FCC 47 CFR PART 15 SUBPART C

for

802.11ac VDSL2 Gateway
Model: SR515ac
Brand: SmartRG
Test Report Number:
C160412Z05-RP1-1
Issued Date: August 12, 2016

Issued for

SmartRG Inc.
501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661

Issued by:

Compliance Certification Services (Shenzhen) Inc.
No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd.,
Guan Lan Town, Baoan District, Shenzhen, China
TEL: 86-755-28055000
FAX: 86-755-28055221
E-Mail: service@ccssz.com

ACCREDITED
TESTING CERT #2861.01

Note: *This report shall not be reproduced except in full, without the written approval of Compliance Certification Services (Shenzhen) Inc. This document may be altered or revised by Compliance Certification Services (Shenzhen) Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NVLAP, NIST or any government agencies. The test results in the report only apply to the tested sample.*

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 12, 2016	Initial Issue	ALL	Sinphy Xie

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

TABLE OF CONTENTS

1 TEST CERTIFICATION 4
2 TEST RESULT SUMMARY 4
3 EUT DESCRIPTION 6
4 TEST METHODOLOGY 7
4.1. DESCRIPTION OF TEST MODES 7
5 SETUP OF EQUIPMENT UNDER TEST 8
5.1. DESCRIPTION OF SUPPORT UNITS 8
5.2. CONFIGURATION OF SYSTEM UNDER TEST 8
6 FACILITIES AND ACCREDITATIONS 9
6.1. FACILITIES 9
6.2. ACCREDITATIONS 9
6.3. MEASUREMENT UNCERTAINTY 9
7 FCC PART 15.247 REQUIREMENTS 10
7.1. POWER LINE CONDUCTED EMISSIONS MEASUREMENT 10
7.2. SPURIOUS EMISSIONS MEASUREMENT 15
7.3. 6dB BANDWIDTH MEASUREMENT 59
7.4. ANTENNA GAIN 73
7.5. PEAK OUTPUT POWER 74
7.6. BAND EDGES MEASUREMENT 78
7.7. PEAK POWER SPECTRAL DENSITY MEASUREMENT 100

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

1 TEST CERTIFICATION

Product	802.11ac VDSL2 Gateway
Model	SR515ac
Brand	SmartRG
Tested	April 12~August 12, 2016
Applicant	**SmartRG Inc.** 501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661
Manufacturer	**SmartRG Inc.** 501 SE Columbia Shores Boulevard, Suite 500 Vancouver, Washington 98661

APPLICABLE STANDARDS			
Standard	**Test Type**	**Standard**	**Test Type**
15.207(a)	Power Line Conducted Emissions	15.247(d) 15.209(a)	● Spurious Emissions ● Conducted Measurement ● Radiated Emissions
15.247(a)(2)	6dB Bandwidth Measurement	15.247(b)(3) 15.247(b)(4)	Peak Power Measurement
15.247(d)	Band Edges Measurement	15.247(e)	Peak Power Spectral Density

We hereby certify that:

The above equipment was tested by Compliance Certification Services (Shenzhen) Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.10: 2013** and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.
The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Sunday Hu
Supervisor of EMC Dept.
Compliance Certification Services (Shenzhen) Inc.

Reviewed by:

Ruby Zhang
Supervisor of Report Dept.
Compliance Certification Services (Shenzhen) Inc.

this report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

2 TEST RESULT SUMMARY

APPLICABLE STANDARDS			
Standard	**Test Type**	**Result**	**Remark**
15.247(a)(2)	6dB Bandwidth Measurement	Pass	Meet the requirement of limit.
15.247(b)(3) 15.247(b)(4)	Peak Power Measurement	Pass	Meet the requirement of limit.
15.247(d)	Band Edges Measurement	Pass	Meet the requirement of limit.
15.247(e)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.247(d) 15.209(a)	● Spurious Emissions ● Conducted Measurement ● Radiated Emissions	Pass	Meet the requirement of limit.
15.207(a)	Power line Conducted Emissions	Pass	Meet the requirement of limit.

Note: 1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.
2. The information of measurement uncertainty is available upon the customer's request.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

3 EUT DESCRIPTION

Product	802.11ac VDSL2 Gateway
Model Number	SR515ac
Brand	SmartRG
Model Discrepancy	N/A
Identify Number	C160412Z05-RP1-1
Received Date	April 12, 2016
Power Supply	DC 12V supplied by the adapter
Adapter Manufacturer /Model No.	ShenZhen SOY Technology Co.,Ltd / SOY-1200250US INPUT: 100-240VAC~50/60Hz 0.8A Max. OUTPUT : 12VDC, 2.5 A DC Cable: Unshielded, 1.20m
Transmit Power	IEEE 802.11b mode: 21.68dBm (Antenna 1) IEEE 802.11g mode: 24.67dBm (Antenna 0) IEEE 802.11g mode:25.76dBm (Antenna 1) IEEE 802.11n HT20 MHz mode:27.85dBm(Combine with Antenna 0 and Antenna 1) IEEE 802.11n HT40 MHz mode:27.06dBm(Combine with Antenna 0 and Antenna 1)
Modulation Technique	IEEE 802.11b mode: DSSS(CCK,QPSK, BPSK) IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT20 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT40 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM)
Transmit Data Rate	IEEE 802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps IEEE 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/9 /6Mbps IEEE 802.11n HT20: 130Mbps with fall back rates of 130/117/104/ 78/52/39/26/13Mbps IEEE 802.11n HT40: 270Mbps with fall back rates of 270/243/216/ 162/108/81/54/27Mbps
Number of Channels	IEEE 802.11b mode: 11 Channels IEEE 802.11g mode: 11 Channels IEEE 802.11n HT20 MHz mode: 11 Channels IEEE 802.11n HT40 MHz mode: 7 Channels
Antenna Specification	Embedded antenna with 5dBi gain (Max)
Channels Spacing	IEEE 802.11b/g ,802.11n HT20/HT40 : 5MHz
Temperature Range	0°C ~ +40°C
Hardware Version	REV1.0
Software Version	GURNCB5.OT142C-C_DBC_SM_010.EN

Note: *1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*

*2. This submittal(s) (test report) is intended for FCC ID: **VW7SR515A** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

this report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

4 TEST METHODOLOGY

4.1. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Test Item	Test mode	Worse mode
Conducted Emission	**Mode 1:** Normal	☒
Radiated Emission	**Mode 1:** TX	☒

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only, and power line conducted emission below 30MHz, which worst case was in normal link mode.

IEEE802.11b mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE802.11g mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 MHz mode: Channel Low (2412MHz), Channel Mid(2437MHz) and Channel High (2462MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT40 MHz mode: Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 27Mbps data rate were chosen for full testing.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

5 SETUP OF EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	B475	WE04591721	DoC	LENOVO	N/A	Unshielded 1.45m (AC Cable) Unshielded 1.75m (DC Cable)

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5.2. CONFIGURATION OF SYSTEM UNDER TEST

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

6 FACILITIES AND ACCREDITATIONS

6.1. FACILITIES

All measurement facilities used to collect the measurement data are located at **No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China**

The sites are constructed in conformance with the requirements of ANSI C63.10, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	**A2LA**
China	**CNAS**

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	**FCC**
Japan	**VCCI(C-4815, R-4320, T-2317, G-10624)**
Canada	**INDUSTRY CANADA**

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccssz.com

6.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : 966(2)	+/-3.8928dB
Radiated Emission, 200 to 1000 MHz Test Site : 966(2)	+/-3.8753dB
Radiated Emission, 1 to 8 GHz	+/-5.3112dB
Radiated Emission, 8 to 18 GHz	+/-5.3493dB
Conducted Emissions	+/-3.2878dB
Band Width	178kHz
Peak Output Power MU	+/-1.906dB
Band Edge MU	+/-0.182dB
Channel Separation MU	416.178Hz
Duty Cycle MU	0.054ms
Frequency Stability MU	226Hz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
The measured result is above (below) the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the 95% level of confidence. However, the result indicates that compliance (non-compliance) is more probable than non-compliance) with the specification limit.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7 FCC PART 15.247 REQUIREMENTS

7.1. POWER LINE CONDUCTED EMISSIONS MEASUREMENT

7.1.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	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 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

7.1.2. TEST INSTRUMENTS

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	02/21/2016	02/20/2017
LISN	EMCO	3825/2	8901-1459	02/21/2016	02/20/2017
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	02/21/2016	02/20/2017
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

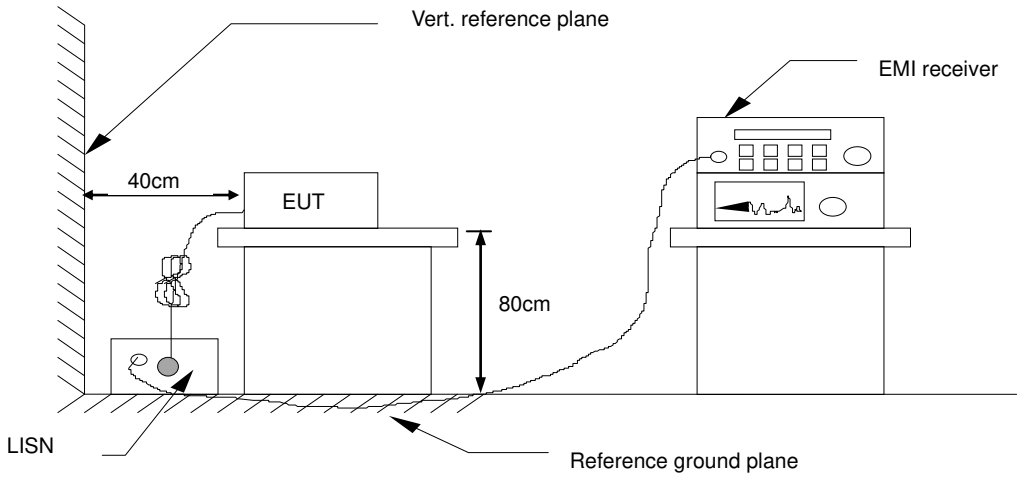
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.1.3. TEST PROCEDURES (please refer to measurement standard)

- The EUT and Support equipment, if needed, was placed on a non-conducted table, which is 0.8m above the ground plane and 0.4m away from the conducted wall.
- The test equipment EUT installed received AC main power, through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane. All support equipment power received from a second LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The frequency range from 150 kHz to 30 MHz was searched. The test data of the worst-case condition(s) was recorded. Emission levels under limit 20dB were not recorded.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.1.4. TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.1.5. DATA SAMPLE

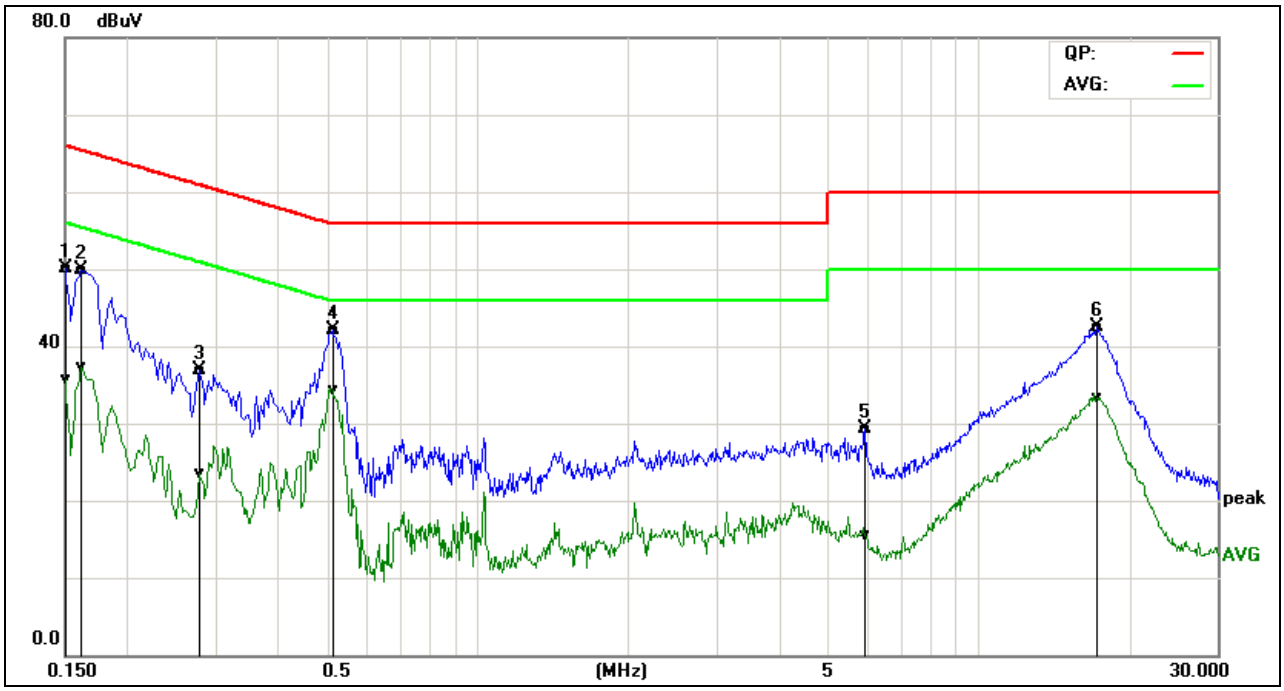
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit = Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.1.6. TEST RESULTS

