

CFR 47 FCC Part 15.247

TEST REPORT

Product : **802.11n/b/g USB Adaptor**
Trade Name : N/A
Model Number : NSU-11NP10-2
FCC ID : WVCNSU-11NP10

Prepared for

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Remark :

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The test results in the report only to the tested sample.

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Statement of Compliance

Applicant: SkyVertex Co., Ltd.
Product: 802.11n/b/g USB Adaptor
Model No.: NSU-11NP10-2
Tested Power Supply: From PC
Date of Final Test: Dec. 10, 2009

Configuration of Measurements and Standards Used :

FCC Rules and Regulations Part 15 Subpart C

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.

2. The testing report shall not be reproduced expect in full, without the written approval of IETC

Report Issued: 2010/02/10

Project Engineer: *Anya Lee*
Anya Lee

Approved: *Jerry Liu*
Jerry Liu

1 General Information

1.1 Description of Equipment Under Test

Product : 802.11n/b/g USB Adaptor
Model Number : NSU-11NP10-2
Applicant : **SkyVertex Co., Ltd.**
3F, No. 168, S2, Chung-Bei Rd., Chung-Li City, Taoyuan 320, Taiwan
Power Supply : From PC
Operating Frequency : 2412MHz ~ 2462MHz
Channel Number : 11 channels
Type of Modulation : DSSS; OFDM
Antenna description : This device uses Dipole antenna.

Antenna Gain	:	2dBi
Connector type	:	SMA-Male-RP

Date of Receipt Sample : Nov. 11, 2009

Date of Test : Dec. 10, 2009

Product Information : **Data Cable:**
USB Cable: Non-shielded, Detachable, 1.05m, without core

Additional Description : 1.) The test model is “**NSU-11NP10-2**” and included in this report.
2.) For more detail specification about EUT, please refer to the user’s manual.

WIRELESS Module Information (Ralink RT3070)

Features

- CMOS Technology with RF, Baseband, and MAC Integrated.
- 1T1R Mode with 150Mbps PHY Rate for Both Transmit and Receiving.
- Legacy and High Throughput Modes
- 20MHz/40MHz Bandwidth
- Reverse Direction Grant Data Flow and Frame Aggregation
- WEP 64/128, WPA, WPA2, TKIP, AES
- QoS-WMM, WMM-PS
- WPS, PIN, PBC
- Multiple BSSID Support
- USB 2.0
- International Regulation-802.11d + h
- Cisco CCX Support
- Bluetooth Co-existence
- Low Power with Advanced Power Management
- Operating Systems- Windows XP 32/64, 2000, Vista 32/64, Linux, Macintosh

1.2 Table for Carrier Frequencies

802.11b/ 802.11g / 802.11n (HT20)

CH No.	1	2	3	4	5	6	7	8	9	10	11
CF (MHz)	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462

802.11n (HT40)

CH No.	3	4	5	6	7	8	9
CF (MHz)	2422	2427	2432	2437	2442	2447	2452

1.3 Test Facility

- Site Description** : ☑RF Test Room ☑OATS 2
- Name of Firm** : Interocean EMC Technology Corp.
- Company web** : <http://www.ietc.com.tw>
- Site 1, 2 Location** : No.5-2, Lin 1, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei County, Taiwan, R.O.C.
- Site 3, 4 Location** : No. 12, Ruei-Shu Valley, Ruei-Ping Tsun, Lin-Kou Hsiang, Taipei County, Taiwan, R.O.C.
- Site Filing** :
- Federal Communication Commissions – USA
Registration No.: 96399 (OATS 1 & 2)
Registration No.: 518958 (OATS 3 & 4)
Designation No.: TW1020
 - Voluntary Control Council for Interference by Information Technology Equipment (VCCI) – Japan
Member No.: 1349
Registration No. (Conducted Room): C-1094
Registration No. (Conducted Room): T-1562
Registration No. (OATS 1): R-1040
Registration No. (OATS 2): R-1041
 - Industry Canada (IC)
OUR FILE: 46405-4437 Submission: 130946
Registration No. (OATS 1): 4437A-1
Registration No. (OATS 2): 4437A-2
Registration No. (OATS 3): 4437A-3
Registration No. (OATS 4): 4437A-4
 - Japan Electrical Safety & Environment Technology Laboratories (JET)
Registration No.: 04S03-01
- Site Accreditation** :
- Bureau of Standards and Metrology and Inspection (BSMI) – Taiwan, R.O.C.
Accreditation No.:
SL2-IN-E-0026 for CNS 13438 / CISPR 22
SL2-R1-E-0026 for CNS 13439 / CISPR 13
SL2-R2-E-0026 for CNS 13439 / CISPR 13
SL2-A1-E-0026 for CNS 13783-1 / CISPR 14-1
SL2-L1-E-0026 for CNS 14115 / CISPR 15
 - Taiwan Accreditation Foundation (TAF)
Accreditation No.: 1113
 - TÜV NORD
Certificate No: TNTW0801R-02



1.4 Test Equipment

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSP30	100002	2010/12/08
Spectrum Analyzer	R&S	FSP40	100478	2010/04/15
Preamplifier	Agilent	8449B	3008A01434	2010/04/01
Preamplifier	Agilent	83050A	3950A00225	2010/08/10
Preamplifier	SCHAFFNER	CA30100	2	2010/11/03
Horn Antenna	COM-POWER	AH-118	10081	2010/05/12
Horn Antenna	Schwarzbeck	BBHA 9120	9120D-583	2011/02/09
Horn Antenna	Schwarzbeck	BBHA 9170	213	2010/06/08
Wide Bandwidth Sensor	Anritsu	MA2491A	728133	2010/11/13
Power Meter	Anritsu	ML2495A	736010	2010/11/13
Temp & Humidity chamber	GIAN FORCE	GTH-150-40-2P-U	MAA0305-012	2011/05/07

Note: The above equipments are within the valid calibration period.

1.5 Summary of Measurement

Report Clause	Test Parameter	Reference Document CFR47 Part15	Results
2	RF Radiated spurious emission test	§15.205, 15.209	Pass
3	RF Conducted spurious emission	§15.247(c)	Pass
4	Maximum Peak output power test	§15.247(b)	Pass
5	Power test of Data Rate	§15.247(b)	Pass
6	6dB Bandwidth	§15.247(a)(2)	Pass
7	Power spectral density	§15.247(e)	Pass
8	Emission on the Band Edge test	§15.247(d)	Pass
9	AC Power Line Conducted Emission test	§15.247(b)	Pass

1.6 Justification

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of the frequency band were all arrive limit requirement, thus we evaluate the EUT pass the specified test.

2 RF Radiated spurious emission test

2.1 Limit

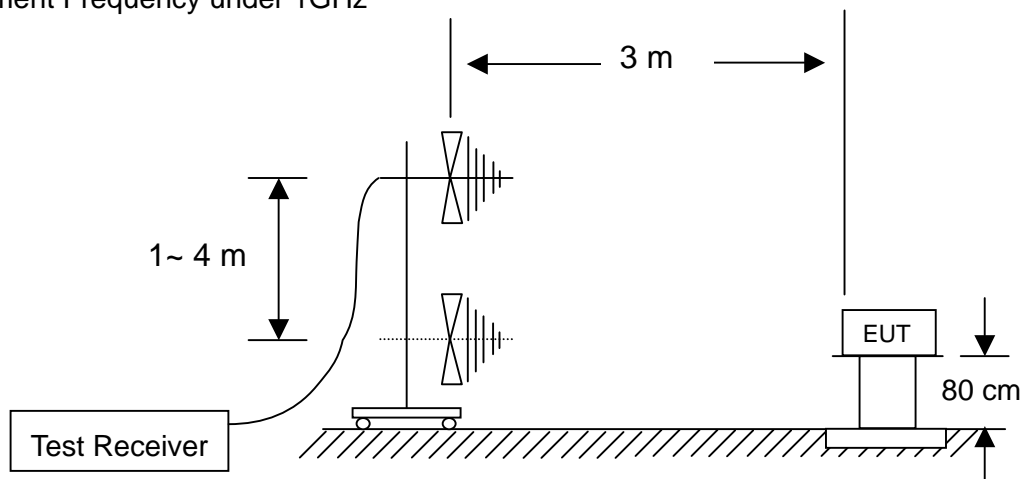
For intentional radiator, the radiated emission shall comply with §15.209(a).

For intentional radiators, according to §15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with §15.247 (c)

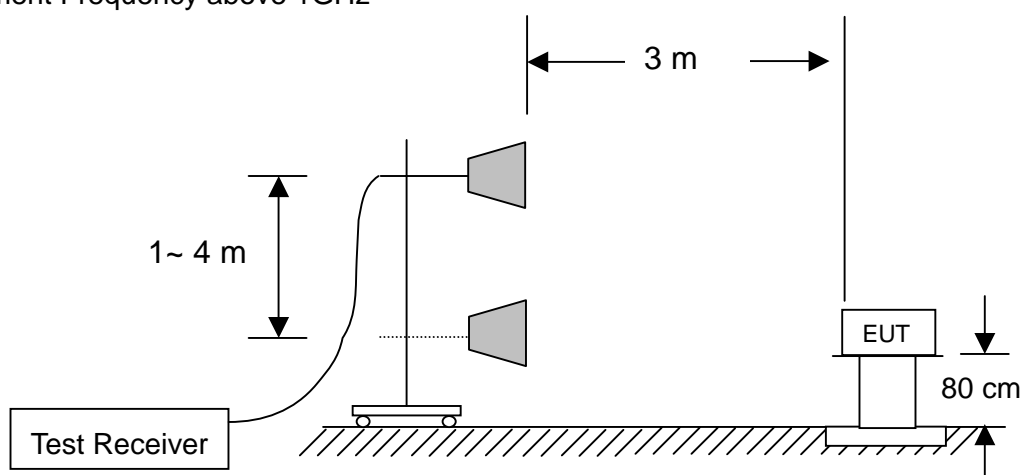
Frequency (MHz)	Field strength dB(μ V/m)	Measurement distance (meters)
1.705~30.0	29.5	30
30 ~ 88	40	3
88~216	43.5	3
216~960	46	3
Above 960	54	3

2.2 Configuration of Measurement

Measurement Frequency under 1GHz



Measurement Frequency above 1GHz



2.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer set as below: For frequency range from 30MHz to 1GHz: RBW=100kHz or greater. For frequencies above 1GHz: set RBW=VBW=1MHz for peak detector and RBW=1MHz, VBW=10Hz for average detector.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and whole system. During the test, all cables were arranged to present worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

2.4 Test Result

PASS.

The final test data is shown as following pages.

Radiated spurious emission

Test Environment

Ambient temperature : 20.0°C

Relative humidity : 61%

Radiated Emission below 1GHz

After verifying 802.11b/g/n, the worse case was found at 802.11b CH1 mode, the data will present on report.

2.4GHz								
Worst case: 802.11b CH1								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
125.000	H	28.90	13.34	14.03	29.59	43.50	-13.91	QP
216.026	H	30.20	13.33	18.51	35.38	43.50	-8.12	QP
250.000	H	28.20	13.43	19.22	33.99	46.00	-12.01	QP
336.000	H	32.00	13.04	16.27	35.23	46.00	-10.77	QP
375.000	H	31.50	12.66	17.77	36.61	46.00	-9.39	QP
500.100	H	27.10	12.63	20.02	34.49	46.00	-11.51	QP
125.000	V	32.60	13.34	14.03	33.29	43.50	-10.21	QP
216.000	V	29.50	13.33	18.51	34.68	46.00	-11.32	QP
250.000	V	29.00	13.43	19.22	34.79	46.00	-11.21	QP
336.000	V	32.30	13.04	16.27	35.53	46.00	-10.47	QP
375.000	V	27.30	12.66	17.77	32.41	46.00	-13.59	QP
501.100	V	26.00	12.64	19.64	33.00	46.00	-13.00	QP

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

The present spurious only show those points are above noise level and the frequency range test from 30MHz to 1GHz.

Radiated spurious emission

Radiated Emission above 1GHz

2.4GHz

802.11b CH1								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4824	H	42.19	36.30	37.50	43.39	54	-10.61	PK
*7236	H	43.31	36.55	42.94	49.70	54	-4.30	PK
*9648	H	41.12	36.93	46.04	50.23	54	-3.77	PK
*12060	H	41.17	36.54	46.13	50.76	54	-3.24	PK
*14472	H	51.14	61.11	52.04	42.07	54	-11.93	PK
*16884	H	52.69	60.35	49.31	41.65	54	-12.35	PK
*19296	H	53.68	59.61	43.70	37.77	54	-16.23	PK
*21708	H	54.94	57.48	44.57	42.03	54	-11.97	PK
*24120	H	58.64	53.54	45.80	50.90	54	-3.10	PK
4824	V	47.38	36.30	37.50	48.58	54	-5.42	PK
*7236	V	42.33	36.55	42.94	48.72	54	-5.28	PK
*9648	V	41.54	36.93	46.04	50.65	54	-3.35	PK
*12060	V	42.36	36.54	46.13	51.95	54	-2.05	PK
*14472	V	52.47	61.11	52.04	43.40	54	-10.60	PK
*16884	V	55.31	60.35	49.31	44.27	54	-9.73	PK
*19296	V	54.97	59.61	43.70	39.06	54	-14.94	PK
*21708	V	54.99	57.48	44.57	42.08	54	-11.92	PK
*24120	V	57.47	53.54	45.80	49.73	54	-4.27	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

802.11b CH6								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4874	H	43.12	36.30	37.59	44.41	54	-9.59	PK
*7311	H	43.33	36.56	43.12	49.89	54	-4.11	PK
*9748	H	42.04	36.95	46.15	51.24	54	-2.76	PK
*12185	H	42.00	36.41	46.17	51.76	54	-2.24	PK
*14622	H	54.31	60.81	51.51	45.01	54	-8.99	PK
*17059	H	52.39	59.98	50.37	42.78	54	-11.22	PK
*19496	H	55.14	60.06	43.70	38.78	54	-15.22	PK
*21933	H	53.94	57.73	44.44	40.65	54	-13.35	PK
*24370	H	55.94	54.06	45.80	47.68	54	-6.32	PK
4874	V	51.47	36.30	37.59	52.76	54	-1.24	PK
*7311	V	42.31	36.56	43.12	48.87	54	-5.13	PK
*9748	V	42.22	36.95	46.15	51.42	54	-2.58	PK
*12185	V	41.95	36.41	46.17	51.71	54	-2.29	PK
*14622	V	54.30	60.81	51.51	45.00	54	-9.00	PK
*17059	V	54.15	59.98	50.37	44.54	54	-9.46	PK
*19496	V	55.90	60.06	43.70	39.54	54	-14.46	PK
*21933	V	55.10	57.73	44.44	41.81	54	-12.19	PK
*24370	V	56.58	54.06	45.80	48.32	54	-5.68	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

802.11b CH11								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4924	H	43.40	36.30	37.67	44.77	54	-9.23	PK
*7386	H	42.11	36.58	43.29	48.82	54	-5.18	PK
*9848	H	42.36	36.97	46.26	51.65	54	-2.35	PK
*12310	H	41.47	36.29	46.23	51.41	54	-2.59	PK
*14772	H	54.35	60.29	50.67	44.73	54	-9.27	PK
*17234	H	54.10	60.13	52.05	46.02	54	-7.98	PK
*19696	H	52.94	59.55	43.54	36.93	54	-17.07	PK
*22158	H	54.68	57.17	44.43	41.94	54	-12.06	PK
*24620	H	56.47	54.15	45.82	48.14	54	-5.86	PK
4924	V	51.15	36.30	37.67	52.52	54	-1.48	PK
*7386	V	42.74	36.58	43.29	49.45	54	-4.55	PK
*9848	V	42.10	36.97	46.26	51.39	54	-2.61	PK
*12310	V	42.47	36.29	46.23	52.41	54	-1.59	PK
*14772	V	55.40	60.29	50.67	45.78	54	-8.22	PK
*17234	V	54.33	60.13	52.05	46.25	54	-7.75	PK
*19696	V	54.37	59.55	43.54	38.36	54	-15.64	PK
*22158	V	55.14	57.17	44.43	42.40	54	-11.60	PK
*24620	V	56.58	54.15	45.82	48.25	54	-5.75	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11g CH1								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
4824	H	46.48	36.30	37.50	47.68	54	-6.32	PK
*7236	H	42.11	36.55	42.94	48.50	54	-5.50	PK
*9648	H	42.14	36.93	46.04	51.25	54	-2.75	PK
*12060	H	41.65	36.54	46.13	51.24	54	-2.76	PK
*14472	H	52.36	61.11	52.04	43.29	54	-10.71	PK
*16884	H	53.64	60.35	49.31	42.60	54	-11.40	PK
*19296	H	54.00	59.61	43.70	38.09	54	-15.91	PK
*21708	H	55.84	57.48	44.57	42.93	54	-11.07	PK
*24120	H	58.47	53.54	45.80	50.73	54	-3.27	PK
4824	V	51.43	36.30	37.50	52.63	54	-1.37	PK
*7236	V	42.14	36.55	42.94	48.53	54	-5.47	PK
*9648	V	43.24	36.93	46.04	52.35	54	-1.65	PK
*12060	V	42.10	36.54	46.13	51.69	54	-2.31	PK
*14472	V	52.31	61.11	52.04	43.24	54	-10.76	PK
*16884	V	55.36	60.35	49.31	44.32	54	-9.68	PK
*19296	V	55.39	59.61	43.70	39.48	54	-14.52	PK
*21708	V	54.94	57.48	44.57	42.03	54	-11.97	PK
*24120	V	57.47	53.54	45.80	49.73	54	-4.27	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

802.11g CH6								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4874	H	42.87	36.30	37.59	44.16	54	-9.84	PK
*7311	H	42.11	36.56	43.12	48.67	54	-5.33	PK
*9748	H	41.94	36.95	46.15	51.14	54	-2.86	PK
*12185	H	42.14	36.41	46.17	51.90	54	-2.10	PK
*14622	H	54.05	60.81	51.51	44.75	54	-9.25	PK
*17059	H	52.36	59.98	50.37	42.75	54	-11.25	PK
*19496	H	53.64	60.06	43.70	37.28	54	-16.72	PK
*21933	H	54.17	57.73	44.44	40.88	54	-13.12	PK
*24370	H	58.94	54.06	45.80	50.68	54	-3.32	PK
4874	V	52.52	36.30	37.59	53.81	74	-20.19	PK
4874	V	38.75	36.30	37.59	40.04	54	-13.96	AV
*7311	V	42.31	36.56	43.12	48.87	54	-5.13	PK
*9748	V	42.17	36.95	46.15	51.37	54	-2.63	PK
*12185	V	42.35	36.41	46.17	52.11	54	-1.89	PK
*14622	V	54.77	60.81	51.51	45.47	54	-8.53	PK
*17059	V	54.36	59.98	50.37	44.75	54	-9.25	PK
*19496	V	55.79	60.06	43.70	39.43	54	-14.57	PK
*21933	V	55.01	57.73	44.44	41.72	54	-12.28	PK
*24370	V	57.17	54.06	45.80	48.91	54	-5.09	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11g CH11								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4924	H	43.00	36.30	37.67	44.37	54	-9.63	PK
*7386	H	42.44	36.58	43.29	49.15	54	-4.85	PK
*9848	H	43.00	36.97	46.26	52.29	54	-1.71	PK
*12310	H	42.36	36.29	46.23	52.30	54	-1.70	PK
*14772	H	54.64	60.29	50.67	45.02	54	-8.98	PK
*17234	H	54.10	60.13	52.05	46.02	54	-7.98	PK
*19696	H	53.22	59.55	43.54	37.21	54	-16.79	PK
*22158	H	54.24	57.17	44.43	41.50	54	-12.50	PK
*24620	H	56.13	54.15	45.82	47.80	54	-6.20	PK
4924	V	53.97	36.30	37.67	55.34	74	-18.66	PK
4924	V	40.41	36.30	37.67	41.78	54	-12.22	AV
*7386	V	42.17	36.58	43.29	48.88	54	-5.12	PK
*9848	V	42.31	36.97	46.26	51.60	54	-2.40	PK
*12310	V	42.51	36.29	46.23	52.45	54	-1.55	PK
*14772	V	54.94	60.29	50.67	45.32	54	-8.68	PK
*17234	V	54.14	60.13	52.05	46.06	54	-7.94	PK
*19696	V	53.68	59.55	43.54	37.67	54	-16.33	PK
*22158	V	55.54	57.17	44.43	42.80	54	-11.20	PK
*24620	V	56.74	54.15	45.82	48.41	54	-5.59	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11n (HT20) CH1								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4824	H	43.73	36.30	37.50	44.93	54	-9.07	PK
*7236	H	42.19	36.55	42.94	48.58	54	-5.42	PK
*9648	H	42.36	36.93	46.04	51.47	54	-2.53	PK
*12060	H	41.49	36.54	46.13	51.08	54	-2.92	PK
*14472	H	52.44	61.11	52.04	43.37	54	-10.63	PK
*16884	H	53.69	60.35	49.31	42.65	54	-11.35	PK
*19296	H	54.94	59.61	43.70	39.03	54	-14.97	PK
*21708	H	55.07	57.48	44.57	42.16	54	-11.84	PK
*24120	H	58.69	53.54	45.80	50.95	54	-3.05	PK
4824	V	54.32	36.30	37.50	55.52	74	-18.48	PK
4824	V	38.88	36.30	37.50	40.08	54	-13.92	AV
*7236	V	42.33	36.55	42.94	48.72	54	-5.28	PK
*9648	V	42.14	36.93	46.04	51.25	54	-2.75	PK
*12060	V	43.36	36.54	46.13	52.95	54	-1.05	PK
*14472	V	52.47	61.11	52.04	43.40	54	-10.60	PK
*16884	V	54.25	60.35	49.31	43.21	54	-10.79	PK
*19296	V	55.65	59.61	43.70	39.74	54	-14.27	PK
*21708	V	55.64	57.48	44.57	42.73	54	-11.27	PK
*24120	V	58.47	53.54	45.80	50.73	54	-3.27	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11n (HT20) CH6								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4874	H	42.68	36.30	37.59	43.97	54	-10.03	PK
*7311	H	42.35	36.56	43.12	48.91	54	-5.09	PK
*9748	H	41.54	36.95	46.15	50.74	54	-3.26	PK
*12185	H	42.61	36.41	46.17	52.37	54	-1.63	PK
*14622	H	52.51	60.81	51.51	43.21	54	-10.79	PK
*17059	H	52.40	59.98	50.37	42.79	54	-11.21	PK
*19496	H	54.54	60.06	43.70	38.18	54	-15.82	PK
*21933	H	53.65	57.73	44.44	40.36	54	-13.64	PK
*24370	H	58.44	54.06	45.80	50.18	54	-3.82	PK
4874	V	53.84	36.30	37.59	55.13	74	-18.87	PK
4874	V	38.70	36.30	37.59	39.99	54	-14.01	AV
*7311	V	41.36	36.56	43.12	47.92	54	-6.08	PK
*9748	V	42.14	36.95	46.15	51.34	54	-2.66	PK
*12185	V	42.35	36.41	46.17	52.11	54	-1.89	PK
*14622	V	54.64	60.81	51.51	45.34	54	-8.66	PK
*17059	V	54.23	59.98	50.37	44.62	54	-9.38	PK
*19496	V	55.45	60.06	43.70	39.09	54	-14.91	PK
*21933	V	54.36	57.73	44.44	41.07	54	-12.93	PK
*24370	V	58.47	54.06	45.80	50.21	54	-3.79	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11n (HT20) CH11								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4924	H	42.33	36.30	37.67	43.70	54	-10.30	PK
*7386	H	42.31	36.58	43.29	49.02	54	-4.98	PK
*9848	H	41.94	36.97	46.26	51.23	54	-2.77	PK
*12310	H	42.14	36.29	46.23	52.08	54	-1.92	PK
*14772	H	54.65	60.29	50.67	45.03	54	-8.97	PK
*17234	H	53.25	60.13	52.05	45.17	54	-8.83	PK
*19696	H	52.64	59.55	43.54	36.63	54	-17.37	PK
*22158	H	54.90	57.17	44.43	42.16	54	-11.84	PK
*24620	H	57.64	54.15	45.82	49.31	54	-4.69	PK
4924	V	55.27	36.30	37.67	56.64	74	-17.36	PK
4924	V	40.37	36.30	37.67	41.74	54	-12.26	AV
*7386	V	42.33	36.58	43.29	49.04	54	-4.96	PK
*9848	V	41.64	36.97	46.26	50.93	54	-3.07	PK
*12310	V	42.14	36.29	46.23	52.08	54	-1.92	PK
*14772	V	55.36	60.29	50.67	45.74	54	-8.26	PK
*17234	V	54.80	60.13	52.05	46.72	54	-7.28	PK
*19696	V	54.32	59.55	43.54	38.31	54	-15.69	PK
*22158	V	55.62	57.17	44.43	42.88	54	-11.12	PK
*24620	V	58.14	54.15	45.82	49.81	54	-4.19	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp

Correction Factor = Antenna Factor + Cable Loss

* Mark indicated background noise level.

802.11n (HT40) CH3								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4824	H	42.64	36.30	37.50	43.84	54	-10.16	PK
*7236	H	42.32	36.55	42.94	48.71	54	-5.29	PK
*9648	H	41.64	36.93	46.04	50.75	54	-3.25	PK
*12060	H	42.11	36.54	46.13	51.70	54	-2.30	PK
*14472	H	52.35	61.11	52.04	43.28	54	-10.72	PK
*16884	H	54.10	60.35	49.31	43.06	54	-10.94	PK
*19296	H	54.69	59.61	43.70	38.78	54	-15.22	PK
*21708	H	55.02	57.48	44.57	42.11	54	-11.89	PK
*24120	H	57.94	53.54	45.80	50.20	54	-3.80	PK
4824	V	48.25	36.30	37.50	49.45	54	-4.55	PK
*7236	V	42.31	36.55	42.94	48.70	54	-5.30	PK
*9648	V	41.69	36.93	46.04	50.80	54	-3.20	PK
*12060	V	42.33	36.54	46.13	51.92	54	-2.08	PK
*14472	V	52.64	61.11	52.04	43.57	54	-10.43	PK
*16884	V	53.25	60.35	49.31	42.21	54	-11.79	PK
*19296	V	54.60	59.61	43.70	38.69	54	-15.31	PK
*21708	V	55.77	57.48	44.57	42.86	54	-11.14	PK
*24120	V	58.64	53.54	45.80	50.90	54	-3.10	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

802.11n (HT40) CH6								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4874	H	43.10	36.30	37.59	44.39	54	-9.61	PK
*7311	H	43.14	36.56	43.12	49.70	54	-4.30	PK
*9748	H	42.11	36.95	46.15	51.31	54	-2.69	PK
*12185	H	42.00	36.41	46.17	51.76	54	-2.24	PK
*14622	H	53.62	60.81	51.51	44.32	54	-9.68	PK
*17059	H	52.31	59.98	50.37	42.70	54	-11.30	PK
*19496	H	54.33	60.06	43.70	37.97	54	-16.03	PK
*21933	H	54.21	57.73	44.44	40.92	54	-13.08	PK
*24370	H	58.61	54.06	45.80	50.35	54	-3.65	PK
4874	V	48.04	36.30	37.59	49.33	54	-4.67	PK
*7311	V	42.33	36.56	43.12	48.89	54	-5.11	PK
*9748	V	41.65	36.95	46.15	50.85	54	-3.15	PK
*12185	V	42.65	36.41	46.17	52.41	54	-1.59	PK
*14622	V	54.65	60.81	51.51	45.35	54	-8.65	PK
*17059	V	55.01	59.98	50.37	45.40	54	-8.60	PK
*19496	V	55.62	60.06	43.70	39.26	54	-14.74	PK
*21933	V	54.68	57.73	44.44	41.39	54	-12.61	PK
*24370	V	58.47	54.06	45.80	50.21	54	-3.79	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

802.11n (HT40) CH9								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
*4904	H	43.11	36.30	37.63	44.44	54	-9.56	PK
*7386	H	42.33	36.58	43.29	49.04	54	-4.96	PK
*9848	H	42.64	36.97	46.26	51.93	54	-2.07	PK
*12310	H	42.62	36.29	46.23	52.56	54	-1.44	PK
*14772	H	55.21	60.29	50.67	45.59	54	-8.41	PK
*17234	H	53.32	60.13	52.05	45.24	54	-8.76	PK
*19696	H	52.47	59.55	43.54	36.46	54	-17.54	PK
*22158	H	54.36	57.17	44.43	41.62	54	-12.38	PK
*24620	H	57.66	54.15	45.82	49.33	54	-4.67	PK
4904	V	46.18	36.30	37.63	47.51	54	-6.49	PK
*7386	V	42.19	36.58	43.29	48.90	54	-5.10	PK
*9848	V	42.32	36.97	46.26	51.61	54	-2.39	PK
*12310	V	43.00	36.29	46.23	52.94	54	-1.06	PK
*14772	V	55.21	60.29	50.67	45.59	54	-8.41	PK
*17234	V	54.69	60.13	52.05	46.61	54	-7.39	PK
*19696	V	54.35	59.55	43.54	38.34	54	-15.66	PK
*22158	V	55.64	57.17	44.43	42.90	54	-11.10	PK
*24620	V	57.90	54.15	45.82	49.57	54	-4.43	PK

Remark : Corrected Level = Reading + Correction Factor – Preamp
 Correction Factor = Antenna Factor + Cable Loss
 * Mark indicated background noise level.

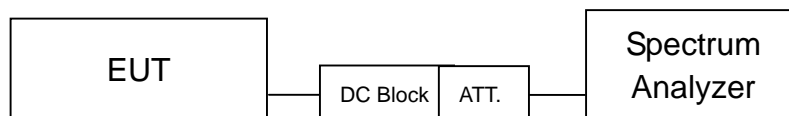
3 RF Conducted spurious emission

3.1 Limit

According to FCC Part 15.247(d) requirement :

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.

3.2 Configuration of Measurement



3.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

RF antenna conducted spurious emissions was measured from the EUT antenna port using a 50ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 100 kHz.

The measurements were performed from 30MHz to 25GHz.

