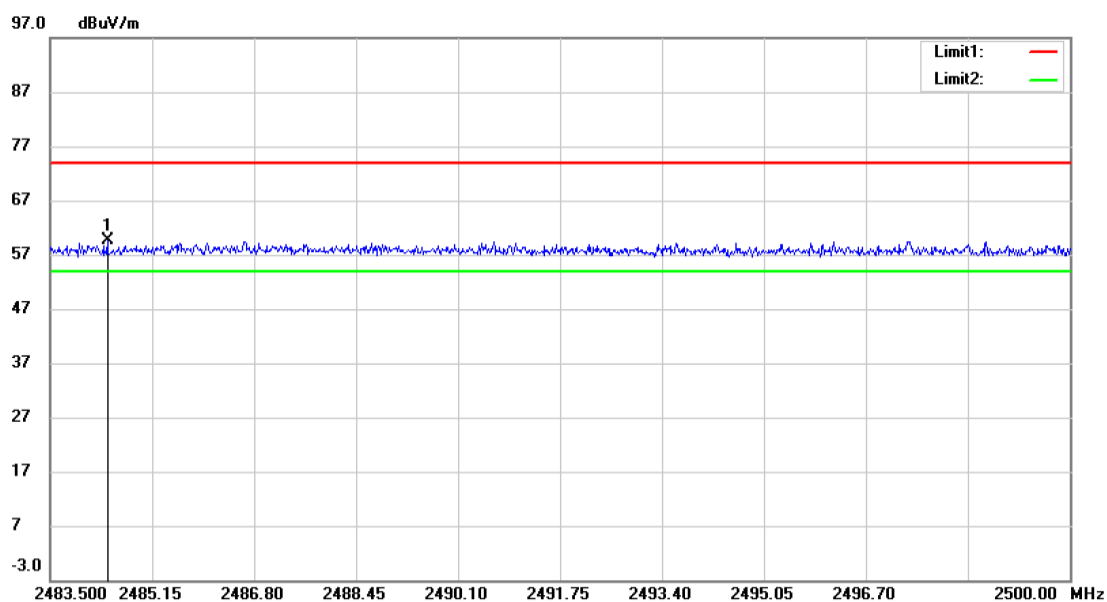
Operator: KK



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
1	*	2487.328	14.15	31.55	45.70	54.00	-8.30	AVG		

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

Operator: KK

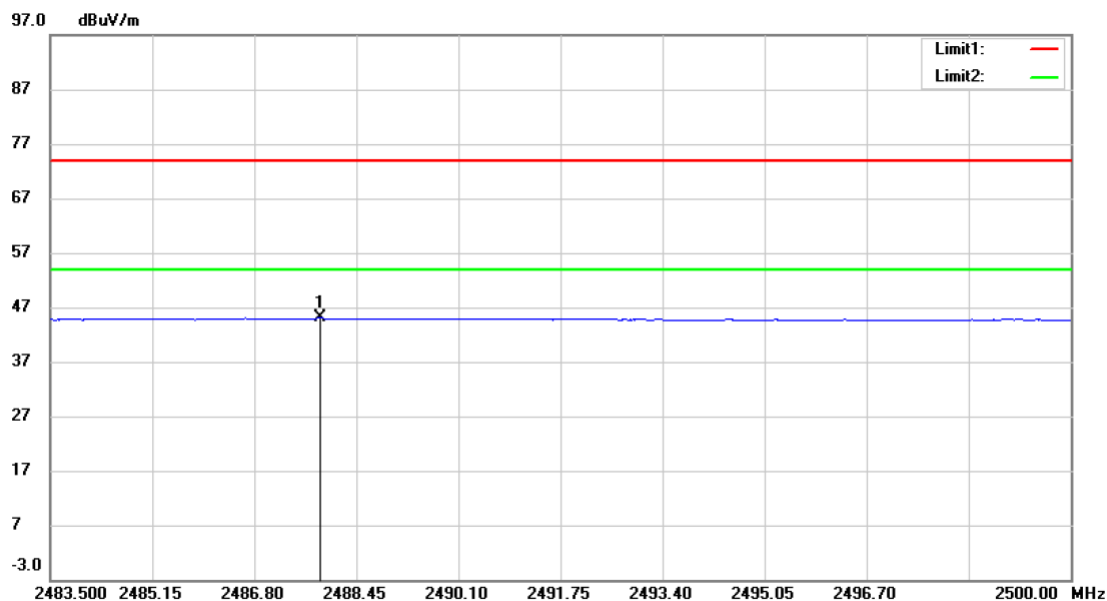


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX CH11
 Note:

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
1	*	2484.424	28.06	31.53	59.59	74.00	-14.41	peak		Comment

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

Operator: KK

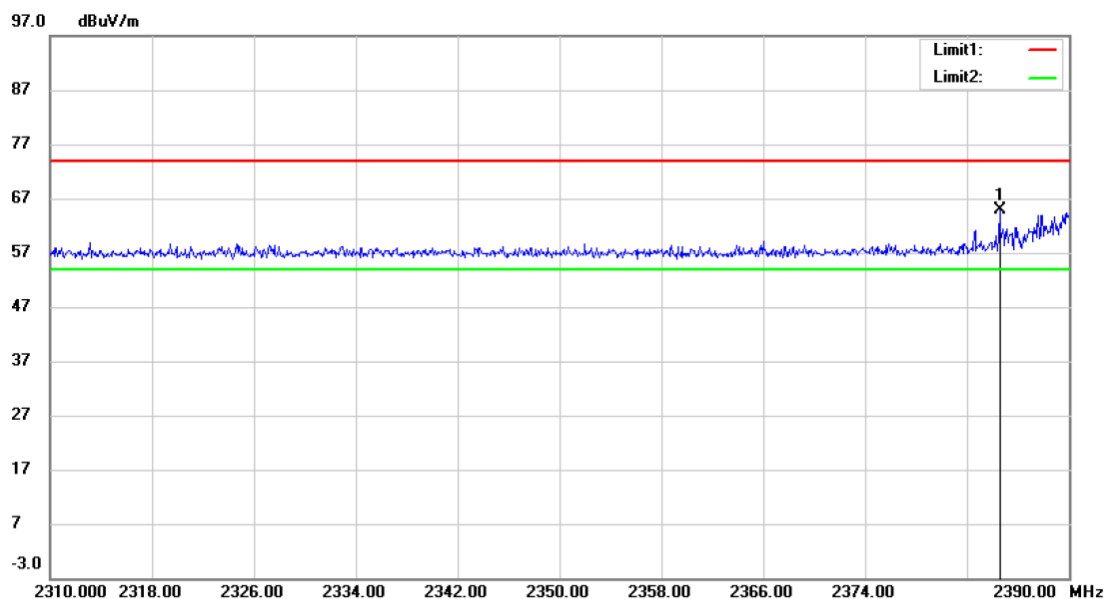


Site site #1 Polarization: **Vertical** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:802.11b TX CH11
Note:

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
1	*	2487.856	13.49	31.55	45.04	54.00	-8.96	AVG		Comment

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

Operator: KK

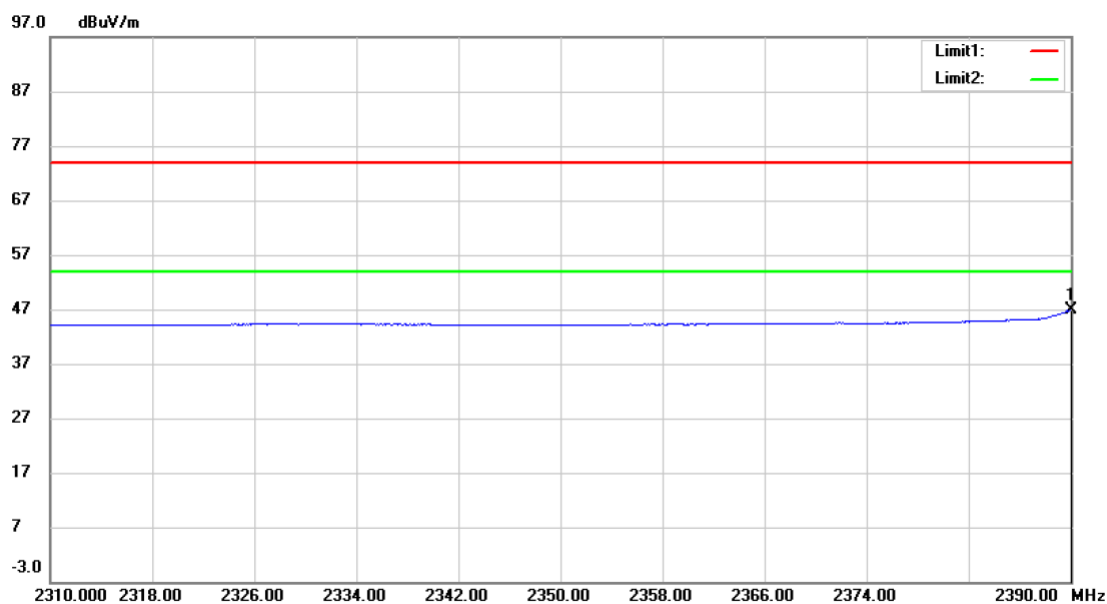


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2384.560	33.85	31.09	64.94	74.00	-9.06	peak		

