

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

All the modulation modes with all adapters were tested the data of the worst mode are recorded as below.

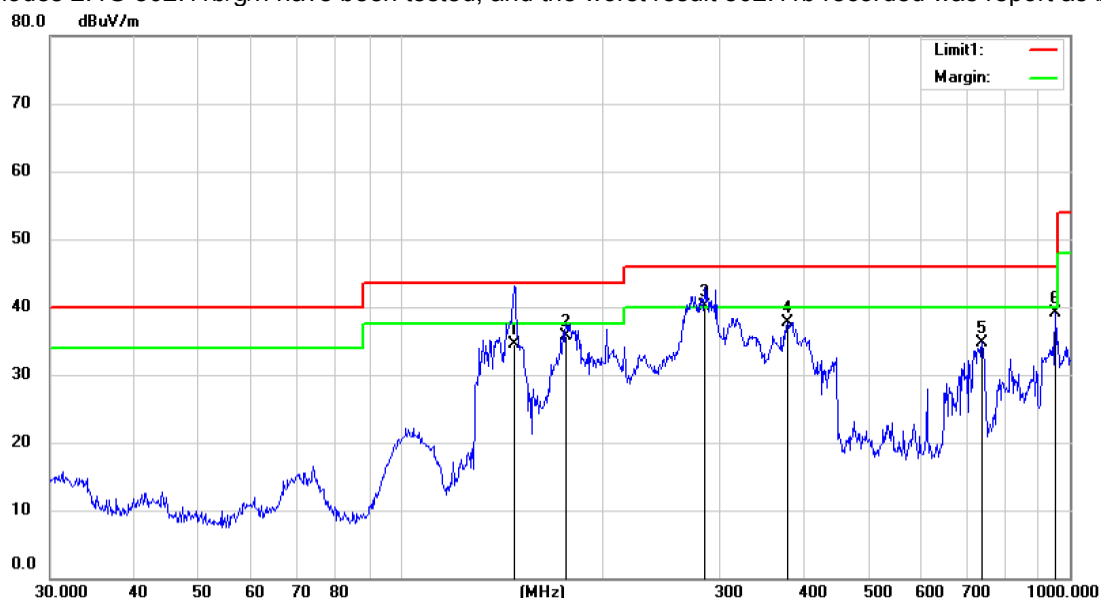
■ Spurious Emission below 30MHz (9KHz to 30MHz)

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
--	--	--	--	--	--	--	--

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

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



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

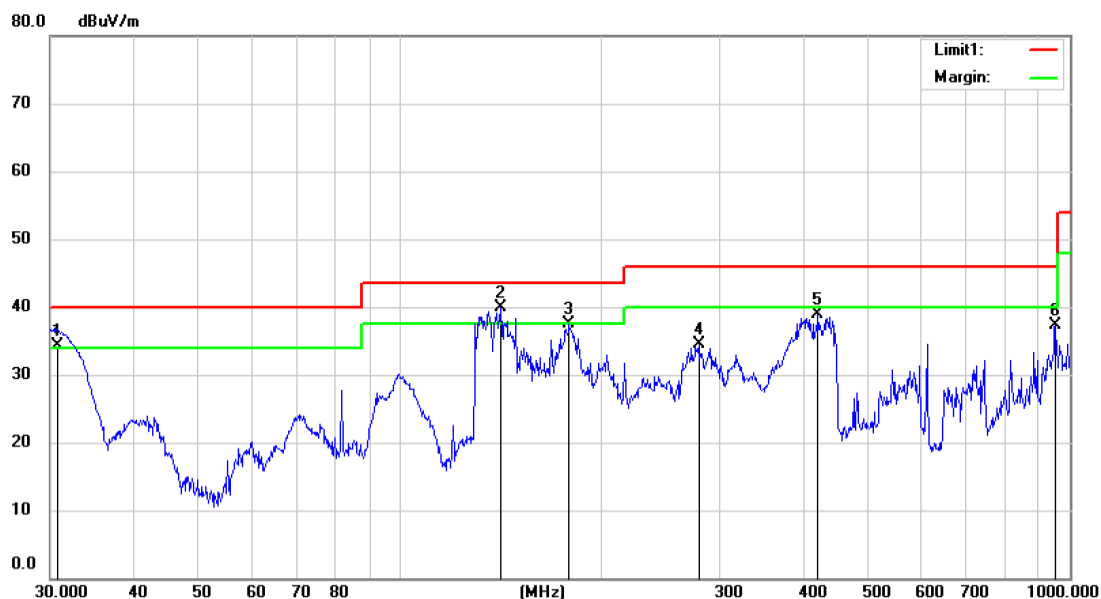
Mode:802.11b TX Channel1

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		147.9214	52.53	-18.03	34.50	43.50	-9.00	QP		
2		176.8878	54.76	-19.12	35.64	43.50	-7.86	QP		
3	*	284.9767	53.05	-12.87	40.18	46.00	-5.82	QP		
4		378.5843	47.76	-10.05	37.71	46.00	-8.29	QP		
5		739.6604	39.55	-4.75	34.80	46.00	-11.20	QP		
6		952.0937	39.82	-0.71	39.11	46.00	-6.89	QP		

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

Operator: CSL



Site 3m Chamber #3

Polarization: **Vertical**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

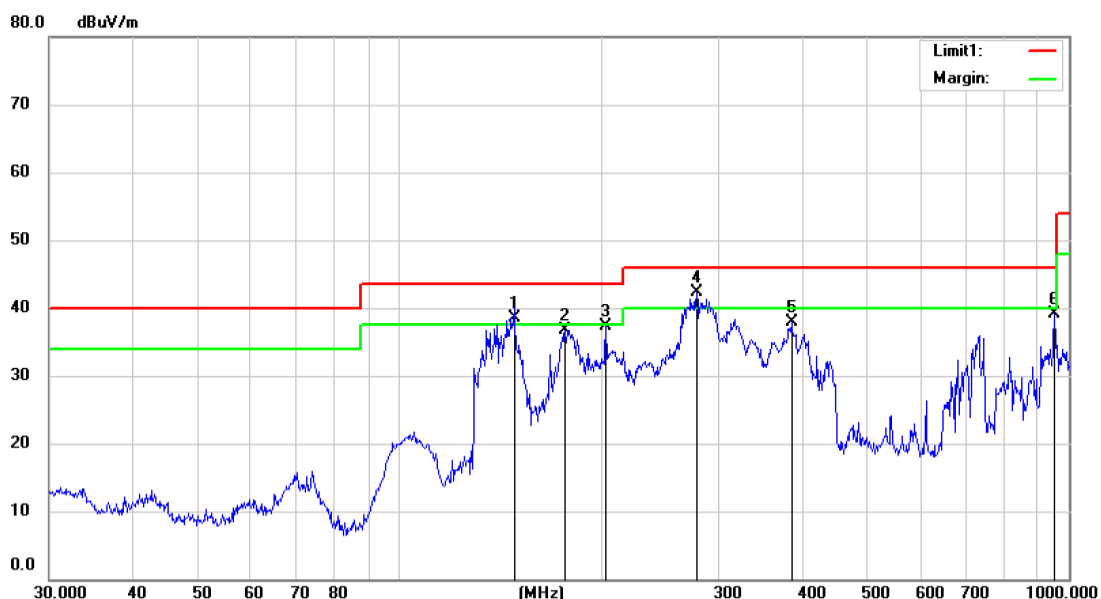
Mode:802.11b TX Channel1

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	!	30.7455	50.50	-16.21	34.29	40.00	-5.71	QP		
2	*	141.3298	57.64	-17.83	39.81	43.50	-3.69	QP		
3		178.7584	56.45	-19.02	37.43	43.50	-6.07	QP		
4		279.0436	47.14	-12.58	34.56	46.00	-11.44	QP		
5		420.5803	48.43	-9.48	38.95	46.00	-7.05	QP		
6		952.0937	38.07	-0.71	37.36	46.00	-8.64	QP		

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

Operator: CSL



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

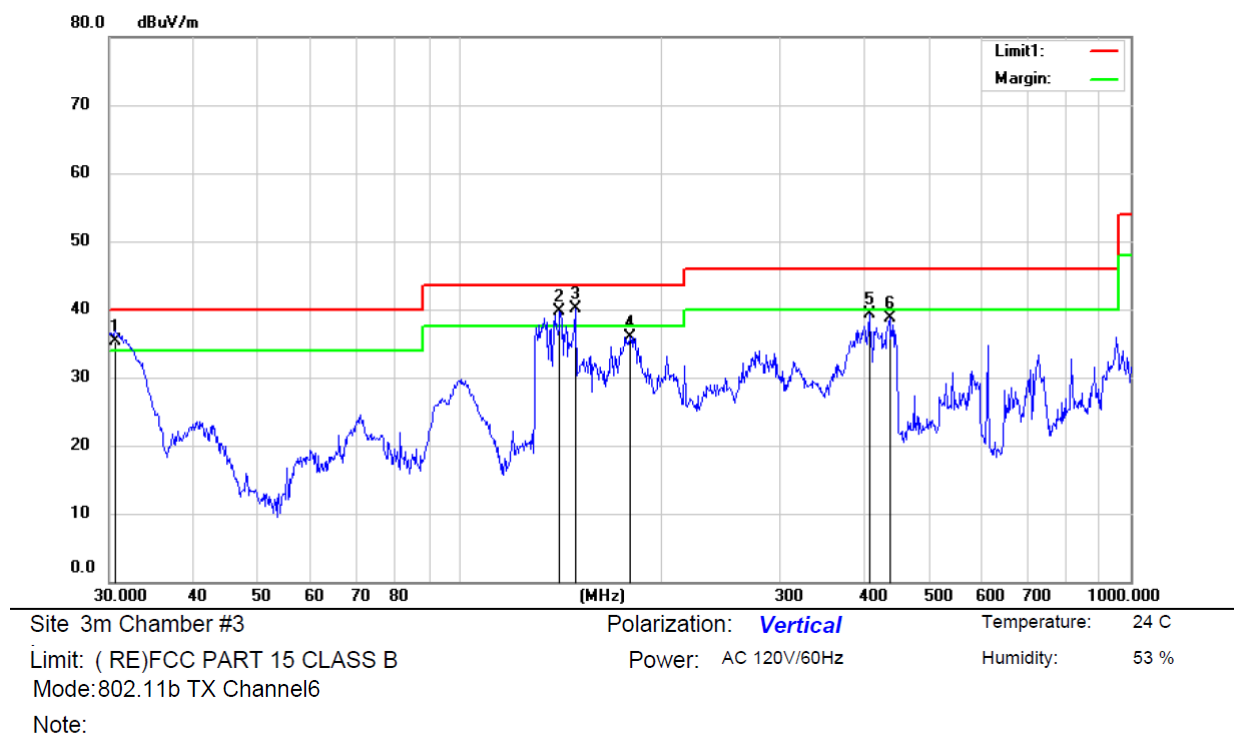
Mode:802.11b TX Channel6

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	!	148.4410	56.60	-18.04	38.56	43.50	-4.94	QP		
2		176.8878	55.86	-19.12	36.74	43.50	-6.76	QP		
3		203.5228	53.69	-16.40	37.29	43.50	-6.21	QP		
4	*	278.0668	54.97	-12.59	42.38	46.00	-3.62	QP		
5		385.2805	47.52	-9.70	37.82	46.00	-8.18	QP		
6		952.0937	39.81	-0.71	39.10	46.00	-6.90	QP		

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

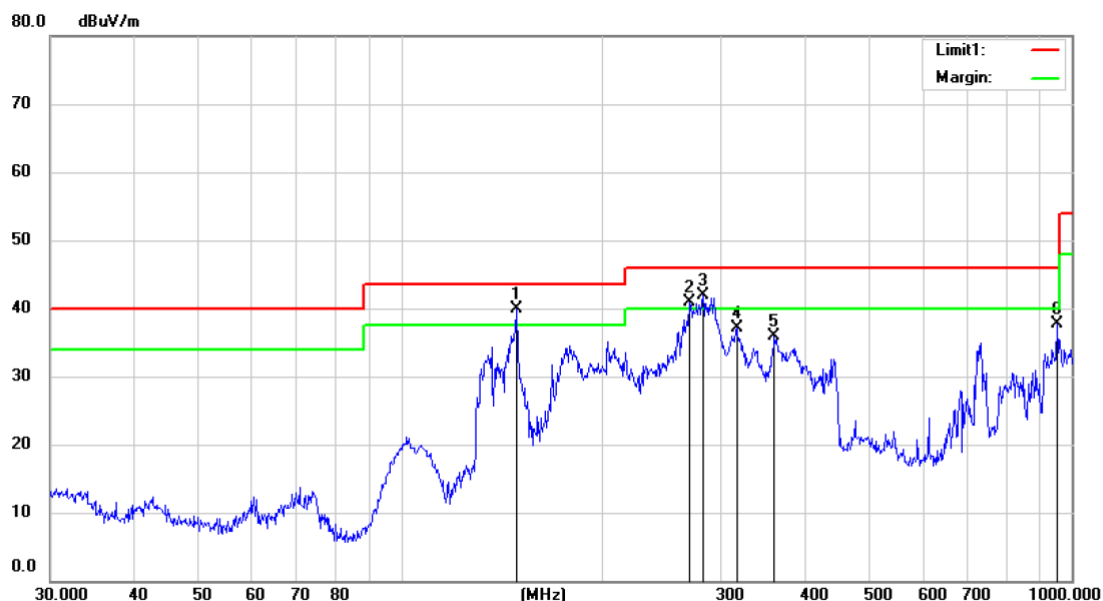
Operator: CSL



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	!	30.6380	51.45	-16.24	35.21	40.00	-4.79	QP		
2	!	140.8351	57.59	-17.81	39.78	43.50	-3.72	QP		
3	*	148.4410	58.06	-18.04	40.02	43.50	-3.48	QP		
4		179.3863	54.86	-18.99	35.87	43.50	-7.63	QP		
5		407.5145	48.48	-9.08	39.40	46.00	-6.60	QP		
6		437.1200	49.70	-10.95	38.75	46.00	-7.25	QP		