3.4 Test Result

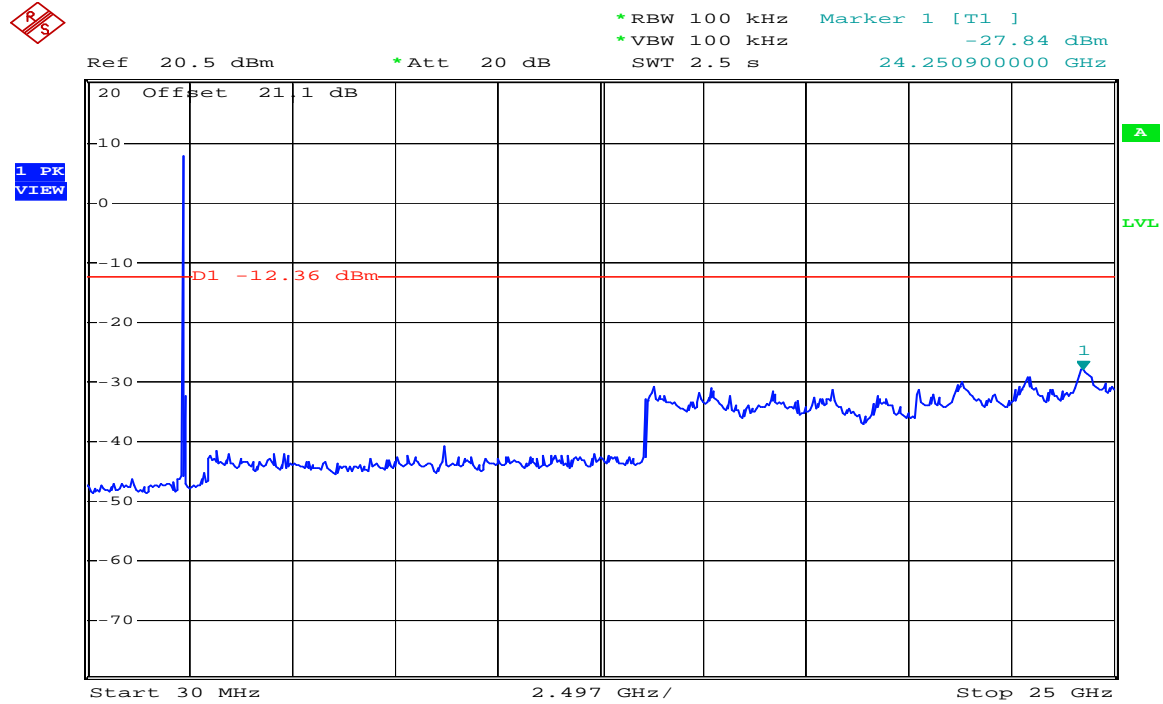
PASS.

The final test data is shown as following pages.

Conducted spurious emission

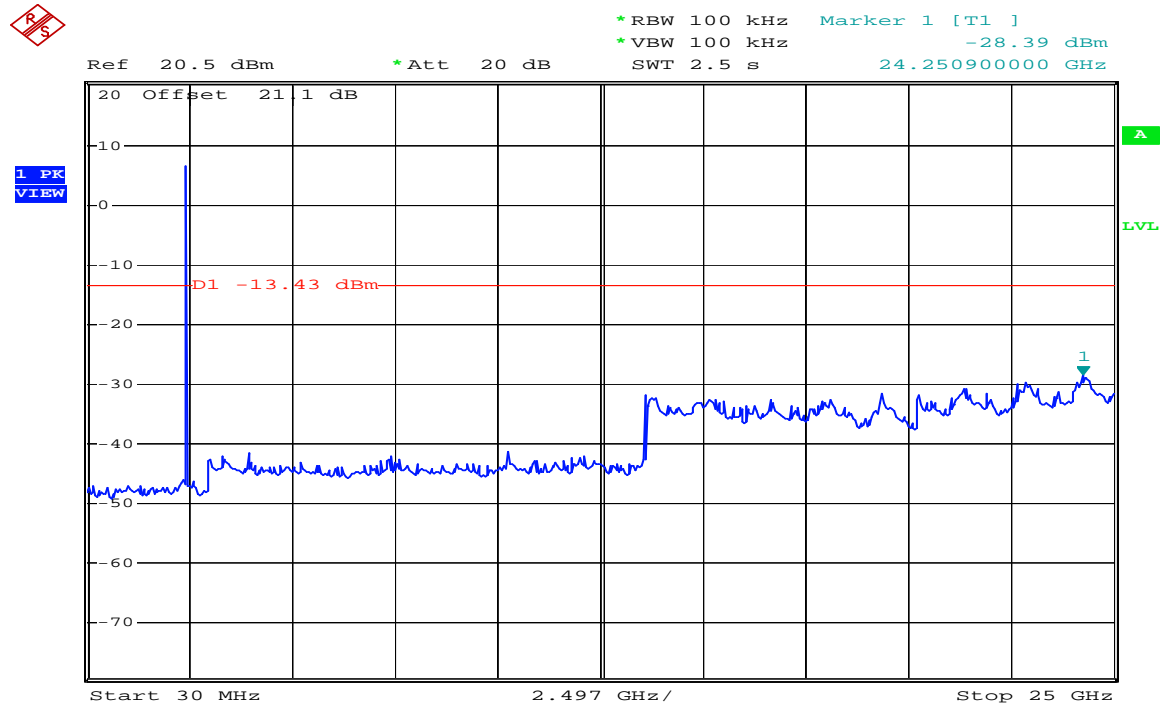
2.4GHz

802.11b CH1 2412MHz



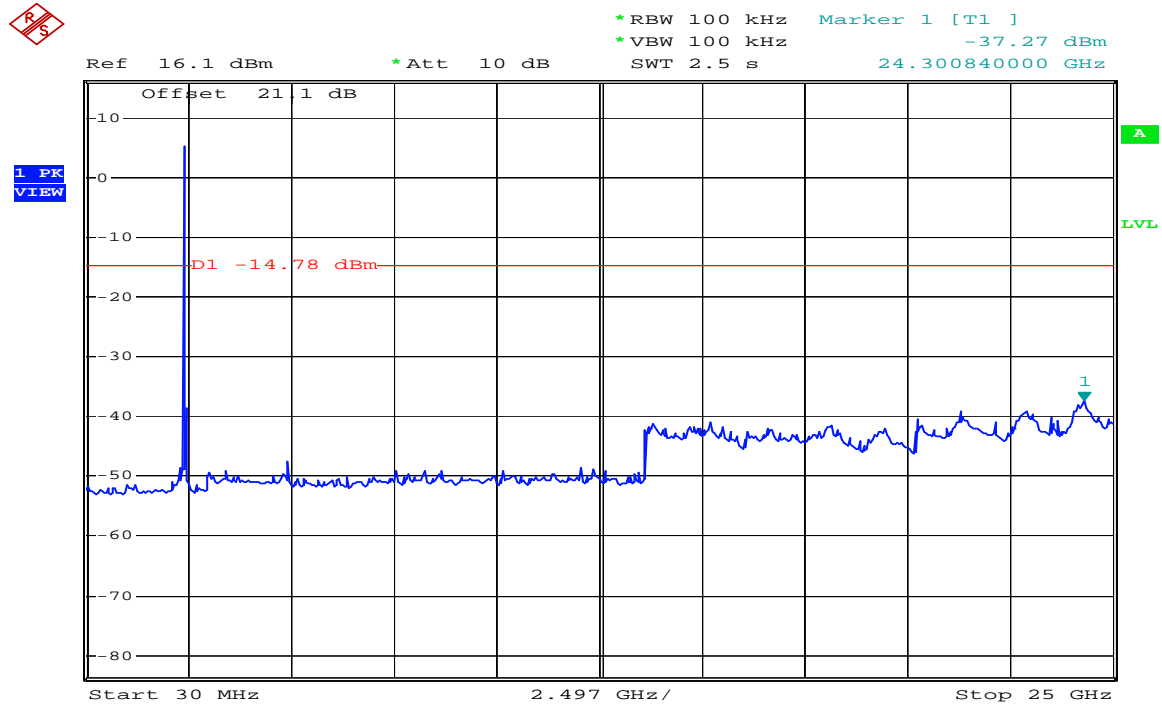
Comment: 802.11b Conducted Spurious 2412MHz
Date: 19.NOV.2009 08:34:02

802.11b CH6 2437MHz



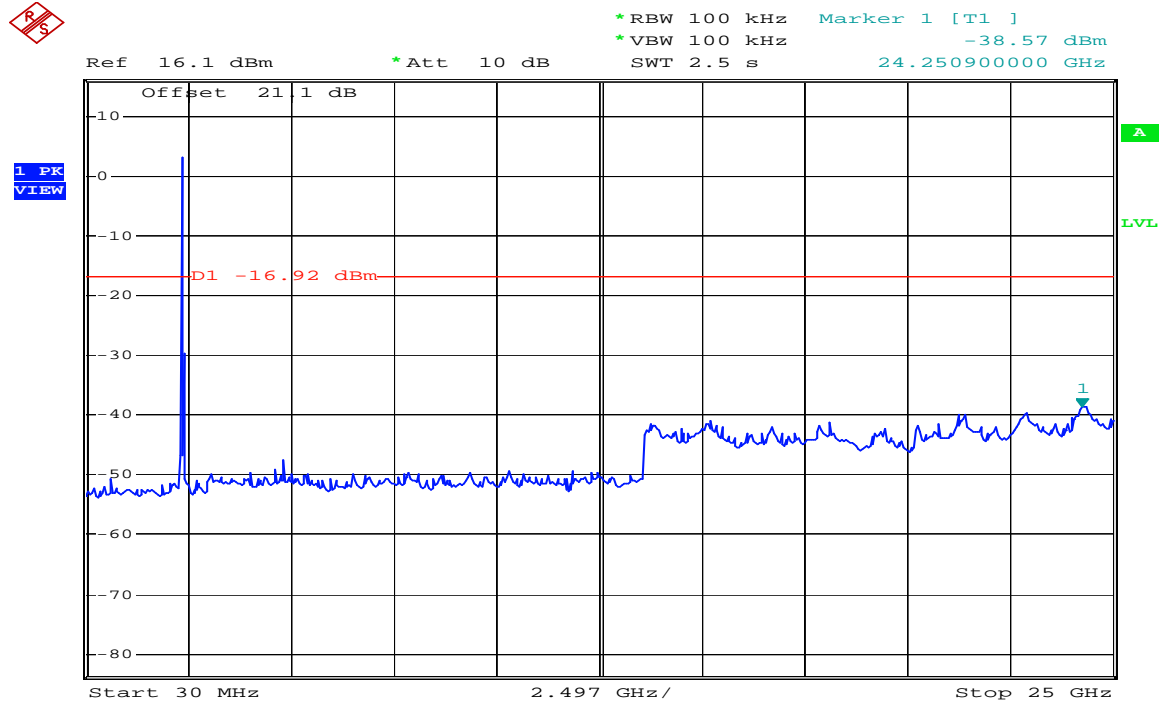
Comment: 802.11b Conducted Spurious 2437MHz
Date: 19.NOV.2009 08:37:00

802.11b CH11 2462MHz



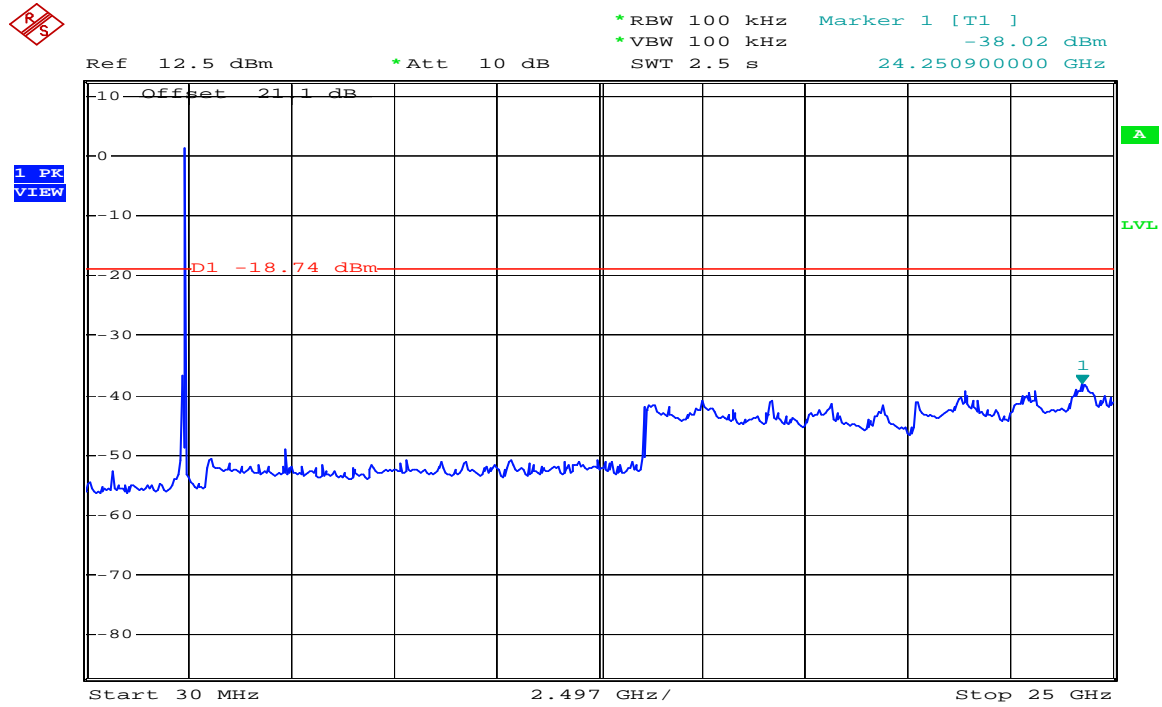
Comment: 802.11b Conducted Spurious 2462MHz
Date: 19.NOV.2009 08:43:55

802.11g CH1 2412MHz



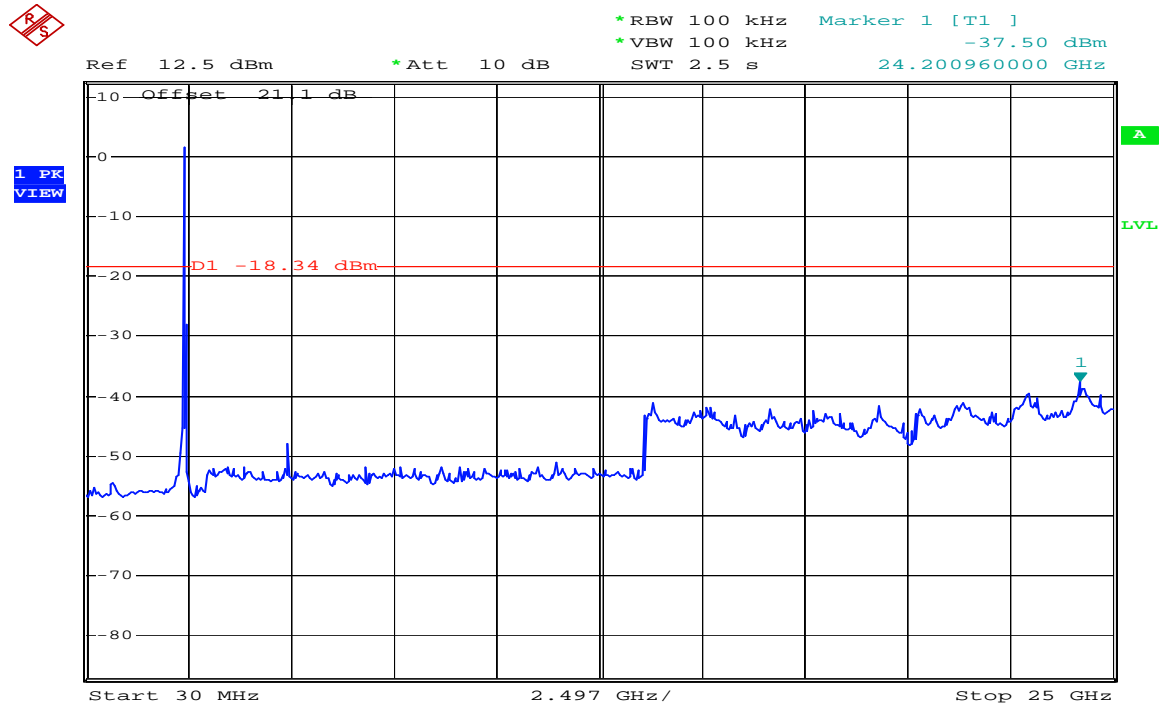
Comment: 802.11g Conducted Spurious 2412MHz
Date: 19.NOV.2009 08:46:15

802.11g CH6 2437MHz



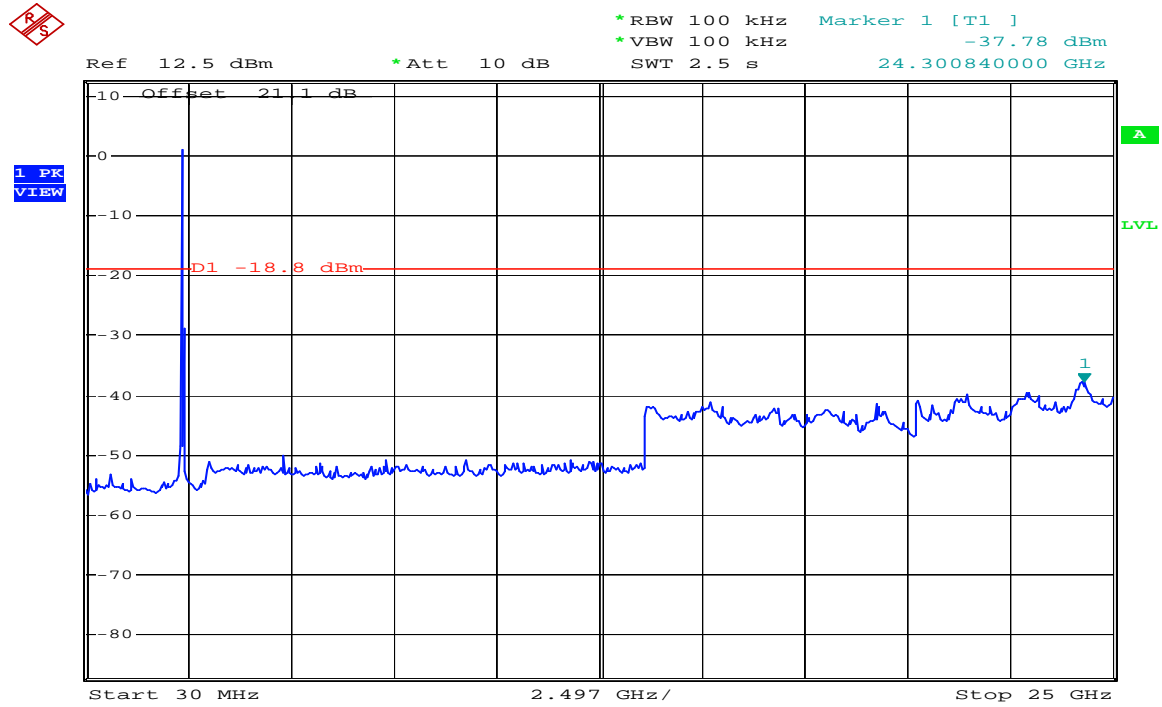
Comment: 802.11g Conducted Spurious 2437MHz
Date: 19.NOV.2009 08:54:54

802.11g CH11 2462MHz



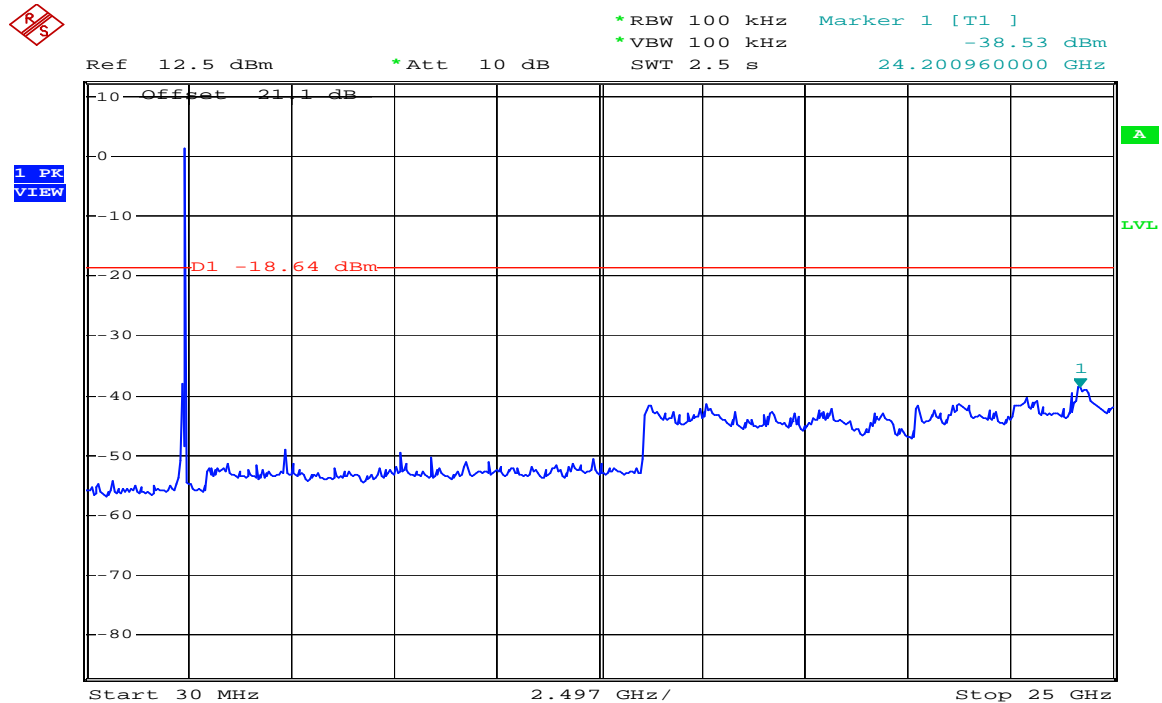
Comment: 802.11g Conducted Spurious 2462MHz
Date: 19.NOV.2009 08:56:06

802.11n (HT20) CH1 2412MHz



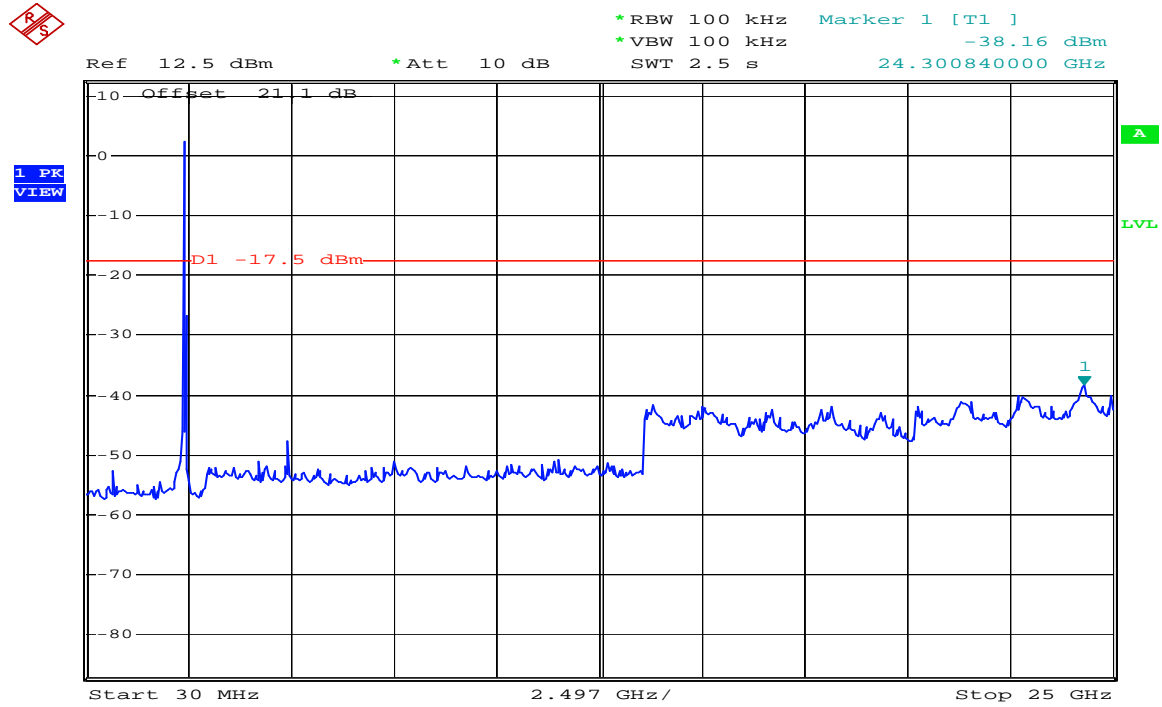
Comment: 802.11n(20) Conducted Spurious 2412MHz
Date: 19.NOV.2009 09:02:58

802.11n (HT20) CH6 2437MHz



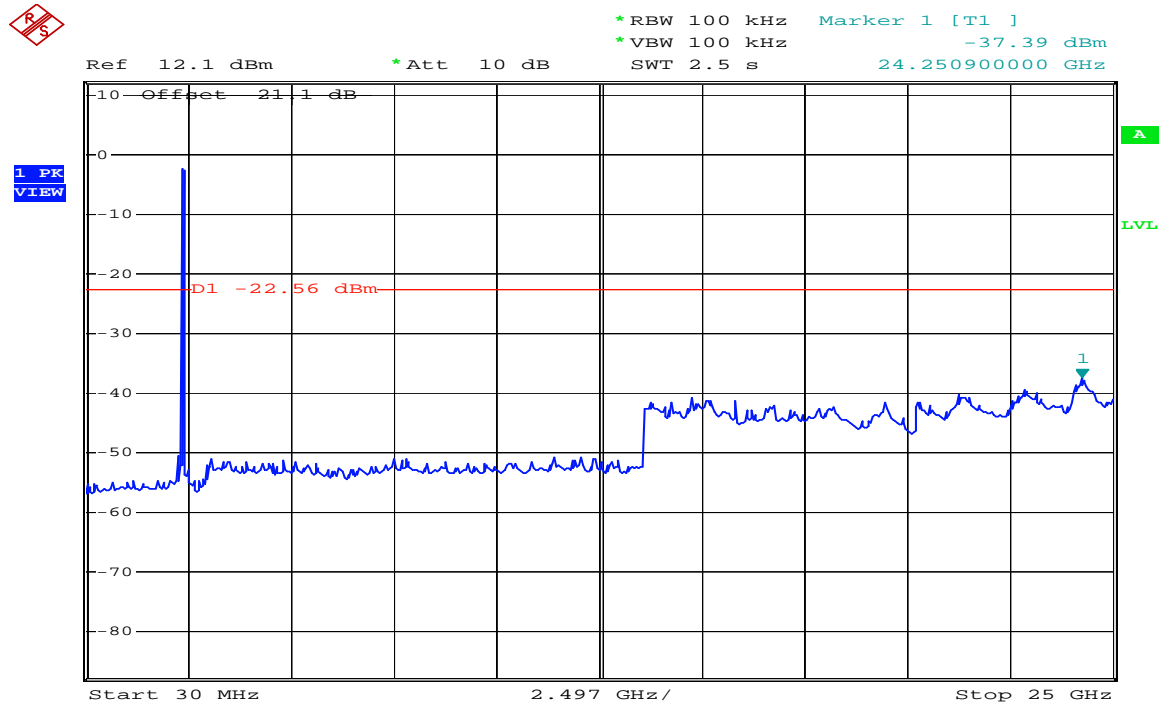
Comment: 802.11n(20) Conducted Spurious 2437MHz
Date: 19.NOV.2009 09:04:25

802.11n (HT20) CH11 2462MHz



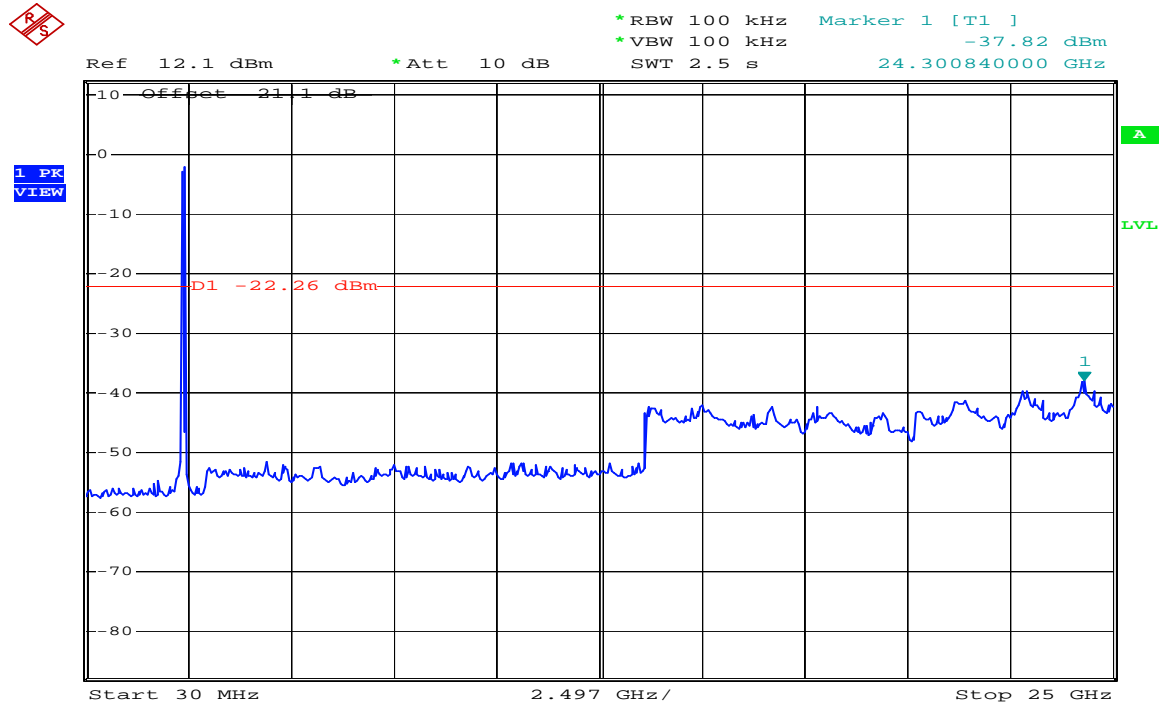
Comment: 802.11n(20) Conducted Spurious 2462MHz
Date: 19.NOV.2009 09:05:31

802.11 n (HT40) CH3 2422MHz



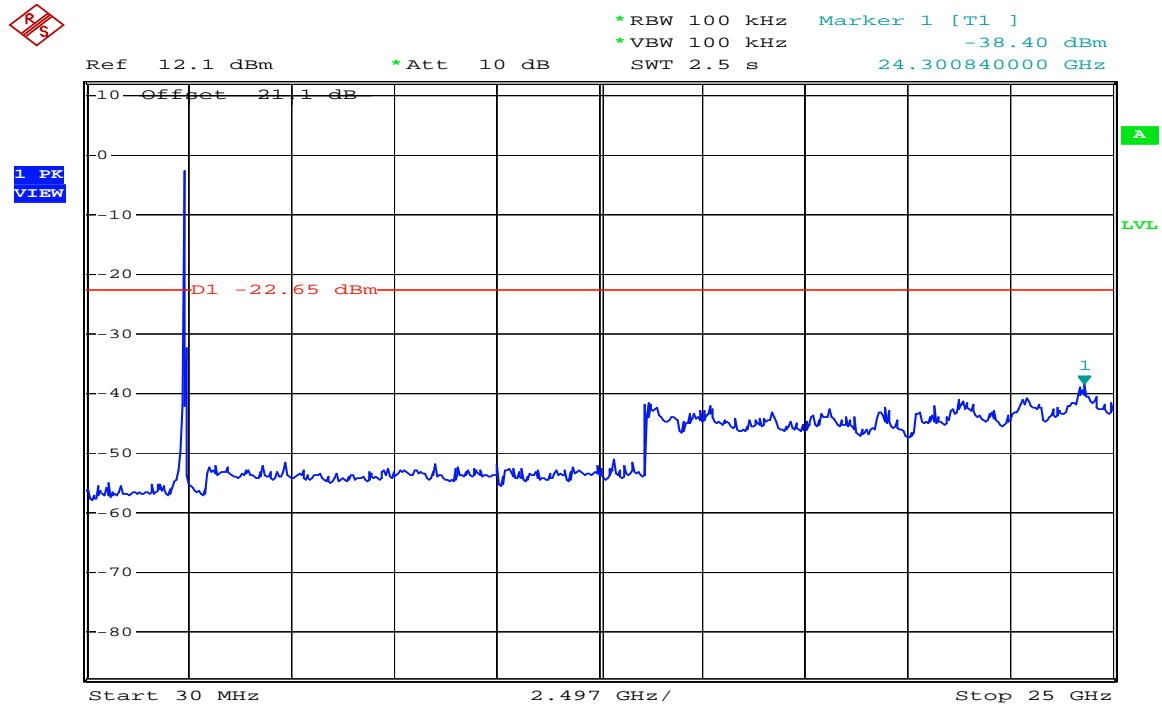
Comment: 802.11n(40)Conducted Spurious 2422MHz
Date: 19.NOV.2009 09:12:39

802.11n (HT40) CH6 2437MHz



Comment: 802.11n(40)Conducted Spurious 2437MHz
Date: 19.NOV.2009 09:13:49

802.11n (HT40) CH9 2452MHz



Comment: 802.11n(40)Conducted Spurious 2452MHz
Date: 19.NOV.2009 09:14:36

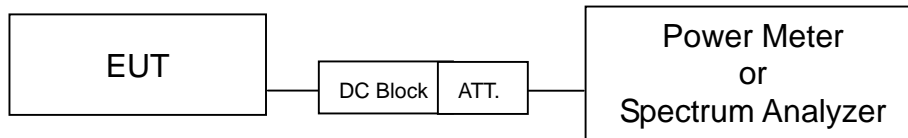
4 Maximum Peak output power test

4.1 Limit

According to FCC Part15.247 (b)(3) requirement :

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: The maximum conducted output power shall be less than 1Watt.