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

Operator: KK

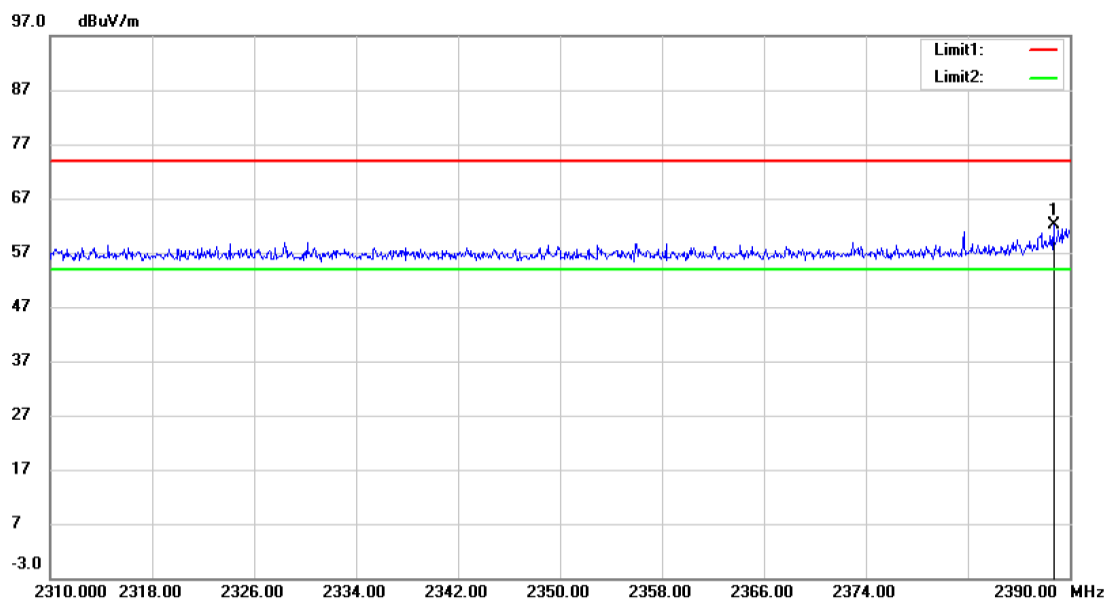


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH1
 Note:

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
1	*	2390.000	15.84	31.11	46.95	54.00	-7.05	AVG		Comment

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

Operator: KK

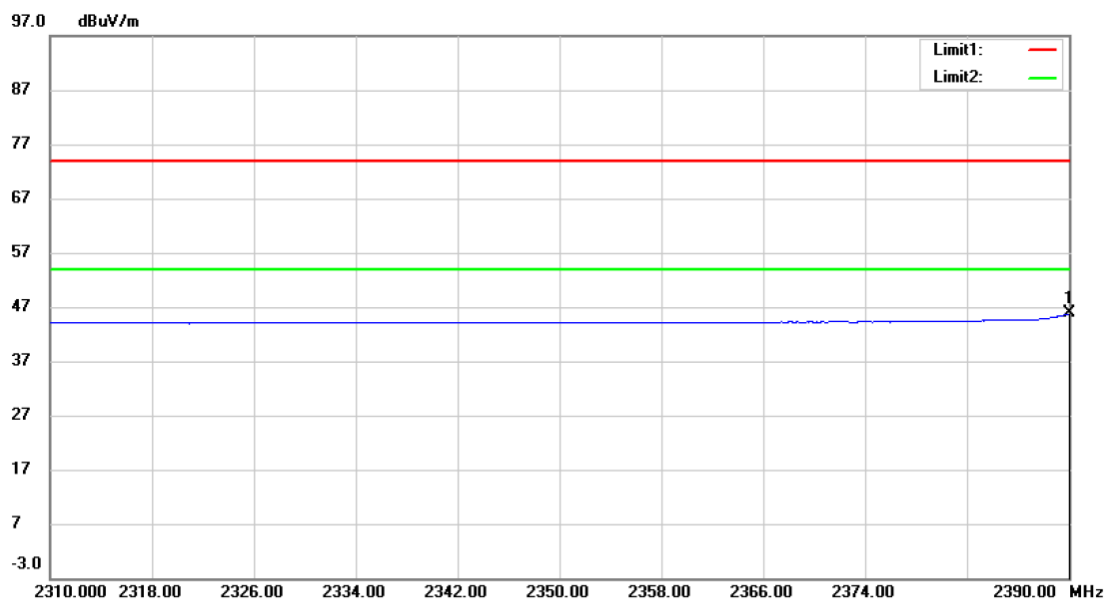


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2388.720	31.06	31.10	62.16	74.00	-11.84	peak		

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

Operator: KK

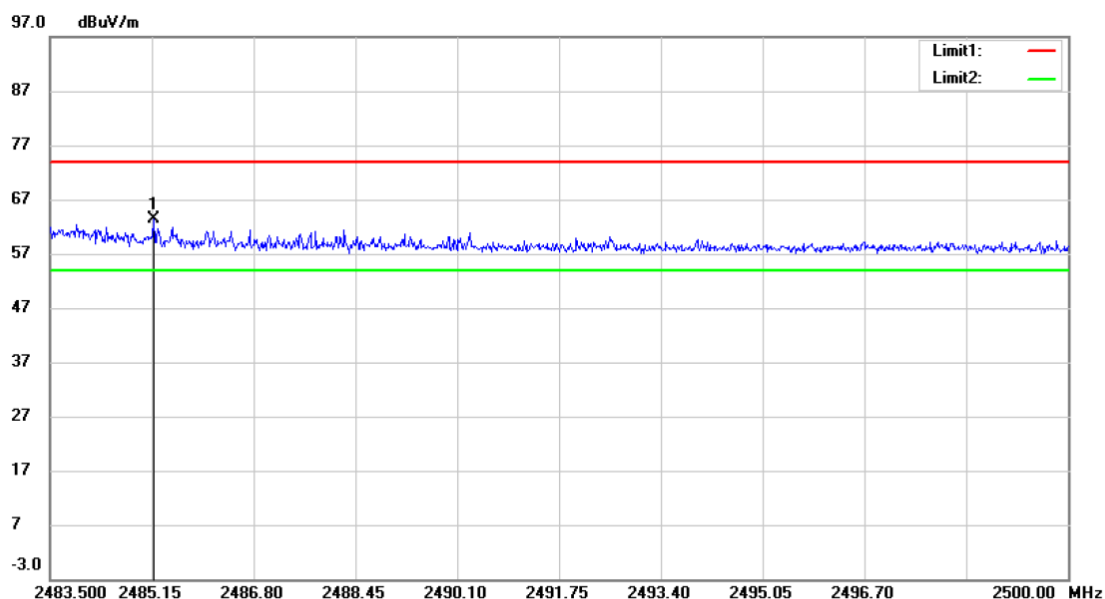


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2390.000	14.68	31.11	45.79	54.00	-8.21	AVG		

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

Operator: KK

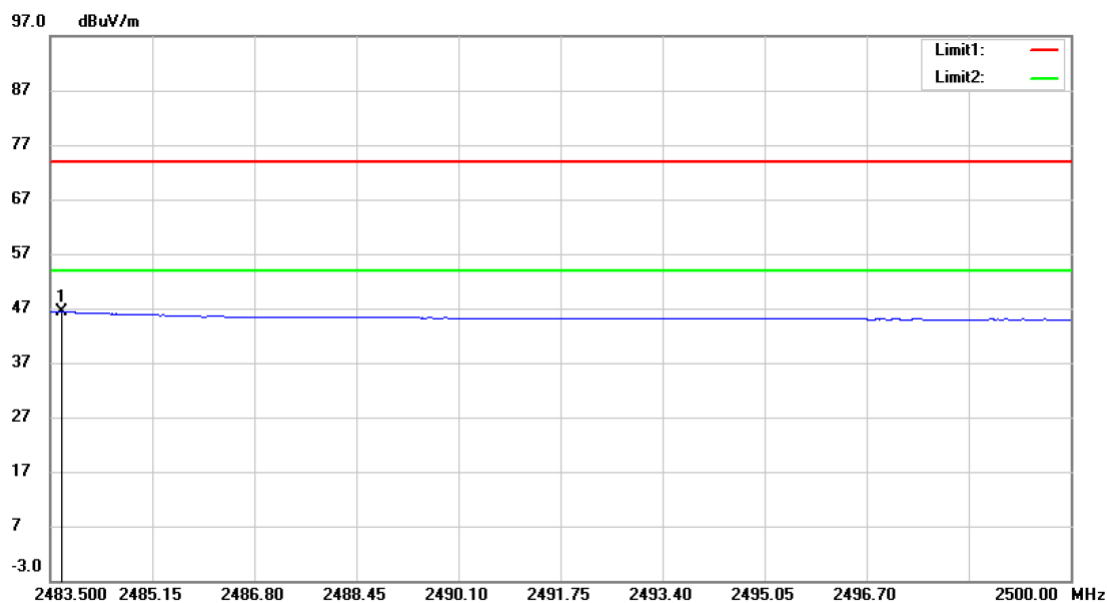


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH11
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2485.183	31.81	31.53	63.34	74.00	-10.66	peak		

