

APPLICATION FOR CERTIFICATION

On Behalf of

Texas Instruments Incorporated

TI-Nspire CX Wireless Network Adapter-v2

Model No. : TINAVWNA2

Brand : TEXAS INSTRUMENTS

FCC ID : V7R-TINAVWNA2

Prepared for

**Texas Instruments Incorporated**

12500 TI Boulevard Dallas, TX 75243-4136 USA

Prepared by

**Audix Technology (Wujiang) Co., Ltd. EMC Dept.**

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Report Number : ACWE-F1305005

Date of Test : Apr.14~24, 2013

Date of Report : May 13, 2013

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## TEST REPORT CERTIFICATION

Applicant	:	Texas Instruments Incorporated
Manufacturer	:	Inventec Appliances(Pudong) Corporation
EUT Description	:	TI-Nspire CX Wireless Network Adapter-v2
FCC ID	:	V7R-TINAVWNA2
(A) Model No.	:	TINAVWNA2
(B) Brand	:	TEXAS INSTRUMENTS
(C) Power Supply	:	DC 3.7V (Supplied by NSC)
(D) Test Voltage	:	DC 3.7V

Applicable Standards:

**FCC RULES AND REGULATIONS PART 15 SUBPART E, Oct. 2012**  
**ANSI C63.10-2009**  
**KDB 789033 D01 General UNII Test Procedures v01r03**

The device described above was tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C section 15.207, 15.205, 15.209&15.407 limits.

The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: Apr.14~24, 2013

Date of Report: May 13, 2013

Prepared by

:



(Emma Hu/Assistant Administrator)

Reviewer

:



(Jingo Lin/Section Manager)

Approved & Authorized Signer

:



(Allen Wang/ Deputy General Manager)

## 1. SUMMARY OF MEASUREMENTS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Results
CONDUCTED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.207 ANSI C63.10	PASS
RADIATED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.209& Section 15.205 ANSI C63.10	PASS
26 dB BANDWIDTH	FCC 47 CFR Part 15 Subpart E/ Section 15.403(i) ANSI C63.10	PASS
MAXIMUM PEAK OUTPUT POWER	FCC 47 CFR Part 15 Subpart E/ Section 15. 407 (a)(4) ANSI C63.10	PASS
POWER SPECTRAL DENSITY	FCC 47 CFR Part 15 Subpart E/ Section 15. 407 (a)(5) ANSI C63.10	PASS
EMISSION LIMITATIONS	FCC 47 CFR Part 15 Subpart E/ Section 15. 407(d) ANSI C63.10	PASS
PEAK POWER EXCURSION	FCC 47 CFR Part 15 Subpart E/ Section 15. 407 (a)(6) ANSI C63.10	PASS
OCCUPIED BANDWIDTH 99% POWER	KDB 789033 D01 General UNII Test Procedures v01r03	PASS
FREQUENCY STABILITY MEASUREMENT	FCC 47 CFR Part 15 Subpart E Section 15.407(g)	PASS

Note: The EUT was pre-tested in three orthogonal planes for radiated measurements, the worst emission level was found in lying mode. Therefore only the test data of the mode were recorded in this report individually.

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Description	:	TI-Nspire CX Wireless Network Adapter-v2
Model No.	:	TINAVWNA2
FCC ID	:	V7R-TINAVWNA2
Brand	:	TEXAS INSTRUMENTS
Applicant	:	Texas Instruments Incorporated 12500 TI Boulevard Dallas, TX 75243-4136 USA
Manufacturer	:	Inventec Appliances(Pudong) Corporation No. 789 Pu Xing Road, Shanghai, PRC
Radio Technology	:	DSSS &OFDM
Antenna Gain	:	1.5dBi
Type of Network	:	IEEE 802.11a/n HT20
Fundamental Range	:	5150 MHz -5250 MHz
Tested Frequency	:	5180MHz (Channel 36) 5220MHz (Channel 44) 5240MHz (Channel 48)
Date of Receipt of Sample	:	Apr.07, 2013
Date of Test	:	Apr.14~24, 2013

### 2.2. UUT's Configuration

Test UUT	:	UUT×1
I/O Ports	:	I/O port×1

### 2.3. Description Test Configuration

Configuration 3: WM-5G (UUT) + NSC(5GHz transfer data) + Hidden (LAP5 + Laptop + USB Cable)

Configuration 4: WM-5G (UUT) + NSC+ Adapter(5GHz transfer data) + Hidden (LAP5 + Laptop + USB Cable)

### 2.4. Operating Condition of EUT

2.4.1. Set up the EUT as test setup diagram.

2.4.2. For all test measurement items, keep the EUT be powered by NSC, Drive the test software “TI-Nspire Computer Link Software v1.1.9182 ”, let the EUT operate wireless TX activity under measurement.

### 2.5. Tested Supporting System Details

#### 2.5.1. TI-nspire CX CAS (NSC)

Manufacturer : TI  
Brand : TEXAS INSTRUMENTS

#### 2.5.2. TI-nspire CX Navigator Access point

Manufacturer : TI  
Brand : TEXAS INSTRUMENTS  
Model No. : TINAVAP3-2

#### 2.5.3. Laptop Computer

Manufacturer : DELL  
Model Number : PP26L  
Serial Number : JX193A01  
FCC ID : FCC By DoC  
Power Cord : Unshielded, Detachable, 1.5 m  
AC Adapter : M/N: LA65NS1-00  
Brand: DELL  
Input: AC 100-240V, 50-60Hz, 1.5A  
Output: DC 19.5V,3.34A  
DC Cord: Unshielded, Undetachable,  
2.0m, 1 ferrite core.

2.6. Description of Test Facility

Name of Firm : **Audix Technology (Wujiang) Co., Ltd. EMC Dept.**

Site Location : No. 1289 Jiangxing East Road, the Eastern Part of Wujiang Economic Development Zone Jiangsu China 215200

Test Facilities : **No.1 10m semi-anechoic chamber**  
 Date of Validity: May. 22, 2015  
 FCC Registration No.: 252588  
**No.1 3m semi-anechoic chamber**  
 Date of Validity: May. 23, 2015  
 FCC Registration No.: 897661

NVLAP Lab Code : 200786-0  
 (NVLAP is a NATA accredited body under Mutual Recognition Agreement)  
 Valid until on Sep.30, 2013

2.7. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
Conducted Disturbance Measurement	0.15MHz ~ 30MHz	± 2.36dB
Radiated Disturbance Measurement (At 10m Chamber)	30MHz ~ 1000MHz	± 3.06dB (Horizontal)
		± 3.10dB (Vertical)
Radiated Disturbance Measurement (At 10m Chamber)	Above 1GHz	± 4.14dB

Remark: Uncertainty =  $ku_c(y)$

Test Item	Uncertainty
6 dB Bandwidth	± $3.1 \times 10^{-6}$ MHz
Maximum Peak Output Power	± 0.30dB
Band Edges	± 0.302dB
Power Spectral Density	± 0.212dB
Emission Limitations	± 0.24dB

Remark: Uncertainty =  $ku_c(y)$

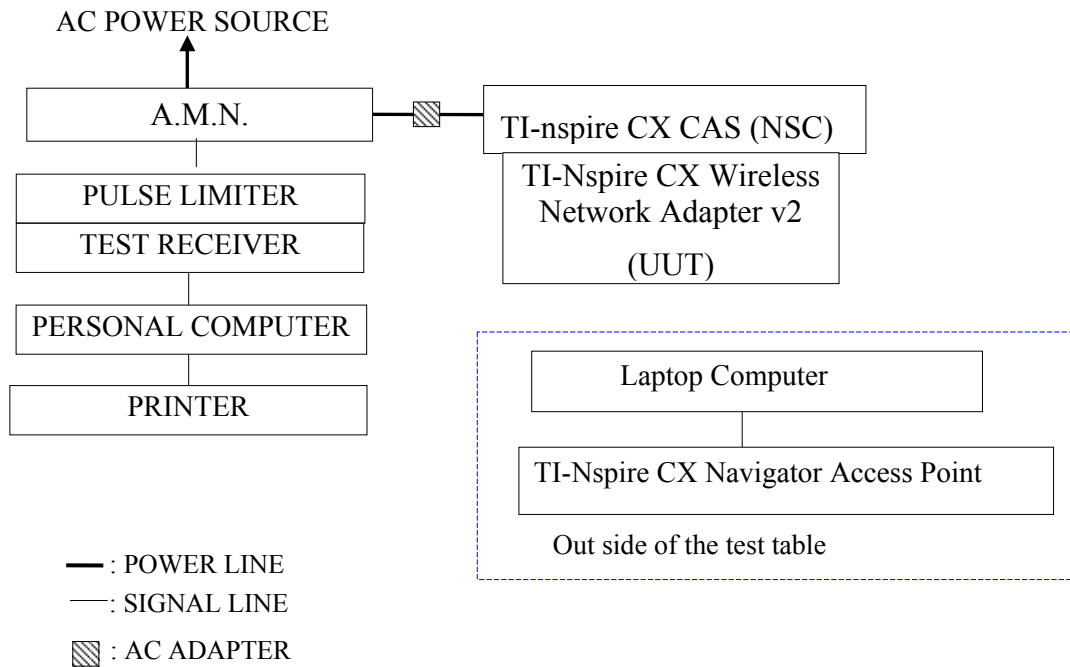


### 3. CONDUCTED EMISSION MEASUREMENT

#### 3.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100839	2013-01-05	2014-01-04
2.	A.M.N.	R & S	ESH2-Z5	100153	2012-05-18	2013-05-17
3.	L.I.S.N	Kyoritsu	KNW-407	8-1793-3	2012-08-06	2013-08-05
4.	Pulse Limiter	AFJ	IPM-136-10 dB	PA201220003	2012-09-05	2013-09-04
5.	50Ω Terminator	Tektronis	MS4630B	001-con	2013-01-05	2014-01-04
6.	RF Cable	Harbour Industries	RG400	003	2013-03-24	2014-03-23

#### 3.2. Block Diagram of Test Setup



#### 3.3. Power line Conducted Emission Limit

##### 3.3.1. Power line Conducted Emission Limit (Section 15.207, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2: The lower limit applies at the band edges.

### 3.4. Test Procedure

The measuring process is according to ANSI C63.10 and laboratory internal procedure TKC-301-015. (For FCC Part15 Subpart C)

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meters height above the ground plane, and 0.4 meters far away from the vertical plane. The EUT (installed in PC system) was powered by AC mains through Artificial Mains Network (A.M.N), other peripheral devices were powered by AC mains through the second Line Impedance Stabilization Network (L.I.S.N). For the measurement, the A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω resistive load. All measurements were done on the phase and neutral line of the EUT's power cord. All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver was set at 9 kHz.

The required frequency band (0.15 MHz ~ 30 MHz) was pre-scanned with peak detector, the final measurement was measured with quasi-peak detector and average detector. (If the average limit is met when using a quasi-peak detector, the average detector is necessary).

The emission level is calculated automatically by the test system which uses the following equation:

Emission level (dBμV) = Meter-Reading (dBμV) + A.M.N factor (dB) + Cable loss (dB).  
(Cable loss include pulse limiter loss)

### 3.5. Conducted Emission Measurement Results

#### 3.5.1. Conducted Emission Measurement Results

#### **PASSED.**

(All the emissions not reported below are too low against the prescribed limits.)

EUT was performed during this section testing and all the test results are attached in next pages.

Test Date : Apr.24, 2013      Temperature : 20.6°C      Humidity : 42%

Mode	Test Condition	Reference Test Data No.	
		Neutral	Line
1	<b>Test Configuration 4</b>	<b># 18</b>	<b>※# 17</b>

NOTE 1- '※' means the worst test mode.

NOTE 2- The worst emission is detected at 0.42 MHz with emission level of 38.05 dB (μV) and with AV detector (Limit is 47.47 dB (μV)), when the Neutral of the EUT is connected to AMN.

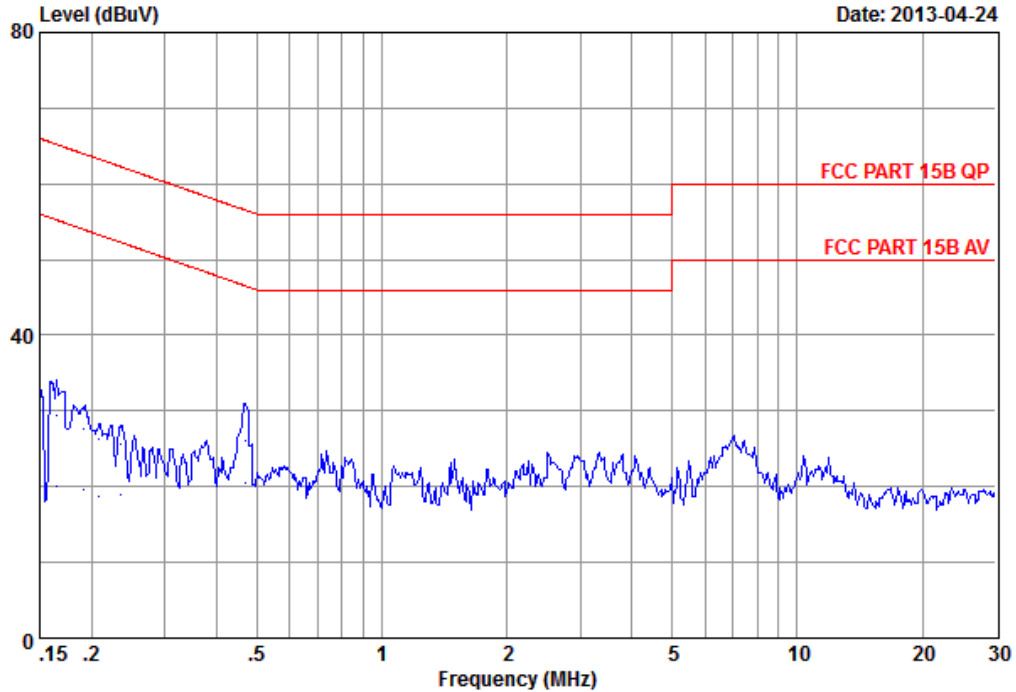


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Data: 18

File: F:\2013Test Data\Report04\G1304008.EM6 (22)

Date: 2013-04-24



Site no. : No.1 Conducted shielding Enclosure Data no. : 18  
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Env. / Ins. : 20.6\*C&42%/ESCI Engineer : KM Tong  
 EUT : TI-inspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test mode : Configuration4  
 Memo :

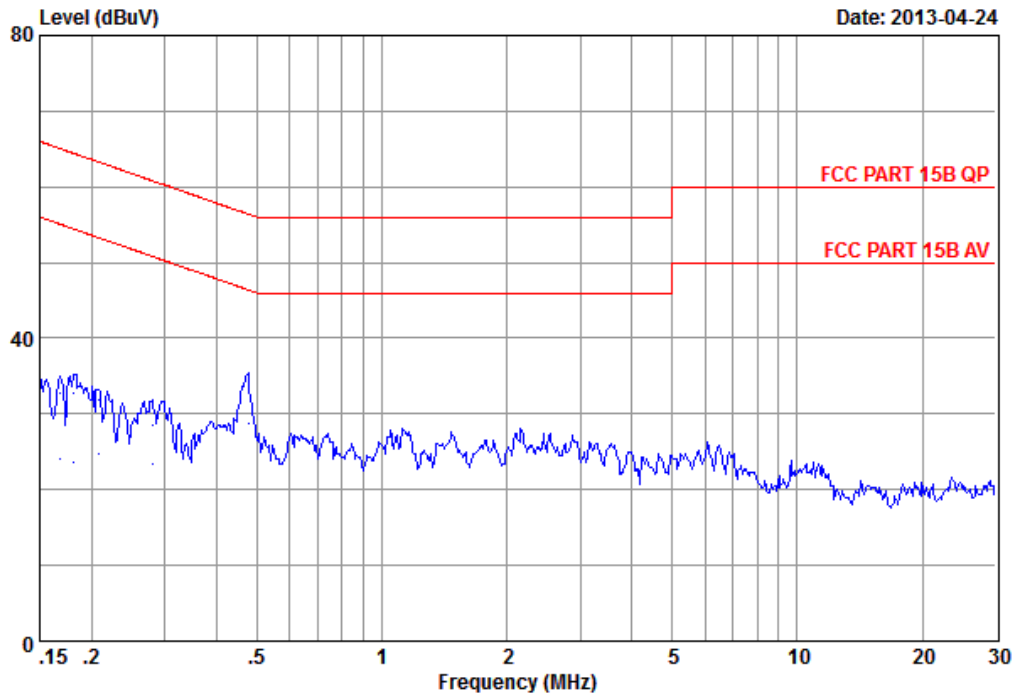
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.17	9.86	10.71	20.74	56.00	35.26	Average
2	0.15	0.17	9.86	20.81	30.84	66.00	35.16	QP
3	0.17	0.17	9.86	10.11	20.14	55.21	35.07	Average
4	0.17	0.17	9.86	19.41	29.44	65.21	35.77	QP
5	0.19	0.17	9.87	9.50	19.54	53.95	34.41	Average
6	0.19	0.17	9.87	17.60	27.64	63.95	36.31	QP
7	0.21	0.17	9.87	16.30	26.34	63.28	36.94	QP
8	0.21	0.17	9.87	8.60	18.64	53.28	34.64	Average
9	0.24	0.17	9.87	9.00	19.04	52.24	33.20	Average
10	0.24	0.17	9.87	15.50	25.54	62.24	36.70	QP
11	0.47	0.19	9.87	16.00	26.06	56.55	30.49	QP
12	0.47	0.19	9.87	10.50	20.56	46.55	25.99	Average

- 1.Emission Level= AMN Factor + Cable Loss + Reading.
- 2.If the average limit is met when using a quasi-peak detector,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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Data: 17 File: F:\2013Test Data\Report04\G1304008.EM6 (22)



Site no. : No.1 Conducted shielding Enclosure Data no. : 17  
 AMN/LISN : ESH2-Z5-1205 Phase : LINE  
 Limit : FCC PART 15B QP  
 Env. / Ins. : 20.6\*C&42%/ESCI Engineer : KM Tong  
 EUT : TI-inspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test mode : Configuration4  
 Memo :

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.23	9.86	13.50	23.59	56.00	32.41	Average
2	0.15	0.23	9.86	23.40	33.49	66.00	32.51	QP
3	0.17	0.23	9.87	22.70	32.80	65.06	32.26	QP
4	0.17	0.23	9.87	13.90	24.00	55.06	31.06	Average
5	0.18	0.24	9.87	13.59	23.70	54.49	30.79	Average
6	0.18	0.24	9.87	22.69	32.80	64.49	31.69	QP
7	0.21	0.24	9.87	21.80	31.91	63.28	31.37	QP
8	0.21	0.24	9.87	14.60	24.71	53.28	28.57	Average
9	0.28	0.27	9.86	13.20	23.33	50.82	27.49	Average
10	0.28	0.27	9.86	18.40	28.53	60.82	32.29	QP
11	0.48	0.31	9.87	18.50	28.68	46.41	17.73	Average
12	0.48	0.31	9.87	23.20	33.38	56.41	23.03	QP

- 1.Emission Level= AMN Factor + Cable Loss + Reading.
- 2.If the average limit is met when using a quasi-peak detector,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

## 4. RADIATED EMISSION MEASUREMENT

### 4.1. Test Equipment

The following test equipment was used during the radiated emission measurement:  
At 10m Semi-Anechoic Chamber

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45107028	2013-01-05	2014-01-04
2.	Spectrum Analyzer	Agilent	E7405A	MY45107030	2013-01-05	2014-01-04
3.	Spectrum Analyzer	Agilent	E4447A	MY45300134	2013-01-05	2014-01-04
4.	Pre-Amplifier	Agilent	8447D	2944A10923	2012-08-14	2013-08-13
5.	Pre-Amplifier	Agilent	8447D	2944A10922	2012-08-14	2013-08-13
6.	Bi-log Antenna (Horizontal)	Schaffner	CBL6112D	22253	2012-05-04	2013-05-03
7.	Bi-log Antenna (Vertical)	Schaffner	CBL6112D	22252	2012-10-18	2013-10-17
8.	Horn Antenna	EMCO	3115	00062593	2012-05-04	2013-05-03
9.	Test Receiver	R&S	ESCI	100351	2013-01-05	2014-01-04
10.	50Ω Coaxial Switch # 1	ANRITSU	MP59B	6200547935	2013-03-24	2014-03-23
11.	50Ω Coaxial Switch # 2	ANRITSU	MP59B	6200547937	2013-03-24	2014-03-23
12.	50Ω Coaxial Switch # 3	ANRITSU	MP59B	6200547934	2013-03-24	2014-03-23
13.	Microwave amplifier	Agilent	8449B	3008A02234	2013-01-05	2014-01-04
14.	RF Cable	Yuhang	CSYH	001	2012-08-14	2013-08-13
15.	RF Cable	Yuhang	CSYH	002	2012-08-14	2013-08-13
16.	RF Cable	Yuhang	CSYH	003	2012-08-14	2013-08-13
17.	RF Cable	Yuhang	CSYH	004	2012-08-14	2013-08-13
18.	RF Cable	Yuhang	CSYH	005	2012-08-14	2013-08-13
19.	RF Cable	Yuhang	CSYH	006	2012-08-14	2013-08-13
20.	RF Cable	Yuhang	CSYH	008	2012-08-14	2013-08-13
21.	RF Cable	Yuhang	CSYH	009	2012-08-14	2013-08-13
22.	RF Cable	Huber+Suhner	SUCOFLEX 102	28571	2013-03-24	2014-03-23
23.	RF Cable	Huber+Suhner	SUCOFLEX 102	28579	2013-03-24	2014-03-23

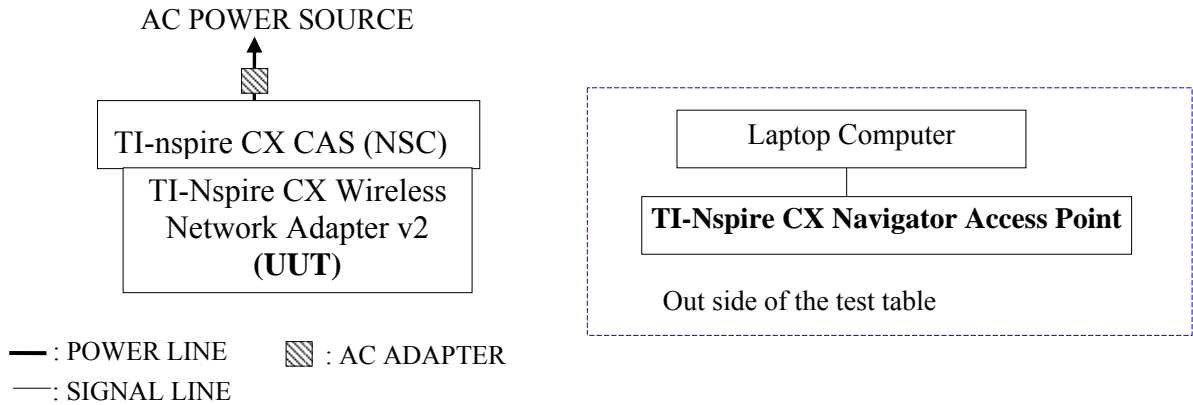
At 3m Semi-Anechoic Chamber

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Agilent	8449B	2944A10921	2012-08-14	2013-08-13
2.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04
3.	Bi-log Antenna	Schaffner	CBL6112D	22250	2012-08-23	2013-08-22
4.	Horn Antenna	EMCO	3115	00062960	2012-05-04	2013-05-03
5.	Horn Antenna	EMCO	3116	62641	2011-06-08	2013-06-07
6.	Test Receiver	R&S	ESCI	100361	2013-01-05	2014-01-04
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200547935	2013-03-24	2014-03-23
8.	RF Cable #1	Yuhang CSYH	cable-3m	001(0.5m)	2012-08-13	2013-08-12
9.	RF Cable #2	Yuhang CSYH	cable-3m	002(0.5m)	2012-08-13	2013-08-12

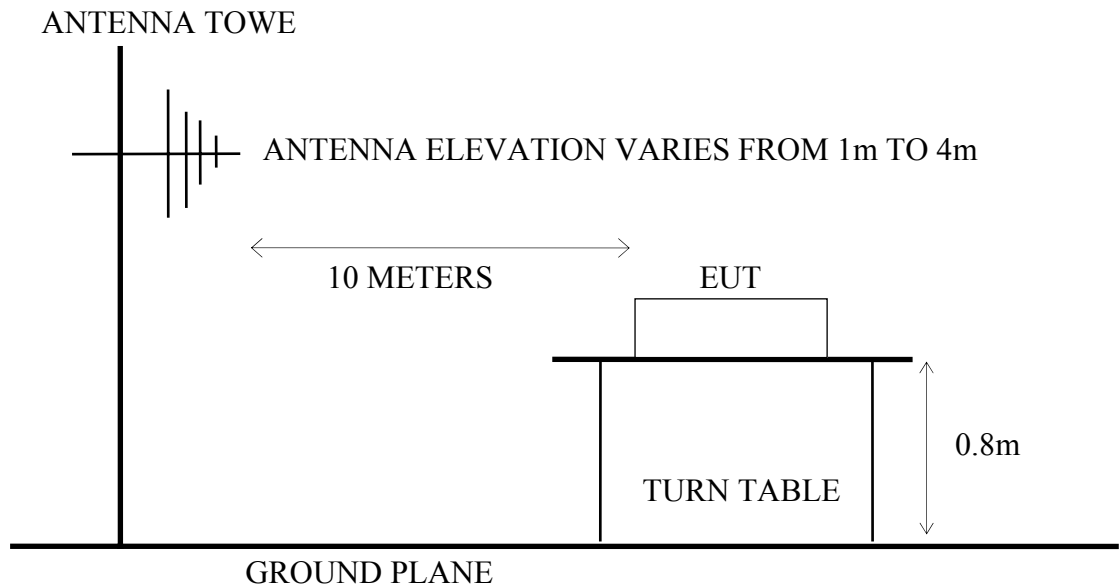
10.	RF Cable #3	Yuhang CSYH	cable-3m	003(3.0m)	2012-08-13	2013-08-12
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4.2. Block Diagram of Test Setup