Model No.	SR515ac	**RBW,VBW**	9 kHz
Environmental Conditions	26°C, 60% RH	**Test Mode**	Mode 1
Tested by	Eve Wang	**Line**	L1
Test Date	2016/07/07		

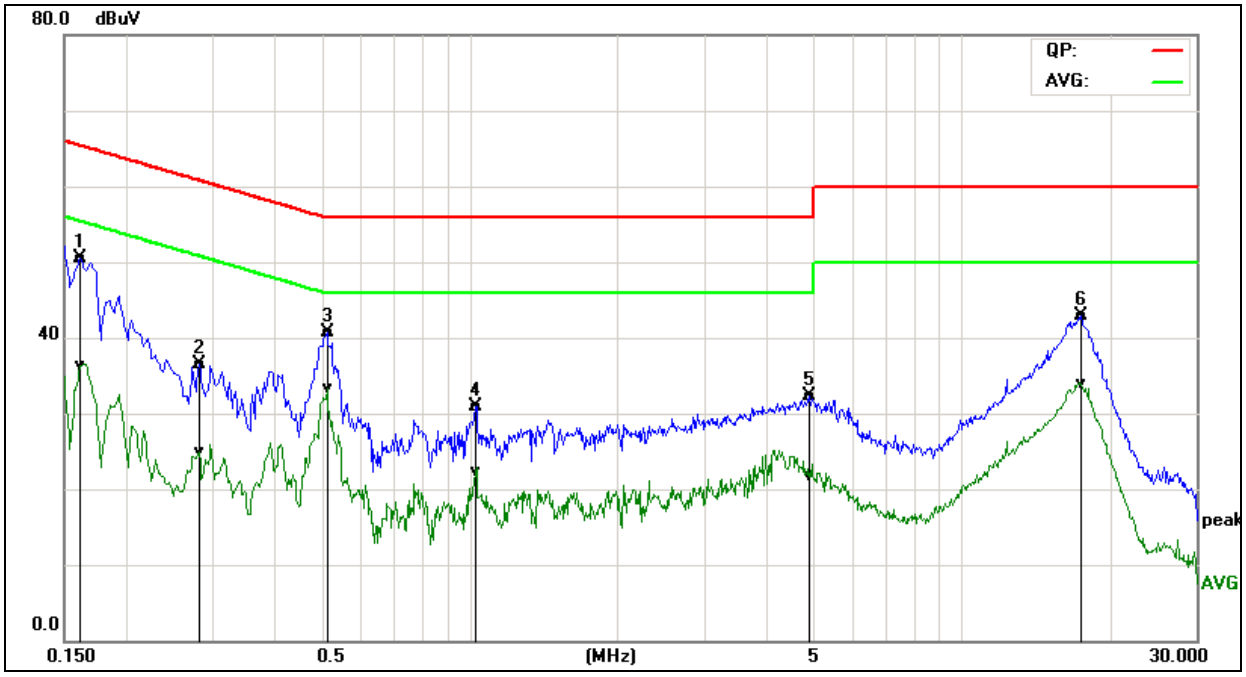


Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.1500	40.55	26.03	9.58	50.13	35.61	65.99	56.00	-15.86	-20.39	Pass
0.1620	40.28	27.68	9.60	49.88	37.28	65.36	55.36	-15.48	-18.08	Pass
0.2779	27.28	13.90	9.69	36.97	23.59	60.88	50.88	-23.91	-27.29	Pass
0.5140	32.42	24.52	9.69	42.11	34.21	56.00	46.00	-13.89	-11.79	Pass
5.9420	19.52	5.74	9.73	29.25	15.47	60.00	50.00	-30.75	-34.53	Pass
17.2700	32.63	23.46	9.87	42.50	33.33	60.00	50.00	-17.50	-16.67	Pass

REMARKS: *L1 = Line One (Live Line)*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Model No.	SR515ac	**RBW,VBW**	9 kHz
Environmental Conditions	26°C, 60% RH	**Test Mode**	Mode 1
Tested by	Eve Wang	**Line**	L2
Test Date	2016/07/07		



Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.1620	40.79	26.59	9.78	50.57	36.37	65.36	55.36	-14.79	-18.99	Pass
0.2819	26.66	15.15	9.76	36.42	24.91	60.76	50.76	-24.34	-25.85	Pass
0.5140	31.00	23.67	9.68	40.68	33.35	56.00	46.00	-15.32	-12.65	Pass
1.0300	21.13	12.58	9.81	30.94	22.39	56.00	46.00	-25.06	-23.61	Pass
4.9180	22.51	11.93	9.78	32.29	21.71	56.00	46.00	-23.71	-24.29	Pass
17.5180	33.10	24.26	9.72	42.82	33.98	60.00	50.00	-17.18	-16.02	Pass

REMARKS: *L2 = Line Two (Neutral Line)*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2. SPURIOUS EMISSIONS MEASUREMENT

7.2.1. CONDUCTED EMISSIONS MEASUREMENT

7.2.1.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

§15.247(d)specifies that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:
If the peakoutput power procedure is used to measure the fundamental emission powerto demonstrate compliance to 15.247(b)(3)requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency bandshall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
If the averageoutput power procedure is used to measure the fundamental emission powerto demonstrate compliance to 15.247(b)(3)requirements,then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measuredin-band average PSD level.
In addition, 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 Section 15.205(c)).

7.2.1.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2016	02/20/2017

7.2.1.3. TEST PROCEDURE (please refer to measurement standard)

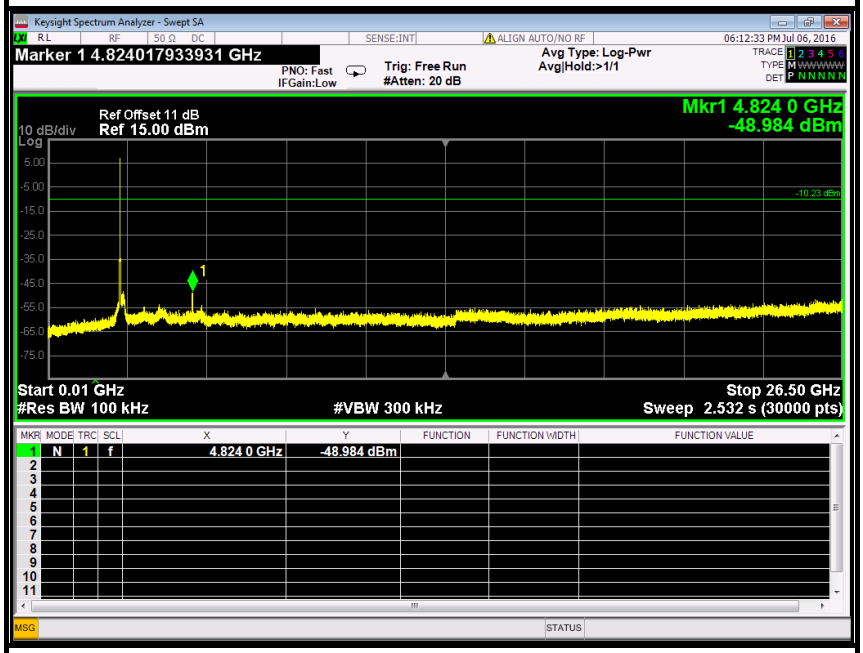
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.
Measurements are made over the 10MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels. No emission found between lowest internal used/generated frequency to 10MHz，it is only recorded 10MHz to 26GHz.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

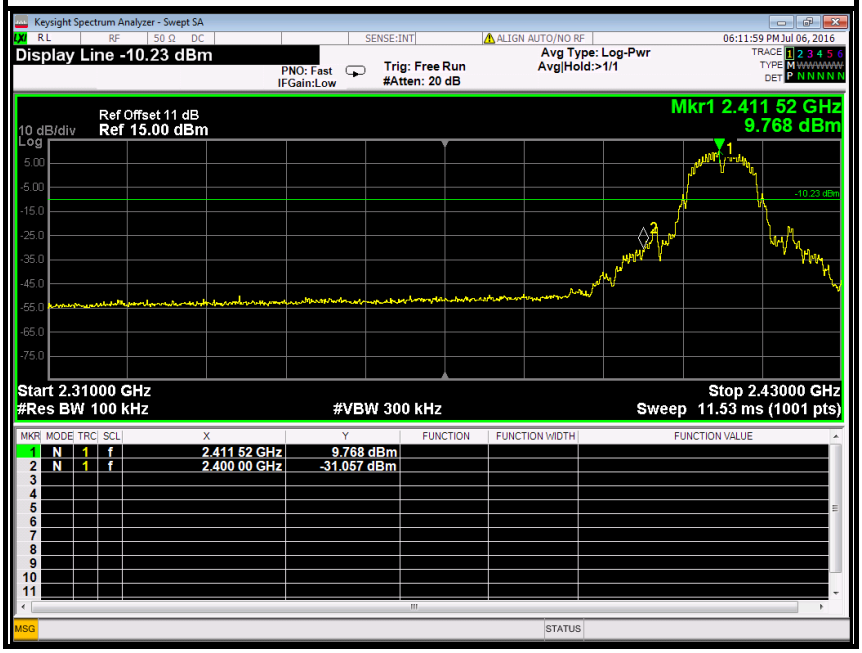
7.2.1.4. TEST RESULTS

Test Plot
IEEE 802.11b mode (Antenna 1)

CH Low (10MHz ~26.5GHz)

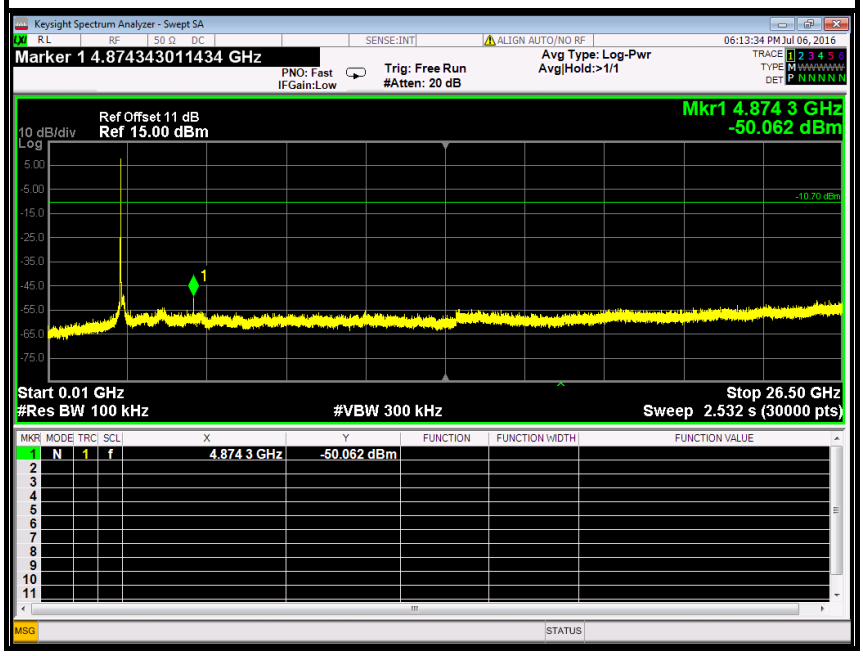


CH Low (2.31GHz ~2.43GHz)



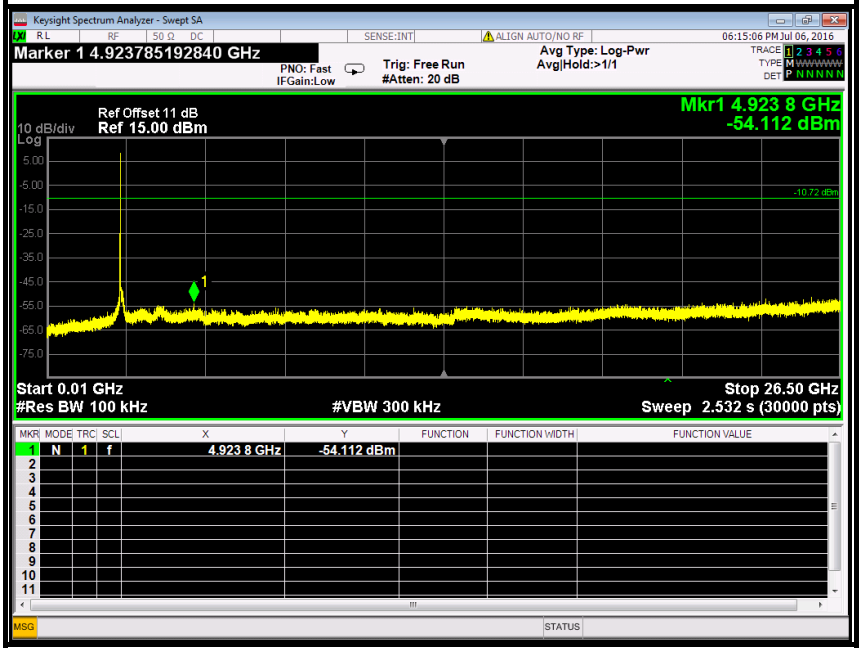
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)

