



FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

Tablet Computer

Model:

**Satellite Click LX0W-C, Satellite Click10 LX0W-C, Satellite Click LX5W-C,
Satellite Click10 LX5W-C, LX0W-C, LX5W-C, LX0-C, LX5-C, Encore
LX0-C, Encore 10 LX0-C, Encore LX5-C, Encore 10 LX5-C, Encore 10K,
Encore 10K LX0W-C, Encore 10K LX5W-C**

Trade Name: TOSHIBA

Issued to

Pegatron Corporation

5F., NO. 76, Ligong ST., Beitou District, Taipei City 112 Taiwan(R.O.C.)

Issued by

Compliance Certification Services Inc.

**No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)**

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Issued Date: May 27, 2015



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 27, 2015	Initial Issue	ALL	Doris Chu



TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION.....	4
2. EUT DESCRIPTION	5
3. TEST METHODOLOGY	7
3.1 EUT CONFIGURATION	7
3.2 EUT EXERCISE	7
3.3 GENERAL TEST PROCEDURES.....	7
3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS.....	8
3.5 DESCRIPTION OF TEST MODES.....	9
4. INSTRUMENT CALIBRATION.....	10
4.1 MEASURING INSTRUMENT CALIBRATION	10
4.2 MEASUREMENT EQUIPMENT USED.....	10
4.3 MEASUREMENT UNCERTAINTY.....	11
5. FACILITIES AND ACCREDITATIONS	12
5.1 FACILITIES	12
5.2 EQUIPMENT	12
5.3 TABLE OF ACCREDITATIONS AND LISTINGS	13
6. SETUP OF EQUIPMENT UNDER TEST	14
6.1 SETUP CONFIGURATION OF EUT	14
6.2 SUPPORT EQUIPMENT	14
7. FCC PART 15 REQUIREMENTS.....	15
7.1 6DB BANDWIDTH	15
7.2 MAXIMUM OUTPUT POWER.....	22
7.3 BAND EDGES MEASUREMENT	24
7.4 PEAK POWER SPECTRAL DENSITY	37
7.5 RADIATED UNDESIRABLE EMISSION.....	44
7.6 POWERLINE CONDUCTED EMISSIONS	57
8. APPENDIX I PHOTOGRAPHS OF TEST SETUP.....	60

APPENDIX 1 - PHOTOGRAPHS OF EUT



1. TEST RESULT CERTIFICATION

Applicant: Pegatron Corporation
5F., NO. 76, Ligong ST., Beitou District, Taipei City 112
Taiwan(R.O.C.)

Equipment Under Test: Tablet Computer

Trade Name: TOSHIBA

Model: Satellite Click LX0W-C, Satellite Click10 LX0W-C, Satellite Click LX5W-C, Satellite Click10 LX5W-C, LX0W-C, LX5W-C, LX0-C, LX5-C, Encore LX0-C, Encore 10 LX0-C, Encore LX5-C, Encore 10 LX5-C, Encore 10K, Encore 10K LX0W-C, Encore 10K LX5W-C

Date of Test: May 16 ~ 26, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart E	No non-compliance noted

We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. 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: 2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Reviewed by:

Miller Lee
Manager
Compliance Certification Services Inc.

Angel Cheng
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	Tablet Computer				
Trade Name	TOSHIBA				
Model Number	Satellite Click LX0W-C, Satellite Click10 LX0W-C, Satellite Click LX5W-C, Satellite Click10 LX5W-C, LX0W-C, LX5W-C, LX0-C, LX5-C, Encore LX0-C, Encore 10 LX0-C, Encore LX5-C, Encore 10 LX5-C, Encore 10K, Encore 10K LX0W-C, Encore 10K LX5W-C				
Model Discrepancy	All the above models are just for marketing purpose only.				
Received Date	May 6, 2015				
Module	Broadcom / BCM43340(AW-AH640)				
Power Supply	<p>1. Powered from Adapter :</p> <p>PHIHONG / PSAC15R-050 I/P: 100-240Vac , 0.5A , 50~60Hz O/P: 5Vdc, 3A</p> <p>2. Powered from Battery :</p> <p>LG (Trademark: TOSHIBA) / PA5234U-1BRS Rating: 3.75Vdc, 21.8Wh, 5820mAh</p>				
Frequency Range	IEEE 802.11a, IEEE 802.11n HT20 mode: 5745 ~ 5825MHz IEEE 802.11n HT40 mode: 5755 ~ 5795MHz				
Channel Number	IEEE 802.11a, IEEE 802.11n HT20 mode: 5 Channels IEEE 802.11n HT40 mode: 2 Channels				
Transmit Power		Mode	Frequency Range (MHz)	Transmit Power (dBm)	Transmit Power (W)
	UNII Band VI	IEEE 802.11a	5745 ~ 5825	8.92	0.0078
		IEEE 802.11n HT 20 MHz	5745 ~ 5825	8.91	0.0078
		IEEE 802.11n HT 40 MHz	5755 ~ 5795	9.76	0.0095
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM, 256QAM)				
Transmit Data Rate	<p>IEEE 802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps</p> <p>IEEE 802.11n HT 20 mode OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps)</p> <p>IEEE 802.11n HT 40 mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)</p>				



Antenna Specification	Gain: 2.56dBi
Antenna Designation	Chip Antenna

Remark:

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: VUIPDALD10-C filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.*



3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2009 Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests documented in this report were performed in accordance with ANSI C63.10: 2009, FCC CFR 47 Part 15.207, 15.209, 15.407 and KDB 789033 D02 General UNII Test Procedures New Rules v01.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in ANSI C63.10: 2009, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

The EUT is placed on the turntable, which is 1.5 m above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in ANSI C63.10: 2009.



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 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	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	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 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



3.5 DESCRIPTION OF TEST MODES

The EUT (model: Satellite Click 10 LX0W-C) had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

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.

Band IV

IEEE 802.11a mode / 5745 ~ 5825MHz

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel Low(5745MHz), Channel Mid(5785MHz) and Channel High(5825MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel Low(5755MHz) and Channel High(5795MHz) with 13.5Mbps data rate were chosen for full testing.

For Conducted Emissions and Radiated Emissions

The field strength of spurious emission was measured in the following position: The EUT has Notebook mode, stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

For Powerline conducted emissions

The field strength of spurious emission was measured in the following position: The EUT has Notebook mode, stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in Notebook mode and the worst case was recorded.



4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year and Loop Antenna is scheduled for calibration once three years.

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	11/23/2015
Thermostatic/Hrgrosatic Chamber	TAICHY	MHG-150LF	930619	10/07/2015
AC Power Source	EXTECH	6205	1140845	N.C.R
DC Power Supply	ABM	8301HD	D011531	N.C.R
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/09/2015

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	09/18/2015
EMI Test Receiver	R&S	ESCI	100064	05/30/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	08/19/2015
Horn Antenna	EMCO	3117	00055165	01/26/2016
Horn Antenna	EMCO	3116	26370	12/25/2015
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Pre-Amplifier	MITEQ	1652-3000	1490939	08/09/2016
Pre-Amplifier	EMC	EMC 01265	4035	08/09/2016
Pre-Amplifier	MITEQ	AMF-6F-260400-4 0-8P	985646	12/25/2015
Coaxial Cable	Huber+Suhner	102	29212/2	12/25/2015
Coaxial Cable	Huber+Suhner	102	29406/2	12/25/2015
Test S/W	EZ-EMC (CCS-3A1RE)			

Conducted Emission room # B				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCI	101073	09/18/2015
LISN	R&S	ENV216	101054	06/06/2016
LISN	SCHWARZBECK	NSLK 8127	8127-541	11/25/2015
Capacitive Voltage Probe	FCC	F-CVP-1	100185	03/12/2016
Test S/W	CCS-3A1-CE			



4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.2575
3M Semi Anechoic Chamber / <200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

No.139, Wugong Rd., Wugu Dist., New Taipei City 24891, Taiwan (R.O.C.)

Tel: 886-2-2298-4086 / Fax: 886-2-2298-1470

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2009 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, ridged waveguide, horn and/or Loop. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.




Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."



5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1309) to perform FCC Part 15 measurements	 FCC MRA: TW1309
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12.2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method -47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	 IC 2324G-1 IC 2324G-2

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.



6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
	N/A						

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



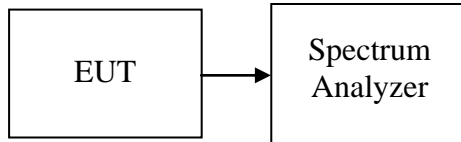
7. FCC PART 15 REQUIREMENTS

7.1 6DB BANDWIDTH

LIMIT

According to §15.407, systems using digital modulation techniques may operate in the 5725 - 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = VBW = 100kHz, Span = 50MHz, Sweep = auto.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

TEST RESULTS

No non-compliance noted



Test Data

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	6db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	15.885	18.0761
Mid	5785	15.720	18.6142
High	5825	15.349	17.8959

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	6db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5745	17.208	18.1045
Mid	5785	17.348	18.0096
High	5825	16.921	18.2724

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5815MHz

Channel	Frequency (MHz)	6db Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5755	33.147	36.6925
High	5795	35.634	36.4791



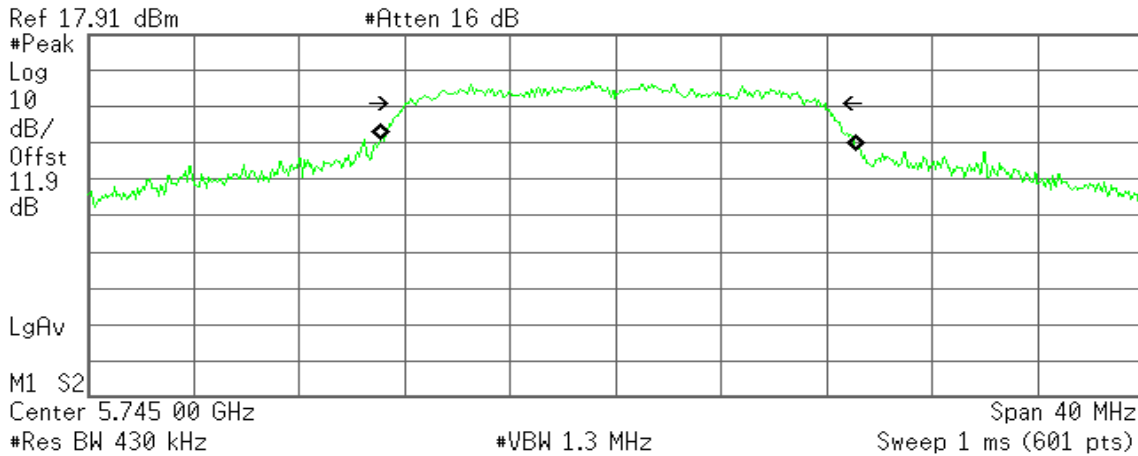
Test Plot

IEEE 802.11a mode / 5745 ~ 5825MHz

CH Low

Agilent

R T



Occupied Bandwidth
18.0761 MHz

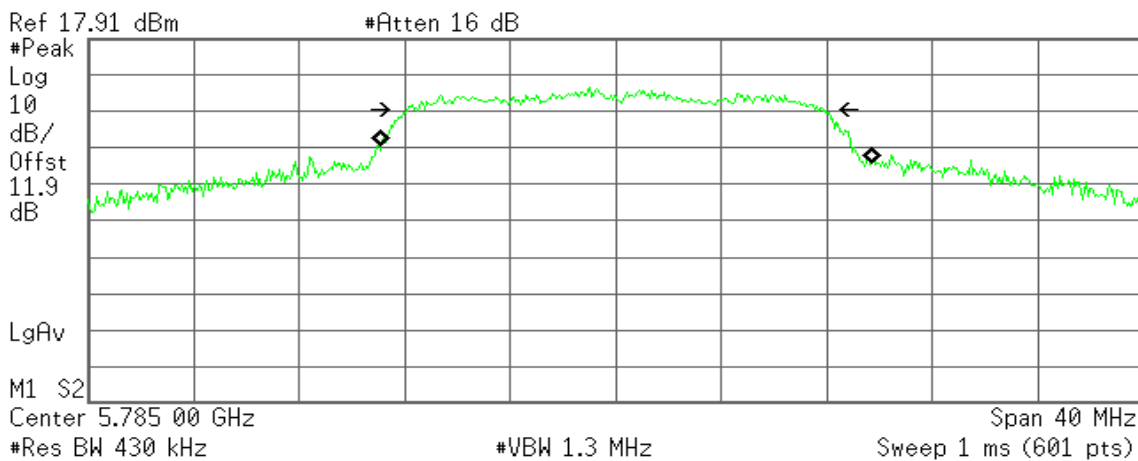
Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 94.300 kHz
x dB Bandwidth 15.885 MHz

CH Mid

Agilent

R T



Occupied Bandwidth
18.6142 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

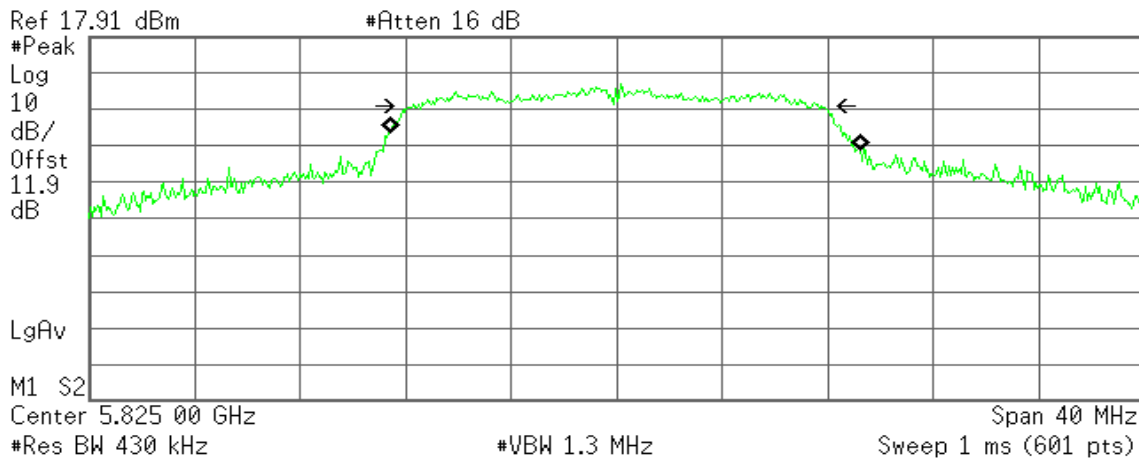
Transmit Freq Error 402.650 kHz
x dB Bandwidth 15.720 MHz