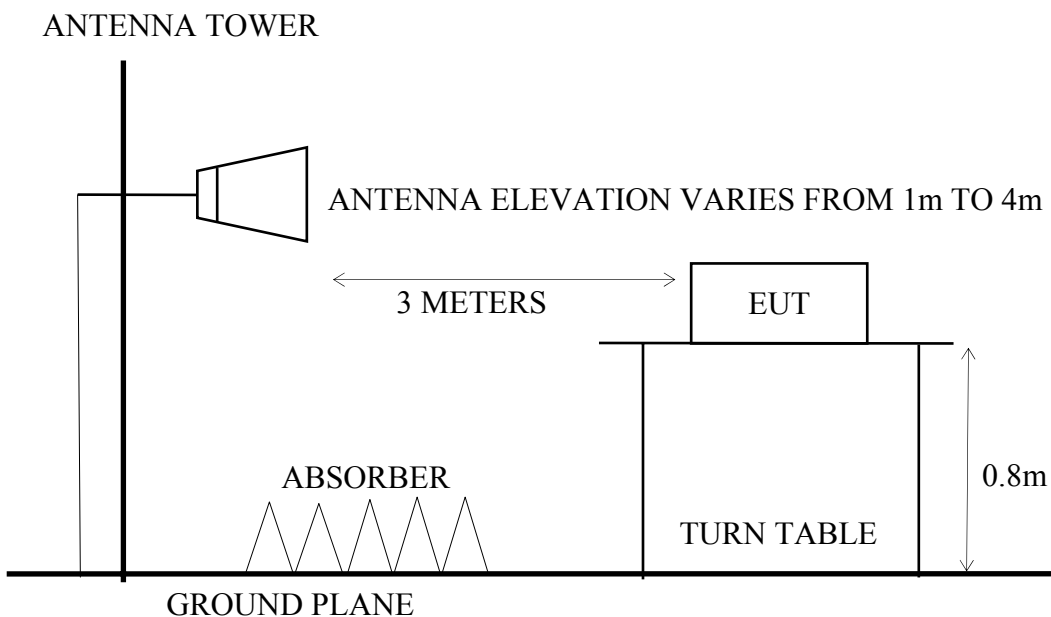
4.2.1. Block Diagram of Test Setup between EUT and simulators



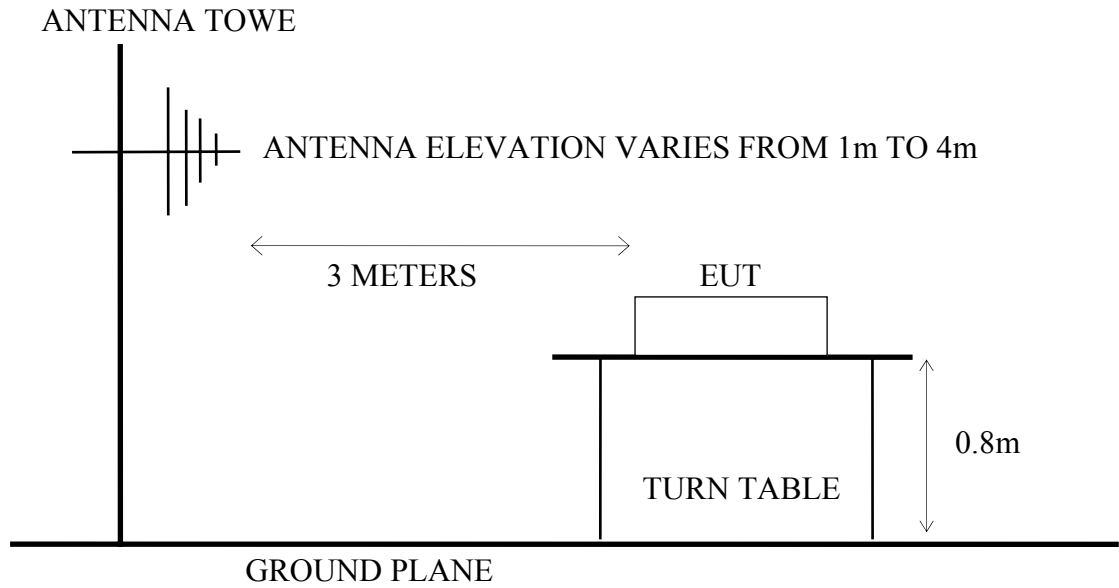
4.2.2. No. 1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 10m) for 30-1000MHz



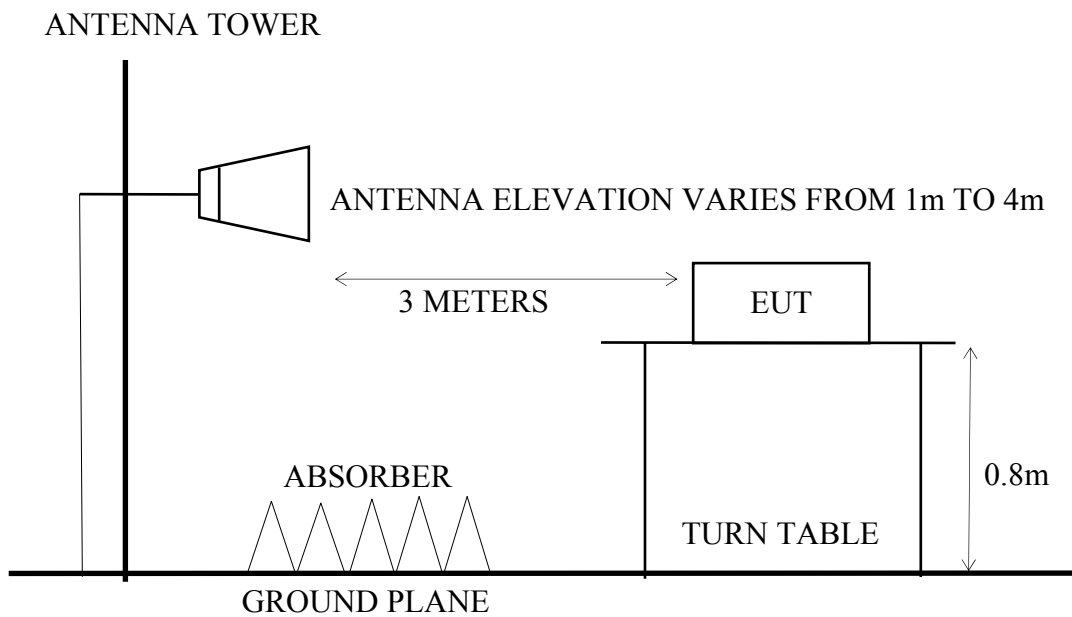
4.2.3. No. 1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for above 1GHz



4.2.4. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance:10m) for 30-1000MHz



4.2.5. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for above 1GHz



4.3. Radiated Emission Limits

4.3.1. Radiated Emission Limits (FCC Part15 C, section 15.209,CISPR22)

Frequency MHz	Distance Meters	Field Strengths Limits
		dB $\mu$ V/m
30 ~ 230	10	30.0
230 ~ 1000	10	37.0
Above 1000	3	74.0 dB $\mu$ V/m (Peak) 54.0 dB $\mu$ V/m (Average)

Remark : (1) Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)  
 (2)The tighter limit applies at the edge between two frequency bands.

#### 4.4. Test Procedure

The measuring process is according to ANSI C63.10 and laboratory internal procedure TKC-301-024. (For FCC Part15 Subpart C)

In the radiated disturbance measurement, the EUT and all simulators were set up on a non-metallic turn table which was 0.8 meters above the ground plane. Measurement distance between EUT and receiving antennas was set at 10 meters at 30MHz~1000MHz and 3 meters at above 1GHz. The specified distance is the distance between the antennas and the closest periphery of EUT. During the radiated measurement, the EUT was rotated 360° and receiving antennas were moved from 1 ~ 4 meters for finding maximum emission. Two receiving antennas were used for both horizontal and vertical polarization detection for 30MHz~1GHz, One receiving antennas was used for both horizontal and vertical polarization detection for above 1GHz (the absorbing material was added when testing of above 1GHz was done). All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver (or spectrum analyzer) was set to:

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz  
 RBW (1 MHz), VBW (1MHz) for Peak detector above 1GHz  
 RBW (1 MHz), VBW (10 Hz) for Peak detector above 1GHz

The required frequency band was pre-scanned with peak detector; all final measurements were measured with quasi-peak detector below 1GHz, measured with average detector and peak detector above 1GHz.

The required frequency band (30 MHz ~ 12000 MHz) was pre-scanned with peak detector; all final measurements were measured with quasi-peak detector below 1GHz, measured with average detector and peak detector above 1GHz.

The emission level is calculated automatically by the test system which uses the following equation :

1. For 30-1000MHz measurement:  

$$\text{Emission Level (dB}\mu\text{V/m)} = \text{Meter-Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)}$$
2. For Above 1GHz measurement:  

$$\text{Emission Level (dB}\mu\text{V/m)} = \text{Meter-Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Pre-amplifier factor (dB}\mu\text{V)}$$



4.5. Measurement Results

**PASSED**

(All the emissions not reported below are too low against the prescribed limits.)

4.5.1. For 30MHz~1GHz

Test Date : Apr.14, 2013      Temperature : 22°C      Humidity : 44%

The details of test modes and reference test data are as follows :

Item	Test Condition	Reference Test Data No.	
		Horizontal	Vertical
1	Test Configuration 3	# 37	# 38
2	Test Configuration 4	# 39	# 40

4.5.2. For Above 1GHz

Item	Test Condition	Reference Test Data No.	
		Horizontal	Vertical
1	Test Configuration 3	# 5	# 6
2	Test Configuration 4	# 7	# 8

4.5.3. For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 4.6.

(The restricted bands defined in part 15.205(a))

For Frequency range: below 1GHz

No.	Test Mode and Frequency			Reference Test Data No.	
				Horizontal	Vertical
1	Transmitting	802.11a	5180MHz (Channel 36)	# 93	# 94
2			5220MHz (Channel 44)	# 95	# 96
3			5240MHz (Channel 48)	# 97	# 98
4		802.11n HT20	5180MHz (Channel 36)	# 99	# 100
5			5220MHz (Channel 44)	# 101	# 102
6			5240MHz (Channel 48)	# 103	# 104

For Frequency range: below 1GHz

No.	Test Mode and Frequency			Reference Test Data No.	
				Horizontal	Vertical
1	Transmitting	802.11a	5180MHz (Channel 36)	# 111	# 112
2			5220MHz (Channel 44)	# 113	# 114
3			5240MHz (Channel 48)	# 115	# 116
4		802.11n HT20	5180MHz (Channel 36)	# 109	# 110
5			5220MHz (Channel 44)	# 107	# 108
6			5240MHz (Channel 48)	# 105	# 106

## 4.5.4. For Band Edge Emission

The EUT was tested in restricted bands and all the test results are listed in section 4.7. The restricted bands defined in part 15.205(a))

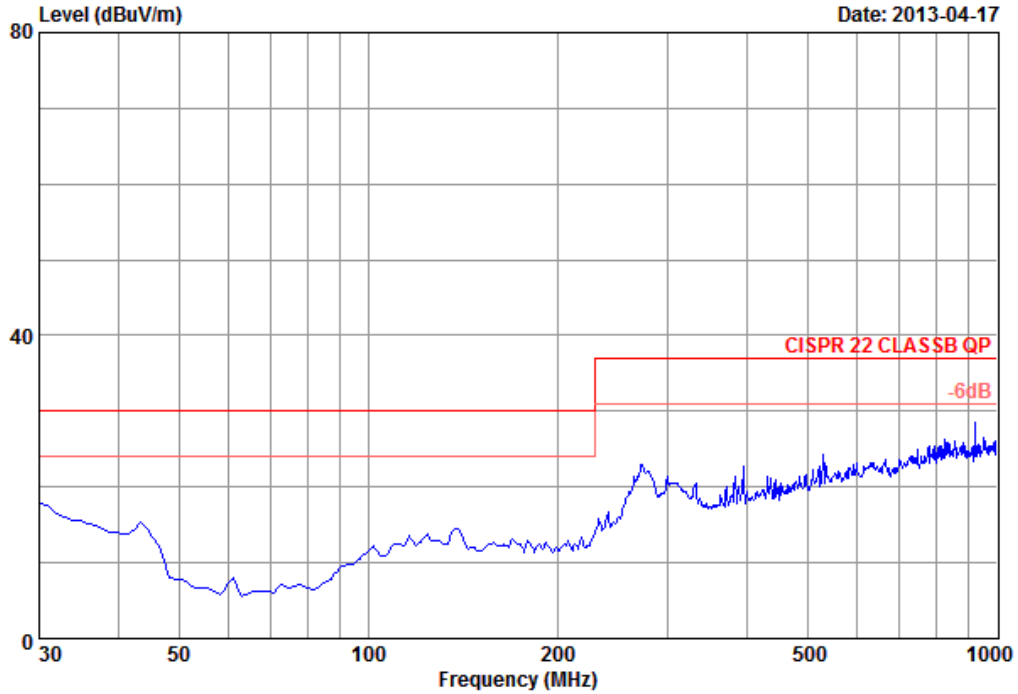
No.	Test Mode and Frequency		Reference Test Data No.		
			Horizontal	Vertical	
1.	Transmitting	802.11a	5180MHz (Channel 36)	# 25 # 27	# 26 # 28
2.		802.11n HT20	5180MHz (Channel 36)	# 29 # 31	# 30 #32

4.5.5. Radiated Emission Measurement Results



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Data: 37 File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48) Date: 2013-04-17



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 37  
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant.pol : HORIZONTAL  
 Env./Ins. : 22.0°C 44%/ESCI Engineer : Kevin  
 EUT. : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating: 120Vac/60Hz  
 Test Mode : Configuration3  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	43.58	10.85	0.91	3.66	15.42	30.00	14.58	QP
2	138.64	12.27	1.67	0.60	14.54	30.00	15.46	QP
3	271.53	12.86	2.40	7.78	23.04	37.00	13.96	QP
4	528.58	18.32	3.40	2.48	24.20	37.00	12.80	QP
5	824.43	20.83	4.49	1.06	26.38	37.00	10.62	QP
6	924.34	20.80	4.76	3.06	28.62	37.00	8.38	QP

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading  
 2.The emission level that are 20dB below the official limit are not reported

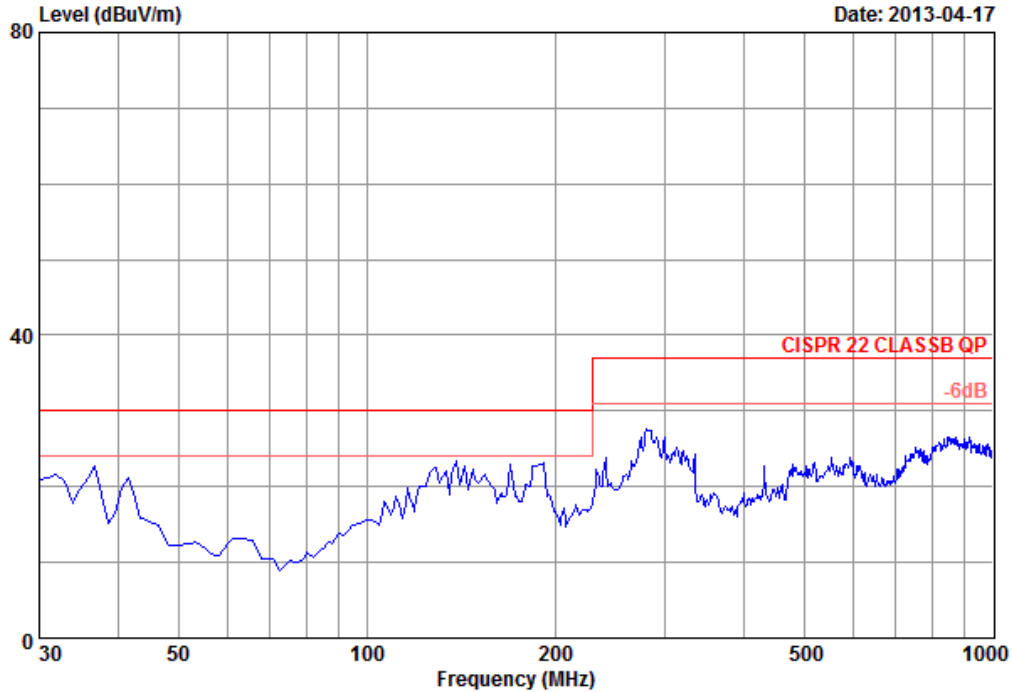


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Data: 38

File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48)

Date: 2013-04-17



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 38  
 Dis./Ant. : 10m : 6112D(22252)0416 V Ant.pol : VERTICAL  
 Env./Ins. : 22.0°C 44%/ESCI Engineer : Kevin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating: 120Vac/60Hz  
 Test Mode : Configuration3  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	36.79	16.30	0.68	5.75	22.73	30.00	7.27	QP
2	128.94	12.10	1.32	9.09	22.51	30.00	7.49	QP
3	138.64	11.10	1.35	10.93	23.38	30.00	6.62	QP
4	191.99	9.20	1.56	12.36	23.12	30.00	6.88	QP
5	279.29	12.90	1.95	12.87	27.72	37.00	9.28	QP
6	848.68	20.80	3.64	2.14	26.58	37.00	10.42	QP

Remarks: 1 Emission Level= Antenna factor + Cable loss + Reading  
 2.The emission level that are 20dB below the official limit are not reported

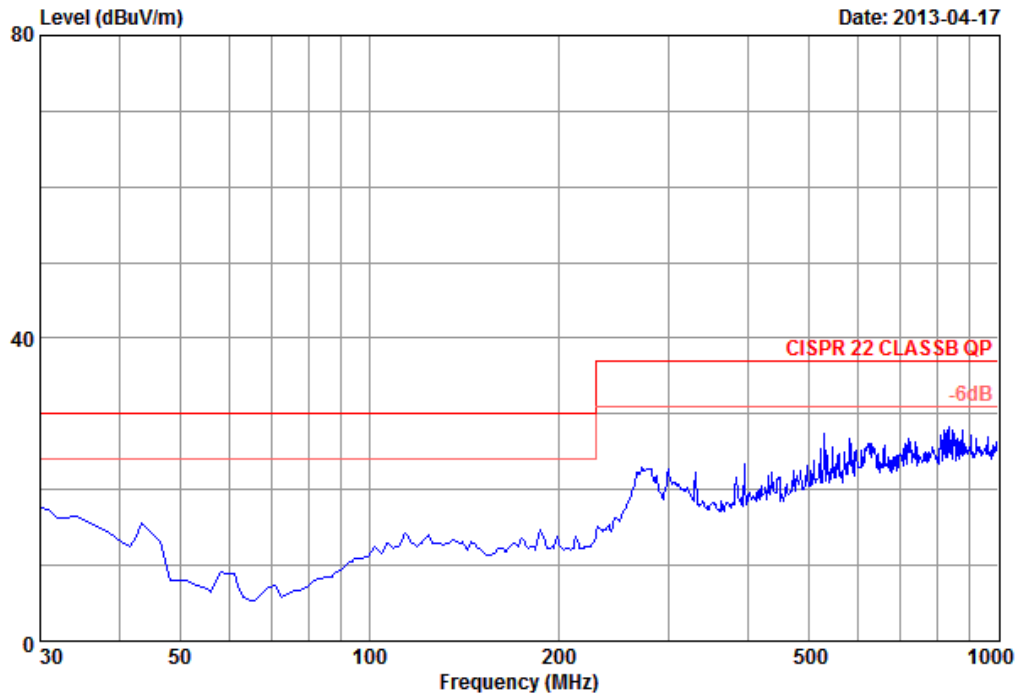


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Data: 39

File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48)

Date: 2013-04-17



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 39  
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant.pol : HORIZONTAL  
 Env./Ins. : 22.0\*C 44%/ESCI Engineer : Kevin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating: 120Vac/60Hz  
 Test Mode : Configuration4  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	271.53	12.86	2.40	7.69	22.95	37.00	14.05	QP
2	528.58	18.32	3.40	5.77	27.49	37.00	9.51	QP
3	581.93	19.20	3.67	3.98	26.85	37.00	10.15	QP
4	623.64	19.55	3.80	2.65	26.00	37.00	11.00	QP
5	722.58	20.03	4.13	2.68	26.84	37.00	10.16	QP
6	837.04	20.90	4.51	2.82	28.23	37.00	8.77	QP

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading  
 2.The emission level that are 20dB below the official limit are not reported

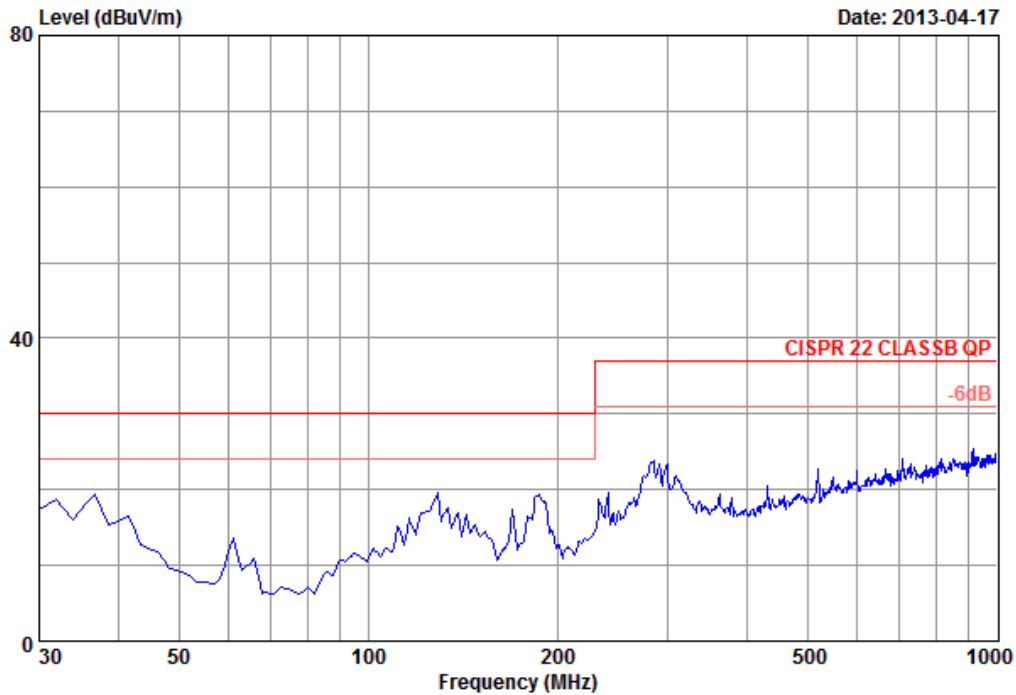


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Data: 40

File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48)

Date: 2013-04-17



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 40  
 Dis./Ant. : 10m 6112D(22252)0416 V Ant.pol : VERTICAL  
 Env./Ins. : 22.0\*C 44%/ESCI Engineer : Kevin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating: 120Vac/60Hz  
 Test Mode : Configuration4  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.50	0.63	-0.49	18.64	30.00	11.36	QP
2	36.79	16.30	0.68	2.51	19.49	30.00	10.51	QP
3	128.94	12.10	1.32	6.10	19.52	30.00	10.48	QP
4	169.68	9.80	1.49	6.10	17.39	30.00	12.61	QP
5	187.14	9.10	1.56	8.74	19.40	30.00	10.60	QP
6	284.14	13.00	1.96	8.82	23.78	37.00	13.22	QP

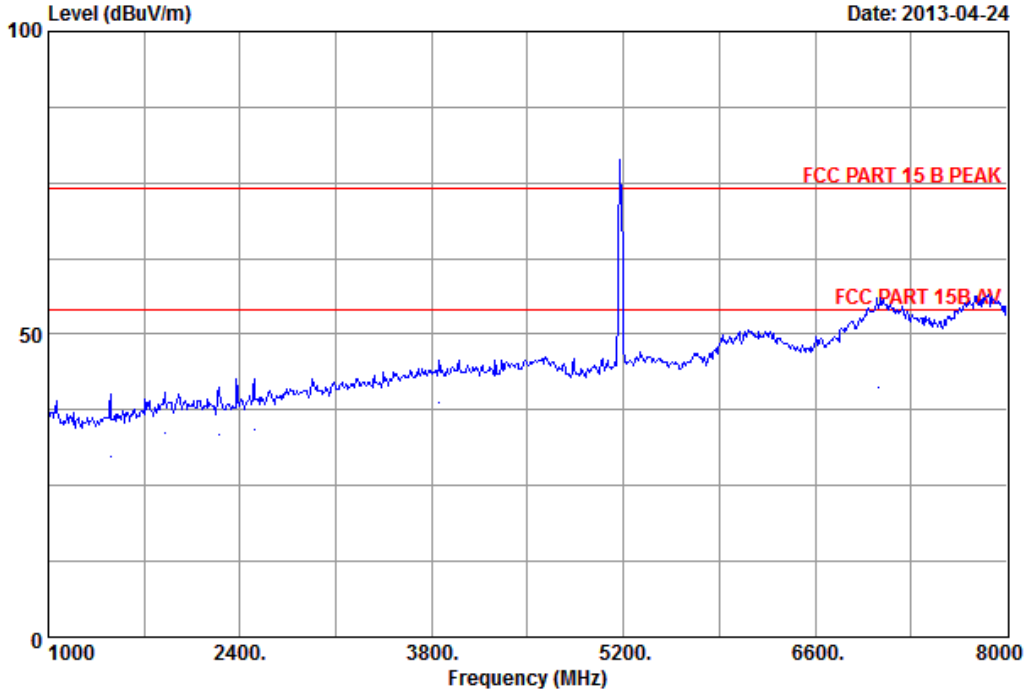
Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading  
 2.The emission level that are 20dB below the official limit are not reported

4.5.6. Radiated Emission Measurement Results (For Above 1GHz)



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Data: 5 File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48) Date: 2013-04-24



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 5  
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : HORIZONTAL  
 Limit : FCC PART 15 B PEAK  
 Env./Ins. : 22.0\*C 44%/E4447A Engineer : Kevin  
 EUT. : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test Mode : Configuration3  
 Memo :