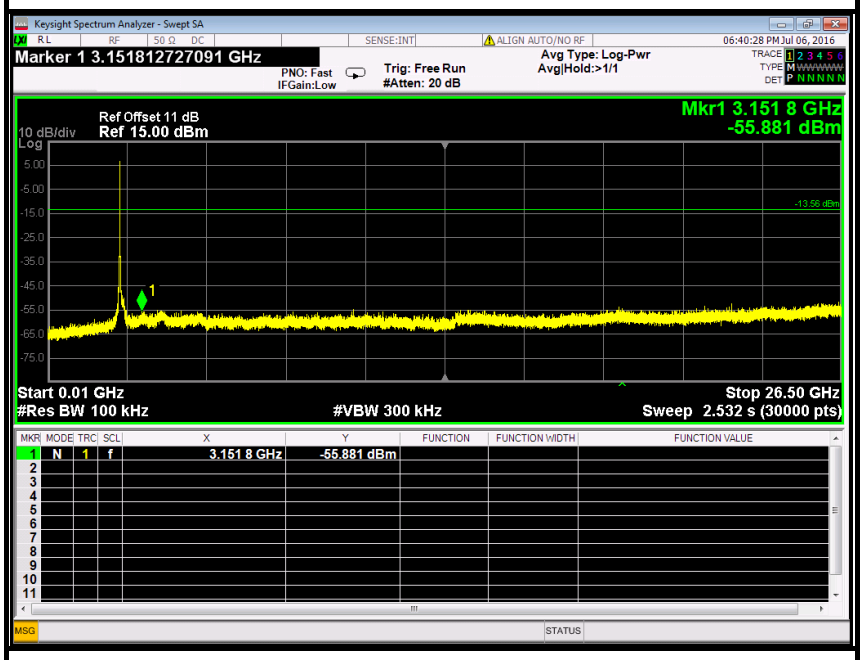


CH High (2.45GHz ~2.5GHz)

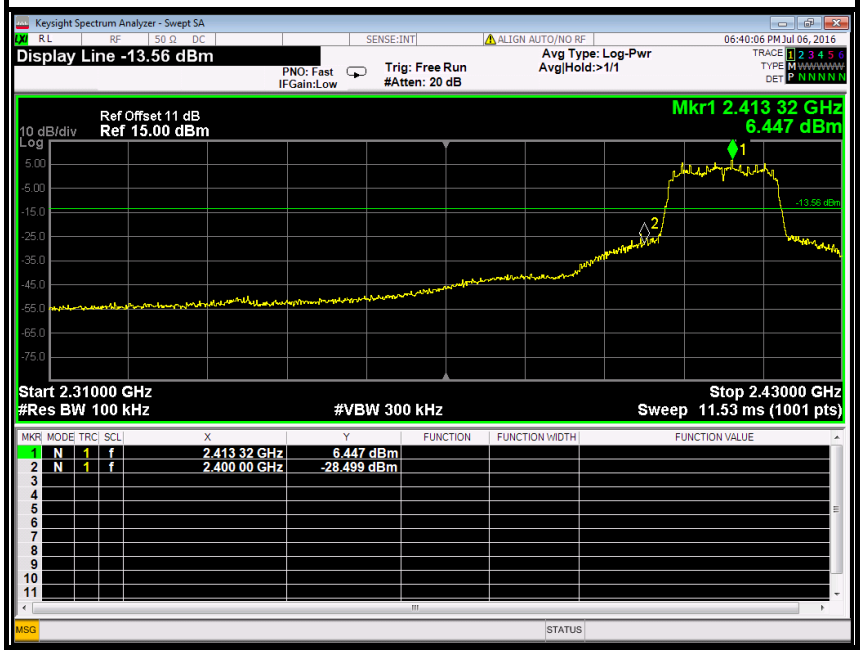
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11g mode (Antenna 0)

CH Low (10MHz ~26.5GHz)

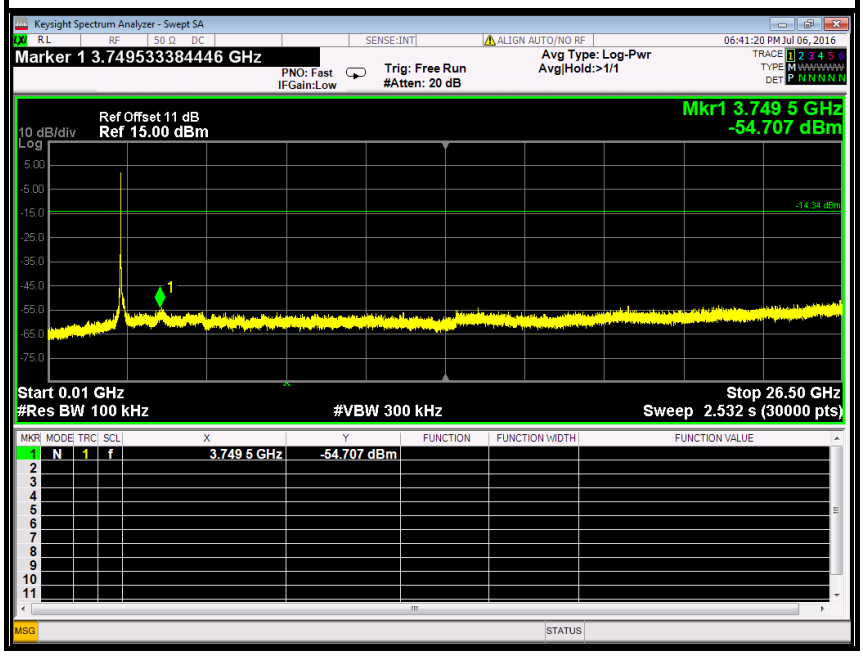


CH Low (2.31GHz ~2.43GHz)



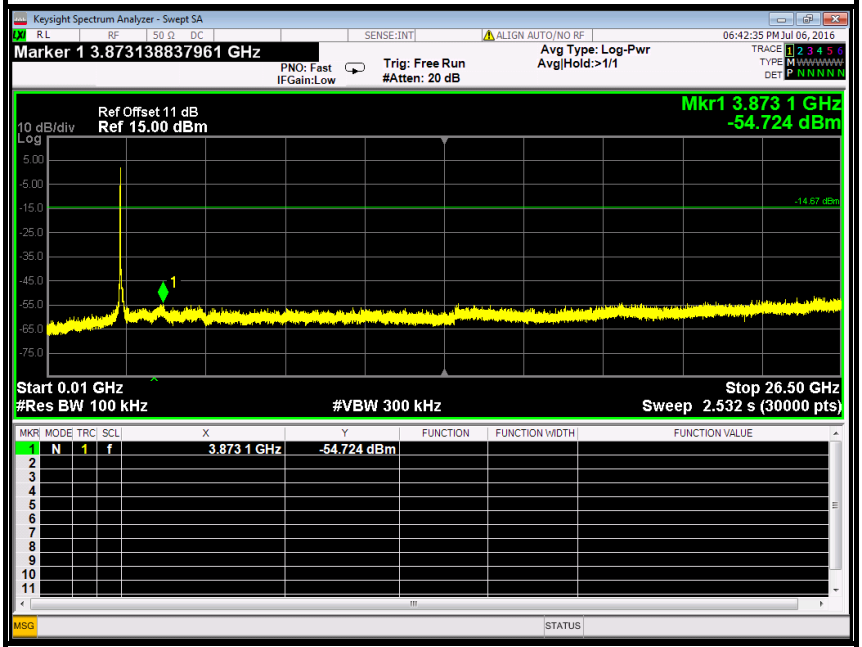
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)

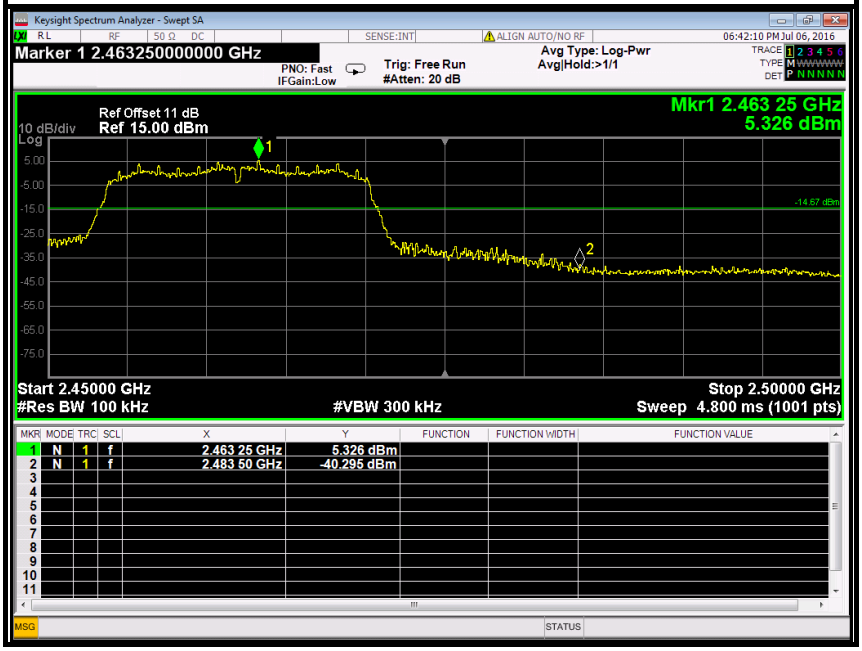


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)



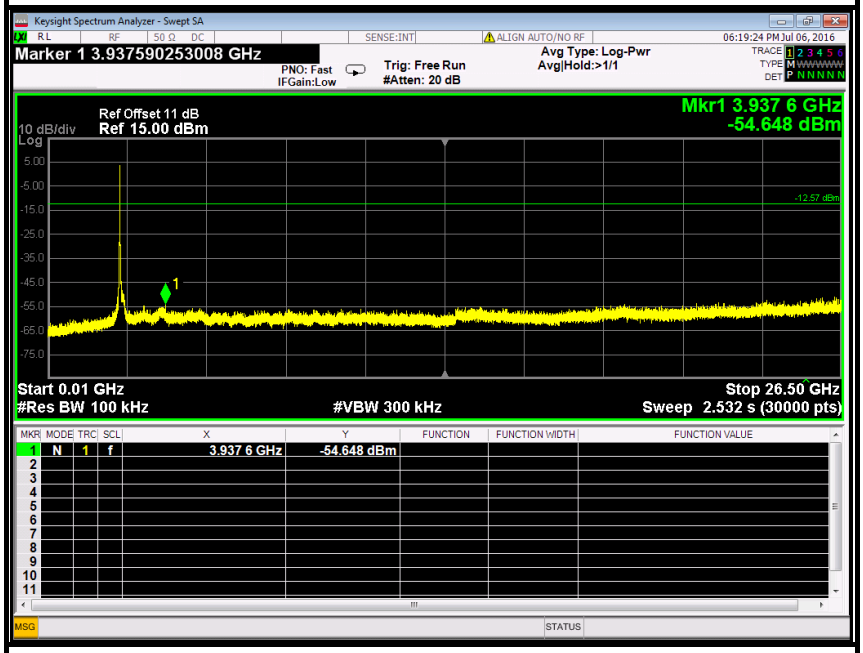
CH High (2.45GHz ~2.5GHz)



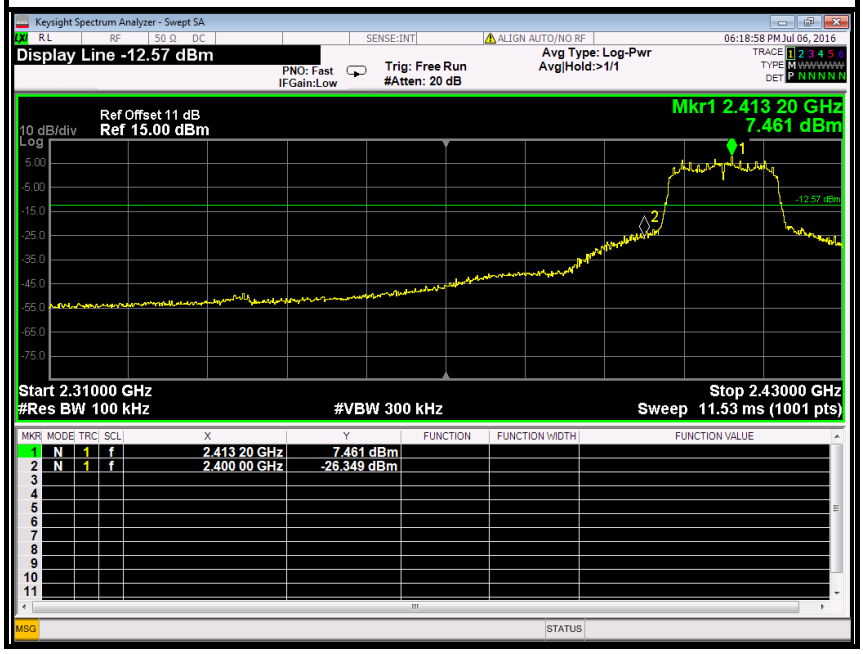
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11g mode (Antenna 1)

CH Low (10MHz ~26.5GHz)