4.2 Configuration of Measurement



4.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

For FCC §15.247(b) the power output was measured on the EUT using a 50 ohm SMA cable connected to peak power meter via power sensor or spectrum analyzer. Peak output power was read directly from power meter or spectrum analyzer. The test was performed at 3 channels (lowest, middle and highest).

4.4 Test Result

PASS.

The final test data is shown as following pages.

Maximum output power

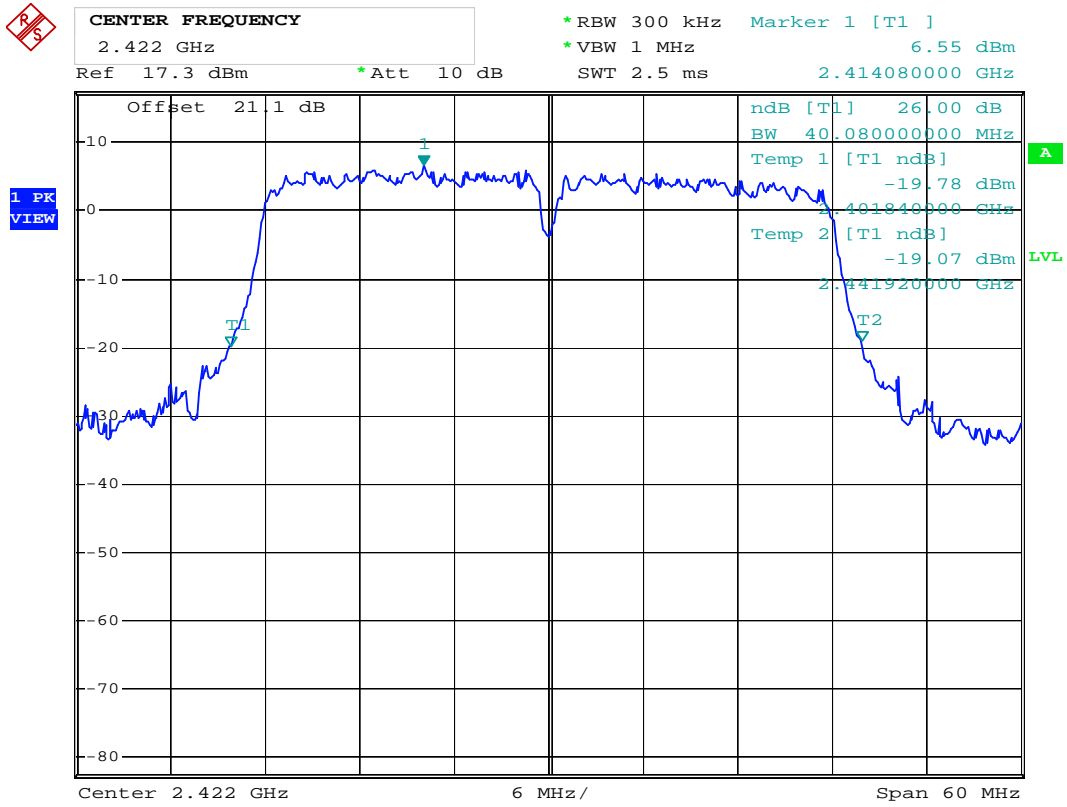
2.4GHz

Mode : 802.11b				
CH	Freq. (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Margin (dB)
1	2412	29.17	30	-0.83
6	2437	29.16	30	-0.84
11	2462	28.23	30	-1.77

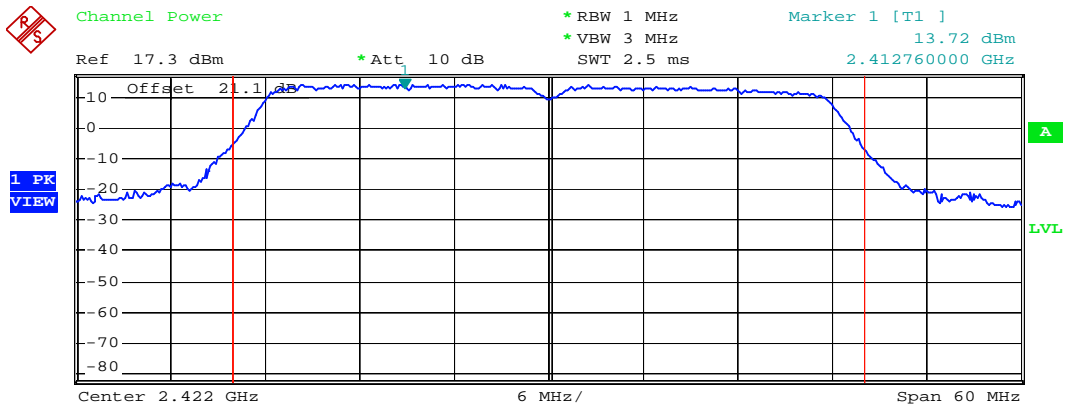
Mode : 802.11g				
CH	Freq. (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Margin (dB)
1	2412	29.38	30	-0.62
6	2437	29.39	30	-0.61
11	2462	29.05	30	-0.95

Mode : 802.11n (HT20)				
CH	Freq. (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Margin (dB)
1	2412	29.31	30	-0.69
6	2437	29.23	30	-0.77
11	2462	29.41	30	-0.59

Mode : 802.11n (HT40)					
CH	Freq. (MHz)	26dB Bandwidth (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Margin (dB)
3	2422	40.08	27.84	30	-2.16
6	2437	40.44	27.48	30	-2.52
9	2452	39.84	27.01	30	-2.99

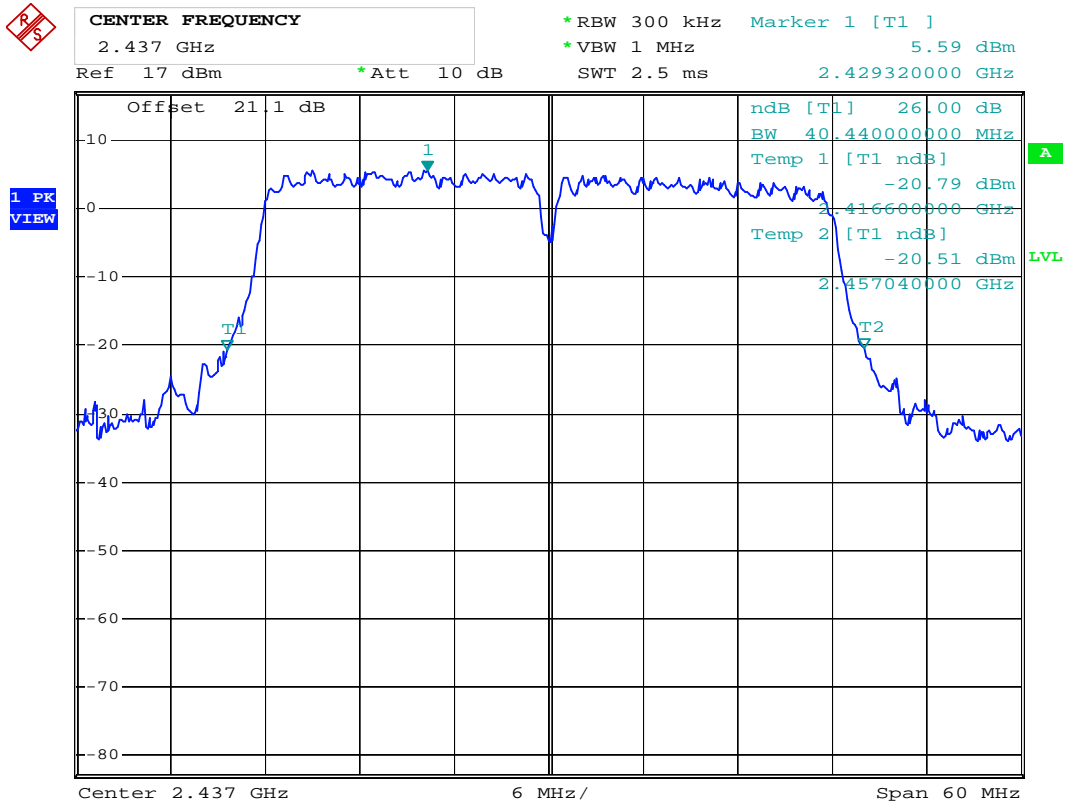


Comment: 802.11n(40) 2422MHz
 Date: 8.FEB.2010 10:21:18

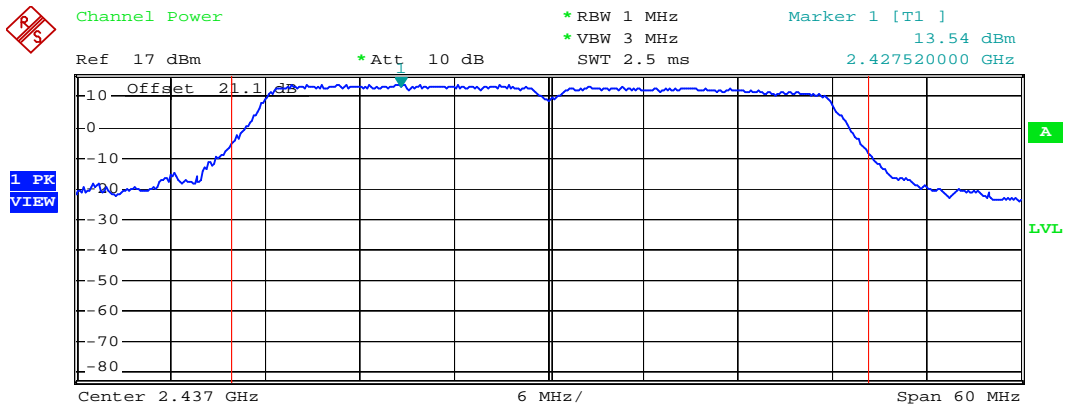


Tx Channel
 Bandwidth 40.08 MHz Power 27.84 dBm

Comment: 802.11n(40) 2422MHz Limit:16.989700
 Date: 8.FEB.2010 10:26:09

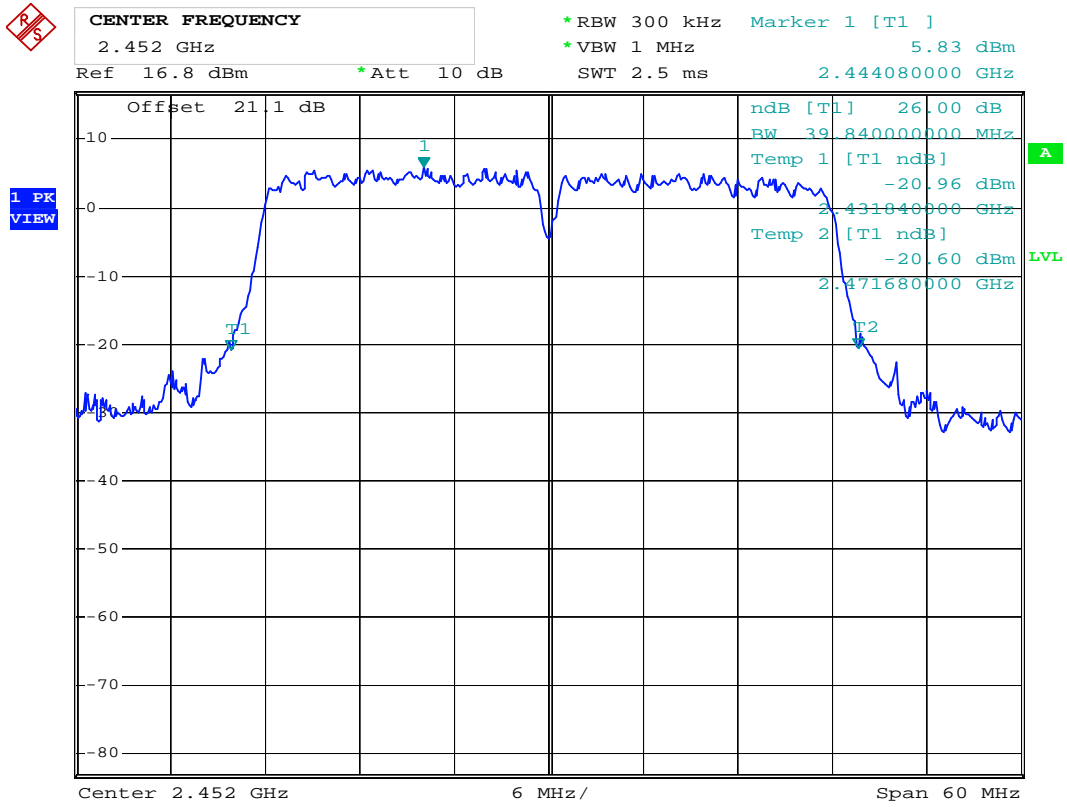


Comment: 802.11n(40) 2437MHz
 Date: 8.FEB.2010 10:30:39

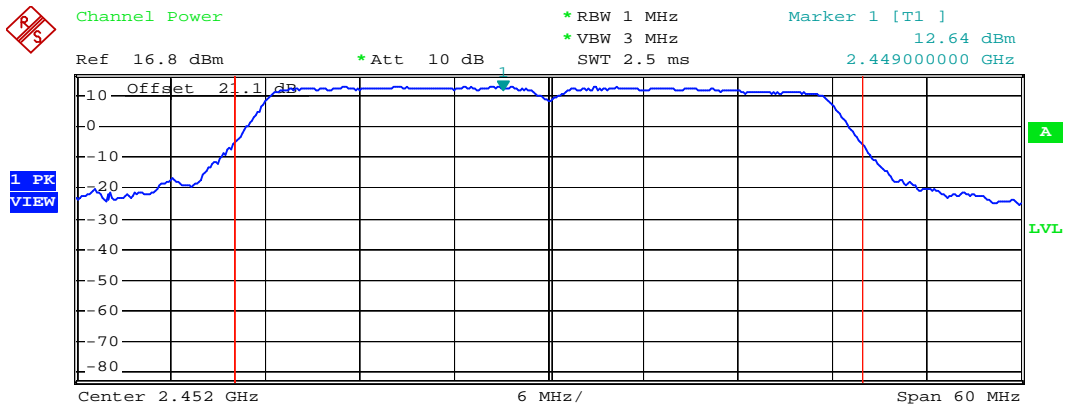


Tx Channel
 Bandwidth 40.44 MHz Power 27.48 dBm

Comment: 802.11n(40) 2437MHz Limit:16.989700
 Date: 8.FEB.2010 10:32:40



Comment: 802.11n(40) 2452MHz
 Date: 8.FEB.2010 10:34:31



Tx Channel
 Bandwidth 39.84 MHz Power 27.01 dBm

Comment: 802.11n(40) 2452MHz Limit:16.989700
 Date: 8.FEB.2010 10:36:08

5 Power test of Data Rate

Mode	Bandwidth (MHz)	Channel	Data Rate	Output Power	
				(dBm)	(watts)
802.11b	20	6	1	29.07	0.8072
			5.5	29.06	0.8054
			11	29.16	0.8241
802.11g	20	6	6	29.39	0.8690
			36	29.20	0.8318
			54	29.21	0.8337
802.11n (HT20)	20	6	HT0	29.23	0.8375
			HT4	28.94	0.7834
			HT7	28.98	0.7907
802.11n (HT40)	40	6	HT0	27.48	0.5598
			HT4	27.43	0.5534
			HT7	27.45	0.5559

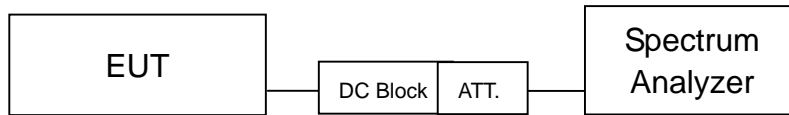
6 6dB Bandwidth

6.1 Limit

According to FCC Part15.247 (a)(2) requirement :

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

6.2 Configuration of Measurement



6.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The minimum 6dB bandwidth was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set \geq RBW, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest).

6.4 Test Result

PASS.

The final test data is shown as following pages.

6dB bandwidth

2.4GHz

Test Mode : 802.11b			
CH No.	Freq. (MHz)	6dB Bandwidth (MHz)	Limit (kHz)
1	2412	11.28	>500
6	2437	11.24	>500
11	2462	11.24	>500

Test Mode : 802.11g			
CH No.	Freq. (MHz)	6dB Bandwidth (MHz)	Limit (kHz)
1	2412	16.56	>500
6	2437	16.60	>500
11	2462	16.56	>500

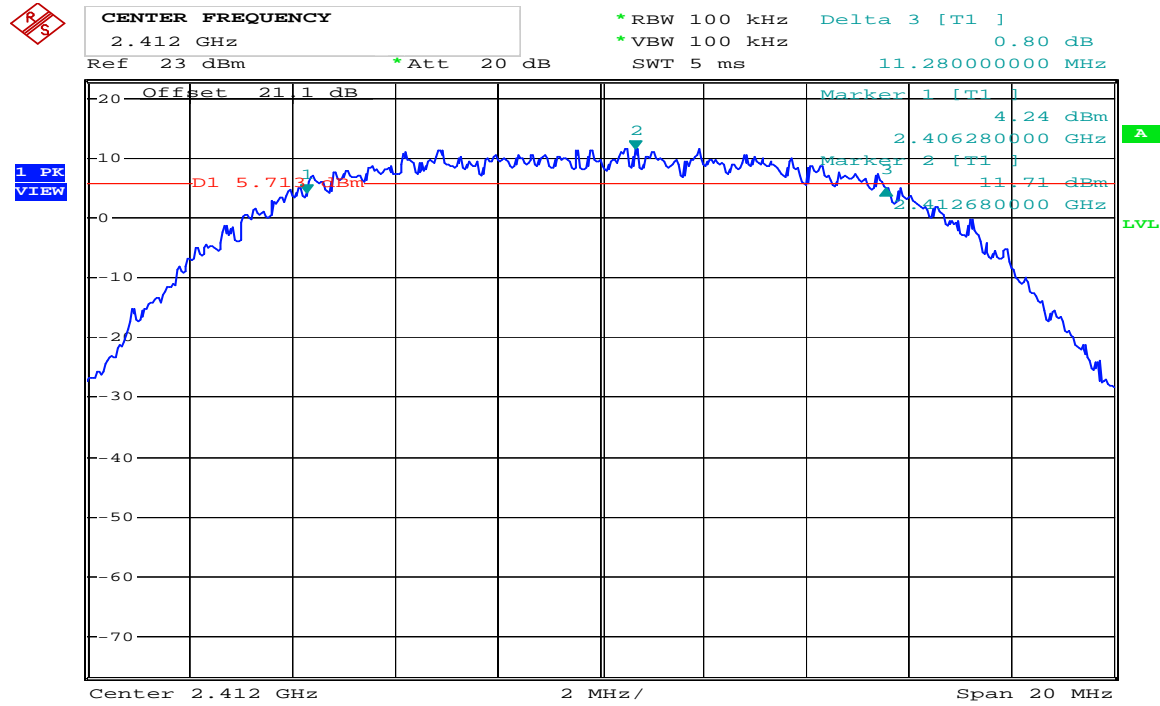
Test Mode : 802.11n (HT20)			
CH No.	Freq. (MHz)	6dB Bandwidth (MHz)	Limit (kHz)
1	2412	16.56	>500
6	2437	16.60	>500
11	2462	16.56	>500

Test Mode : 802.11n (HT40)			
CH No.	Freq. (MHz)	6dB Bandwidth (MHz)	Limit (kHz)
3	2422	36.56	>500
6	2437	36.64	>500
9	2452	36.56	>500

6dB Bandwidth

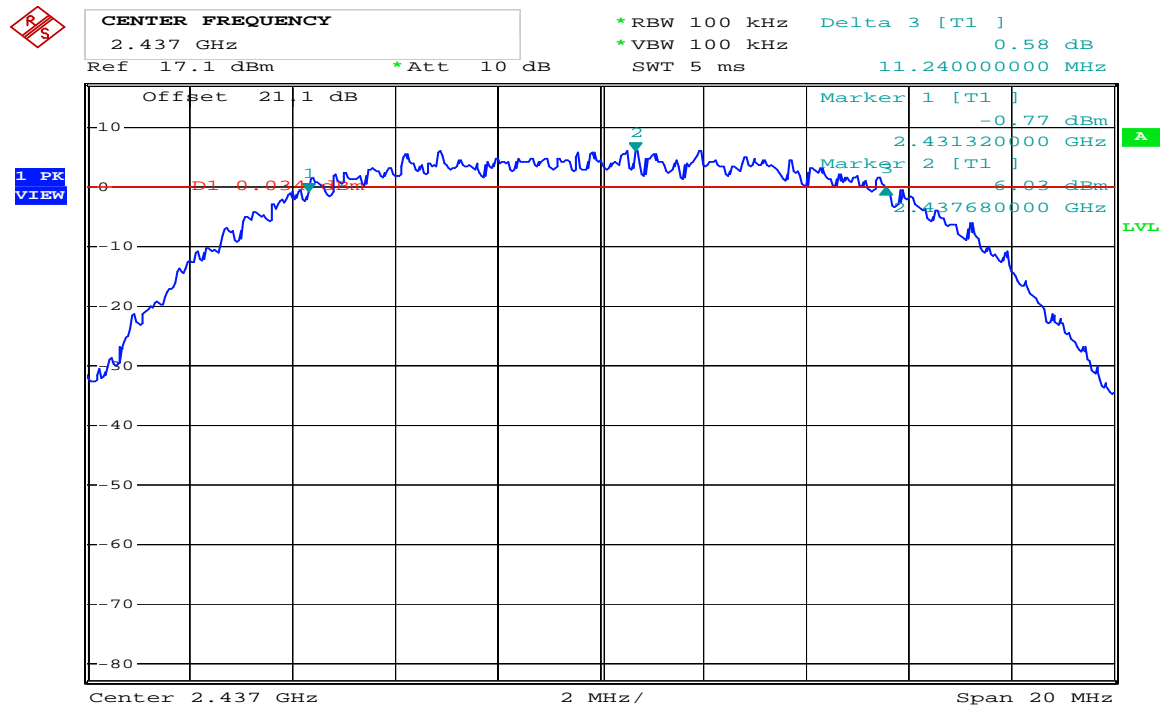
2.4GHz

802.11b CH1 2412MHz



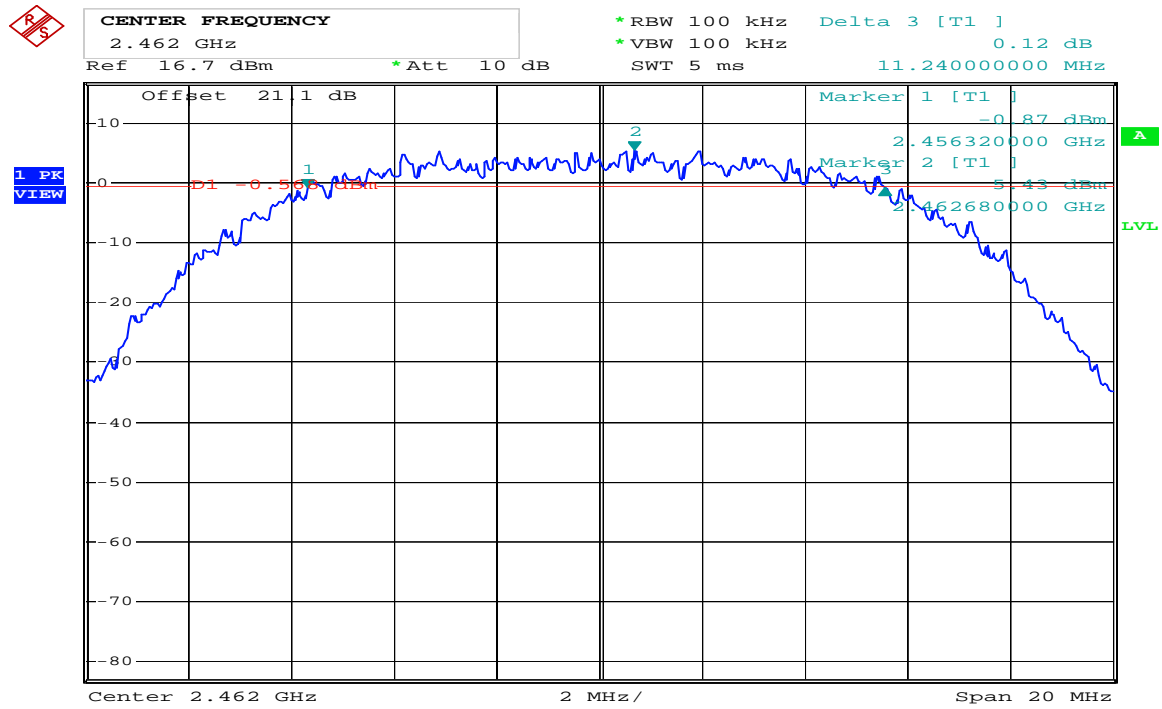
Comment: 802.11b 2412MHz
Date: 19.NOV.2009 08:28:58

802.11b CH6 2437MHz



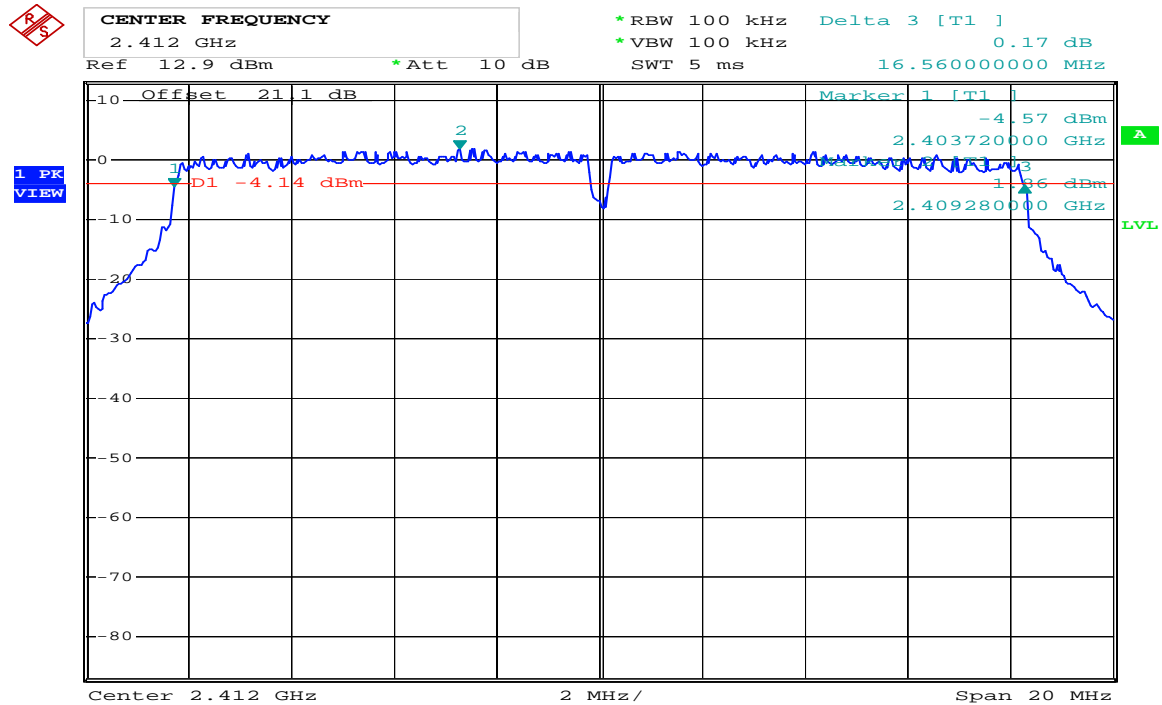
Comment: 802.11b 2437MHz
Date: 19.NOV.2009 08:37:48

