

APPLICATION FOR CERTIFICATION

On Behalf of

Texas Instruments Incorporated

TI-Nspire™ Navigator™ Wireless Cradle

Model No. : TINAVWC2

Brand : TEXAS INSTRUMENTS

FCC ID : V7R-TINAVWC2

Prepared for

Texas Instruments Incorporated

7800 Banner Dallas, TX 75251 United States

Prepared by

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

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Report Number : ACWE-F1012002

Date of Test : Nov.22~Dec.01, 2010

Date of Report : Dec.10, 2010

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TEST REPORT CERTIFICATION

Applicant : Texas Instruments Incorporated
 Manufacturer : Inventec Appliances(Pudong) Corporation
 EUT Description : TI-Nspire™ Navigator™ Wireless Cradle
 FCC ID : V7R-TINAVWC2
 (A) Model No. : TINAVWC2
 (B) Brand : TEXAS INSTRUMENTS
 (C) Power Supply : DC 3.7V
 (D) TEST VOLTAGE : AC 120V, 50Hz (Via Adapter)

Applicable Standards:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Sep. 2008
 ANSI C63.4/2009

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&15.247 limits.

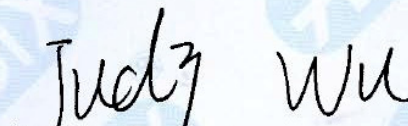
The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC limits.

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: Nov.22~Dec.01, 2010

Date of Report: Dec.10, 2010

Prepared by :


 (Judy Wu/Senior Assistant)

Reviewer :


 (Kin Lin/Section Manager)

Approved & Authorized Signer :


 (Allen Wang/Senior 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	Section 15.207	PASS
RADIATED EMISSION	Section 15.209& Section 15.205	PASS
6 dB BANDWIDTH	Section 15.247(a)(2)	PASS
MAXIMUM PEAK OUTPUT POWER	Section 15.247(b)(3)	PASS
BAND EDGES	Section 15.247(d)	PASS
POWER SPECTRAL DENSITY	Section 15.247(e)	PASS
EMISSION LIMITATIONS	Section 15.247(d)	PASS
MPE CALCULATION	Part 2: Section 2.1091	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description	:	TI-Nspire™ Navigator™ Wireless Cradle
Model No.	:	TINAVWC2
FCC ID	:	V7R-TINAVWC2
Brand	:	TEXAS INSTRUMENTS
Applicant	:	Texas Instruments Incorporated 7800 Banner Dallas, TX 75251 United States
Manufacturer	:	Inventec Appliances(Pudong) Corporation No. 789 Pu Xing Road, Shanghai, PRC
Radio Technology	:	DSSS &OFDM
Antenna Gain	:	4.65dBi
Type of Network	:	IEEE 802.11b/g
Fundamental Range	:	2400 MHz -2483.5MHz
Tested Frequency	:	2412MHz (Channel 1) 2437MHz (Channel 6) 2462MHz (Channel 11)
Date of Receipt of Sample	:	Nov.01, 2010
Date of Test	:	Nov.22~Dec.01, 2010

2.2. UUT's Configuration

Test UUT	:	UUT×5
I/O Ports	:	DC In port×1

2.3. Description Test Configuration

Test Configuration according TEXAS INSTRUMENTS Education Technology Docking Station for TI-Nspire™ Navigator Cradle EMC Test Plan (EMC TP 061307, rev.1.9)

Configuration A: UUT+ N-spire + (NAP+AC9930 Adapter+ Laptop)

Configuration B: UUT*5+ N-spire*5+Charging bay +AC 9940 Adapter (NAP+AC9930 Adapter+ Laptop)

2.4. Product Description and Features

The TI-Nspire™ Wireless Cradle is a moderately complex electronic product containing an IC, rechargeable battery, numerous miscellaneous discrete electronic components, and circuit board. This wireless sled contains features such as an 802.11g wireless and AC adapter for operation. The Wireless Cradle is the UUT (Unit-Under-Test).

TI-Nspire™ Navigator Cradle Clocks:

2.4 GHz carrier frequency

40 MHz oscillator

15MHz SDIO Clock

TI-NSpire Clocks

27 MHz oscillator.

32.768 kHz clock

60 MHz SDRAM clock

120 MHz CPU clock

180 MHz PLL

There are also some 1MHz variable clocks for the power supply.

2.5. Operating Condition of EUT

2.5.1. Set up the EUT as test setup diagram.

2.5.2. For conducted or Radiated emission measurement, setup the EUT as the test configurations; turn on all the equipment, Drive the test software “TI-Nspire Computer Link 1.1.9182.0”, let EUT operate normal activity.

2.5.3. For other measurement items, keep the EUT be powered by the battery, Drive the test software “TI-Nspire Computer Link 1.1.9182.0”, let the EUT operate wireless TX activity under measurement.

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: Aug. 20, 2012 Registration No.: 252588 No.1 3m semi-anechoic chamber Date of Validity: Aug. 20, 2012 Registration No.: 897661 No. 1 conducted shielding enclosure RF Fully anechoic chamber
NVLAP Lab Code	:	200786-0 (NVLAP is a NATA accredited body under Mutual Recognition Agreement) Valid until on Sep.30, 2011
DAR-Registration No.	:	DAT-P-264/07-00 Valid until on Dec.14, 2012

2.7. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
Conducted Disturbance Measurement	0.15MHz ~ 30MHz	± 2.81dB
Radiated Disturbance Measurement (At 10m Chamber)	30MHz ~ 1000MHz	± 3.54dB (Horizontal)
		± 3.51dB (Vertical)
Radiated Disturbance Measurement (At 3m Chamber)	Above 1GHz	± 4.78dB

Remark: Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6 dB Bandwidth	± 2.8×10^{-6} MHz
Maximum Peak Output Power	± 0.33dB
Band Edges	± 0.208dB
Power Spectral Density	± 0.34dB
Emission Limitations	± 0.208dB
Temperature	±0.416
Humidity	±3.16%

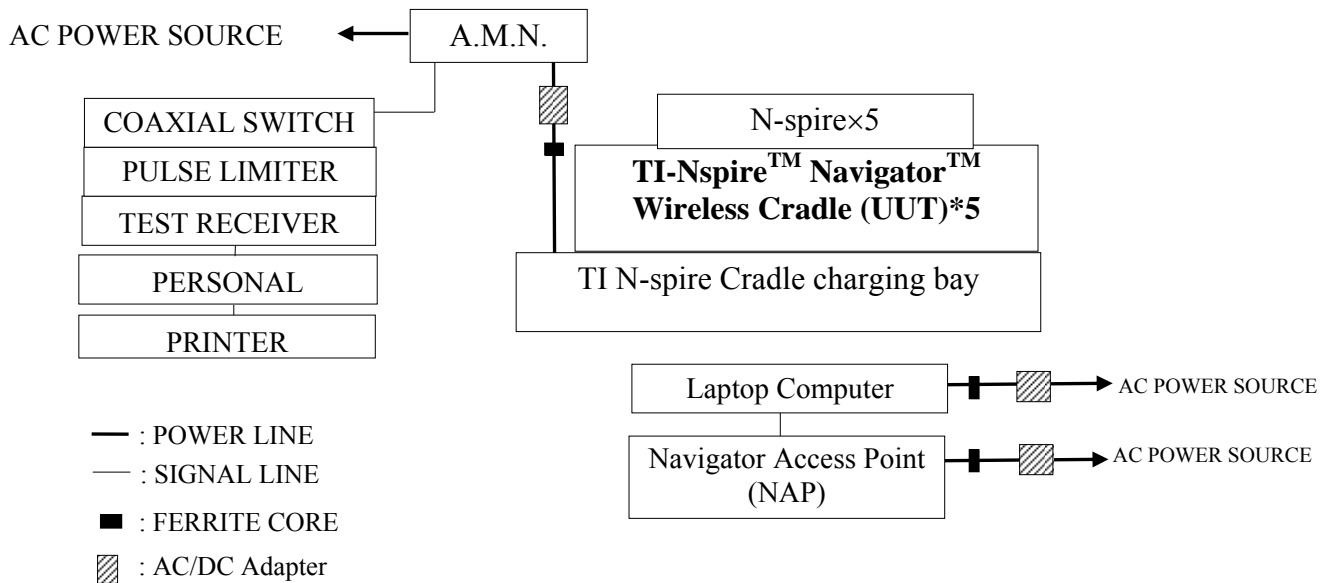
Remark: Uncertainty = $ku_c(y)$

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	100352	2010-01-05	2011-01-04
2.	A.M.N	R & S	ESH2-Z5	100153	2010-03-25	2011-03-24
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1793-4	2010-08-11	2011-08-10
4.	Pulse Limiter	R&S	ESH3-Z2	100605	2010-08-11	2011-08-10
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200547934	2010-08-14	2011-08-13
6.	50ohm Terminator	N/A	N/A	N/A	2010-03-25	2011-03-24
7.	RF Cable	Harbour Industries	RG400	002	2010-08-14	2011-08-13

3.2. Block Diagram of Test Setup



3.3. Power line Conducted Emission Limit (FCC Part15 section 15.207)

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 C63.4 and laboratory internal procedure TKC-301-015.

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:

$$\text{Emission level (dB}\mu\text{V)} = \text{Meter-Reading (dB}\mu\text{V)} + \text{A.M.N factor (dB)} + \text{Cable loss (dB)}$$

(Cable loss include pulse limiter loss)

3.5. 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 : Nov.22, 2010 Temperature : 20.6 Humidity : 46%

Mode	Adapter M/N	Test Condition	Reference Test Data No.	
			Neutral	Line
1	AC9940 (PIE)	Test Configuration B	# 13	# 14
2	AC9940 (GRE)	Test Configuration B	# 15	# 16

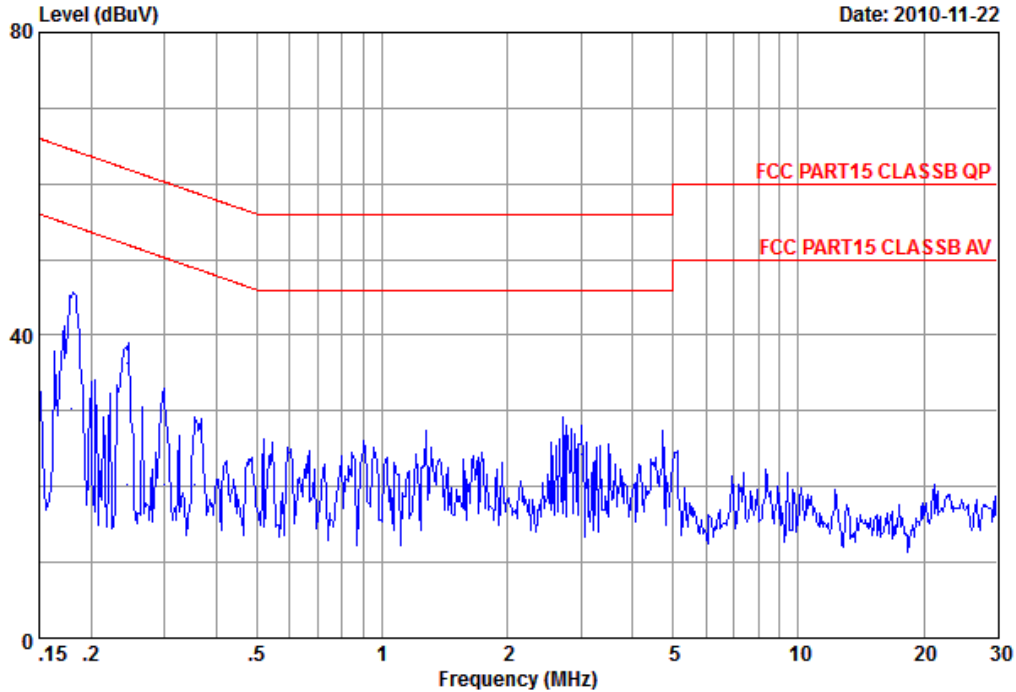
NOTE 1- ‘ ’ means the worst test mode.

NOTE 2- The worst emission is detected at 3.72 MHz with emission level of 38.755dB (μV) with AV detector (limit is 46.00dB (μV)), when the Line of the EUT is connected to A.M.N.



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Data: 13 File: F:\2010 Test Data\Report\G1010001-G1010050\G1010028.EM6 (18) Date: 2010-11-22



Site no. : NO.1 Conducted Shielding Enclosure Data no. : 13
 AMN/LISN : ESH2-Z5 1003 Phase : NEUTRAL
 Limit : FCC PART15 CLASSE QP
 Env. / Ins. : 20.6*C&46%/ESCI Engineer : Will
 EUT : TI-Nspire™ Navigator™ Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test mode : Configuration B
 Memo : Adapter:PIE

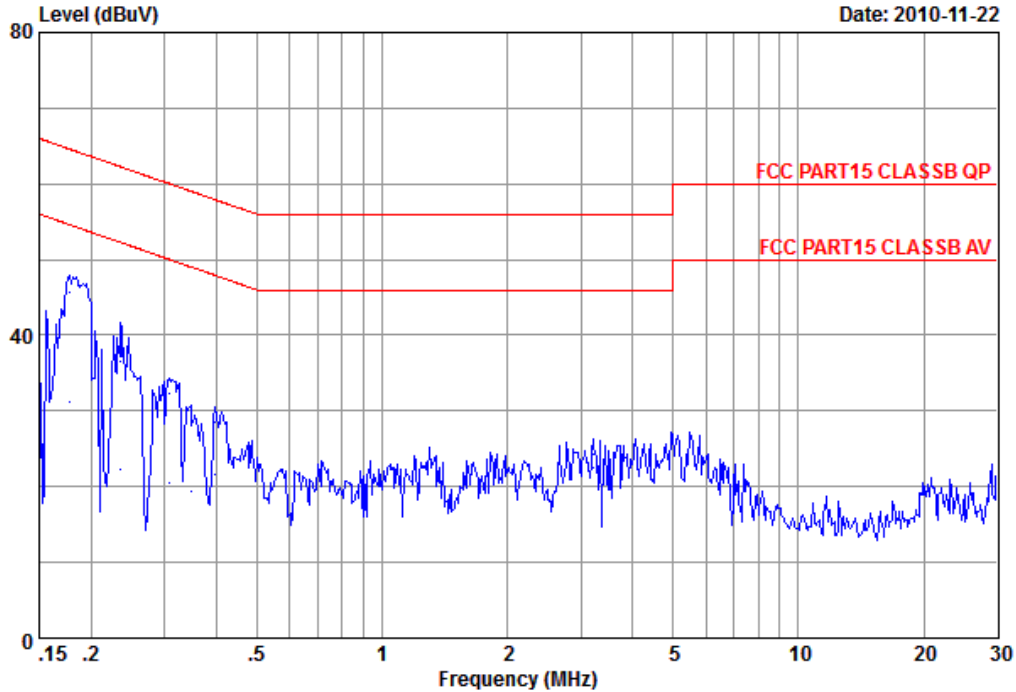
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18	0.17	9.85	34.90	44.92	64.53	19.61	QP
2	0.18	0.17	9.85	20.20	30.22	54.53	24.31	Average
3	0.24	0.17	9.84	26.20	36.21	62.00	25.79	QP
4	0.24	0.17	9.84	10.20	20.21	52.00	31.79	Average
5	0.30	0.17	9.84	20.98	30.99	60.28	29.29	QP
6	0.30	0.17	9.84	10.20	20.21	50.28	30.07	Average
7	0.36	0.17	9.84	17.24	27.25	58.83	31.58	QP
8	0.36	0.17	9.84	10.20	20.21	48.83	28.62	Average
9	2.72	0.25	9.83	17.08	27.16	56.00	28.84	QP
10	2.72	0.25	9.83	15.60	25.68	46.00	20.32	Average
11	3.03	0.26	9.83	14.20	24.29	46.00	21.71	Average
12	3.03	0.26	9.83	15.88	25.97	56.00	30.03	QP

Note: 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: 14 File: F:\2010 Test Data\Report\G1010001-G1010050\G1010028.EM6 (18) Date: 2010-11-22



Site no. : NO.1 Conducted Shielding Enclosure Data no. : 14
 AMN/LISN : ESH2-Z5 1003 Phase : LINE
 Limit : FCC PART15 CLASSB QP
 Env. / Ins. : 20.6*C&46%/ESCI Engineer : Will
 EUT : TI-Nspire™ Navigator™ Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test mode : Configuration B
 Memo : Adapter:PIE

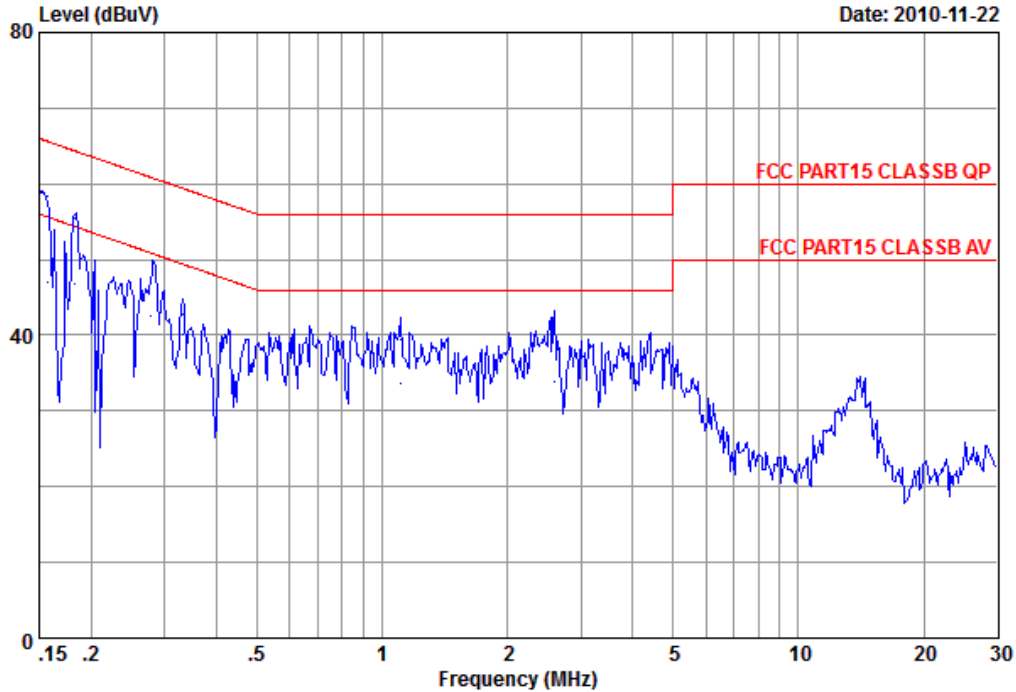
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18	0.15	9.85	35.60	45.60	64.58	18.98	QP
2	0.18	0.15	9.85	21.20	31.20	54.58	23.38	Average
3	0.24	0.15	9.84	26.50	36.49	62.24	25.75	QP
4	0.24	0.15	9.84	12.20	22.19	52.24	30.05	Average
5	0.31	0.15	9.84	22.23	32.22	60.06	27.84	QP
6	0.31	0.15	9.84	10.50	20.49	50.06	29.57	Average
7	0.35	0.15	9.84	9.50	19.49	49.05	29.56	Average
8	0.35	0.15	9.84	18.76	28.75	59.05	30.30	QP
9	0.40	0.15	9.84	18.43	28.42	57.95	29.53	QP
10	0.40	0.15	9.84	11.60	21.59	47.95	26.36	Average
11	3.21	0.11	9.83	14.31	24.25	56.00	31.75	QP
12	3.21	0.11	9.83	12.50	22.44	46.00	23.56	Average

Note: 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: 15 File: F:\2010 Test Data\Report\G1010001-G1010050\G1010028.EM6 (18) Date: 2010-11-22



Site no. : NO.1 Conducted Shielding Enclosure Data no. : 15
 AMN/LISN : ESH2-Z5 1003 Phase : NEUTRAL
 Limit : FCC PART15 CLASSE QP
 Env. / Ins. : 20.6*C&46%/ESCI Engineer : Will
 EUT : TI-Nspire™ Navigator™ Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test mode : Configuration B
 Memo : Adapter:GRE

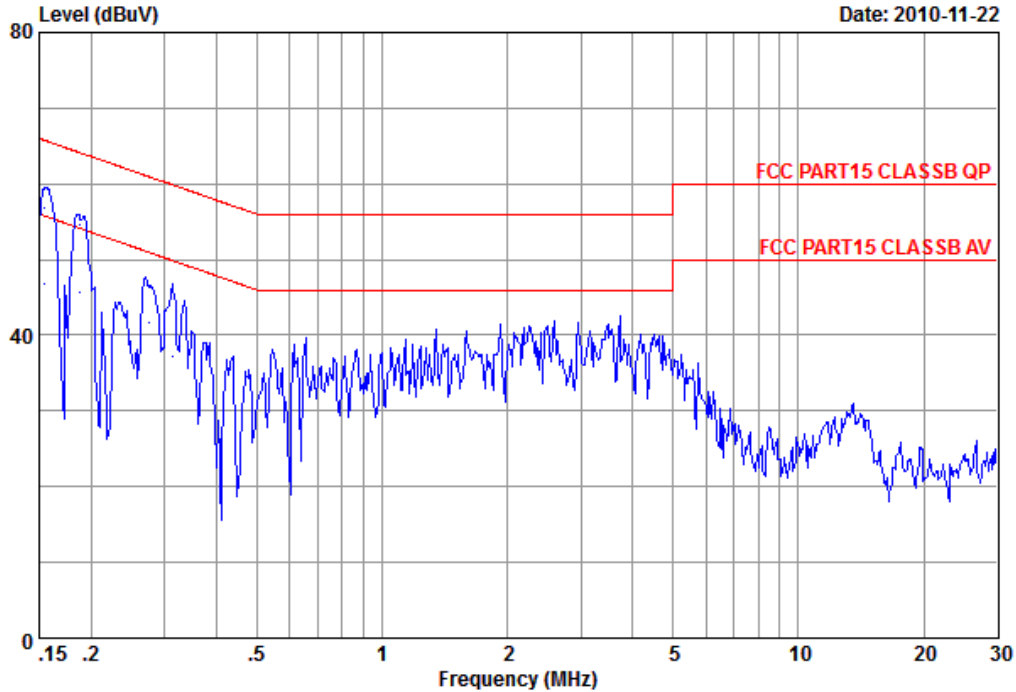
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.17	9.85	48.30	58.32	65.64	7.32	QP
2	0.16	0.17	9.85	37.10	47.12	55.64	8.52	Average
3	0.18	0.17	9.85	36.80	46.82	54.39	7.57	Average
4	0.18	0.17	9.85	45.50	55.52	64.39	8.87	QP
5	0.28	0.17	9.84	36.80	46.81	60.85	14.04	QP
6	0.28	0.17	9.84	32.60	42.61	50.85	8.24	Average
7	0.33	0.17	9.84	30.20	40.21	49.40	9.19	Average
8	0.33	0.17	9.84	32.70	42.71	59.40	16.69	QP
9	1.11	0.21	9.83	23.60	33.64	46.00	12.36	Average
10	1.11	0.21	9.83	29.50	39.54	56.00	16.46	QP
11	2.59	0.25	9.83	30.10	40.18	56.00	15.82	QP
12	2.59	0.25	9.83	23.90	33.98	46.00	12.02	Average