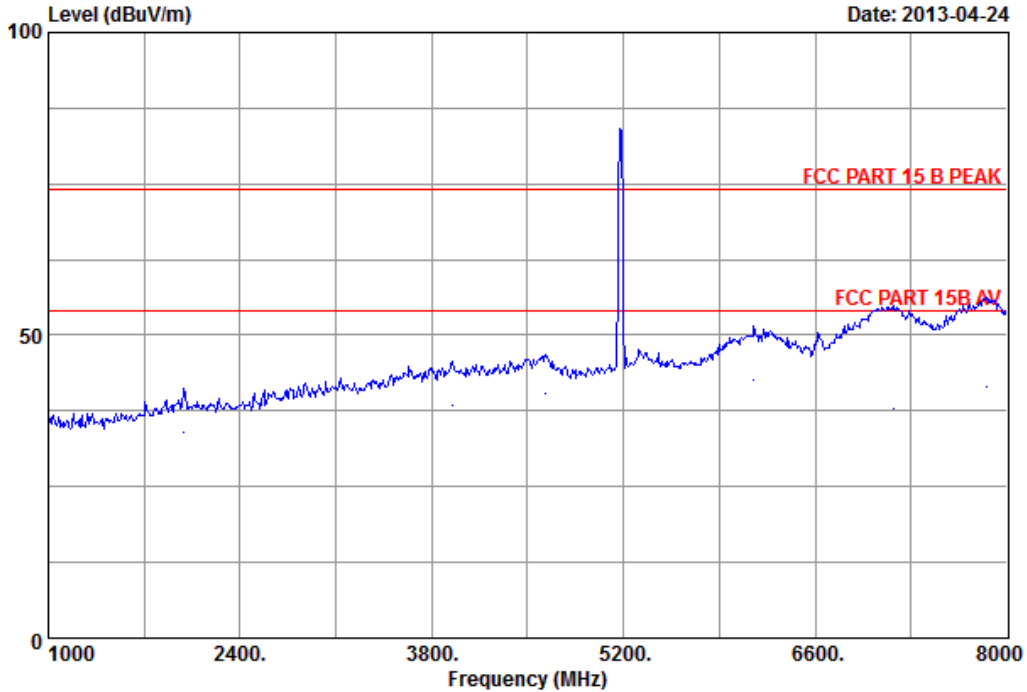
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1455.00	26.27	7.80	41.44	35.49	40.02	74.00	33.98	Peak
2	1456.32	26.27	7.80	31.20	35.49	29.78	54.00	24.22	Average
3	1847.00	27.91	8.72	38.88	35.08	40.43	74.00	33.57	Peak
4	1849.33	27.91	8.72	32.22	35.08	33.77	54.00	20.23	Average
5	2246.00	28.55	9.32	38.19	34.85	41.21	74.00	32.79	Peak
6	2247.32	28.55	9.32	30.33	34.85	33.35	54.00	20.65	Average
7	2505.00	28.57	10.26	38.65	34.78	42.70	74.00	31.30	Peak
8	2506.32	28.57	10.26	30.32	34.78	34.37	54.00	19.63	Average
9	3856.00	33.11	12.74	34.23	34.44	45.64	74.00	28.36	Peak
10	3857.32	33.11	12.74	27.33	34.44	38.74	54.00	15.26	Average
11	5172.00	34.70	14.67	63.95	34.38	78.94	74.00	-4.94	Peak
12	7055.00	37.72	17.94	34.12	33.77	56.01	74.00	17.99	Peak
13	7056.33	37.72	17.94	19.32	33.75	41.23	54.00	12.77	Average

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp  
 2.The emission level that are 20dB below the official limit are not reported



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Data: 6 File: G:\TEST DATA\2013\Report\4IG1304008.EM6 (48) Date: 2013-04-24



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 6  
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : VERTICAL  
 Limit : FCC PART 15 B PEAK  
 Env./Ins. : 22.0\*C 44%/E4447A Engineer : Kevin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test Mode : Configuration3  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1987.00	28.52	9.04	38.61	34.92	41.25	74.00	32.75	Peak
2	1988.32	28.52	9.04	31.21	34.92	33.85	54.00	20.15	Average
3	3947.00	33.54	12.88	33.59	34.41	45.60	74.00	28.40	Peak
4	3948.32	33.54	12.88	26.32	34.41	38.33	54.00	15.67	Average
5	4626.00	33.99	14.39	32.66	34.34	46.70	74.00	27.30	Peak
6	4627.32	33.99	14.39	26.32	34.34	40.36	54.00	13.64	Average
7	5172.00	34.70	14.67	69.17	34.38	84.16	74.00	-10.16	Peak
8	6152.00	37.06	16.86	32.06	34.54	51.44	74.00	22.56	Peak
9	6153.20	37.06	16.86	23.31	34.54	42.69	54.00	11.31	Average
10	7167.00	38.01	17.98	32.55	33.69	54.85	74.00	19.15	Peak
11	7168.32	38.01	17.98	15.64	33.69	37.94	54.00	16.06	Average
12	7846.00	38.45	19.87	31.13	33.28	56.17	74.00	17.83	Peak
13	7847.32	38.45	19.87	16.31	33.26	41.37	54.00	12.63	Average

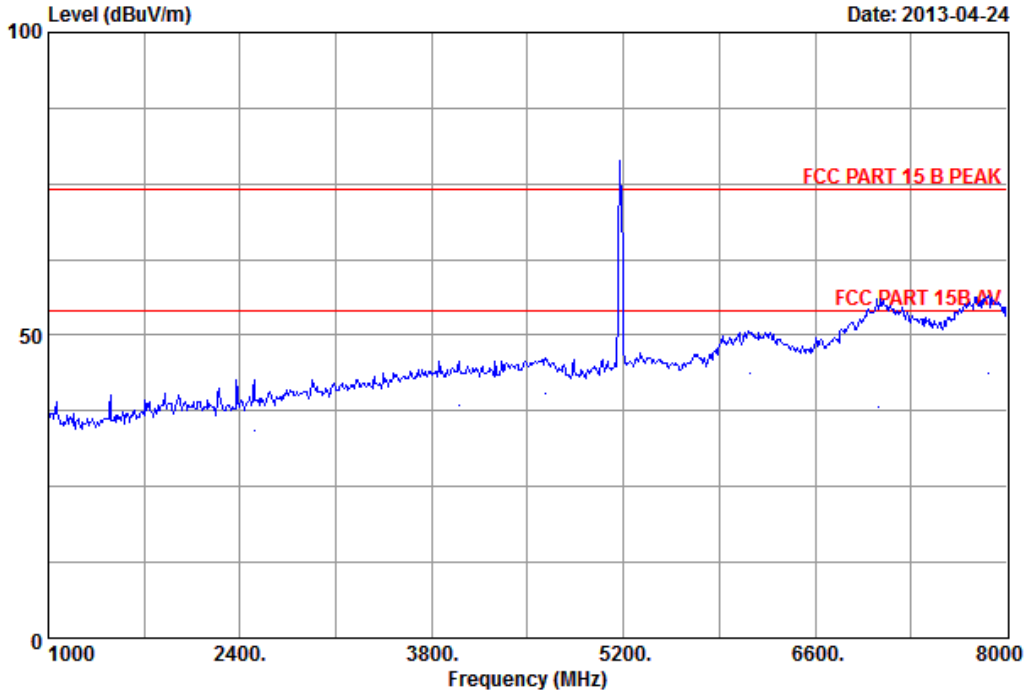
Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp  
 2.The emission level that are 20dB below the official limit are not reported





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Data: 7 File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48) Date: 2013-04-24



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 7  
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : HORIZONTAL  
 Limit : FCC PART 15 B PEAK  
 Env./Ins. : 22.0\*C 44%/E4447A Engineer : Kevin  
 EUT. : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test Mode : Configuration4  
 Memo :

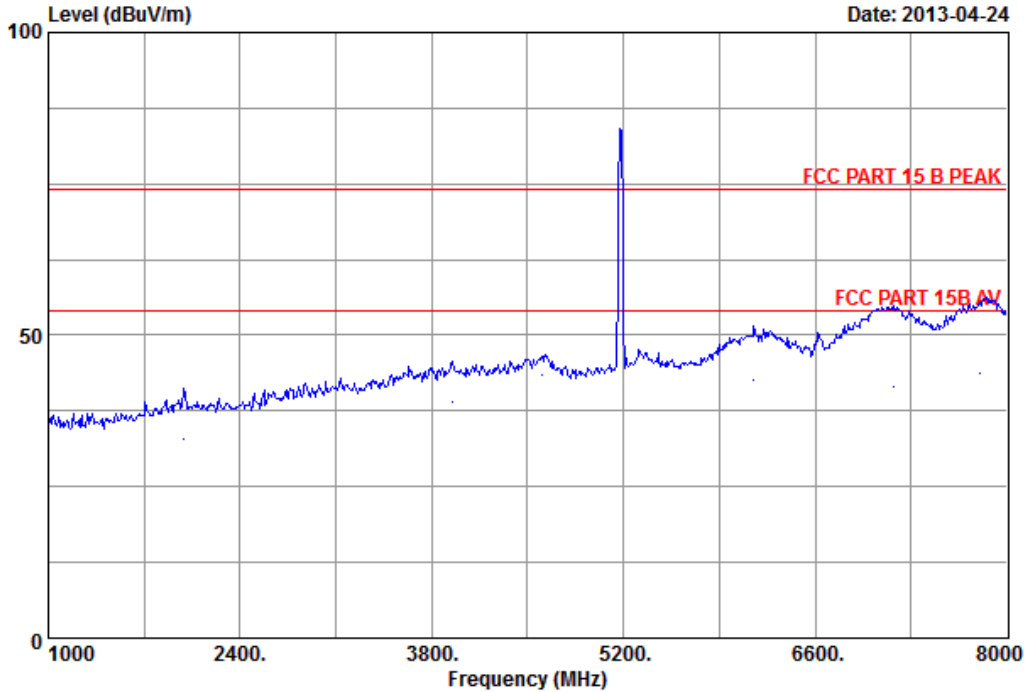
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2505.00	28.57	10.26	38.65	34.78	42.70	74.00	31.30	Peak
2	2506.32	28.57	10.26	30.32	34.78	34.37	54.00	19.63	Average
3	3996.00	33.80	12.75	33.61	34.41	45.75	74.00	28.25	Peak
4	3997.20	33.80	12.75	26.21	34.40	38.36	54.00	15.64	Average
5	4626.00	33.99	14.39	32.08	34.34	46.12	74.00	27.88	Peak
6	4627.32	33.99	14.39	26.32	34.34	40.36	54.00	13.64	Average
7	5172.00	34.70	14.67	63.95	34.38	78.94	74.00	-4.94	Peak
8	6117.00	37.05	16.80	31.30	34.57	50.58	74.00	23.42	Peak
9	6118.32	37.05	16.80	24.37	34.57	43.65	54.00	10.35	Average
10	7055.00	37.72	17.94	34.12	33.77	56.01	74.00	17.99	Peak
11	7056.32	37.72	17.94	16.32	33.75	38.23	54.00	15.77	Average
12	7867.00	38.43	19.87	31.53	33.26	56.57	74.00	17.43	Peak
13	7868.32	38.43	19.87	18.65	33.26	43.69	54.00	10.31	Average

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp  
 2.The emission level that are 20dB below the official limit are not reported



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Data: 8 File: G:\TEST DATA\2013\Report4\G1304008.EM6 (48) Date: 2013-04-24



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 8  
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : VERTICAL  
 Limit : FCC PART 15 B PEAK  
 Env./Ins. : 22.0\*C 44%/E4447A Engineer : Kevin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : 120Vac/60Hz  
 Test Mode : Configuration4  
 Memo :

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1987.00	28.52	9.04	38.61	34.92	41.25	74.00	32.75	Peak
2	1988.32	28.52	9.04	30.32	34.92	32.96	54.00	21.04	Average
3	3947.00	33.54	12.88	33.59	34.41	45.60	74.00	28.40	Peak
4	3948.32	33.54	12.88	26.90	34.41	38.91	54.00	15.09	Average
5	4605.00	33.97	14.22	32.77	34.35	46.61	74.00	27.39	Peak
6	4606.23	33.97	14.22	29.64	34.35	43.48	54.00	10.52	Average
7	5172.00	34.70	14.67	69.17	34.38	84.16	74.00	-10.16	Peak
8	6152.00	37.06	16.86	32.06	34.54	51.44	74.00	22.56	Peak
9	6153.20	37.06	16.86	23.29	34.54	42.67	54.00	11.33	Average
10	7167.00	38.01	17.98	32.55	33.69	54.85	74.00	19.15	Peak
11	7168.32	38.01	17.98	19.33	33.69	41.63	54.00	12.37	Average
12	7797.00	38.50	19.16	31.08	33.30	55.44	74.00	18.56	Peak
13	7798.32	38.50	19.16	19.33	33.30	43.69	54.00	10.31	Average

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp  
 2.The emission level that are 20dB below the official limit are not reported

4.6. Restricted Bands Measurement Results (For Below 1GHz)

4.6.1. Type of Network : IEEE 802.11a



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH36 5180MHz  
 Memo :  
 Data NO. : 93  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.40	0.46	27.90	19.15	40.00	20.85	QP
2	396.66	16.40	1.96	42.34	33.07	46.00	12.93	QP
3	528.58	18.06	2.47	40.61	32.74	46.00	13.26	QP
4	660.50	19.50	2.67	36.62	30.59	46.00	15.41	QP
5	850.62	21.36	2.93	40.24	36.85	46.00	9.15	QP
6	924.34	21.74	3.10	42.36	39.58	46.00	6.42	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH36 5180MHz  
 Memo :  
 Data NO. : 94  
 Ant. pol. : VERTICAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	44.55	11.35	0.54	37.16	21.51	40.00	18.49	QP
2	78.50	7.23	0.77	38.53	19.04	40.00	20.96	QP
3	528.58	18.06	2.47	34.61	26.74	46.00	19.26	QP
4	660.50	19.50	2.67	33.85	27.82	46.00	18.18	QP
5	757.50	20.42	2.74	36.26	31.00	46.00	15.00	QP
6	836.07	21.10	2.82	31.86	27.78	46.00	18.22	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH44 5220MHz  
 Memo :

Data NO. : 95  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	281.23	13.50	1.56	33.21	21.44	46.00	24.56	QP
2	396.66	16.40	1.96	41.89	32.62	46.00	13.38	QP
3	528.58	18.06	2.47	39.67	31.80	46.00	14.20	QP
4	660.50	19.50	2.67	37.02	30.99	46.00	15.01	QP
5	867.11	21.28	3.24	40.72	37.31	46.00	8.69	QP
6	924.34	21.74	3.10	42.85	40.07	46.00	5.93	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH44 5220MHz  
 Memo :

Data NO. : 96  
 Ant. pol. : VERTICAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.91	17.84	0.48	37.38	28.10	40.00	11.90	QP
2	78.50	7.23	0.77	39.76	20.27	40.00	19.73	QP
3	528.58	18.06	2.47	34.39	26.52	46.00	19.48	QP
4	660.50	19.50	2.67	33.79	27.76	46.00	18.24	QP
5	757.50	20.42	2.74	37.80	32.54	46.00	13.46	QP
6	960.23	22.10	3.09	37.75	35.36	54.00	18.64	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 97  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH48 5240MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 261.83	13.80	1.52	31.41	19.92	46.00	26.08	QP
2 396.66	16.40	1.96	41.45	32.18	46.00	13.82	QP
3 528.58	18.06	2.47	34.21	26.34	46.00	19.66	QP
4 660.50	19.50	2.67	37.69	31.66	46.00	14.34	QP
5 855.47	21.28	2.96	41.18	37.66	46.00	8.34	QP
6 924.34	21.74	3.10	42.56	39.78	46.00	6.22	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 98  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH48 5240MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 40.67	13.50	0.55	38.28	24.80	40.00	15.20	QP
2 528.58	18.06	2.47	34.02	26.15	46.00	19.85	QP
3 528.58	18.06	2.47	34.02	26.15	46.00	19.85	QP
4 660.50	19.50	2.67	33.97	27.94	46.00	18.06	QP
5 757.50	20.42	2.74	36.48	31.22	46.00	14.78	QP
6 960.23	22.10	3.09	35.22	32.83	54.00	21.17	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

4.6.2. Type of Network : IEEE 802.11n HT20



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH36 5180MHz  
 Memo :

Data NO. : 99  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	261.83	13.80	1.52	33.18	21.69	46.00	24.31	QP
2	396.66	16.40	1.96	41.68	32.41	46.00	13.59	QP
3	528.58	18.06	2.47	33.66	25.79	46.00	20.21	QP
4	660.50	19.50	2.67	37.45	31.42	46.00	14.58	QP
5	855.47	21.28	2.96	40.84	37.32	46.00	8.68	QP
6	924.34	21.74	3.10	43.08	40.30	46.00	5.70	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 6112D(22250)-12-08  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH36 5180MHz  
 Memo :

Data NO. : 100  
 Ant. pol. : VERTICAL  
 Engineer : Justin

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	396.66	16.43	1.96	35.13	25.89	46.00	20.11	QP
2	528.58	18.06	2.47	34.40	26.53	46.00	19.47	QP
3	660.50	19.50	2.67	34.31	28.28	46.00	17.72	QP
4	757.50	20.42	2.74	37.45	32.19	46.00	13.81	QP
5	878.75	21.30	2.99	31.88	28.46	46.00	17.54	QP
6	960.23	22.10	3.09	37.38	34.99	54.00	19.01	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 101  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH44 5220MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 30.97	19.70	0.44	26.64	19.17	40.00	20.83	QP
2 396.66	16.40	1.96	39.88	30.61	46.00	15.39	QP
3 528.58	18.06	2.47	40.88	33.01	46.00	12.99	QP
4 660.50	19.50	2.67	39.97	33.94	46.00	12.06	QP
5 855.47	21.28	2.96	39.07	35.55	46.00	10.45	QP
6 924.34	21.74	3.10	39.39	36.61	46.00	9.39	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 102  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH44 5220MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 39.70	13.97	0.51	39.42	26.35	40.00	13.65	QP
2 78.50	7.23	0.77	37.09	17.60	40.00	22.40	QP
3 528.58	18.06	2.47	34.98	27.11	46.00	18.89	QP
4 660.50	19.50	2.67	33.68	27.65	46.00	18.35	QP
5 757.50	20.42	2.74	36.49	31.23	46.00	14.77	QP
6 960.23	22.10	3.09	34.78	32.39	54.00	21.61	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 103  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH48 5240MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 87.23	8.90	0.86	38.13	20.38	40.00	19.62	QP
2 396.66	16.40	1.96	41.97	32.70	46.00	13.30	QP
3 528.58	18.06	2.47	39.84	31.97	46.00	14.03	QP
4 660.50	19.50	2.67	41.12	35.09	46.00	10.91	QP
5 862.26	21.22	3.02	40.59	37.00	46.00	9.00	QP
6 924.34	21.74	3.10	42.40	39.62	46.00	6.38	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber Data NO. : 104  
 Dis. / Ant. : 3m 6112D(22250)-12-08 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 CLASS B  
 Env. / Ins. : 17\*C40%/ESCI Engineer : Justin  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH48 5240MHz  
 Memo :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 35.82	16.09	0.51	38.61	27.63	40.00	12.37	QP
2 87.23	8.70	0.86	43.59	25.64	40.00	14.36	QP
3 528.58	18.06	2.47	35.29	27.42	46.00	18.58	QP
4 660.50	19.50	2.67	33.97	27.94	46.00	18.06	QP
5 757.50	20.42	2.74	35.47	30.21	46.00	15.79	QP
6 960.23	22.10	3.09	38.87	36.48	54.00	17.52	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



4.7. Restricted Bands Measurement Results (For Above 1GHz)

4.7.1. Type of Network : IEEE 802.11a



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH36 5180MHz  
 Memo :  
 Data NO. : 111  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112808.00	40.48	15.37	35.16	58.28	74.00	15.72	Peak
212819.15	40.48	15.37	17.36	40.48	54.00	13.52	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH36 5180MHz  
 Memo :  
 Data NO. : 112  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112496.00	39.40	14.93	34.42	55.49	74.00	18.51	Peak
212501.20	39.46	14.93	19.33	40.46	54.00	13.54	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH44 5220MHz  
 Memo :  
 Data NO. : 113  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112820.00	40.48	15.45	35.39	58.63	74.00	15.37	Peak
212831.25	40.53	15.45	16.37	39.66	54.00	14.34	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH44 5220MHz  
 Memo :  
 Data NO. : 114  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
111800.00	38.97	14.65	36.00	55.47	74.00	18.53	Peak
211830.10	38.91	14.68	19.62	39.06	54.00	14.94	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH48 5240MHz  
 Memo :  
 Data NO. : 115  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
111836.00	38.91	14.68	36.50	55.94	74.00	18.06	Peak
211847.20	38.88	14.68	19.31	38.72	54.00	15.28	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11a CH48 5240MHz  
 Memo :  
 Data NO. : 116  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
111200.00	39.38	14.42	35.51	55.08	74.00	18.92	Peak
211213.20	39.39	14.41	19.32	38.89	54.00	15.11	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

4.7.2. Type of Network : IEEE 802.11n HT20



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH36 5180MHz  
 Memo :

Data NO. : 109  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112568.00	39.63	15.13	34.33	55.97	74.00	18.03	Peak
212574.20	39.68	15.13	17.01	38.70	54.00	15.30	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH36 5180MHz  
 Memo :

Data NO. : 110  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112580.00	39.68	15.13	34.79	56.48	74.00	17.52	Peak
212593.20	39.74	15.05	19.32	41.03	54.00	12.97	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH44 5220MHz  
 Memo :  
 Data NO. : 107  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112712.00	40.14	15.26	35.98	58.47	74.00	15.53	Peak
212736.20	40.19	15.34	15.24	37.91	54.00	16.09	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH44 5220MHz  
 Memo :  
 Data NO. : 108  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112652.00	39.91	15.26	35.75	57.93	74.00	16.07	Peak
212682.15	40.02	15.18	14.37	36.62	54.00	17.38	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH48 5240MHz  
 Memo :  
 Data NO. : 105  
 Ant. pol. : HORIZONTAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112832.00	40.53	15.45	34.56	57.85	74.00	16.15	Peak
212840.12	40.53	15.45	15.26	38.55	54.00	15.45	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site NO. : 3m chamber  
 Dis. / Ant. : 3m 3115 (62960)-12-04  
 Limit : FCC PART 15 C PK  
 Env. / Ins. : 17\*C40%/E4447A  
 EUT : TI-nspire CX Wireless Network Adapter v2  
 M/N : TINAVWNA2  
 Power Rating : DC 3.7V  
 Test Mode : TX 802.11nHT20 CH48 5240MHz  
 Memo :  
 Data NO. : 106  
 Ant. pol. : VERTICAL  
 Engineer : Justin

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
112664.00	39.97	15.26	34.70	56.94	74.00	17.06	Peak
212668.24	39.97	15.18	17.20	39.40	54.00	14.60	Average

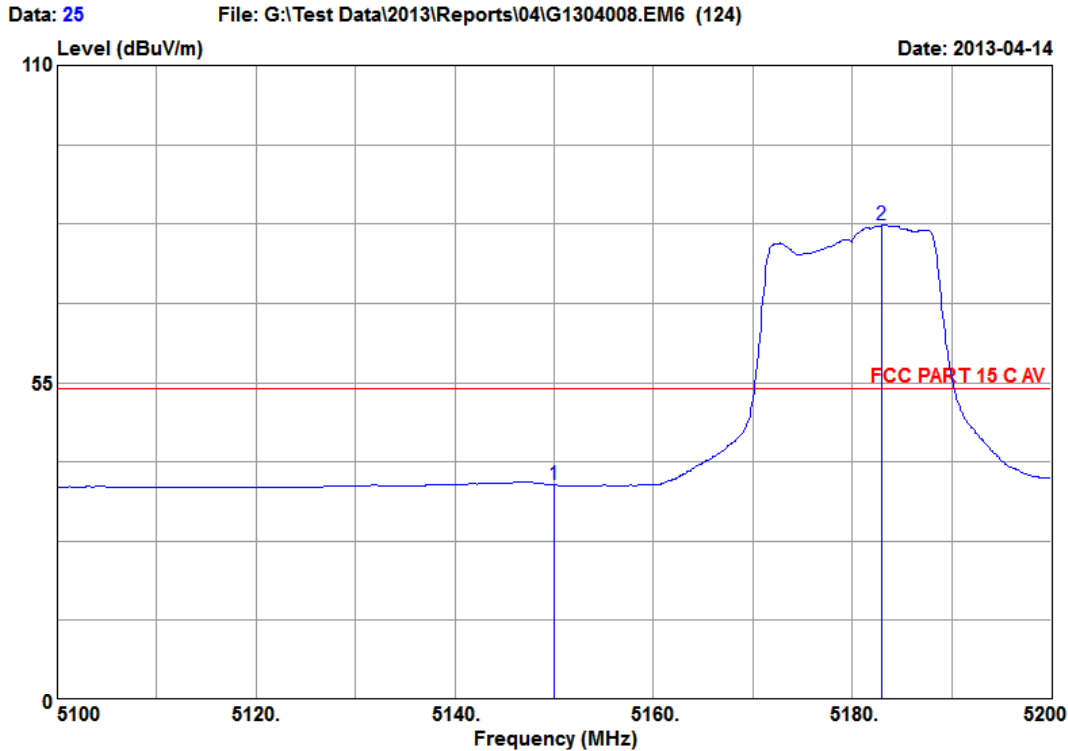
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

4.8. Spurious Emission Measurement Results in Band Edge Emission (FCC Part 15, 15.205)

4.8.1. IEEE 802.11a



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Site NO. : 3m chamber	Data NO. : 25
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C AV	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11a CH36 5180MHz	
Memo :	

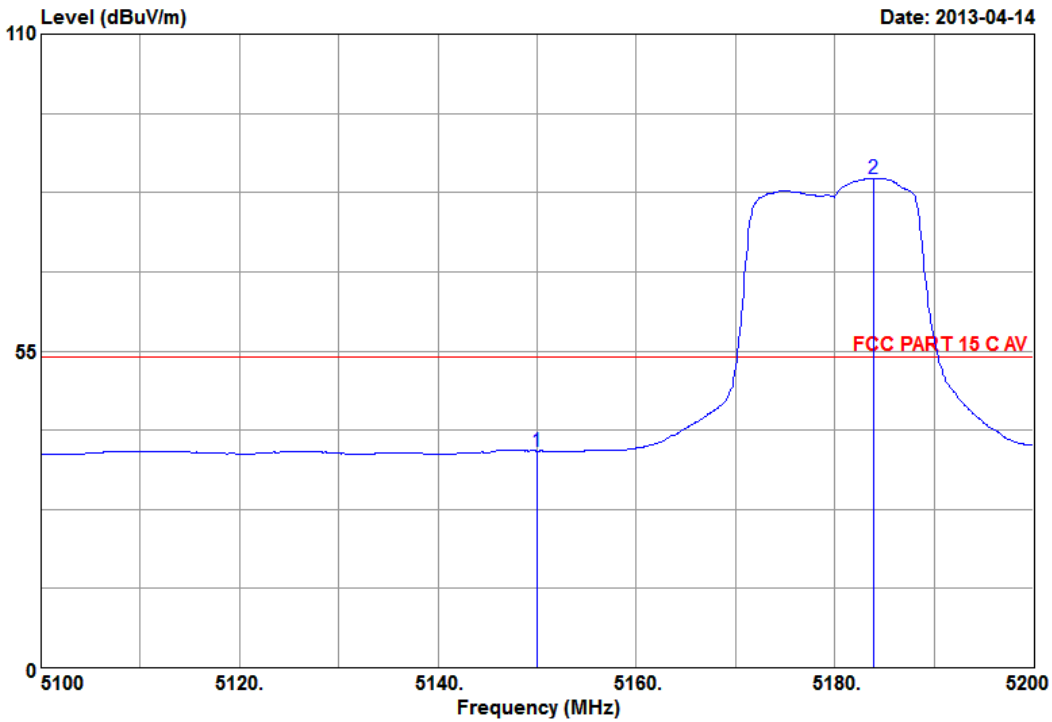
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.00	34.69	9.34	27.70	37.26	54.00	16.74	Average
2	5182.90	34.71	9.34	72.65	82.23	54.00	-28.23	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 26 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO.	: 3m chamber	Data NO.	: 26
Dis. / Ant.	: 3m 3115 (62960)-12-04	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 C AV	Engineer	: Justin
Env. / Ins.	: 17*C40%/E4447A		
EUT	: TI-nspire CX Wireless Network Adapter v2		
M/N	: TINAVWNA2		
Power Rating	: DC 3.7V		
Test Mode	: TX 802.11a CH36 5180MHz		
Memo	:		

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	28.08	37.64	54.00	16.36	Average
2 5183.90	34.71	9.34	75.43	85.01	54.00	-31.01	Average

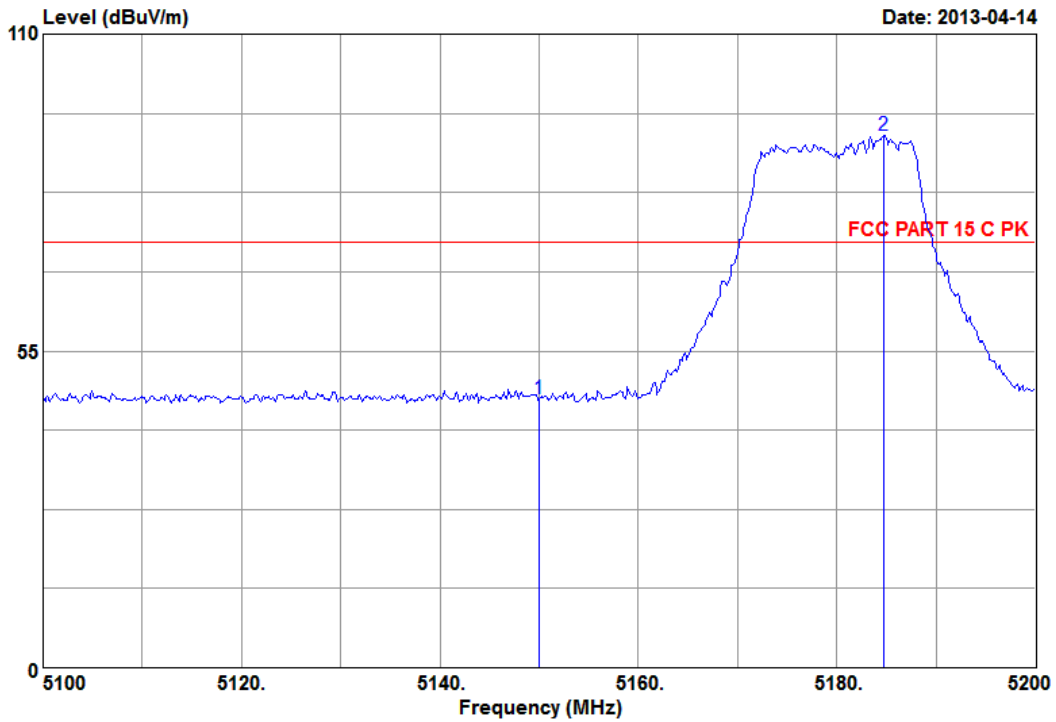
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.