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

Operator: KK

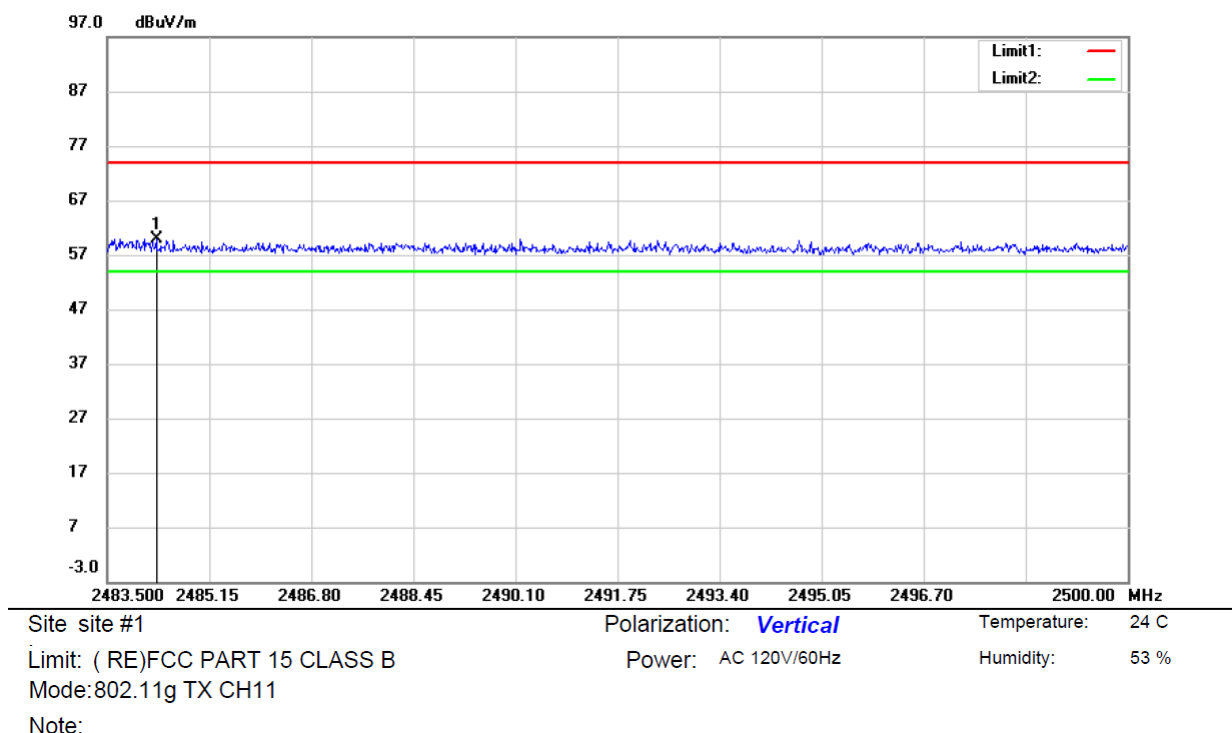


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH11
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.682	14.91	31.52	46.43	54.00	-7.57	AVG		

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

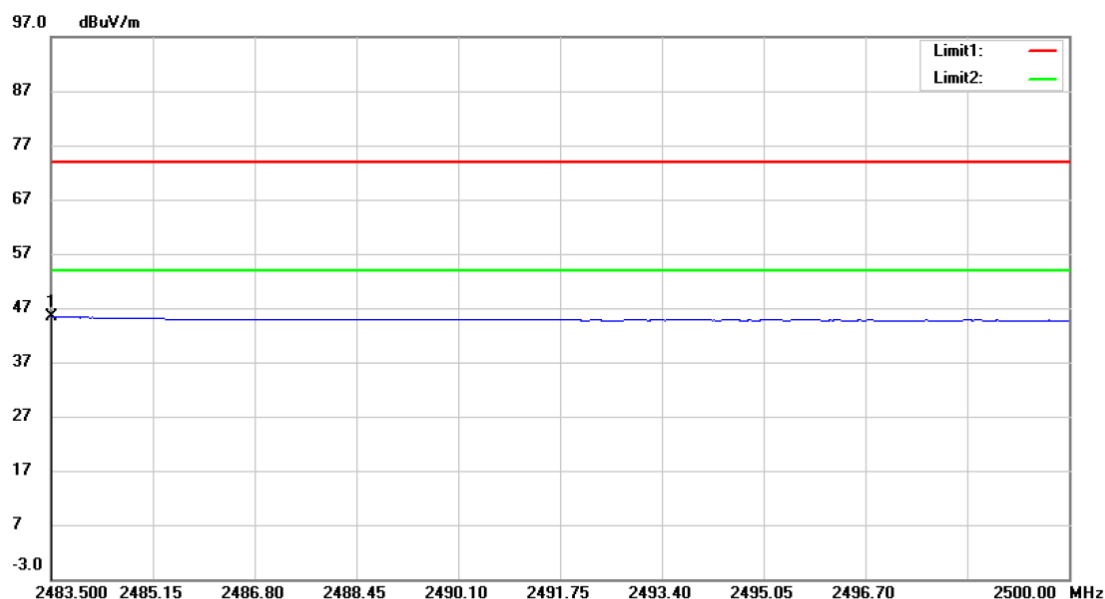
Operator: KK



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2484.292	28.34	31.53	59.87	74.00	-14.13	peak		

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

Operator: KK

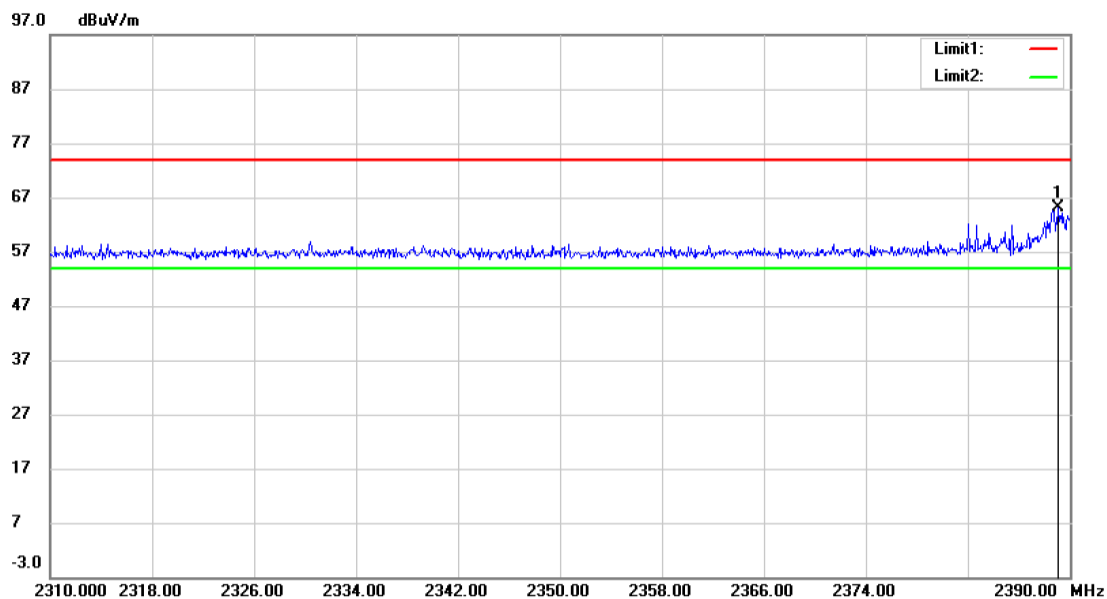


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX CH11
 Note:

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
1	*	2483.500	13.87	31.52	45.39	54.00	-8.61	AVG		Comment

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

Operator: KK

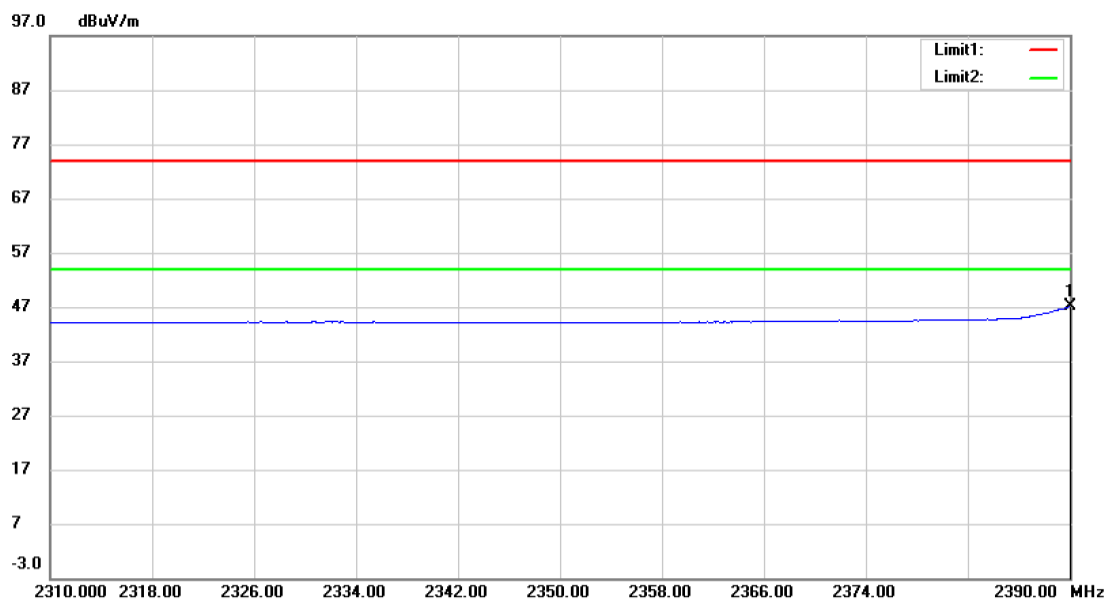


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH20 TX CH1
 Note:

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
1	*	2389.120	34.01	31.10	65.11	74.00	-8.89	peak		