Note: 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: 16 File: F:\2010 Test Data\Report\G1010001-G1010050\G1010028.EM6 (18) Date: 2010-11-22



Site no. : NO.1 Conducted Shielding Enclosure Data no. : 16
 AMN/LISN : ESH2-Z5 1003 Phase : LINE
 Limit : FCC PART15 CLASSE QP
 Env. / Ins. : 20.6*C&46%/ESCI Engineer : Will
 EUT : TI-Nspire™ Navigator™ Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test mode : Configuration B
 Memo : Adapter:GRE

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.15	9.85	46.91	56.91	65.76	8.85	QP
2	0.15	0.15	9.85	36.91	46.91	55.76	8.85	Average
3	0.19	0.15	9.85	44.70	54.70	64.12	9.42	QP
4	0.19	0.15	9.85	35.70	45.70	54.12	8.42	Average
5	0.28	0.15	9.84	36.50	46.49	60.97	14.48	QP
6	0.28	0.15	9.84	31.60	41.59	50.97	9.38	Average
7	0.31	0.15	9.84	36.40	46.39	59.89	13.50	QP
8	0.31	0.15	9.84	27.20	37.19	49.89	12.70	Average
9	1.34	0.10	9.83	29.90	39.83	56.00	16.17	QP
10	1.34	0.10	9.83	27.90	37.83	46.00	8.17	Average
11	3.72	0.11	9.84	28.80	38.75	46.00	7.25	Average
12	3.72	0.11	9.84	30.69	40.64	56.00	15.36	QP

Note: 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 (For 30MHz~1000MHz)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Spectrum Analyzer	Agilent	E7405A	MY45107028	2010-03-25	2011-03-24
2	Spectrum Analyzer	Agilent	E7405A	MY45107030	2010-03-25	2011-03-24
3	Pre-Amplifier	Agilent	8447D	2944A10918	2010-08-11	2011-08-10
4	Pre-Amplifier	Agilent	8447D	2944A10922	2010-08-11	2011-08-10
5	Bi-log Antenna (Horizontal)	Schaffner	CBL6112D	22253	2010-05-05	2011-05-04
6	Bi-log Antenna (Vertical)	Schaffner	CBL6112D	22252	2010-05-05	2011-05-04
7	Test Receiver	R&S	ESCI	100351	2010-01-05	2011-01-04
8	50Ω Coaxial Switch # 1	ANRITSU	MP59B	6200547935	2010-08-11	2011-08-10
9	50Ω Coaxial Switch # 2	ANRITSU	MP59B	6200547937	2010-08-11	2011-08-10
10	50Ω Coaxial Switch # 3	ANRITSU	MP59B	6200547938	2010-08-11	2011-08-10
11	RF Cable	Yuhang	CSYH	001	2010-08-14	2011-08-13
12	RF Cable	Yuhang	CSYH	002	2010-08-14	2011-08-13
13	RF Cable	Yuhang	CSYH	003	2010-08-14	2011-08-13
14	RF Cable	Yuhang	CSYH	004	2010-08-14	2011-08-13
15	RF Cable	Yuhang	CSYH	005	2010-08-14	2011-08-13
16	RF Cable	Yuhang	CSYH	006	2010-08-14	2011-08-13
17	RF Cable	Yuhang	CSYH	008	2010-08-14	2011-08-13
18	RF Cable	Yuhang	CSYH	009	2010-08-14	2011-08-13

At 3m Semi-Anechoic Chamber (For Above 1GHz)

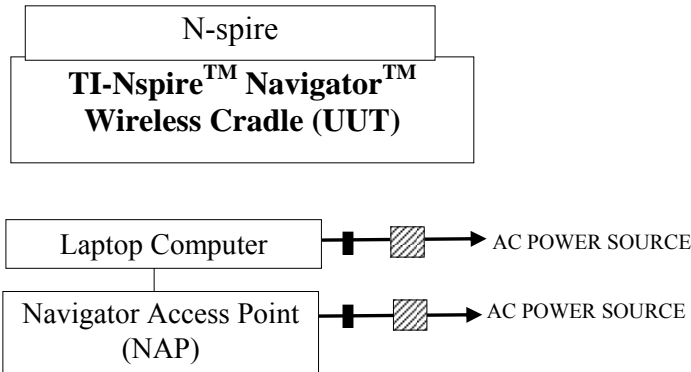
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Agilent	8449B	2944A10921	2010-08-14	2011-08-13
2.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2010-01-08	2011-01-07
3.	Bi-log Antenna	Schaffner	CBL6112D	22250	2010-06-10	2011-06-09
4.	Test Receiver	R&S	ESCI	100361	2010-01-05	2011-01-04
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200547935	2010-08-14	2011-08-13
6.	RF Cable #1	Yuhang CSYH	cable-3m	001 (Length: 0.5m)	2010-08-14	2011-08-13
7.	RF Cable #2	Yuhang CSYH	cable-3m	002 (Length: 0.5m)	2010-08-14	2011-08-13
8.	RF Cable #3	Yuhang CSYH	cable-3m	003 (Length: 3.0m)	2010-08-14	2011-08-13

4.2. Block Diagram of Test Setup

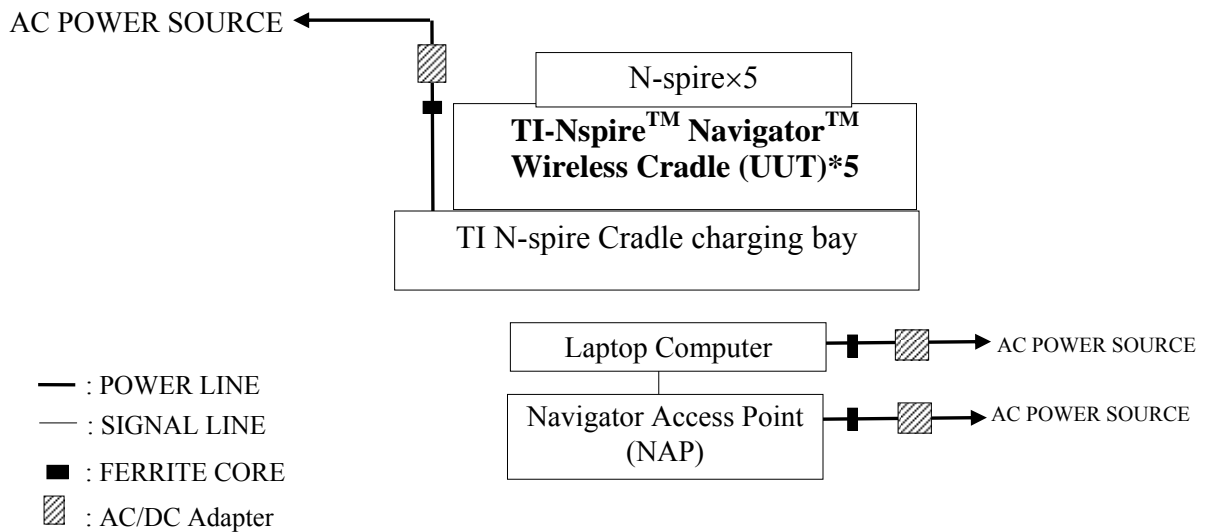
4.2.1. Block Diagram of Test Setup between EUT and simulators

For 30MHz~1000MHz

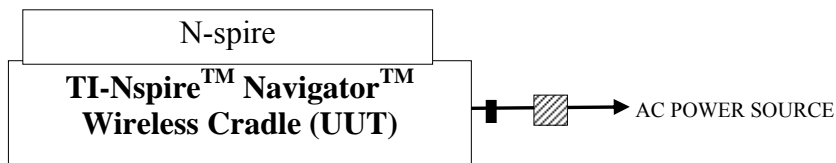
For Configuration A



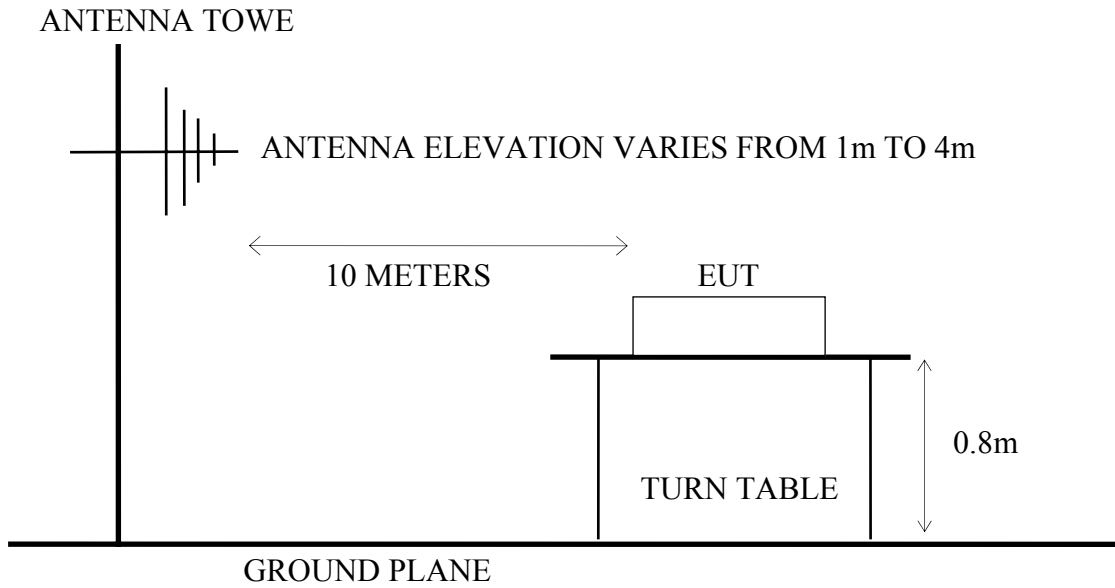
For Configuration B



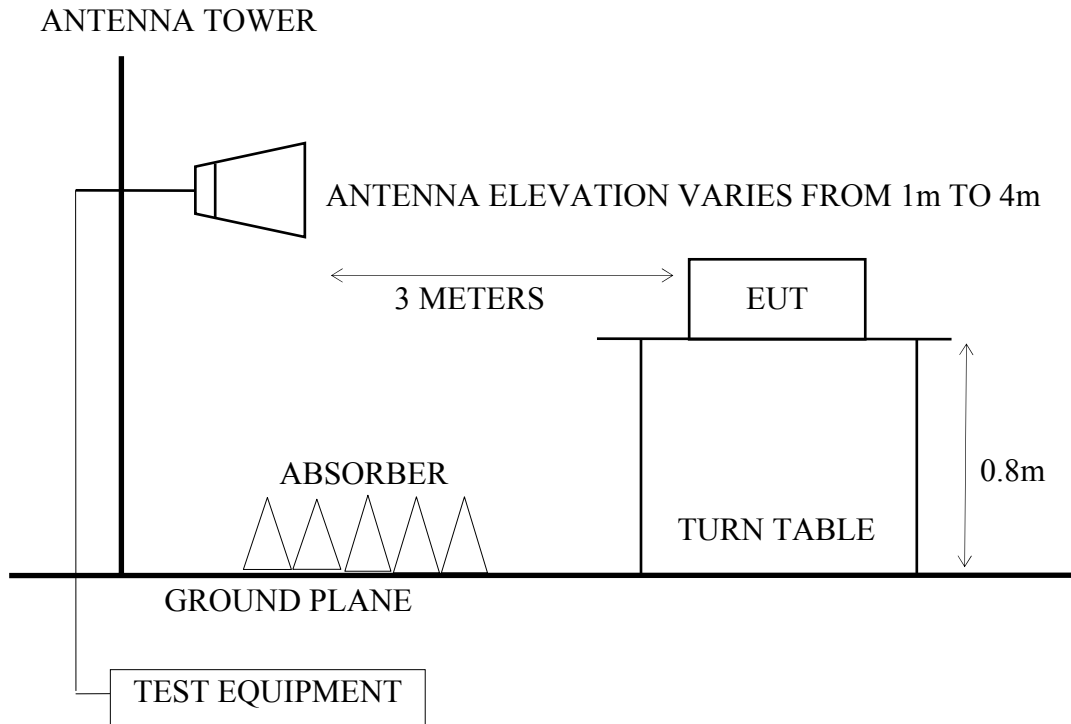
For Above 1GHz



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



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



4.3. Radiated Emission Limits (FCC Part15 section 15.209)

Frequency MHz	Distance Meters	Field Strengths Limits	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

Remark : (1) Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$)

(2) The tighter limit applies at the edge between two frequency bands.

4.4. Test Procedure

The measuring process is according to ANSI C63.4 and laboratory internal procedure TKC-301-024.

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 Average 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 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 : Dec.01, 2010 Temperature : 20.3 Humidity : 46%

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

Mode	Adapter M/N	Test Condition	Reference Test Data No.	
			Horizontal	Vertical
1	-----	Test Configuration A	# 7	# 8
2	AC9940 (PIE)	Test Configuration B	# 9	# 10
3	AC9940 (GRE)	Test Configuration B	# 11	# 12

4.5.2. For Frequency above 1GHz

The EUT with following test modes were performed during this section testing and all the test results are listed in section 4.6.2.

No.	Test Mode and Frequency		
1.	Transmitting	802.11b	2412MHz (Channel 1)
2.			2437MHz (Channel 6)
3.			2462MHz (Channel 11)
4.		802.11g	2412MHz (Channel 1)
5.			2437MHz (Channel 6)
6.			2462MHz (Channel 11)

4.5.3. For Restricted Bands:

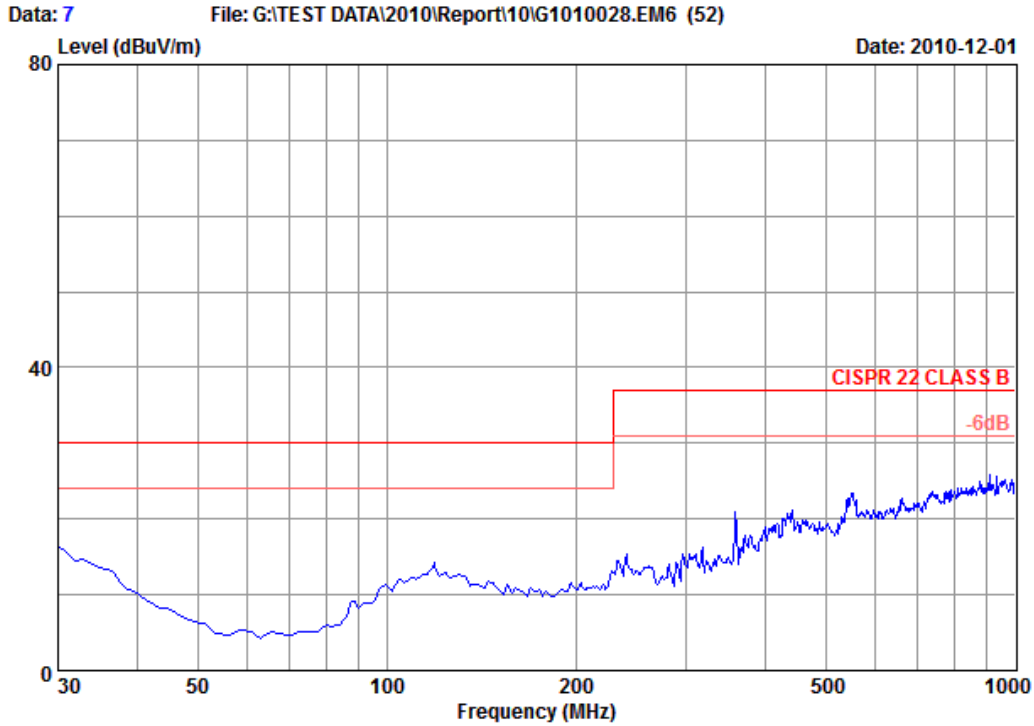
The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

No.	Test Mode and Frequency			Reference Test Data No.	
				Horizontal	Vertical
1.	Transmitting	802.11b	2412MHz (Channel 1)	# 13, # 14	# 15, # 16
2.			2462MHz (Channel 11)	# 17, # 18	# 19, # 20
3.		802.11g	2412MHz (Channel 1)	# 21, # 22	# 23 # 24
4.			2462MHz (Channel 11)	# 25, # 26	# 27, # 28

4.5.4. Radiated Emission Measurement Results



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Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 7
 Dis./Ant. : 10m BI-LOG 6112D(22253) Ant.pol : HORIZONTAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT. : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration A
 Memo :

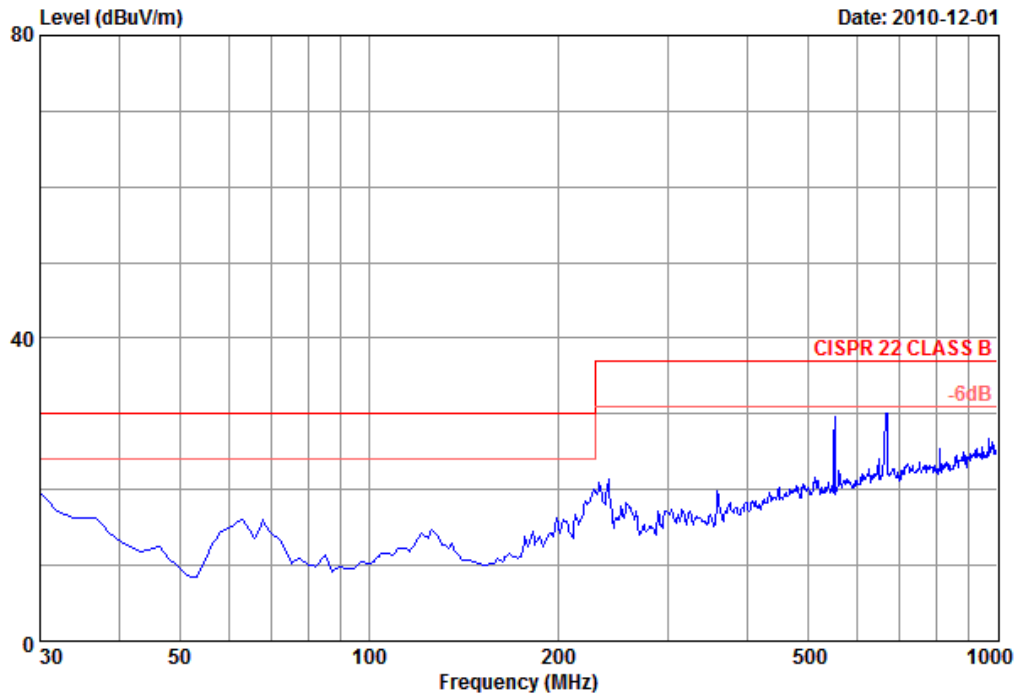
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	119.24	12.66	1.43	0.21	14.30	30.00	15.70	QP
2	240.49	11.90	1.98	1.47	15.35	37.00	21.65	QP
3	358.83	14.27	2.58	4.08	20.93	37.00	16.07	QP
4	441.28	17.00	3.10	1.11	21.21	37.00	15.79	QP
5	549.92	19.50	3.33	0.35	23.18	37.00	13.82	QP
6	909.79	21.10	4.39	0.42	25.91	37.00	11.09	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: 8 File: G:\TEST DATA\2010\Report\10\G1010028.EM6 (52)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 8
 Dis./Ant. : 10m BI-LOG 6112D(22252) Ant.pol : VERTICAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration A
 Memo :