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

Operator: CSL



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

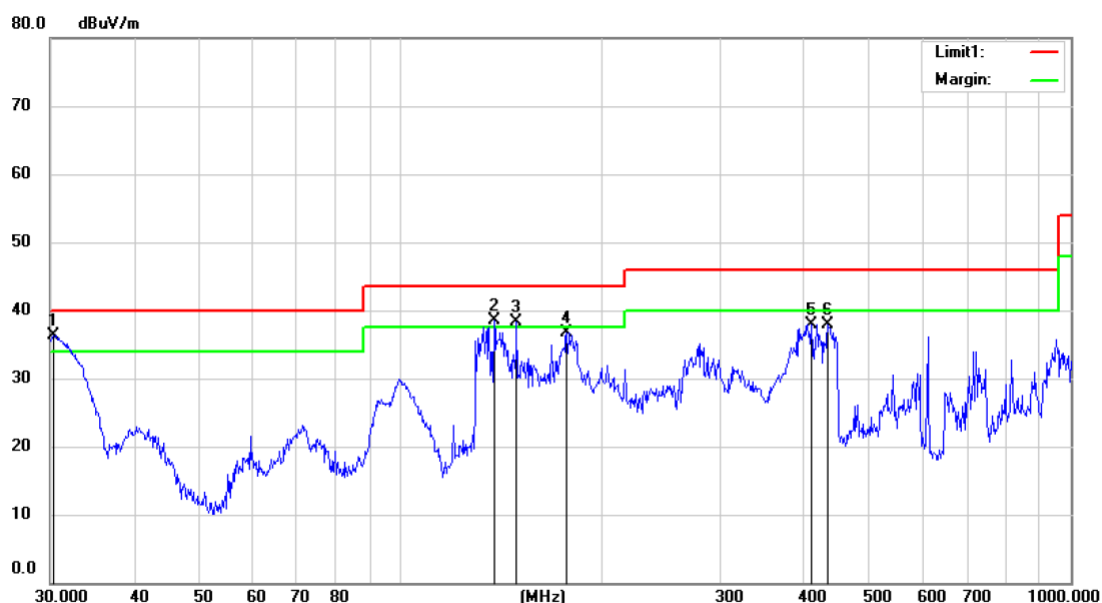
Mode:802.11b TX Channel11

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	*	148.9625	58.05	-18.07	39.98	43.50	-3.52	QP		
2	!	269.4284	53.62	-12.70	40.92	46.00	-5.08	QP		
3	!	281.9946	54.60	-12.70	41.90	46.00	-4.10	QP		
4		316.5890	50.74	-13.56	37.18	46.00	-8.82	QP		
5		360.4476	46.66	-10.72	35.94	46.00	-10.06	QP		
6		952.0937	38.45	-0.71	37.74	46.00	-8.26	QP		

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

Operator: CSL



Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX Channel11
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	
							Detector		degree	Comment
1	*	30.3173	52.61	-16.34	36.27	40.00	-3.73	QP		
2	!	137.9028	56.14	-17.67	38.47	43.50	-5.03	QP		
3	!	148.9625	56.45	-18.07	38.38	43.50	-5.12	QP		
4		176.8878	55.85	-19.12	36.73	43.50	-6.77	QP		
5		410.3825	47.08	-9.16	37.92	46.00	-8.08	QP		
6		434.0651	48.51	-10.68	37.83	46.00	-8.17	QP		

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

Operator: CSL

■ 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:	June 1, 2015
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
11296.00	V	48.49	33.53	74.00	54.00	-25.51	-20.47
13761.00	V	50.24	35.46	74.00	54.00	-23.76	-18.54
16447.00	V	52.27	37.23	74.00	54.00	-21.73	-16.77
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
12282.00	H	48.66	33.66	74.00	54.00	-25.34	-20.34
14781.00	H	51.14	36.45	74.00	54.00	-22.86	-17.55
16447.00	H	52.83	37.67	74.00	54.00	-21.17	-16.33

Test mode:	802.11b	Frequency:	Channel 6: 2437MHz
------------	---------	------------	--------------------

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
11291.00	V	48.30	33.41	74.00	54.00	-25.70	-20.59
13745.00	V	50.71	36.13	74.00	54.00	-23.29	-17.87
15903.00	V	51.04	35.57	74.00	54.00	-22.96	-18.43
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
11517.00	H	47.80	32.48	74.00	54.00	-26.20	-21.52
14781.00	H	50.48	35.46	74.00	54.00	-23.52	-18.54
16855.00	H	53.64	36.97	74.00	54.00	-20.36	-17.03

Test mode:	802.11b	Frequency:	Channel 11: 2462MHz
------------	---------	------------	---------------------

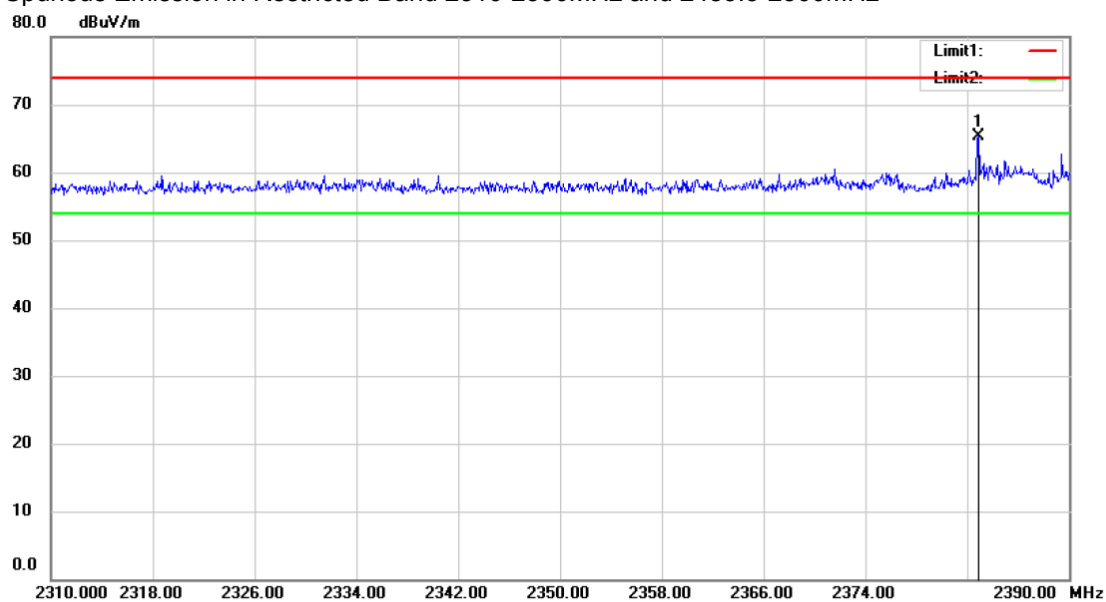
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
11177.00	V	49.01	34.09	74.00	54.00	-24.99	-19.91
13931.00	V	50.93	36.18	74.00	54.00	-23.07	-17.82
16515.00	V	53.36	38.42	74.00	54.00	-20.64	-15.58
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
10990.00	H	48.54	34.42	74.00	54.00	-25.46	-19.58
15359.00	H	52.76	37.67	74.00	54.00	-21.24	-16.33
17671.00	H	53.19	38.27	74.00	54.00	-20.81	-15.73

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

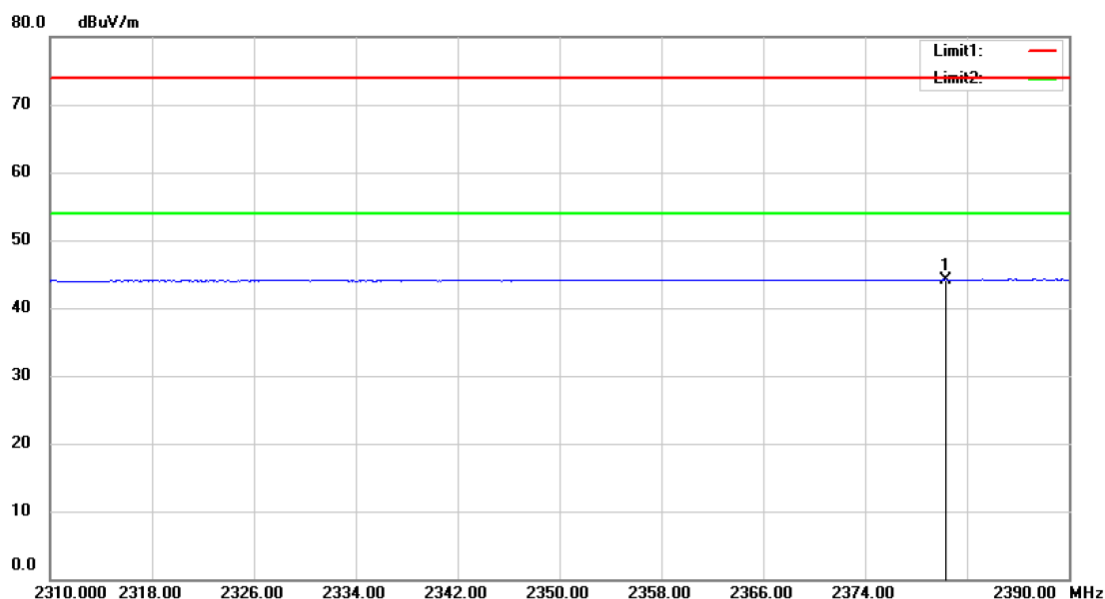


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:802.11b TX Channel1
Note:

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	*	2382.880	34.26	31.08	65.34	74.00	-8.66	peak		

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

Operator: CSL



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

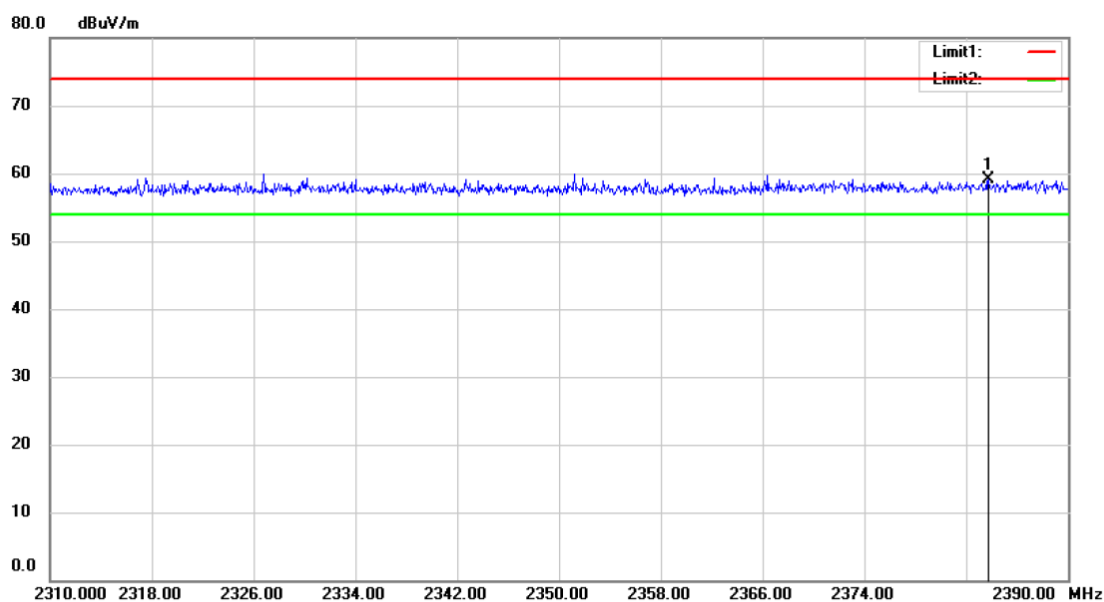
Mode:802.11b TX Channel1

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	*	2380.320	13.14	31.06	44.20	54.00	-9.80	AVG		

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

Operator: CSL

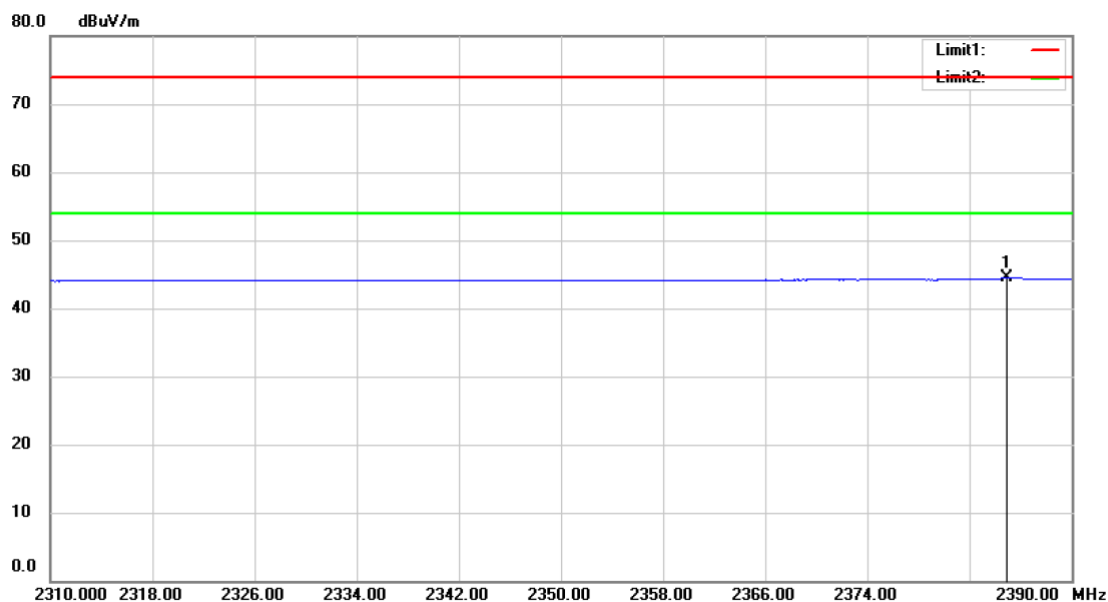


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX Channel1
 Note:

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	*	2383.760	27.95	31.08	59.03	74.00	-14.97	peak		

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

Operator: CSL



Site 3m Chamber #3

Polarization: *Vertical*

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

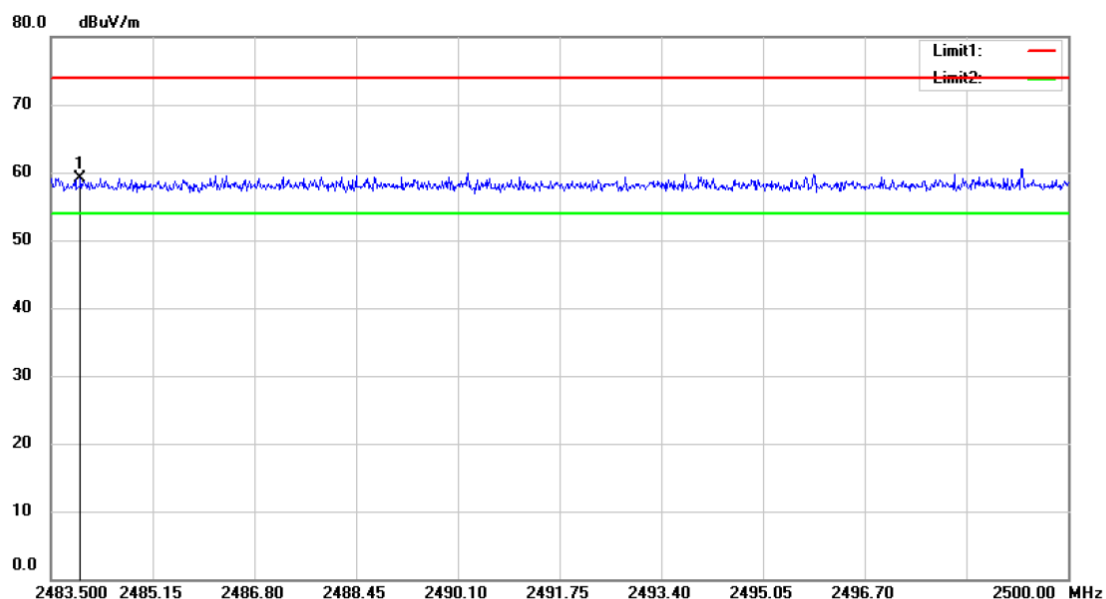
Mode:802.11b TX Channel1

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	*	2384.880	13.36	31.09	44.45	54.00	-9.55	AVG		Comment

