



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

FOR

Product Name: 802.11 b/g/n Long-Range Wireless USB Adapter

**Model : AWUS036NEH, UBDo-neh, UBDo-neht,UBDo-neh8,
WISP-36NEH, Solo-36NEH, Bullet-UNE**

Trade Name: ALFA

Issued to

Alfa Network Inc.

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Issued by

Global Certification Corp.

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APPENDIX 1

PHOTOS OF TEST CONFIGURATION

APPENDIX 3

PHOTOS OF EUT



1. GENERAL INFORMATION

Applicant : Alfa Network Inc.

Address : 4F.-1, NO. 106, Rueiguang Rd., Neihu District, City 114, Taiwan

Manufacturer : Alfa Network Inc.

Address : 4F.-1, NO. 106, Rueiguang Rd., Neihu District, City 114, Taiwan

EUT : 802.11 b/g/n Long-Range Wireless USB Adapter

Model Name : AWUS036NEH, UBDo-neh, UBDo-neht,UBDo-neh8, WISP-36NEH, Solo-36NEH, Bullet-UNE

Model Differences : The difference between series models shown above is the outer case. The model, AWUS036NEH, is the testing sample, and the final test data are shown on this test report.

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.4-2003. The said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

FCC part 15 subpart C

Receipt Date : 01/11/2010

Final Test Date : 03/03/2010

Taipei, Taiwan

(Place)

Mar. 03, 2010

(Date)

Alex Chou / Manager

(Signature)

Designation Number: TW1030



1.1 DESCRIPTION OF THE TESTED SAMPLES

EUT Name	: 802.11 b/g/n Long-Range Wireless USB Adapter
Model Number	: AWUS036NEH
FCC ID	: UQ 2036NEH
Input Voltage	: 5 Vdc
Power From	Outside Support Unit PC
Operate Frequency	: Refer to the channel list as described below
Modulation Technique	: DBPSK. DAPSK. CCK. OFDM
Number of Channels	: 11
Channel spacing	: ☐ N/A ☒ <u>5</u> MHz
Operating Mode	: ☐ Simplex ☒ Duplex
Antenna Type	: ☐ integral antenna: <u>PCB Printing</u> ☒ a dedicated antenna
Antenna gain	2dBi
Transmit Power	IEEE 802.11b mode: 18.60 dBm IEEE 802.11g mode: 18.40 dBm IEEE 802.11n Standard-20 MHz Channel: mode: 17.53 dBm IEEE 802.11n Wide-40 MHz Channel: mode: 18.71 dBm
Modulation Technique & Transmit Data Rate	IEEE 802.11b mode: DSSS(1,2,5.5 and 11Mbps) IEEE 802.11g mode: OFDM(6,9,12,18,24,36,48 and 54Mbps) IEEE802.11n Standard-20 Channel mode: OFDM(6.5,7.2,13,14.4,14.44,19.5,21.7,26,28.89,28.9,39,43.3,43.33,52,57.7,57.8,58.5,65.0,72.2,78,86.67,104,115.56,117,130,144.44, and 54Mbps) IEEE802.11n Wide-40 Channel 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 and Mbps)
Frequency Range	IEEE 802.11b/g/ draft 802.11n Standard-20 MHz: 2.412~2.462 GHz draft 802.11n Wide-40 MHz: 2.422~2452 GHz
Note	Antenna of product is fixed and client can not replace it.



2. TEST METHODOLOGY

All testing as described bellowed were performed in accordance with ANSI C63.4:2003 and FCC CFR 47 Part 15 Subpart C.

2.1 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.4:2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

2.2 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
10.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	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	()
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.

2.3 DESCRIPTION OF TEST MODES

The EUT was tested under following modes:

Modes:

- 1. Continuous transmitting**
- 2. Receiving**

Channels:

IEEE 802.11b 2412GHz(Lowest Channel)
IEEE 802.11b 2437GHz(Middle Channel)
IEEE 802.11b 2462GHz(Highest Channel)
IEEE 802.11g 2412GHz(Lowest Channel)
IEEE 802.11g 2437GHz(Middle Channel)
IEEE 802.11g 2462GHz(Highest Channel)
IEEE 802.11n(20m) 2412GHz(Lowest Channel)
IEEE 802.11n(20m) 2437GHz(Middle Channel)
IEEE 802.11n(20m) 2462GHz(Highest Channel)
IEEE 802.11n(40m) 2422GHz(Lowest Channel)
IEEE 802.11n(40m) 2462GHz(Middle Channel)
IEEE 802.11n(40m) 2452GHz(Highest Channel)



2.4 DESCRIPTION OF THE SUPPORT EQUIPMENTS

Setup Diagram

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

Support Equipment

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	PC	M35	0545TDT0 0856	R33142	Acer	N/A	Unshielded 1.8m
2	PRINTER	STYLUS PHOTO750	BDEK017 629	3872P011	EPSON	Shielded 1.8m	Unshielded 1.8m
3	MOUSE	M-UV83	HCA9251 0159	T41126	Logitech	Shielded 1.8m/USB	N/A

Note: All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

Grounding: Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.



3. TEST AND MEASUREMENT EQUIPMENT

3.1 CALIBRATION

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

3.2 EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

TABLE 1 LIST OF TEST AND MEASUREMENT EQUIPMENT

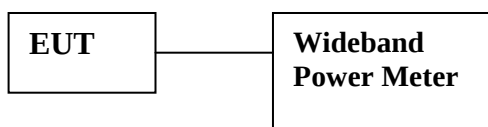
Instrument	Manufacturer	Model No.	Serial No.	Calibration Due Date	Note
EMC Test Receiver	R&S	ESCI	100438	Apr 29, 2010	
Bilog Antenna	SUNOL	JB1	A052204	Nov 06, 2010	
Turn table	EMCO	2080	9508-1805	N/A	
Controller	EMCO	2090	9804-1328	N/A	
Amplifier	G.W	GAP-801	EF150001	Jul.18, 2010	
Amplifier	Schwarzbeck	BBV 9718	9718-008	Aug. 10, 2010	
Spectrum Analyzer	NEX1	Ns-265	5044006	Aug .07, 2010	
RF Cable	BELDEN	RG-8/U	28M-002	Nov.02, 2010	
RF Cable	Huber Suhner	SUCOFLEX 104	293864/4	Nov.13, 2010	
Thermo-Hygro meter	WISEWIND	4-IN-1	050100378	Apr. 08, 2010	
Loop Antenna	TESEO	HLA6120	26349	Sep.11, 2010	
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-491	Aug. 05, 2010	
Wideband Peak Power Meter	Anritsu	ML2495A	0841006	Oct.03,2010	

※ Calibration interval of instruments listed above is one year



4. PEAK POWER

4.1 TEST SETUP



4.2 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: 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 directional gain of the antenna exceeds 6 dBi.

4.3 TEST PROCEDURE

1. Peak power is measured using the spectrum analyzer's internal power integration function.
2. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

4.4 TEST RESULT: PASSED



4.5 TEST DATA:

TEST Mode:IEEE 802.11b

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)	Limit (w)	Result
Low	2412	18.60	0.07244	1.00	PASS
Mid	2437	18.22	0.06637		PASS
High	2462	17.62	0.05780		PASS

TEST Mode:IEEE 802.11g

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)	Limit (w)	Result
Low	2412	18.40	0.06918	1.00	PASS
Mid	2437	18.32	0.06792		PASS
High	2462	18.11	0.06471		PASS

TEST Mode:IEEE 802.11n(20M)

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)	Limit (w)	Result
Low	2412	17.53	0.05662	1.00	PASS
Mid	2437	17.29	0.05357		PASS
High	2462	16.14	0.04111		PASS

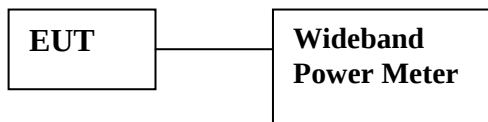
TEST Mode:IEEE 802.11n(40M)

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)	Limit (w)	Result
Low	2422	18.71	0.07430	1.00	PASS
Mid	2437	18.16	0.06546		PASS
High	2452	18.06	0.06397		PASS



5. AVERAGE POWER

5.1 TEST SETUP



5.2 LIMIT

None ; for reporting purposes only.

5.3 TEST PROCEDURE

The transmitter output is connected to the Power Meter . The Power Meter is set to the average power detection.

5.4 TEST RESULT: PASSED



5.5 TEST DATA:

TEST Mode:IEEE 802.11b

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)
Low	2412	11.57	0.01435
Mid	2437	10.95	0.01244
High	2462	10.30	0.01071

TEST Mode:IEEE 802.11g

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)
Low	2412	8.65	0.00732
Mid	2437	8.88	0.00772
High	2462	8.52	0.00711

TEST Mode:IEEE 802.11n(20M)

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)
Low	2412	6.95	0.00495
Mid	2437	6.53	0.00449
High	2462	5.47	0.00352

TEST Mode:IEEE 802.11n(40M)

Chammel	Frequency (MHz)	Output Power (dbm)	Output Power (W)
Low	2422	8.00	0.00630
Mid	2437	7.59	0.00574
High	2452	7.32	0.00539



6. SECTION 15.247 REQUIREMENTS (HARMONICS)

6.1 TEST SETUP

Refer to paragraph 6.1.

6.2 LIMIT

Fundamental Frequency (MHz)	Field Strength of Harmonics (dB μ V/m at 3-meter)	Detector
902 - 928 2400 – 2483 5725 - 5875	74	Peak
902 - 928 2400 – 2483 5725 - 5875	54	AV

6.3 RESULT: PASSED

6.4 TEST DATA:

Harmonics - IEEE 802.11b CH Low

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dB μ V	dB/m	dB μ V/m	dB μ V/m	dB		
4824.00	45.06	0.96	46.02	74.00	-27.98	HORIZONTAL	Peak
7236.00	42.63	7.50	50.13	74.00	-23.87	HORIZONTAL	Peak
9704.00	41.67	10.66	52.33	74.00	-21.67	HORIZONTAL	Peak



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4808.00	46.82	0.95	47.77	74.00	-26.23	VERTICAL	Peak
7222.00	43.74	7.40	51.14	74.00	-22.86	VERTICAL	Peak
9648.00	40.78	10.57	51.35	74.00	-22.65	VERTICAL	Peak

Harmonics - IEEE 802.11b CH Mid

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.74	0.96	44.70	74.00	-29.30	HORIZONTAL	Peak
7236.00	41.84	7.50	49.34	74.00	-24.66	HORIZONTAL	Peak
9648.00	41.14	10.57	51.71	74.00	-22.29	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4876.00	50.14	1.00	51.14	74.00	-22.86	VERTICAL	Peak
7290.00	43.47	7.89	51.36	74.00	-22.64	VERTICAL	Peak
9648.00	41.56	10.57	52.13	74.00	-21.87	VERTICAL	Peak

Harmonics - IEEE 802.11b CH High

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.74	0.96	44.70	74.00	-29.30	HORIZONTAL	Peak
7236.00	41.47	7.50	48.97	74.00	-25.03	HORIZONTAL	Peak
9648.00	41.45	10.57	52.02	74.00	-21.98	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4910.00	46.80	1.03	47.83	74.00	-26.17	VERTICAL	Peak
7236.00	41.67	7.50	49.17	74.00	-24.83	VERTICAL	Peak
9648.00	40.66	10.57	51.23	74.00	-22.77	VERTICAL	Peak

Harmonics - IEEE 802.11g CH Low

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.83	0.96	45.79	74.00	-28.21	HORIZONTAL	Peak
7236.00	41.91	7.50	49.41	74.00	-24.59	HORIZONTAL	Peak
9648.00	41.59	10.57	52.16	74.00	-21.84	HORIZONTAL	Peak



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4808.00	50.64	0.95	51.59	74.00	-22.41	VERTICAL	Peak
7236.00	42.52	7.50	50.02	74.00	-23.98	VERTICAL	Peak
9648.00	41.14	10.57	51.71	74.00	-22.29	VERTICAL	Peak

Harmonics - IEEE 802.11g CH Mid

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.60	0.96	45.56	74.00	-28.44	HORIZONTAL	Peak
7236.00	41.58	7.50	49.08	74.00	-24.92	HORIZONTAL	Peak
9648.00	41.02	10.57	51.59	74.00	-22.41	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4672.00	45.92	0.83	46.75	74.00	-27.25	VERTICAL	Peak
7236.00	41.92	7.50	49.42	74.00	-24.58	VERTICAL	Peak
9648.00	42.28	10.57	52.85	74.00	-21.15	VERTICAL	Peak

Harmonics - IEEE 802.11g CH High

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.76	0.96	44.72	74.00	-29.28	HORIZONTAL	Peak
7236.00	41.06	7.50	48.56	74.00	-25.44	HORIZONTAL	Peak
9648.00	41.55	10.57	52.12	74.00	-21.88	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4910.00	49.08	1.03	50.11	74.00	-23.89	VERTICAL	Peak
7236.00	41.81	7.50	49.31	74.00	-24.69	VERTICAL	Peak
9648.00	41.60	10.57	52.17	74.00	-21.83	VERTICAL	Peak

Harmonics - IEEE 802.11n(20M) CH Low

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.94	0.96	44.90	74.00	-29.10	HORIZONTAL	Peak
7236.00	43.01	7.50	50.51	74.00	-23.49	HORIZONTAL	Peak
9648.00	41.71	10.57	52.28	74.00	-21.72	HORIZONTAL	Peak



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4842.00	49.59	0.97	50.56	74.00	-23.44	VERTICAL	Peak
7358.00	44.40	8.39	52.79	74.00	-21.21	VERTICAL	Peak
9648.00	41.49	10.57	52.06	74.00	-21.94	VERTICAL	Peak

Harmonics - IEEE 802.11n(20M) CH Mid

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.47	0.96	45.43	74.00	-28.57	HORIZONTAL	Peak
7236.00	41.80	7.50	49.30	74.00	-24.70	HORIZONTAL	Peak
9648.00	41.53	10.57	52.10	74.00	-21.90	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.92	0.96	44.88	74.00	-29.12	VERTICAL	Peak
7236.00	41.55	7.50	49.05	74.00	-24.95	VERTICAL	Peak
9648.00	41.44	10.57	52.01	74.00	-21.99	VERTICAL	Peak

Harmonics - IEEE 802.11n(20M) CH High

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.86	0.96	45.82	74.00	-28.18	HORIZONTAL	Peak
7236.00	41.44	7.50	48.94	74.00	-25.06	HORIZONTAL	Peak
9648.00	41.23	10.57	51.80	74.00	-22.20	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4910.00	46.72	1.03	47.75	74.00	-26.25	VERTICAL	Peak
7236.00	41.26	7.50	48.76	74.00	-25.24	VERTICAL	Peak
9648.00	40.77	10.57	51.34	74.00	-22.66	VERTICAL	Peak

Harmonics - IEEE 802.11n(40M) CH Low

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.40	0.96	45.36	74.00	-28.64	HORIZONTAL	Peak
7236.00	41.12	7.50	48.62	74.00	-25.38	HORIZONTAL	Peak
9648.00	40.64	10.57	51.21	74.00	-22.79	HORIZONTAL	Peak



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	46.04	0.96	47.00	74.00	-27.00	VERTICAL	Peak
7236.00	41.72	7.50	49.22	74.00	-24.78	VERTICAL	Peak
9648.00	41.41	10.57	51.98	74.00	-22.02	VERTICAL	Peak

Harmonics - IEEE 802.11n(40M) CH Mid

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	43.81	0.96	44.77	74.00	-29.23	HORIZONTAL	Peak
7236.00	41.44	7.50	48.94	74.00	-25.06	HORIZONTAL	Peak
9648.00	40.91	10.57	51.48	74.00	-22.52	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.01	0.96	44.97	74.00	-29.03	VERTICAL	Peak
7236.00	42.22	7.50	49.72	74.00	-24.28	VERTICAL	Peak
9648.00	41.91	10.57	52.48	74.00	-21.52	VERTICAL	Peak

Harmonics - IEEE 802.11n(40M) CH High

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.10	0.96	45.06	74.00	-28.94	HORIZONTAL	Peak
7236.00	41.20	7.50	48.70	74.00	-25.30	HORIZONTAL	Peak
9648.00	41.42	10.57	51.99	74.00	-22.01	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4824.00	44.40	0.96	45.36	74.00	-28.64	VERTICAL	Peak
7236.00	40.99	7.50	48.49	74.00	-25.51	VERTICAL	Peak
9648.00	41.76	10.57	52.33	74.00	-21.67	VERTICAL	Peak



Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, PreAmp, etc.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting: use a 1 MHz RBW, a 3 MHz VBW.
5. Measurements above 1000 MHz, Average detector setting: 1 MHz RBW with 10 Hz VBW
6. Peak detector measurement data will represent the worst case results.
7. “---” denotes the data which is not available.



7. SECTION 15.205 REQUIREMENTS (BAND EDGE)

7.1 TEST SETUP

Refer to paragraph 6.1.

7.2 LIMIT

Restricted Bands:

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	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

Operation within the bands:

902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

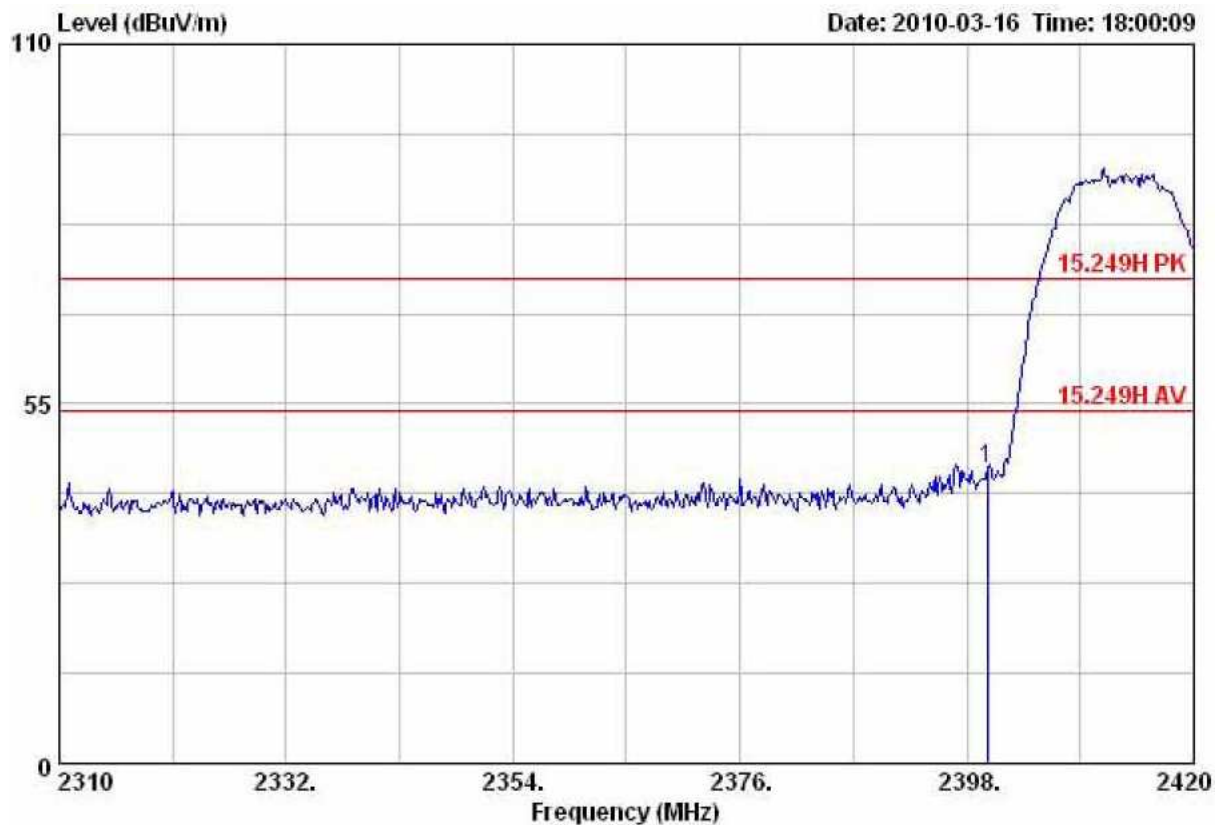
Frequency (Hz)	Field Strength (μ V/m at 3-meter)	Field Strength (dB μ V/m at 3-meter)
1.705-30	30 (at 30-meter)	49.5
30-88	100	40
88-216	150	43
216-960	200	46
Above 960	500	54



7.3 RESULT: PASSED

7.4 TEST DATA:

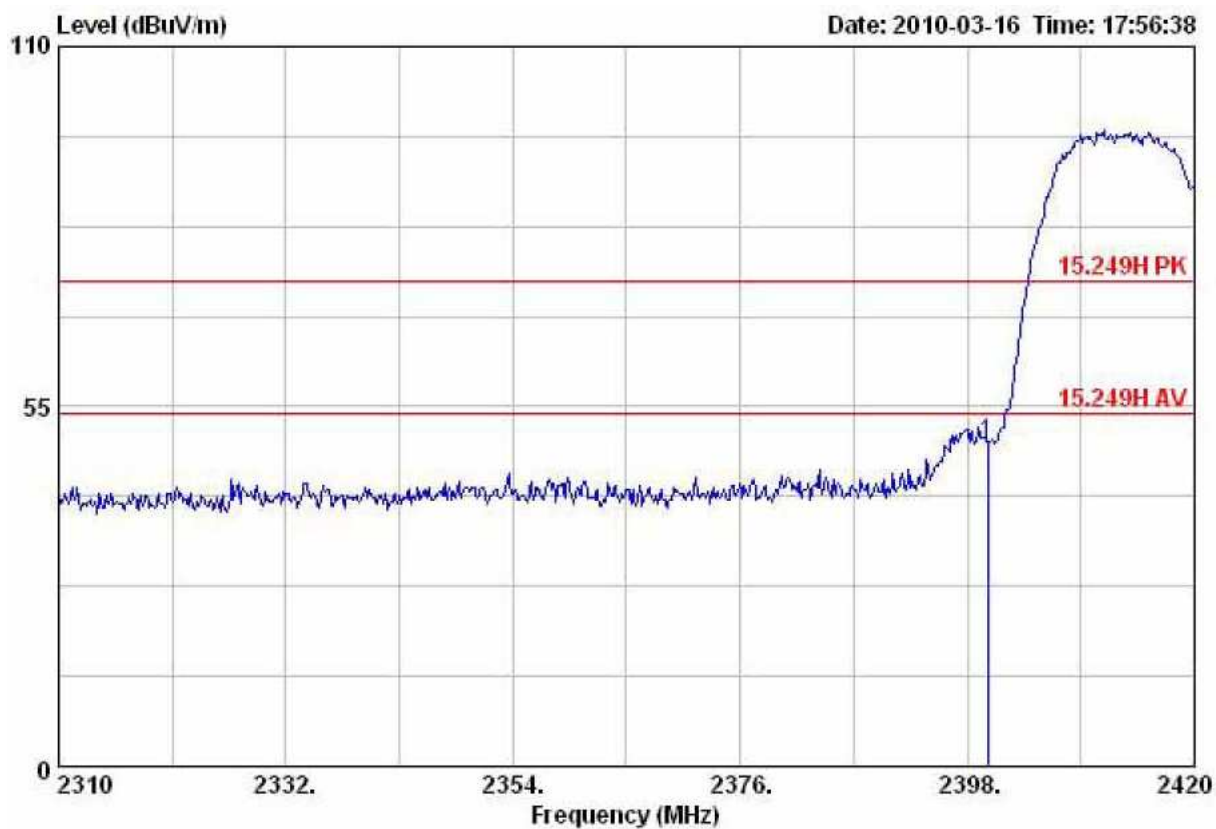
IEEE 802.11b CH Low - Horizontal



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	51.42	-6.46	44.96	74.00	-29.04	HORIZONTAL	Peak