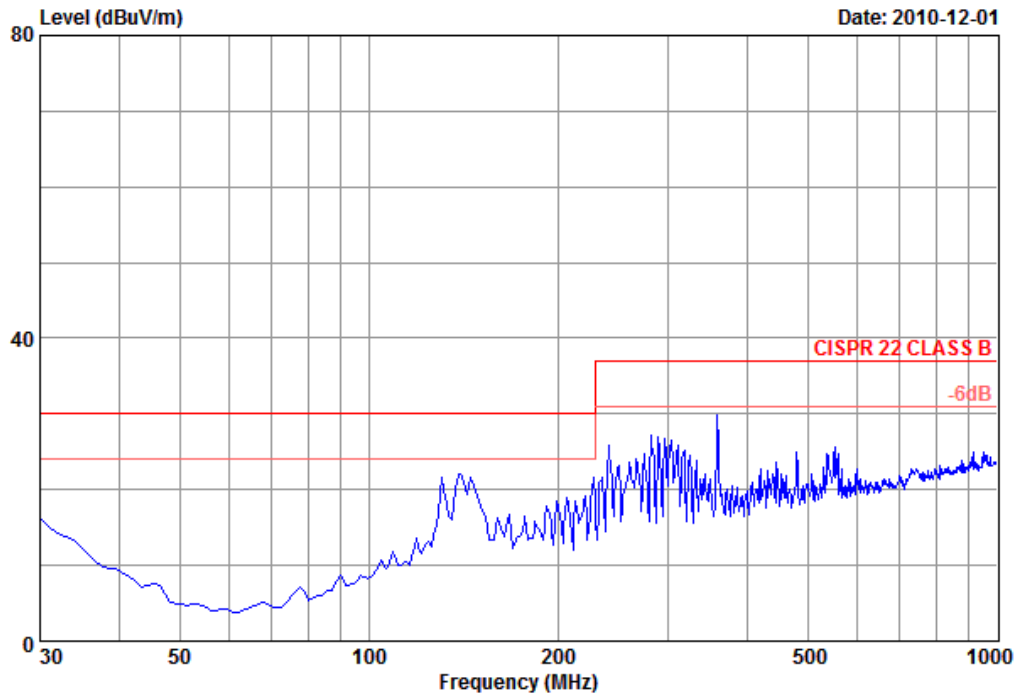
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.00	19.00	0.65	0.04	19.69	30.00	10.31	QP
2	62.98	6.13	0.93	9.02	16.08	30.00	13.92	QP
3	67.83	6.40	0.84	8.70	15.94	30.00	14.06	QP
4	232.73	10.75	1.73	8.45	20.93	37.00	16.07	QP
5	550.89	18.10	3.08	8.39	29.57	37.00	7.43	QP
6	664.25	19.66	2.82	7.12	29.60	37.00	7.40	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: 9 File: G:\TEST DATA\2010\Report\10\G1010028.EM6 (52)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 9
 Dis./Ant. : 10m BI-LOG 6112D(22253) Ant.pol : HORIZONTAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT. : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration B
 Memo : Adapter:PIE

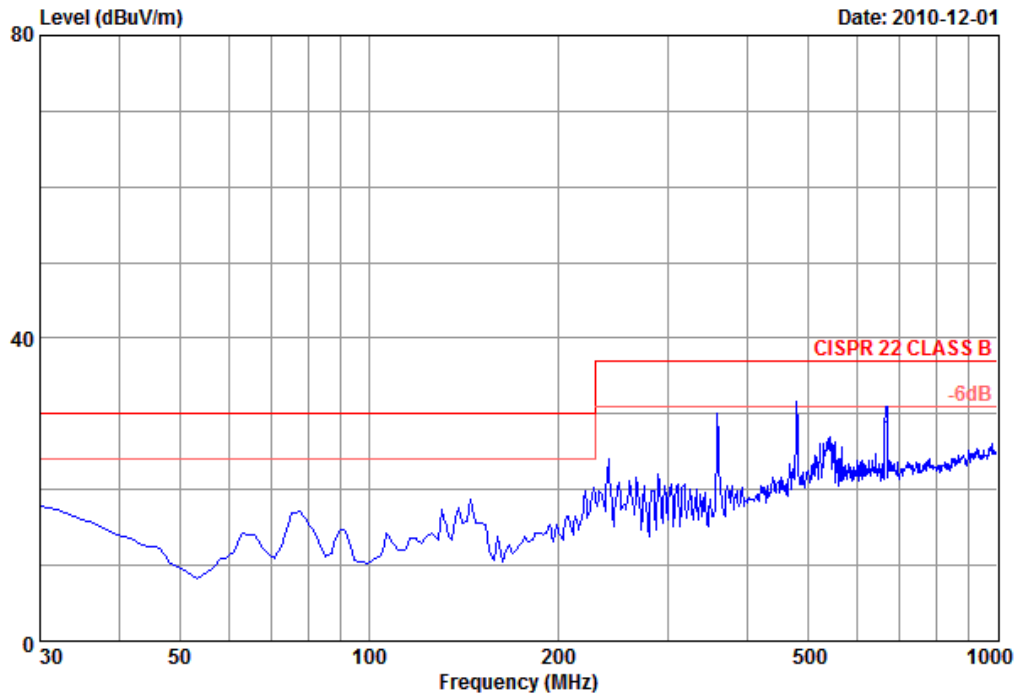
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	130.88	12.90	1.57	7.25	21.72	30.00	8.28	QP
2	138.64	11.80	1.54	8.70	22.04	30.00	7.96	QP
3	145.43	10.97	1.61	9.06	21.64	30.00	8.36	QP
4	227.88	10.10	2.08	9.52	21.70	30.00	8.30	QP
5	281.23	13.05	2.35	11.77	27.17	37.00	9.83	QP
6	358.83	14.27	2.58	12.96	29.81	37.00	7.19	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: 10 File: G:\TEST DATA\2010\Report\10\G1010028.EM6 (52)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 10
 Dis./Ant. : 10m BI-LOG 6112D(22252) Ant.pol : VERTICAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT. : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration B
 Memo : Adapter:PIE

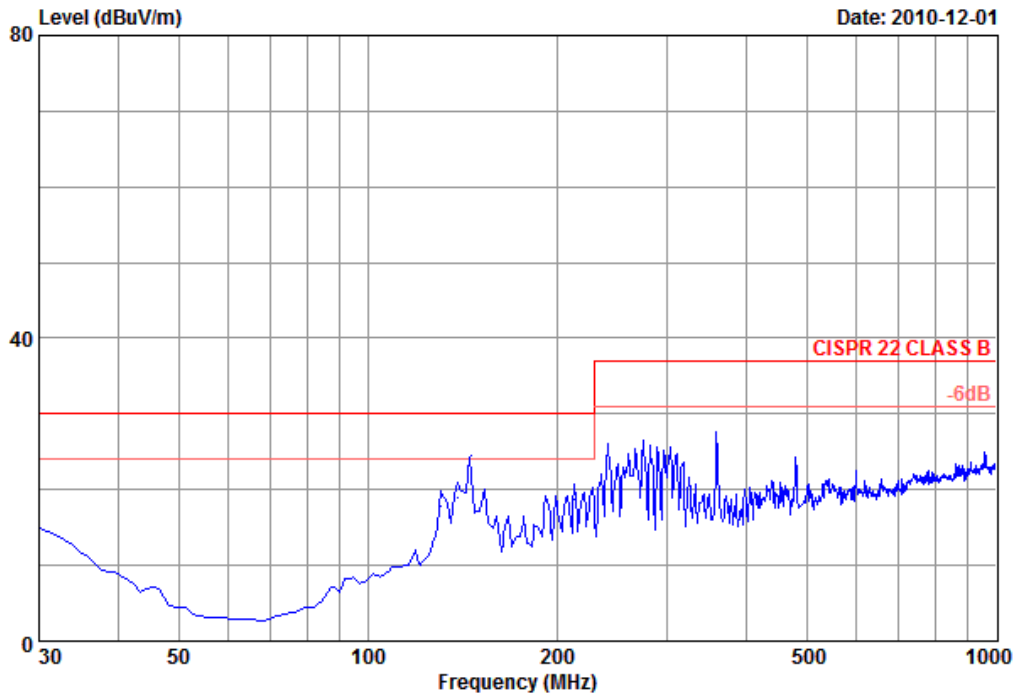
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	77.53	7.00	0.99	9.24	17.23	30.00	12.77	QP
2	145.43	10.17	1.39	7.20	18.76	30.00	11.24	QP
3	227.88	10.53	1.70	8.04	20.27	30.00	9.73	QP
4	358.83	14.75	2.17	12.18	29.10	37.00	7.90	QP
5	480.08	17.20	2.63	9.74	29.57	37.00	7.43	QP
6	664.38	19.66	2.82	6.40	28.88	37.00	8.12	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: 11 File: G:\TEST DATA\2010\Report\10\G1010028.EM6 (52)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 11
 Dis./Ant. : 10m BI-LOG 6112D(22253) Ant.pol : HORIZONTAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT. : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration B
 Memo : Adapter:GRE
 #1

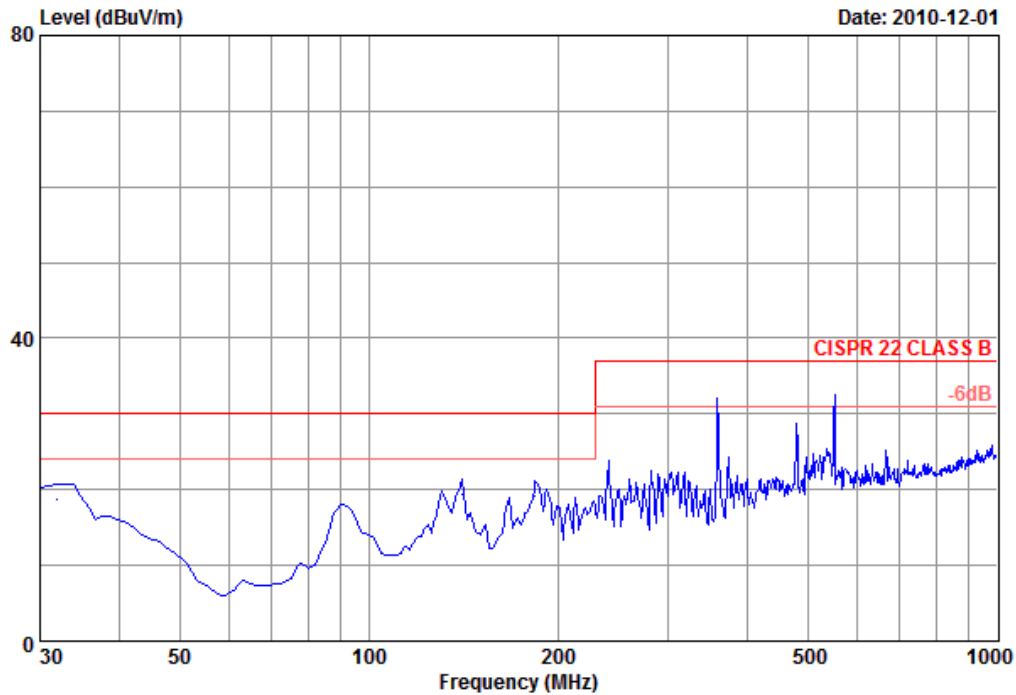
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	130.88	12.90	1.57	3.34	17.81	30.00	12.19	QP
2	138.64	11.80	1.54	5.53	18.87	30.00	11.13	QP
3	146.23	10.97	1.64	11.80	24.41	30.00	5.59	QP
4	213.33	9.20	2.04	7.54	18.78	30.00	11.22	QP
5	274.44	12.90	2.30	10.33	25.53	37.00	11.47	QP
6	358.83	14.27	2.58	8.88	25.73	37.00	11.27	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: 12 File: G:\TEST DATA\2010\Report\10\G1010028.EM6 (52)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 12
 Dis./Ant. : 10m BI-LOG 6112D(22252) Ant.pol : VERTICAL
 Env./Ins. : 20.3*C 46%/ESCI Engineer : Hilary
 EUT : TI-NspireTM NavigatorTM Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : Configuration B
 Memo : Adapter:GRE
 #1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	17.90	0.63	0.30	18.83	30.00	11.17	QP
2	140.58	10.90	1.48	7.01	19.39	30.00	10.61	QP
3	184.23	10.13	1.46	7.56	19.15	30.00	10.85	QP
4	358.83	14.75	2.17	12.09	29.01	37.00	7.99	QP
5	480.08	17.20	2.63	8.93	28.76	37.00	8.24	QP
6	550.89	18.10	3.08	8.26	29.44	37.00	7.56	QP

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

4.6. Radiated Emission Measurement Results

4.6.1. Type of Network : IEEE 802.11b

Data of Test: Nov. 22, 2010

Ambient temperature: 18 Relative humidity: 49%

Data Rate: 1Mbps

Test Frequency band: TX 2412MHz

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1595.00	Horizontal	63.96	74.00	10.04
3210.00	Horizontal	46.45	74.00	27.55
4825.00	Horizontal	46.04	74.00	27.96
7236.00	Horizontal	52.69	74.00	21.31

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
3216.01	Horizontal	42.11	54.00	11.89
4824.03	Horizontal	37.99	54.00	16.01
7236.00	Horizontal	47.76	54.00	6.24

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1595.00	Vertical	57.11	74.00	16.89
3210.00	Vertical	51.55	74.00	22.45
4825.00	Vertical	48.19	74.00	25.81
7236.00	Vertical	52.53	74.00	21.47

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
3216.00	Vertical	48.29	54.00	5.71
4824.05	Vertical	44.71	54.00	9.29
7236.00	Vertical	47.51	54.00	6.49

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Test Frequency band: TX 2437MHz**Peak**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1612.00	Horizontal	62.89	74.00	11.11
4876.00	Horizontal	49.42	74.00	24.58
7307.00	Horizontal	53.83	74.00	20.17

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4873.95	Horizontal	46.50	54.00	7.50
7310.00	Horizontal	38.24	54.00	15.76

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1612.00	Vertical	56.33	74.00	17.67
3227.00	Vertical	51.94	74.00	22.06
4876.00	Vertical	49.34	74.00	24.66
7311.00	Vertical	52.52	74.00	21.48

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4873.81	Vertical	46.59	54.00	7.41
7310.00	Vertical	38.83	54.00	15.17

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Test Frequency band: TX 2462MHz**Peak**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1646.00	Horizontal	64.11	74.00	9.89
4927.00	Horizontal	46.28	74.00	27.72
7396.00	Horizontal	51.65	74.00	22.35

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4924.10	Horizontal	42.42	54.00	11.58
7396.00	Horizontal	39.35	54.00	14.65

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1646.00	Vertical	54.84	74.00	19.16
4910.00	Vertical	51.34	74.00	22.66
7396.00	Vertical	52.53	74.00	21.47

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4924.06	Vertical	48.88	54.00	5.12
7396.00	Vertical	39.38	54.00	14.62

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

4.6.2.Type of Network : IEEE 802.11g

Data of Test: Nov. 22, 2010

Ambient temperature: 18 Relative humidity: 49%

Data Rate: 6Mbps

Test Frequency band: TX 2412MHz**Peak**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1612.00	Horizontal	64.89	74.00	6.11
3210.00	Horizontal	53.64	74.00	20.36
4825.00	Horizontal	46.27	74.00	27.73
7256.00	Horizontal	53.36	74.00	20.64

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4824.17	Horizontal	34.65	54.00	19.35
7236.00	Horizontal	39.13	54.00	14.87

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
1595.00	Vertical	57.54	74.00	16.46
3210.00	Vertical	57.98	74.00	16.02
4825.00	Vertical	45.94	74.00	28.06
7236.00	Vertical	52.09	74.00	21.91

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4821.38	Vertical	34.63	54.00	19.37
7236.00	Vertical	38.97	54.00	15.03

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Test Frequency band: TX 2437MHz**Peak**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4876.00	Horizontal	46.08	74.00	27.92
7311.00	Horizontal	52.01	74.00	21.99

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4871.17	Horizontal	35.03	54.00	18.97
7311.00	Horizontal	38.68	54.00	15.32

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4842.00	Vertical	47.72	74.00	26.28
7324.00	Vertical	51.82	74.00	22.18

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4876.17	Vertical	36.06	54.00	17.94
7311.00	Vertical	38.69	54.00	15.31

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Test Frequency band: TX 2462MHz**Peak**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4927.00	Horizontal	47.11	74.00	26.89
7396.00	Horizontal	51.34	74.00	22.66

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4924.42	Horizontal	32.99	54.00	21.01
7396.00	Horizontal	39.22	54.00	14.78

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

Peak

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4910.00	Vertical	48.59	74.00	25.41
7375.00	Vertical	52.67	74.00	21.33

Average

Frequency (MHz)	Antenna Polarization	Emission Level (dBuv)	Limit (dBuv)	Margin (dB)
4924.00	Vertical	37.45	54.00	16.55
7396.00	Vertical	39.17	54.00	14.83

Note 1. : All the emissions (up to 25GHz) not reported are too low to be measured.

Note 2. : The emission behavior belongs to narrowband spurious emission.

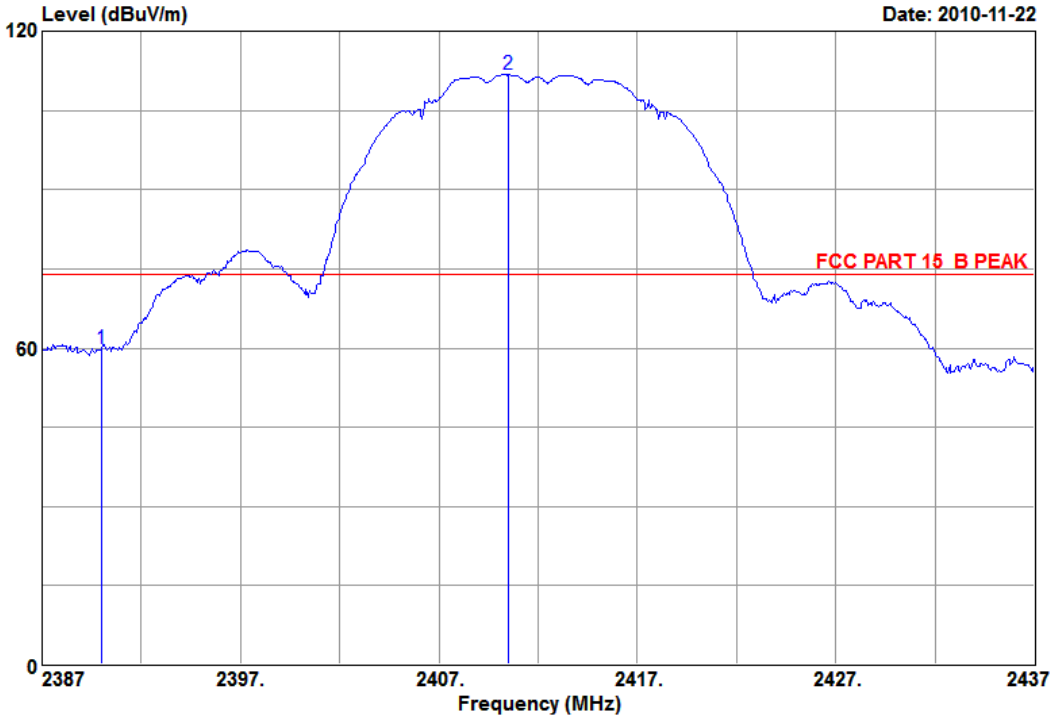
4.7. Spurious Emission Measurement Results in restricted band (FCC Part 15, 15.205)

4.7.1. IEEE 802.11b



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Data: 13 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61) Date: 2010-11-22



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 13
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B PEAK	Engineer	: venus
Env. / Ins.	: 18.0*CS&49%/Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH1		

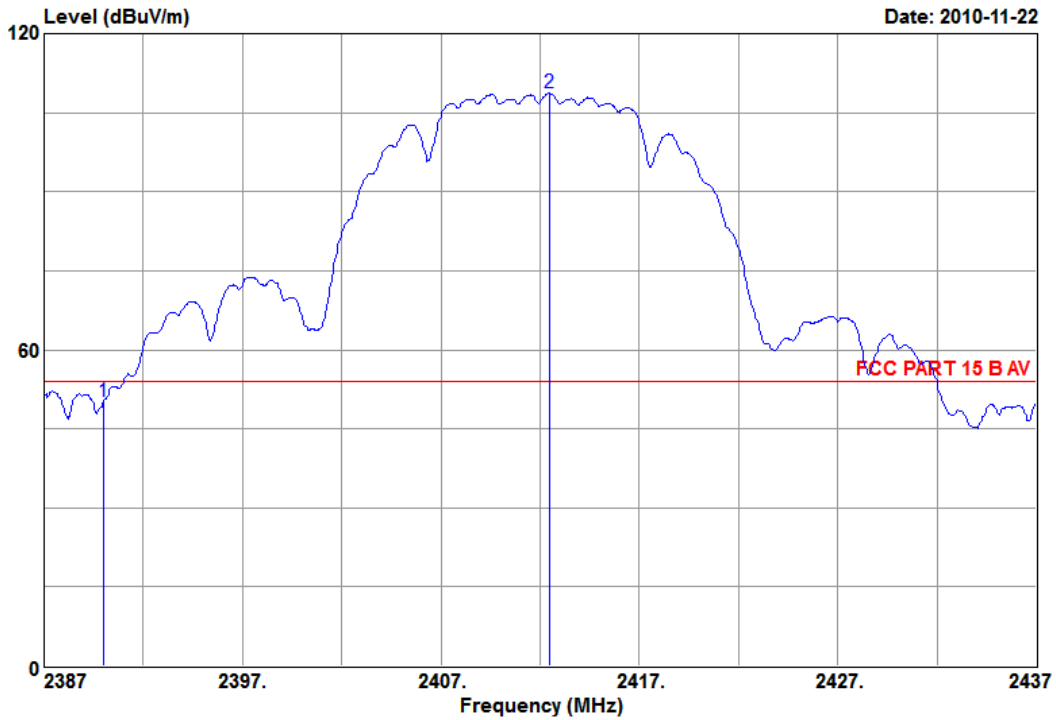
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	7.51	58.99	59.85	74.00	14.15	Peak
2 2410.50	28.58	7.55	110.80	111.75	74.00	-37.75	Peak

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: 14 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 14
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B AV	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH1		