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

Operator: CSL

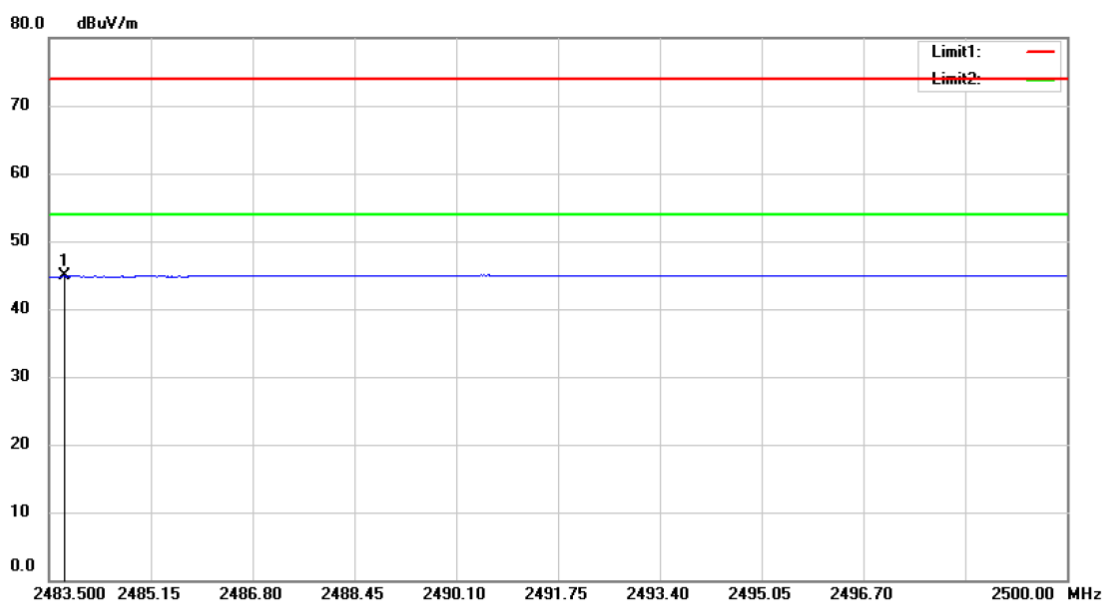


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX Channel11
 Note:

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	*	2483.979	27.66	31.53	59.19	74.00	-14.81	peak		

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

Operator: CSL

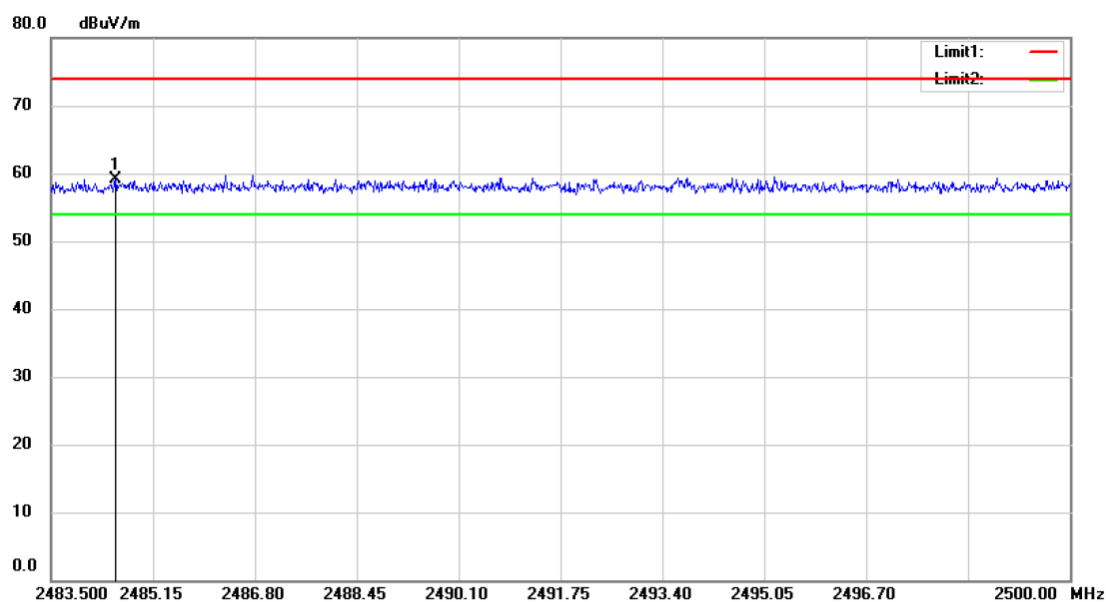


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX Channel11
 Note:

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	*	2483.747	13.30	31.52	44.82	54.00	-9.18	AVG		

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

Operator: CSL

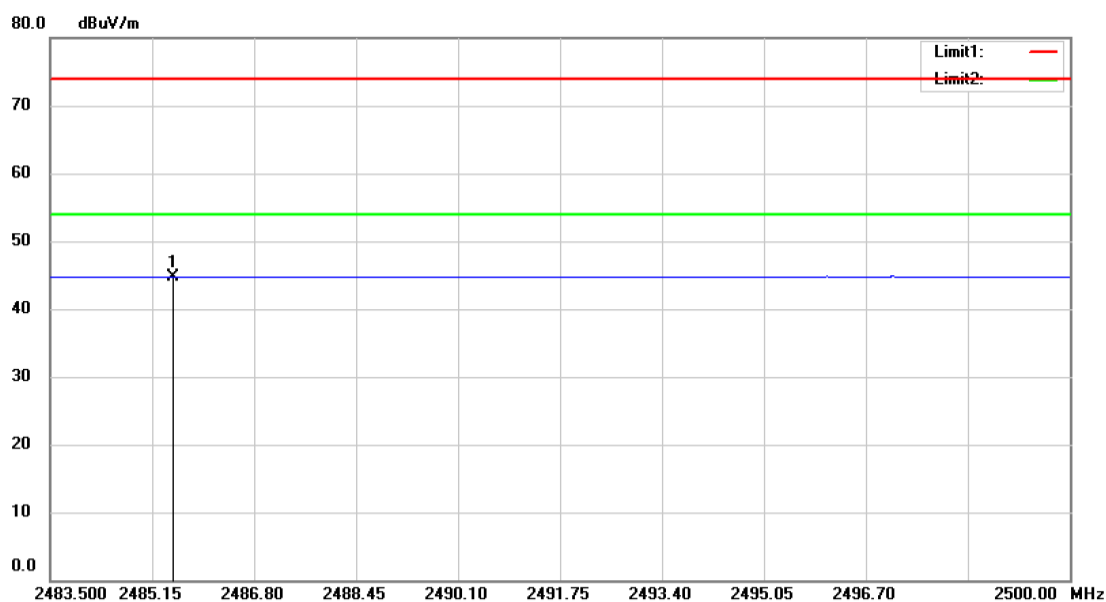


Site 3m Chamber #3 Polarization: *Vertical* Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11b TX Channel11
 Note:

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 *	2484.539	27.55	31.53	59.08	74.00	-14.92	peak		Comment

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

Operator: CSL



Site 3m Chamber #3

Polarization: *Vertical*

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

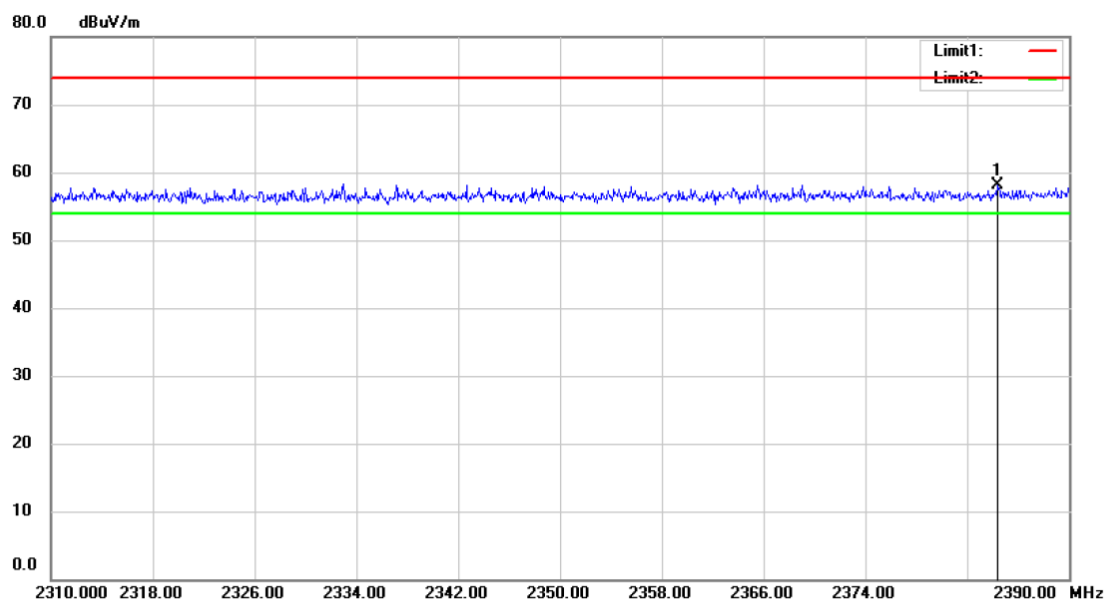
Mode:802.11b TX Channel11

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	*	2485.497	13.20	31.53	44.73	54.00	-9.27	AVG		

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

Operator: CSL

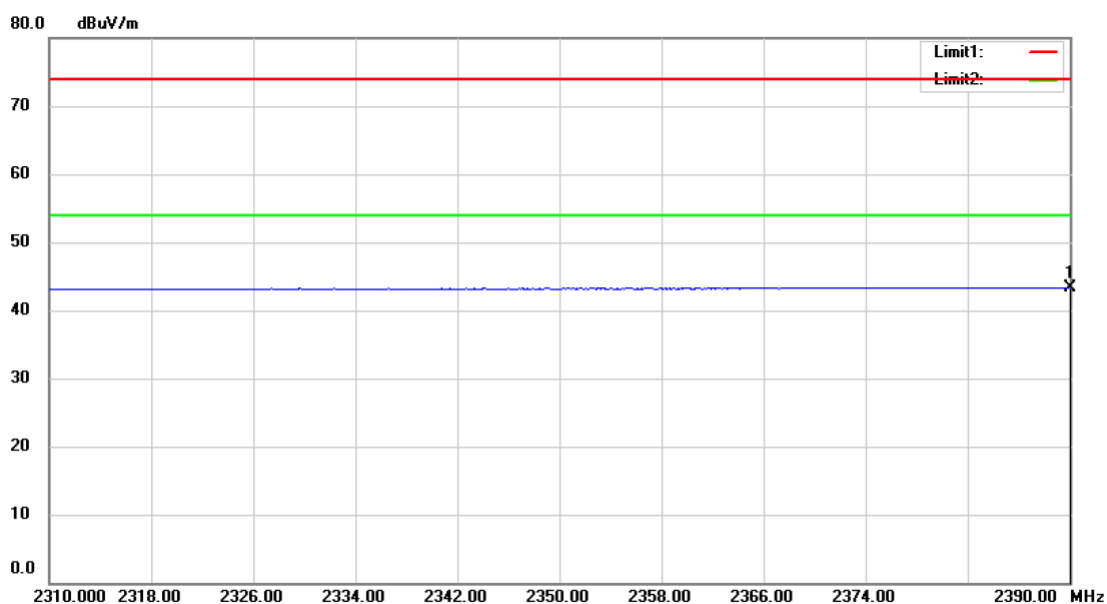


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel1
 Note:

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	*	2384.400	27.93	30.25	58.18	74.00	-15.82	peak		

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

Operator: CSL

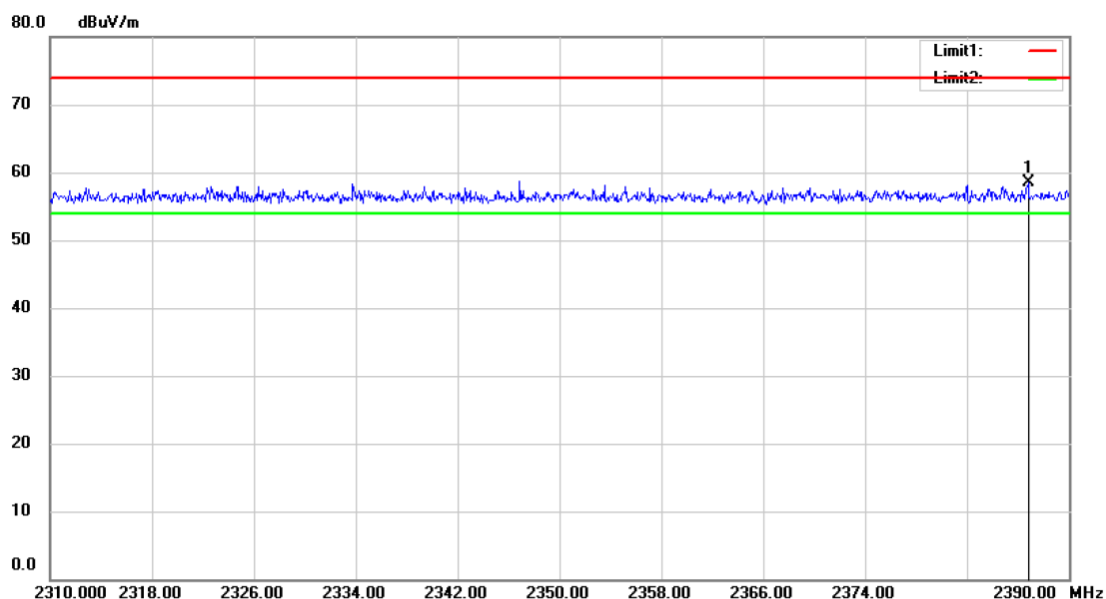


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel1
 Note:

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	*	2390.000	13.09	30.28	43.37	54.00	-10.63	AVG		

