FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Product Name: Mobile Phone
Brand Name: FPXPHONE
Model No.: F9300
Series Model: N/A
Test Report Number:
C130703R01-RPW

Issued for

Etoway Technology Co.,Ltd

Room 1004-1005, Building A, Stars Plaza No.38 Hongli Road, Futian District, Shenzhen City, China

Issued by

Compliance Certification Services Inc.

Kun shan Laboratory

No.10 Weiye Rd., Innovation park, Eco&Tec,
Development Zone, Kunshan City, Jiangsu, China

TEL: 86-512-57355888

FAX: 86-512-57370818

ACCREDITED
TESTING CERT #2541.01

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION

Product Name:	Mobile Phone
Trade Name:	FPXPHONE
Model Name.:	F9300
Series Model:	N/A
Applicant Discrepancy:	Initial
Device Category:	MOBILE DEVICES
Date of Test:	July 10, 2013
Applicant:	**Etoway Technology Co.,Ltd** Room 1004-1005, Building A, Stars Plaza No.38 Hongli Road, Futian District, Shenzhen City, China
Manufacturer:	**Etoway Technology Co.,Ltd** Room 1004-1005, Building A, Stars Plaza No.38 Hongli Road, Futian District, Shenzhen City, China
Application Type:	Certification

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

We hereby certify that:

The above equipment was tested by Compliance Certification Services 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 C63.4: 2003 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:

Hui.Li
RF Manager
Compliance Certification Service Inc.

Tested by:

Blent.Wang
Test Engineer
Compliance Certification Service Inc.

2. EUT DESCRIPTION

Product Name:	Mobile Phone
Brand Name:	FPXPHONE
Model Name:	F9300
Series Model:	N/A
Model Discrepancy:	N/A
Frequency Range:	IEEE 802.11b/g/HT20: 2412 MHz~ 2462 MHz IEEE 802.11n HT40:2422MHz~2452MHz
Transmit Power:	IEEE 802.11b: 18.08dBm (64.27mW) IEEE 802.11g: 14.49dBm (28.12mW) IEEE 802.11n HT20: 15.05dBm (31.99mW) IEEE 802.11n HT40: 14.52dBm (28.31mW)
Modulation Technique:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: DSSS /OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40：OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	IEEE 802.11b/g: 11 Channels IEEE 802.11n HT20 :11 Channels IEEE 802.11n HT40: 7 Channels
Antenna Specification:	0.5 dBi gain (Max)

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: 2AAJDF9300*** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 2003and FCC CFR 47 15.207, 15.209 and 15.247.

3.1. EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2. EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3. GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 2003 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4 2003.

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 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

[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 transmitting and receiving with one (chain 0) antenna working at a/b/g mode, so one antenna working configuration was used for a/b/g mode testing in this report.

The EUT transmitting and receiving with two antennas simultaneously working at n mode, so 2x2 configuration was used for all testing in this report.

The worst-case data rates are determined to be as follows for each mode based on investigation by measuring the average power, peak power and PPSD across all data rates, bandwidths, and modulations.

The worst-case data rates:
IEEE802.11b mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE802.11g mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11n HT20 mode:

Channel Low (2412MHz)

Channel Mid (2437MHz)

Channel High (2462MHz) with MCS0 data rate were chosen for full testing.

IEEE802.11n HT40 mode:

Channel Low (2422MHz)

Channel Mid (2437MHz)

Channel High (2452MHz) with MCS0 data rate were chosen for full testing.

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.

Equipment Used for Emissions Measurement

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-5-12
DETECTOR NEGATIVE	Agilent	8473B	MY42240176	2014-5-12
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2014-3-24
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	2014-3-24
EPM-P Series Power Meter	Agilent	E4416A	GB41292714	2014-5-12
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	2014-5-12
DC POWER SUPPLY	GW instek	GPS-3303C	E903131	2014-5-12
Temp. / Humidity Chamber	Kingson	THS-M1	242	2014-3-12
Test Software	EZ-EMC			

977 Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-5-12
EMI Test Receiver	R&S	ESPI3	101026	2014-3-15
Pre-Amplfier	MINI	ZFL-1000VH2	d041703	2014-5-12
Pre-Amplfier	Miteq	NSP4000-NF	870629	2014-5-12
Bilog Antenna	Sunol	JB1	A110204-2	2014-5-12
Horn-antenna	SCHWARZBECK	BBHA9120D	D:266	2014-6-7
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT1OO	95637	N.C.R
Test Software	EZ-EMC			

Conducted Emission				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI TEST RECEIVER	R&S	ESCI3	100781	2014-3-15
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	2014-3-15
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	SN:05012	2014-3-15
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	2014-4-7
Test Software	EZ-EMC			

Remark: *The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2

5. FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at
CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone

Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 2003 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, and/or ridged waveguide, horn. 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. LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.

5.4. TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC Part 15/18 (using ANSI C63.4 :2003)；VCCI V3; CNS 13438; CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22:2005; CISPR 22:1997 +A1 :2000+A2 :2002；EN 55022:2006; EN55022 :1998 +A1 :2001+A2 :2003；EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; AS/NZS CISPR 22； CAN/CSA-CEI/IEC CISPR 22；EN 61000-3-2；EN 61000-3-3；EN550024； EN 61000-4-2； EN 61000-4-3；EN61000-4-4；EN 61000-4-5； EN 61000-4-6；IEC 61000-4-8；EN 61000-4-11； IEC61000-3-2；IEC61000-3-3；IEC 61000-4-2； IEC 61000-4-3；IEC 61000-4-4； IEC 61000-4-5；IEC 61000-4-6；IEC 61000-4-8；IEC 61000-4-11； EN 300 220-3; EN 300 328; EN 300 330-2; EN 300 440-1; EN 300-440-2; EN 300 893; EN 301 489-01; EN 301 489-3; EN 301 489-07; EN 301 489-17；47 CFR FCC Part 15, 22, 24	ACCREDITED TESTING CERT #2541.01
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	93105, 90471
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	VCCI R-1600 C-1707 G-216

** 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 1 for the actual connections between EUT and support equipment.

6.2. SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID
1.	**NOTEBOOK**	**IBM**	**62P7043**	**998W21C**	**DOC**

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.*

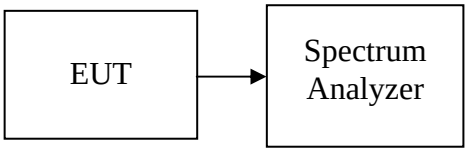
7. FCC PART 15.247 REQUIREMENTS

7.1. 6DB BANDWIDTH

LIMIT

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Configuration



TEST PROCEDURE

KDB 558074 D01 DTS Measurement Guidance v03r01 dated 04-09-2013.

TEST RESULTS

No non-compliance noted

Test Data

IEEE 802.11b mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.121	>500	PASS
Mid	2437	10.110		PASS
High	2462	10.099		PASS

IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.625	>500	PASS
Mid	2437	16.619		PASS
High	2462	16.622		PASS

IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.842	>500	PASS
Mid	2437	17.811		PASS
High	2462	17.832		PASS

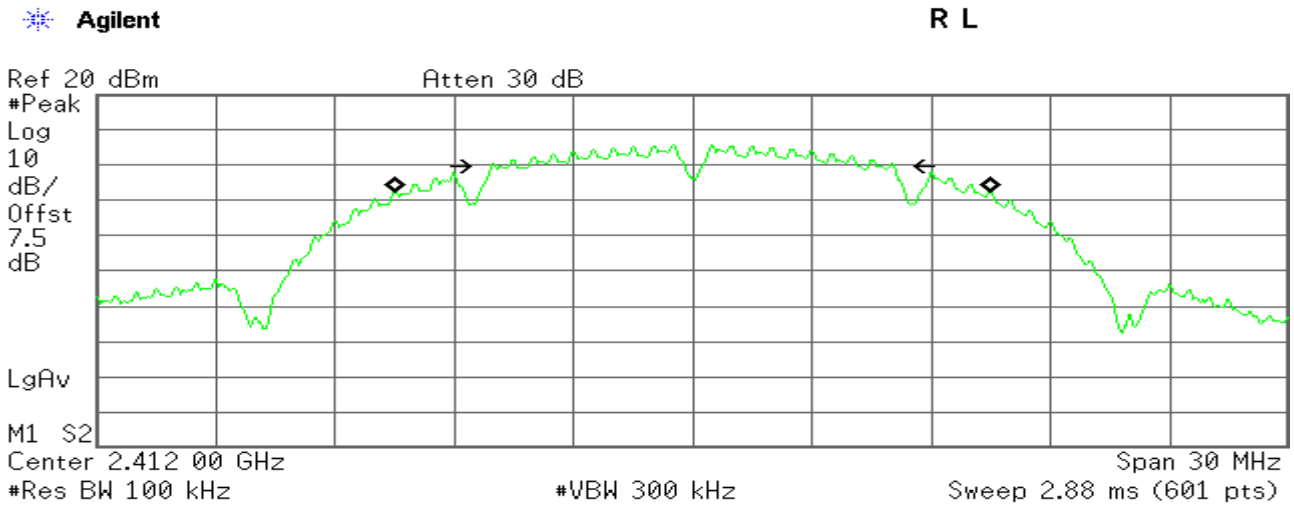
IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.501	>500	PASS
Mid	2437	36.496		PASS
High	2452	36.496		PASS

Test Plot

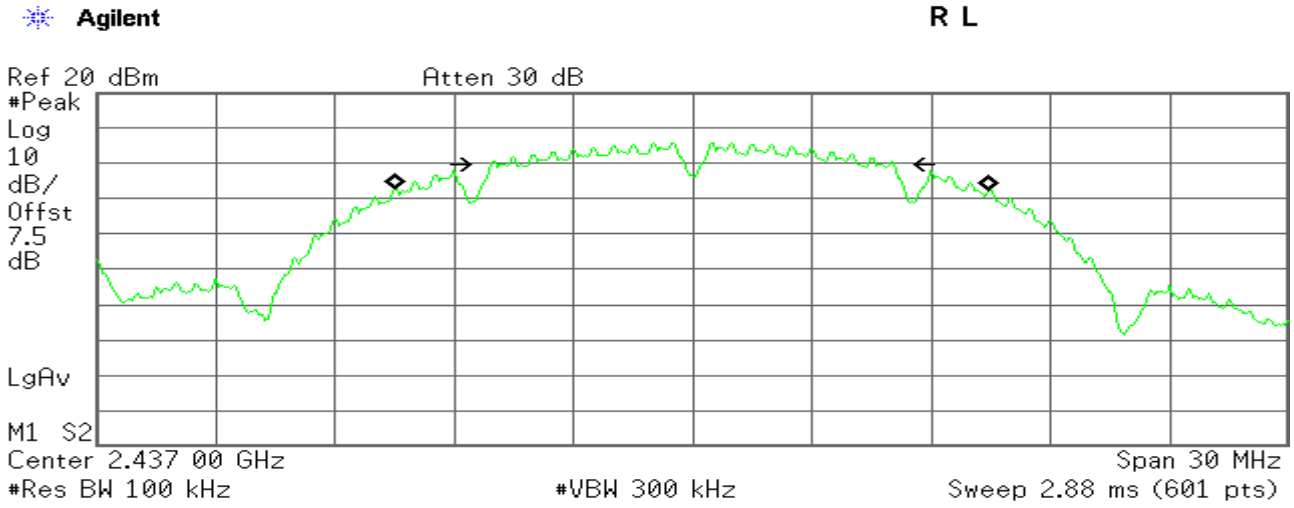
IEEE 802.11b MODE

6dB Bandwidth (CH Low)



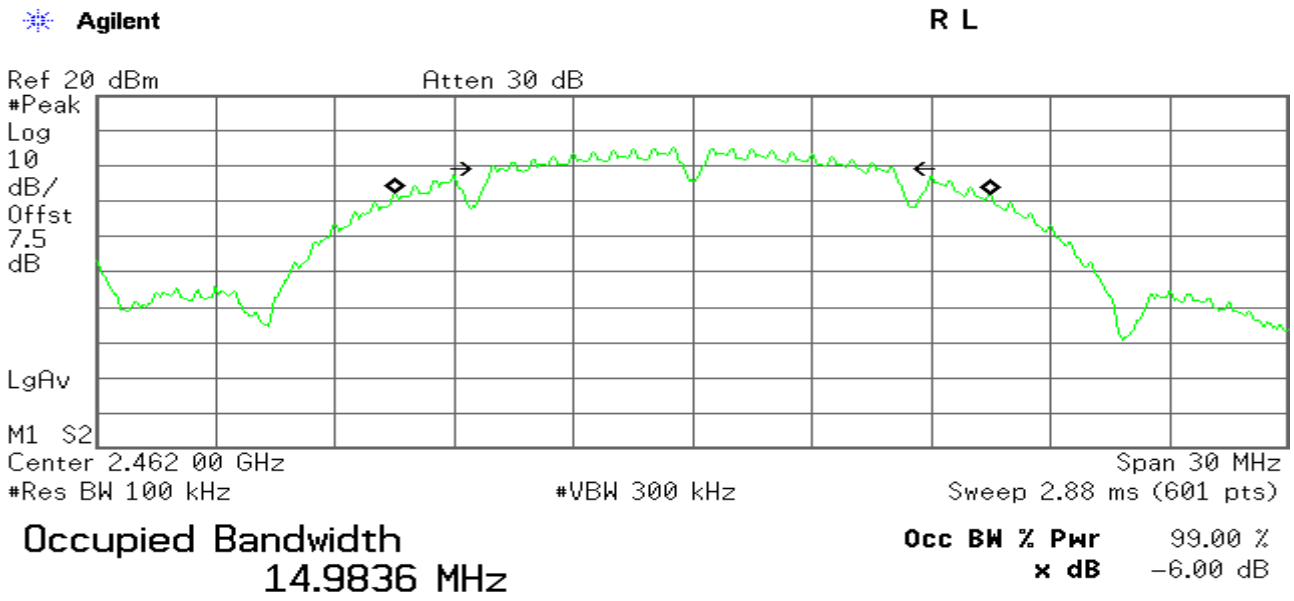
Transmit Freq Error −14.516 kHz
x dB Bandwidth 10.121 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error −26.213 kHz
x dB Bandwidth 10.110 MHz

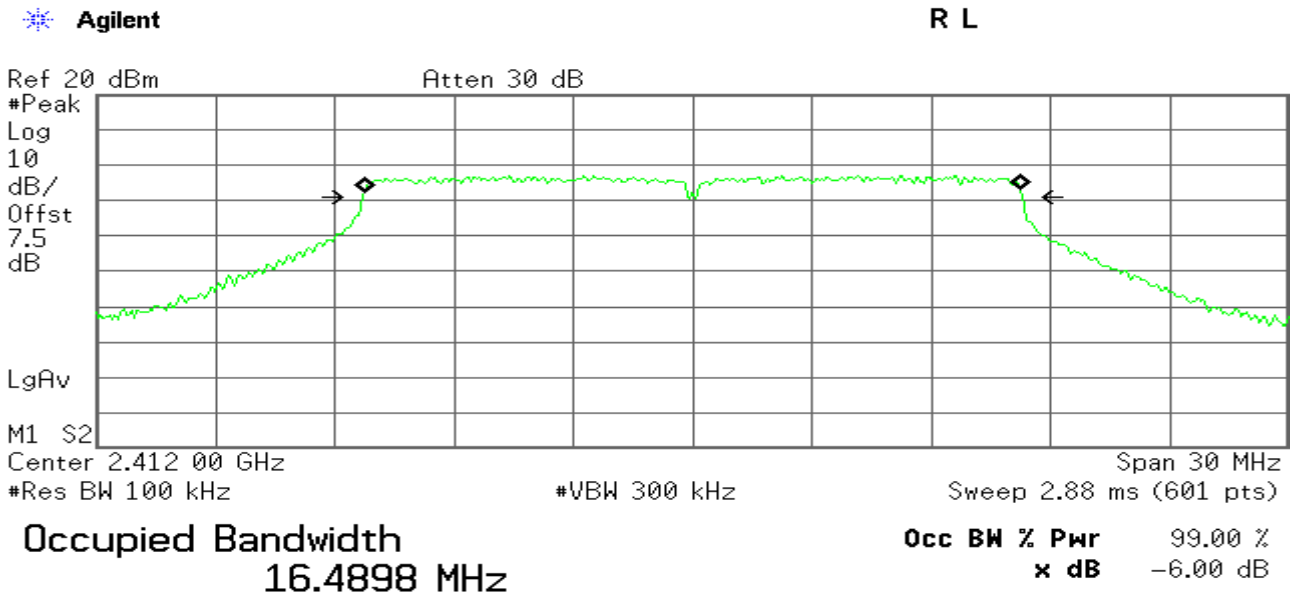
6dB Bandwidth (CH High)



Transmit Freq Error −16.197 kHz
x dB Bandwidth 10.099 MHz

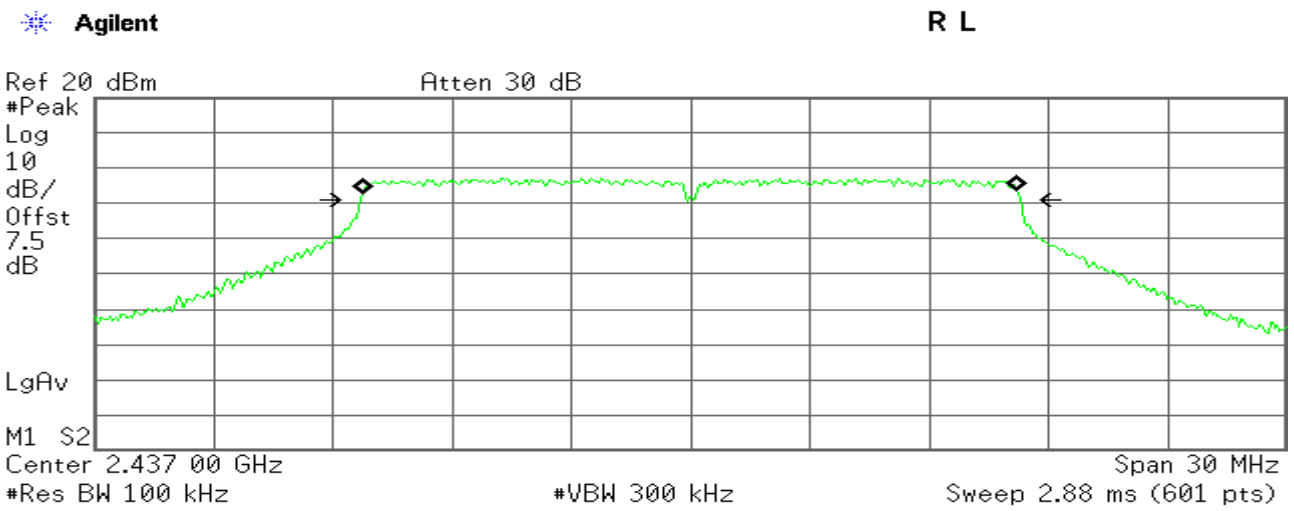
IEEE 802.11g MODE

6dB Bandwidth (CH Low)



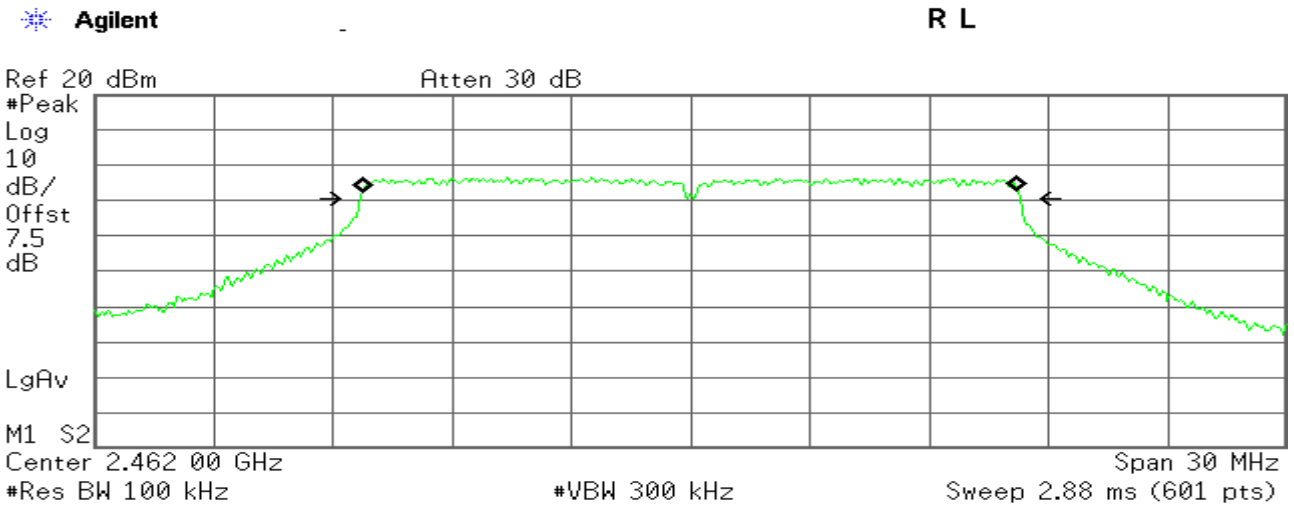
Transmit Freq Error −11.551 kHz
x dB Bandwidth 16.625 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error −17.481 kHz
x dB Bandwidth 16.619 MHz

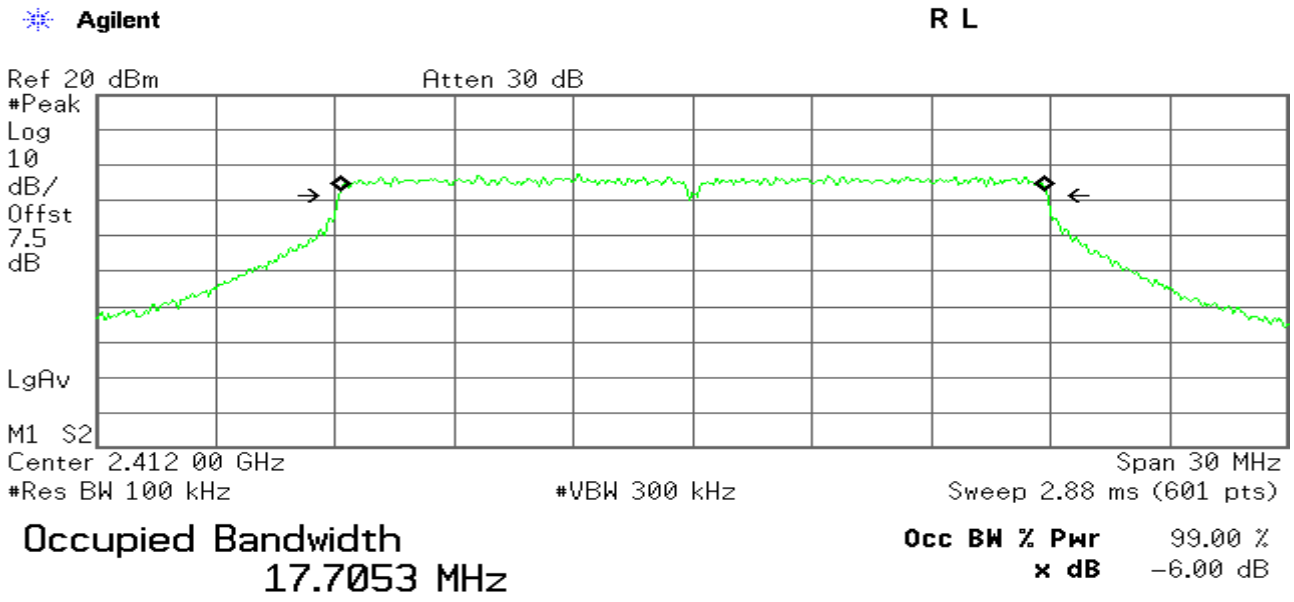
6dB Bandwidth (CH High)



Transmit Freq Error −24.784 kHz
x dB Bandwidth 16.622 MHz

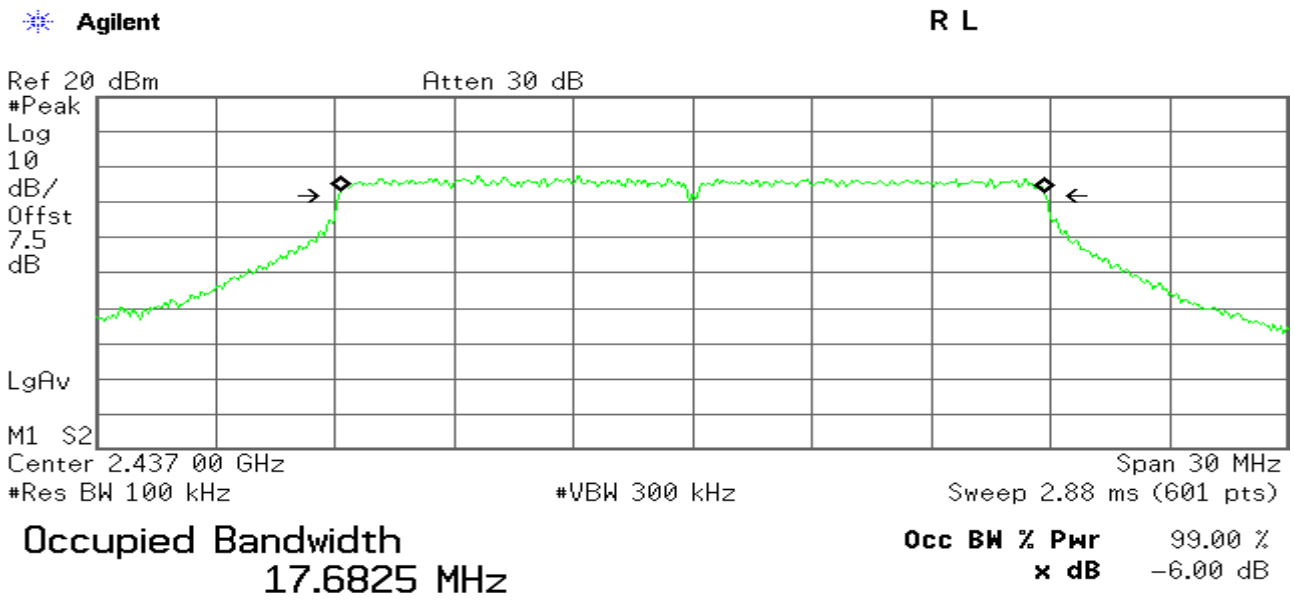
IEEE 802.11n HT20 MODE

6dB Bandwidth (CH Low)



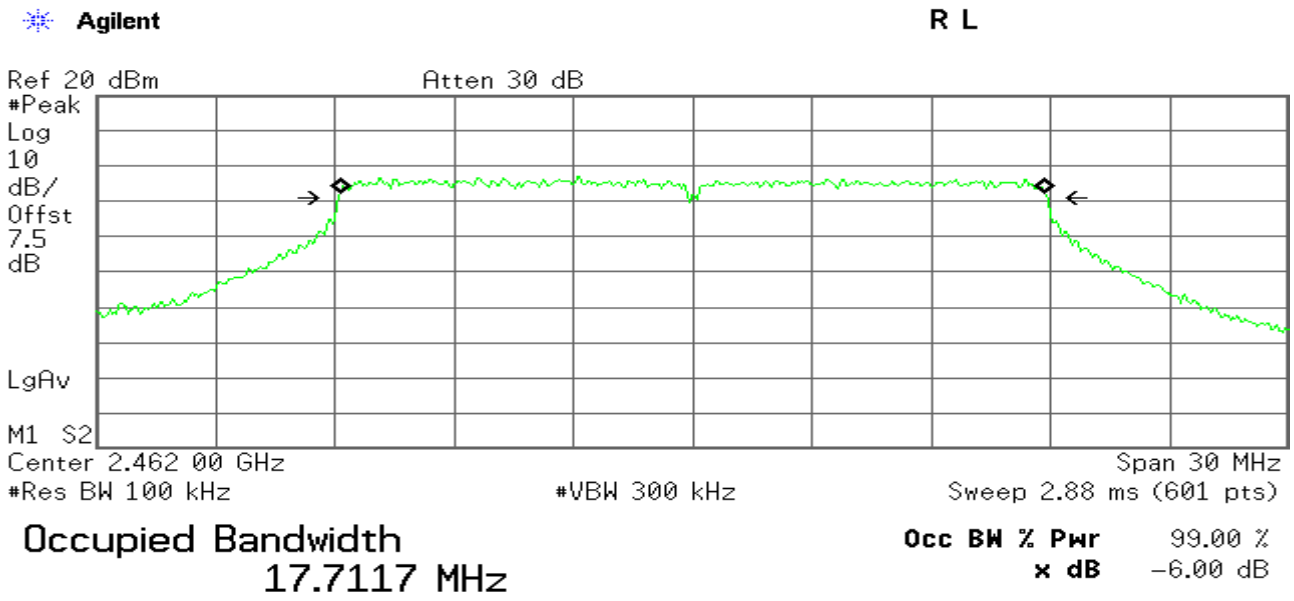
Transmit Freq Error 10.028 kHz
x dB Bandwidth 17.842 MHz

6dB Bandwidth (CH Mid)



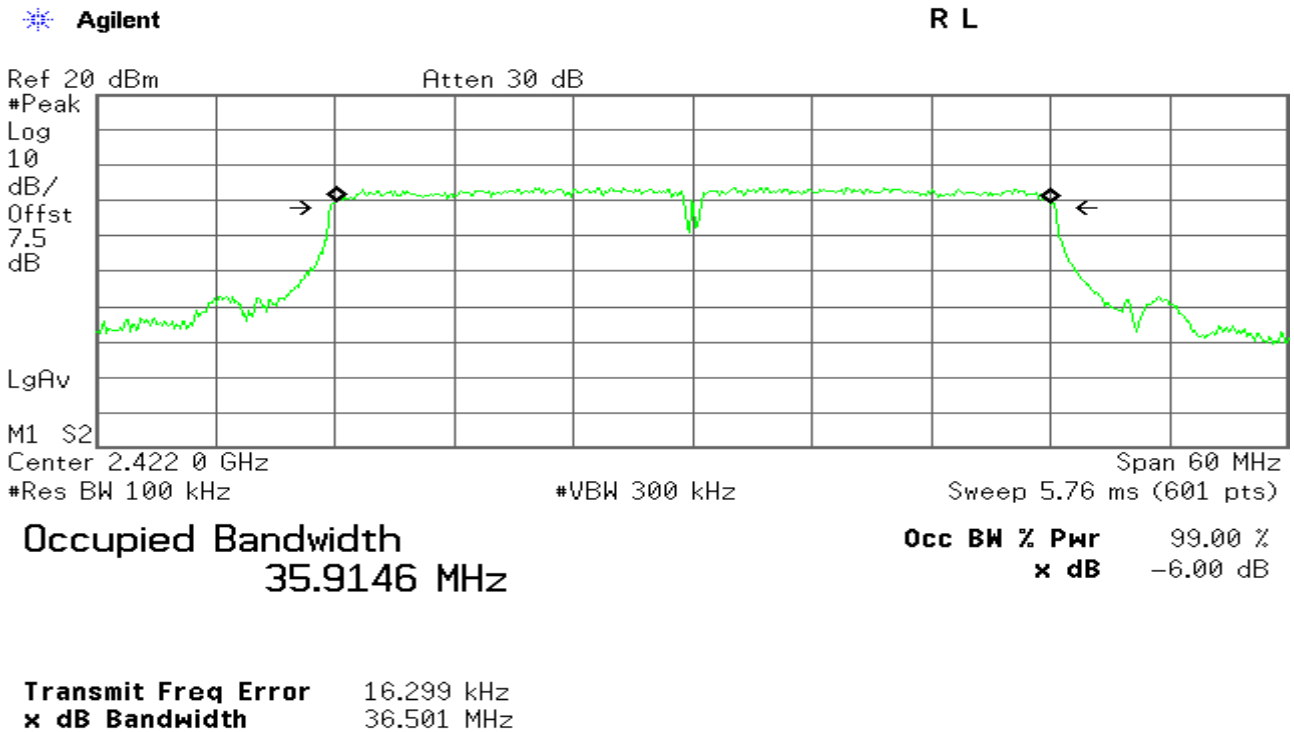
Transmit Freq Error -3.713 kHz
x dB Bandwidth 17.811 MHz

6dB Bandwidth (CH High)

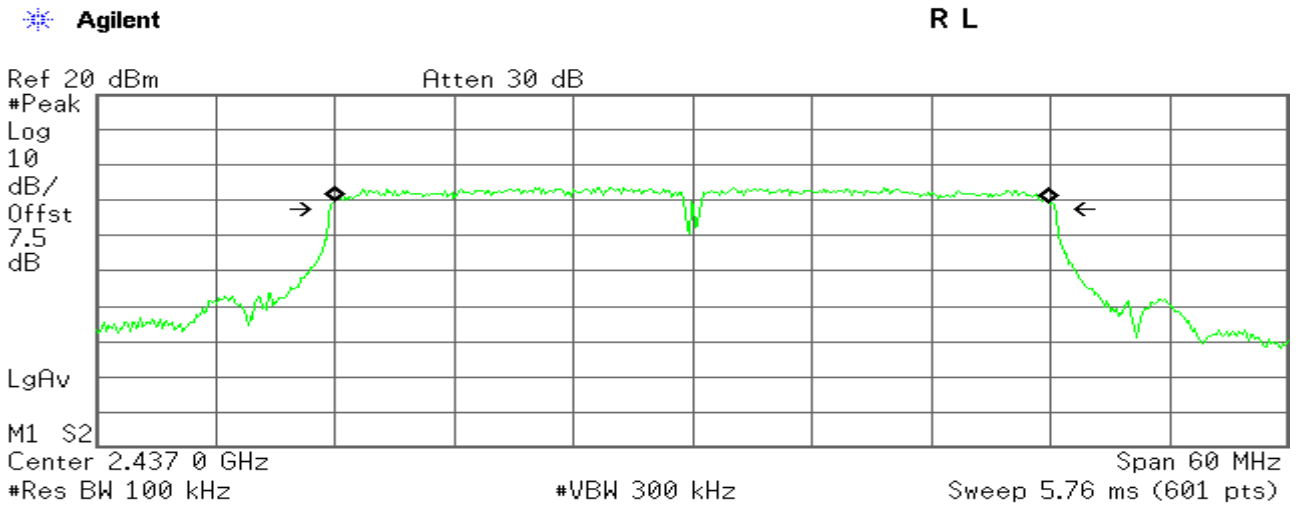


IEEE 802.11n HT40 MODE

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

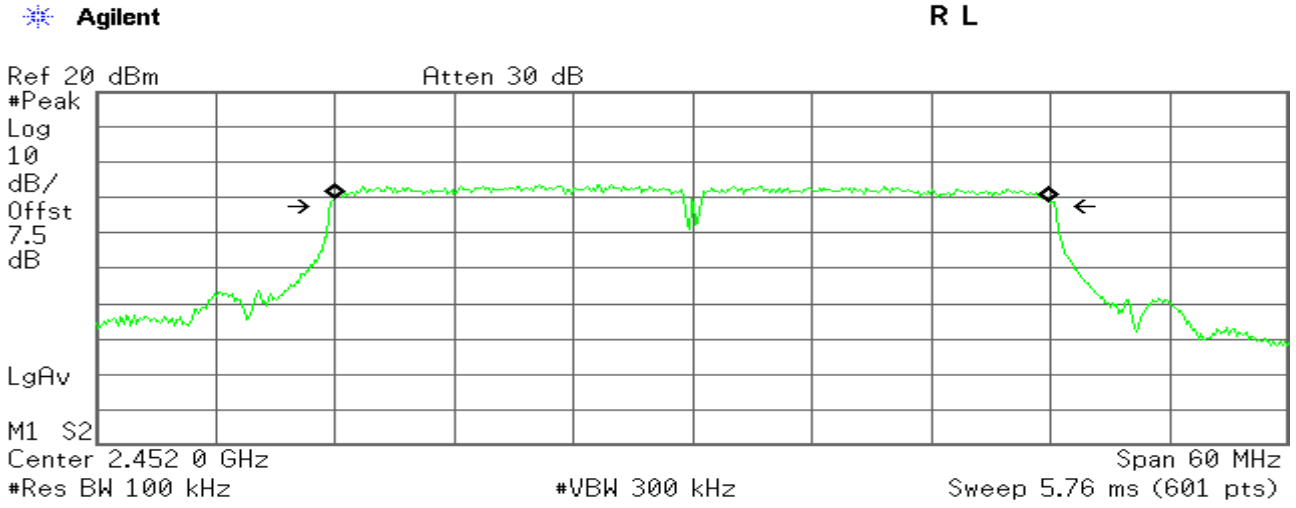


Occupied Bandwidth
35.9063 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -4.849 kHz
x dB Bandwidth 36.496 MHz

6dB Bandwidth (CH High)



Occupied Bandwidth
35.9083 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error -20.834 kHz
x dB Bandwidth 36.496 MHz

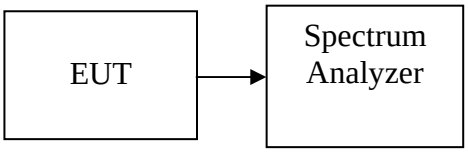
7.2. POWER OUTPUT

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Configuration



TEST PROCEDURE

KDB 558074 D01 DTS Measurement Guidance v03r01 dated 04-09-2013..