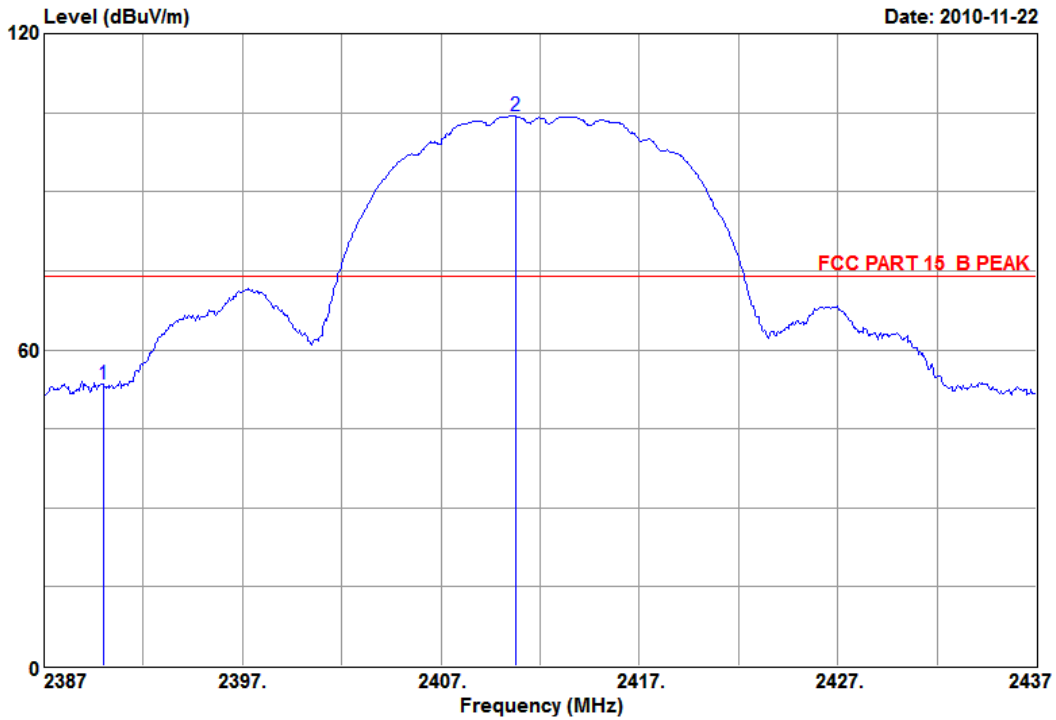
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	8.47	48.34	50.16	54.00	3.84	Average
2 2412.50	28.58	9.32	106.00	108.72	54.00	-54.72	Average

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: 15 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 15
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 B PEAK	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH1		

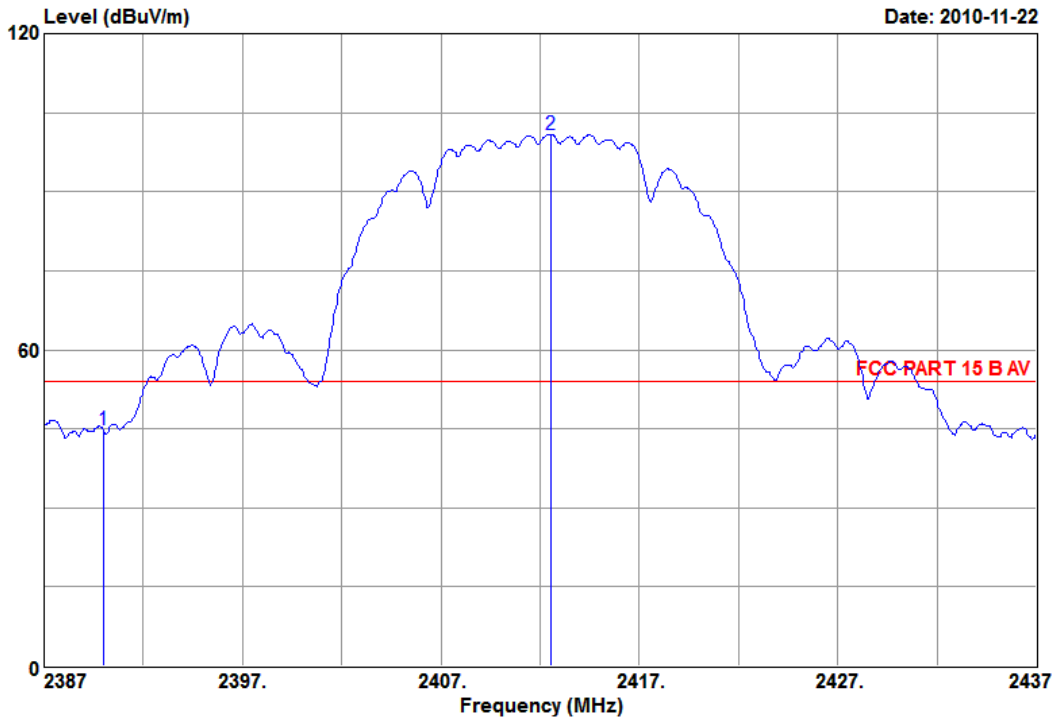
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	8.47	51.73	53.55	74.00	20.45	Peak
2 2410.75	28.58	9.32	101.59	104.31	74.00	-30.31	Peak

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: 16 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 16
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 B AV	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH1		

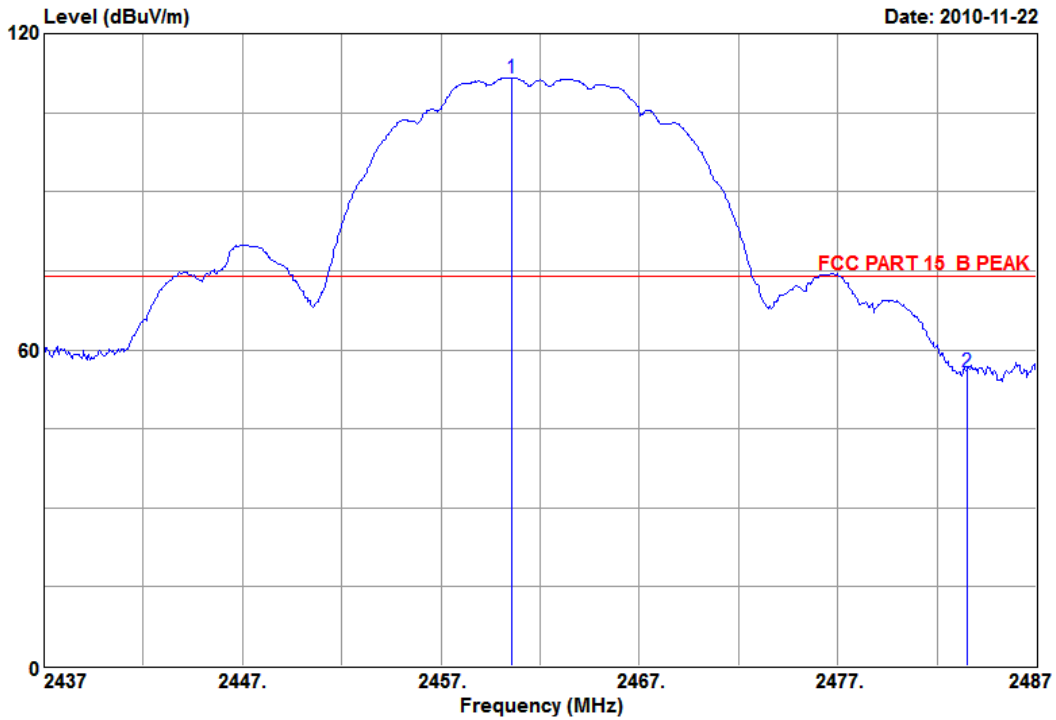
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	8.47	42.87	44.69	54.00	9.31	Average
2 2412.55	28.58	9.32	98.14	100.86	54.00	-46.86	Average

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: 17 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 17
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B PEAK	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH11		

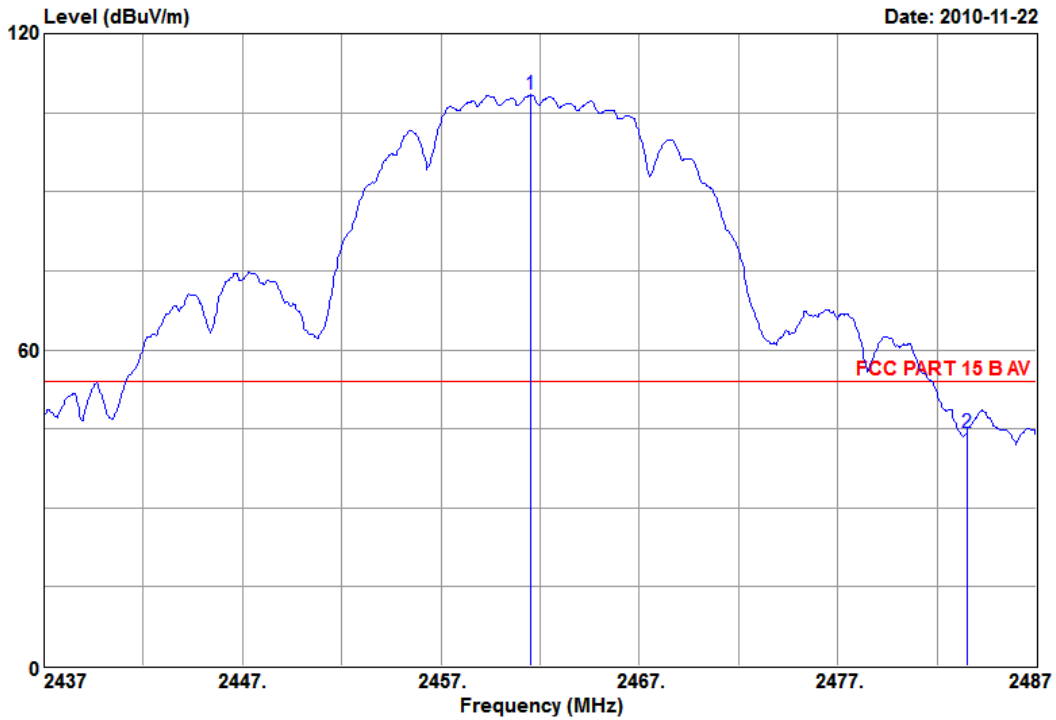
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2460.55	28.71	9.00	109.04	111.56	74.00	-37.56	Peak
2 2483.50	28.76	9.42	52.70	55.68	74.00	18.32	Peak

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: 18 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 18
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B AV	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11b		
Memo	: CH11		

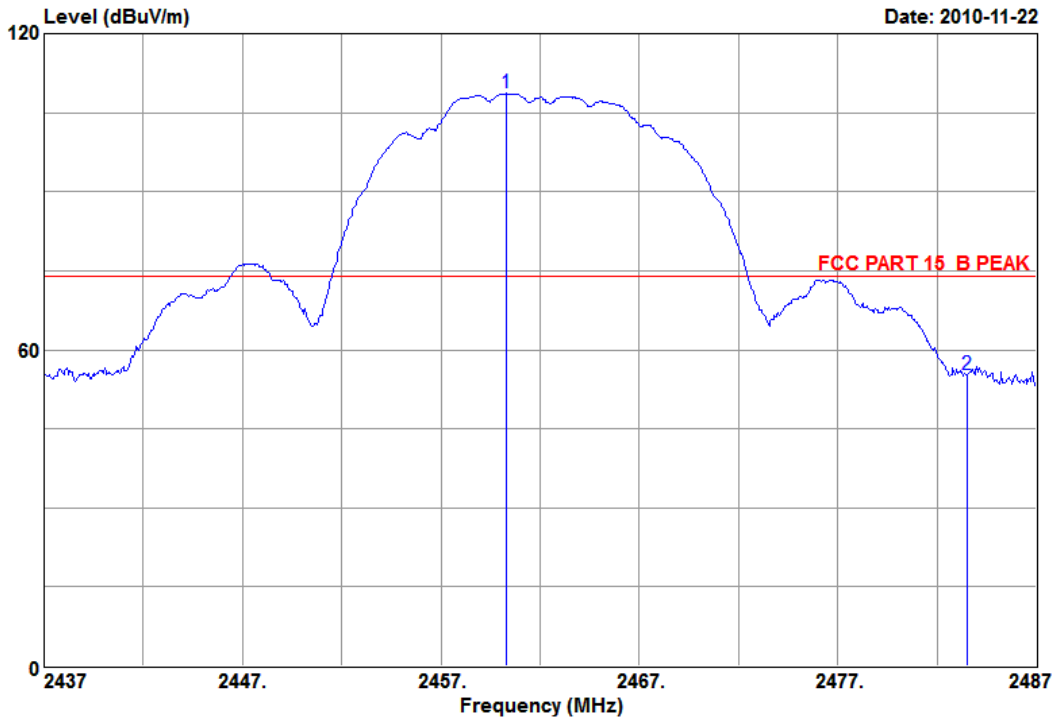
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2461.55	28.71	9.00	105.93	108.45	54.00	-54.45	Average
2 2483.50	28.76	9.42	41.38	44.36	54.00	9.64	Average

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: 19 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 19
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : VERTICAL
Limit : FCC PART 15 B PEAK	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11b	
Memo : CH11	

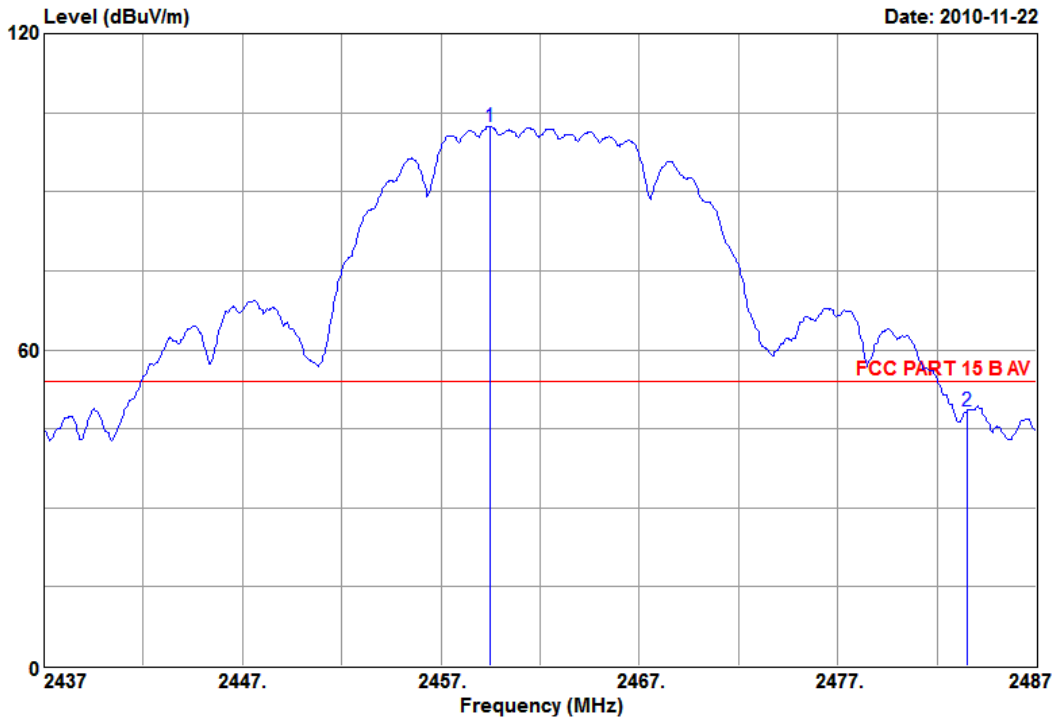
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2460.30	28.71	9.00	106.11	108.63	74.00	-34.63	Peak
2 2483.50	28.76	9.42	52.23	55.21	74.00	18.79	Peak

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: 20 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 20
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : VERTICAL
Limit : FCC PART 15 B AV	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11b	
Memo : CH11	

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2459.50	28.71	9.00	99.95	102.47	54.00	-48.47	Average
2 2483.50	28.76	9.42	45.33	48.31	54.00	5.69	Average

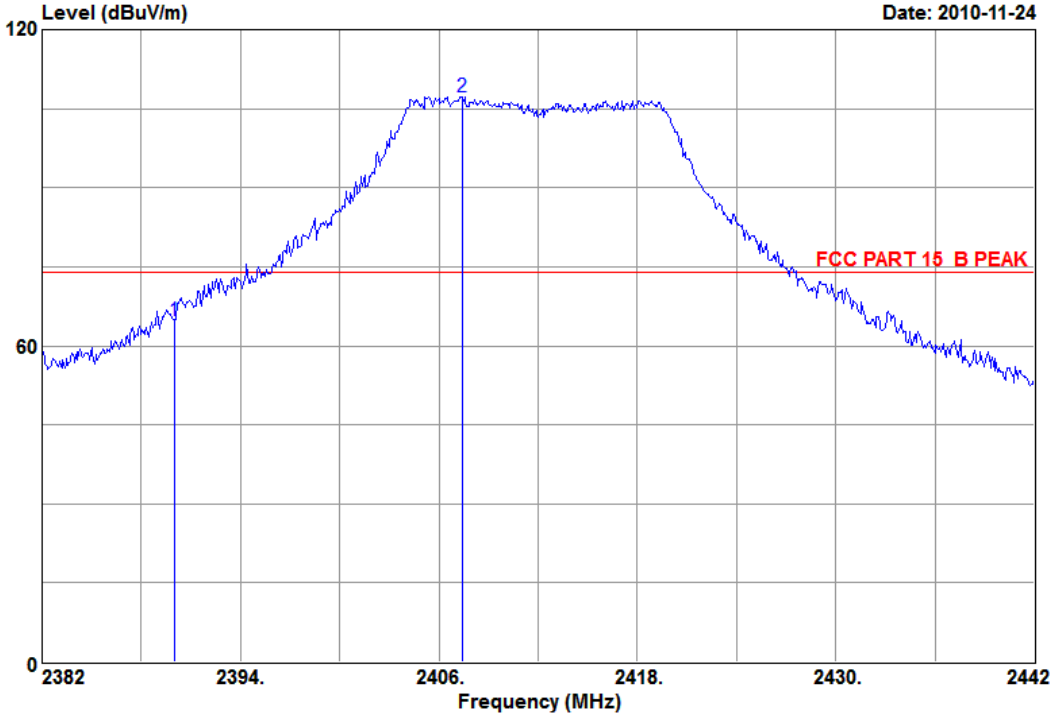
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

4.7.2. IEEE 802.11g



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Data: 21 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61) Date: 2010-11-24



Site NO. : 3m Semi-Anechoic Chamber Data NO. : 21
 Dis. / Ant. : 3m HORN 3115(62961) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B PEAK
 Env. / Ins. : 18.0*CS&49%/Agilent E4447A Engineer : venus
 EUT : TI-NspirTM Navigator Wireless Cradle
 M/N : TINAVWC2
 Power Rating : 120Vac/60Hz
 Test Mode : TX 802.11g
 Memo : CH1

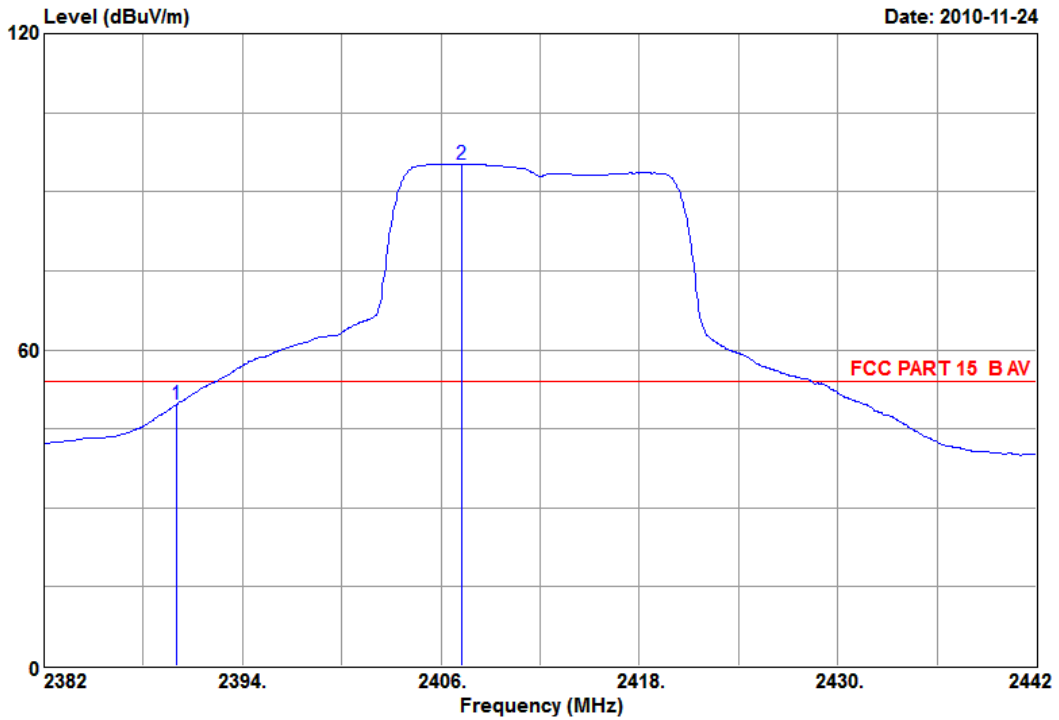
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	7.51	63.80	64.66	74.00	9.34	Peak
2 2407.38	28.58	7.55	106.31	107.26	74.00	-33.26	Peak

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: 22 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 22
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B AV	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11g		
Memo	: CH1		