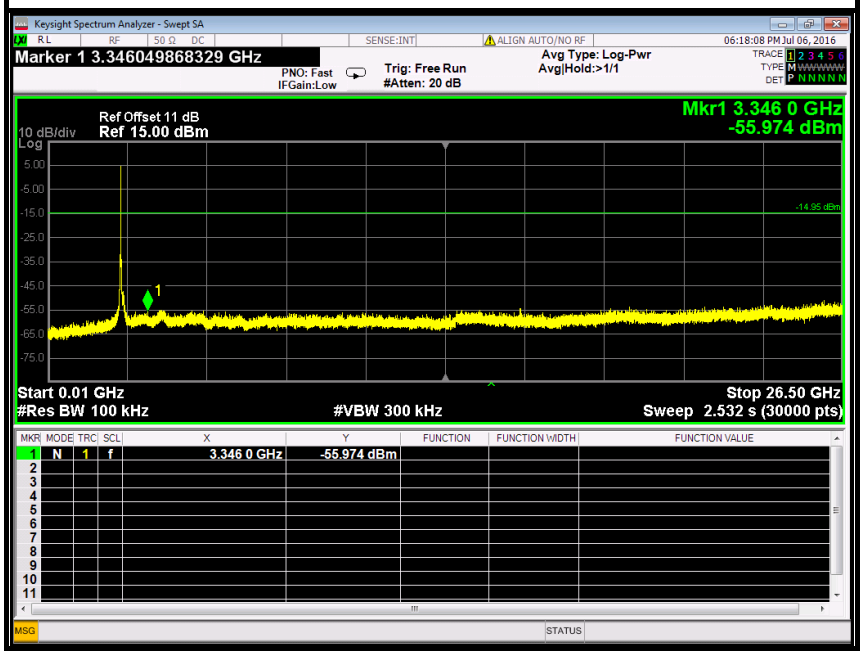


CH Low (2.31GHz ~2.43GHz)



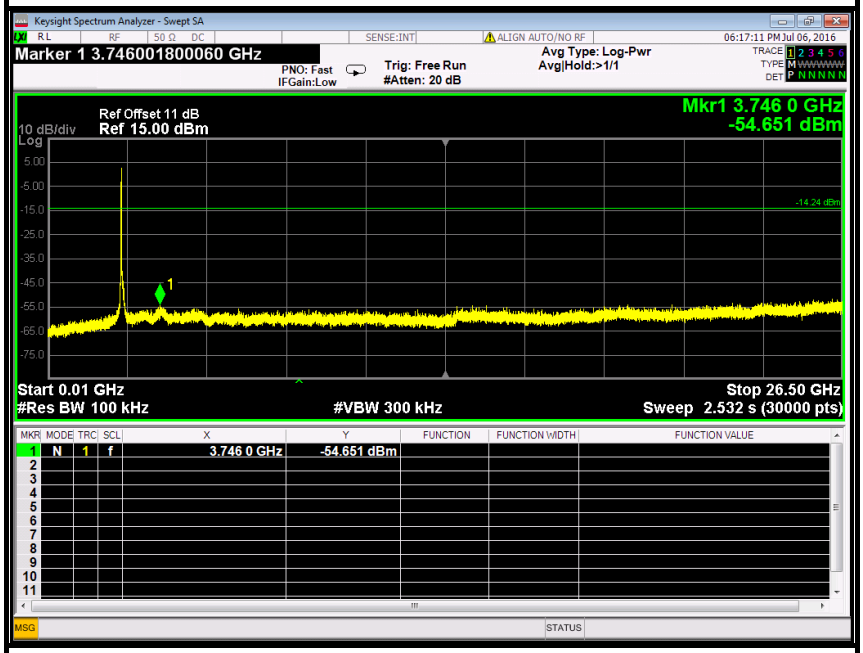
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)

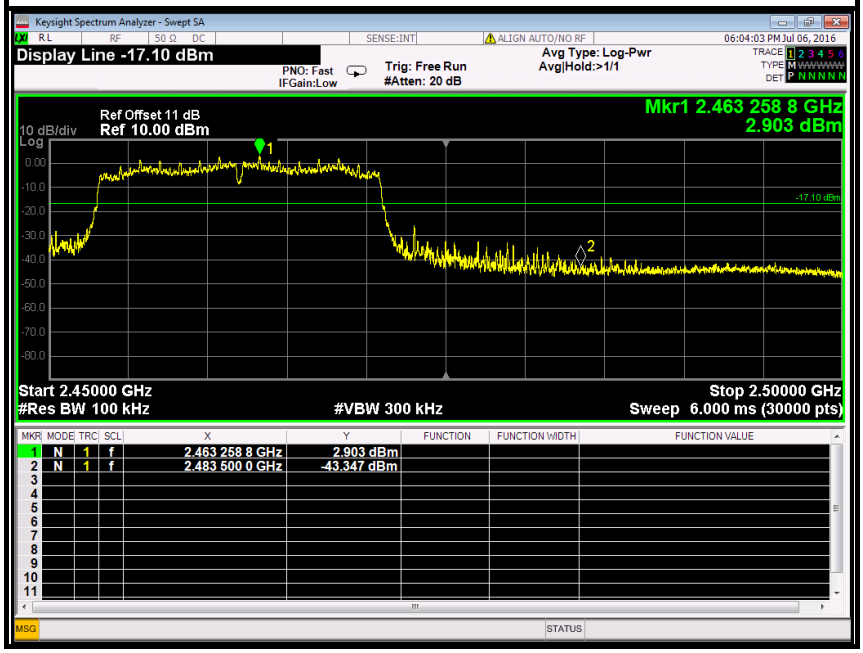


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)



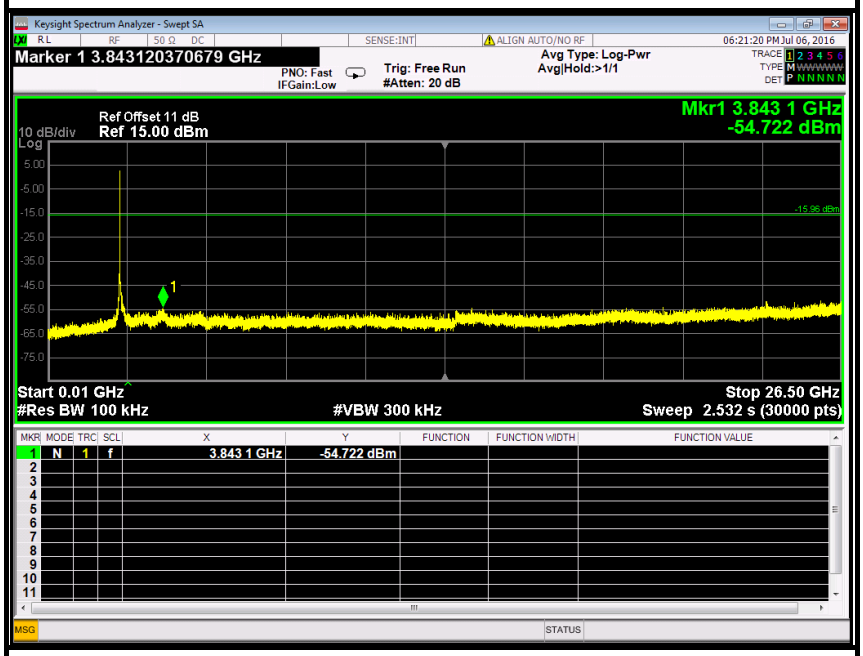
CH High (2.45GHz ~2.5GHz)



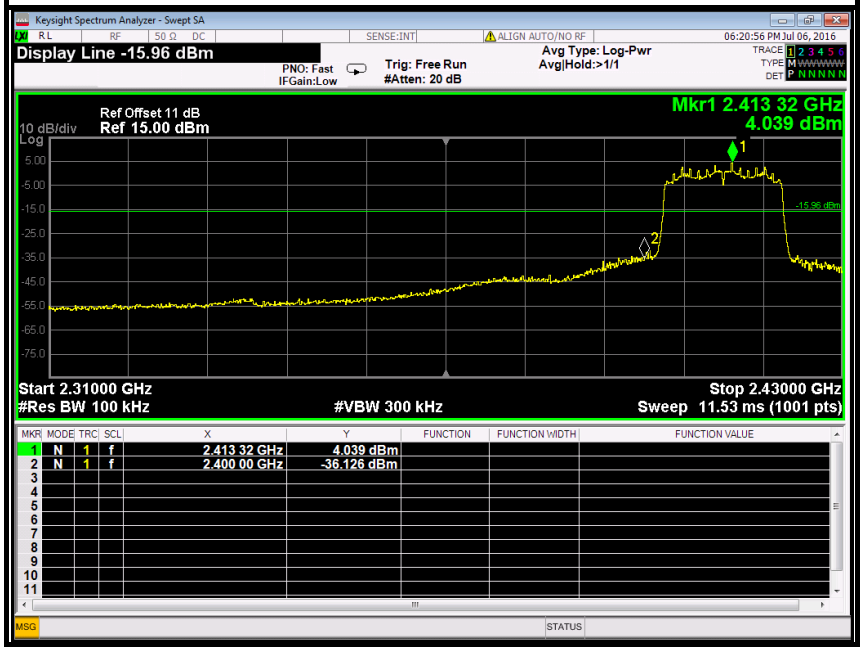
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 MHz mode (Antenna 0)

CH Low (10MHz ~26.5GHz)

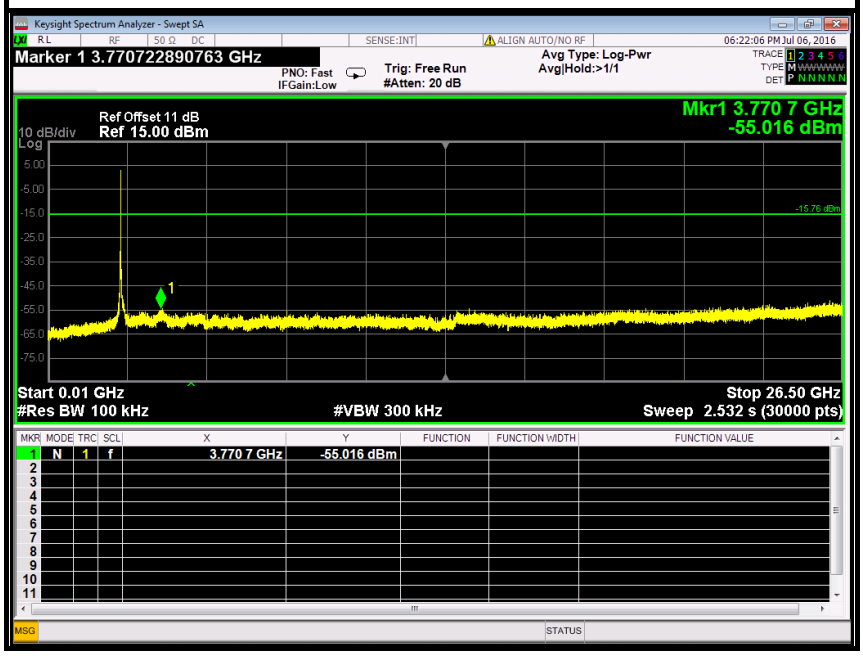


CH Low (2.31GHz ~2.43GHz)



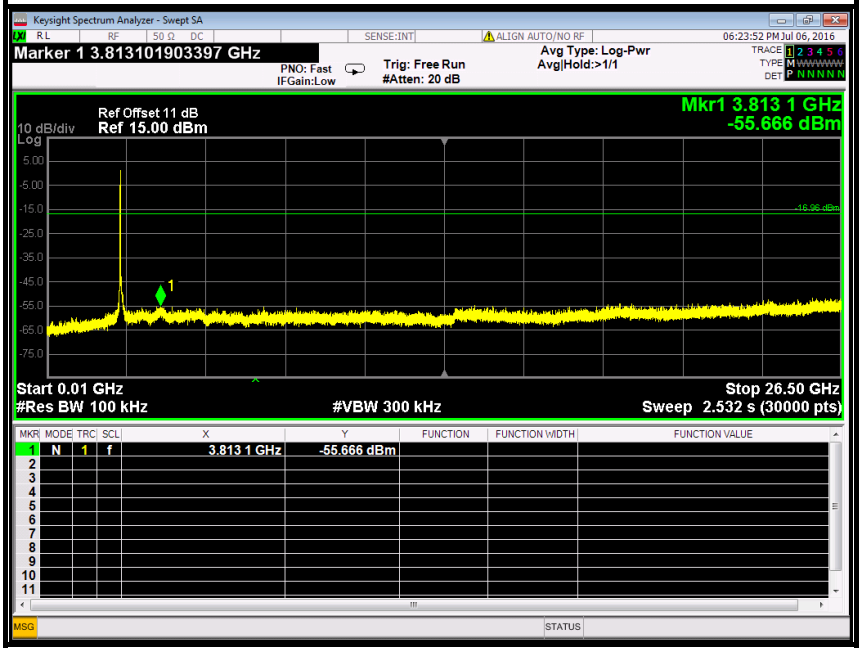
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)