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mw)	Limit	Result
Low	2412	**18.08**	**64.27**		PASS
Mid	2437	18	63.10		PASS
High	2462	17.54	56.75	30dBm	PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mw)	Limit	Result
Low	2412	**14.49**	**28.12**		PASS
Mid	2437	15.01	31.70		PASS
High	2462	14.36	27.29	30dBm	PASS

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mw)	Limit	Result
Low	2412	14.96	31.33		PASS
Mid	2437	**15.05**	**31.99**		PASS
High	2462	14.43	27.73	30dBm	PASS

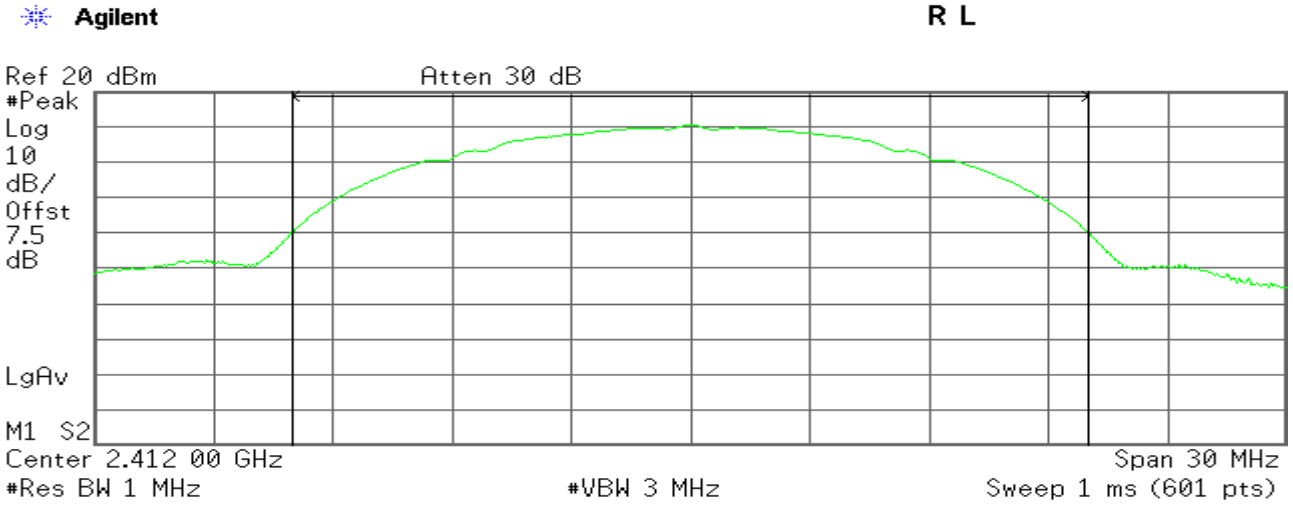
Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mw)	Limit	Result
Low	2422	**14.52**	**28.31**		PASS
Mid	2437	14.51	28.25		PASS
High	2452	14.24	26.55	30dBm	PASS

Test Plot

IEEE 802.11b mode

Peak Power (CH Low)



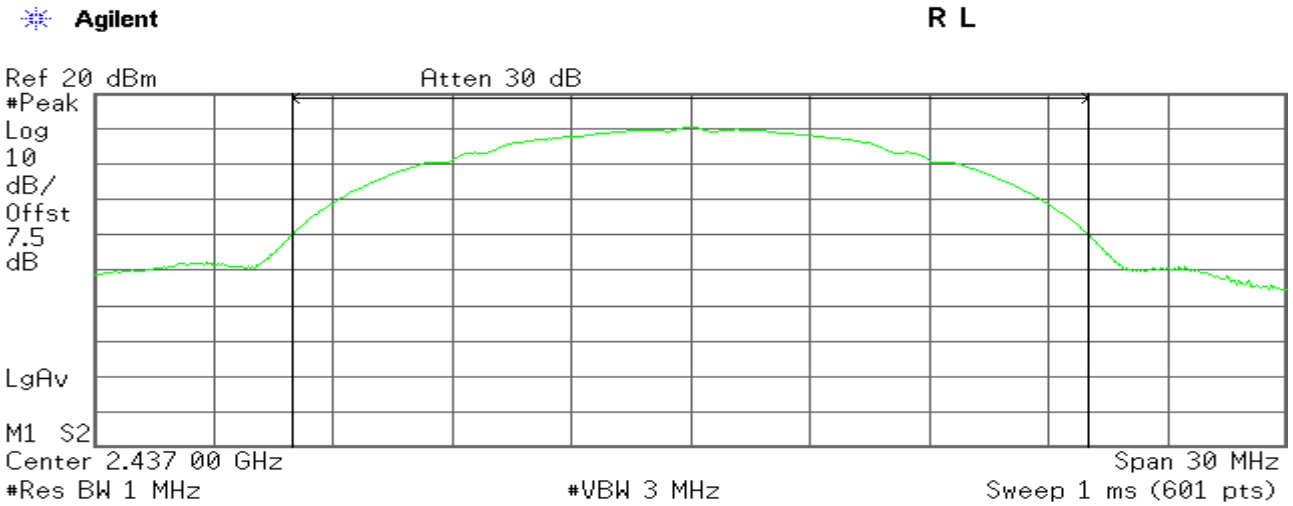
Channel Power

18.08 dBm /20.0000 MHz

Power Spectral Density

-54.93 dBm/Hz

Peak Power (CH Mid)



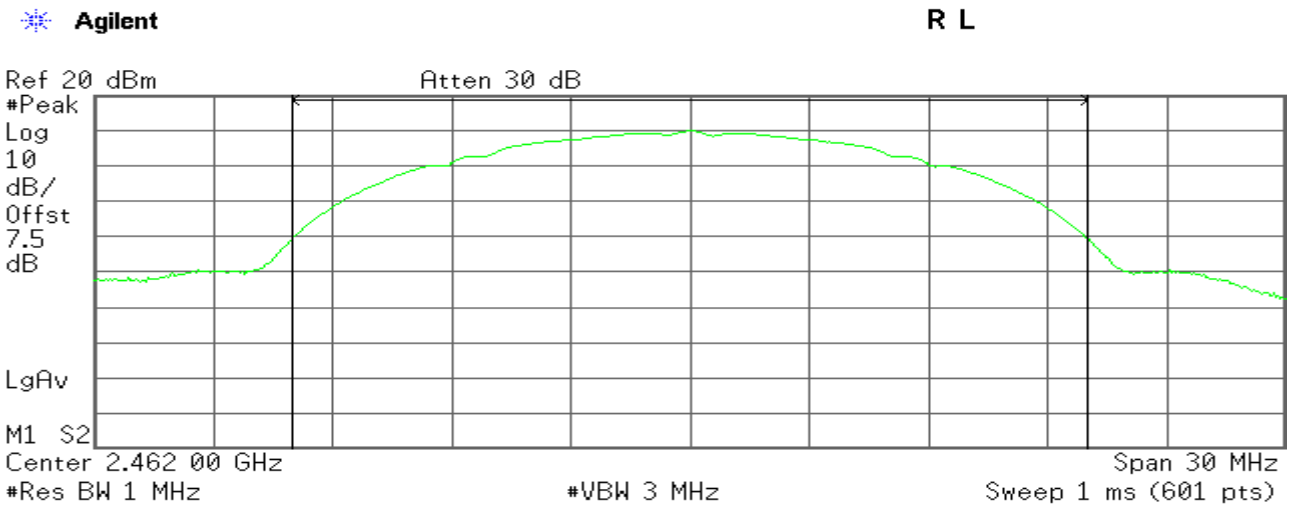
Channel Power

18.00 dBm /20.0000 MHz

Power Spectral Density

-54.93 dBm/Hz

Peak Power (CH High)



Channel Power

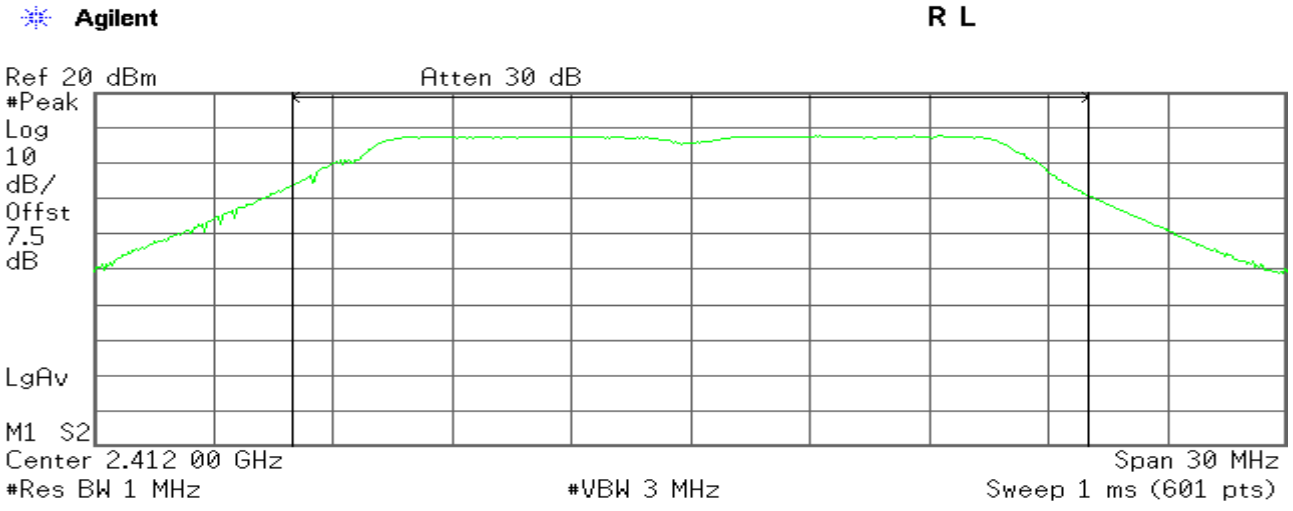
17.54 dBm /20.0000 MHz

Power Spectral Density

-55.47 dBm/Hz

IEEE 802.11g mode

Peak Power (CH Low)



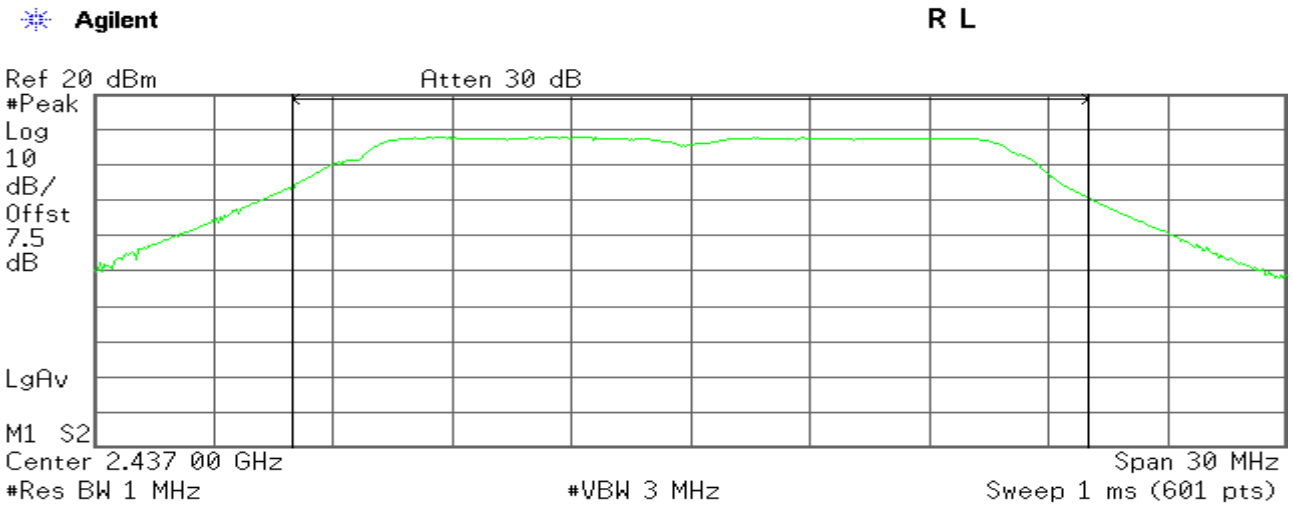
Channel Power

14.94 dBm /20.0000 MHz

Power Spectral Density

-58.07 dBm/Hz

Peak Power (CH Mid)



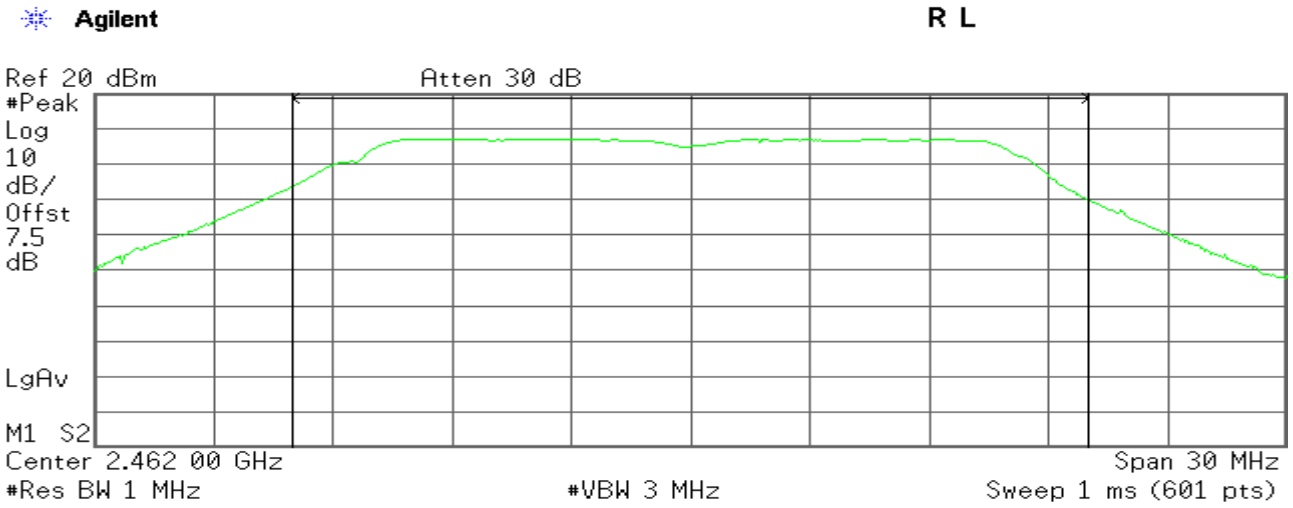
Channel Power

15.01 dBm /20.0000 MHz

Power Spectral Density

-58.00 dBm/Hz

Peak Power (CH High)



Channel Power

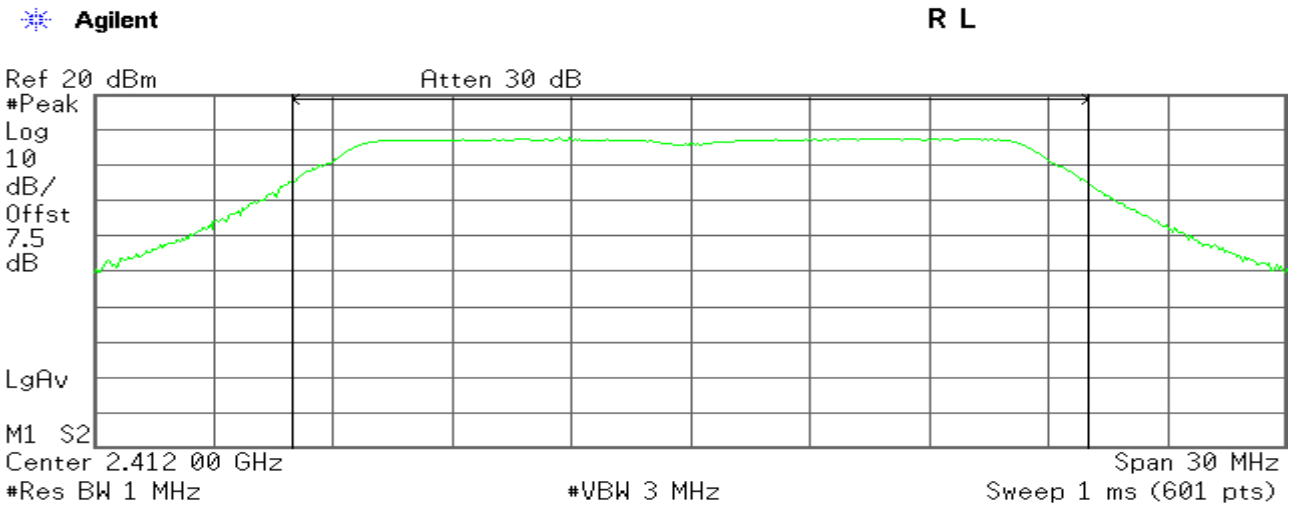
14.36 dBm /20.0000 MHz

Power Spectral Density

-58.65 dBm/Hz

IEEE 802.11n HT20 mode

Peak Power (CH Low)



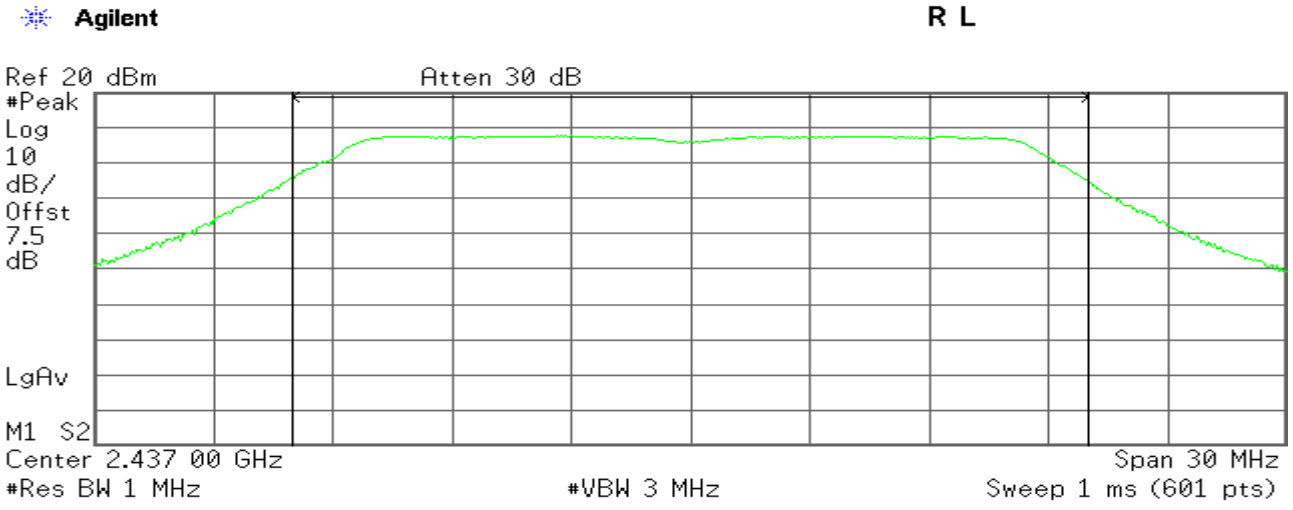
Channel Power

14.96 dBm /20.0000 MHz

Power Spectral Density

-58.05 dBm/Hz

Peak Power (CH Mid)



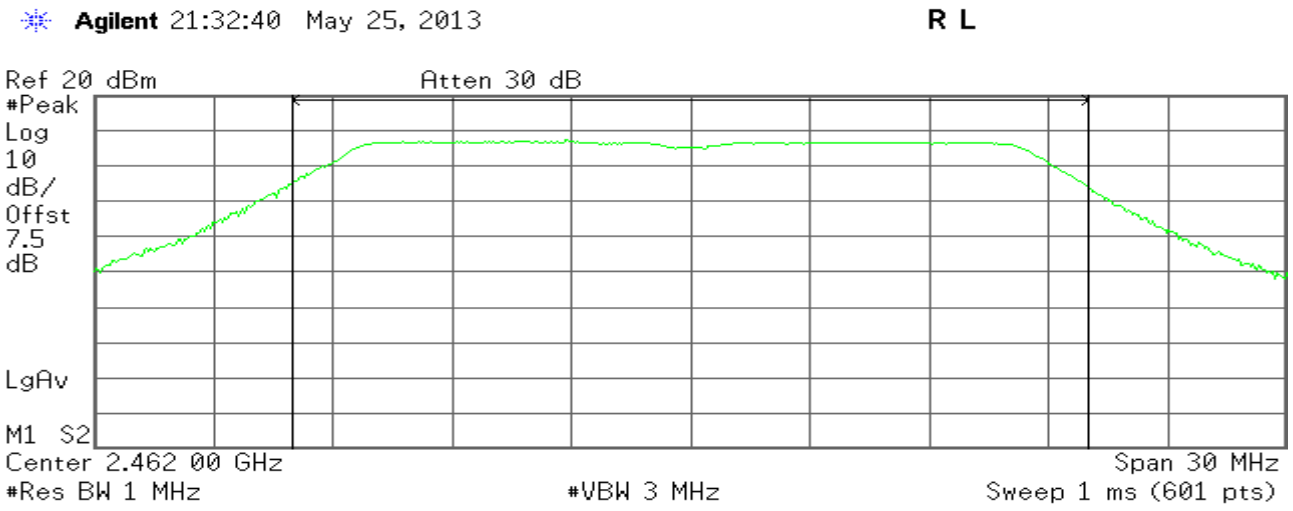
Channel Power

15.05 dBm /20.0000 MHz

Power Spectral Density

-57.96 dBm/Hz

Peak Power (CH High)



Channel Power

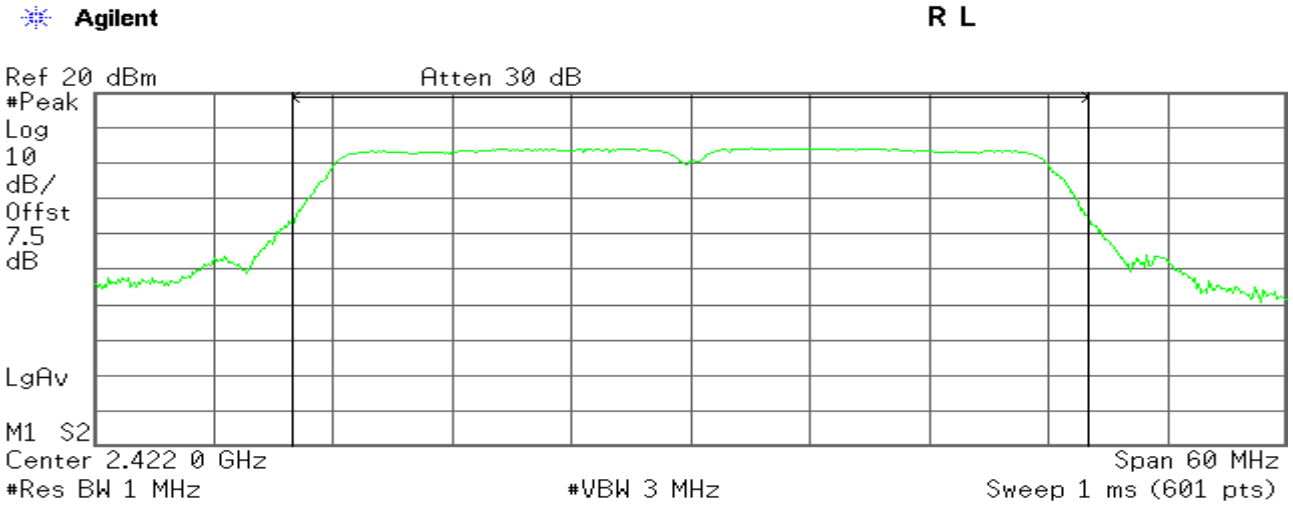
14.43 dBm /20.0000 MHz

Power Spectral Density

-58.58 dBm/Hz

IEEE 802.11n HT40 mode

Peak Power (CH Low)



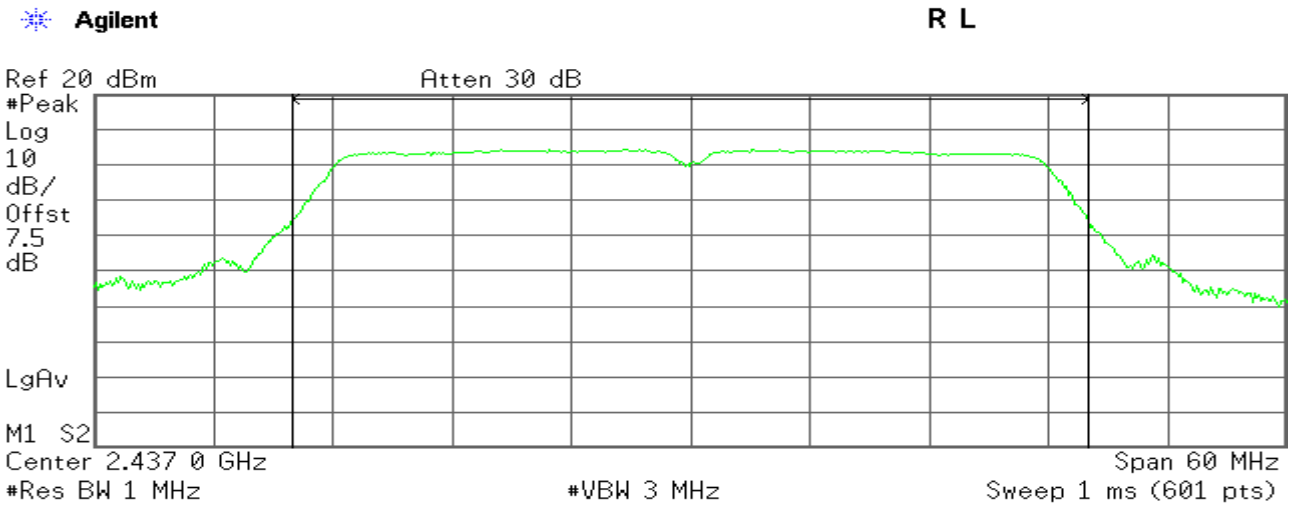
Channel Power

14.52 dBm /40.0000 MHz

Power Spectral Density

-61.50 dBm/Hz

Peak Power (CH Mid)



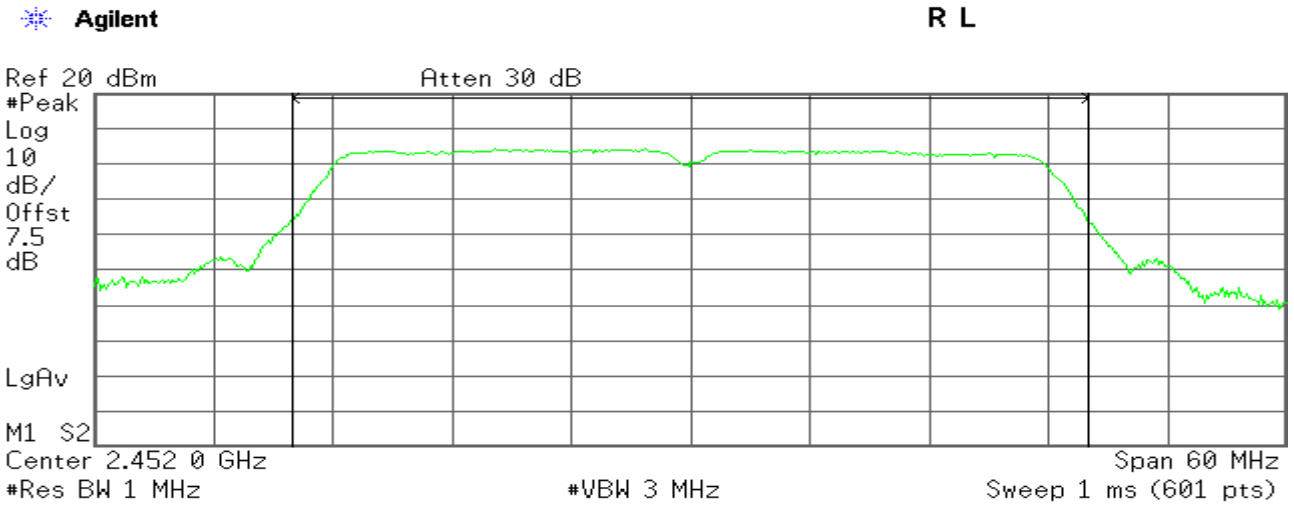
Channel Power

14.51 dBm /40.0000 MHz

Power Spectral Density

-61.51 dBm/Hz

Peak Power (CH High)



Channel Power

14.24 dBm /40.0000 MHz

Power Spectral Density

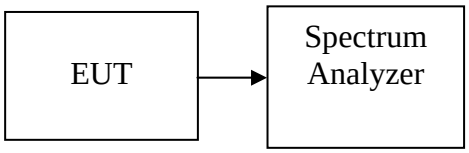
-61.78 dBm/Hz

7.3. PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

KDB 558074 D01 DTS Measurement Guidance v03r01 dated 04-09-2013..