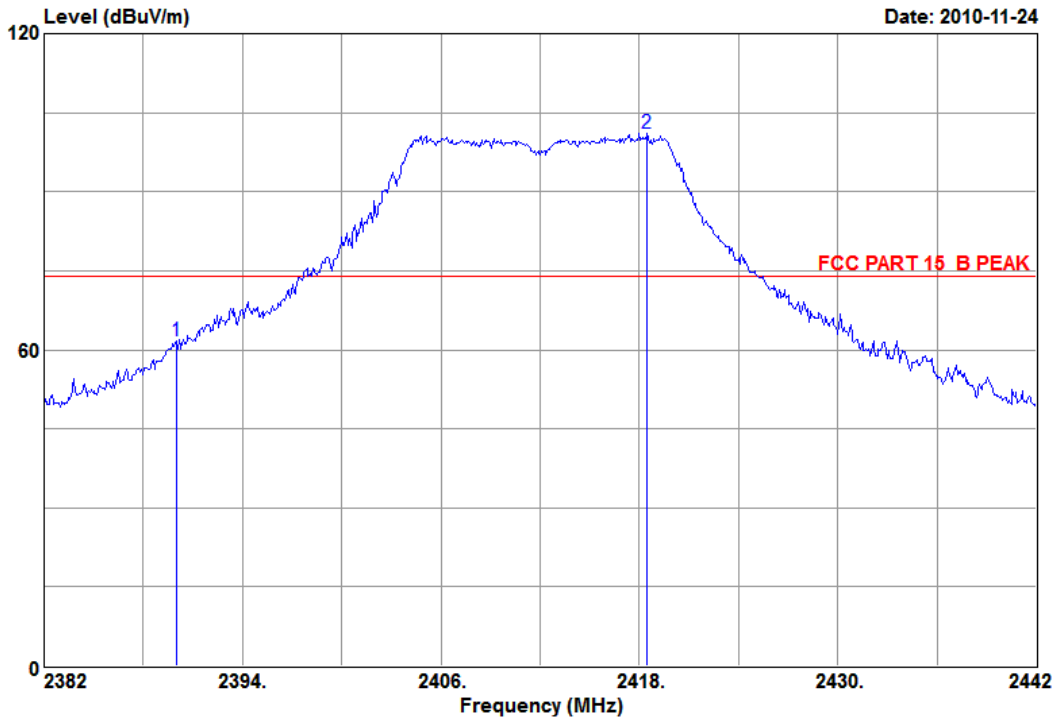
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	7.51	48.73	49.59	54.00	4.41	Average
2 2407.26	28.58	7.55	94.31	95.26	54.00	-41.26	Average

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: 23 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 23
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : VERTICAL
Limit : FCC PART 15 B PEAK	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11g	
Memo : CH1	

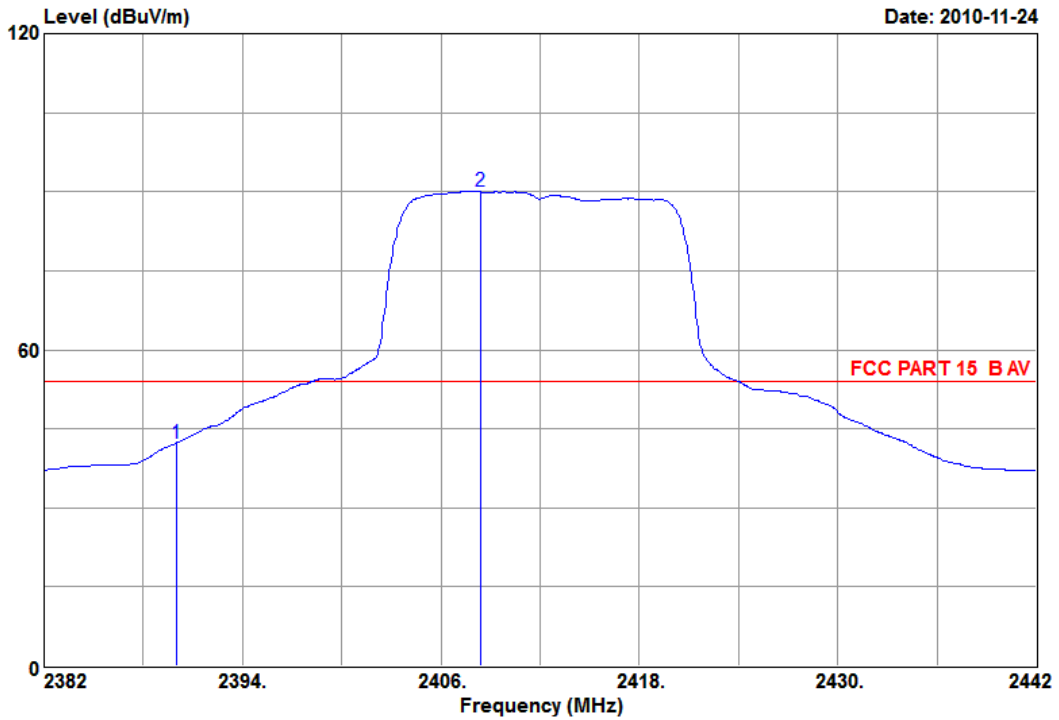
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	7.51	60.90	61.76	74.00	12.24	Peak
2 2418.48	28.58	7.55	100.24	101.19	74.00	-27.19	Peak

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: 24 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 24
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 B AV	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11g		
Memo	: CH1		

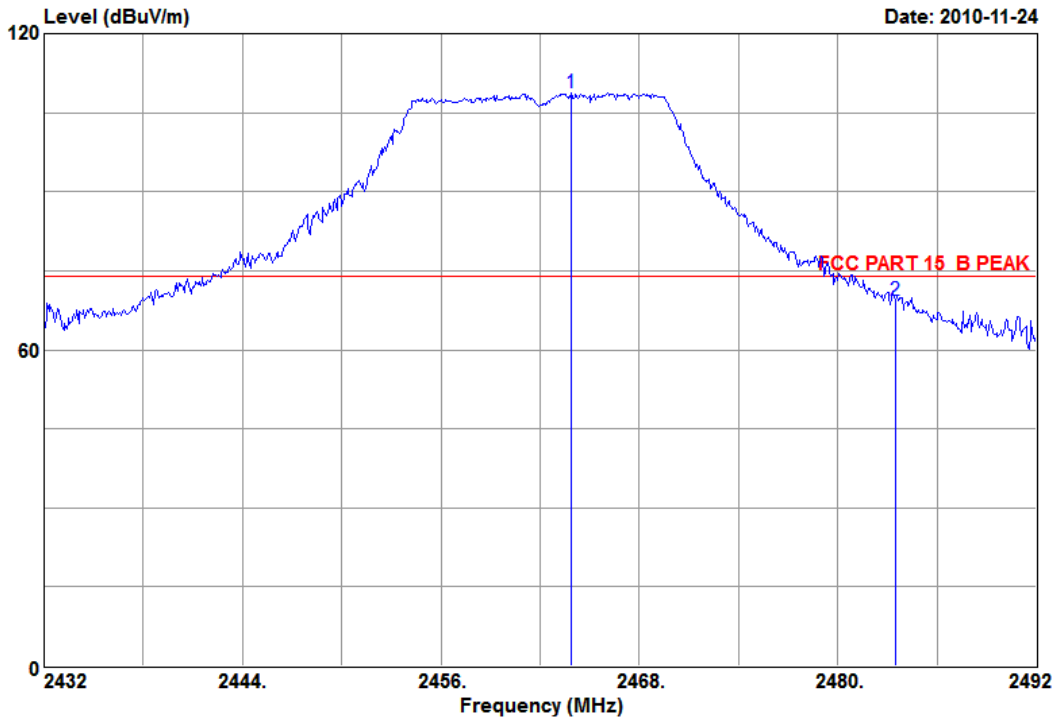
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2390.00	28.53	7.51	41.44	42.30	54.00	11.70	Average
2 2408.40	28.58	7.55	89.06	90.01	54.00	-36.01	Average

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: 25 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO.	: 3m Semi-Anechoic Chamber	Data NO.	: 25
Dis. / Ant.	: 3m HORN 3115(62961)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 B PEAK	Engineer	: venus
Env. / Ins.	: 18.0°C&49%Agilent E4447A		
EUT	: TI-Nspir™ Navigator Wireless Cradle		
M/N	: TINAVWC2		
Power Rating	: 120Vac/60Hz		
Test Mode	: TX 802.11g		
Memo	: CH11		

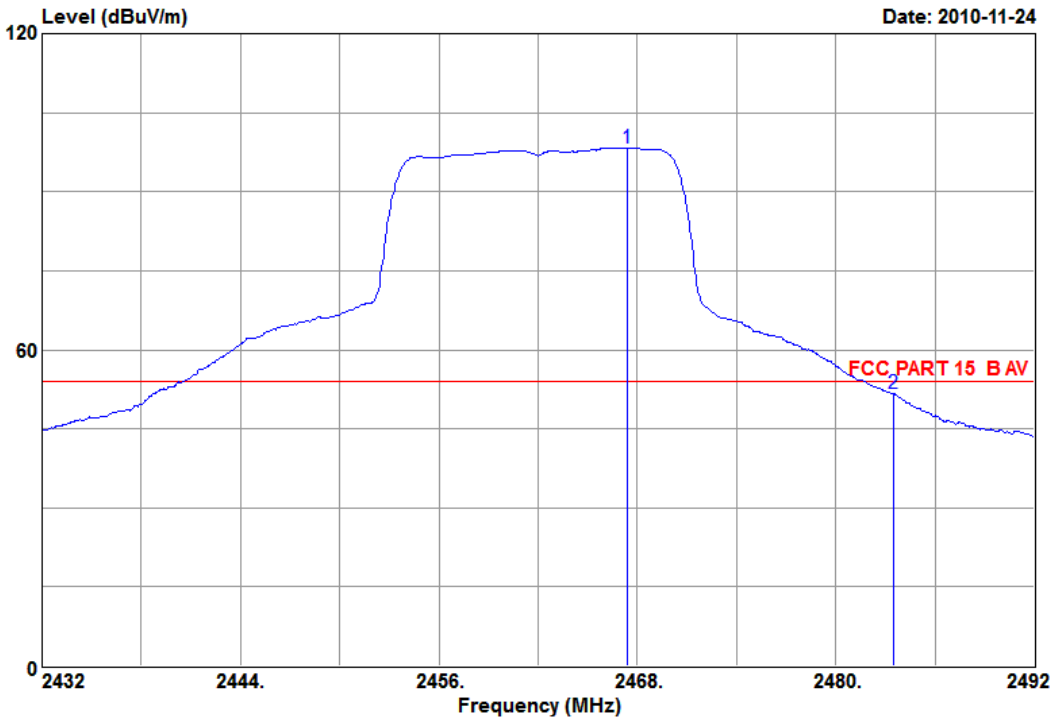
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2463.86	28.71	7.68	107.50	108.70	74.00	-34.70	Peak
2 2483.50	28.76	7.73	67.97	69.26	74.00	4.74	Peak

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: 26 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 26
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B AV	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11g	
Memo : CH11	

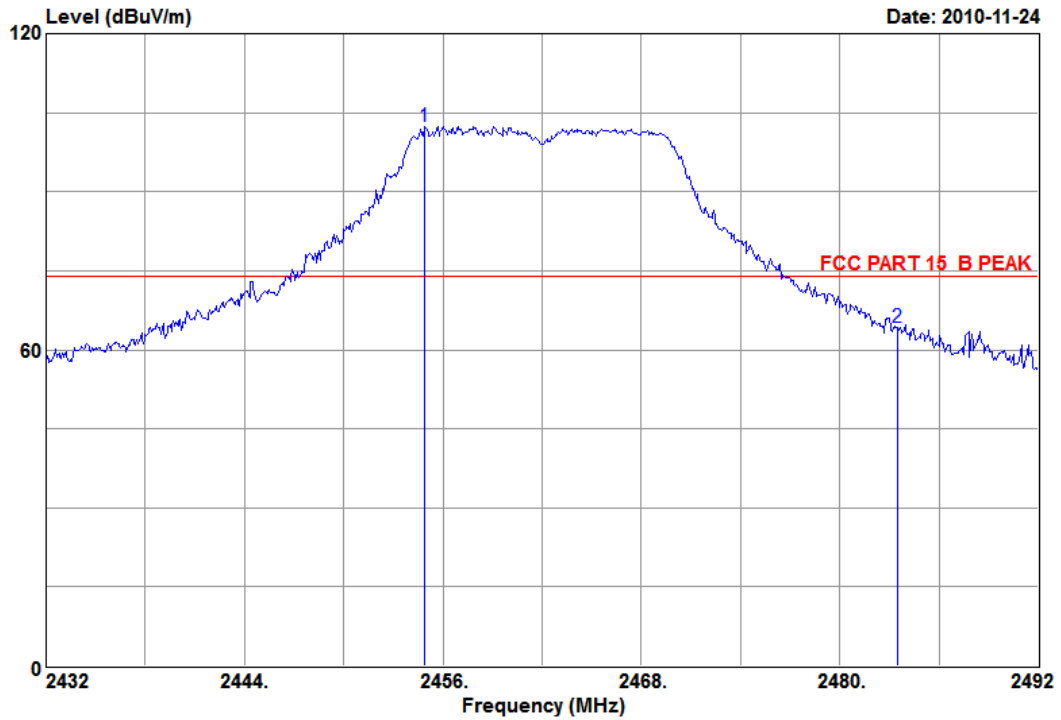
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2467.40	28.71	7.68	97.10	98.30	54.00	-44.30	Average
2 2483.50	28.76	7.73	50.43	51.72	54.00	2.28	Average

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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Data: 27 File: G:\Test Data\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 27
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : VERTICAL
Limit : FCC PART 15 B PEAK	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11g	
Memo : CH11	

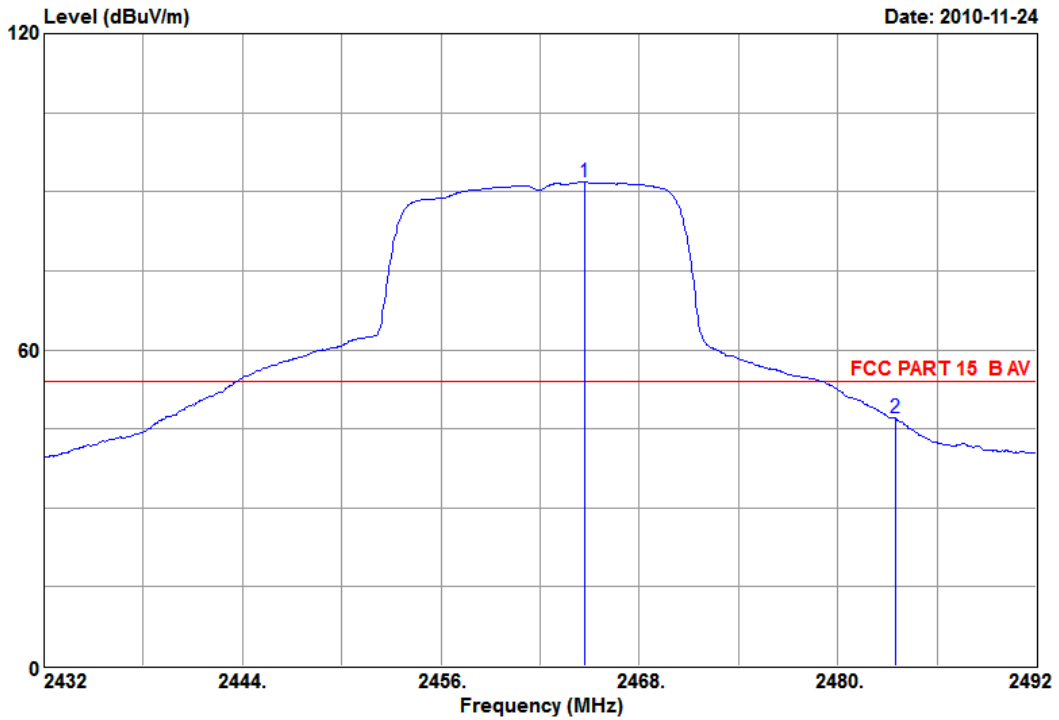
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2454.86	28.71	7.68	101.27	102.47	74.00	-28.47	Peak
2 2483.50	28.76	7.73	62.96	64.25	74.00	9.75	Peak

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\2010\Report\G1010XXX\G1010028\G1010028.EM6 (61)



Site NO. : 3m Semi-Anechoic Chamber	Data NO. : 28
Dis. / Ant. : 3m HORN 3115(62961)	Ant. pol. : VERTICAL
Limit : FCC PART 15 B AV	Engineer : venus
Env. / Ins. : 18.0°C&49%Agilent E4447A	
EUT : TI-Nspir™ Navigator Wireless Cradle	
M/N : TINAVWC2	
Power Rating : 120Vac/60Hz	
Test Mode : TX 802.11g	
Memo : CH11	

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2464.70	28.71	7.68	90.65	91.85	54.00	-37.85	Average
2 2483.50	28.76	7.73	45.70	46.99	54.00	7.01	Average

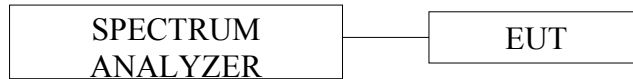
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

5. 6 dB BANDWIDTH MEASUREMENT

5.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2010-01-08	2011-01-07

5.2. Block Diagram of Test Setup



— : SIGNAL LINE

5.3. Specification Limits (§15.247(a)(2))

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

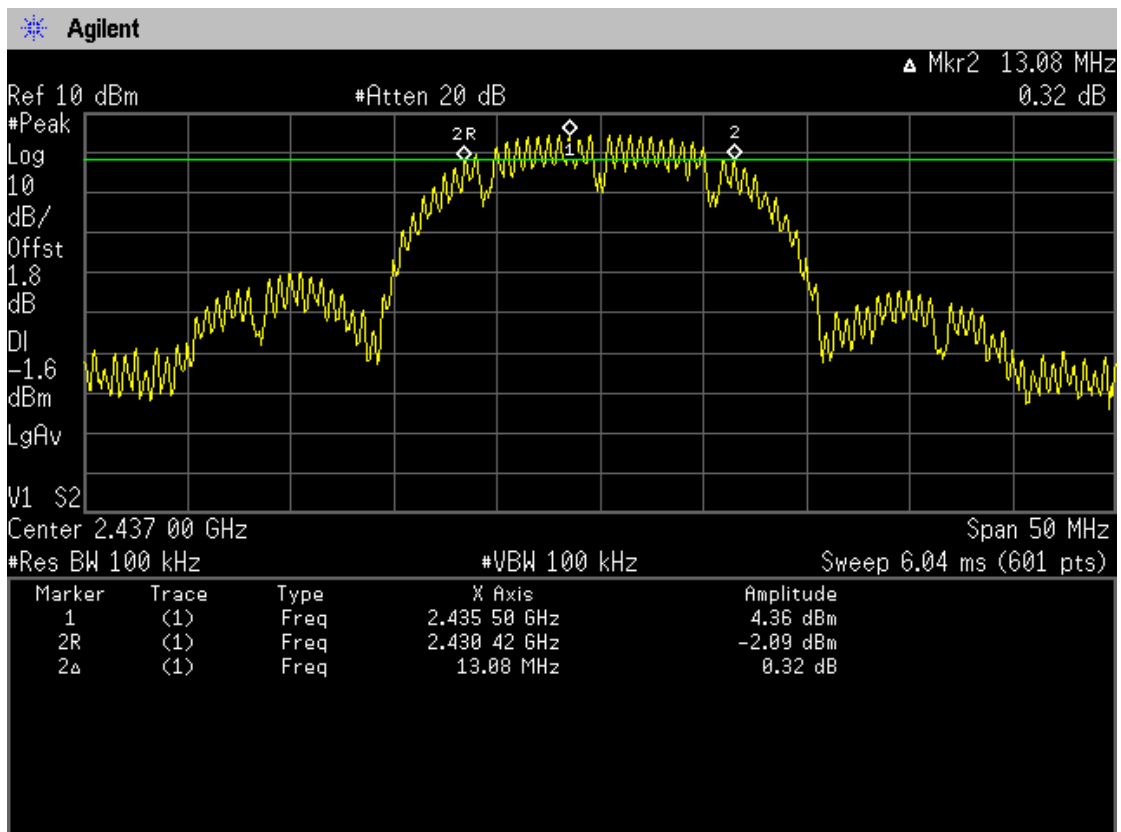
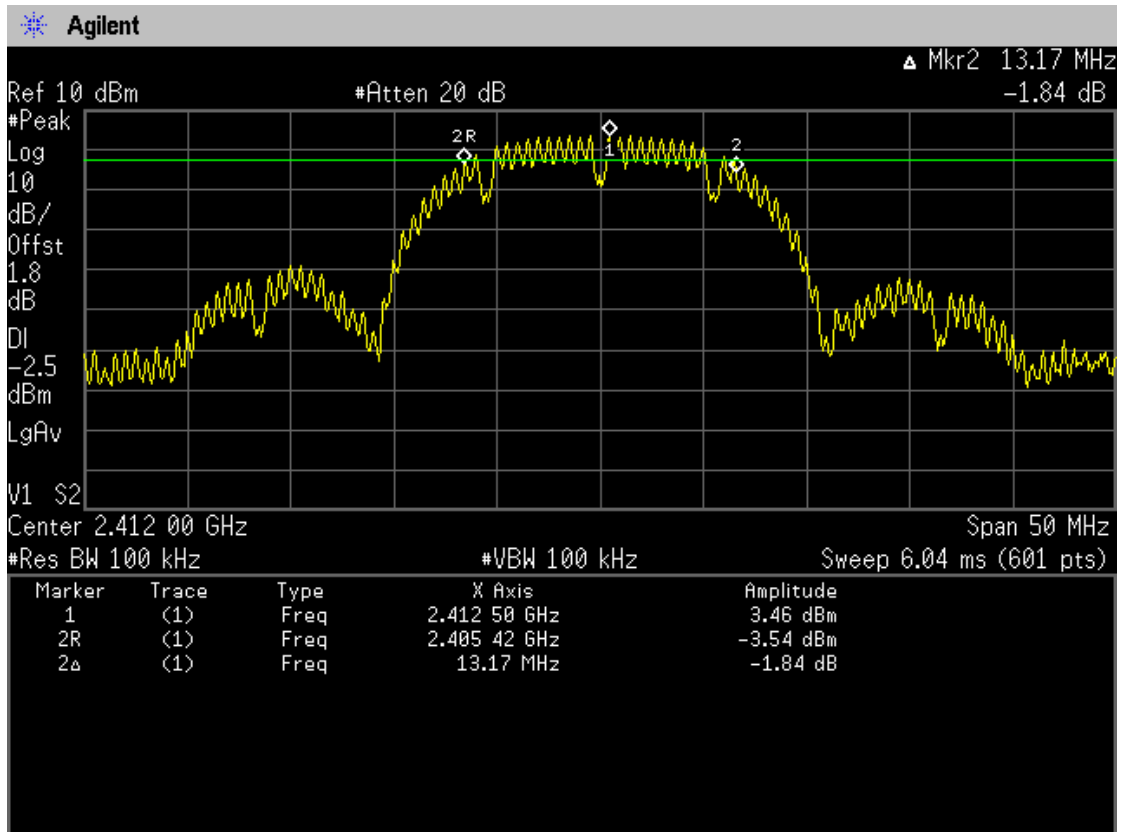
5.4. Test Results

