



FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.247

Report Reference No.: TRE1209009501 R/C:82725

FCC ID.: T37PL9571-WAP

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Date of issue: Feb 18, 2013

Testing Laboratory Name: Shenzhen Huatongwei International Inspection Co., Ltd

Address: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name: ASOKA Shenzhen Limited.

Address: Room 1701, 17/F., Fiyta Hi Tech Building, Gao-Xin Rd, South, Shenzhen, P R China

Test specification:

Standard: FCC Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

TRF Originator: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF: Dated 2006-06

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Test item description: PlugLink 500 Wireless "N" Adapter

Trade Mark: /

Model/Type reference: PL9571-WAP

Listed Models: /

Modulation Type: CCK, OFDM

Operation Frequency: From 2400MHz to 2483.5MHz

Result: Positive

TEST REPORT

Test Report No. : TRE1209009501	Feb 18, 2013 Date of issue
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Equipment under Test : PlugLink 500 Wireless "N" Adapter

Model /Type : PL9571-WAP

Listed Models : /

Applicant : ASOKA Shenzhen Limited.

Address : Room 1701,17/F., Fiyta Hi Tech Building, Gao-Xin Rd,
South, Shenzhen , P R China

Manufacturer : Asoka USA Corporation

Address : 2620 Augustine Drive Suite 230,Santa Clara City,CA
95054

Test Result according to the standards on page 4:	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1.	<u>TEST STANDARDS</u>	<u>4</u>
2.	<u>SUMMARY</u>	<u>5</u>
2.1.	General Remarks	5
2.2.	Equipment Under Test	5
2.3.	Description of the test mode	5
2.4.	Short description of the Equipment under Test (EUT)	5
2.5.	EUT operation mode	5
2.6.	EUT configuration	5
2.7.	Related Submittal(s) / Grant (s)	6
2.8.	Modifications	6
2.9.	NOTE	6
3.	<u>TEST ENVIRONMENT.....</u>	<u>7</u>
3.1.	Address of the test laboratory	7
3.2.	Test Facility	7
3.3.	Environmental conditions	8
3.4.	Configuration of Tested System	8
3.5.	Test Description	8
3.6.	Statement of the measurement uncertainty	9
3.7.	Equipments Used during the Test	10
4.	<u>TEST CONDITIONS AND RESULTS.....</u>	<u>11</u>
4.1.	AC Power Conducted Emission	11
4.2.	Radiated Emission	14
4.3.	Maximum Peak Output Power	24
4.4.	Power Spectral Density	31
4.5.	Band Edge Compliance of RF Emission	39
4.6.	Spurious RF Conducted Emission	53
4.7.	6dB Bandwidth	60
4.8.	Antenna Requirement	67
5.	<u>TEST SETUP PHOTOS OF THE EUT</u>	<u>68</u>
6.	<u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT</u>	<u>70</u>

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

ANSI C63.10: American National Standard for Testing Unlicensed Wireless Devices

KDB558074: DTS Meas Guidance v02 of Measurement Procedure

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Sep 25, 2012
Testing commenced on	:	Sep 25, 2012
Testing concluded on	:	Feb 18, 2013

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	☒ 120V / 60 Hz	☐ 115V / 60Hz
		☐ 12 V DC	☐ 24 V DC
		☐ Other (specified in blank below)	

2.3. Description of the test mode

IEEE 802.11b/g/n: Eleven channels are provided to the EUT.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

2.4. Short description of the Equipment under Test (EUT)

2.4GHz (PlugLink 500 Wireless "N" Adapter (M/N:PL9571-WAP))

For more details, refer to the user's manual of

the EUT. Serial number: Prototype

2.5. EUT operation mode

The EUT has been tested under typical operating condition. The Applicant provides command to control the EUT for staying in continuous transmitting and receiving mode for testing.

2.6. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

☐	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
☐	Multimeter	Manufacturer :	/
		Model No. :	/

2.7. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: T37PL9571-WAP** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.8. Modifications

No modifications were implemented to meet testing criteria.

2.9. NOTE

- The EUT is a 802.11b/g/n PlugLink 500 Wireless "N" Adapter, The functions of the EUT listed as below:

	Test Standards	Reference Report
WLAN 802.11b/g/n	FCC Part 15 Subpart C (Section15.247)	TRE1209009501
LAN Port	FCC Part 15 Subpart B	TRE1209009502
MPE REPORT	FCC Per 47 CFR 2.1093(d)	TRE1209009503

- The frequency bands used in this EUT are listed as follows:

Frequency Band(MHz)	2400-2483.5	5150-5350	5470-5725	5725-5850
802.11b	√	—	—	—
802.11g	√	—	—	—
802.11n(20MHz)	√	—	—	—
802.11n(40MHz)	√	—	—	—

- The EUT incorporates a SIMO function, Physically, the EUT provides one completed transmitter and Two receiver.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar.01. 2012. Valid time is until Feb. 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept. 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jun. 01, 2012, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the authorization is valid through July 07, 2013

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2010. Valid time is until May 06, 2013.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2013.

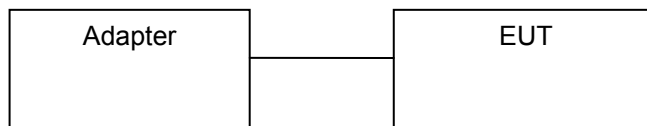
3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
HuPlugLink 500 Wireless "N" Adapterity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System



3.5. Test Description

FCC PART 15		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(2)	6dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF Conducted Emission	PASS
FCC Part 15.247(b)	Maximum Peak Output Power	PASS
FCC Part 15.247(e)	Power Spectral Density	PASS
FCC Part 15.109/ 15.205/ 15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band Edge	PASS
FCC Part 15.203/15.247 (b)	Antenna Requirement	PASS

Remark: The measurement uncertainty is not included in the test result.

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel
Maximum Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Spurious RF conducted emission Radiated Emission 9kHz~1GHz& Radiated Emission 1GHz~10th Harmonic	11b/DSSS	11 Mbps	1/6/11
	11g/OFDM	54 Mbps	1/6/11
	11n(20MHz)/OFDM	65Mbps	1/6/11
	11n(40MHz)/OFDM	135 Mbps	3/6/9
Band Edge	11b/DSSS	11 Mbps	1/11
	11g/OFDM	54 Mbps	1/11
	11n(20MHz)/OFDM	65Mbps	1/11
	11n(40MHz)/OFDM	135 Mbps	3/9

3.6. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-12.75 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	-----	(1)
Emission Mask	-----	(1)
Modulation Characteristic	-----	(1)
Transmitter Frequency Behavior	-----	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3.7. Equipments Used during the Test

AC Power Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Artificial Mains	Rohde&Schwarz	ESH2-Z5	100028	2012/10/27
2	EMI Test Receiver	Rohde&Schwarz	ESCS 30	100038	2012/10/27
3	Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	2012/10/27
4	EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	2012/10/27

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	2012/10/27
2	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2012/10/27
3	RF TEST PANEL	Rohde&Schwarz	TS / RSP	335015/ 0017	2012/10/27
4	TURNTABLE	ETS	2088	2149	2012/10/27
5	ANTENNA MAST	ETS	2075	2346	2012/10/27
6	EMI TEST SOFTWARE	Rohde&Schwarz	ESK1	N/A	2012/10/27
7	HORN ANTENNA	Rohde&Schwarz	HF906	100039	2012/10/27
8	Amplifer	Sonoma	310N	E009-13	2012/10/27
9	JS amplifer	Rohde&Schwarz	JS4-00101800-28-5A	F201504	2012/10/27
10	High pass filter	Compliance Direction systems	BSU-6	34202	2012/10/27
11	Horn Antenna	SCHWARZBECK	BBHA9170	25841	2012/10/27
12	Amplifer	Compliance Direction systems	PAP1-4060	120	2012/10/27
13	Loop Antenna	Rohde&Schwarz	HFH2-Z2	100020	2012/10/27
14	Amplifer	Compliance Direction systems	PAP1-4060	120	2012/10/27
15	HORN ANTENNA	ShwarzBeck	9120D	1012	2012/10/27
16	TURNTABLE	MATURO	TT2.0	----	2012/10/27
17	ANTENNA MAST	MATURO	TAM-4.0-P	----	2012/10/27

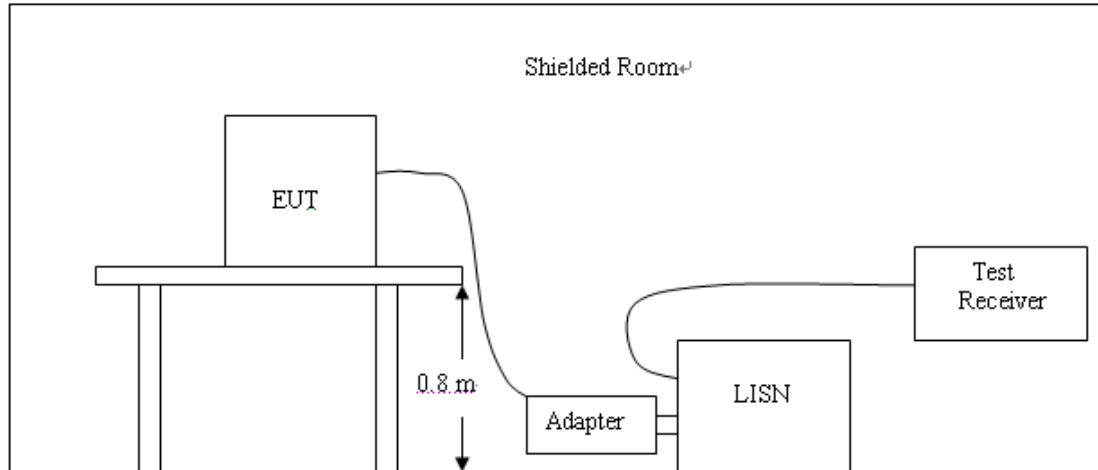
Maximum Peak Output Power / Power Spectral Density / 6dB Bandwidth / Band Edge Compliance of RF Emission / Spurious RF Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2012/10/27
2	Spectrum Analyzer	Rohde&Schwarz	FSP	1164.4391.40	2012/10/27

The Cal.Interval was one year

4. TEST CONDITIONS AND RESULTS

4.1. AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2009.
- 2 Support equipment, if needed, was placed as per ANSI C63.4-2009
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2009
- 4 The EUT received DC12V power from the adapter, the adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any.
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following :

Frequency (MHz)	Maximum RF Line Voltage (dBµV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

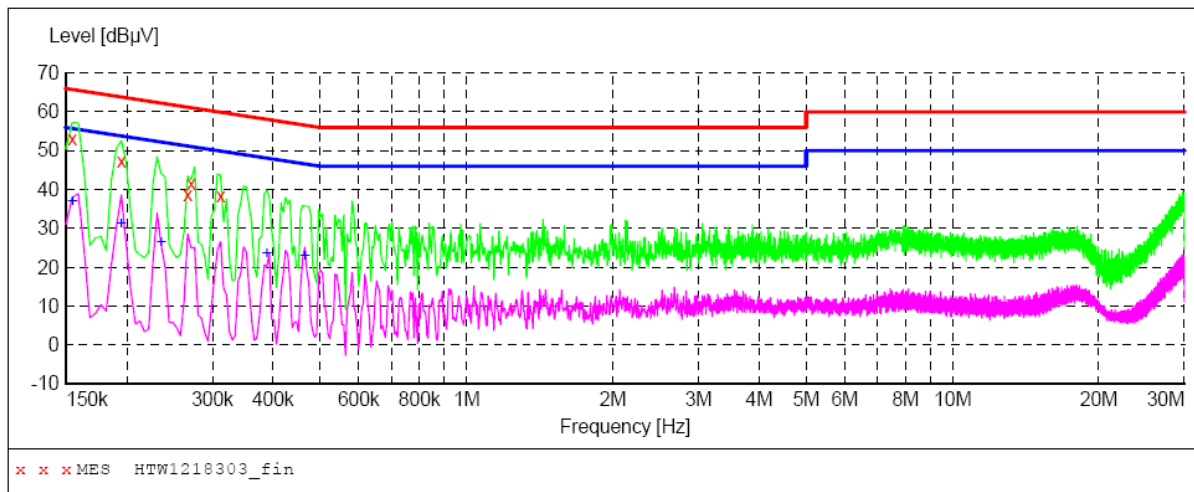
* Decreasing linearly with the logarithm of the frequency

TEST RESULTS

The AC Power Conducted Emission measurement are performed the each test mode (b/g/n) and channel (low/PlugLink 500 Wireless "N" Adapter/high), the datum recorded below (802.11b mode,the PlugLink 500 Wireless "N" Adapterdle channel) is the worst case for all the test modes and channels.

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW1218303_fin"**

12/18/2012 9:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	53.00	10.2	66	12.8	QP	N	GND
0.195000	47.40	10.2	64	16.4	QP	N	GND
0.267000	38.70	10.2	61	22.5	QP	N	GND
0.271500	41.40	10.2	61	19.7	QP	N	GND
0.312000	38.50	10.2	60	21.4	QP	N	GND

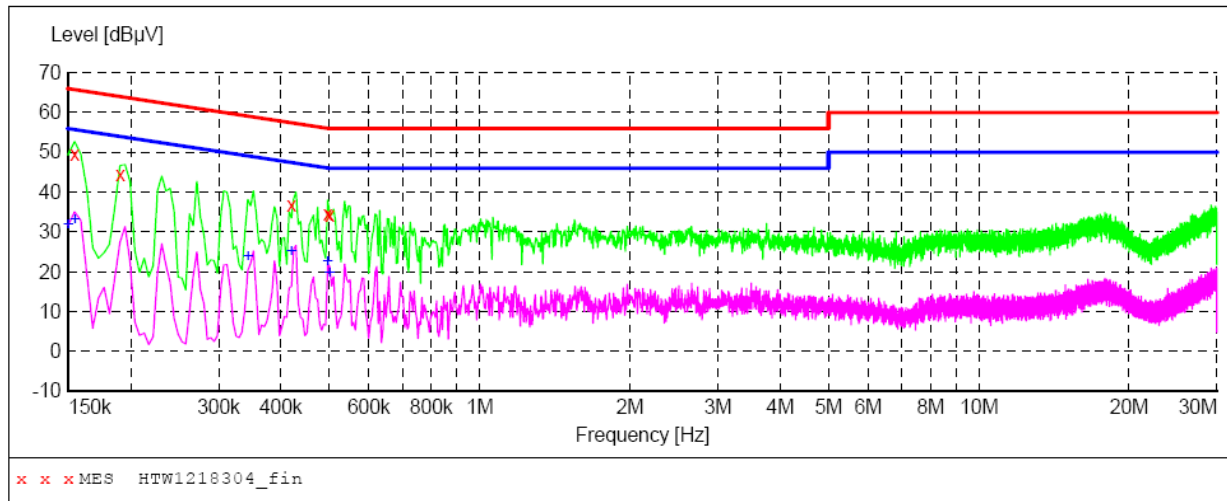
MEASUREMENT RESULT: "HTW1218303_fin2"

12/18/2012 9:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	37.10	10.2	56	18.7	AV	N	GND
0.195000	31.50	10.2	54	22.3	AV	N	GND
0.235500	26.40	10.2	52	25.9	AV	N	GND
0.388500	23.50	10.2	48	24.6	AV	N	GND
0.465000	23.00	10.2	47	23.6	AV	N	GND

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW1218304_fin"**

12/18/2012 9:24AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	49.70	10.2	66	16.1	QP	L1	GND
0.190500	44.50	10.2	64	19.5	QP	L1	GND
0.420000	36.80	10.2	57	20.6	QP	L1	GND
0.496500	34.50	10.2	56	21.6	QP	L1	GND
0.501000	34.20	10.2	56	21.8	QP	L1	GND

MEASUREMENT RESULT: "HTW1218304_fin2"

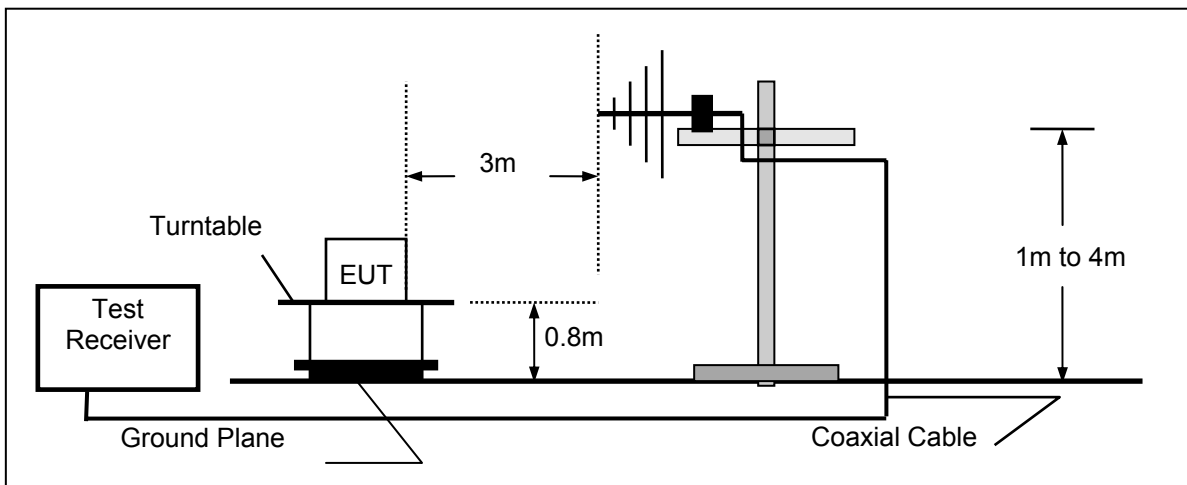
12/18/2012 9:24AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	31.80	10.2	56	24.2	AV	L1	GND
0.154500	33.40	10.2	56	22.4	AV	L1	GND
0.343500	24.10	10.2	49	25.0	AV	L1	GND
0.420000	25.20	10.2	47	22.2	AV	L1	GND
0.496500	22.60	10.2	46	23.5	AV	L1	GND
0.501000	19.80	10.2	46	26.2	AV	L1	GND

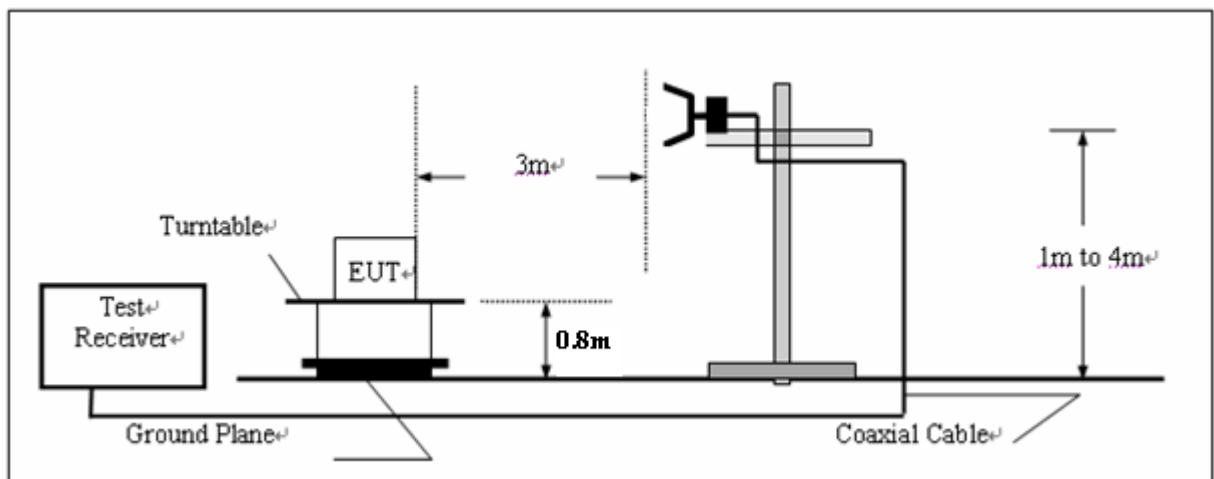
4.2. Radiated Emission

TEST CONFIGURATION

(a) Radiated Emission Test Set-Up, Frequency below 1000MHz



(b) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL + AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

The frequency spectrum above 1 GHz for Transmitter was investigated. All emission not reported are much lower than the prescribed limits. Set the RBW=1MHz, VBW=3MHz for Peak Detector while the RBW=1MHz, VBW=10Hz for Average Detector, Readings are both peak and average values.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	300	$20\log(2400/F(\text{KHz}))$	$2400/F(\text{KHz})$
0.49-1.705	30	$20\log(24000/F(\text{KHz}))$	$24000/F(\text{KHz})$
1.705-30	30	$20\log(30)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the following table.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$
1.705-30	3	$20\log(30)+40\log(30/3)$
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

TEST RESULTS

- Note: 1. The radiated measurement are performed the each test mode (b/g/n) and channel (low/PlugLink 500 Wireless "N" Adapter/high), the datum recorded below (802.11b mode, the PlugLink 500 Wireless "N" Adapter channel) is the worst case for all the test mode and channel.
 2. ULTRA-BROADBAND ANTENNA for the radiation emission test below 1G.
 3. HORN ANTENNA for the radiation emission test above 1G.