802.11b CH11 2462MHz



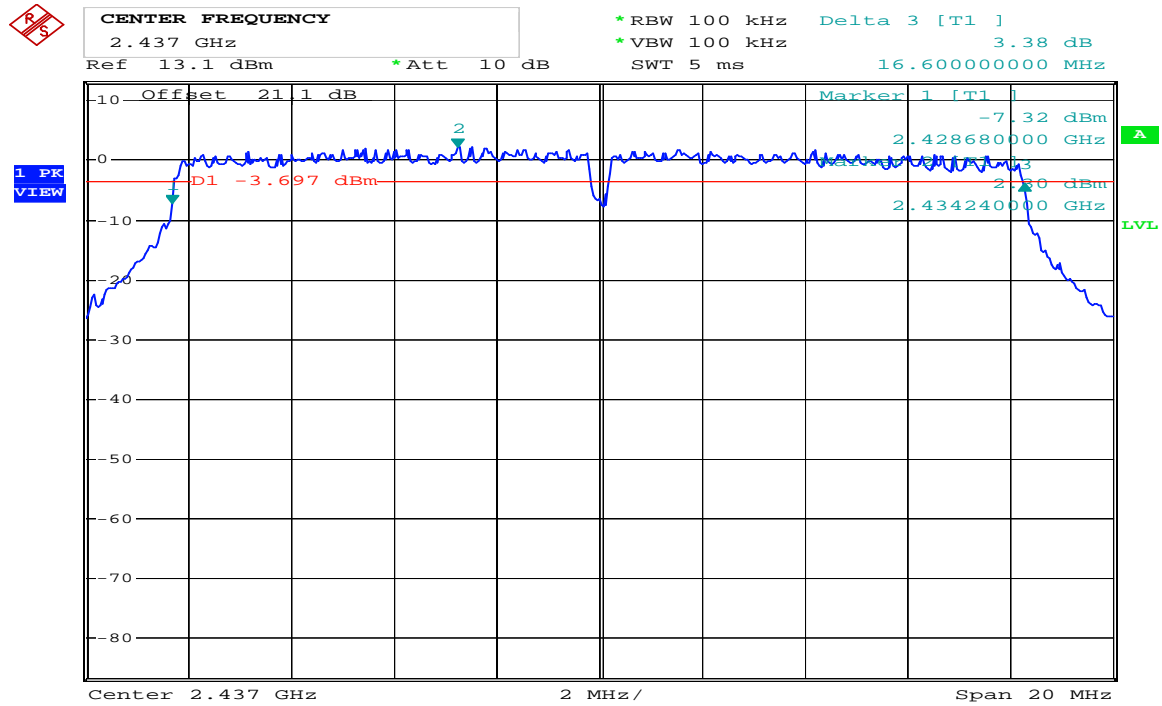
Comment: 802.11b 2462MHz
Date: 19.NOV.2009 08:40:09

802.11g CH1 2412MH



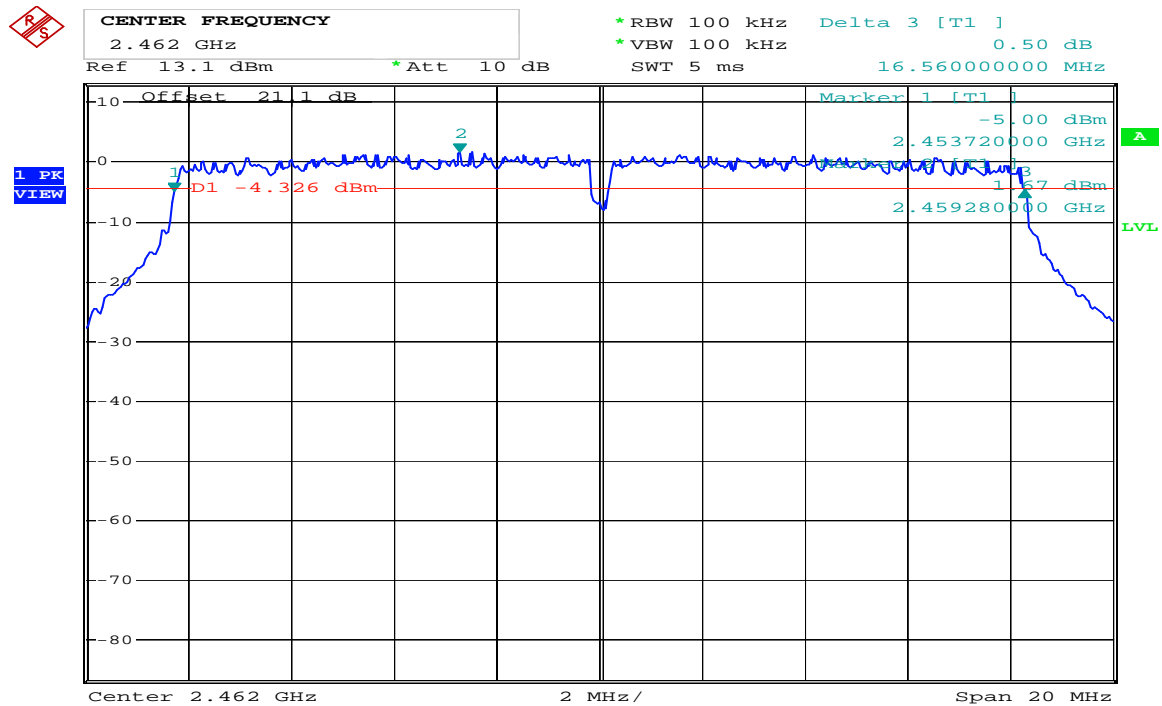
Comment: 802.11g 2412MHz
Date: 19.NOV.2009 08:48:02

802.11g CH6 2437MHz



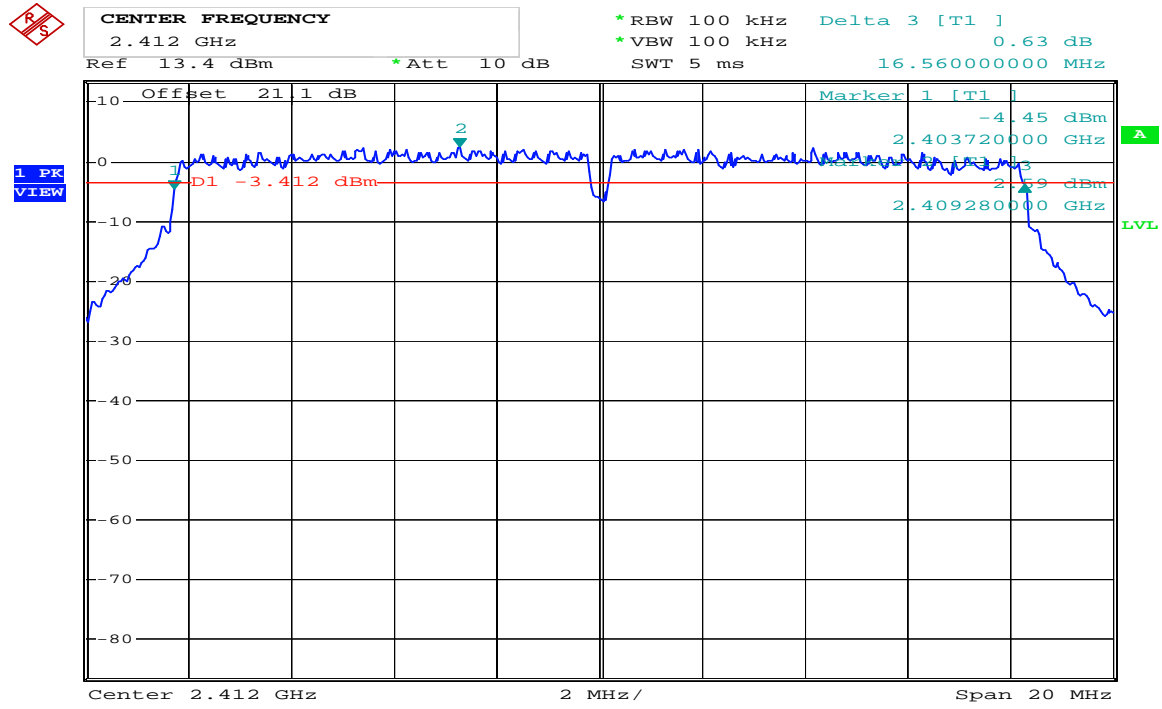
Comment: 802.11g 2437MHz
Date: 19.NOV.2009 08:50:40

802.11g CH11 2462MHz



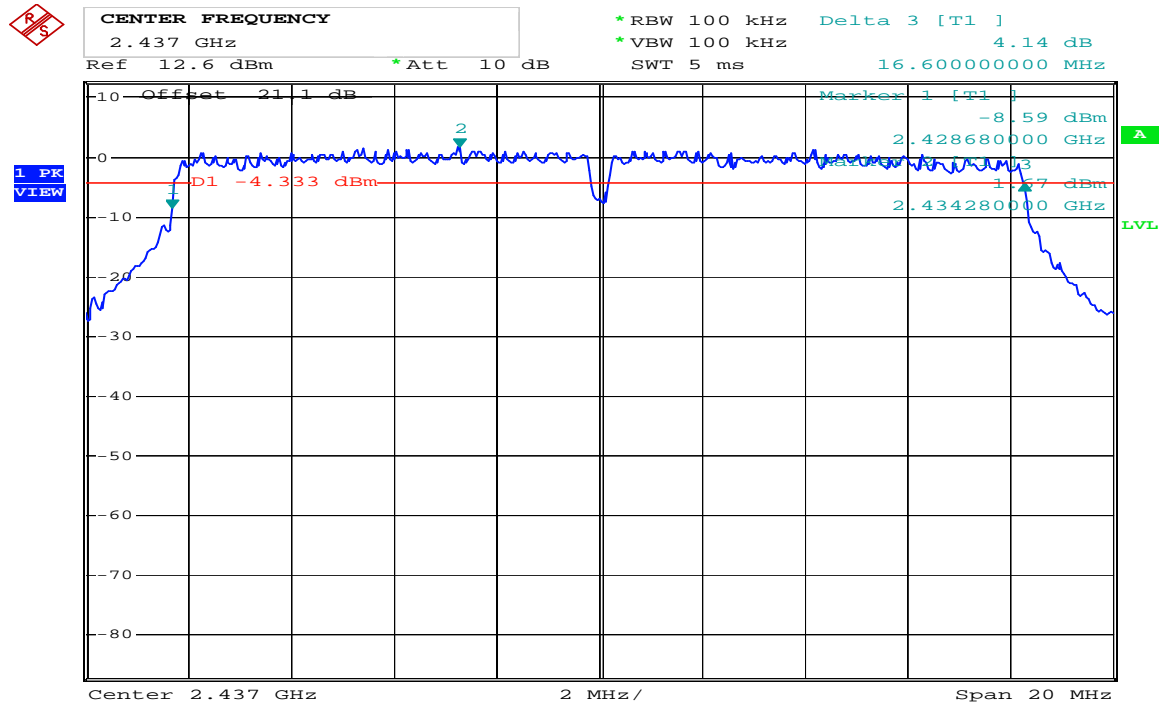
Comment: 802.11g 2462MHz
Date: 19.NOV.2009 08:56:50

802.11n (HT20) CH1 2412MHz



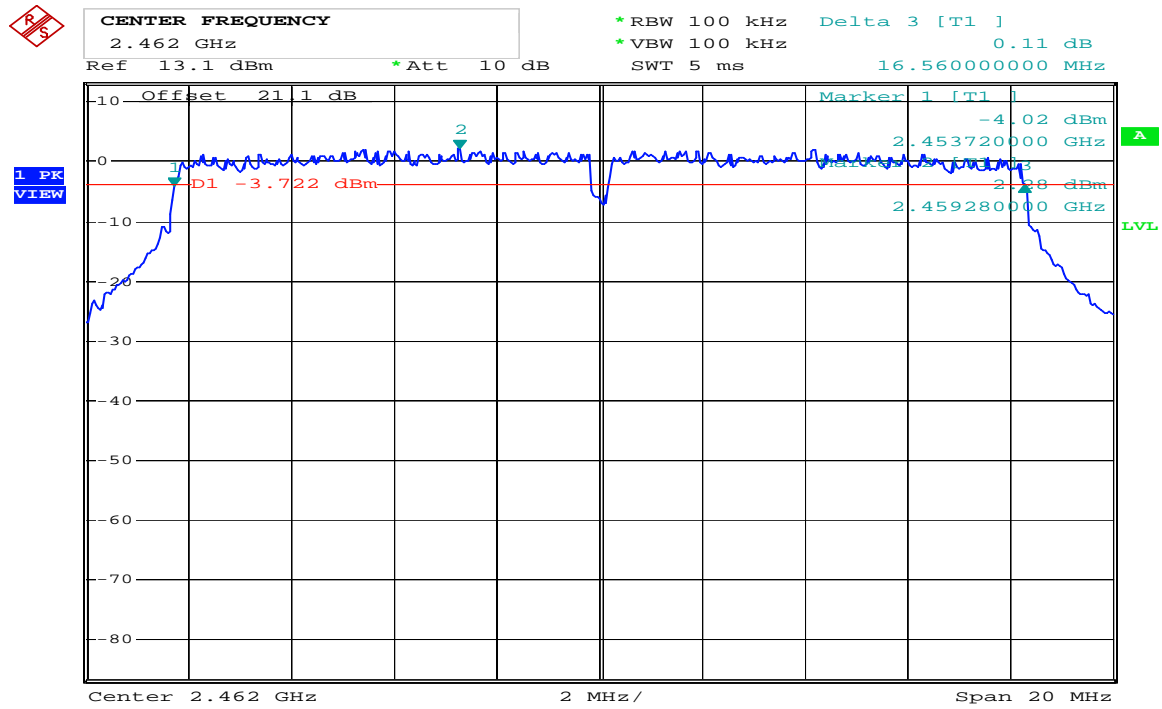
Comment: 802.11n(20) 2412MHz
Date: 19.NOV.2009 09:00:02

802.11n (HT20) CH6 2437MHz



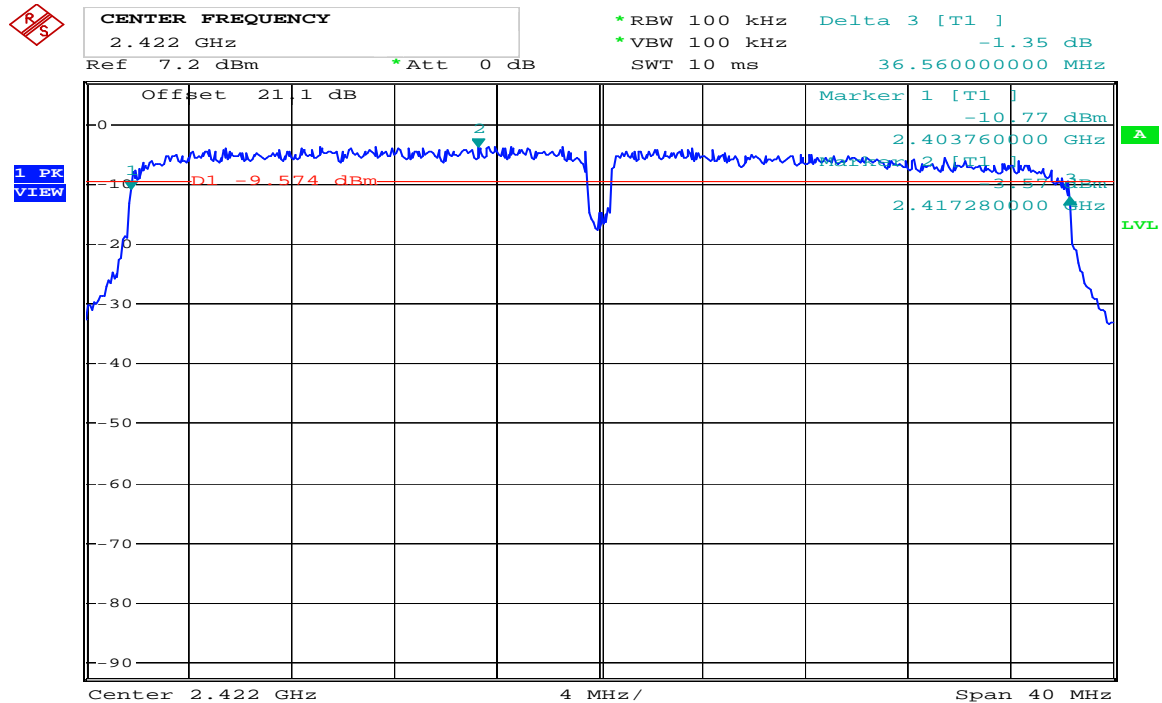
Comment: 802.11n(20) 2437MHz
Date: 19.NOV.2009 09:08:21

802.11n (HT20) CH11 2462MHz



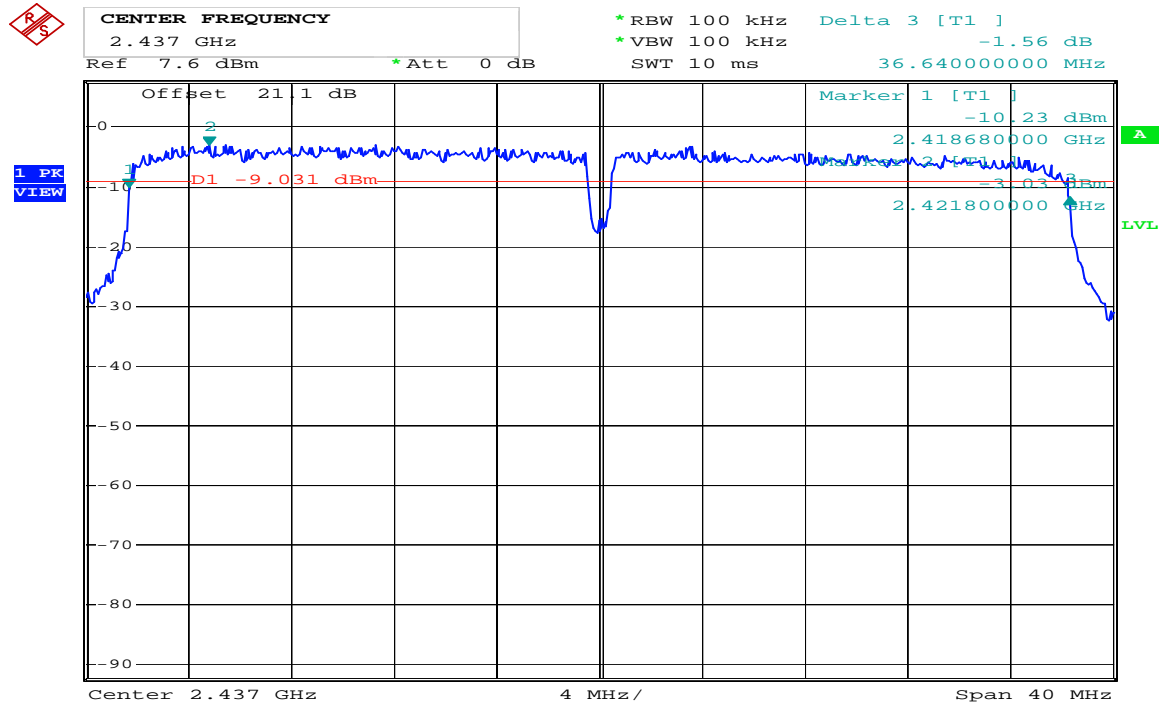
Comment: 802.11n(20) 2462MHz
Date: 19.NOV.2009 09:06:12

802.11 n (HT40) CH3 2422MHz



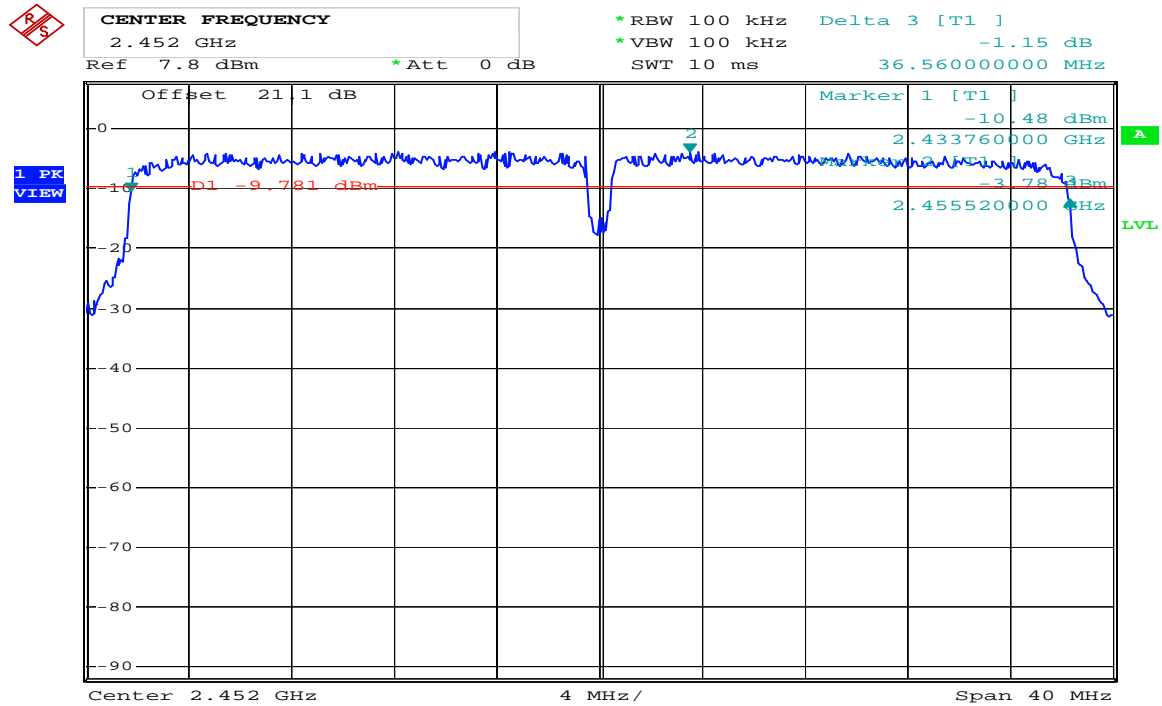
Comment: 802.11n(40) 2422MHz
Date: 19.NOV.2009 09:27:04

802.11n (HT40) CH6 2437MHz



Comment: 802.11n(40) 2437MHz
Date: 19.NOV.2009 09:19:24

802.11n (HT40) CH9 2452MHz



Comment: 802.11n(40) 2452MHz
Date: 19.NOV.2009 09:15:21

99%Occupied bandwidth

2.4GHz

Test Mode : 802.11b		
CH No.	Freq. (MHz)	Occupied Bandwidth (MHz)
1	2412	14.00
6	2437	14.04
11	2462	14.04

Test Mode : 802.11g		
CH No.	Freq. (MHz)	Occupied Bandwidth (MHz)
1	2412	16.44
6	2437	16.44
11	2462	16.44

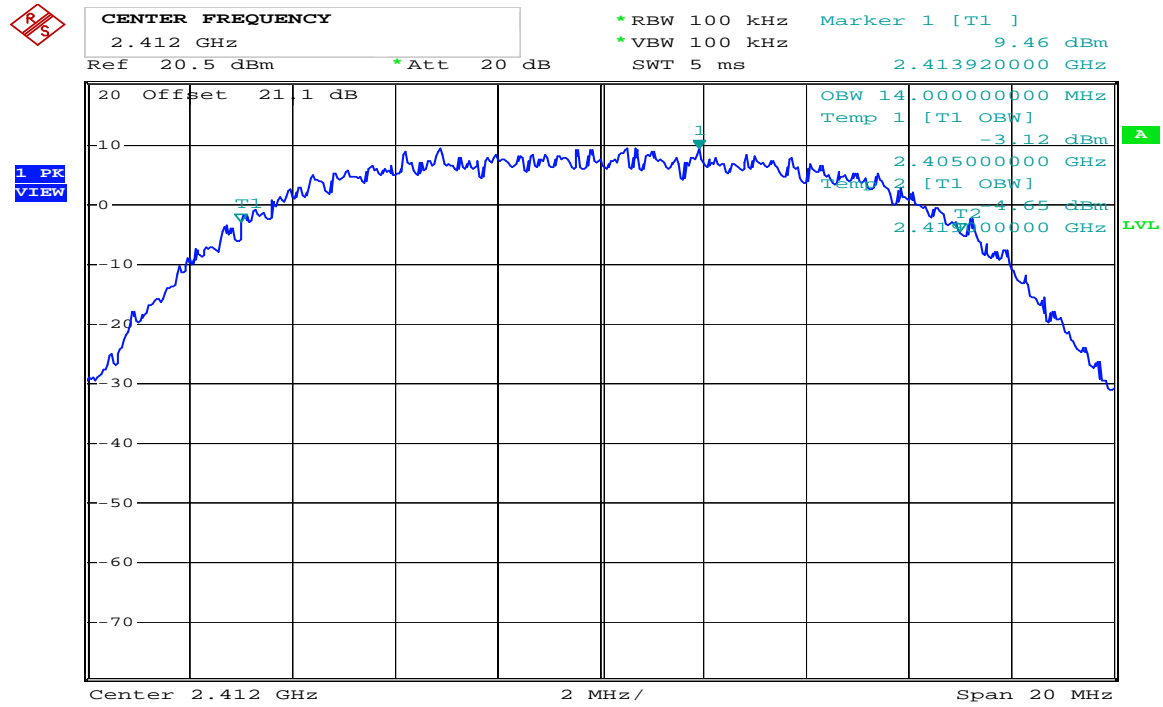
Test Mode : 802.11n (HT20)		
CH No.	Freq. (MHz)	Occupied Bandwidth (MHz)
1	2412	16.44
6	2437	16.44
11	2462	16.44

Test Mode : 802.11 n (HT40)		
CH No.	Freq. (MHz)	Occupied Bandwidth (MHz)
3	2422	35.92
6	2437	36.00
9	2452	36.00

99%Occupied bandwidth

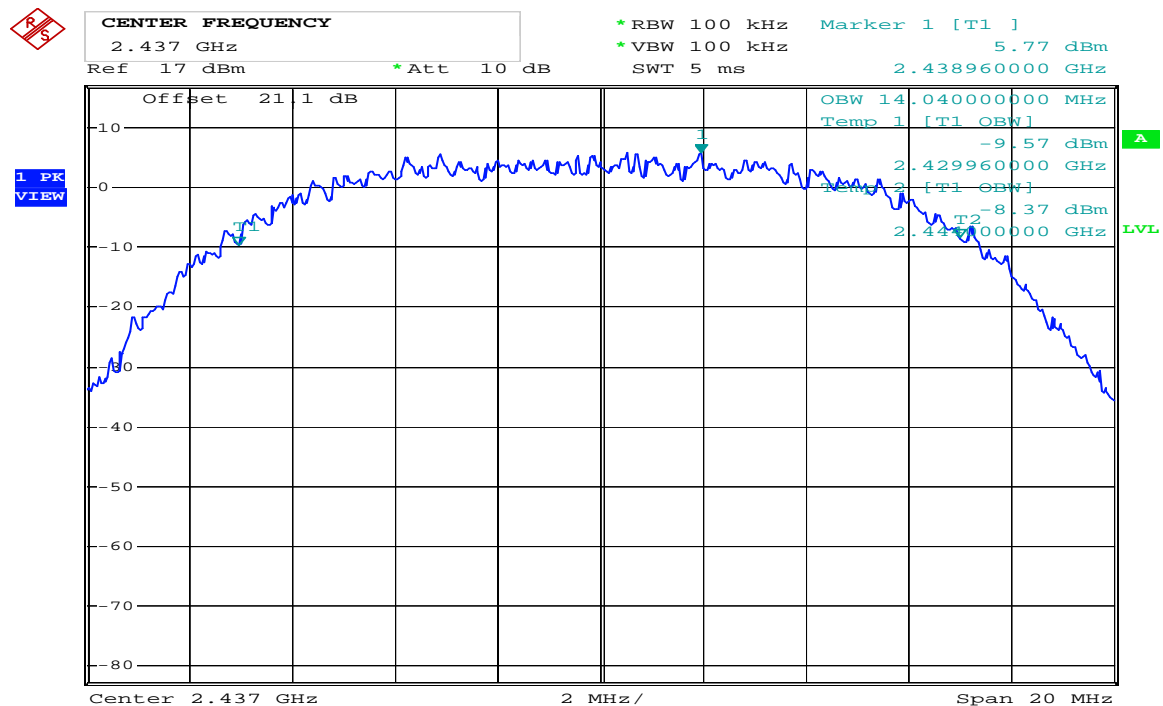
2.4GHz

802.11b CH1 2412MHz



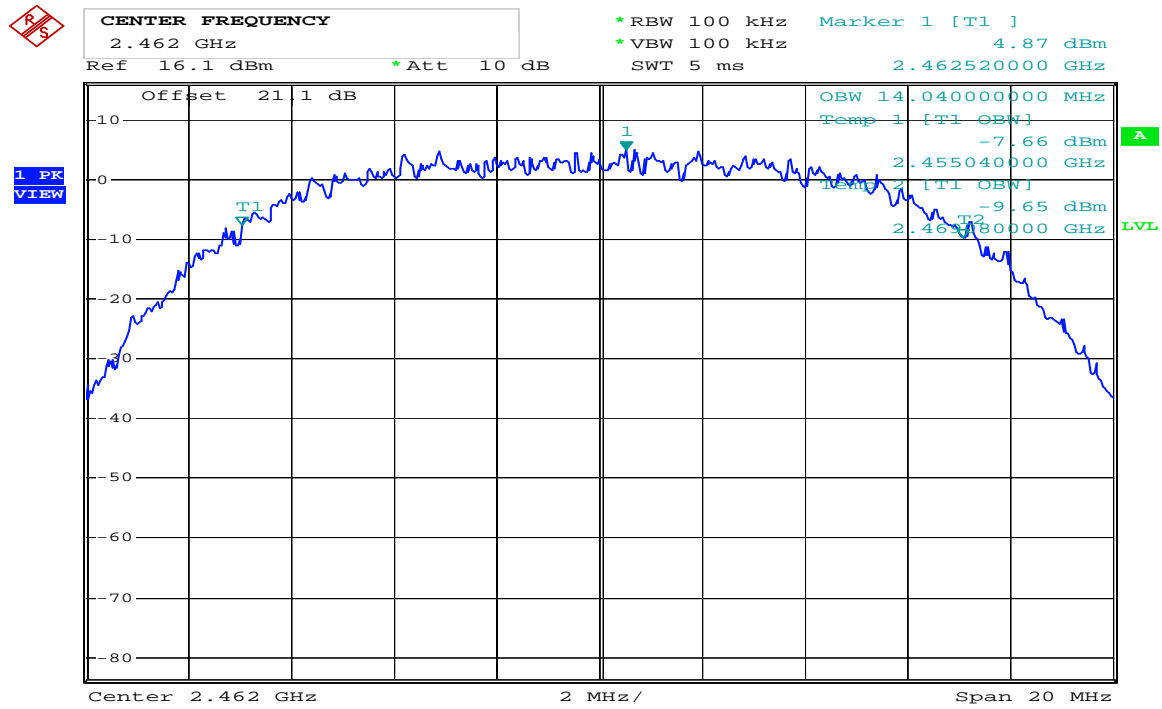
Comment: 802.11b 2412MHz
Date: 19.NOV.2009 08:30:11