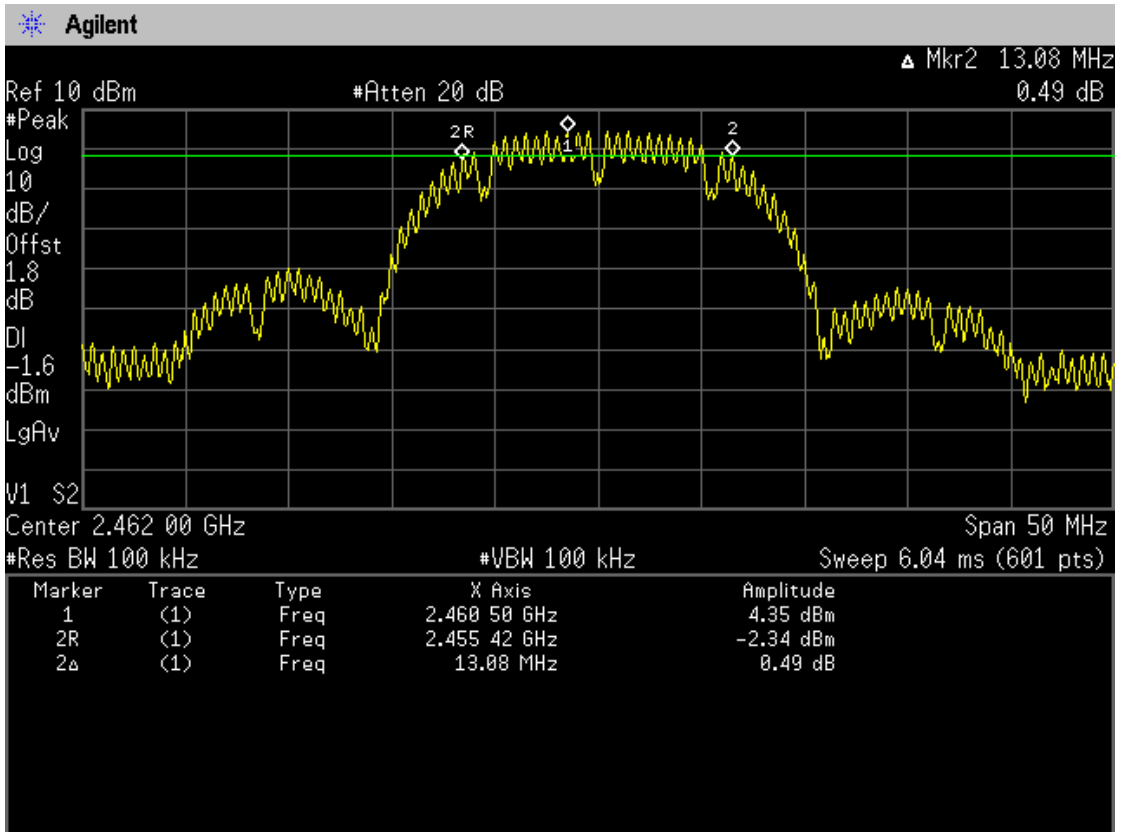
PASSED. All the test results are attached in next pages.

Test Date: Nov.22, 2010 Temperature: 17 Humidity: 40 %

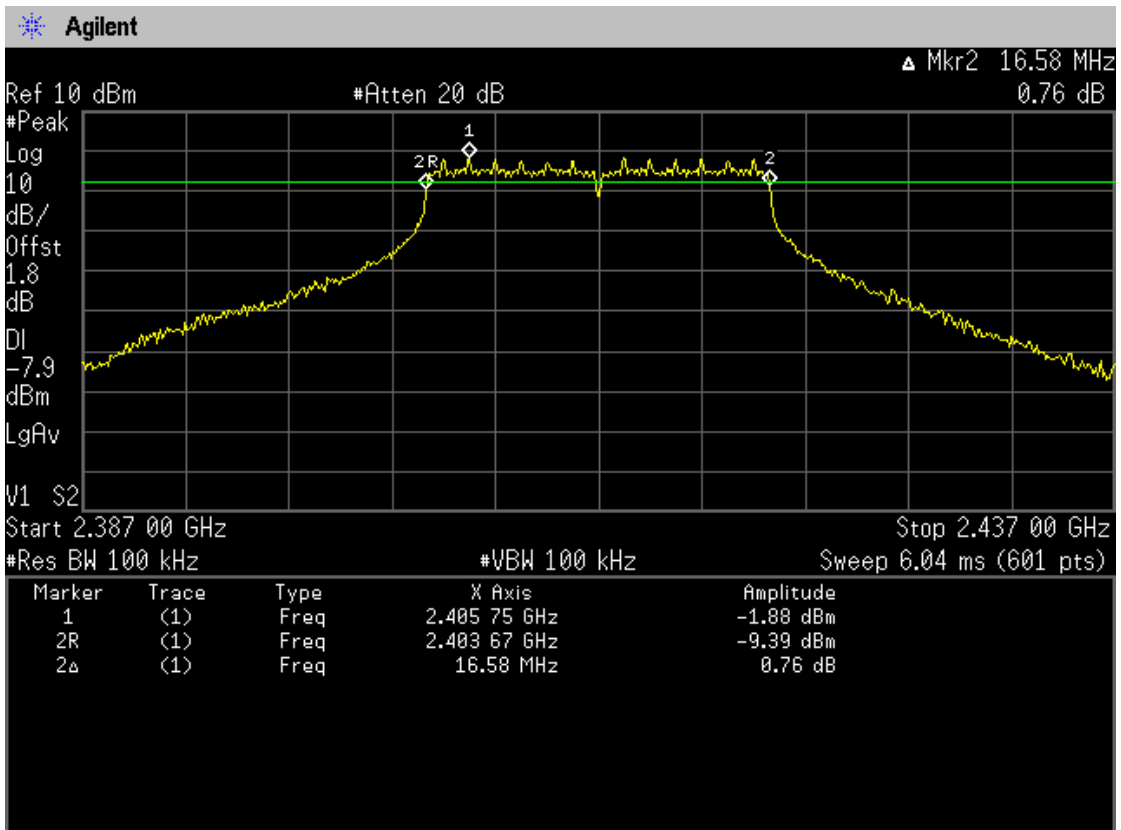
Item	Channel	Test Frequency	6dB Bandwidth
802.11b	1	2412MHz	13.17MHz
	6	2436MHz	13.08MHz
	11	2462MHz	13.08MHz
802.11g	1	2412MHz	16.58MHz
	6	2437MHz	16.50MHz
	11	2462MHz	16.50MHz

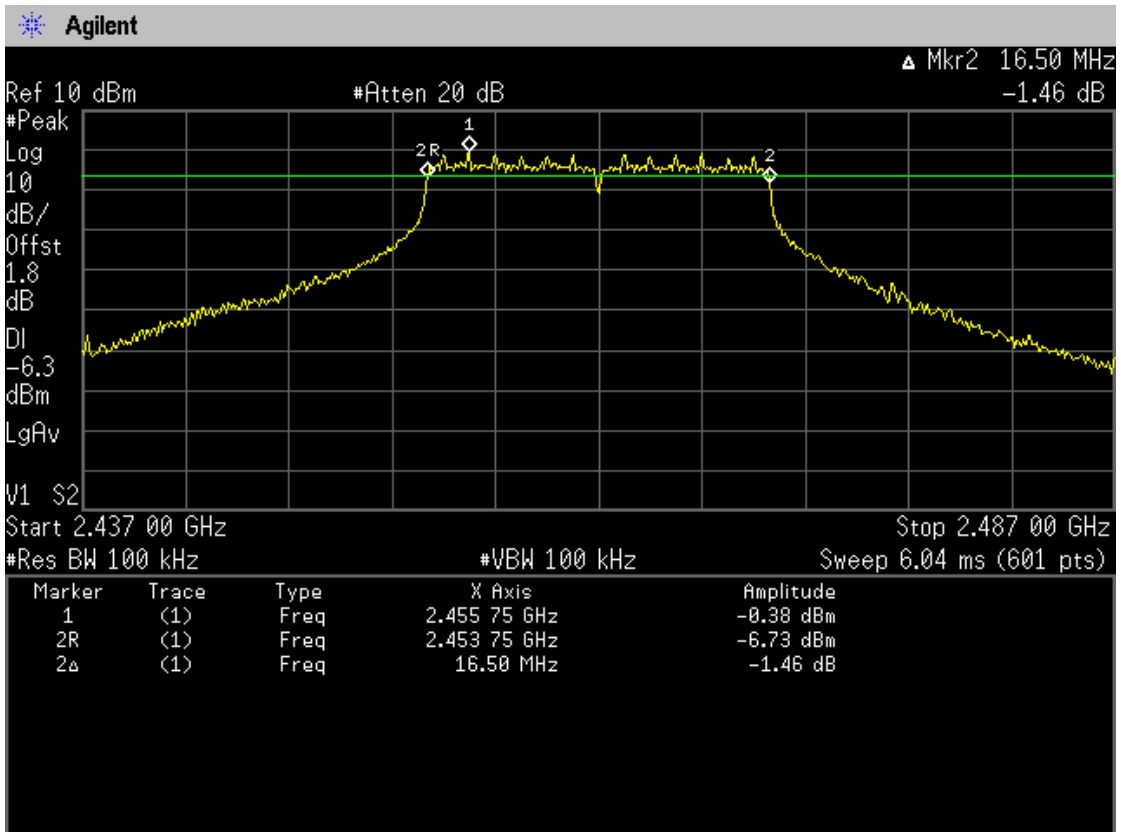
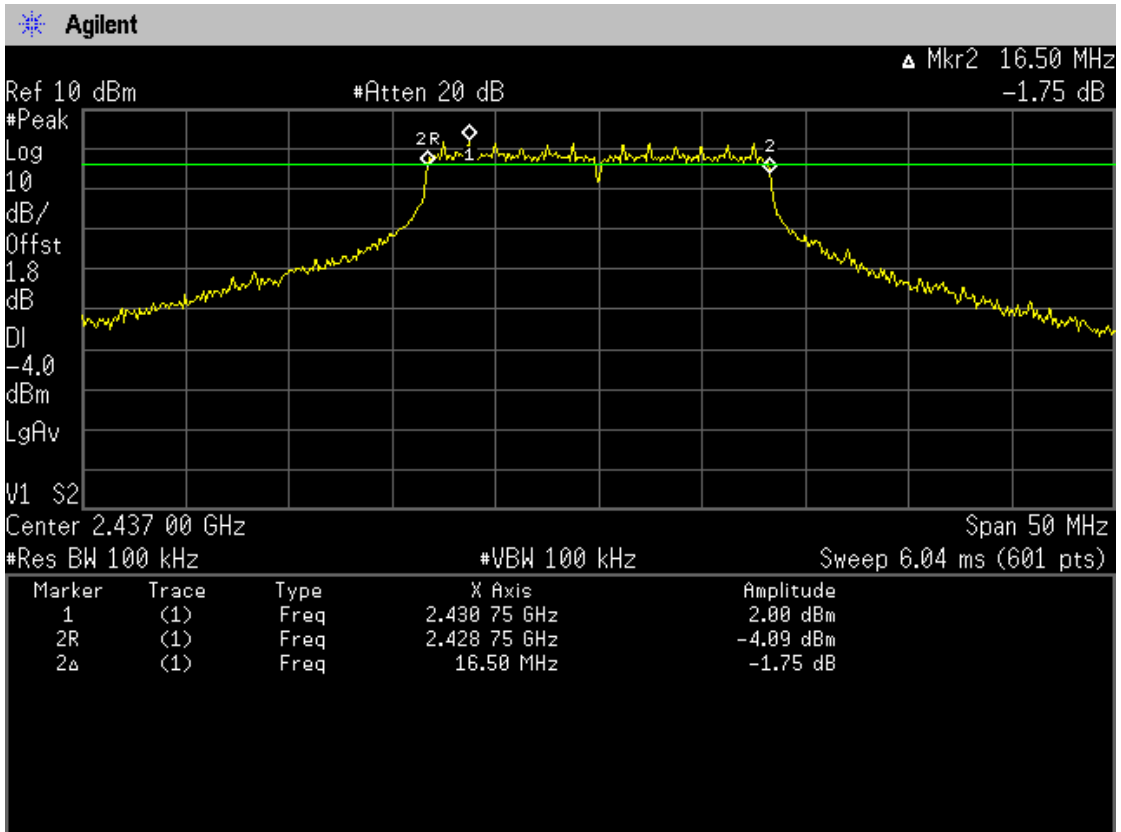
5.4.1.802.11b





5.4.2.802.11g





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	2010-01-05	2011-01-04
2.	Power Sensor	Agilent	N1921A	MY45240521	2010-01-05	2011-01-04

6.2. Block Diagram of Test Setup



— : SIGNAL LINE

6.3. Specification Limits (§15.247(b)(3))

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

6.4. Test Results

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

Test Date: Nov.22, 2010 Test Mode: 802.11b

Test Condition			Peak Power (dBm)		
Temperature (*C)	Voltage (V)	Data rate (Mbps)	CH 1 2412 MHz	CH 6 2437 MHz	CH 11 2462 MHz
25	3.7	1	16.08	16.52	16.75
25	3.7	2	16.04	16.38	16.44
25	3.7	5.5	15.80	15.28	16.31
25	3.7	11	15.43	15.15	16.09

Test Date: Nov.22, 2010 Test Mode: 802.11g

Test Condition			Peak Power (dBm)		
Temperature (*C)	Voltage (V)	Data rate (Mbps)	CH 1 2412 MHz	CH 6 2437 MHz	CH 11 2462 MHz
25	3.7	6	19.43	20.84	20.31
25	3.7	9	19.28	20.58	20.13
25	3.7	12	19.23	20.51	20.09
25	3.7	18	19.14	20.43	20.11
25	3.7	24	19.18	20.34	19.96
25	3.7	36	19.27	20.28	19.94
25	3.7	48	19.16	20.25	19.86
25	3.7	54	19.14	20.27	19.88

7. BAND EDGES MEASUREMENT

7.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2010-01-08	2011-01-07

7.2. Block Diagram of Test Setup

The same as section 5.2.

7.3. Specification Limits (§15.247(d))

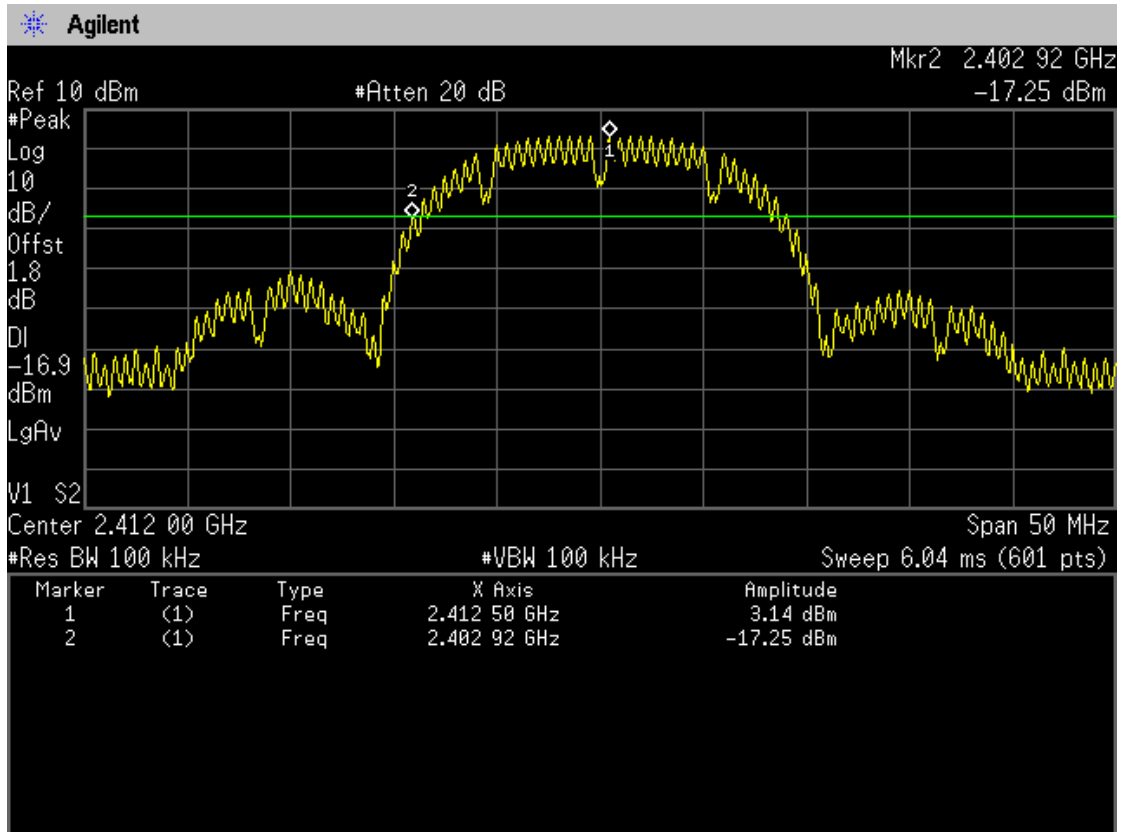
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

7.4. Test Results

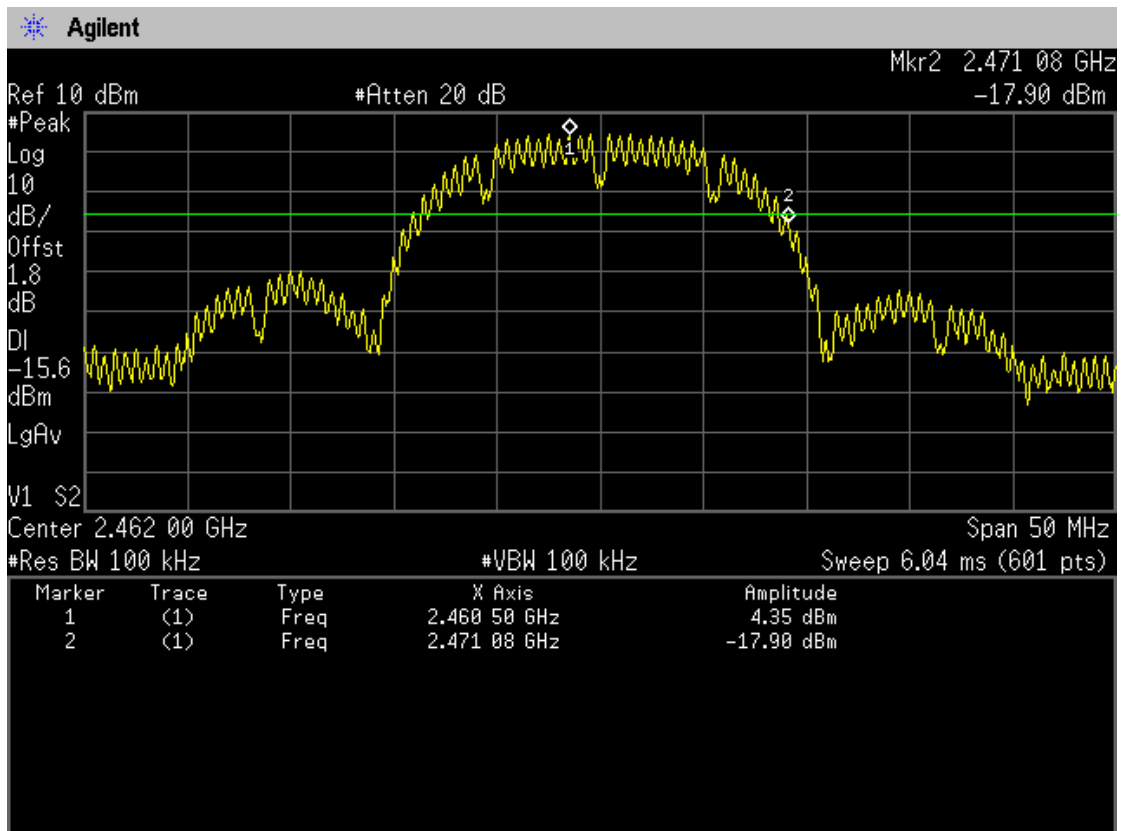
PASSED. The testing data was attached in the next pages.