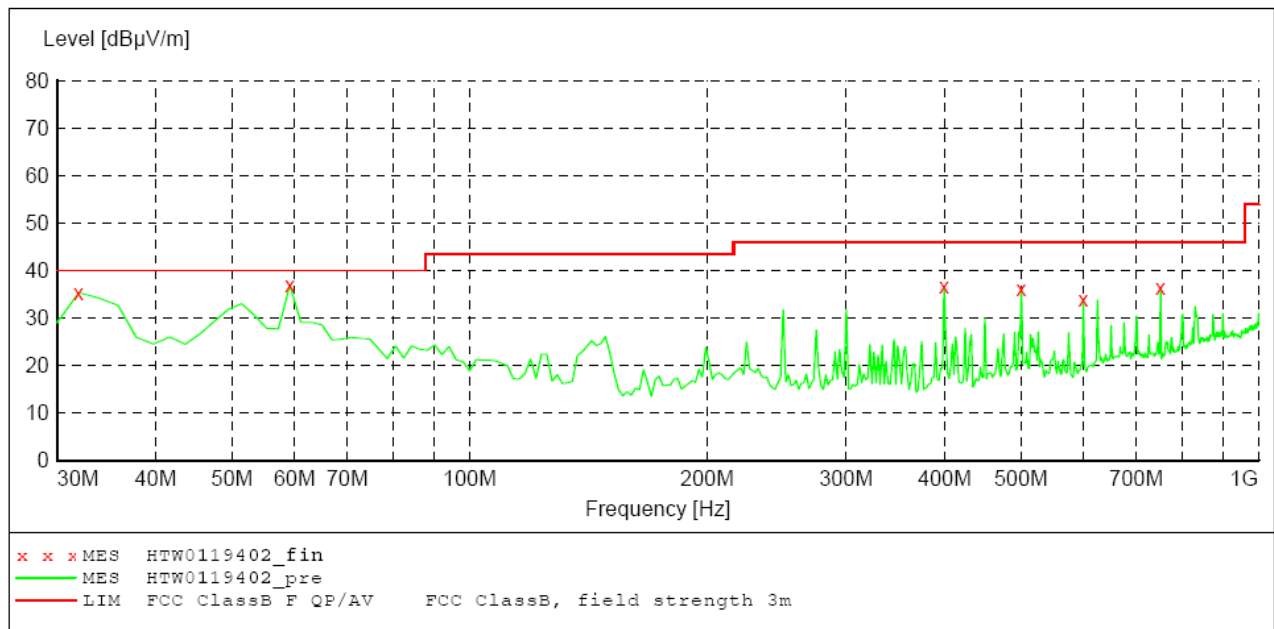
For 9KHz to 30MHz

Frequency (MHz)	Corrected Reading (dB μ V/m)@3m	FCC Limit (dB μ V/m) @3m	Margin (dB)	Detector	Result
0.96	49.12	67.96	18.84	QP	Pass
1.39	42.06	64.74	22.68	QP	Pass
10.20	46.25	69.54	23.29	QP	Pass
23.02	42.20	69.54	27.34	QP	Pass

For 30MHz to 1000MHz

SCAN TABLE: "test Field (30M-1G) QP"

Short Description: Field Strength (30M-1G)
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 30.0 MHz 1.0 GHz 60.0 kHz QuasiPeak 1.0 s 120 kHz HL562



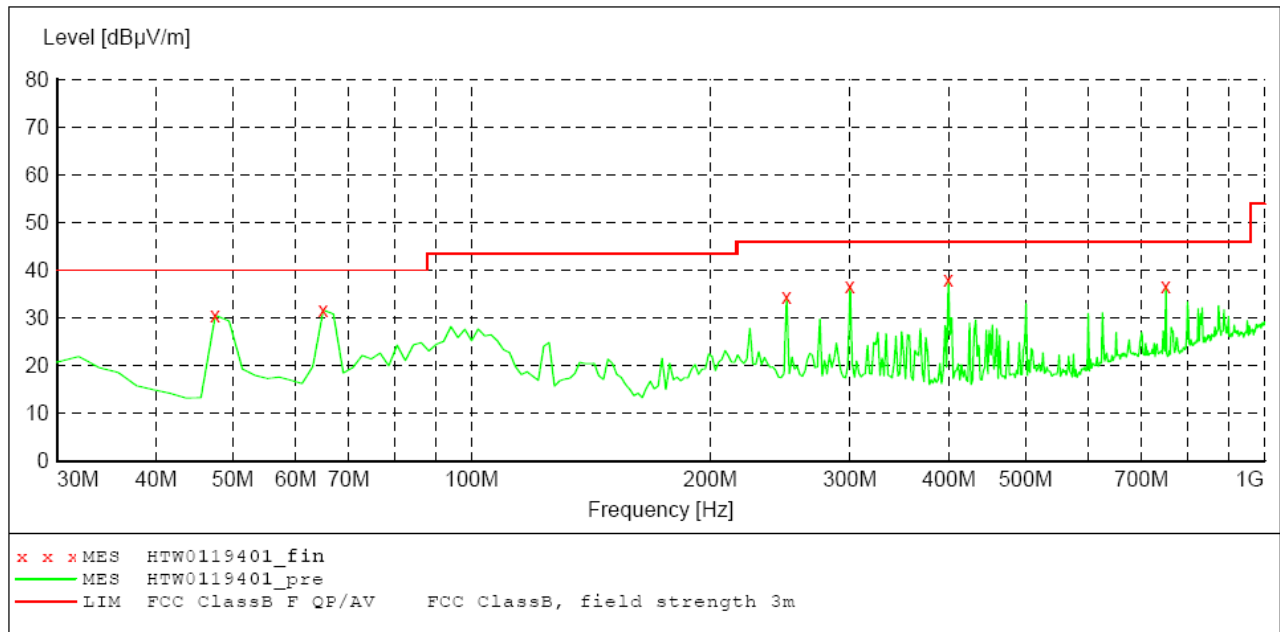
MEASUREMENT RESULT: "HTW0119402_fin"

1/19/2013 4:59PM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.943888	35.40	-12.5	40.0	4.6	QP	100.0	200.00	VERTICAL
59.158317	36.90	-25.3	40.0	3.1	QP	100.0	59.00	VERTICAL
399.338677	36.70	-15.9	46.0	9.3	QP	100.0	69.00	VERTICAL
500.420842	36.20	-14.6	46.0	9.8	QP	100.0	247.00	VERTICAL
599.559118	34.00	-13.7	46.0	12.0	QP	100.0	218.00	VERTICAL
751.182365	36.40	-11.2	46.0	9.6	QP	100.0	36.00	VERTICAL

SCAN TABLE: "test Field (30M-1G) QP"

Short Description:			Field Strength (30M-1G)			
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562

**MEASUREMENT RESULT: "HTW0119401_fin"**

1/19/2013 5:01PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.494990	30.60	-21.3	40.0	9.4	QP	300.0	214.00	HORIZONTAL
64.989980	31.70	-24.2	40.0	8.3	QP	300.0	214.00	HORIZONTAL
249.659319	34.40	-19.2	46.0	11.6	QP	100.0	154.00	HORIZONTAL
300.200401	36.70	-17.7	46.0	9.3	QP	100.0	183.00	HORIZONTAL
399.338677	38.10	-15.9	46.0	7.9	QP	100.0	197.00	HORIZONTAL
751.182365	36.80	-11.2	46.0	9.2	QP	100.0	207.00	HORIZONTAL

802.11b Mode(above 1GHz)**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2412MHz)**

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2412.00	98.05	PK			1.00 H	360	102.72	28.3	4.90	-36.6	-3.40
1	*2412.00	92.98	AV			1.00 H	360	96.24	28.3	4.90	-36.6	-3.40
2	4824.00	63.11	PK	74.00	10.89	1.00 H	359	59.91	32.7	7.00	-36.5	3.20
2	4824.00	40.96	AV	54.00	13.04	1.00 H	359	37.76	32.7	7.00	-36.5	3.20
3	7236.00	56.94	PK	74.00	17.06	1.00 H	152	47.54	35.8	8.90	-35.3	9.40
3	7236.00	44.99	AV	54.00	9.01	1.00 H	152	35.59	35.8	8.90	-35.3	9.40
4	9648.00	56.62	PK	74.00	17.38	1.00 H	140	44.02	37.2	10.20	-34.8	12.60
4	9648.00	44.92	AV	54.00	9.08	1.00 H	140	32.32	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2412MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2412.00	101.55	PK			1.00 V	124	104.95	28.3	4.90	-36.6	-3.40
1	*2412.00	92.45	AV			1.00 V	124	95.85	28.3	4.90	-36.6	-3.40
2	4824.00	60.82	PK	74.00	13.18	1.00 V	339	57.62	32.7	7.00	-36.5	3.20
2	4824.00	46.07	AV	54.00	7.93	1.00 V	339	42.87	32.7	7.00	-36.5	3.20
3	7236.00	55.96	PK	74.00	18.04	1.00 V	340	46.56	35.8	8.90	-35.3	9.40
3	7236.00	44.89	AV	54.00	9.11	1.00 V	340	35.49	35.8	8.90	-35.3	9.40
4	9648.00	55.24	PK	74.00	18.76	1.00 V	20	42.64	37.2	10.20	-34.8	12.60
4	9648.00	43.24	AV	54.00	10.76	1.00 V	20	30.64	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	97.51	PK			1.00 H	153	100.71	28.3	5.10	-36.6	-3.20
1	*2437.00	92.22	AV			1.00 H	153	95.42	28.3	5.10	-36.6	-3.20
2	4874.00	61.43	PK	74.00	12.57	1.00 H	202	58.03	32.3	7.60	-36.5	3.40
2	4874.00	49.17	AV	54.00	4.83	1.00 H	202	45.77	32.3	7.60	-36.5	3.40
3	7311.00	52.68	PK	74.00	21.32	1.00 H	355	43.28	36.1	8.60	-35.3	9.40
3	7311.00	46.52	AV	54.00	7.48	1.00 H	355	37.12	36.1	8.60	-35.3	9.40
4	9748.00	54.96	PK	74.00	19.04	1.00 H	28	42.36	37.2	10.20	-34.8	12.60
4	9748.00	47.55	AV	54.00	6.45	1.00 H	28	34.95	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	98.64	PK			1.00 V	121	101.84	28.3	5.10	-36.6	-3.20
1	*2437.00	93.25	AV			1.00 V	121	96.45	28.3	5.10	-36.6	-3.20
2	4874.00	62.35	PK	74.00	11.65	1.00 V	97	58.95	32.3	7.60	-36.5	3.40
2	4874.00	45.56	AV	54.00	8.44	1.00 V	97	42.16	32.3	7.60	-36.5	3.40
3	7311.00	60.05	PK	74.00	13.95	1.00 V	288	50.65	36.1	8.60	-35.3	9.40
3	7311.00	42.36	AV	54.00	11.64	1.00 V	288	32.96	36.1	8.60	-35.3	9.40
4	9748.00	58.02	PK	74.00	15.98	1.00 V	89	45.42	37.2	10.20	-34.8	12.60
4	9748.00	42.25	AV	54.00	11.75	1.00 V	89	29.65	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	96.85	PK		1.00 H	154	100.15	28.6	4.70	-36.6	-3.30
1	*2462.00	92.74	AV		1.00 H	154	96.04	28.6	4.70	-36.6	-3.30
2	4924.00	62.02	PK	74.00	1.00 H	100	58.22	33.0	7.00	-36.2	3.80
2	4924.00	48.25	AV	54.00	1.00 H	100	44.45	33.0	7.00	-36.2	3.80
3	7386.00	59.25	PK	74.00	1.00 H	190	49.85	36.2	8.50	-35.3	9.40
3	7386.00	44.42	AV	54.00	1.00 H	190	35.02	36.2	8.50	-35.3	9.40
4	9848.00	57.55	PK	74.00	1.00 H	113.	44.95	37.2	10.20	-34.8	12.60
4	9848.00	42.25	AV	54.00	1.00 H	113	29.65	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	97.52	PK		1.00 V	247	100.82	28.6	4.70	-36.6	-3.30
1	*2462.00	92.20	AV		1.00 V	247	95.50	28.6	4.70	-36.6	-3.30
2	4924.00	58.12	PK	74.00	1.00 V	90	54.32	33.0	7.00	-36.2	3.80
2	4924.00	49.08	AV	54.00	1.00 V	90	45.28	33.0	7.00	-36.2	3.80
3	7386.00	63.29	PK	74.00	1.00 V	29	53.89	36.2	8.50	-35.3	9.40
3	7386.00	46.21	AV	54.00	1.00 V	29	36.81	36.2	8.50	-35.3	9.40
4	9848.00	58.02	PK	74.00	1.00 V	222	45.42	37.2	10.20	-34.8	12.60
4	9848.00	44.25	AV	54.00	1.00 V	222	31.65	37.2	10.20	-34.8	12.60

802.11g Mode**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2412MHz)**

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
2	*2412.00	97.18	PK		1.00 H	123	100.48	28.3	5.00	-36.6	-3.30
2	*2412.00	92.62	AV		1.00 H	123	95.92	28.3	5.00	-36.6	-3.30
3	4824.00	61.21	PK	74.00	1.00 H	216	57.41	32.7	7.30	-36.2	3.80
3	4824.00	47.13	AV	54.00	1.00 H	216	43.33	32.7	7.30	-36.2	3.80
4	7236.00	57.25	PK	74.00	1.00 H	176	47.85	35.8	8.90	-35.3	9.40
4	7236.00	42.52	AV	54.00	1.00 H	176	33.12	35.8	8.90	-35.3	9.40
5	9648.00	58.24	PK	74.00	1.00 H	72	45.64	37.2	10.20	-34.8	12.60
5	9648.00	43.61	AV	54.00	1.00 H	72	31.01	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2412MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
2	*2412.00	101.50	PK		1.00 V	127	104.80	28.3	5.00	-36.6	-3.30
2	*2412.00	95.23	AV		1.00 V	127	98.53	28.3	5.00	-36.6	-3.30
3	4824.00	64.52	PK	74.00	1.00 V	95	60.72	32.7	7.30	-36.2	3.80
3	4824.00	48.52	AV	54.00	1.00 V	95	44.72	32.7	7.30	-36.2	3.80
4	7236.00	63.28	PK	74.00	1.00 V	0	53.88	35.8	8.90	-35.3	9.40
4	7236.00	47.02	AV	54.00	1.00 V	0	37.62	35.8	8.90	-35.3	9.40
5	9648.00	62.52	PK	74.00	1.00 V	264	49.92	37.2	10.20	-34.8	12.60
5	9648.00	44.71	AV	54.00	1.00 V	264	32.11	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	98.12	PK			1.00 H	100	101.32	28.3	5.10	-36.6	-3.20
1	*2437.00	91.48	AV			1.00 H	100	94.68	28.3	5.10	-36.6	-3.20
2	4874.00	62.25	PK	74.00	11.75	1.00 H	214	58.85	32.8	7.10	-36.5	3.40
2	4874.00	48.52	AV	54.00	5.48	1.00 H	214	45.12	32.8	7.10	-36.5	3.40
3	7311.00	60.55	PK	74.00	13.45	1.00 H	0	51.15	36.1	8.60	-35.3	9.40
3	7311.00	47.20	AV	54.00	6.80	1.00 H	0	37.80	36.1	8.60	-35.3	9.40
4	9748.00	62.25	PK	74.00	11.75	1.00 H	163	49.65	37.2	10.20	-34.8	12.60
4	9748.00	46.55	AV	54.00	7.45	1.00 H	163	33.95	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	101.01	PK			1.00 V	122	104.21	28.3	5.10	-36.6	-3.20
1	*2437.00	96.28	AV			1.00 V	122	99.48	28.3	5.10	-36.6	-3.20
2	4874.00	62.46	PK	74.00	11.54	1.00 V	100	59.06	32.8	7.10	-36.5	3.40
2	4874.00	45.65	AV	54.00	8.35	1.00 V	100	42.25	32.8	7.10	-36.5	3.40
3	7311.00	57.55	PK	74.00	16.45	1.00 V	356	48.15	36.1	8.60	-35.3	9.40
3	7311.00	46.85	AV	54.00	7.15	1.00 V	356	37.45	36.1	8.60	-35.3	9.40
4	9748.00	59.65	PK	74.00	14.35	1.00 V	26	47.05	37.2	10.20	-34.8	12.60
4	9748.00	46.54	AV	54.00	7.46	1.00 V	26	33.94	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	95.52	PK			1.00 H	156	98.82	28.2	5.10	-36.6	-3.30
1	*2462.00	90.05	AV			1.00 H	156	93.35	28.2	5.10	-36.6	-3.30
2	4924.00	62.20	PK	74.00	11.80	1.00 H	198	58.40	33.0	7.00	-36.2	3.80
2	4924.00	42.52	AV	54.00	11.48	1.00 H	198	38.72	33.0	7.00	-36.2	3.80
3	7386.00	57.72	PK	74.00	16.28	1.00 H	90	48.32	36.2	8.50	-35.3	9.40
3	7386.00	44.52	AV	54.00	9.48	1.00 H	90	35.12	36.2	8.50	-35.3	9.40
4	9848.00	58.53	PK	74.00	15.47	1.00 H	124	45.93	37.3	10.10	-34.8	12.60
4	9848.00	48.63	AV	54.00	5.37	1.00 H	124	36.03	37.3	10.10	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	96.52	PK			1.00 V	125	99.82	28.2	5.10	-36.6	-3.30
1	*2462.00	90.51	AV			1.00 V	125	93.81	28.2	5.10	-36.6	-3.30
2	4924.00	61.50	PK	74.00	12.50	1.00 V	96	57.70	33.0	7.00	-36.2	3.80
2	4924.00	46.14	AV	54.00	7.86	1.00 V	96	42.34	33.0	7.00	-36.2	3.80
3	7386.00	56.85	PK	74.00	17.15	1.00 V	35	47.45	36.2	8.50	-35.3	9.40
3	7386.00	46.14	AV	54.00	7.86	1.00 V	35	36.74	36.2	8.50	-35.3	9.40
4	9848.00	60.21	PK	74.00	13.79	1.00 V	37	47.61	37.3	10.10	-34.8	12.60
4	9848.00	48.27	AV	54.00	5.73	1.00 V	37	35.67	37.3	10.10	-34.8	12.60

802.11n(20MHz) Mode**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2412MHz)**

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2412.00	95.21 PK			1.00 H	100	98.51	28.3	5.00	-36.6	-3.30
1	*2412.00	91.20 AV			1.00 H	100	94.50	28.3	5.00	-36.6	-3.30
2	4824.00	63.20 PK	74.00	10.8	1.00 H	204	59.40	32.7	7.30	-36.2	3.80
2	4824.00	45.21 AV	54.00	8.79	1.00 H	204	41.41	32.7	7.30	-36.2	3.80
3	7236.00	59.06 PK	74.00	14.94	1.00 H	114	49.66	35.8	8.90	-35.3	9.40
3	7236.00	45.26 AV	54.00	8.74	1.00 H	114	35.86	35.8	8.90	-35.3	9.40
4	9648.00	61.02 PK	74.00	12.98	1.00 H	93	48.42	37.2	10.20	-34.8	12.60
4	9648.00	48.06 AV	54.00	5.94	1.00 H	93	35.46	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2412MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2412.00	96.21 PK			1.00 V	123	99.51	28.3	5.00	-36.6	-3.30
1	*2412.00	92.04 AV			1.00 V	123	95.34	28.3	5.00	-36.6	-3.30
2	4824.00	59.52 PK	74.00	14.48	1.00 V	100	55.72	32.7	7.30	-36.2	3.80
2	4824.00	45.01 AV	54.00	8.99	1.00 V	100	41.21	32.7	7.30	-36.2	3.80
3	7236.00	60.20 PK	74.00	13.8	1.00 V	236	50.8	35.8	8.90	-35.3	9.40
3	7236.00	47.21 AV	54.00	6.79	1.00 V	236	37.81	35.8	8.90	-35.3	9.40
4	9648.00	61.47 PK	74.00	12.53	1.00 V	1163	48.87	37.2	10.20	-34.8	12.60
4	9648.00	48.52 AV	54.00	5.48	1.00 V	116	35.92	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	95.21 PK			1.00 H	120	98.41	28.3	5.10	-36.6	-3.20
1	*2437.00	91.20 AV			1.00 H	120	94.40	28.3	5.10	-36.6	-3.20
2	4874.00	60.12 PK	74.00	13.88	1.00 H	194	56.72	32.3	7.60	-36.5	3.40
2	4874.00	46.21 AV	54.00	7.79	1.00 H	194	42.81	32.3	7.60	-36.5	3.40
3	7311.00	57.21 PK	74.00	16.79	1.00 H	248	47.81	36.1	8.60	-35.3	9.40
3	7311.00	45.74 AV	54.00	8.26	1.00 H	248	36.34	36.1	8.60	-35.3	9.40
4	9748.00	59.21 PK	74.00	14.79	1.00 H	36	46.61	37.2	10.20	-34.8	12.60
4	9748.00	47.25 AV	54.00	6.75	1.00 H	36	34.65	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	94.21 PK			1.00 V	122	97.41	28.3	5.10	-36.6	-3.20
1	*2437.00	89.89 AV			1.00 V	122	93.09	28.3	5.10	-36.6	-3.20
2	4874.00	61.02 PK	74.00	12.98	1.00 V	181	57.62	32.3	7.60	-36.5	3.40
2	4874.00	48.95 AV	54.00	5.05	1.00 V	181	45.55	32.3	7.60	-36.5	3.40
3	7311.00	57.21 PK	74.00	16.79	1.00 V	346	47.81	36.1	8.60	-35.3	9.40
3	7311.00	43.26 AV	54.00	10.74	1.00 V	346	33.86	36.1	8.60	-35.3	9.40
4	9748.00	58.21 PK	74.00	15.79	1.00 V	335	45.61	37.2	10.20	-34.8	12.60
4	9748.00	48.11 AV	54.00	5.89	1.00 V	335	35.51	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	95.12	PK			1.00 H	122	98.42	28.2	5.10	-36.6	-3.30
1	*2462.00	90.41	AV			1.00 H	122	93.71	28.2	5.10	-36.6	-3.30
2	4924.00	57.21	PK	74.00	16.79	1.00 H	217	53.41	33.0	7.00	-36.2	3.80
2	4924.00	43.50	AV	54.00	10.5	1.00 H	217	39.70	33.0	7.00	-36.2	3.80
3	7386.00	56.51	PK	74.00	17.49	1.00 H	0	47.11	36.2	8.50	-35.3	9.40
3	7386.00	45.52	AV	54.00	8.48	1.00 H	0	36.12	36.2	8.50	-35.3	9.40
4	9848.00	58.11	PK	74.00	15.89	1.00 H	118	45.51	37.3	10.10	-34.8	12.60
4	9848.00	47.53	AV	54.00	6.47	1.00 H	118	34.93	37.3	10.10	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2462MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2462.00	94.48	PK			1.00 V	125	97.78	28.2	5.10	-36.6	-3.30
1	*2462.00	89.25	AV			1.00 V	125	92.55	28.2	5.10	-36.6	-3.30
2	4924.00	57.24	PK	74.00	16.76	1.00 V	100	53.44	33.0	7.00	-36.2	3.80
2	4924.00	45.52	AV	54.00	8.48	1.00 V	100	41.72	33.0	7.00	-36.2	3.80
3	7386.00	56.21	PK	74.00	17.79	1.00 V	0	46.81	36.2	8.50	-35.3	9.40
3	7386.00	43.58	AV	54.00	10.42	1.00 V	0	34.18	36.2	8.50	-35.3	9.40
4	9848.00	57.53	PK	74.00	16.47	1.00 V	187	44.93	37.3	10.10	-34.8	12.60
4	9848.00	48.65	AV	54.00	5.35	1.00 V	187	36.05	37.3	10.10	-34.8	12.60

802.11n(40MHz) Mode**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40--2422MHz)**

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2422.00	95.24	PK			1.00 H	123	98.54	28.3	5.00	-36.6	-3.30
1	*2422.00	91.60	AV			1.00 H	123	94.90	28.3	5.00	-36.6	-3.30
2	4844.00	58.17	PK	74.00	15.83	1.00 H	91	54.37	32.7	7.30	-36.2	3.80
2	4844.00	42.15	AV	54.00	11.85	1.00 H	91	38.35	32.7	7.30	-36.2	3.80
3	7266.00	57.21	PK	74.00	16.79	1.00 H	266	47.81	35.8	8.90	-35.3	9.40
3	7266.00	40.52	AV	54.00	13.48	1.00 H	266	31.12	35.8	8.90	-35.3	9.40
4	9688.00	58.02	PK	74.00	15.98	1.00 H	337	45.42	37.2	10.20	-34.8	12.60
4	9688.00	47.22	AV	54.00	6.78	1.00 H	337	34.62	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40--2422MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2422.00	95.12	PK			1.00 V	127	98.42	28.3	5.00	-36.6	-3.30
1	*2422.00	90.22	AV			1.00 V	127	93.52	28.3	5.00	-36.6	-3.30
2	4844.00	57.21	PK	74.00	16.79	1.00 V	211	53.41	32.7	7.30	-36.2	3.80
2	4844.00	42.02	AV	54.00	11.98	1.00 V	211	38.22	32.7	7.30	-36.2	3.80
3	7266.00	60.25	PK	74.00	13.75	1.00 V	57	50.85	35.8	8.90	-35.3	9.40
3	7266.00	48.51	AV	54.00	5.49	1.00 V	57	39.11	35.8	8.90	-35.3	9.40
4	9688.00	58.52	PK	74.00	15.48	1.00 V	249	45.92	37.2	10.20	-34.8	12.60
4	9688.00	47.52	AV	54.00	6.48	1.00 V	249	34.92	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40--2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	94.52	PK			1.00 H	100	97.72	28.3	5.10	-36.6	-3.20
1	*2437.00	90.58	AV			1.00 H	100	93.78	28.3	5.10	-36.6	-3.20
2	4874.00	57.52	PK	74.00	16.48	1.00 H	198	54.12	32.3	7.60	-36.5	3.40
2	4874.00	43.57	AV	54.00	10.43	1.00 H	198	40.17	32.3	7.60	-36.5	3.40
3	7311.00	57.26	PK	74.00	16.74	1.00 H	203	47.86	36.1	8.60	-35.3	9.40
3	7311.00	42.06	AV	54.00	11.94	1.00 H	203	32.66	36.1	8.60	-35.3	9.40
4	9748.00	59.65	PK	74.00	14.35	1.00 H	56	47.05	37.2	10.20	-34.8	12.60
4	9748.00	47.62	AV	54.00	6.38	1.00 H	56	35.02	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40--2437MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2437.00	96.08	PK			1.00 V	122	99.28	28.3	5.10	-36.6	-3.20
1	*2437.00	91.57	AV			1.00 V	122	94.77	28.3	5.10	-36.6	-3.20
2	4874.00	59.41	PK	74.00	14.59	1.00 V	96	56.01	32.3	7.60	-36.5	3.40
2	4874.00	47.27	AV	54.00	6.73	1.00 V	96	43.87	32.3	7.60	-36.5	3.40
3	7311.00	57.24	PK	74.00	16.76	1.00 V	26	47.84	36.1	8.60	-35.3	9.40
3	7311.00	43.24	AV	54.00	10.76	1.00 V	26	33.84	36.1	8.60	-35.3	9.40
4	9748.00	59.52	PK	74.00	14.48	1.00 V	299	46.92	37.2	10.20	-34.8	12.60
4	9748.00	49.77	AV	54.00	4.23	1.00 V	299	37.17	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n40--2452MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2452.00	94.42	PK			1.00 H	153	97.62	28.2	5.20	-36.6	-3.20
1	*2452.00	89.52	AV			1.00 H	153	92.72	28.2	5.20	-36.6	-3.20
2	4904.00	57.75	PK	74.00	16.25	1.00 H	204	53.95	33.0	7.00	-36.2	3.80
2	4904.00	48.74	AV	54.00	5.26	1.00 H	204	44.94	33.0	7.00	-36.2	3.80
3	7356.00	58.41	PK	74.00	15.59	1.00 H	301	49.01	36.2	8.50	-35.3	9.40
3	7356.00	47.65	AV	54.00	6.35	1.00 H	301	38.25	36.2	8.50	-35.3	9.40
4	9808.00	60.52	PK	74.00	13.48	1.00 H	118	47.92	37.3	10.10	-34.8	12.60
4	9808.00	48.20	AV	54.00	5.80	1.00 H	118	35.60	37.3	10.10	-34.8	12.60