802.11b CH6 2437MHz



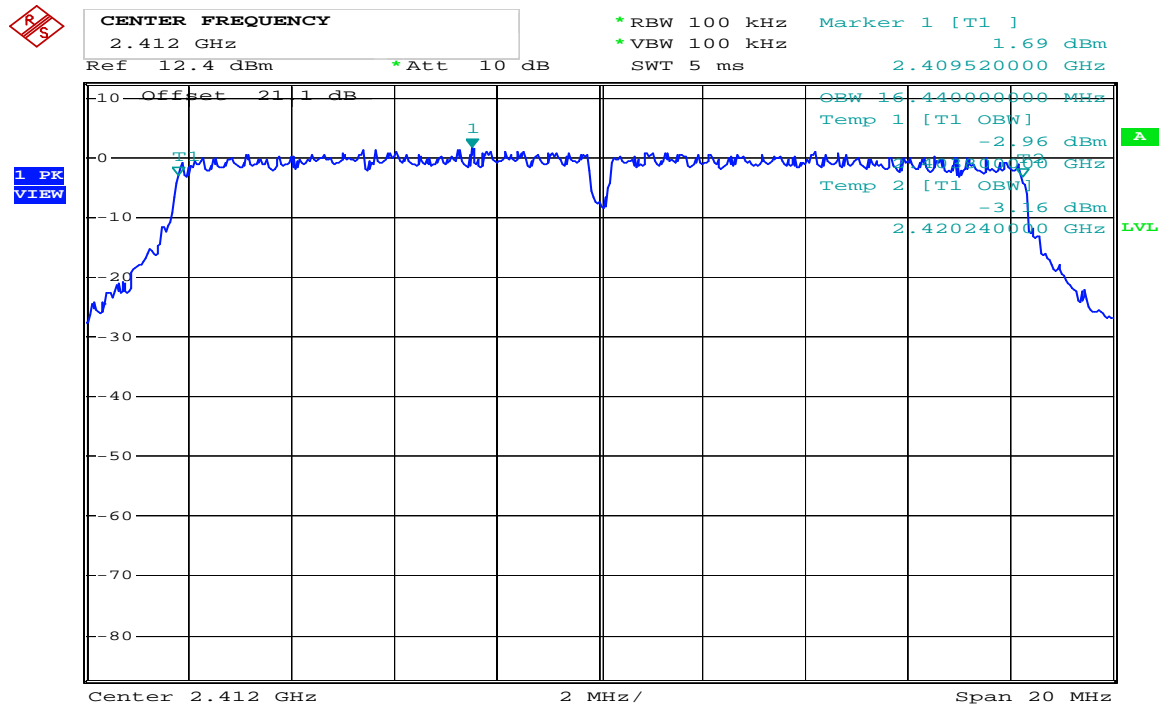
Comment: 802.11b 2437MHz
Date: 19.NOV.2009 08:39:01

802.11b CH11 2462MHz



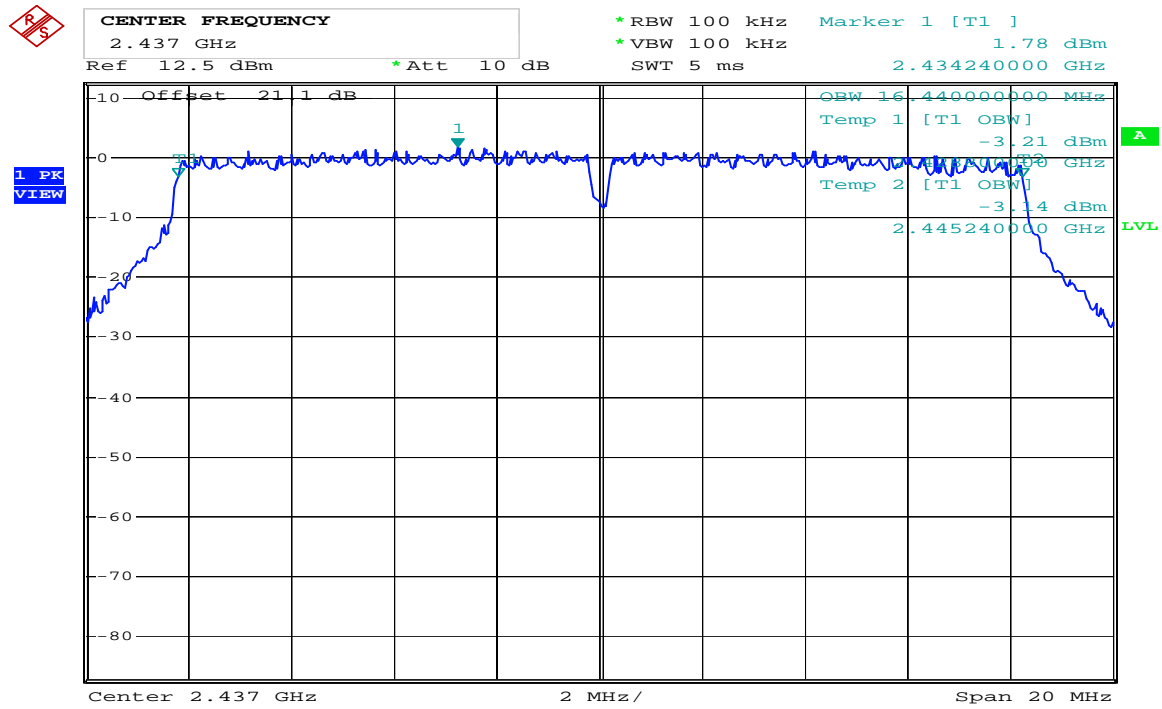
Comment: 802.11b 2462MHz
Date: 19.NOV.2009 08:41:21

802.11g CH1 2412MHz



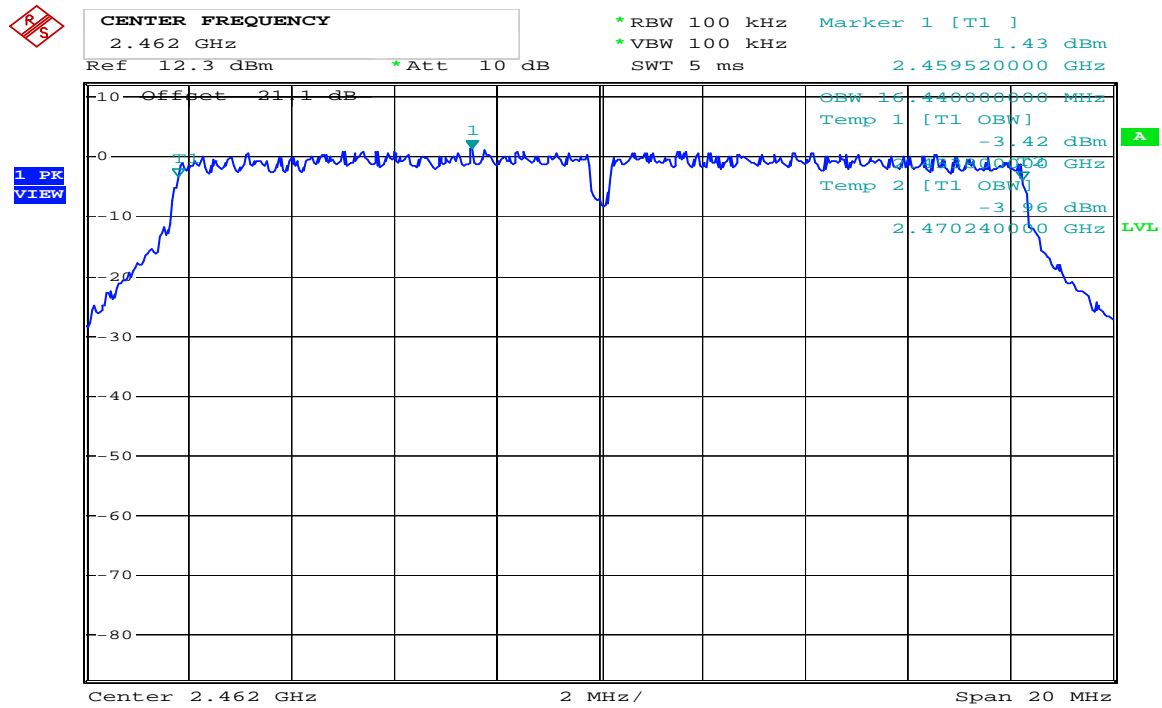
Comment: 802.11g 2412MHz
Date: 19.NOV.2009 08:49:13

802.11g CH6 2437MHz



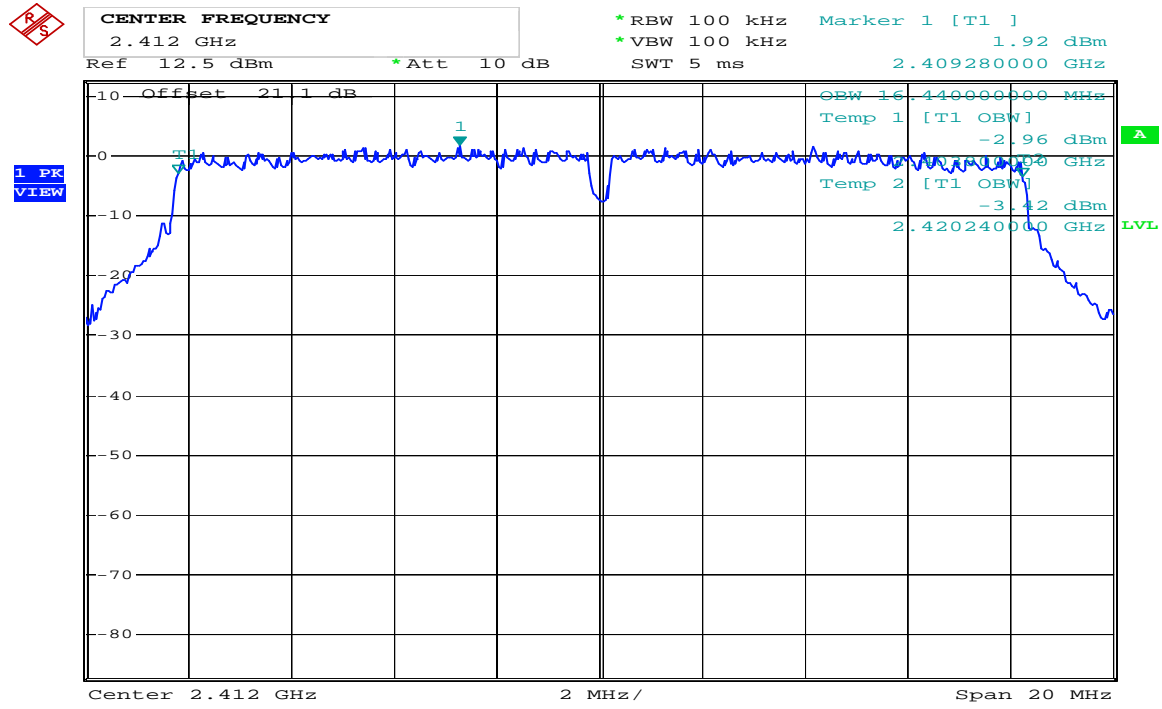
Comment: 802.11g 2437MHz
Date: 19.NOV.2009 08:51:52

802.11g CH11 2462MHz



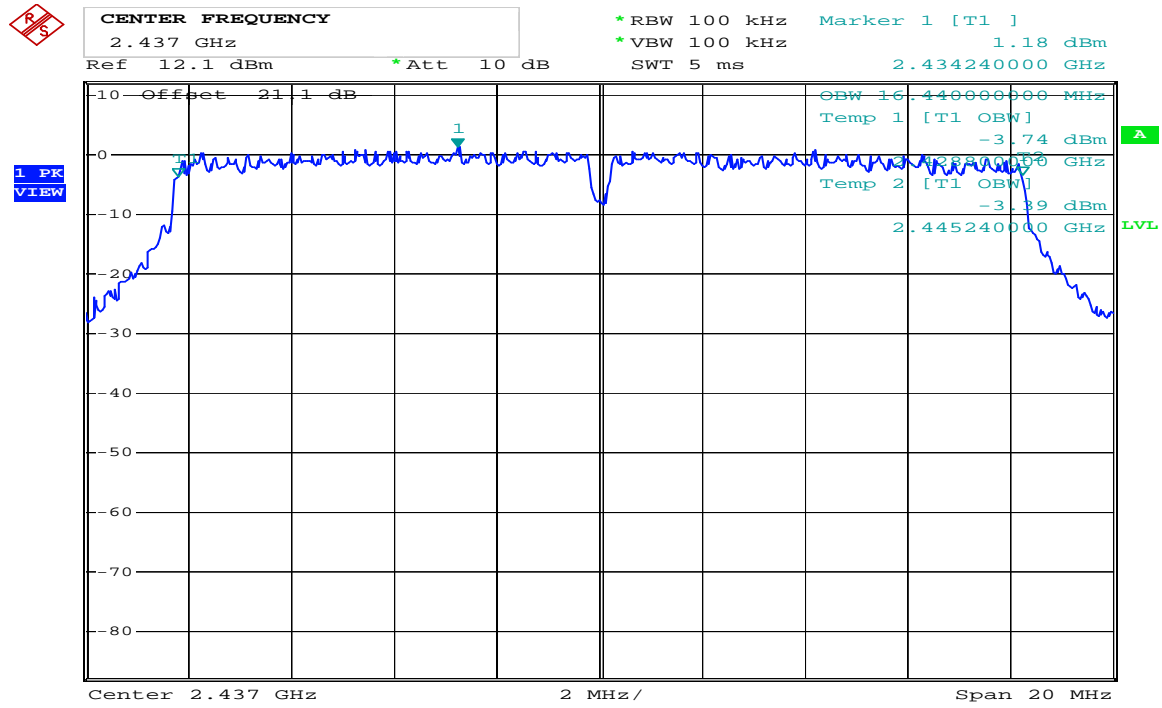
Comment: 802.11g 2462MHz
Date: 19.NOV.2009 08:58:00

802.11n (HT20) CH1 2412MHz



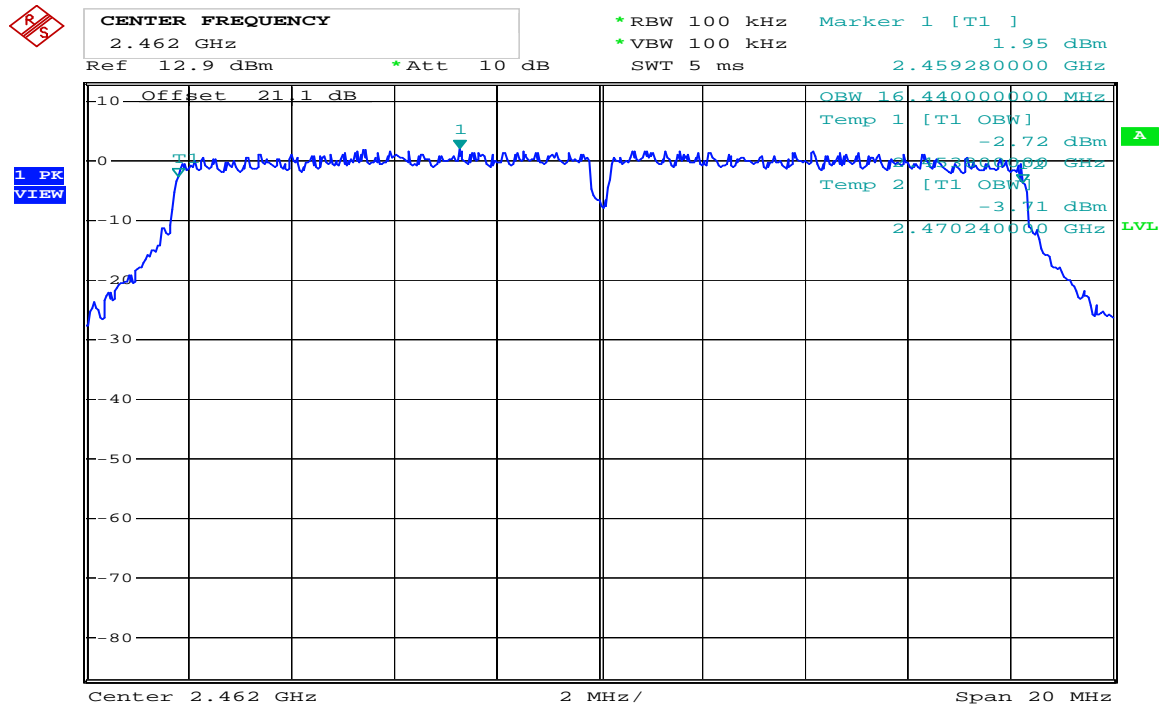
Comment: 802.11n(20) 2412MHz
Date: 19.NOV.2009 09:01:15

802.11n (HT20) CH6 2437MHz



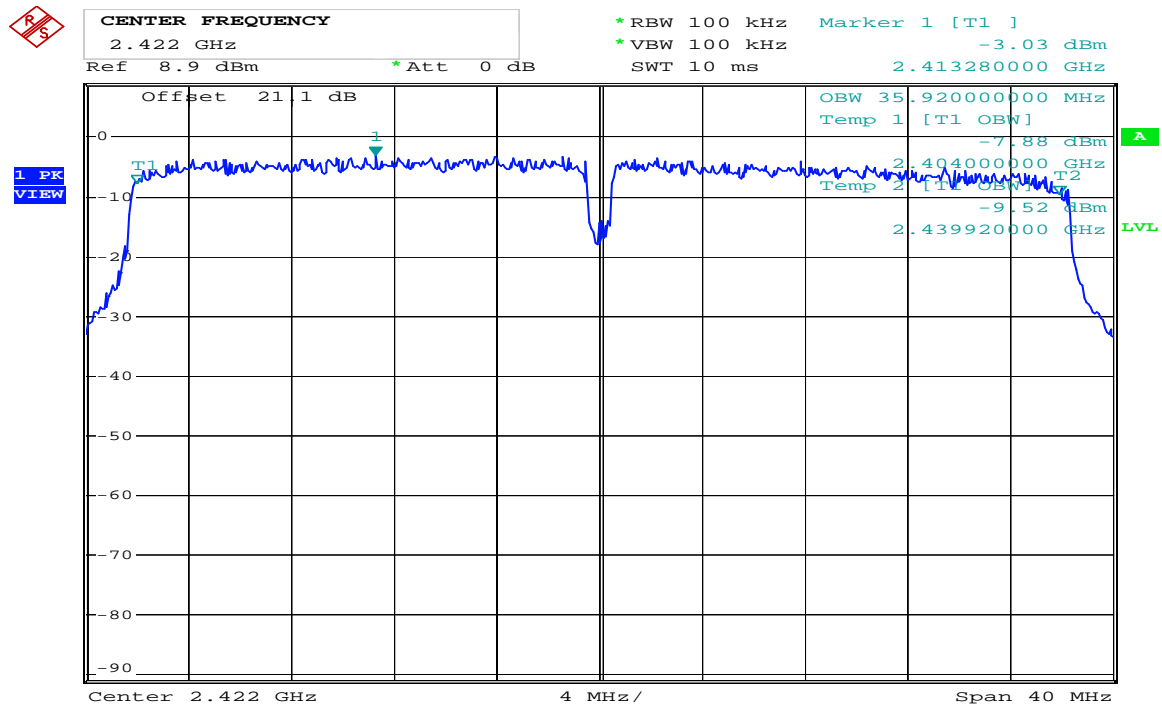
Comment: 802.11n(20) 2437MHz
Date: 19.NOV.2009 09:09:33

802.11n (HT20) CH11 2462MHz



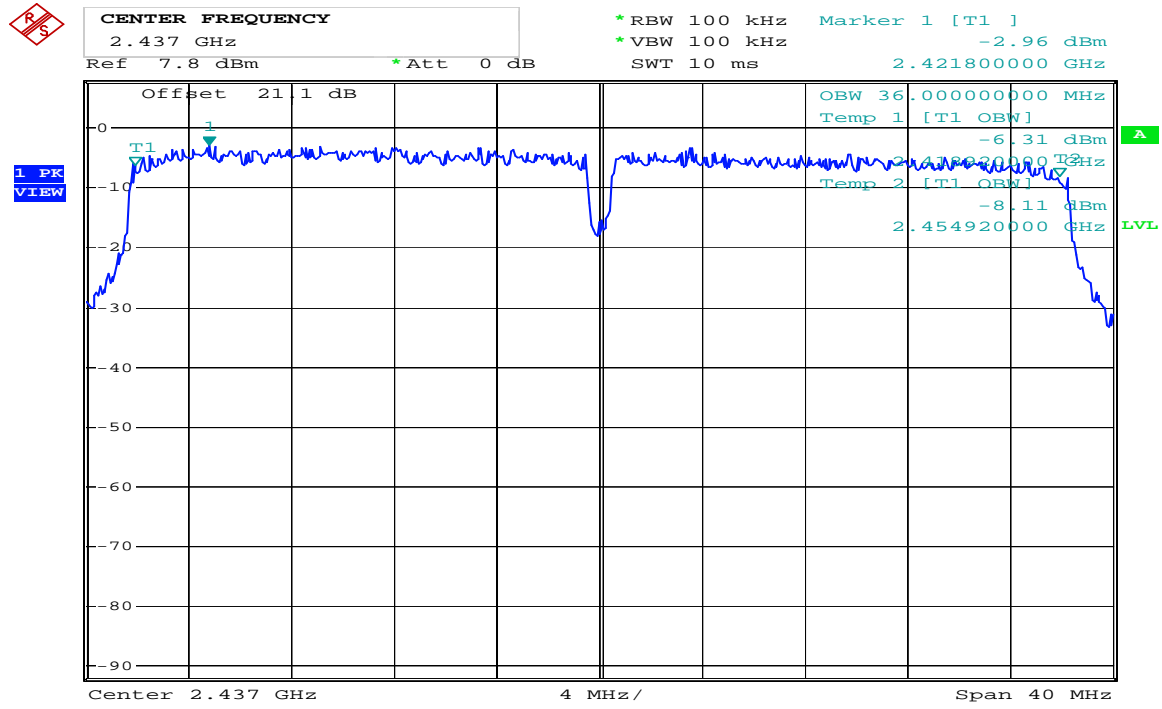
Comment: 802.11n(20) 2462MHz
Date: 19.NOV.2009 09:07:22

802.11 n (HT40) CH3 2422MHz



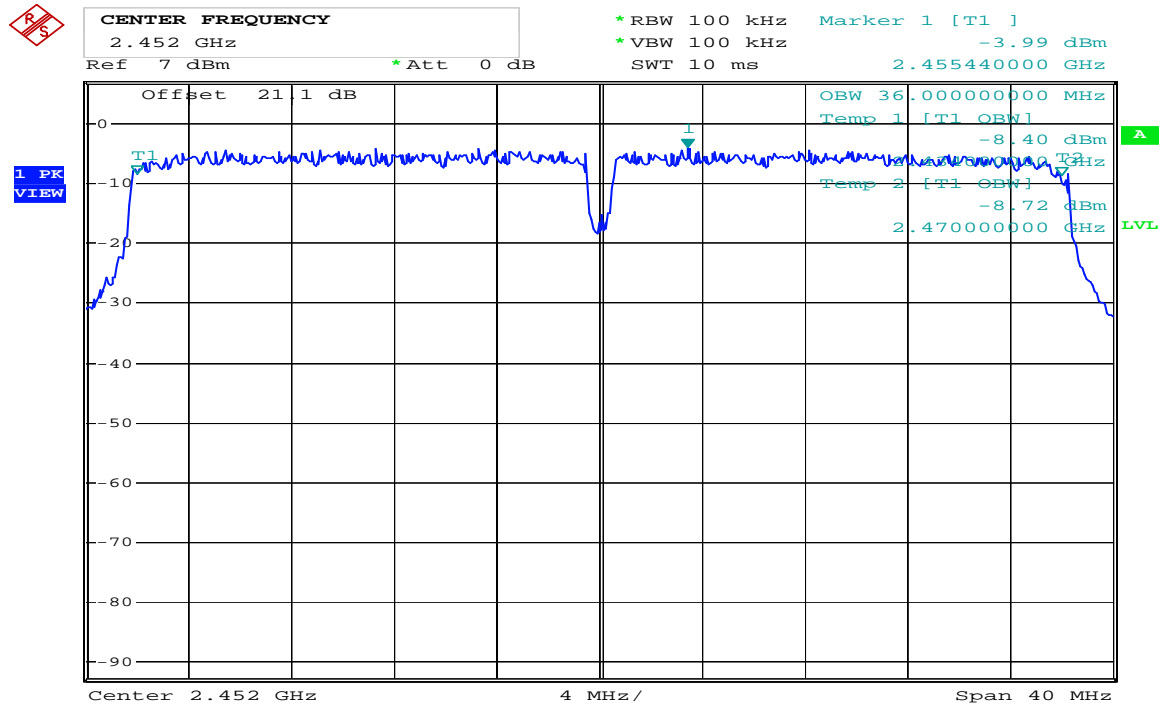
Comment: 802.11n(40) 2422MHz
Date: 19.NOV.2009 09:21:32

802.11n (HT40) CH6 2437MHz



Comment: 802.11n(40) 2437MHz
Date: 19.NOV.2009 09:18:42

802.11n (HT40) CH9 2452MHz



Comment: 802.11n(40) 2452MHz
Date: 19.NOV.2009 09:16:35

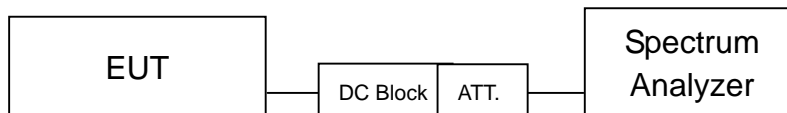
7 Power spectral density

7.1 Limit

According to FCC Part15.247 (e) requirement :

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.

7.2 Configuration of Measurement



7.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The power spectrum density was measured from the antenna port of the EUT using a 50ohm spectrum analyzer with the resolution bandwidth set at 3kHz, video bandwidth set at 10kHz, span of 1.5MHz, and sweep time set at 500 seconds. Power Density was read directly correction was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest).

7.4 Test Result

PASS.

The final test data is shown as following pages.