CH High

 Agilent

R T



Occupied Bandwidth
17.8959 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 331.022 kHz
x dB Bandwidth 15.349 MHz

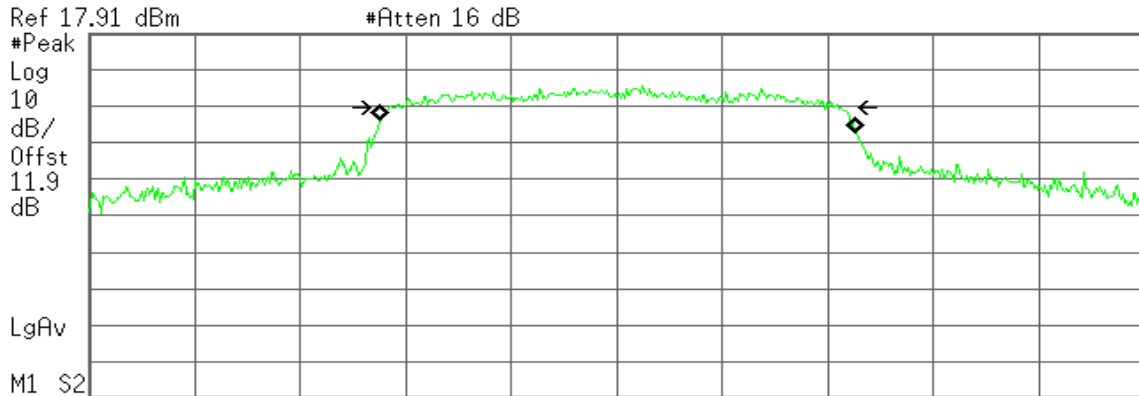


IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

CH Low

Agilent

R T



Center 5.745 00 GHz Span 40 MHz
 #Res BW 430 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth

18.1045 MHz

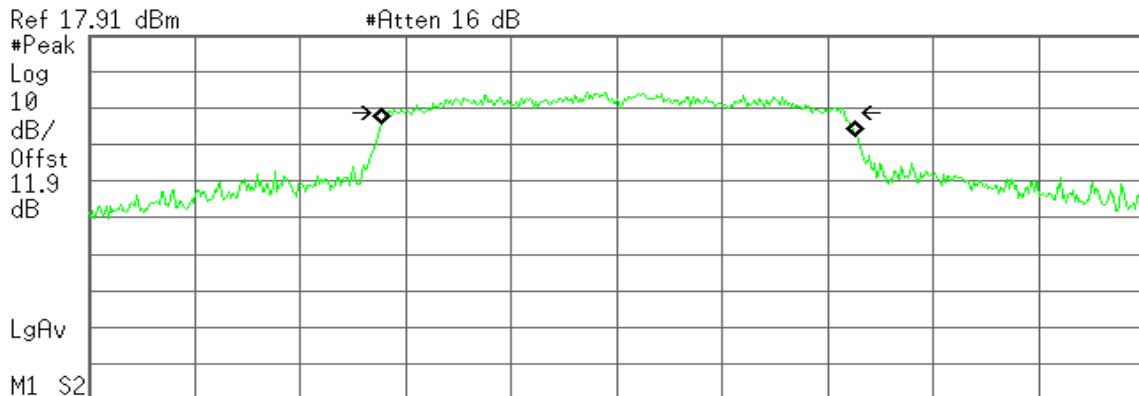
Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 41.305 kHz
x dB Bandwidth 17.208 MHz

CH Mid

Agilent

R T



Center 5.785 00 GHz Span 40 MHz
 #Res BW 430 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth

18.0096 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

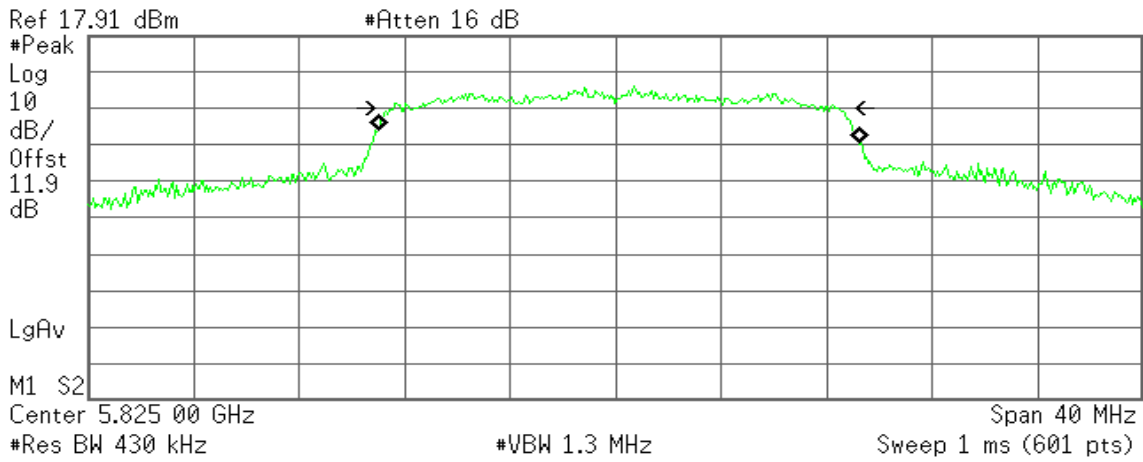
Transmit Freq Error 82.522 kHz
x dB Bandwidth 17.348 MHz



CH High

Agilent

R T



Occupied Bandwidth
18.2724 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 102.909 kHz
x dB Bandwidth 16.921 MHz

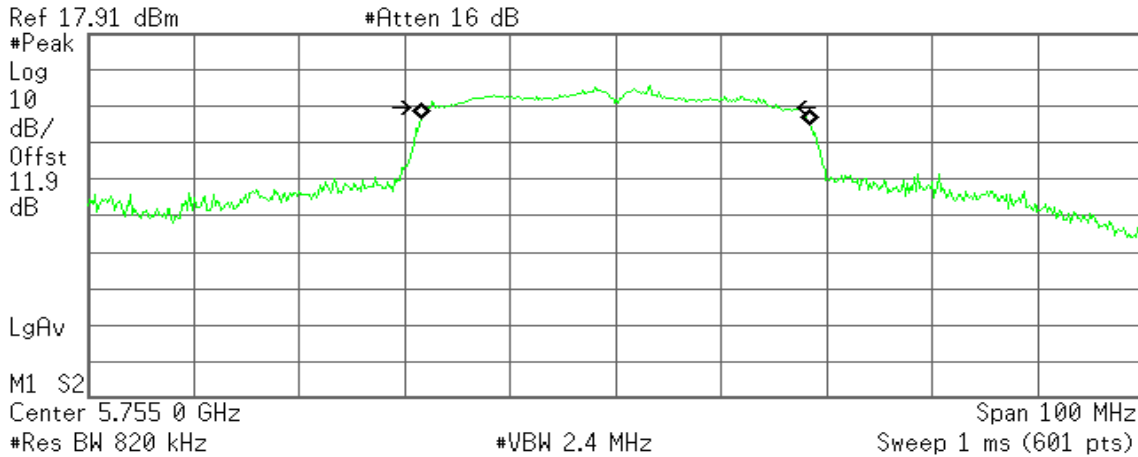


IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

CH Low

Agilent

R T



Occupied Bandwidth
36.6925 MHz

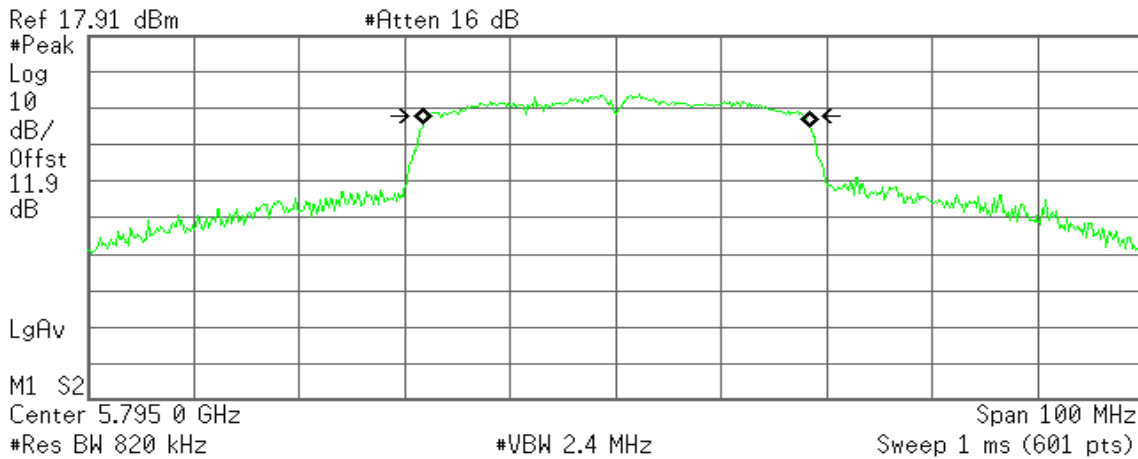
Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -30.618 kHz
x dB Bandwidth 33.147 MHz

CH High

Agilent

R T



Occupied Bandwidth
36.4791 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 98.135 kHz
x dB Bandwidth 35.634 MHz



7.2 MAXIMUM OUTPUT POWER

LIMIT

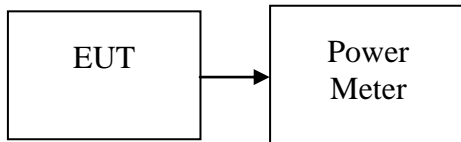
According to §15.407(a)

- (1) For the band 5.725-5.850 GHz bands, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 30 dBm, where B is the 6 dB emission bandwidth in MHz.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Test Configuration

The EUT was connected to a Power Meter through a 50Ω RF cable.



TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the avg power detection. The EUT is configured to transmit continuously.

TEST RESULTS

No non-compliance noted



Test Data

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5745	8.86	30.00
Mid	5785	*8.92	30.00
High	5825	8.27	30.00

Test mode: IEEE 802.11n HT 20 MHz mode / 5245 ~ 5825MHz

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5745	8.90	30.00
Mid	5785	8.72	30.00
High	5825	*8.91	30.00

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5755	*9.76	30.00
High	5795	9.50	30.00



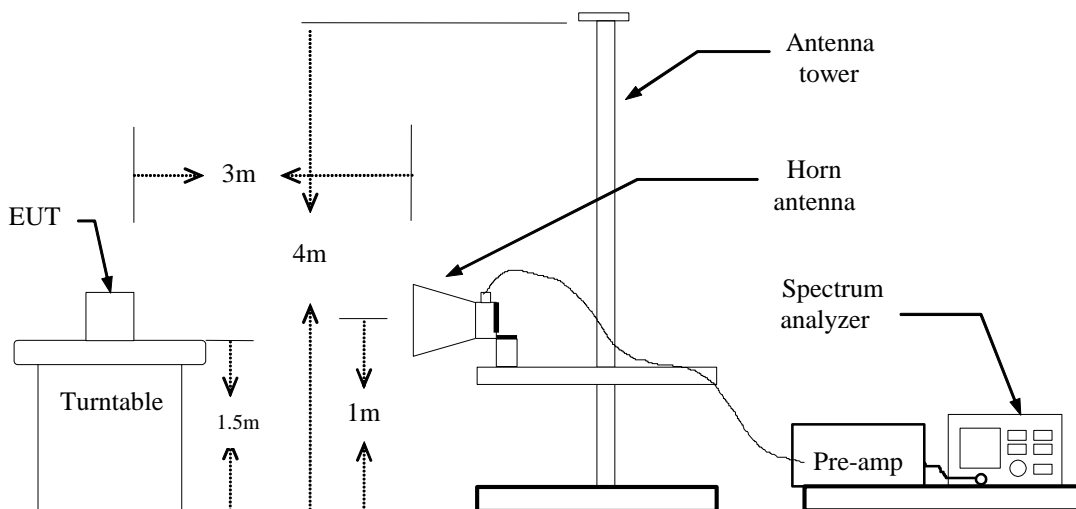
7.3 BAND EDGES MEASUREMENT

LIMIT

According to §15.407(b),

- (1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the 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 emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz,
if duty cycle $\geq 98\%$, VBW=10Hz.
if duty cycle $< 98\%$ VBW=1/T.
IEEE 802.11b mode: = 87%, VBW= 560Hz
IEEE 802.11g mode: = 77%, VBW= 1.1KHz
IEEE 802.11n HT 20 MHz mode: = 88%, VBW= 510Hz
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