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-12.21	8	PASS
Mid	2437	-11.78	8	PASS
High	2462	-12.15	8	PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-15.46	8	PASS
Mid	2437	-14.89	8	PASS
High	2462	-16.42	8	PASS

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-15.35	8	PASS
Mid	2437	-14.95	8	PASS
High	2462	-14.59	8	PASS

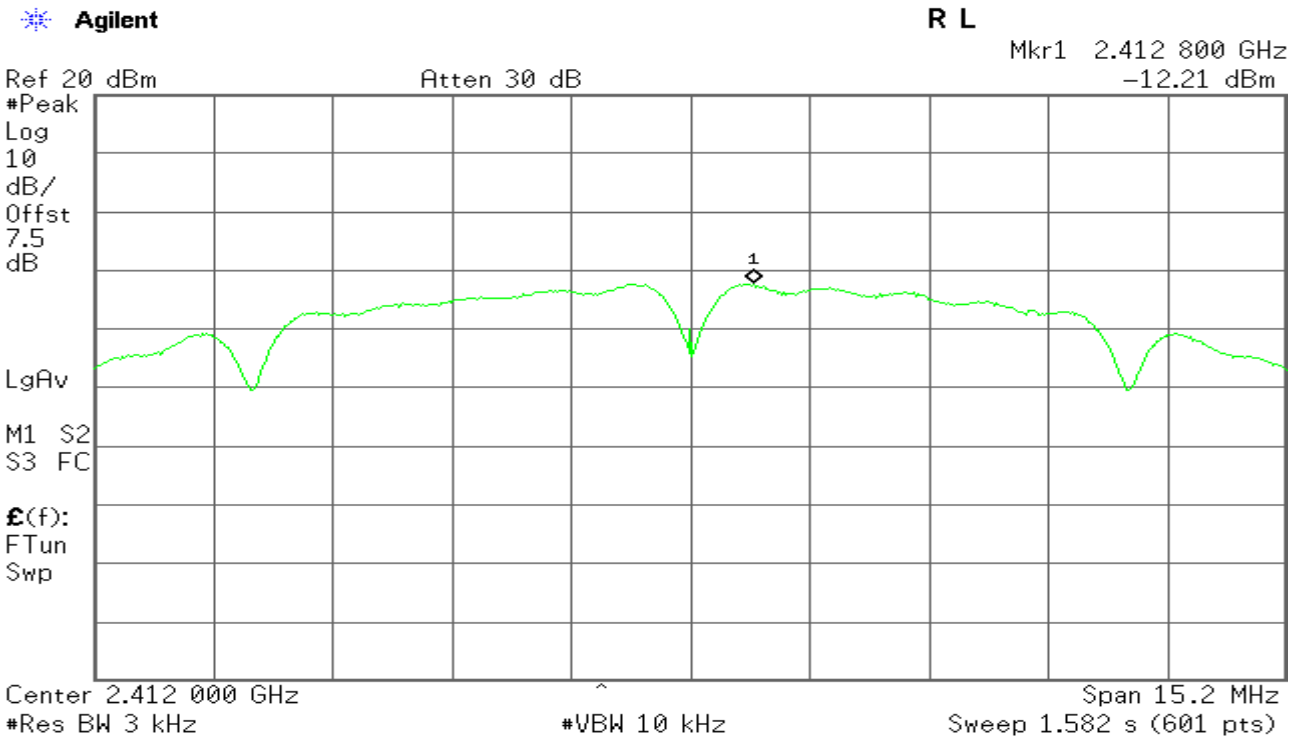
Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-17.03	8	PASS
Mid	2437	-16.56	8	PASS
High	2452	-17.47	8	PASS

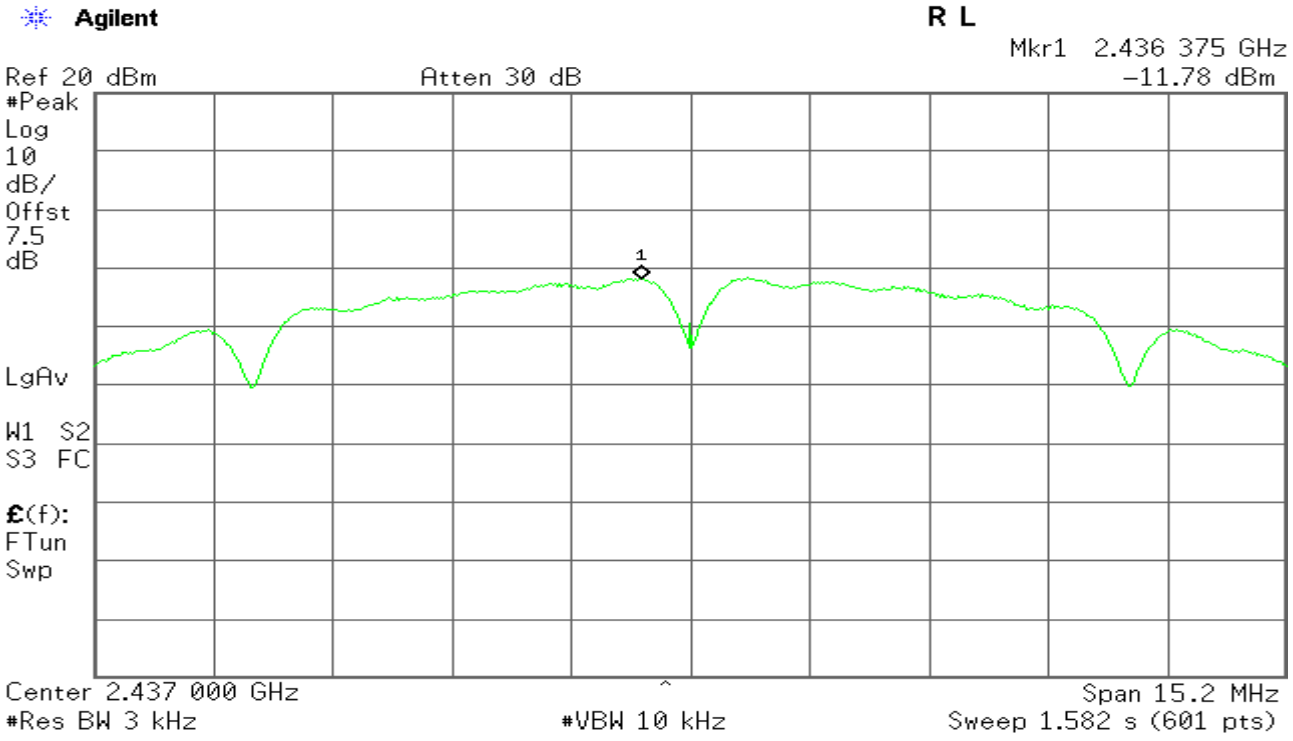
Test Plot

IEEE 802.11b mode

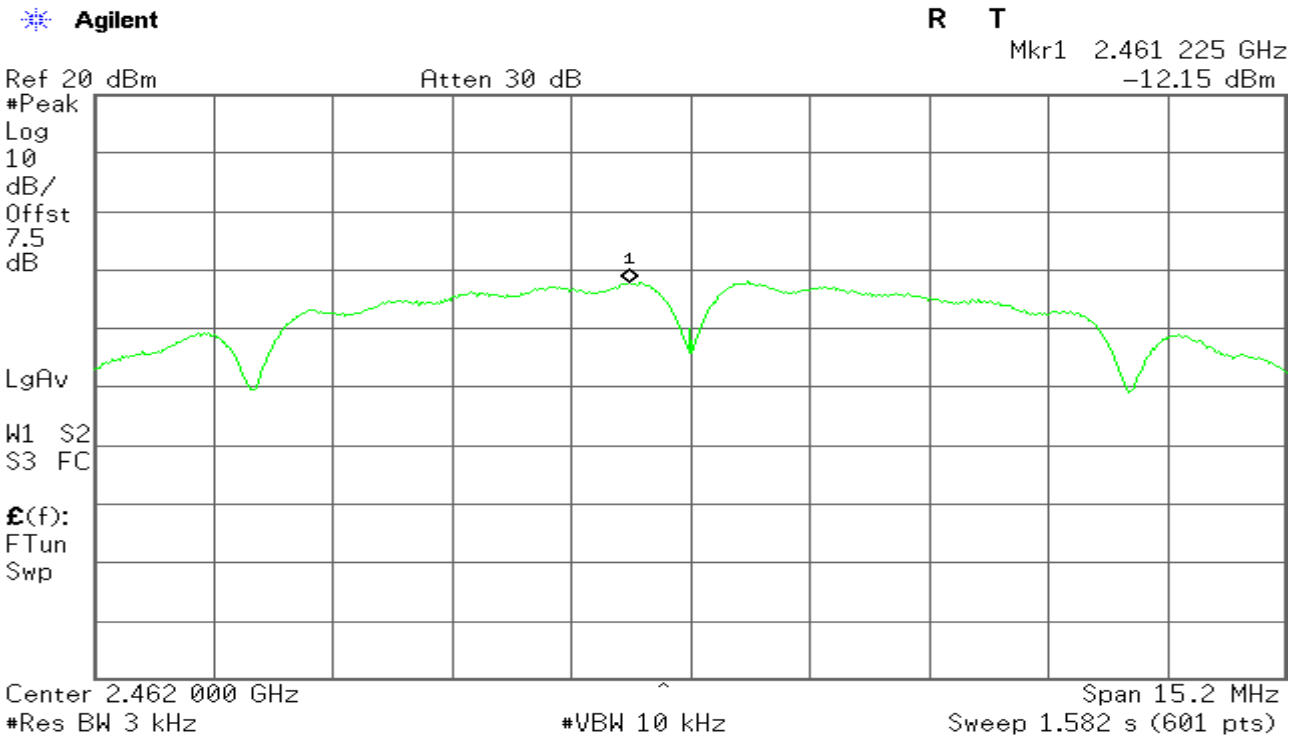
PPSD (CH Low)



PPSD (CH Mid)

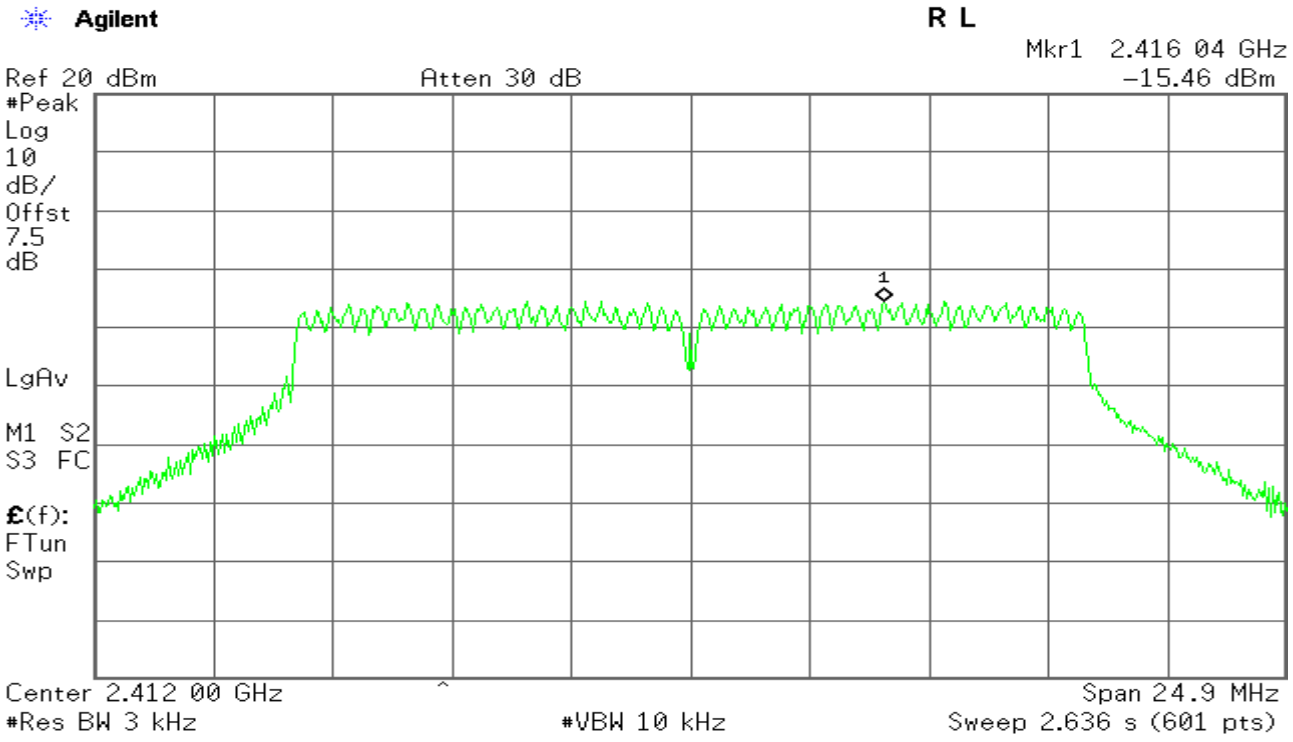


PPSD (CH High)

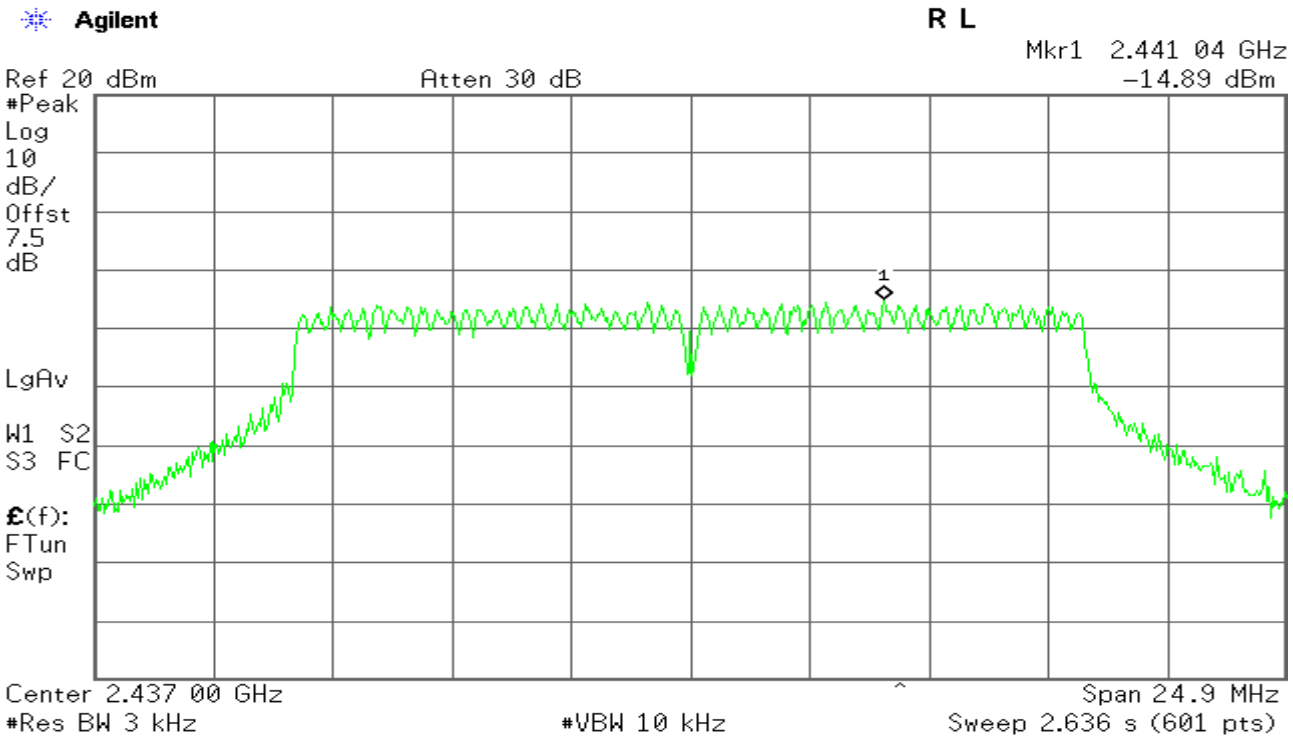


IEEE 802.11g mode

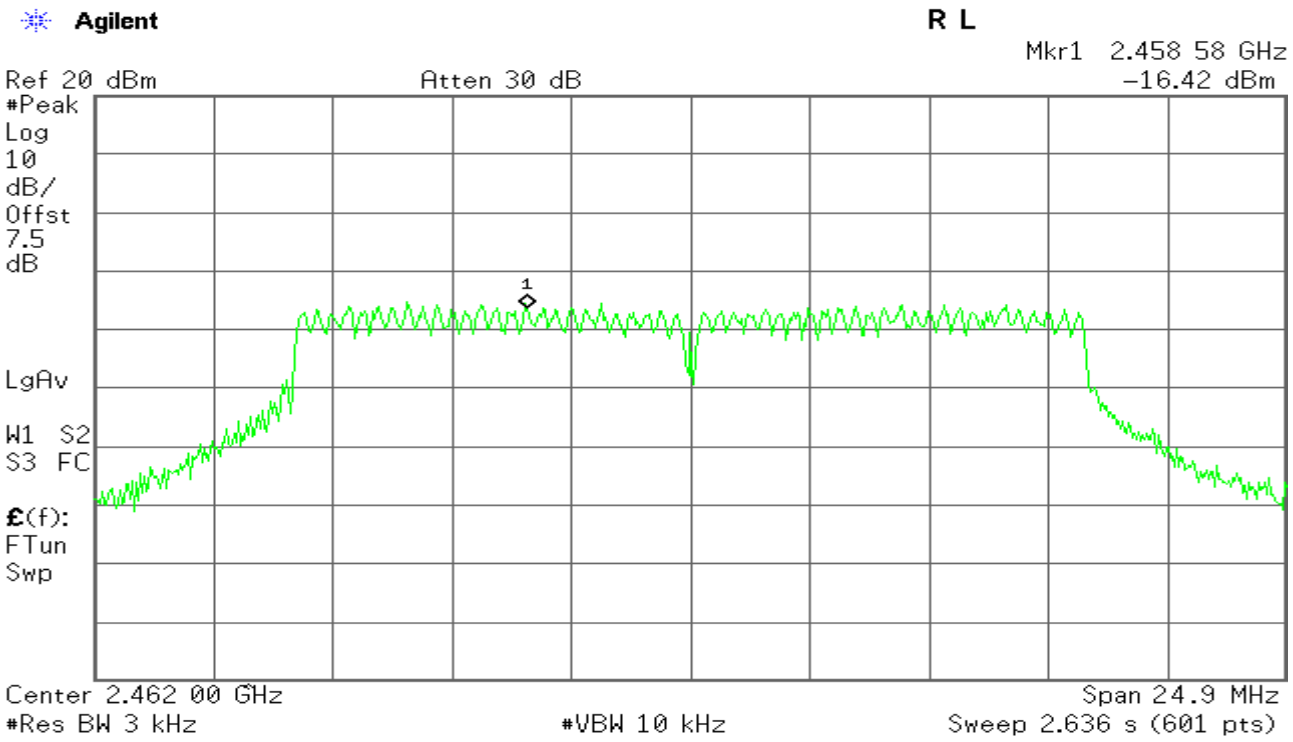
PPSD (CH Low)



PPSD (CH Mid)

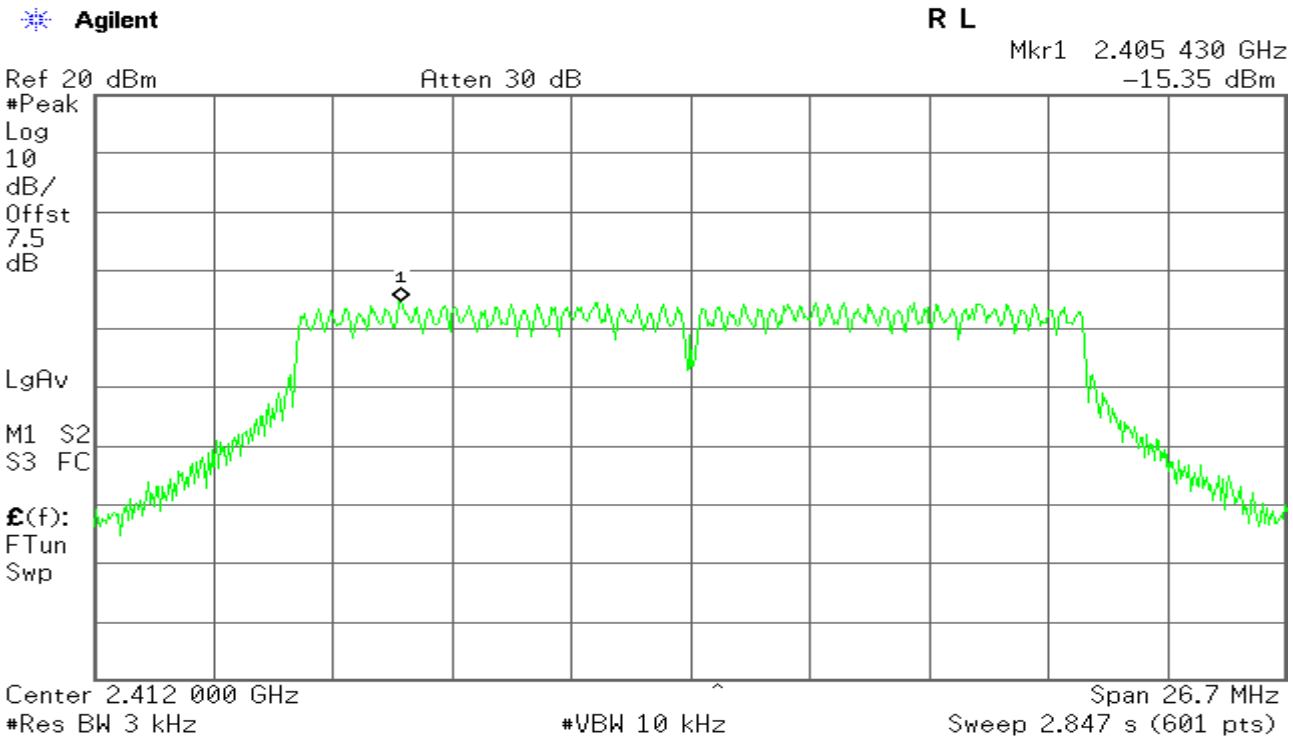


PPSD (CH High)

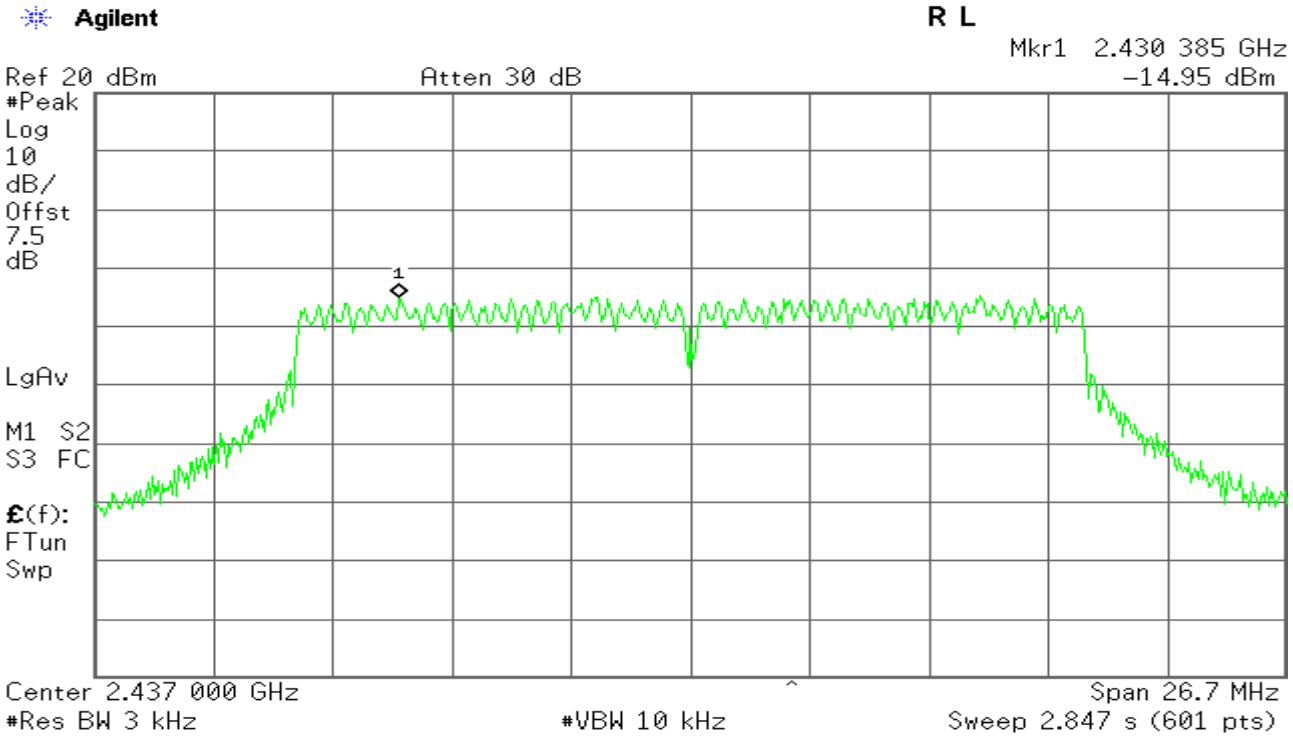


IEEE 802.11n HT20 mode

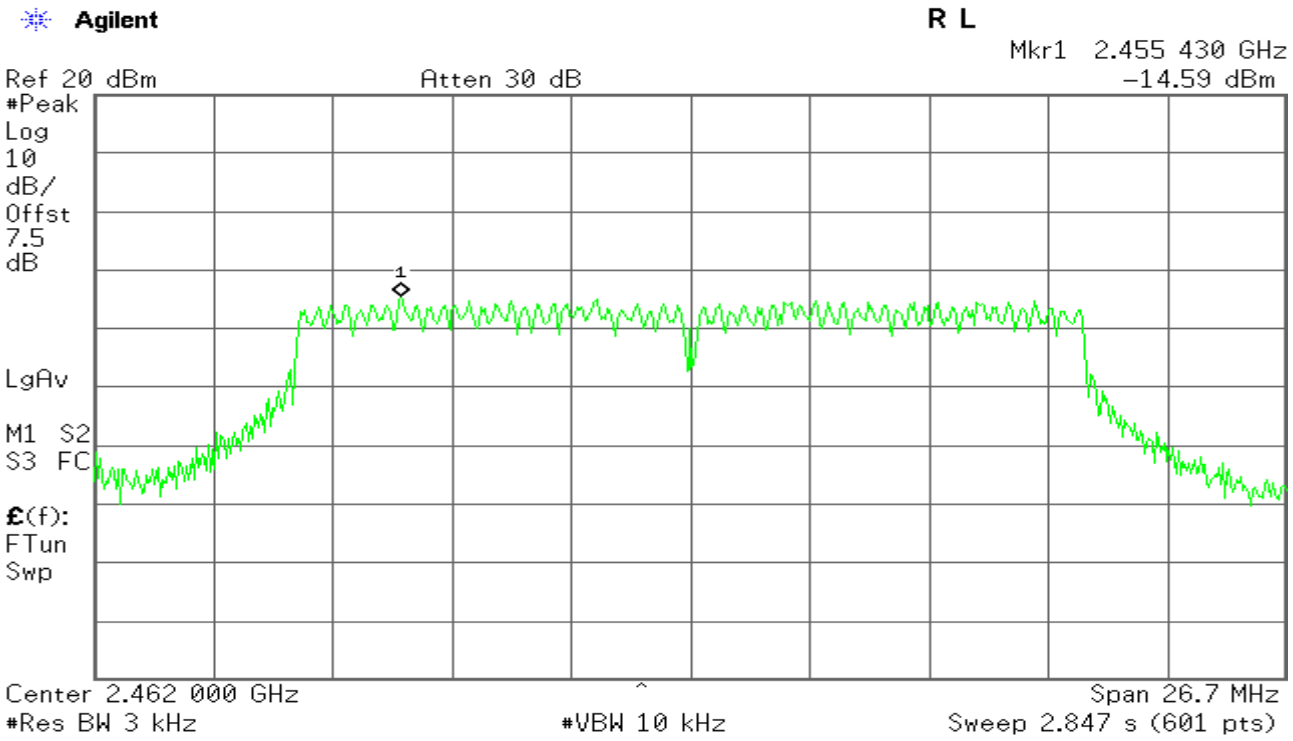
PPSD (CH Low)



PPSD (CH Mid)

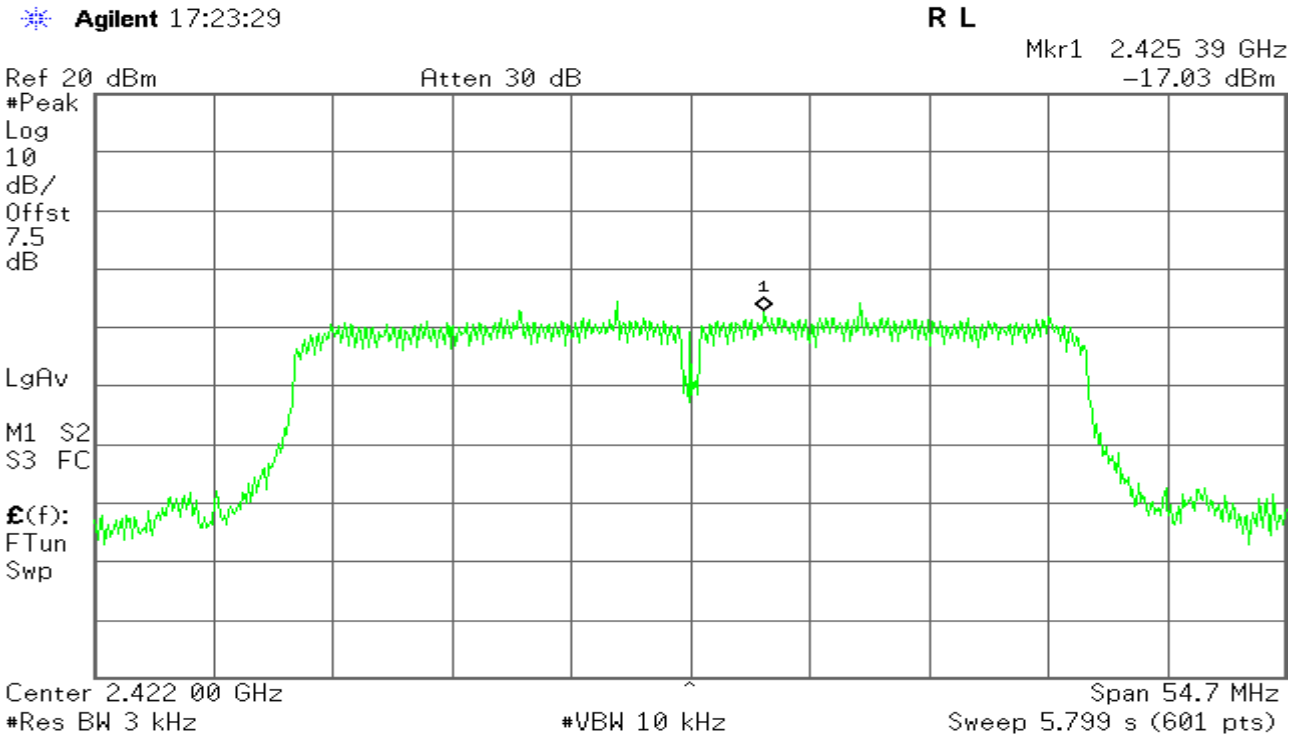


PPSD (CH High)