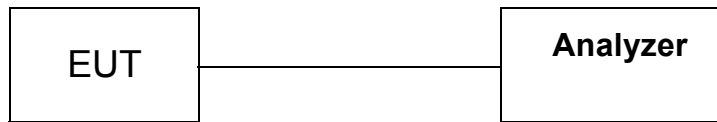
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n40--2452MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	*2452.00	95.01	PK			1.00 V	125	98.21	28.2	5.20	-36.6	-3.20
1	*2452.00	90.15	AV			1.00 V	125	93.35	28.2	5.20	-36.6	-3.20
2	4904.00	56.14	PK	74.00	17.86	1.00 V	177	52.34	33.0	7.00	-36.2	3.80
2	4904.00	43.15	AV	54.00	10.85	1.00 V	177	39.35	33.0	7.00	-36.2	3.80
3	7356.00	60.58	PK	74.00	13.42	1.00 V	0	51.18	36.2	8.50	-35.3	9.40
3	7356.00	45.54	AV	54.00	8.46	1.00 V	0	36.14	36.2	8.50	-35.3	9.40
4	9808.00	61.52	PK	74.00	12.48	1.00 V	315	48.92	37.3	10.10	-34.8	12.60
4	9808.00	49.41	AV	54.00	4.59	1.00 V	315	36.81	37.3	10.10	-34.8	12.60

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) + Pre-amplifier Factor
 3. The other emission levels were very low against the limit.
 4. Margin value = Limit value - Emission level.
 5. " * " : Fundamental frequency

4.3. Maximum Peak Output Power

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

Follow KDB 558074 D01 DTS Meas Guidance v02 of measurement procedure 8.1.2

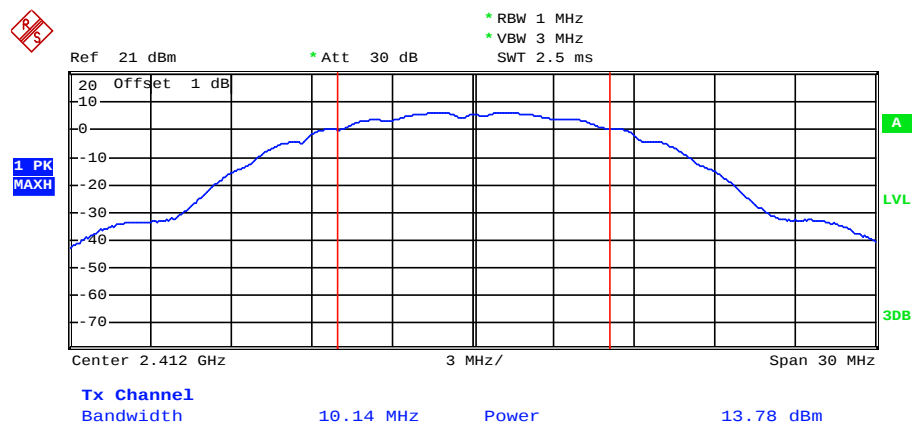
LIMIT

The Maximum Peak Output Power Measurement is 30dBm.

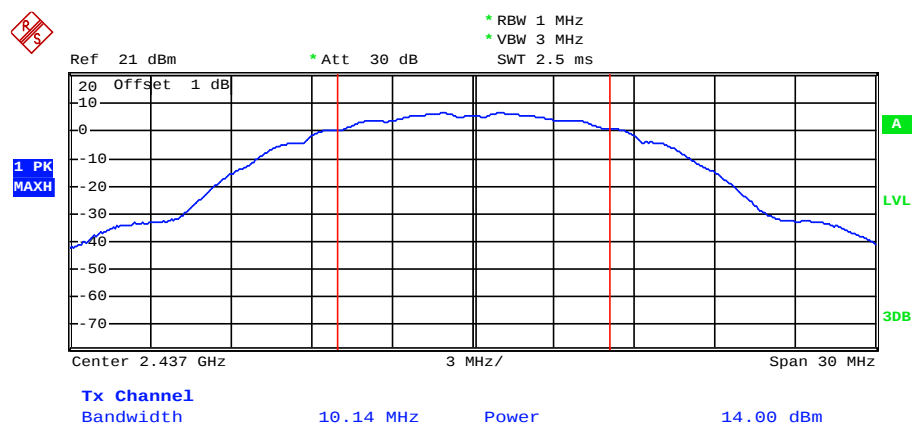
TEST RESULTS

Channel Number	Frequency (MHz)	Reading Power Output(dBm)	Limit (dBm)	Verdict
802.11b				
1	2412	13.78	30	PASS
6	2437	14.00	30	PASS
11	2462	13.54	30	PASS
802.11g				
1	2412	12.67	30	PASS
6	2437	12.87	30	PASS
11	2462	13.03	30	PASS
802.11n20				
1	2412	12.57	30	PASS
6	2437	12.73	30	PASS
11	2462	12.94	30	PASS
802.11n40				
3	2422	12.29	30	PASS
6	2437	12.49	30	PASS
9	2452	12.62	30	PASS

Remark:1.Test results including cable loss;
2.Each mode test difference speeds and recorded worst cases at each mode.

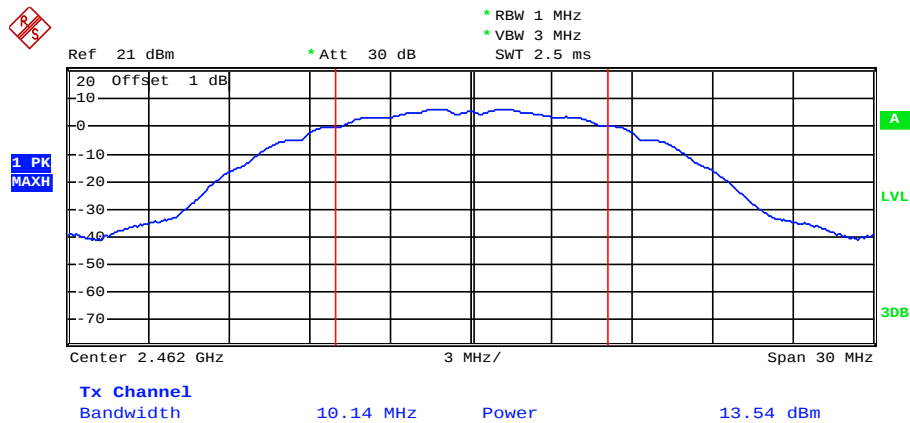
Photos of Maximum Peak Output Power**802.11b Mode channel 1**

Date: 21.JAN.2013 19:35:53

802.11b Mode channel 6

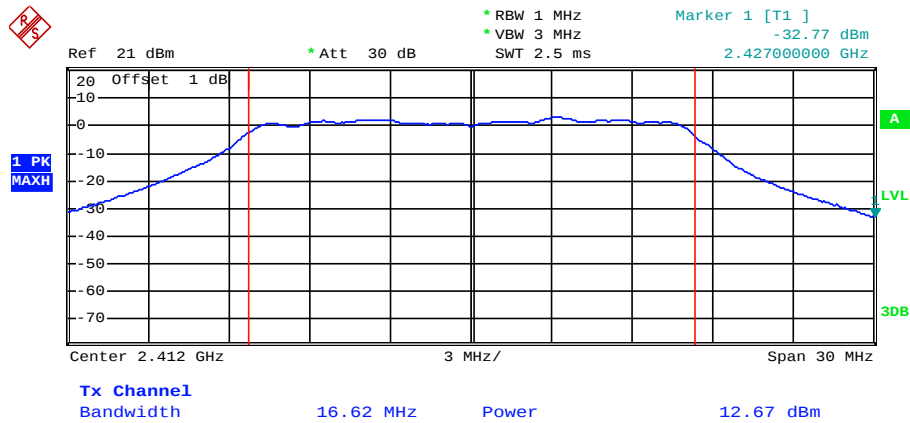
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802.11b Mode channel 11



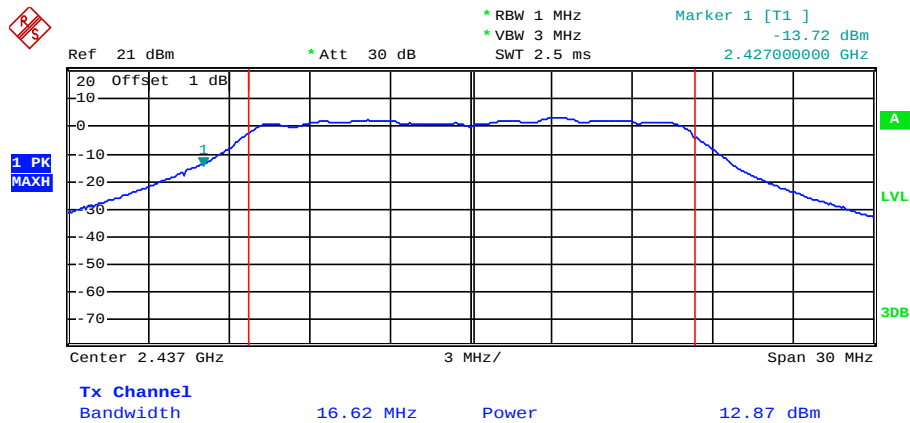
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802.11g Mode channel 1



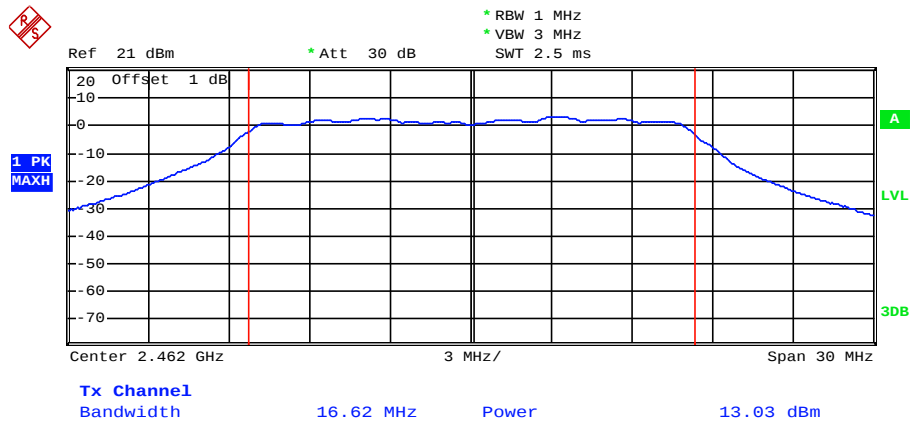
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802.11g Mode channel 6



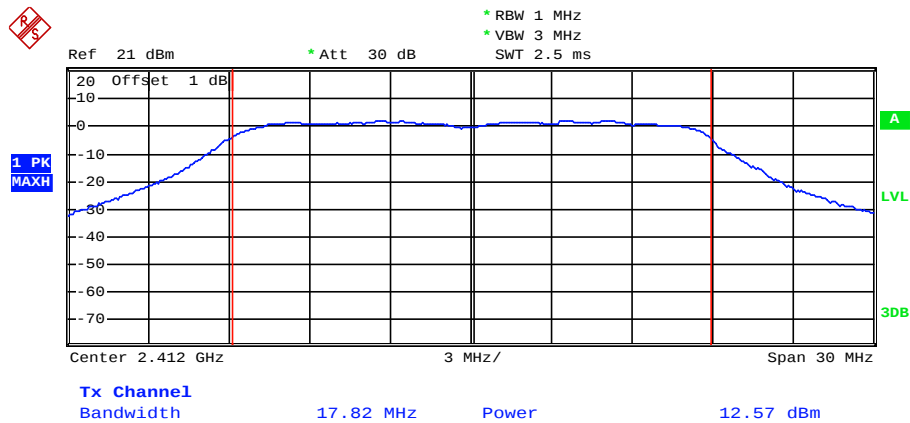
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802.11g Mode channel 11



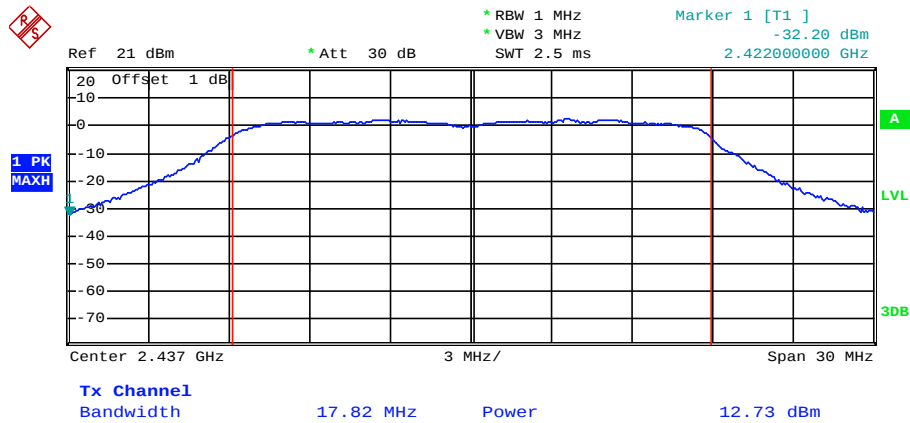
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802.11n20 Mode channel 1



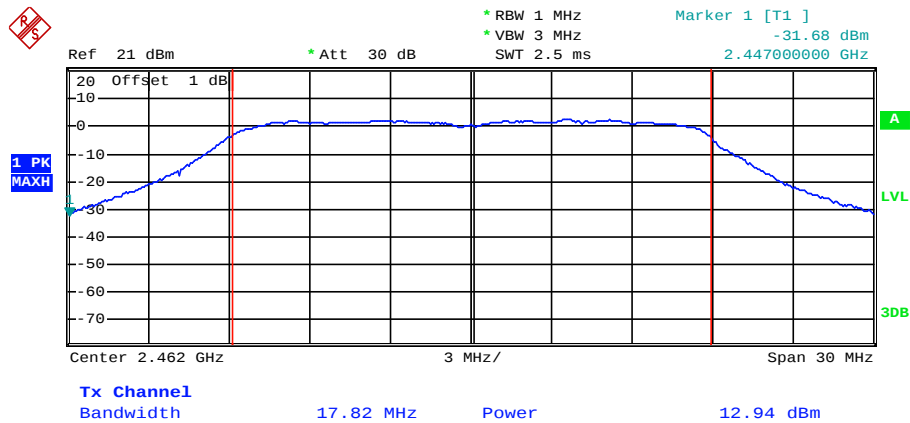
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802.11n20 Mode channel 6



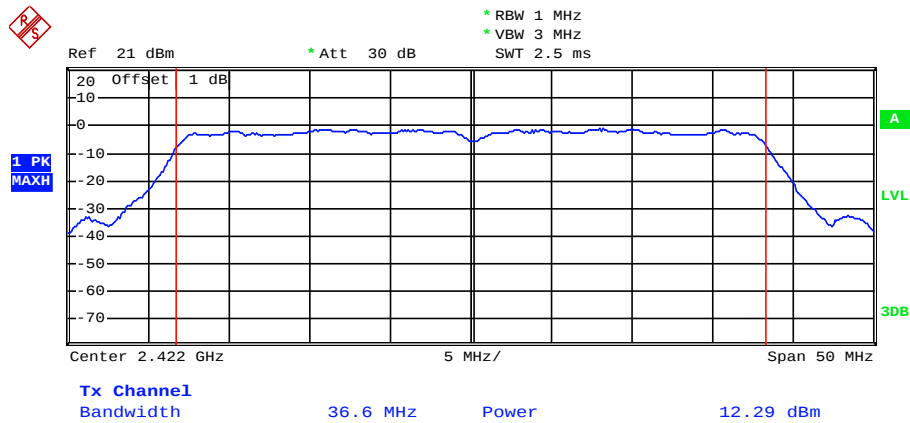
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802.11n20 Mode channel 11



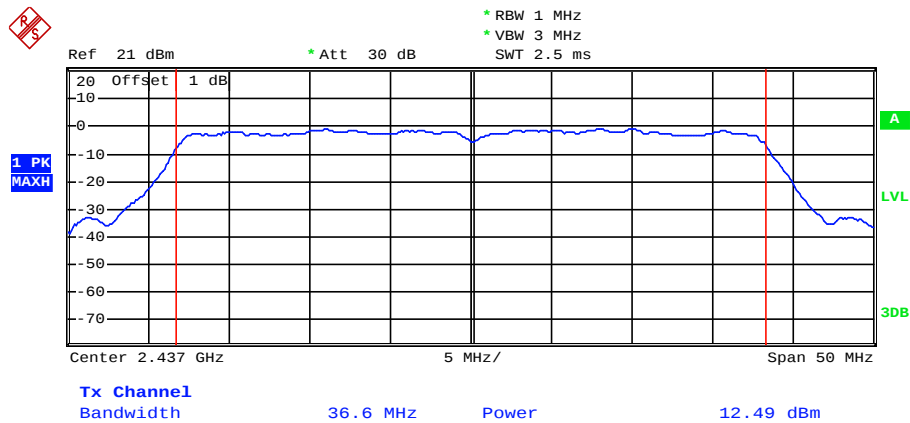
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802.11n40 Mode channel 3



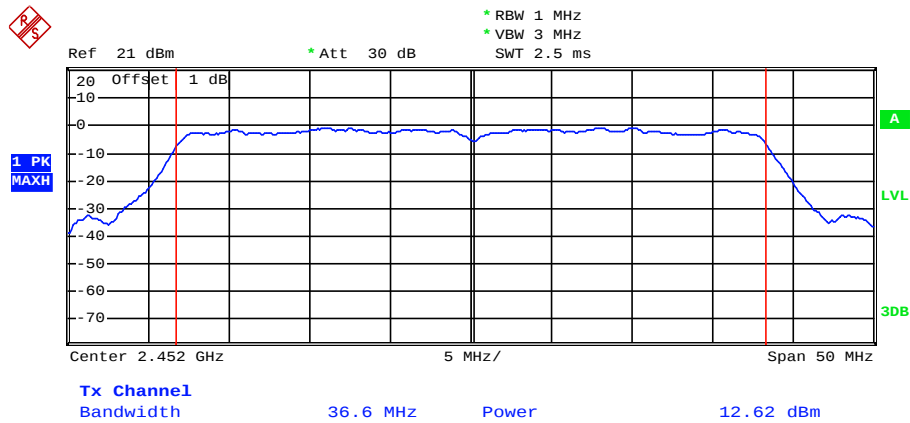
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802.11n40 Mode channel 6



Date: 21.JAN.2013 19:30:17

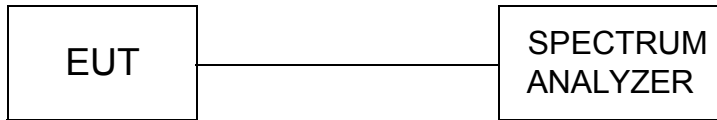
802.11n40 Mode channel 9



Date: 21.JAN.2013 19:29:54

4.4. Power Spectral Density

TEST CONFIGURATION



TEST PROCEDURE

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
 2. Set the RBW ≥ 3 kHz.
 3. Set the VBW $\geq 3 \times$ RBW.
 4. Set the span to 1.5 times the DTS channel bandwidth.
 5. Detector = peak.
 6. Sweep time = auto couple.
 7. Trace mode = max hold.
 8. Allow trace to fully stabilize.
 9. Use the peak marker function to determine the maximum power level.
 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
 11. The resulting peak PSD level must be ≤ 8 dBm.
- Follow KDB 558074 D01 DTS Meas Guidance v02 of measurement procedure 9.1

LIMIT

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.

TEST RESULTS

Channel	Frequency (MHz)	Measured PSD (dBm/100kHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-0.20	-15.40	8	PASS
6	2437	0.25	-14.95	8	PASS
11	2462	0.23	-14.97	8	PASS

Note: 1. For 802.11b mode at final test to get the worst-case emission at 11Mbps.
2. The test results including the cable loss.

Channel	Frequency (MHz)	Measured PSD (dBm/100kHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-7.37	-22.57	8	PASS
6	2437	-7.24	-22.44	8	PASS
11	2462	-7.06	-22.26	8	PASS

Note: 1. For 802.11g mode at final test to get the worst-case emission at 54Mbps.
2. The test results including the cable loss.

Channel	Frequency (MHz)	Measured PSD (dBm/100kHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-7.88	-23.08	8	PASS
6	2437	-7.66	-22.86	8	PASS
11	2462	-8.08	-23.28	8	PASS

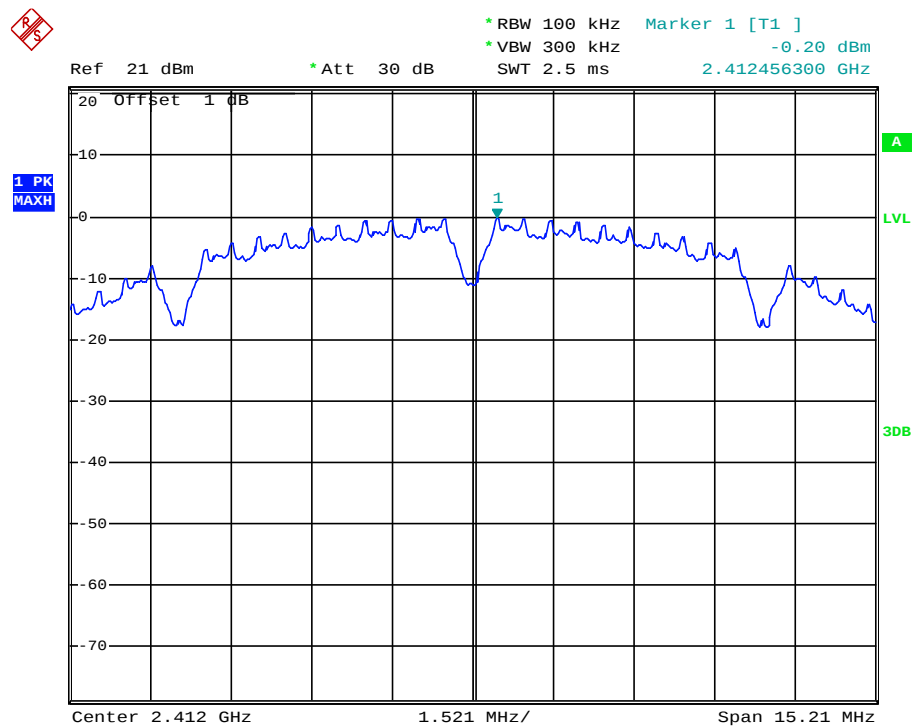
Note: 1. For 802.11n(20MHz) mode at final test to get the worst-case emission at 65 Mbps.
2. The test results including the cable lose.

Channel	Frequency (MHz)	Measured PSD (dBm/100kHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
3	2422	-10.93	-26.13	8	PASS
6	2437	-11.09	-26.29	8	PASS
9	2452	-10.82	-26.02	8	PASS

Note: 1. For 802.11n(40MHz) mode at final test to get the worst-case emission at 135Mbps.
2. The test results including the cable lose.