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

Operator: KK

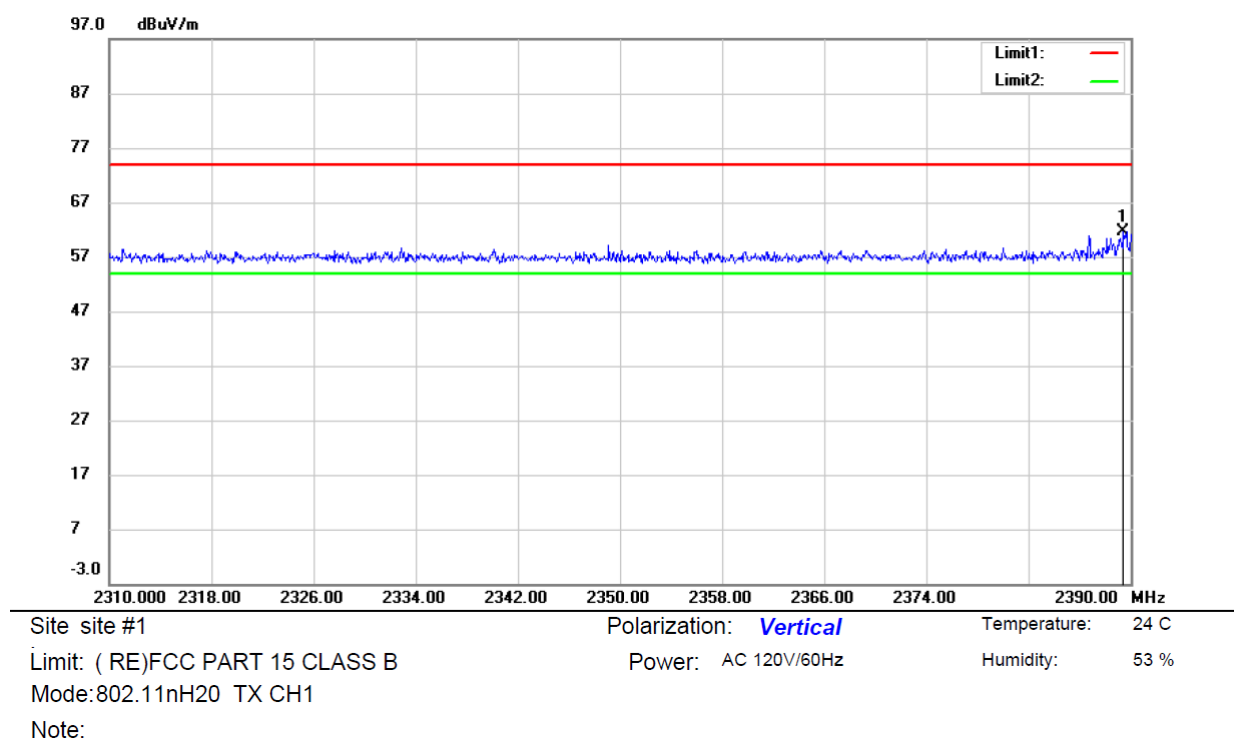


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH20 TX CH1
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2390.000	16.07	31.11	47.18	54.00	-6.82	AVG		Comment

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

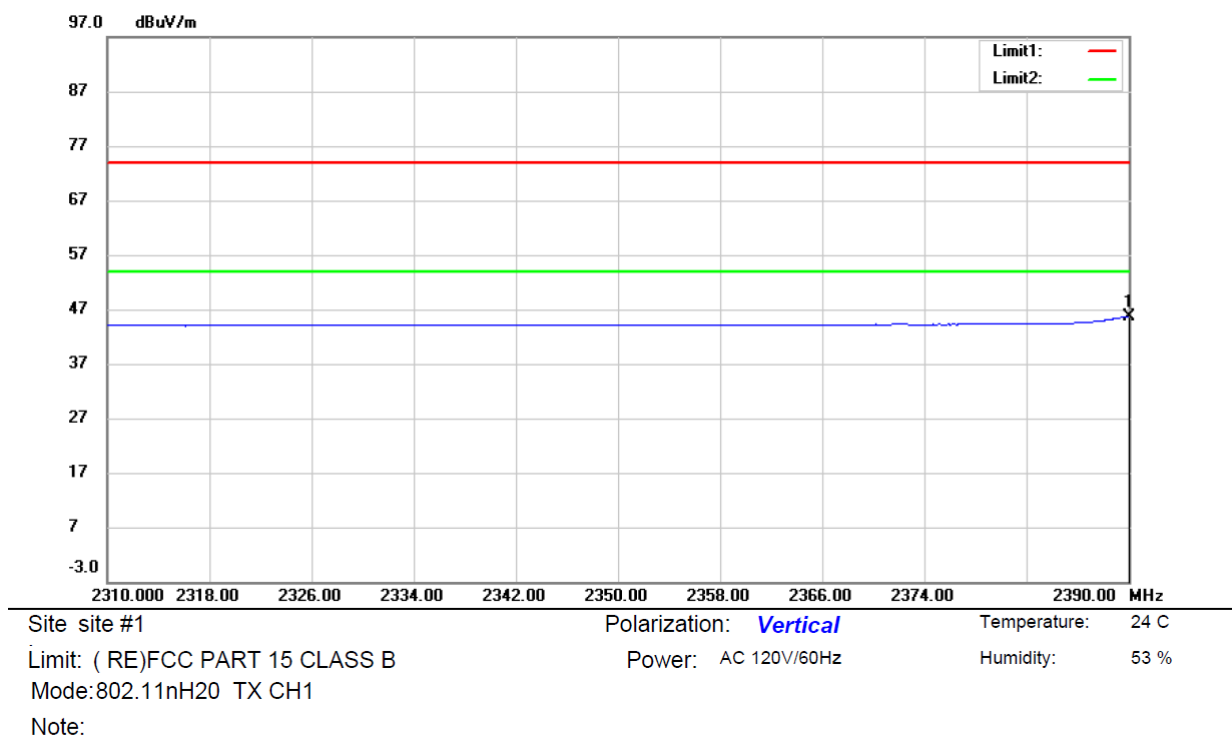
Operator: KK



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2389.440	30.48	31.10	61.58	74.00	-12.42	peak		

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

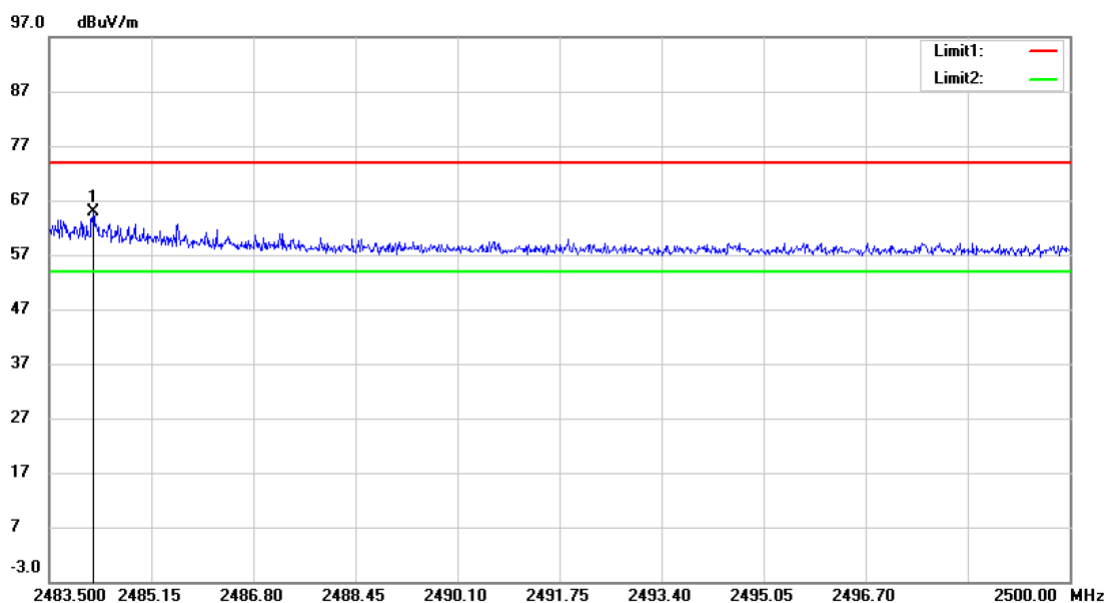
Operator: KK



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2390.000	14.59	31.11	45.70	54.00	-8.30	AVG		

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

Operator: KK

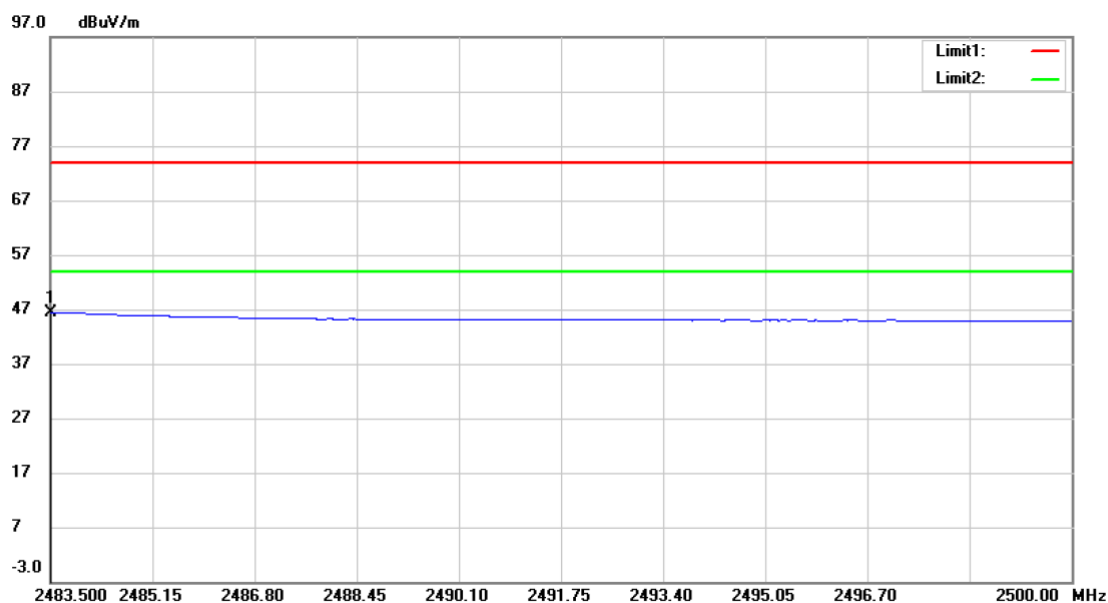


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH20 TX CH11
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2484.209	33.36	31.53	64.89	74.00	-9.11	peak		