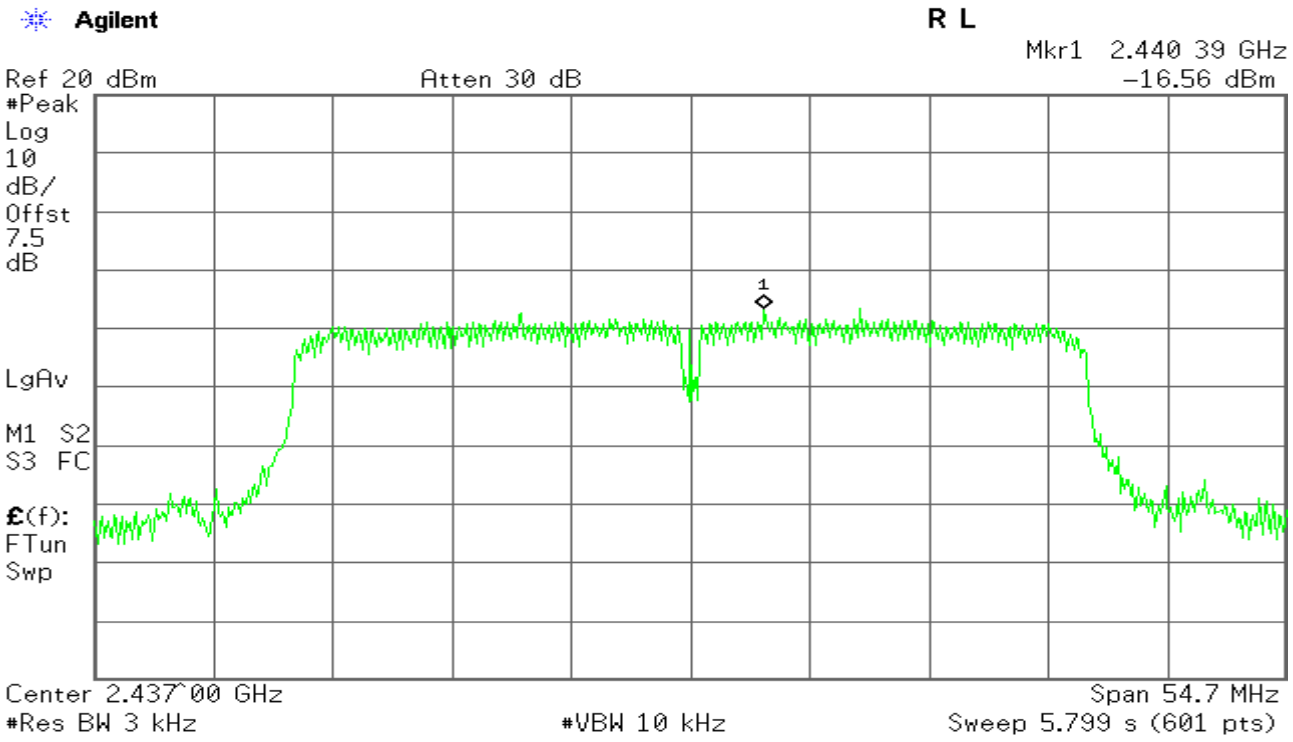


IEEE 802.11n HT40 mode

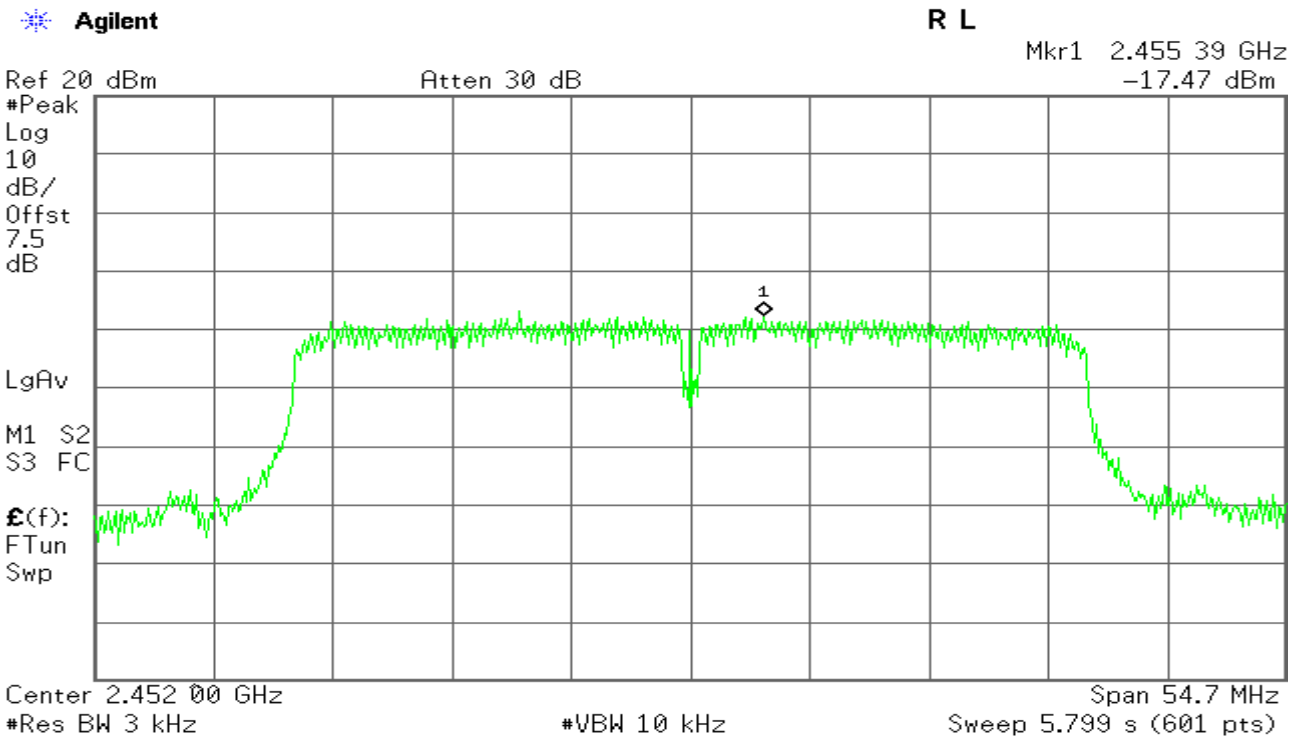
PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)



7.4. SPURIOUS EMISSIONS

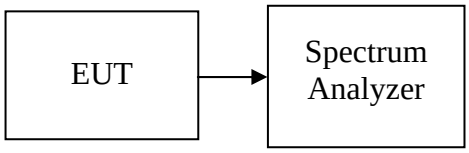
1.1.1. CONDUCTED MEASUREMENT

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. 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)).

Conducted power was measured based on the use of RMS averaging over a time interval,therefore the required attenuntion is 30 dB.

Test Configuration



TEST PROCEDURE

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 1 MHz. The video bandwidth is set to 1 MHz.

Measurements are made over the 30MHz to 40GHz range with the transmitter set to the lowest, middle, and highest channels.

