

UNII Band I Frequency(MHz)

5190

Ant0







UNII Band I Frequency(MHz)

5230

Ant0







UNII Band II-A Frequency(MHz)

5270

Ant0





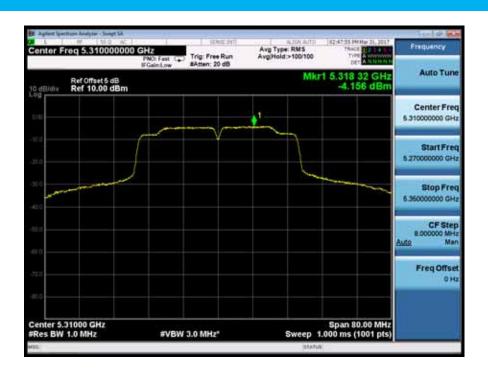


UNII Band II-A Frequency(MHz)

5310

Ant0



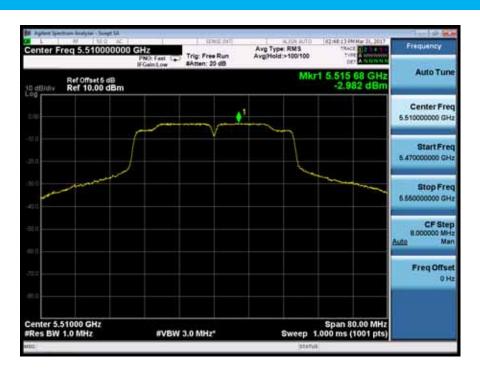


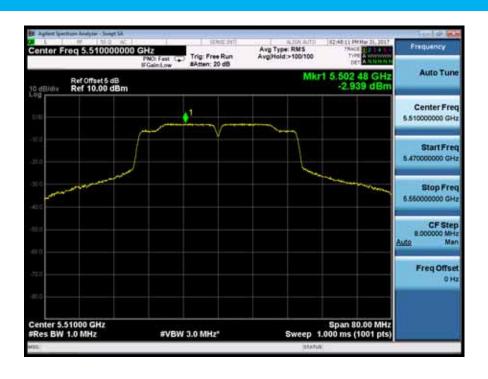


UNII Band II-C Frequency(MHz)

5510

Ant0





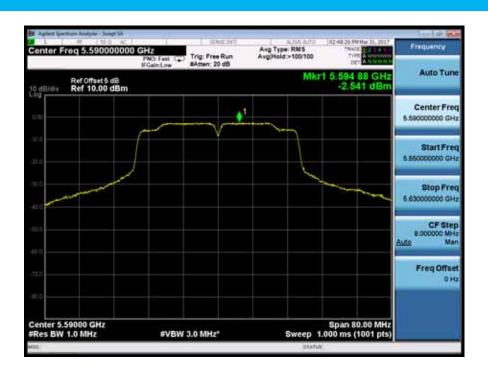


UNII Band II-C Frequency(MHz)

5590

Ant0







UNII Band II-C Frequency(MHz)

5670

Ant0







UNII Band III Frequency(MHz)

5755

Ant0







UNII Band III Frequency(MHz)

5795

Ant0







UNII Band I Frequency(MHz)

5210

Ant0



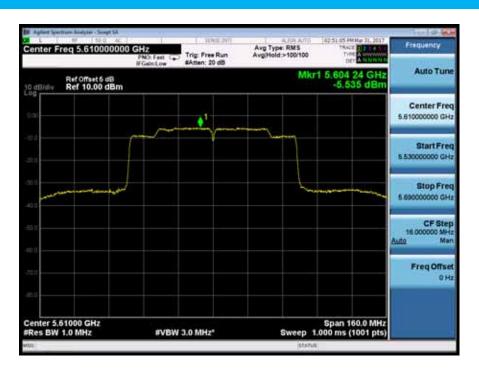




UNII Band II-A Frequency(MHz)

5290

Ant0





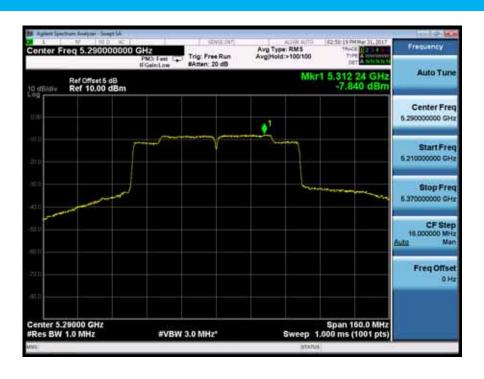


UNII Band II-C Frequency(MHz)

5530

Ant0







UNII Band II-C Frequency(MHz)

5610

Ant0



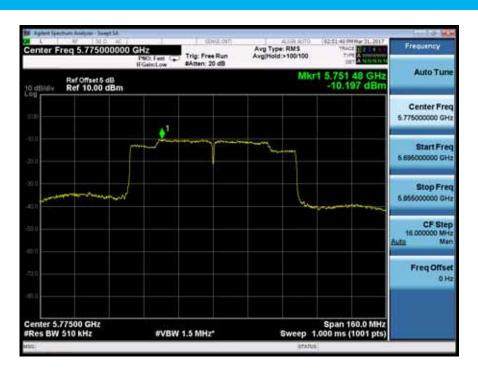


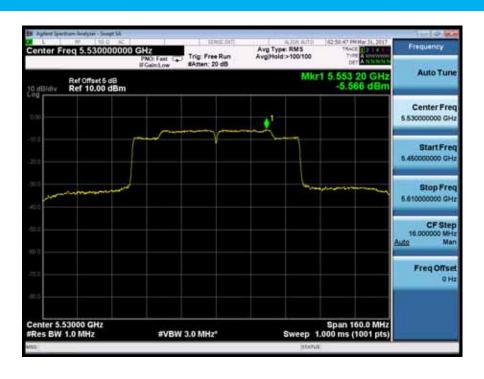


UNII Band III Frequency(MHz)

5775

Ant0







8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g) ANSI C63.10 Section 6.8

8.4.2 Conformance Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 10 kHz.

Set the video bandwidth (VBW) =30 kHz.

Set Span= Entire absence of modulation emissions bandwidth

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

Allow the trace to stabilize.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

Beginning at each temperature level specified in user manual, the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level

Measure and record the results in the test report.

8.4.5 Test Results

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Temperature : -- Test Date : March 31, 2017 Humidity : 65 % Test By: King Kong



Temperature: -- Test Date: March 31, 2017
Humidity: 65 % Test By: King Kong



Temperature: -- Test Date: March 31, 2017
Humidity: 65 % Test By: King Kong



Temperature: -- Test Date: March 31, 2017
Humidity: 65 % Test By: King Kong



802.11n(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11ac(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11ac(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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802.11ac(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11ac(VHT20) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11n(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong



802.11ac(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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802.11ac(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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802.11ac(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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802.11ac(VHT40) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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802.11ac(VHT80) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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5530

802.11ac(VHT80) mode Temperature : --Humidity : 65 % Test Date : March 31, 2017 Test By: King Kong

Voltage(V) Temp()

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8.5 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.5.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209 The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

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	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

The provisions of §15.205 apply to intentional radiators operating under this section,15.205 Restricted bands of operation

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		_	

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. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ

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15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.5.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.

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

And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Repeat above procedures until all frequency measured was complete.

We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.

Use the following spectrum analyzer settings:

Set RBW=120kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for <30MHz (150KHz to 30KHz).

Set the VBW > RBW.

Detector = Peak.

Trace mode = 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. Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:

RBW = 1 MHz.

VBW ≥ 3 MHz.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.

RBW = 1 MHz.

Video bandwidth. • If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100 (i.e., 10 kHz) but not less than 10 Hz.