Power spectral density

2.4GHz

802.11b				
CH	Freq. (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Margin (dB)
1	2412	-6.03	8	-14.03
6	2437	-7.83	8	-15.83
11	2462	-8.59	8	-16.59

802.11g				
CH	Freq. (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Margin (dB)
1	2412	-12.86	8	-20.86
6	2437	-12.71	8	-20.71
11	2462	-13.05	8	-21.05

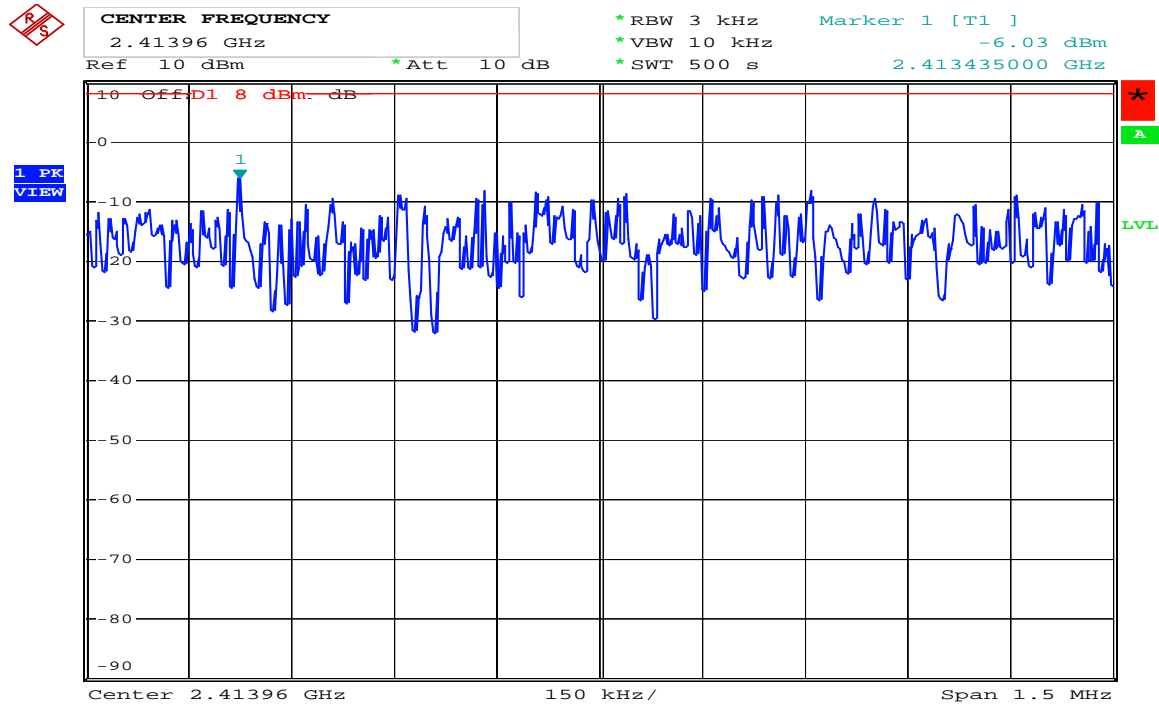
802.11n (HT20)				
CH	Freq. (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Margin (dB)
1	2412	-12.43	8	-20.43
6	2437	-13.22	8	-21.22
11	2462	-12.32	8	-20.32

802.11n (HT40)				
CH	Freq. (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Margin (dB)
3	2422	-16.24	8	-24.24
6	2437	-16.41	8	-24.41
9	2452	-15.69	8	-23.69

Power spectral density

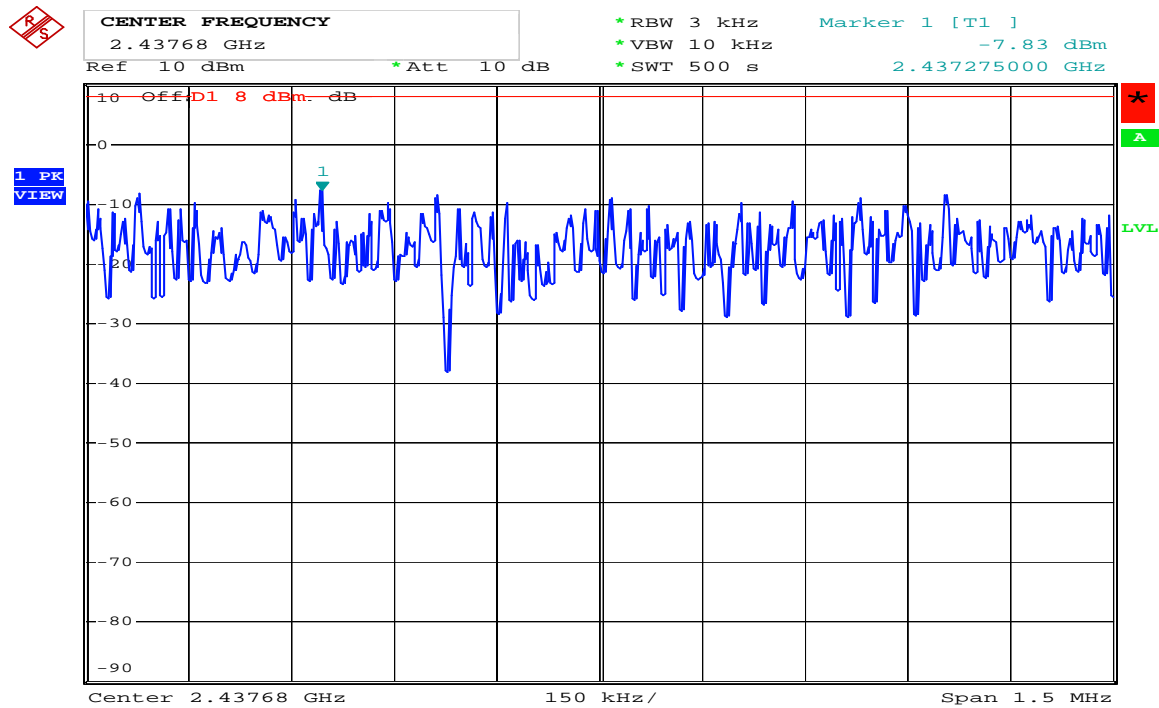
2.4GHz

802.11b CH1 2412MHz



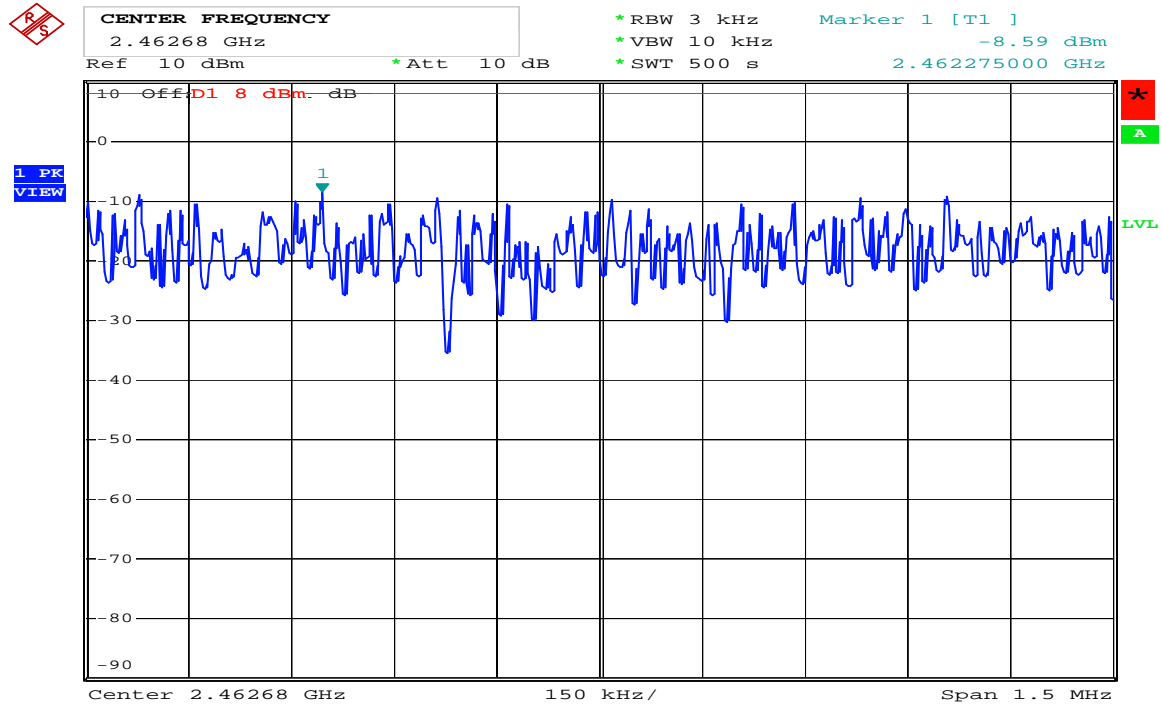
Comment: 802.11b 2412MHz
Date: 17.DEC.2009 16:32:32

802.11b CH6 2437MHz



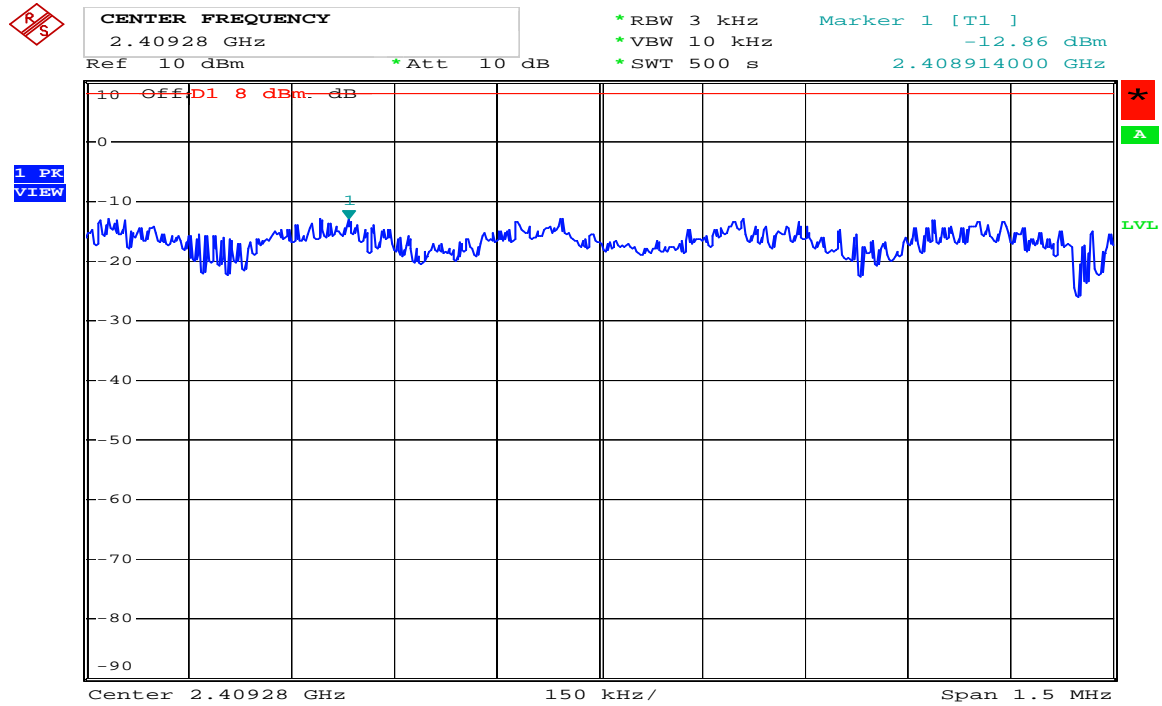
Comment: 802.11b 2437MHz
Date: 19.NOV.2009 08:38:41

802.11b CH11 2462MHz



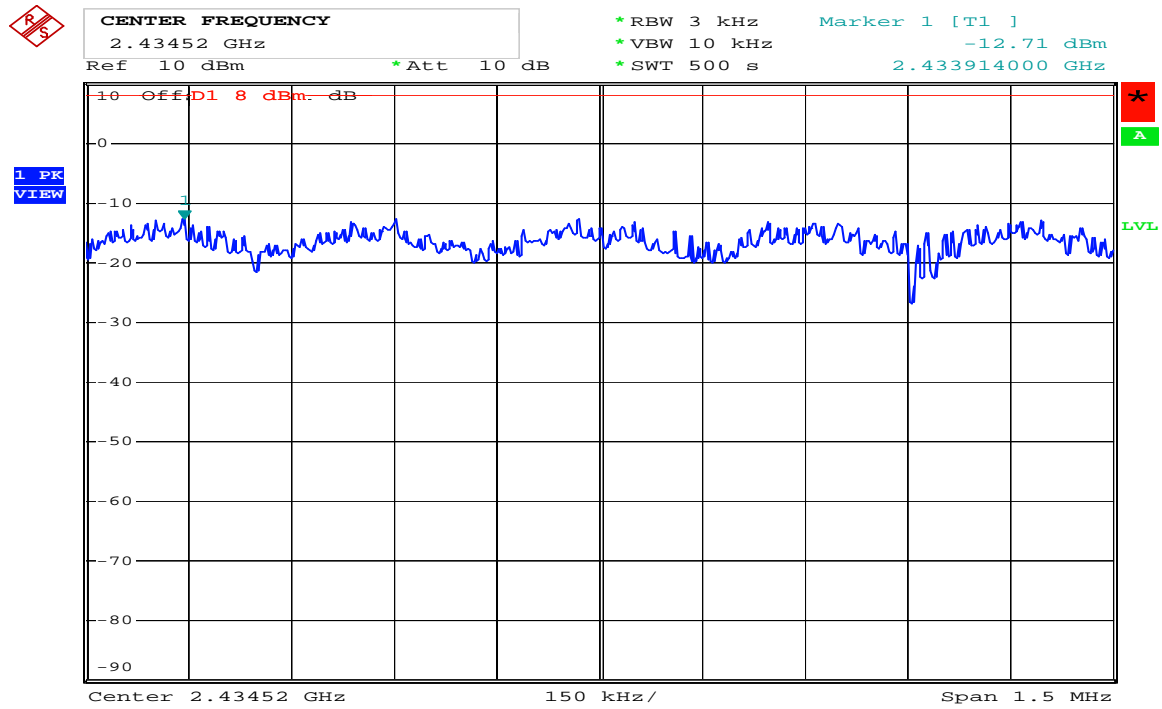
Comment: 802.11b 2462MHz
Date: 19.NOV.2009 08:41:01

802.11g CH1 2412MHz



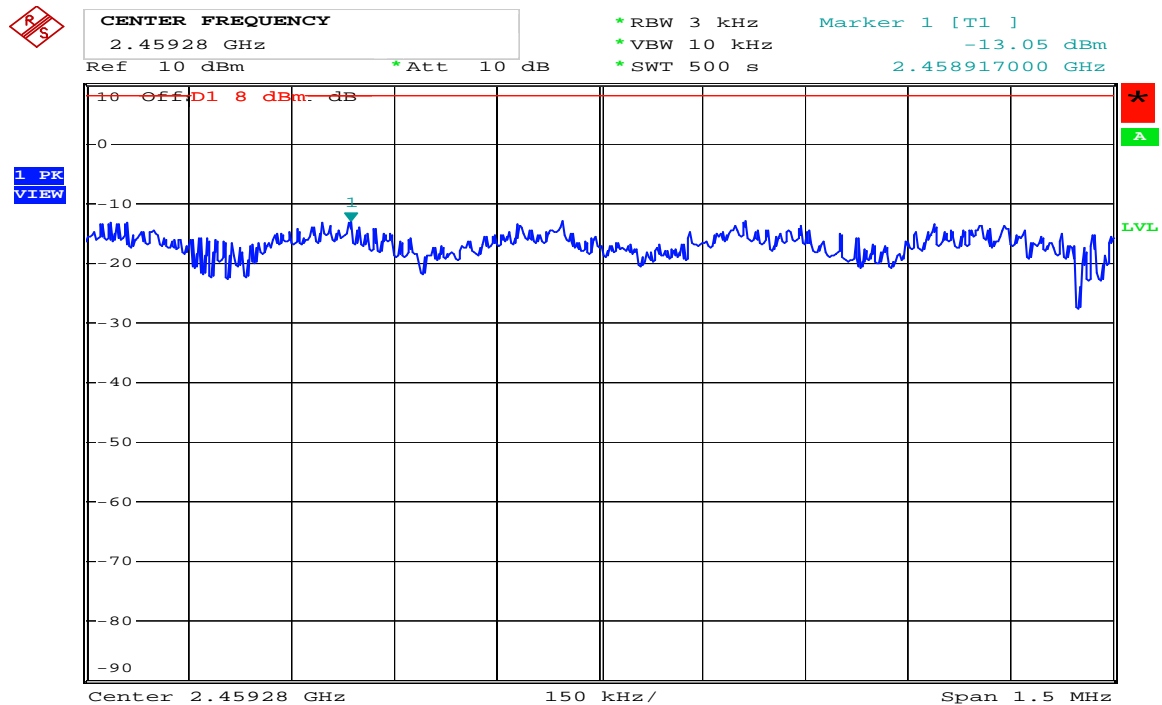
Comment: 802.11g 2412MHz
Date: 19.NOV.2009 08:48:53

802.11g CH6 2437MHz



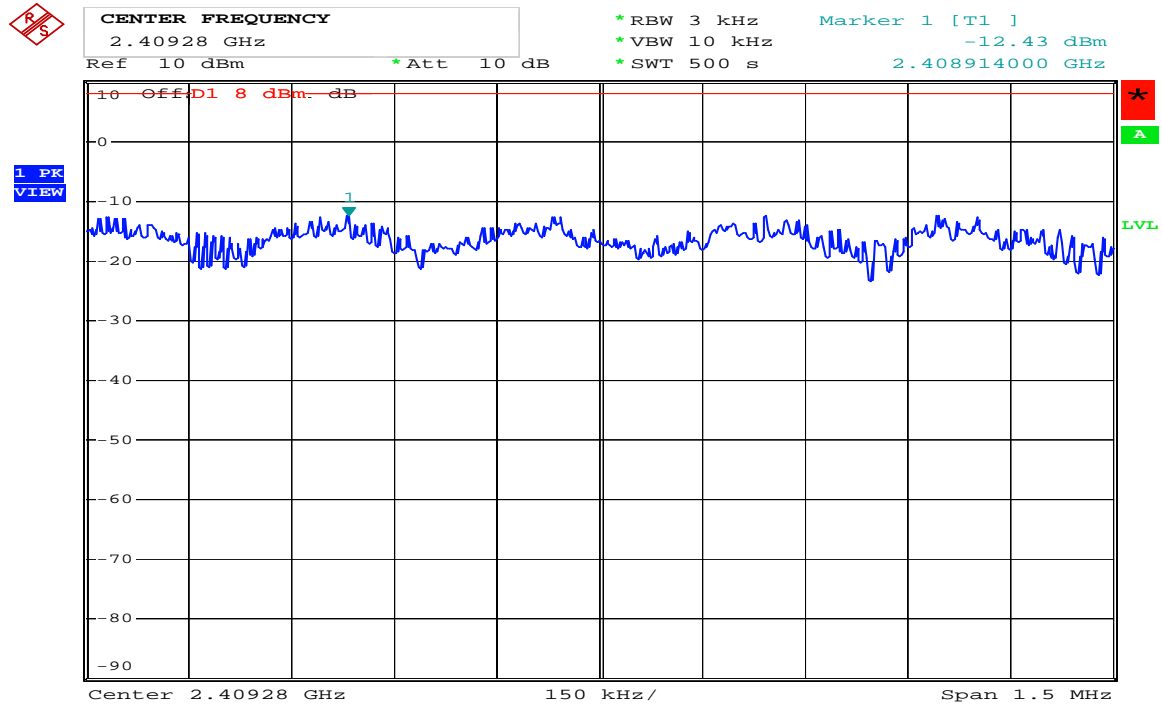
Comment: 802.11g 2437MHz
Date: 19.NOV.2009 08:51:32

802.11g CH11 2462MHz



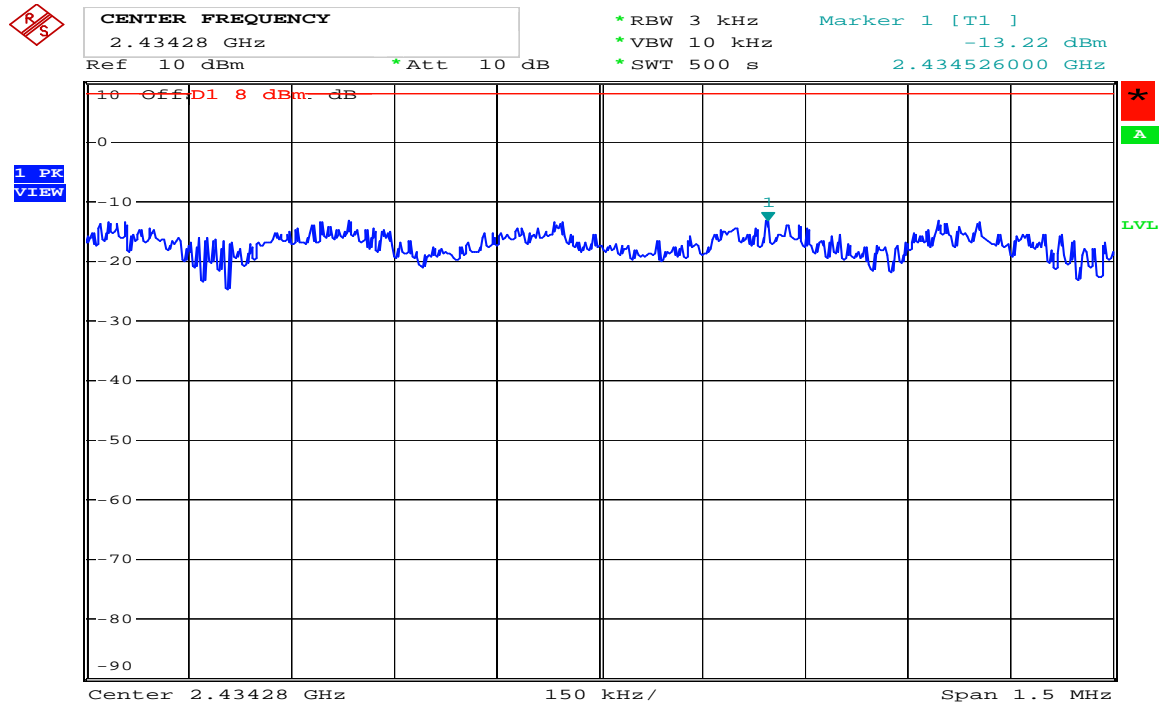
Comment: 802.11g 2462MHz
Date: 19.NOV.2009 08:57:40

802.11n (HT20) CH1 2412MHz



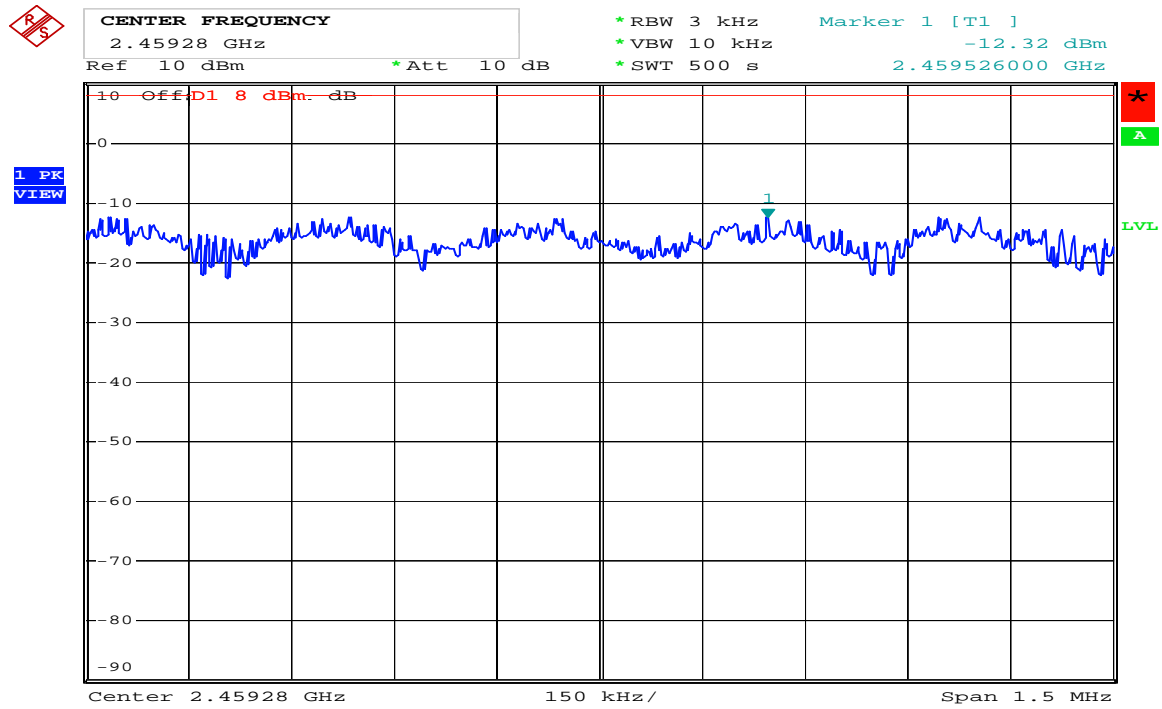
Comment: 802.11n(20) 2412MHz
Date: 19.NOV.2009 09:00:55

802.11n (HT20) CH6 2437MHz



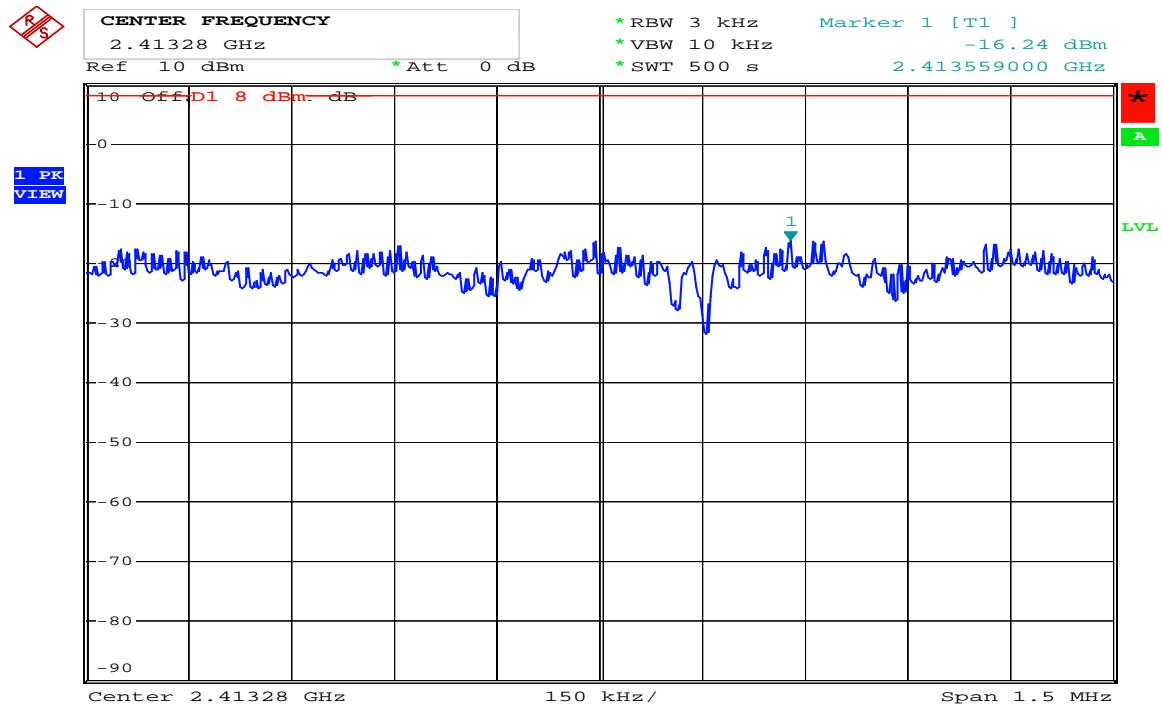
Comment: 802.11n(20) 2437MHz
Date: 19.NOV.2009 09:09:12

802.11n (HT20) CH11 2462MHz



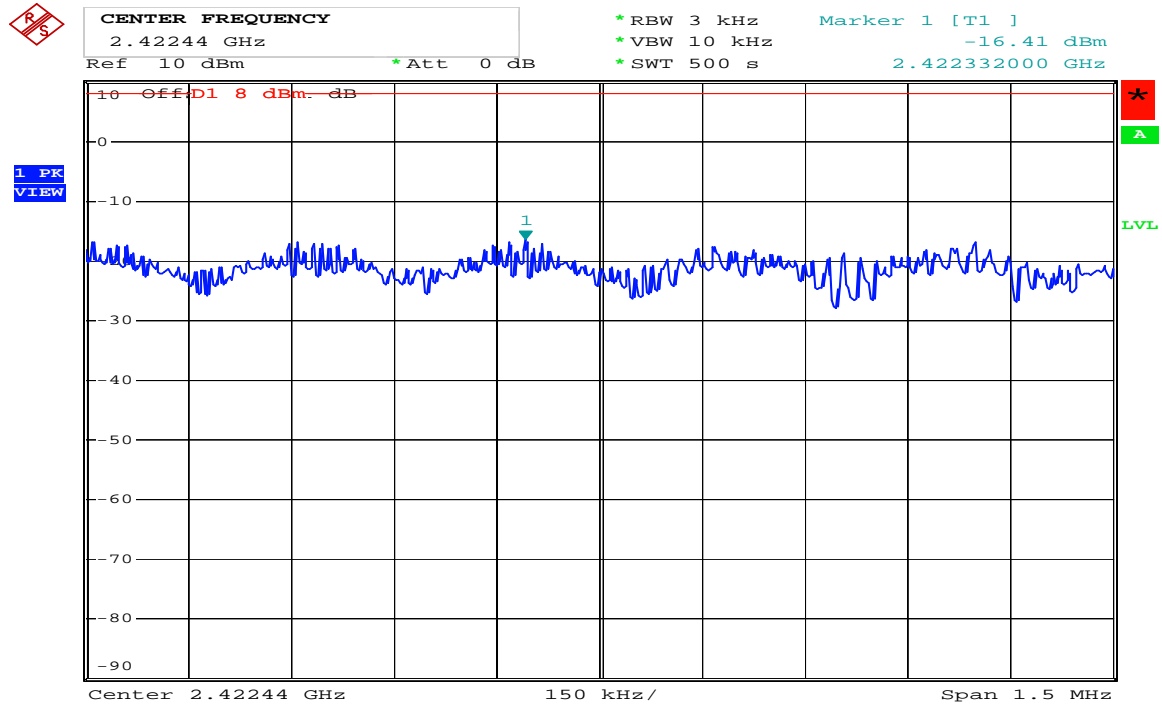
Comment: 802.11n(20) 2462MHz
Date: 19.NOV.2009 09:07:03

802.11 n (HT40) CH3 2422MHz



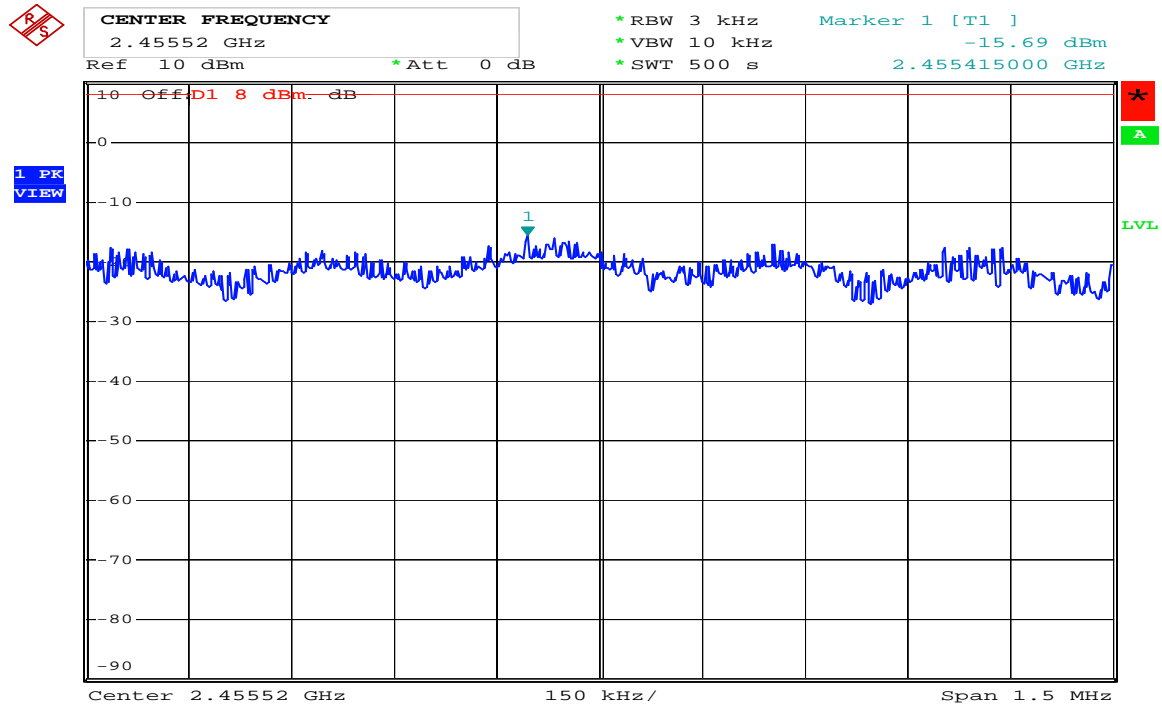
Comment: 802.11n(40) 2422MHz
Date: 19.NOV.2009 09:23:11

802.11n (HT40) CH6 2437MHz



Comment: 802.11n(40) 2437MHz
Date: 19.NOV.2009 09:18:21

802.11n (HT40) CH9 2452MHz



Comment: 802.11n(40) 2452MHz
Date: 19.NOV.2009 09:16:14

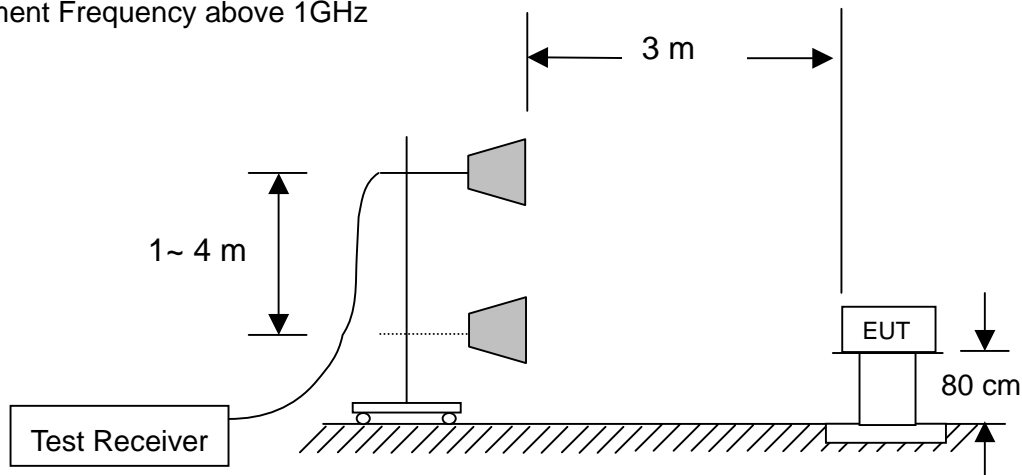
8 Emission on the Band Edge test

8.1 Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

8.2 Configuration of Measurement

Measurement Frequency above 1GHz



8.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW =1M, VBW= RBW for peak, and VBW=10Hz for average.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

8.4 Test Result

PASS.