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

Operator: CSL

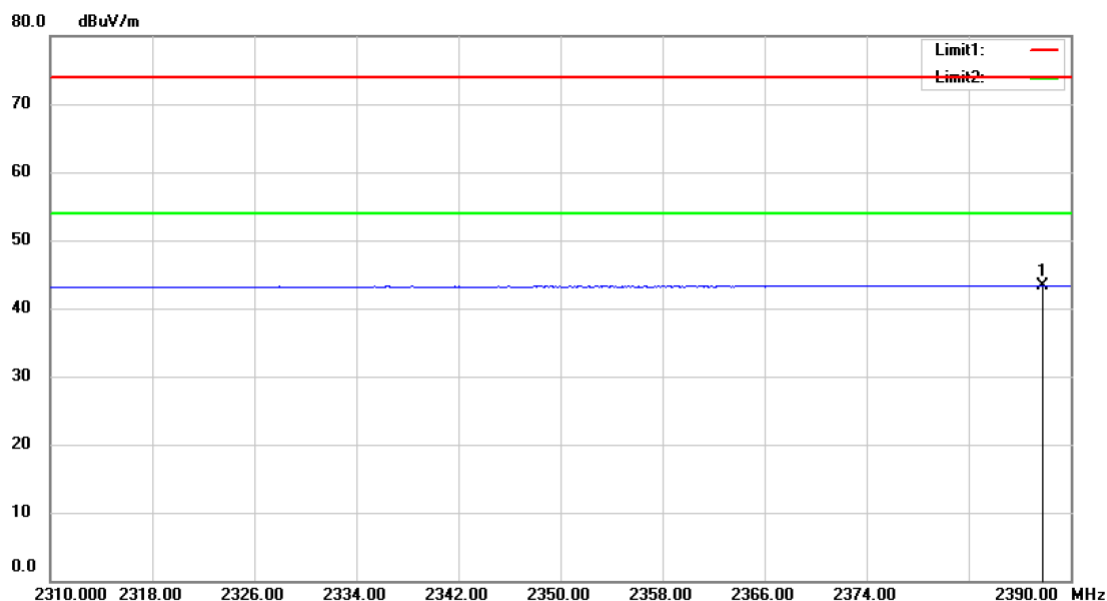


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel1
 Note:

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	*	2386.800	28.27	30.27	58.54	74.00	-15.46	peak		Comment

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

Operator: CSL

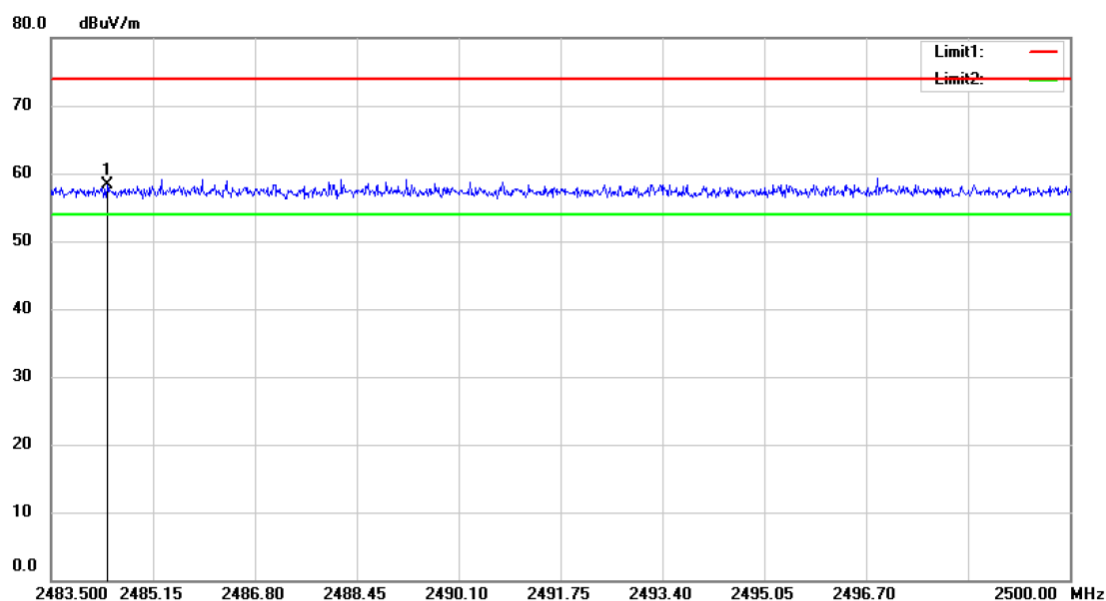


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel1
 Note:

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	*	2387.760	13.12	30.27	43.39	54.00	-10.61	AVG		

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

Operator: CSL

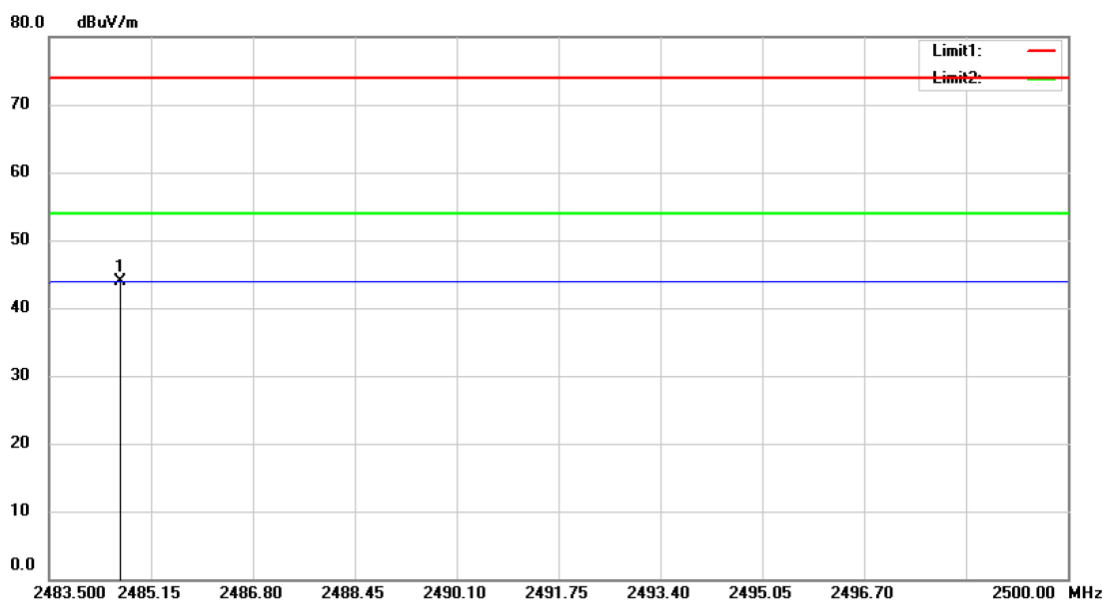


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel11
 Note:

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	*	2484.407	27.68	30.71	58.39	74.00	-15.61	peak		Comment

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

Operator: CSL

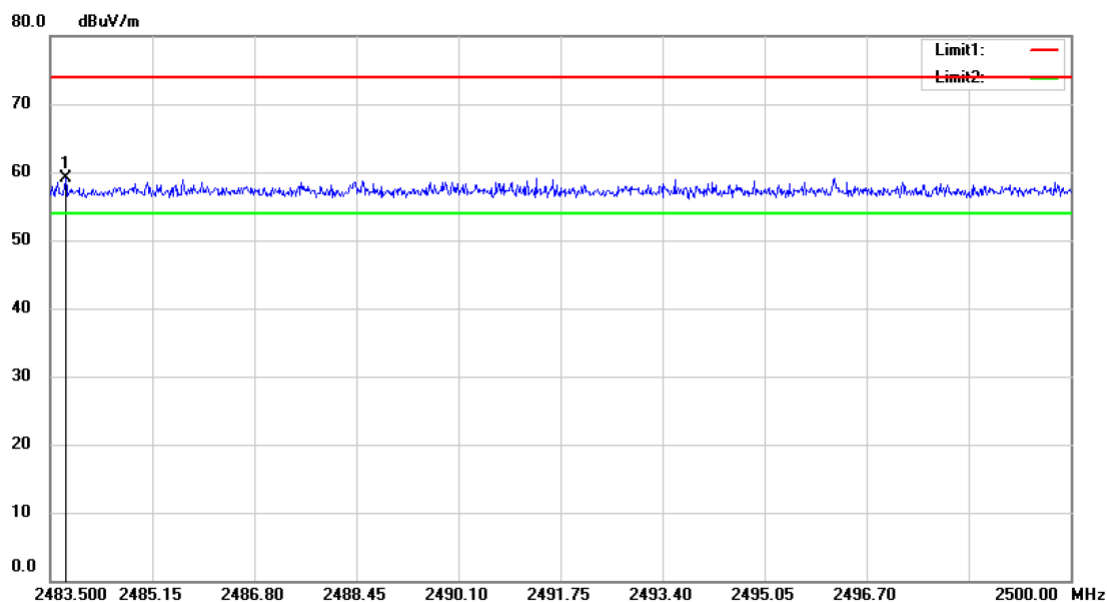


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel11
 Note:

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	*	2484.655	13.17	30.71	43.88	54.00	-10.12	AVG		Comment

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

Operator: CSL

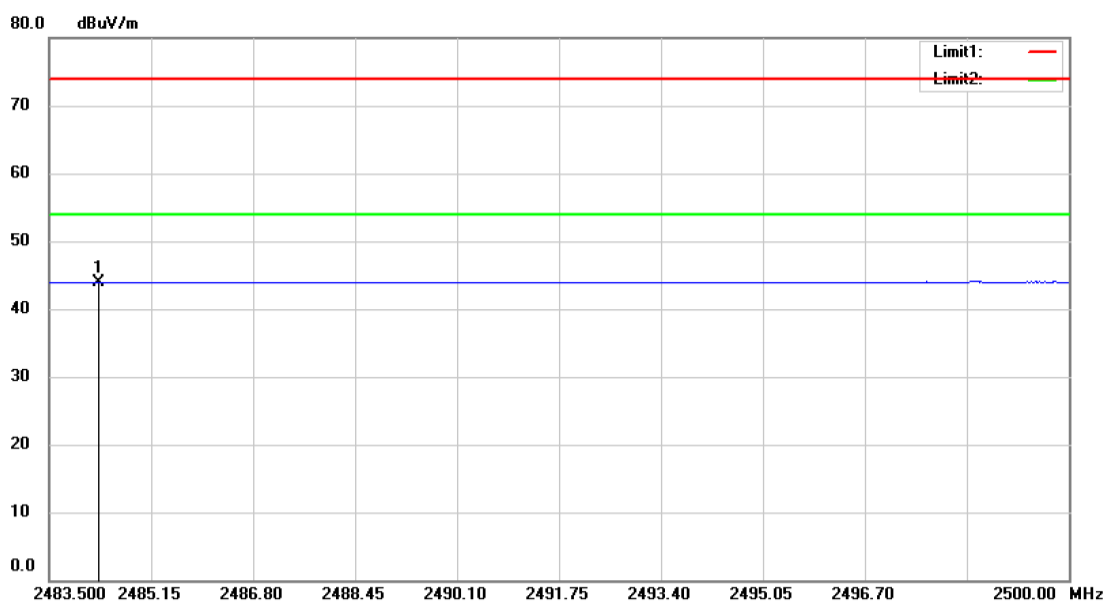


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel11
 Note:

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	*	2483.747	28.44	30.70	59.14	74.00	-14.86	peak		

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

Operator: CSL

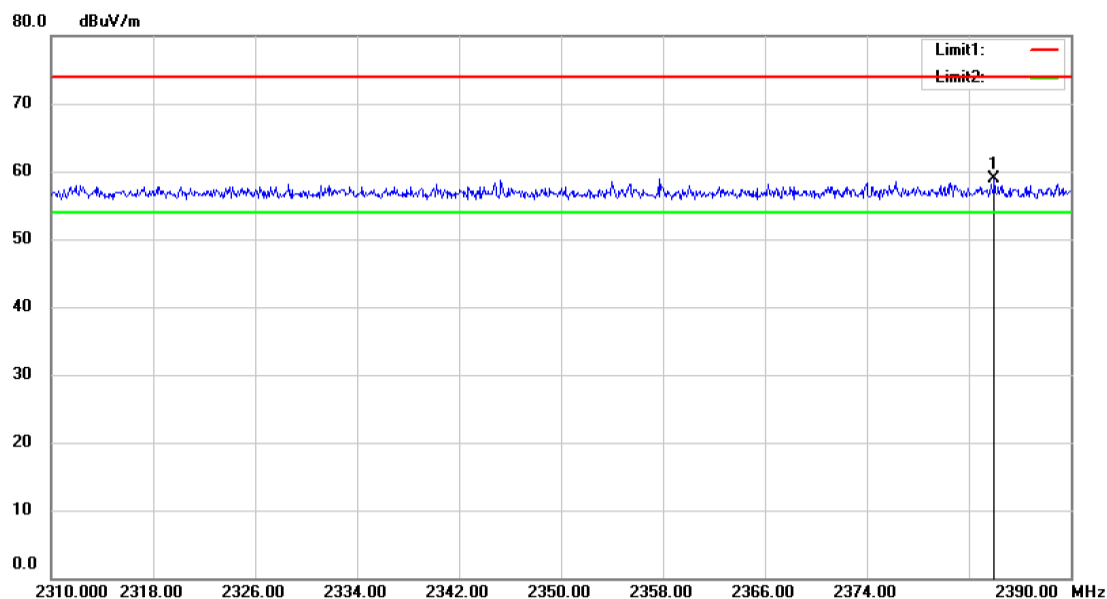


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11g TX Channel11
 Note:

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	*	2484.292	13.24	30.71	43.95	54.00	-10.05	AVG		

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

Operator: CSL

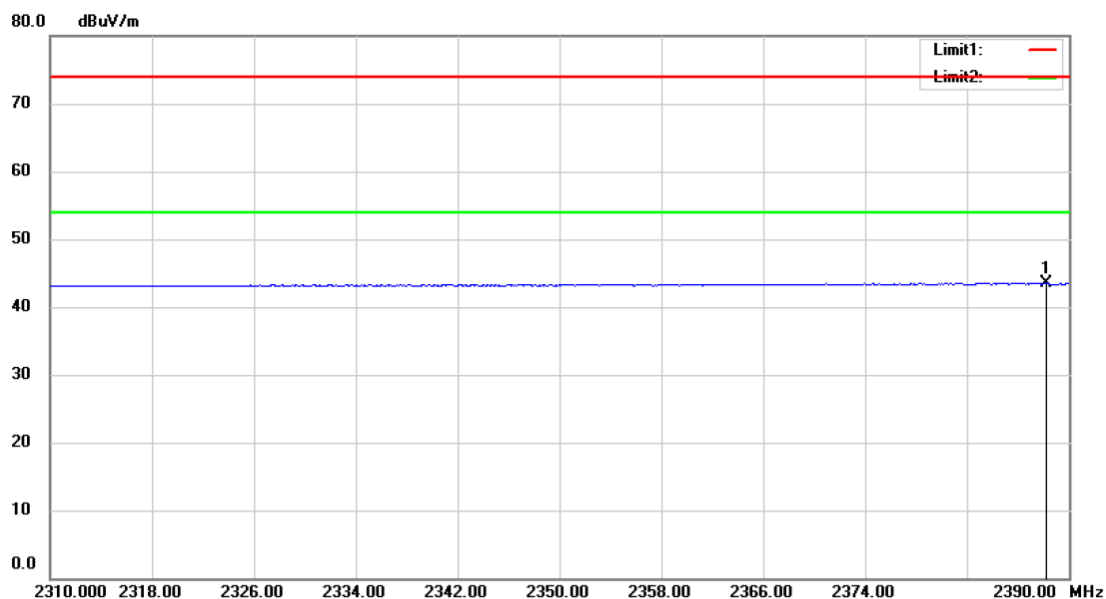


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:802.11n HT20 TX Channel1
Note:

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	*	2384.000	28.74	30.25	58.99	74.00	-15.01	peak		

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

Operator: CSL

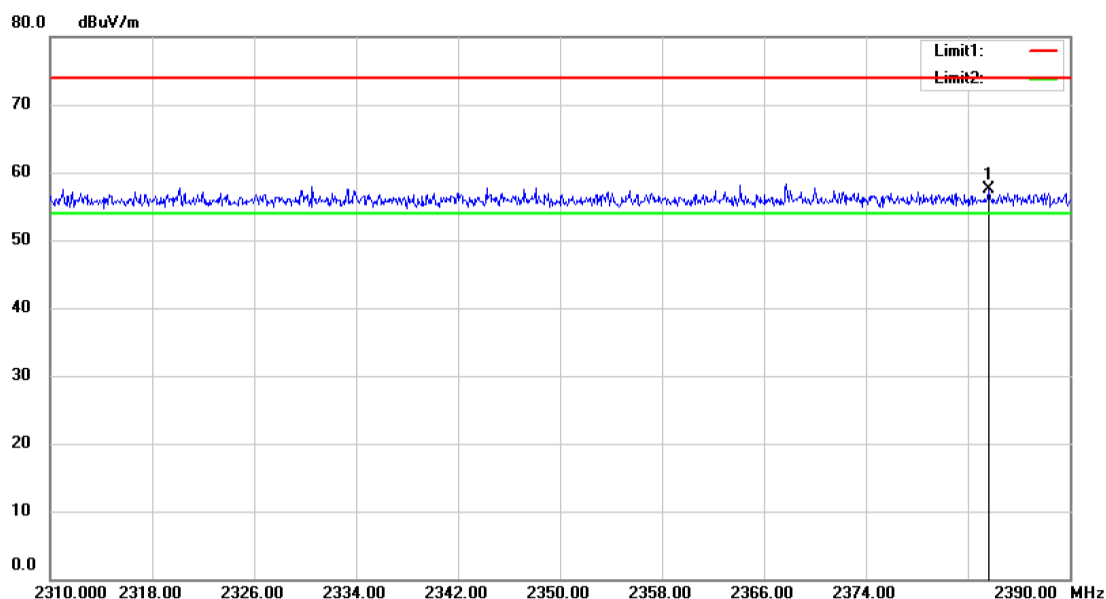


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel1
 Note:

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	*	2388.240	13.19	30.27	43.46	54.00	-10.54	AVG		

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

Operator: CSL

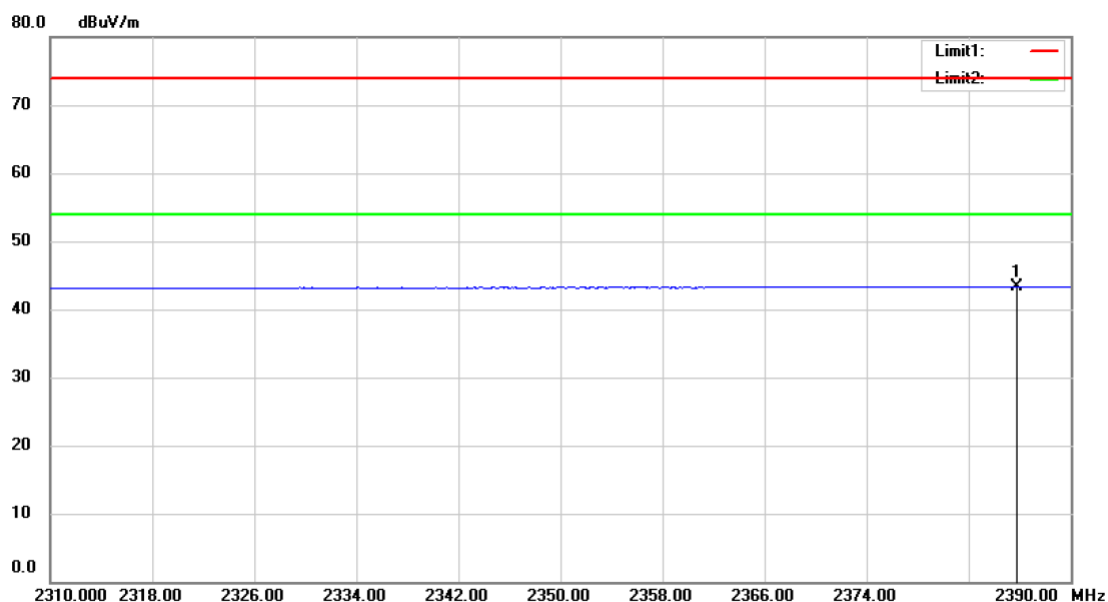


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel1
 Note:

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	*	2383.600	27.32	30.24	57.56	74.00	-16.44	peak		

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

Operator: CSL

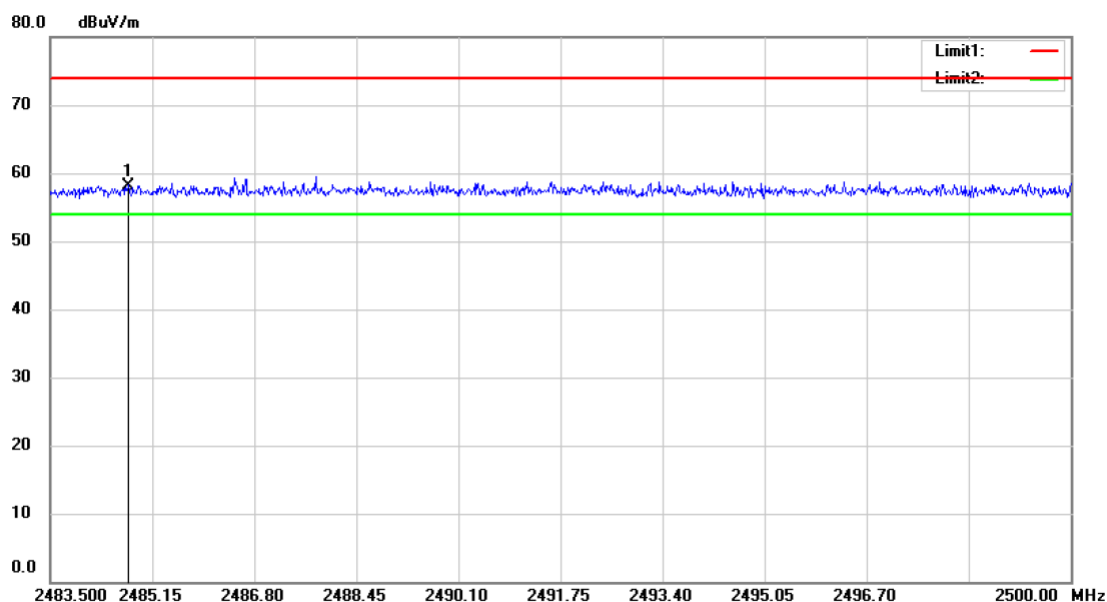


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel1
 Note:

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	*	2385.760	13.13	30.26	43.39	54.00	-10.61	AVG		

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

Operator: CSL

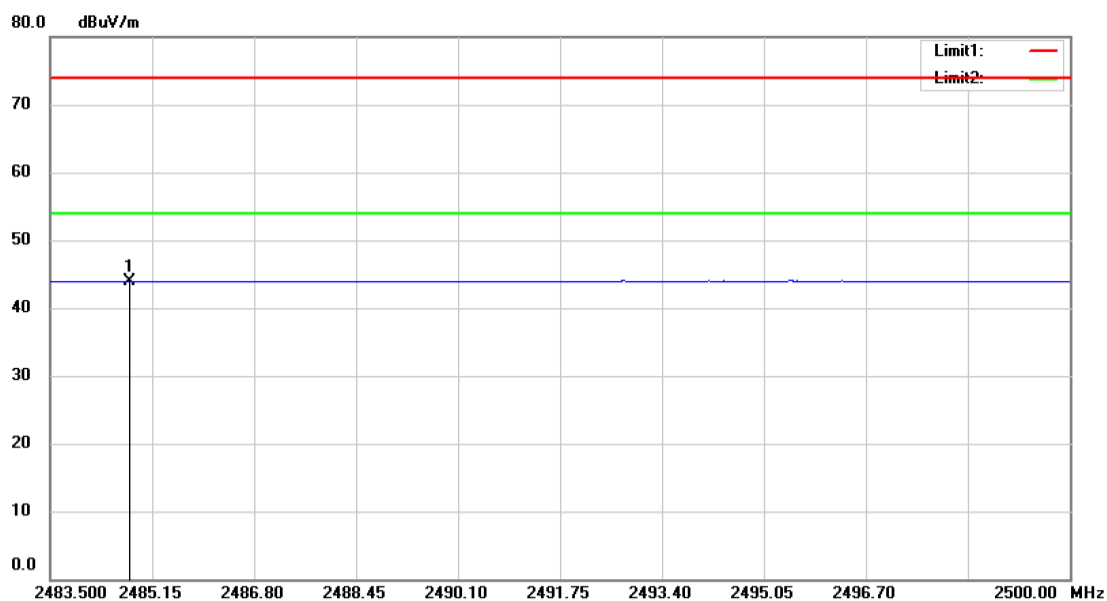


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel11
 Note:

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	*	2484.771	27.49	30.71	58.20	74.00	-15.80	peak		

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

Operator: CSL

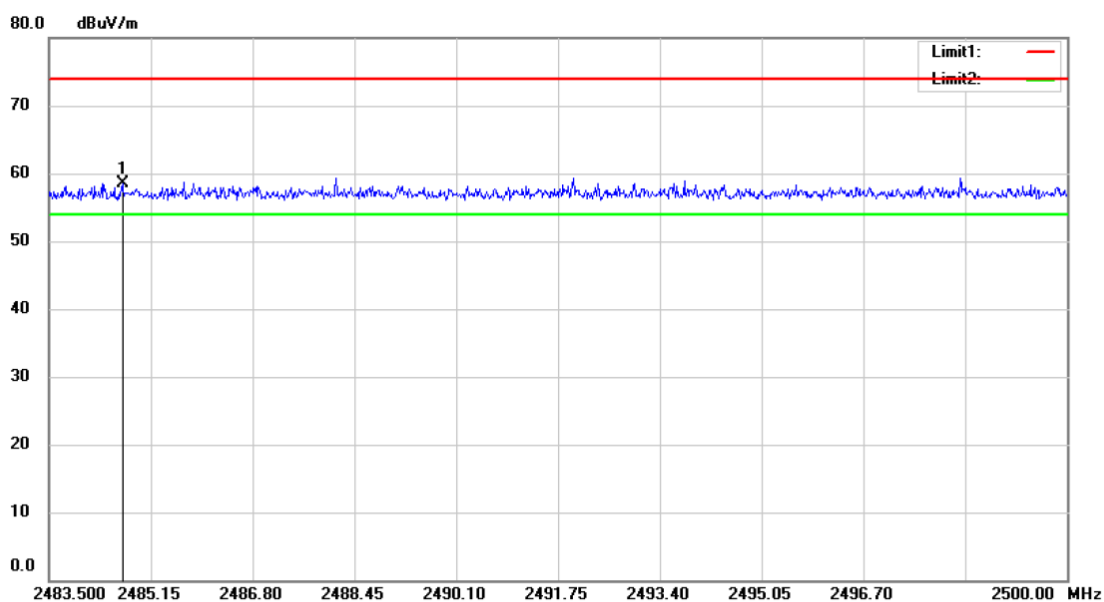


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel11
 Note:

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	13.26	30.71	43.97	54.00	-10.03	AVG		

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

Operator: CSL

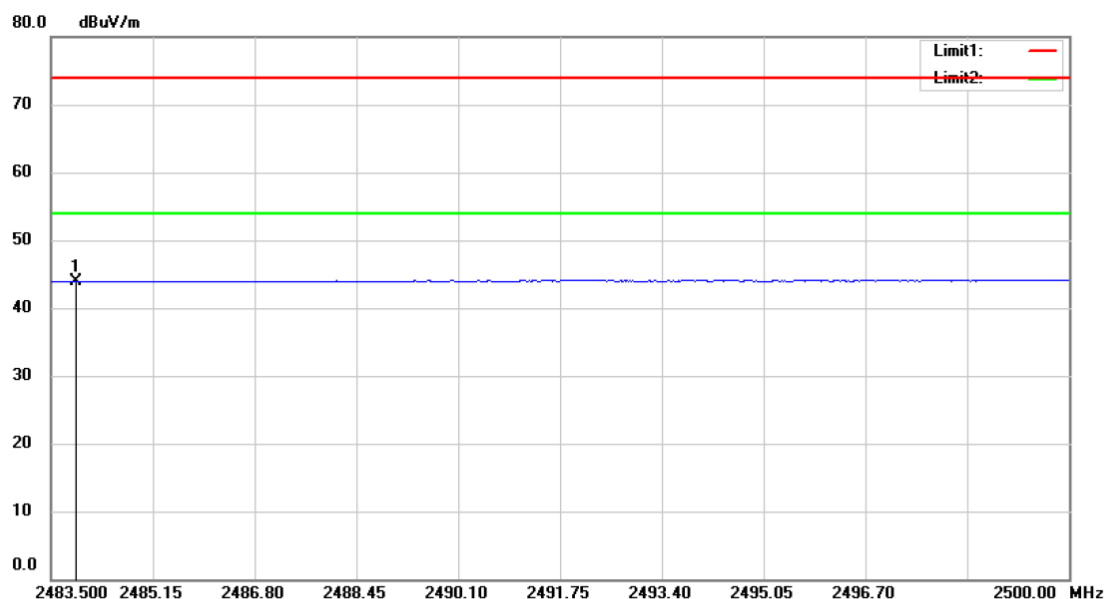


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel11
 Note:

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	*	2484.688	27.78	30.71	58.49	74.00	-15.51	peak		