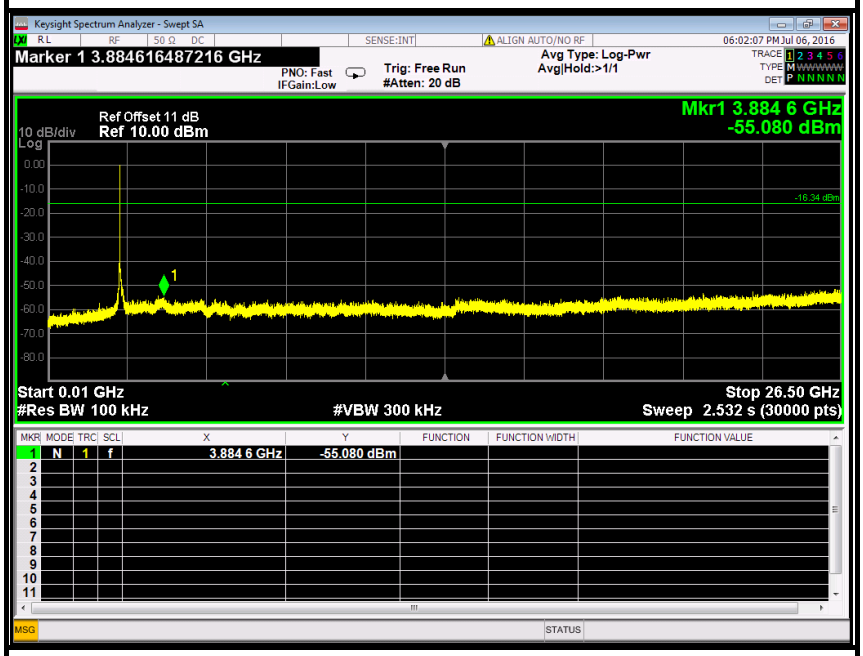


CH High (2.45GHz ~2.5GHz)

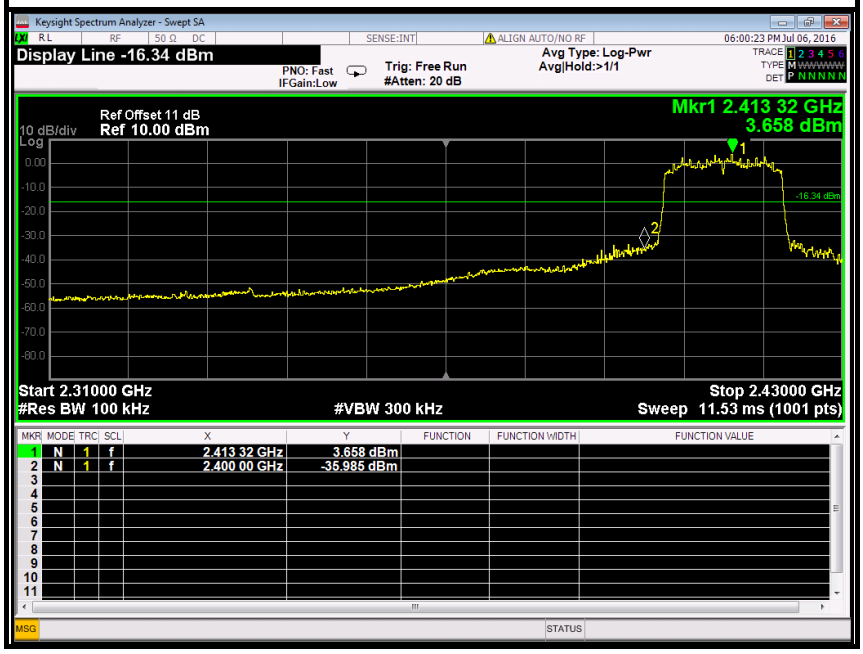
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT20 MHz mode (Antenna 1)

CH Low (10MHz ~26.5GHz)

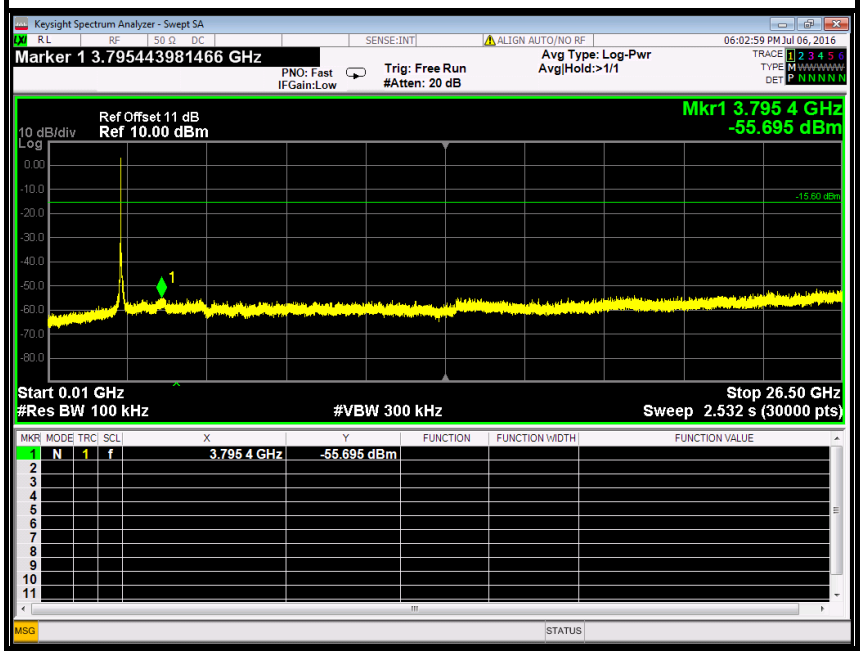


CH Low (2.31GHz ~2.43GHz)



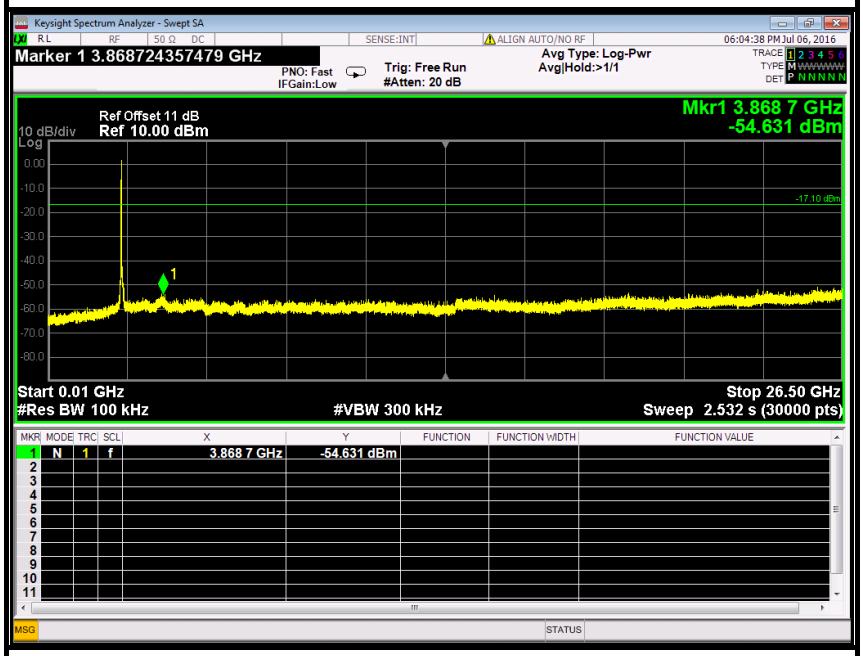
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)

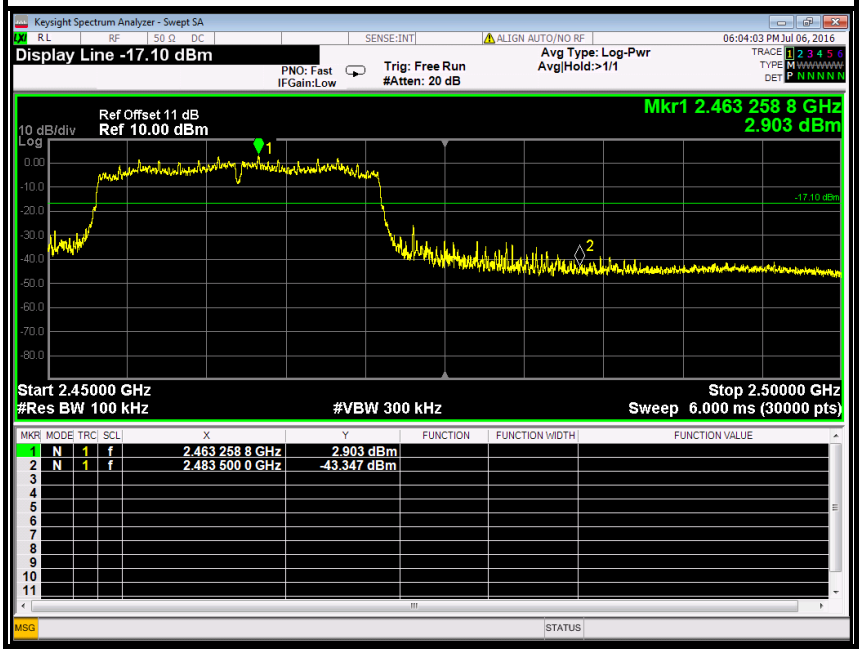


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)



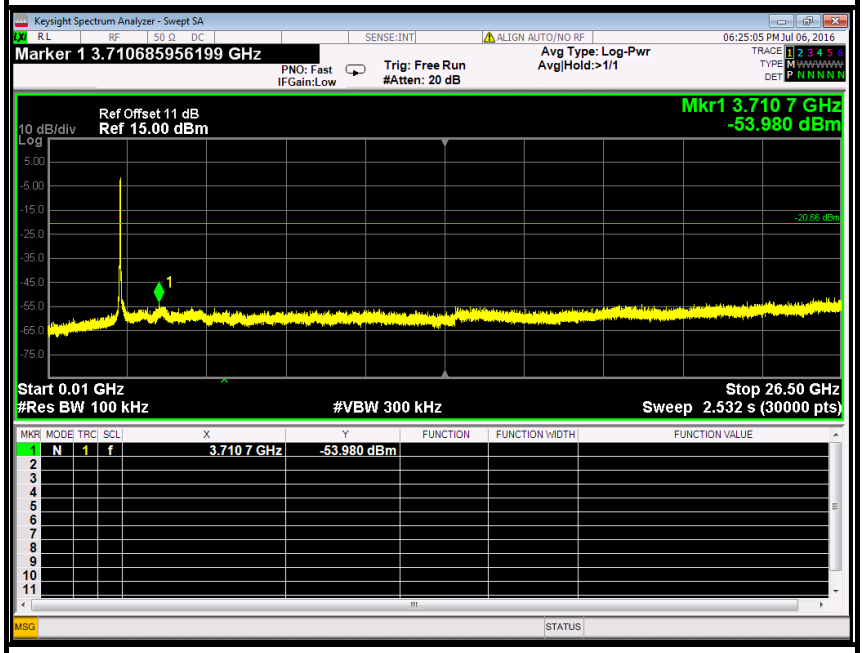
CH High (2.45GHz ~2.5GHz)



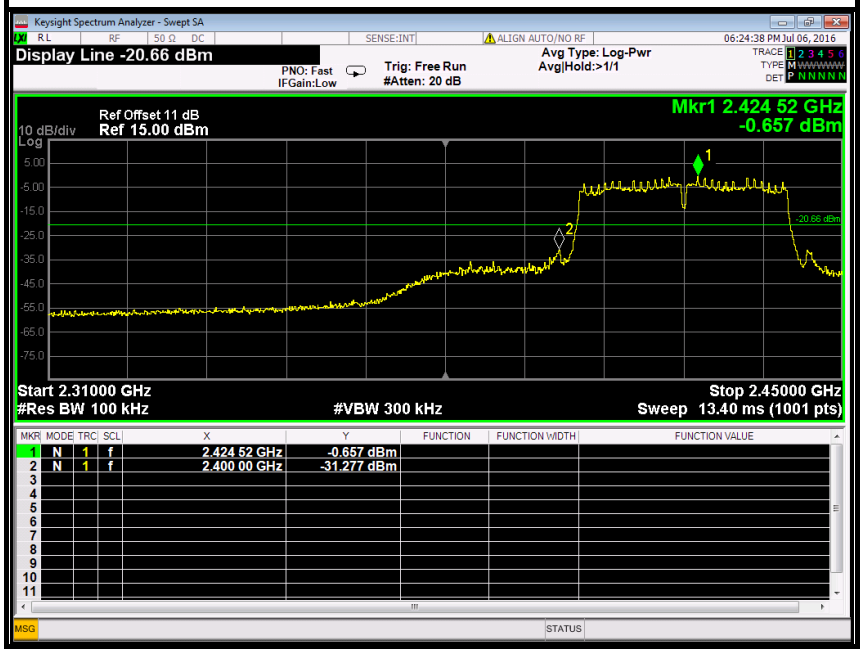
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 MHz mode (Antenna 0)

CH Low (10MHz ~26.5GHz)