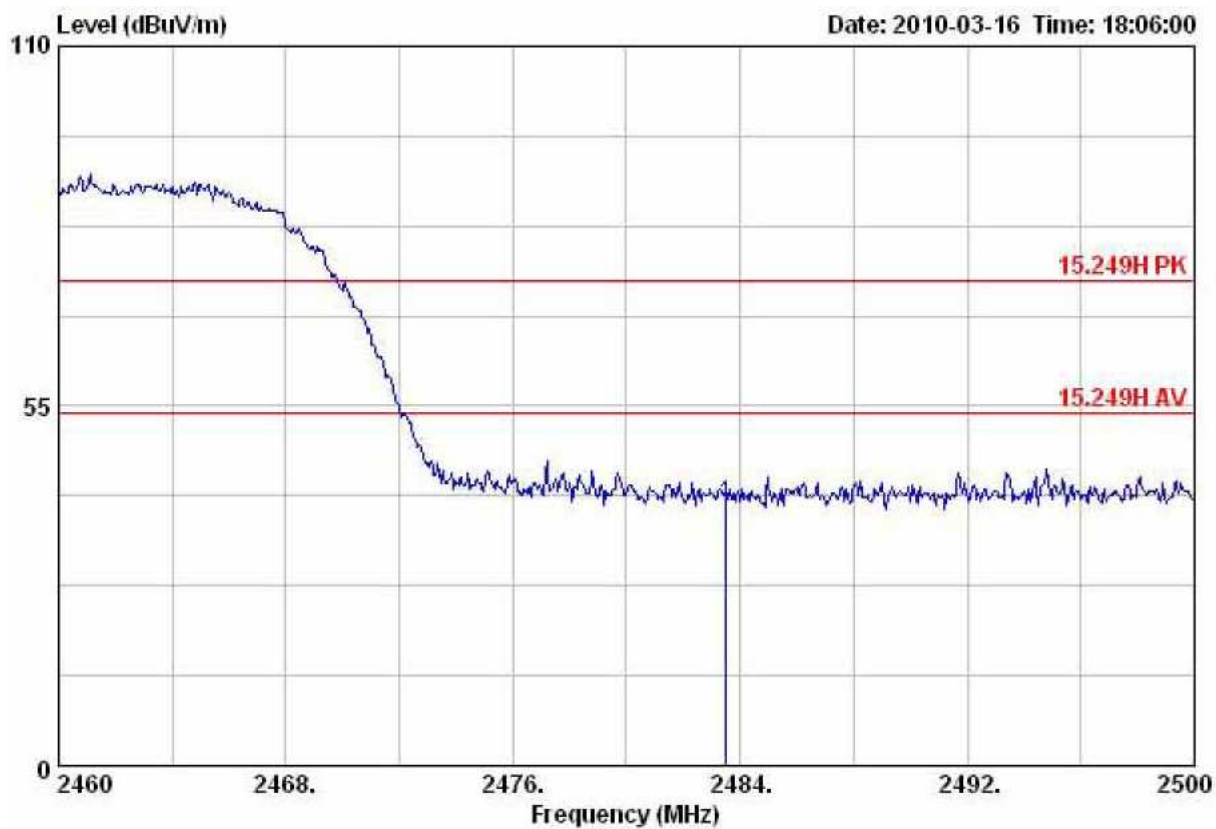
IEEE 802.11b CH Low – Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	55.89	-6.46	49.43	74.00	-24.57	VERTICAL	Peak



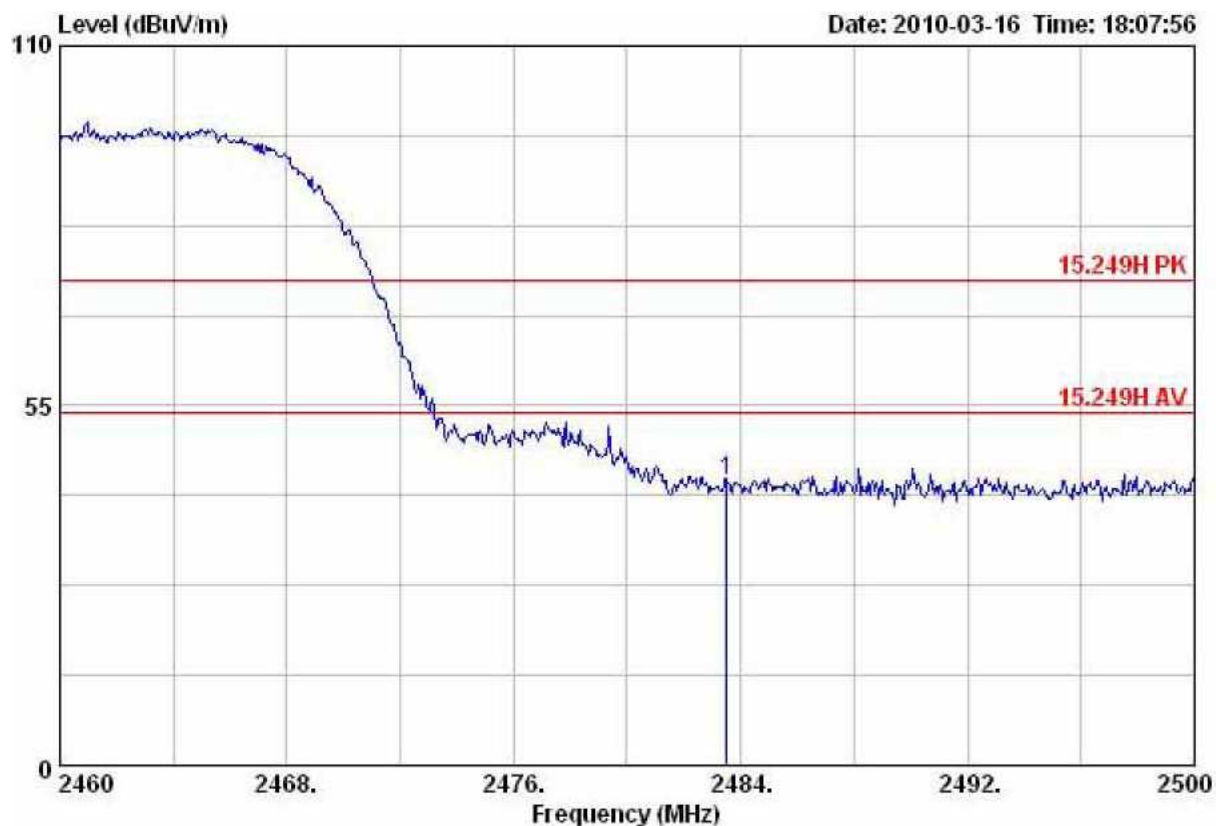
IEEE 802.11b CH High - Horizontal



Freq	Read	Factor	Level	Limit	Over	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	45.64	-5.74	39.90	74.00	-34.10	HORIZONTAL	Peak



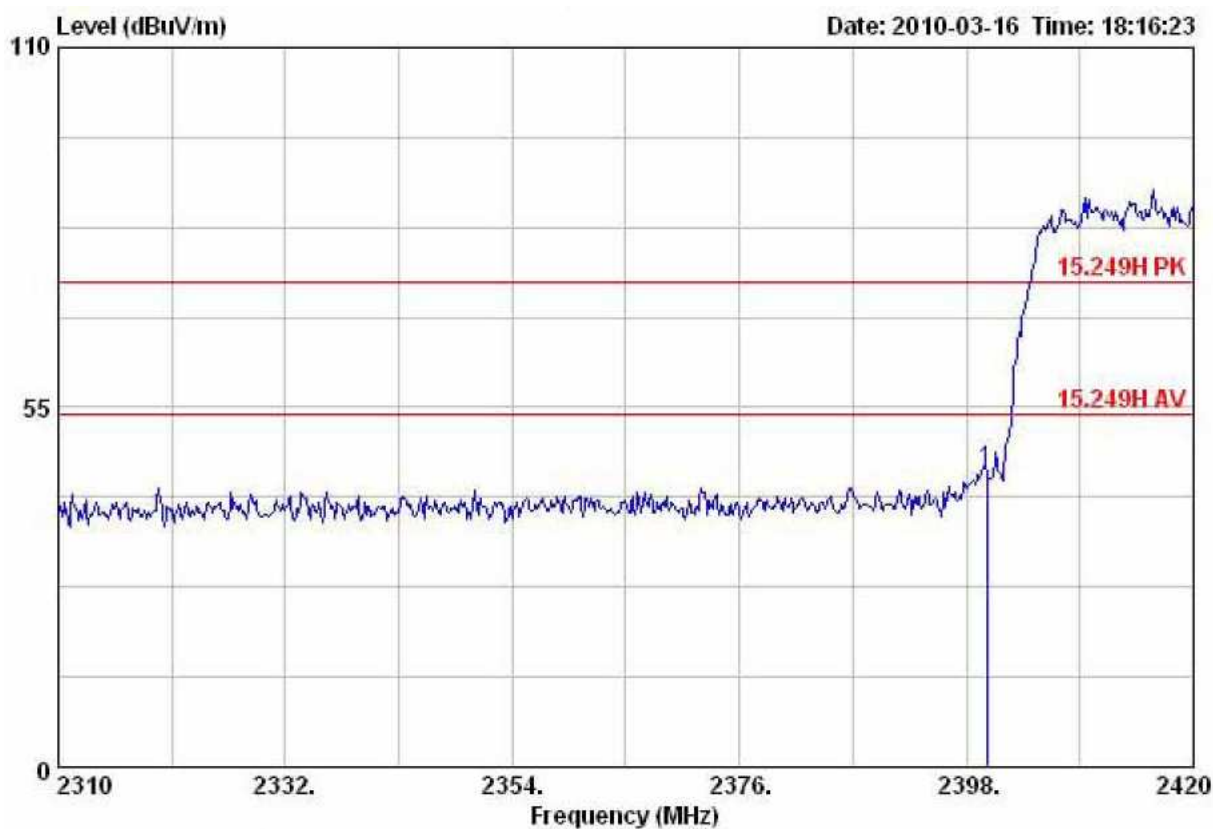
IEEE 802.11b CH High - Vertical



Freq	Read		Level	Limit	Over		
MHz	Level	Factor	Level	Line	Limit	Pol/Phase	Remark
	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	49.36	-5.74	43.62	74.00	-30.38	VERTICAL	Peak



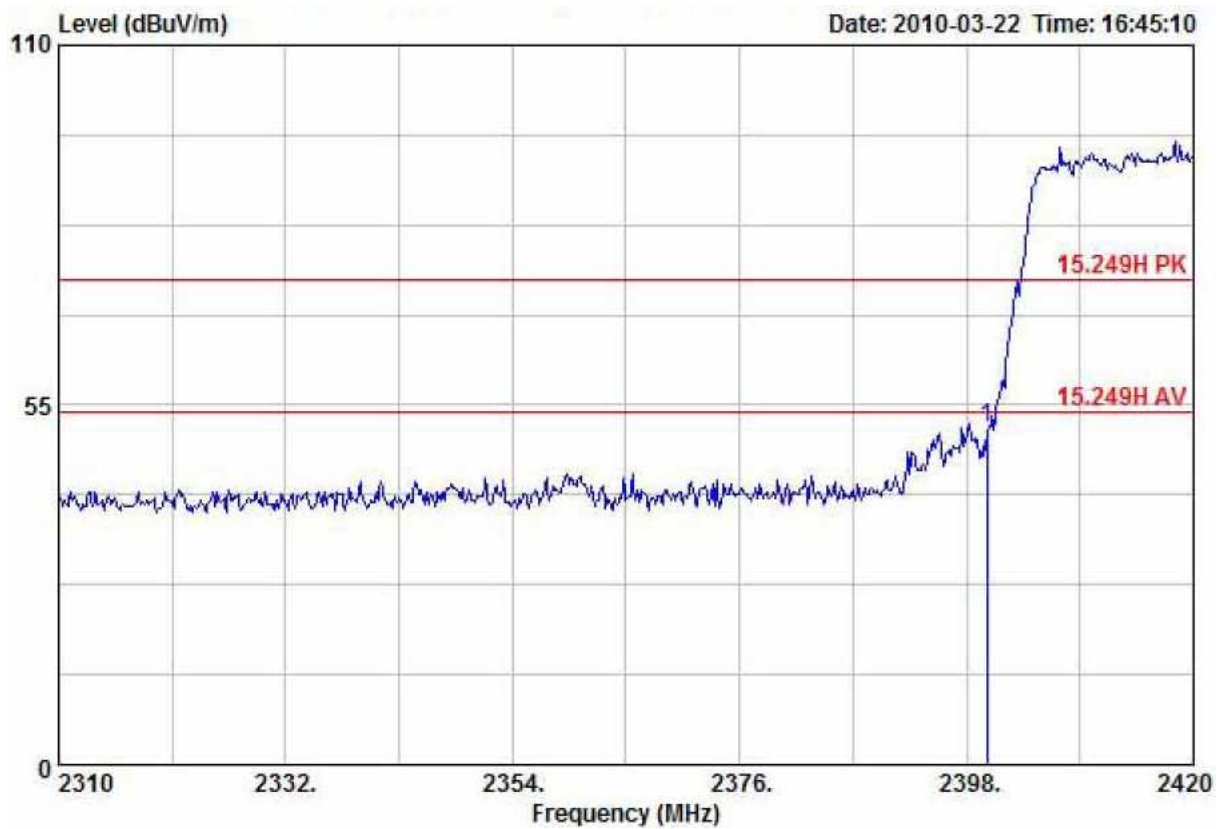
IEEE 802.11g CH Low – Horizontal



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	51.94	-6.46	45.48	74.00	-28.52	HORIZONTAL	Peak



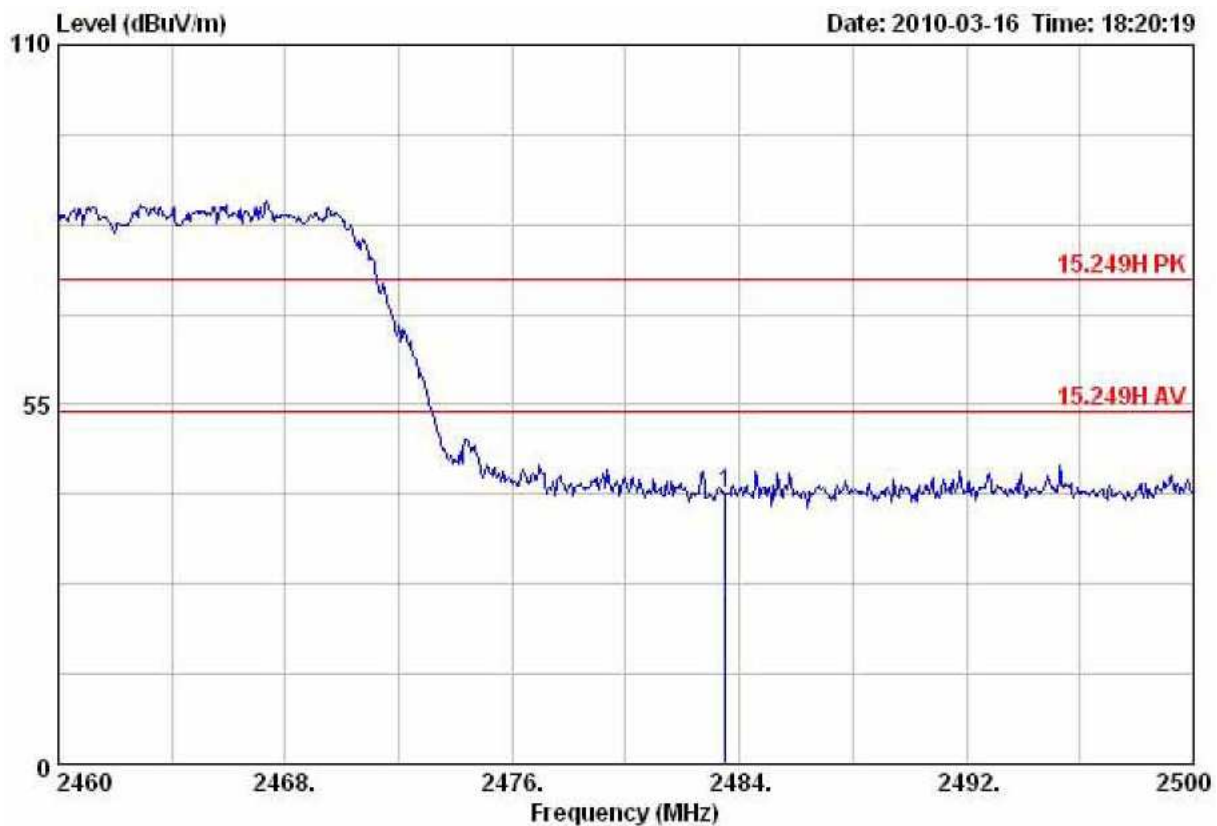
IEEE 802.11g CH Low –Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	58.06	-6.46	51.60	74.00	-22.40	VERTICAL	Peak



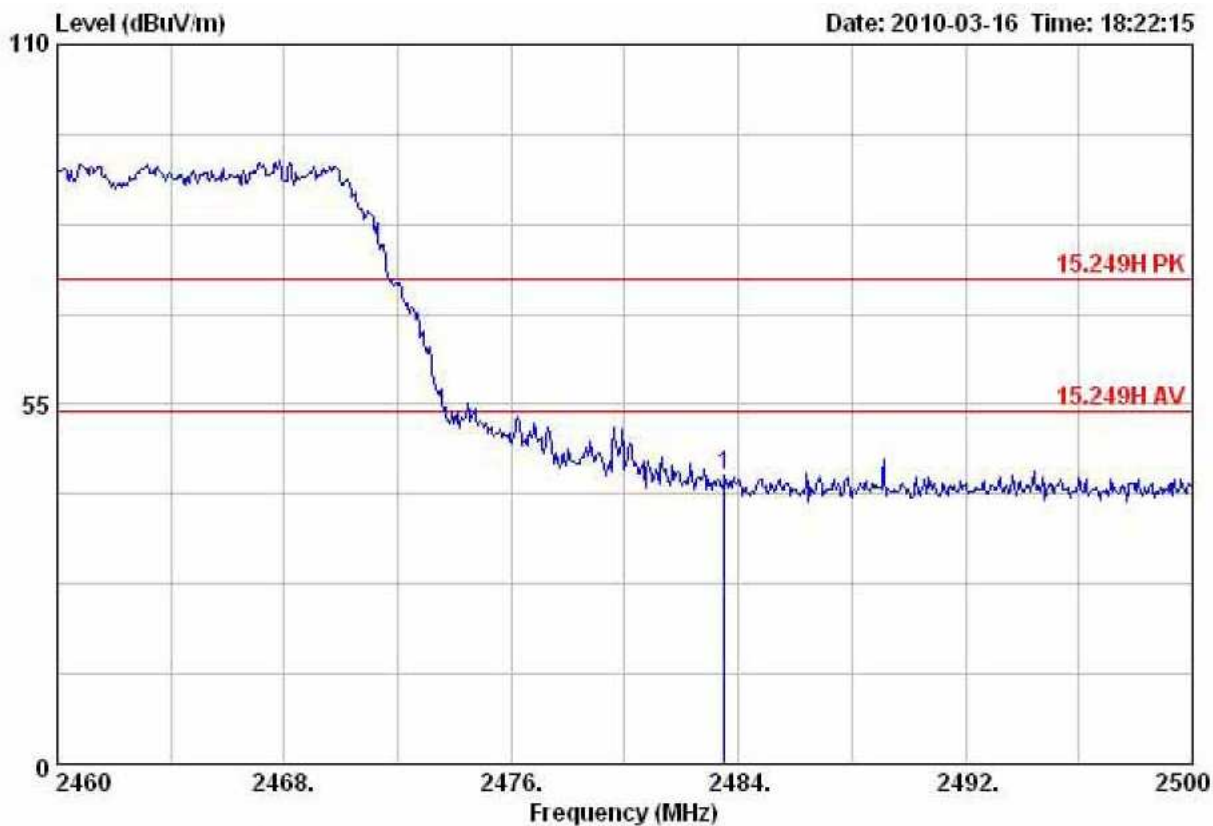
IEEE 802.11g CH High – Horizontal



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	47.19	-5.74	41.45	74.00	-32.55	HORIZONTAL	Peak



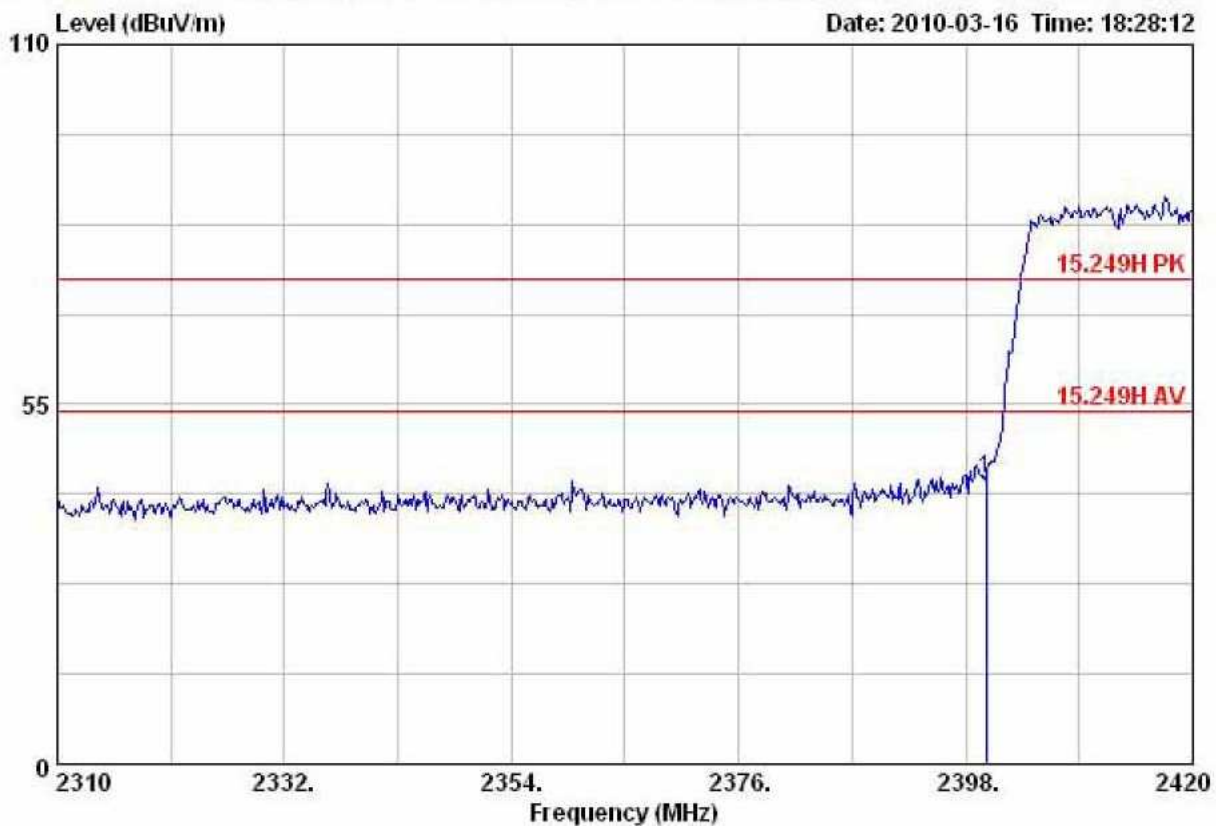
IEEE 802.11g CH High – Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	49.80	-5.74	44.06	74.00	-29.94	VERTICAL	Peak