• If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is defined in section II.B.1.a).

Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).

• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the

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transmit cycle, at least 50 traces shall be averaged.)

Band edge measurements.

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.5.5 Test Results

■ ☑For Undesirable radiated Spurious Emission in UNII Band I
The voltage 120V &240V and the modes 802.11a/n/ac has been tested and the worst result recorded as below:

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● ☑Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature: 28

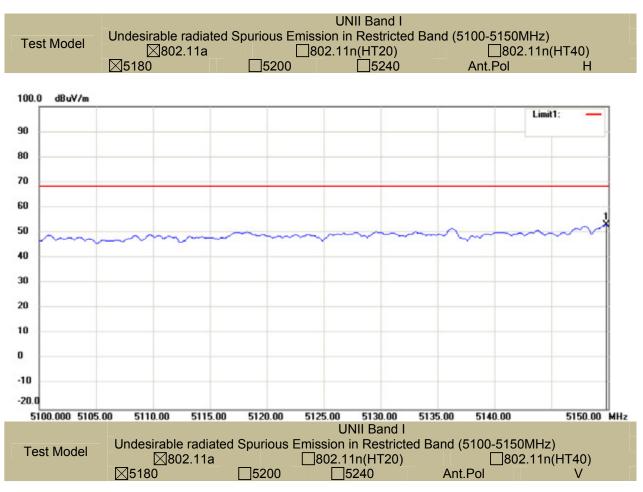


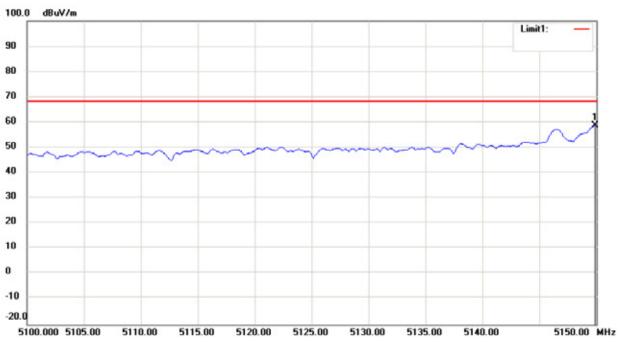
● ⊠Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature: 28

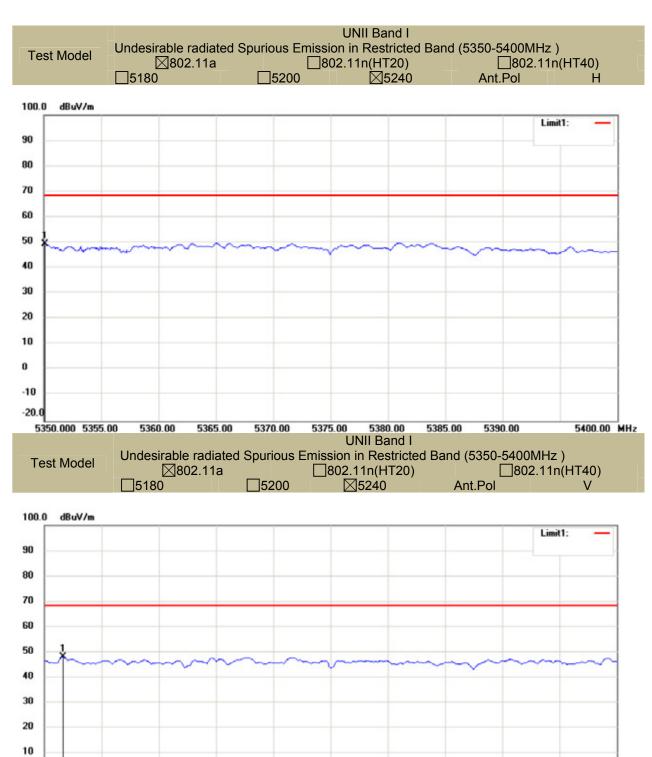
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5375.00

5380.00

5385.00

5390.00

5400.00 MHz

0 -10 -20.0

5350.000 5355.00

5360.00

5365.00

5370.00



■ ∑For Undesirable radiated Spurious Emission in UNII Band II-A All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

• Mundesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

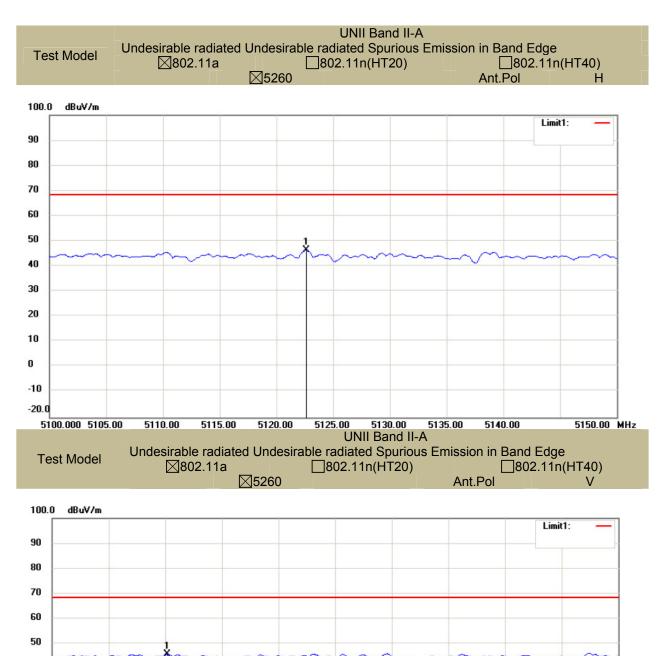
Temperature: 28



● ⊠Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature: 28





5125.00

5130.00

5135.00

5140.00

5150.00 MHz

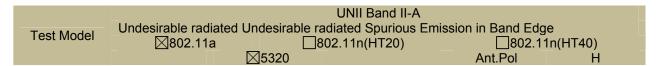
5100.000 5105.00

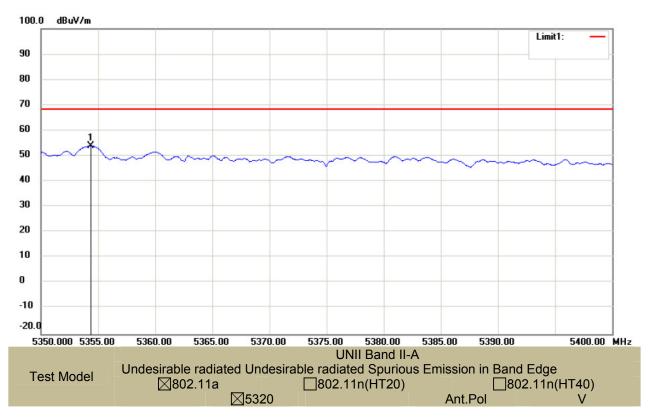
5110.00

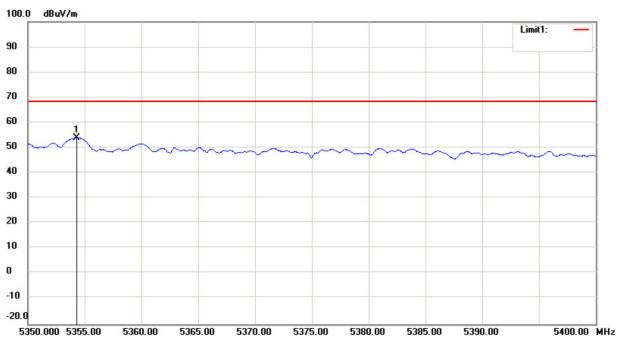
5115.00

5120.00











■ ☑For Undesirable radiated Spurious Emission in UNII Band II-C All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

• Mundesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

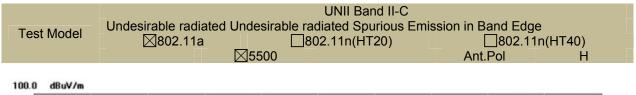
Temperature: 28

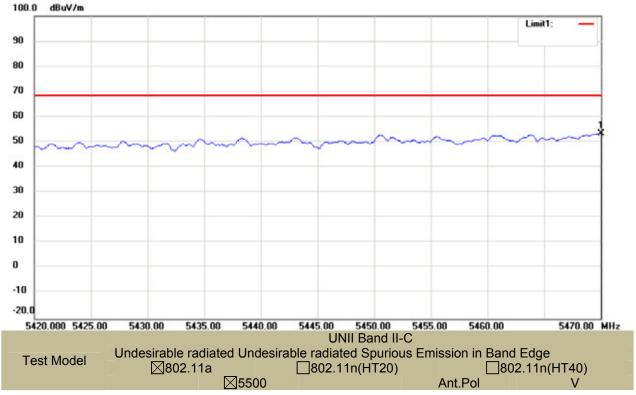


• Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature: 28

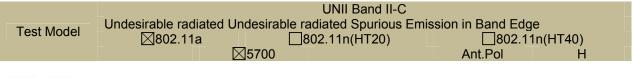


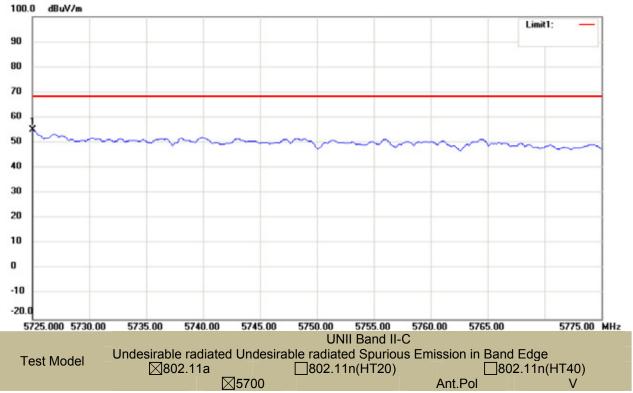


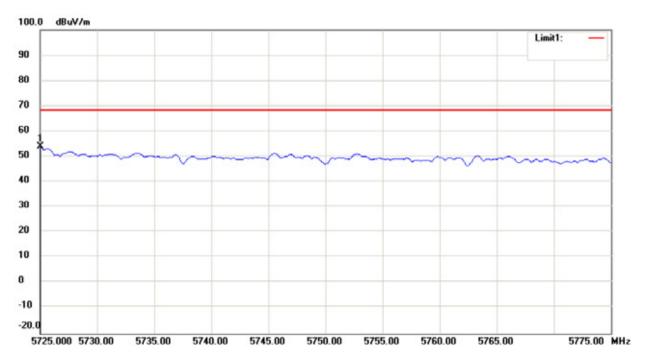














■ ⊠For Undesirable radiated Spurious Emission in UNII Band III

All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

• ⊠Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature: 28

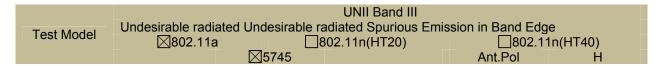
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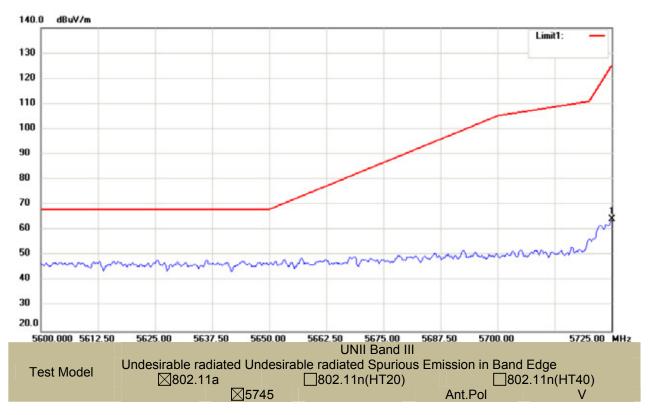


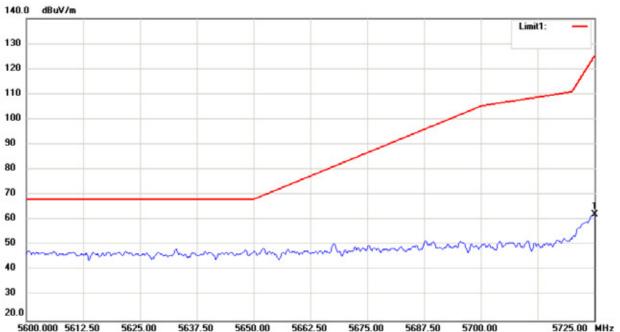
● ⊠Undesirable radiated Spurious Emission in band edge

Temperature : 28

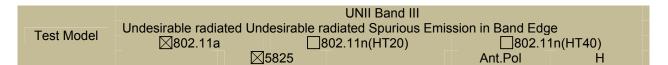


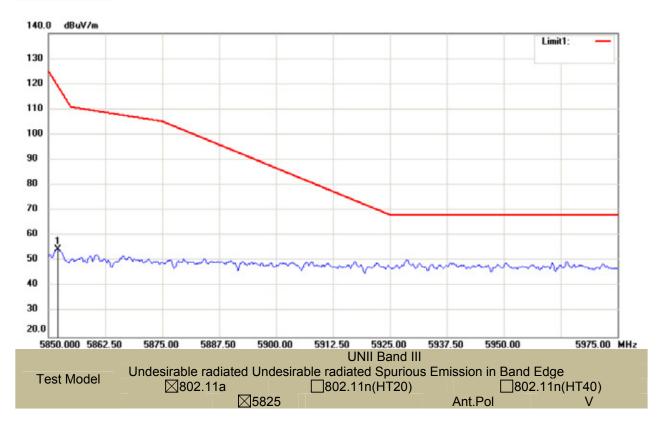


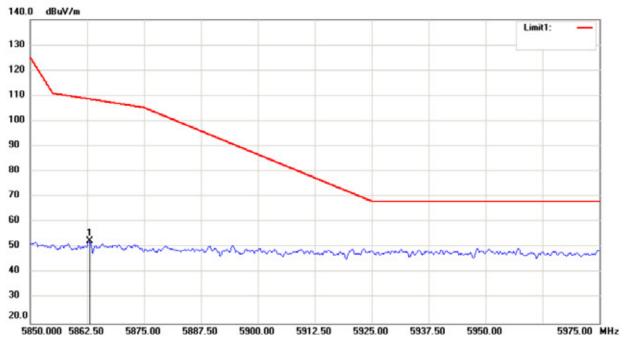








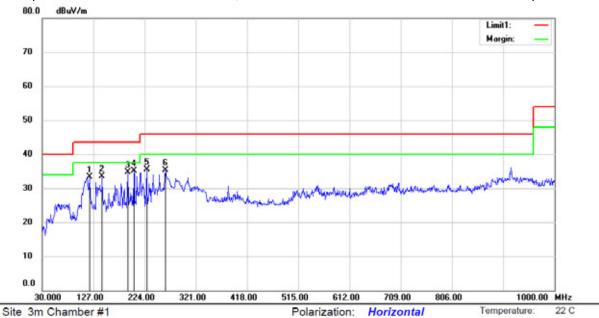






50 %

Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
 All adapter and all mode have been tested, and the worst results have been recorded in the report.