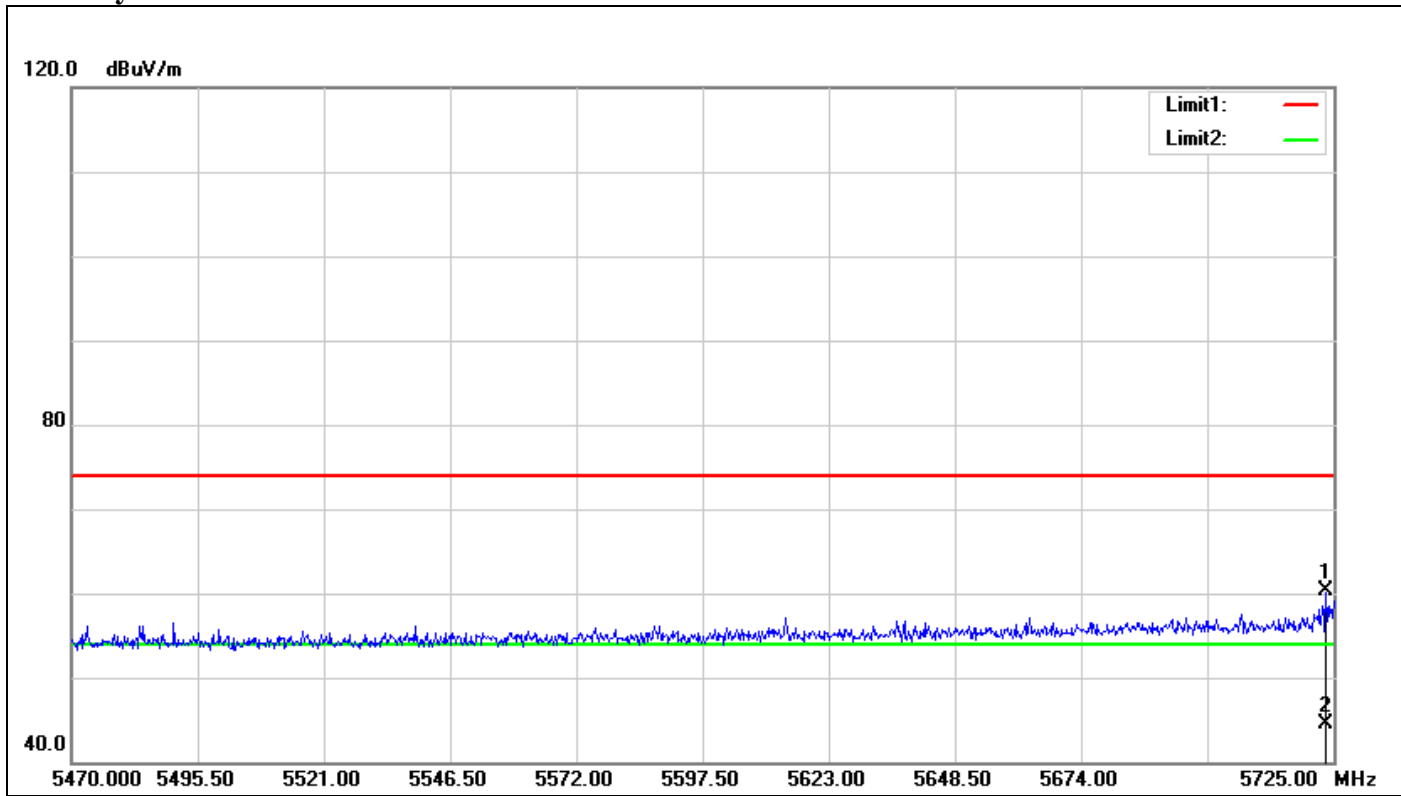
TEST RESULTS

Refer to attach spectrum analyzer data chart.



Band Edges (IEEE 802.11a mode / CH 5745 MHz)

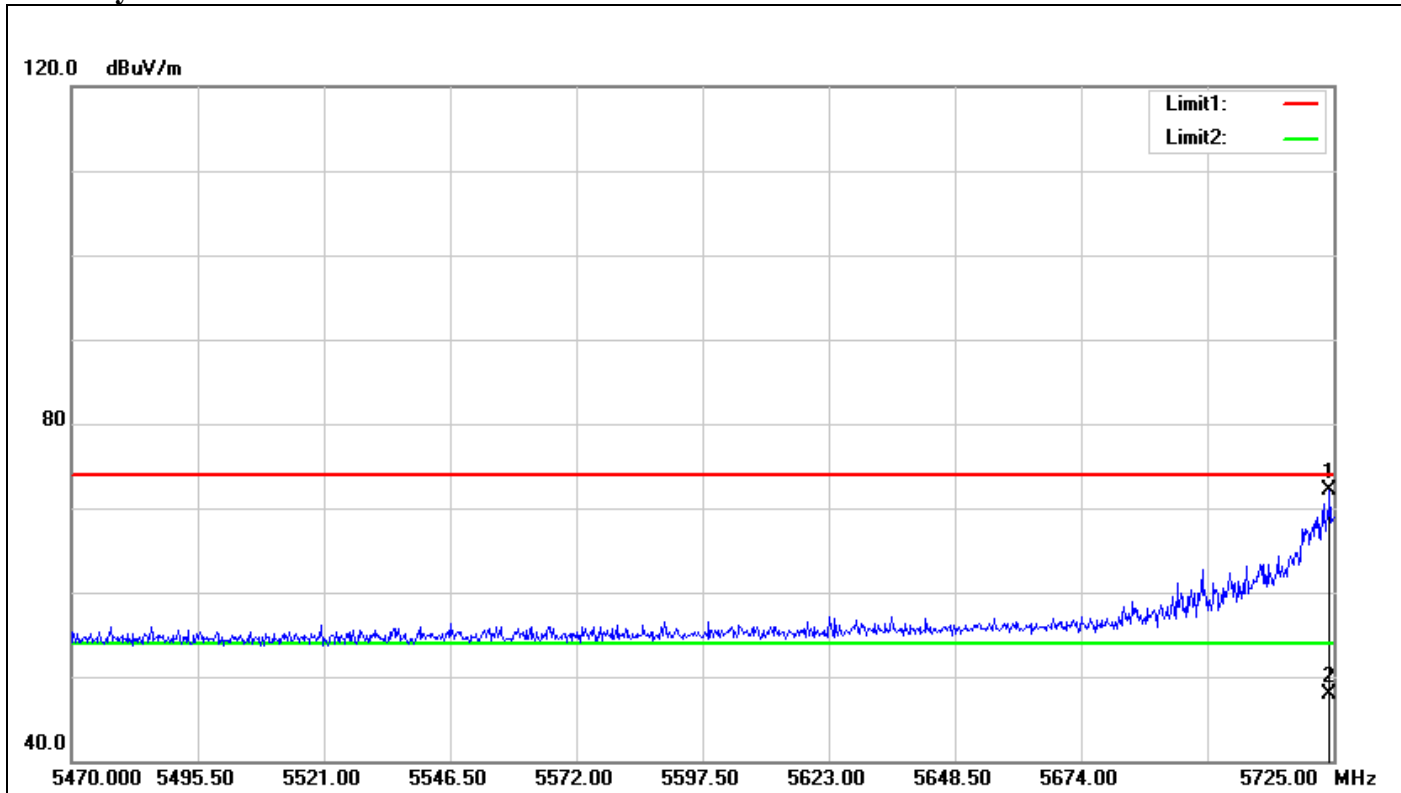
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5723.470	54.00	6.20	60.20	74.00	-13.80	100	90	peak
2	5723.470	38.25	6.20	44.45	54.00	-9.55	100	90	AVG



Polarity: Horizontal

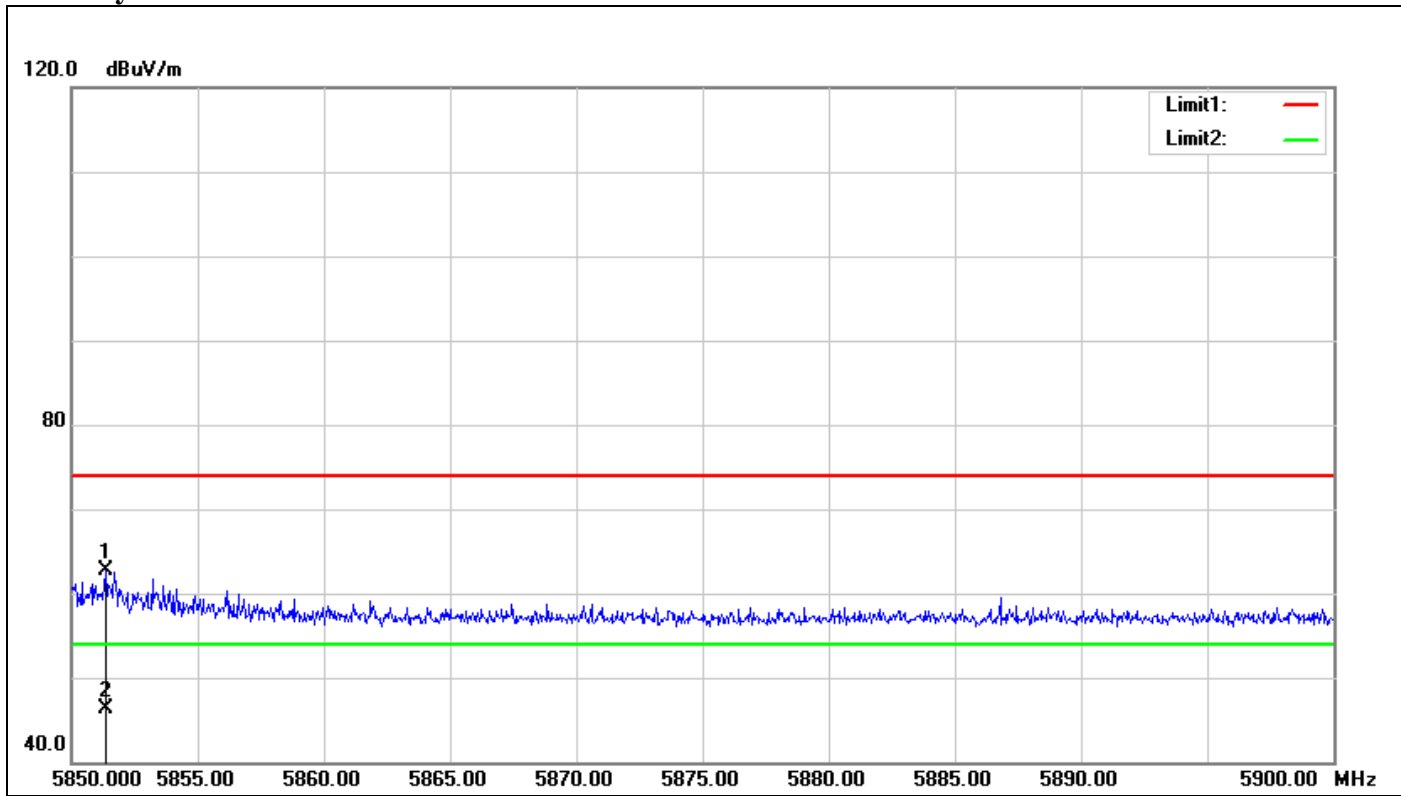


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5724.235	65.87	6.21	72.08	74.00	-1.92	100	329	peak
2	5724.235	41.75	6.21	47.96	54.00	-6.04	100	329	AVG



Band Edges (IEEE 802.11a mode / CH 5825 MHz)

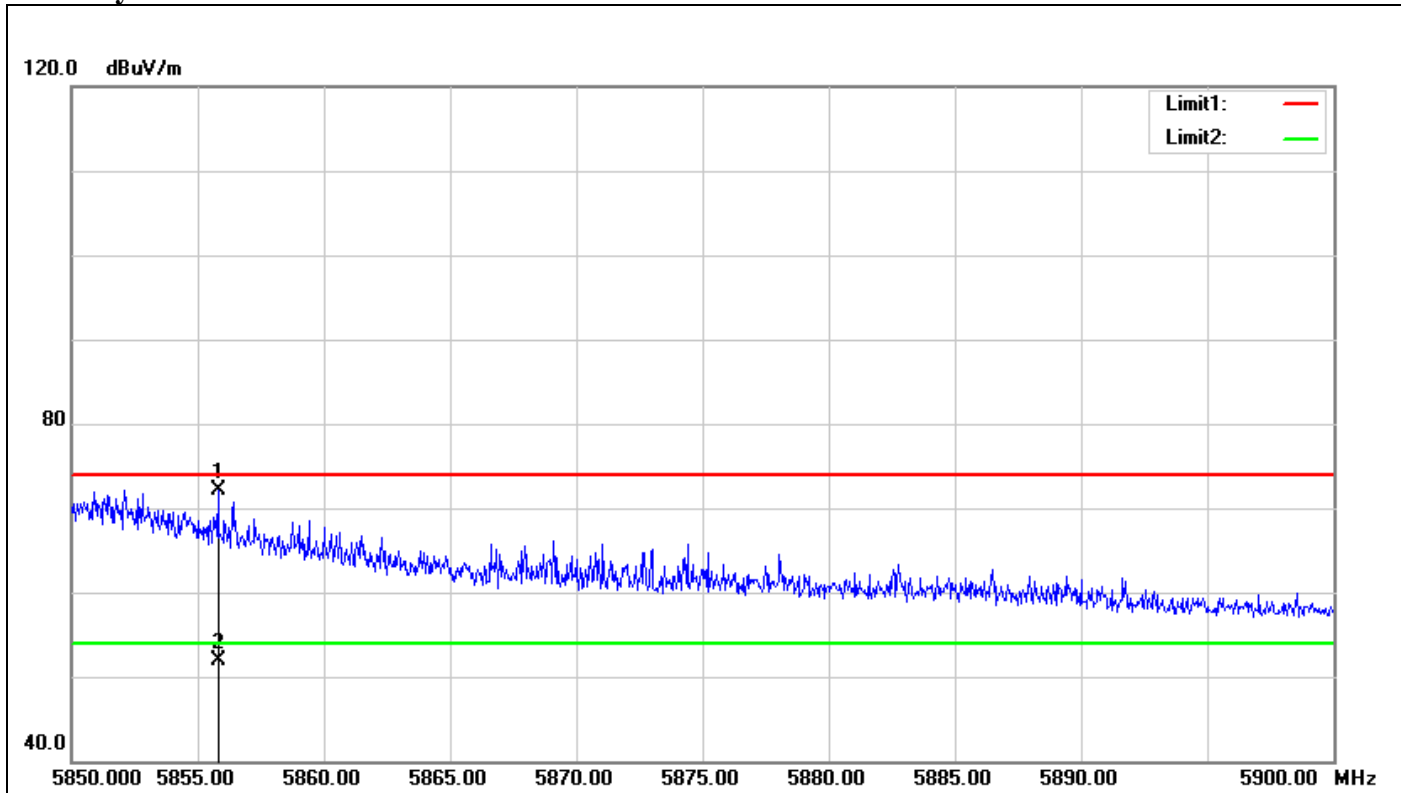
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5851.350	55.91	6.75	62.66	74.00	-11.34	100	112	peak
2	5851.350	39.64	6.75	46.39	54.00	-7.61	100	112	AVG