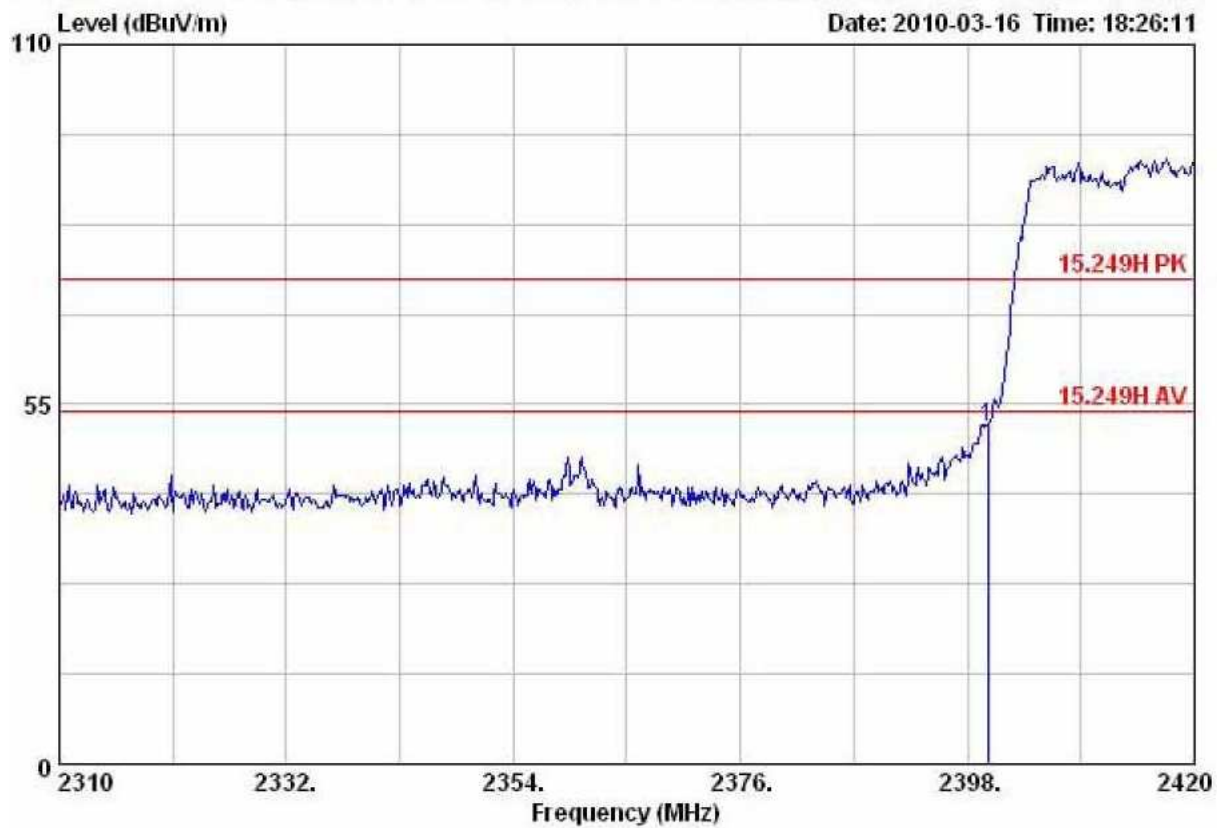
IEEE 802.11n(20M) CH Low – Horizontal



Freq	Read Level	Factor	Level	Limit	Over	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	49.89	-6.46	43.43	74.00	-30.57	HORIZONTAL	Peak



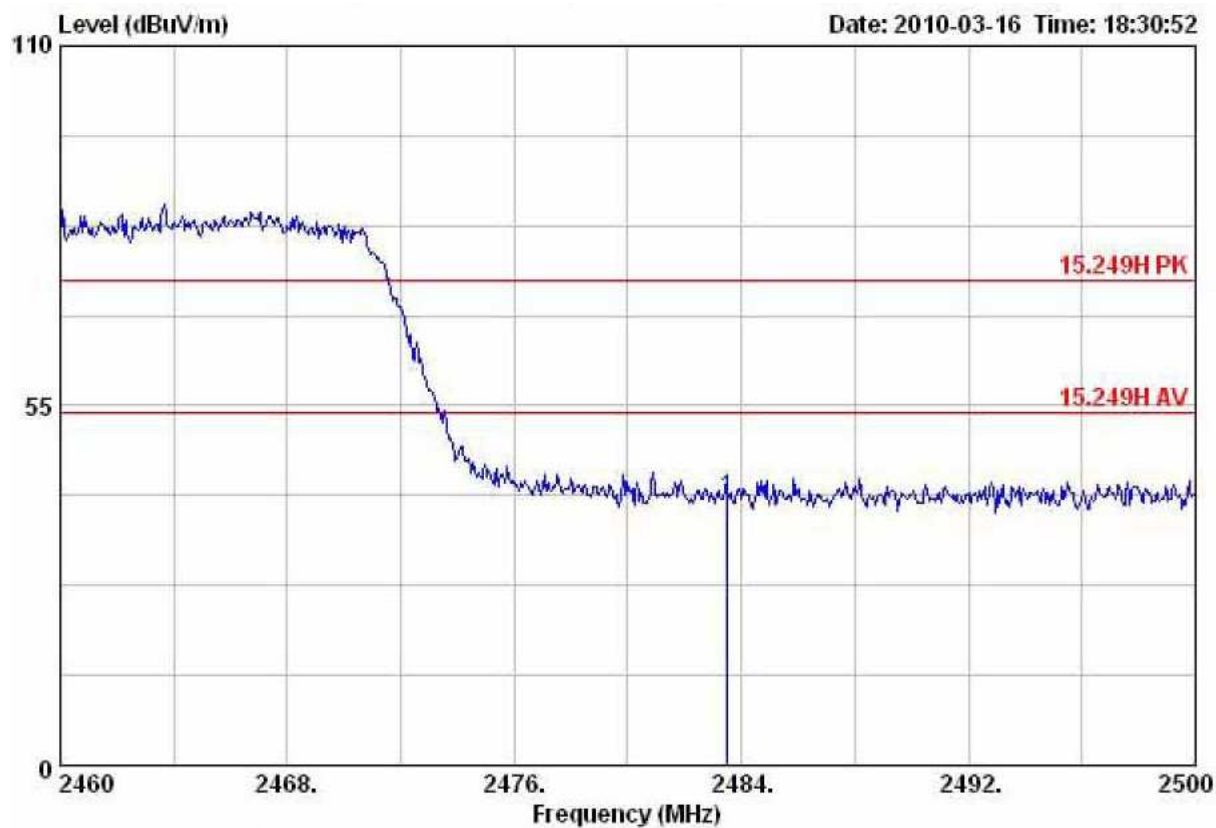
IEEE 802.11n(20M) CH Low -Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	58.08	-6.46	51.62	74.00	-22.38	VERTICAL	Peak



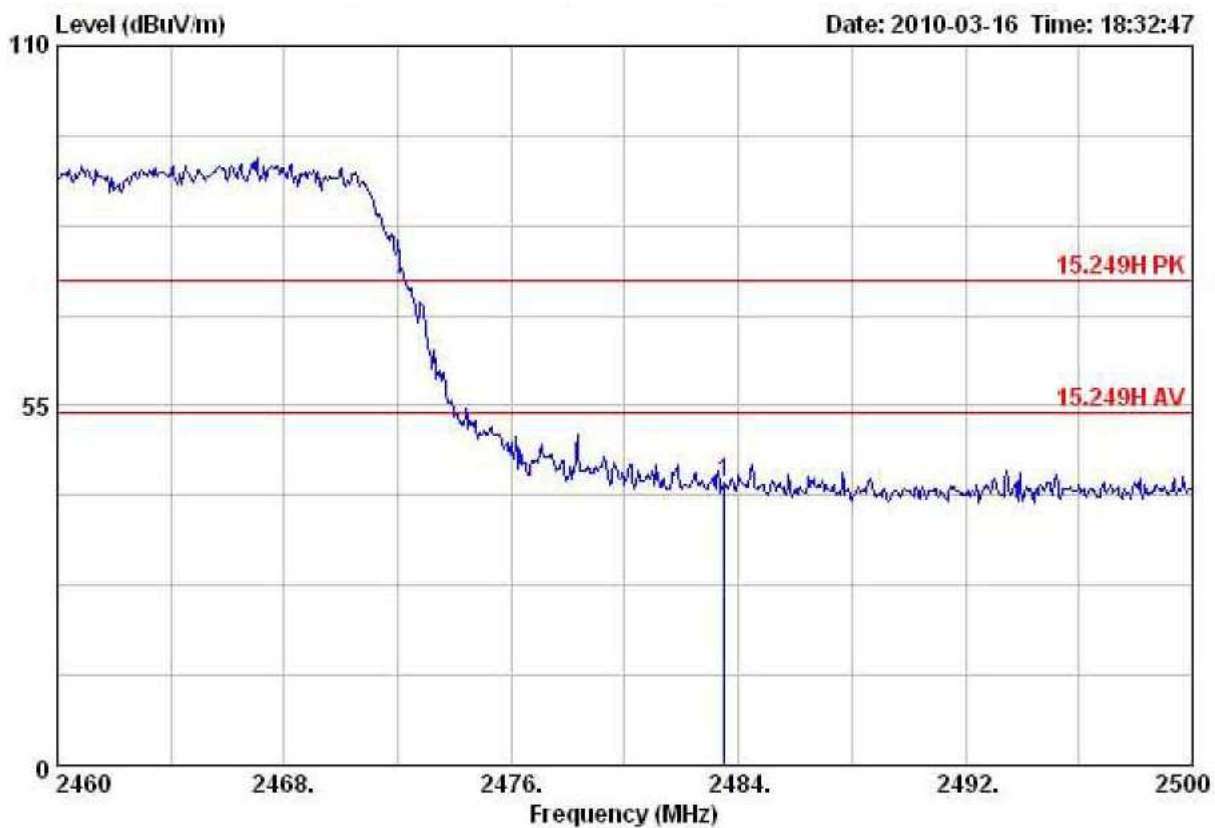
IEEE 802.11n(20M) CH High – Horizontal



Freq	Read		Limit	Over		
Level	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
2483.50	46.50	-5.74	40.76	74.00	-33.24	HORIZONTAL Peak



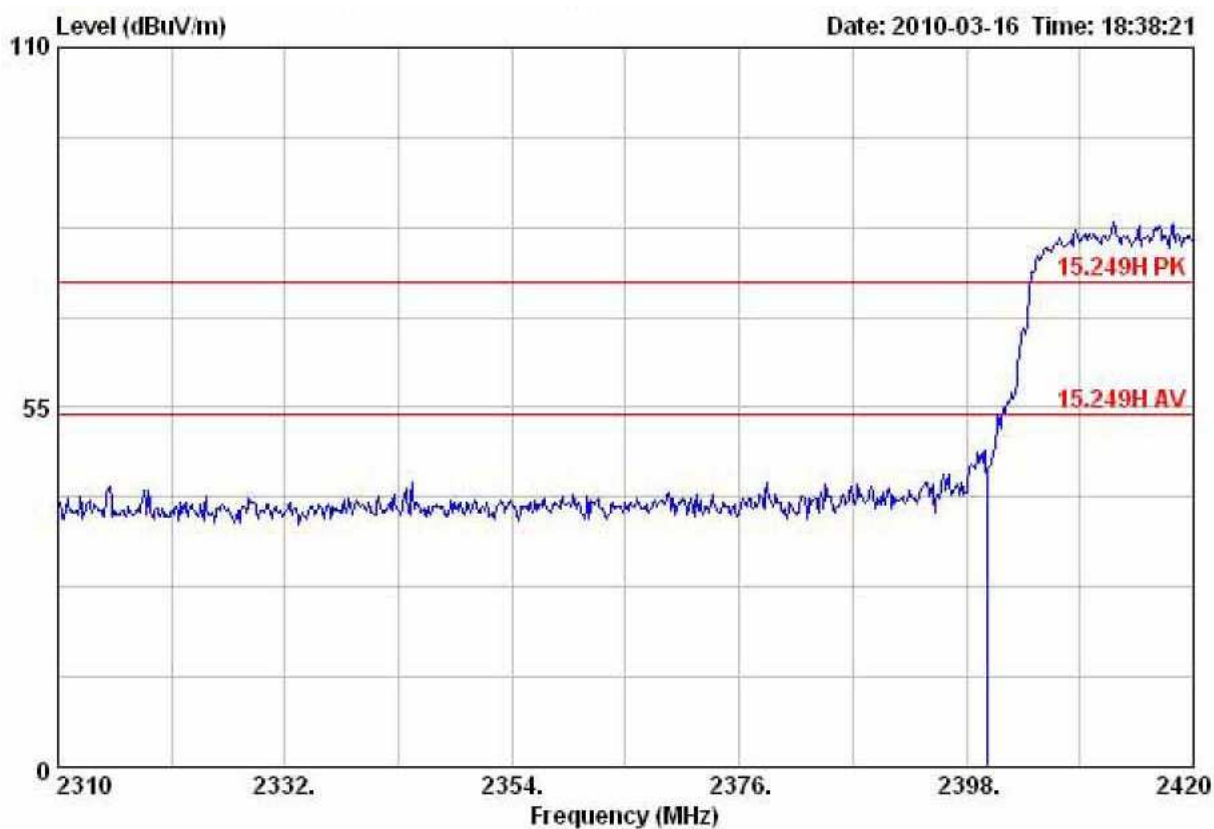
IEEE 802.11n(20M) CH High –Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	49.03	-5.74	43.29	74.00	-30.71	VERTICAL	Peak



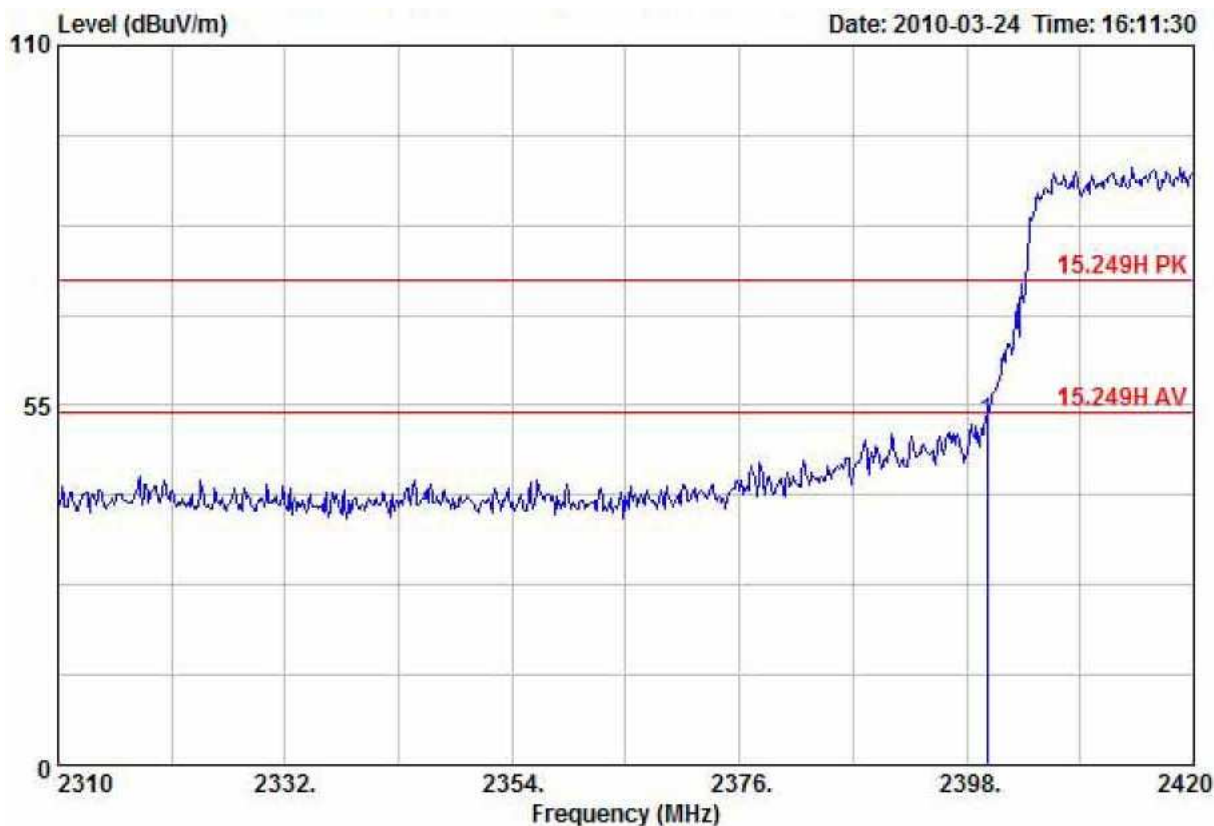
IEEE 802.11n(40M) CH Low – Horizontal



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	51.06	-6.46	44.60	74.00	-29.40	HORIZONTAL	Peak



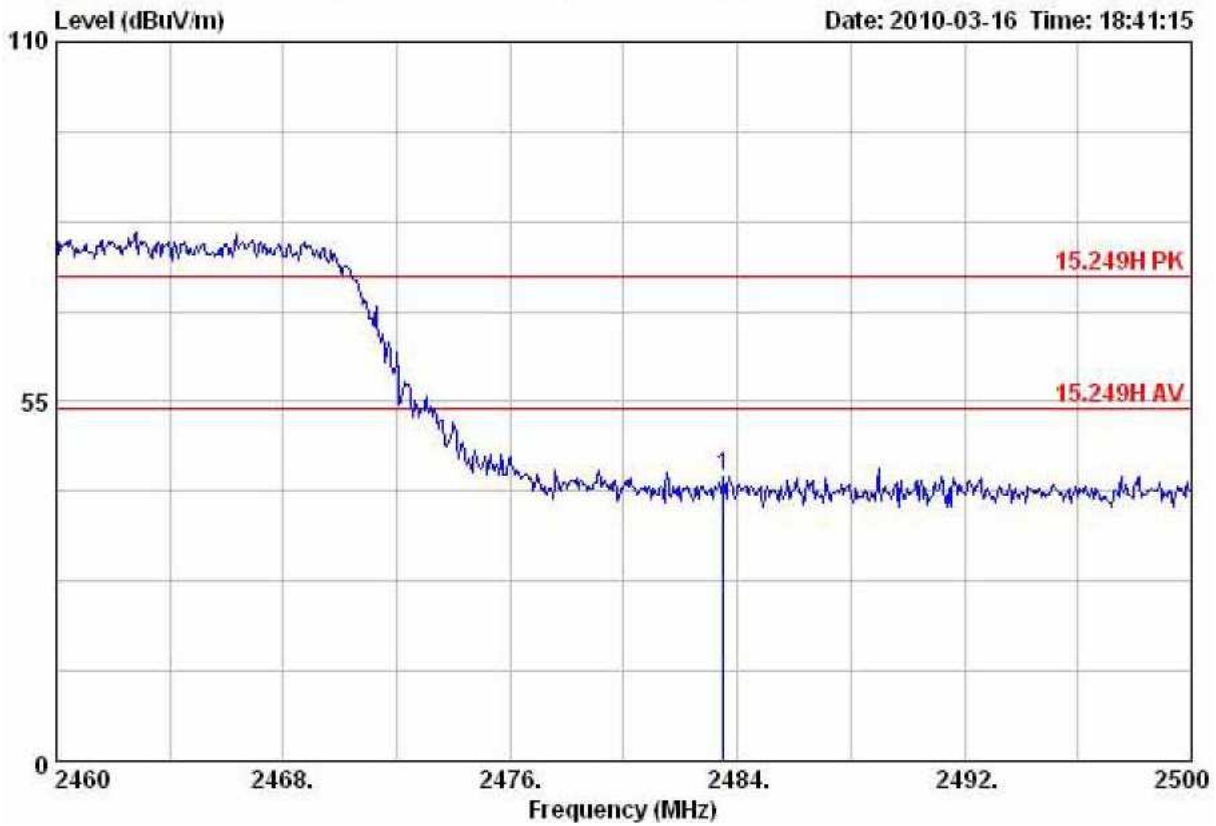
IEEE 802.11n(40M) CH Low –Vertical



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2400.00	58.89	-6.46	52.43	74.00	-21.57	VERTICAL	Peak



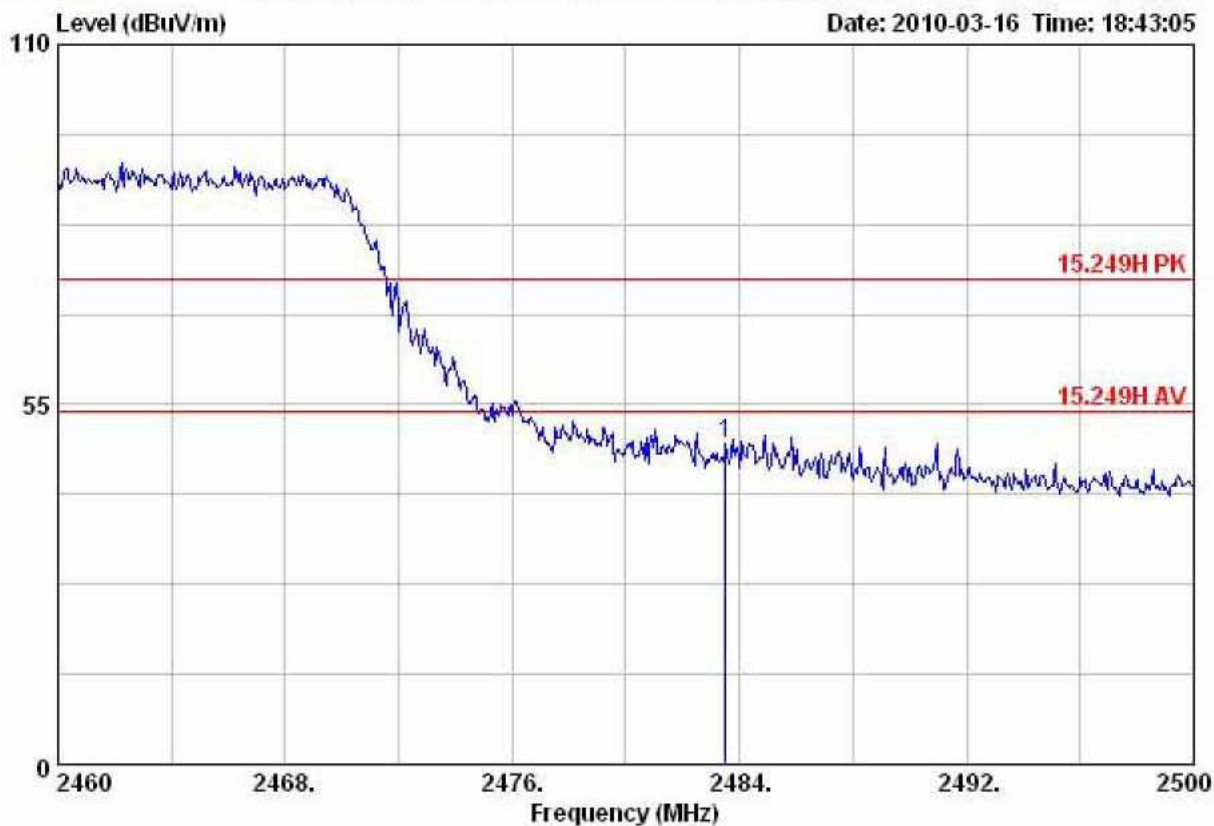
IEEE 802.11n(40M) CH High – Horizontal



Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	49.11	-5.74	43.37	74.00	-30.63	HORIZONTAL	Peak