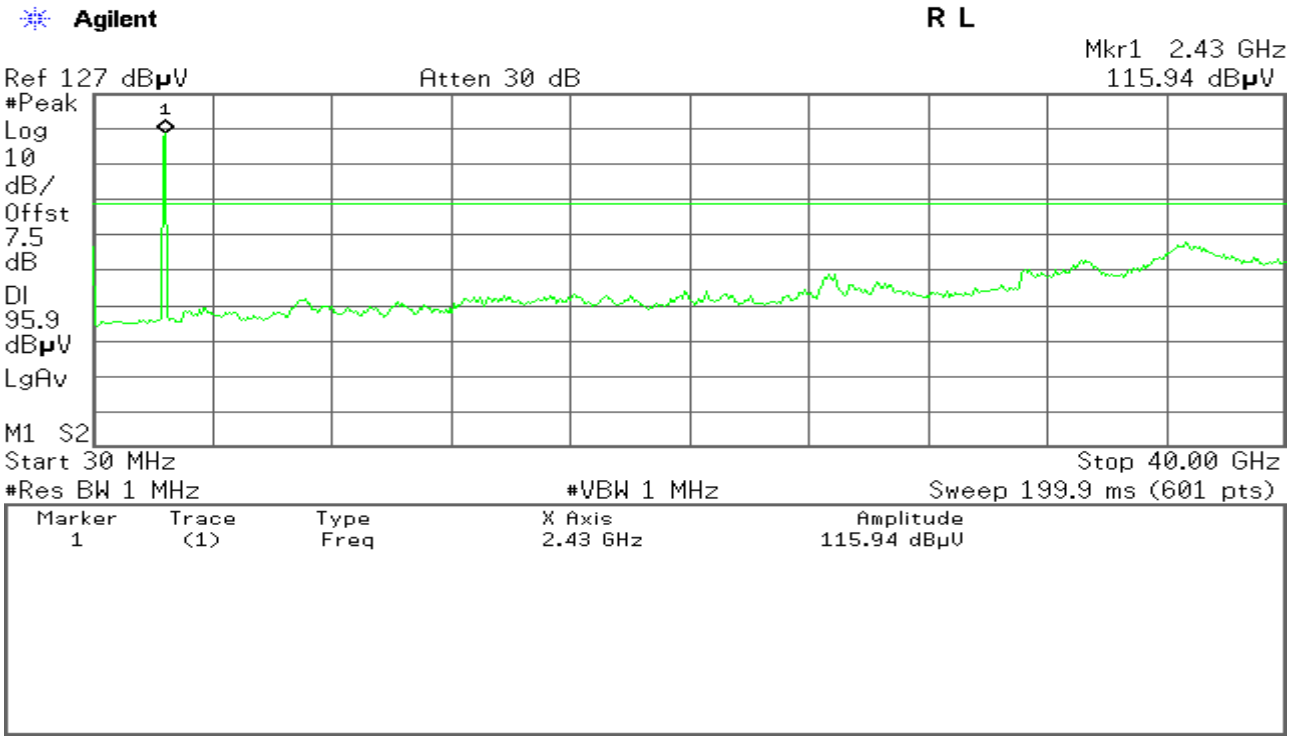
TEST RESULTS

No non-compliance noted

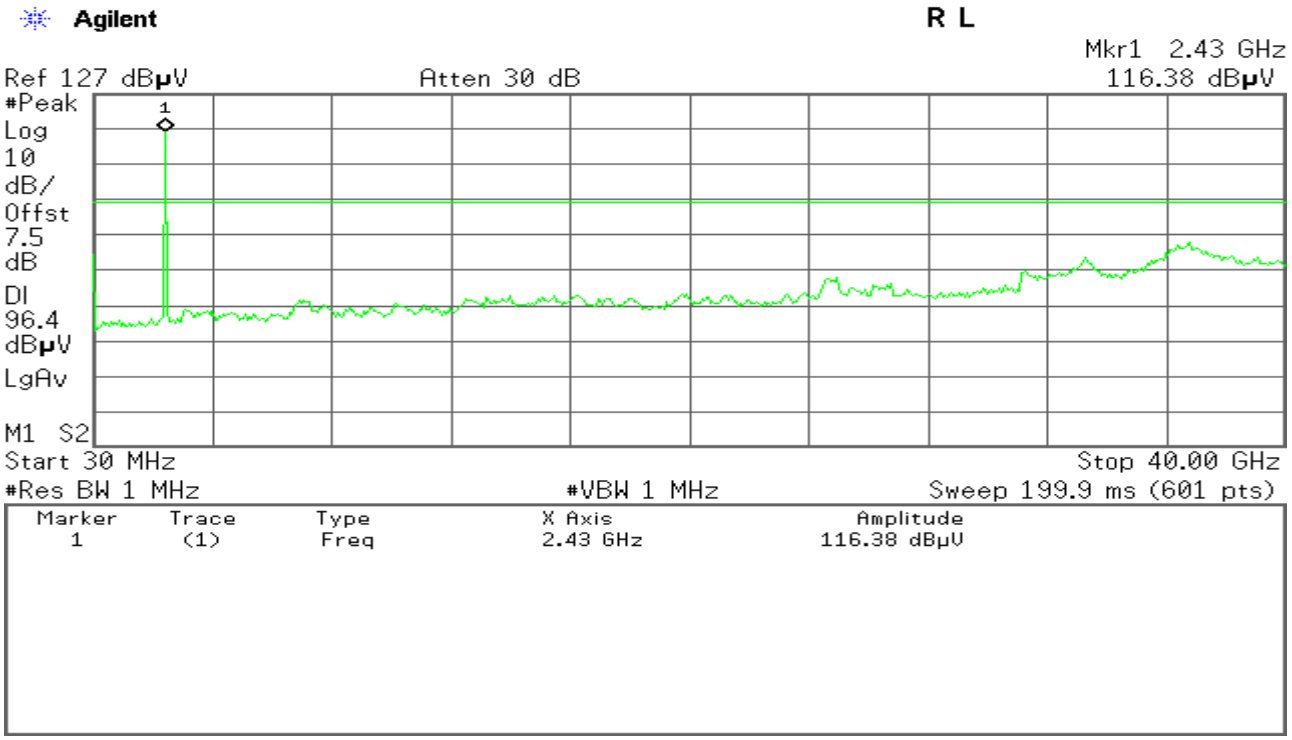
Test Plot

IEEE 802.11b mode

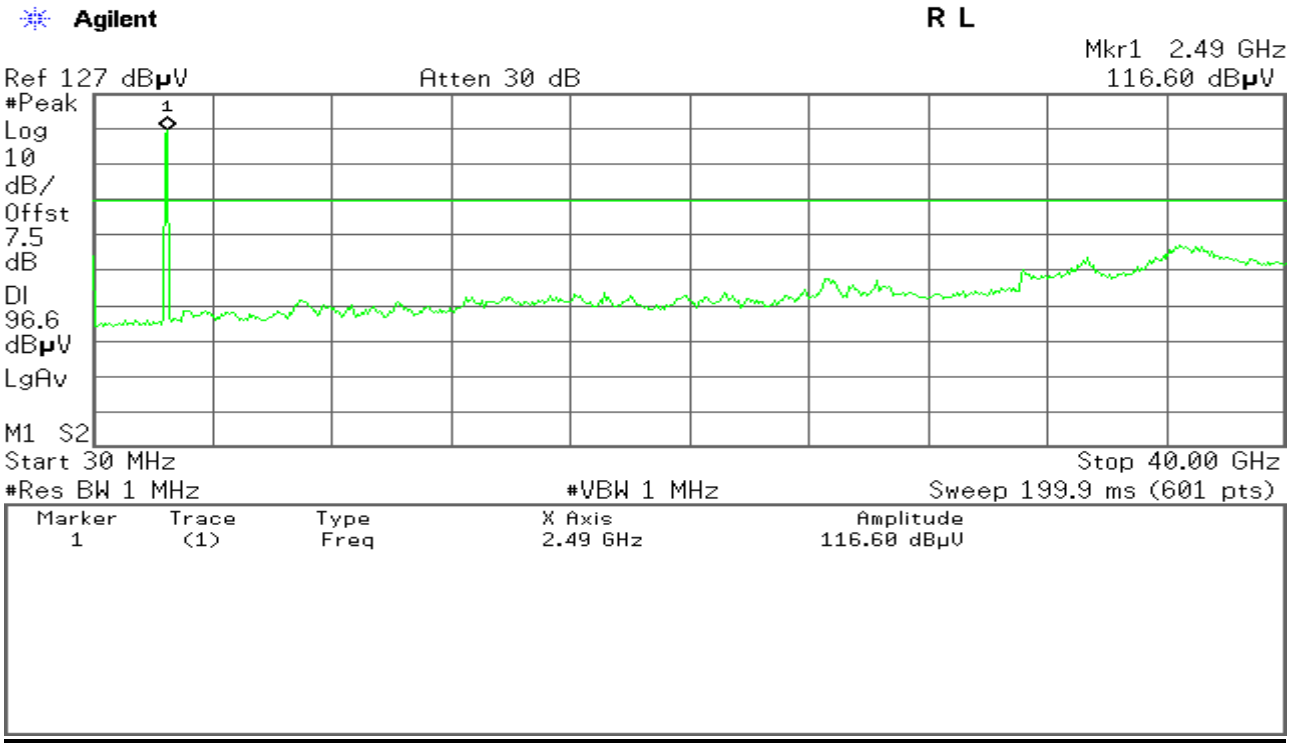
CH Low



CH Mid

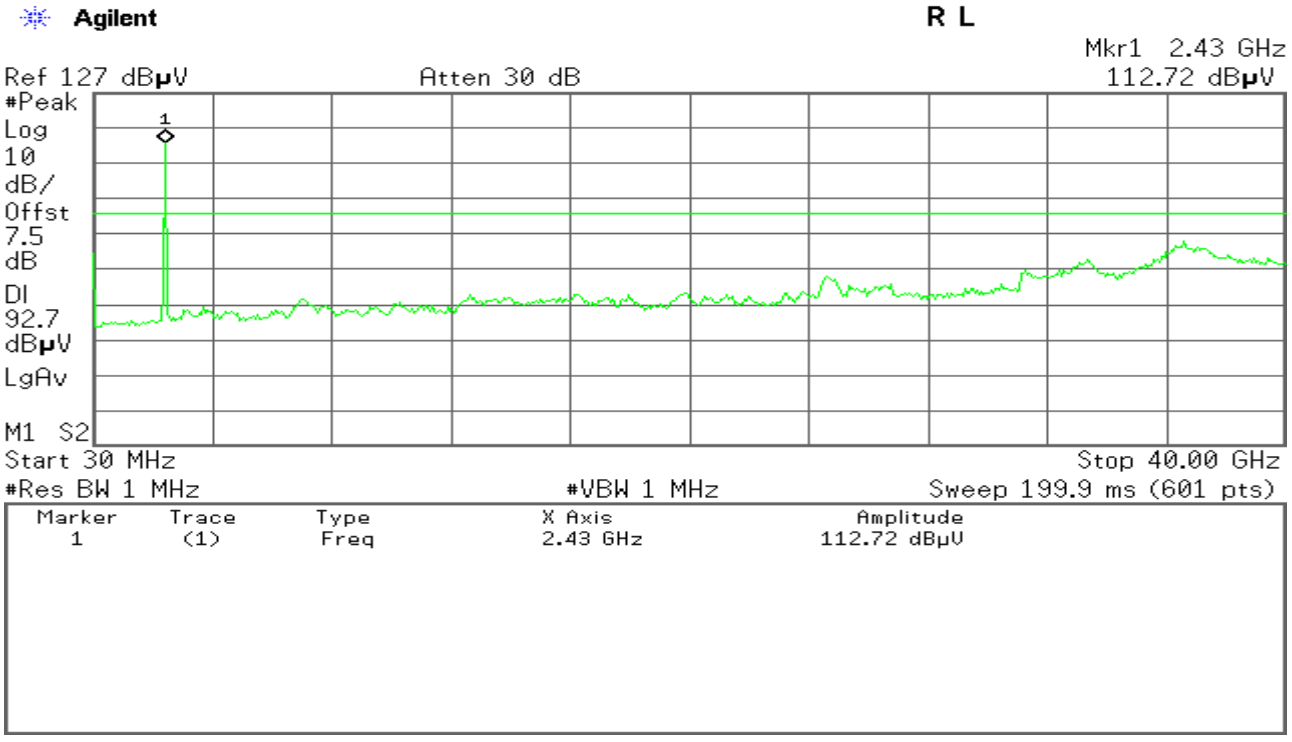


CH High

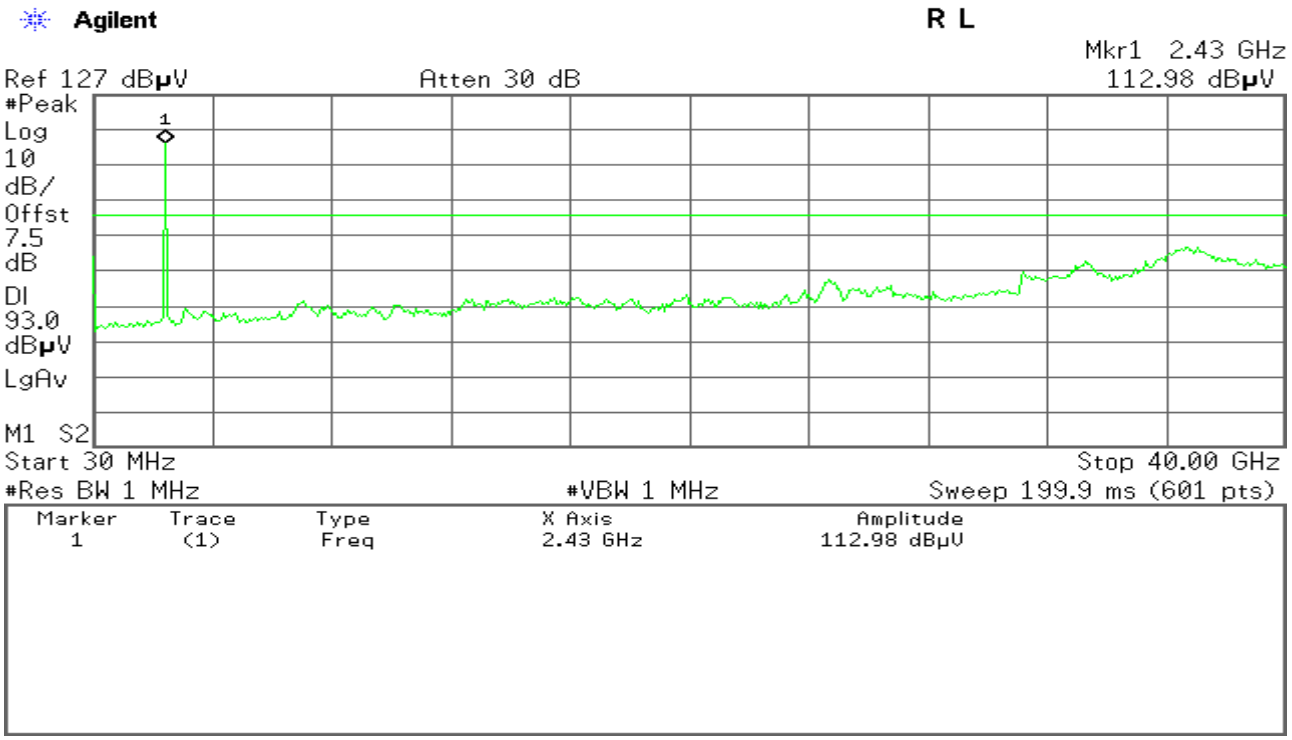


IEEE 802.11g mode

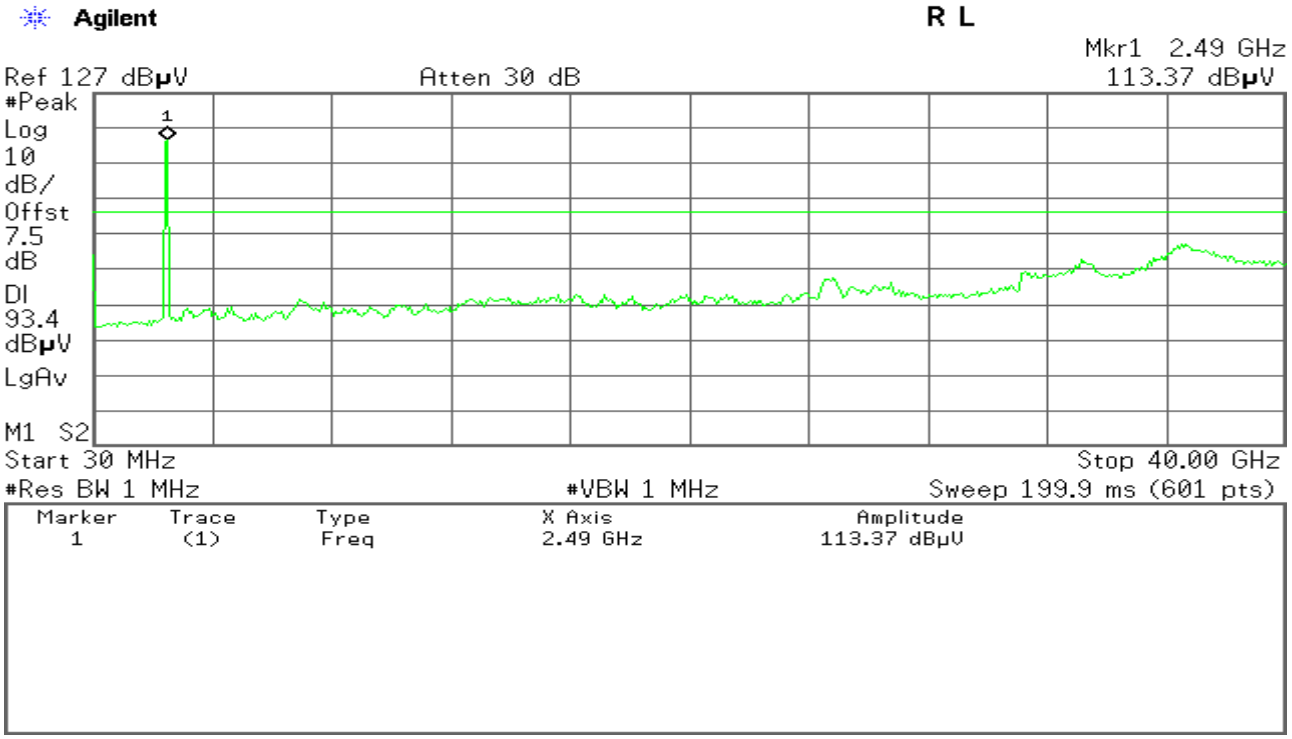
CH Low



CH Mid

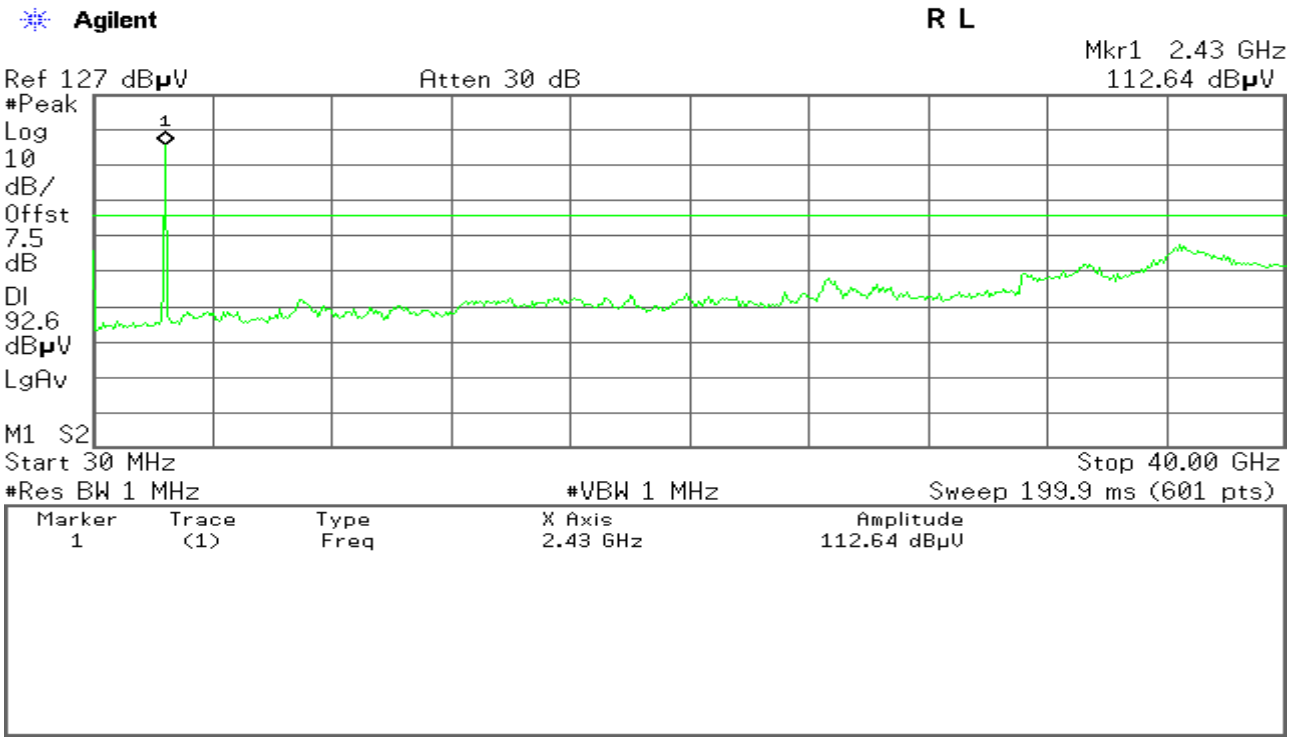


CH High

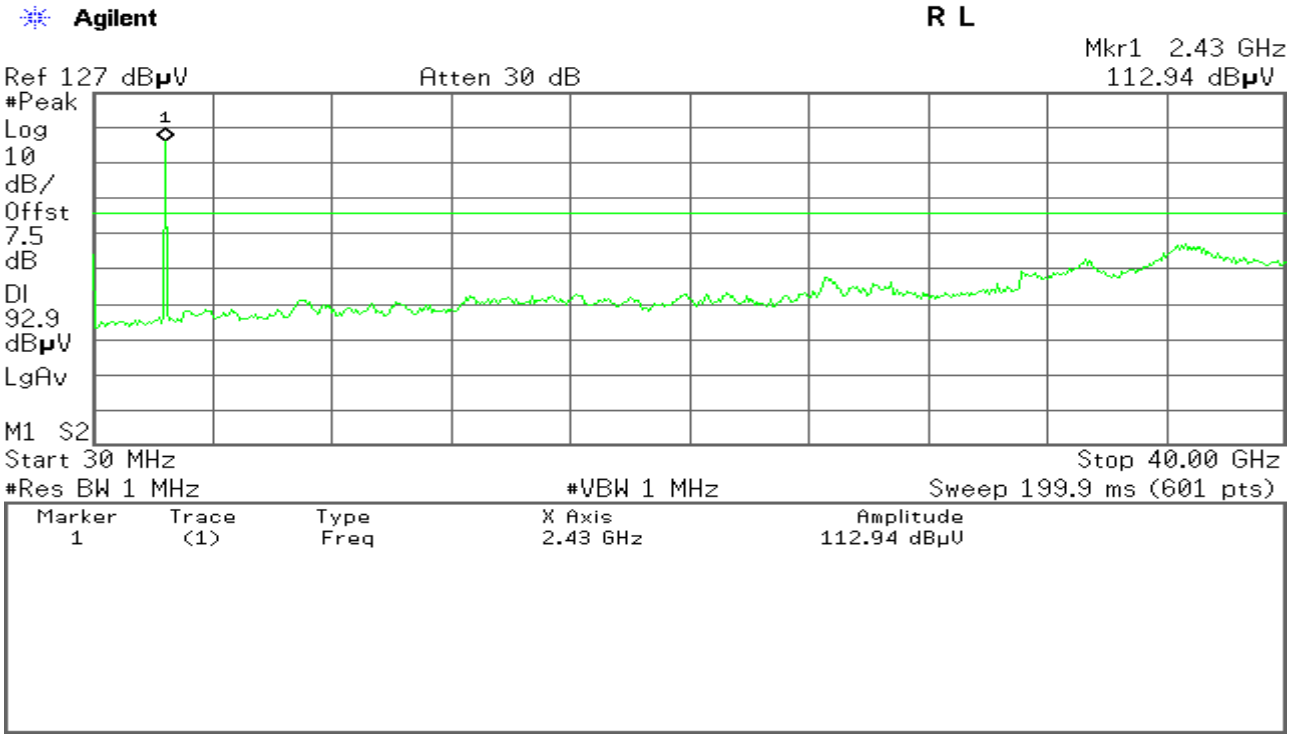


IEEE 802.11n HT20 mode

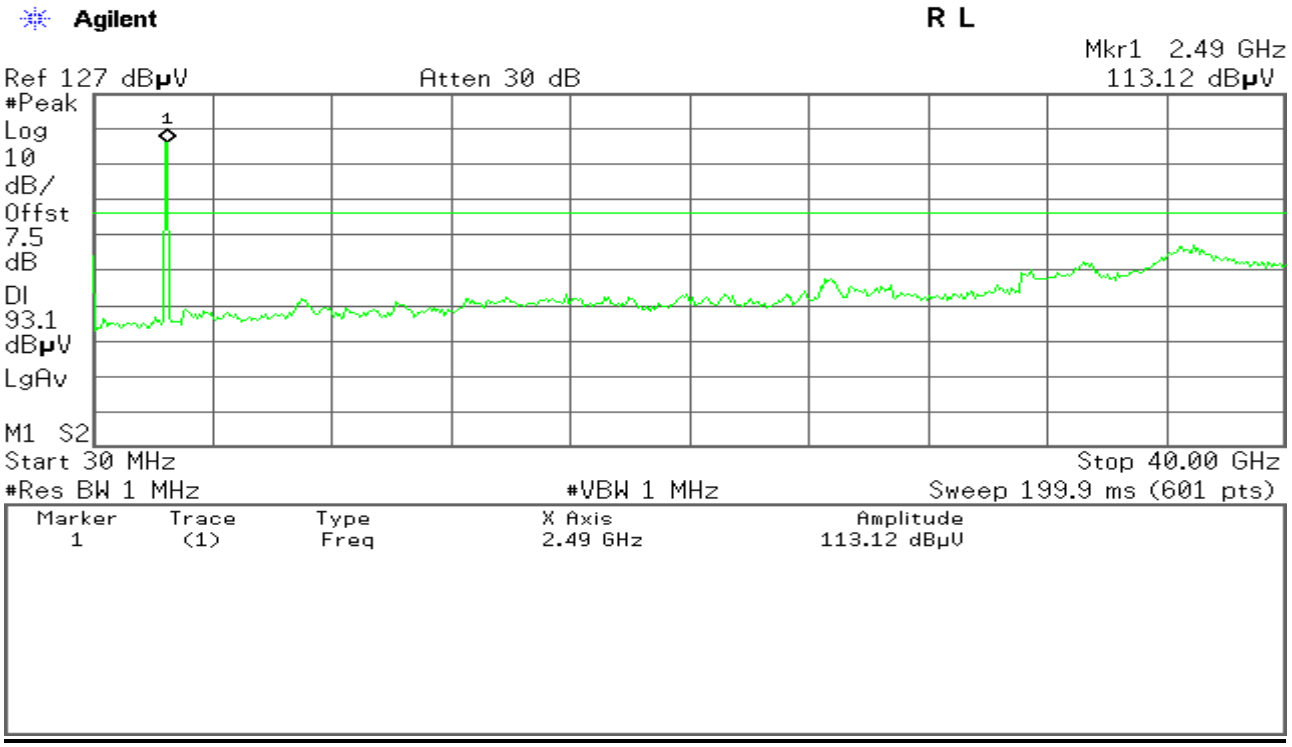
CH Low



CH Mid

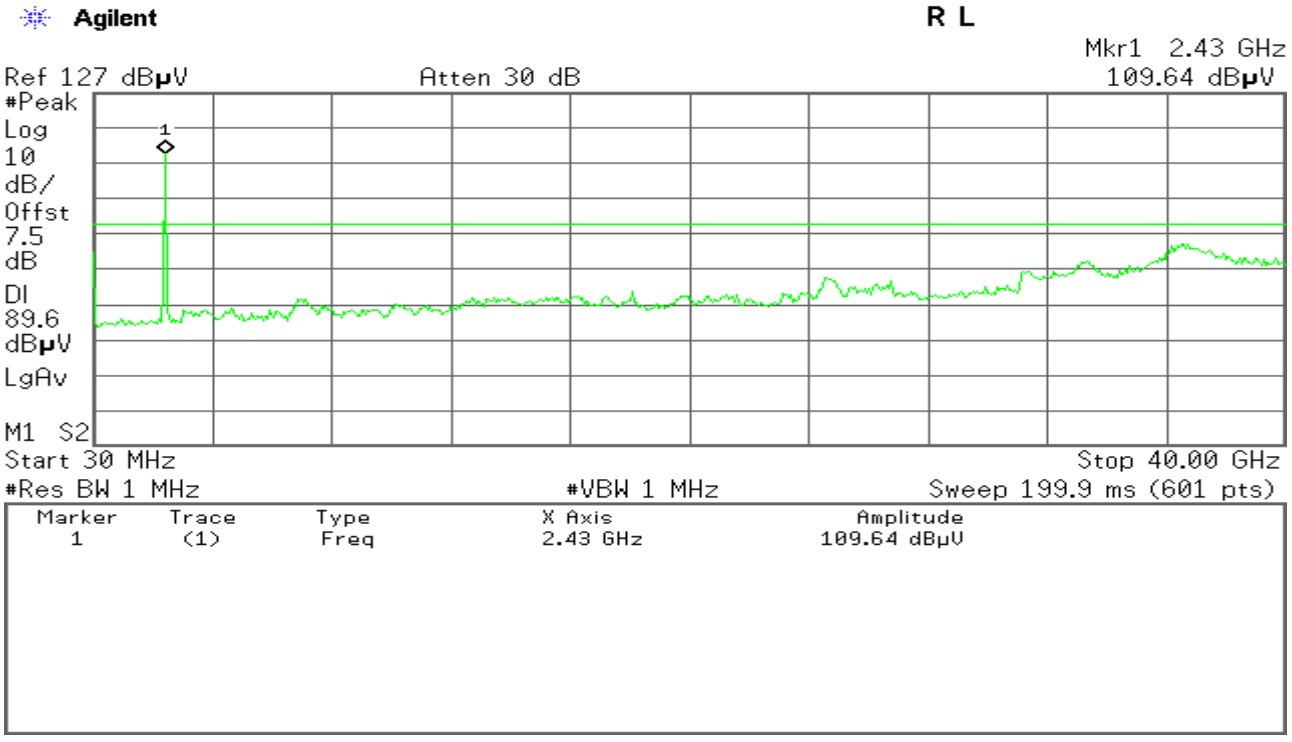


CH High

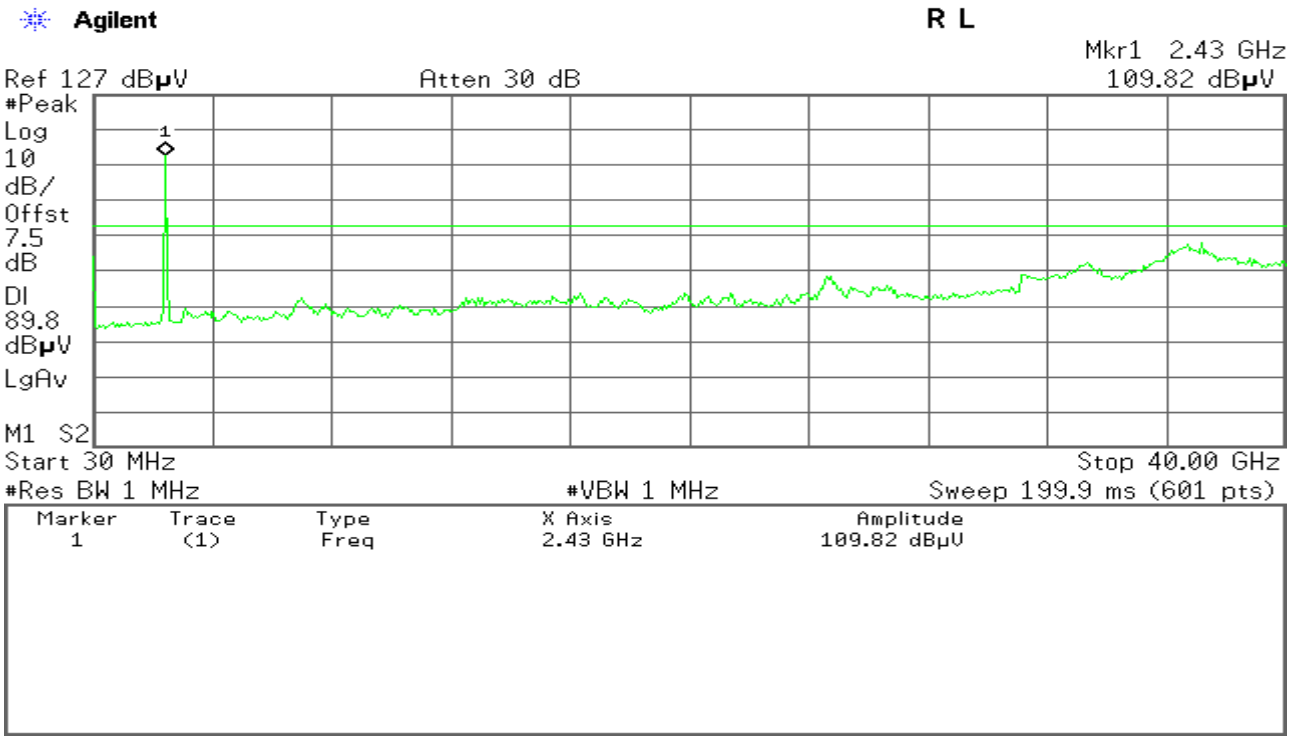


IEEE 802.11n HT40 mode

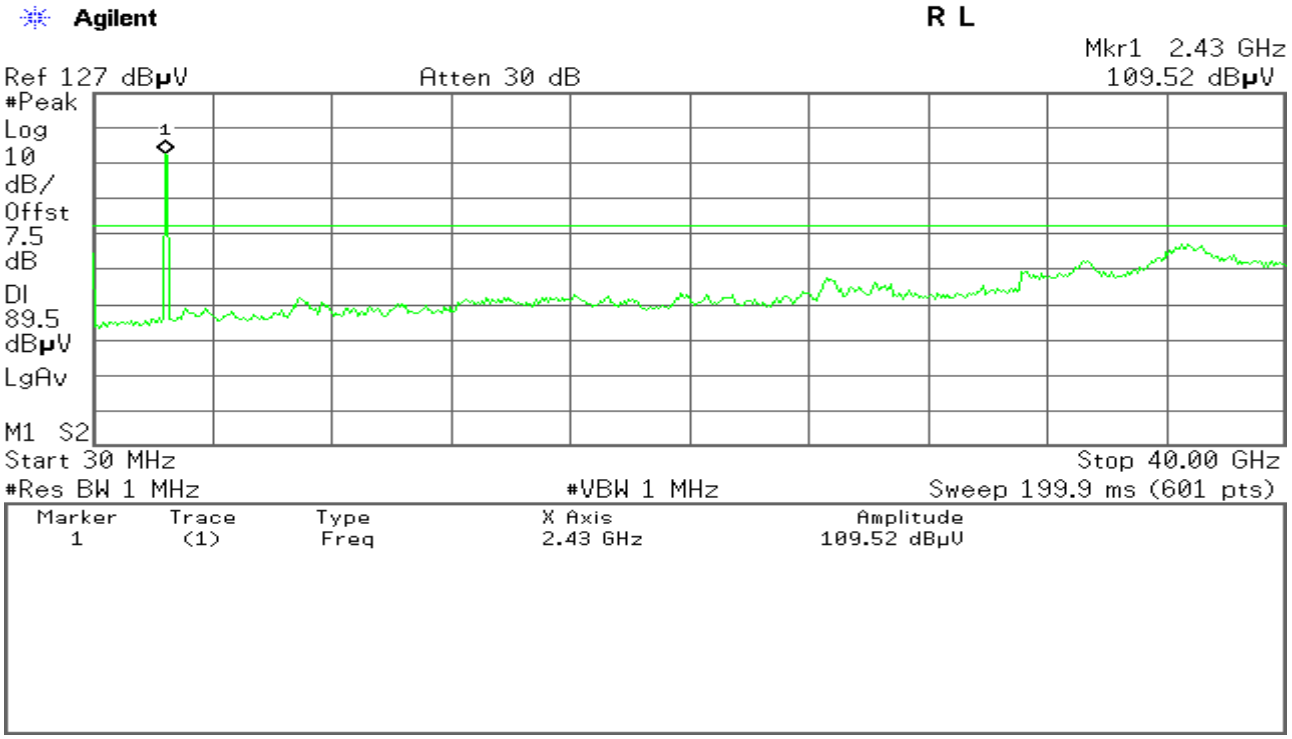
CH Low



CH Mid



CH High



7.5. RADIATED EMISSIONS

LIMIT

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 (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

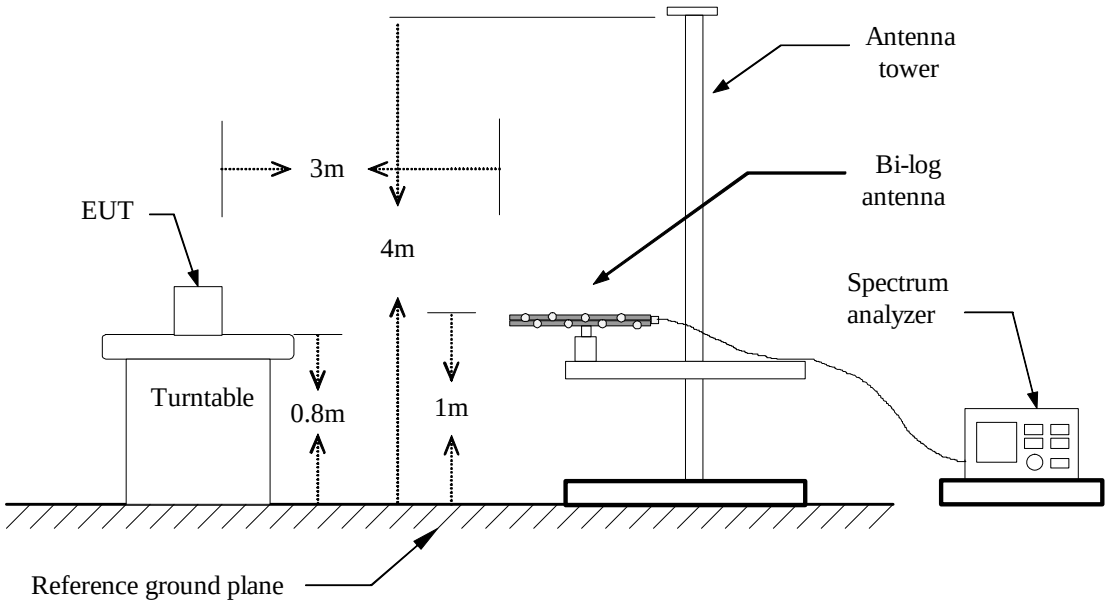
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

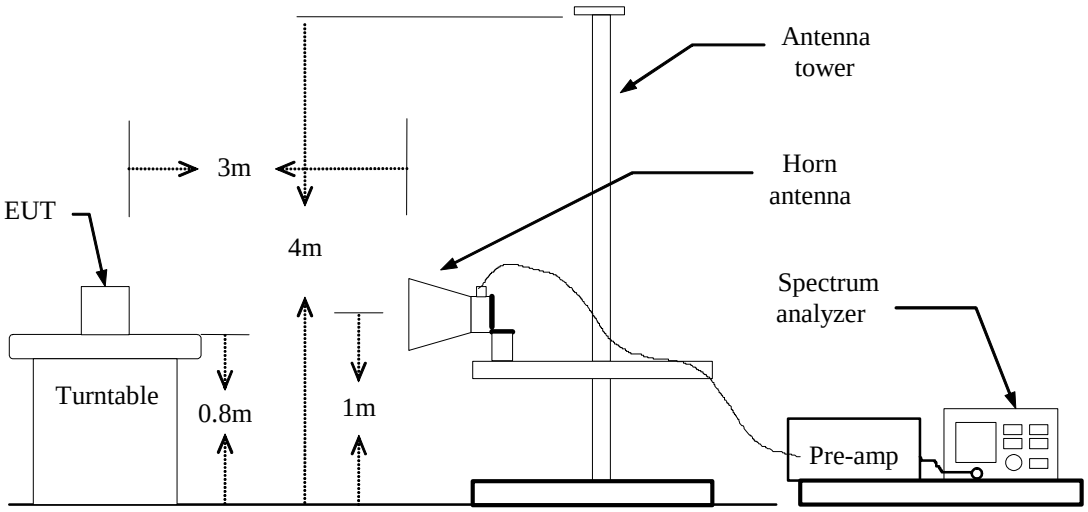
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m 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:

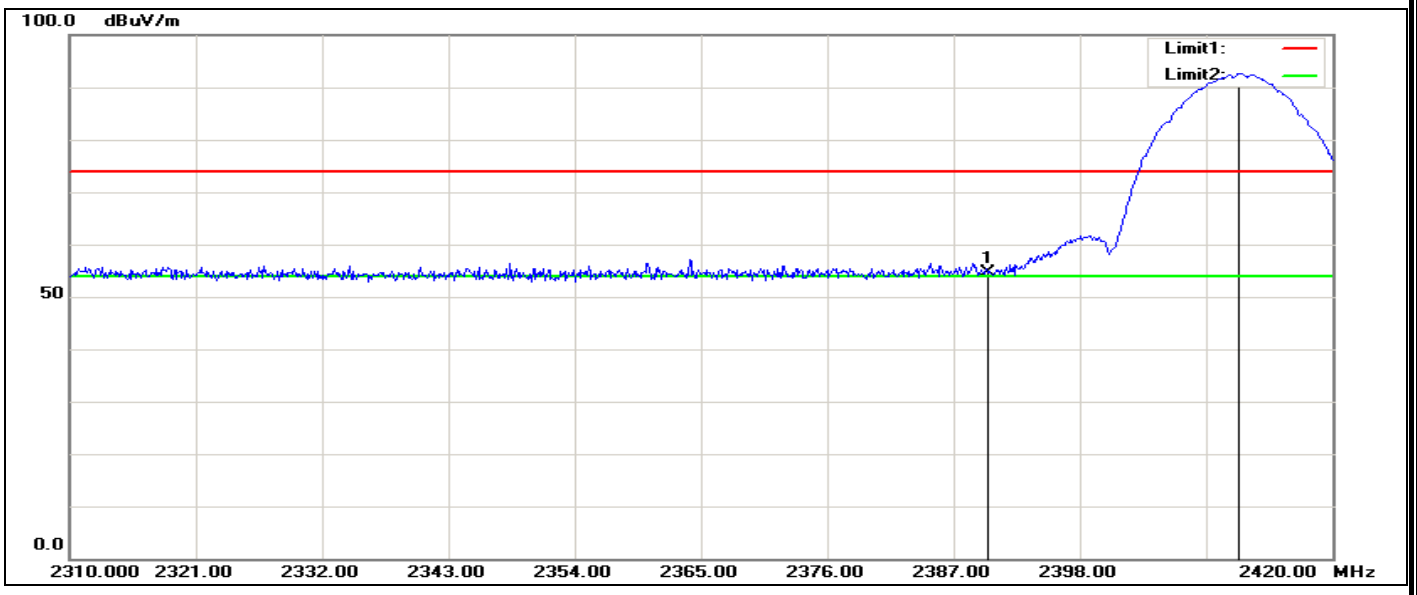
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

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

TEST RESULTS

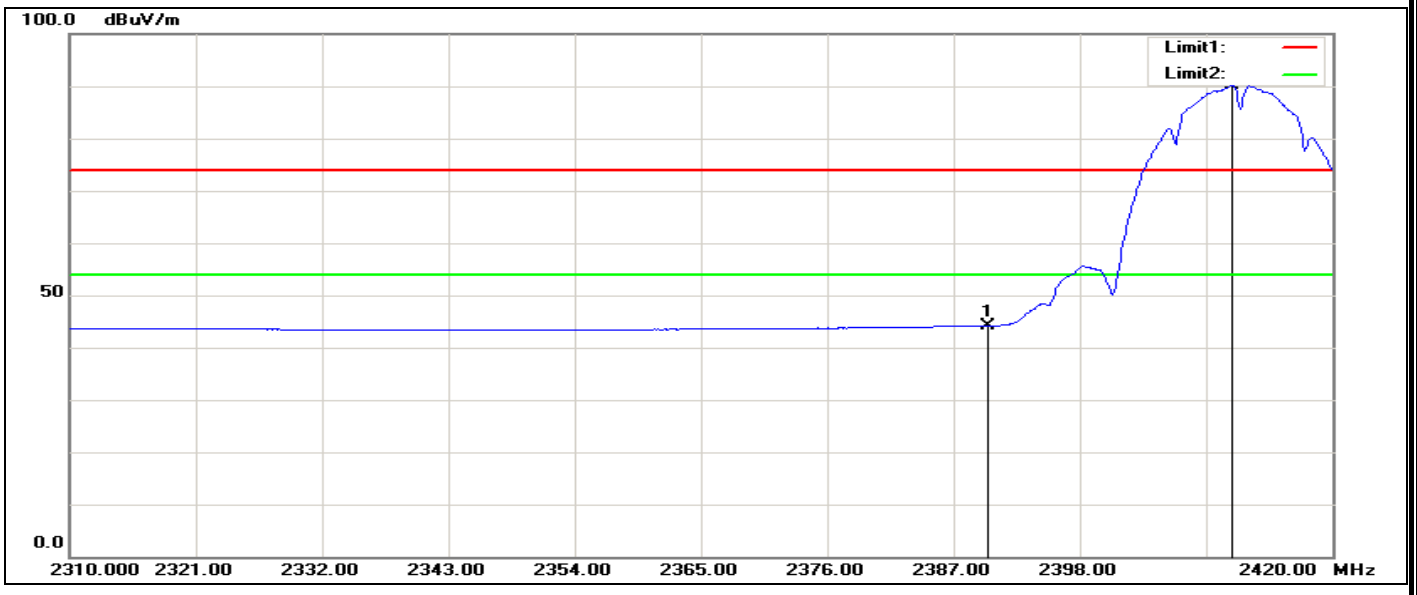
RESTRICTED BANDEDGE (b Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	23.77	30.82	54.59	74.00	-19.41	102	162	peak
2	2411.860	61.83	30.90	92.73	74.00	18.73	102	208	peak

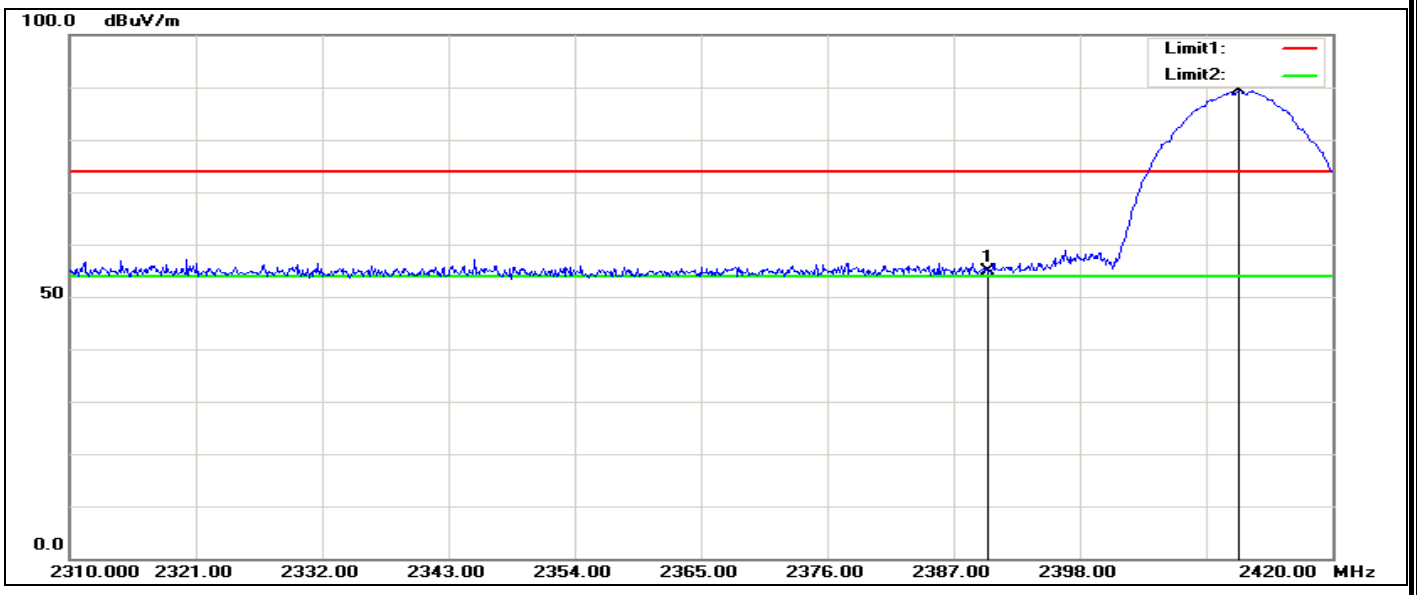
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.33	30.82	44.15	74.00	-29.85	100	191	peak
2	2411.200	59.33	30.89	90.22	74.00	16.22	100	179	peak

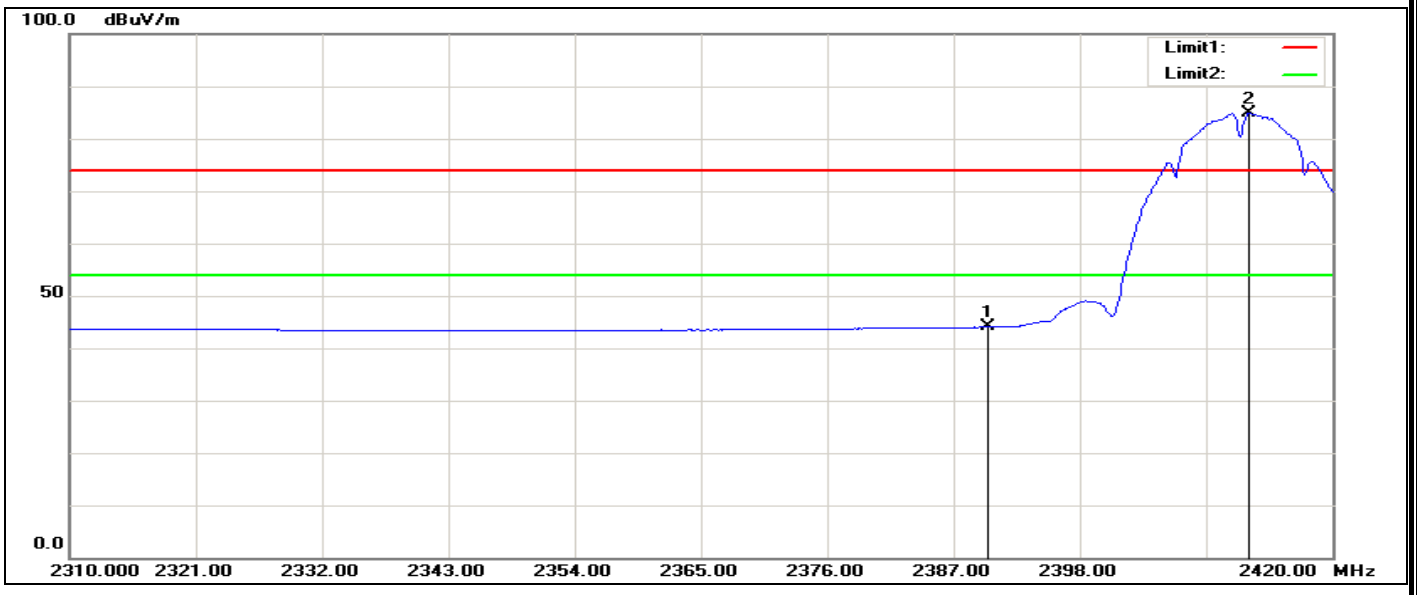
RESTRICTED BANDEDGE (b Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	24.05	30.82	54.87	74.00	-19.13	102	162	peak
2	2411.860	58.41	30.90	89.31	74.00	15.31	102	208	peak

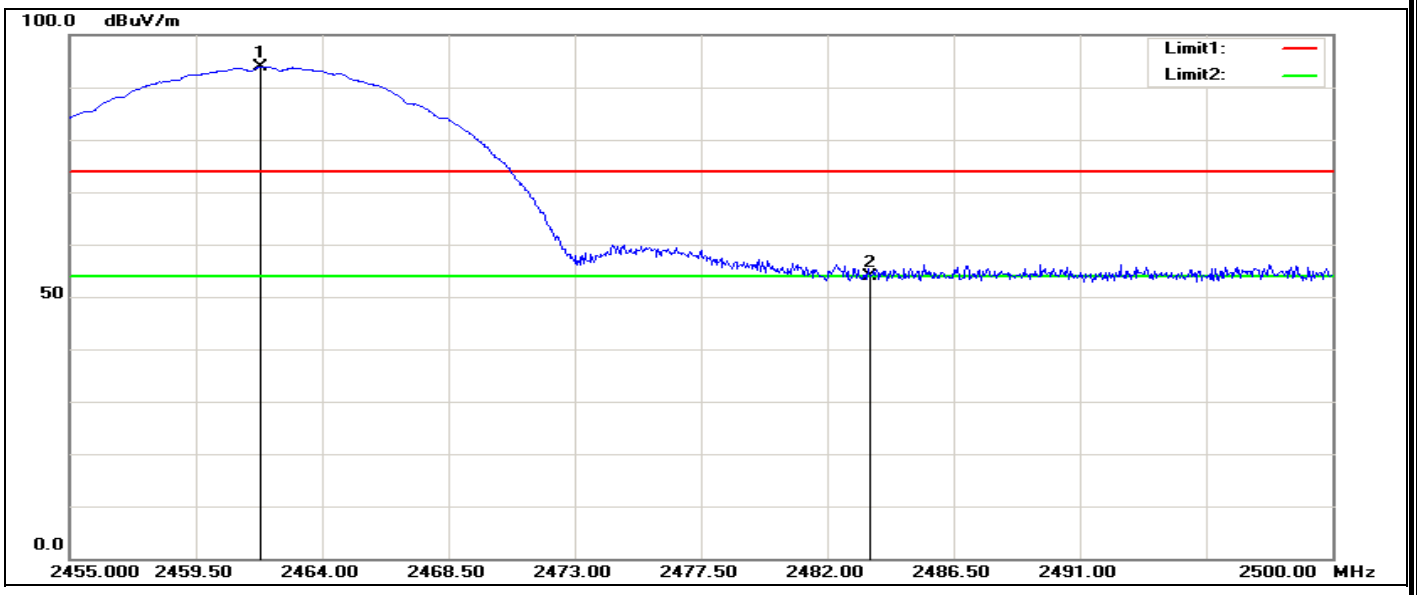
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.22	30.82	44.04	54.00	-9.96	100	188	AVG
2	2412.740	53.97	30.90	84.87	54.00	30.87	100	180	AVG

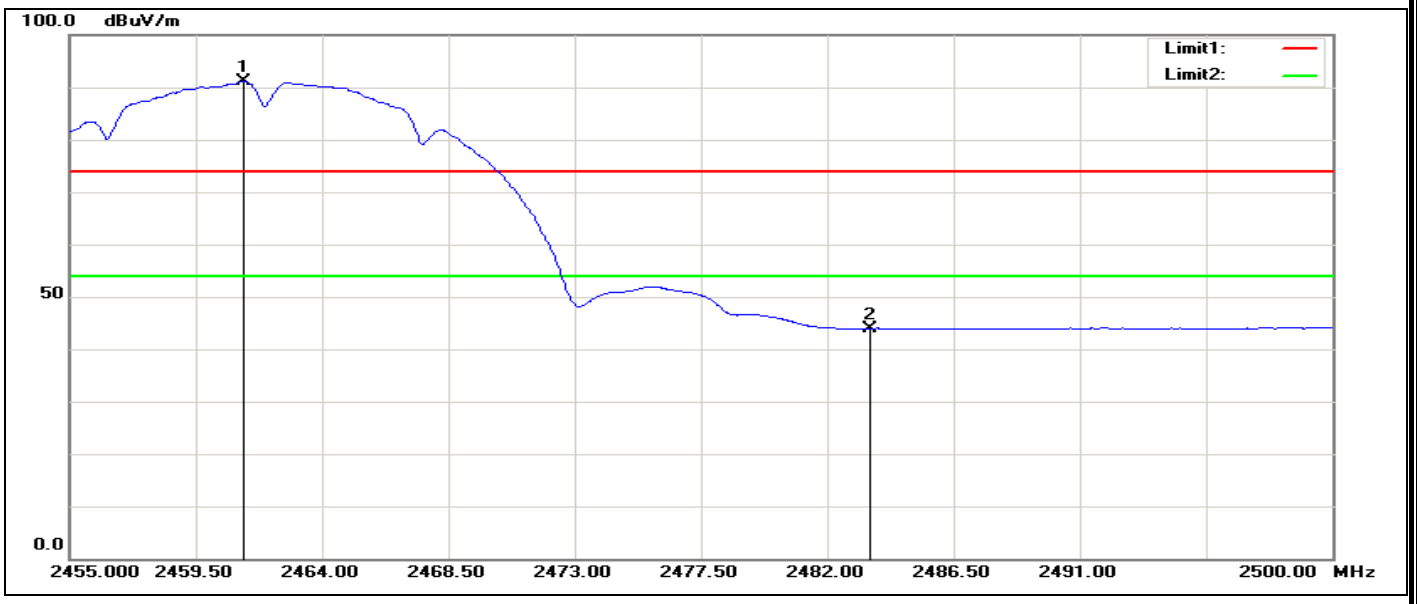
RESTRICTED BANDEDGE (b Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2461.795	62.82	31.16	93.98	74.00	19.98	100	205	peak
2	2483.500	22.52	31.27	53.79	74.00	-20.21	100	210	peak

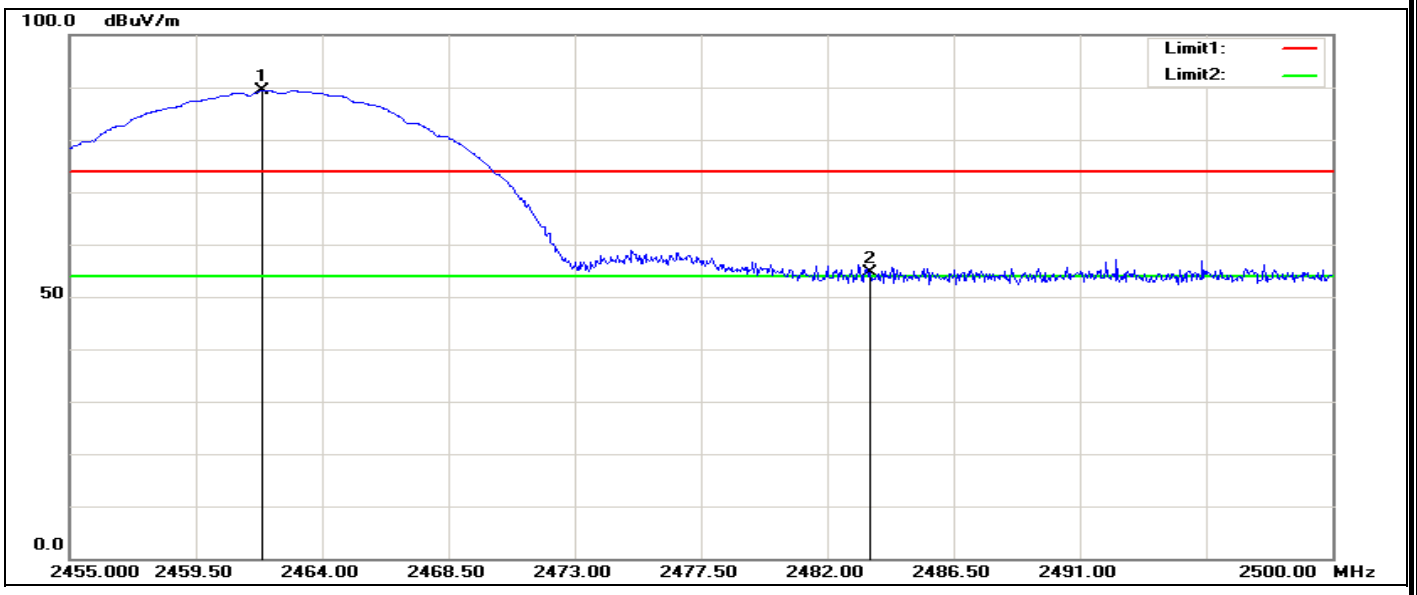
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2461.210	59.98	31.15	91.13	54.00	37.13	100	210	AVG
2	2483.500	12.70	31.27	43.97	54.00	-10.03	100	210	AVG