Limit: (RE)FCC PART 15 C

Mode:TX 5180

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		119.2400	47.21	-13.84	33.37	43.50	-10.13	QP			
2		143.4900	49.75	-16.22	33.53	43.50	-9.97	QP			
3		191.9900	47.47	-12.75	34.72	43.50	-8.78	QP			
4	*	203.6300	47.47	-12.38	35.09	43.50	-8.41	QP			
5		227.8800	47.11	-11.62	35.49	46.00	-10.51	QP			
6		263.7700	46.17	-10.85	35.32	46.00	-10.68	QP			

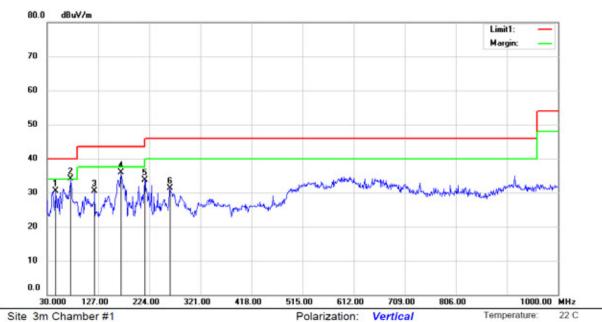
Power: AC 120V/60Hz

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^{*:}Maximum data x:Over limit !:over margin Operator: LQZ



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5180

wode. IX 5160

Note:

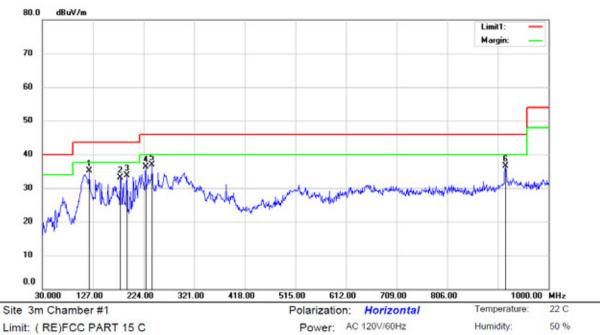
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		46.4900	42.04	-11.49	30.55	40.00	-9.45	QP			
2	*	74.6200	51.04	-17.02	34.02	40.00	-5.98	QP			
3		120.2100	44.45	-14.02	30.43	43.50	-13.07	QP			
4		169.6800	50.42	-14.51	35.91	43.50	-7.59	QP			
5		215.2700	45.16	-11.47	33.69	43.50	-9.81	QP			
6		262.8000	41.91	-10.69	31.22	46.00	-14.78	QP			

Power: AC 120V/60Hz

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

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Limit: (RE)FCC PART 15 C

Mode:TX 5200

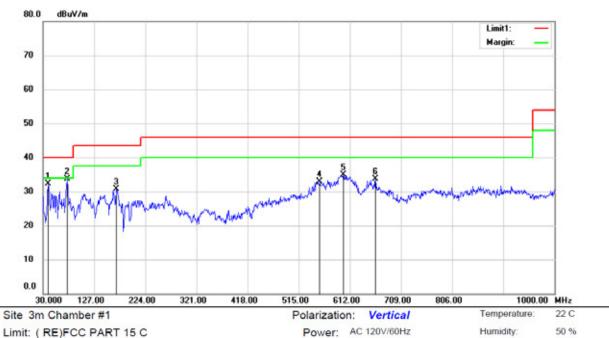
Note:

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	120.2100	49.14	-14.02	35.12	43.50	-8.38	QP			
2		179.3800	46.71	-13.66	33.05	43.50	-10.45	QP			
3		191.9900	46.41	-12.75	33.66	43.50	-9.84	QP			
4		227.8800	47.87	-11.62	36.25	46.00	-9.75	QP			
5		240.4900	47.77	-10.92	36.85	46.00	-9.15	QP			
6		917.5500	34.71	1.76	36.47	46.00	-9.53	QP			

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

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Limit: (RE)FCC PART 15 C

Mode:TX 5200

Note:

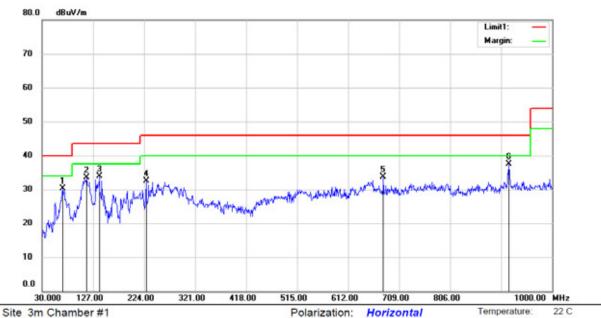
No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	43.88	-11.56	32.32	40.00	-7.68	QP			
2	*	75.5900	50.72	-17.06	33.66	40.00	-6.34	QP			
3		168.7100	45.18	-14.56	30.62	43.50	-12.88	QP			
4		554.7700	36.76	-3.90	32.86	46.00	-13.14	QP			
5		599.3900	37.61	-2.69	34.92	46.00	-11.08	QP			
6		660.5000	35.25	-1.59	33.66	46.00	-12.34	QP			

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

TRF No.: FCC 15.407/A Page 210 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5240

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		68.8000	45.83	-15.55	30.28	40.00	-9.72	QP			
2		114.3900	46.45	-13.00	33.45	43.50	-10.05	QP			
3		138.6400	49.88	-16.00	33.88	43.50	-9.62	QP			
4		227.8800	44.06	-11.62	32.44	46.00	-13.56	QP			
5	(678.9300	35.91	-2.29	33.62	46.00	-12.38	QP			
6	*	917.5500	35.77	1.76	37.53	46.00	-8.47	QP			

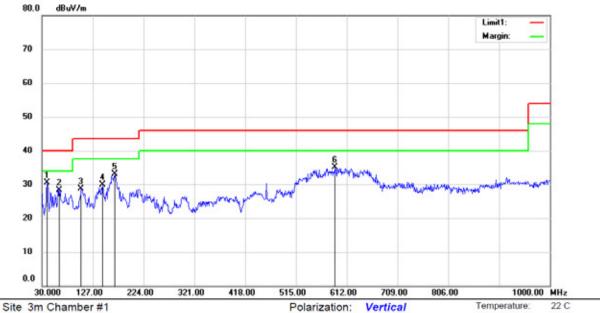
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 211 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5240

Note:

No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	39.7000	42.01	-11.56	30.45	40.00	-9.55	QP			
2		62.9800	41.61	-13.27	28.34	40.00	-11.66	QP			
3		104.6900	39.96	-11.33	28.63	43.50	-14.87	QP			
4		145.4300	46.02	-16.17	29.85	43.50	-13.65	QP			
5		168.7100	47.63	-14.56	33.07	43.50	-10.43	QP			
6		589.6900	38.54	-3.48	35.06	46.00	-10.94	QP			

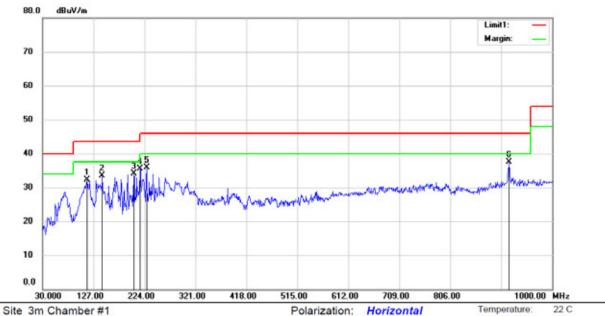
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 212 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5260

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	1	114.3900	45.29	-13.00	32.29	43.50	-11.21	QP			
2	1	143.4900	49.75	-16.22	33.53	43.50	-9.97	QP			
3	2	203.6300	46.47	-12.38	34.09	43.50	-9.41	QP			
4	* 2	215.2700	47.01	-11.47	35.54	43.50	-7.96	QP			
5	2	227.8800	47.61	-11.62	35.99	46.00	-10.01	QP			
6	9	917.5500	35.78	1.76	37.54	46.00	-8.46	QP			