Polarity: Horizontal

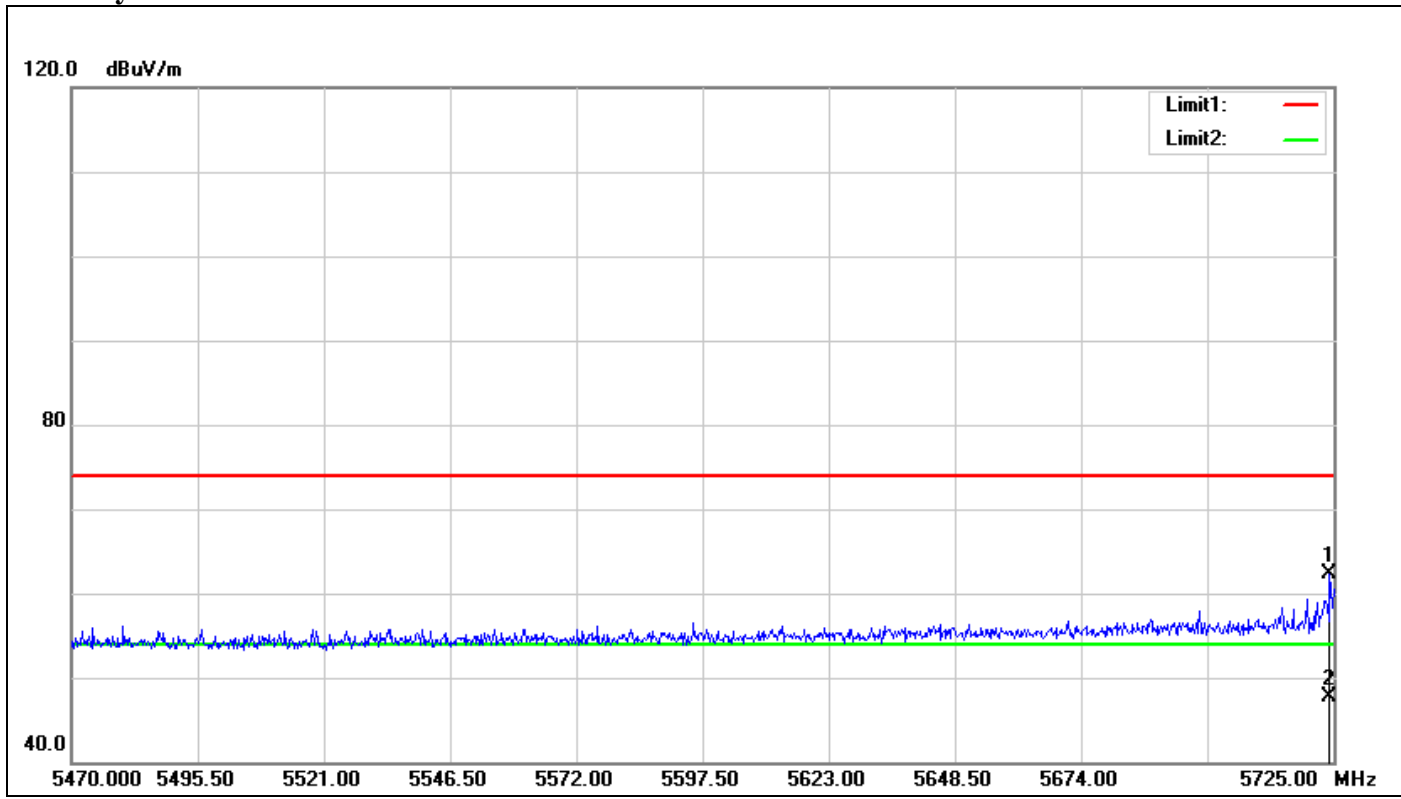


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5855.800	65.40	6.77	72.17	74.00	-1.83	100	181	peak
2	5855.800	45.16	6.77	51.93	54.00	-2.07	100	181	AVG



Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5745 MHz)

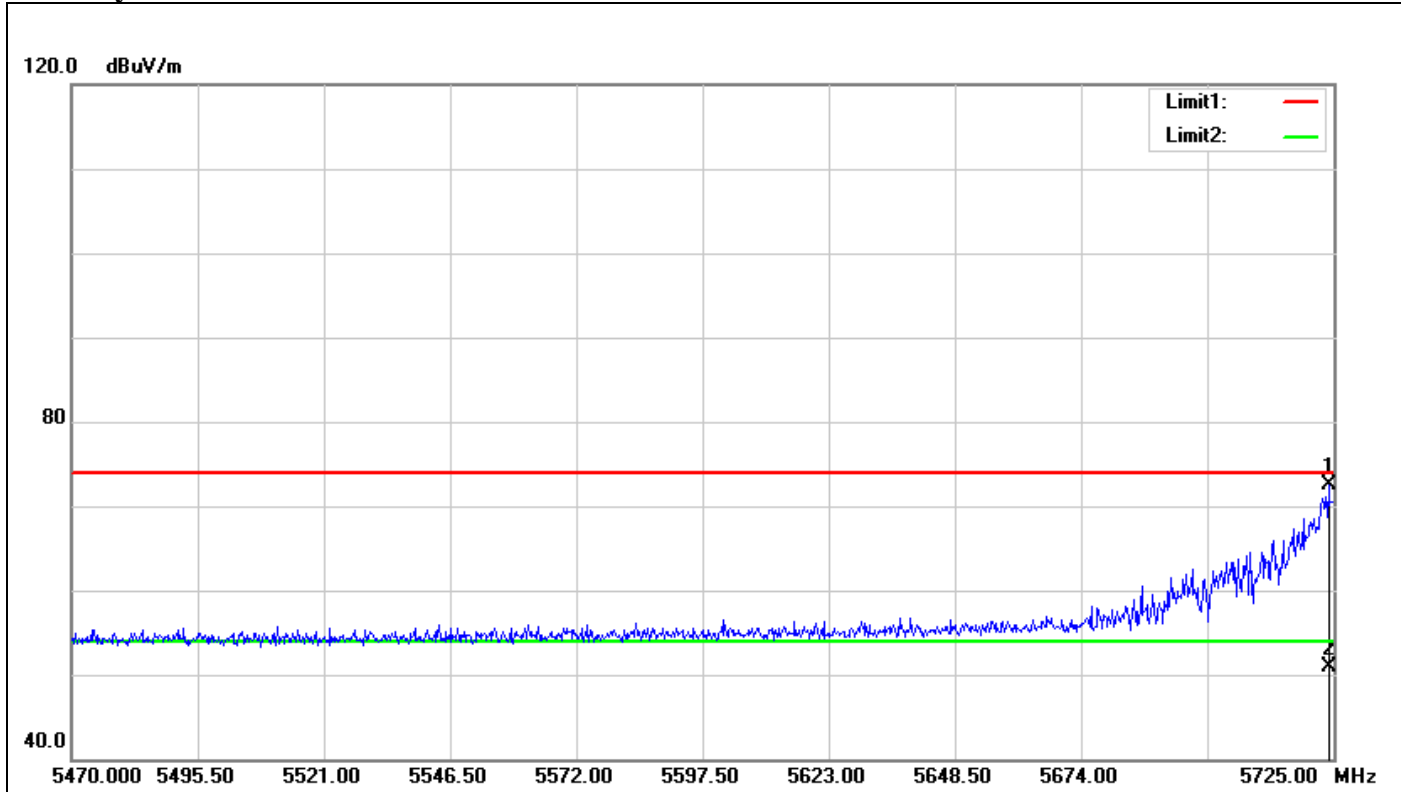
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5724.235	56.17	6.21	62.38	74.00	-11.62	100	78	peak
2	5724.235	41.44	6.21	47.65	54.00	-6.35	100	78	AVG



Polarity: Horizontal

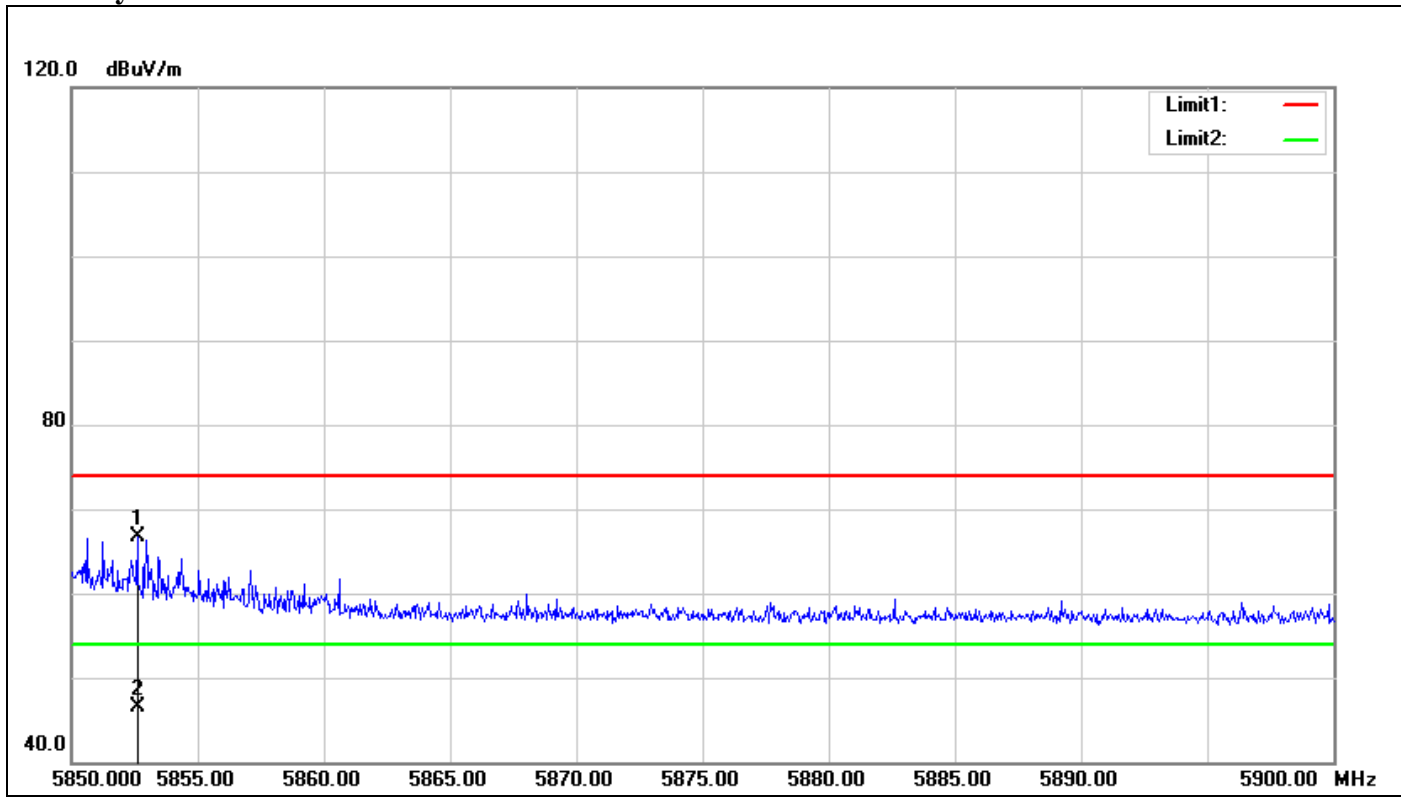


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5723.980	66.33	6.20	72.53	74.00	-1.47	100	37	peak
2	5723.980	44.72	6.20	50.92	54.00	-3.08	100	37	AVG



Band Edges (IEEE 802.11n HT 20 MHz Channel mode / CH 5825 MHz)