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

Operator: CSL

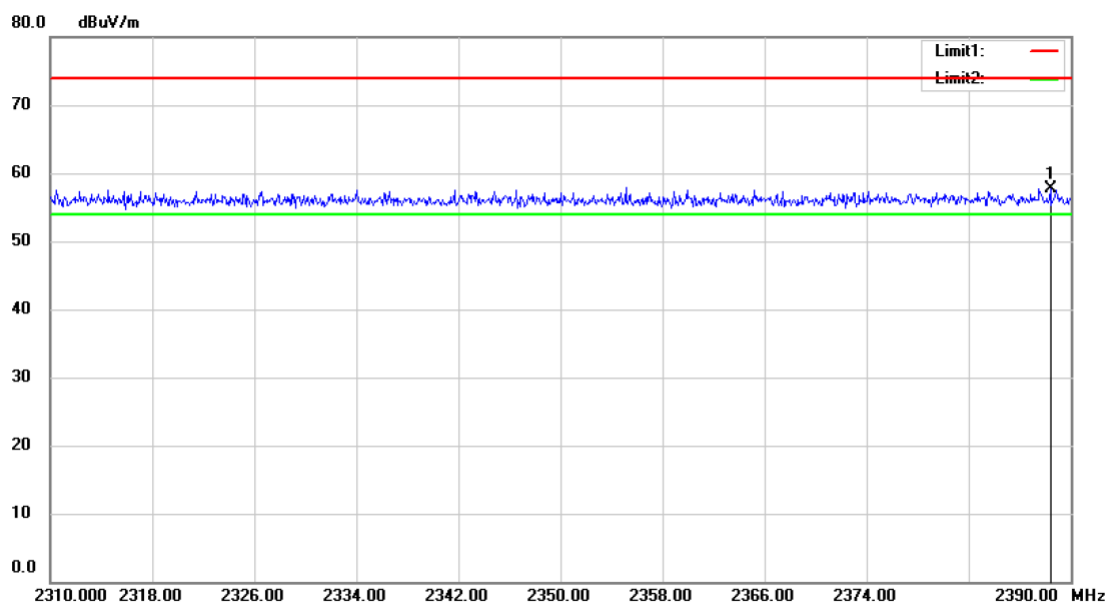


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT20 TX Channel11
 Note:

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	*	2483.896	13.28	30.71	43.99	54.00	-10.01	AVG		

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

Operator: CSL

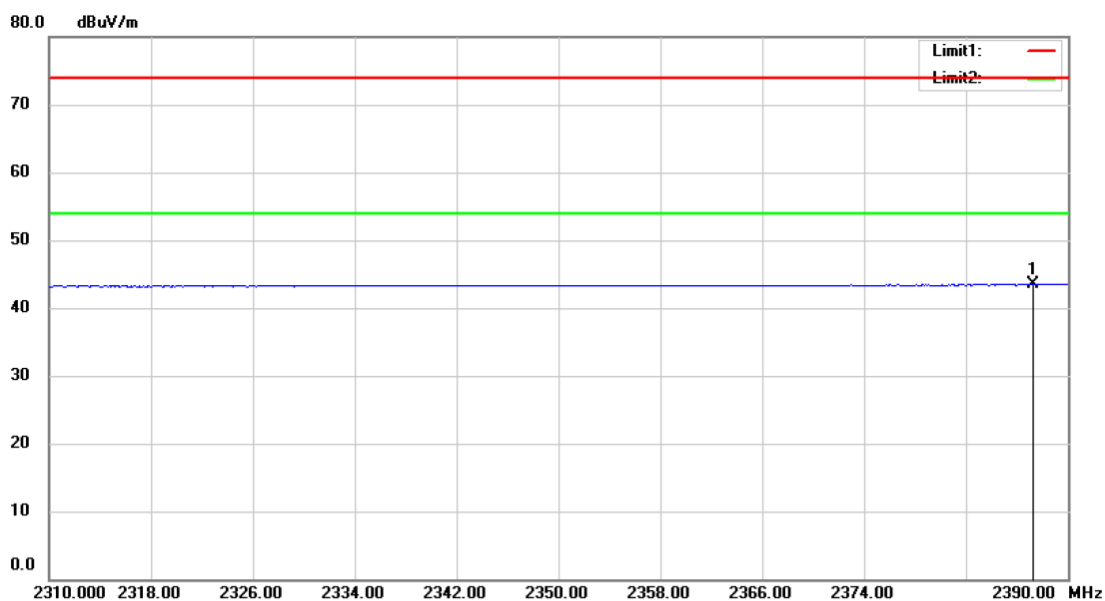


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT40 TX Channel3
 Note:

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	*	2388.400	27.52	30.27	57.79	74.00	-16.21	peak		

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

Operator: CSL

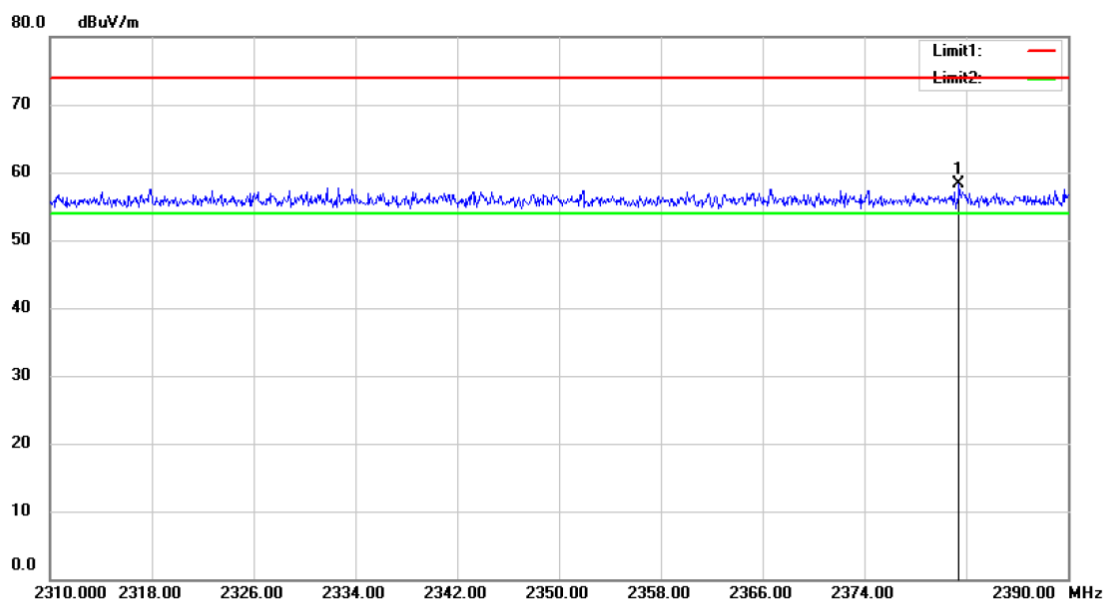


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT40 TX Channel3
 Note:

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	*	2387.280	13.23	30.27	43.50	54.00	-10.50	AVG		

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

Operator: CSL

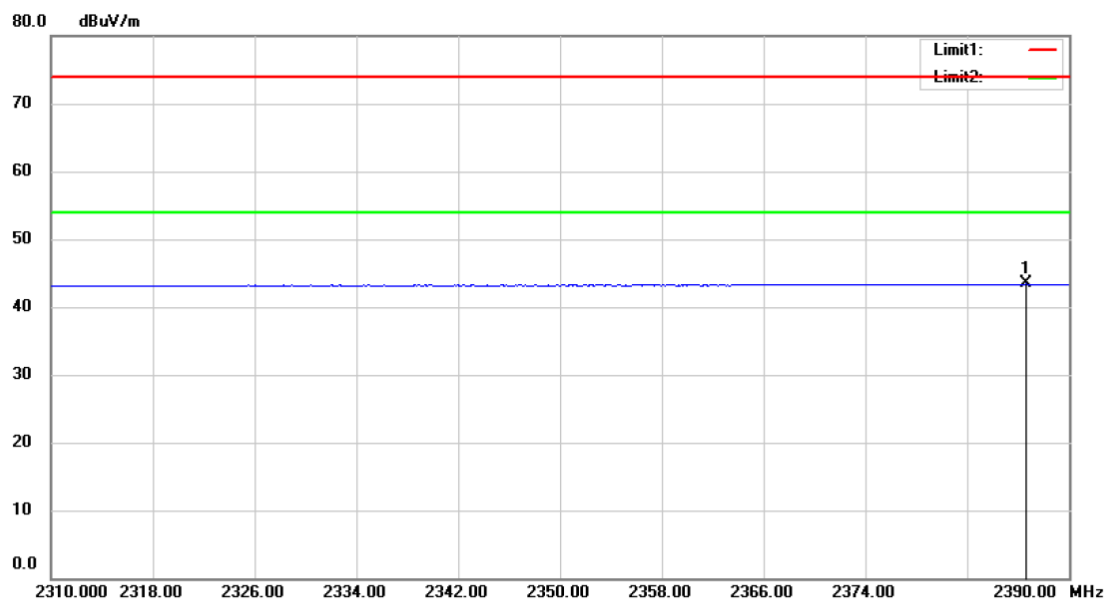


Site 3m Chamber #3 Polarization: **Vertical** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT40 TX Channel3
 Note:

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	*	2381.440	28.11	30.24	58.35	74.00	-15.65	peak		Comment

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

Operator: CSL



Site 3m Chamber #3

Polarization: *Vertical*

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

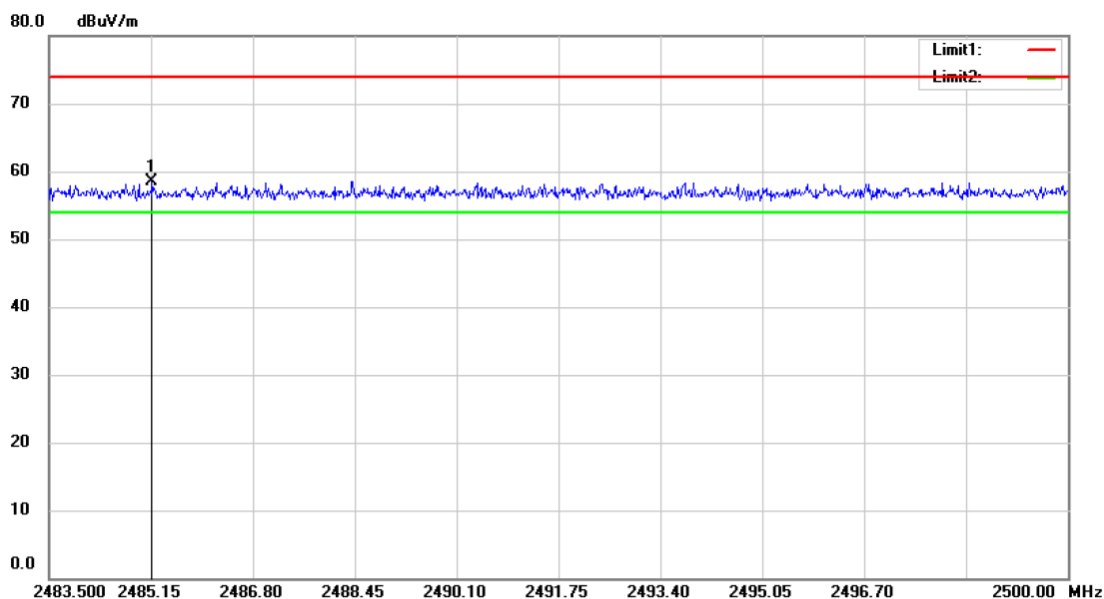
Mode:802.11n HT40 TX Channel3

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	*	2386.640	13.15	30.26	43.41	54.00	-10.59	AVG		

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

Operator: CSL

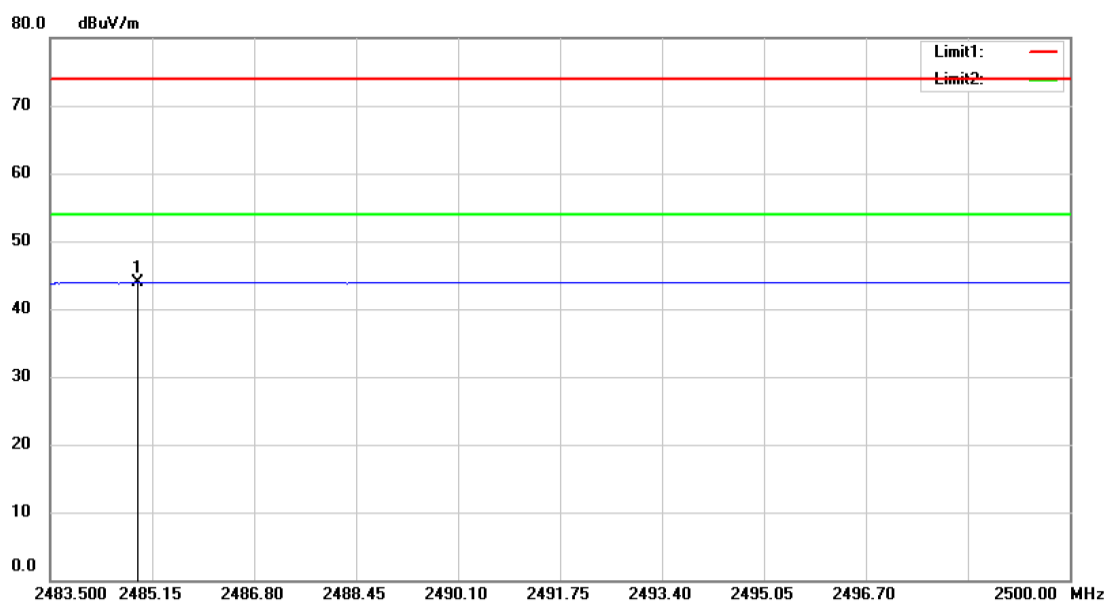


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT40 TX Channel9
 Note:

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	*	2485.166	27.76	30.71	58.47	74.00	-15.53	peak		