IEEE 802.11n(40M) CH High –Vertical



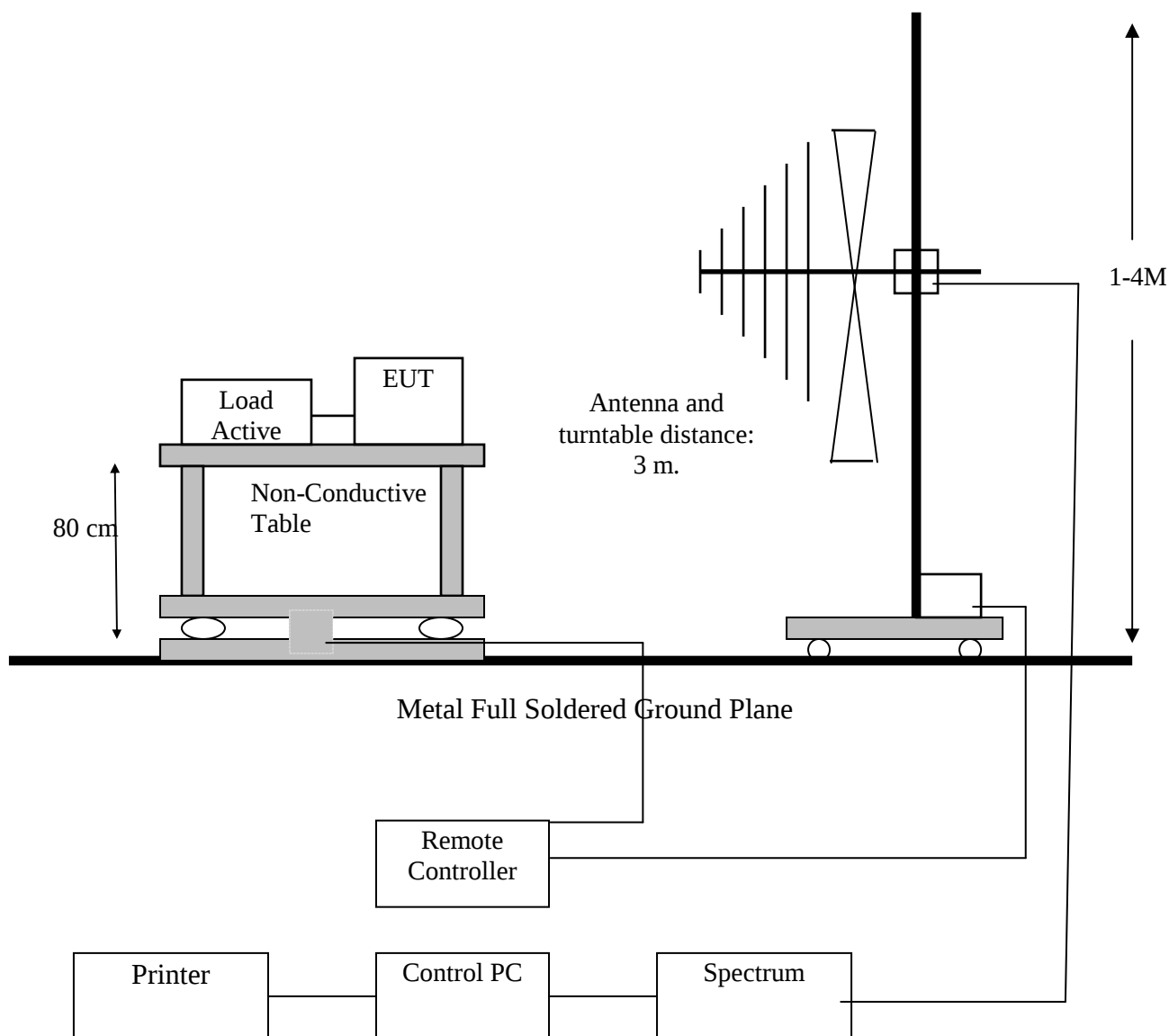
Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	54.72	-5.74	48.98	74.00	-25.02	VERTICAL	Peak

Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, PreAmp, etc.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting: use a 1 MHz RBW, a 3 MHz VBW.
5. Measurements above 1000 MHz, Average detector setting: 1 MHz RBW with 10 Hz VBW.
6. Peak detector measurement data will represent the worst case results.

8. SECTION 15.209 REQUIREMENTS (GENERAL RADIATED EMISSION)

8.1 TEST SETUP





8.2 LIMIT

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209 as below.

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
1.705-30	30	30
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500*	3

**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.*

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

Frequency (Hz)	Field Strength (μ V/m at 3-meter)	Field Strength (dB μ V/m at 3-meter)
1.705-30	30 (at 30-meter)	49.5
30-88	100	40
88-216	150	43
216-960	200	46
Above 960	500	54



8.3 TEST PROCEDURE

1. The EUT was placed on a turntable, which was 0.8m above ground plane.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT was set at 3m away from the receiving antenna, which was 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 maximized by changing the polarization of receiving antenna, both horizontal and vertical.
6. Repeated above procedures until the measurements for all frequencies are completed.

8.4 RESULT: PASSED

8.5 TEST DATA:

All frequencies not described in this test report and within the range of the general radiated emission limits are not detectable significantly. The table as below is representing worst emissions found.

Highest Channel (worst emissions found)

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
198.82	33.94	-2.12	31.82	43.00	-11.18	HORIZONTAL	Peak
299.73	33.03	-0.52	32.51	46.00	-13.49	HORIZONTAL	Peak
381.48	31.82	1.70	33.52	46.00	-12.48	HORIZONTAL	Peak
416.92	27.28	2.59	29.87	46.00	-16.13	HORIZONTAL	Peak
736.84	22.62	10.19	32.81	46.00	-13.19	HORIZONTAL	Peak
984.76	8.70	16.16	24.86	54.00	-29.14	HORIZONTAL	Peak

Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
198.75	33.97	-2.14	31.83	43.00	-11.17	VERTICAL	Peak
299.84	33.66	-0.51	33.15	46.00	-12.85	VERTICAL	Peak
336.46	29.78	0.50	30.28	46.00	-15.72	VERTICAL	Peak
660.45	20.94	8.92	29.86	46.00	-16.14	VERTICAL	Peak
707.81	21.34	9.73	31.07	46.00	-14.93	VERTICAL	Peak
992.84	16.12	16.35	32.47	54.00	-21.53	VERTICAL	Peak



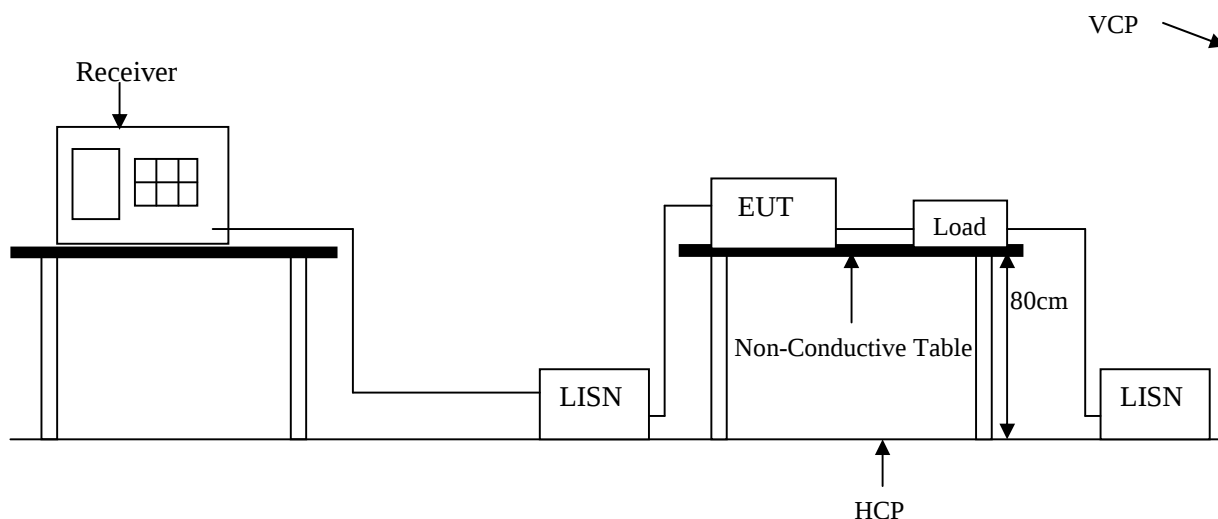
Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, PreAmp, etc.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements from 9 kHz to 150 kHz, Peak detector setting: 100 Hz RBW
5. Measurements from 150 kHz to 30MHz, Peak detector setting: 10 kHz RBW
6. Measurements from 30 MHz to 1000 MHz, Peak detector setting: 100 kHz RBW
7. Measurements from 9 kHz to 150 kHz, CISPR Quasi-Peak detector: 200 Hz RBW
8. Measurements from 150 kHz to 30MHz, CISPR Quasi-Peak detector: 9 kHz RBW
9. Measurements from 30 MHz to 1000 MHz, CISPR Quasi-Peak detector: 120 kHz RBW
10. Peak detector measurement data will represent the worst case results.



9. SECTION 15.207 REQUIREMENTS (POWERLINE CONDUCTED EMISSIONS)

9.1 TEST SETUP



9.2 TEST SETUP

9.3 LIMIT

Frequency range (MHz)	CLASS A		CLASS B	
	QP dB(uV)	Average dB(uV)	QP dB(uV)	Average dB(uV)
0.15-0.5	79 dBuV	66 dBuV	66 - 56 dBuV	56 - 46 dBuV
0.5-5.0	73 dBuV	60 dBuV	56 dBuV	46 dBuV
5.0-30.0	73 dBuV	60 dBuV	60 dBuV	50 dBuV

Remark: In the above table, the tighter limit applies at the band edges.

9.4 TEST PROCEDURE

The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). It provides a 50 ohm / 50 μ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm / 50 μ H coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photograph.)

Both sides of AC line are checked for the maximum conducted emission interference. In order to find the maximum emissions, the relating positions of equipment and all of the interference cables must be changed according to EN 55022 regulations: The measurement procedure on conducted emission interference.

The resolution bandwidth of the field strength meter is set at 9 KHz.

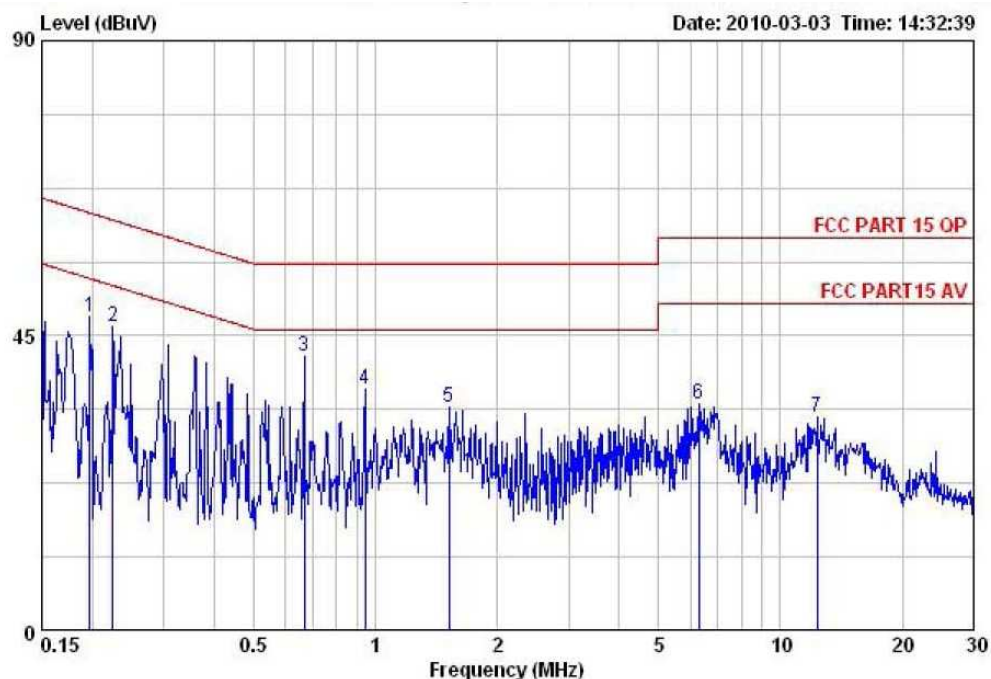


9.5 TEST SPECIFICATION

According to PART15.207

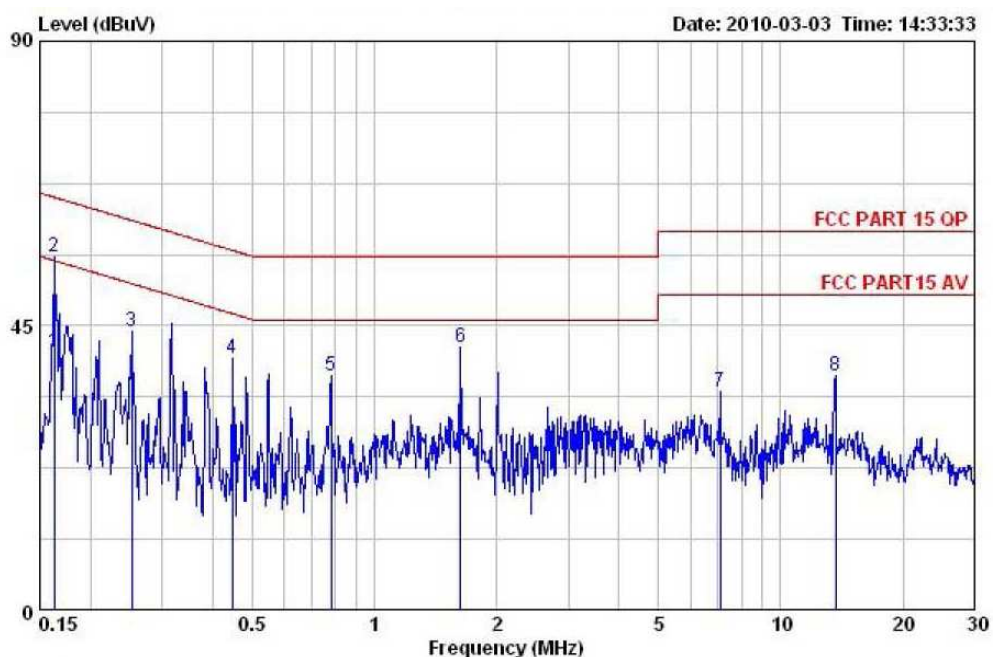
9.6 RESULT: PASSED

9.7 TEST DATA:



Site : Conducted
Condition : FCC PART 15 OP NNB41-080924 0310015 LINE
: RBW:9KHz VBW:300KHz SWT:Auto
EUT : 802.11 b/g/n Long Range USB Adapter
MODEL : AWUS036NEH
MEMO :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.20	37.69	10.15	47.84	63.71	-15.87	Peak
2	0.22	36.33	10.15	46.48	62.66	-16.18	Peak
3	0.67	31.78	10.20	41.98	56.00	-14.02	Peak
4	0.94	26.74	10.23	36.97	56.00	-19.03	Peak
5	1.52	23.91	10.26	34.17	56.00	-21.83	Peak
6	6.29	24.30	10.41	34.71	60.00	-25.29	Peak
7	12.32	22.07	10.51	32.58	60.00	-27.42	Peak



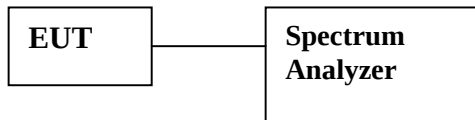
Site : Conducted
Condition : FCC PART 15 OP NNB41-080924 0310015 NEUTRAL
: RBW:9KHz VBW:300KHz SWT:Auto
EUT : 802.11 b/g/n Long Range USB Adapter
MODEL : AWUS036NEH
MEMO :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.16	30.65	10.15	40.80	55.34	-14.54	Average
2	0.16	45.66	10.15	55.81	65.34	-9.53	Peak
3	0.25	33.88	10.16	44.04	61.69	-17.65	Peak
4	0.45	29.62	10.18	39.80	56.93	-17.13	Peak
5	0.78	26.92	10.21	37.13	56.00	-18.87	Peak
6	1.63	31.34	10.26	41.60	56.00	-14.40	Peak
7	7.10	24.12	10.42	34.54	60.00	-25.46	Peak
8	13.62	26.49	10.49	36.98	60.00	-23.02	Peak



10. 6DB BANKWIDTH

10.1 TEST SETUP



10.2 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 – 5820 MHz bands . The minimum 6dB bandwidth shall be least 500 kHz

10.3 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 RF cable from the antenna port to the spectrum.
3. Set the spectrum analyzer as RBW = 100kHz , VBW = RBW , Span = Base mode , Sweep = auto.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

10.4 TEST RESULT: PASSED



10.5 TEST DATA:

Test mode:IEEE 802.11b

Channd	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(kHz)	Result
Low	2412	10.60	>500	PASS
Mid	2437	9.64		PASS
High	2462	9.88		PASS

Test mode:IEEE 802.11g

Channd	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(kHz)	Result
Low	2412	16.50	>500	PASS
Mid	2437	16.58		PASS
High	2462	16.54		PASS

Test mode:IEEE 802.11n(20M)

Channd	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(kHz)	Result
Low	2412	17.74	>500	PASS
Mid	2437	17.74		PASS
High	2462	17.74		PASS

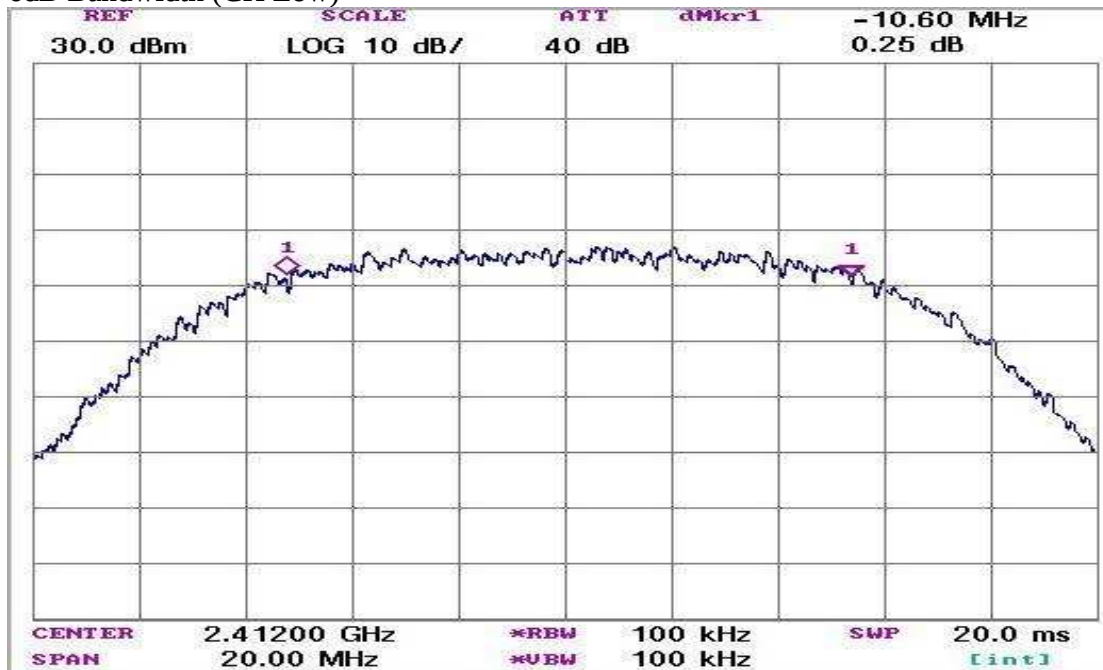
Test mode:IEEE 802.11n(40M)

Channd	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(kHz)	Result
Low	2412	36.50	>500	PASS
Mid	2437	36.70		PASS
High	2462	36.50		PASS

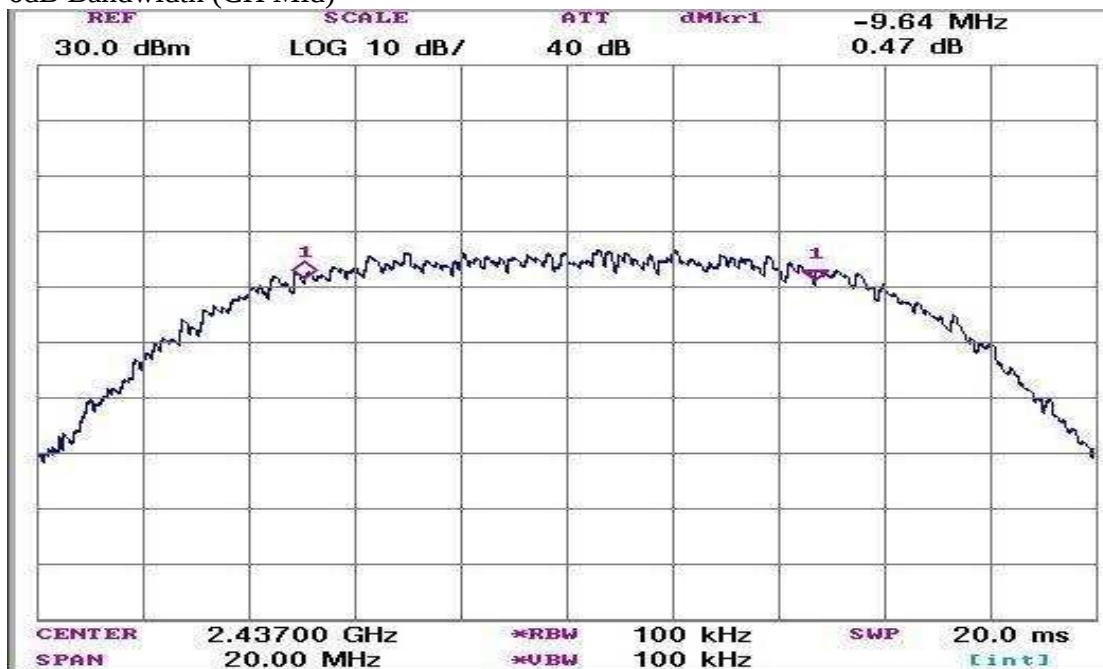


Tset Plot

IEEE 802.11b mode
6dB Bandwidth (CH Low)