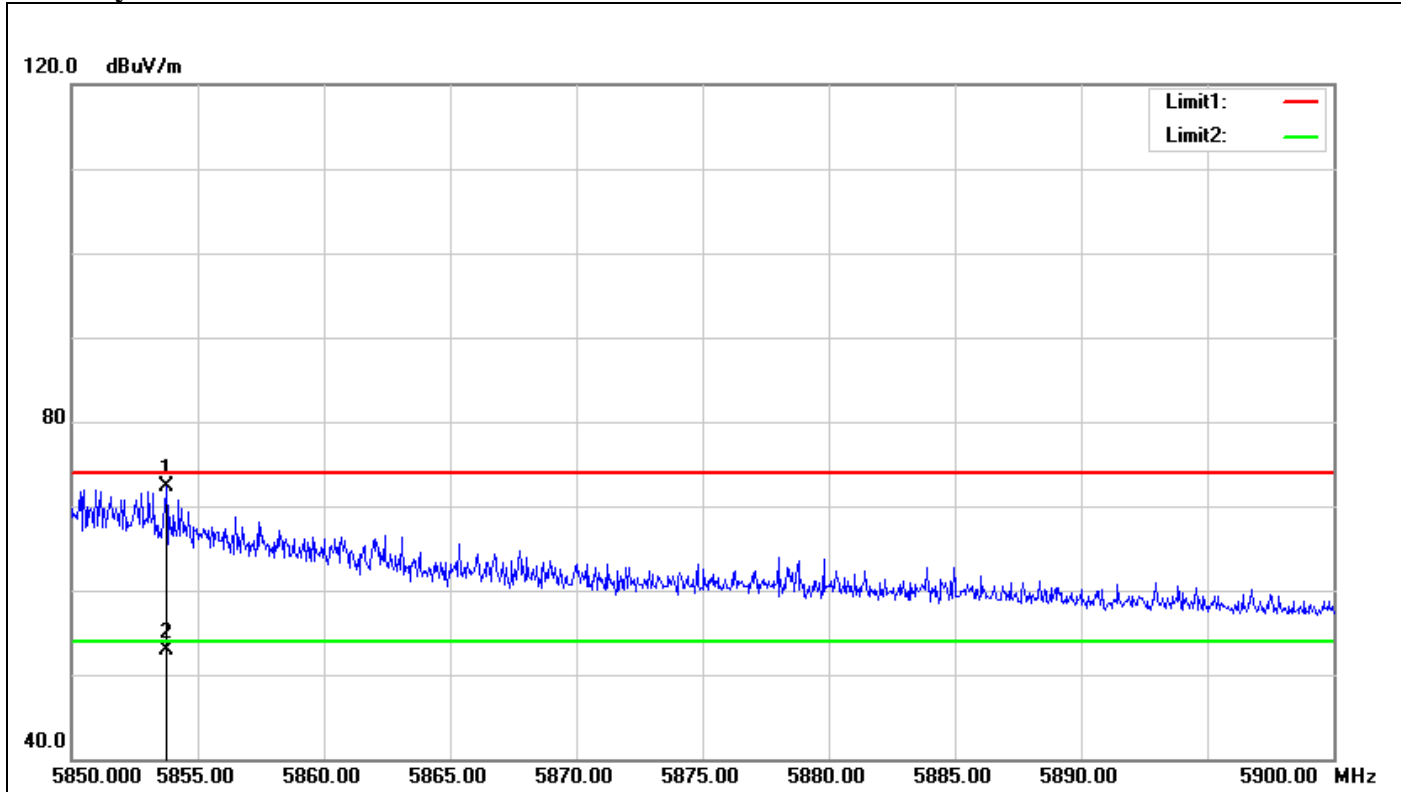
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5852.600	59.97	6.75	66.72	74.00	-7.28	100	0	peak
2	5852.600	39.77	6.75	46.52	54.00	-7.48	100	0	AVG



Polarity: Horizontal

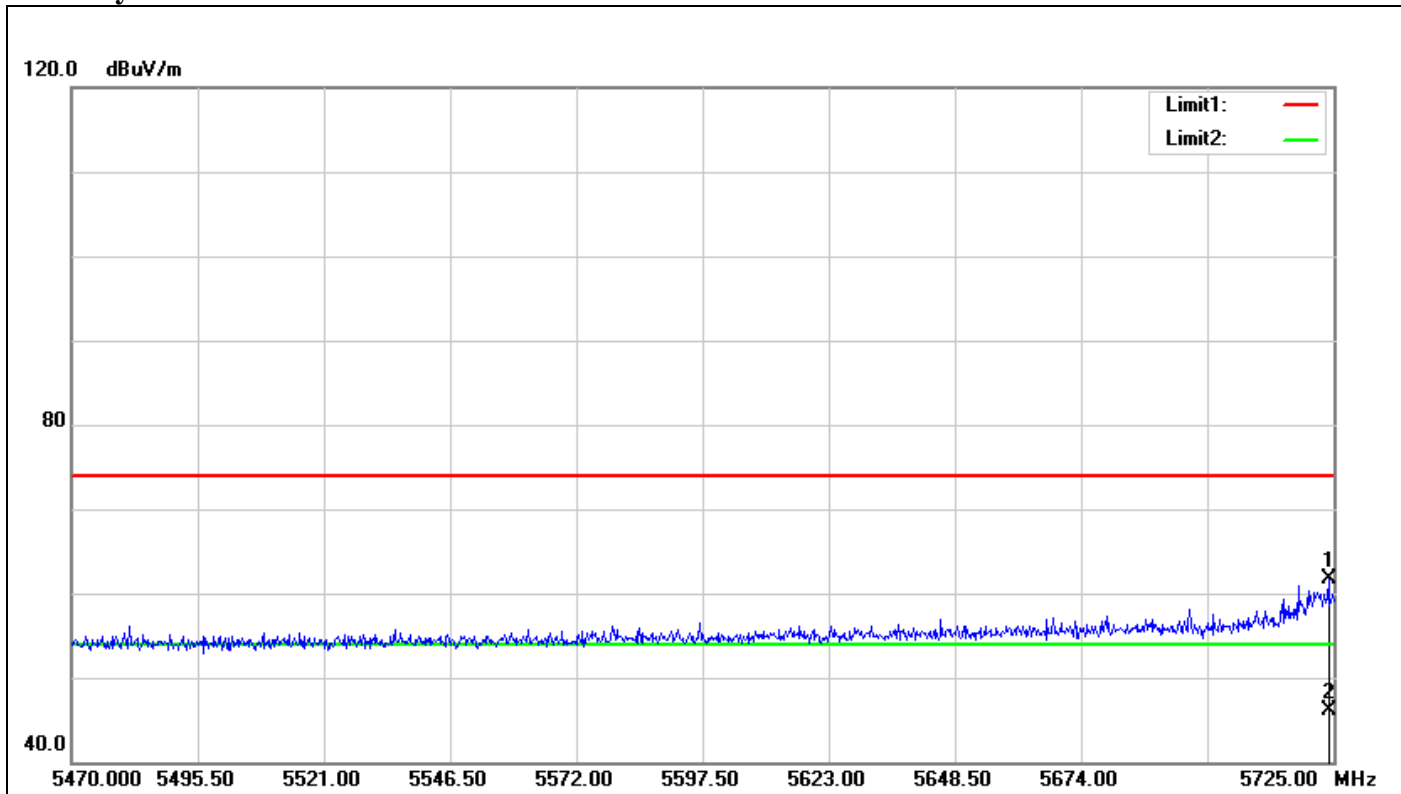


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5853.750	65.61	6.76	72.37	74.00	-1.63	100	22	peak
2	5853.750	46.18	6.76	52.94	54.00	-1.06	100	22	AVG



Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5755 MHz)

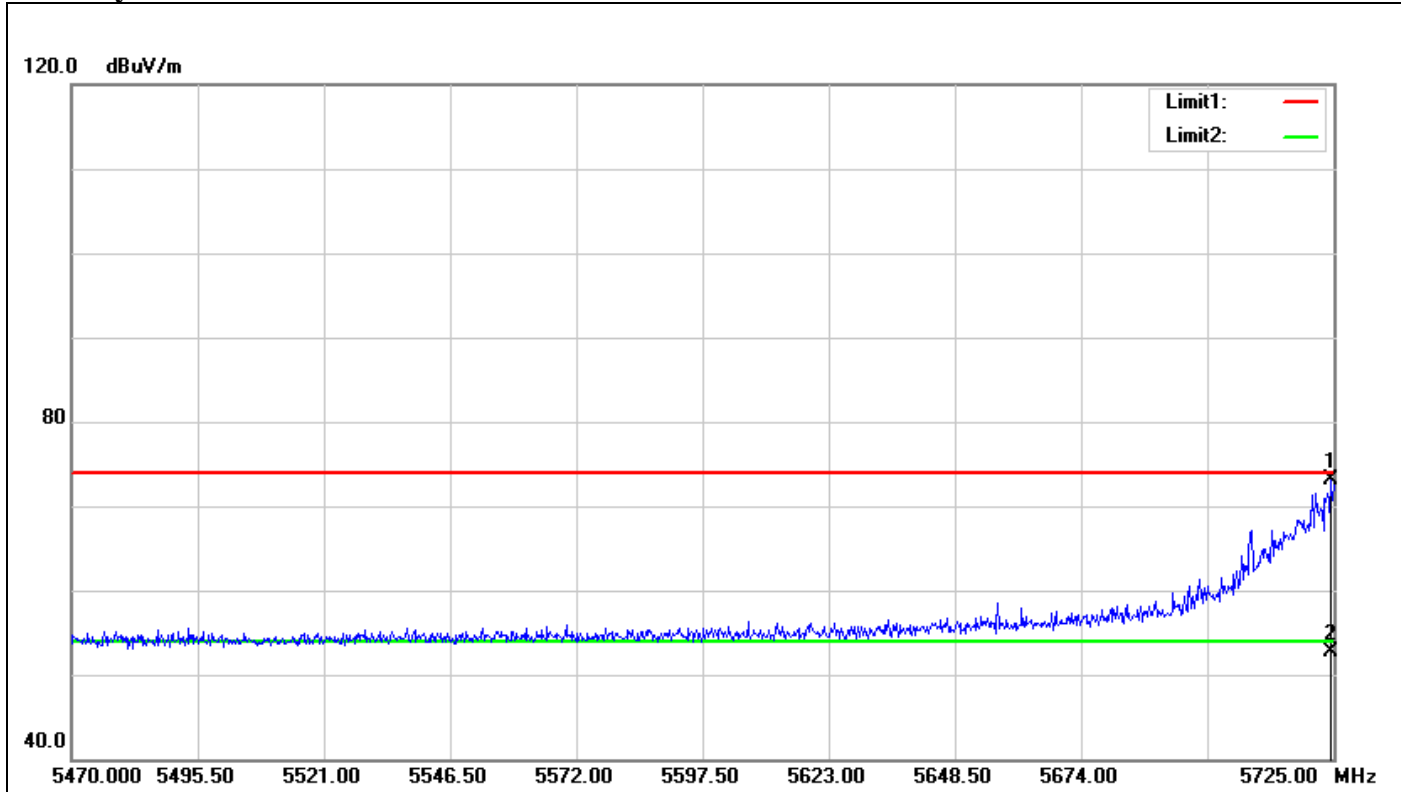
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5723.980	55.49	6.20	61.69	74.00	-12.31	100	241	peak
2	5723.980	39.98	6.20	46.18	54.00	-7.82	100	241	AVG



Polarity: Horizontal

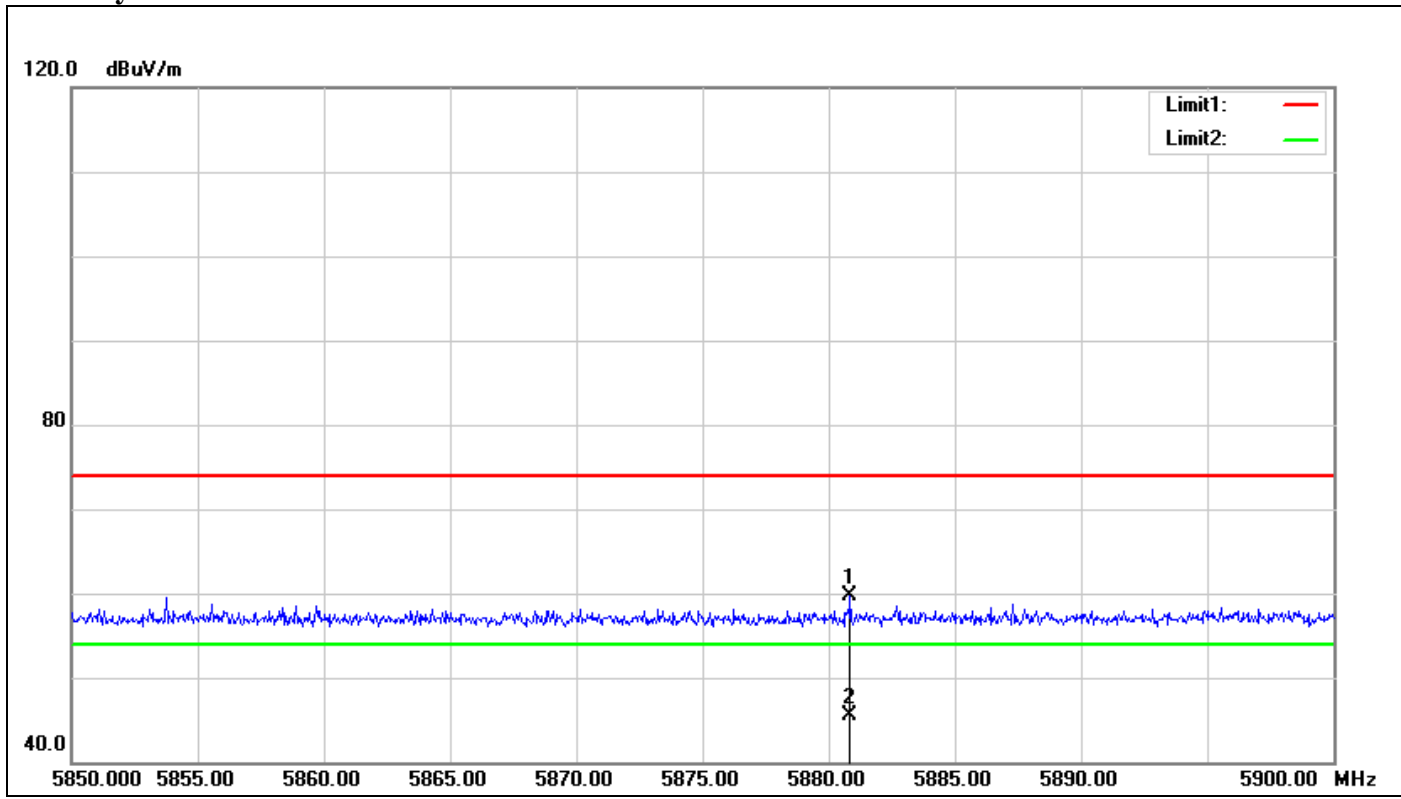


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5724.490	66.98	6.21	73.19	74.00	-0.81	100	314	peak
2	5724.490	46.46	6.21	52.67	54.00	-1.33	100	314	AVG



Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5795 MHz)

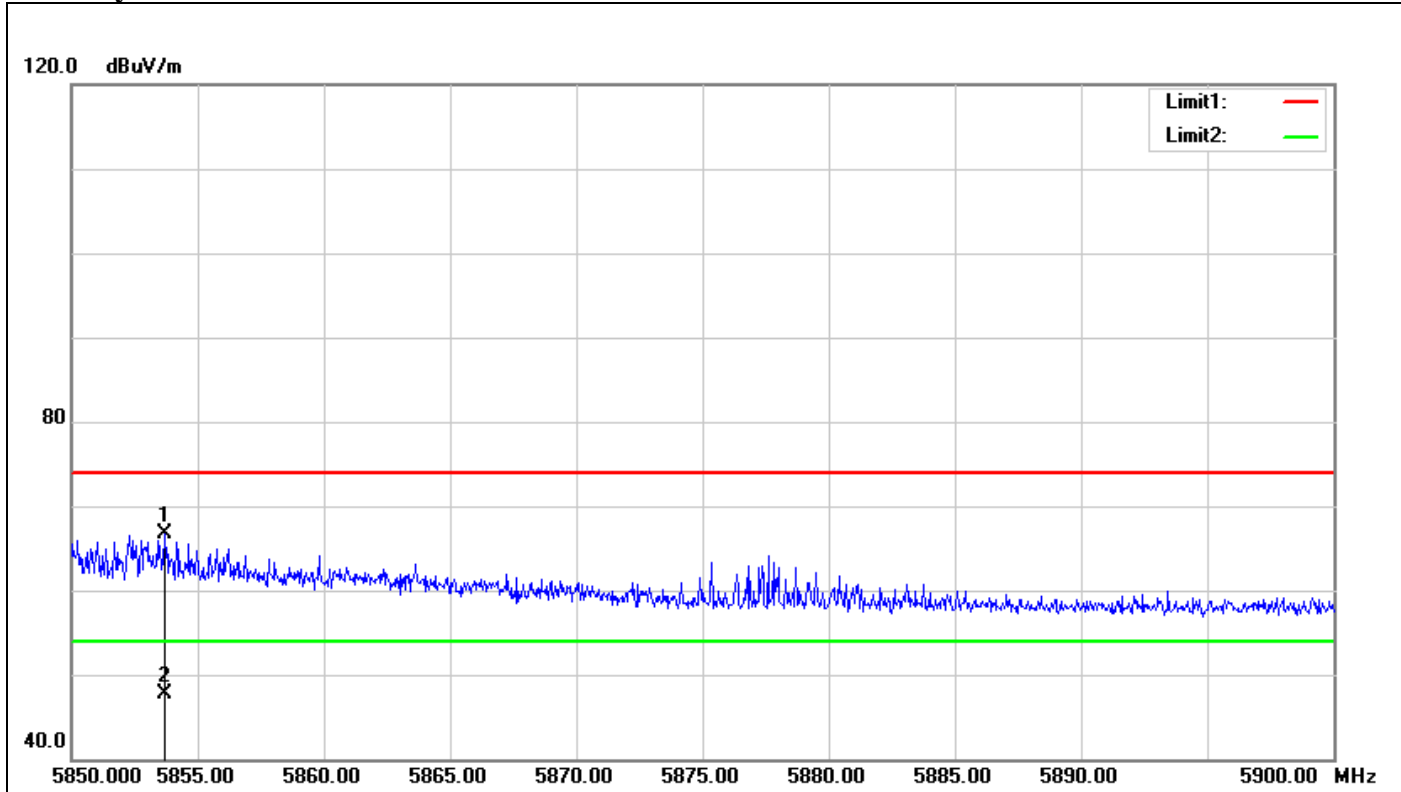
Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5880.850	52.89	6.87	59.76	74.00	-14.24	100	332	peak
2	5880.850	38.58	6.87	45.45	54.00	-8.55	100	332	AVG



Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	5853.700	59.96	6.76	66.72	74.00	-7.28	100	178	peak
2	5853.700	40.96	6.76	47.72	54.00	-6.28	100	178	AVG



7.4 PEAK POWER SPECTRAL DENSITY

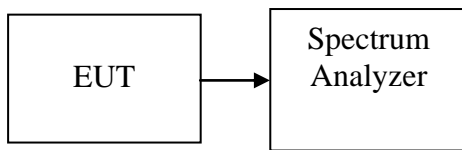
LIMIT

According to §15.407(a),

- (1) For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30dBm in any 1MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 500kHz, VBW = 3*RBW, Span = Sweep= AUTO
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed

TEST RESULTS

No non-compliance noted



Test Data

Test mode: IEEE 802.11a mode/ 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5745	-2.58	30.00	-32.58	PASS
Mid	5785	-3.13	30.00	-33.13	PASS
High	5825	-3.06	30.00	-33.06	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5745	-3.41	30.00	-33.41	PASS
Mid	5785	-4.20	30.00	-34.2	PASS
High	5825	-3.31	30.00	-33.31	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

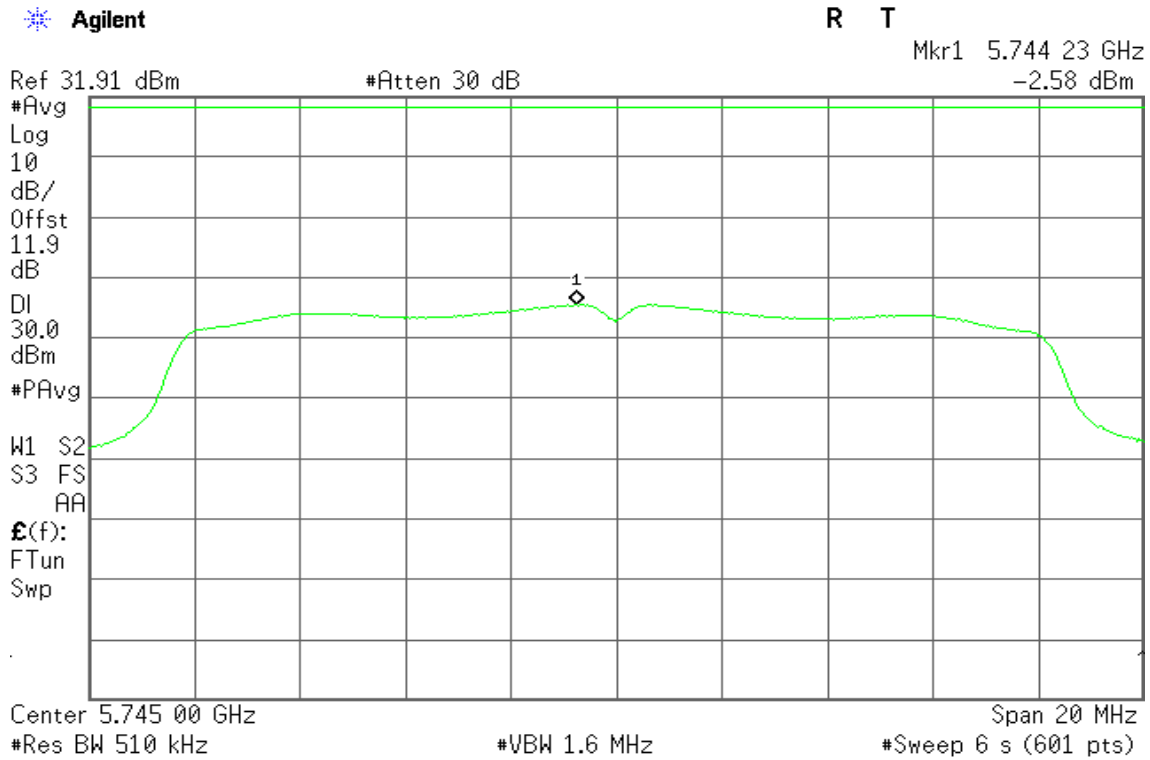
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5755	-8.18	30.00	-38.18	PASS
High	5795	-8.83	30.00	-38.83	PASS