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Data: 27 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO. : 3m chamber	Data NO. : 27
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C PK	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11a CH36 5180MHz	
Memo :	

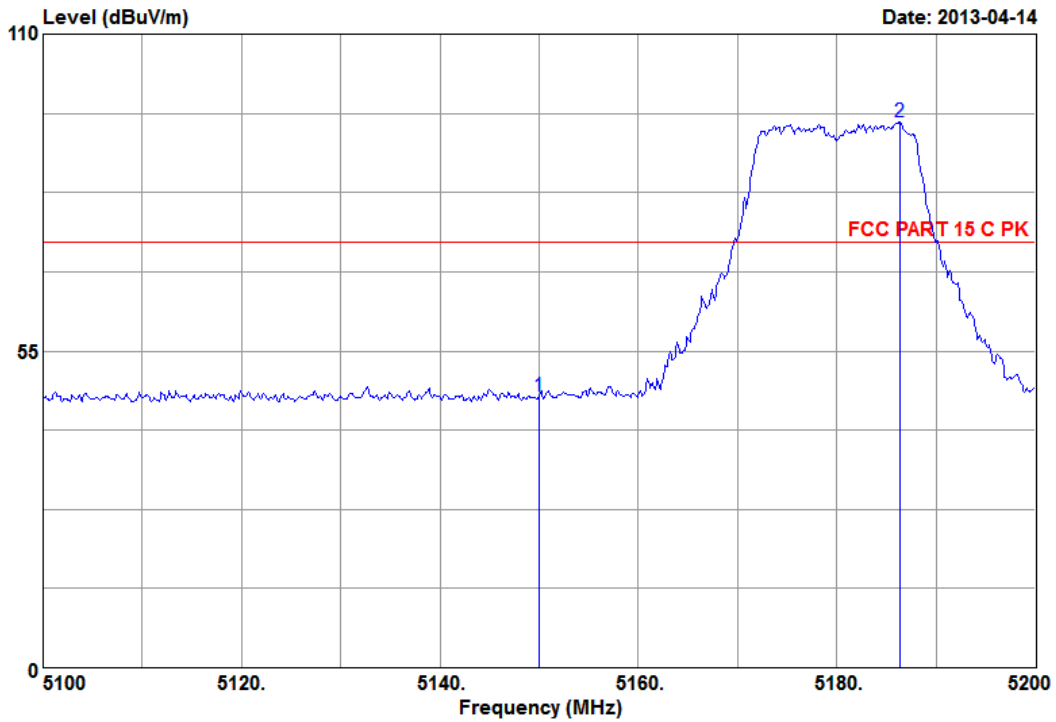
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	37.15	46.71	74.00	27.29	Peak
2 5184.70	34.71	9.34	82.95	92.53	74.00	-18.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 28 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO. : 3m chamber	Data NO. : 28
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : VERTICAL
Limit : FCC PART 15 C PK	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11a CH36 5180MHz	
Memo :	

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	37.59	47.15	74.00	26.85	Peak
2 5186.40	34.71	9.34	85.23	94.81	74.00	-20.81	Peak

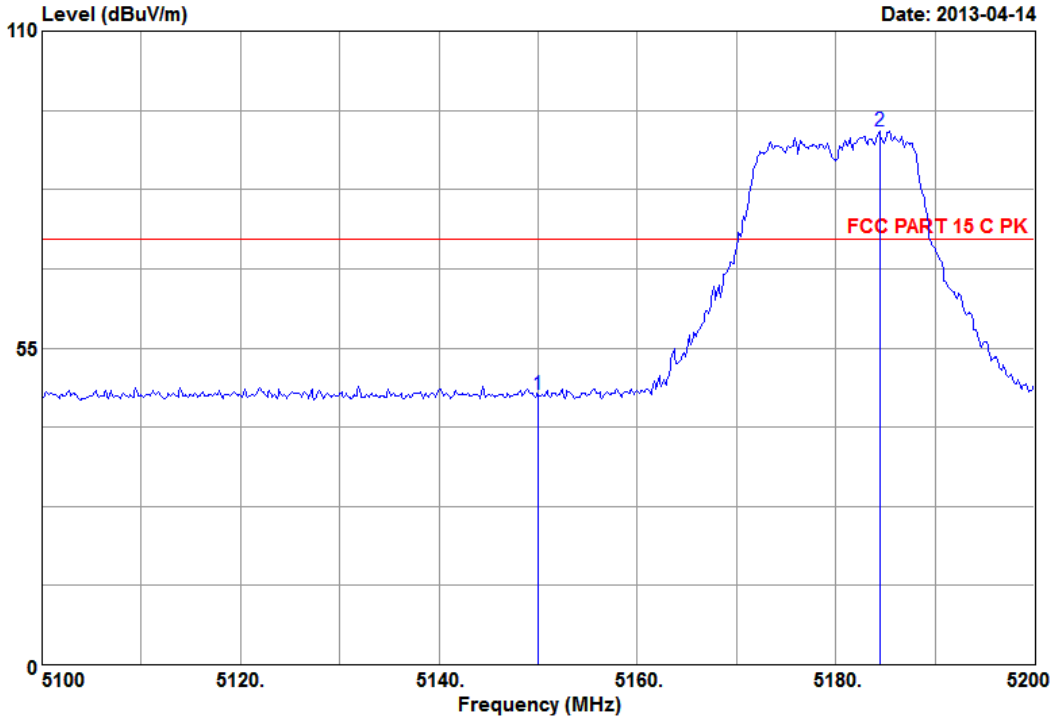
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

4.8.2. IEEE 802.11n HT20



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Data: 29 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Date: 2013-04-14

Site NO. : 3m chamber	Data NO. : 29
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C PK	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11nHT20 5180MHz	
Memo :	

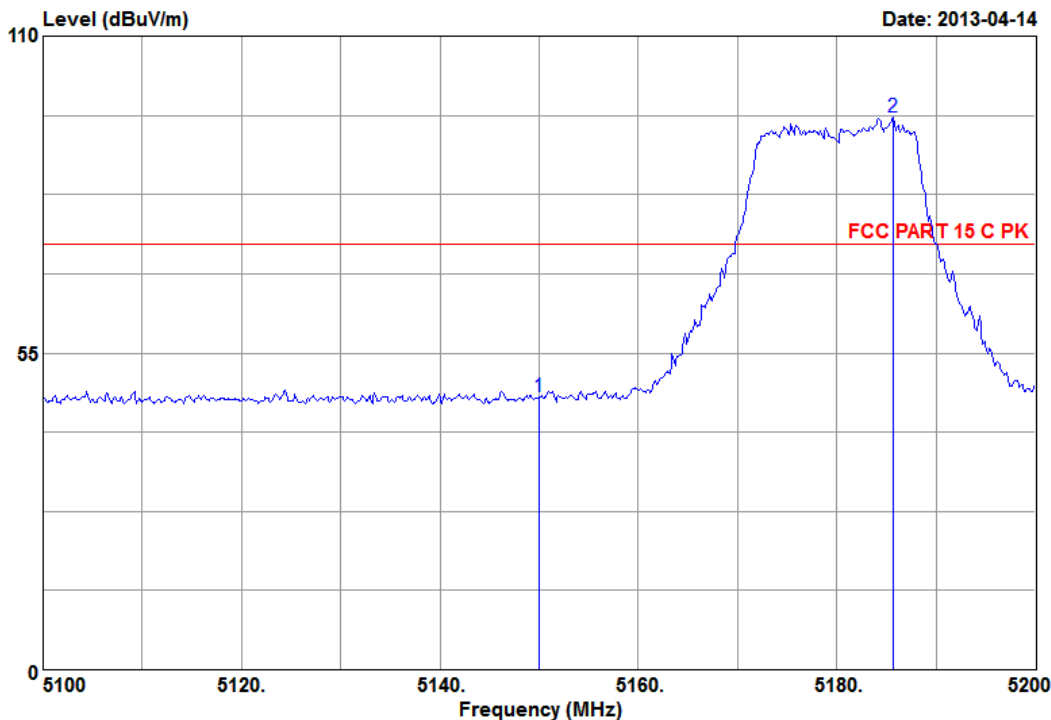
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.00	34.69	9.34	37.37	46.93	74.00	27.07	Peak
2	5184.40	34.71	9.34	82.97	92.55	74.00	-18.55	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 30 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO.	: 3m chamber	Data NO.	: 30
Dis. / Ant.	: 3m 3115 (62960)-12-04	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 C PK	Engineer	: Justin
Env. / Ins.	: 17*C40%/E4447A		
EUT	: TI-nspire CX Wireless Network Adapter v2		
M/N	: TINAVWNA2		
Power Rating	: DC 3.7V		
Test Mode	: TX 802.11nHT20 5180MHz		
Memo	:		

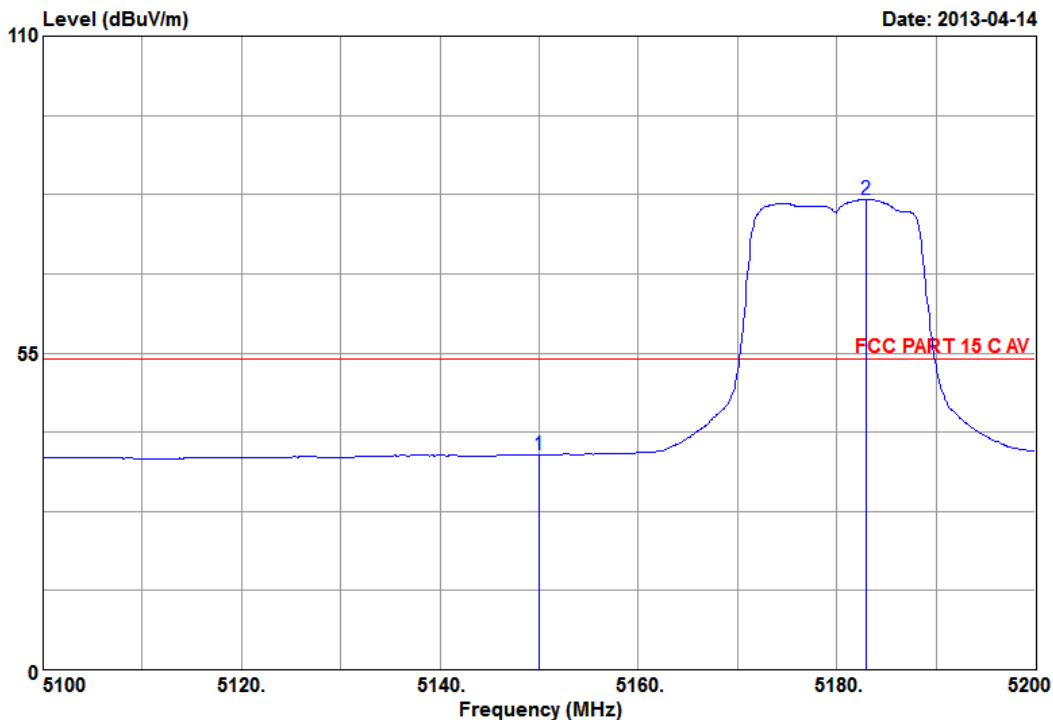
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	37.77	47.33	74.00	26.67	Peak
2 5185.70	34.71	9.34	86.27	95.85	74.00	-21.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 31 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO. : 3m chamber	Data NO. : 31
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C AV	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11nHT20 5180MHz	
Memo :	

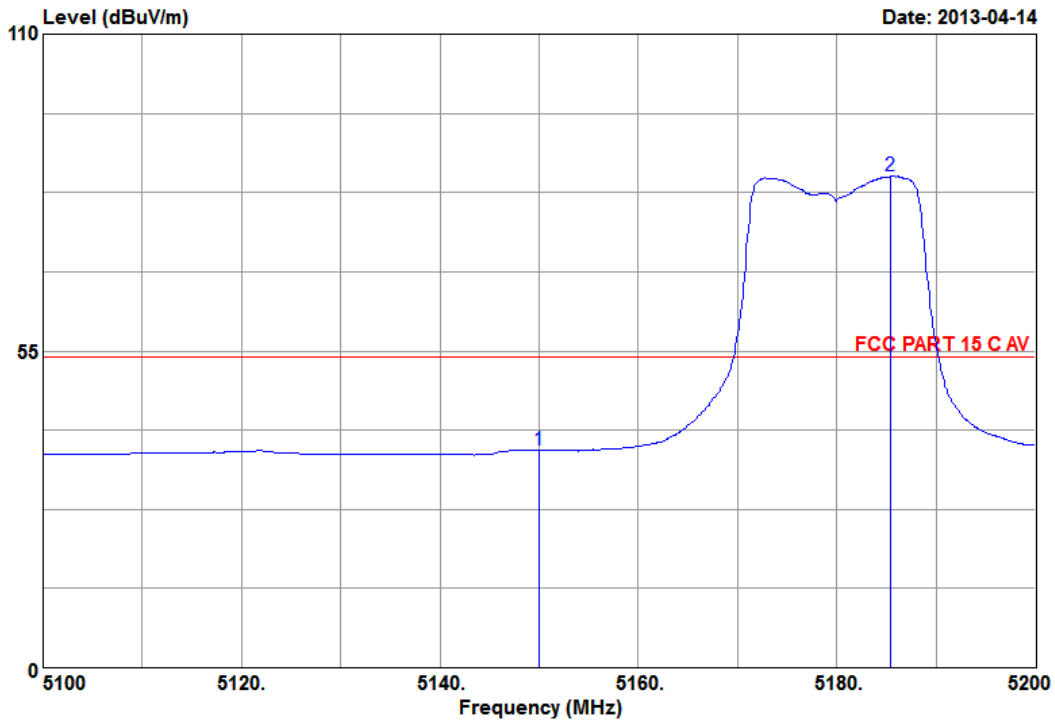
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	27.68	37.24	54.00	16.76	Average
2 5182.90	34.71	9.34	72.08	81.66	54.00	-27.66	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 32 File: G:\Test Data\2013\Reports\04\G1304008.EM6 (124)



Site NO. : 3m chamber	Data NO. : 32
Dis. / Ant. : 3m 3115 (62960)-12-04	Ant. pol. : VERTICAL
Limit : FCC PART 15 C AV	Engineer : Justin
Env. / Ins. : 17*C40%/E4447A	
EUT : TI-nspire CX Wireless Network Adapter v2	
M/N : TINAVWNA2	
Power Rating : DC 3.7V	
Test Mode : TX 802.11nHT20 5180MHz	
Memo :	

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 5150.00	34.69	9.34	28.16	37.72	54.00	16.28	Average
2 5185.40	34.71	9.34	75.73	85.31	54.00	-31.31	Average

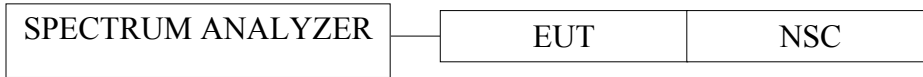
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

## 5. 26 dB BANDWIDTH MEASUREMENT

### 5.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04

### 5.2. Block Diagram of Test Setup



— : SIGNAL LINE

### 5.3. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

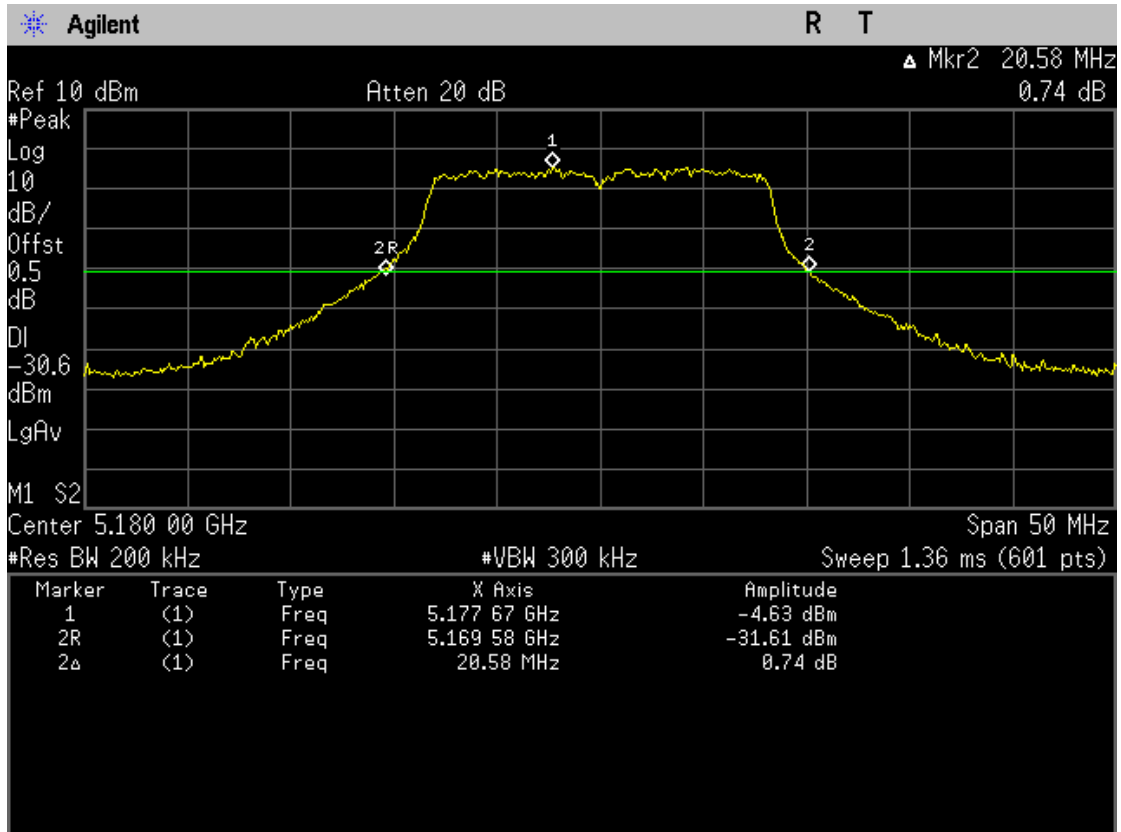
### 5.4. Test Results

**PASSED.** All the test results are attached in next pages.

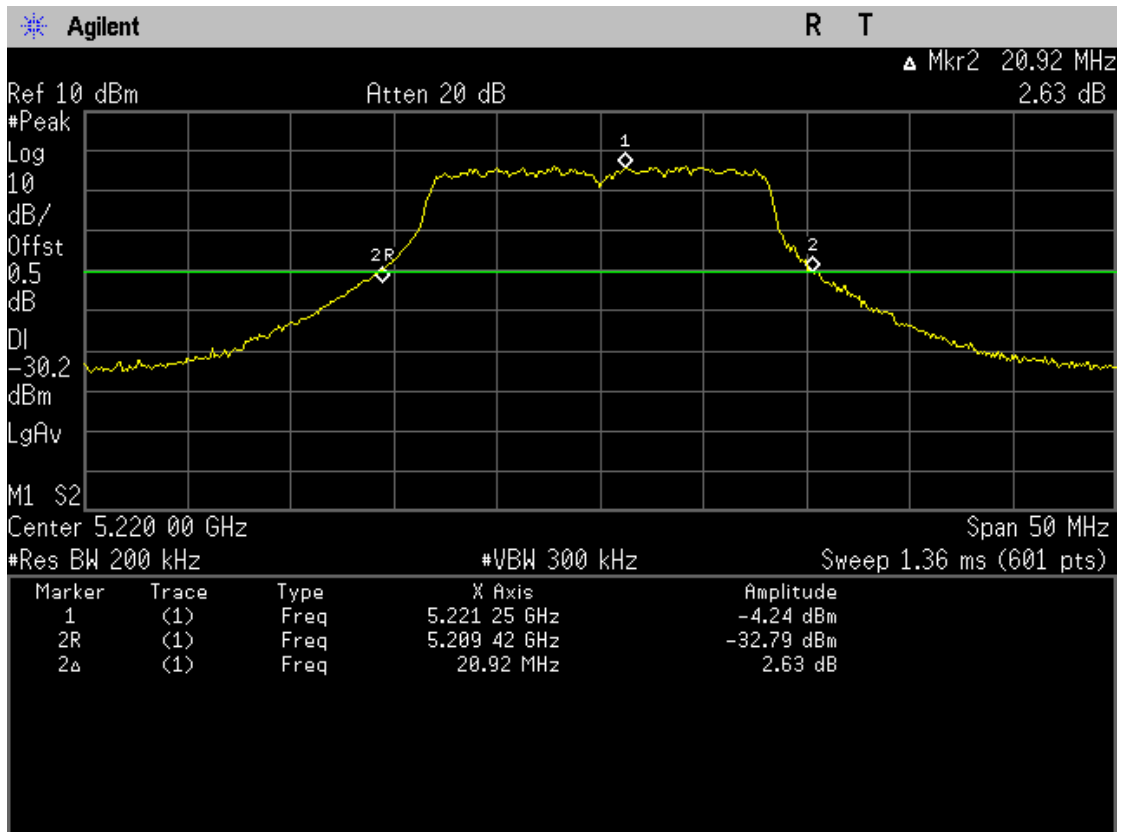
Item	Channel	Test Frequency	26dB Bandwidth
802.11a	36	5180MHz	20.58MHz
	44	5220MHz	20.92 MHz
	48	5240MHz	20.67 MHz
802.11n HT20	36	5180MHz	21.75 MHz
	44	5220MHz	21.33 MHz
	48	5240MHz	21.67 MHz