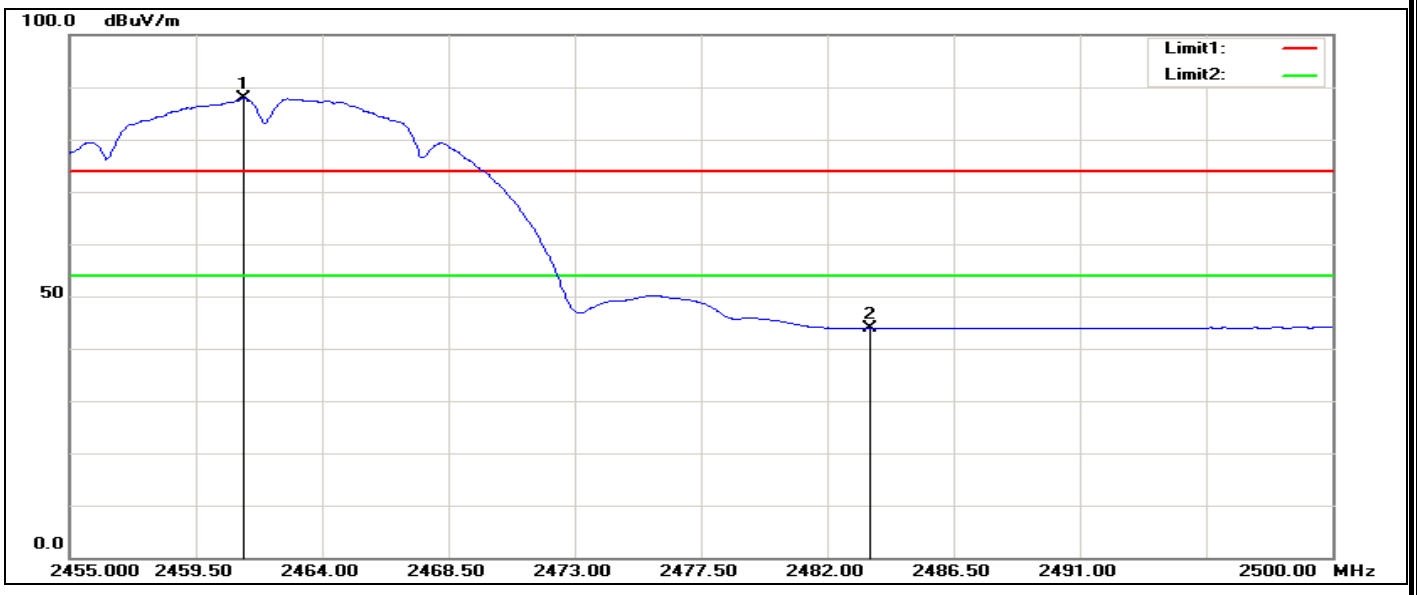
RESTRICTED BANDEDGE (b Mode, High Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2461.885	58.27	31.16	89.43	74.00	15.43	100	189	peak
2	2483.500	23.27	31.27	54.54	74.00	-19.46	100	189	peak

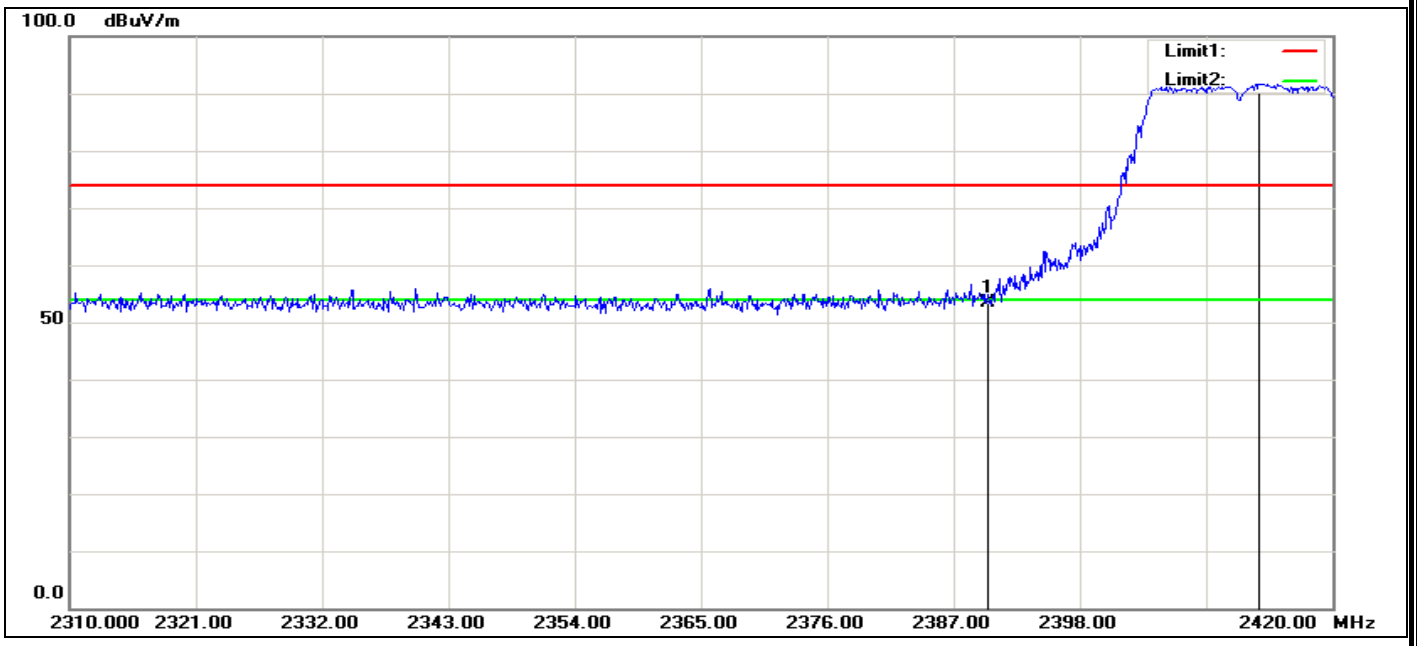
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2461.210	56.66	31.15	87.81	54.00	33.81	100	192	AVG
2	2483.500	12.62	31.27	43.89	54.00	-10.11	100	192	AVG

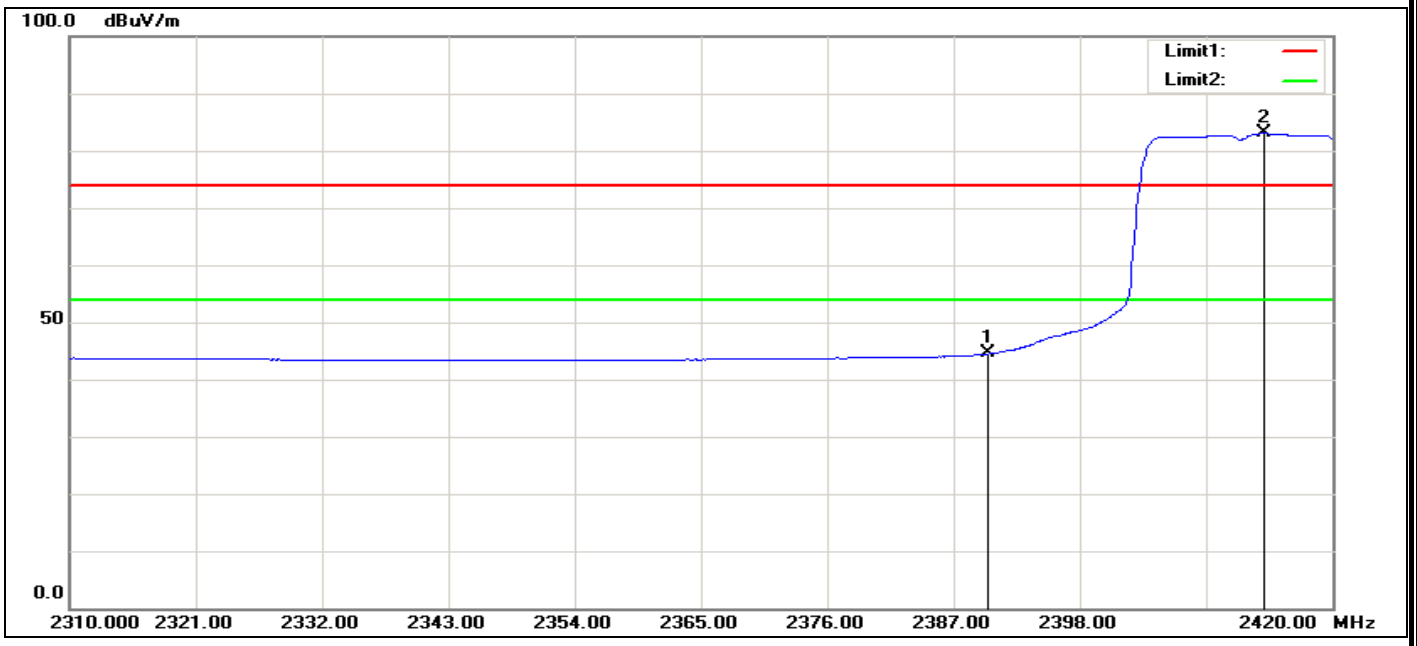
RESTRICTED BANDEDGE (g Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	22.61	30.82	53.43	74.00	-20.57	100	214	peak
2	2413.620	60.80	30.90	91.70	74.00	17.70	100	213	peak

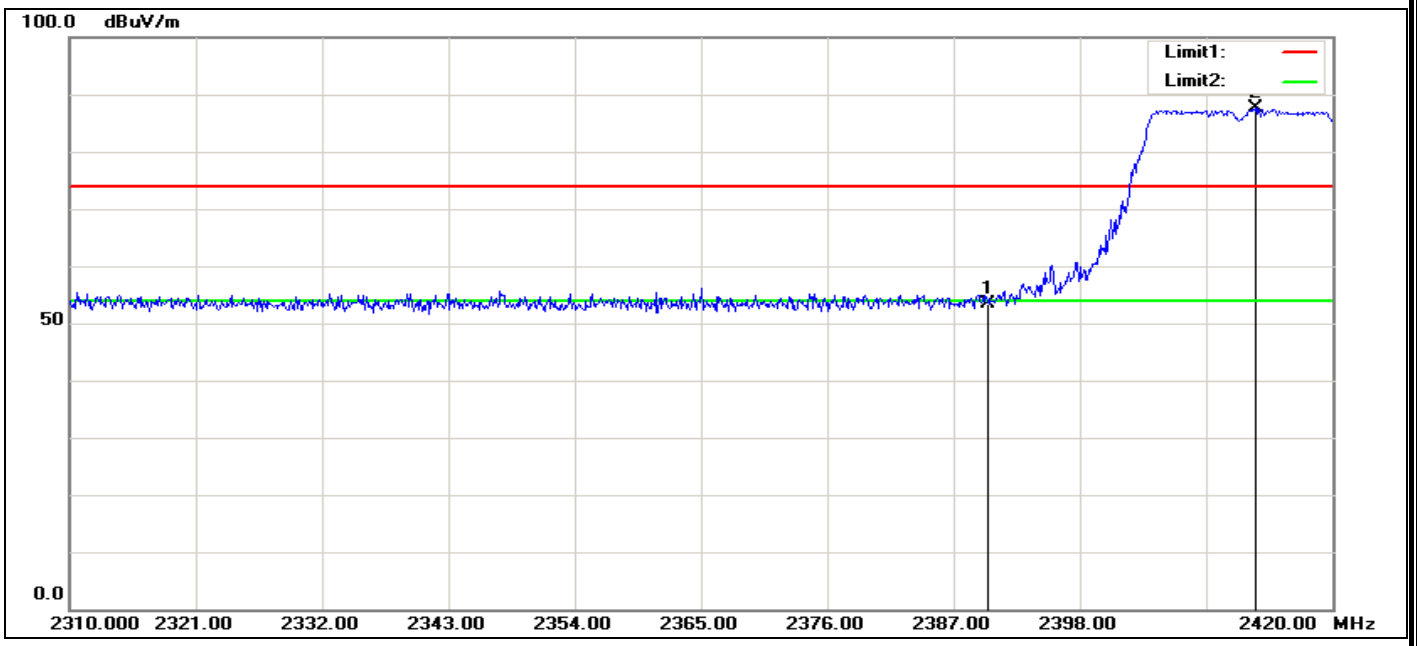
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.72	30.82	44.54	54.00	-9.46	100	213	AVG
2	2414.060	52.25	30.90	83.15	54.00	29.15	100	241	AVG

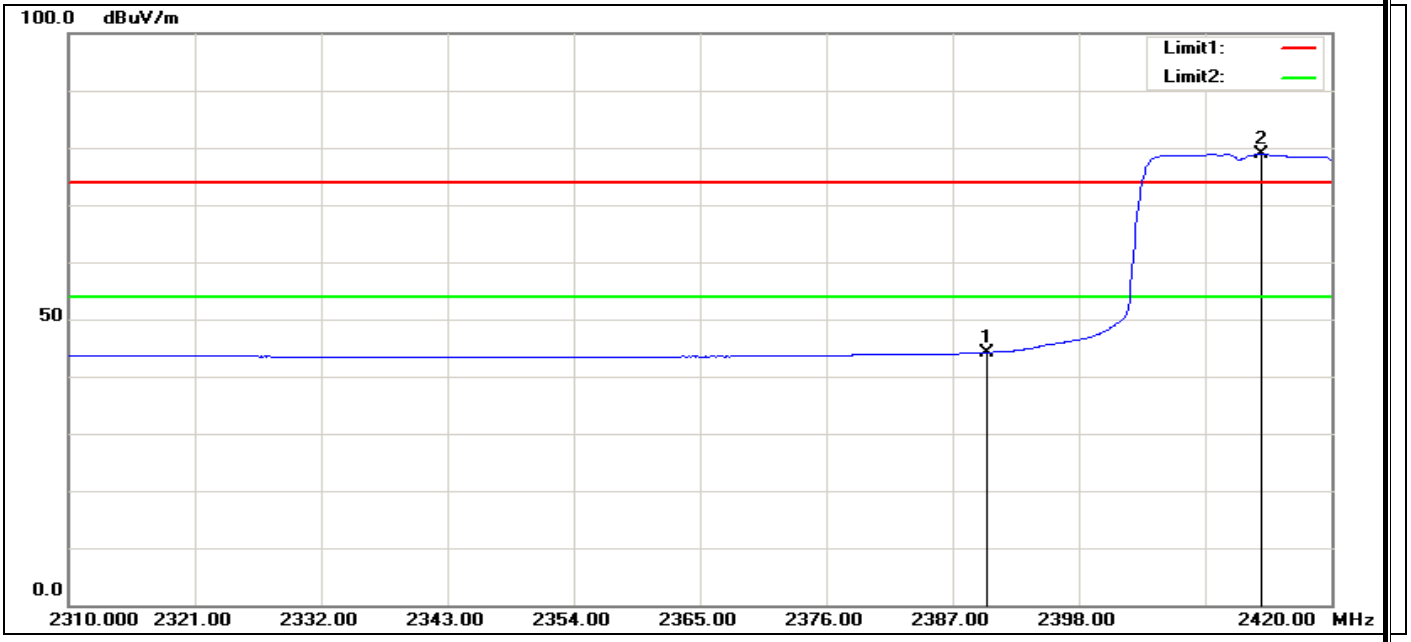
RESTRICTED BANDEDGE (g Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	22.63	30.82	53.45	74.00	-20.55	100	192	peak
2	2413.290	56.73	30.90	87.63	74.00	13.63	100	191	peak

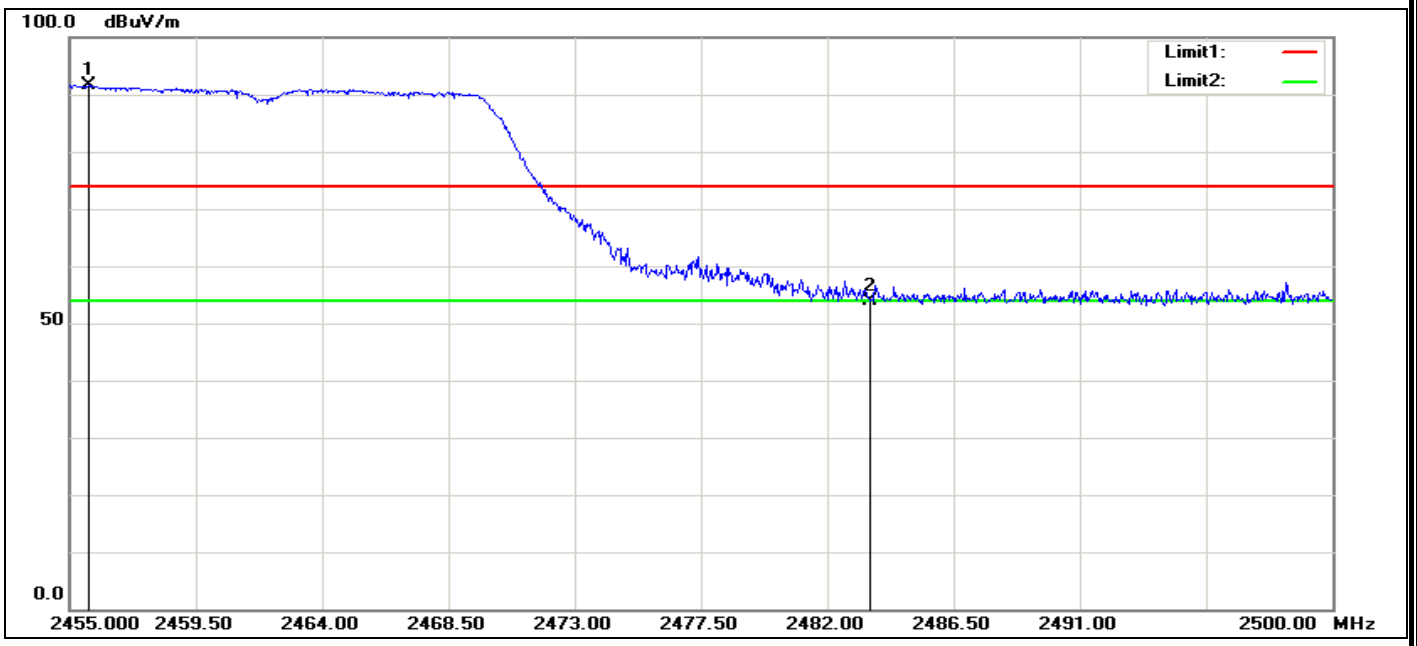
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.37	30.82	44.19	54.00	-9.81	100	193	AVG
2	2413.950	48.10	30.90	79.00	54.00	25.00	100	191	AVG

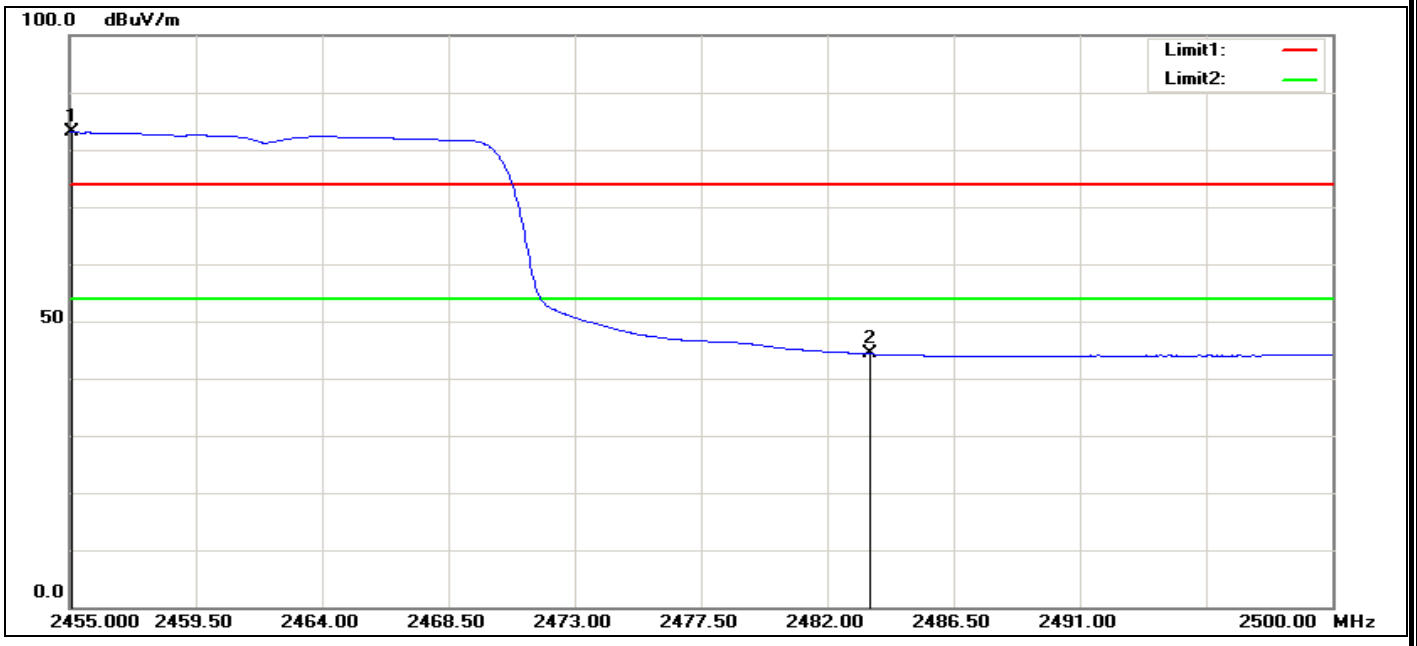
RESTRICTED BANDEDGE (g Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2455.675	60.48	31.13	91.61	74.00	17.61	100	211	peak
2	2483.500	22.68	31.27	53.95	74.00	-20.05	100	212	peak

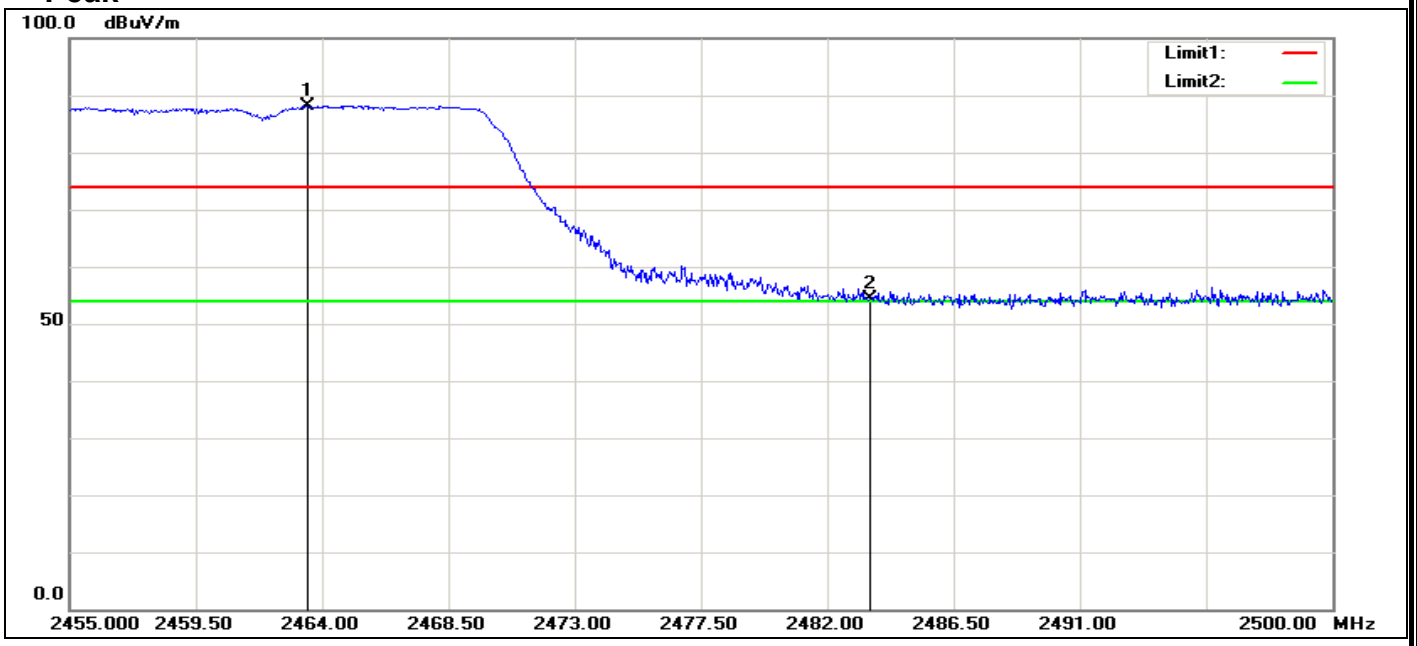
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2455.090	51.90	31.13	83.03	54.00	29.03	100	211	AVG
2	2483.500	13.03	31.27	44.30	54.00	-9.70	100	210	AVG

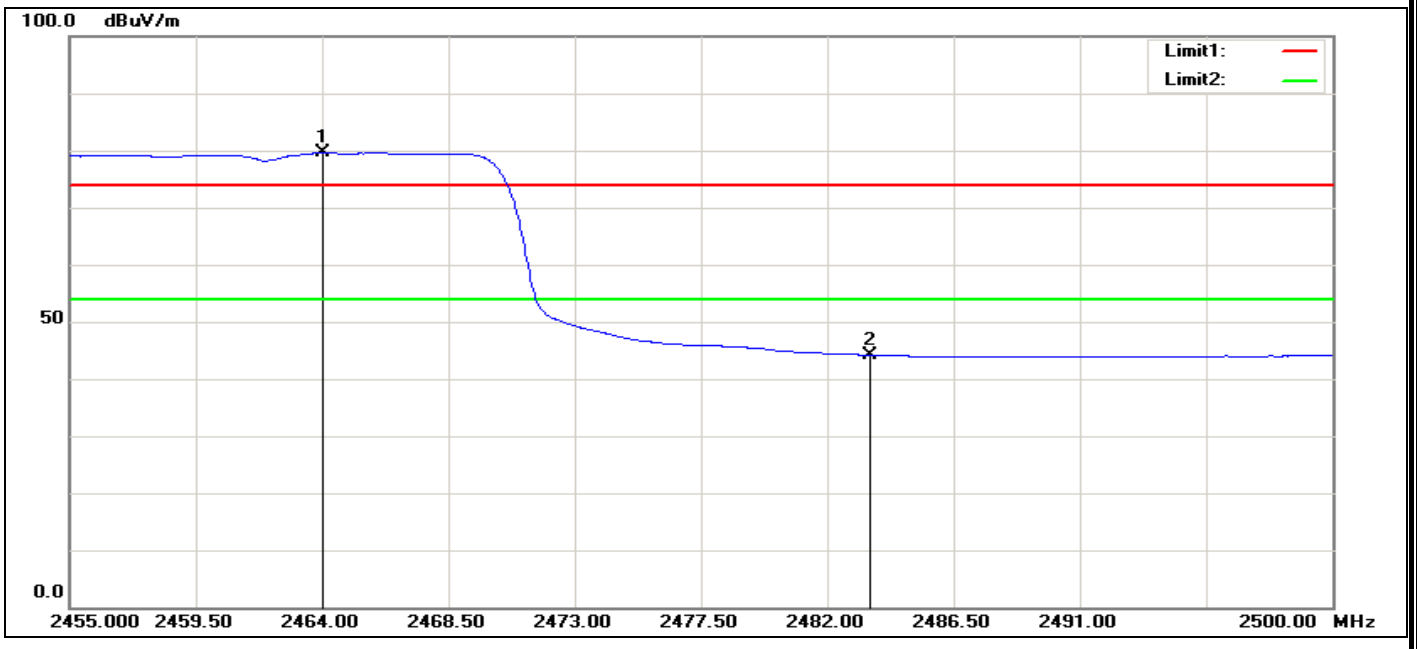
RESTRICTED BANDEDGE (g Mode, High Channel, Vertical)

Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2463.460	57.07	31.17	88.24	74.00	14.24	100	192	peak
2	2483.500	23.14	31.27	54.41	74.00	-19.59	100	192	peak

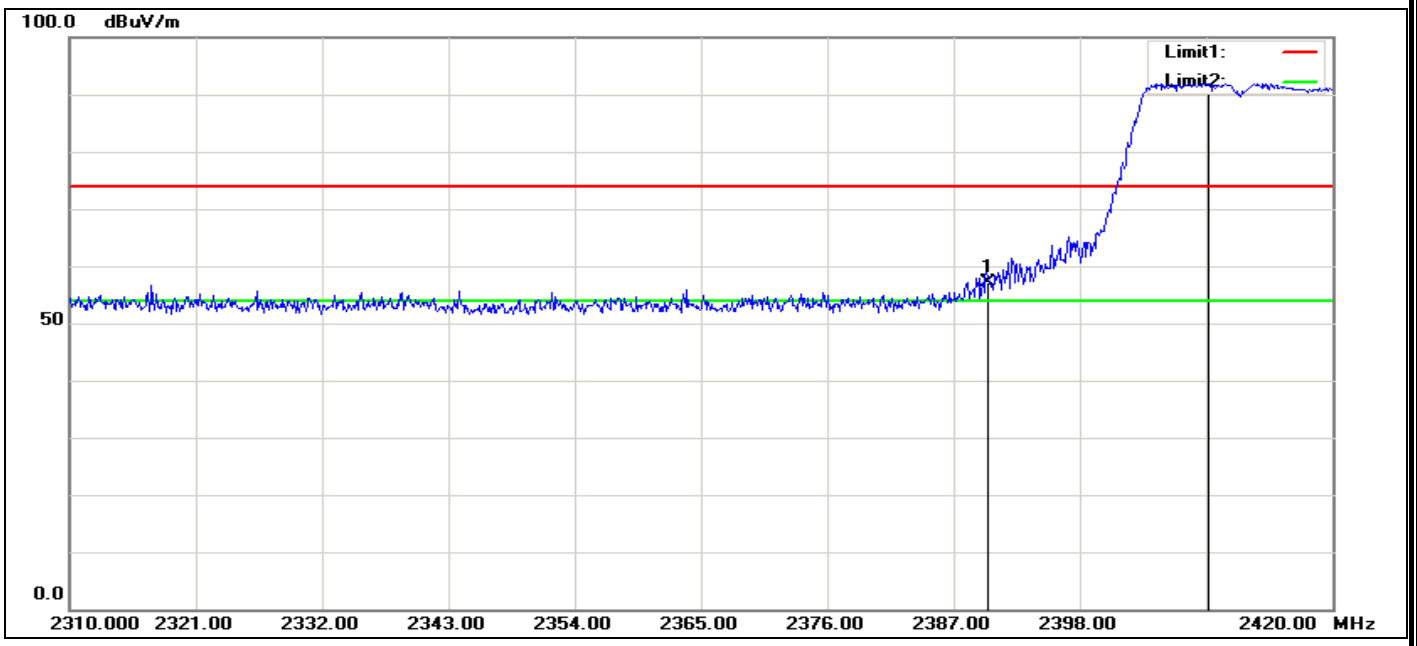
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2464.000	48.49	31.17	79.66	54.00	25.66	100	193	AVG
2	2483.500	12.91	31.27	44.18	54.00	-9.82	100	189	AVG