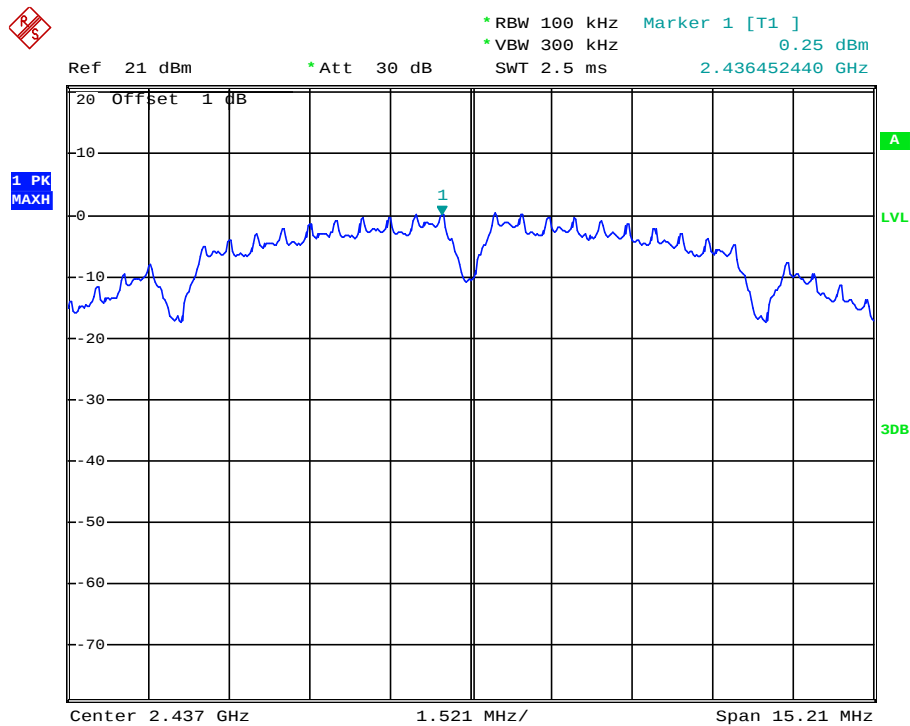
Photos of Power Spectral Density Measurement

802.11b Mode channel 1



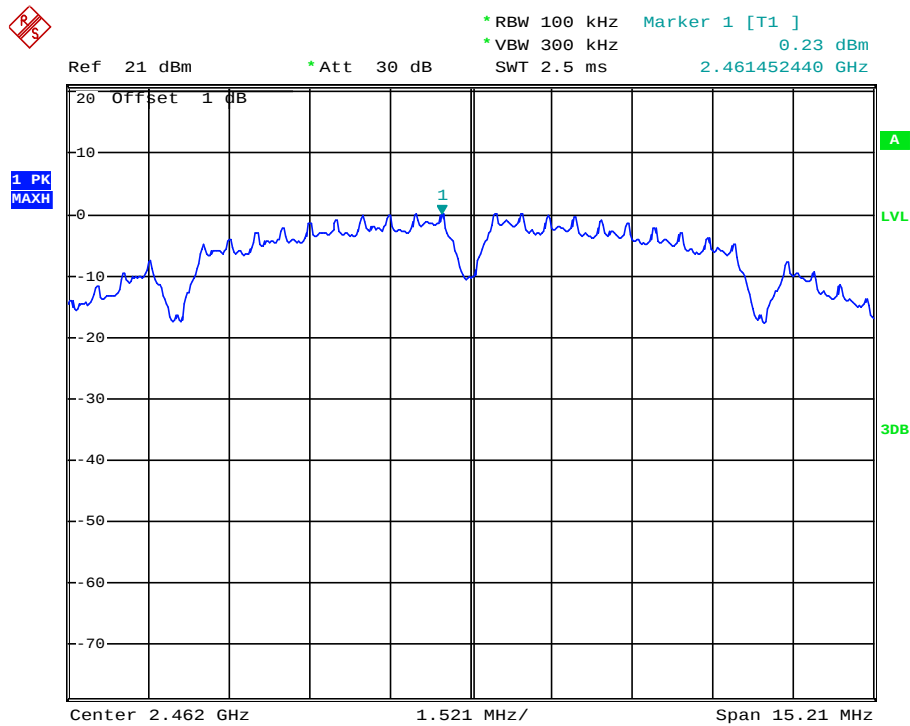
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802.11b Mode channel 6



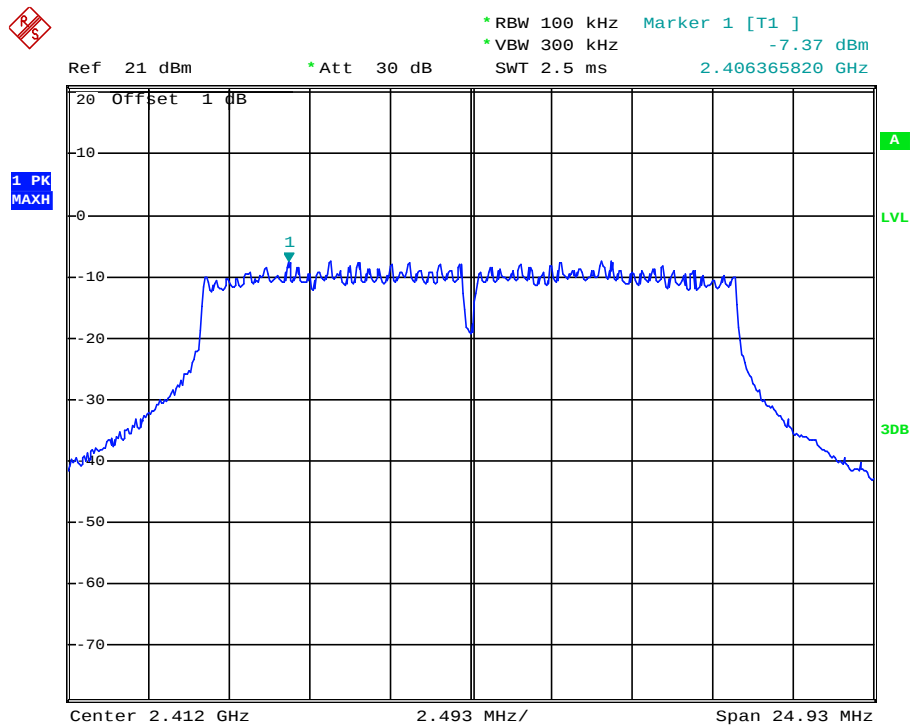
Date: 21.JAN.2013 19:41:05

802.11b Mode channel 11



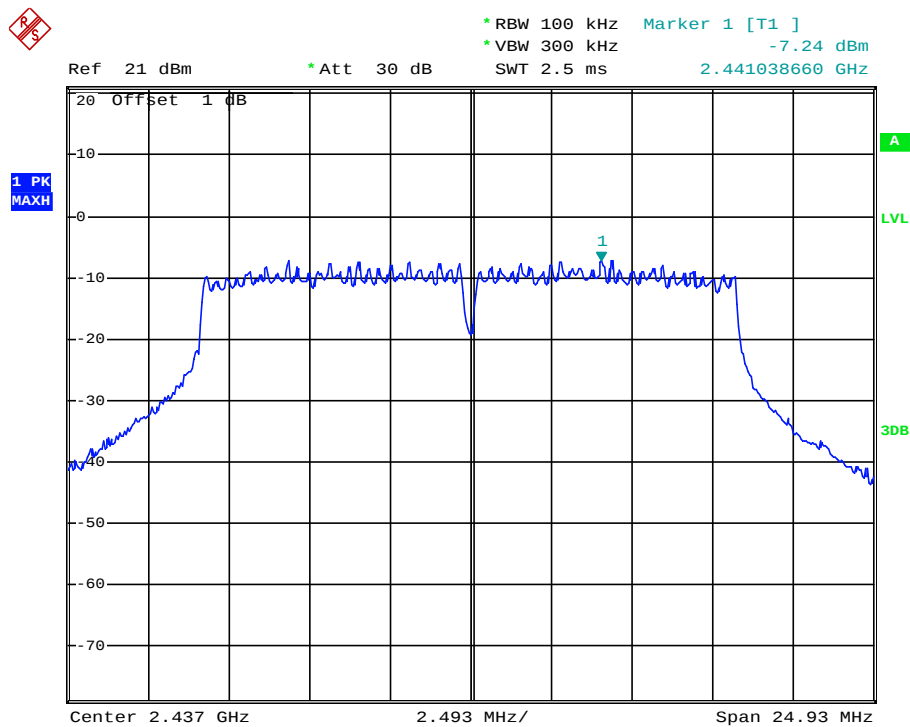
Date: 21.JAN.2013 19:40:01

802.11g Mode channel 1



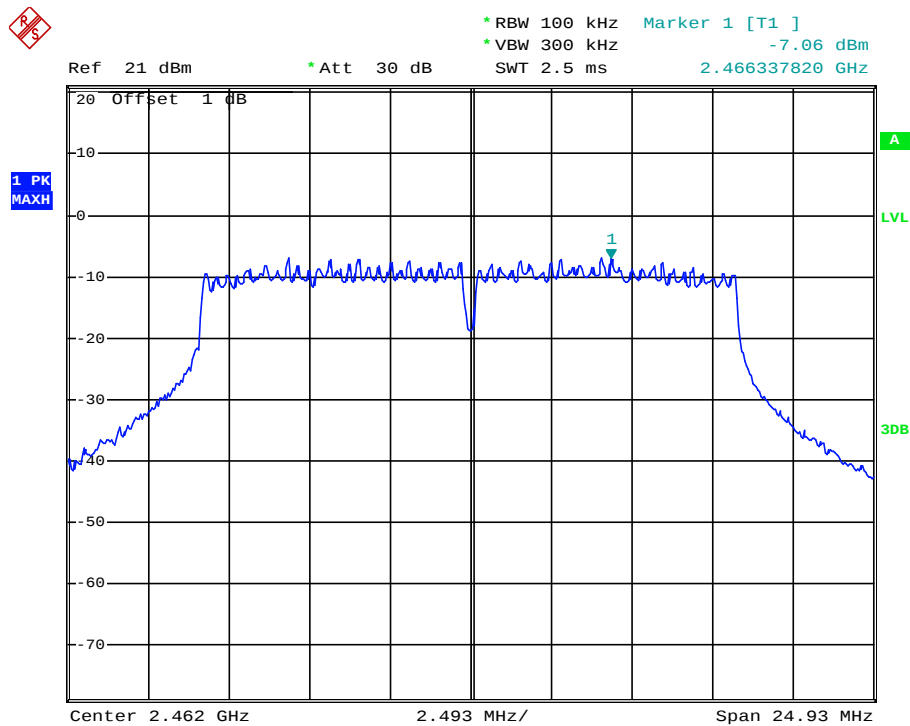
Date: 21.JAN.2013 19:42:23

802.11g Mode channel 6



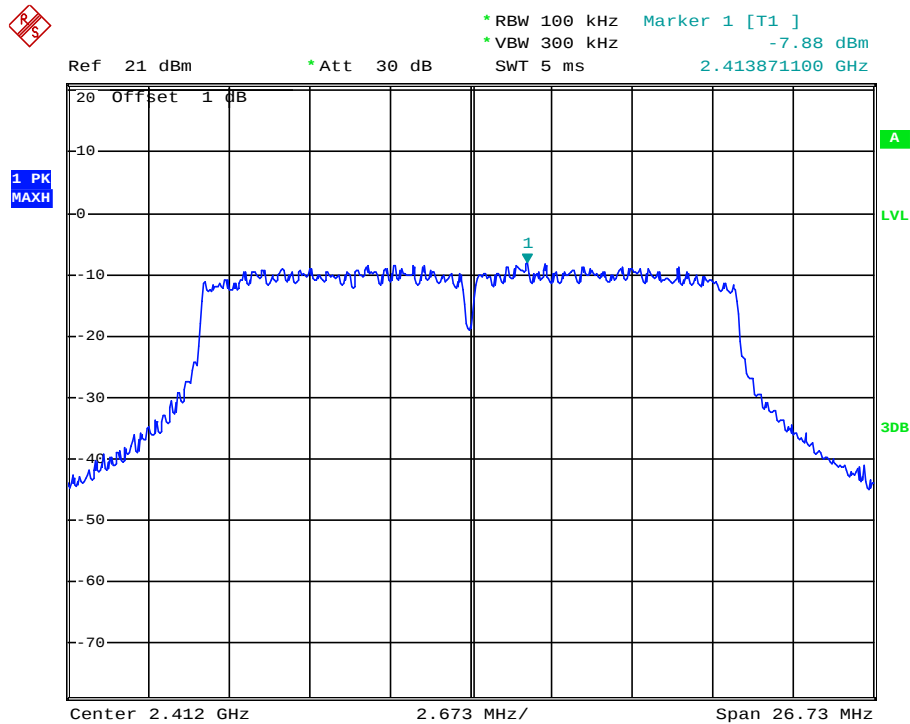
Date: 21.JAN.2013 19:42:58

802.11g Mode channel 11

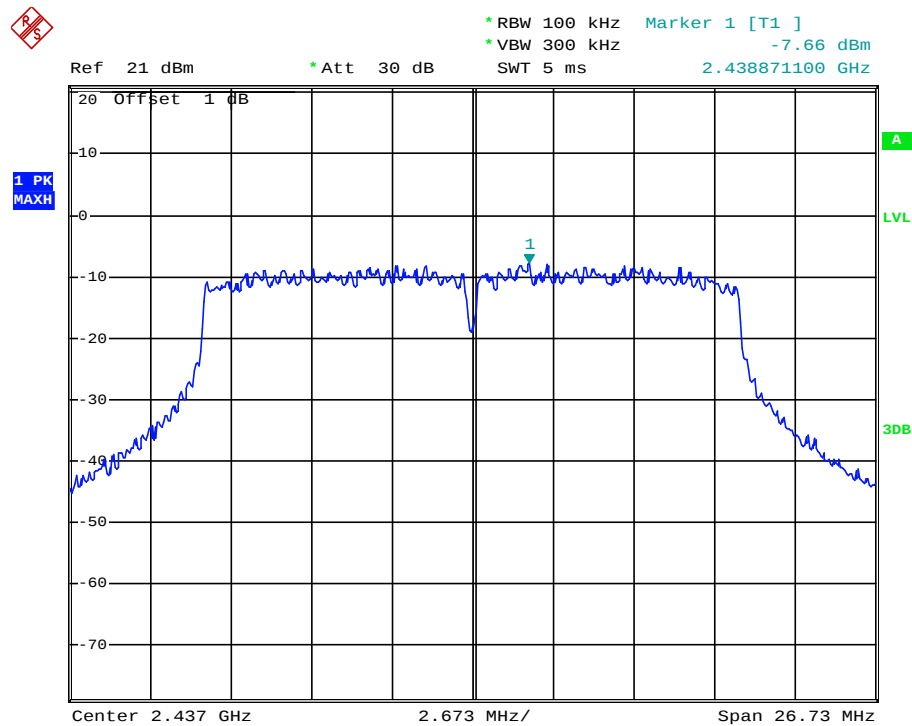


Date: 21.JAN.2013 19:43:30

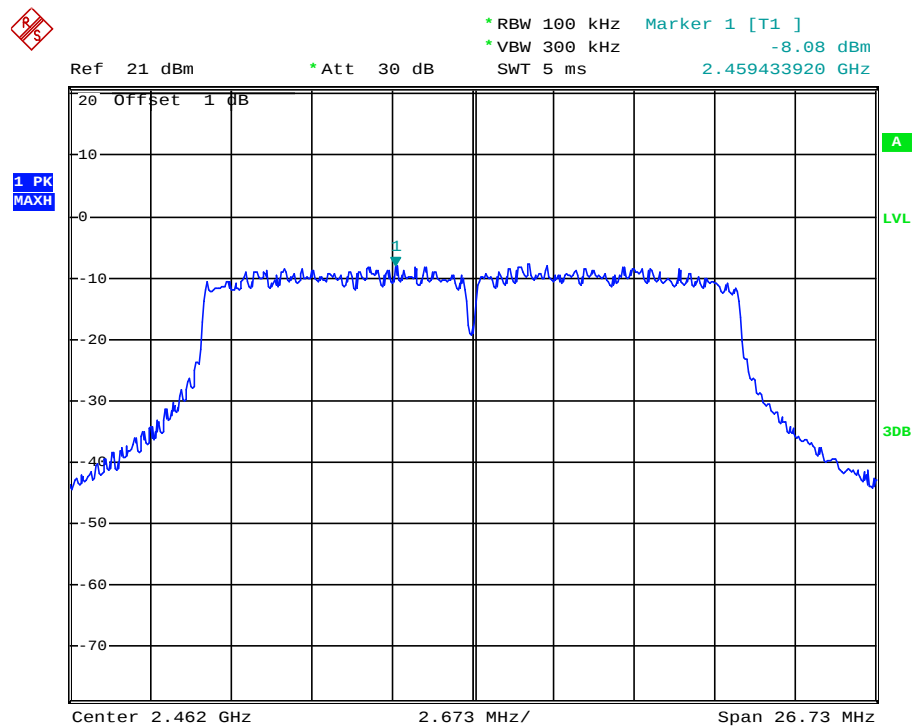
802.11n20 Mode channel 1



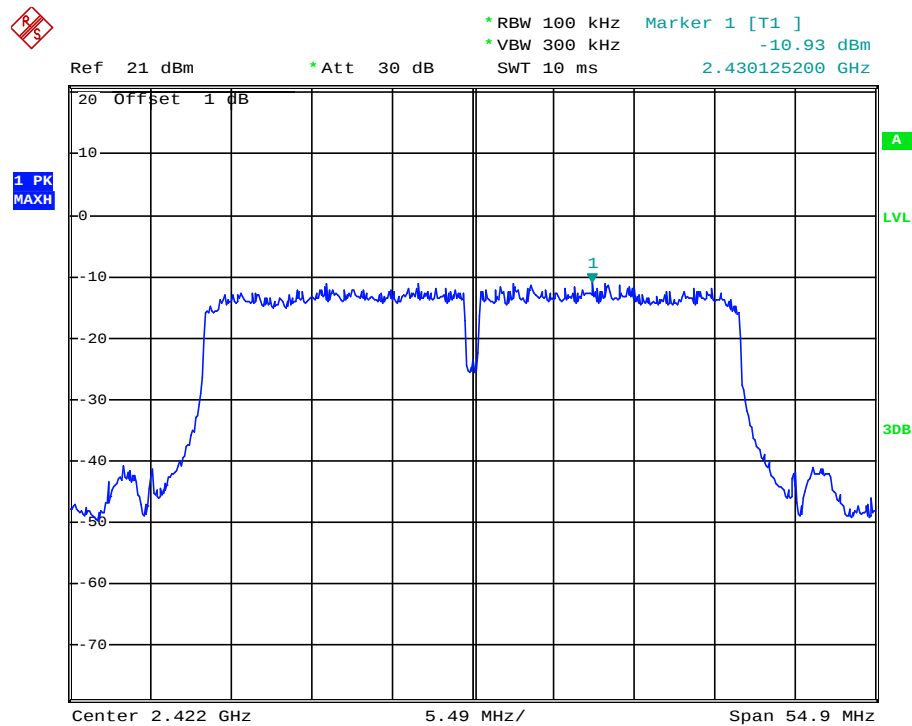
Date: 21.JAN.2013 19:44:19

802.11n20 Mode channel 6

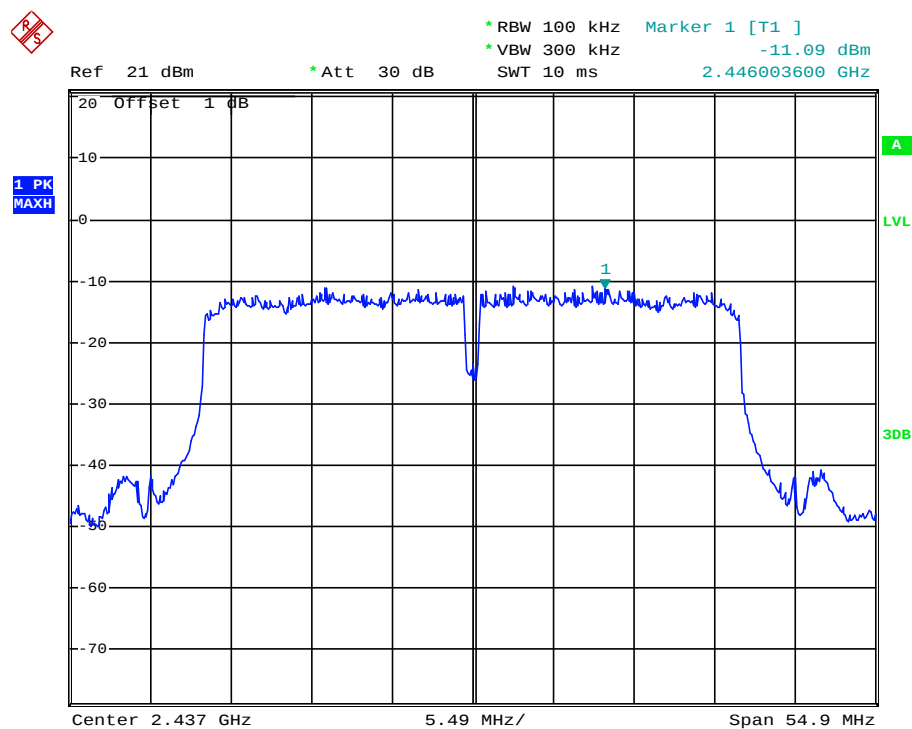
Date: 21.JAN.2013 19:44:39

802.11n20 Mode channel 11

Date: 21.JAN.2013 19:45:00

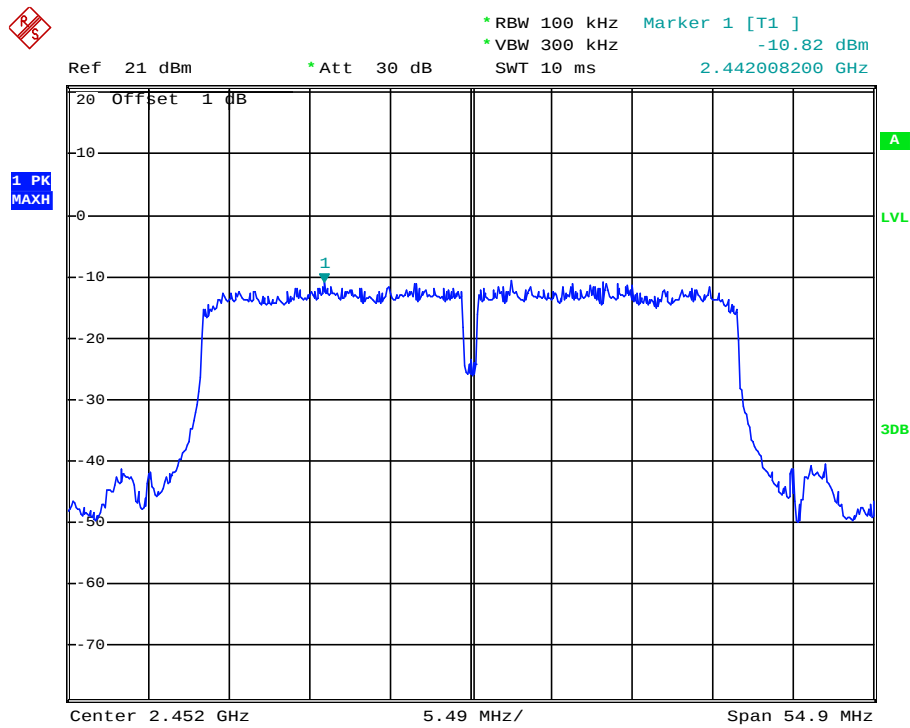
802.11n40 Mode channel 3

Date: 21.JAN.2013 19:45:52

802.11n40 Mode channel 6

Date: 21.JAN.2013 19:46:24

802.11n40 Mode channel 9



Date: 21.JAN.2013 19:46:52

4.5. Band Edge Compliance of RF Emission

Applicable Standard

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 §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. For Radiated emissions restricted band RBW=1MHz, VBW=3MHz for peak detector and RBW=1MHz, VBW=10Hz for average detector.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.
6. § 15.209(a) specifies radiated emissions limits for unwanted emissions in the restricted bands in terms of the maximum permissible electric field strength at a specified measurement distance. A correspondent EIRP level can be determined from the following relationship:
$$E = \text{EIRP} - 20\log(d) + 104.8$$

where:
EIRP = the equivalent isotropic radiated power in dBm,
E = electric field strength in dB μ V/m,
d = measurement distance in meters.
7. For emissions at frequencies less than or equal to 30 MHz , a maximum ground reflection factor of 6 dB shall be used and for emissions at frequencies greater than 30 MHz but less than or equal to 1000 MHz, a maximum ground reflection factor of 4.7 dB shall be used. For emissions on frequencies greater than 1000 MHz, no ground reflection factor is applied.