Power: AC 120V/60Hz

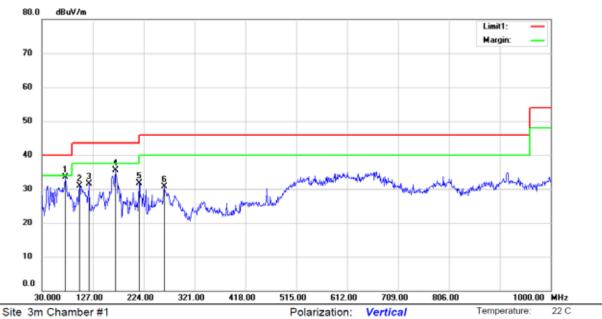
*:Maximum data x:Over limit !:over margin Operator: LQZ

TRF No.: FCC 15.407/A Page 213 of 236 Report No.: ES170217006E4 Ver.1.0



50 %

Humidity:



Limit: (RE)FCC PART 15 C

Mode:TX 5260

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	74.6200	50.54	-17.02	33.52	40.00	-6.48	QP			
2		101.7800	42.33	-11.47	30.86	43.50	-12.64	QP			
3		120.2100	45.45	-14.02	31.43	43.50	-12.07	QP			
4		169.6800	49.92	-14.51	35.41	43.50	-8.09	QP			
5		215.2700	43.16	-11.47	31.69	43.50	-11.81	QP			
6		262.8000	41.41	-10.69	30.72	46.00	-15.28	QP			

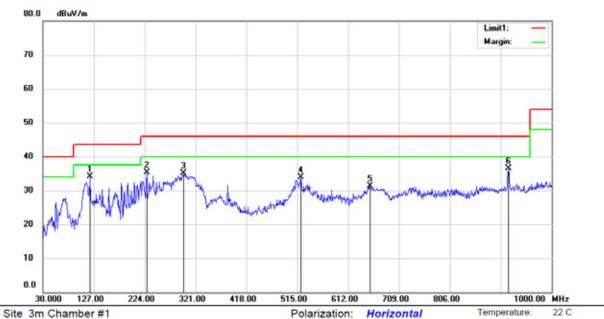
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 214 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5280

Note:

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	120.2100	48.14	-14.02	34.12	43.50	-9.38	QP			
2		227.8800	46.87	-11.62	35.25	46.00	-10.75	QP			
3		297.7200	45.11	-9.94	35.17	46.00	-10.83	QP			
4		521.7900	39.18	-5.27	33.91	46.00	-12.09	QP			
5		653.7100	32.53	-1.28	31.25	46.00	-14.75	QP			
6		917.5500	34.71	1.76	36.47	46.00	-9.53	QP			

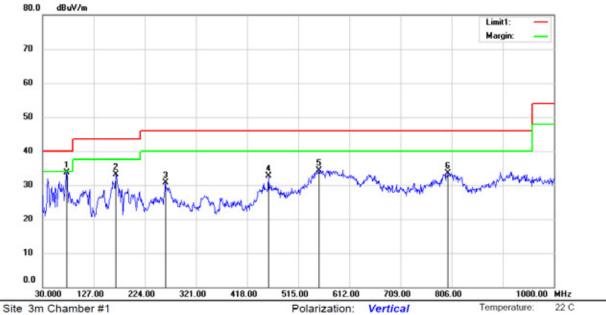
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 215 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



One on onamber#1

Limit: (RE)FCC PART 15 C

Mode:TX 5280

Note:

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	75.5900	50.72	-17.06	33.66	40.00	-6.34	QP			
2		168.7100	47.68	-14.56	33.12	43.50	-10.38	QP			
3		262.8000	41.48	-10.69	30.79	46.00	-15.21	QP			
4		458.7400	40.32	-7.63	32.69	46.00	-13.31	QP			
5		554.7700	38.26	-3.90	34.36	46.00	-11.64	QP			
6		798.2400	33.86	-0.27	33.59	46.00	-12.41	QP			

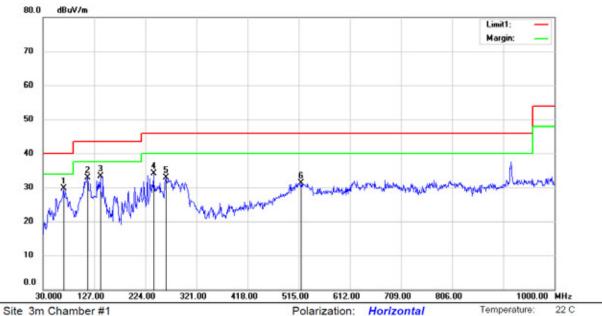
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 216 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5320

Note:

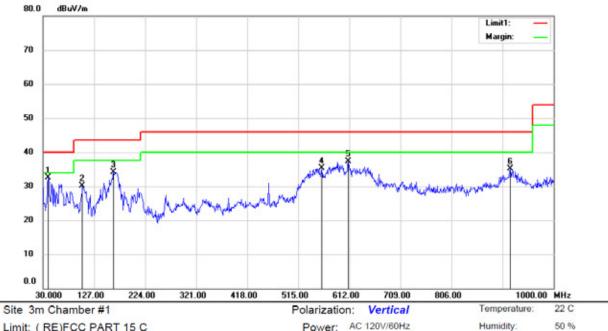
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		68.8000	45.33	-15.55	29.78	40.00	-10.22	QP			
2		114.3900	45.95	-13.00	32.95	43.50	-10.55	QP			
3	*	138.6400	49.38	-16.00	33.38	43.50	-10.12	QP			
4	-	239.5200	44.96	-10.92	34.04	46.00	-11.96	QP			
5		262.8000	43.65	-10.69	32.96	46.00	-13.04	QP			
6		519.8500	36.71	-5.33	31.38	46.00	-14.62	QP			

Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 217 of 236 Report No.: ES170217006E4 Ver.1.0





Limit: (RE)FCC PART 15 C

Mode:TX 5320

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	39.7000	44.01	-11.56	32.45	40.00	-7.55	QP			
2		104.6900	41.46	-11.33	30.13	43.50	-13.37	QP			
3		163.8600	49.01	-14.83	34.18	43.50	-9.32	QP			
4		559.6200	39.14	-3.93	35.21	46.00	-10.79	QP			
5		610.0600	40.04	-2.81	37.23	46.00	-8.77	QP			
6		917.5500	33.29	1.76	35.05	46.00	-10.95	QP			

Power: AC 120V/60Hz

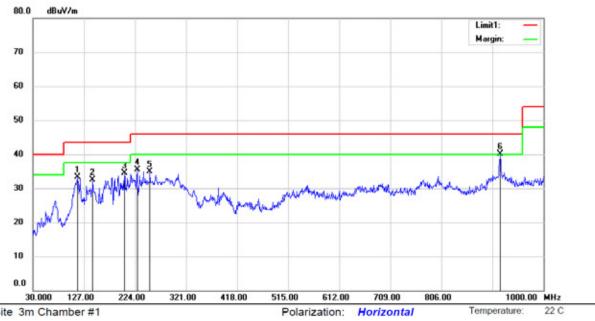
*:Maximum data x:Over limit !:over margin Operator: LQZ

TRF No.: FCC 15.407/A Page 218 of 236 Report No.: ES170217006E4 Ver.1.0



50 %

Humidity:



Site 3m Chamber #1

Limit: (RE)FCC PART 15 C

Mode:TX 5500

Note:

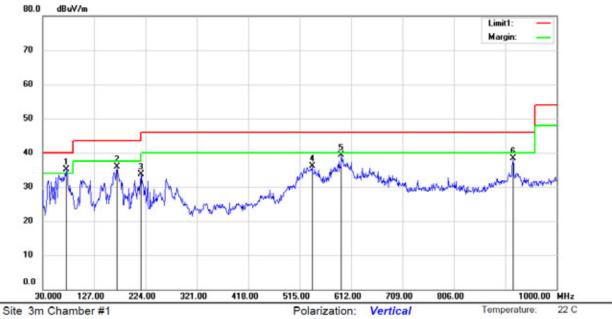
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		114.3900	46.29	-13.00	33.29	43.50	-10.21	QP			
2		143.4900	48.75	-16.22	32.53	43.50	-10.97	QP			
3		203.6300	46.97	-12.38	34.59	43.50	-8.91	QP			
4		227.8800	47.11	-11.62	35.49	46.00	-10.51	QP			
5	:	252.1300	45.83	-10.95	34.88	46.00	-11.12	QP			
6	*	917.5500	38.28	1.76	40.04	46.00	-5.96	QP			

Power: AC 120V/60Hz

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

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Limit: (RE)FCC PART 15 C

Mode:TX 5500

Note:

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	74.6200	52.04	-17.02	35.02	40.00	-4.98	QP			
2		169.6800	50.42	-14.51	35.91	43.50	-7.59	QP			
3		215.2700	45.16	-11.47	33.69	43.50	-9.81	QP			
4		538.2800	40.81	-4.65	36.16	46.00	-9.84	QP			
5		593.5700	42.38	-3.17	39.21	46.00	-6.79	QP			
6		917.5500	36.64	1.76	38.40	46.00	-7.60	QP			

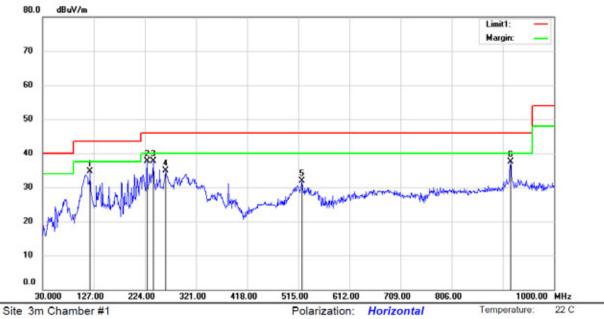
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 220 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Power: AC 120V/60Hz

Limit: (RE)FCC PART 15 C

Mode:TX 5600

Note:

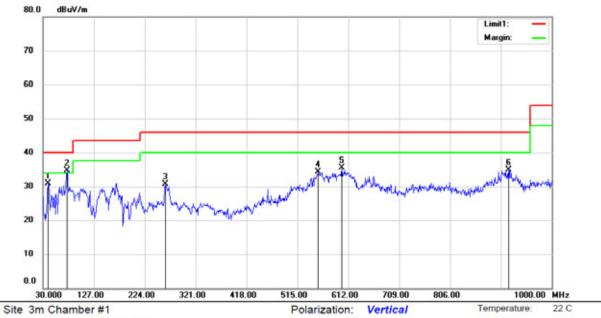
No.	Mk	k. Fre		eading evel	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MH	Z	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		120.21	00	48.64	-14.02	34.62	43.50	-8.88	QP			
2	*	227.88	00	49.37	-11.62	37.75	46.00	-8.25	QP			
3		239.52	00	48.62	-10.92	37.70	46.00	-8.30	QP			
4		263.77	00	45.67	-10.85	34.82	46.00	-11.18	QP			
5		521.79	00	37.18	-5.27	31.91	46.00	-14.09	QP			
6		917.55	00	35.71	1.76	37.47	46.00	-8.53	QP			

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

TRF No.: FCC 15.407/A Page 221 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5600

Note:

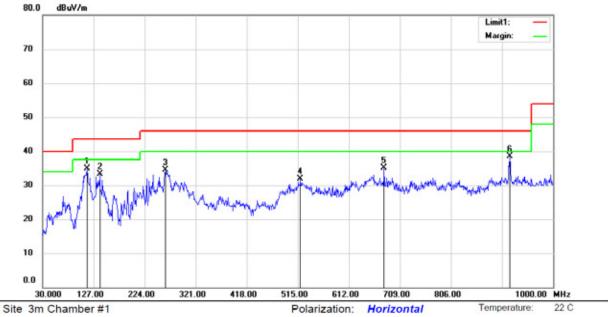
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	42.38	-11.56	30.82	40.00	-9.18	QP			
2	*	75.5900	51.72	-17.06	34.66	40.00	-5.34	QP			
3		262.8000	41.48	-10.69	30.79	46.00	-15.21	QP			
4		554.7700	38.26	-3.90	34.36	46.00	-11.64	QP			
5		599.3900	38.11	-2.69	35.42	46.00	-10.58	QP			
6		917.5500	33.19	1.76	34.95	46.00	-11.05	QP			

Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 222 of 236 Report No.: ES170217006E4 Ver.1.0





Power: AC 120V/60Hz

Limit: (RE)FCC PART 15 C

Mode:TX 5700

Note:

No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		114.3900	47.95	-13.00	34.95	43.50	-8.55	QP			
2		138.6400	49.38	-16.00	33.38	43.50	-10.12	QP			
3		263.7700	45.43	-10.85	34.58	46.00	-11.42	QP			
4		519.8500	37.21	-5.33	31.88	46.00	-14.12	QP			
5		678.9300	37.41	-2.29	35.12	46.00	-10.88	QP			
6	*	917.5500	36.77	1.76	38.53	46.00	-7.47	QP			

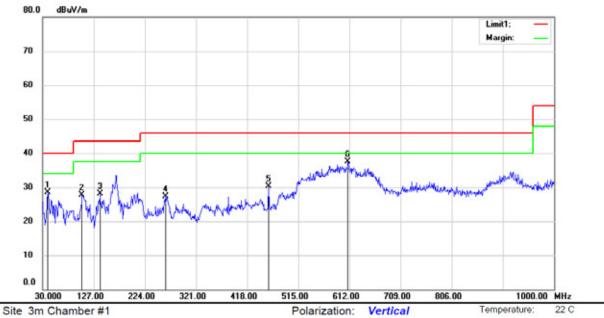
*:Maximum data x:Over limit !:over margin Operator: LQZ

TRF No.: FCC 15.407/A Page 223 of 236 Report No.: ES170217006E4 Ver.1.0



50 %

Humidity:



Limit: (RE)FCC PART 15 C

Mode:TX 5700

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	40.01	-11.56	28.45	40.00	-11.55	QP			
2		104.6900	38.96	-11.33	27.63	43.50	-15.87	QP			
3		138.6400	44.03	-16.00	28.03	43.50	-15.47	QP			
4		262.8000	37.96	-10.69	27.27	46.00	-18.73	QP			
5		458.7400	38.00	-7.63	30.37	46.00	-15.63	QP			
6	*	609.0900	40.26	-2.80	37.46	46.00	-8.54	QP			

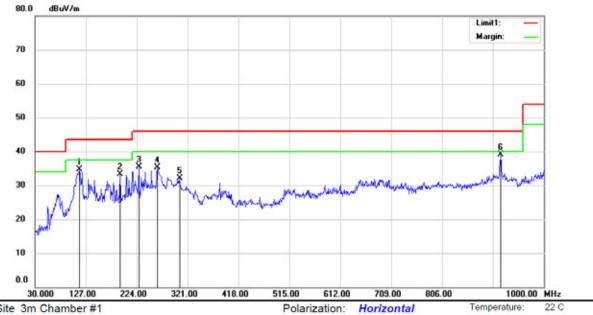
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 224 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Site 3m Chamber #1