7.4.1.802.11b

CH1

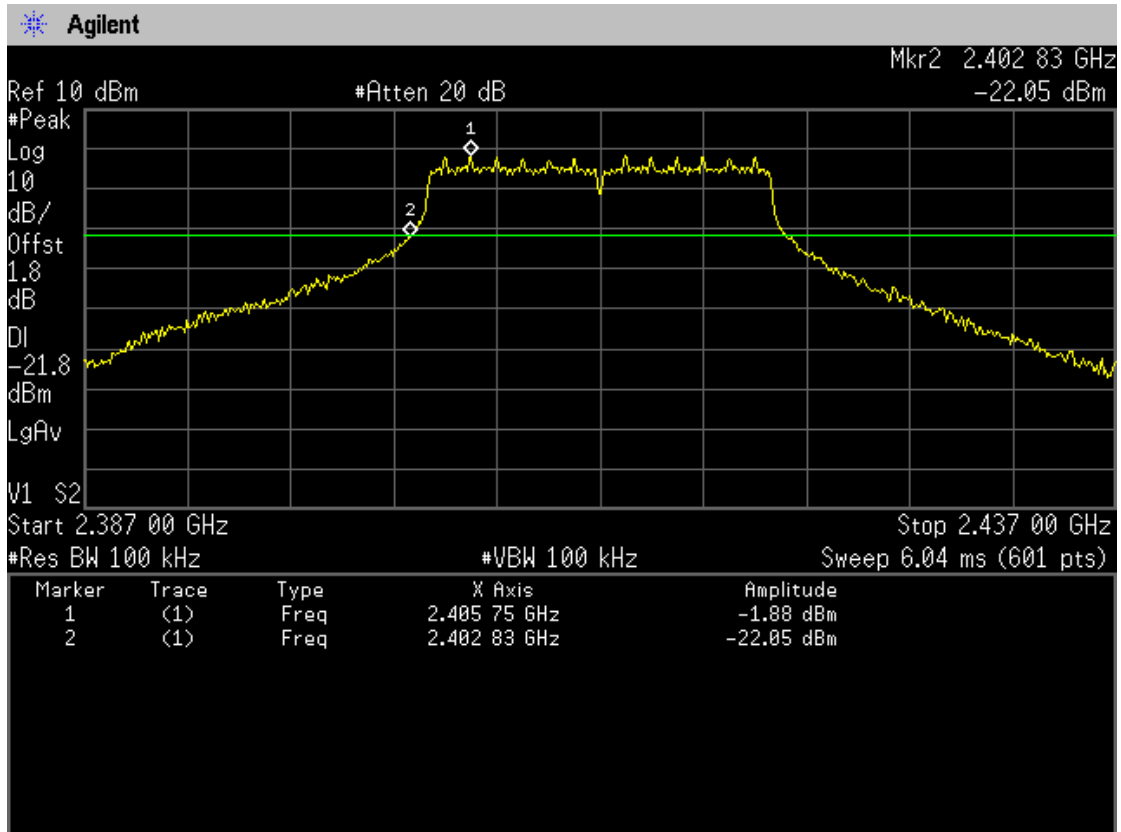


CH11

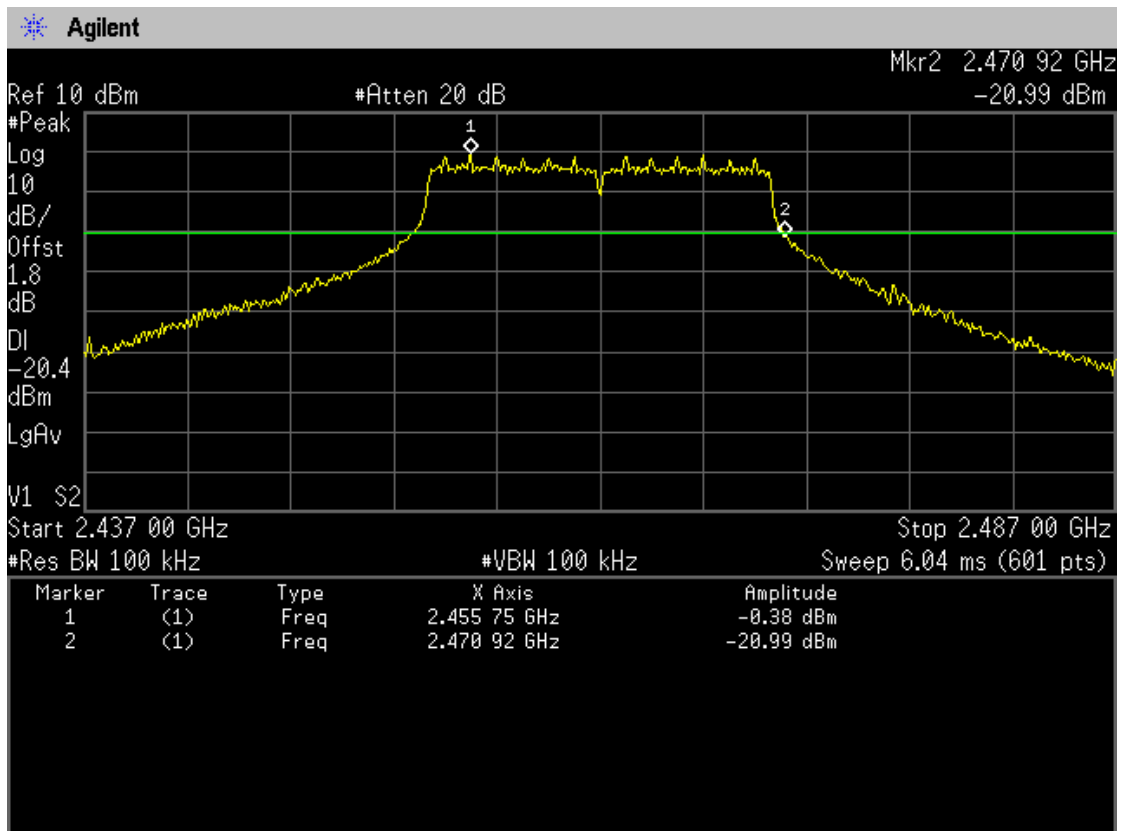


7.4.2.802.11g

CH1



CH11



8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2010-01-08	2011-01-07

8.2. Block Diagram of Test Setup

The same as section 5.2.

8.3. Specification Limits (§15.247(e))

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

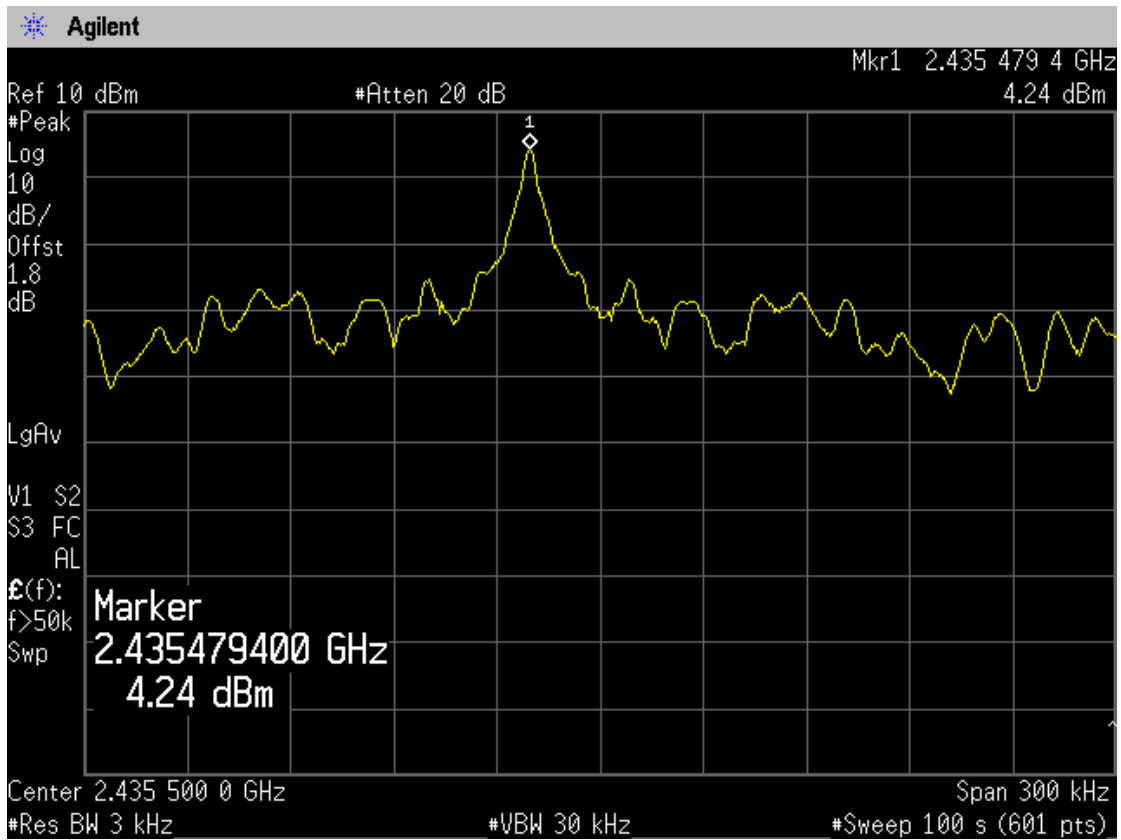
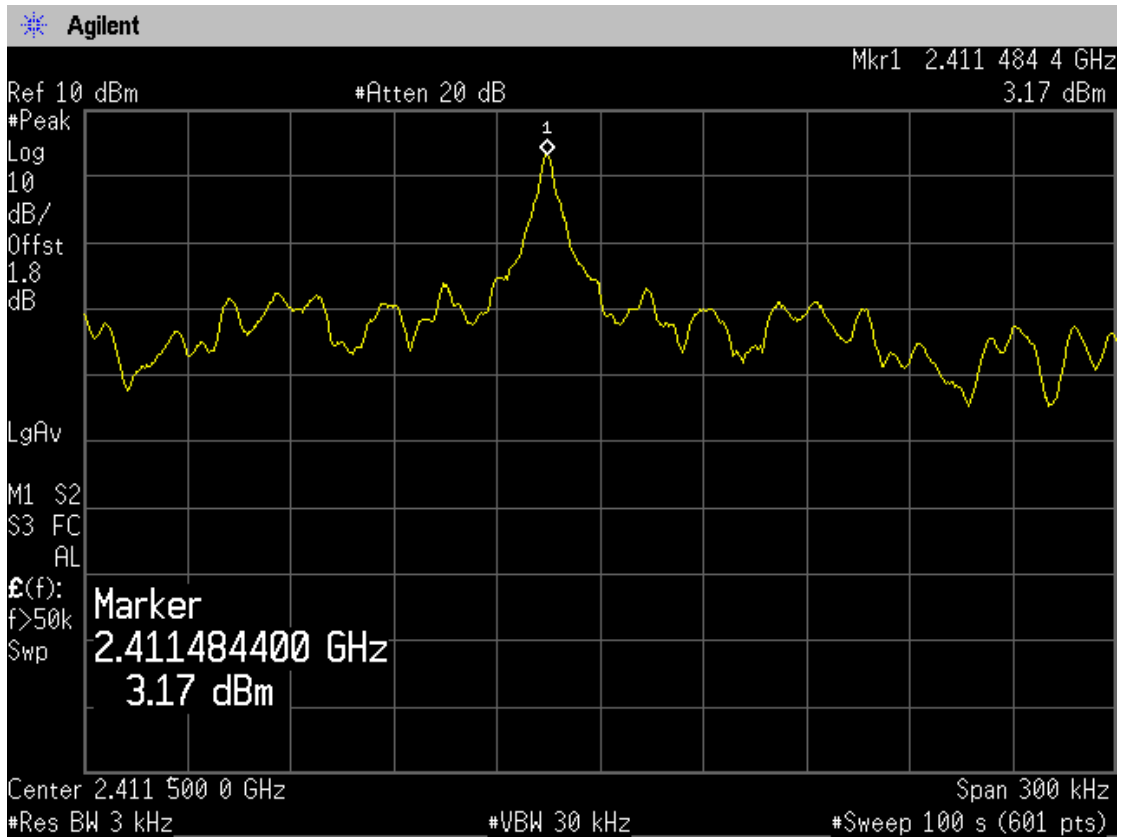
8.4. Test Results

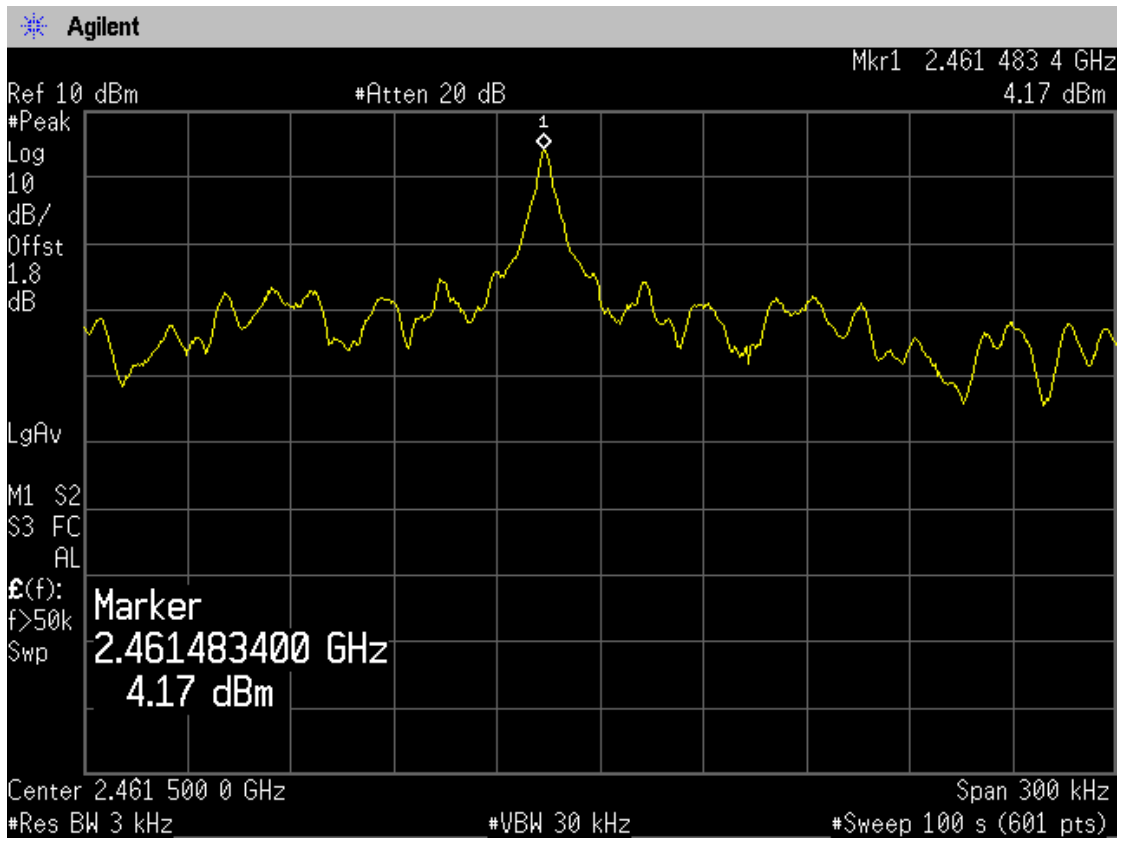
PASSED. All the test results are attached in next page.

Test Date: Nov.22 Temperature: 17 Humidity: 40 %

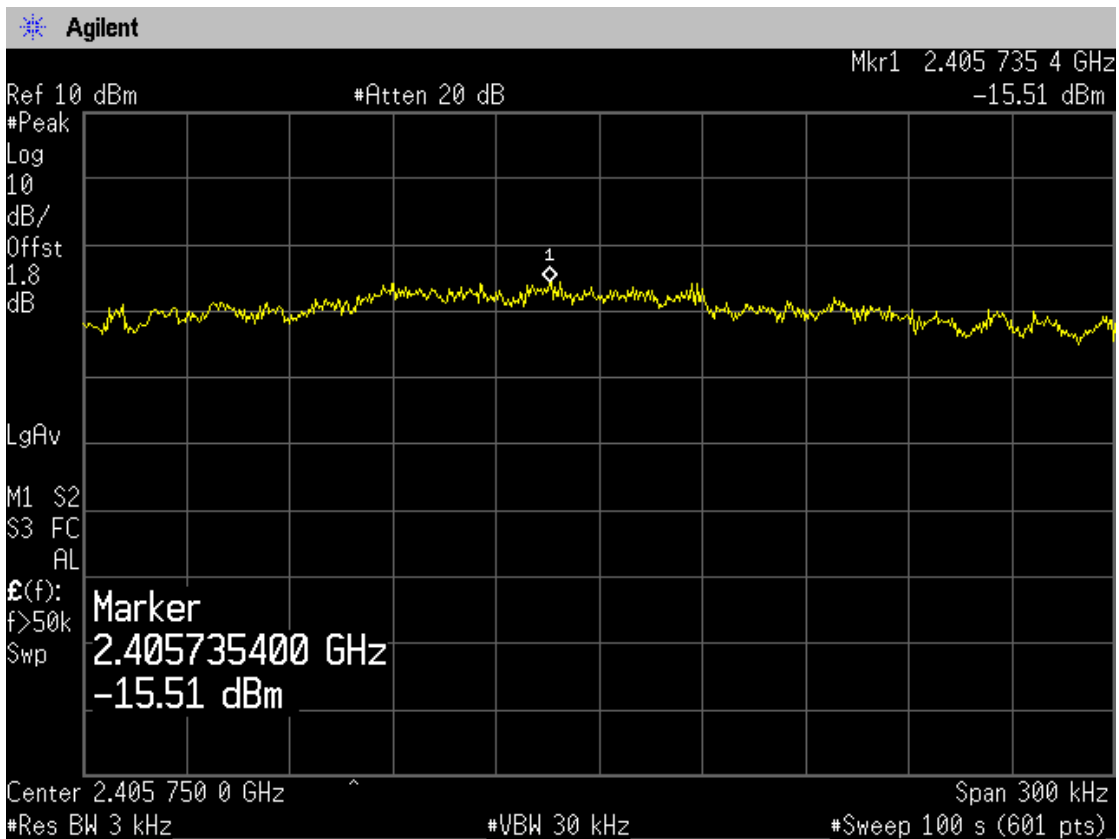
Item	Channel	Frequency(GHz)	Value(dBm)
802.11b	1	2411.4844MHz	3.17
	6	2435.4794MHz	4.24
	11	2461.4834MHz	4.17
802.11g	1	2405.7354 MHz	-15.51
	6	2431.9437MHz	-12.37
	11	2455.6882MHz	-14.23

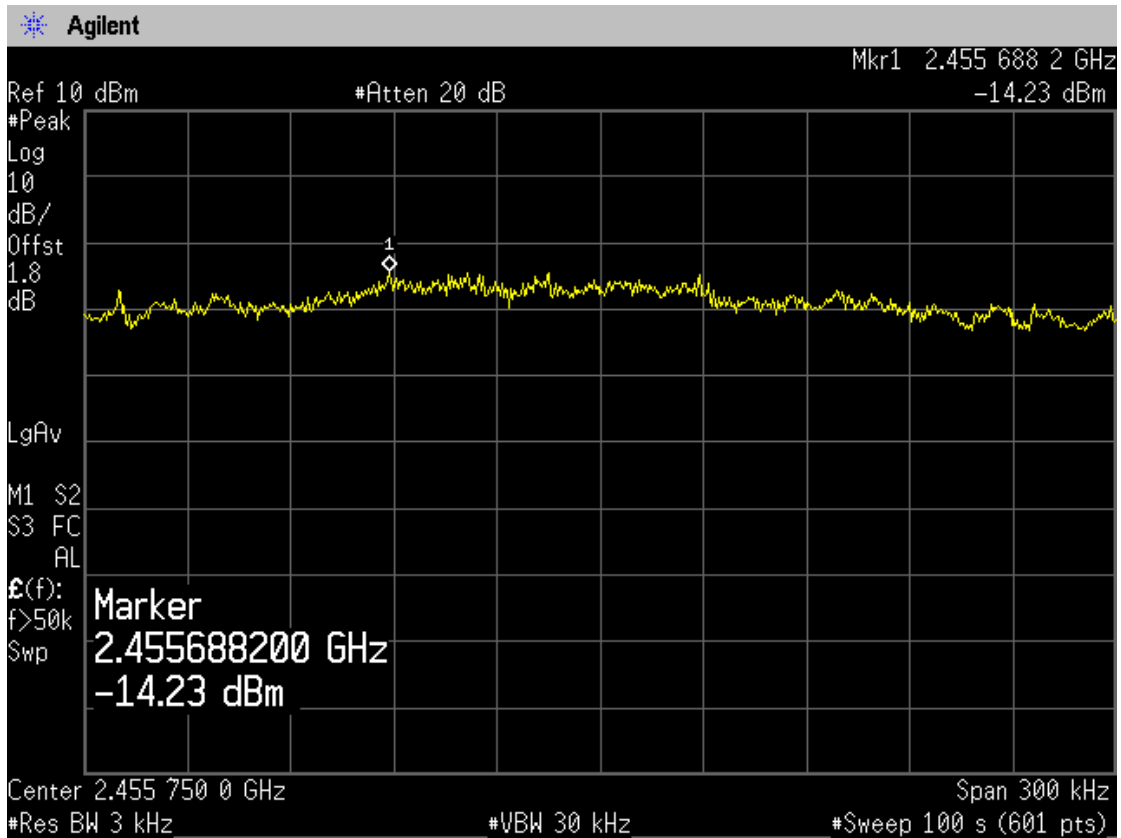
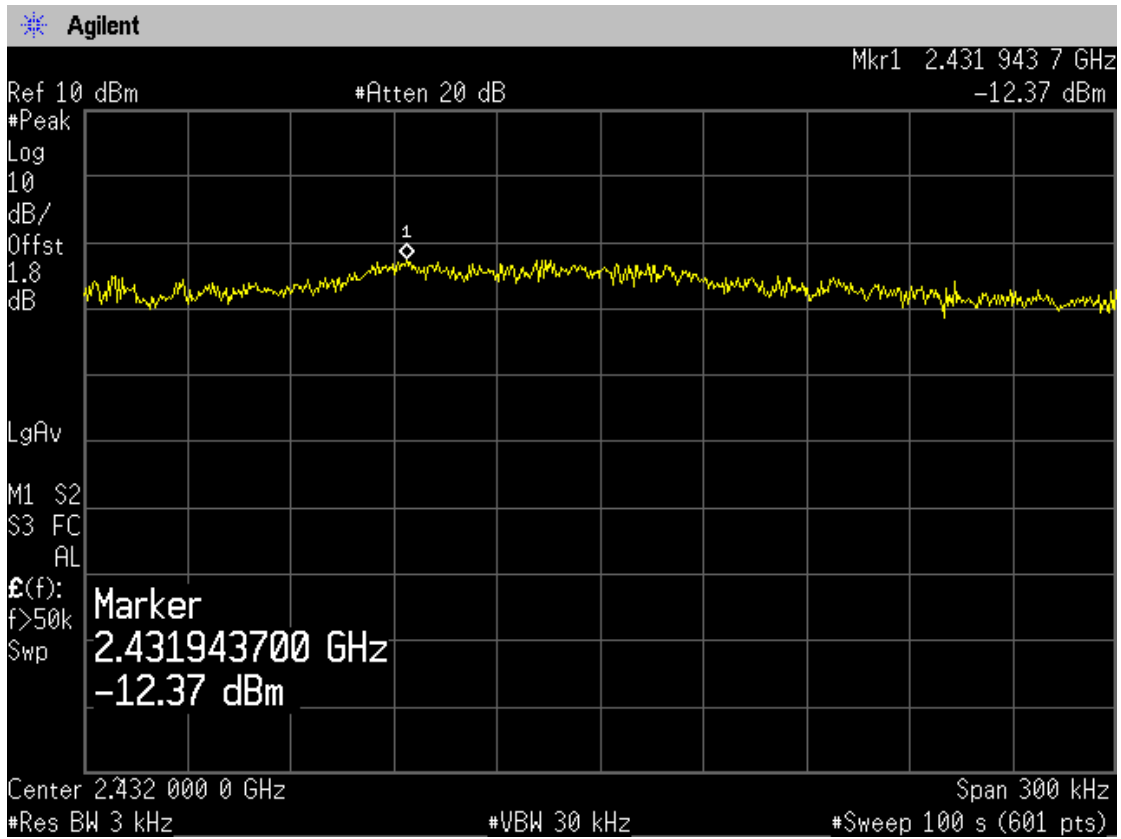
8.4.1.802.11b





8.4.2.802.11g





9. EMISSION LIMITATIONS MEASUREMENT

9.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4447A	MY45300136	2010-01-08	2011-01-07

9.2. Block Diagram of Test Setup

The same as section 5.2.