LIMIT

Below -20dB of the highest emission level in operating band.

Radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)

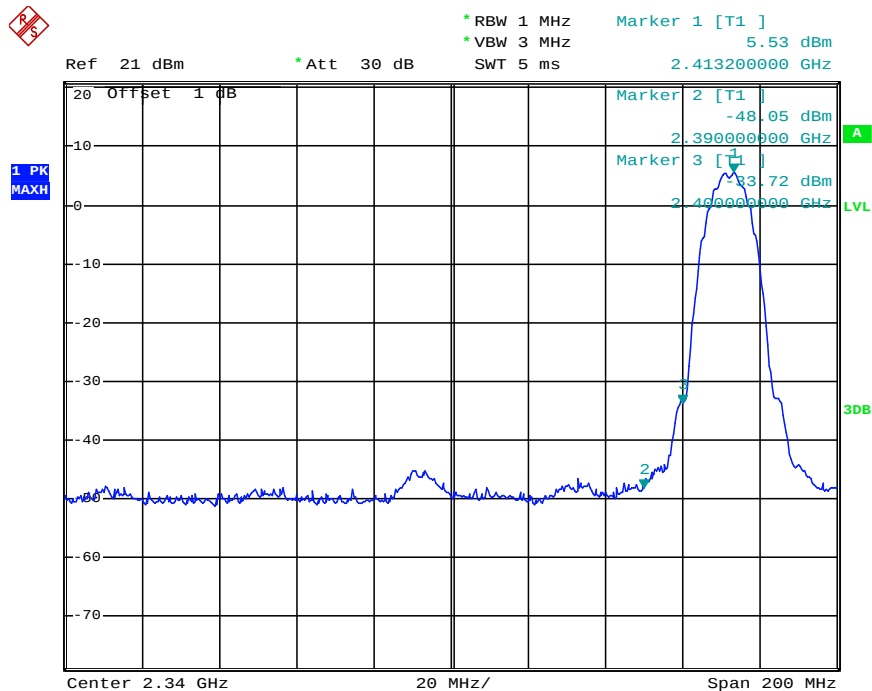
TEST RESULTS

Conducted band edge were measurement for 802.11b,802.11g,802.11n(20MHz) and 802.11n(40MHz) mode at difference date,recording worst case in test report.

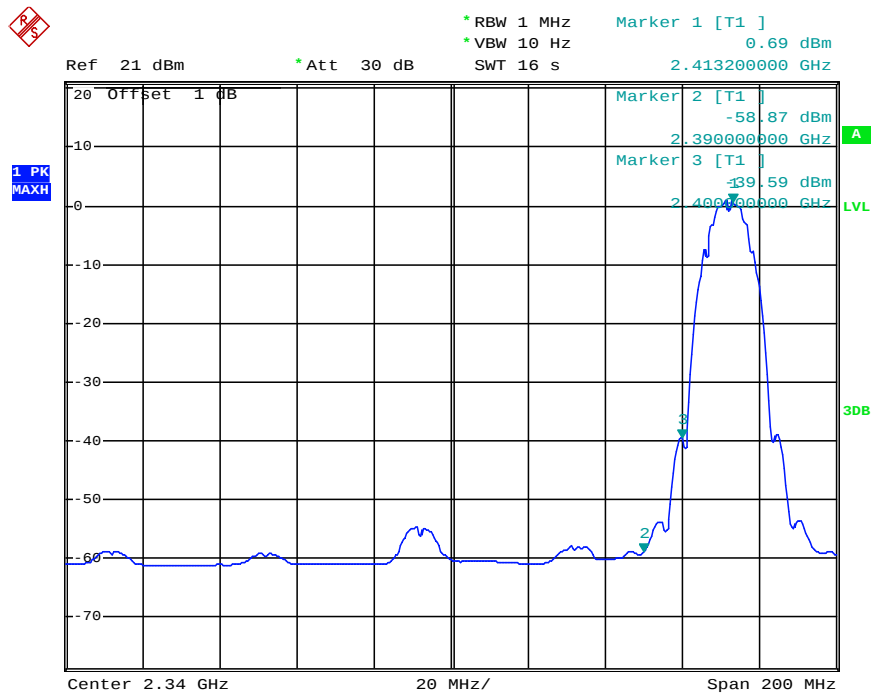
Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground reflection factor(dBi)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)
802.11 b						
2390.00	-48.05	2.0	0	49.21	PK	74.00
2390.00	-58.87	2.0	0	38.39	AV	54.00
2483.50	-46.98	2.0	0	50.28	PK	74.00
2483.50	-55.80	2.0	0	41.46	AV	54.00
802.11 g						
2390.00	-47.77	2.0	0	49.49	PK	74.00
2390.00	-59.86	2.0	0	37.40	AV	54.00
2483.50	-46.81	2.0	0	50.45	PK	74.00
2483.50	-59.02	2.0	0	38.24	AV	54.00
802.11 n(20MHz)						
2390.00	-48.66	2.0	0	48.60	PK	74.00
2390.00	-59.77	2.0	0	37.49	AV	54.00
2483.50	-47.98	2.0	0	49.28	PK	74.00
2483.50	-58.80	2.0	0	38.46	AV	54.00
802.11 n(40MHz)						
2390.00	-46.45	2.0	0	50.81	PK	74.00
2390.00	-58.40	2.0	0	38.86	AV	54.00
2483.50	-47.56	2.0	0	49.70	PK	74.00
2483.50	-58.36	2.0	0	38.90	AV	54.00