5.4.1. 802.11a

CH 36

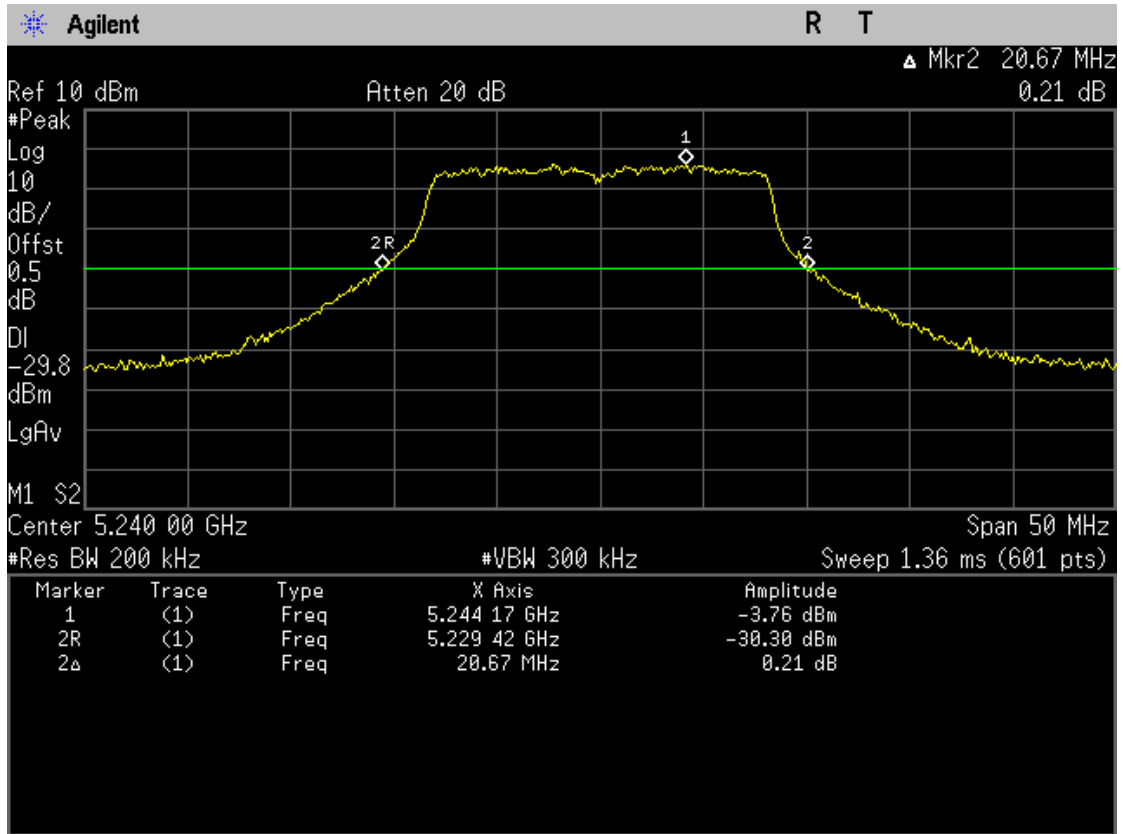


CH 44



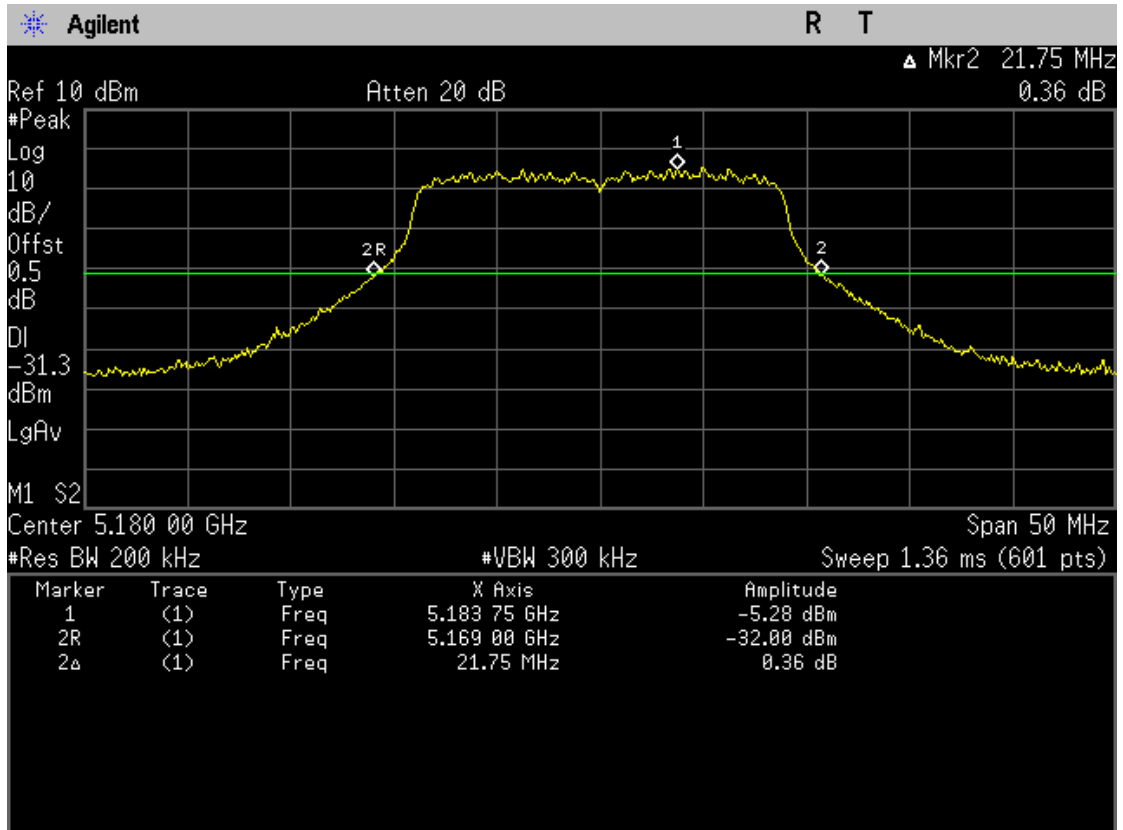


CH 48

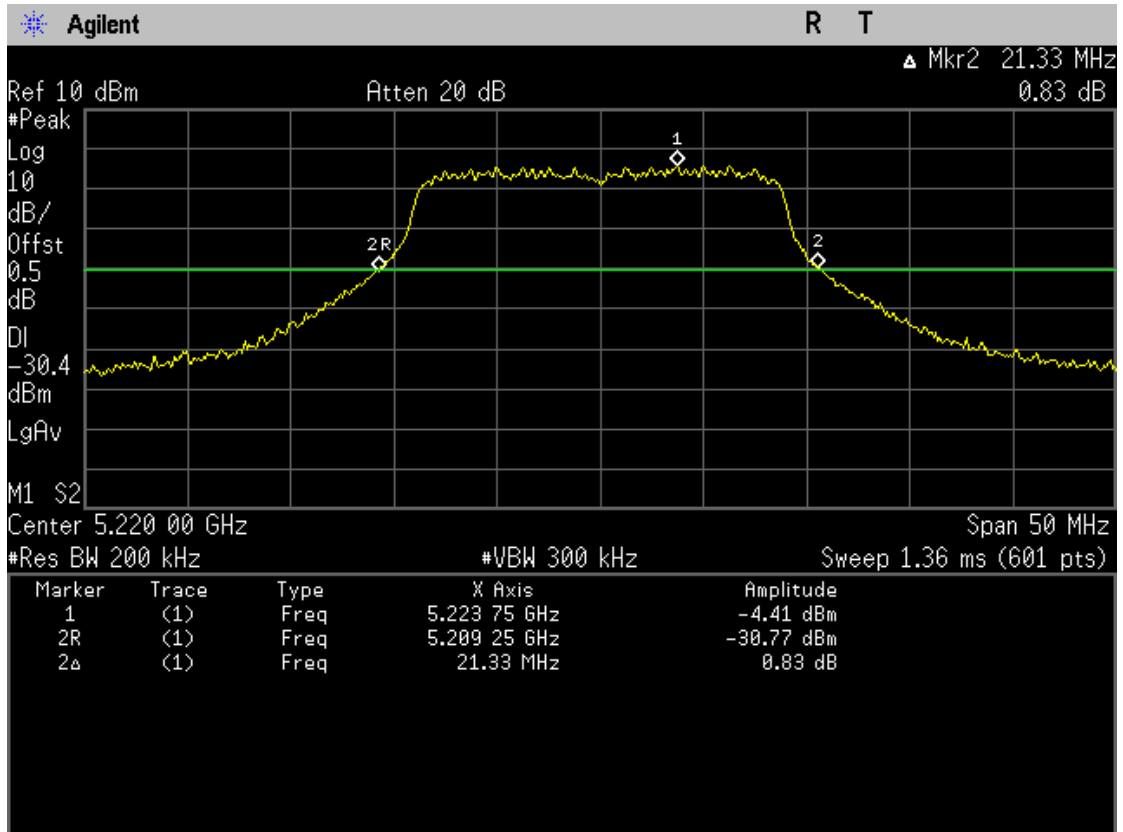


5.4.2. 802.11n HT20

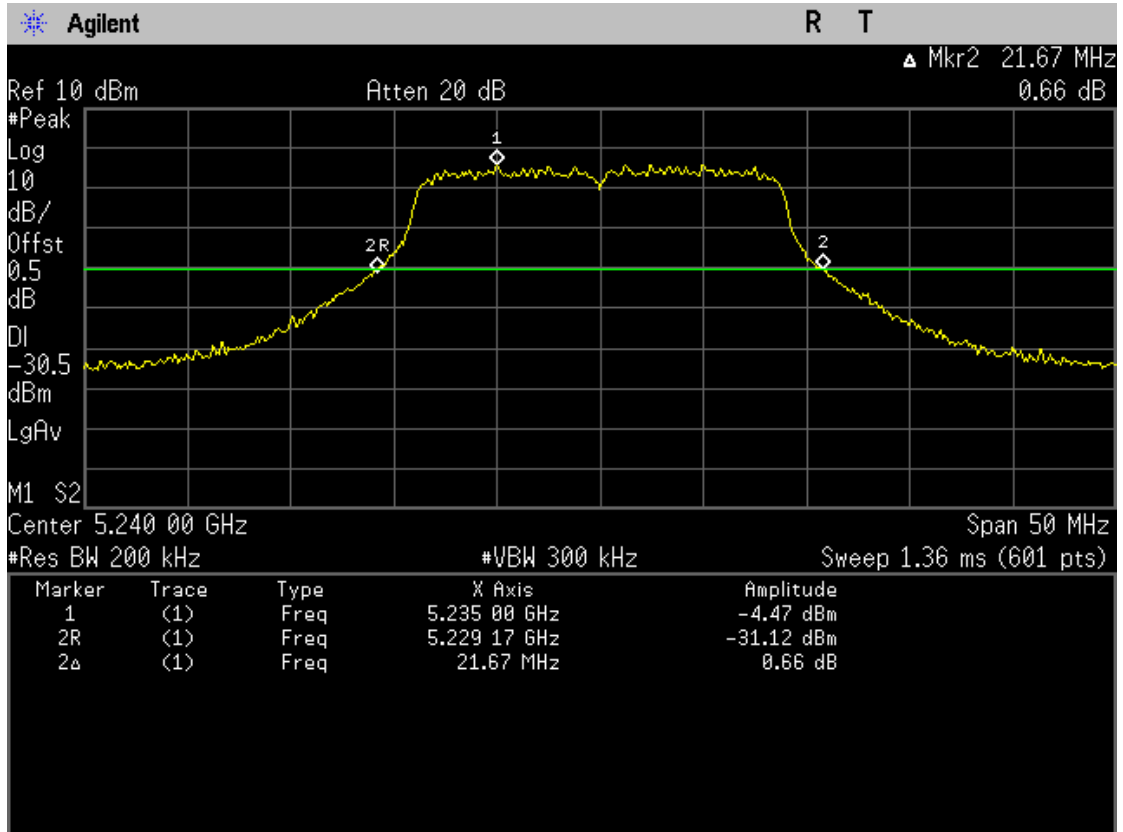
CH 36



CH 44



CH 48



## 6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

### 6.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Agilent	N1911A	MY45100361	2013-01-05	2014-01-04
2.	Power Sensor	Agilent	N1921A	MY45240521	2013-01-05	2014-01-04

### 6.2. Block Diagram of Test Setup



— : SIGNAL LINE

### 6.3. Specification Limits (§15.407(a)(1))

For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50mW or  $4\text{dBm} + 10 \log B$ , where B is the 26-dB emission bandwidth in MHz.

### 6.4. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

### 6.5. Test Results

**PASSED.** All the test results are attached in next pages.

Test Date: Apr.19, 2013 Test Mode: 802.11a

Test Condition			Peak Power (dBm)		
Temperature (*C)	Voltage (V)	Data rate (Mbps)	CH 36 5180MHz	CH 44 5220MHz	CH 48 5240MHz
20	3.7	6	14.48	14.75	14.62
20	3.7	9	13.47	14.31	14.59
20	3.7	12	13.81	13.87	14.32
20	3.7	18	14.15	13.64	13.87
20	3.7	24	13.42	13.25	13.91
20	3.7	36	13.91	13.49	13.84
20	3.7	48	13.36	13.11	13.29
20	3.7	54	13.27	13.39	13.77

Test Date: Apr.19, 2013 Test Mode: 802.11n HT20

Test Condition			Peak Power (dBm)		
Temperature (*C)	Voltage (V)	Data rate (Mbps)	CH 36 5180MHz	CH 44 5220MHz	CH 48 5240MHz
20	3.7	MCS0	14.09	13.86	14.13
20	3.7	MCS1	13.79	13.76	14.01
20	3.7	MCS2	13.64	13.25	13.82
20	3.7	MCS3	13.50	13.67	13.74
20	3.7	MCS4	13.71	13.73	13.94
20	3.7	MCS5	12.89	12.96	13.27
20	3.7	MCS6	13.04	13.11	13.09

## 7. POWER SPECTRAL DENSITY MEASUREMENT

### 7.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04

### 7.2. Block Diagram of Test Setup

The same as section 5.2.

### 7.3. Specification Limits (§15.407(a)-(1) (2))

For the band 5.15-5.25GHz, the peak power spectral density shall not exceed 4dBm in any 1 MHz band.

### 7.4. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

### 7.5. Test Results

**PASSED.** All the test results are attached in next page.

Test Date: Apr.20, 2013

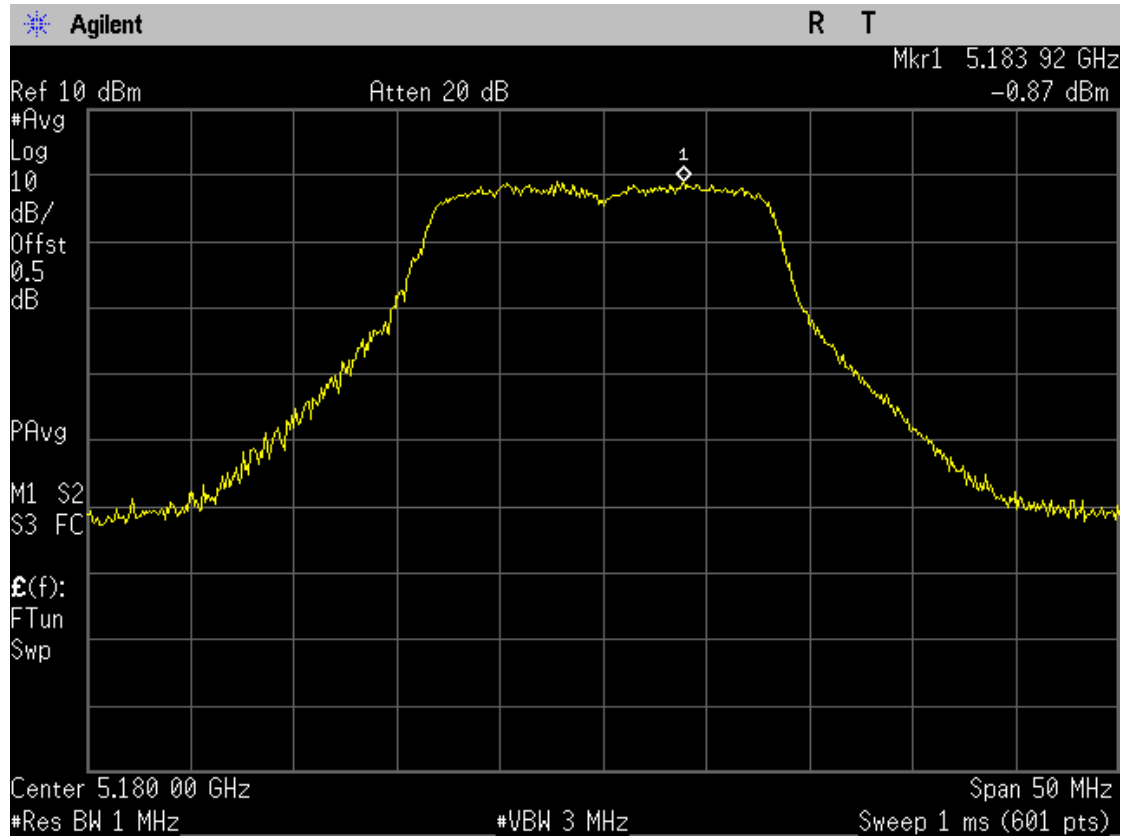
Temperature: 19.1 °C

Humidity: 58 %

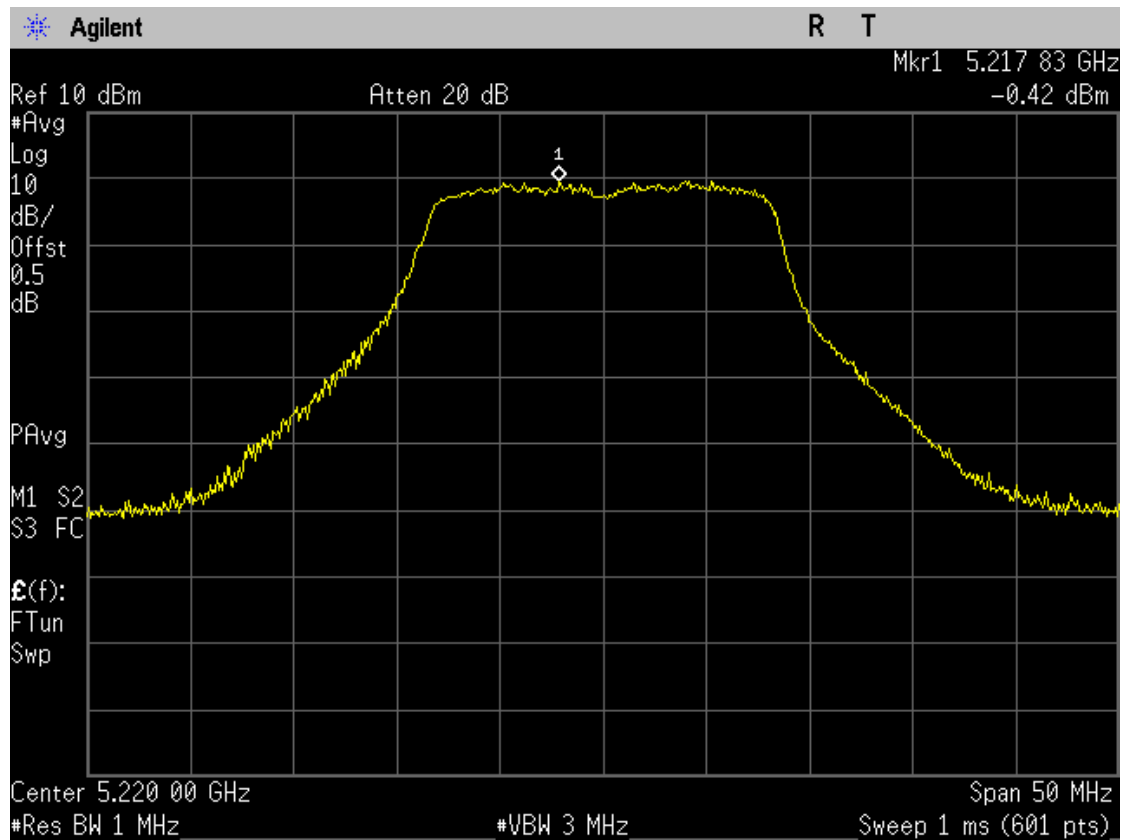
Item	Channel	Frequency(GHz)	Value(dBm)
802.11a	36	5.18392	-0.87
	44	5.21783	-0.42
	48	5.23767	-0.24
802.11n HT20	36	5.18325	-1.50
	44	5.22317	-0.96
	48	5.23508	-0.56

7.5.1. 802.11a

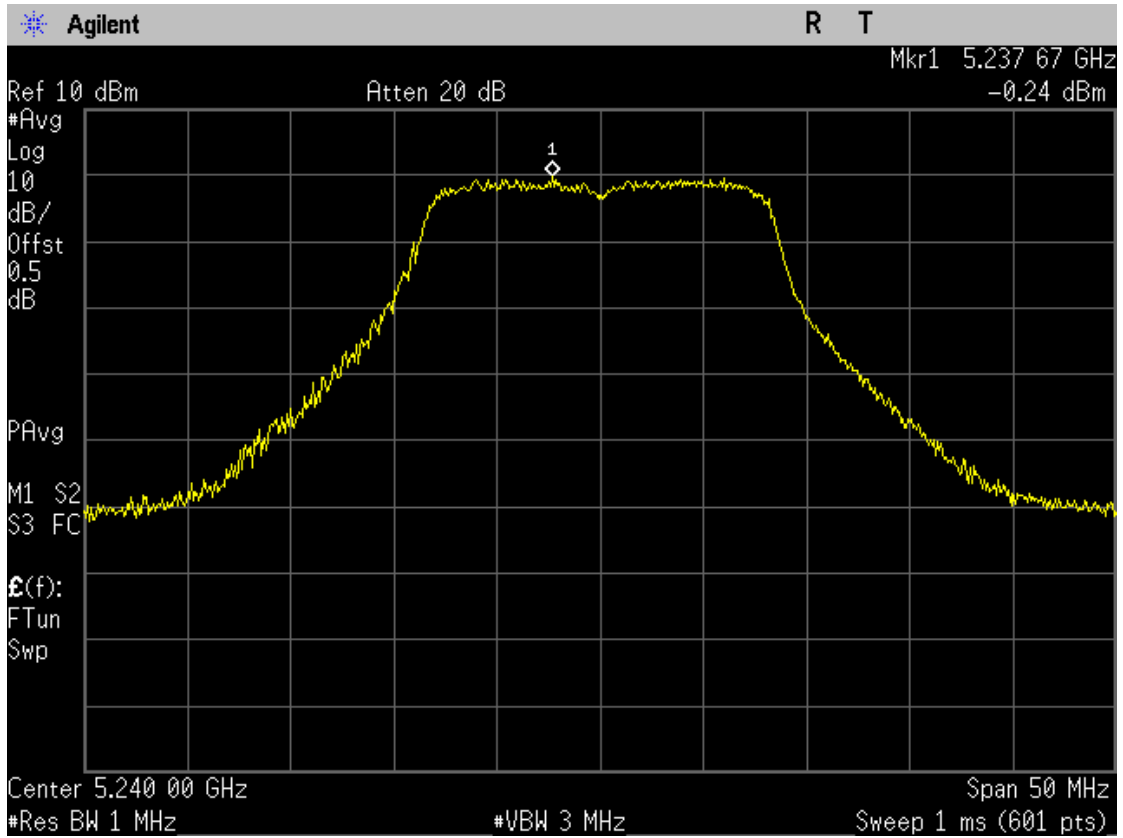
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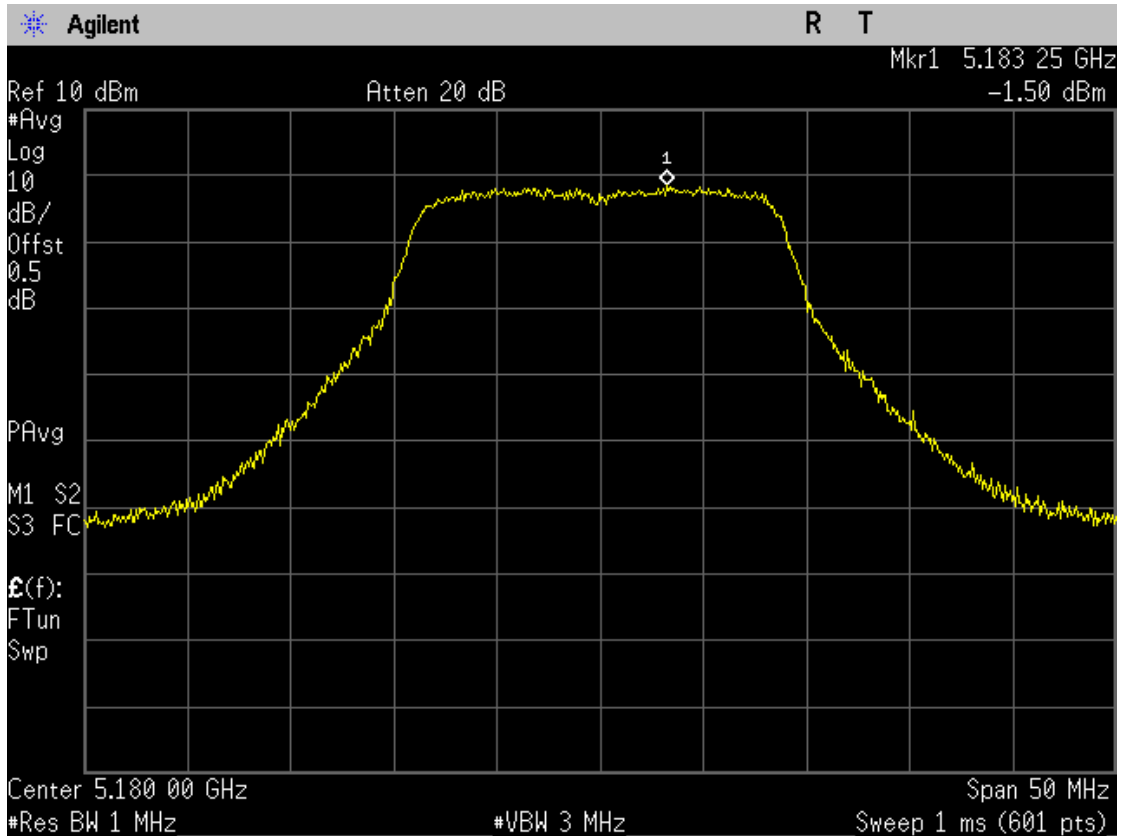


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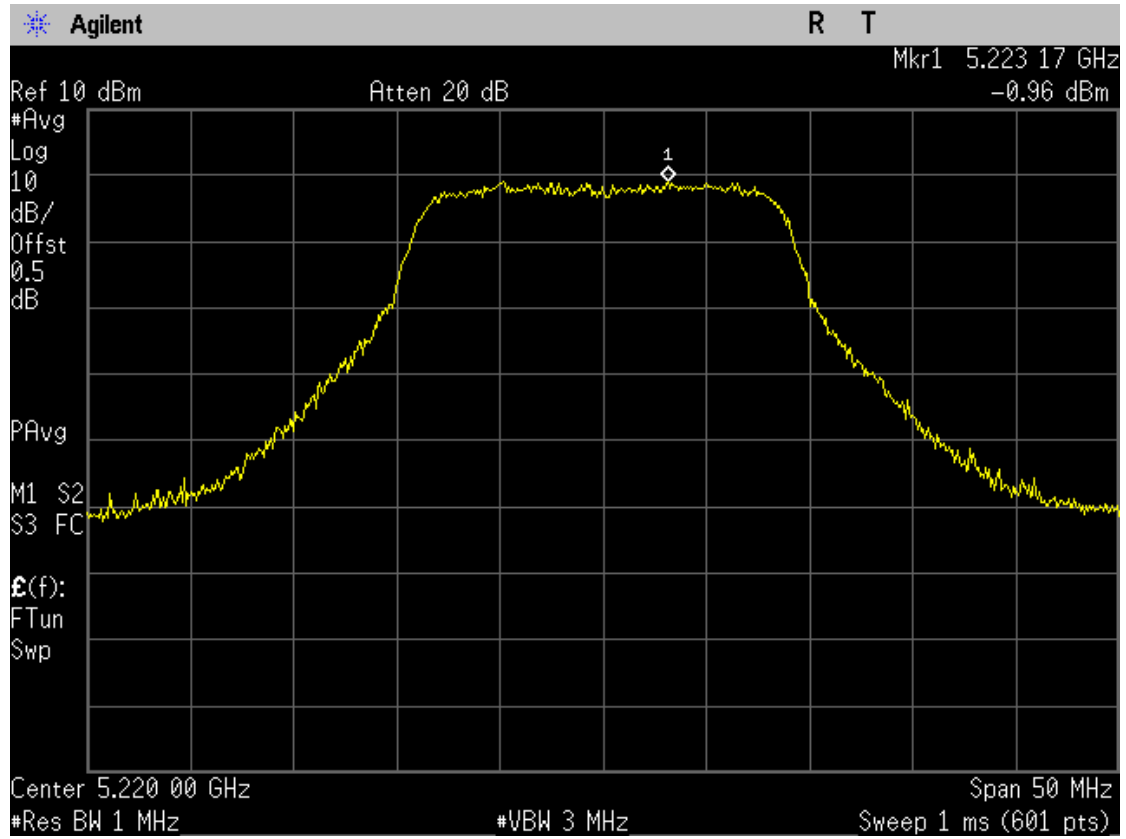


7.5.2. 802.11n HT20

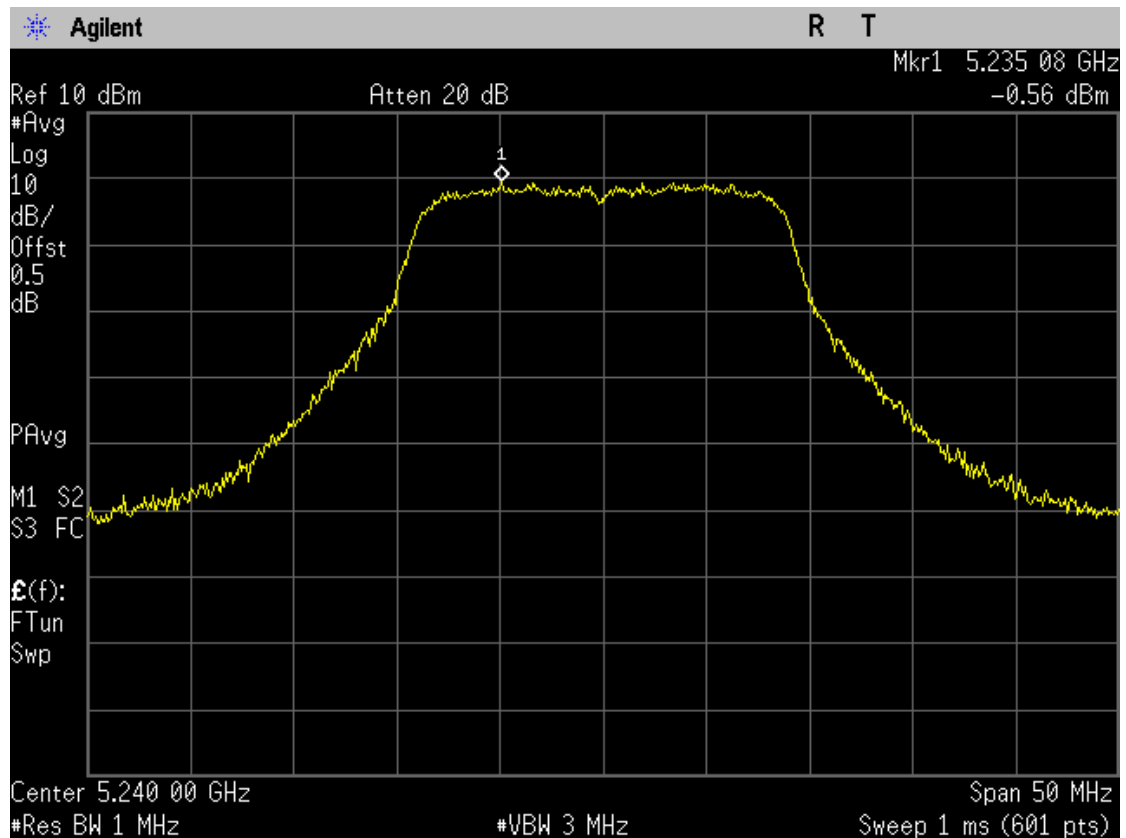
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## 8. EMISSION LIMITATIONS MEASUREMENT

### 8.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04

### 8.2. Block Diagram of Test Setup

The same as section 5.2.