The final test data is shown as following pages.

Band edge

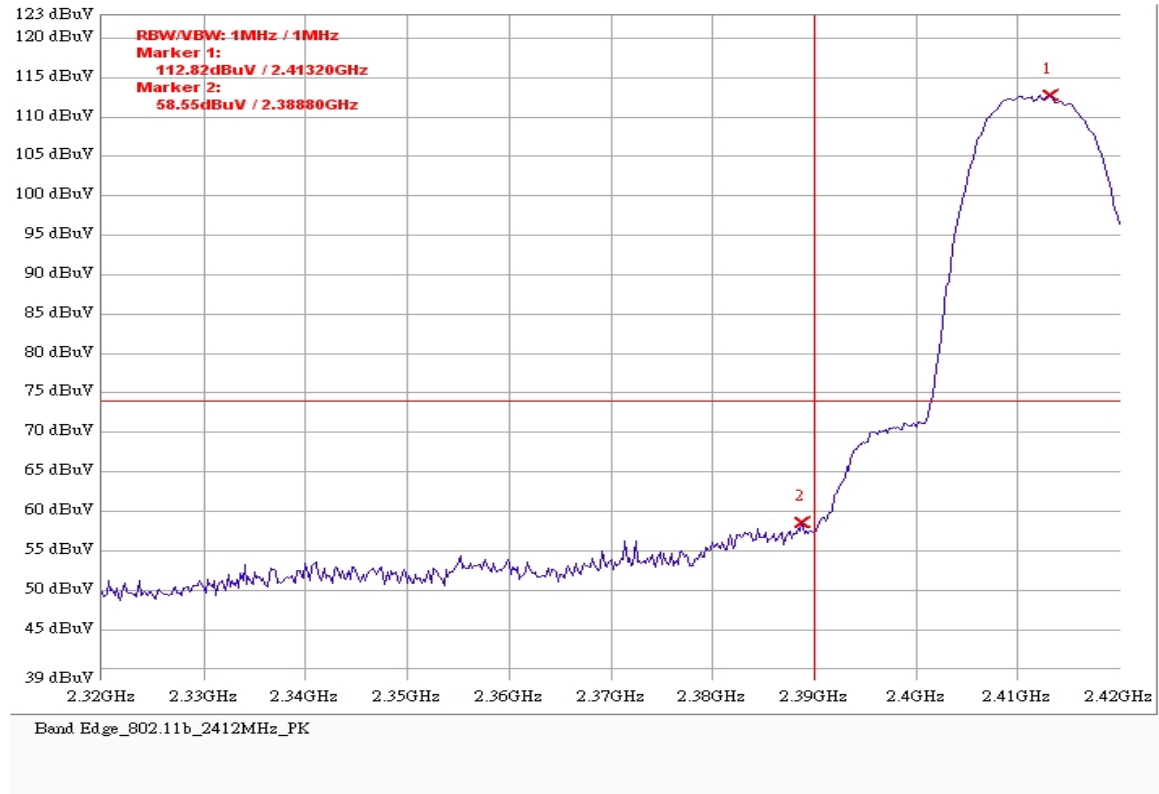
802.11b					
CH	Restrict Freq. Band (MHz)	Detector Mode	Maximum level (dB μ V/m)	Limit (dBm)	Margin (dB)
1	2310~2390	PK	58.55	74	-15.45
		AV	44.54	54	-9.46
11	2483.5~2500	PK	54.91	74	-19.09
		AV	42.93	54	-11.07

802.11g					
CH	Restrict Freq. Band (MHz)	Detector Mode	Maximum level (dB μ V/m)	Limit (dBm)	Margin (dB)
1	2310~2390	PK	62.47	74	-11.53
		AV	46.78	54	-7.22
11	2483.5~2500	PK	64.38	74	-9.62
		AV	47.51	54	-6.49

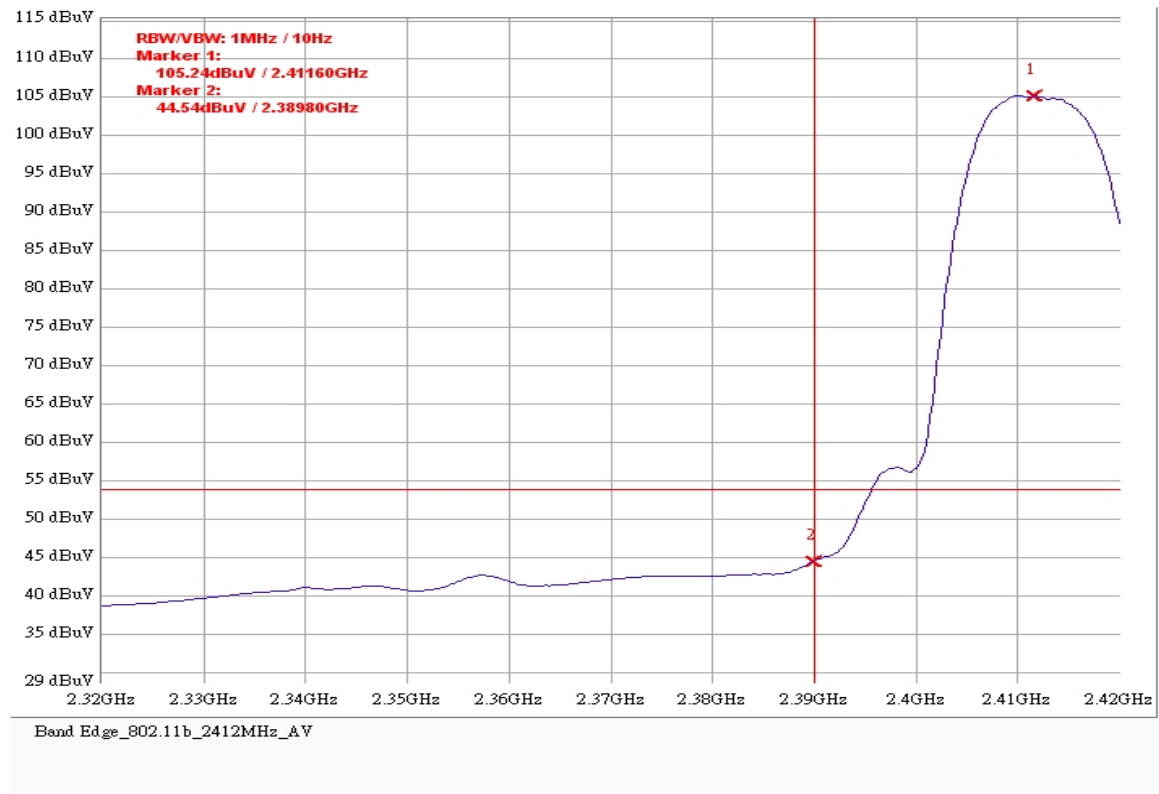
802.11n (HT20)					
CH	Restrict Freq. Band (MHz)	Detector Mode	Maximum level (dB μ V/m)	Limit (dBm)	Margin (dB)
1	2310~2390	PK	69.25	74	-4.75
		AV	53.28	54	-0.72
11	2483.5~2500	PK	66.32	74	-7.68
		AV	49.23	54	-4.77

802.11n (HT40)					
CH	Restrict Freq. Band (MHz)	Detector Mode	Maximum level (dB μ V/m)	Limit (dBm)	Margin (dB)
3	2310~2390	PK	69.01	74	-4.99
		AV	53.52	54	-0.48
9	2483.5~2500	PK	67.77	74	-6.23
		AV	53.34	54	-0.66