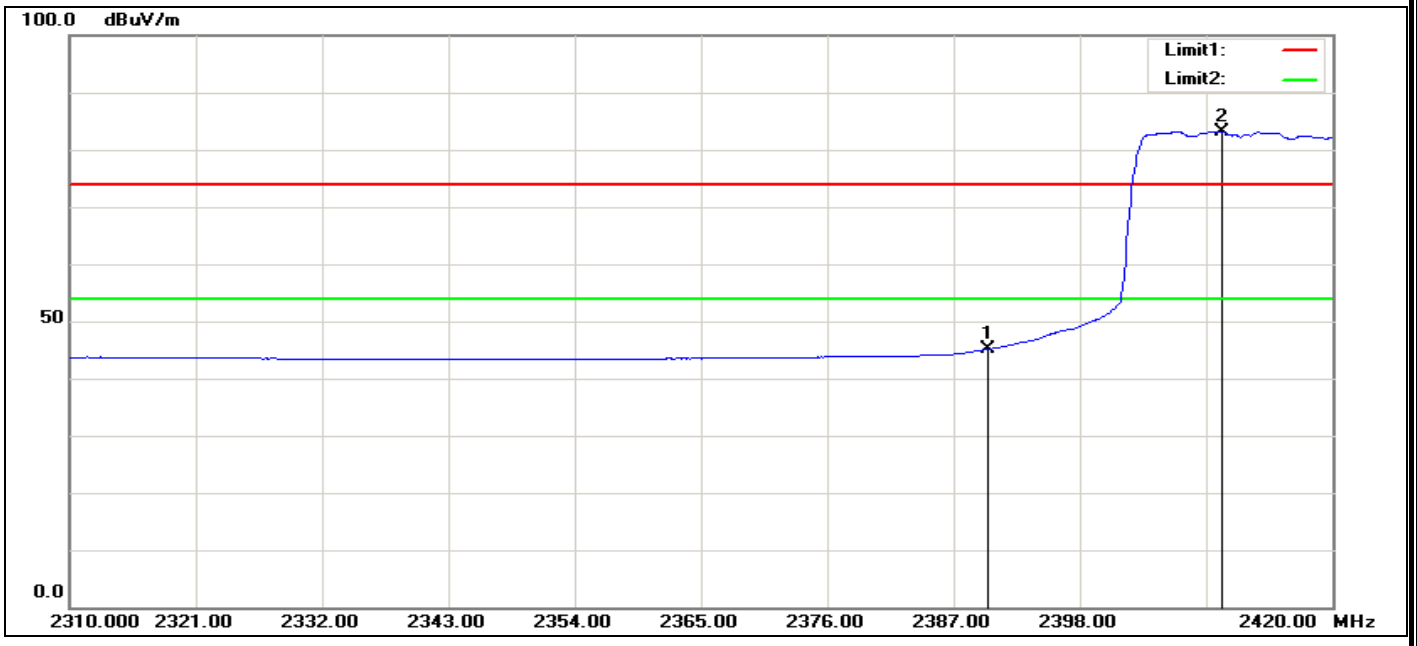
RESTRICTED BANDEDGE (HT20 Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	26.34	30.82	57.16	74.00	-16.84	100	199	peak
2	2409.220	61.10	30.88	91.98	74.00	17.98	100	199	peak

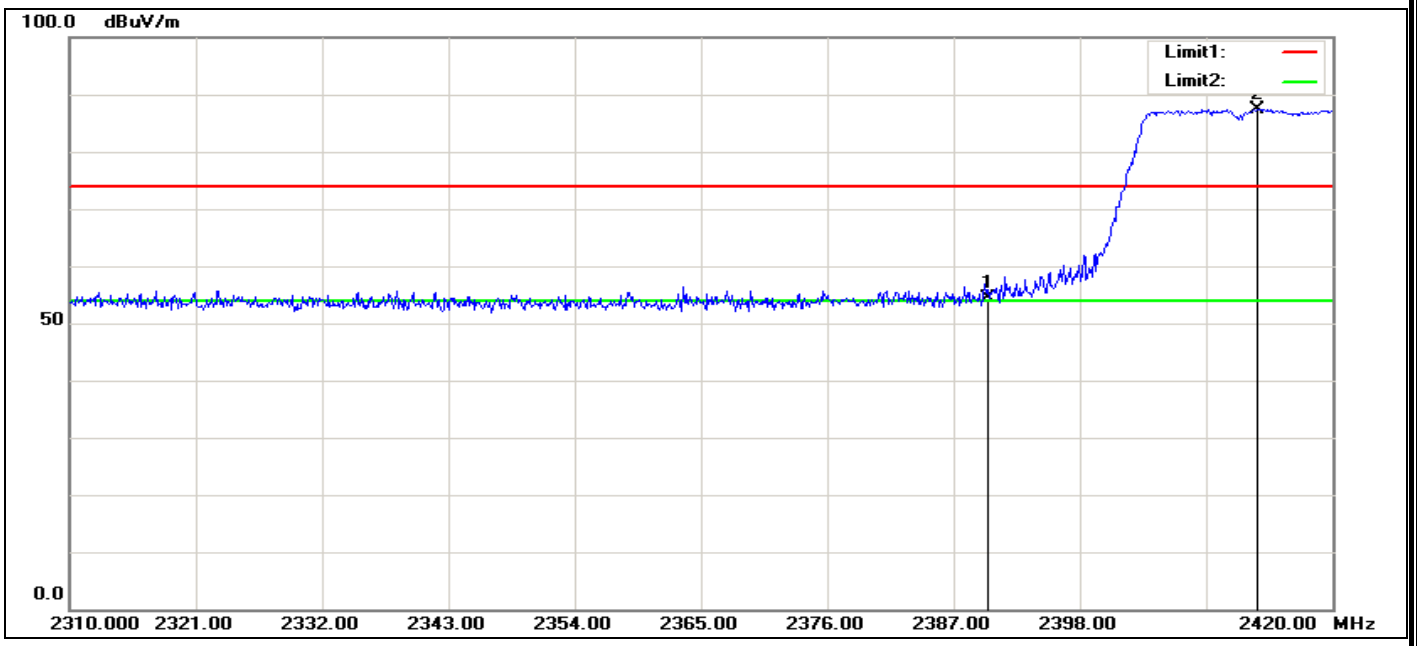
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	14.33	30.82	45.15	74.00	-28.85	100	198	peak
2	2410.320	52.20	30.88	83.08	74.00	9.08	100	197	peak

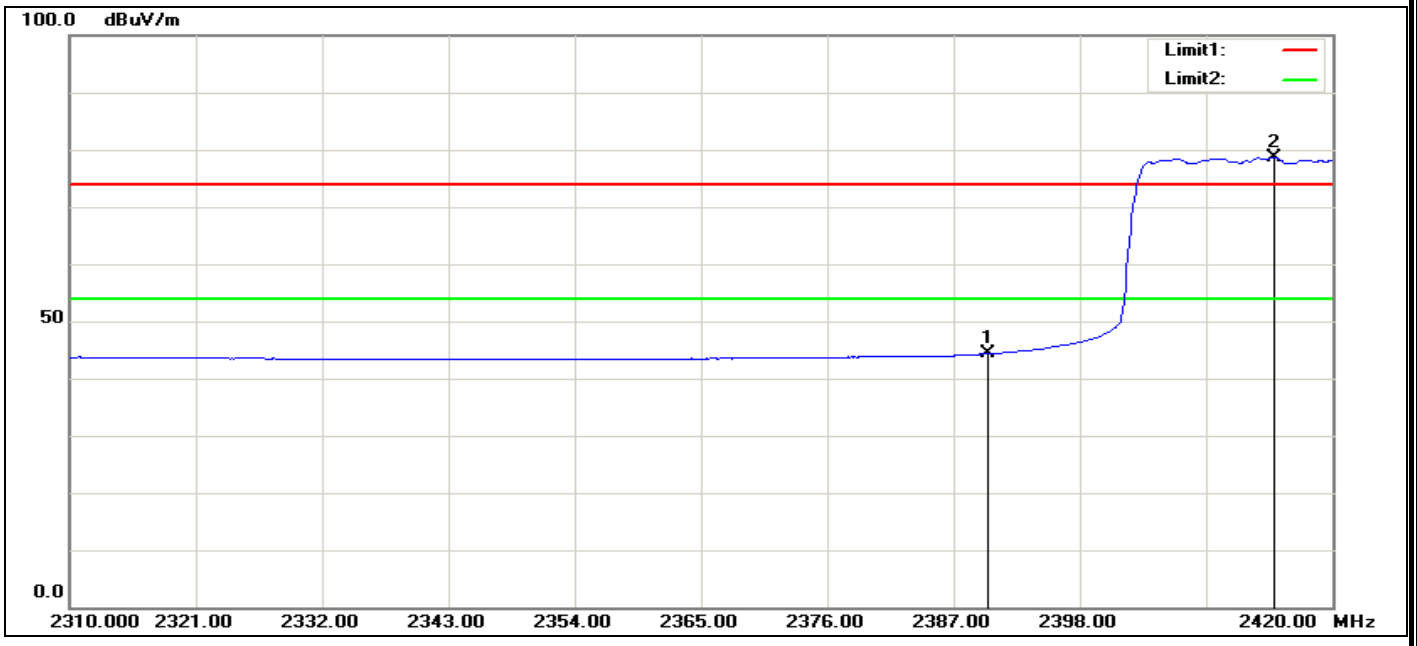
RESTRICTED BANDEDGE (HT20 Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	23.55	30.82	54.37	74.00	-19.63	100	193	peak
2	2413.510	56.59	30.90	87.49	74.00	13.49	100	192	peak

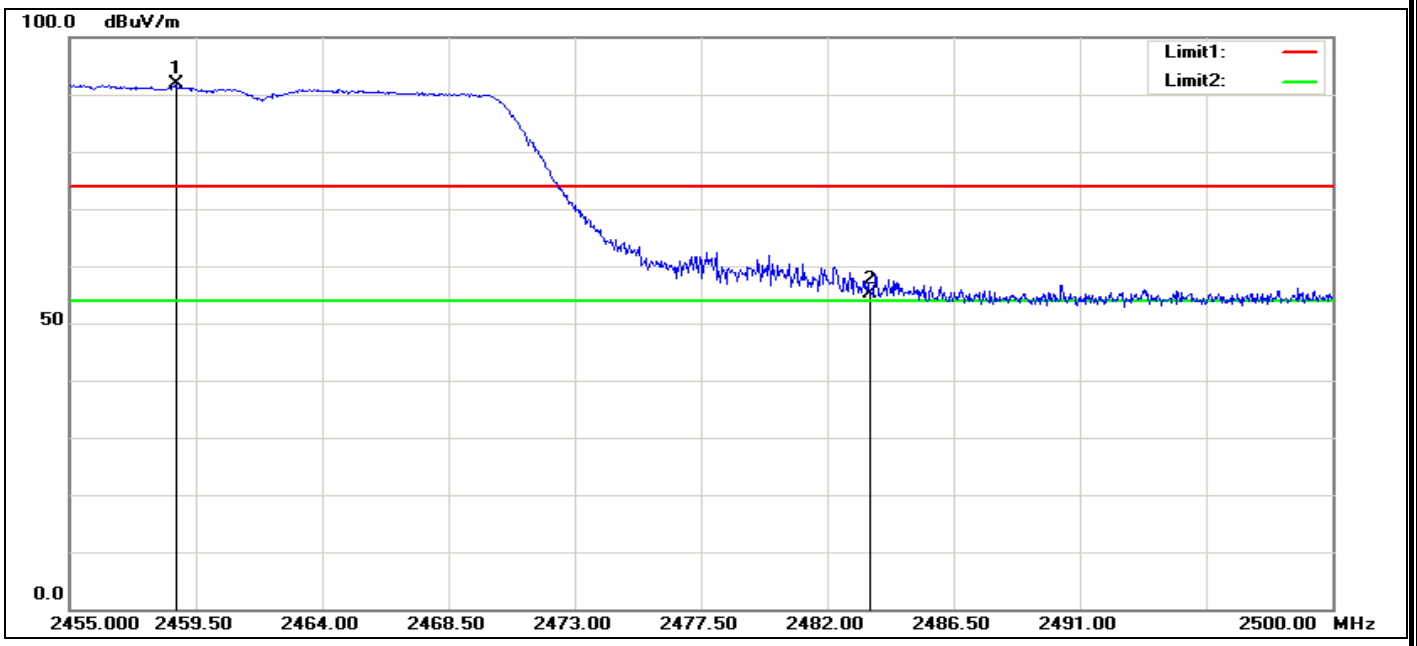
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.53	30.82	44.35	54.00	-9.65	100	190	AVG
2	2414.940	47.65	30.90	78.55	54.00	24.55	100	194	AVG

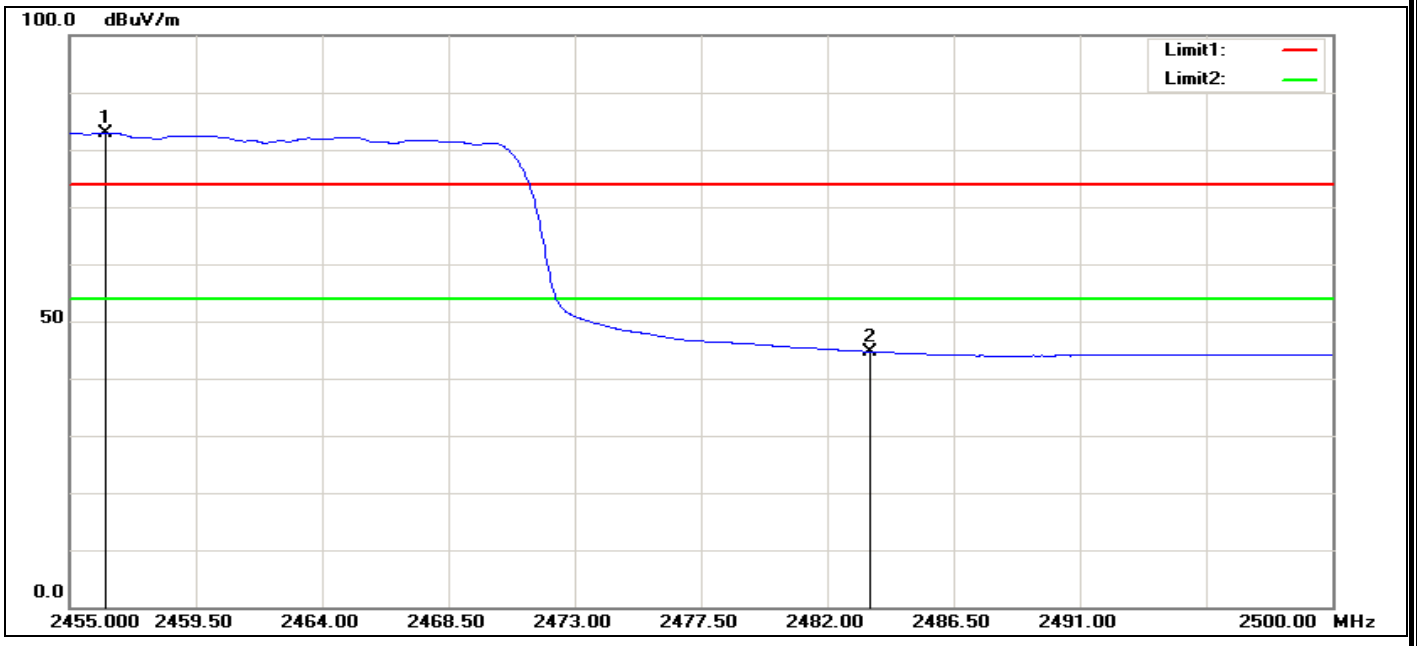
RESTRICTED BANDEDGE (HT20 Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2458.780	60.76	31.15	91.91	74.00	17.91	100	209	peak
2	2483.500	23.95	31.27	55.22	74.00	-18.78	100	210	peak

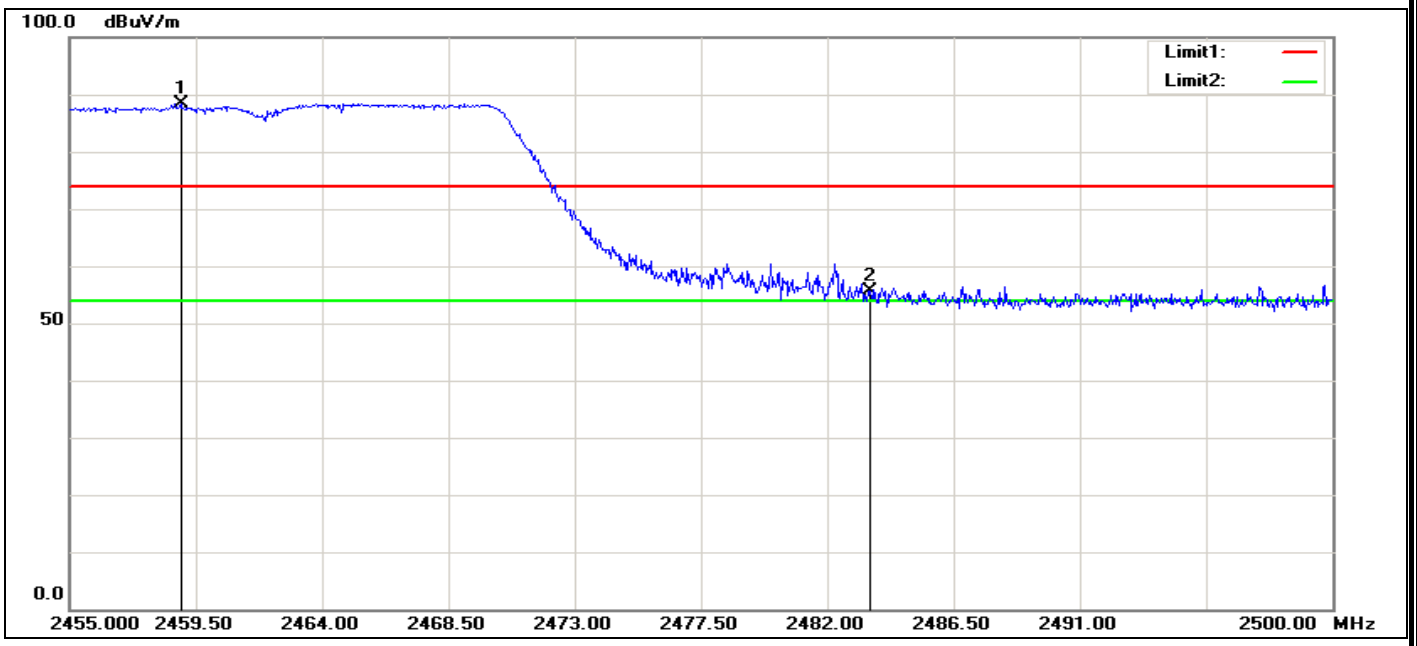
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2456.305	51.74	31.13	82.87	54.00	28.87	100	209	AVG
2	2483.500	13.41	31.27	44.68	54.00	-9.32	100	207	AVG

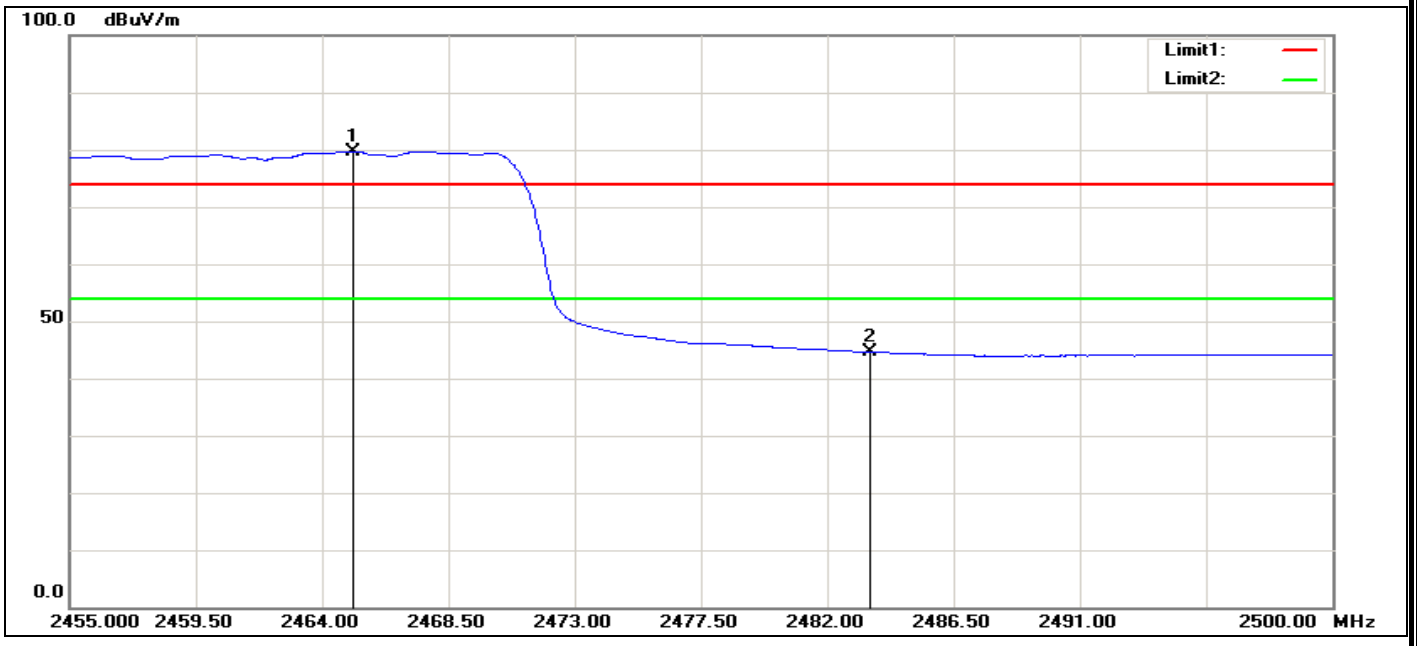
RESTRICTED BANDEDGE (HT20 Mode, High Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2458.960	57.34	31.15	88.49	74.00	14.49	100	190	peak
2	2483.500	24.43	31.27	55.70	74.00	-18.30	100	191	peak

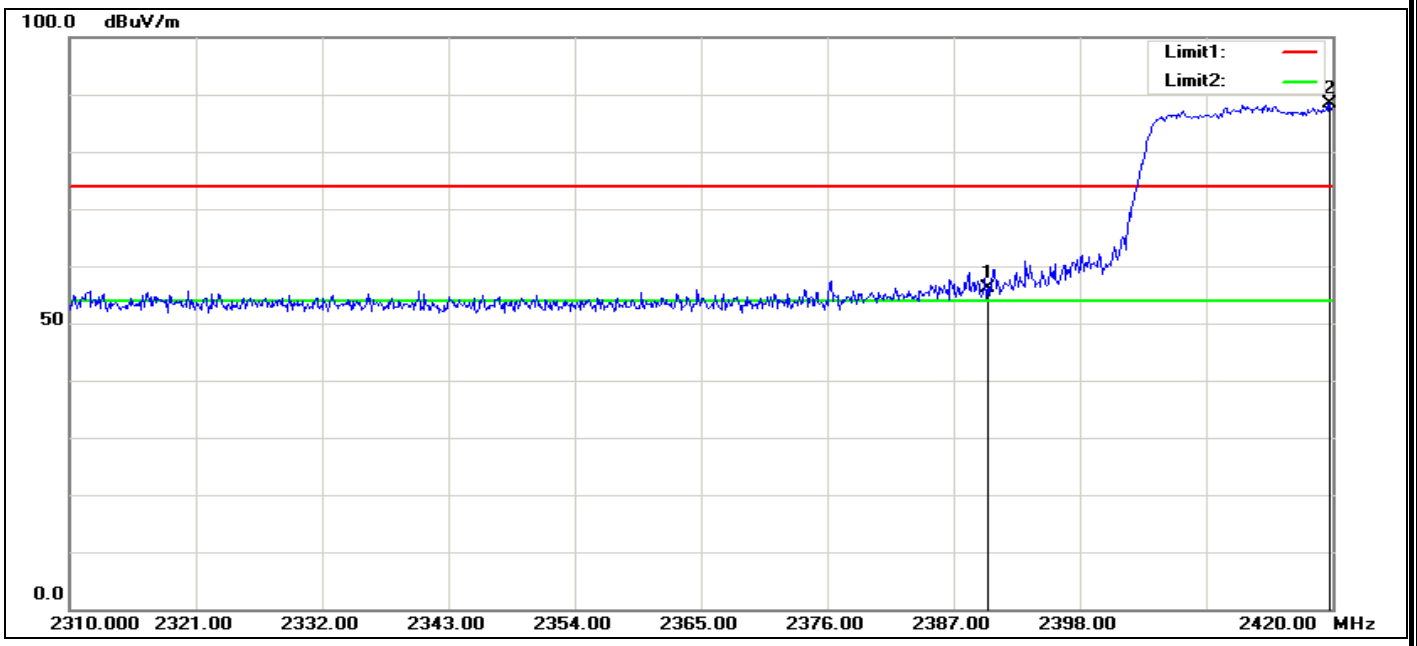
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2465.080	48.56	31.18	79.74	54.00	25.74	100	190	AVG
2	2483.500	13.35	31.27	44.62	54.00	-9.38	100	190	AVG

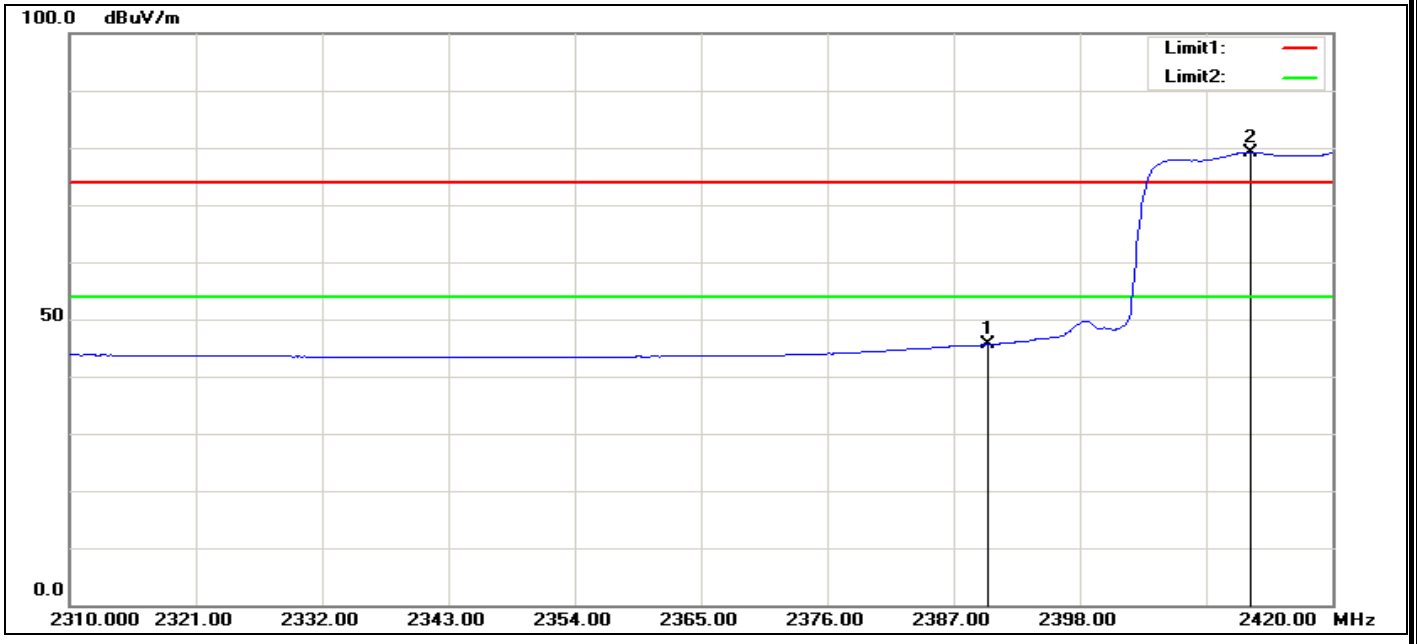
RESTRICTED BANDEDGE (HT40 Mode, Low Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	25.39	30.82	56.21	74.00	-17.79	100	207	peak
2	2419.780	57.51	30.94	88.45	74.00	14.45	100	208	peak

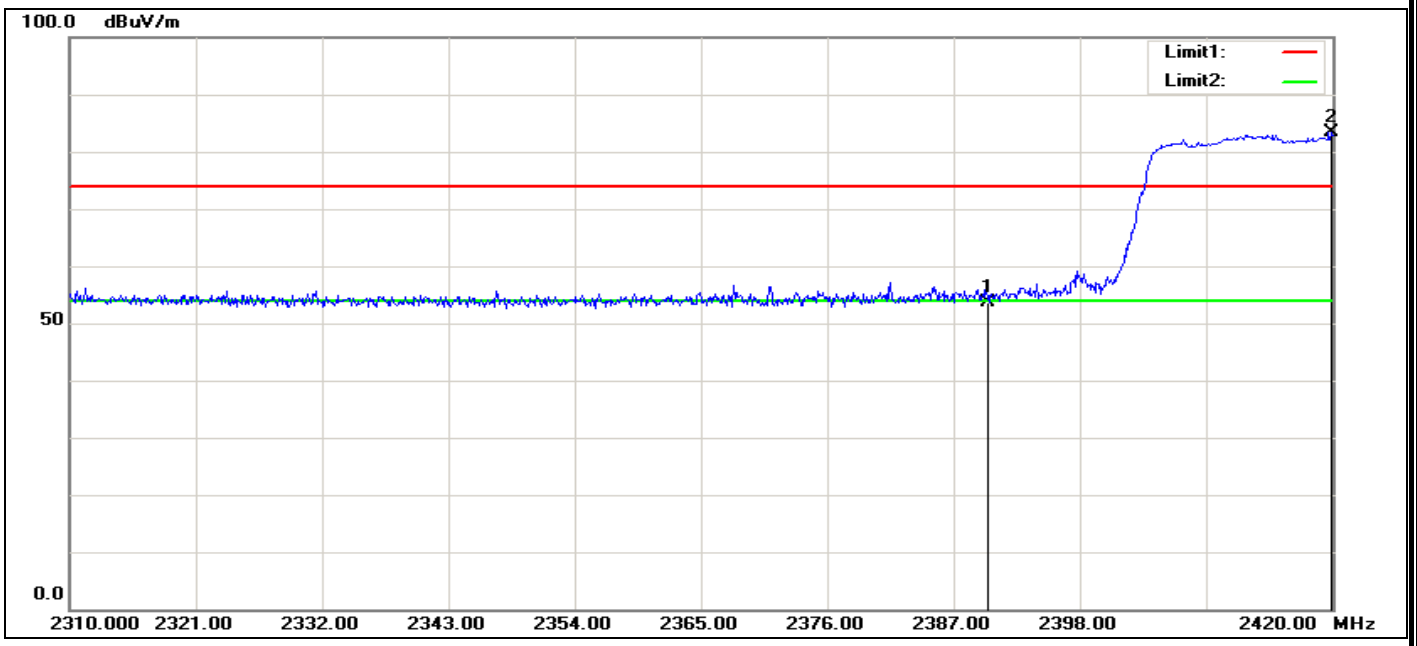
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	14.78	30.82	45.60	74.00	-28.40	100	209	peak
2	2412.850	48.34	30.90	79.24	74.00	5.24	100	208	peak

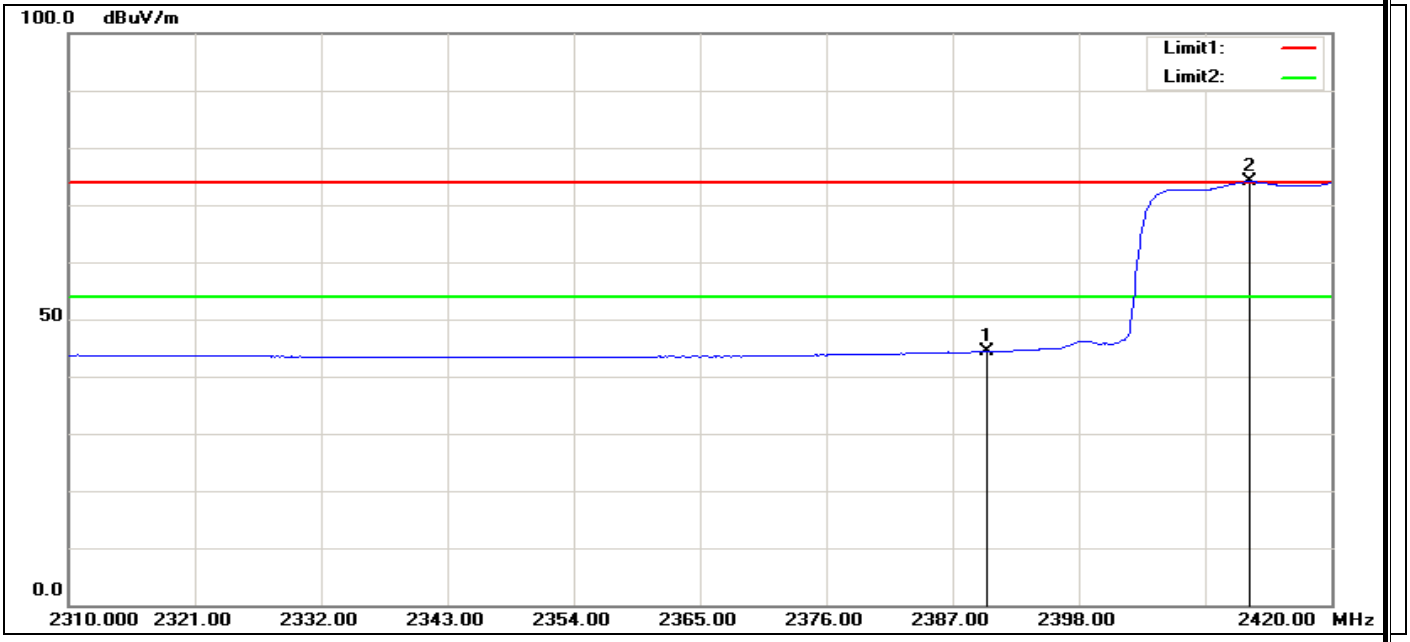
RESTRICTED BANDEDGE (HT40 Mode, Low Channel, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	22.80	30.82	53.62	74.00	-20.38	100	187	peak
2	2419.890	52.36	30.94	83.30	74.00	9.30	100	190	peak