Limit: (RE)FCC PART 15 C

Mode:TX 5745

Note:

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		114.3900	47.79	-13.00	34.79	43.50	-8.71	QP			
2		191.9900	45.97	-12.75	33.22	43.50	-10.28	QP			
3		227.8800	47.11	-11.62	35.49	46.00	-10.51	QP			
4		263.7700	46.17	-10.85	35.32	46.00	-10.68	QP			
5		305.4800	42.10	-9.98	32.12	46.00	-13.88	QP			
6	*	917.5500	37.28	1.76	39.04	46.00	-6.96	QP			

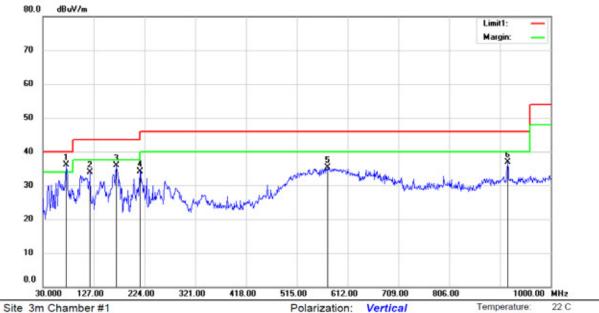
Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 225 of 236 Report No.: ES170217006E4 Ver.1.0



50 %



Site 3iii Chamber #1

Limit: (RE)FCC PART 15 C

Mode:TX 5745

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	74.6200	53.04	-17.02	36.02	40.00	-3.98	QP			
2		120.2100	47.95	-14.02	33.93	43.50	-9.57	QP			
3		169.6800	50.42	-14.51	35.91	43.50	-7.59	QP			
4		215.2700	45.66	-11.47	34.19	43.50	-9.31	QP			
5		574.1700	39.19	-3.96	35.23	46.00	-10.77	QP			
6		917.5500	35.14	1.76	36.90	46.00	-9.10	QP			

Power: AC 120V/60Hz

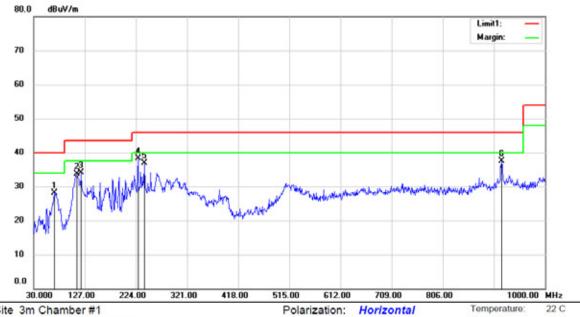
*:Maximum data x:Over limit !:over margin Operator: LQZ

TRF No.: FCC 15.407/A Page 226 of 236 Report No.: ES170217006E4 Ver.1.0



50 %

Humidity:



Site 3m Chamber #1

Limit: (RE)FCC PART 15 C

Mode:TX 5785

Note:

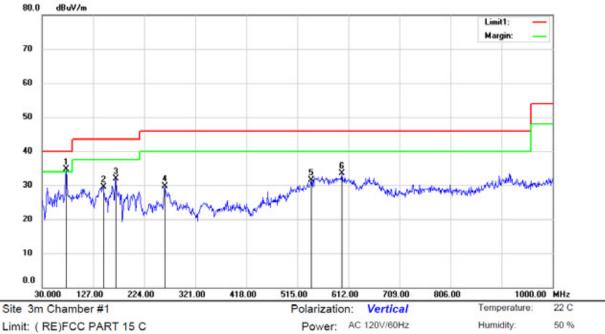
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		68.8000	43.71	-15.55	28.16	40.00	-11.84	QP			
2		112.4500	46.26	-12.58	33.68	43.50	-9.82	QP			
3		120.2100	48.14	-14.02	34.12	43.50	-9.38	QP			
4	*	227.8800	49.87	-11.62	38.25	46.00	-7.75	QP			
5		240.4900	47.77	-10.92	36.85	46.00	-9.15	QP			
6		917.5500	35.71	1.76	37.47	46.00	-8.53	QP			

Power: AC 120V/60Hz

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

TRF No.: FCC 15.407/A Page 227 of 236 Report No.: ES170217006E4 Ver.1.0





Limit: (RE)FCC PART 15 C

Mode:TX 5785

Note:

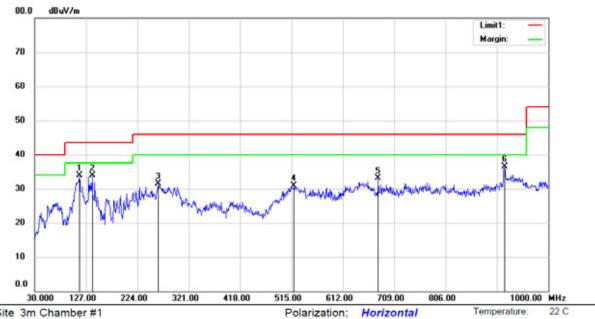
No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	75.5900	51.72	-17.06	34.66	40.00	-5.34	QP			
2		146.4000	45.43	-16.02	29.41	43.50	-14.09	QP			
3		169.6800	46.33	-14.51	31.82	43.50	-11.68	QP			
4		262.8000	40.48	-10.69	29.79	46.00	-16.21	QP			
5		541.1900	35.94	-4.49	31.45	46.00	-14.55	QP			
6		599.3900	36.11	-2.69	33.42	46.00	-12.58	QP			

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

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50 %



Site 3m Chamber #1

Limit: (RE)FCC PART 15 C

Mode:TX 5825

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	1	14.3900	46.95	-13.00	33.95	43.50	-9.55	QP			
2	1	38.6400	49.88	-16.00	33.88	43.50	-9.62	QP			
3	2	63.7700	42.43	-10.85	31.58	46.00	-14.42	QP			
4	5	19.8500	36.21	-5.33	30.88	46.00	-15.12	QP			
5	6	78.9300	35.41	-2.29	33.12	46.00	-12.88	QP			
6	* 9	17.5500	34.77	1.76	36.53	46.00	-9.47	QP			

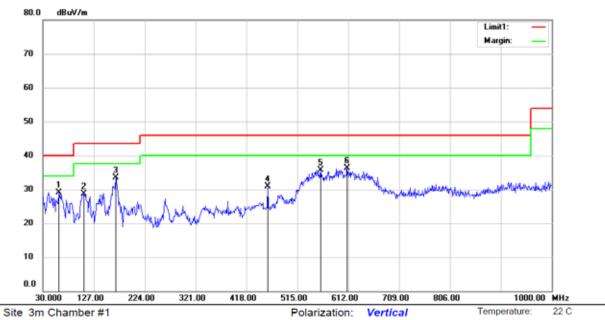
Power: AC 120V/60Hz

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

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50 %



Limit: (RE)FCC PART 15 C

Mode:TX 5825

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		60.0700	40.85	-11.78	29.07	40.00	-10.93	QP			
2		107.6000	40.41	-11.71	28.70	43.50	-14.80	QP			
3		168.7100	48.13	-14.56	33.57	43.50	-9.93	QP			
4		458.7400	38.50	-7.63	30.87	46.00	-15.13	QP			
5		559.6200	39.64	-3.93	35.71	46.00	-10.29	QP			
6	*	610.0600	39.04	-2.81	36.23	46.00	-9.77	QP			

Power: AC 120V/60Hz

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

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8.6 POWER LINE CONDUCTED EMISSIONS

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 6.3 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

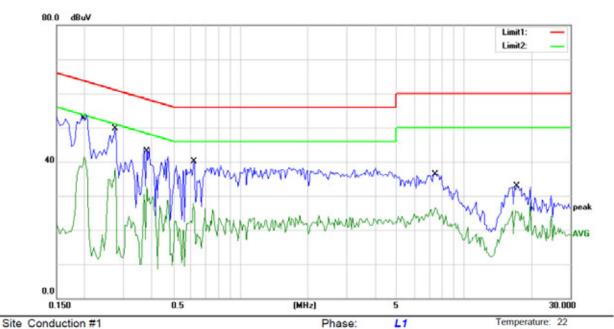
Pass

All mode and the voltage 120V and 240V have been tested, and show the worst result(WIFI+BT ON,120V \sim 60Hz) as bellow.