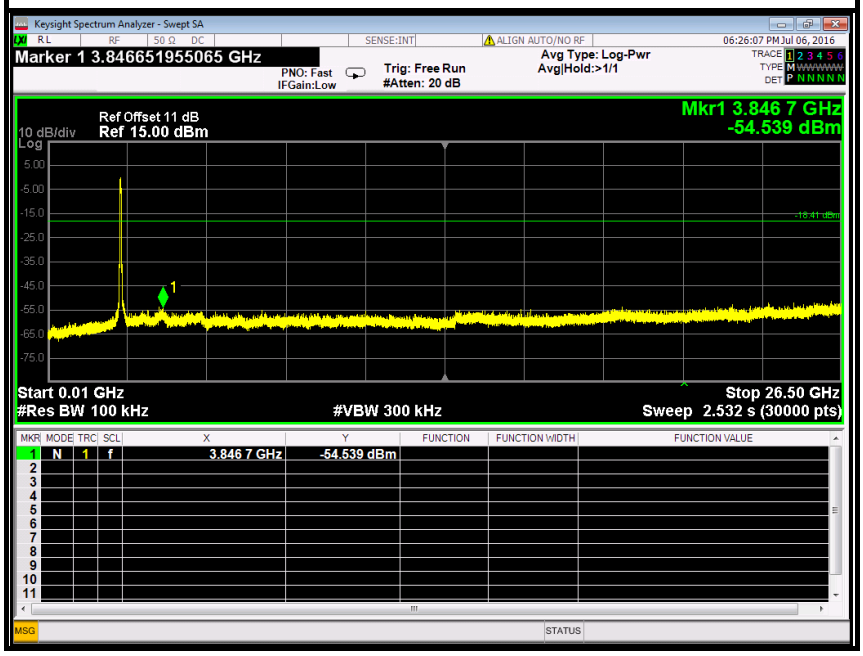


CH Low (2.31GHz ~2.45GHz)



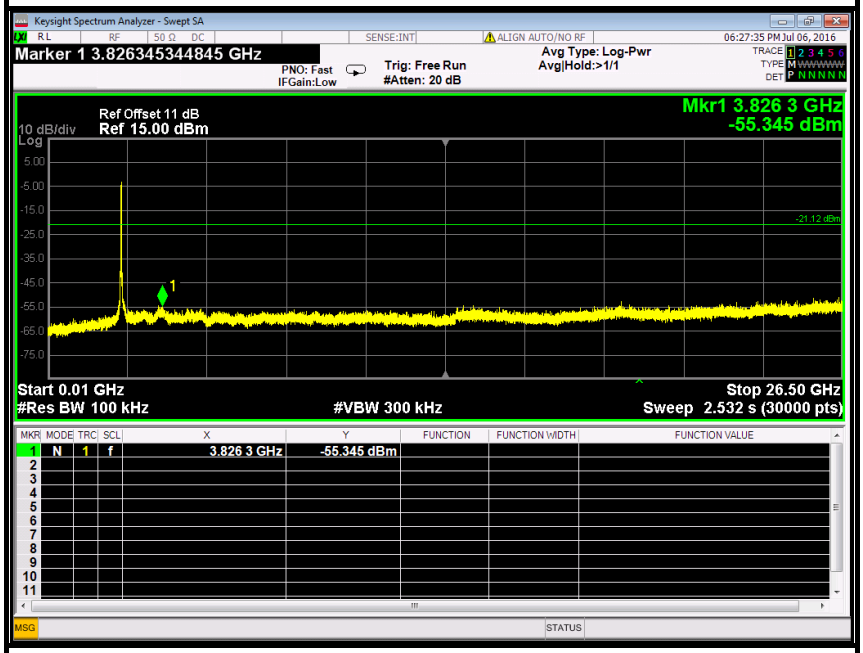
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)

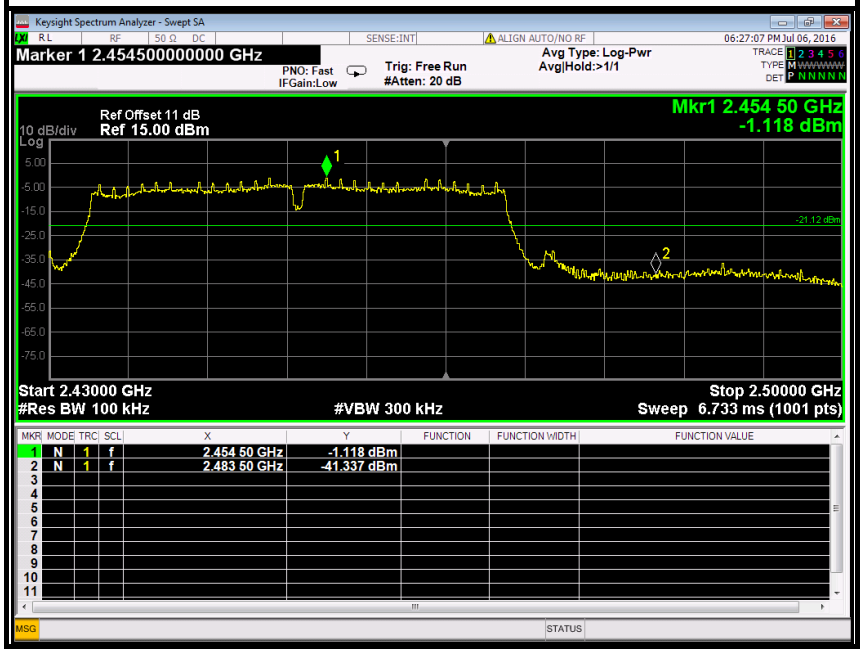


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)



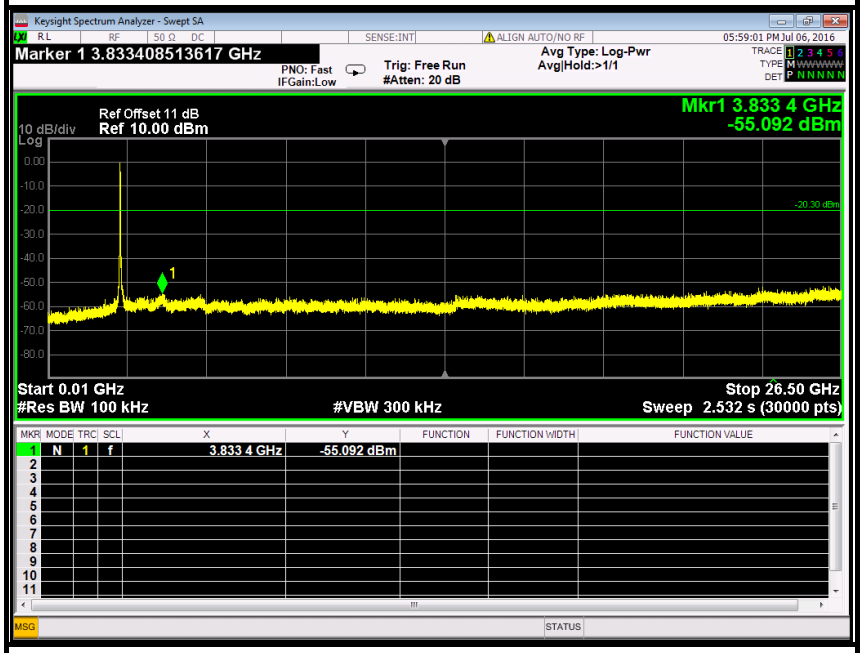
CH High (2.43GHz ~2.5GHz)



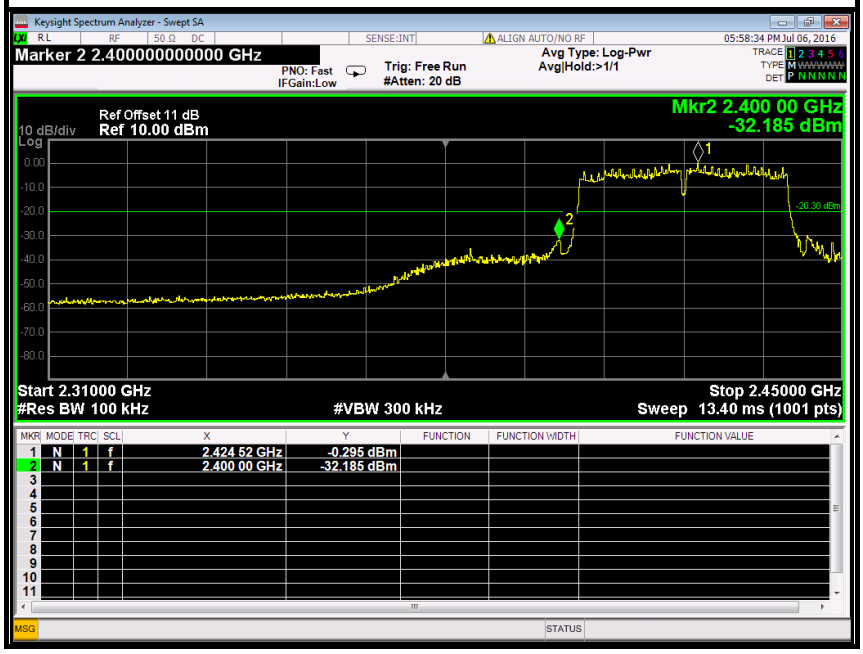
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

IEEE 802.11n HT40 MHz mode (Antenna 1)

CH Low (10MHz ~26.5GHz)

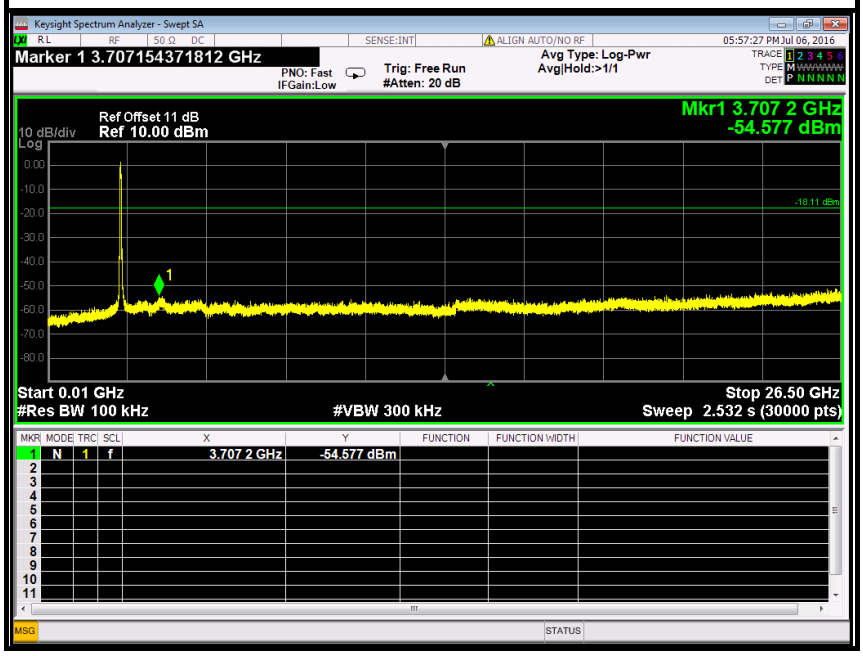


CH Low (2.31GHz ~2.45GHz)



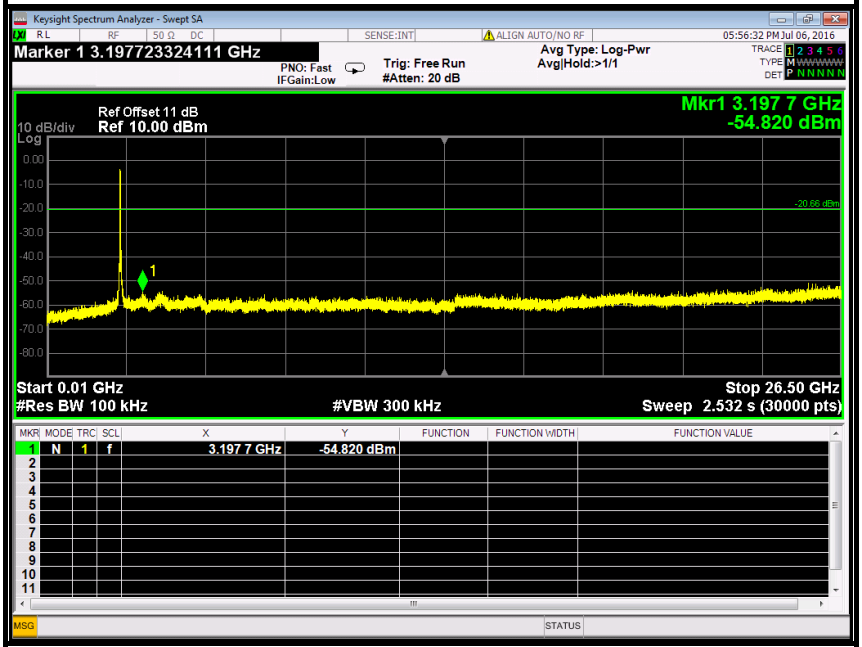
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH Mid (10MHz ~26.5GHz)