### 8.3. Specification Limits

-27dBm/MHz e.i.r.p.

### 8.4. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

### 8.5. Test Results

**PASSED.** All the test results are attached in next pages.

Test Date: Apr.20, 2013

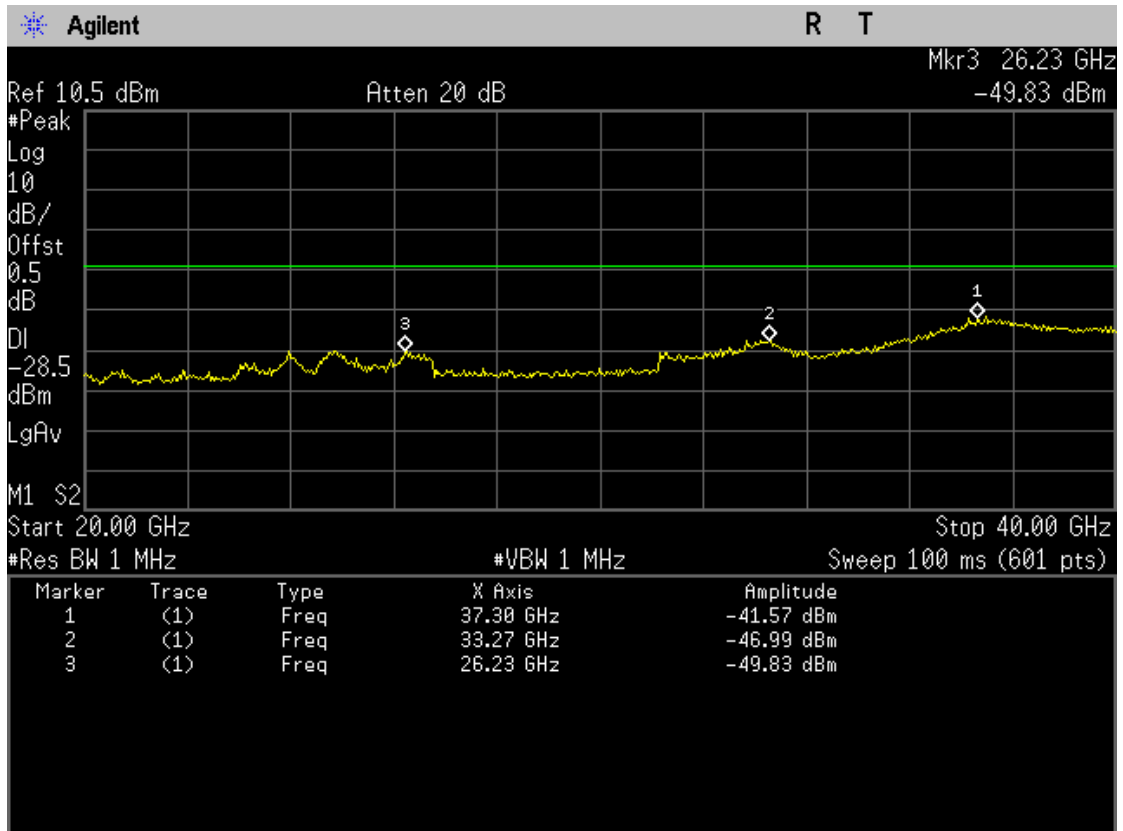
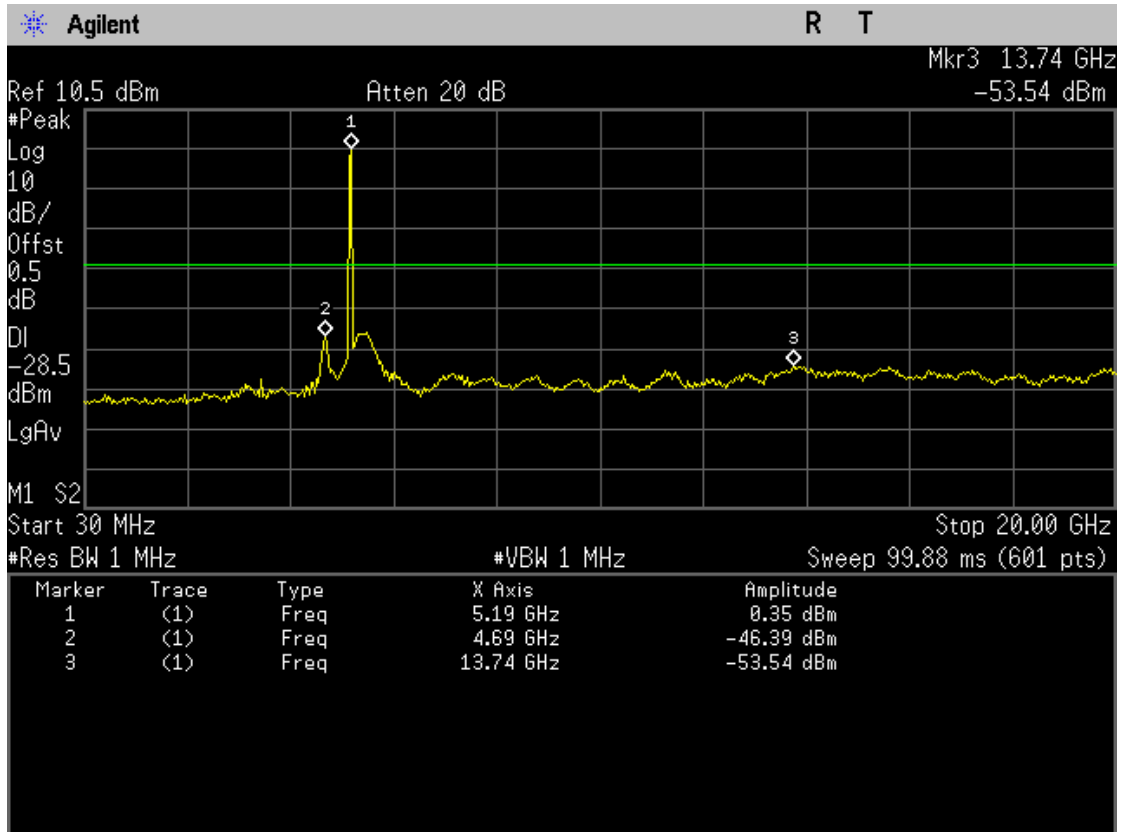
Temperature: 19.1 °C

Humidity: 58 %

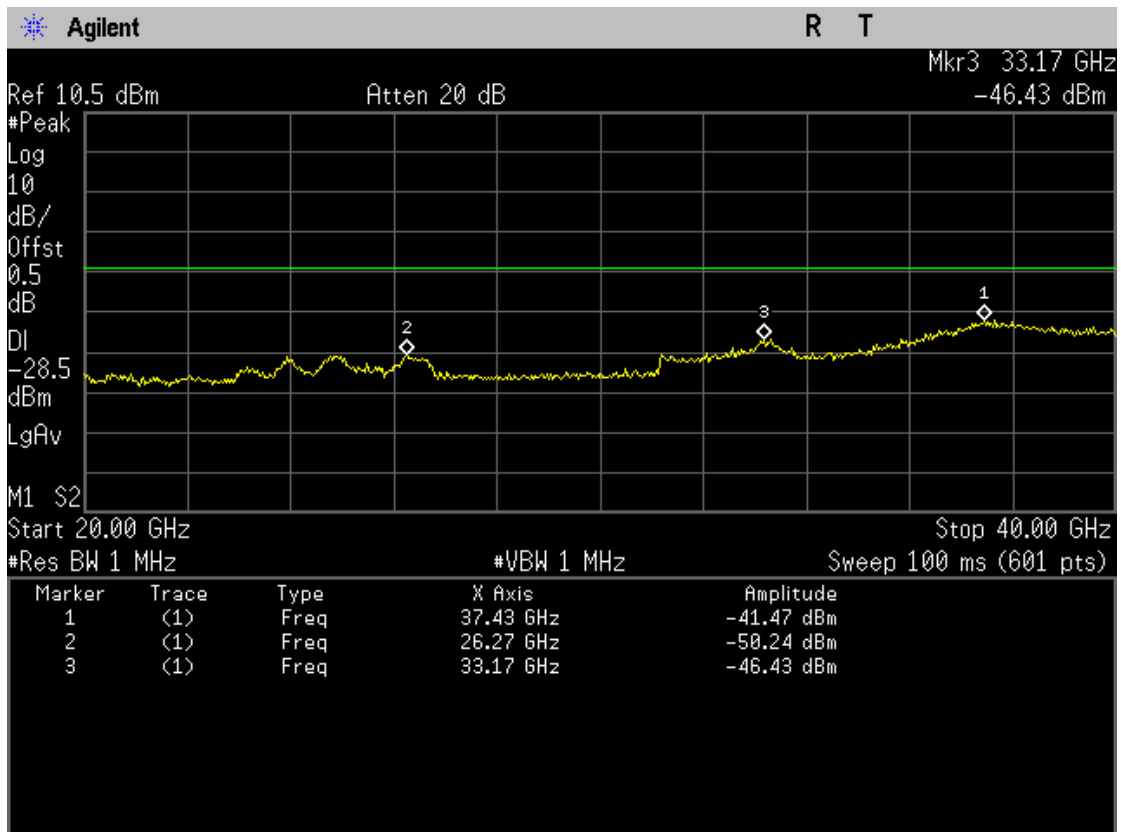
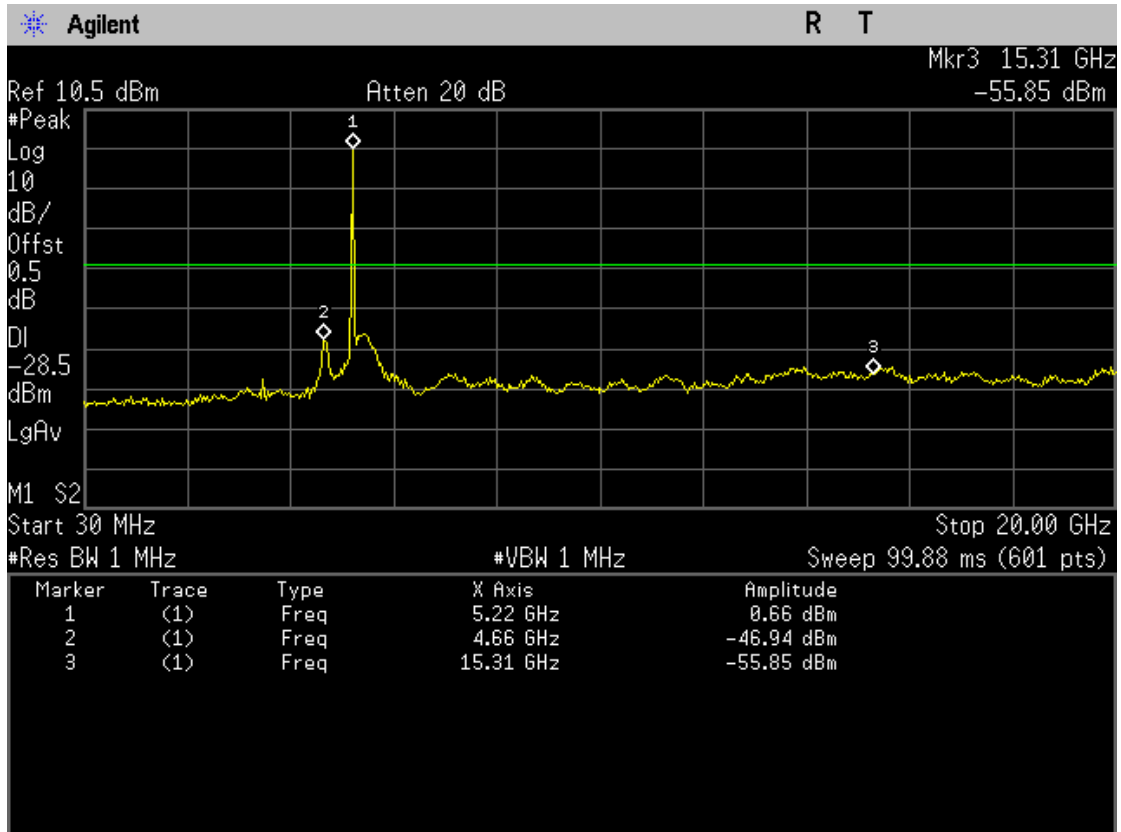
Item	Channel	Frequency(GHz)	Amplitude(dBm)
802.11a	36	5.19	0.35
		4.69	-46.39
		13.74	-53.54
		37.30	-41.57
		33.27	-46.99
		26.23	-49.83
	44	5.22	0.66
		4.66	-46.94
		15.31	-55.85
		37.43	-41.47
		26.27	-50.24
		33.17	-46.43
	48	5.26	1.21
		4.69	-45.44
		8.72	-56.16
37.70		-41.55	
26.50		-51.36	
802.11n HT20	36	5.19	-0.16
		4.66	-47.21
		10.45	-58.15
		37.53	-42.22
		33.13	-47.25
	44	5.22	0.47
		4.66	-47.67
		15.64	-53.46
		38.03	-42.66
		24.83	-50.15
	48	5.22	1.17
		4.69	-45.06
		15.64	-53.95
		37.77	-42.15
		26.53	-48.84

8.5.1. 802.11a

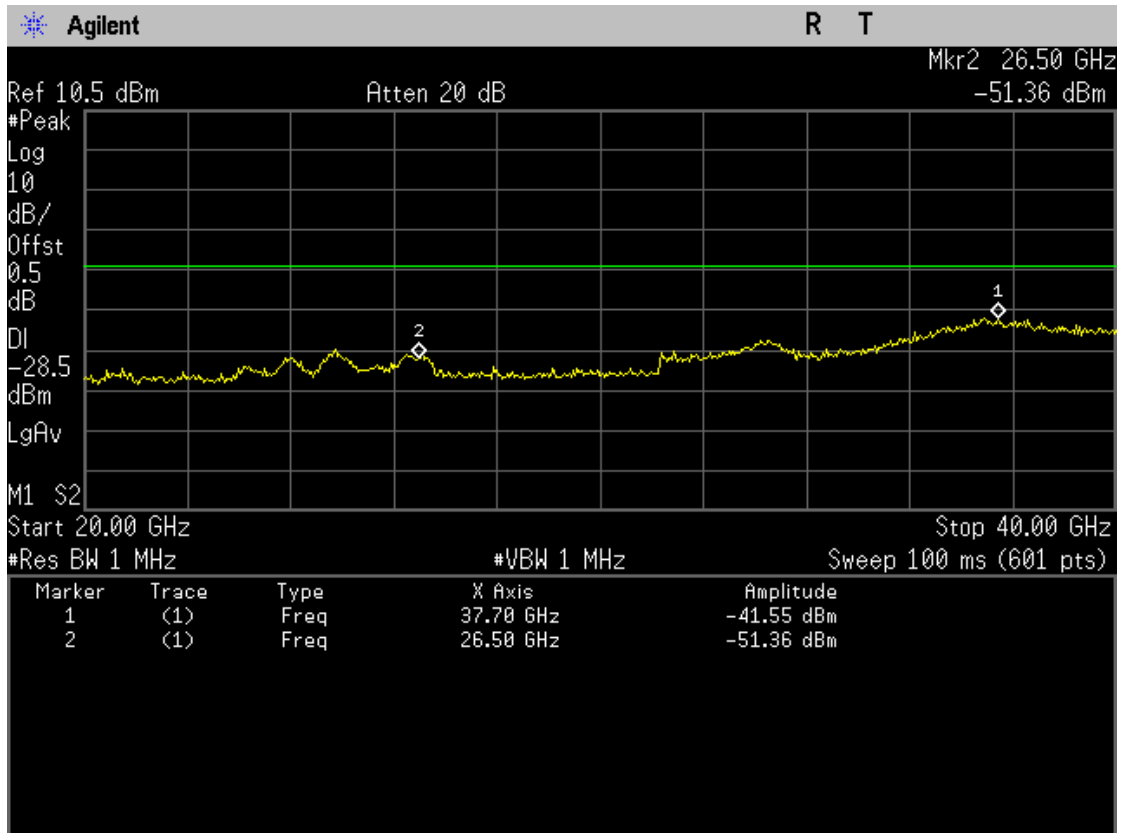
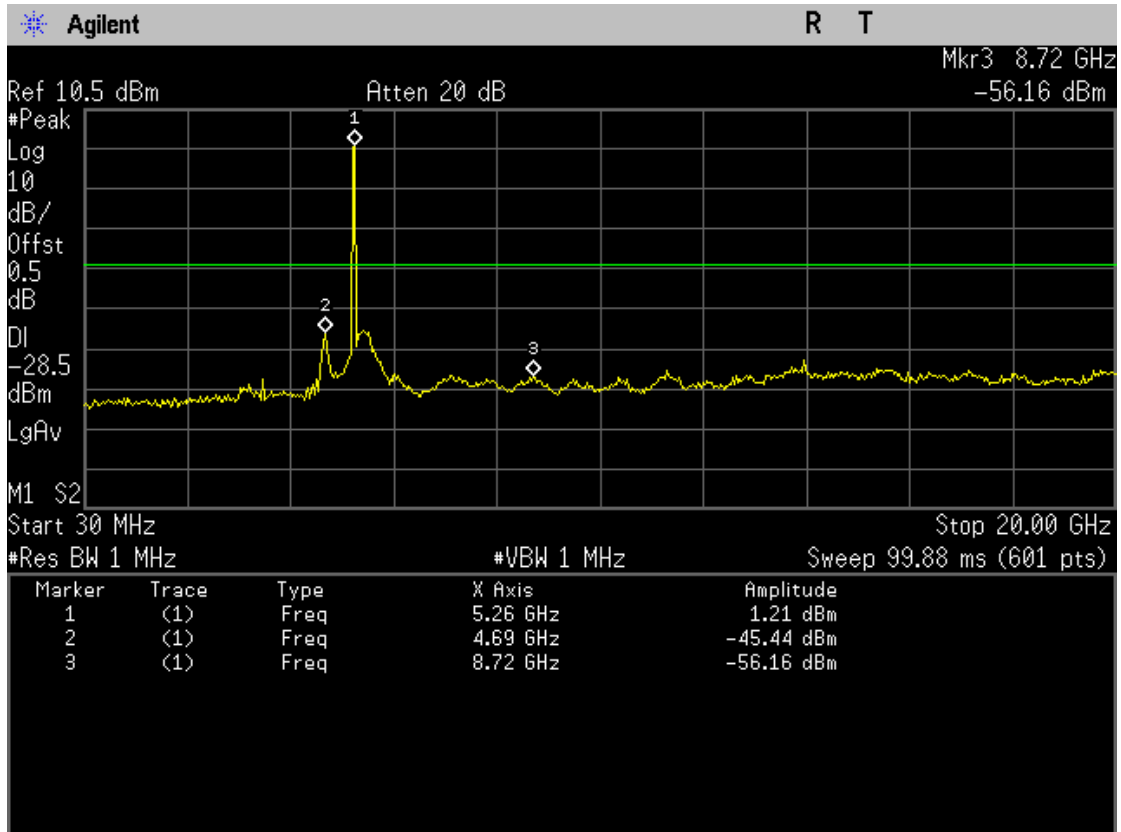
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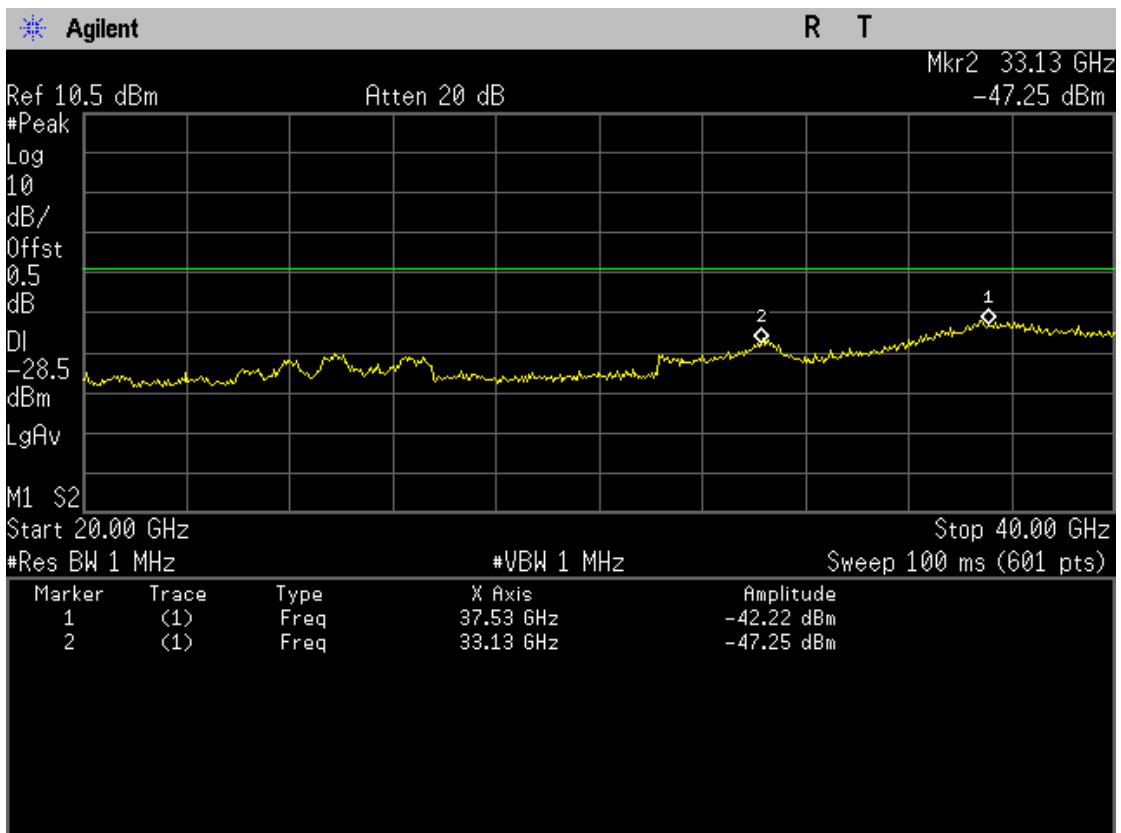
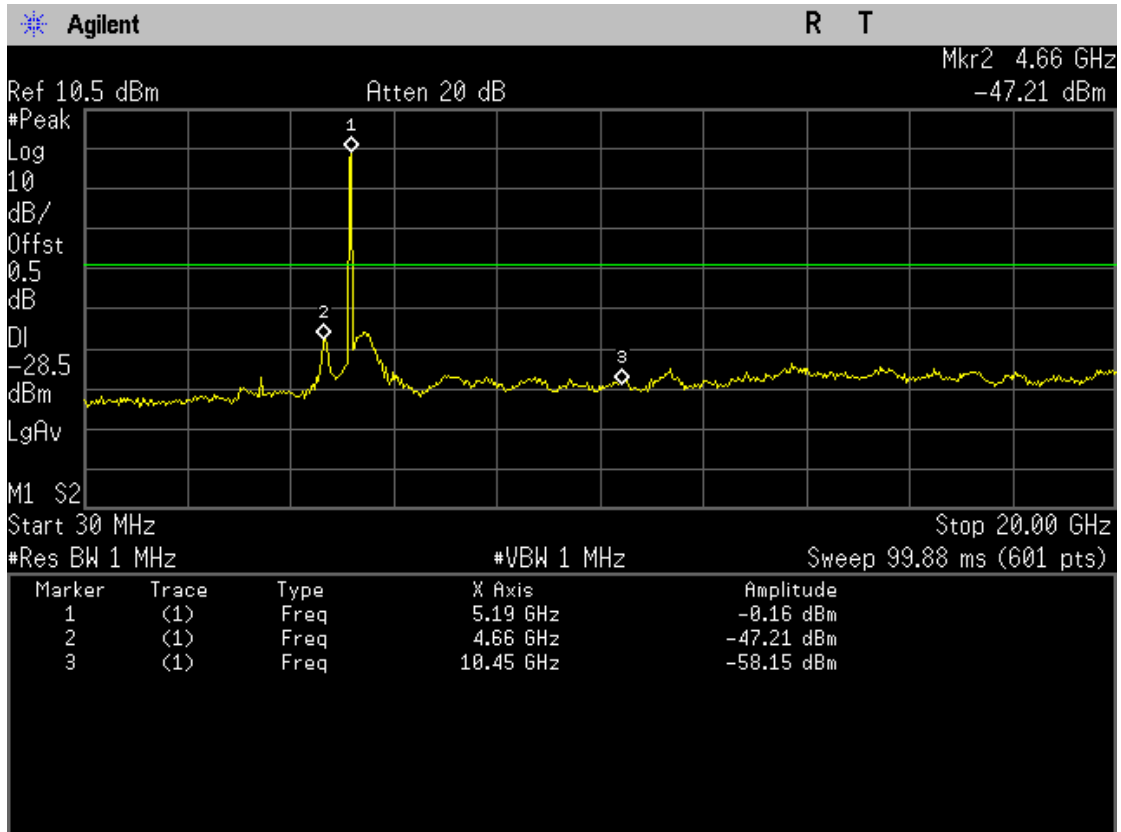