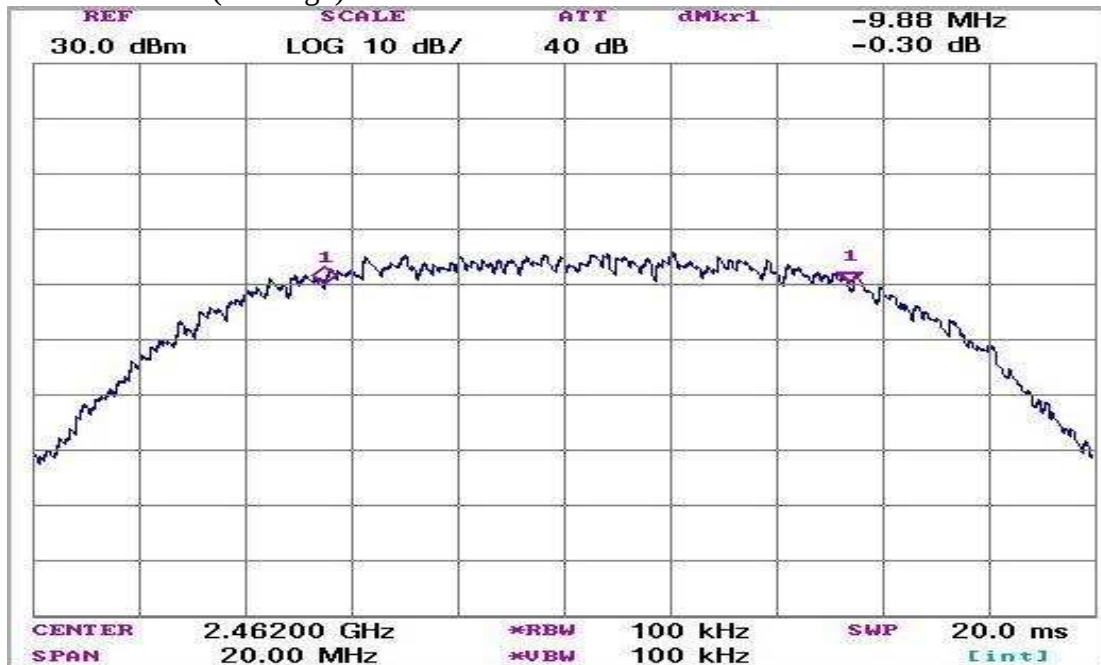


IEEE 802.11b mode
6dB Bandwidth (CH Mid)

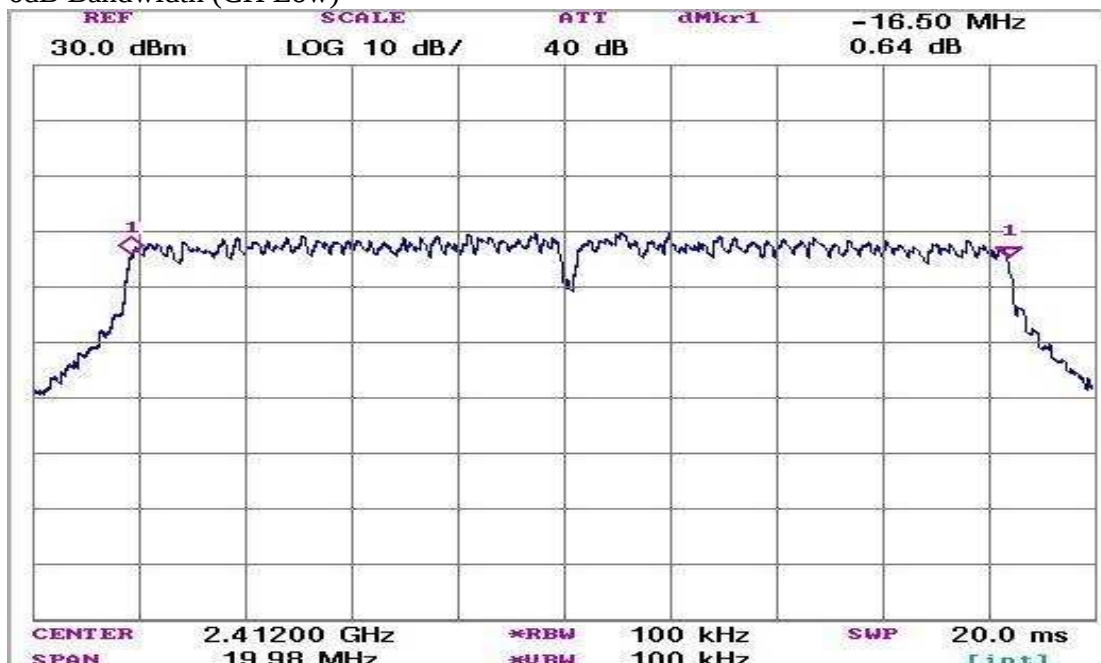




IEEE 802.11b mode
6dB Bandwidth (CH High)

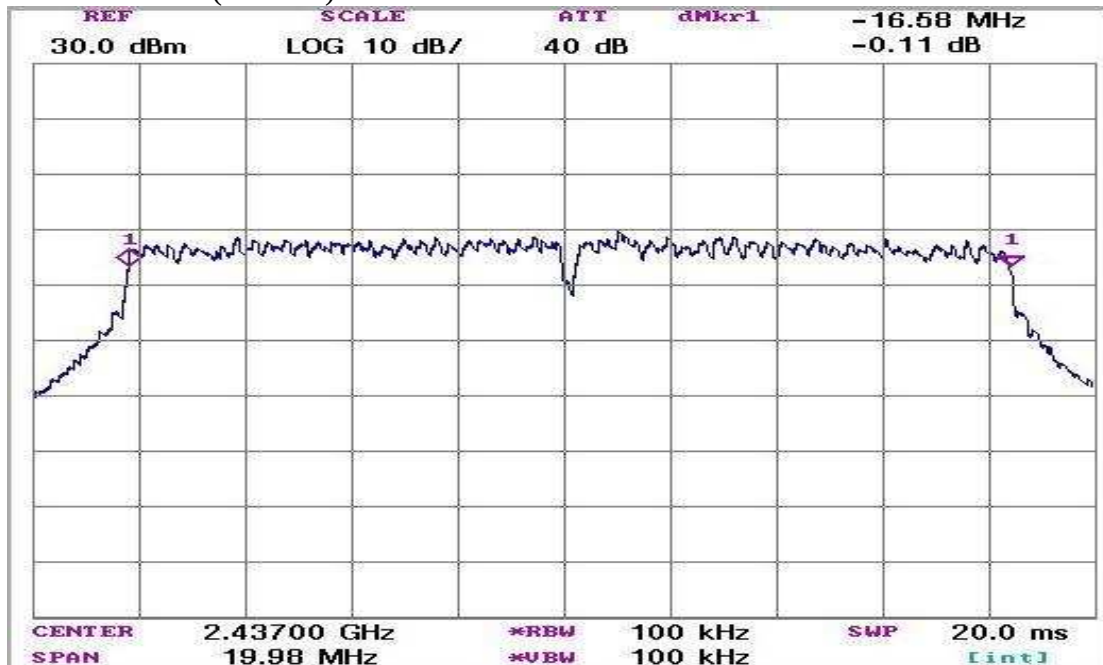


IEEE 802.11g mode
6dB Bandwidth (CH Low)

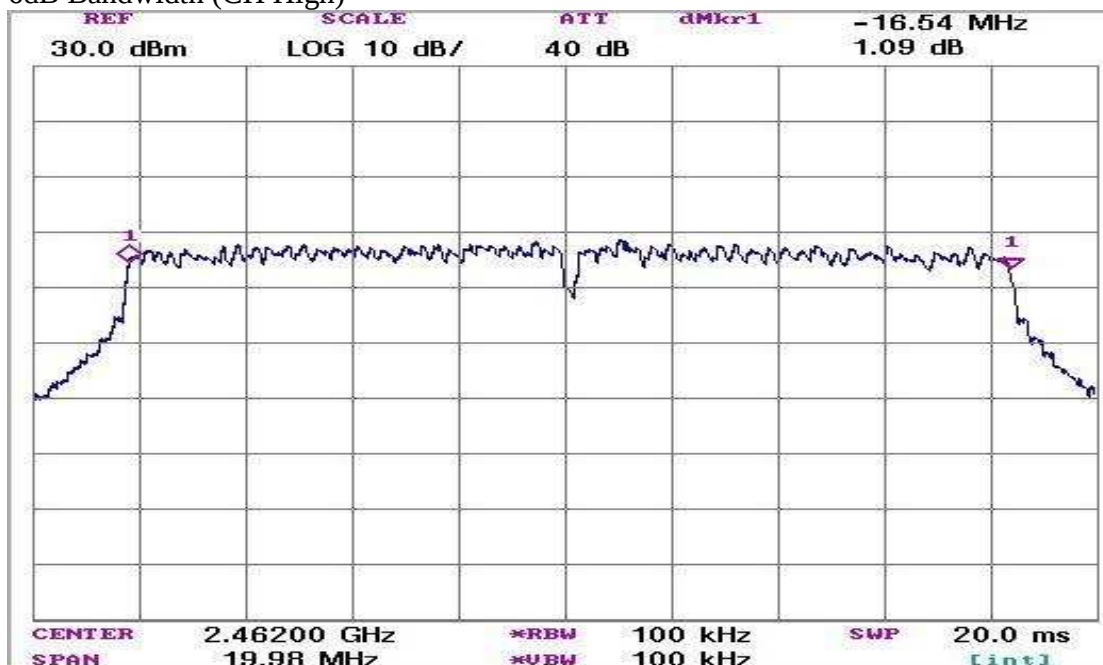




IEEE 802.11g mode
6dB Bandwidth (CH Mid)

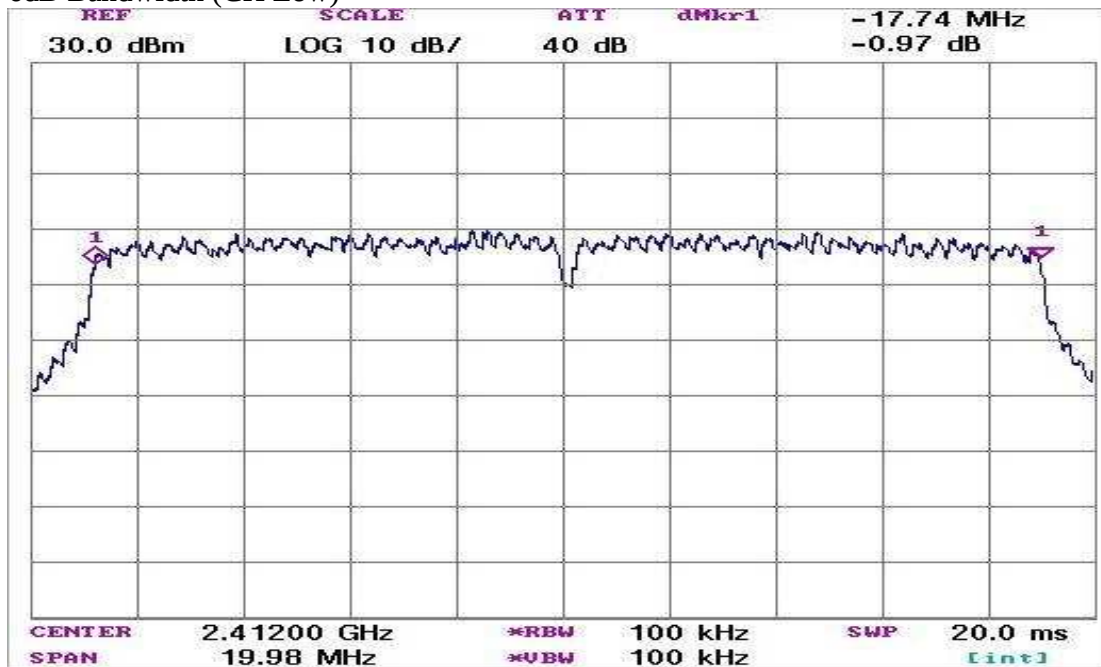


IEEE 802.11g mode
6dB Bandwidth (CH High)

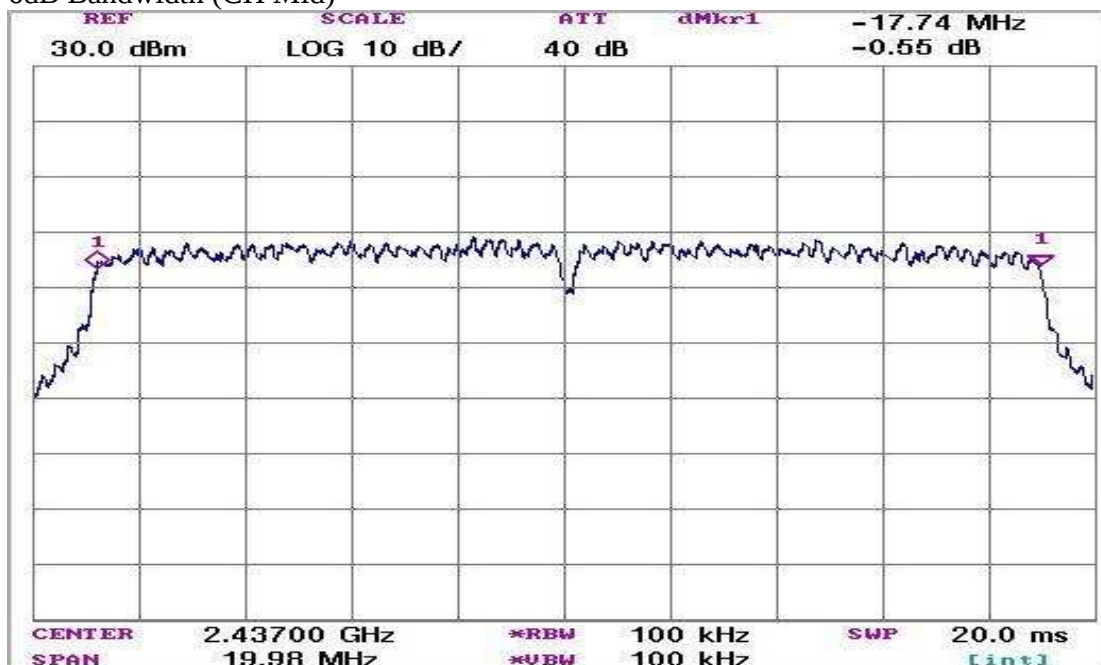




IEEE 802.11n(20M) mode
6dB Bandwidth (CH Low)

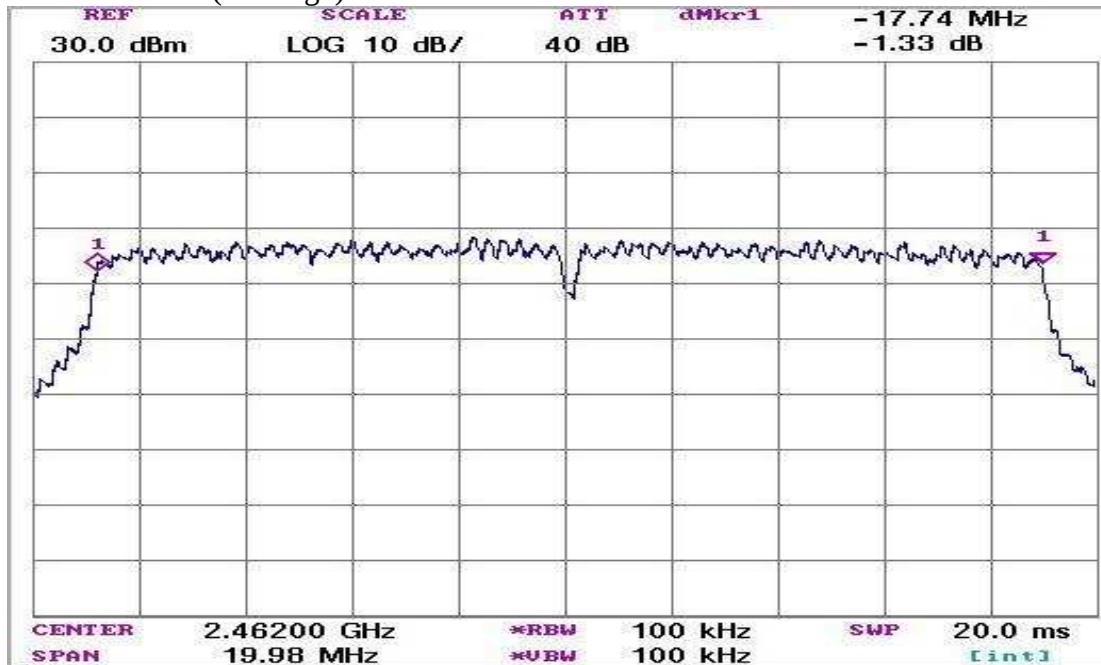


IEEE 802.11n(20M) mode
6dB Bandwidth (CH Mid)

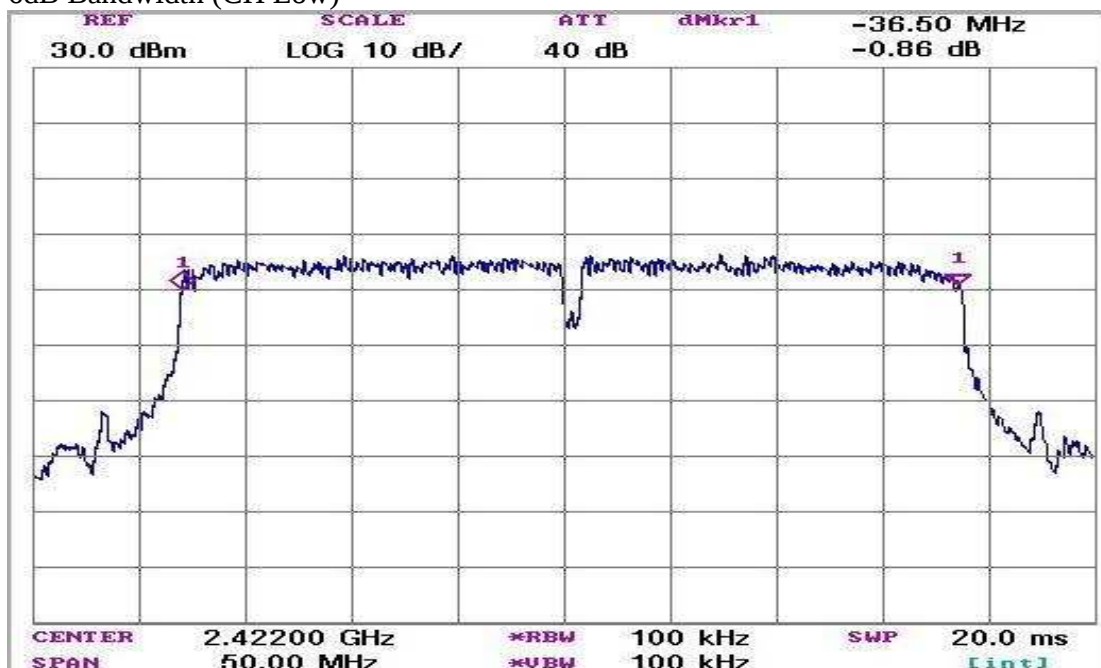




IEEE 802.11n(20M) mode
6dB Bandwidth (CH High)

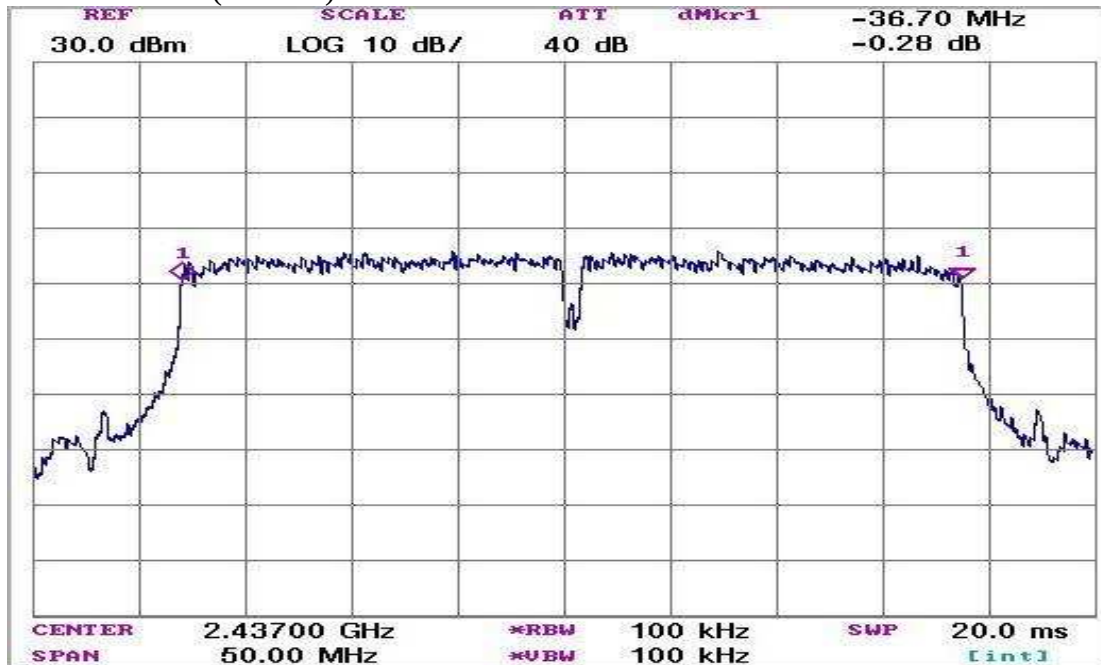


IEEE 802.11n(40M) mode
6dB Bandwidth (CH Low)

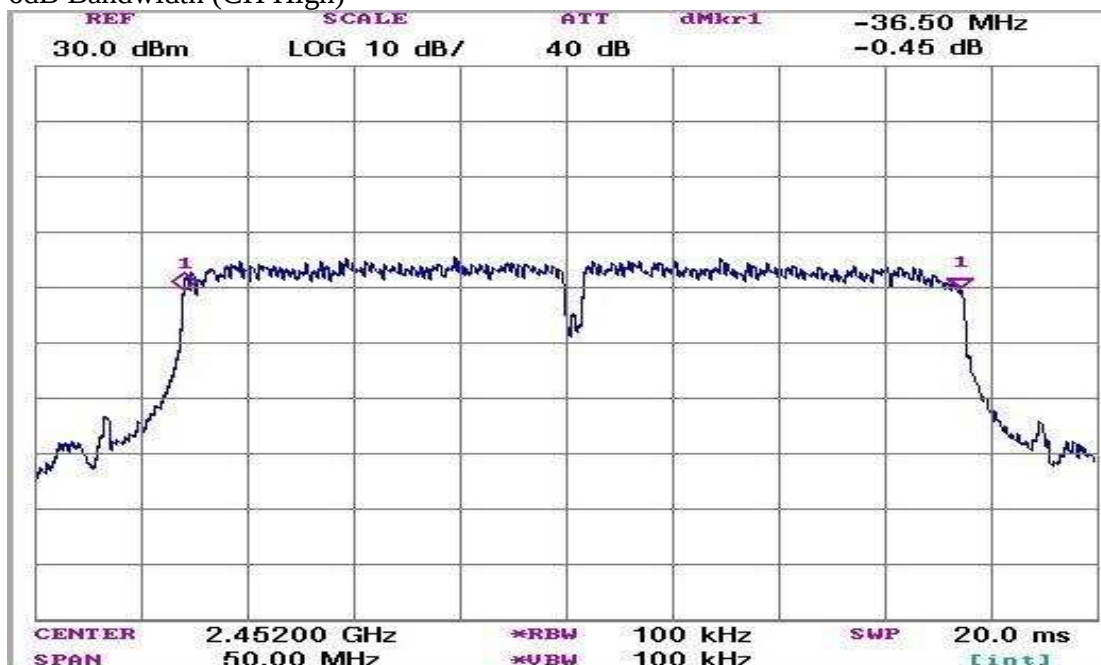




IEEE 802.11n(40M) mode
6dB Bandwidth (CH Mid)



IEEE 802.11n(40M) mode
6dB Bandwidth (CH High)





10. PEAK POWER SPECTRAL DENSITY

10.6 TEST SETUP



10.7 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 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.