Photos of Band Edge Measurement

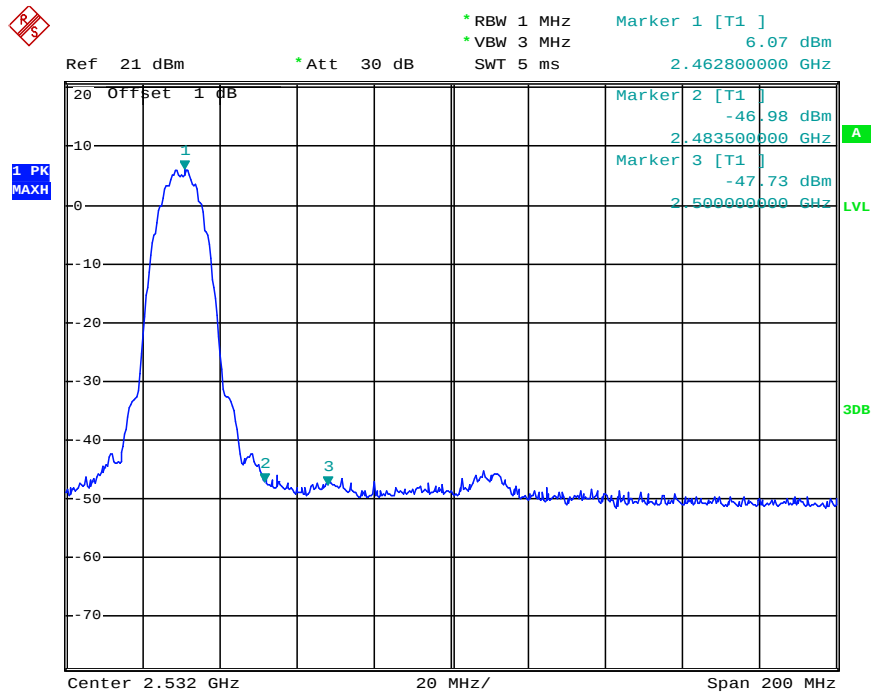
For 802.11b Mode Channel 1



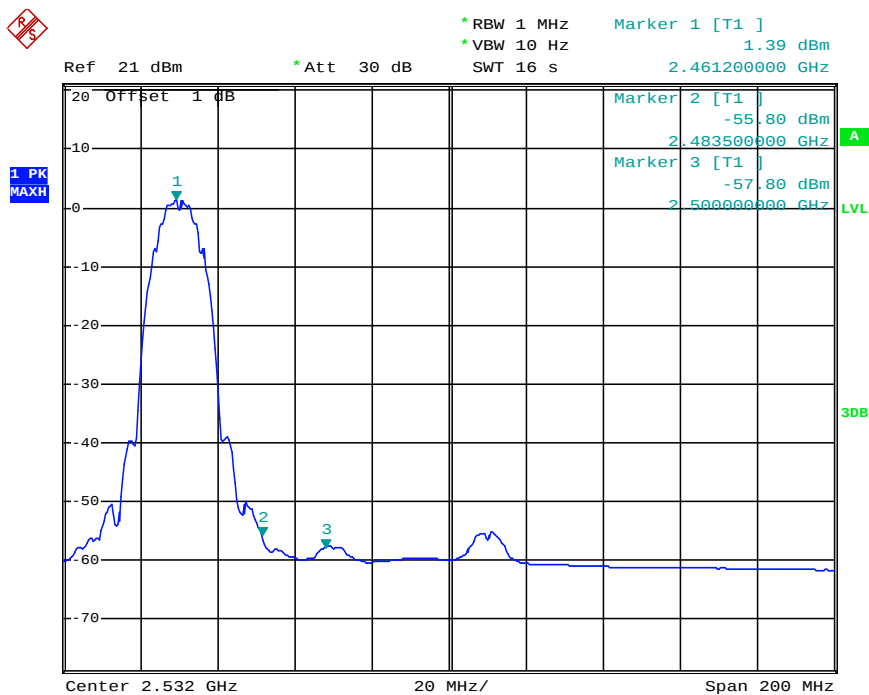
Date: 18.JAN.2013 16:09:18



Date: 18.JAN.2013 16:10:03

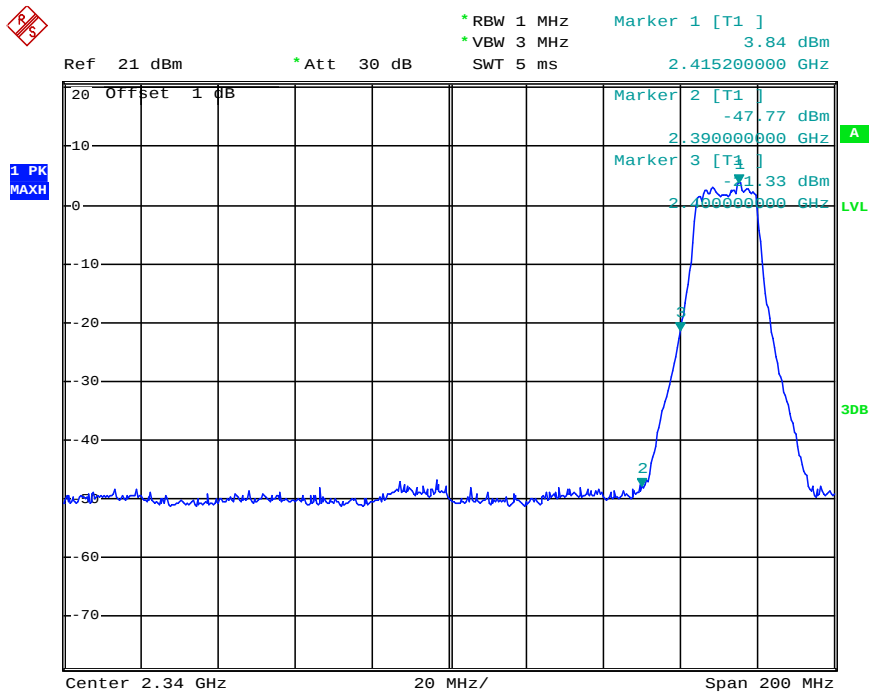
For 802.11b Mode Channel 11

Date: 18.JAN.2013 16:06:43

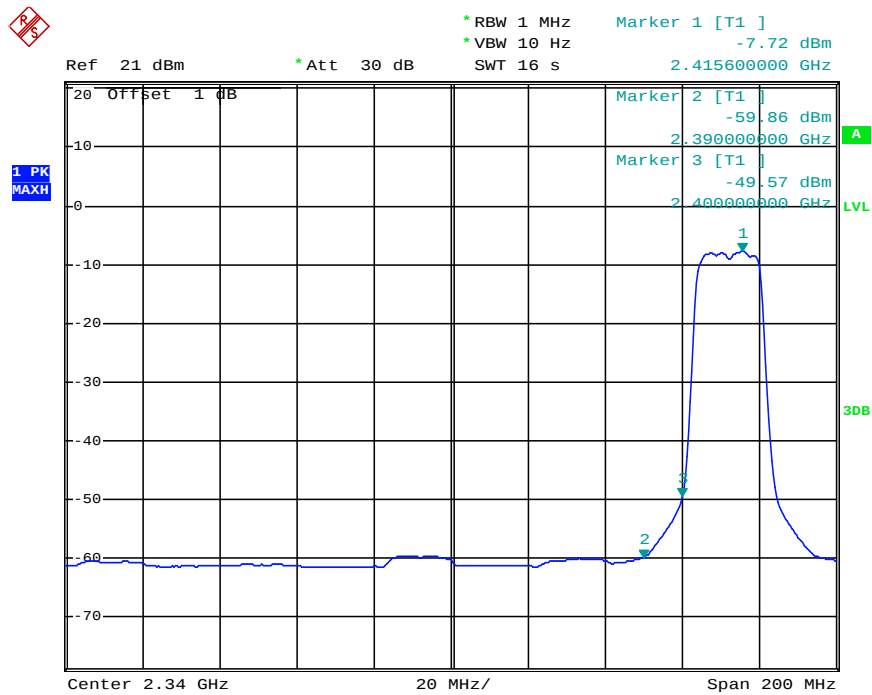


Date: 18.JAN.2013 16:07:33

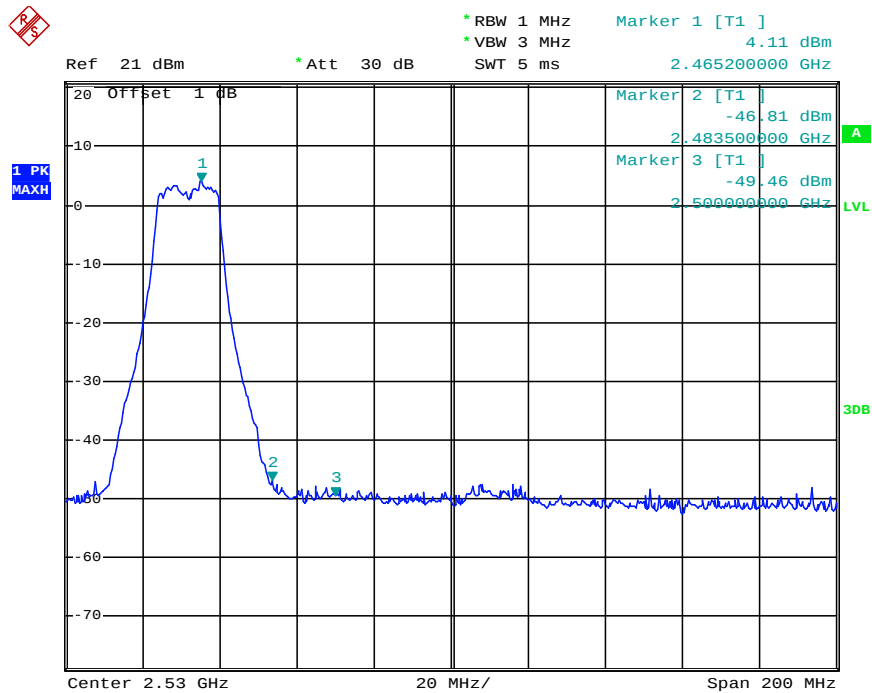
For 802.11g Mode Channel 1



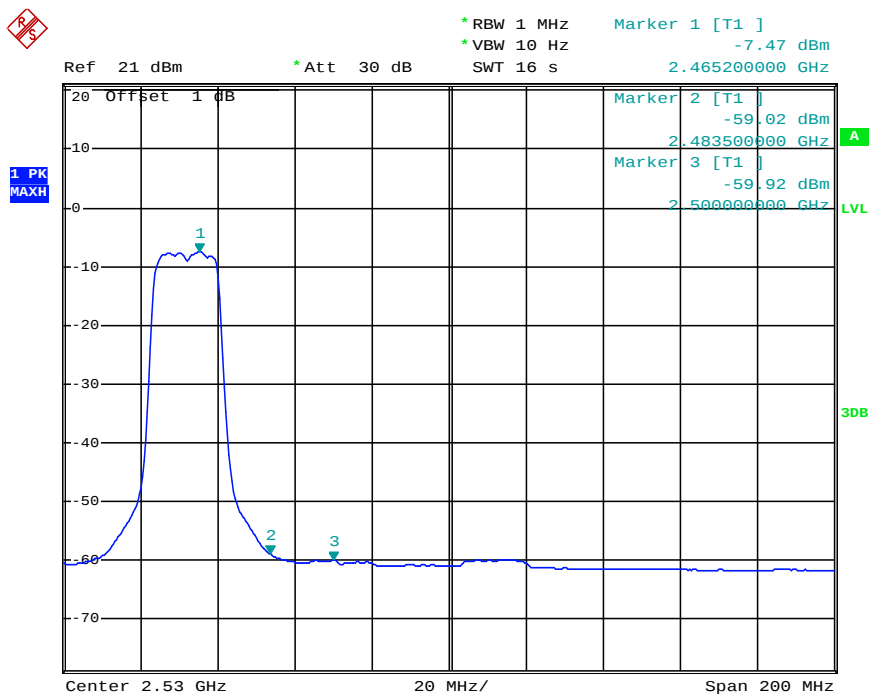
Date: 18.JAN.2013 16:12:01



Date: 18.JAN.2013 16:11:40

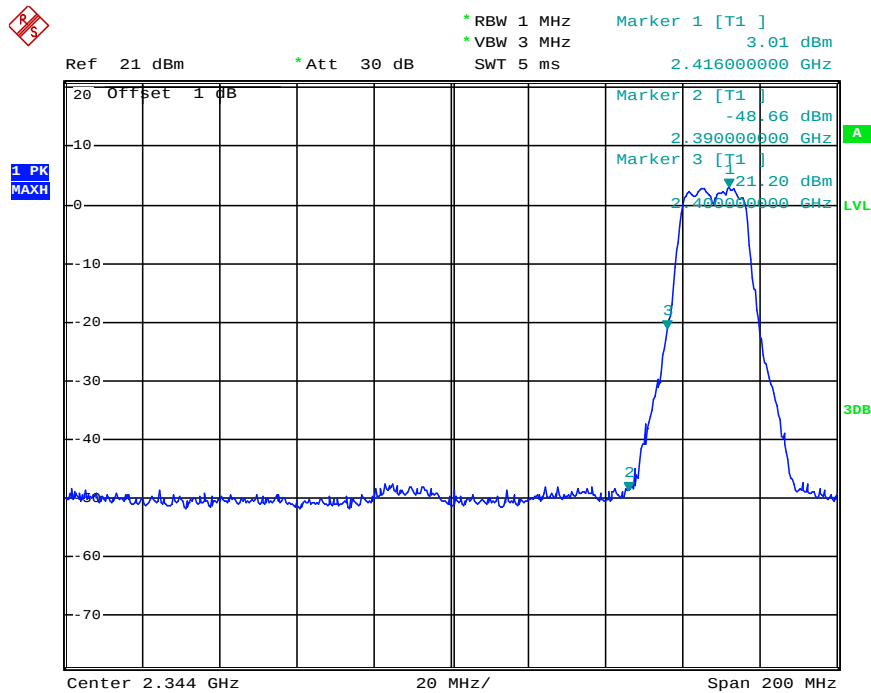
For 802.11g Mode Channel 11

Date: 18.JAN.2013 16:22:27

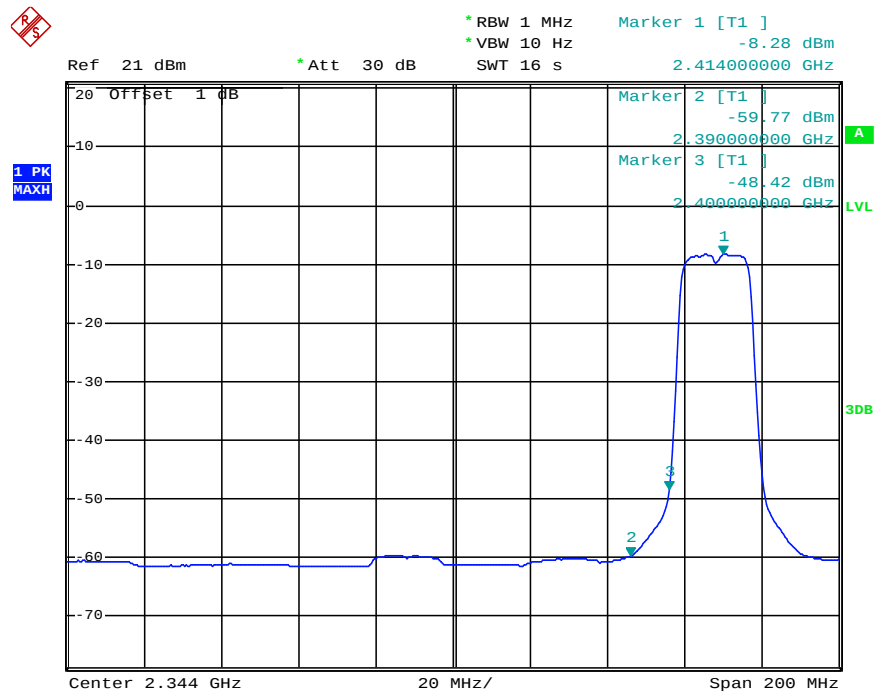


Date: 18.JAN.2013 16:22:52

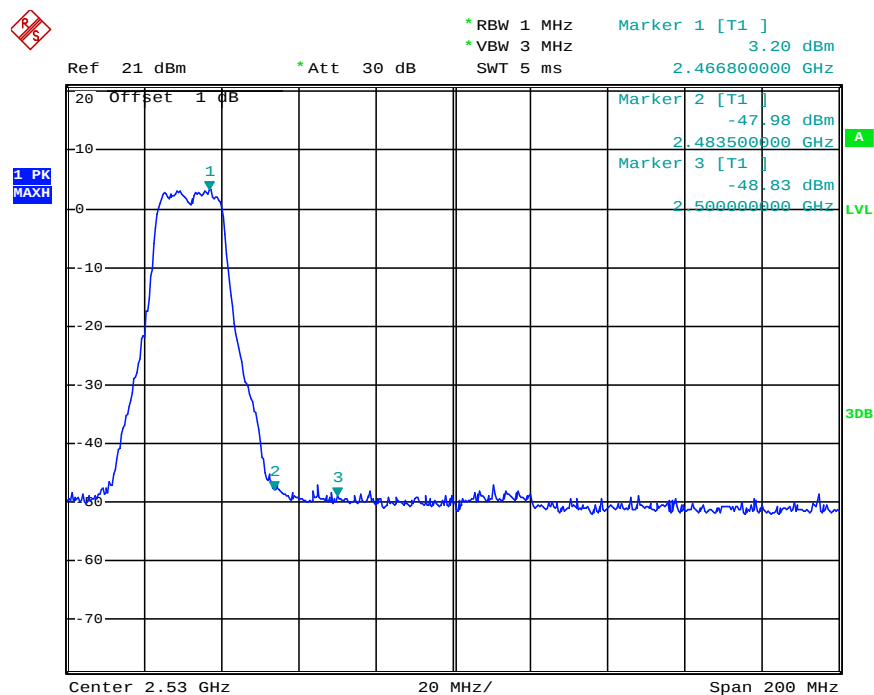
802.11n (20MHz) Mode Channel 1



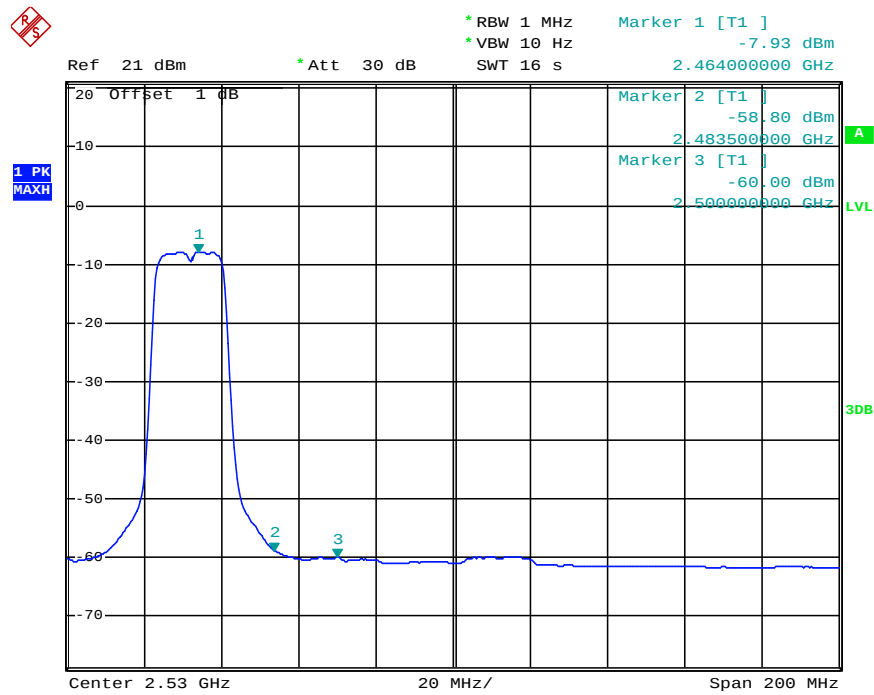
Date: 18.JAN.2013 16:18:28



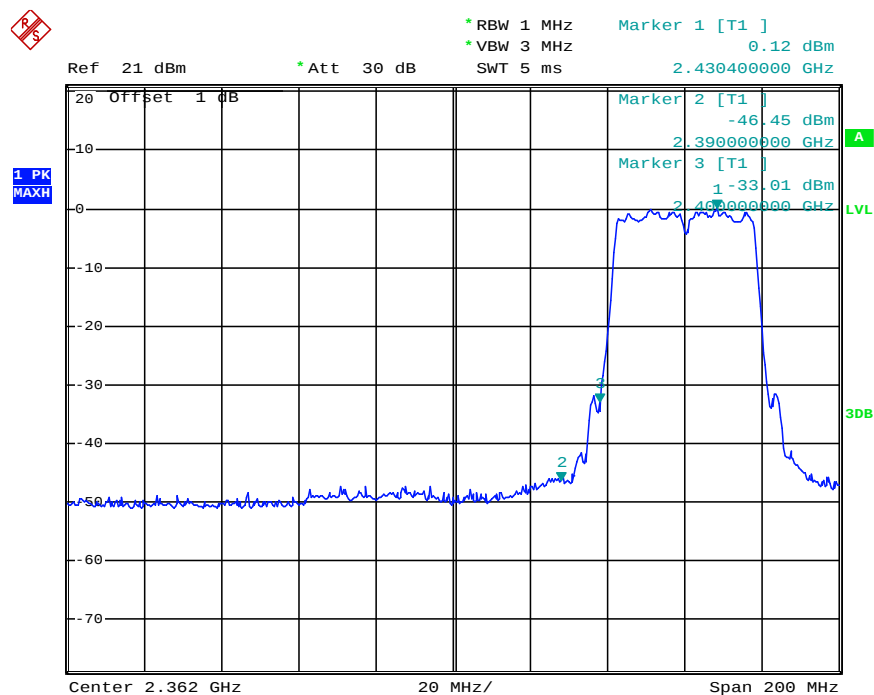
Date: 18.JAN.2013 16:19:12

802.11n (20MHz) Mode Channel 11

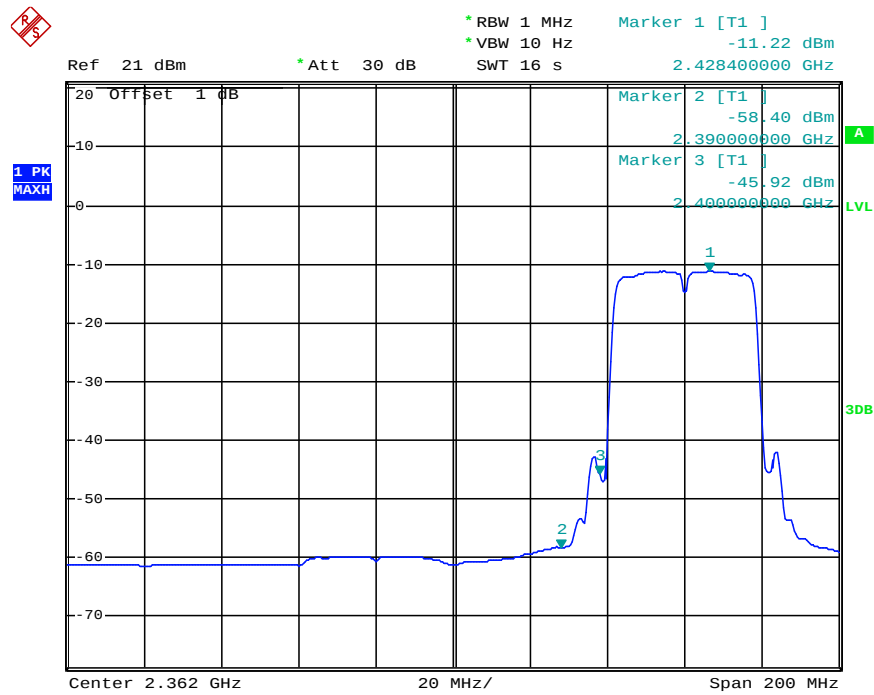
Date: 18.JAN.2013 16:16:10



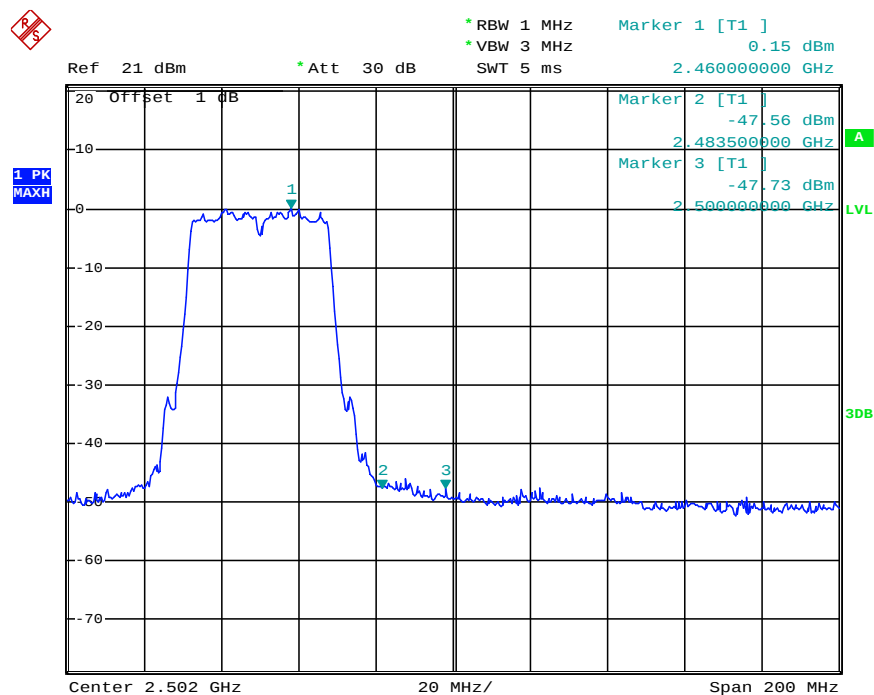
Date: 18.JAN.2013 16:16:47

802.11n (40MHz) Mode Channel 3

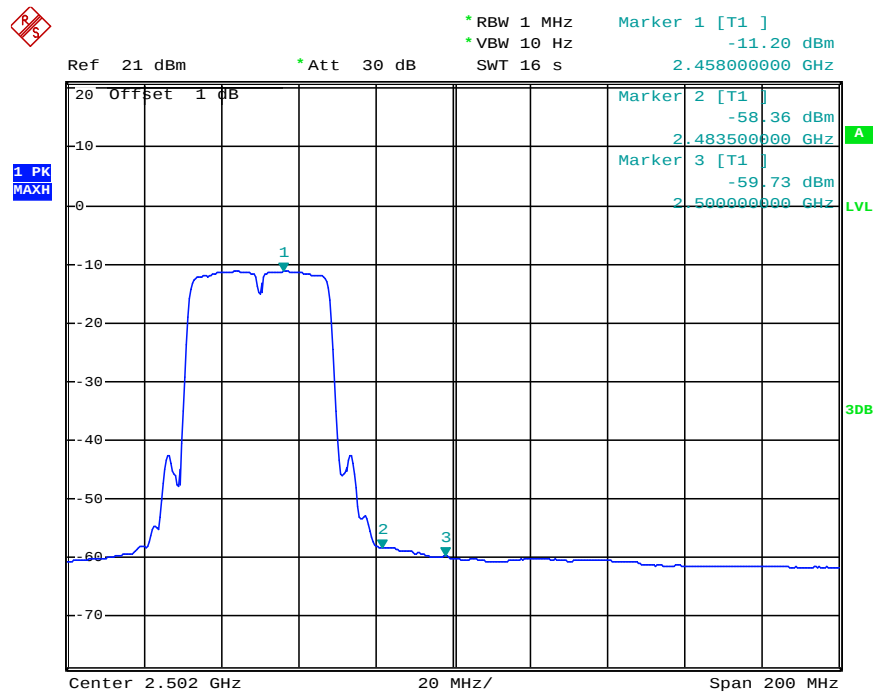
Date: 18.JAN.2013 16:29:13



Date: 18.JAN.2013 16:29:56

802.11n (40MHz) Mode Channel 9

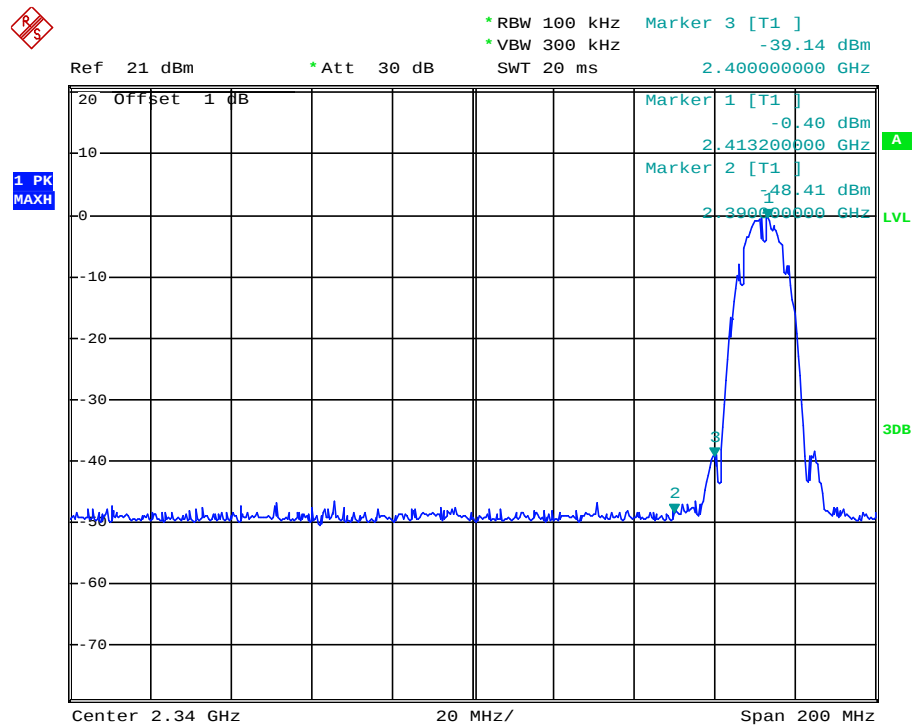
Date: 18.JAN.2013 16:24:51



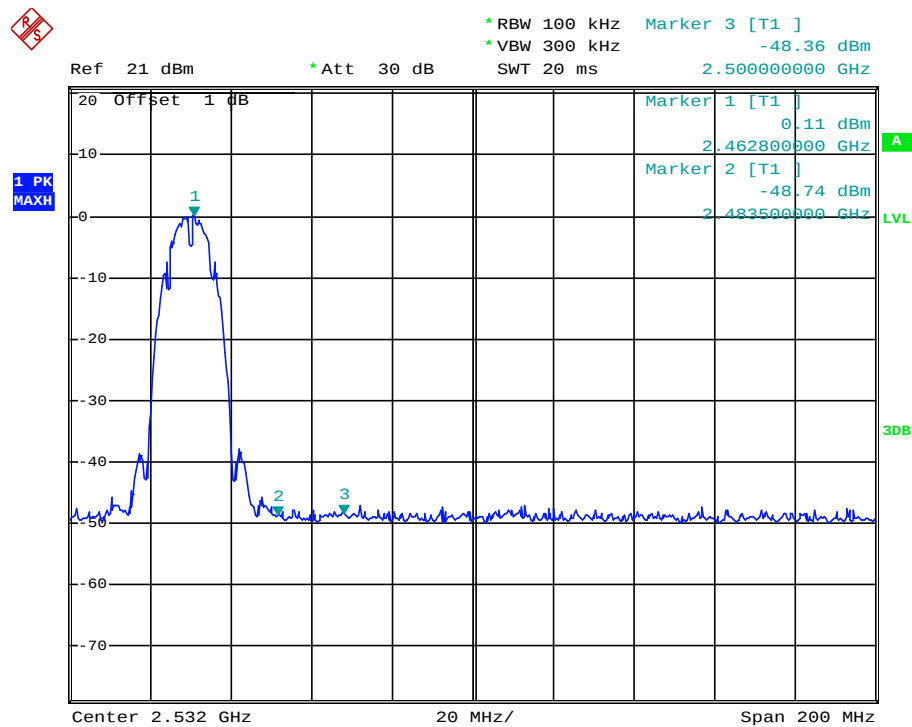
Date: 18.JAN.2013 16:25:19

Photos of Conducted Band Edge Measurement

Channel Number	Channel Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
802.11b				
1	2390.00	48.01	20	PASS
11	2483.50	48.85	20	PASS
802.11g				
1	2390.00	41.30	20	PASS
11	2483.50	41.86	20	PASS
802.11n(20)				
1	2390.00	40.63	20	PASS
11	2483.50	39.86	20	PASS
802.11n(40)				
3	2390.00	37.92	20	PASS
9	2483.50	38.35	20	PASS