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

Operator: CSL

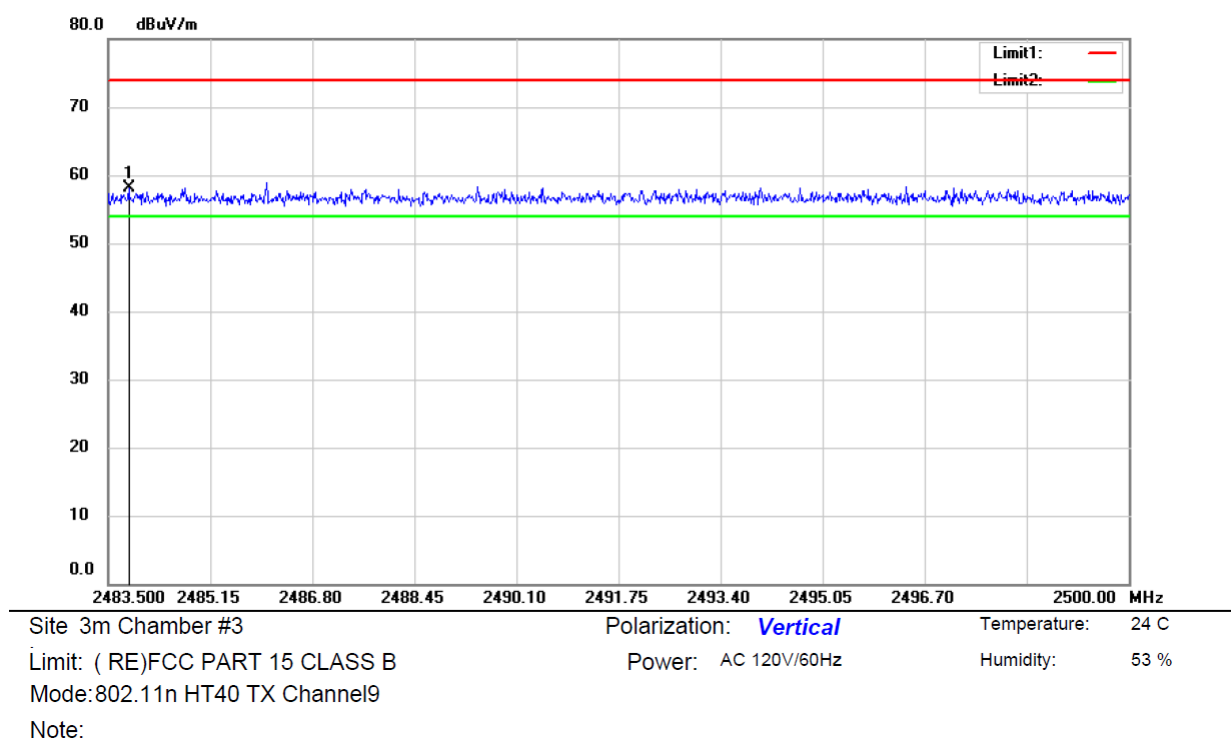


Site 3m Chamber #3 Polarization: **Horizontal** Temperature: 24 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
 Mode:802.11n HT40 TX Channel9
 Note:

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	*	2484.919	13.15	30.71	43.86	54.00	-10.14	AVG		Comment

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

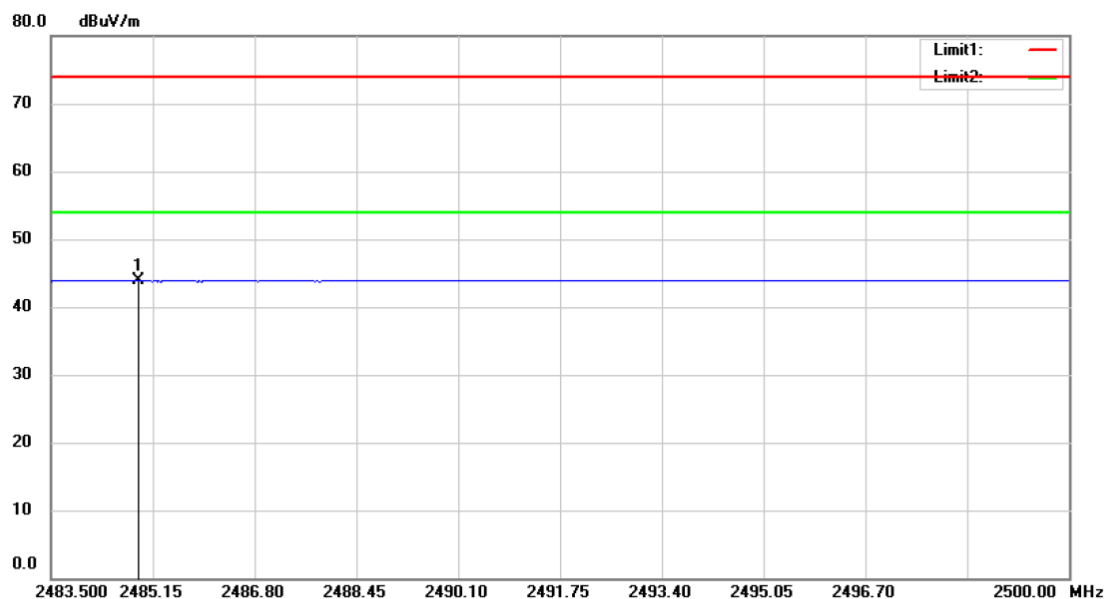
Operator: CSL



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	*	2483.830	27.38	30.71	58.09	74.00	-15.91	peak		

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

Operator: CSL



Site 3m Chamber #3

Polarization: **Vertical**

Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

Mode:802.11n HT40 TX Channel9

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	*	2484.919	13.16	30.71	43.87	54.00	-10.13	AVG		Comment

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

Operator: CSL

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.

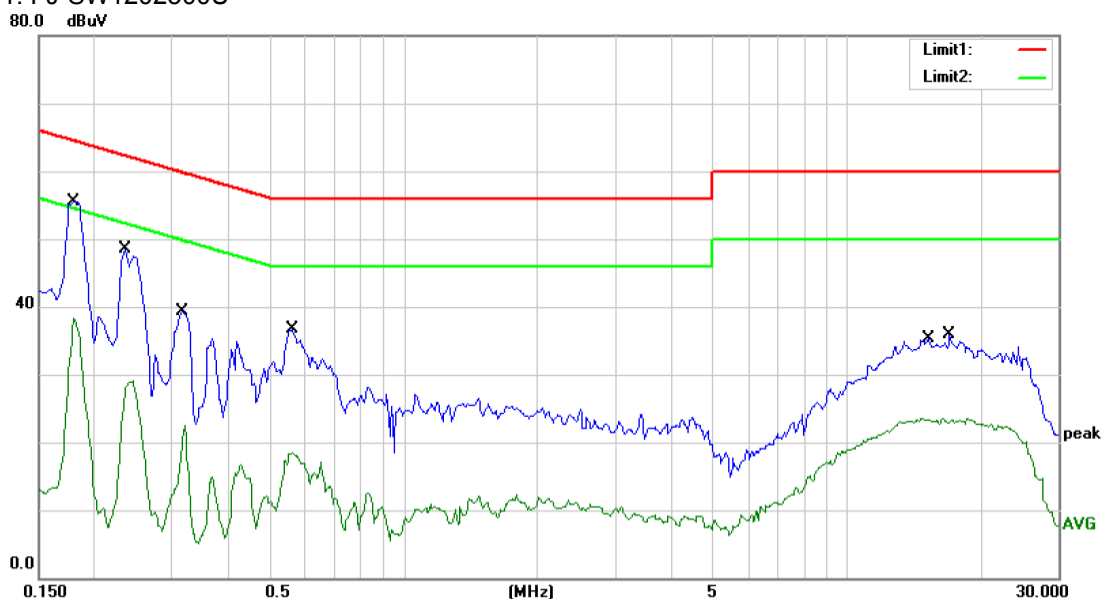
Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

PASS.

Adapter1: FJ-SW1202500U



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

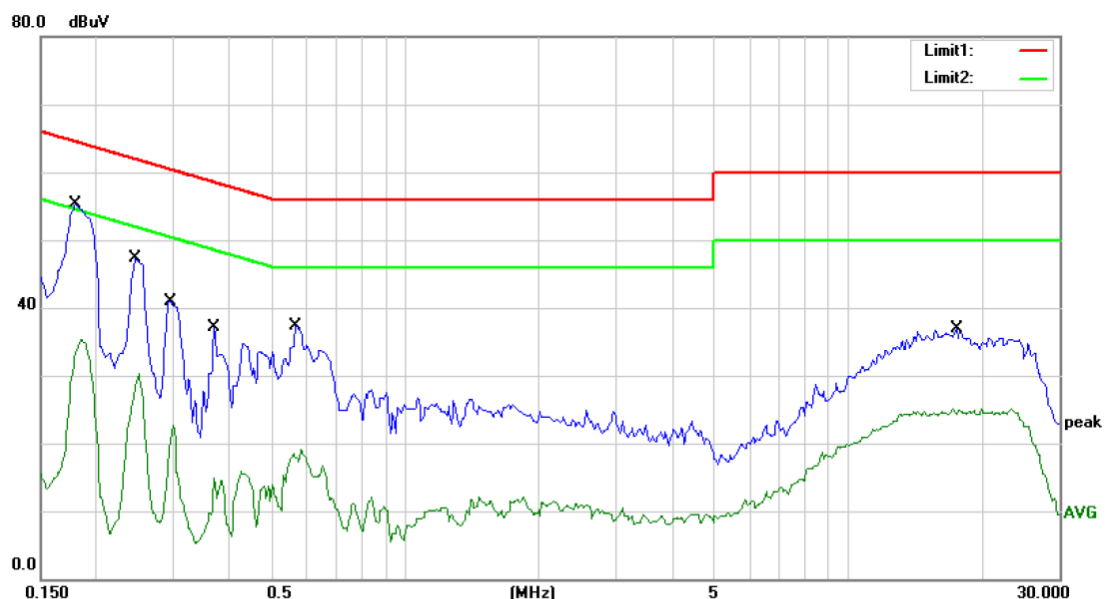
Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1800	55.48	0.00	55.48	64.49	-9.01	QP	
2		0.1800	38.39	0.00	38.39	54.49	-16.10	AVG	
3		0.2350	48.41	0.00	48.41	62.27	-13.86	QP	
4		0.2350	29.03	0.00	29.03	52.27	-23.24	AVG	
5		0.3150	39.34	0.00	39.34	59.84	-20.50	QP	
6		0.3150	22.59	0.00	22.59	49.84	-27.25	AVG	
7		0.5600	36.79	0.00	36.79	56.00	-19.21	QP	
8		0.5600	18.46	0.00	18.46	46.00	-27.54	AVG	
9		15.2750	35.28	0.00	35.28	60.00	-24.72	QP	
10		15.2750	23.59	0.00	23.59	50.00	-26.41	AVG	
11		17.0250	35.88	0.00	35.88	60.00	-24.12	QP	
12		17.0250	23.22	0.00	23.22	50.00	-26.78	AVG	

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



Site Conduction #1

Phase: **N**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

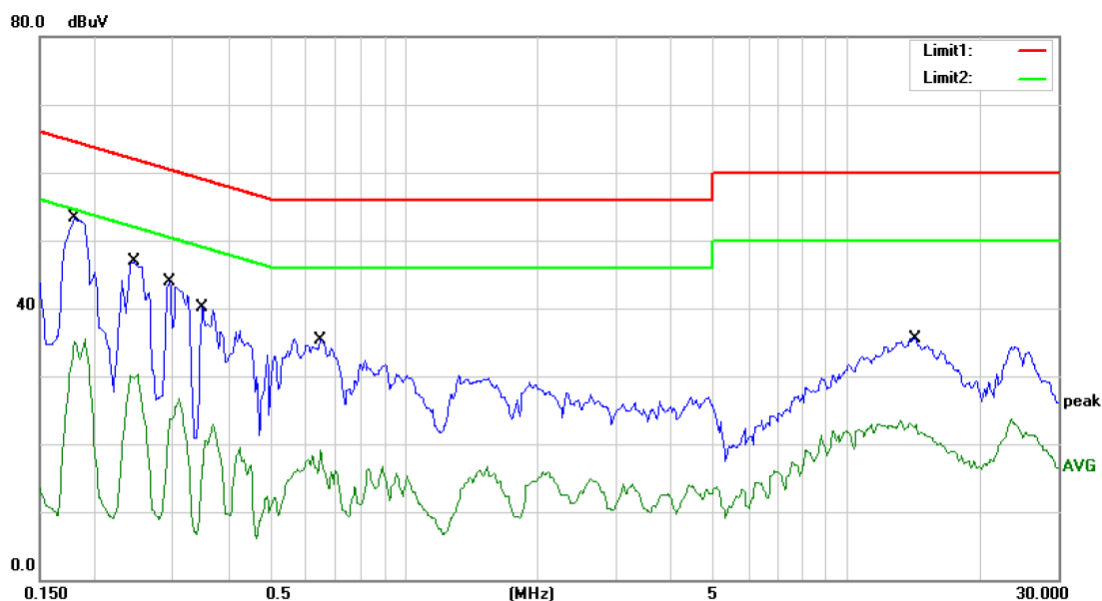
Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1800	55.24	0.00	55.24	64.49	-9.25	QP	
2		0.1800	35.26	0.00	35.26	54.49	-19.23	AVG	
3		0.2450	47.35	0.00	47.35	61.92	-14.57	QP	
4		0.2450	30.28	0.00	30.28	51.92	-21.64	AVG	
5		0.2950	40.91	0.00	40.91	60.38	-19.47	QP	
6		0.2950	22.73	0.00	22.73	50.38	-27.65	AVG	
7		0.3700	37.19	0.00	37.19	58.50	-21.31	QP	
8		0.3700	15.97	0.00	15.97	48.50	-32.53	AVG	
9		0.5650	37.29	0.00	37.29	56.00	-18.71	QP	
10		0.5650	19.02	0.00	19.02	46.00	-26.98	AVG	
11		17.6000	36.83	0.00	36.83	60.00	-23.17	QP	
12		17.6000	25.15	0.00	25.15	50.00	-24.85	AVG	

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



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 240V/50Hz

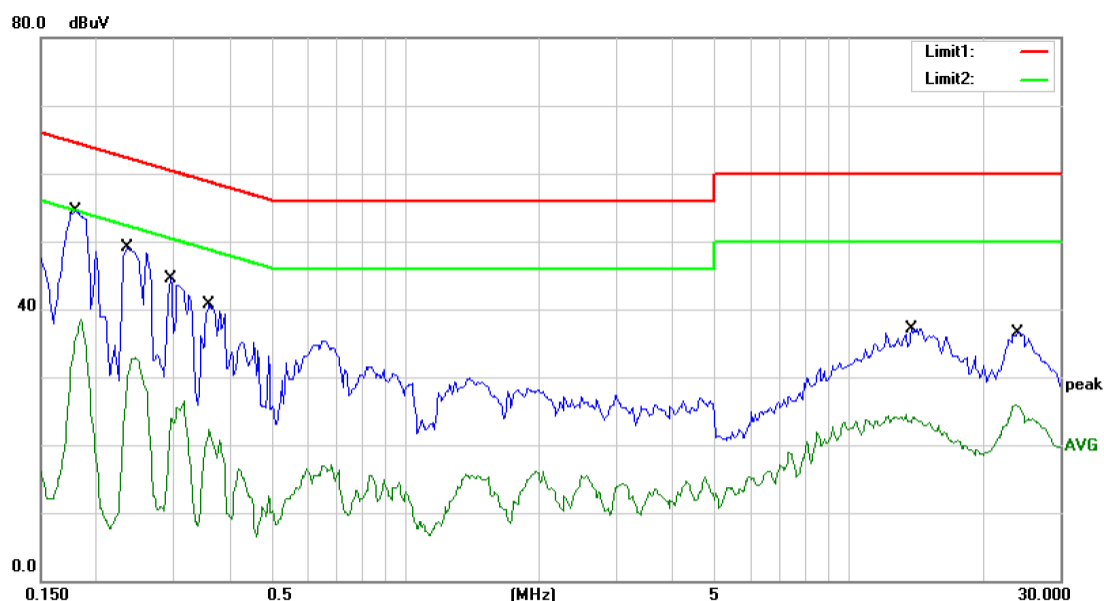
Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1800	53.22	0.00	53.22	64.49	-11.27	QP	
2		0.1800	35.48	0.00	35.48	54.49	-19.01	AVG	
3		0.2450	46.87	0.00	46.87	61.92	-15.05	QP	
4		0.2450	30.28	0.00	30.28	51.92	-21.64	AVG	
5		0.2950	43.89	0.00	43.89	60.38	-16.49	QP	
6		0.2950	26.69	0.00	26.69	50.38	-23.69	AVG	
7		0.3500	40.11	0.00	40.11	58.96	-18.85	QP	
8		0.3500	22.85	0.00	22.85	48.96	-26.11	AVG	
9		0.6450	35.37	0.00	35.37	56.00	-20.63	QP	
10		0.6450	19.10	0.00	19.10	46.00	-26.90	AVG	
11		14.2250	35.48	0.00	35.48	60.00	-24.52	QP	
12		14.2250	23.41	0.00	23.41	50.00	-26.59	AVG	