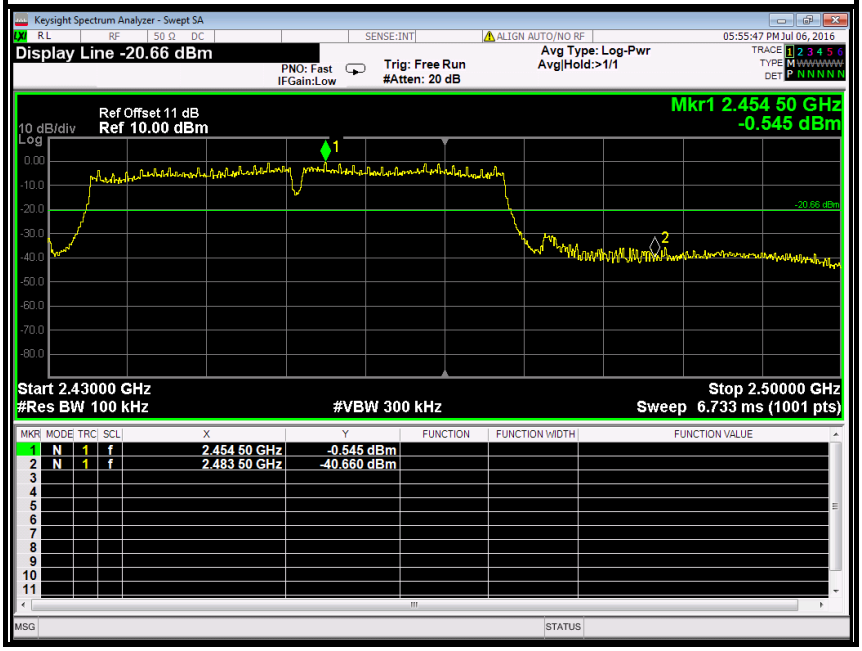


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

CH High (10MHz ~26.5GHz)



CH High (2.43GHz ~2.5GHz)



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2. RADIATED EMISSIONS MEASUREMENT

7.2.2.1. LIMITS OF RADIATED EMISSIONS MEASUREMENT

According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

1. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

NOTE:(1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2.2. TEST INSTRUMENTS

Radiated Emission Test Site 966（2）					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
Amplifier	EMEC	EM330	060661	03/18/2016	03/17/2017
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2016	02/20/2017
Loop Antenna	COM-POWER	AL-130	121044	09/25/2015	09/24/2016
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2.3. TEST PROCEDURE (please refer to measurement standard)

1. The EUT is placed on a turntable, which is 0.8m or 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

   RBW=100kHz / VBW=300kHz / Sweep=AUTO

   Above 1GHz:

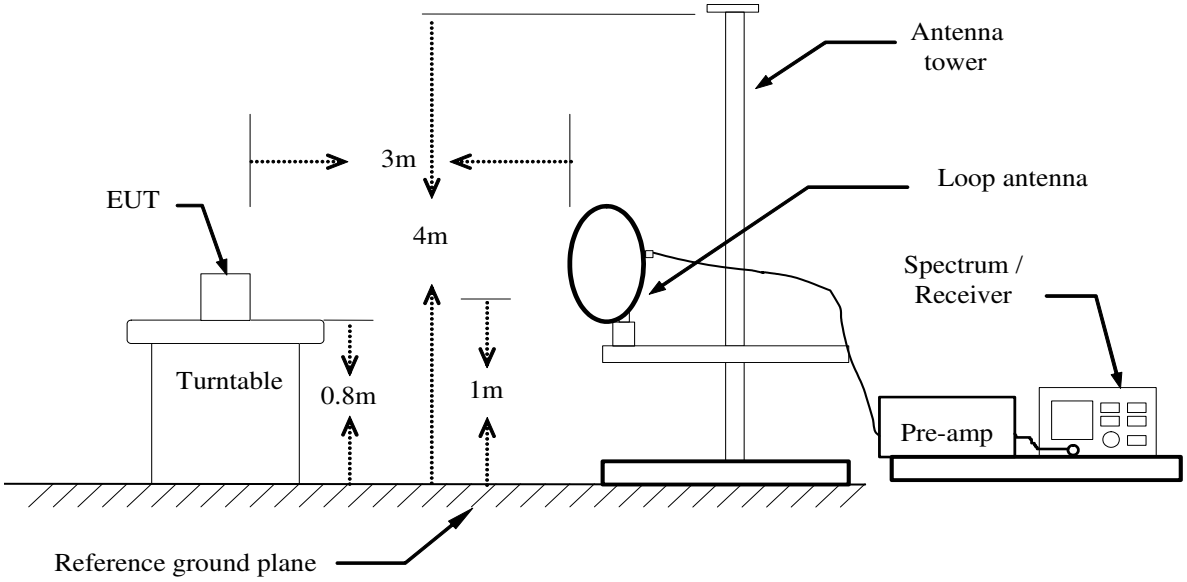
   (a) PEAK: RBW=1MHz,VBW=3MHz / Sweep=AUTO

   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO / Detector=Peak
7. Repeat above procedures until the measurements for all frequencies are complete.

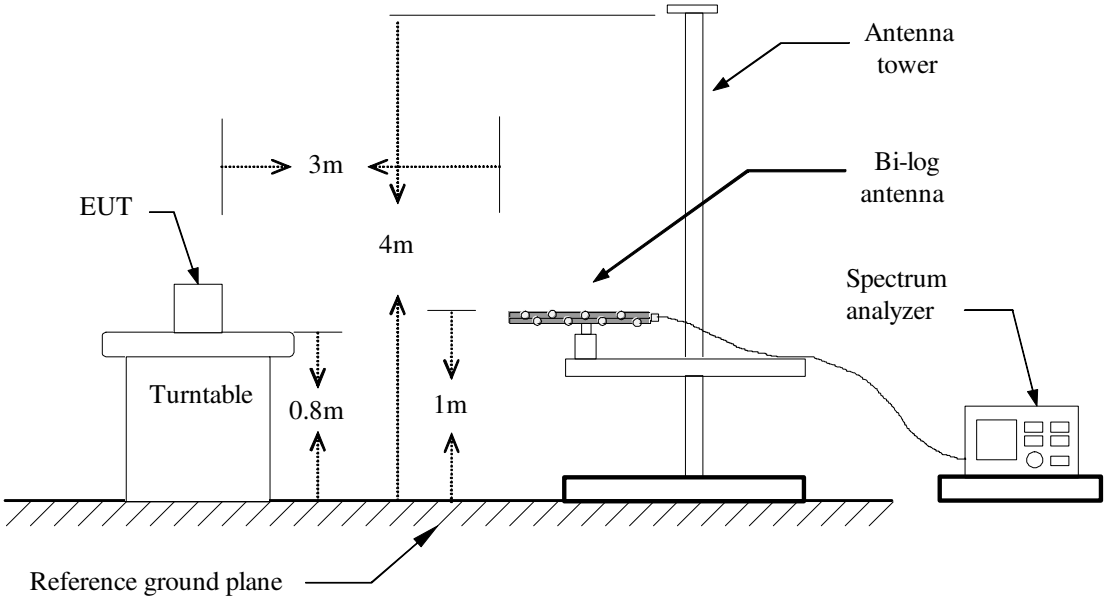
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2.4. TEST SETUP

Below 30MHz

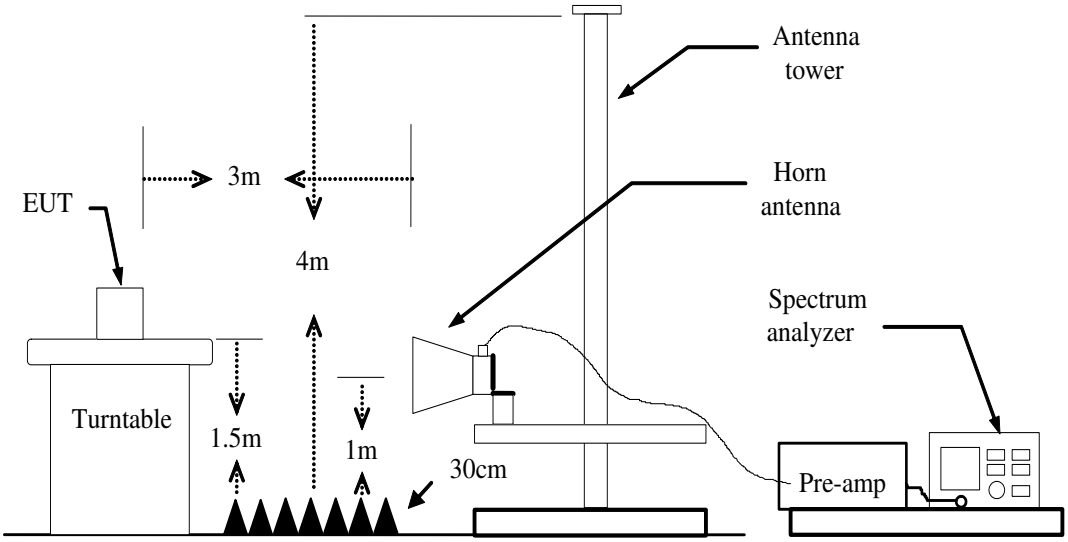


Below 1 GHz



This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Above 1 GHz



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2.5. DATA SAPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Q.P. = Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Peak = Peak Reading
AVG = Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m)
Result (dBuV/m) = Reading (dBuV) + Correction Factor

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

7.2.2.6. TEST RESULTS

Below 1 GHz

Test Mode: TX **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** July 6, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
45.5200	53.15	-19.12	34.03	40.00	-5.97	V	QP
123.1200	51.56	-21.02	30.54	43.50	-12.96	V	QP
375.3200	48.39	-16.82	31.57	46.00	-14.43	V	QP
624.6100	49.43	-12.73	36.70	46.00	-9.30	V	QP
749.7400	41.52	-11.19	30.33	46.00	-15.67	V	QP
874.8700	45.97	-10.14	35.83	46.00	-10.17	V	QP
37.7600	48.68	-15.48	33.20	40.00	-6.80	H	QP
171.6200	53.57	-22.92	30.65	43.50	-12.85	H	QP
247.2800	54.55	-21.19	33.36	46.00	-12.64	H	QP
375.3200	48.64	-16.82	31.82	46.00	-14.18	H	QP
624.6100	48.18	-12.73	35.45	46.00	-10.55	H	QP
874.8700	45.21	-10.14	35.07	46.00	-10.93	H	QP

*****Remark:*** *No emission found between lowest internal used/generated frequency to 30MHz.*

Notes:

1. *Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.*
2. *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.*
3. *The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.*
4. *Frequency (MHz). = Emission frequency in MHz*
   Reading (dBµV/m) = Receiver reading
   Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain
   Limit (dBµV/m) = Limit stated in standard
   Margin (dB) = Measured (dBµV/m) – Limits (dBµV/m)
   Antenna Pol e(H/V) = Current carrying line of reading

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Above 1 GHz
Antenna 1
Test Mode: TX / IEEE 802.11b(CH Low) **Tested by:** Eve Wang
Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1378.000	48.67	-7.14	41.53	74.00	-32.47	V	peak
1873.000	46.82	-5.81	41.01	74.00	-32.99	V	peak
3214.000	49.08	-1.00	48.08	74.00	-25.92	V	peak
3997.000	42.37	1.58	43.95	74.00	-30.05	V	peak
4825.000	50.22	4.41	54.63	74.00	-19.37	V	peak
4825.000	47.55	4.41	51.96	54.00	-2.04	V	AVG
7237.000	44.94	8.16	53.10	74.00	-20.90	V	peak
7237.000	42.02	8.16	50.18	54.00	-3.82	V	AVG
1378.000	48.34	-7.14	41.20	74.00	-32.80	H	Peak
1621.000	48.30	-6.65	41.65	74.00	-32.35	H	Peak
1873.000	47.43	-5.81	41.62	74.00	-32.38	H	Peak
3214.000	45.81	-1.00	44.81	74.00	-29.19	H	Peak
4825.000	50.50	4.41	54.91	74.00	-19.09	H	Peak
4825.000	47.28	4.41	51.69	54.00	-2.31	H	AVG
7237.000	45.10	8.16	53.26	74.00	-20.74	H	Peak
7237.000	42.02	8.16	50.18	54.00	-3.82	H	AVG

***REMARKS**:*

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11b (CH Mid) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1126.000	49.77	-8.07	41.70	74.00	-32.30	V	Peak
1747.000	48.38	-6.38	42.00	74.00	-32.00	V	Peak
3250.000	44.33	-0.94	43.39	74.00	-30.61	V	Peak
4870.000	50.43	4.56	54.99	74.00	-19.01	V	Peak
4870.000	47.22	4.56	51.78	54.00	-2.22	V	AVG
5824.000	40.15	6.01	46.16	74.00	-27.84	V	Peak
7309.000	42.70	8.30	51.00	74.00	-23.00	V	Peak
1621.000	49.21	-6.65	42.56	74.00	-31.44	H	Peak
1954.000	47.91	-5.29	42.62	74.00	-31.38	H	Peak
3250.000	45.90	-0.94	44.96	74.00	-29.04	H	Peak
4870.000	49.22	4.56	53.78	74.00	-20.22	H	Peak
4870.000	45.68	4.56	50.24	54.00	-3.76	H	AVG
5860.000	40.28	6.02	46.30	74.00	-27.70	H	Peak
7309.000	43.43	8.30	51.73	74.00	-22.27	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11b (CH High) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1378.000	49.68	-7.14	42.54	74.00	-31.46	V	Peak
3286.000	49.20	-0.88	48.32	74.00	-25.68	V	Peak
4006.000	41.99	1.61	43.60	74.00	-30.40	V	Peak
4924.000	48.81	4.73	53.54	74.00	-20.46	V	Peak
4924.000	46.24	4.73	50.97	54.00	-3.03	V	AVG
6319.000	40.64	6.60	47.24	74.00	-26.76	V	Peak
7390.000	41.73	8.46	50.19	74.00	-23.81	V	Peak
1126.000	47.61	-8.07	39.54	74.00	-34.46	H	Peak
2584.000	43.77	-2.11	41.66	74.00	-32.34	H	Peak
3196.000	44.60	-1.03	43.57	74.00	-30.43	H	Peak
4924.000	48.42	4.73	53.15	74.00	-20.85	H	Peak
4924.000	45.75	4.73	50.48	54.00	-3.52	H	AVG
5842.000	40.55	6.01	46.56	74.00	-27.44	H	Peak
7381.000	41.13	8.44	49.57	74.00	-24.43	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Antenna 0