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

Operator: KK

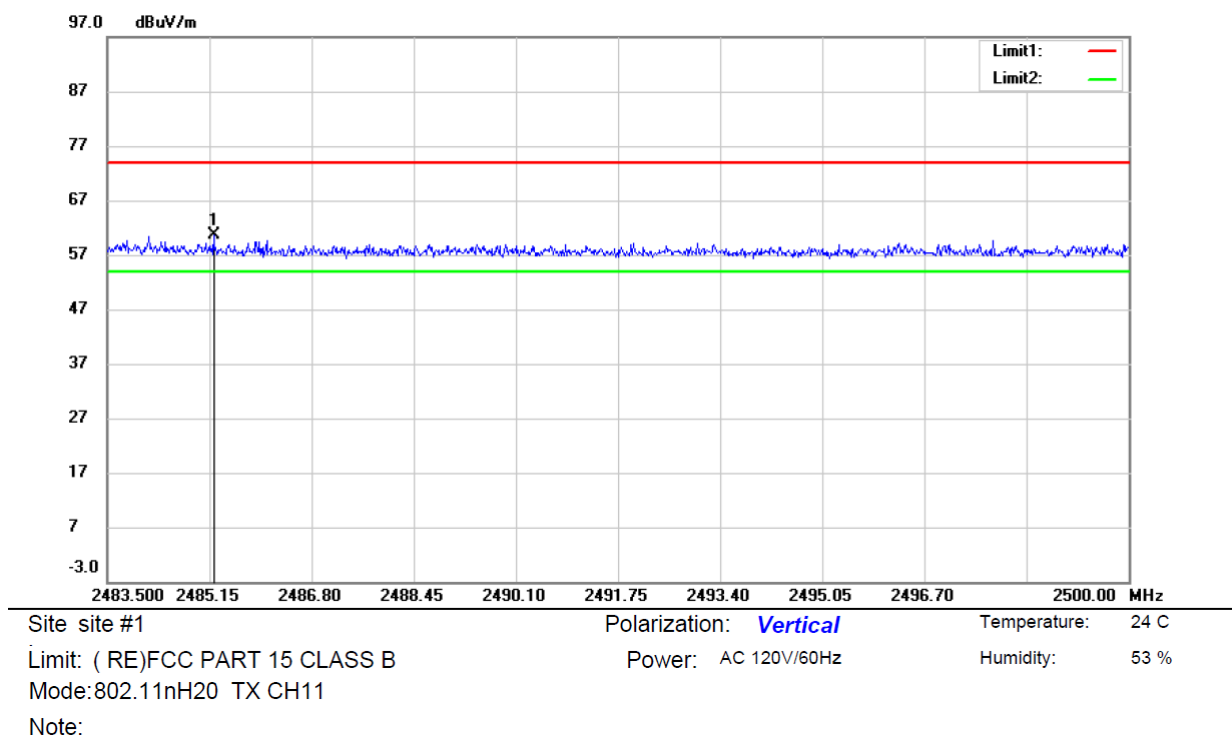


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH20 TX CH11
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	14.90	31.52	46.42	54.00	-7.58	AVG		

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

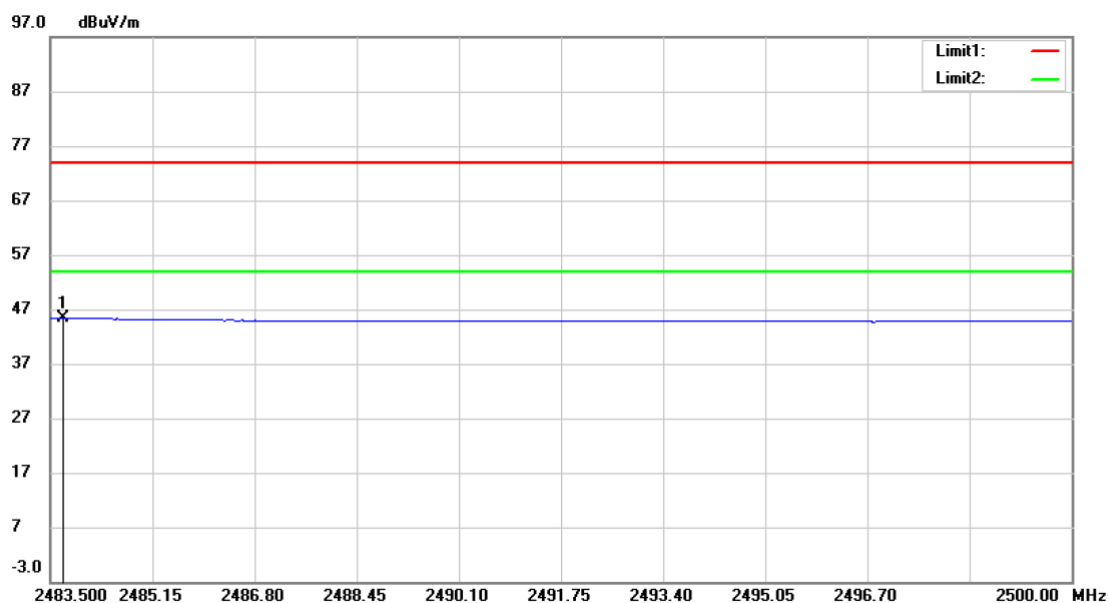
Operator: KK



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2485.216	29.05	31.53	60.58	74.00	-13.42	peak		

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

Operator: KK

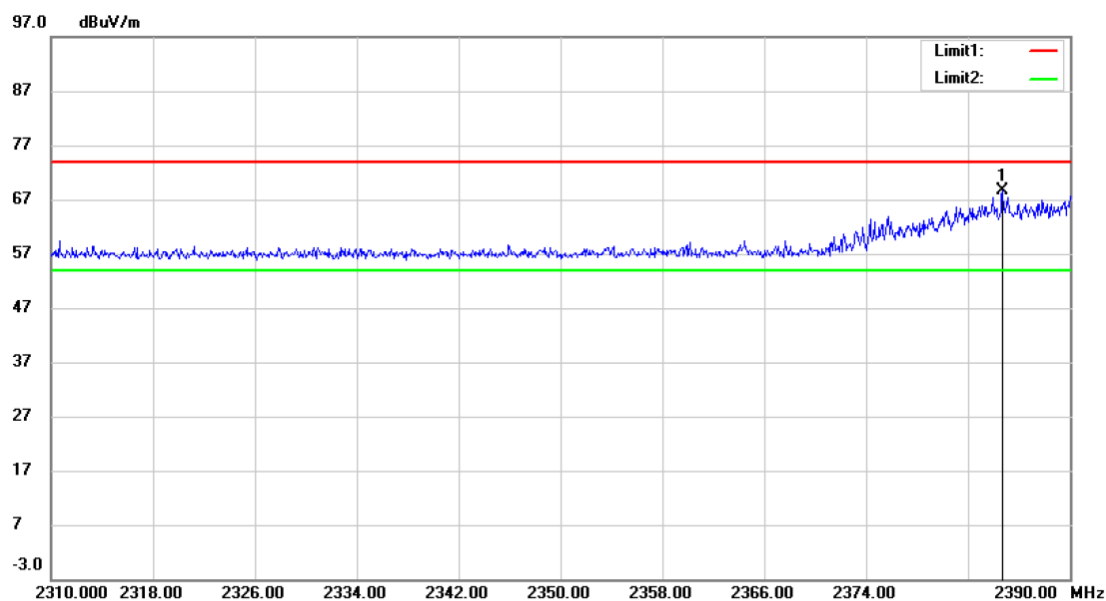


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH20 TX CH11
 Note:

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
1	*	2483.682	13.96	31.52	45.48	54.00	-8.52	AVG		Comment

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

Operator: KK

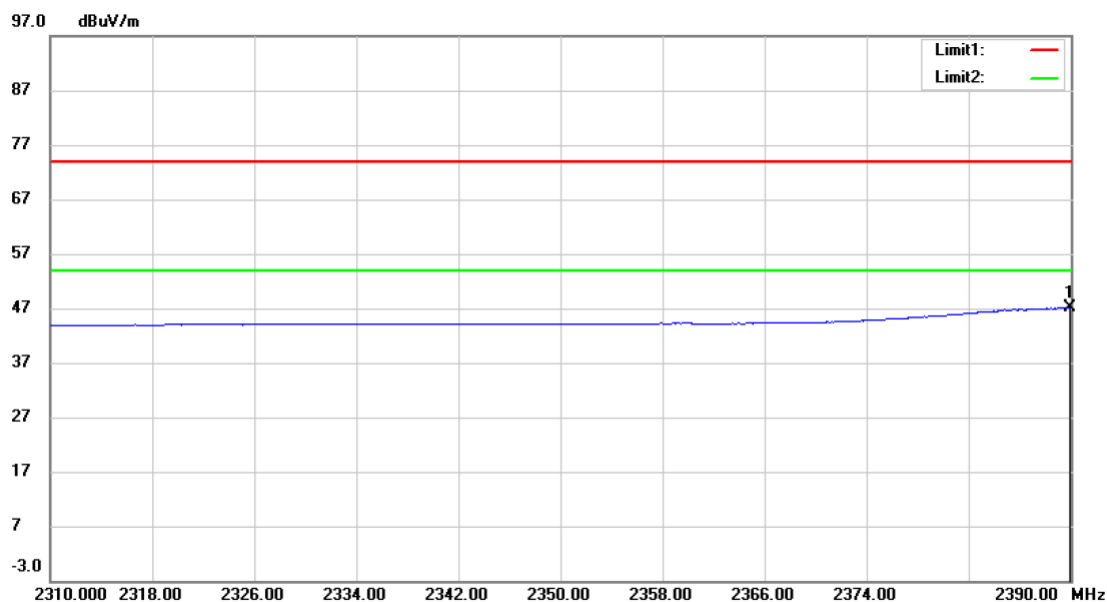


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH3
 Note:

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
1	*	2384.720	37.59	31.09	68.68	74.00	-5.32	peak		

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

Operator: KK

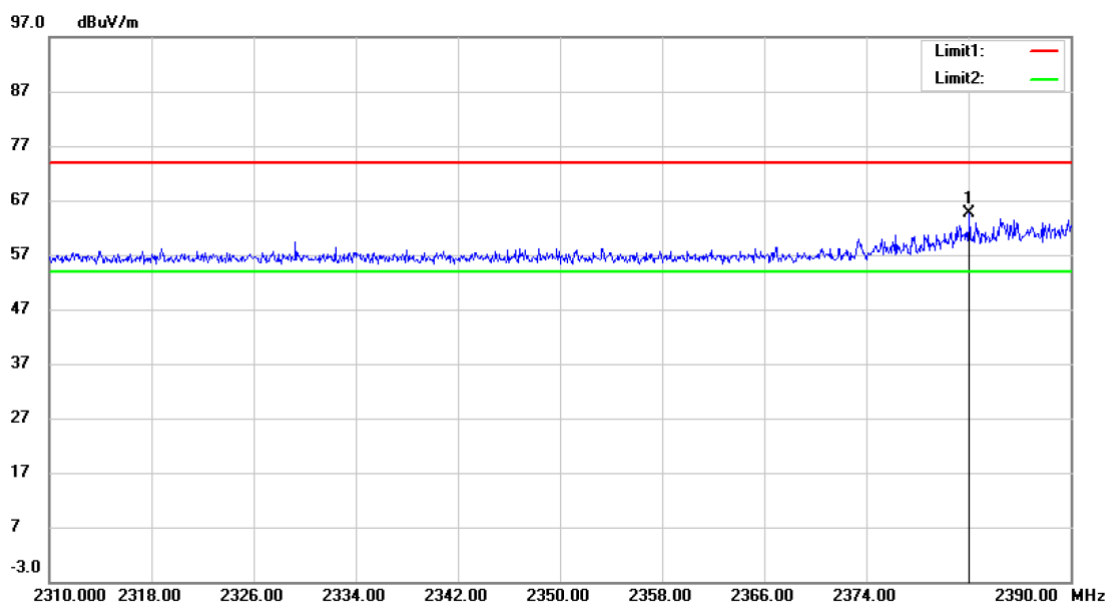


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH3
 Note:

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
1	*	2389.920	16.09	31.11	47.20	54.00	-6.80	AVG		

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

Operator: KK

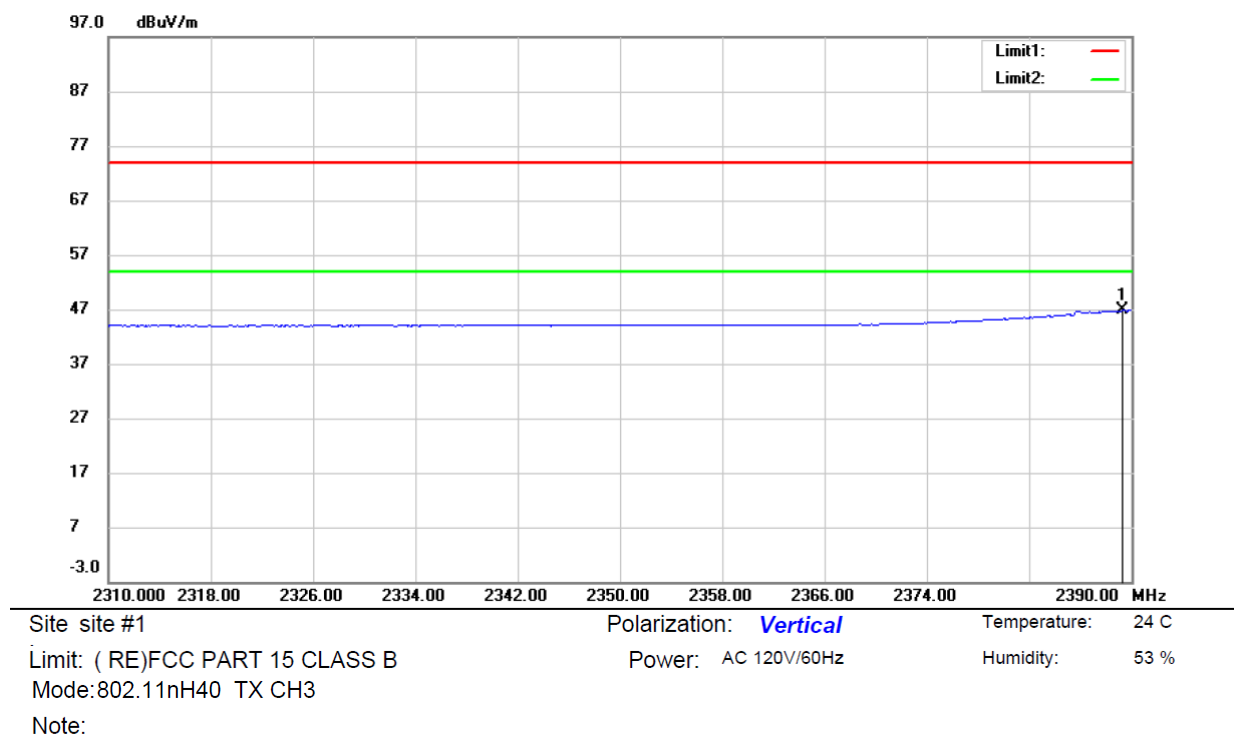


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH3
 Note:

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
1	*	2382.080	33.52	31.08	64.60	74.00	-9.40	peak		

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

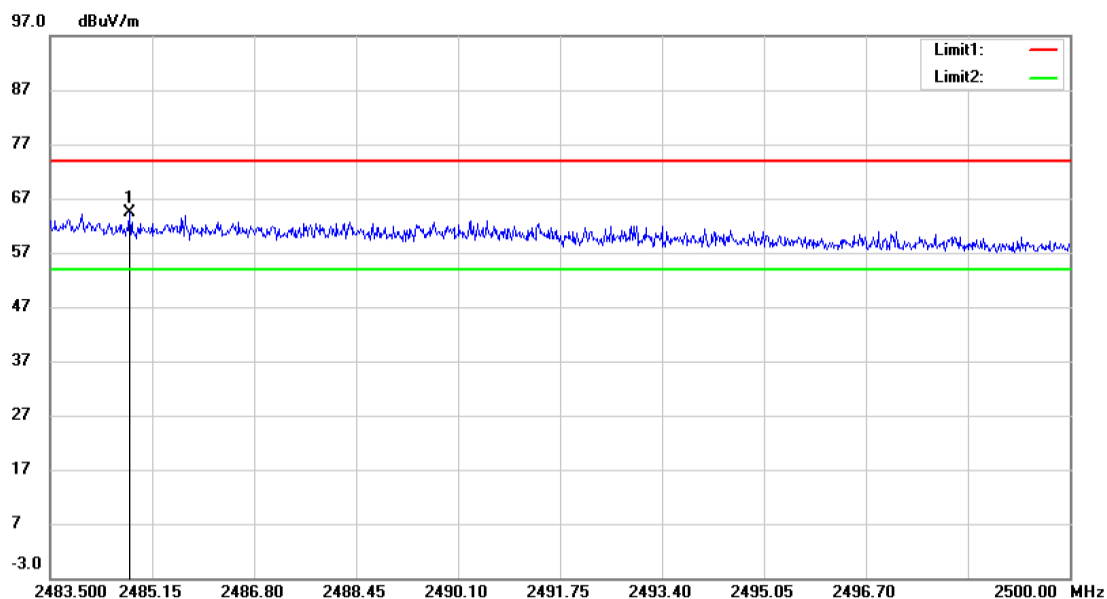
Operator: KK



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
1	*	2389.280	15.73	31.10	46.83	54.00	-7.17	AVG		Comment

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

Operator: KK

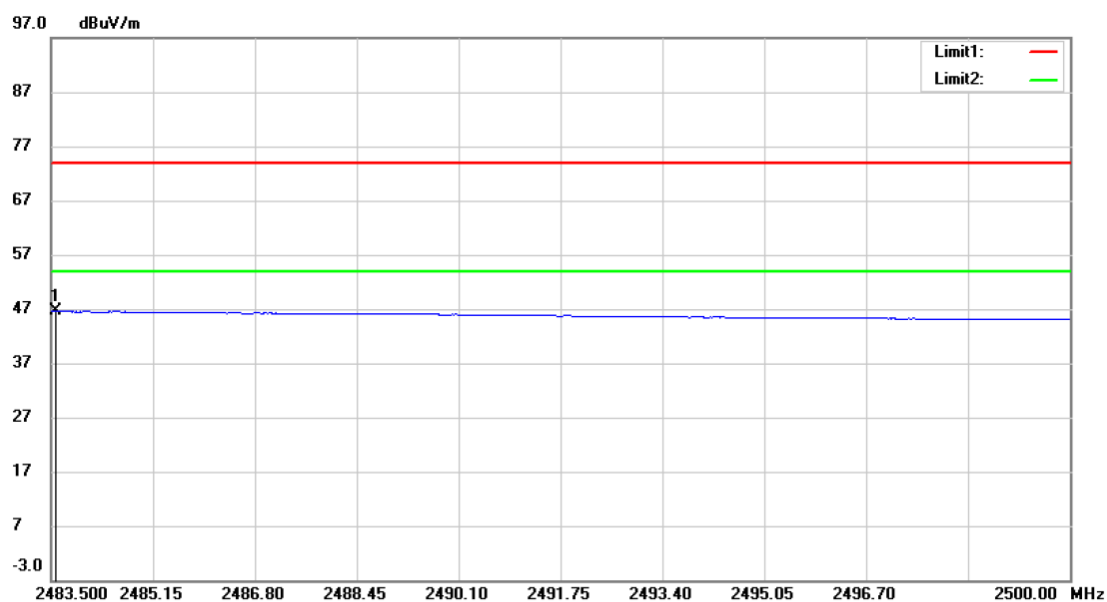


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH9
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2484.787	32.83	31.53	64.36	74.00	-9.64	peak		