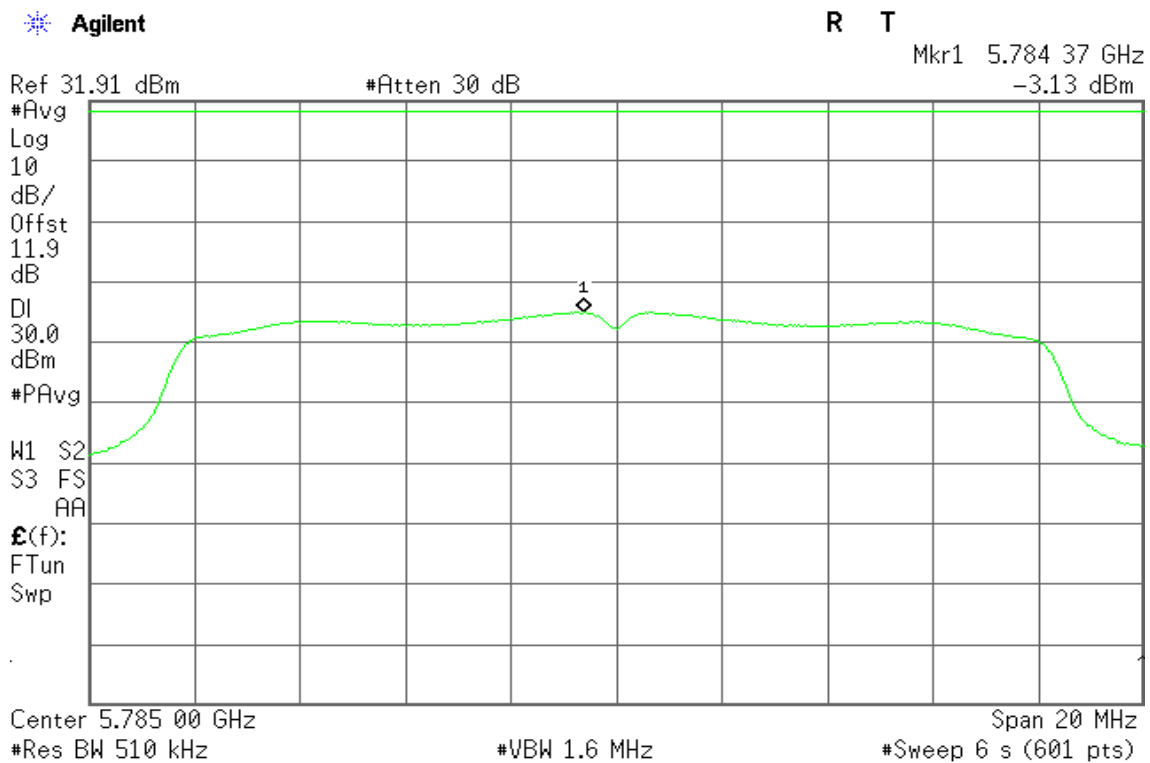
Test Plot

IEEE 802.11a MHz mode / 5745 ~ 5825MHz

CH Low



CH Mid



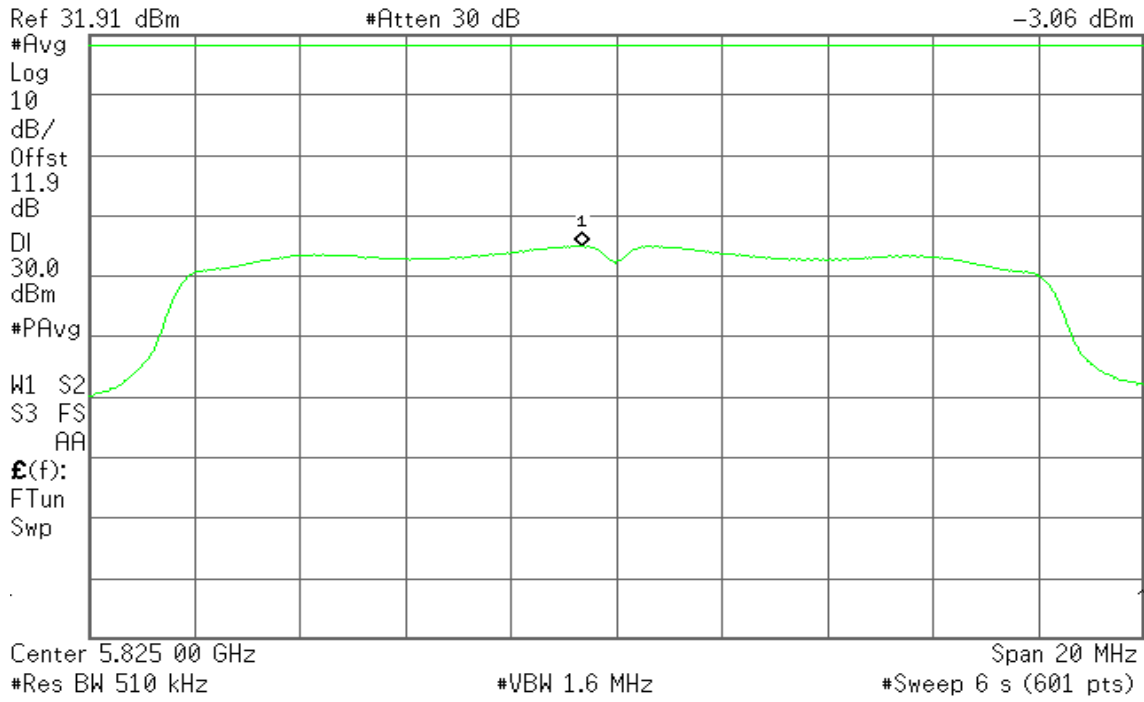


CH High

Agilent

R T

Mkr1 5.824 33 GHz
-3.06 dBm





IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

CH Low

Agilent

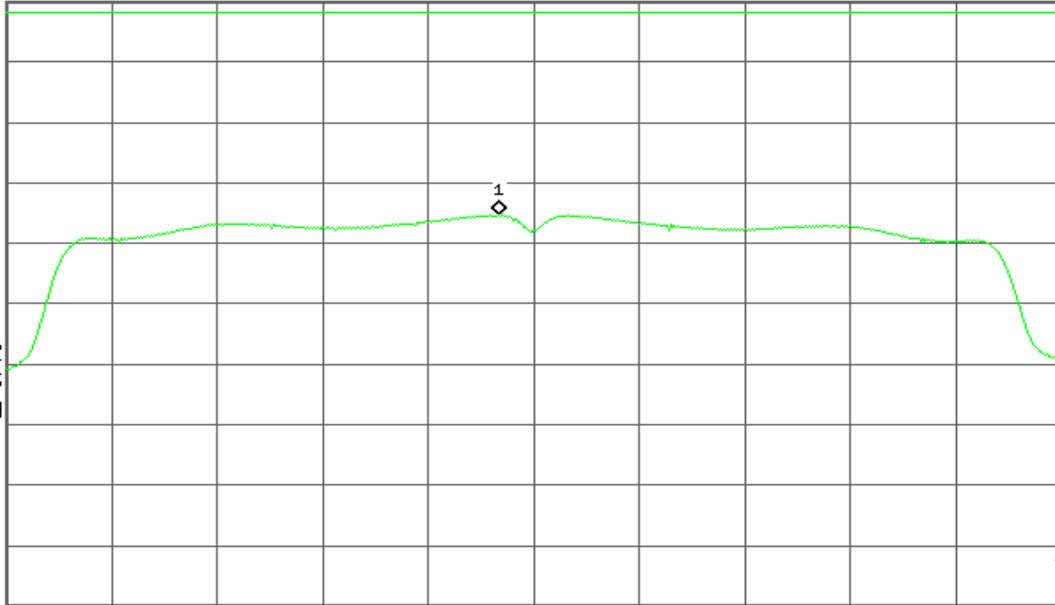
R T

Mkr1 5.744 33 GHz
-3.41 dBm

Ref 31.91 dBm

#Atten 30 dB

#Avg
Log
10
dB/
Offst
11.9
dB
DI
30.0
dBm
#PAvg
W1 S2
S3 FS
AA
£(f):
FTun
Swp



Center 5.745 00 GHz

#Res BW 510 kHz

#VBW 1.6 MHz

Span 20 MHz

#Sweep 6 s (601 pts)

CH Mid

Agilent

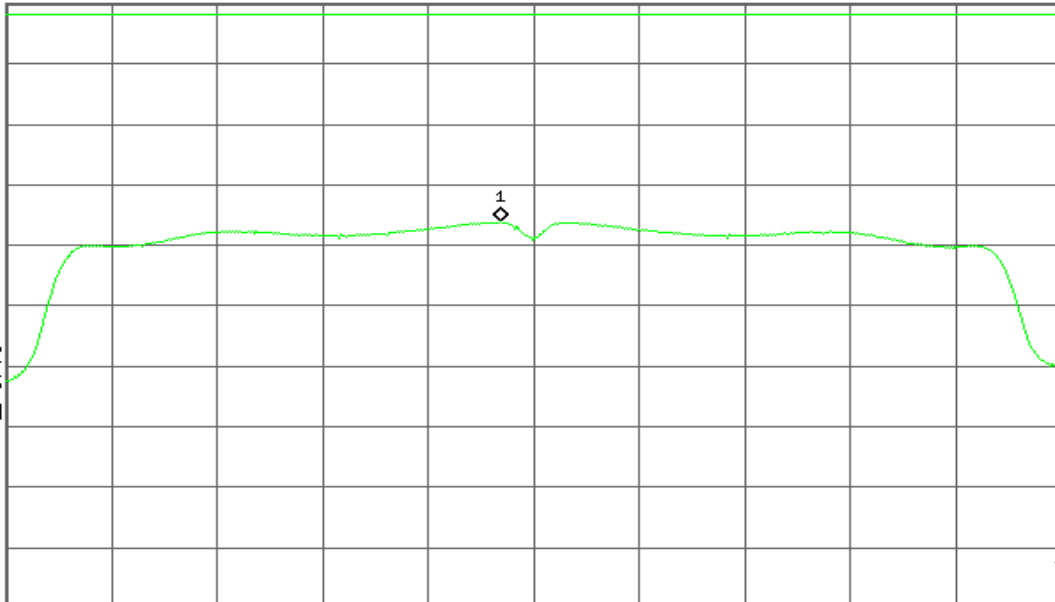
R T

Mkr1 5.784 37 GHz
-4.20 dBm

Ref 31.91 dBm

#Atten 30 dB

#Avg
Log
10
dB/
Offst
11.9
dB
DI
30.0
dBm
#PAvg
W1 S2
S3 FS
AA
£(f):
FTun
Swp



Center 5.785 00 GHz

#Res BW 510 kHz

#VBW 1.6 MHz

Span 20 MHz

#Sweep 6 s (601 pts)

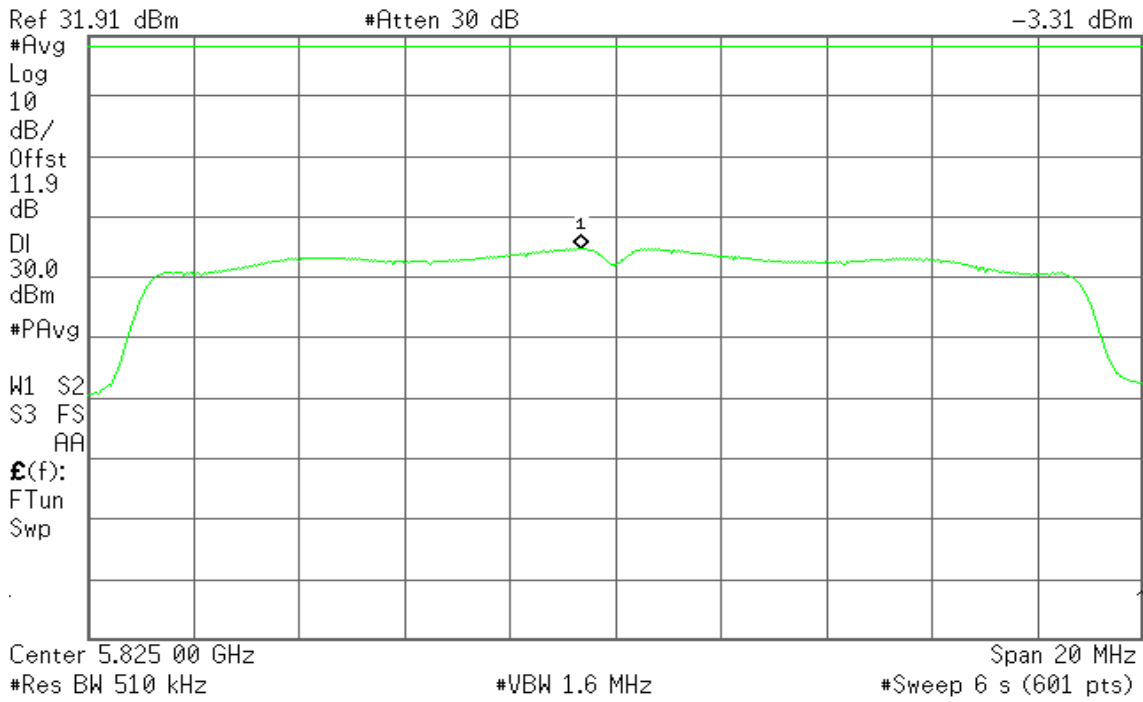


CH High

Agilent

R T

Mkr1 5.824 33 GHz
-3.31 dBm





IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

CH Low

Agilent

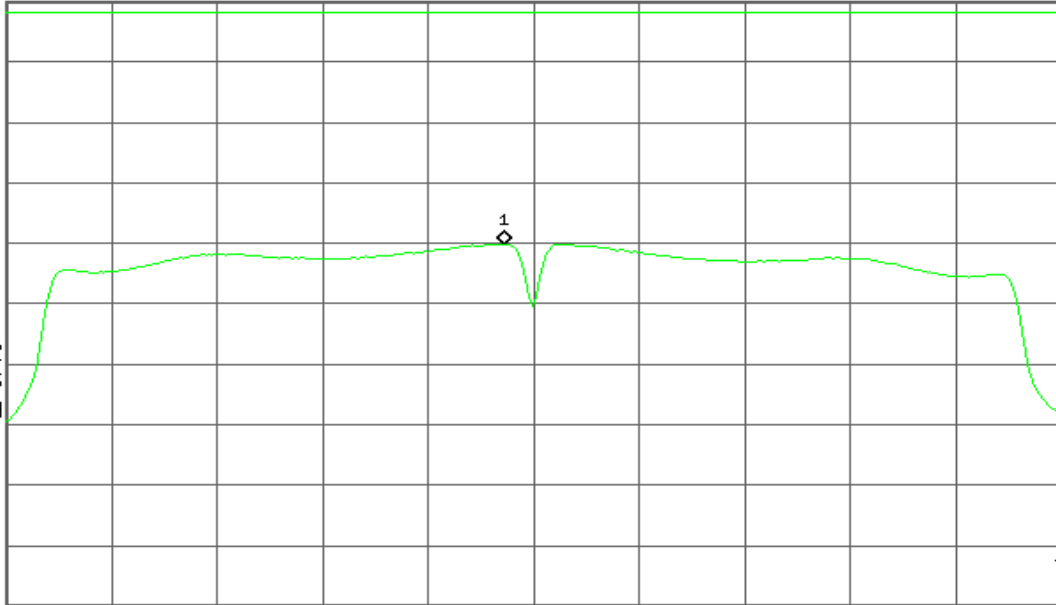
R T

Mkr1 5.753 87 GHz
-8.18 dBm

Ref 31.91 dBm

#Atten 30 dB

#Avg
Log
10
dB/
Offst
11.9
dB
DI
30.0
dBm
#PAvg
W1 S2
S3 FS
AA
£(f):
FTun
Swp



Center 5.755 00 GHz

Span 40 MHz

#Res BW 510 kHz

#VBW 1.6 MHz

#Sweep 6 s (601 pts)

CH High

Agilent

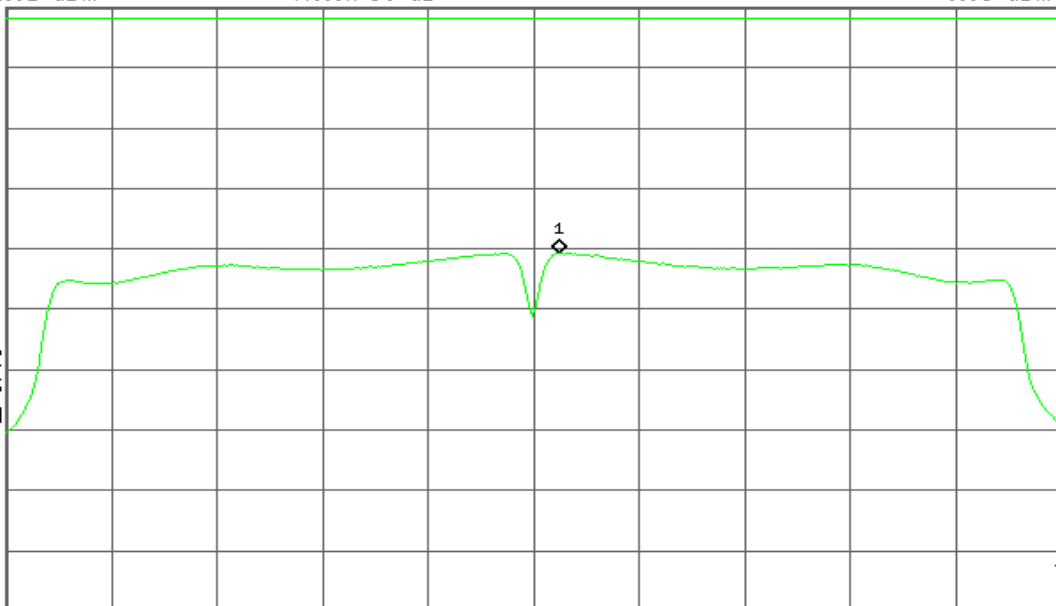
R T

Mkr1 5.796 00 GHz
-8.83 dBm

Ref 31.91 dBm

#Atten 30 dB

#Avg
Log
10
dB/
Offst
11.9
dB
DI
30.0
dBm
#PAvg
W1 S2
S3 FS
AA
£(f):
FTun
Swp



Center 5.795 00 GHz

Span 40 MHz

#Res BW 510 kHz

#VBW 1.6 MHz

#Sweep 6 s (601 pts)



7.5 RADIATED UNDESIRABLE EMISSION

1. 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 ($\mu\text{V/m}$)	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.