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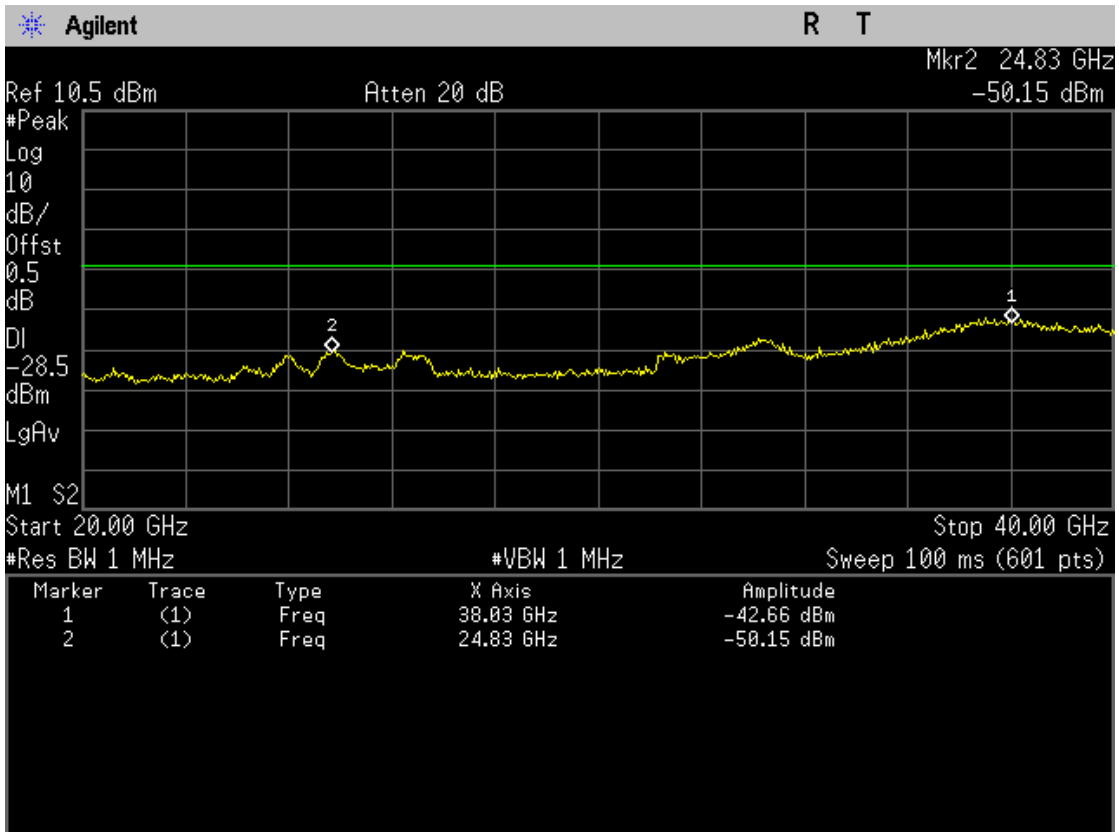
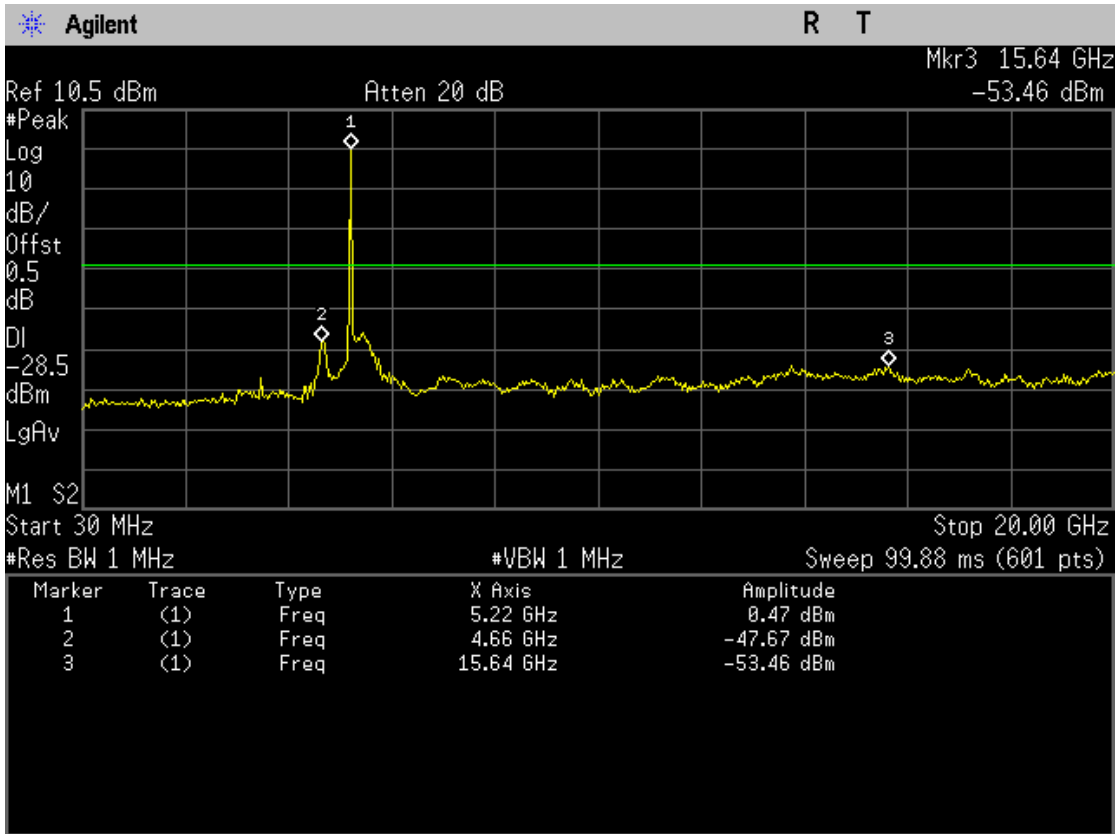


8.5.2. For 802.11n HT20

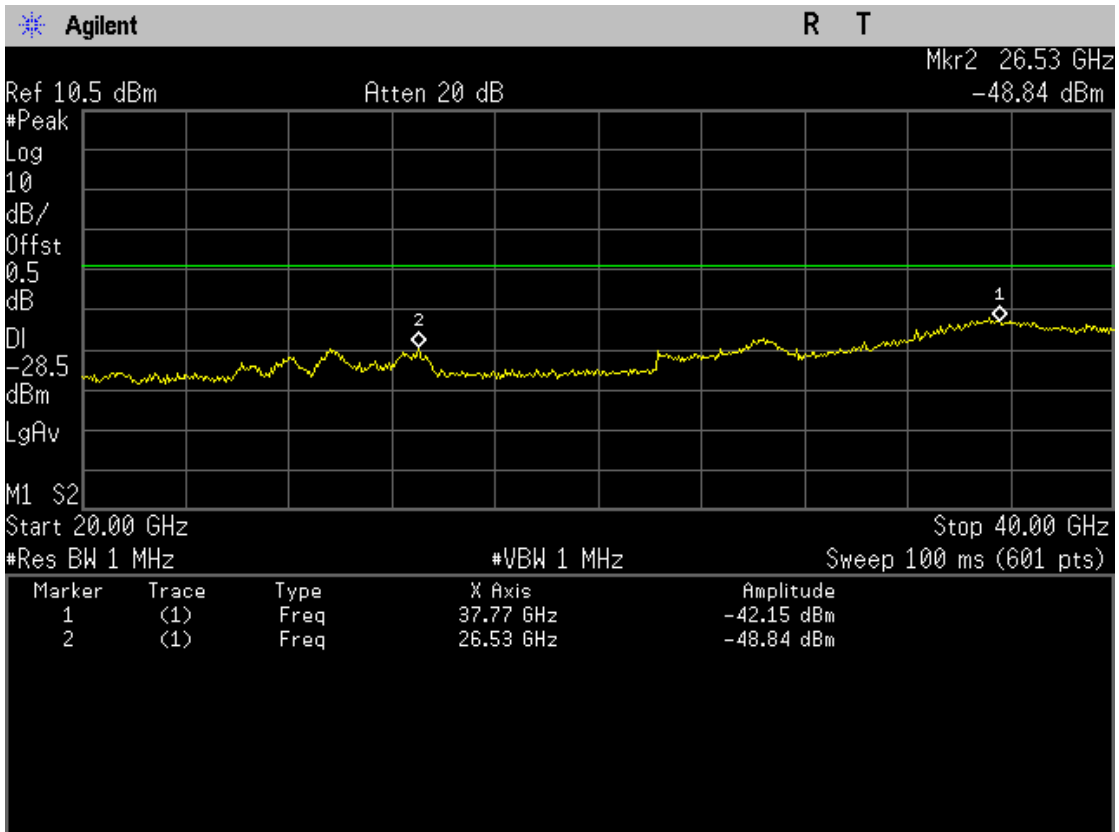
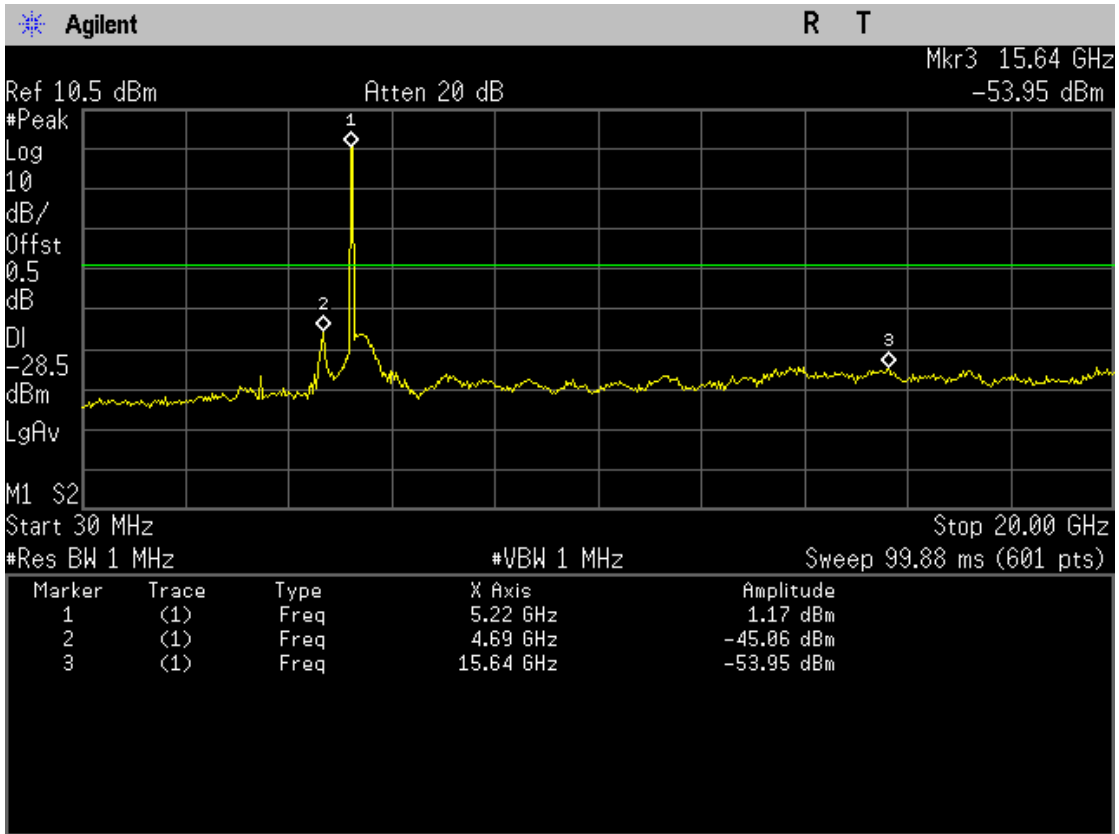
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## 9. PEAK POWER EXCURSION MEASUREMENT

### 9.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04

### 9.2. Block Diagram of Test Setup

The same as section 5.2.

### 9.3. Specification Limits (§15.407(a)(6))

The ratio of the peak excursion of the modulation envelope(measured using a peak hold function) to the maximum conducted output power(measured as specified above) shall not exceed 13dB across any 1MHz bandwidth or the emission bandwidth whichever is less.

### 9.4. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

### 9.5. Test Results

**PASSED.** All the test results are attached in next pages.

Test Date: Apr.21, 2013

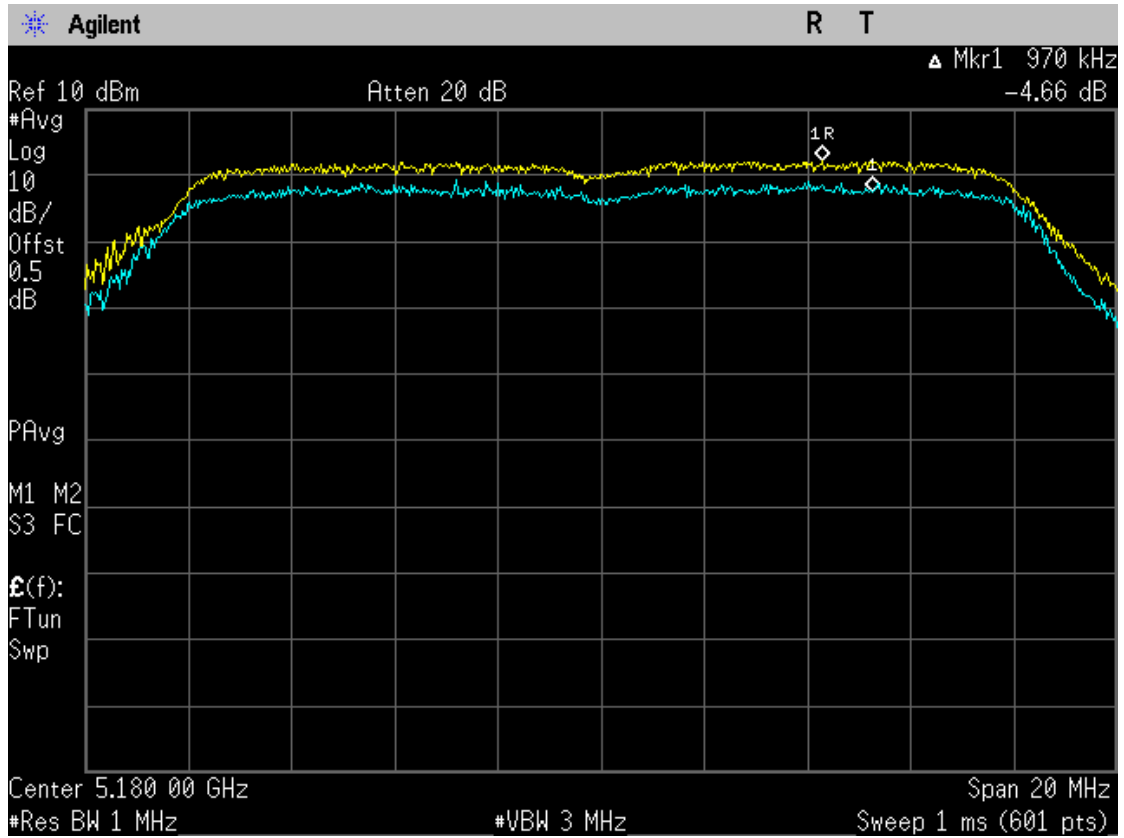
Temperature: 19.1 °C

Humidity: 58 %

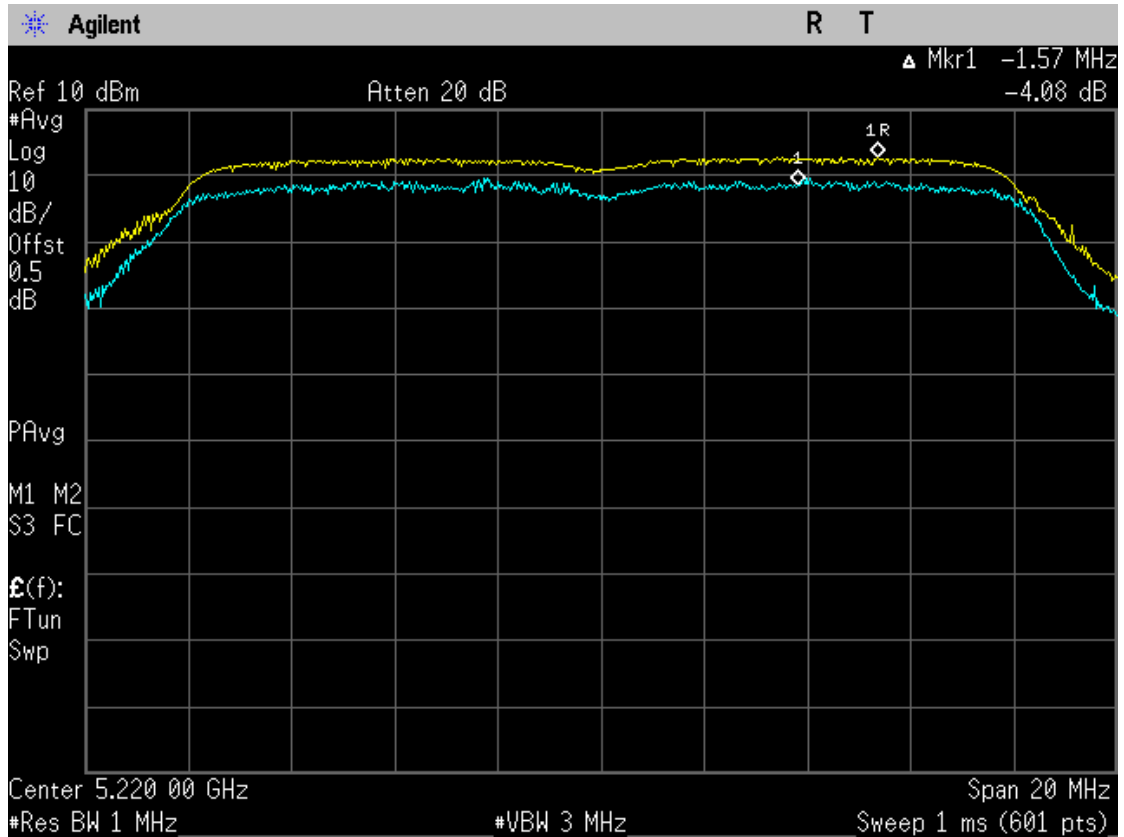
Item	Channel	Frequency(GHz)	Peak Power Excursion (dB)
802.11a	36	5.180	-4.66
	44	5.220	-4.08
	48	5.240	-3.02
802.11n HT 20	36	5.180	-3.31
	44	5.220	-2.69
	48	5.240	-3.99

9.5.1. 802.11a

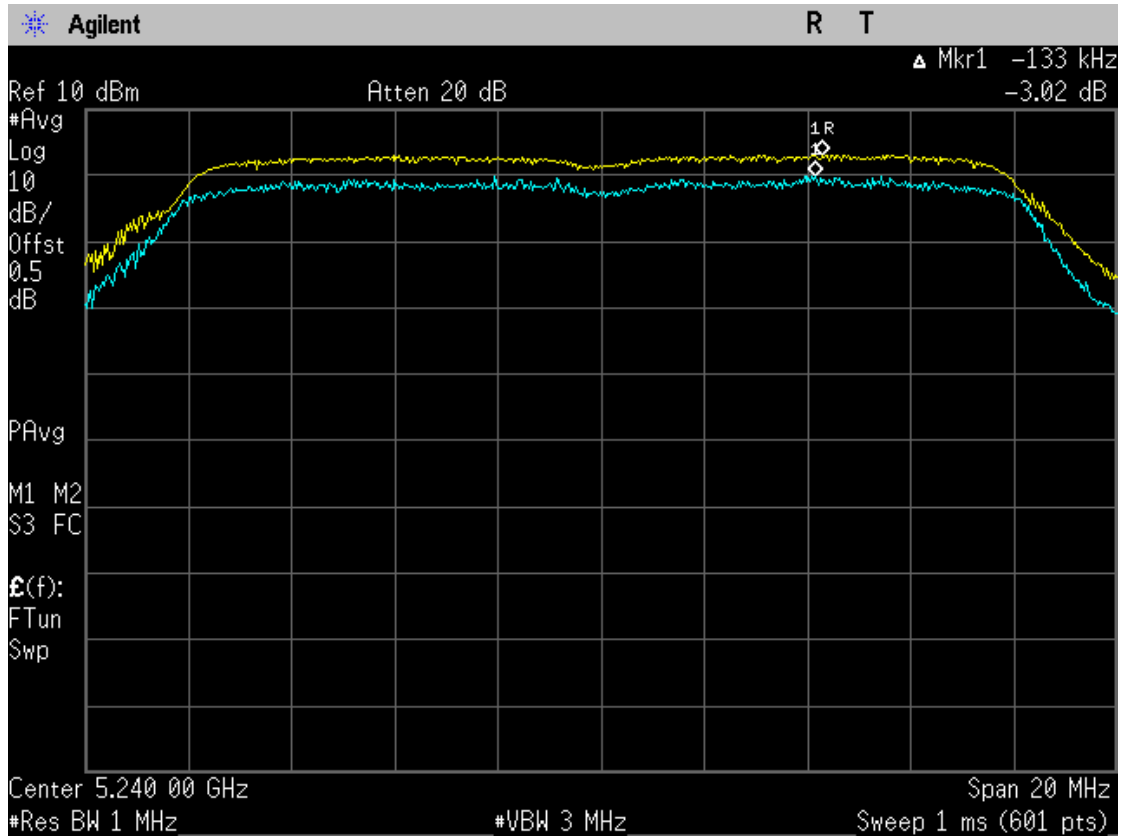
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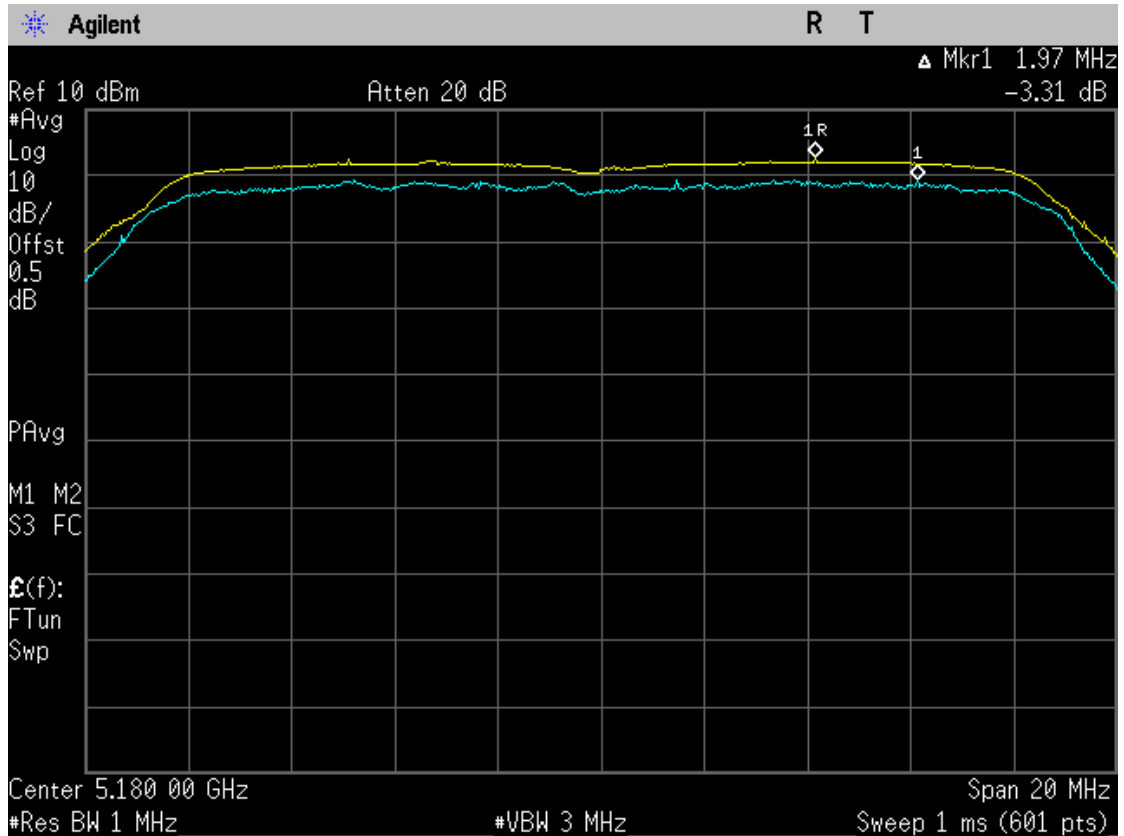