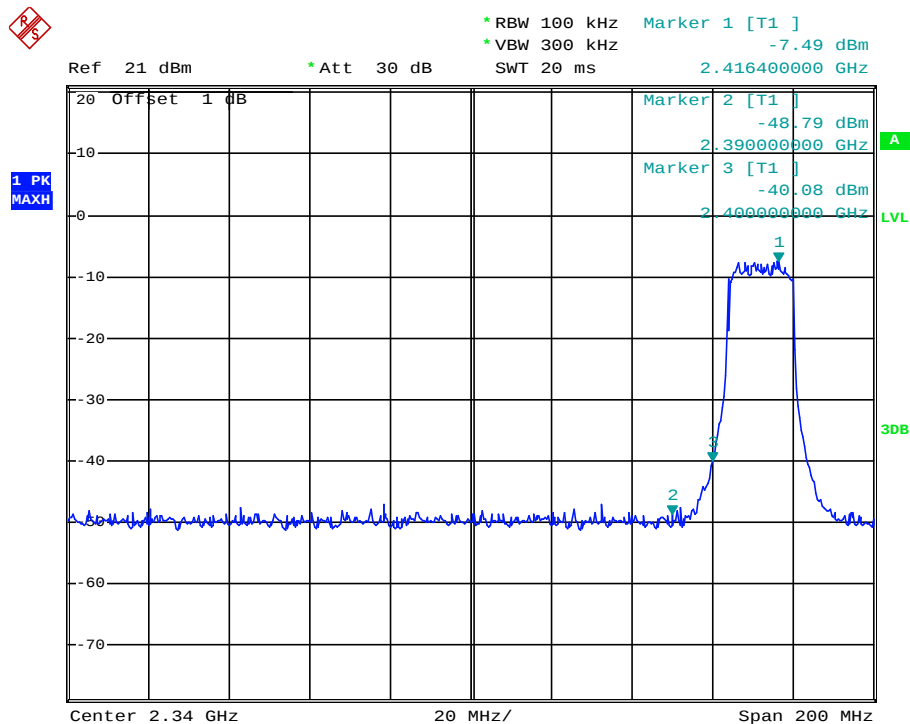
For 802.11b Mode Channel 1

Date: 18.JAN.2013 16:08:57

For 802.11b Mode Channel 11

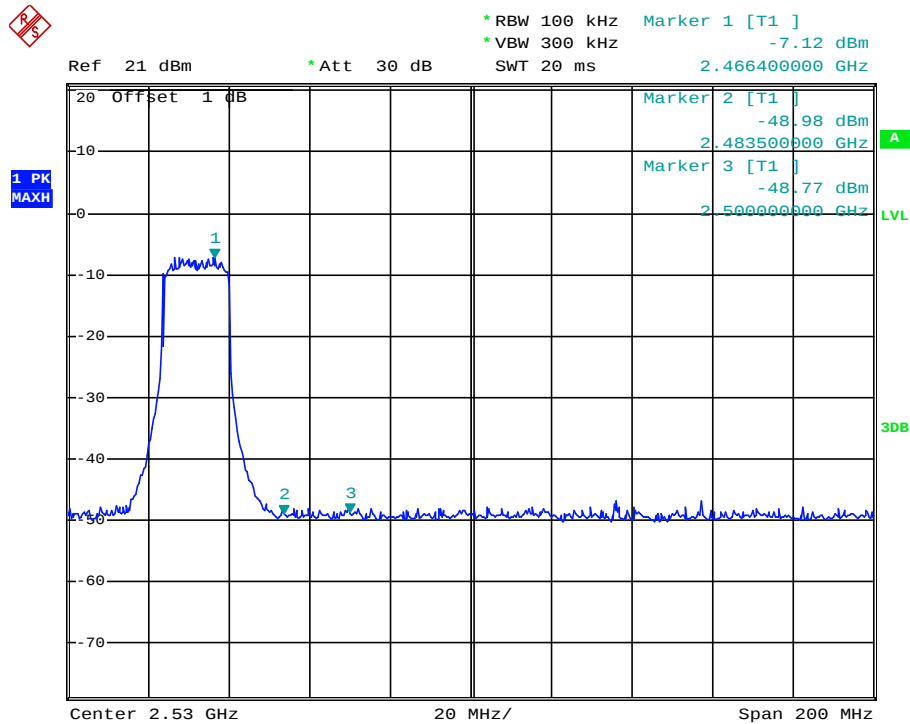
Date: 18.JAN.2013 16:06:21

For 802.11g Mode Channel 1



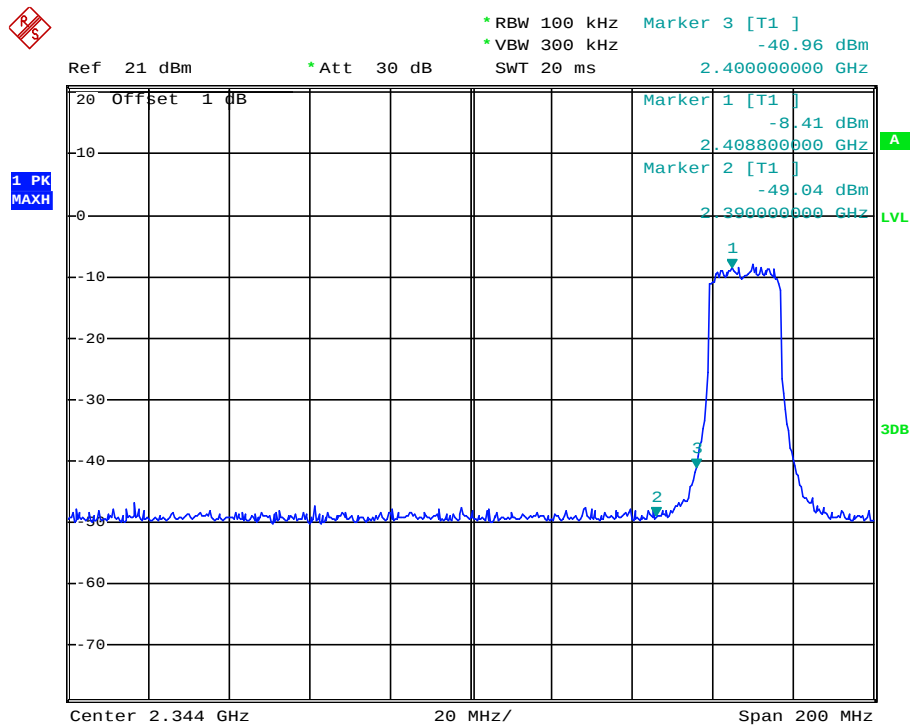
Date: 18.JAN.2013 16:12:35

For 802.11g Mode Channel 11



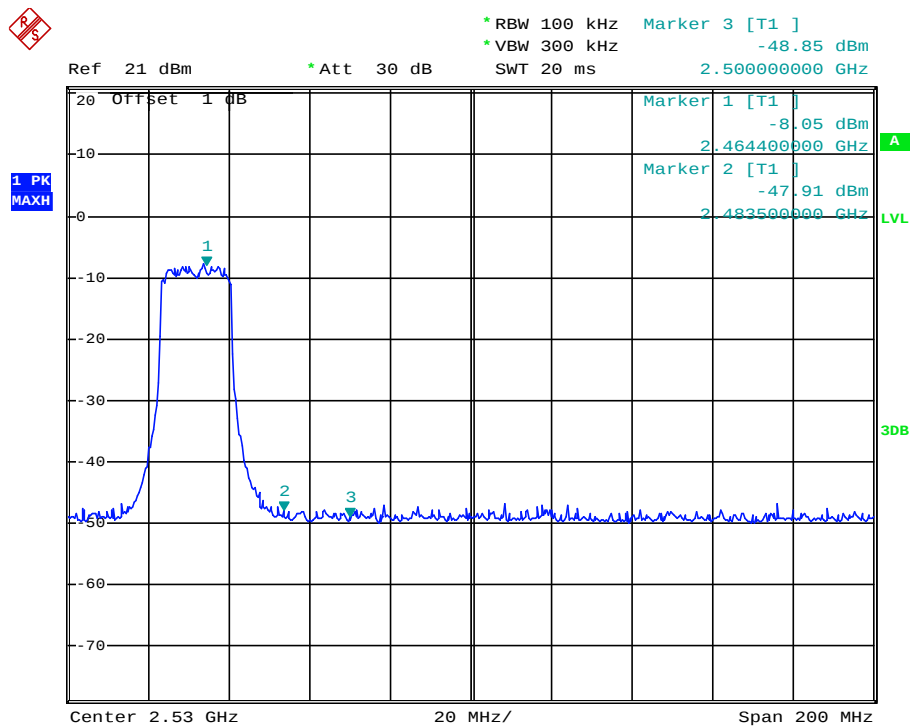
Date: 18.JAN.2013 16:22:16

802.11n (20MHz) Mode Channel 1

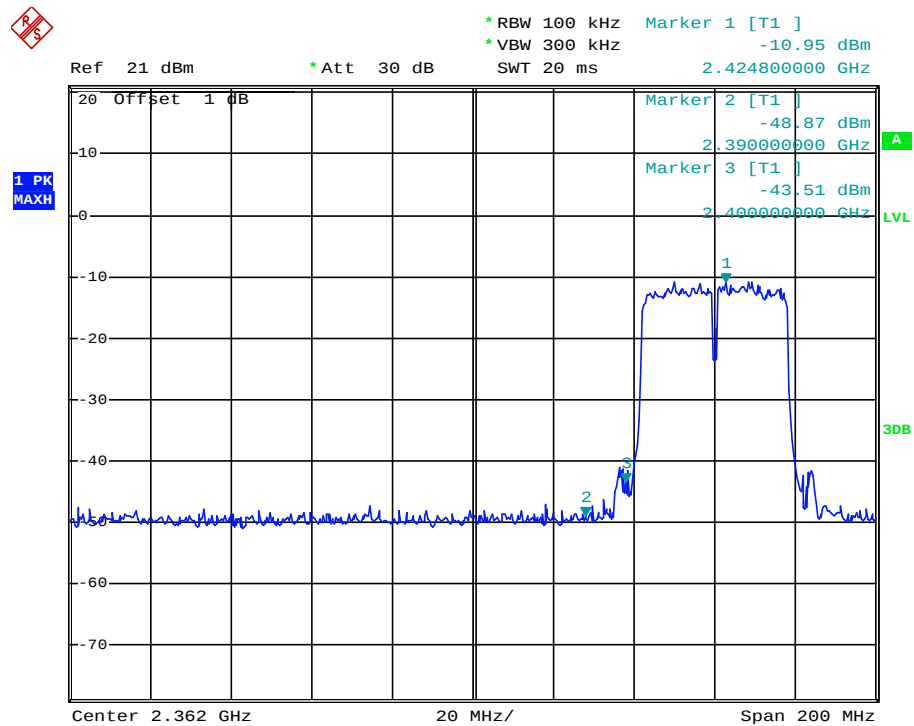


Date: 18.JAN.2013 16:18:15

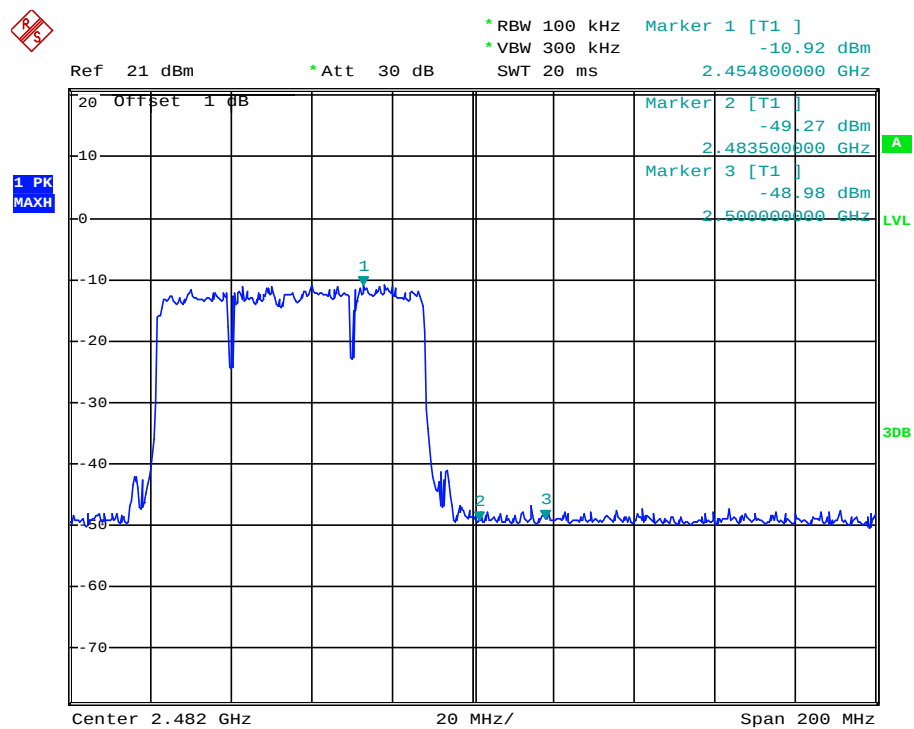
802.11n (20MHz) Mode Channel 11



Date: 18.JAN.2013 16:15:53

802.11n (40MHz) Mode Channel 3

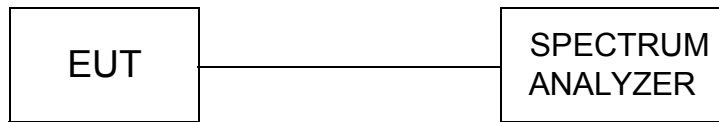
Date: 18.JAN.2013 16:28:55

802.11n (40MHz) Mode Channel 6

Date: 18.JAN.2013 16:24:20

4.6. Spurious RF Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

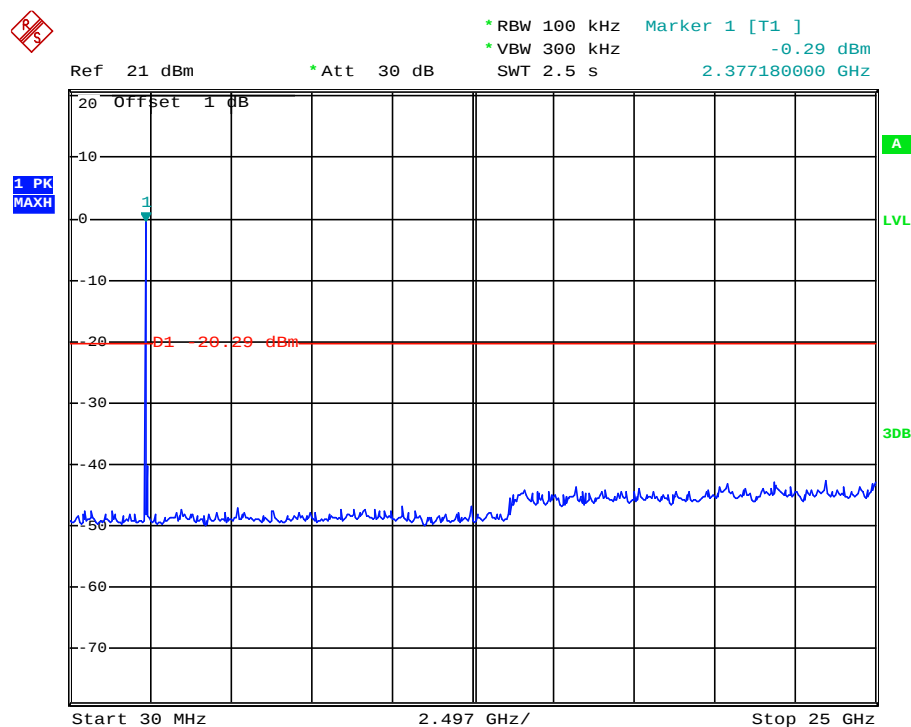
The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2009 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBM= 300KHz to measure the peak field strength, and measure frequency range from 30MHz to 26.5GHz.

LIMIT

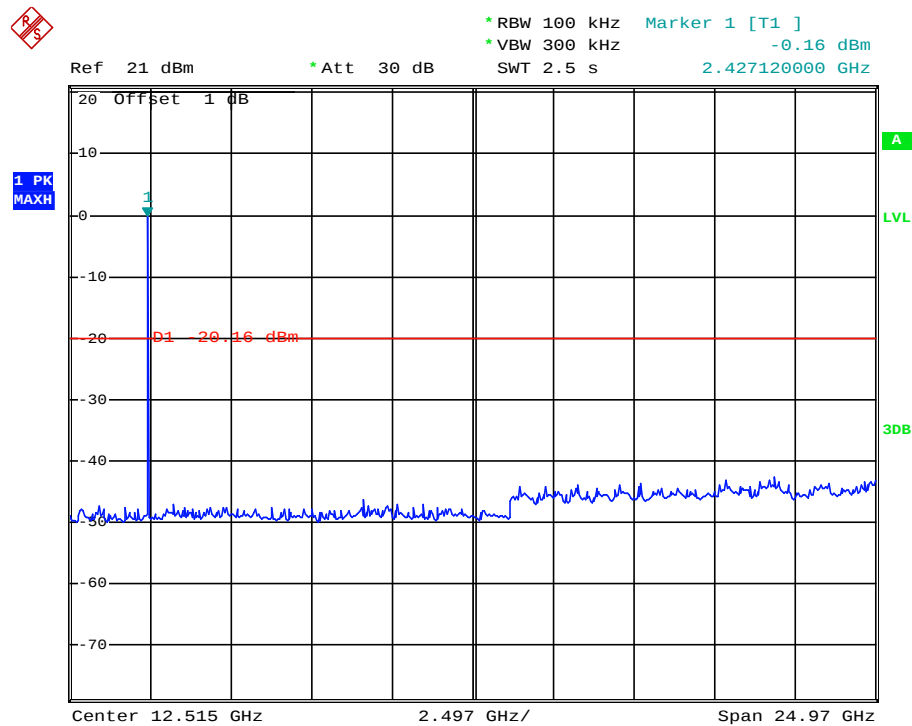
1. Below -20dB of the highest emission level in operating band.
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