10.8 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Set the spectrum analyzer as RBW = 3kHz , VBW = 10kHz , Span = 300kHz , Sweep = 100s.
3. Record the max. reading
4. Repeat the above procedure until the measurements for all frequencies are completed.

10.9 TEST RESULT: PASSED



10.10 TEST DATA:

TEST Mode:IEEE 802.11b

Chammel	Frequency (MHz)	Output Power (dBm)	Limit (dBw)	Result
Low	2412	-17.16	8.00	PASS
Mid	2437	-17.27		PASS
High	2462	-18.50		PASS

TEST Mode:IEEE 802.11g

Chammel	Frequency (MHz)	Output Power (dBm)	Limit (dBw)	Result
Low	2412	-22.23	8.00	PASS
Mid	2437	-22.75		PASS
High	2462	-22.52		PASS

TEST Mode:IEEE 802.11n(20M)

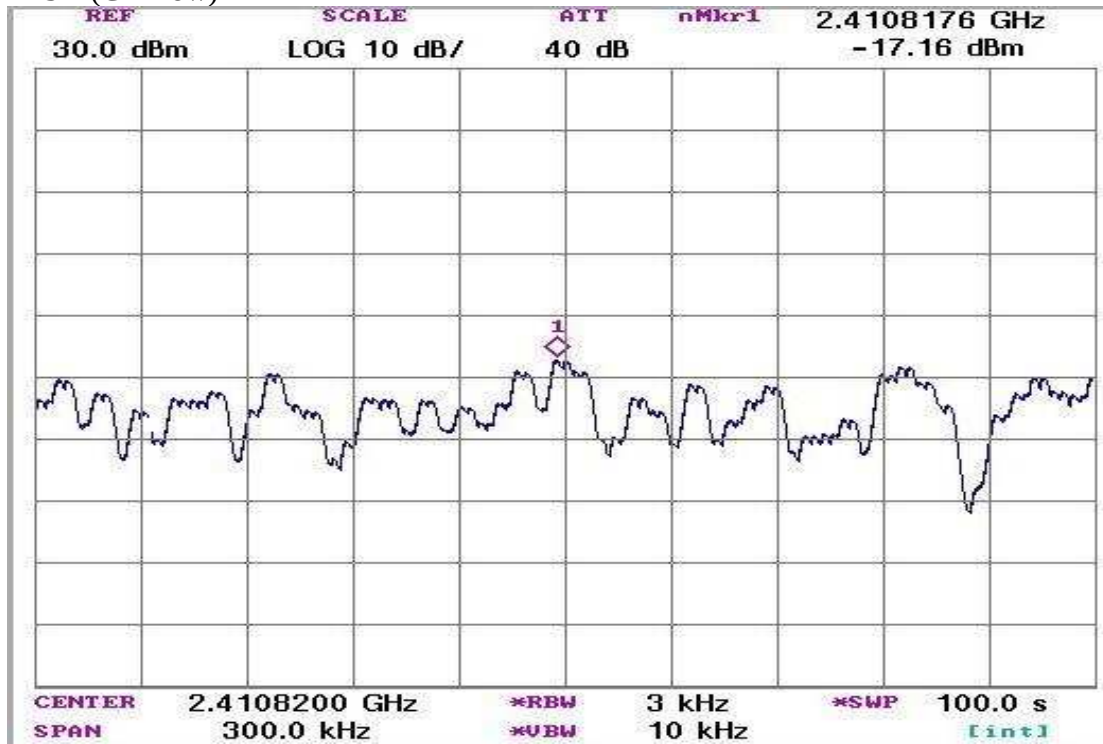
Chammel	Frequency (MHz)	Output Power (dBm)	Limit (dBw)	Result
Low	2412	-21.41	8.00	PASS
Mid	2437	-21.83		PASS
High	2462	-22.72		PASS

TEST Mode:IEEE 802.11n(40M)

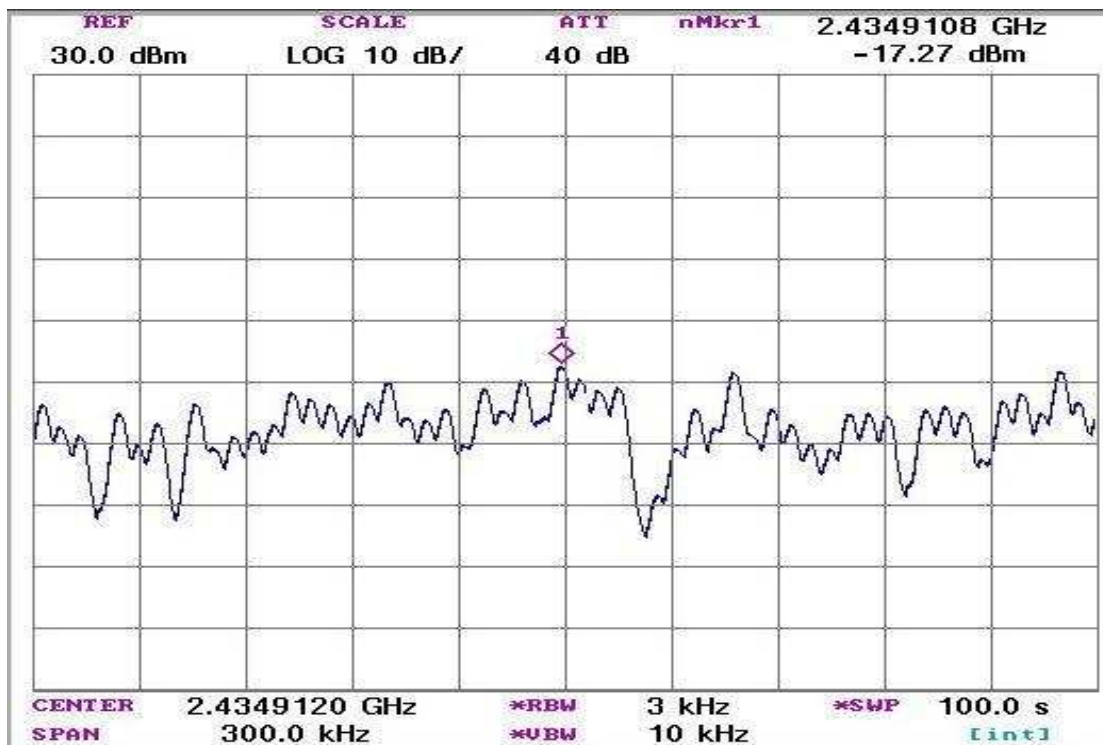
Chammel	Frequency (MHz)	Output Power (dBm)	Limit (dBw)	Result
Low	2422	-25.19	8.00	PASS
Mid	2437	-24.86		PASS
High	2452	-25.72		PASS



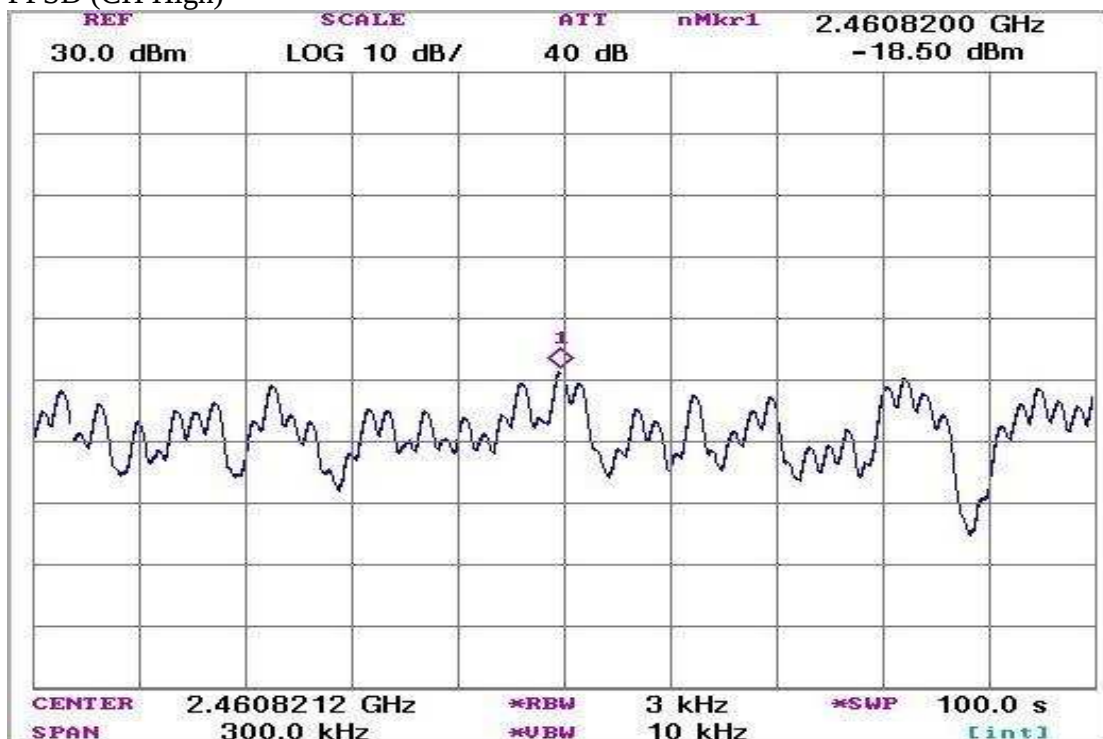
Tset Plot
IEEE 802.11b mode
PPSD (CH Low)



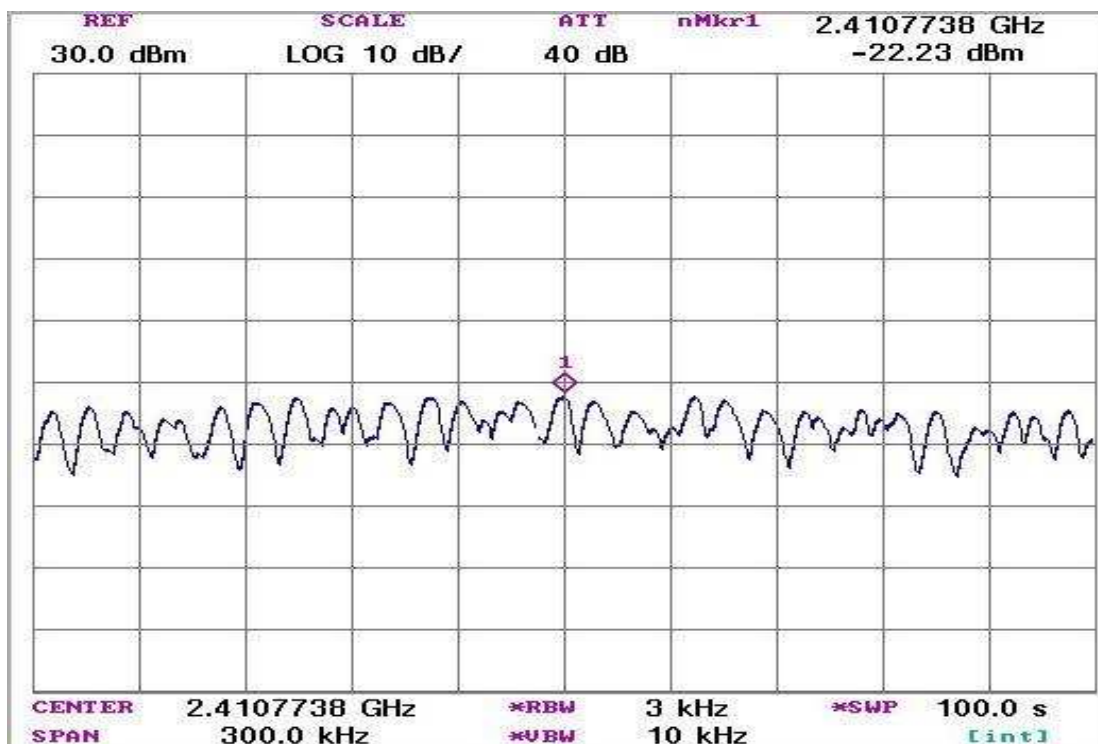
IEEE 802.11b mode
PPSD (CH Mid)



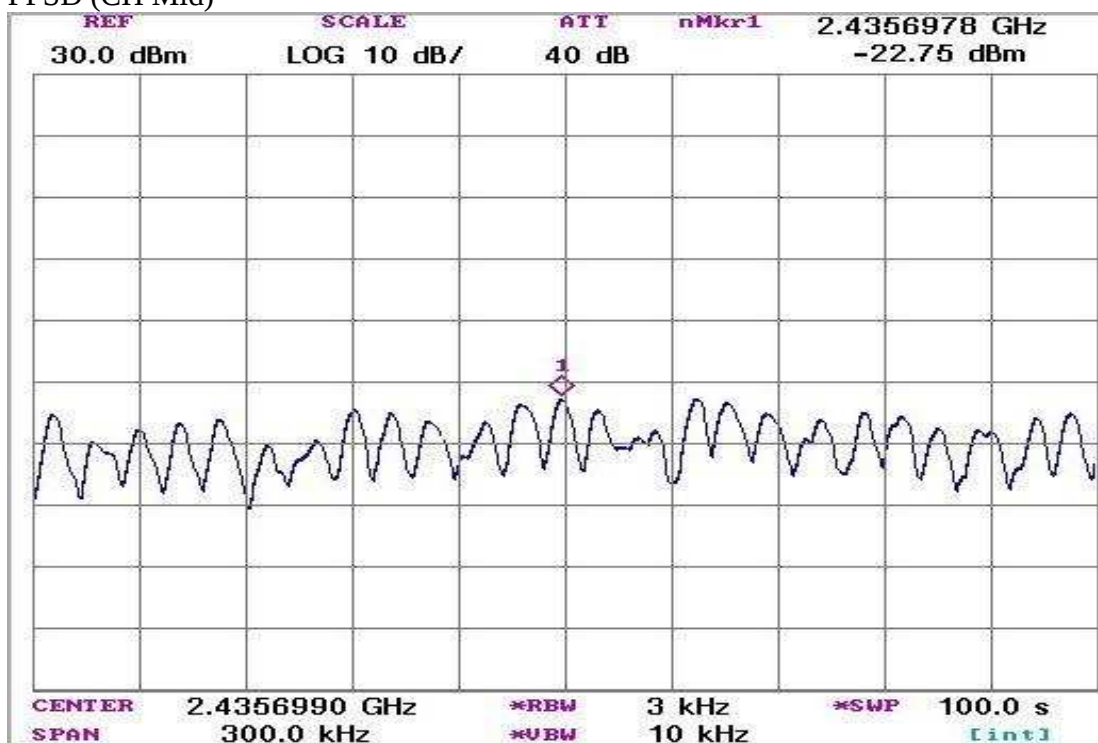
IEEE 802.11b mode
PPSD (CH High)



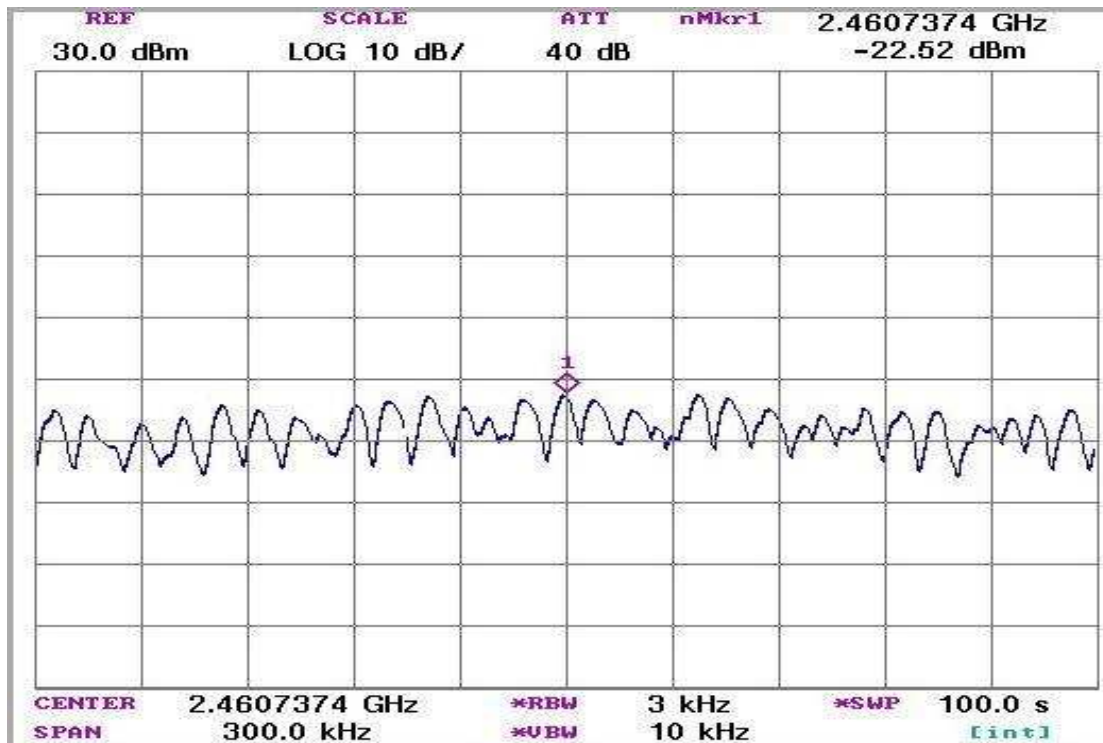
IEEE 802.11g mode
PPSD (CH Low)



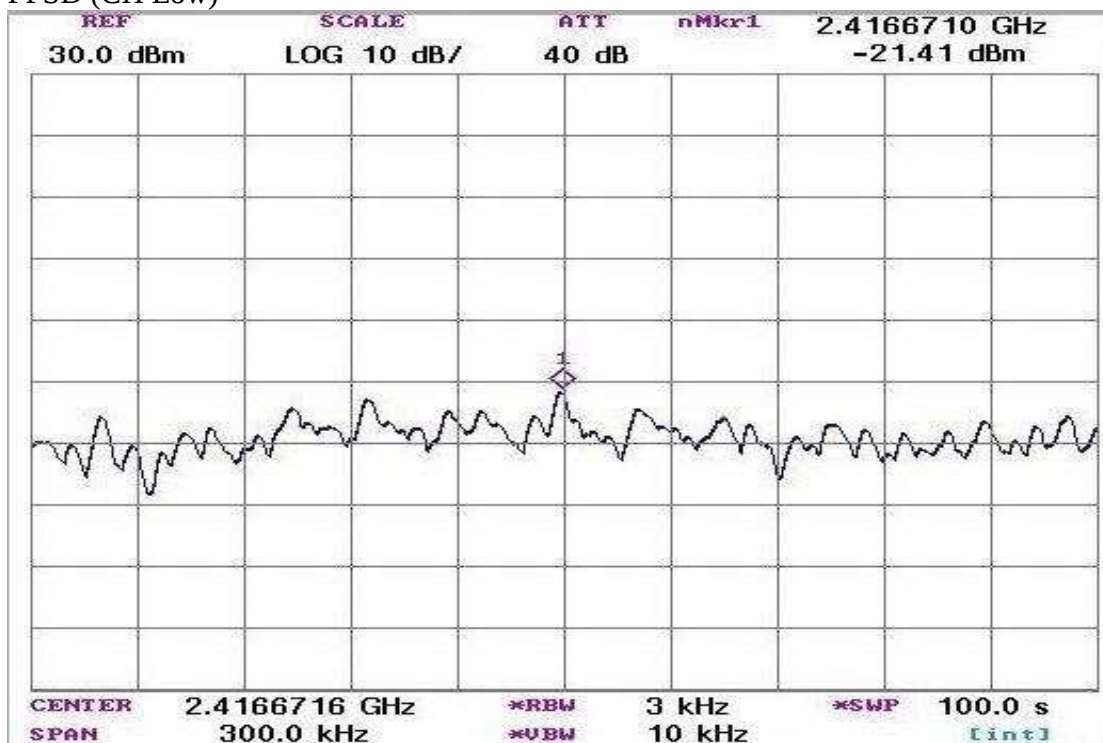
IEEE 802.11g mode
PPSD (CH Mid)



IEEE 802.11g mode
PPSD (CH High)



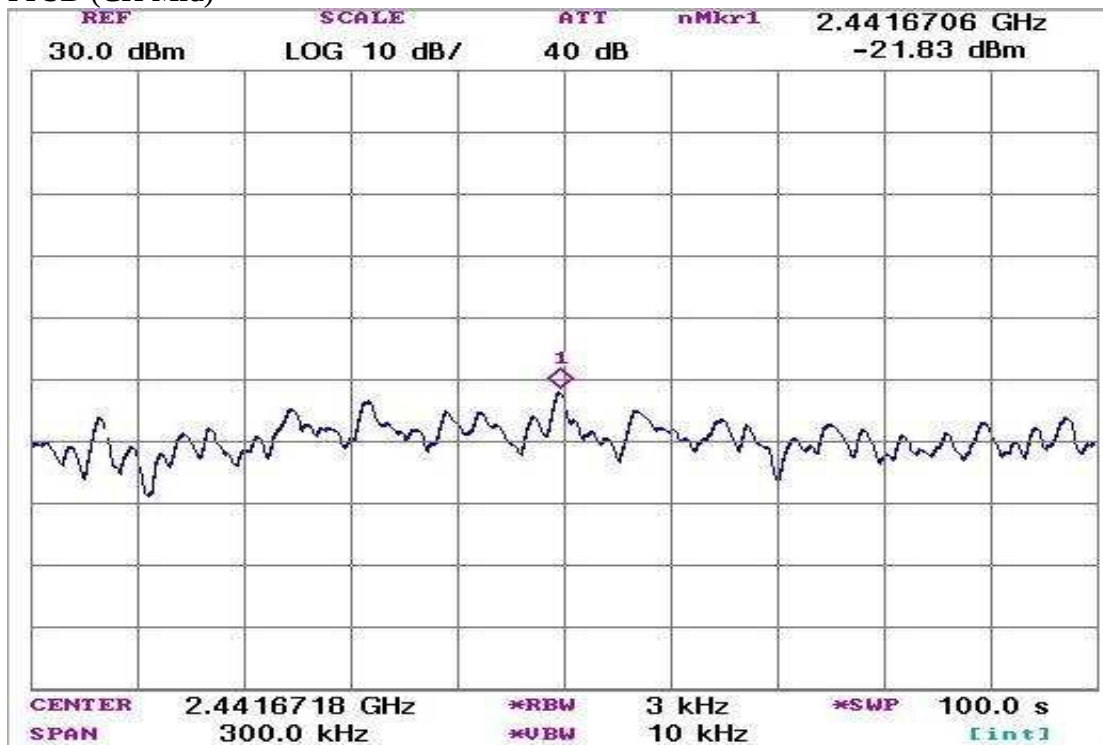
IEEE 802.11n(20M) mode
PPSD (CH Low)