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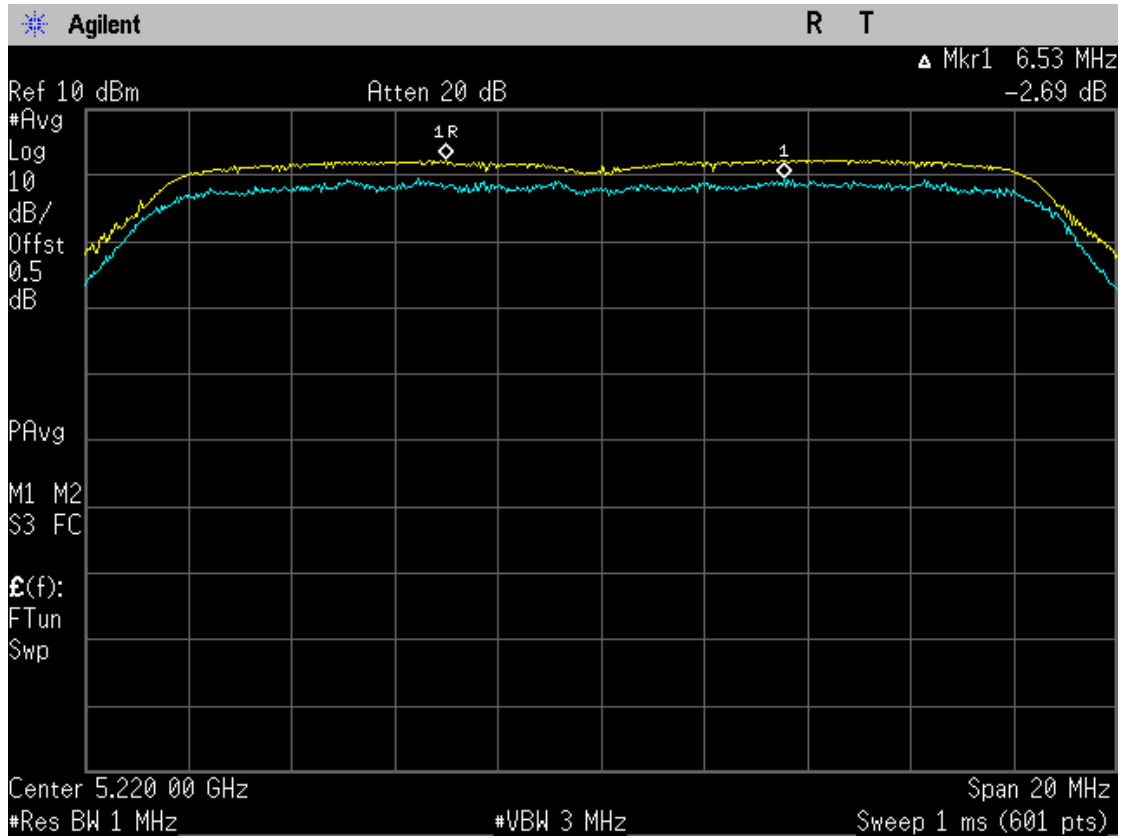


9.5.2. 802.11n HT20

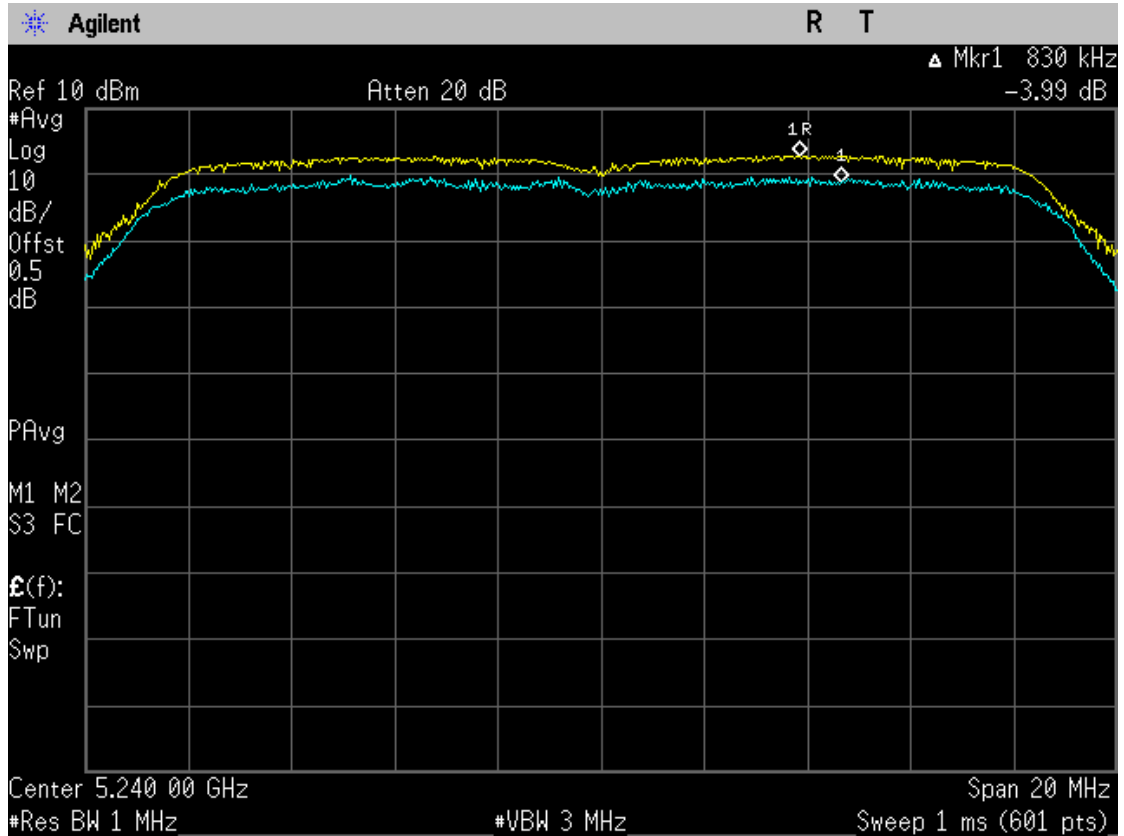
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## 10. OCCUPIED BANDWIDTH 99% POWER MEASUREMENT

### 10.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04

### 10.2. Block Diagram of Test Setup

The same as section 5.2.

### 10.3. Test Procedure

The measurement guideline was according to KDB789033 D01-v01r03

### 10.4. Test Results

**PASSED.** All the test results are attached in next pages.

Test Date: Apr.21, 2013

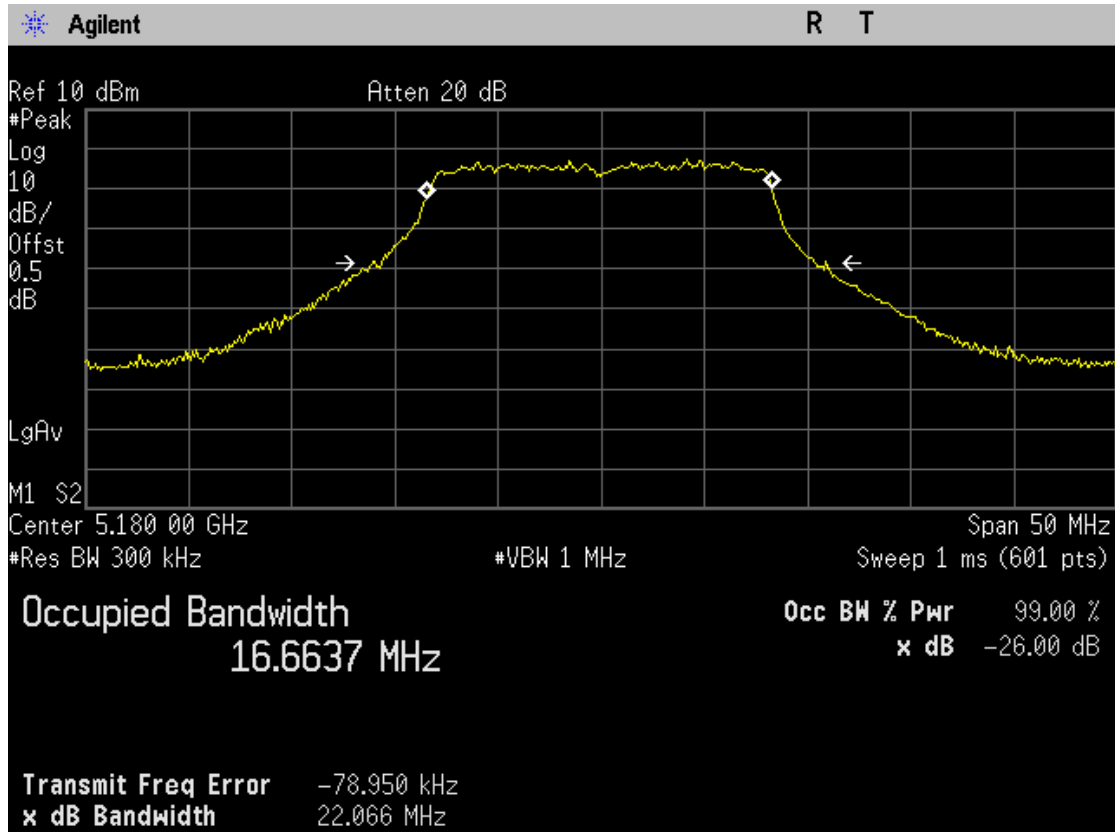
Temperature: 19.1 °C

Humidity: 58 %

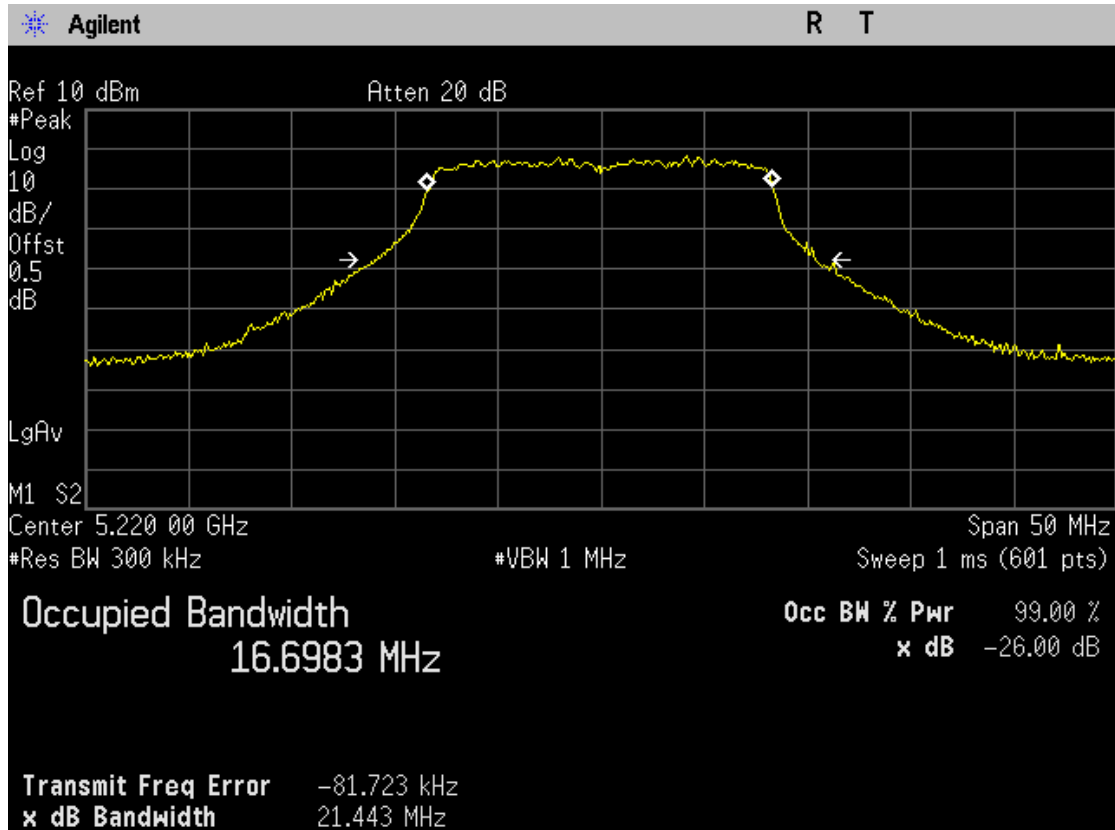
Item	Channel	Frequency (GHz)	Occupied Bandwidth (MHz)
802.11a	36	5.180	16.6637
	44	5.220	16.6983
	48	5.240	16.6607
802.11n HT 20	36	5.180	17.7681
	44	5.220	18.0837
	48	5.240	17.7834

10.4.1. 802.11a

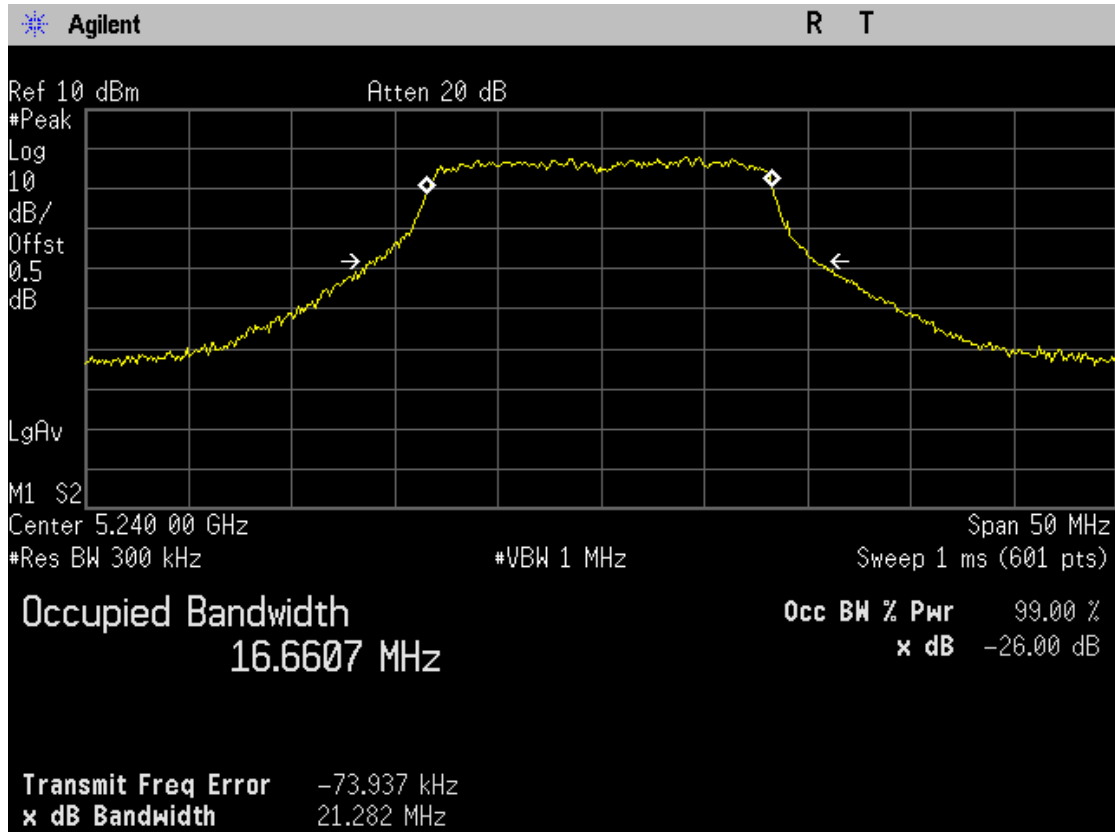
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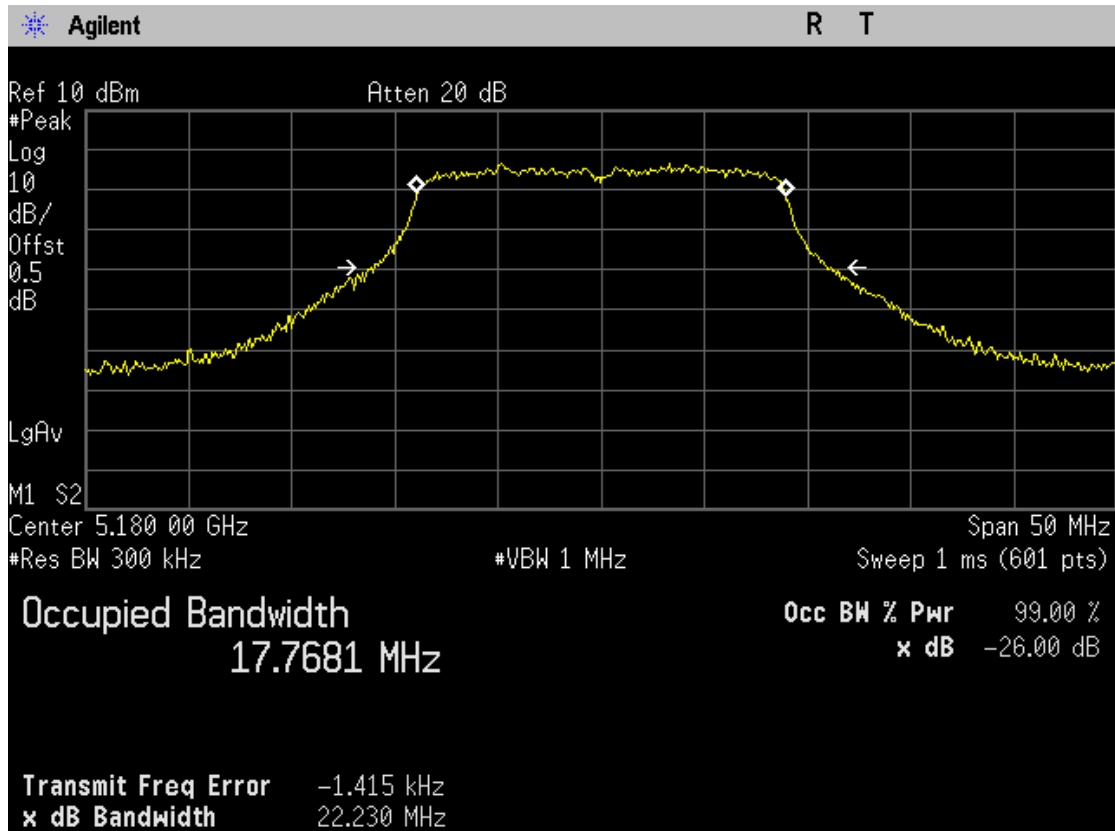


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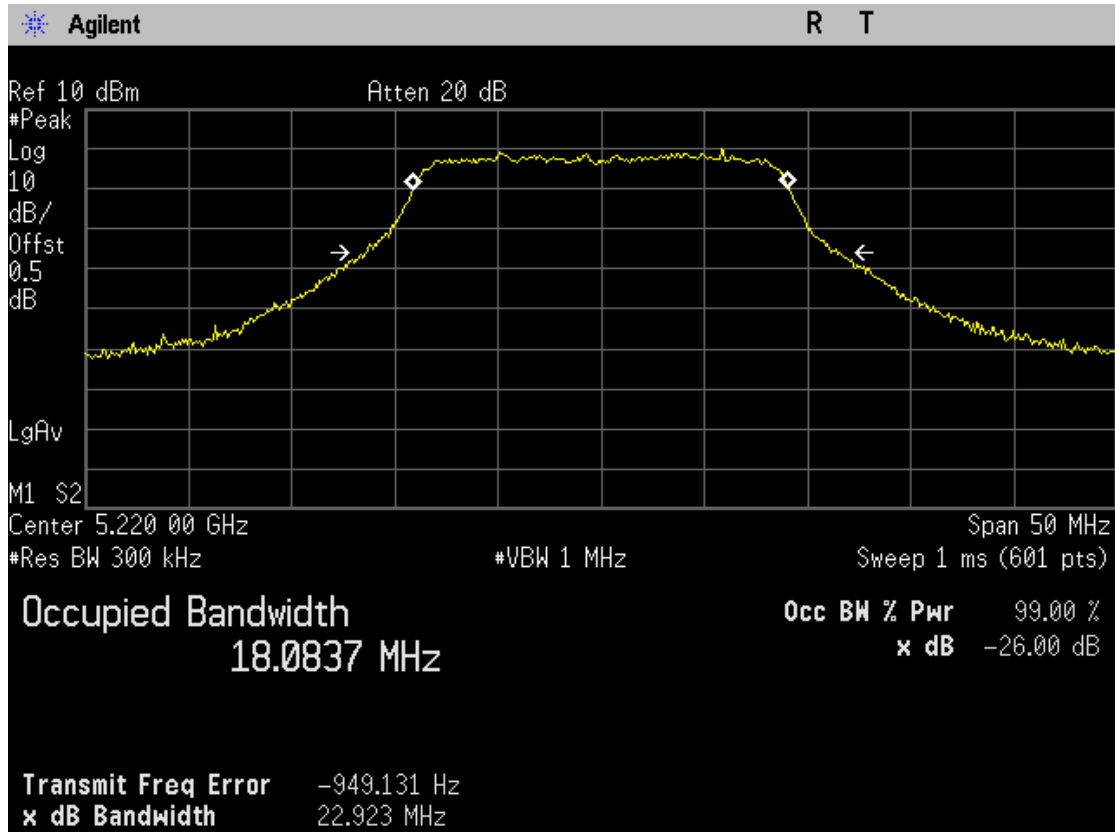


10.4.2. 802.11n HT20

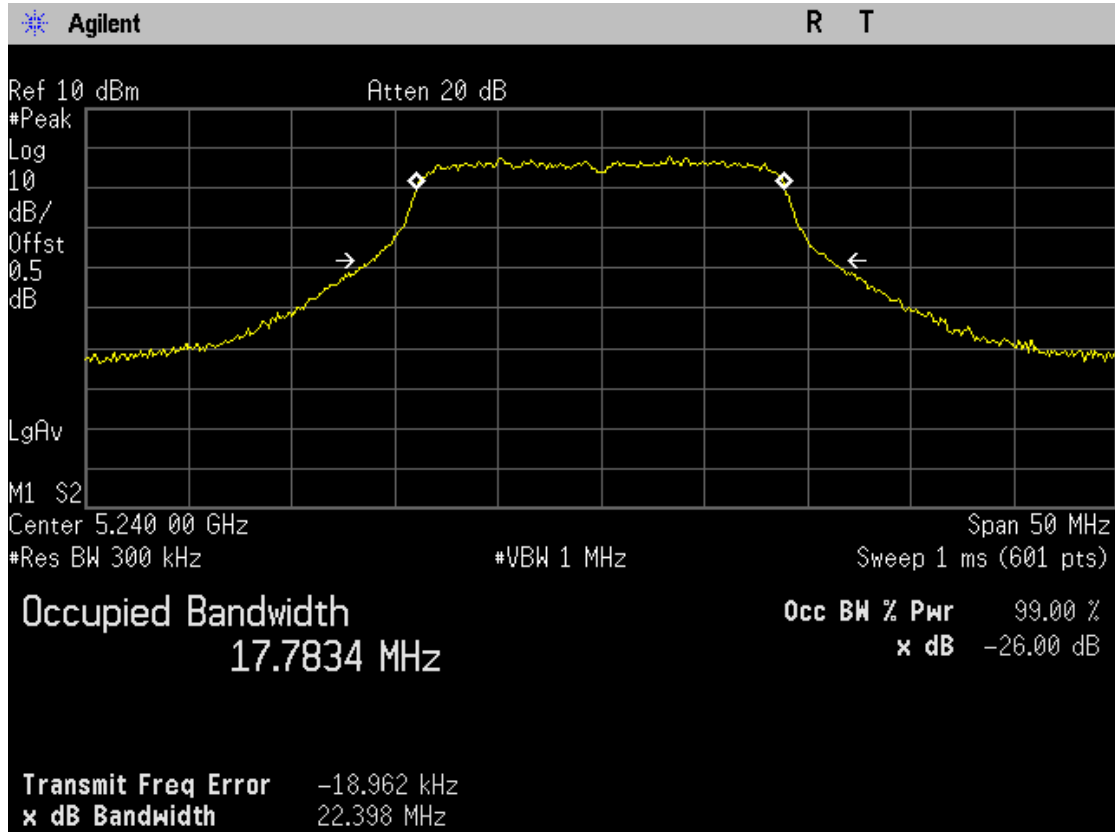
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## 11. Frequency Stability Measurement

### 11.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2013-01-05	2014-01-04
2.	Constant Temperature/ Humidity	Titech	MHQ-120CLUB	A60614	2012-08-06	2013-08-05

### 11.2. Block Diagram of Test Setup

The same as section 5.2.

### 11.3. Test Procedure

The manufacture of the equipment is responsible for ensuring that the frequency stability is such that emissions are always maintained within the band of operation under all conditions.

The measurement guideline was according to FCC, Part 15 Subpart E §15.407(g).

### 11.4. Specification

#### Limits

§15.407(g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### 11.5. Test Results

**PASSED.** All the test results are attached in next pages.

Test Date: Apr.21, 2013      Temperature: 19.1 °C      Humidity: 58 %

#### CH36 5180MHz

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V
Frequency (MHz)	5180.012	5180.006	5180.000	5179.982	5179.979	5179.975	5179.982	5179.983
Error(ppm)	2.32	1.16	0	-3.47	-4.05	-4.83	-3.47	-3.28

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V
Frequency (MHz)	5180.008	5180.008	5180	5179.983	5179.983	5179.975	5179.983	5179.973
Error(ppm)	1.54	1.54	0	-3.28	-3.28	-4.83	-3.28	-5.21

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V
Frequency (MHz)	5180.008	5180.011	5180.000	5180.000	5179.986	5179.975	5179.988	5179.973
Error(ppm)	1.54	2.12	0	0	-2.70	-4.83	-2.32	-5.21

## CH44 5220MHz

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V
Frequency (MHz)	5220.012	5220.008	5220.000	5220.000	5219.968	5219.971	5219.993	5219.972
Error(ppm)	2.30	1.53	0	0	-6.13	-5.56	-1.34	-5.36

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V
Frequency (MHz)	5220.017	5220.008	5220	5219.983	5219.983	5219.975	5219.983	5219.973
Error(ppm)	3.26	1.53	0	-3.26	-3.26	-4.79	-3.26	-5.17

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V
Frequency (MHz)	5220.008	5220.006	5220.011	5220	5219.991	5219.986	5219.931	5219.967
Error(ppm)	1.53	1.15	2.11	0	-1.72	-2.68	-1.32	-6.32

## CH48 5240MHz

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V	DC 3.145V
Frequency (MHz)	5240.017	5240.009	5240	5239.967	5239.981	5239.975	5239.985	5239.973
Error(ppm)	3.24	1.72	0	-6.30	-3.63	-4.77	-2.86	-5.15

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V	DC 3.7V
Frequency (MHz)	5240.017	5240	5239.992	5239.983	5239.983	5239.975	5239.983	5239.974
Error(ppm)	3.24	0	-1.53	-3.24	-3.24	-4.63	-3.24	-4.96

Temperature (°C)	-20	-10	0	10	20	30	40	50
Voltage	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V	DC 4.255V
Frequency (MHz)	5240.006	5240	5240	5239.978	5239.992	5239.976	5239.981	5239.974
Error(ppm)	1.15	0	0	-4.20	-1.53	-4.58	-3.63	-4.96

## 12.DEVIATION TO TEST SPECIFICATIONS

【NONE】