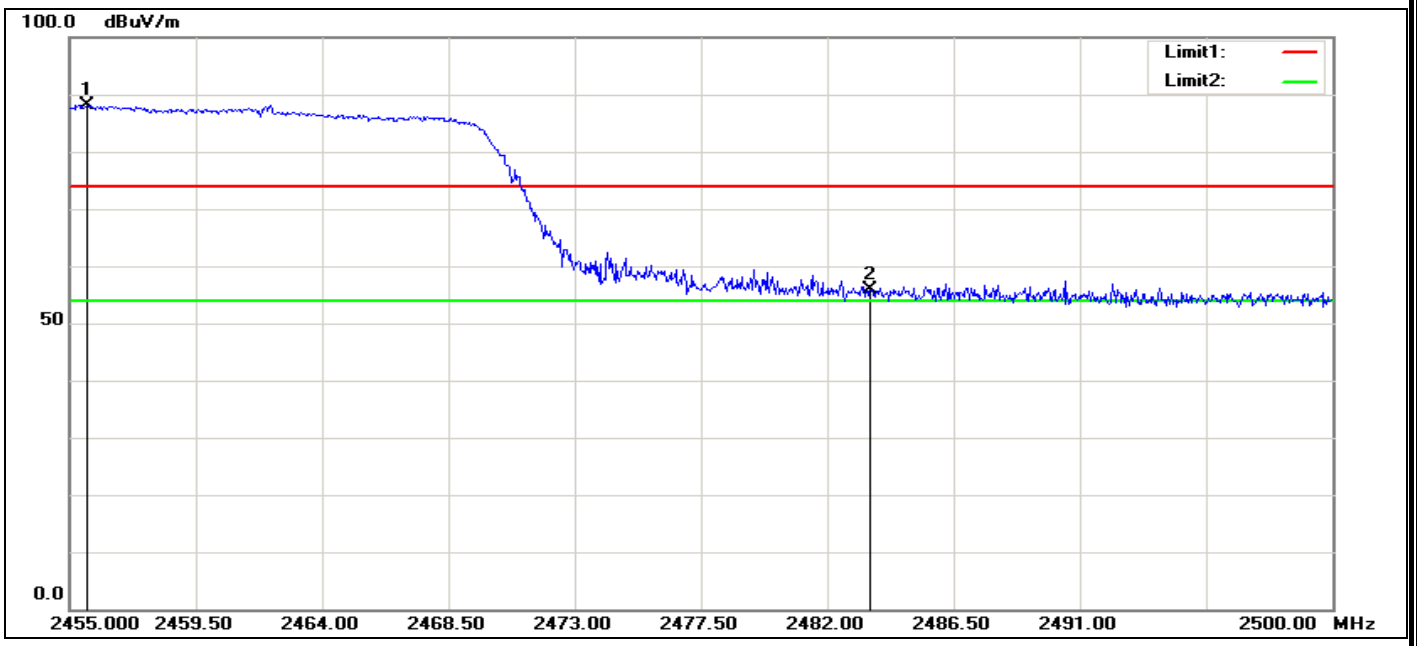
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2390.000	13.53	30.82	44.35	54.00	-9.65	100	191	AVG
2	2412.850	43.18	30.90	74.08	54.00	20.08	100	192	AVG

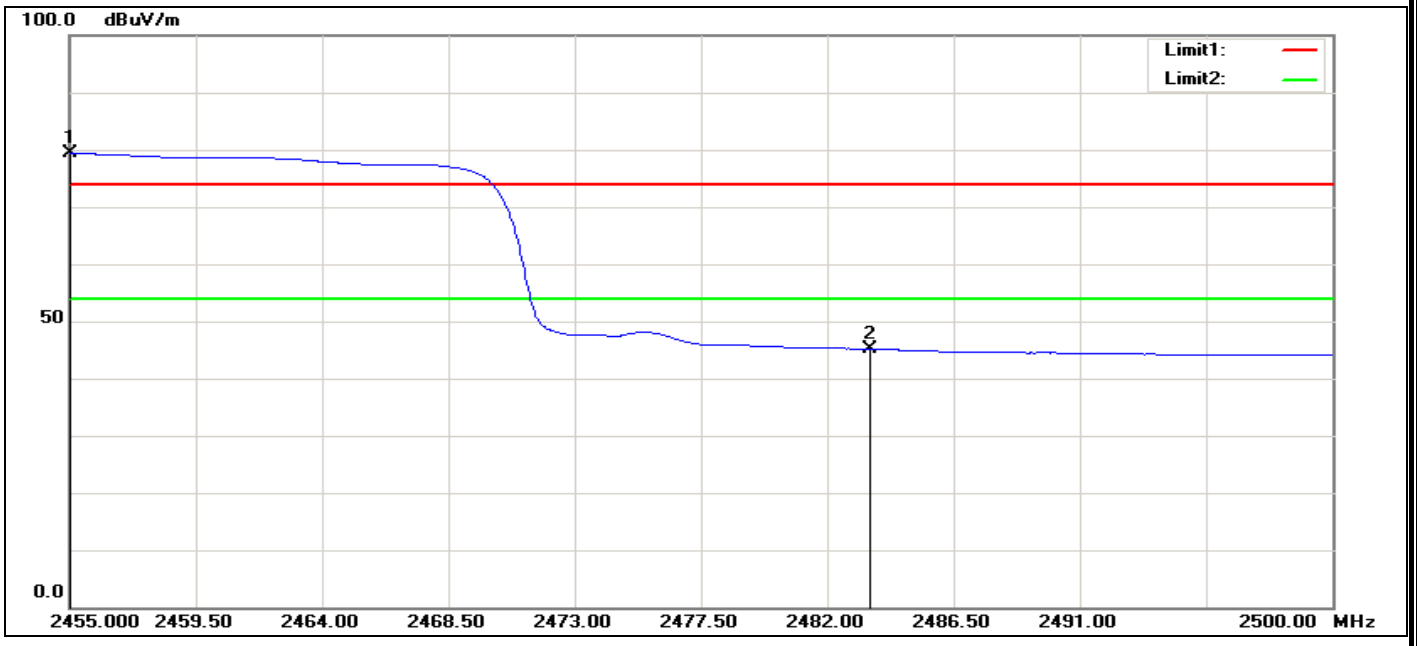
RESTRICTED BANDEDGE (HT40 Mode, High Channel, Horizontal)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2455.630	56.97	31.13	88.10	74.00	14.10	100	207	peak
2	2483.500	24.60	31.27	55.87	74.00	-18.13	100	211	peak

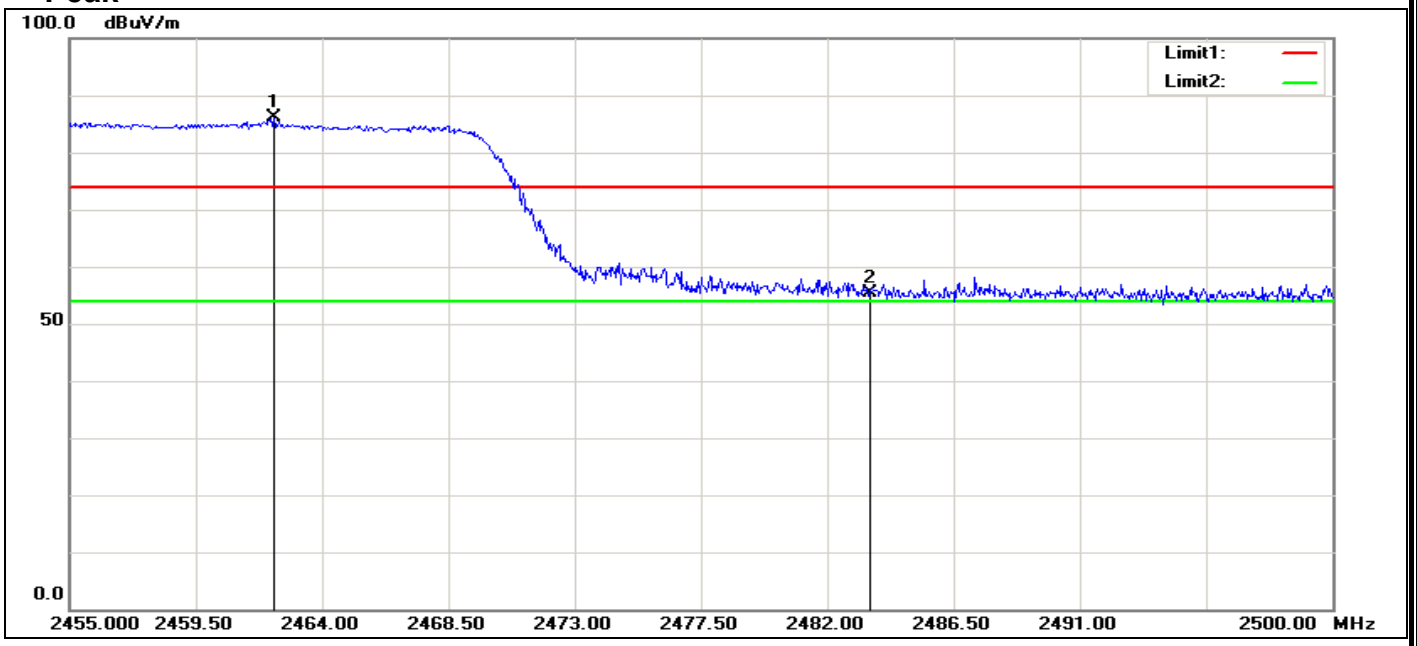
AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2455.000	48.27	31.12	79.39	54.00	25.39	100	207	AVG
2	2483.500	13.87	31.27	45.14	54.00	-8.86	100	206	AVG

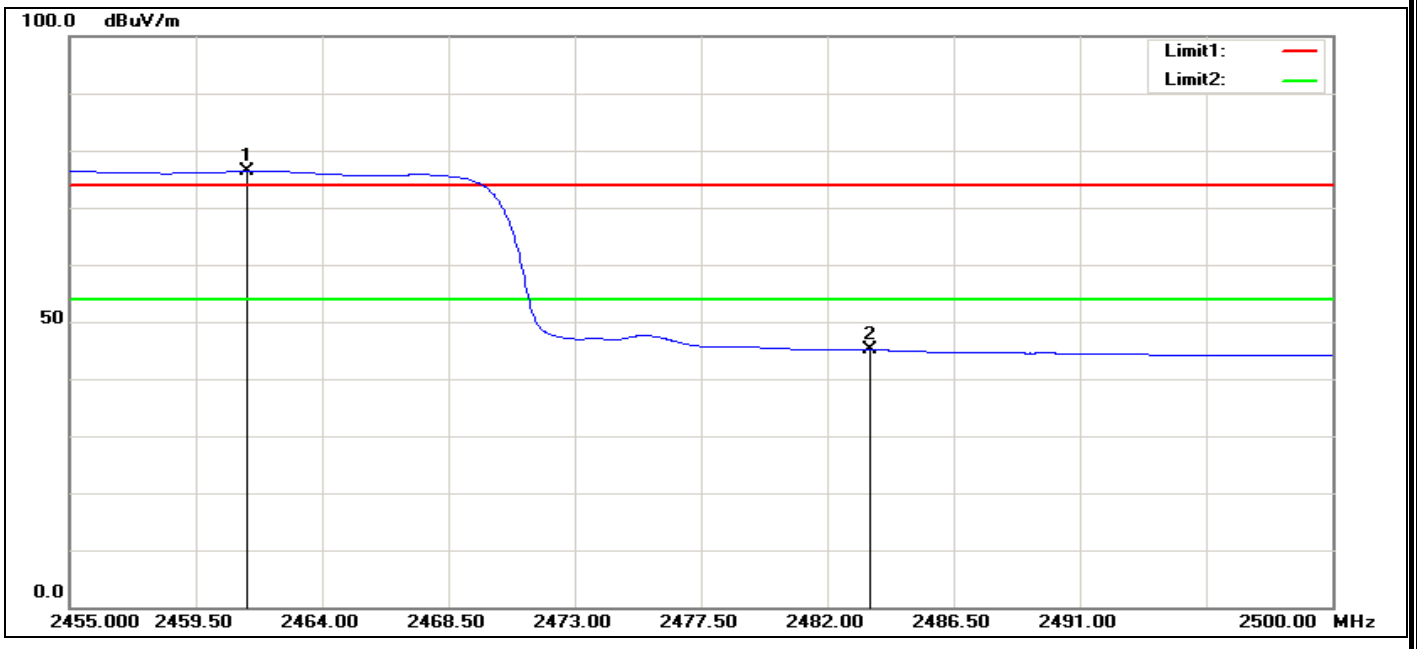
RESTRICTED BANDEDGE (HT40 Mode, High Channel, Vertical)

Peak



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2462.290	54.89	31.16	86.05	74.00	12.05	100	193	peak
2	2483.500	24.18	31.27	55.45	74.00	-18.55	100	192	peak

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2461.300	45.25	31.15	76.40	54.00	22.40	100	193	AVG
2	2483.500	13.77	31.27	45.04	54.00	-8.96	100	192	AVG

Below 1GHz

Operation Mode: Normal Link **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
30.0000	H	13.06	22.71	35.77	40.00	-4.23	peak
125.0600	H	14.57	15.46	30.03	43.50	-13.47	peak
671.1700	H	15.10	22.17	37.27	46.00	-8.73	peak
728.4000	H	15.23	22.74	37.97	46.00	-8.03	peak
869.0500	H	15.16	24.95	40.11	46.00	-5.89	peak
959.2600	H	14.83	26.46	41.29	46.00	-4.71	peak
30.9700	V	16.54	22.03	38.57	40.00	-1.43	peak
208.4800	V	20.81	13.16	33.97	43.50	-9.53	peak
672.1400	V	14.97	22.15	37.12	46.00	-8.88	peak
843.8300	V	14.59	25.20	39.79	46.00	-6.21	peak
930.1600	V	15.31	25.35	40.66	46.00	-5.34	peak
967.9900	V	15.26	26.36	41.62	54.00	-12.38	peak

Remark:

1. *Measuring frequencies from 30 MHz to the 1GHz (No emission found between lowest internal used/generated frequency to 30 MH).*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *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.*
4. *Margin (dB) = Result (dBuV/m) – Limit (dBuV/m).*

Above 1 GHz

Operation Mode: TX / IEEE 802.11b / CH Low **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4824.000	57.11	-7.95	49.16	74.00	-24.84	100	315	peak
2	4824.020	53.65	-7.95	45.70	54.00	-8.30	100	314	AVG
3	7236.000	58.09	-0.67	57.42	74.00	-16.58	100	360	peak
4	7236.700	50.82	-0.67	50.15	54.00	-3.85	100	361	AVG

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4823.995	51.22	-7.95	43.27	54.00	-10.73	100	35	AVG
2	4824.000	54.23	-7.95	46.28	74.00	-27.72	100	34	peak
3	7236.735	47.42	-0.67	46.75	54.00	-7.25	100	327	AVG
4	7240.000	53.63	-0.68	52.95	74.00	-21.05	100	326	peak

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4872.000	56.74	-7.71	49.03	74.00	-24.97	100	325	peak
2	4873.975	55.28	-7.69	47.59	54.00	-6.41	100	324	AVG
3	7310.185	53.26	-0.86	52.40	54.00	-1.60	100	356	AVG
4	7312.000	57.90	-0.85	57.05	74.00	-16.95	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4872.000	54.12	-7.71	46.41	74.00	-27.59	100	34	peak
2	4874.000	48.49	-7.69	40.80	54.00	-13.20	100	361	AVG
3	7310.165	46.29	-0.86	45.43	54.00	-8.57	100	334	AVG
4	7312.000	51.57	-0.85	50.72	74.00	-23.28	100	335	peak

Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.990	55.63	-7.57	48.06	54.00	-5.94	98	311	peak
2	4924.000	57.04	-7.57	49.47	74.00	-24.53	100	312	AVG
3	7384.000	57.61	-0.70	56.91	74.00	-17.09	100	360	AVG
4	7385.160	52.03	-0.69	51.34	54.00	-2.66	103	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4924.000	53.26	-7.57	45.69	74.00	-28.31	100	250	peak
2	4924.020	55.60	-7.57	48.03	54.00	-5.97	97	342	AVG
3	7385.190	48.80	-0.69	48.11	54.00	-5.89	103	331	AVG
4	7388.000	50.56	-0.69	49.87	74.00	-24.13	100	331	peak

Operation Mode: TX / IEEE 802.11g / CH Low **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4823.980	37.51	-7.95	29.56	54.00	-24.44	97	294	peak
2	4824.000	47.74	-7.95	39.79	74.00	-34.21	101	295	AVG
3	7236.000	52.56	-0.67	51.89	74.00	-22.11	101	356	AVG
4	7237.865	37.76	-0.67	37.09	54.00	-16.91	105	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4836.000	46.79	-7.89	38.90	74.00	-35.10	100	358	peak
2	4836.990	34.43	-7.89	26.54	54.00	-27.46	100	358	AVG
3	7224.000	47.40	-0.63	46.77	74.00	-27.23	100	14	AVG
4	7226.305	33.69	-0.64	33.05	54.00	-20.95	100	347	peak

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4872.000	47.15	-7.71	39.44	74.00	-34.56	100	308	peak
2	4874.105	37.95	-7.69	30.26	54.00	-23.74	100	307	AVG
3	7308.000	50.52	-0.86	49.66	74.00	-24.34	100	360	AVG
4	7310.185	38.80	-0.86	37.94	54.00	-16.06	100	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4872.000	48.08	-7.71	40.37	74.00	-33.63	100	31	peak
2	4874.040	35.50	-7.69	27.81	54.00	-26.19	100	30	AVG
3	7308.000	50.07	-0.86	49.21	74.00	-24.79	100	341	AVG
4	7309.985	32.96	-0.86	32.10	54.00	-21.90	100	0	peak

Operation Mode: TX / IEEE 802.11g / CH High **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4924.000	48.47	-7.57	40.90	74.00	-33.10	100	320	peak
2	4924.090	37.66	-7.57	30.09	54.00	-23.91	100	320	AVG
3	7383.810	38.43	-0.70	37.73	54.00	-16.27	100	355	AVG
4	7388.000	51.50	-0.69	50.81	74.00	-23.19	100	356	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4928.000	47.12	-7.57	39.55	74.00	-34.45	100	318	peak
2	4933.845	34.83	-7.57	27.26	54.00	-26.74	100	317	AVG
3	7480.000	51.79	-0.35	51.44	74.00	-22.56	100	49	AVG
4	7483.360	33.34	-0.34	33.00	54.00	-21.00	100	48	peak

Operation Mode: TX / IEEE 802.11n HT20 / CH Low **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4823.905	36.60	-7.95	28.65	54.00	-25.35	100	315	peak
2	4824.000	47.74	-7.95	39.79	74.00	-34.21	100	314	AVG
3	7239.770	37.67	-0.68	36.99	54.00	-17.01	100	360	peak
4	7240.000	52.16	-0.68	51.48	74.00	-22.52	100	361	AVG

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4913.665	34.19	-7.56	26.63	54.00	-27.37	100	35	AVG
2	4916.000	46.29	-7.57	38.72	74.00	-35.28	100	34	peak
3	7232.000	48.36	-0.66	47.70	74.00	-26.30	100	327	AVG
4	7236.845	34.56	-0.68	33.88	54.00	-20.12	100	326	peak

Operation Mode: TX / IEEE 802.11n HT20 / CH Mid **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4864.805	35.41	-7.74	27.67	54.00	-26.33	100	325	peak
2	4868.000	48.02	-7.72	40.30	74.00	-33.70	100	324	AVG
3	7311.400	38.69	-0.85	37.84	54.00	-16.16	100	356	AVG
4	7312.000	52.85	-0.85	52.00	74.00	-22.00	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4880.000	46.90	-7.66	39.24	74.00	-34.76	100	34	peak
2	4882.470	33.72	-7.65	26.07	54.00	-27.93	100	361	AVG
3	7453.520	32.99	-0.46	32.53	54.00	-21.47	100	334	AVG
4	7456.000	50.70	-0.44	50.26	74.00	-23.74	100	335	peak

Operation Mode: TX / IEEE 802.11n HT20 / CH High **Test Date:** 2013-7-9

Temperature: 22°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4920.000	49.69	-7.57	42.12	74.00	-31.88	100	325	peak
2	4922.440	36.66	-7.57	29.09	54.00	-24.91	100	324	AVG
3	7376.000	50.65	-0.72	49.93	74.00	-24.07	100	356	AVG
4	7380.970	37.87	-0.70	37.17	54.00	-16.83	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	5050.900	34.01	-7.53	26.48	54.00	-27.52	100	34	peak
2	5052.000	47.87	-7.53	40.34	74.00	-33.66	100	361	AVG
3	7467.345	39.68	-0.41	39.27	54.00	-14.73	100	334	AVG
4	7472.000	53.50	-0.39	53.11	74.00	-20.89	100	335	peak

Operation Mode: TX / IEEE 802.11n HT40 / CH Low **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4884.000	46.88	-7.64	39.24	74.00	-34.76	100	325	peak
2	4887.575	34.32	-7.62	26.70	54.00	-27.30	100	324	AVG
3	7265.570	36.18	-0.77	35.41	54.00	-18.59	100	356	AVG
4	7268.000	48.30	-0.77	47.53	74.00	-26.47	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4962.965	34.33	-7.58	26.75	54.00	-27.25	100	34	peak
2	4964.000	56.91	-7.58	49.33	74.00	-24.67	100	361	AVG
3	7289.715	33.04	-0.85	32.19	54.00	-21.81	100	334	AVG
4	7292.000	49.91	-0.86	49.05	74.00	-24.95	100	335	peak

Operation Mode: TX / IEEE 802.11n HT40 / CH Mid **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4983.825	34.43	-7.59	26.84	54.00	-27.16	100	325	peak
2	4984.000	56.70	-7.59	49.11	74.00	-24.89	100	324	AVG
3	7320.000	48.76	-0.83	47.93	74.00	-26.07	100	356	AVG
4	7320.040	34.89	-0.83	34.06	54.00	-19.94	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4999.795	34.44	-7.60	26.84	54.00	-27.16	100	34	peak
2	5000.000	57.39	-7.60	49.79	74.00	-24.21	100	361	AVG
3	7453.770	49.37	-0.46	48.91	54.00	-5.09	100	334	AVG
4	7456.000	54.12	-0.44	53.68	74.00	-20.32	100	335	peak

Operation Mode: TX / IEEE 802.11n HT40 / CH High **Test Date:** 2013-7-9

Temperature: 24°C **Tested by:** Blent.Wang

Humidity: 48 % RH **Polarity:** Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4908.000	46.82	-7.56	39.26	74.00	-34.74	100	325	peak
2	4909.780	35.26	-7.56	27.70	54.00	-26.30	100	324	AVG
3	7356.000	47.94	-0.76	47.18	74.00	-26.82	100	356	AVG
4	7358.365	35.11	-0.76	34.35	54.00	-19.65	100	355	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4963.370	34.34	-7.58	26.76	54.00	-27.24	100	34	peak
2	4964.000	53.07	-7.58	55.49	74.00	-28.51	100	361	AVG
3	7460.000	54.94	-0.43	54.51	74.00	-19.49	100	334	AVG
4	7464.545	48.32	-0.41	47.91	54.00	-6.09	100	335	peak

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 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

** 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.

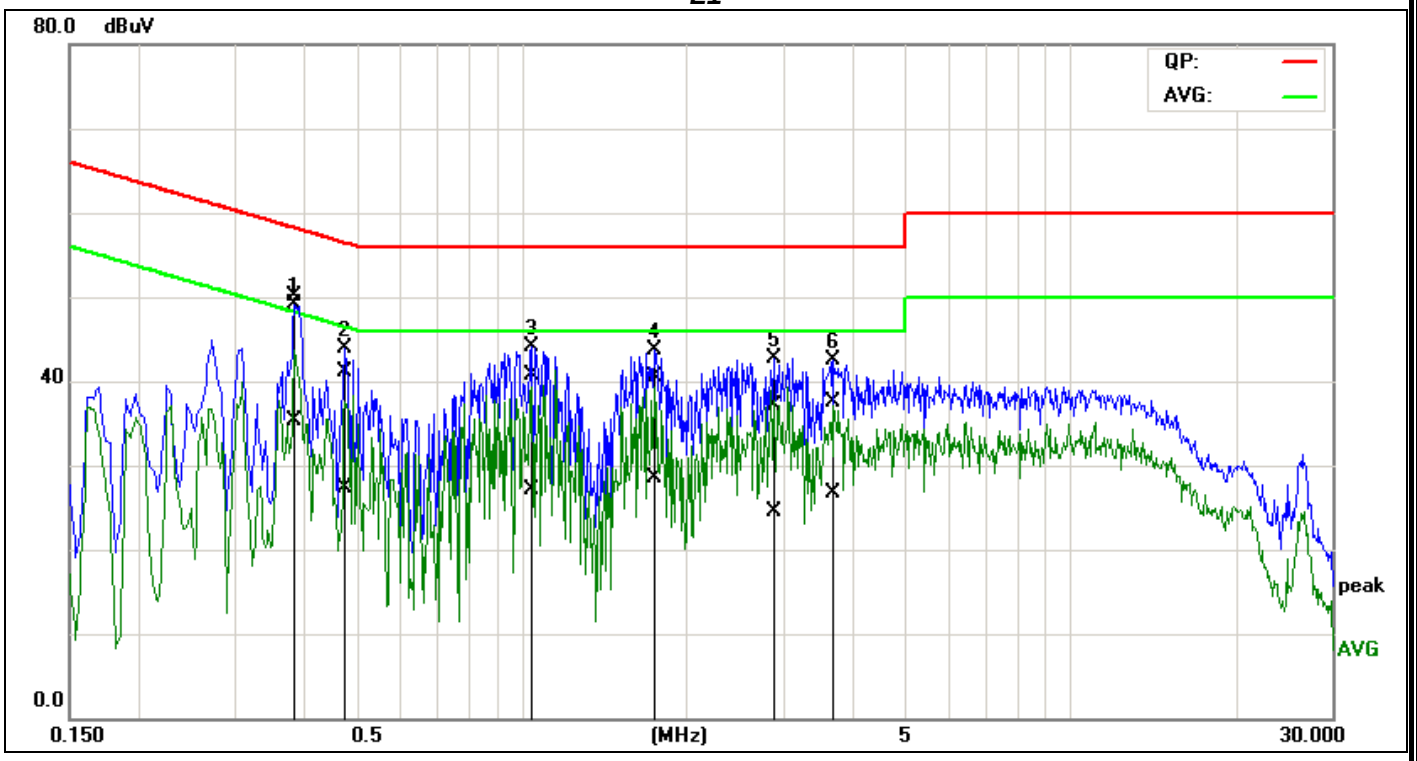
TEST RESULTS

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

Job No.:	C130703R01	Date:	2013-7-7
Company:	FPXPHONE	Time:	15:32:29
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Blent.Wang
Line:	L1	Test Voltage:	AC 120V/60Hz
Model:	F9300	Description:	

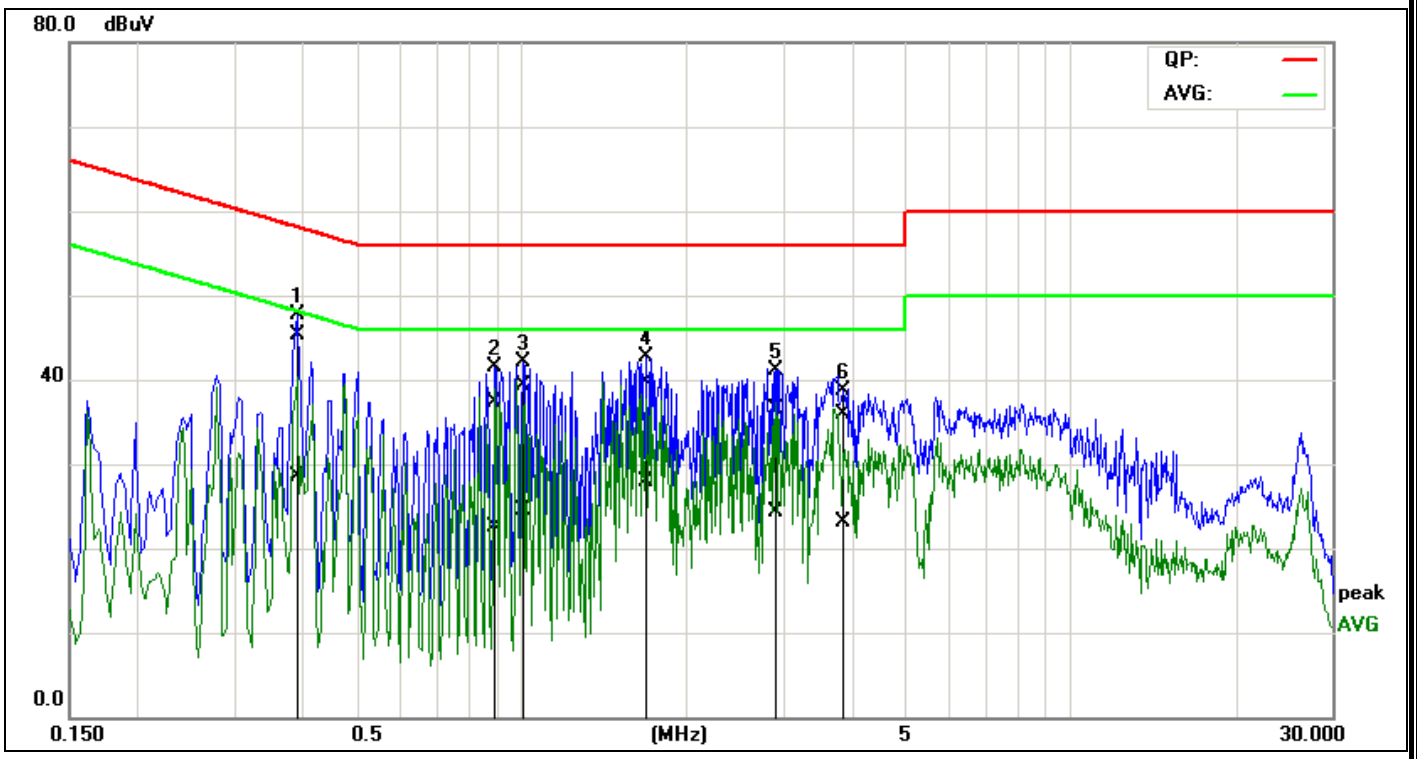
L1



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.3885	40.12	25.32	9.96	50.08	35.28	58.09	48.10	-8.01	-12.82	Pass
2	0.4779	31.01	17.40	10.00	41.01	27.40	56.38	46.38	-15.37	-18.98	Pass
3	1.0448	30.71	17.03	9.98	40.69	27.01	56.00	46.00	-15.31	-18.99	Pass
4	1.7473	30.42	18.40	10.06	40.48	28.46	56.00	46.00	-15.52	-17.54	Pass
5*	2.8914	26.98	14.34	10.19	37.17	24.53	56.00	46.00	-18.83	-21.47	Pass
6	3.7217	27.31	16.34	10.29	37.60	26.63	56.00	46.00	-18.40	-19.37	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Job No.:	C130703R01	Date:	2013-7-7
Company:	FPXPHONE	Time:	15:36:59
Standard:	FCC Class B	Temp.(C)/Hum.(%):	22(C)/48%
Test item:	Conduction test	Test By:	Blent.Wang
Line:	L2	Test Voltage:	AC 120V/60Hz
Model:	F9300	Description:	



No.	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
1	0.3895	35.41	18.43	9.99	45.40	28.42	58.07	48.07	-12.67	-19.65	Pass
2	0.8845	27.38	12.44	9.98	37.36	22.42	56.00	46.00	-18.64	-23.58	Pass
3	1.0128	29.27	14.58	9.96	39.23	24.54	56.00	46.00	-16.77	-21.46	Pass
4	1.6894	29.54	17.80	10.08	39.62	27.88	56.00	46.00	-16.38	-18.12	Pass
5	2.8823	26.30	14.05	10.22	36.52	24.27	56.00	46.00	-19.48	-21.73	Pass
6*	3.8018	25.66	12.83	10.32	35.98	23.15	56.00	46.00	-20.02	-22.85	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).