IEEE 802.11n(20M) mode

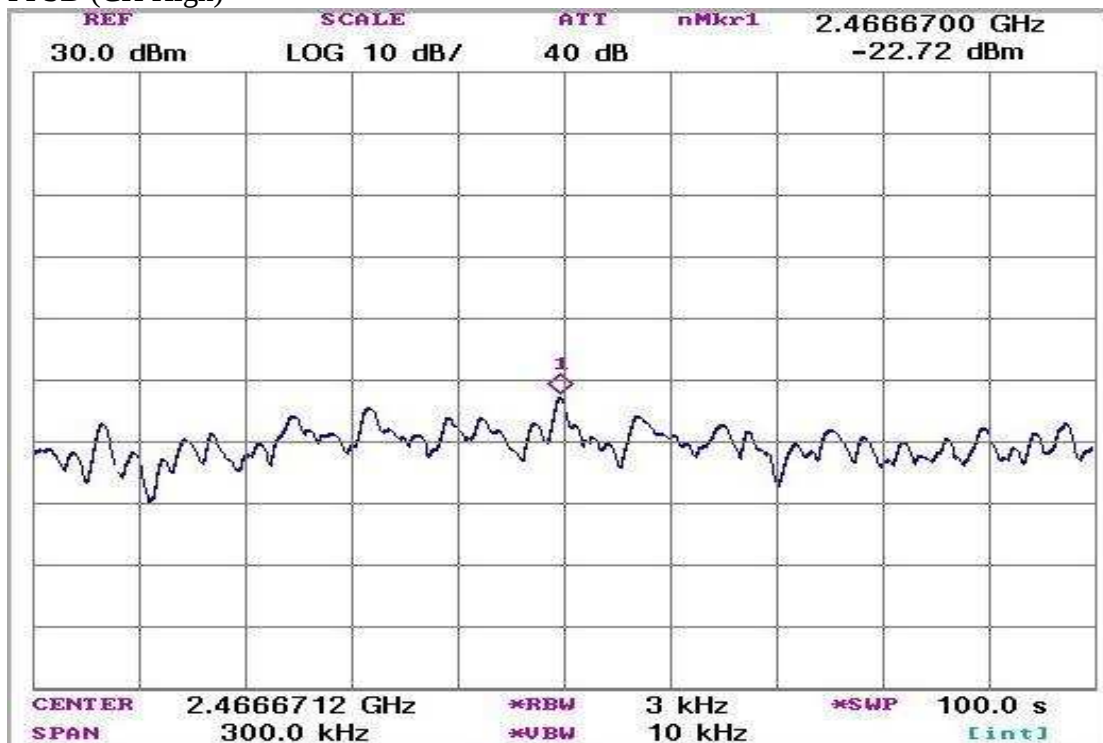


PPSD (CH Mid)



IEEE 802.11n(20M) mode

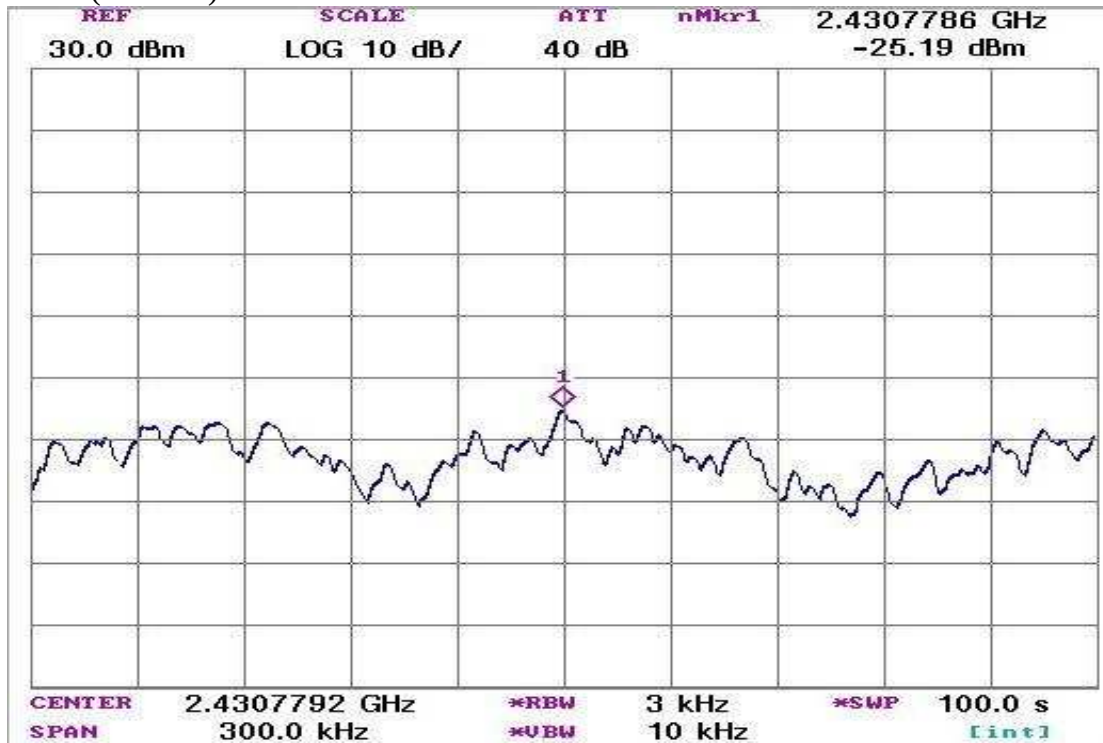
PPSD (CH High)



IEEE 802.11n(40M) mode



PPSD (CH Low)



IEEE 802.11n(40M) mode

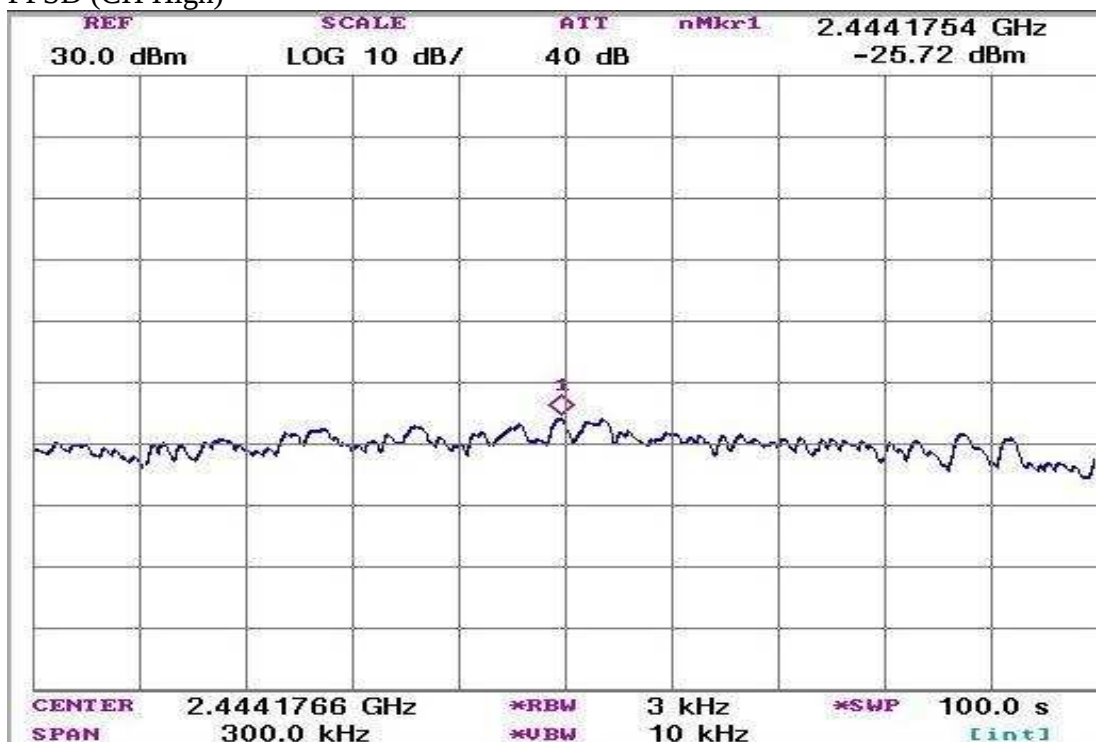
PPSD (CH Mid)



IEEE 802.11n(40M) mode



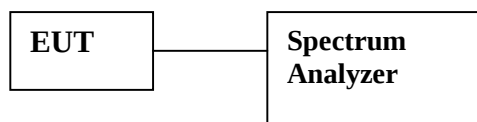
PPSD (CH High)



11. SPURIOUS EMISSIONS

11.1 CONDUCTED MEASUREMENT

11.2 TEST SETUP



11.3 LIMIT

According to § 15.247(d) , in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is 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)).

11.4 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.

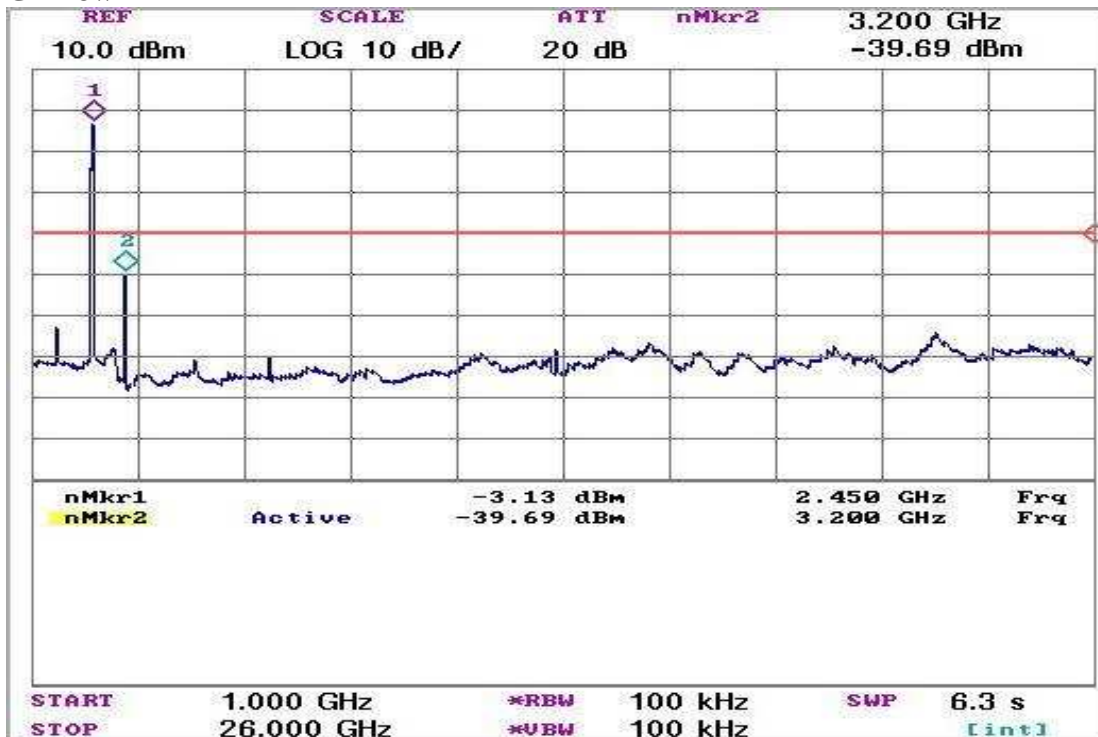
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

Measurements are made over the 13 GHz to 26GHz range for IEEE 802.11b/g.