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



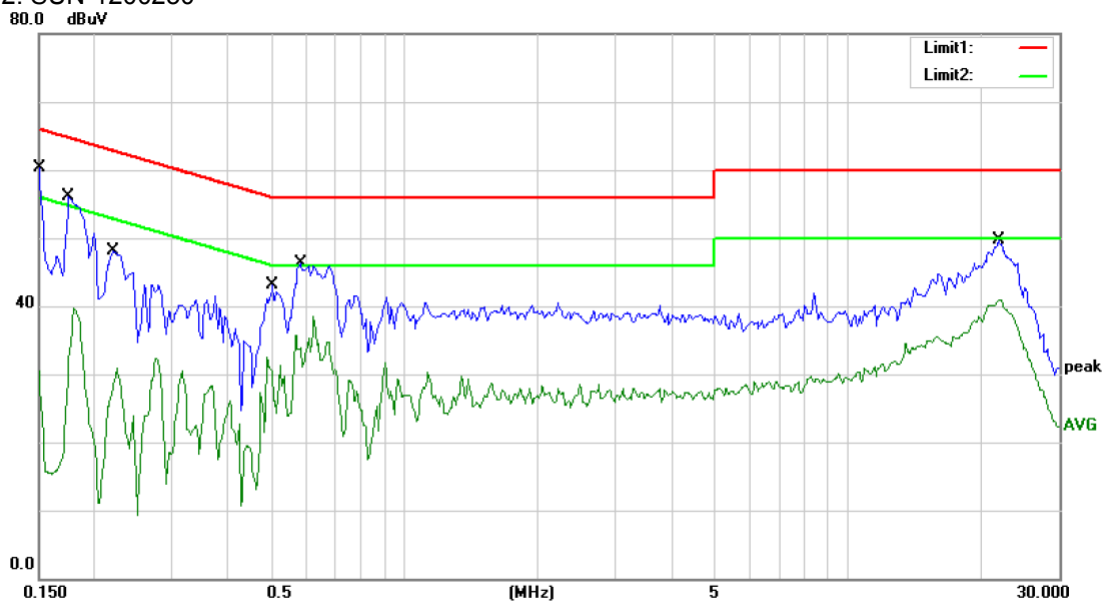
Site Conduction #1
 Limit: (CE)FCC PART 15 class B_QP
 Mode: ON
 Note:

Phase: **N** Temperature: 26
 Power: AC 240V/50Hz Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1800	54.42	0.00	54.42	64.49	-10.07	QP	
2		0.1800	38.54	0.00	38.54	54.49	-15.95	AVG	
3		0.2350	49.03	0.00	49.03	62.27	-13.24	QP	
4		0.2350	32.82	0.00	32.82	52.27	-19.45	AVG	
5		0.2950	44.41	0.00	44.41	60.38	-15.97	QP	
6		0.2950	26.44	0.00	26.44	50.38	-23.94	AVG	
7		0.3600	40.68	0.00	40.68	58.73	-18.05	QP	
8		0.3600	22.29	0.00	22.29	48.73	-26.44	AVG	
9		13.9000	37.05	0.00	37.05	60.00	-22.95	QP	
10		13.9000	24.51	0.00	24.51	50.00	-25.49	AVG	
11		24.0750	36.57	0.00	36.57	60.00	-23.43	QP	
12		24.0750	26.00	0.00	26.00	50.00	-24.00	AVG	

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

Adapter2: SUN-1200250



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

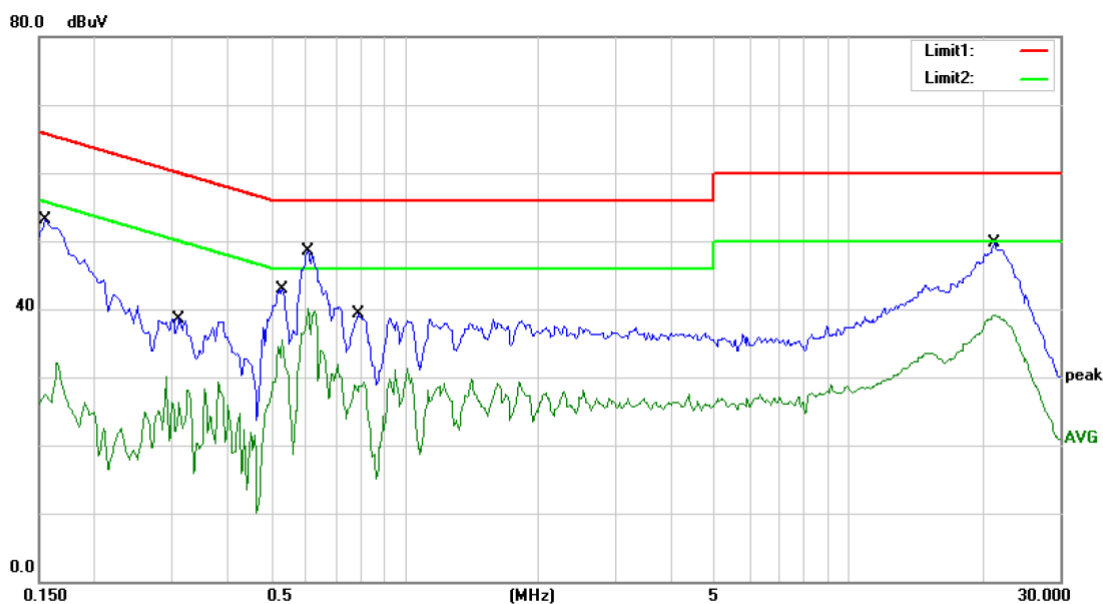
Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	60.24	0.00	60.24	66.00	-5.76	QP	
2		0.1500	30.58	0.00	30.58	56.00	-25.42	AVG	
3		0.1750	56.06	0.00	56.06	64.72	-8.66	QP	
4		0.1750	39.67	0.00	39.67	54.72	-15.05	AVG	
5		0.2200	48.14	0.00	48.14	62.82	-14.68	QP	
6		0.2200	30.84	0.00	30.84	52.82	-21.98	AVG	
7		0.5050	43.02	0.00	43.02	56.00	-12.98	QP	
8		0.5050	32.55	0.00	32.55	46.00	-13.45	AVG	
9		0.5850	46.21	0.00	46.21	56.00	-9.79	QP	
10		0.5850	38.58	0.00	38.58	46.00	-7.42	AVG	
11		21.8500	49.63	0.00	49.63	60.00	-10.37	QP	
12		21.8500	40.98	0.00	40.98	50.00	-9.02	AVG	

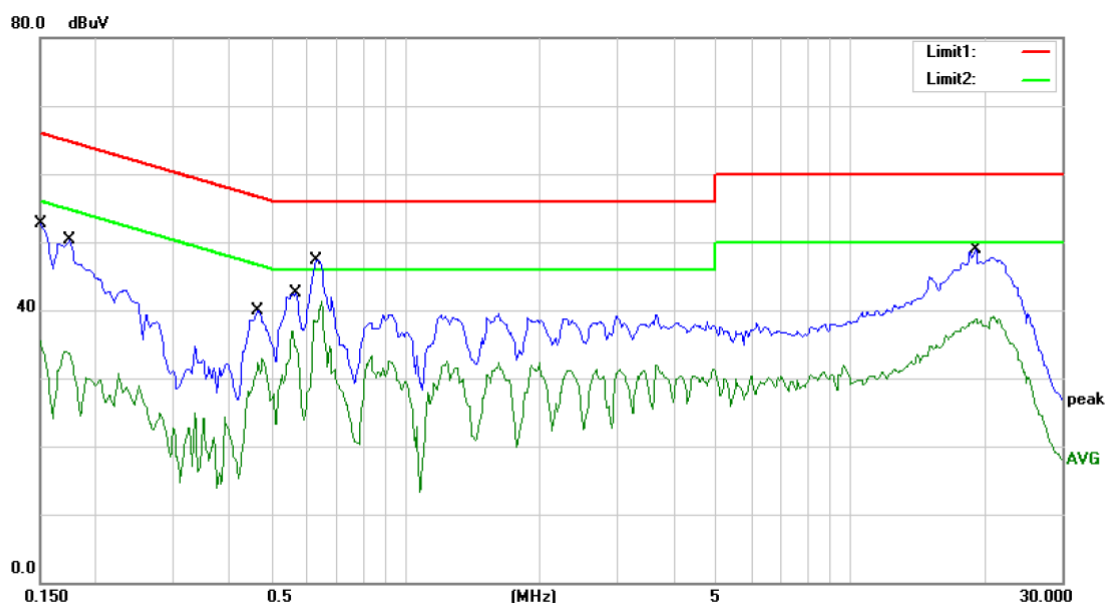
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Vern



Site Conduction #1 Phase: **N** Temperature: 26
 Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 60 %
 Mode: ON
 Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1550	53.04	0.00	53.04	65.73	-12.69	QP	
2	0.1550	32.15	0.00	32.15	55.73	-23.58	AVG	
3	0.3100	38.60	0.00	38.60	59.97	-21.37	QP	
4	0.3100	30.04	0.00	30.04	49.97	-19.93	AVG	
5	0.5300	42.99	0.00	42.99	56.00	-13.01	QP	
6	0.5300	35.56	0.00	35.56	46.00	-10.44	AVG	
7	0.6050	48.48	0.00	48.48	56.00	-7.52	QP	
8 *	0.6050	40.14	0.00	40.14	46.00	-5.86	AVG	
9	0.7850	39.33	0.00	39.33	56.00	-16.67	QP	
10	0.7850	29.65	0.00	29.65	46.00	-16.35	AVG	
11	21.3000	49.79	0.00	49.79	60.00	-10.21	QP	
12	21.3000	39.12	0.00	39.12	50.00	-10.88	AVG	

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



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 240V/50Hz

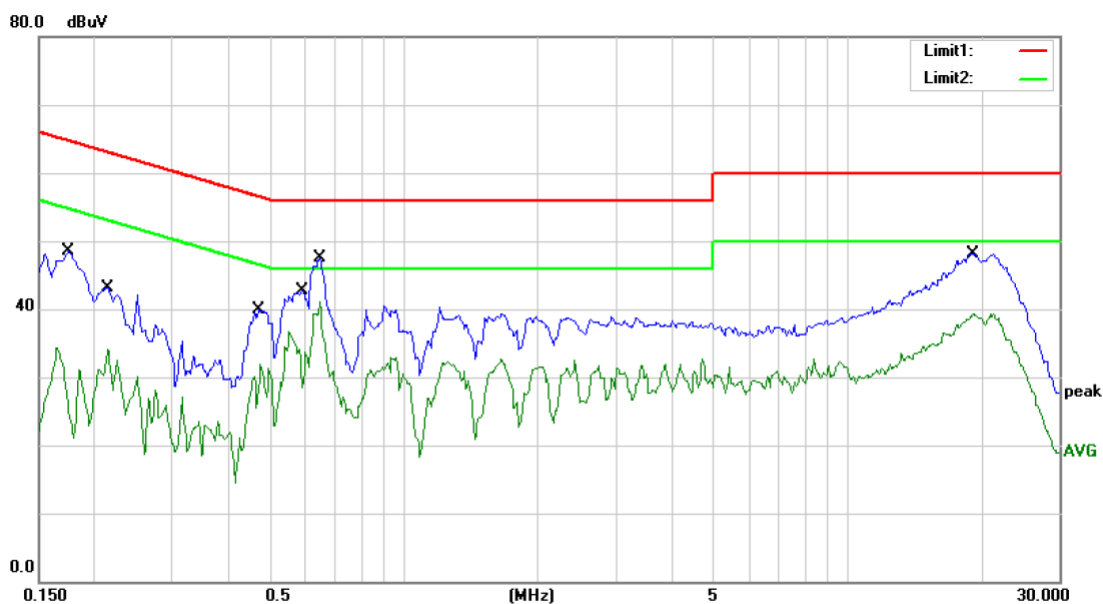
Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	52.66	0.00	52.66	66.00	-13.34	QP	
2		0.1500	35.45	0.00	35.45	56.00	-20.55	AVG	
3		0.1750	50.34	0.00	50.34	64.72	-14.38	QP	
4		0.1750	33.92	0.00	33.92	54.72	-20.80	AVG	
5		0.4650	39.98	0.00	39.98	56.60	-16.62	QP	
6		0.4650	32.84	0.00	32.84	46.60	-13.76	AVG	
7		0.5650	42.45	0.00	42.45	56.00	-13.55	QP	
8		0.5650	36.95	0.00	36.95	46.00	-9.05	AVG	
9		0.6300	47.29	0.00	47.29	56.00	-8.71	QP	
10	*	0.6300	41.25	0.00	41.25	46.00	-4.75	AVG	
11		19.2000	48.84	0.00	48.84	60.00	-11.16	QP	
12		19.2000	39.06	0.00	39.06	50.00	-10.94	AVG	

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



Site Conduction #1

Phase: **N**

Temperature: 26

Limit: (CE)FCC PART 15 class B_QP

Power: AC 240V/50Hz

Humidity: 60 %

Mode: ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1750	48.60	0.00	48.60	64.72	-16.12	QP	
2		0.1750	34.25	0.00	34.25	54.72	-20.47	AVG	
3		0.2150	43.14	0.00	43.14	63.01	-19.87	QP	
4		0.2150	34.05	0.00	34.05	53.01	-18.96	AVG	
5		0.4700	39.88	0.00	39.88	56.51	-16.63	QP	
6		0.4700	31.81	0.00	31.81	46.51	-14.70	AVG	
7		0.5900	42.64	0.00	42.64	56.00	-13.36	QP	
8		0.5900	36.70	0.00	36.70	46.00	-9.30	AVG	
9		0.6450	47.49	0.00	47.49	56.00	-8.51	QP	
10	*	0.6450	41.18	0.00	41.18	46.00	-4.82	AVG	
11		19.1250	48.12	0.00	48.12	60.00	-11.88	QP	
12		19.1250	39.26	0.00	39.26	50.00	-10.74	AVG	

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

8.7 ANTENNA APPLICATION

8.7.1 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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.

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 1dBi and meets the requirement.

END OF REPORT