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

Operator: KK

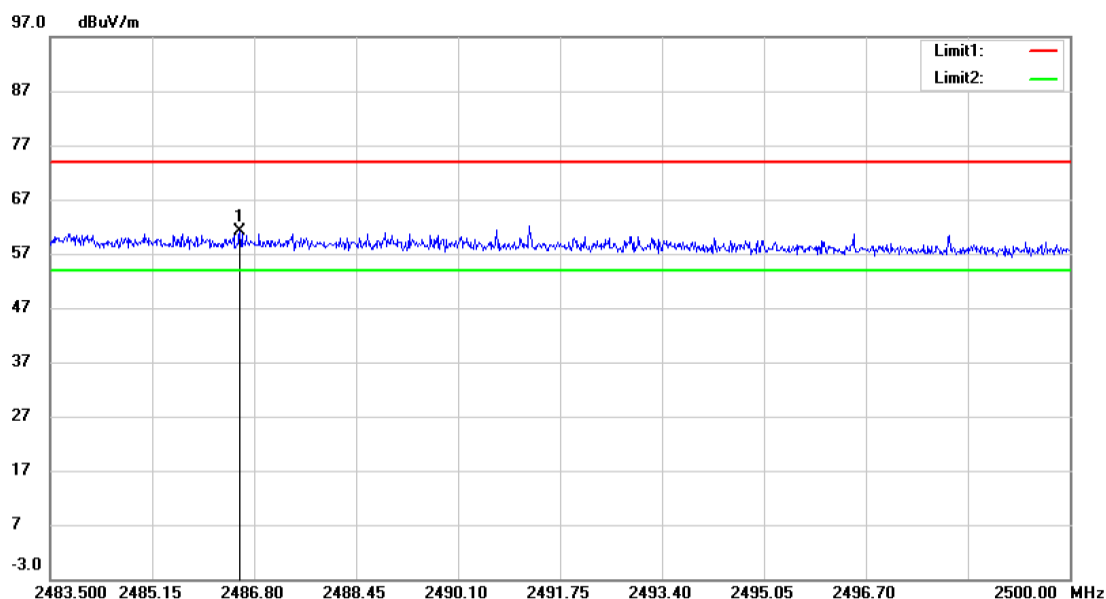


Site site #1 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH9
 Note:

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
1	*	2483.566	15.15	31.52	46.67	54.00	-7.33	AVG		

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

Operator: KK

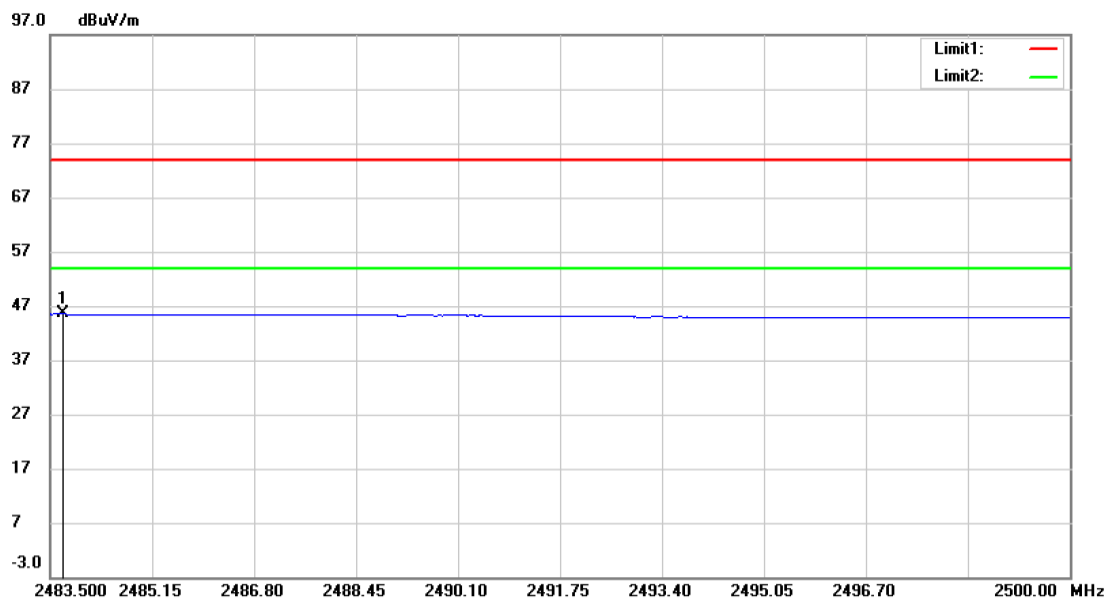


Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH9
 Note:

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
1	*	2486.569	29.67	31.54	61.21	74.00	-12.79	peak		Comment

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

Operator: KK



Site site #1 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11nH40 TX CH9
 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
1	*	2483.715	14.03	31.52	45.55	54.00	-8.45	AVG		Comment

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

Operator: KK

8.6 CONDUCTED EMISSION TEST

8.6.1 Applicable Standard

According to FCC Part 15.207(a)

8.6.2 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.		

8.6.3 Test Configuration

Test according to clause 7.3 conducted emission test setup

8.6.4 Test Procedure

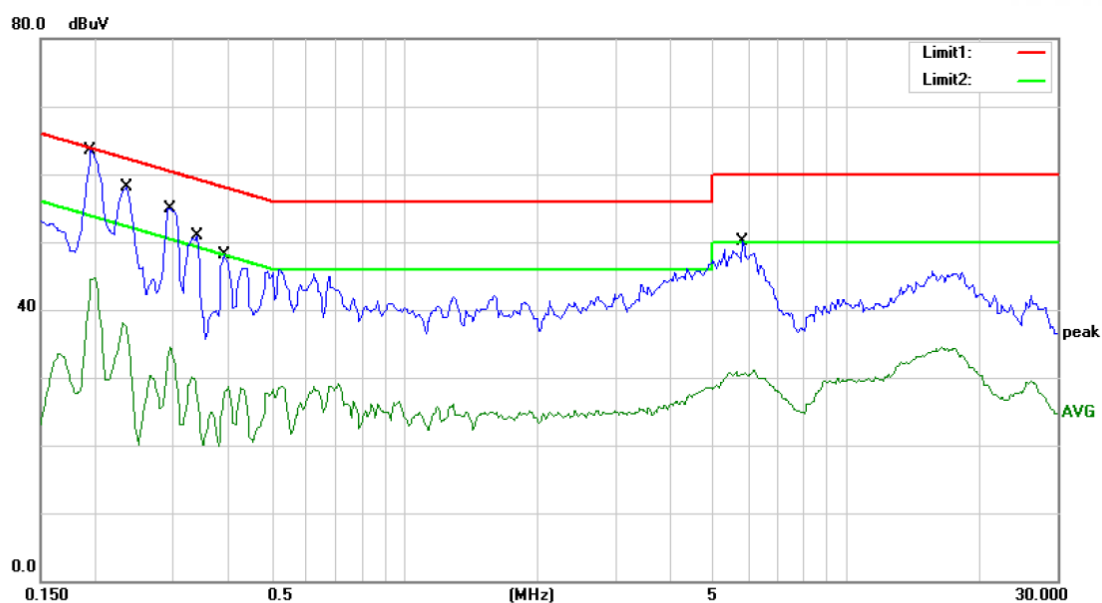
The EUT was placed on a table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

PASS.