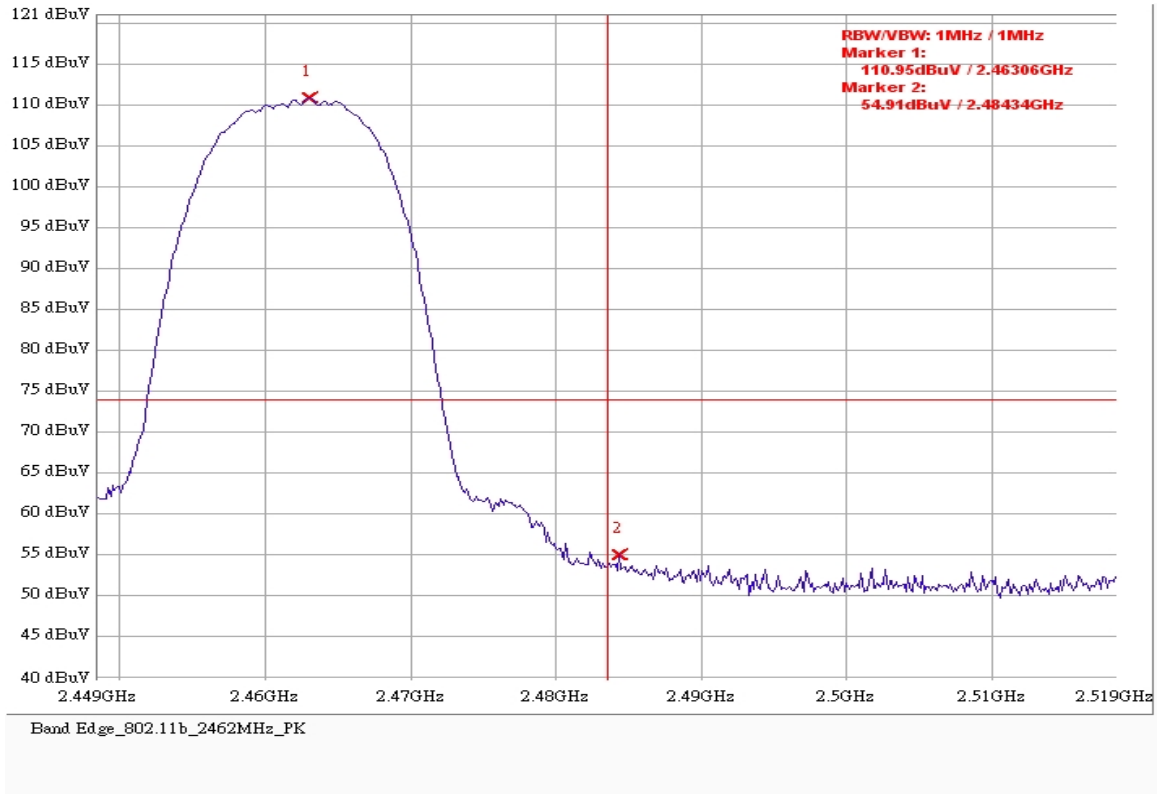
802.11b CH1 2412MHz PK



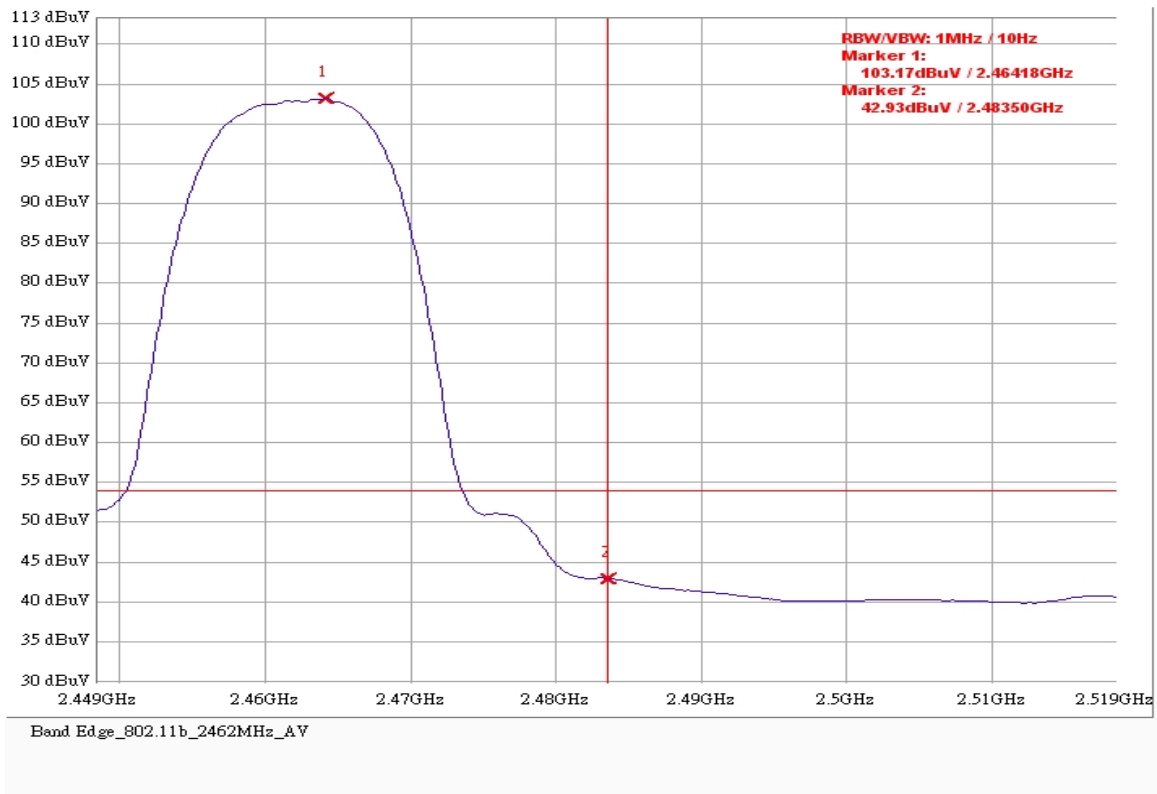
802.11b CH1 2412MHz AV



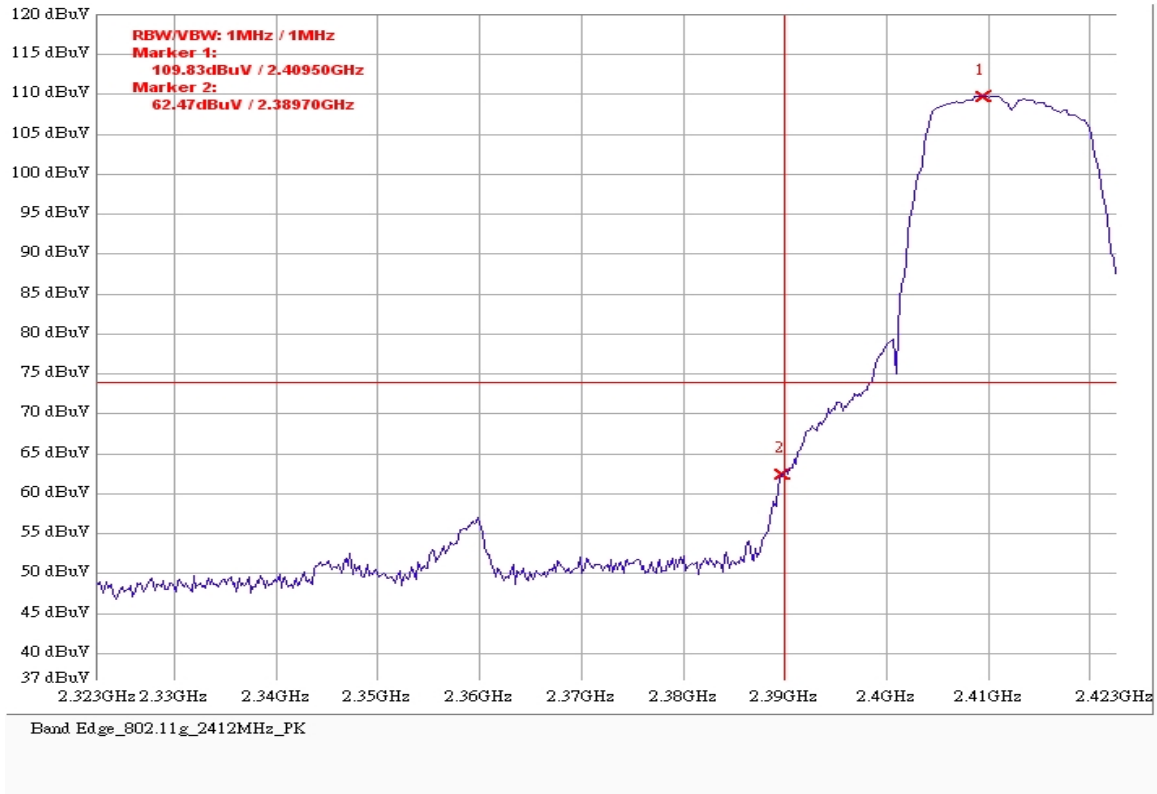
802.11b CH11 2462MHz PK



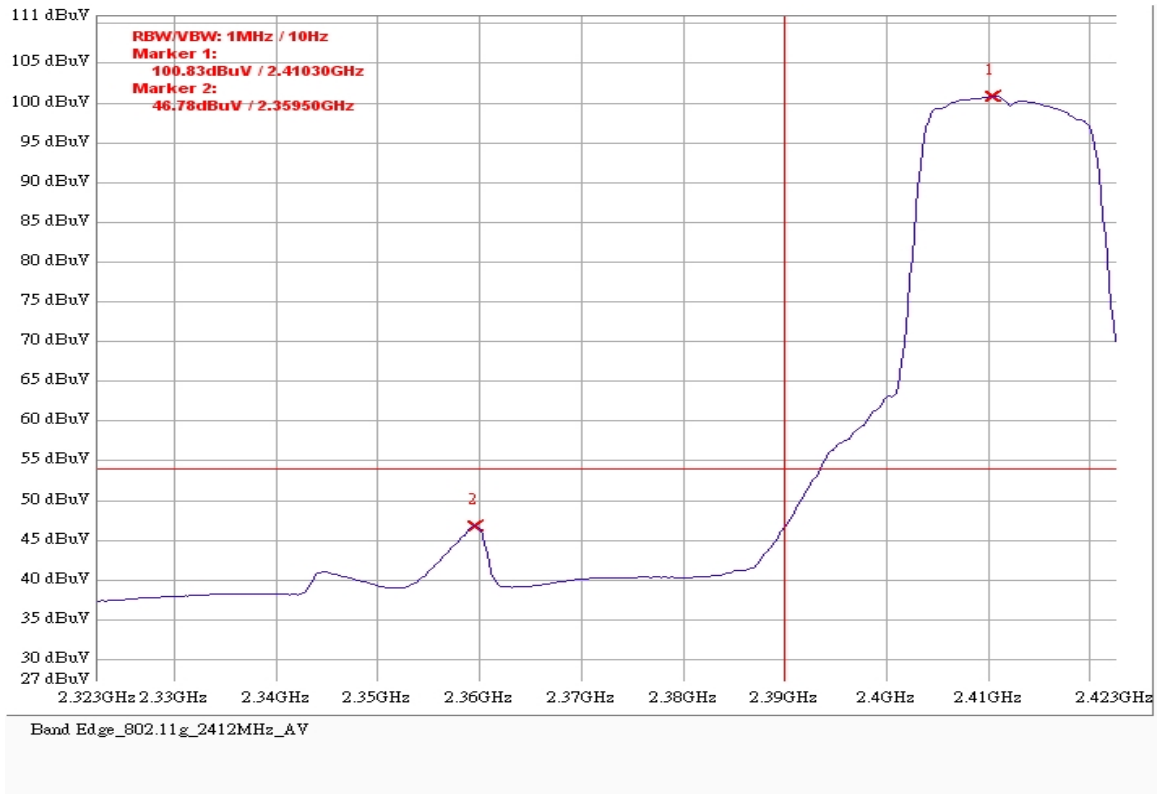
802.11b CH11 2462MHz AV



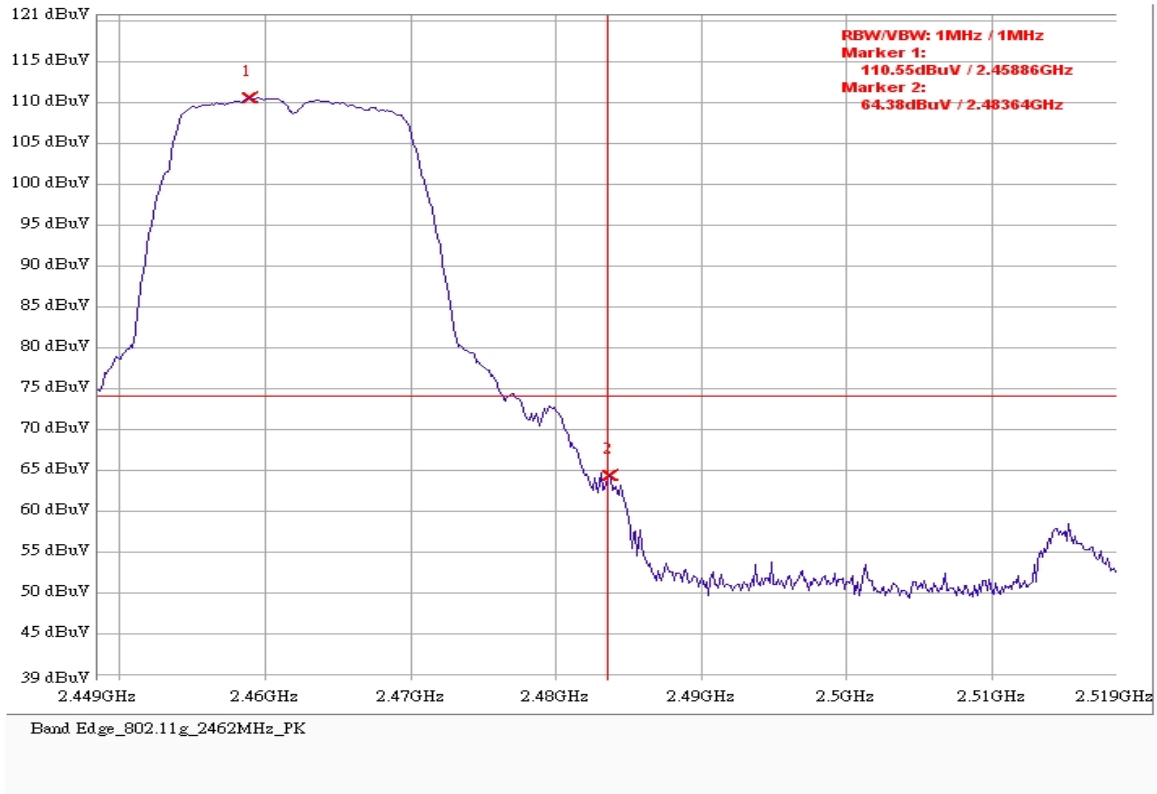
802.11g CH1 2412MHz PK



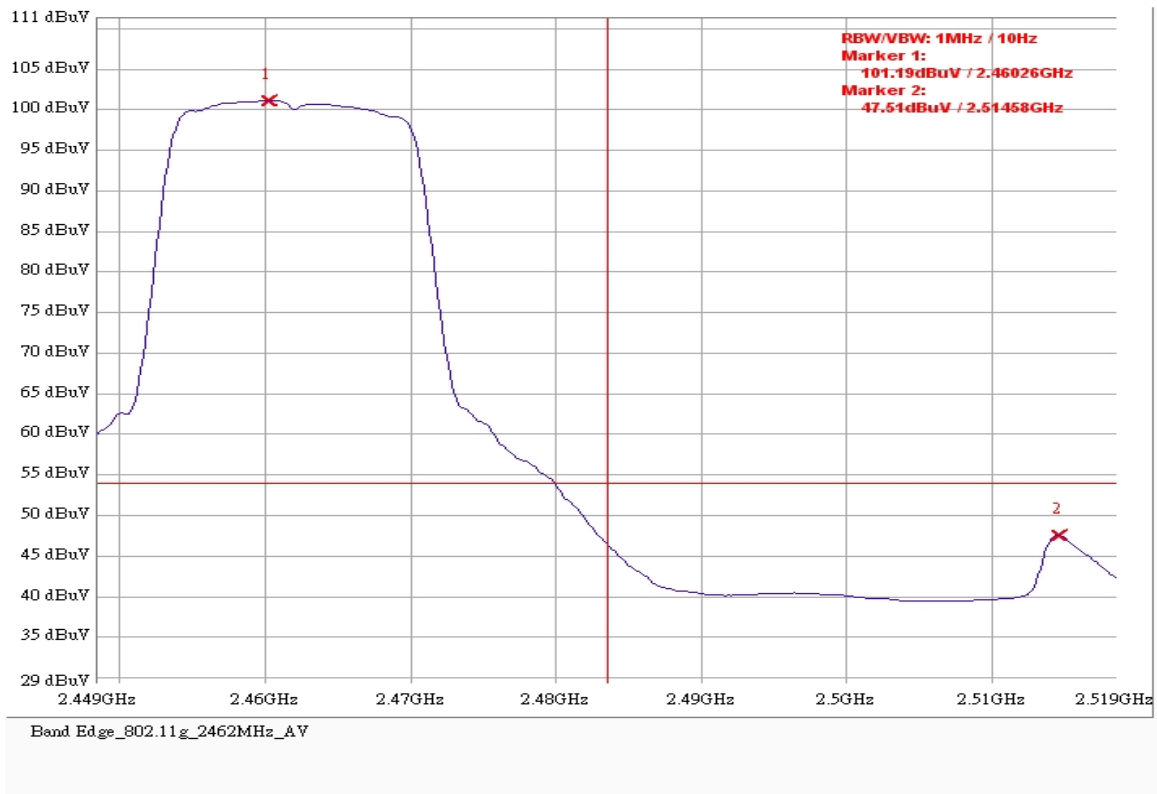
802.11g CH1 2412MHz AV



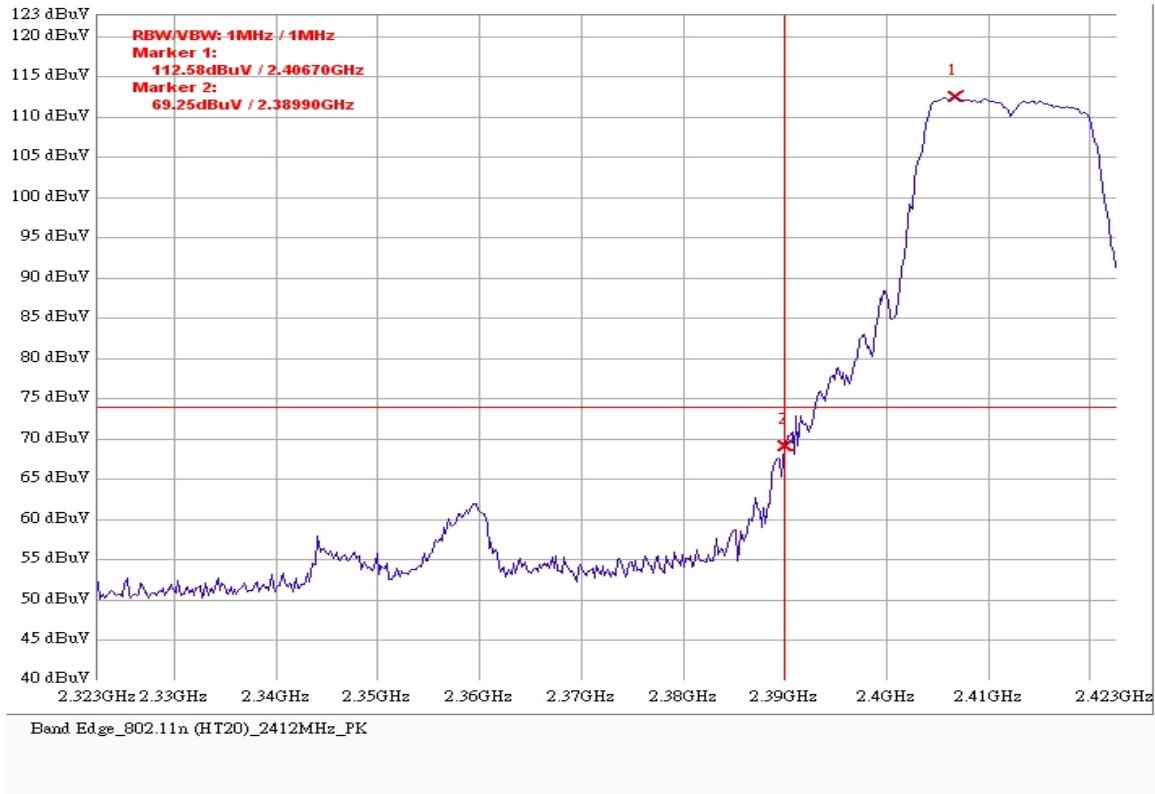
802.11g CH11 2462MHz PK



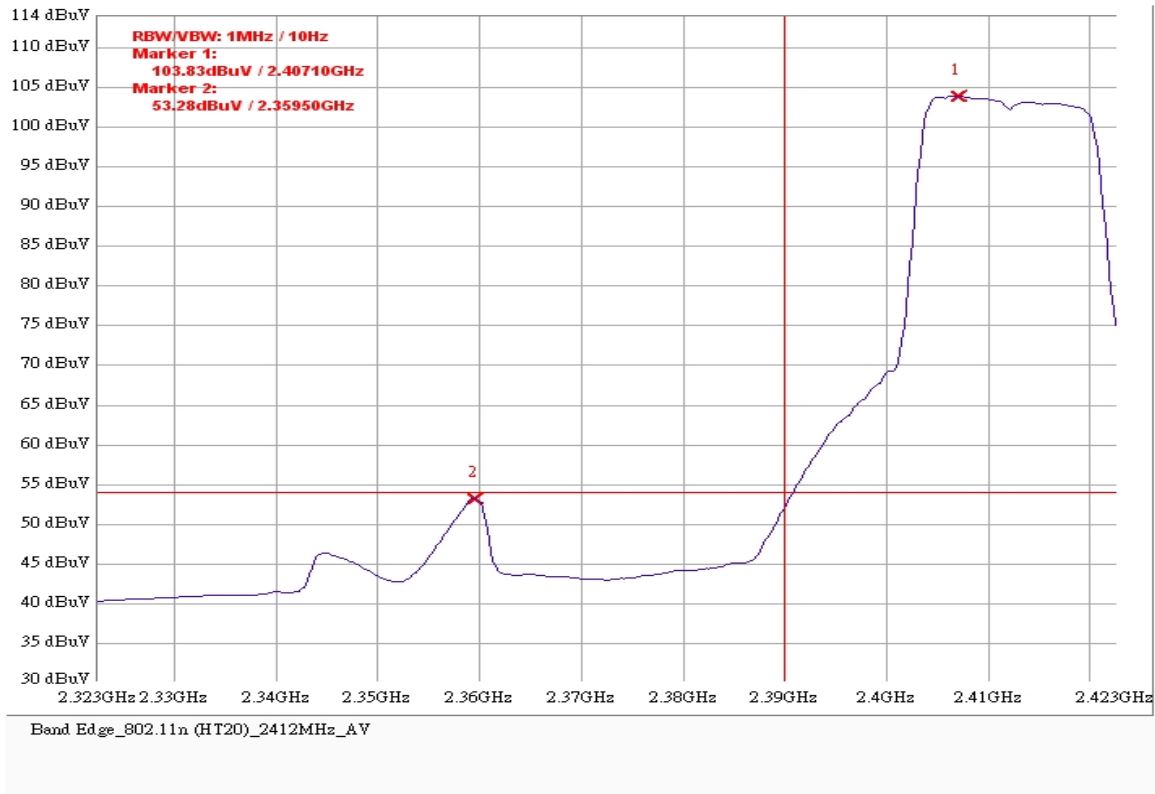
802.11g CH11 2462MHz AV



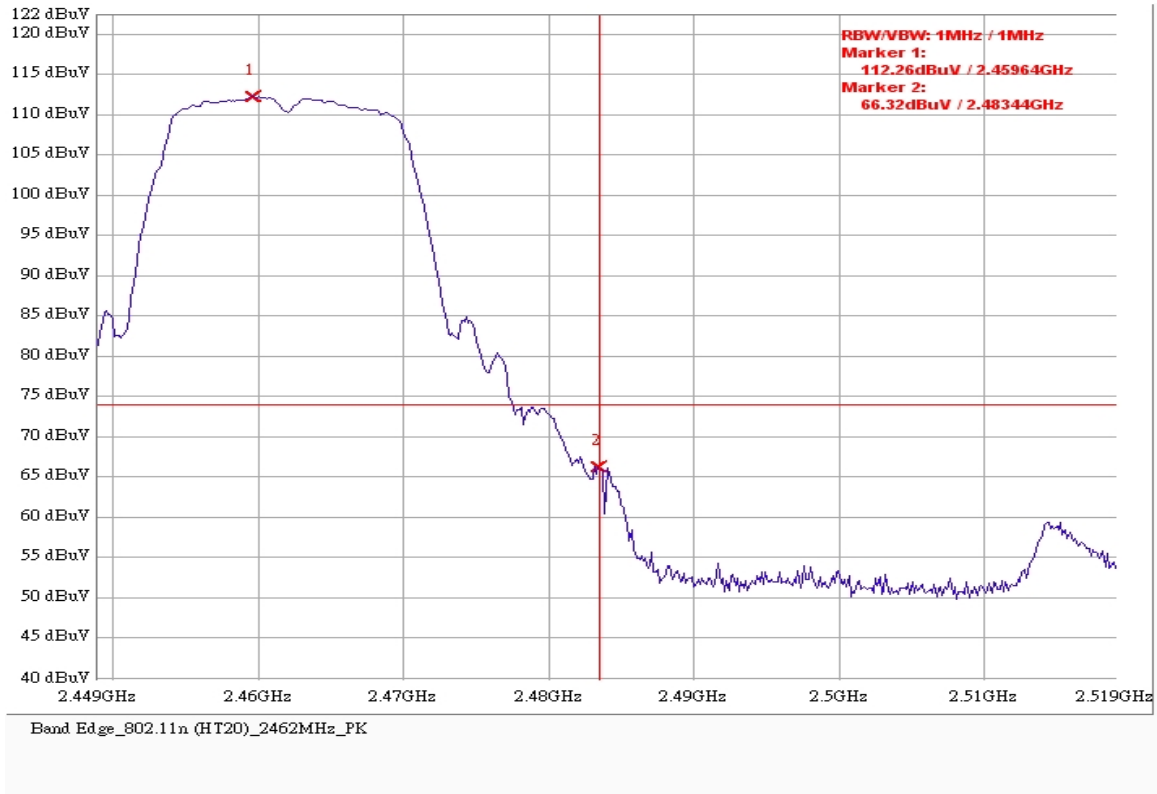
802.11n (HT20) CH1 2412MHz PK



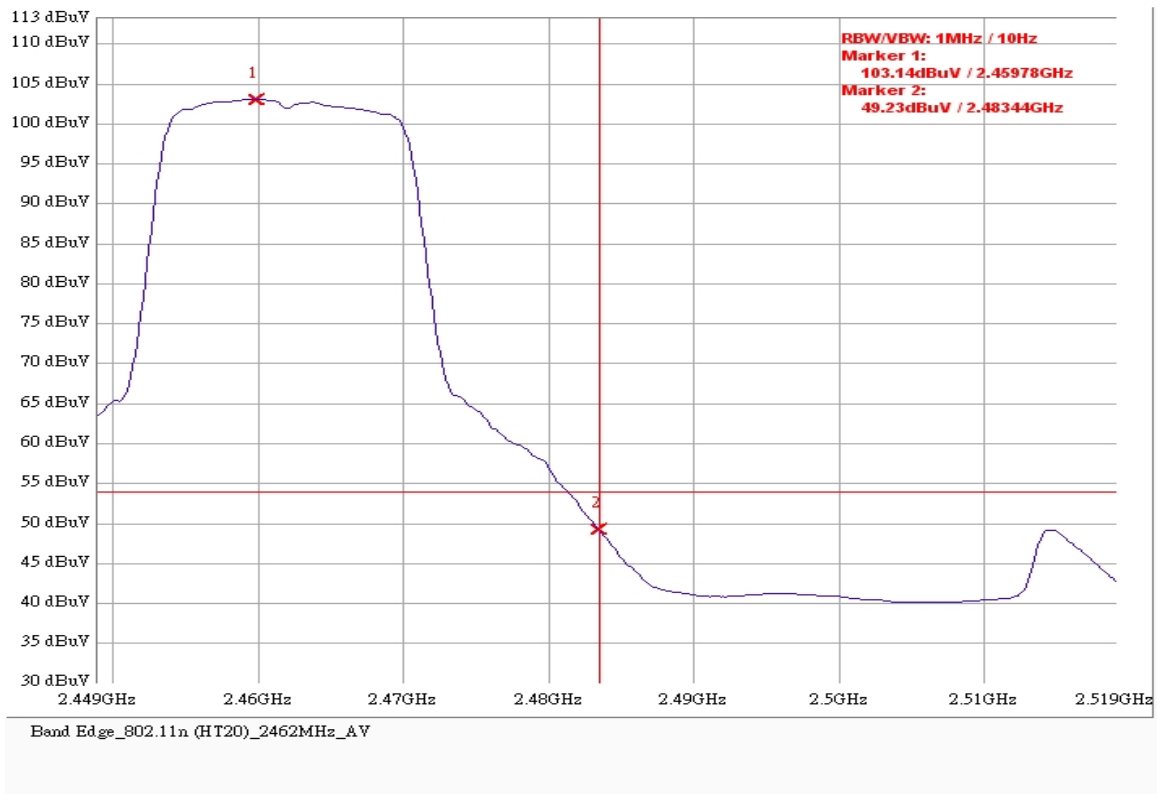
802.11n (HT20) CH1 2412MHz AV



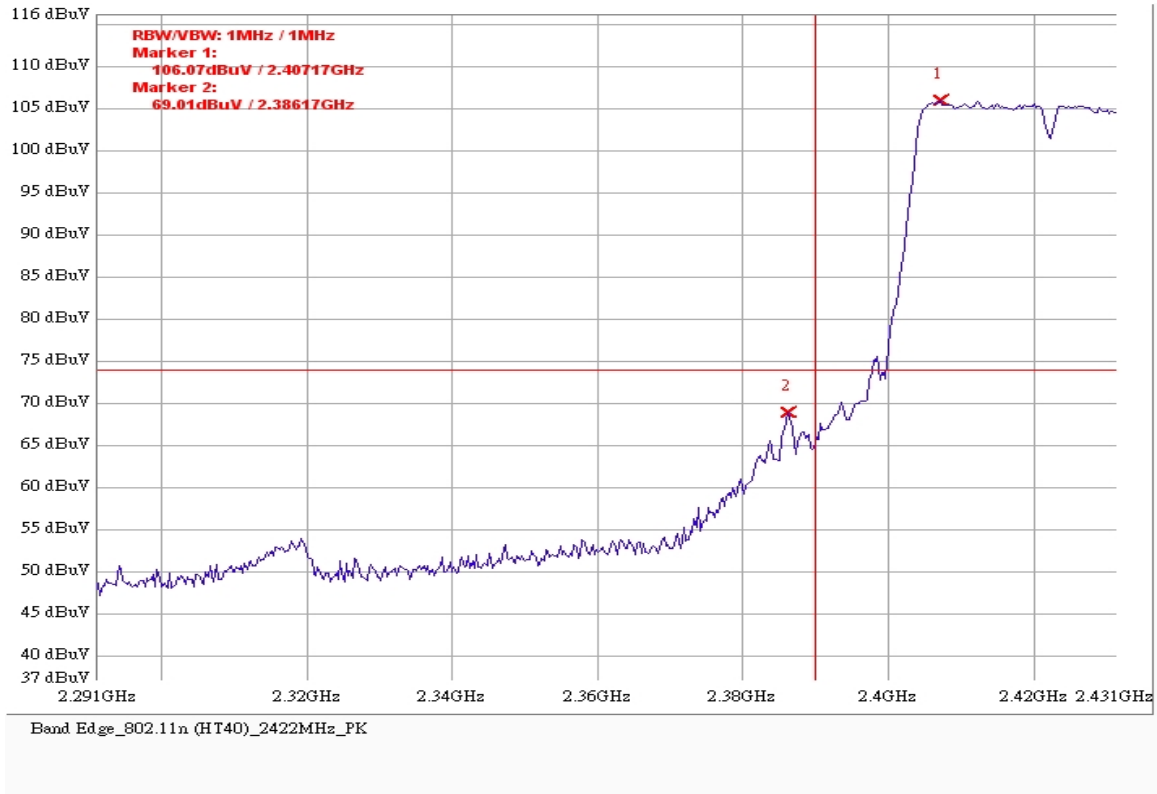
802.11n (HT20) CH11 2462MHz PK



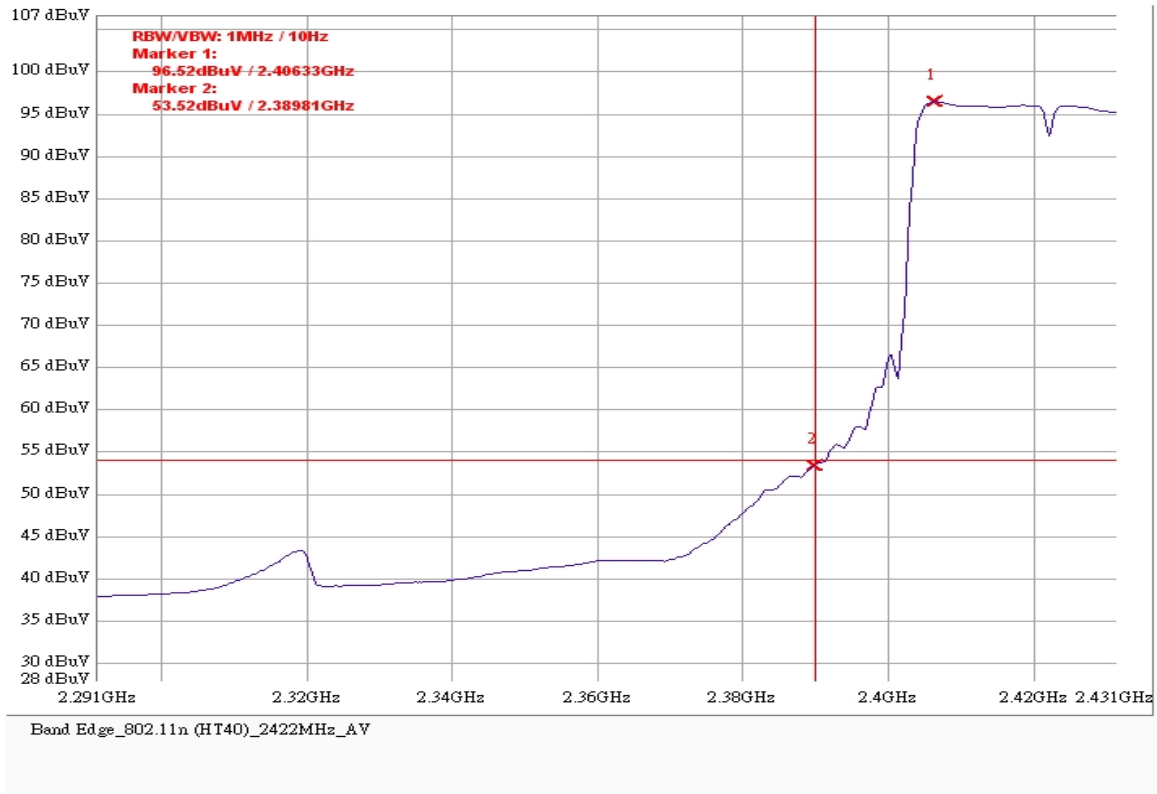
802.11n (HT20) CH11 2462MHz AV



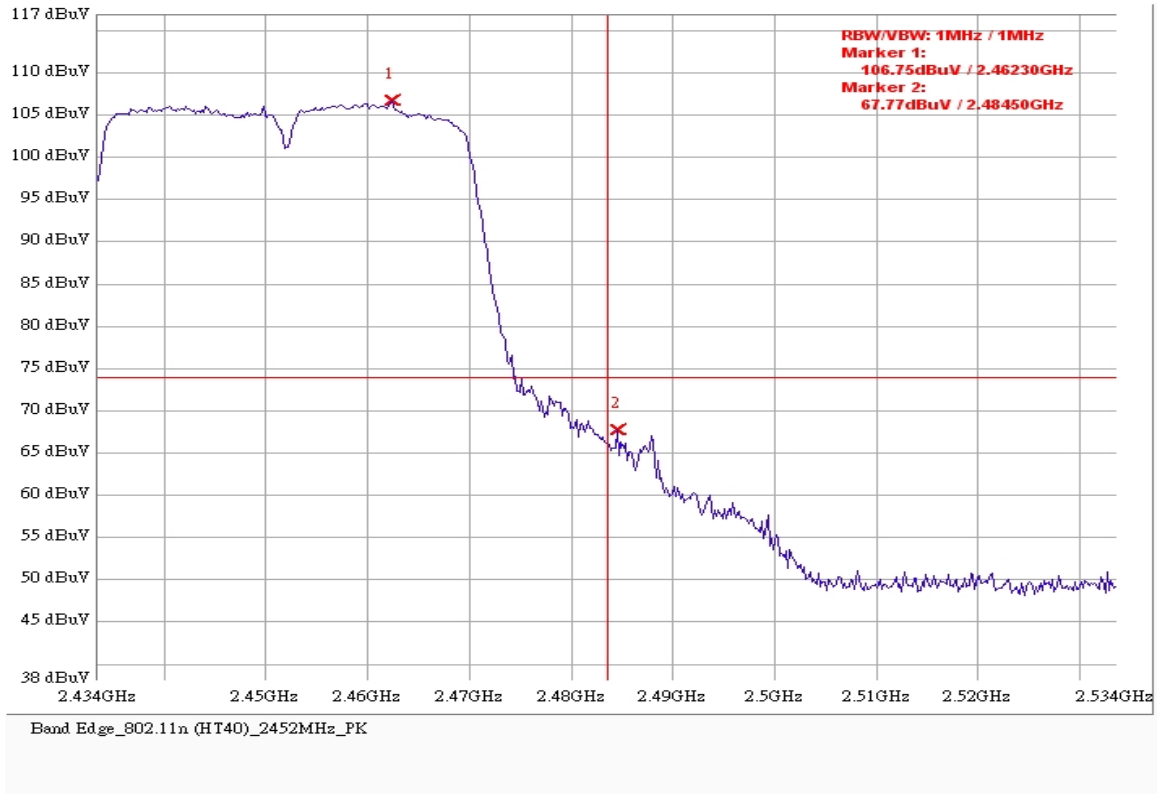
802.11n (HT40) CH3 2422MHz PK



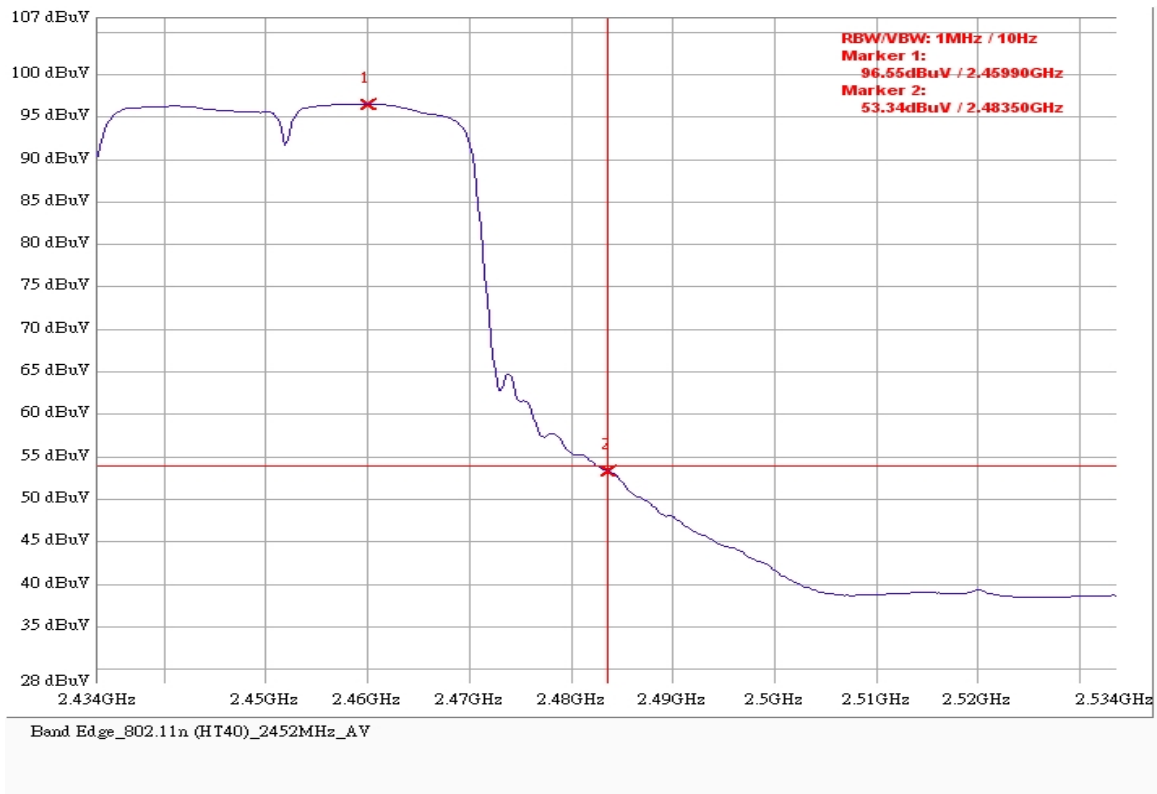
802.11n (HT40) CH3 2422MHz AV



802.11n (HT40) CH9 2452MHz PK



802.11n (HT40) CH9 2452MHz AV



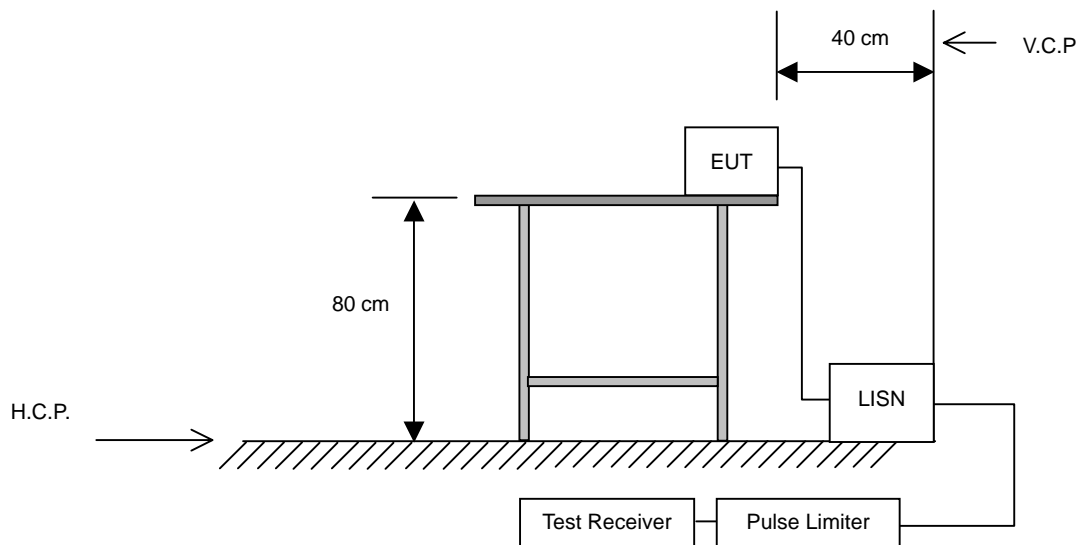
9 AC Power Line Conducted Emission test

9.1 Limit

Frequency (MHz)	Quasi-Peak (dB μ V)	Average (dB μ V)
0.15 to 0.5	66 to 56	56 to 46
> 0.5 to 5	56	46
> 5 to 30	60	50

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

9.2 Configuration of Measurement



9.3 Test Procedures

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct. 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

- 1) The EUT was placed 80cm height above ground on a non-conductive table and vertical conducting plane located 40cm to the rear of the EUT.
- 2) The EUT was connected to the main power through Line Impedance Stabilization Networks (LISN). This setup provided a 50ohm/50mH coupling impedance for the measuring equipment. The auxiliary equipment will place in secondary LISN.
- 3) Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/2003 on conducted measurement.

9.4 Test Result

PASS.

The final test data is shown as following pages.

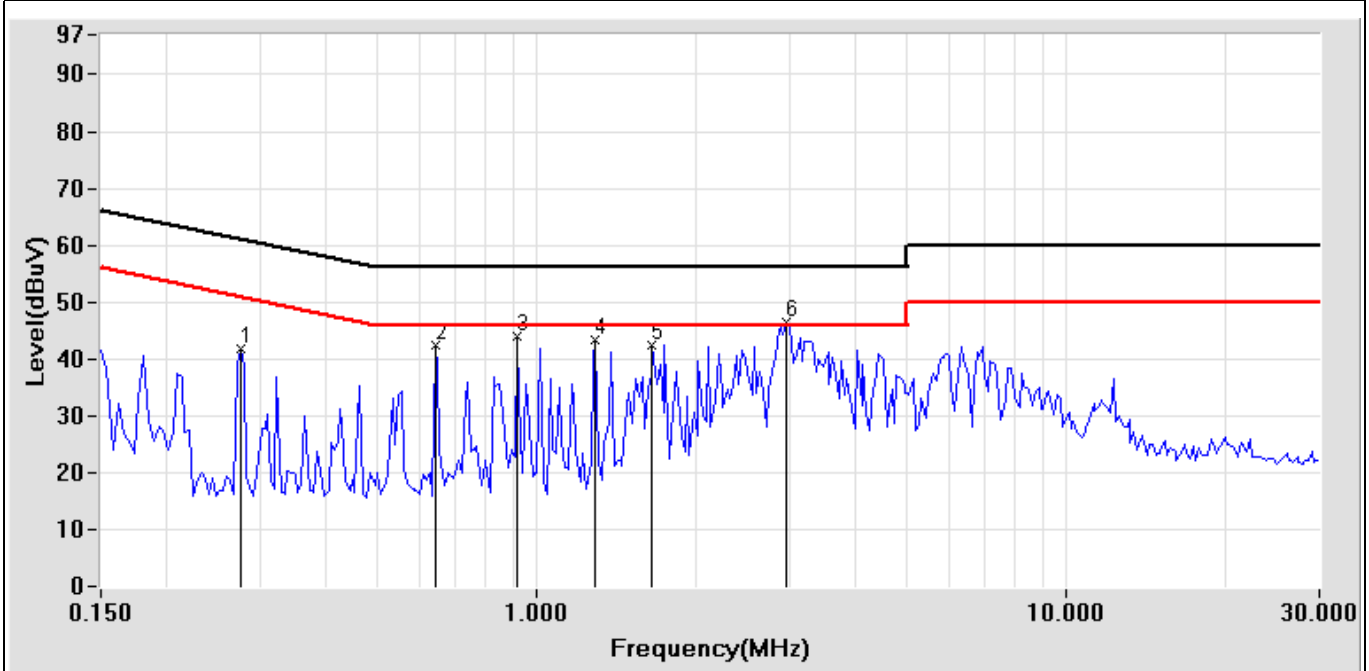
Power Line Conducted Test Data

EUT: 802.11n/b/g USB Adaptor CLIENT: SkyVertex Co., Ltd. MODEL: NSU-11NP10-2 RATING: From PC Temperature: 25.3 °C Humidity: 66 %	POLARITY: Line DISTANCE: Serial No.: FILE/DATA#: SkyVertex Co., Ltd.emi/2 OPERATOR: Anya TEST SITE: Conduction 1
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Frequency (MHz)	Factor (dB)	Meter Reading (dBµV)		Emission Level (dBµV)		Limits (dBµV)		Margin (dB)	
		Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
0.275	0.18	40.62	37.80	40.80	37.98	60.97	50.97	-20.17	-12.99
0.642	0.12	43.15	37.24	43.27	37.36	56.00	46.00	-12.73	-8.64
0.916	0.10	42.25	38.21	42.35	38.31	56.00	46.00	-13.65	-7.69
1.283	0.10	41.46	37.63	41.56	37.73	56.00	46.00	-14.44	-8.27
1.650	0.10	40.78	36.51	40.88	36.61	56.00	46.00	-15.12	-9.39
2.963	0.13	43.66	30.80	43.79	30.93	56.00	46.00	-12.21	-15.07

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



Test Mode: Mode 1: Operation Mode

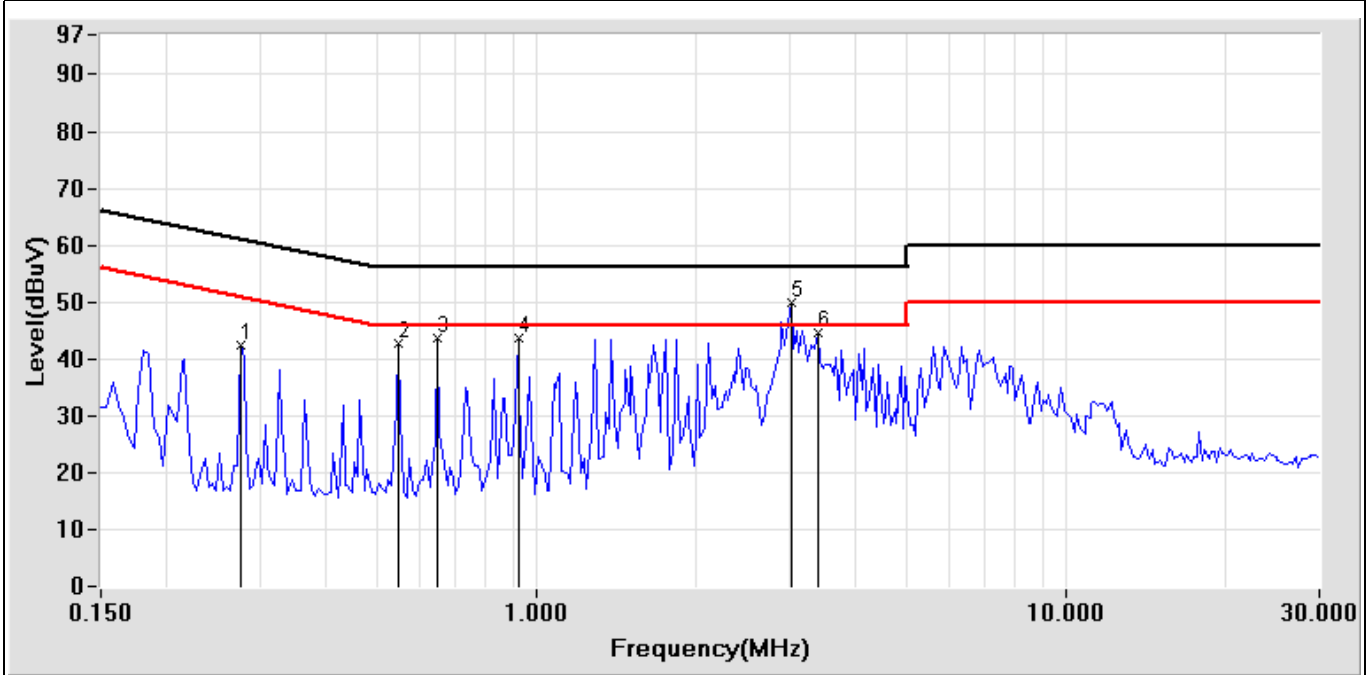
Power Line Conducted Test Data

EUT: 802.11n/b/g USB Adaptor CLIENT: SkyVertex Co., Ltd. MODEL: NSU-11NP10-2 RATING: From PC Temperature: 25.3 °C Humidity: 66 %	POLARITY: Neutral DISTANCE: Serial No.: FILE/DATA#: SkyVertex Co., Ltd.emi/3 OPERATOR: ANYA TEST SITE: Conduction 1
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Frequency (MHz)	Factor (dB)	Meter Reading (dBμV)		Emission Level (dBμV)		Limits (dBμV)		Margin (dB)	
		Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
0.275	0.18	40.87	37.66	41.05	37.84	60.97	50.97	-19.92	-13.13
0.548	0.13	42.44	39.06	42.57	39.19	56.00	46.00	-13.43	-6.81
0.646	0.12	42.31	36.35	42.43	36.47	56.00	46.00	-13.57	-9.53
0.920	0.10	42.07	38.52	42.17	38.62	56.00	46.00	-13.83	-7.38
3.013	0.13	43.55	31.12	43.68	31.25	56.00	46.00	-12.32	-14.75
3.396	0.14	42.44	35.49	42.58	35.63	56.00	46.00	-13.42	-10.37

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



Test Mode: Mode 1: Operation Mode