11.5 TEST RESULTS: PASSED

11.6 TEST DATA:

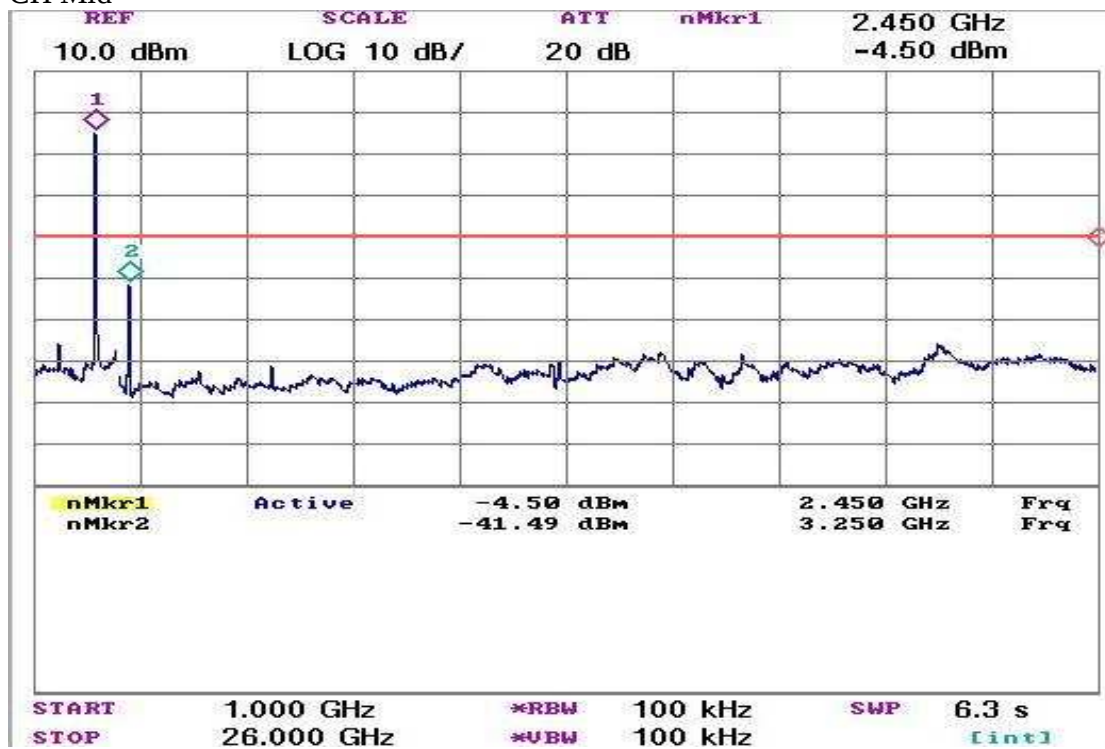
Test Plot
IEEE 802.11b mode
CH Low



IEEE 802.11b mode



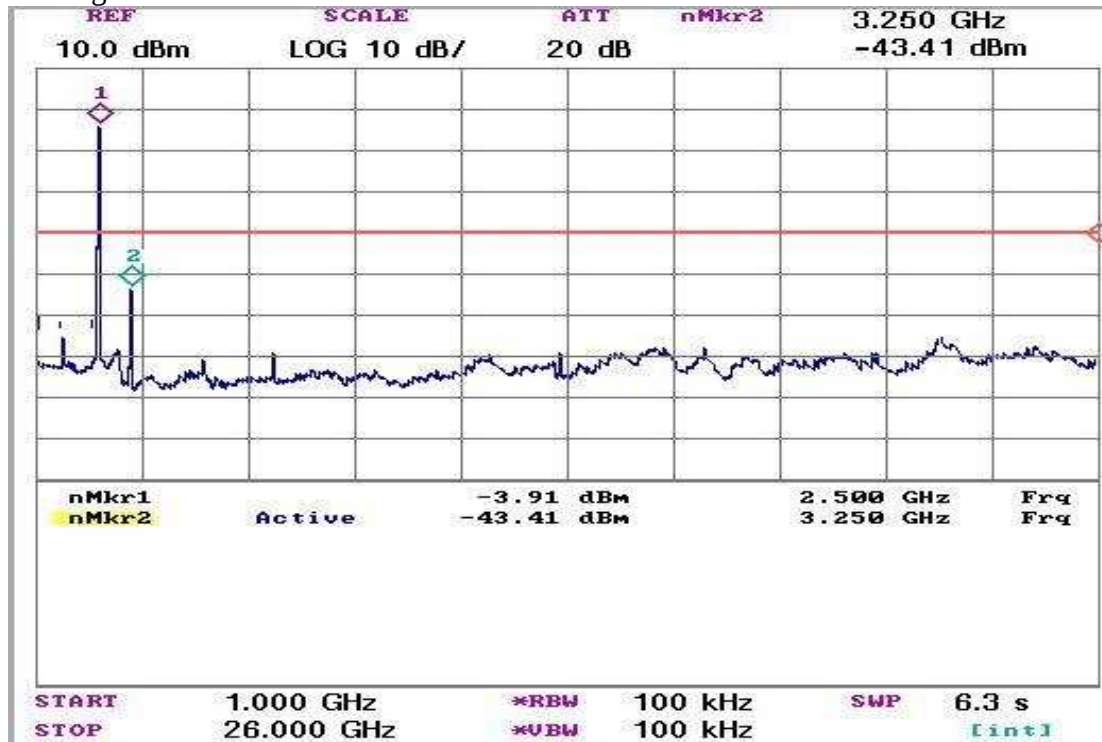
CH Mid





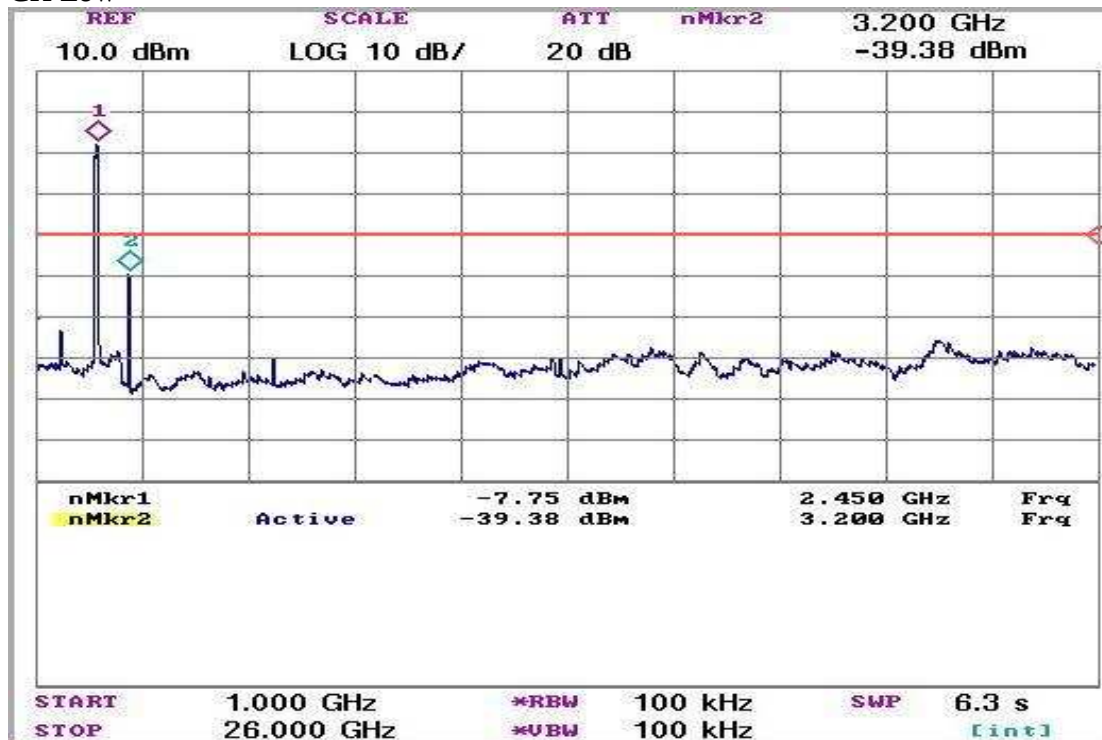
IEEE 802.11b mode

CH High



IEEE 802.11g mode

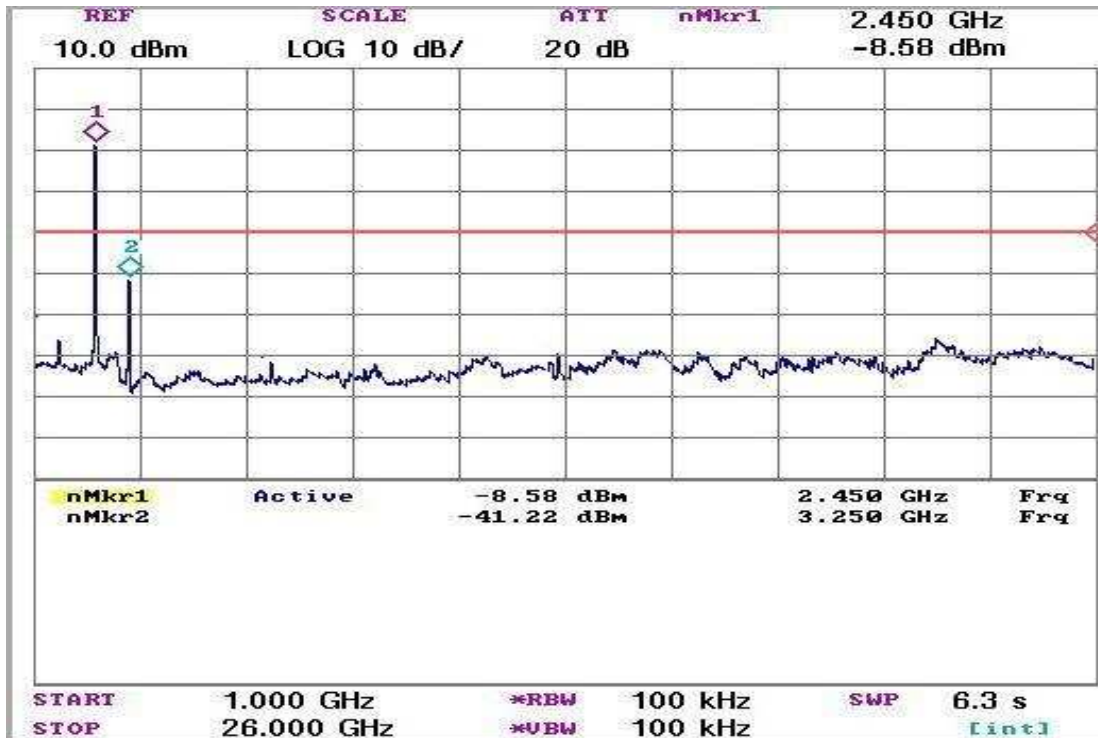
CH Low





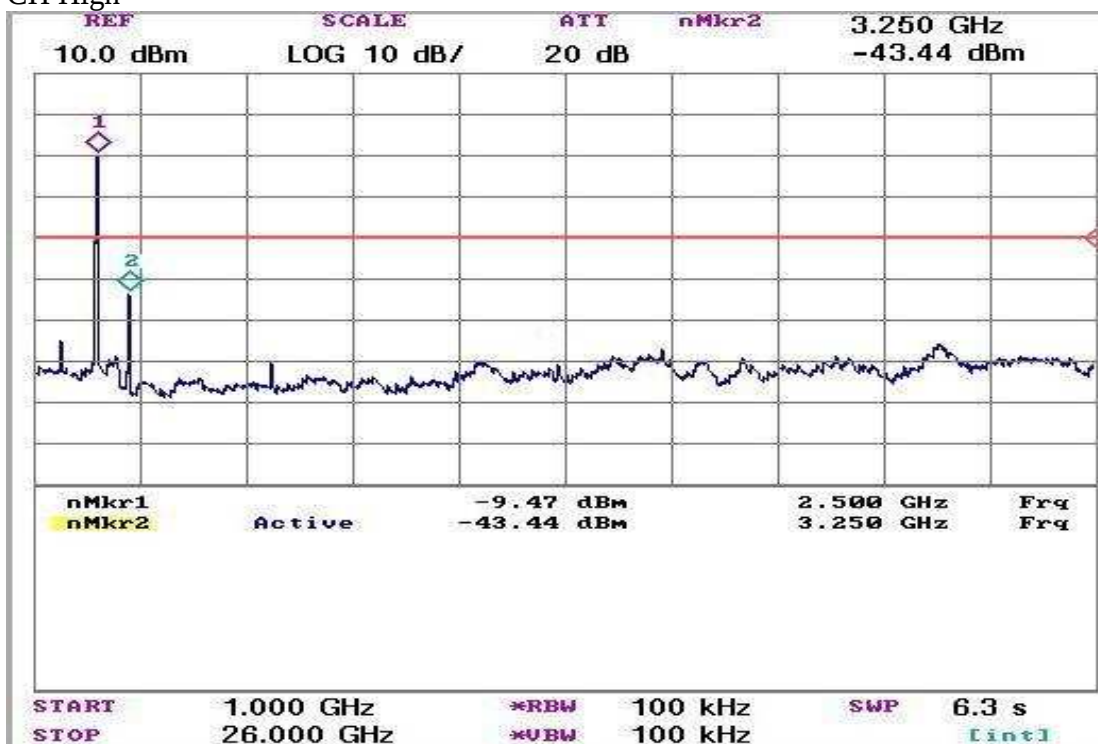
IEEE 802.11g mode

CH Mid



IEEE 802.11g mode

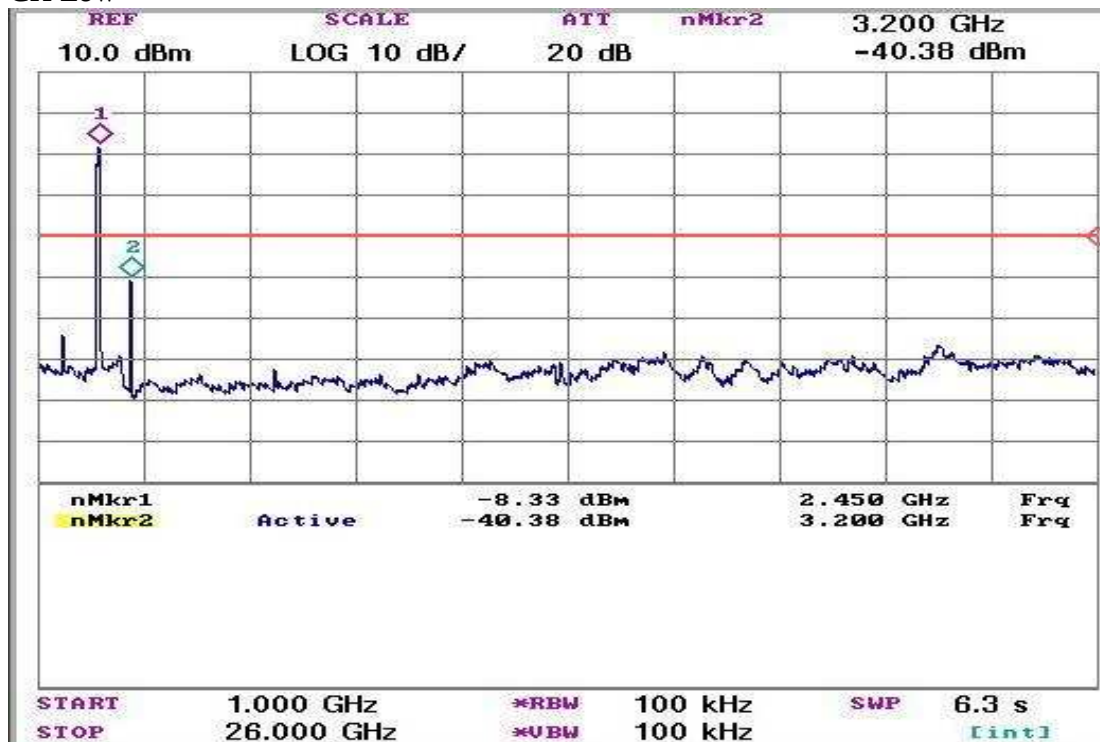
CH High





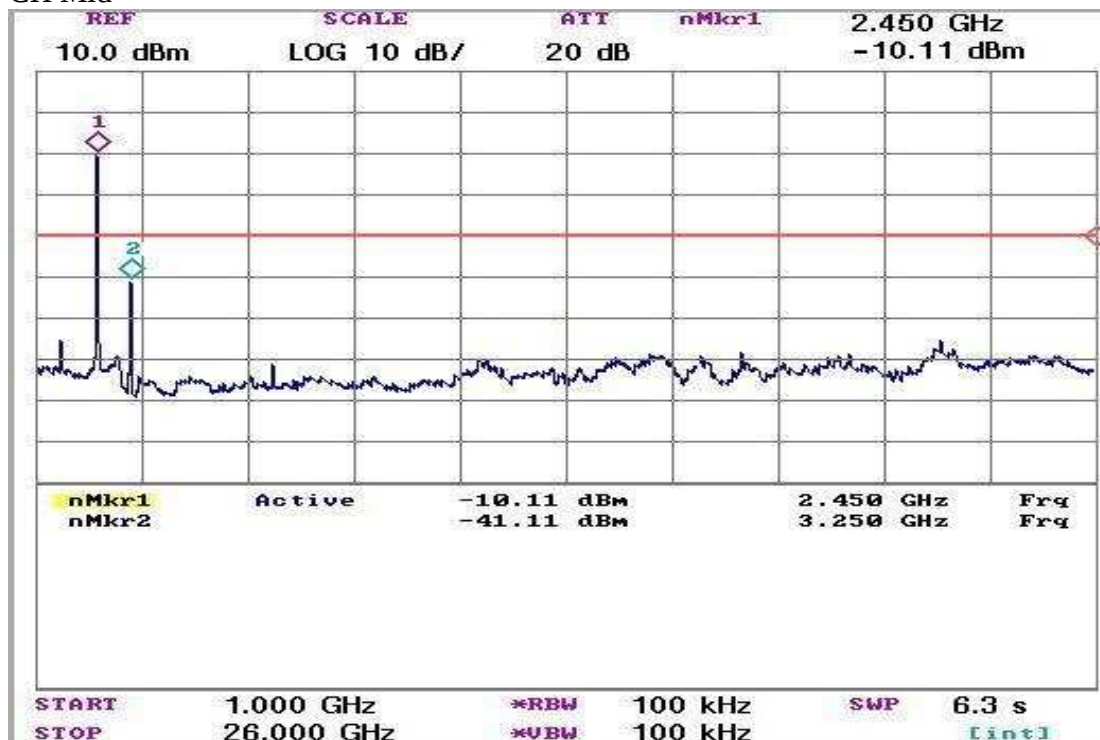
IEEE 802.11n(20M) mode

CH Low



IEEE 802.11n(20M) mode

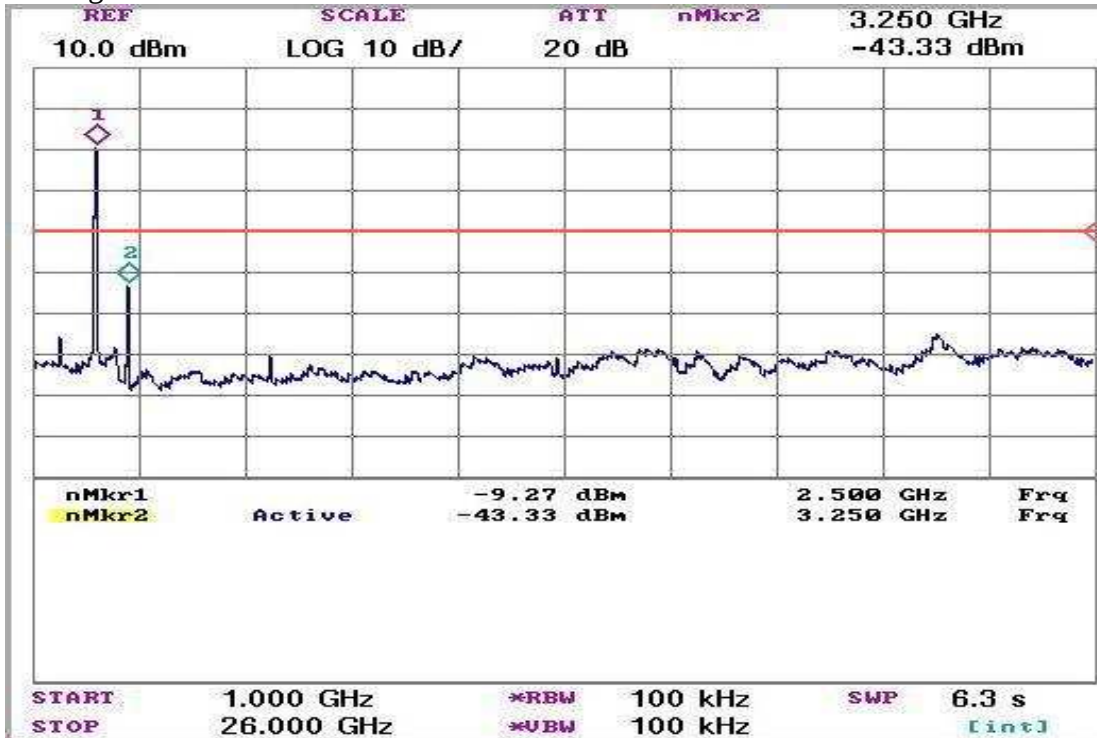
CH Mid





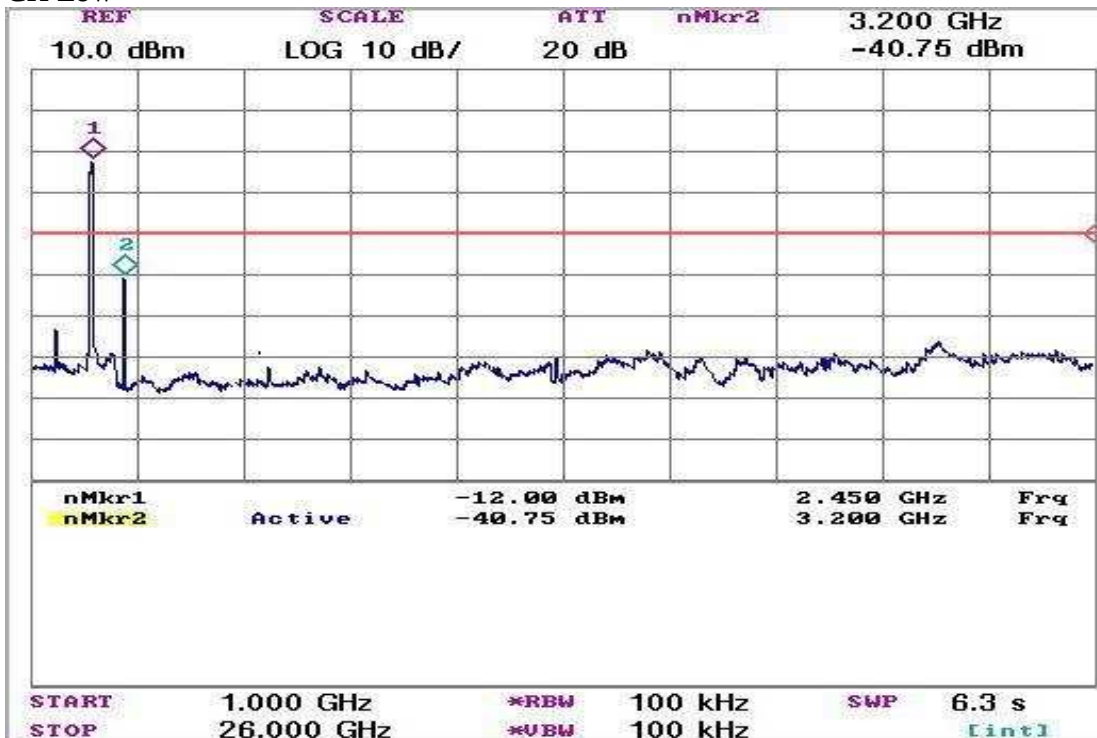
IEEE 802.11n(20M) mode

CH High



IEEE 802.11n(40M) mode

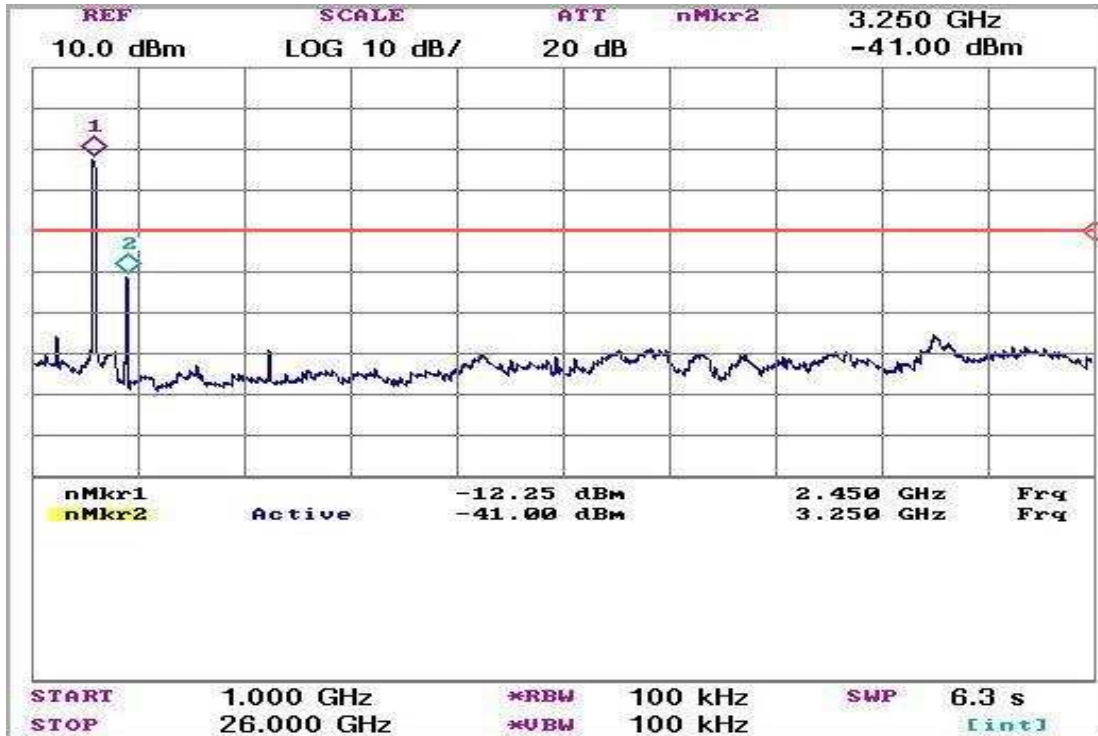
CH Low





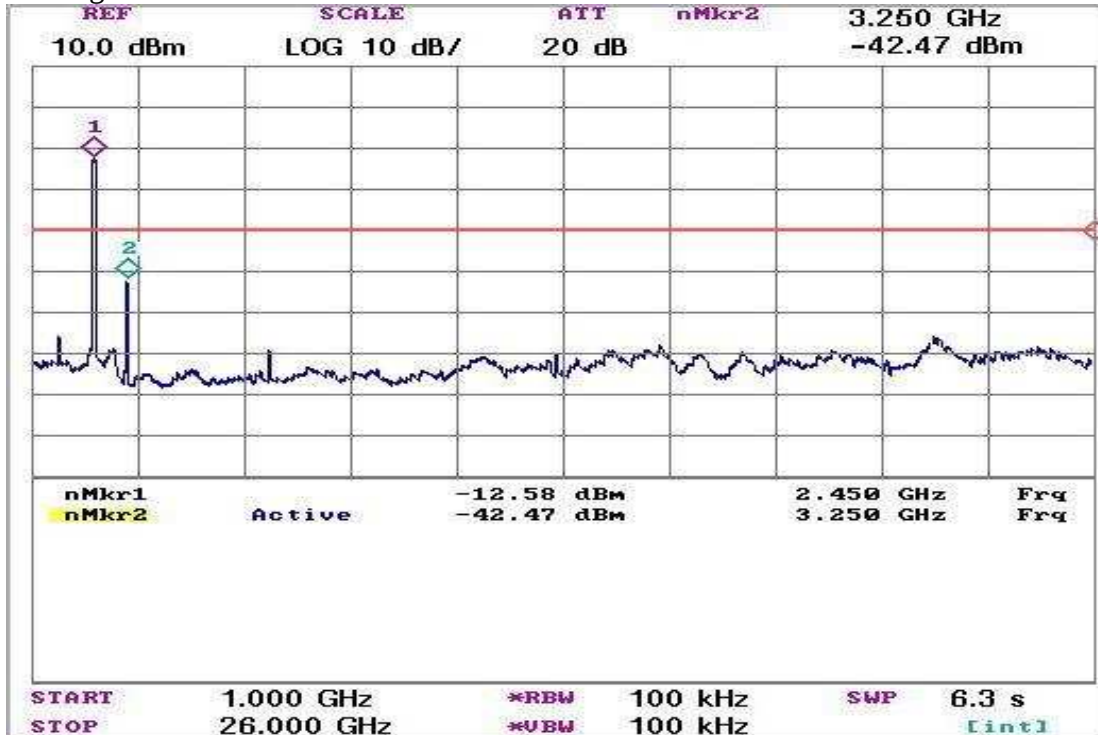
IEEE 802.11n(40M) mode

CH Mid



IEEE 802.11n(40M) mode

CH High





Global Certification Corp.

Appendix 1

PHOTOS OF TEST CONFIGURATION





Global Certification Corp.

PHOTO OF EUT

PHOTOS OF EUT



PHOTO OF EUT



Front View of EUT 1



Rear View of EUT 1



PHOTO OF EUT



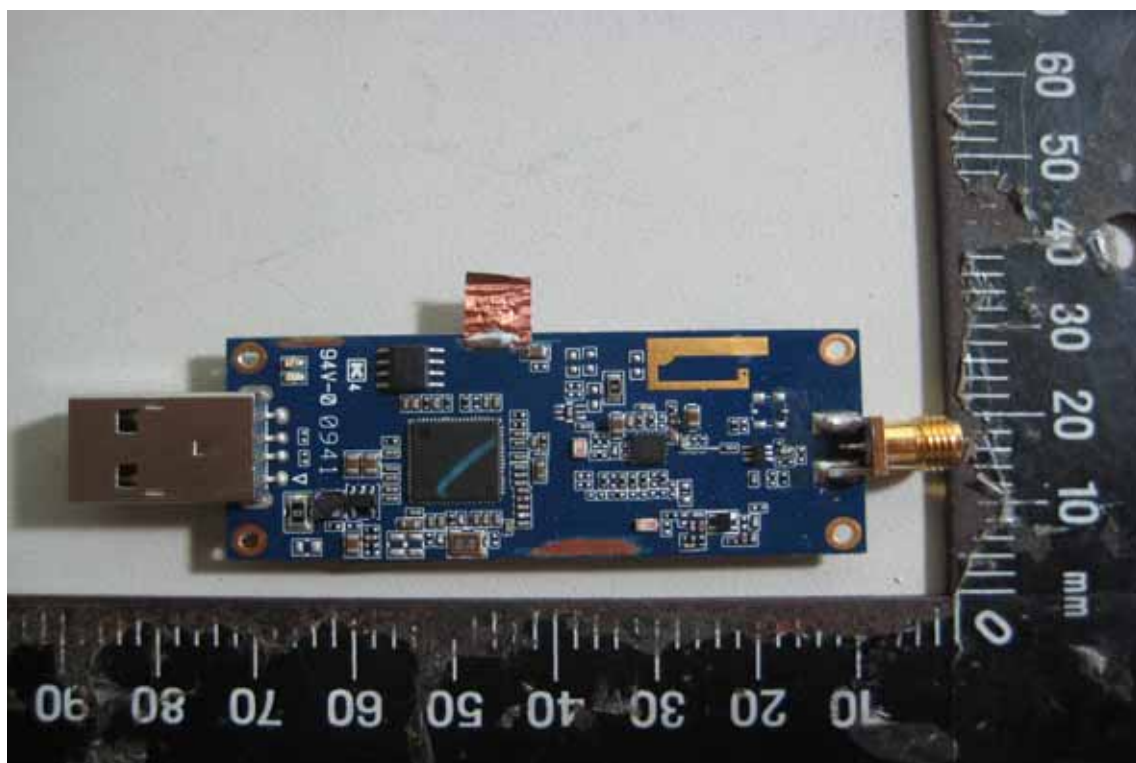
Inside View of EUT 1



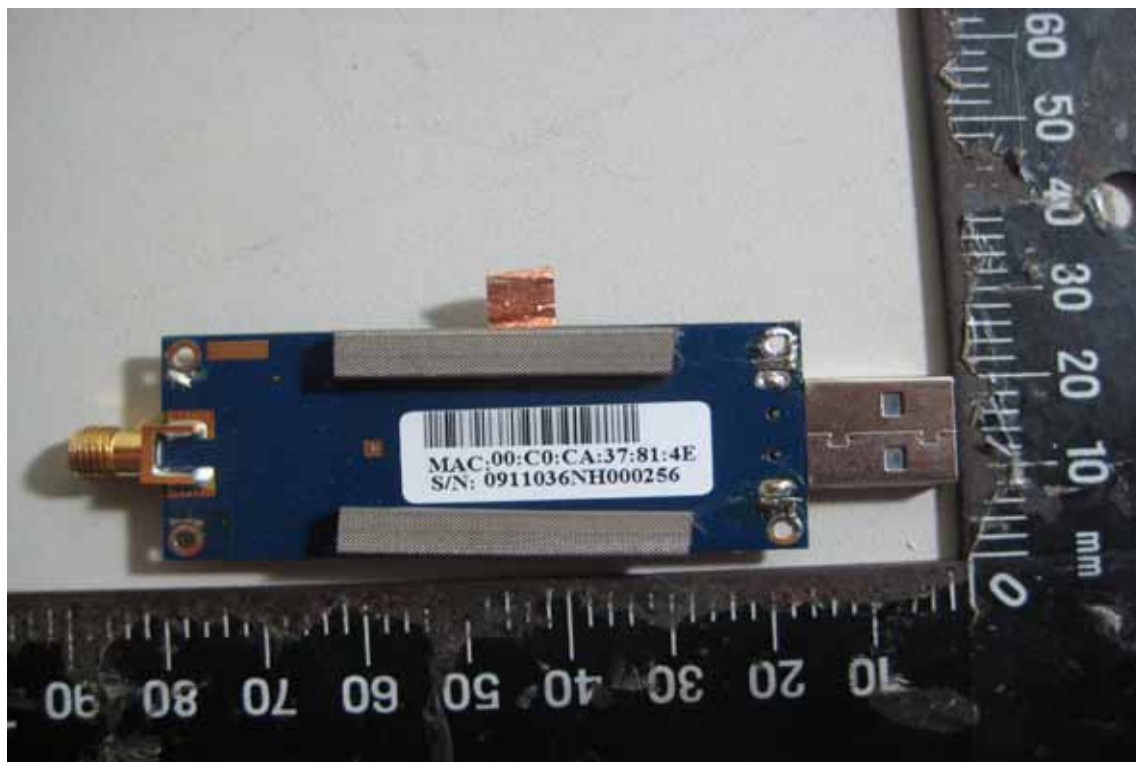
I/O Port



PHOTO OF EUT



Component Side of Main Board 1



Solder Side of Main Board 1