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55 %



Limit: (CE)FCC PART 15 C

Note: Adapter model: ADS-25FSG-12 12024EPCU

Power: AC 120V/60Hz Mode: WIFI +BT ON

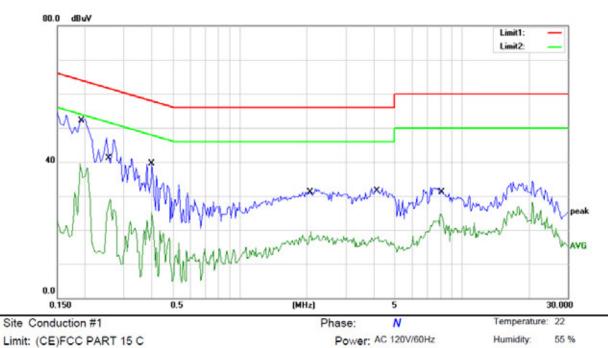
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2000	53.51	0.00	53.51	63.61	-10.10	QP	
2		0.2000	41.53	0.00	41.53	53.61	-12.08	AVG	
3		0.2750	49.71	0.00	49.71	60.97	-11.26	QP	
4		0.2750	38.04	0.00	38.04	50.97	-12.93	AVG	
5		0.3800	44.17	0.00	44.17	58.28	-14.11	QP	
6		0.3800	32.55	0.00	32.55	48.28	-15.73	AVG	
7		0.6150	40.20	0.00	40.20	56.00	-15.80	QP	
8		0.6150	27.73	0.00	27.73	46.00	-18.27	AVG	
9		7.4200	36.45	0.00	36.45	60.00	-23.55	QP	
10		7.4200	26.50	0.00	26.50	50.00	-23.50	AVG	
11		17.0500	32.88	0.00	32.88	60.00	-27.12	QP	
12		17.0500	25.63	0.00	25.63	50.00	-24.37	AVG	

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

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55 %



Limit: (CE)FCC PART 15 C

Mode: WIFI +BT ON

Note: Adapter model: ADS-25FSG-12 12024EPCU

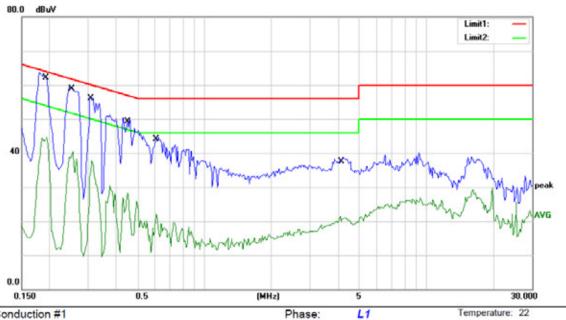
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1900	52.64	0.00	52.64	64.04	-11.40	QP	
2		0.1900	39.45	0.00	39.45	54.04	-14.59	AVG	
3		0.2600	47.15	0.00	47.15	61.43	-14.28	QP	
4		0.2600	29.02	0.00	29.02	51.43	-22.41	AVG	
5		0.4000	39.52	0.00	39.52	57.85	-18.33	QP	
6		0.4000	25.06	0.00	25.06	47.85	-22.79	AVG	
7		2.0900	32.16	0.00	32.16	56.00	-23.84	QP	
8		2.0900	19.43	0.00	19.43	46.00	-26.57	AVG	
9		4.2200	32.25	0.00	32.25	56.00	-23.75	QP	
10		4.2200	18.09	0.00	18.09	46.00	-27.91	AVG	
11		7.9800	32.47	0.00	32.47	60.00	-27.53	QP	
12		7.9800	24.78	0.00	24.78	50.00	-25.22	AVG	

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

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55 %



Power: AC 120V/60Hz

Site Conduction #1

Limit: (CE)FCC PART 15 C

Mode: WIFI +BT ON

Note: Adapter model: KSASB0241200200VU

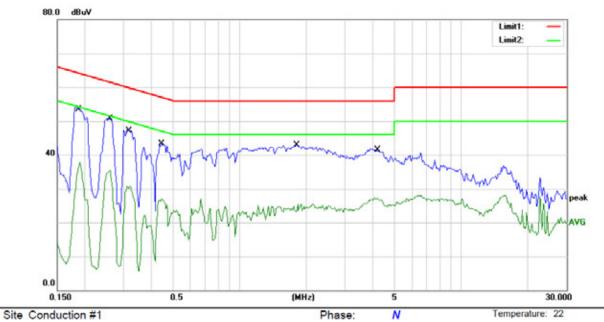
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1950	53.90	0.00	53.90	63.82	-9.92	QP	
2	*	0.1950	44.70	0.00	44.70	53.82	-9.12	AVG	
3		0.2550	50.90	0.00	50.90	61.59	-10.69	QP	
4		0.2550	40.46	0.00	40.46	51.59	-11.13	AVG	
5		0.3100	47.30	0.00	47.30	59.97	-12.67	QP	
6		0.3100	37.99	0.00	37.99	49.97	-11.98	AVG	
7		0.4500	41.30	0.00	41.30	56.88	-15.58	QP	
8		0.4500	28.23	0.00	28.23	46.88	-18.65	AVG	
9		0.6050	44.59	0.00	44.59	56.00	-11.41	QP	
10		0.6050	22.11	0.00	22.11	46.00	-23.89	AVG	
11		4.0900	38.54	0.00	38.54	56.00	-17.46	QP	
12		4.0900	21.30	0.00	21.30	46.00	-24.70	AVG	

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

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55 %



Power: AC 120V/60Hz

Site Conduction #1

Limit: (CE)FCC PART 15 C

Mode: WIFI+BT ON

Note: Adapter model: KSASB0241200200VU

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1900	53.86	0.00	53.86	64.04	-10.18	QP	
2		0.1900	37.99	0.00	37.99	54.04	-16.05	AVG	
3		0.2600	50.78	0.00	50.78	61.43	-10.65	QP	
4		0.2600	35.59	0.00	35.59	51.43	-15.84	AVG	
5		0.3200	47.52	0.00	47.52	59.71	-12.19	QP	
6		0.3200	30.92	0.00	30.92	49.71	-18.79	AVG	
7		0.4450	43.21	0.00	43.21	56.97	-13.76	QP	
8		0.4450	27.10	0.00	27.10	46.97	-19.87	AVG	
9		1.8300	42.98	0.00	42.98	56.00	-13.02	QP	
10		1.8300	25.58	0.00	25.58	46.00	-20.42	AVG	
11		4.2000	41.76	0.00	41.76	56.00	-14.24	QP	
12		4.2000	27.37	0.00	27.37	46.00	-18.63	AVG	

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

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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 15.407 (a), 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

PASS.

The EUT has a FPC antenna for BT, the max gain is 2 dBi; The EUT has two FPC antenna for WIFI, the max gain is 2 dBi;

Note:

\boxtimes	Antenna use a permanently attached antenna which is not replaceable.
	Not using a standard antenna jack or electrical connector for antenna replacement
\bigvee	The antenna has to be professionally installed (please provide method of installation)
whic	h in accordance to section 15.203, please refer to the internal photos.

Which in accordance to coolen 10.200, pleace fold to the internal photoe.

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