9.3. Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

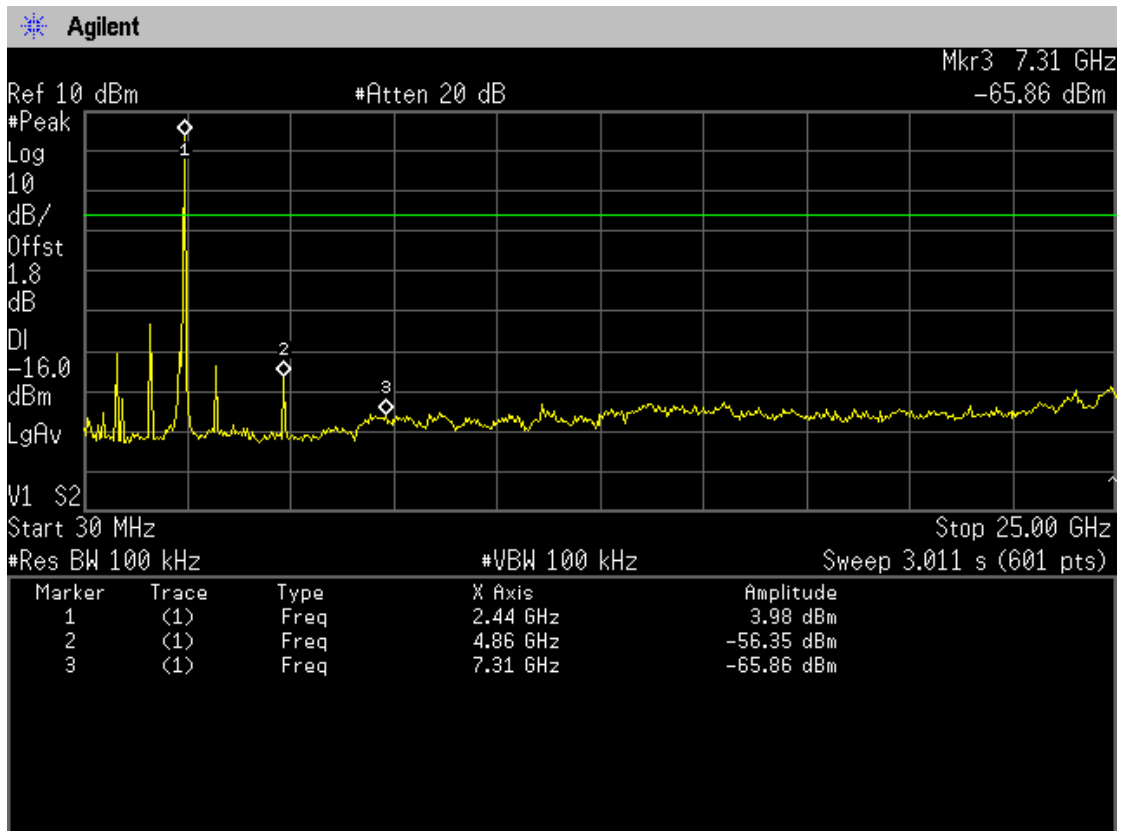
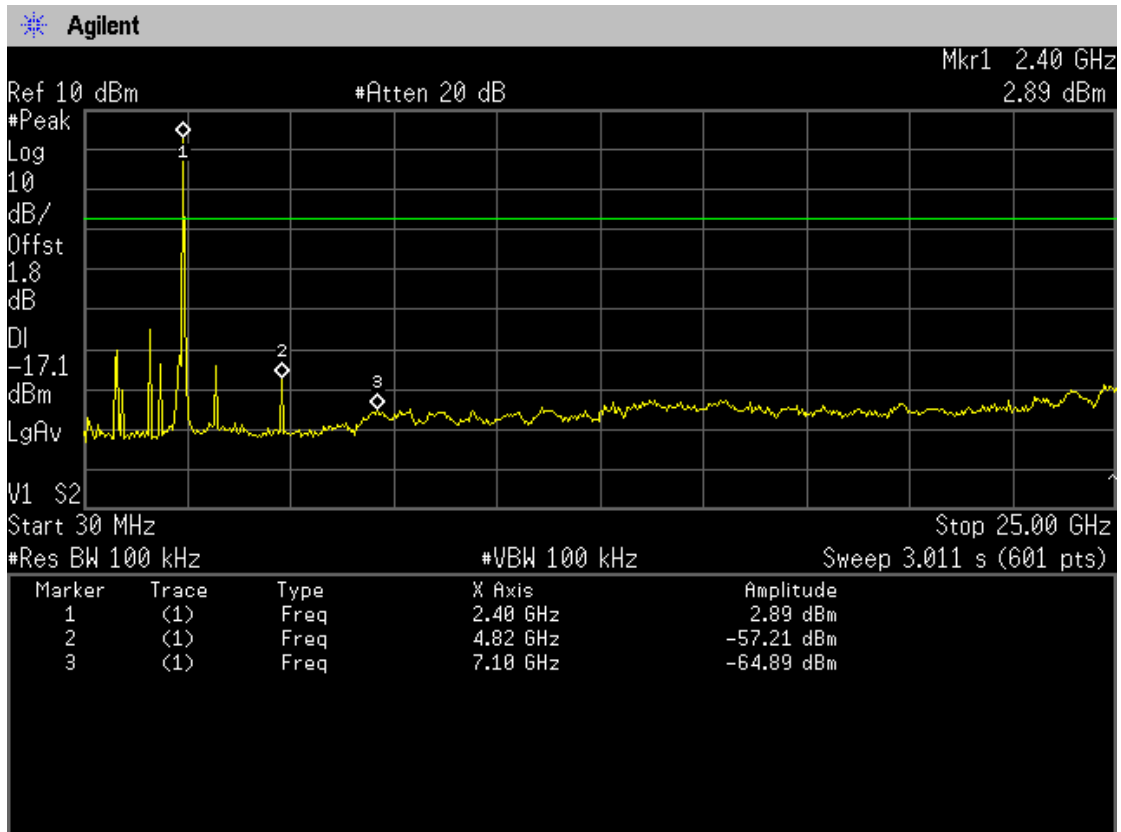
9.4. Test Results

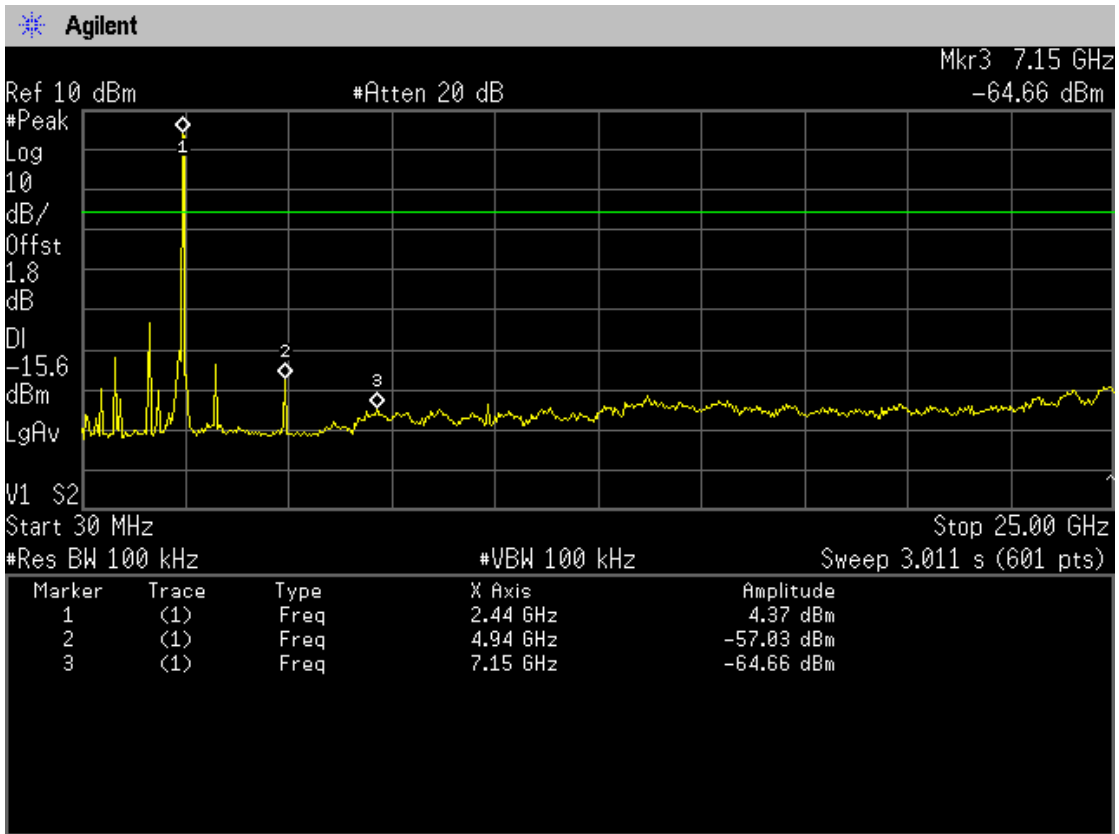
PASSED. All the test results are attached in next pages.

Test Date: Nov.22, 2010 Temperature: 17 Humidity: 40 %

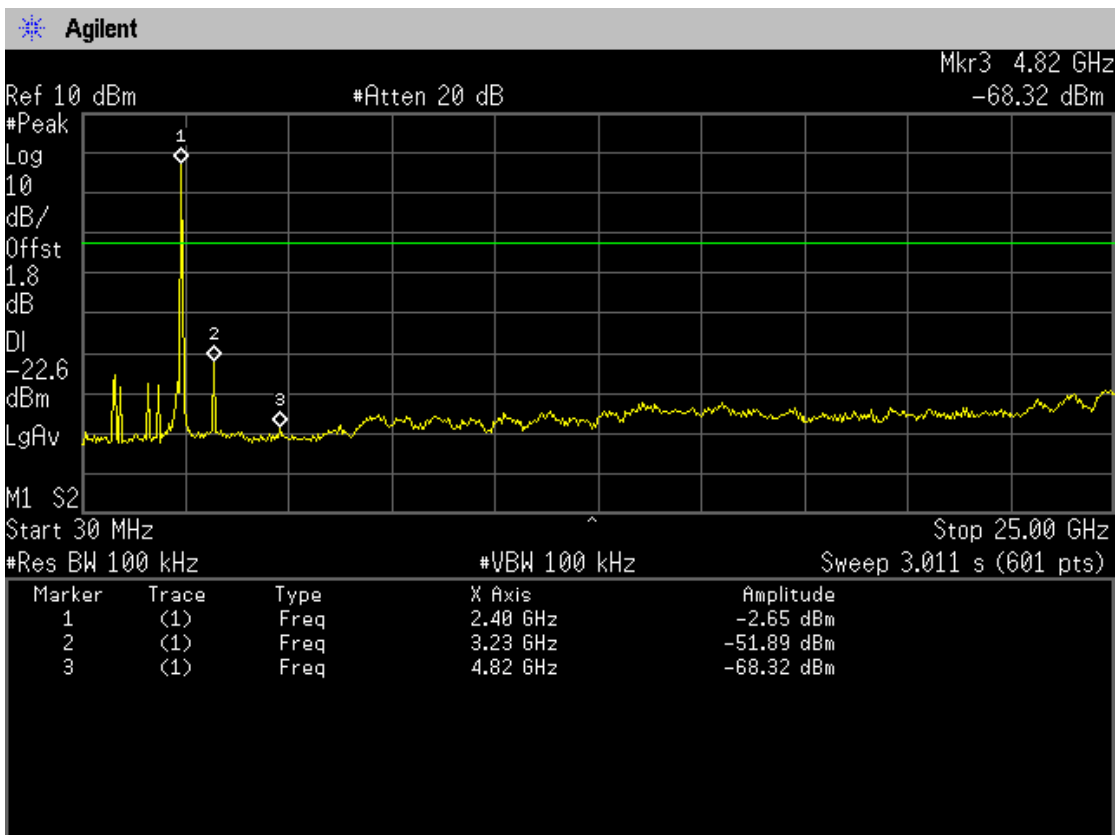
Item	Channel	Frequency(GHz)	Amplitude(dBm)
802.11b	1	2.4	2.89
		4.82	-57.21
		7.1	-64.89
	6	2.44	3.98
		4.86	-56.35
		7.31	-65.86
	11	2.44	4.37
		4.94	-57.03
		7.15	-64.66
802.11g	1	2.40	-2.65
		3.23	-51.89
		4.82	-68.32
	6	2.44	-1.40
		3.23	-48.15
		4.86	-66.17
	11	2.44	-2.69
		3.28	-48.33
		4.94	-69.30

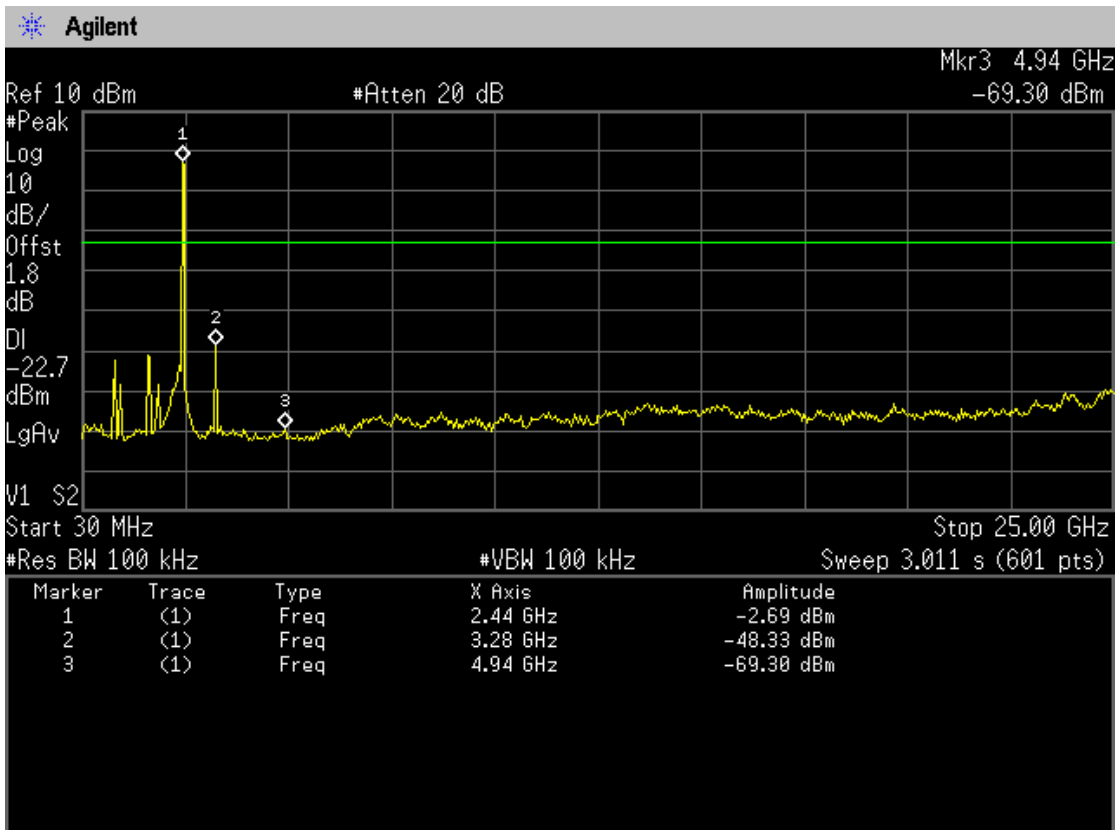
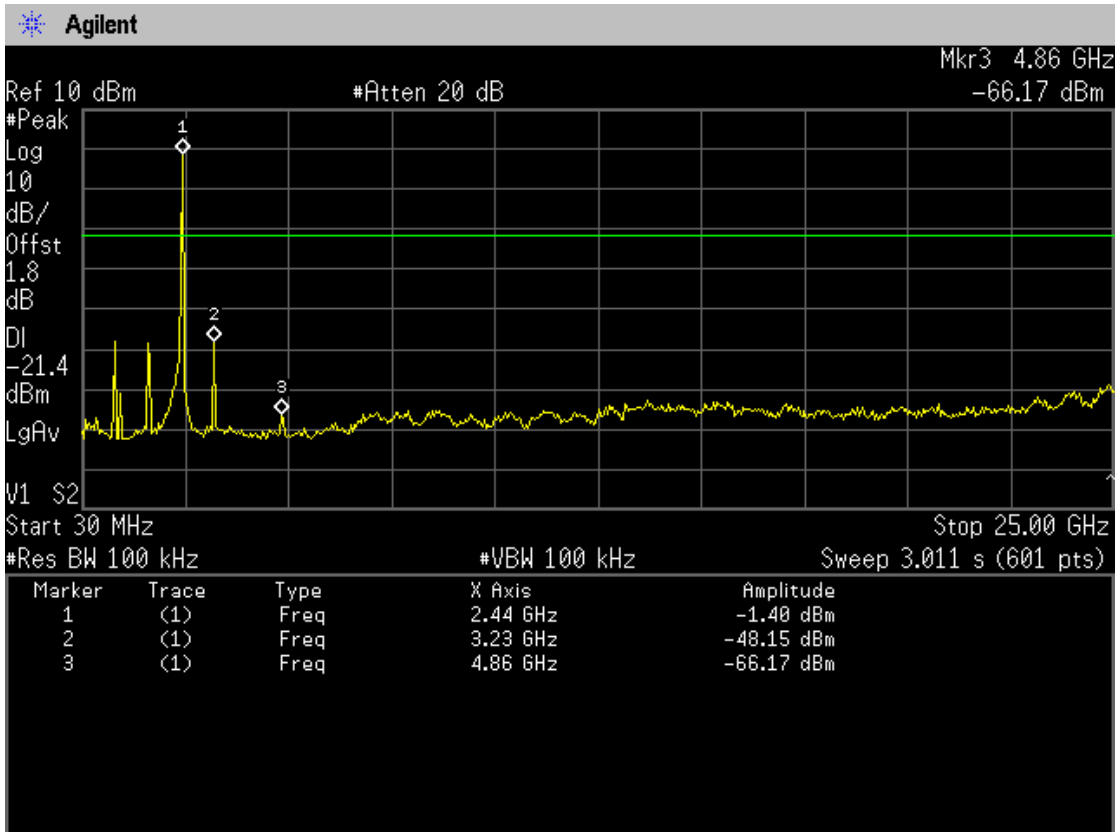
9.4.1.802.11b





9.4.2.For 802.11g





10. MPE CALCULATIONS

Systems operating under the provision of 47 CFR 1.1307(b)(1) shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the FCC guidelines.

The MPE calculation for this exposure is shown below.

Using the Antennas with highest output power:

The peak radiated output power (EIRP) is calculated as follows:

Frequency (GHz)	Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (P+G) (dBm)	EIRP (mw)
2.4	20.84	4.65	25.49	354.00

EIRP = P + G Where P = Power input to the antenna (mW). G = Power gain of the antenna (dBi)

The numeric gain (G) of the antenna with a gain specified in dB is determined by:

Frequency (GHz)	Antenna Gain (dBi)	Numeric Antenna Gain
2.4	4.65	2.92

$G = \text{Log-1 (dB antenna gain/10)}$

Power density at the specific separation:

Frequency (GHz)	Numeric Power Gain of the Antenna (G)	Power input to the antenna (P) (mW)	Maximum Power Spectral Density $S=PG/(4\pi R^2)$ (mW/cm ²)	Maximum Power Spectral Density Limit (mW/cm ²)
2.4	2.92	121.34	0.07	1.00

$S = PG/(4R^2\pi)$

S = Maximum power density (mW/cm²)

P = Power input to the antenna (mW).

G = Numeric power gain of the antenna

R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The maximum permissible exposure (MPE) for the general population is 1mW/cm² .

The power density at 20cm does not exceed the 1mW/cm² limit. Therefore, the exposure condition is compliant with FCC rules.

11. DEVIATION TO TEST SPECIFICATIONS

【NONE】