Site Conduction #2

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

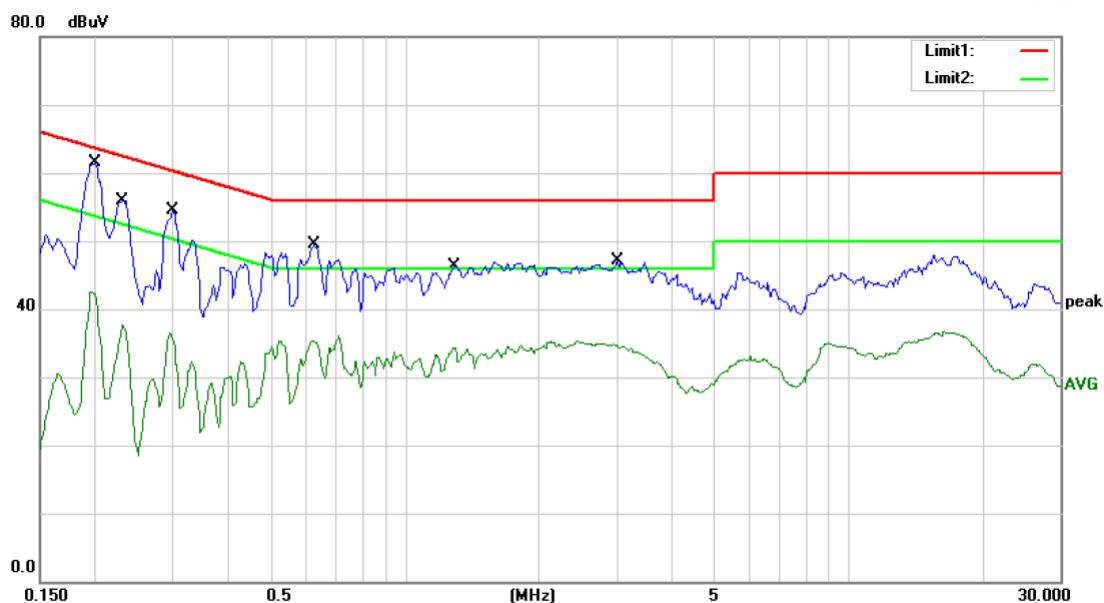
Humidity: 55 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1950	57.10	0.00	57.10	63.82	-6.72	QP	
2		0.1950	44.79	0.00	44.79	53.82	-9.03	AVG	
3		0.2350	54.30	0.00	54.30	62.27	-7.97	QP	
4		0.2350	38.02	0.00	38.02	52.27	-14.25	AVG	
5	*	0.2950	54.88	0.00	54.88	60.38	-5.50	QP	
6		0.2950	34.55	0.00	34.55	50.38	-15.83	AVG	
7		0.3400	50.95	0.00	50.95	59.20	-8.25	QP	
8		0.3400	30.04	0.00	30.04	49.20	-19.16	AVG	
9		0.3900	48.14	0.00	48.14	58.06	-9.92	QP	
10		0.3900	28.68	0.00	28.68	48.06	-19.38	AVG	
11		5.8300	50.12	0.00	50.12	60.00	-9.88	QP	
12		5.8300	31.09	0.00	31.09	50.00	-18.91	AVG	

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



Site Conduction #2

Phase: **N**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

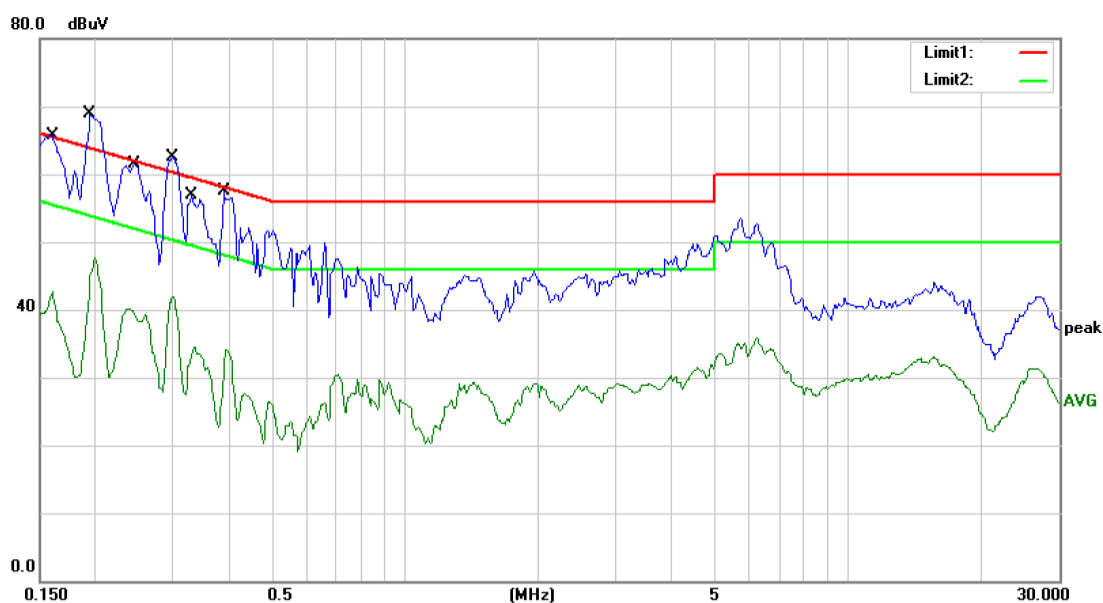
Humidity: 55 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2000	57.90	0.00	57.90	63.61	-5.71	QP	
2		0.2000	42.46	0.00	42.46	53.61	-11.15	AVG	
3		0.2300	55.93	0.00	55.93	62.45	-6.52	QP	
4		0.2300	37.78	0.00	37.78	52.45	-14.67	AVG	
5		0.3000	54.41	0.00	54.41	60.24	-5.83	QP	
6		0.3000	36.49	0.00	36.49	50.24	-13.75	AVG	
7		0.6250	49.45	0.00	49.45	56.00	-6.55	QP	
8		0.6250	35.31	0.00	35.31	46.00	-10.69	AVG	
9		1.2950	46.38	0.00	46.38	56.00	-9.62	QP	
10		1.2950	34.33	0.00	34.33	46.00	-11.67	AVG	
11		3.0250	47.12	0.00	47.12	56.00	-8.88	QP	
12		3.0250	34.82	0.00	34.82	46.00	-11.18	AVG	

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



Site Conduction #2

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 240V/50Hz

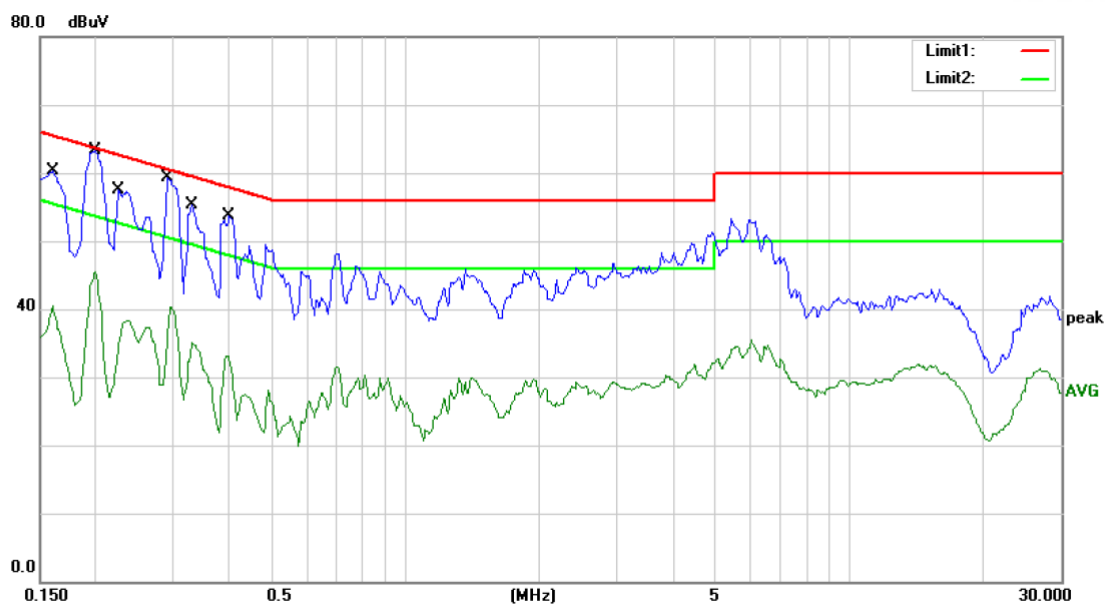
Humidity: 55 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1600	53.80	0.00	53.80	65.46	-11.66	QP	
2		0.1600	42.73	0.00	42.73	55.46	-12.73	AVG	
3		0.1950	57.60	0.00	57.60	63.82	-6.22	QP	
4	*	0.1950	47.77	0.00	47.77	53.82	-6.05	AVG	
5		0.2450	48.90	0.00	48.90	61.92	-13.02	QP	
6		0.2450	40.18	0.00	40.18	51.92	-11.74	AVG	
7		0.3000	53.50	0.00	53.50	60.24	-6.74	QP	
8		0.3000	42.00	0.00	42.00	50.24	-8.24	AVG	
9		0.3300	45.90	0.00	45.90	59.45	-13.55	QP	
10		0.3300	34.59	0.00	34.59	49.45	-14.86	AVG	
11		0.3900	47.30	0.00	47.30	58.06	-10.76	QP	
12		0.3900	34.16	0.00	34.16	48.06	-13.90	AVG	

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



Site Conduction #2

Phase: **N**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 240V/50Hz

Humidity: 55 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1600	60.35	0.00	60.35	65.46	-5.11	QP	
2		0.1600	40.43	0.00	40.43	55.46	-15.03	AVG	
3		0.2000	57.55	0.00	57.55	63.61	-6.06	QP	
4		0.2000	45.59	0.00	45.59	53.61	-8.02	AVG	
5		0.2255	57.40	0.00	57.40	62.61	-5.21	QP	
6		0.2255	38.34	0.00	38.34	52.61	-14.27	AVG	
7		0.2900	54.30	0.00	54.30	60.52	-6.22	QP	
8		0.2900	37.97	0.00	37.97	50.52	-12.55	AVG	
9		0.3300	53.30	0.00	53.30	59.45	-6.15	QP	
10		0.3300	35.10	0.00	35.10	49.45	-14.35	AVG	
11		0.4000	51.60	0.00	51.60	57.85	-6.25	QP	
12		0.4000	33.05	0.00	33.05	47.85	-14.80	AVG	

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

8.7 ANTENNA APPLICATION

8.7.1 Antenna Requirement

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 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.

For intentional device, according to IC RSS-Gen 8.3, testing shall be performed using the highest gain antenna of each combination of licence-exempt transmitter and antenna type, with the transmitter output power set at the maximum level.9 When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna manufacturer.

8.7.2 Result

The EUT'S antenna is PIFA antenna, and the antenna can't be replaced by the user, which in accordance to section 15.203, please refer to the internal photos. The antenna's gain is 2.5dBi and meets the requirement.

END OF REPORT