Test Mode: TX / IEEE 802.11g(CH Low) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1621.000	47.90	-6.65	41.25	74.00	-32.75	V	Peak
3214.000	47.68	-1.00	46.68	74.00	-27.32	V	Peak
4384.000	42.33	2.94	45.27	74.00	-28.73	V	Peak
4825.000	44.34	4.41	48.75	74.00	-25.25	V	Peak
7246.000	44.87	8.18	53.05	74.00	-20.95	V	Peak
7246.000	40.01	8.18	48.19	54.00	-5.81	V	AVG
1378.000	48.51	-7.14	41.37	74.00	-32.63	H	Peak
2800.000	44.07	-1.72	42.35	74.00	-31.65	H	Peak
3214.000	46.11	-1.00	45.11	74.00	-28.89	H	Peak
3871.000	41.26	1.05	42.31	74.00	-31.69	H	Peak
4825.000	44.21	4.41	48.62	74.00	-25.38	H	Peak
7237.000	44.95	8.16	53.11	74.00	-20.89	H	Peak
7237.000	41.36	8.16	49.52	54.00	-4.48	H	AVG

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11g (CH Mid) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2809.000	45.39	-1.70	43.69	74.00	-30.31	V	Peak
3313.000	48.61	-0.83	47.78	74.00	-26.22	V	Peak
4870.000	43.65	4.56	48.21	74.00	-25.79	V	Peak
5662.000	41.86	5.94	47.80	74.00	-26.20	V	Peak
6976.000	41.72	7.66	49.38	74.00	-24.62	V	Peak
7300.000	42.79	8.29	51.08	74.00	-22.92	V	Peak
1378.000	47.83	-7.14	40.69	74.00	-33.31	H	Peak
2530.000	44.32	-2.21	42.11	74.00	-31.89	H	Peak
3196.000	43.85	-1.03	42.82	74.00	-31.18	H	Peak
4861.000	41.05	4.53	45.58	74.00	-28.42	H	Peak
5527.000	40.55	5.88	46.43	74.00	-27.57	H	Peak
6886.000	40.78	7.52	48.30	74.00	-25.70	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11g (CH High) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1126.000	49.31	-8.07	41.24	74.00	-32.76	V	Peak
2512.000	43.84	-2.24	41.60	74.00	-32.40	V	Peak
3286.000	47.61	-0.88	46.73	74.00	-27.27	V	Peak
4924.000	42.99	4.73	47.72	74.00	-26.28	V	Peak
5203.000	40.76	5.34	46.10	74.00	-27.90	V	Peak
7390.000	41.89	8.46	50.35	74.00	-23.65	V	Peak
2539.000	44.49	-2.19	42.30	74.00	-31.70	H	Peak
3286.000	44.02	-0.88	43.14	74.00	-30.86	H	Peak
4924.000	46.13	4.73	50.86	74.00	-23.14	H	Peak
6013.000	40.61	6.10	46.71	74.00	-27.29	H	Peak
6490.000	39.39	6.87	46.26	74.00	-27.74	H	Peak
7390.000	44.39	8.46	52.85	74.00	-21.15	H	Peak
7390.000	40.25	8.46	48.71	54.00	-5.29	H	AVG

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Antenna 1

Test Mode: TX / IEEE 802.11g(CH Low) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1621.000	46.58	-6.65	39.93	74.00	-34.07	V	Peak
2575.000	43.63	-2.12	41.51	74.00	-32.49	V	Peak
3196.000	44.87	-1.03	43.84	74.00	-30.16	V	Peak
4825.000	46.07	4.41	50.48	74.00	-23.52	V	Peak
6409.000	40.07	6.74	46.81	74.00	-27.19	V	Peak
7237.000	42.98	8.16	51.14	74.00	-22.86	V	Peak
2584.000	44.46	-2.11	42.35	74.00	-31.65	H	Peak
3286.000	43.48	-0.88	42.60	74.00	-31.40	H	Peak
4303.000	41.43	2.66	44.09	74.00	-29.91	H	Peak
5581.000	40.10	5.90	46.00	74.00	-28.00	H	Peak
6769.000	39.99	7.33	47.32	74.00	-26.68	H	Peak
7390.000	40.90	8.46	49.36	74.00	-24.64	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11g (CH Mid) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1126.000	50.14	-8.07	42.07	74.00	-31.93	V	Peak
3295.000	47.11	-0.86	46.25	74.00	-27.75	V	Peak
4141.000	40.54	2.09	42.63	74.00	-31.37	V	Peak
4807.000	40.92	4.35	45.27	74.00	-28.73	V	Peak
5905.000	40.01	6.04	46.05	74.00	-27.95	V	Peak
6967.000	40.20	7.65	47.85	74.00	-26.15	V	Peak
2584.000	44.39	-2.11	42.28	74.00	-31.72	H	Peak
3295.000	44.59	-0.86	43.73	74.00	-30.27	H	Peak
4861.000	41.53	4.53	46.06	74.00	-27.94	H	Peak
5329.000	40.46	5.57	46.03	74.00	-27.97	H	Peak
6463.000	40.69	6.83	47.52	74.00	-26.48	H	Peak
7318.000	43.42	8.32	51.74	74.00	-22.26	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11g (CH High) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1126.000	48.43	-8.07	40.36	74.00	-33.64	V	Peak
2827.000	44.47	-1.67	42.80	74.00	-31.20	V	Peak
3286.000	47.80	-0.88	46.92	74.00	-27.08	V	Peak
4915.000	43.31	4.70	48.01	74.00	-25.99	V	Peak
6301.000	39.76	6.57	46.33	74.00	-27.67	V	Peak
7390.000	42.30	8.46	50.76	74.00	-23.24	V	Peak
1873.000	46.71	-5.81	40.90	74.00	-33.10	H	Peak
3286.000	44.18	-0.88	43.30	74.00	-30.70	H	Peak
4924.000	45.11	4.73	49.84	74.00	-24.16	H	Peak
6004.000	39.91	6.09	46.00	74.00	-28.00	H	Peak
6589.000	39.73	7.03	46.76	74.00	-27.24	H	Peak
7381.000	46.18	8.44	54.62	74.00	-19.38	H	Peak
7381.000	41.23	8.44	49.67	54.00	-4.33	H	AVG

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Combine with Antenna 0 and Antenna 1

Test Mode: TX / IEEE 802.11n HT20 MHz (CH Low) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1999.000	46.62	-5.01	41.61	74.00	-32.39	V	Peak
2602.000	44.61	-2.08	42.53	74.00	-31.47	V	Peak
3214.000	47.39	-1.00	46.39	74.00	-27.61	V	Peak
4825.000	48.44	4.41	52.85	74.00	-21.15	V	Peak
4825.000	43.73	4.41	48.14	54.00	-5.86	V	AVG
6958.000	42.34	7.63	49.97	74.00	-24.03	V	Peak
7237.000	42.30	8.16	50.46	74.00	-23.54	V	Peak
2143.000	45.67	-4.22	41.45	74.00	-32.55	H	Peak
3214.000	46.68	-1.00	45.68	74.00	-28.32	H	Peak
3781.000	42.42	0.67	43.09	74.00	-30.91	H	Peak
4825.000	44.38	4.41	48.79	74.00	-25.21	H	Peak
6481.000	40.42	6.86	47.28	74.00	-26.72	H	Peak
7768.000	40.77	9.20	49.97	74.00	-24.03	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11n HT20 MHz (CH Mid) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2503.000	45.24	-2.25	42.99	74.00	-31.01	V	Peak
3250.000	48.75	-0.94	47.81	74.00	-26.19	V	Peak
4474.000	40.42	3.26	43.68	74.00	-30.32	V	Peak
4879.000	41.66	4.59	46.25	74.00	-27.75	V	Peak
5770.000	40.12	5.98	46.10	74.00	-27.90	V	Peak
6562.000	40.20	6.99	47.19	74.00	-26.81	V	Peak
1621.000	48.14	-6.65	41.49	74.00	-32.51	H	Peak
2539.000	45.08	-2.19	42.89	74.00	-31.11	H	Peak
3250.000	45.89	-0.94	44.95	74.00	-29.05	H	Peak
4870.000	42.17	4.56	46.73	74.00	-27.27	H	Peak
5311.000	41.37	5.53	46.90	74.00	-27.10	H	Peak
6886.000	41.59	7.52	49.11	74.00	-24.89	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / EEE 802.11n HT20 MHz (CH High) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2548.000	44.95	-2.17	42.78	74.00	-31.22	V	Peak
3286.000	49.27	-0.88	48.39	74.00	-25.61	V	Peak
4924.000	42.21	4.73	46.94	74.00	-27.06	V	Peak
5383.000	41.60	5.66	47.26	74.00	-26.74	V	Peak
6121.000	40.80	6.28	47.08	74.00	-26.92	V	Peak
7048.000	40.81	7.79	48.60	74.00	-25.40	V	Peak
1747.000	50.00	-6.38	43.62	74.00	-30.38	H	Peak
3286.000	45.46	-0.88	44.58	74.00	-29.42	H	Peak
4924.000	43.29	4.73	48.02	74.00	-25.98	H	Peak
5923.000	40.41	6.05	46.46	74.00	-27.54	H	Peak
6670.000	40.80	7.17	47.97	74.00	-26.03	H	Peak
8020.000	40.02	9.64	49.66	74.00	-24.34	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Combine with Antenna 0 and Antenna 1

Test Mode: TX/ IEEE 802.11n HT40 MHz (CH Low) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1999.000	48.34	-5.01	43.33	74.00	-30.67	V	Peak
3232.000	48.95	-0.97	47.98	74.00	-26.02	V	Peak
4402.000	41.79	3.01	44.80	74.00	-29.20	V	Peak
5266.000	41.03	5.45	46.48	74.00	-27.52	V	Peak
5716.000	41.26	5.96	47.22	74.00	-26.78	V	Peak
6490.000	41.60	6.87	48.47	74.00	-25.53	V	Peak
2485.000	45.33	-2.34	42.99	74.00	-31.01	H	Peak
3196.000	45.34	-1.03	44.31	74.00	-29.69	H	Peak
3997.000	42.63	1.58	44.21	74.00	-29.79	H	Peak
4843.000	42.54	4.47	47.01	74.00	-26.99	H	Peak
5896.000	40.71	6.04	46.75	74.00	-27.25	H	Peak
6481.000	40.66	6.86	47.52	74.00	-26.48	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2593.000	45.97	-2.09	43.88	74.00	-30.12	V	Peak
3250.000	48.78	-0.94	47.84	74.00	-26.16	V	Peak
4609.000	41.31	3.71	45.02	74.00	-28.98	V	Peak
4996.000	41.36	4.97	46.33	74.00	-27.67	V	Peak
6121.000	40.30	6.28	46.58	74.00	-27.42	V	Peak
7219.000	40.41	8.13	48.54	74.00	-25.46	V	Peak
1873.000	47.98	-5.81	42.17	74.00	-31.83	H	Peak
2521.000	45.36	-2.22	43.14	74.00	-30.86	H	Peak
3250.000	46.10	-0.94	45.16	74.00	-28.84	H	Peak
4312.000	41.55	2.69	44.24	74.00	-29.76	H	Peak
5023.000	41.15	5.02	46.17	74.00	-27.83	H	Peak
5536.000	40.92	5.89	46.81	74.00	-27.19	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test Mode: TX/ IEEE 802.11n HT40 MHz (CH High) **Tested by:** Eve Wang

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** May 25, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2494.000	45.64	-2.29	43.35	74.00	-30.65	V	Peak
3268.000	45.25	-0.91	44.34	74.00	-29.66	V	Peak
3961.000	42.43	1.43	43.86	74.00	-30.14	V	Peak
5104.000	41.41	5.17	46.58	74.00	-27.42	V	Peak
5752.000	40.97	5.98	46.95	74.00	-27.05	V	Peak
7138.000	40.80	7.97	48.77	74.00	-25.23	V	Peak
1378.000	48.13	-7.14	40.99	74.00	-33.01	H	Peak
2827.000	45.00	-1.67	43.33	74.00	-30.67	H	Peak
3268.000	46.20	-0.91	45.29	74.00	-28.71	H	Peak
4402.000	41.34	3.01	44.35	74.00	-29.65	H	Peak
4996.000	42.39	4.97	47.36	74.00	-26.64	H	Peak
5518.000	41.25	5.88	47.13	74.00	-26.87	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *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.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.