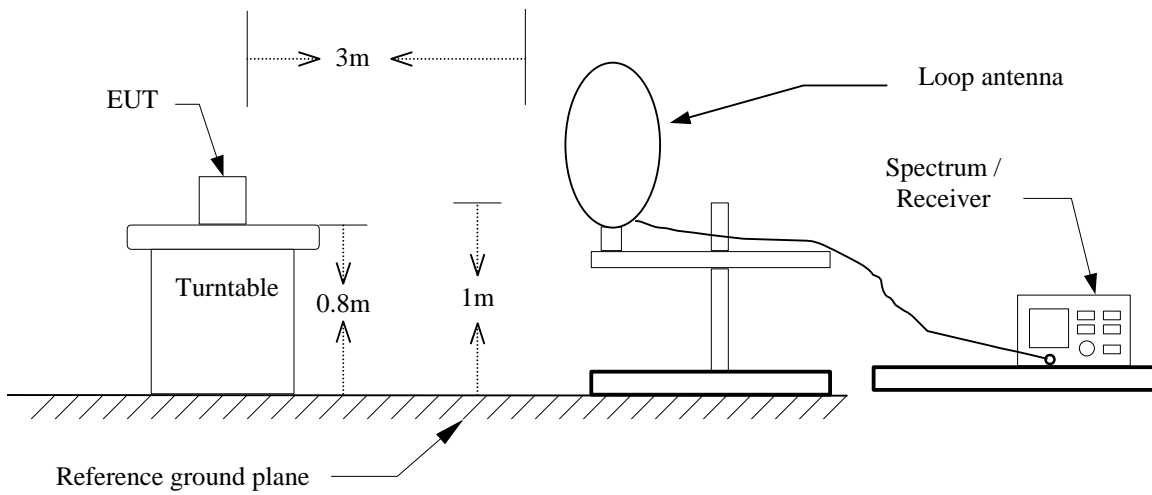
2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
0.009 - 0.490	2400/F(kHz) +80	20LOG((2400/F(kHz))+80)
0.490 - 1.705	24000/F(kHz) +40	20LOG((24000/F(kHz))+40)
1.705 – 30.0	30	69.54
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

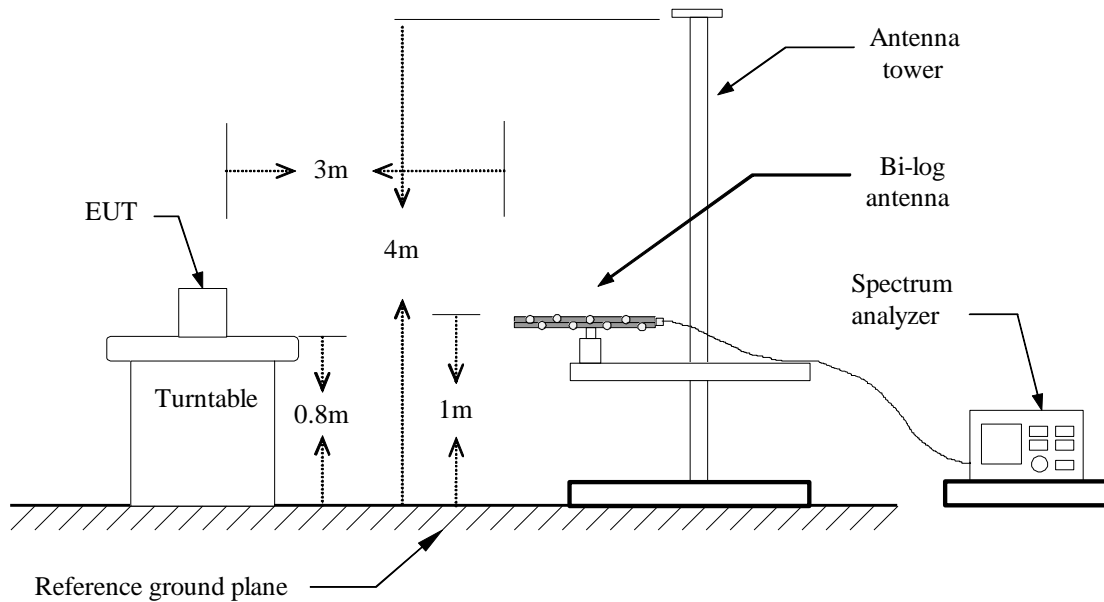


Test Configuration

9kHz ~ 30MHz

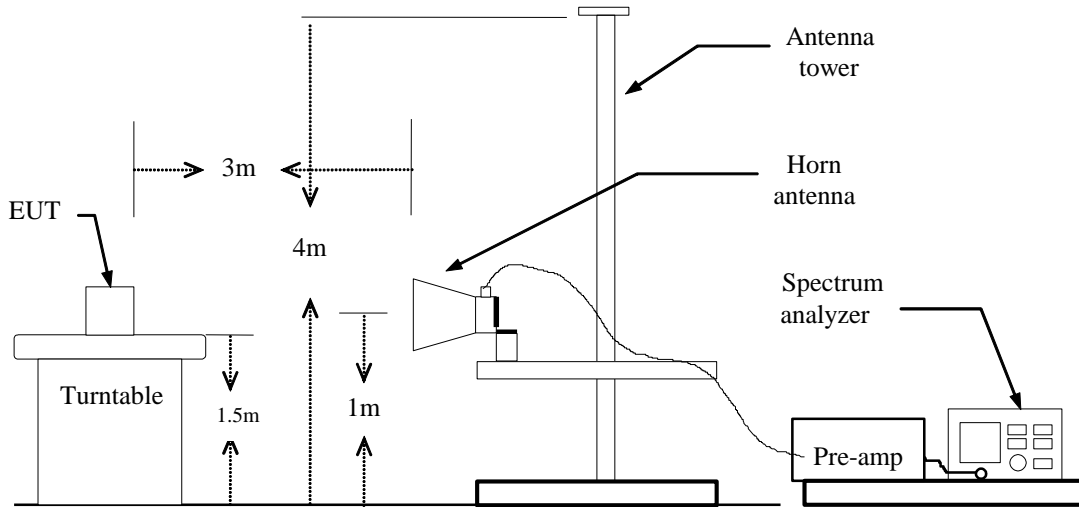


30MHz ~ 1GHz





Above 1 GHz





TEST PROCEDURE

1. The EUT is placed on a turntable, which is 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=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz,
if duty cycle \geq 98%, VBW=10Hz.
if duty cycle < 98% VBW=1/T.

IEEE 802.11b mode: = 87%, VBW= 560Hz

IEEE 802.11g mode: = 77%, VBW= 1.1KHz

IEEE 802.11n HT 20 MHz mode: = 88%, VBW= 510Hz

7. Repeat above procedures until the measurements for all frequencies are complete.

**TEST RESULTS****Below 1 GHz****Operation Mode:** Normal Link**Test Date:** May 18, 2015**Temperature:** 27°C**Tested by:** David Shu**Humidity:** 53% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
36.7900	47.36	-14.85	32.51	40.00	-7.49	Peak	V
76.5600	52.10	-22.90	29.20	40.00	-10.80	Peak	V
259.8900	33.28	-17.68	15.60	46.00	-30.40	Peak	V
449.0400	35.30	-12.69	22.61	46.00	-23.39	Peak	V
668.2600	30.21	-9.12	21.09	46.00	-24.91	Peak	V
852.5600	28.68	-6.75	21.93	46.00	-24.07	Peak	V
36.7900	45.81	-14.85	30.96	40.00	-9.04	Peak	H
76.5600	48.48	-22.90	25.58	40.00	-14.42	Peak	H
320.0300	42.28	-15.92	26.36	46.00	-19.64	Peak	H
533.4300	33.23	-11.28	21.95	46.00	-24.05	Peak	H
749.7400	29.90	-7.88	22.02	46.00	-23.98	Peak	H
893.3000	29.30	-6.24	23.06	46.00	-22.94	Peak	H

Remark:

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. 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.
5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).



Above 1 GHz

Operation Mode: Tx / IEEE 802.11a mode / 5745 ~ 5825MHz / CH Low **Test Date:** May 16, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2190.000	49.52	-4.48	45.04	74.00	-28.96	peak	V
N/A							
2764.000	49.30	-2.59	46.71	74.00	-27.29	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5745 ~ 5825MHz / CH Mid **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2554.000	50.93	-3.01	47.92	74.00	-26.08	peak	V
11580.000	37.95	16.85	54.80	74.00	-19.20	peak	V
11580.000	25.38	16.85	42.23	54.00	-11.77	peak	V
N/A							
3226.000	51.55	-1.57	49.98	74.00	-24.02	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11a mode / 5745 ~ 5825MHz / CH High **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3051.000	49.86	-1.99	47.87	74.00	-26.13	peak	V
N/A							
2582.000	49.91	-2.95	46.96	74.00	-27.04	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz / CH Low **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2582.000	50.53	-2.95	47.58	74.00	-26.42	peak	V
N/A							
2393.000	50.64	-3.75	46.89	74.00	-27.11	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz / CH Mid **Test Date:** May 16, 2015

Temperature: 27°C **Tested by:** David Shu

Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
3170.000	51.51	-1.70	49.81	74.00	-24.19	peak	V
11570.000	35.07	16.84	51.91	74.00	-22.09	peak	V
N/A							
2652.000	50.07	-2.81	47.26	74.00	-26.74	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz / CH High **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
1966.000	50.93	-5.06	45.87	74.00	-28.13	peak	V
11650.000	35.02	16.91	51.93	74.00	-22.07	peak	V
N/A							
2533.000	50.28	-3.05	47.23	74.00	-26.77	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz / CH Low **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2652.000	49.88	-2.81	47.07	74.00	-26.93	peak	V
N/A							
2561.000	50.05	-3.00	47.05	74.00	-26.95	peak	H
N/A							

Remark:

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.
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).



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz / CH High **Test Date:** May 16, 2015
Temperature: 27°C **Tested by:** David Shu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
2281.000	49.76	-4.32	45.44	74.00	-28.56	peak	V
N/A							
2428.000	49.96	-3.58	46.38	74.00	-27.62	peak	H
N/A							

Remark:

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.
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).



7.6 POWERLINE CONDUCTED EMISSIONS

LIMIT

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 μ H/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 (dB μ V)	
	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

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

**TEST RESULTS**

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode: Normal Link **Test Date:** May 26, 2015
Temperature: 26°C **Tested by:** David Shu
Humidity: 60% RH

Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB/m)	QP Result (dBuV/m)	AV Result (dBuV/m)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.2020	42.69	36.07	0.19	42.88	36.26	63.53	53.53	-20.65	-17.27	L1
0.2980	45.75	35.82	0.19	45.94	36.01	60.30	50.30	-14.36	-14.29	L1
0.4020	36.67	26.52	0.20	36.87	26.72	57.81	47.81	-20.94	-21.09	L1
0.5940	33.29	24.80	0.20	33.49	25.00	56.00	46.00	-22.51	-21.00	L1
0.7140	34.76	24.42	0.21	34.97	24.63	56.00	46.00	-21.03	-21.37	L1
1.7620	29.58	17.89	0.15	29.73	18.04	56.00	46.00	-26.27	-27.96	L1
0.1940	41.70	34.78	0.10	41.80	34.88	63.86	53.86	-22.06	-18.98	L2
0.2987	45.50	33.22	0.10	45.60	33.32	60.28	50.28	-14.68	-16.96	L2
0.4140	38.78	27.51	0.10	38.88	27.61	57.57	47.57	-18.69	-19.96	L2
0.6020	35.75	25.21	0.10	35.85	25.31	56.00	46.00	-20.15	-20.69	L2
0.9940	27.04	19.61	0.10	27.14	19.71	56.00	46.00	-28.86	-26.29	L2
2.4580	28.87	16.29	0.00	28.87	16.29	56.00	46.00	-27.13	-29.71	L2

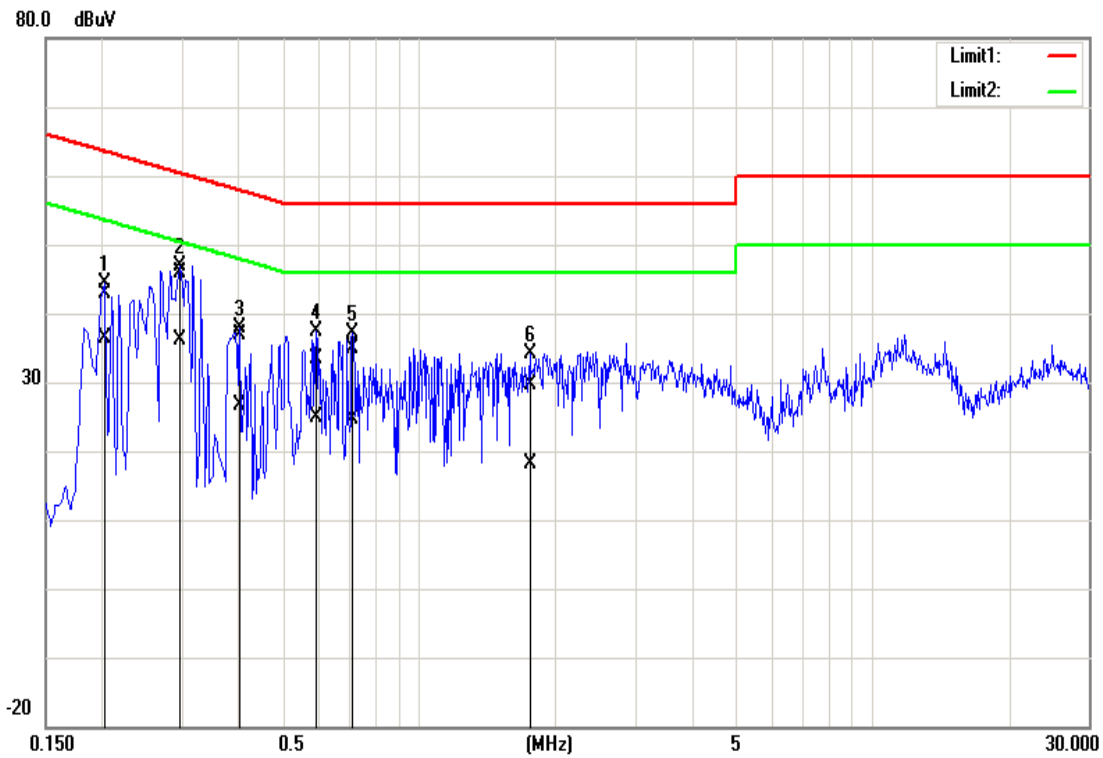
Remark:

1. Measuring frequencies from 0.15 MHz to 30MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz;
4. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)



Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