TEST RESULTS

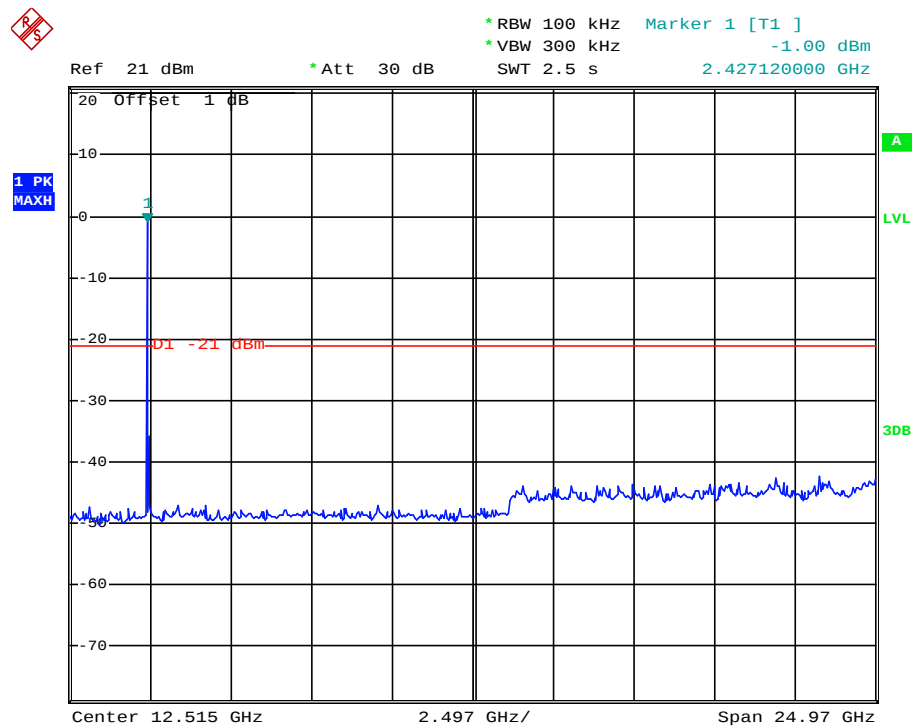
802.11b Mode channel 1



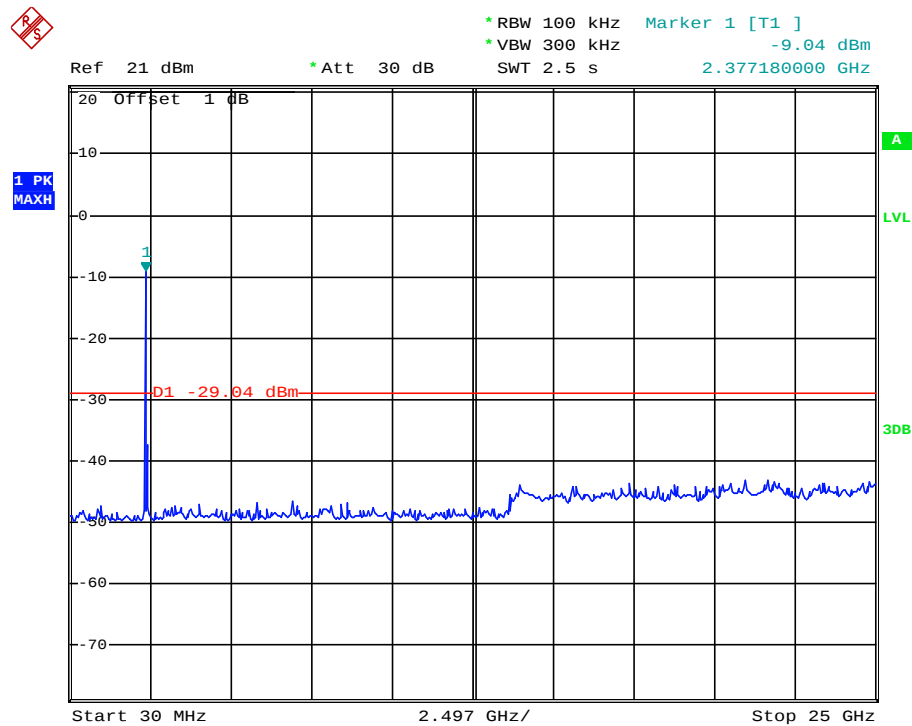
Date: 18.JAN.2013 16:01:25

802.11b Mode channel 6

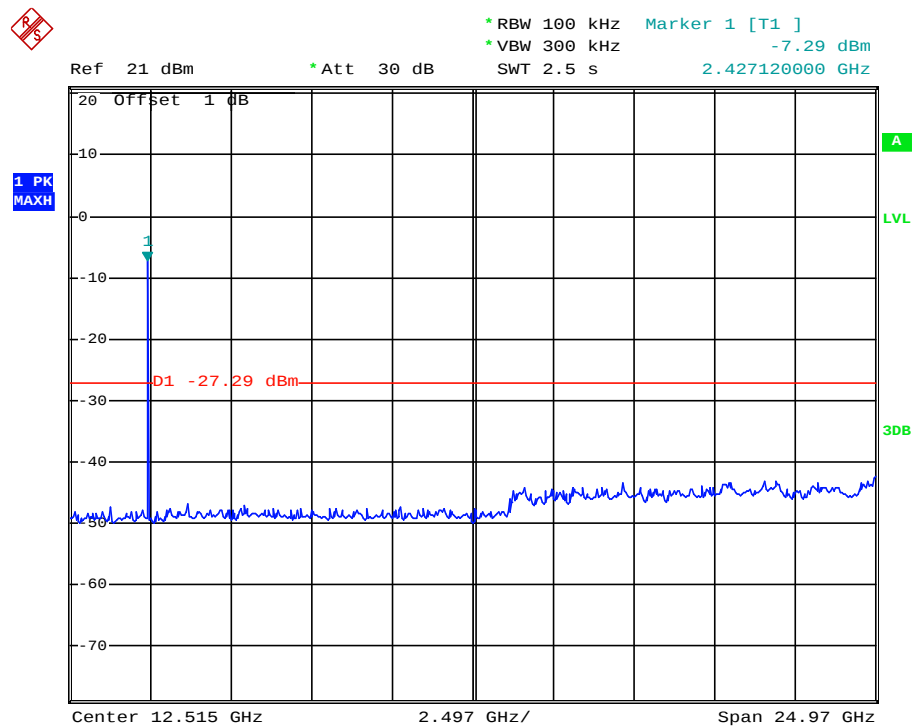
Date: 18.JAN.2013 16:02:09

802.11b Mode channel 11

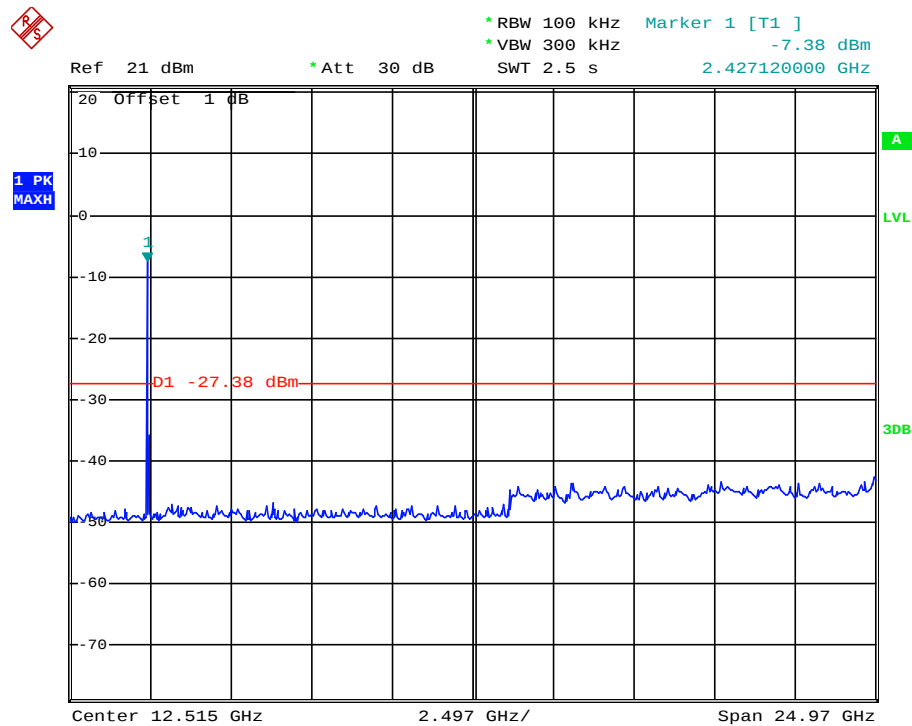
Date: 18.JAN.2013 16:03:18

802.11g Mode channel 1

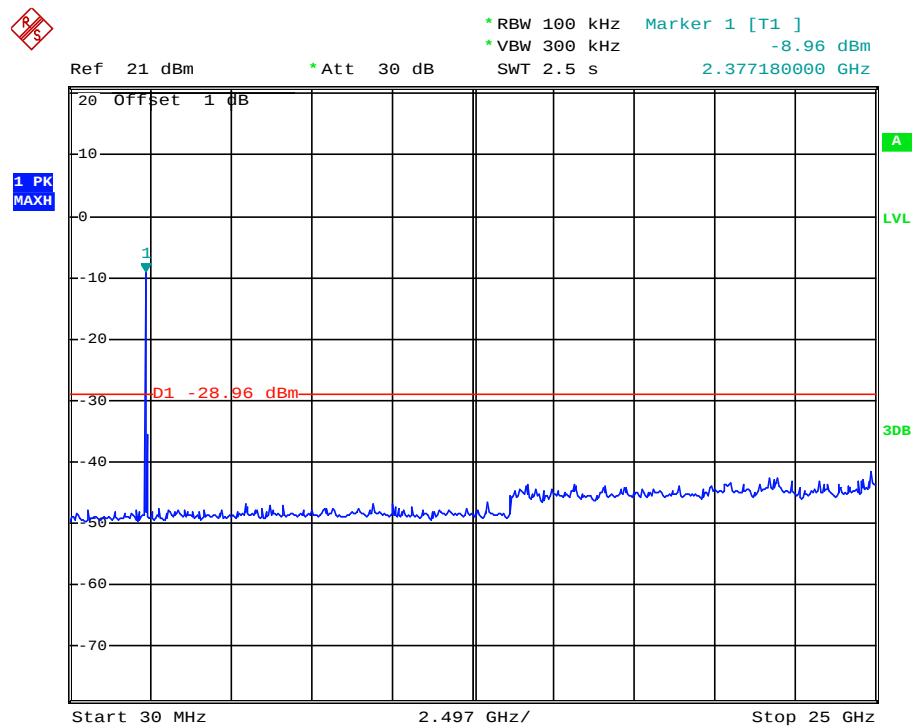
Date: 18.JAN.2013 16:38:32

802.11g Mode channel 6

Date: 18.JAN.2013 16:39:26

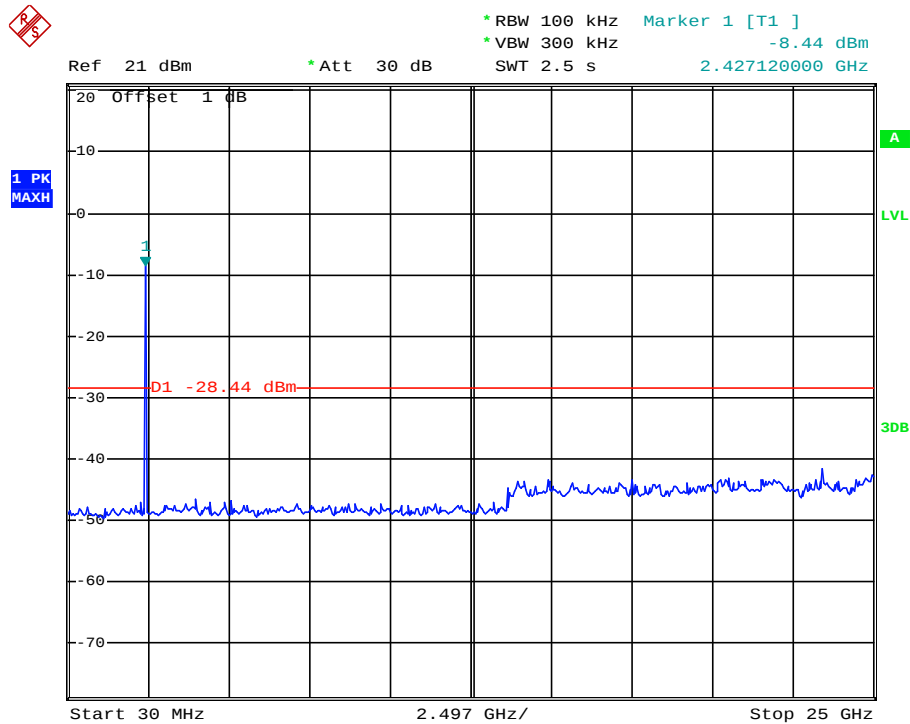
802.11g Mode channel 11

Date: 18.JAN.2013 16:40:19

802.11n20 Mode channel 1

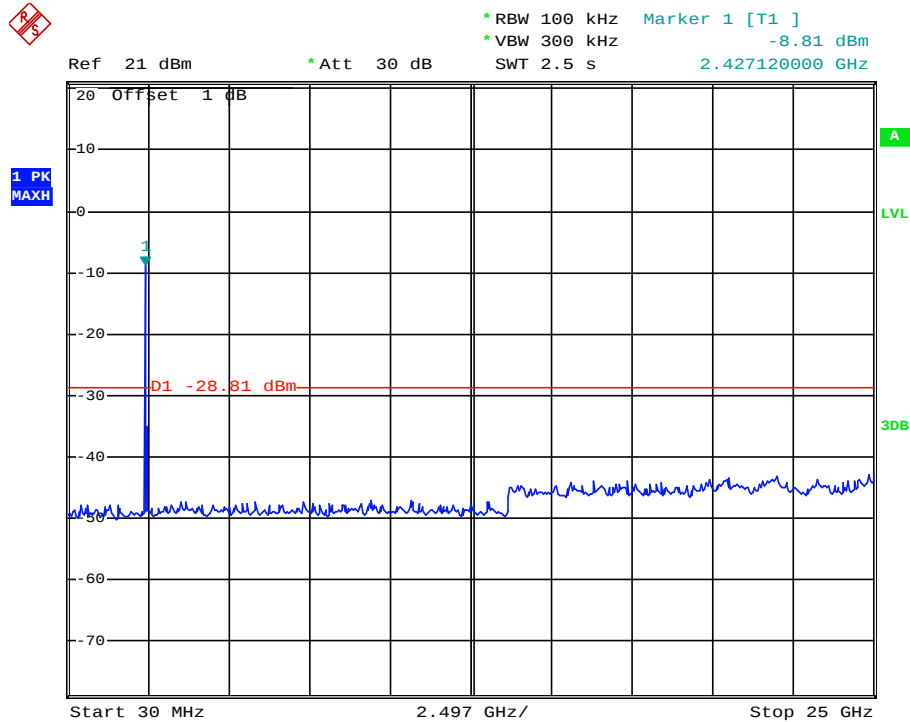
Date: 18.JAN.2013 16:34:23

802.11n20 Mode channel 6



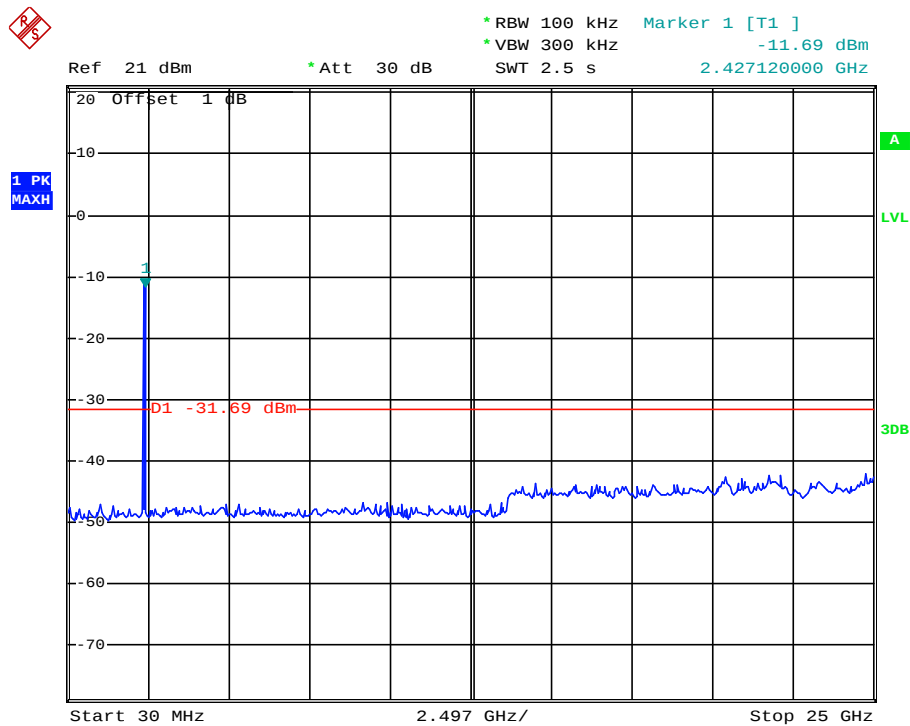
Date: 18.JAN.2013 16:36:15

802.11n20 Mode channel 11



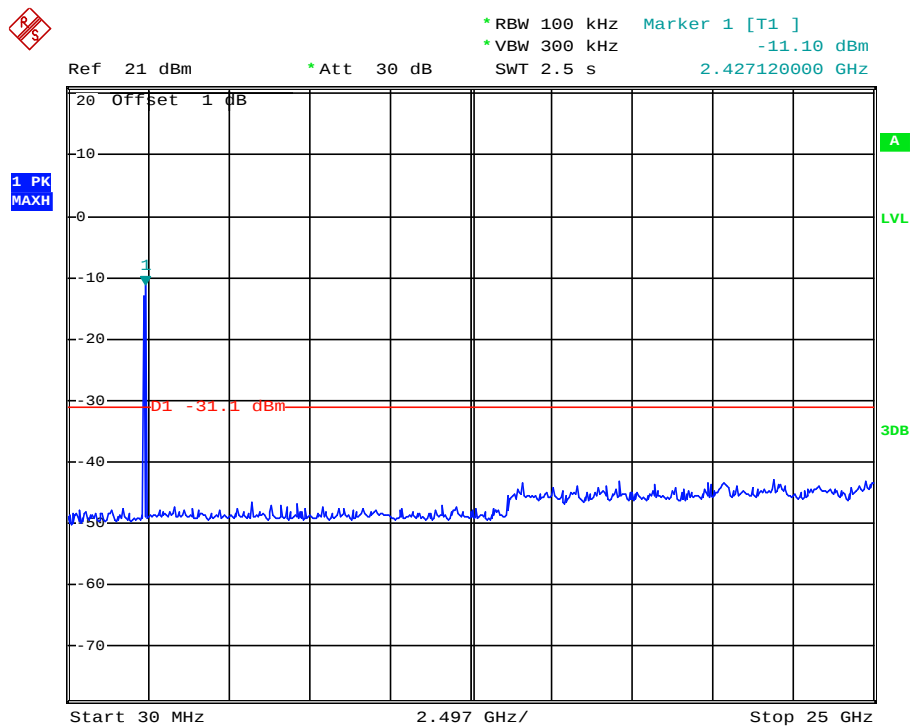
Date: 18.JAN.2013 16:37:31

802.11n40 Mode channel 3



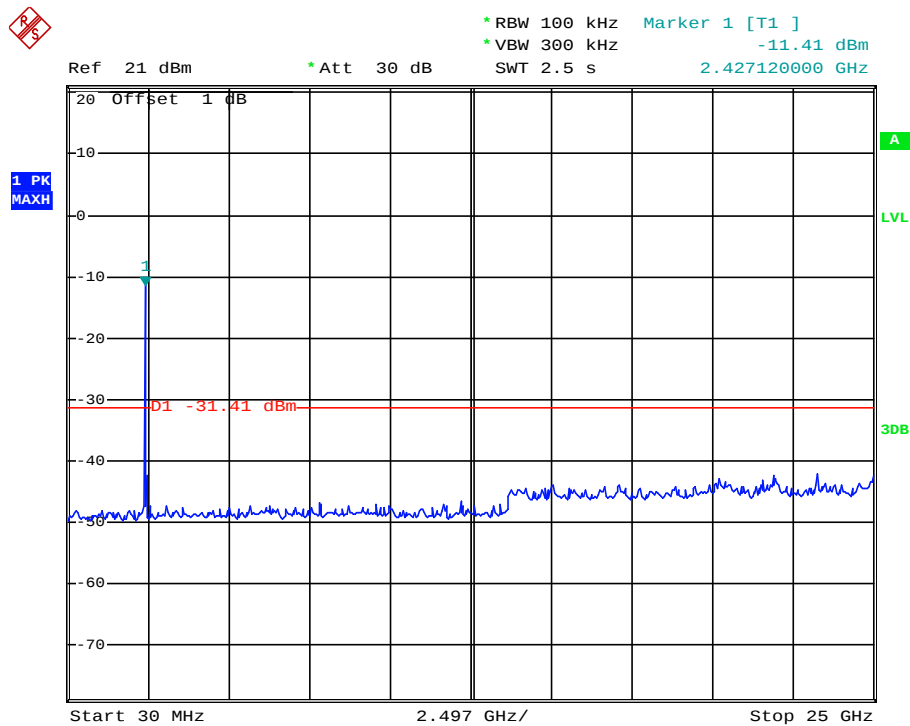
Date: 18.JAN.2013 16:31:36

802.11n40 Mode channel 6



Date: 21.JAN.2013 19:54:35

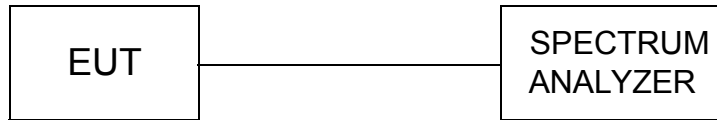
802.11n40 Mode channel 9



Date: 18.JAN.2013 16:33:19

4.7. 6dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300KHz VBW.

The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

LIMIT

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

TEST RESULTS

For 802.11b Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
1	2412	10.14	0.500	PASS
6	2437	10.14	0.500	PASS
11	2462	10.14	0.500	PASS

For 802.11g Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
1	2412	16.62	0.500	PASS
6	2437	16.62	0.500	PASS
11	2462	16.62	0.500	PASS

For 802.11n (20MHz) Mode

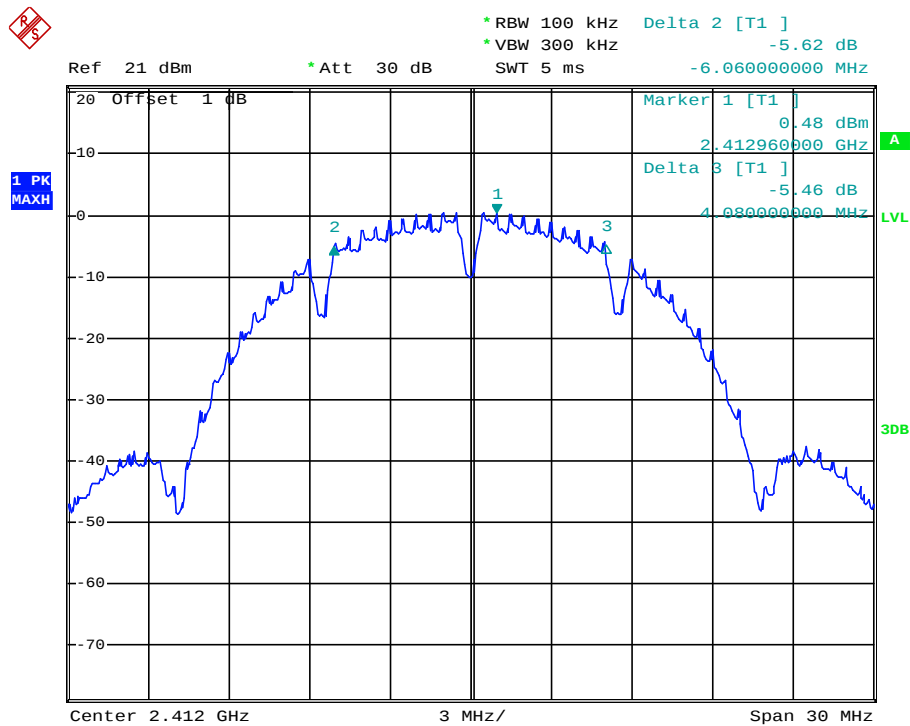
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
1	2412	17.82	0.500	PASS
6	2437	17.76	0.500	PASS
11	2462	17.82	0.500	PASS

For 802.11n (40MHz) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
3	2422	36.60	0.500	PASS
6	2437	36.60	0.500	PASS
9	2452	36.60	0.500	PASS

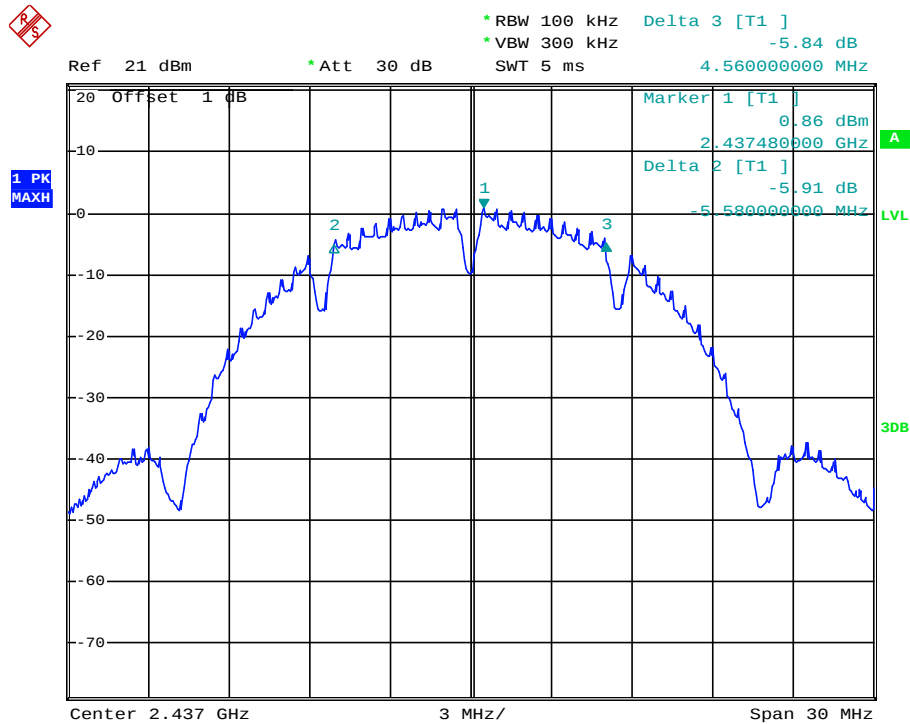
Photos of 6dB Bandwidth Measurement

802.11b Mode channel 1

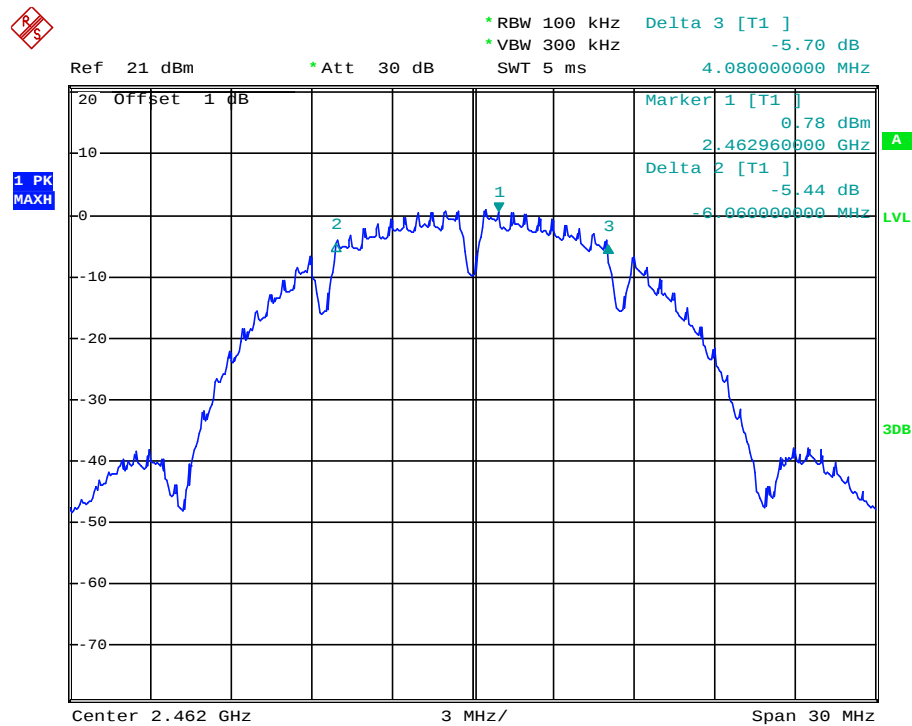


Date: 21.JAN.2013 19:03:57

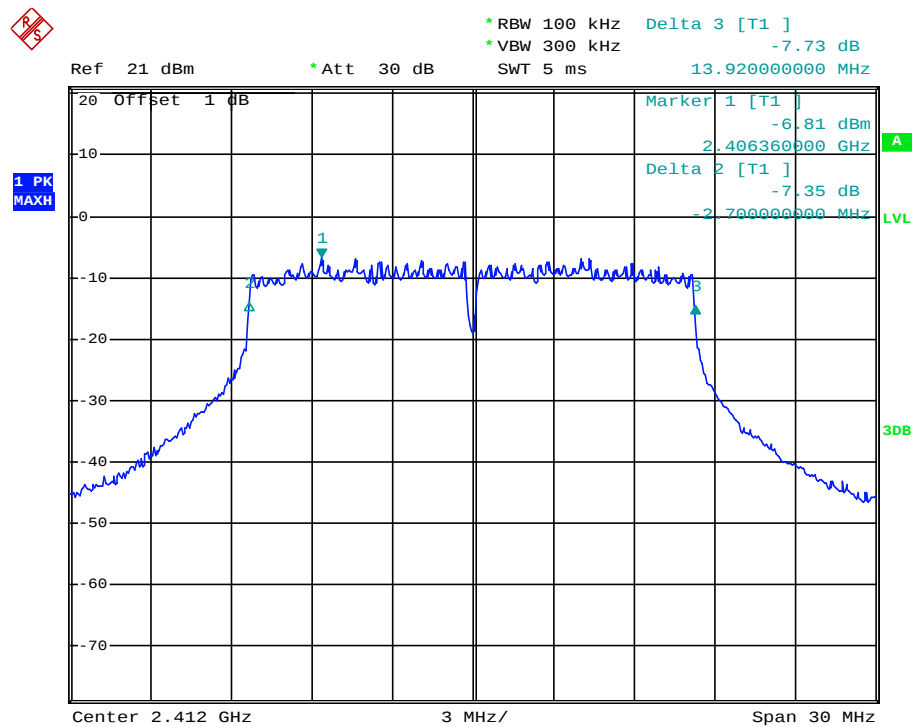
802.11b Mode channel 6



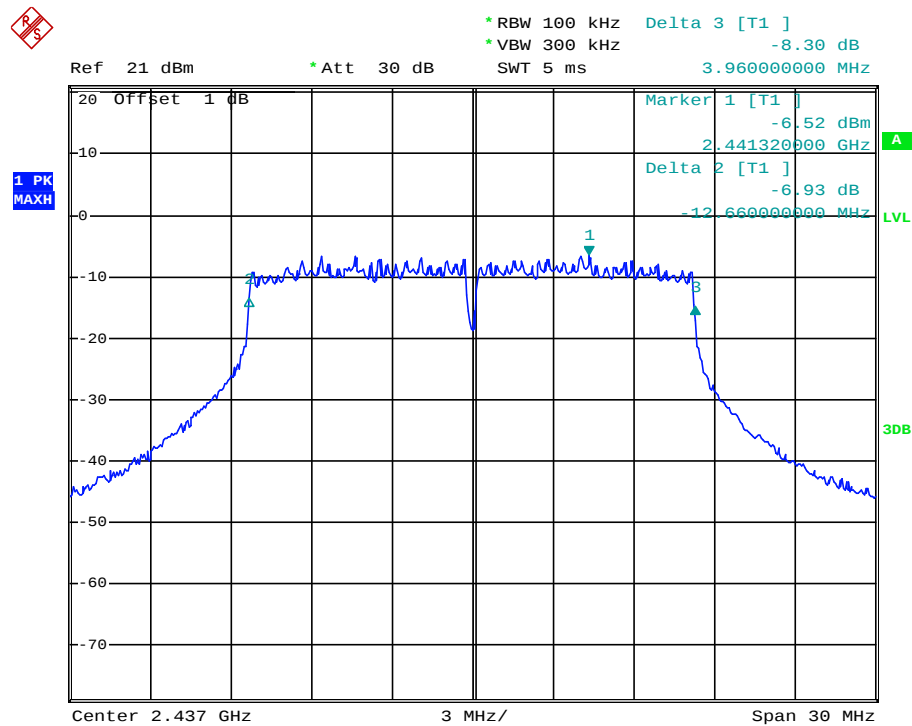
Date: 21.JAN.2013 19:06:29

802.11b Mode channel 11

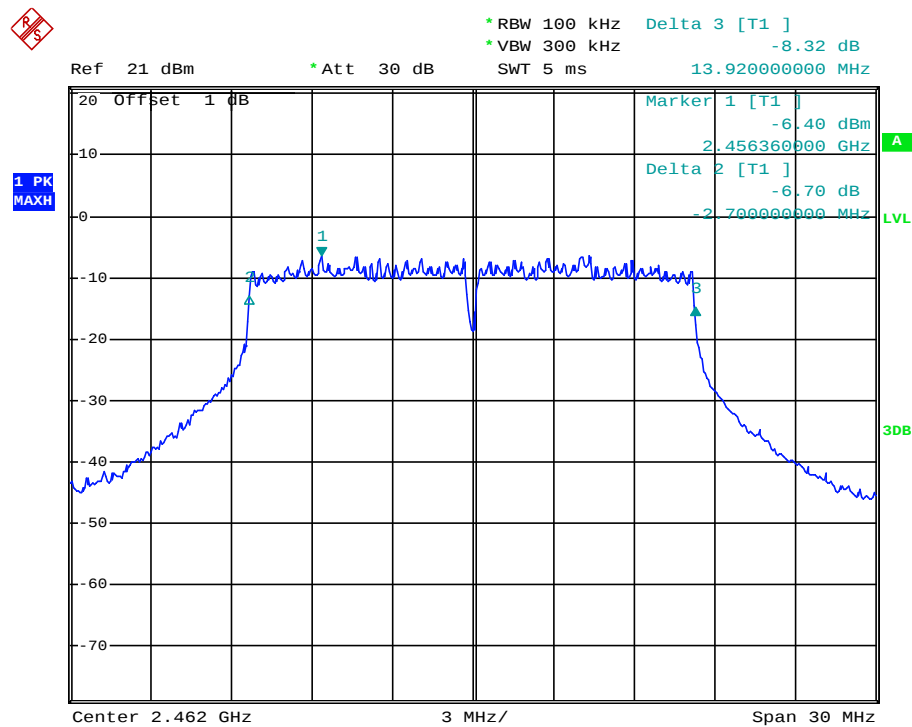
Date: 21.JAN.2013 19:07:29

802.11g Mode channel 1

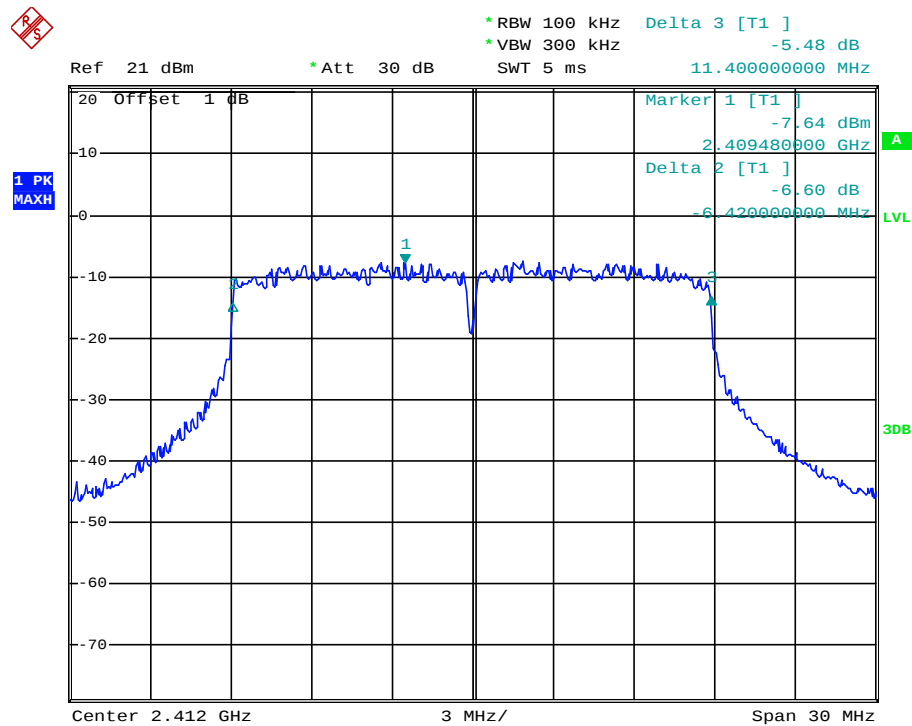
Date: 21.JAN.2013 19:10:03

802.11g Mode channel 6

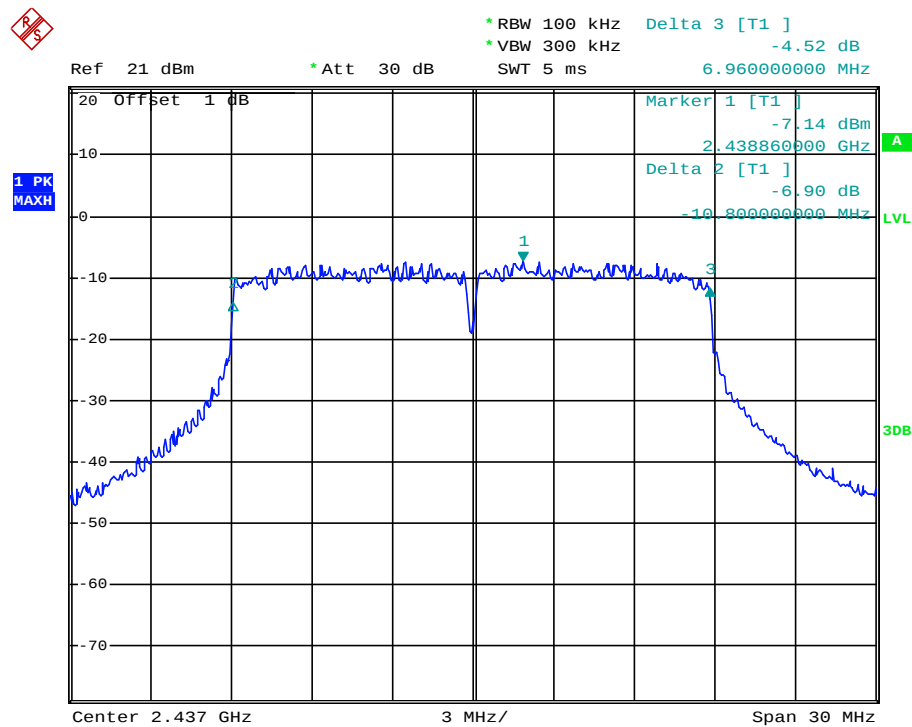
Date: 21.JAN.2013 19:09:17

802.11g Mode channel 11

Date: 21.JAN.2013 19:08:27

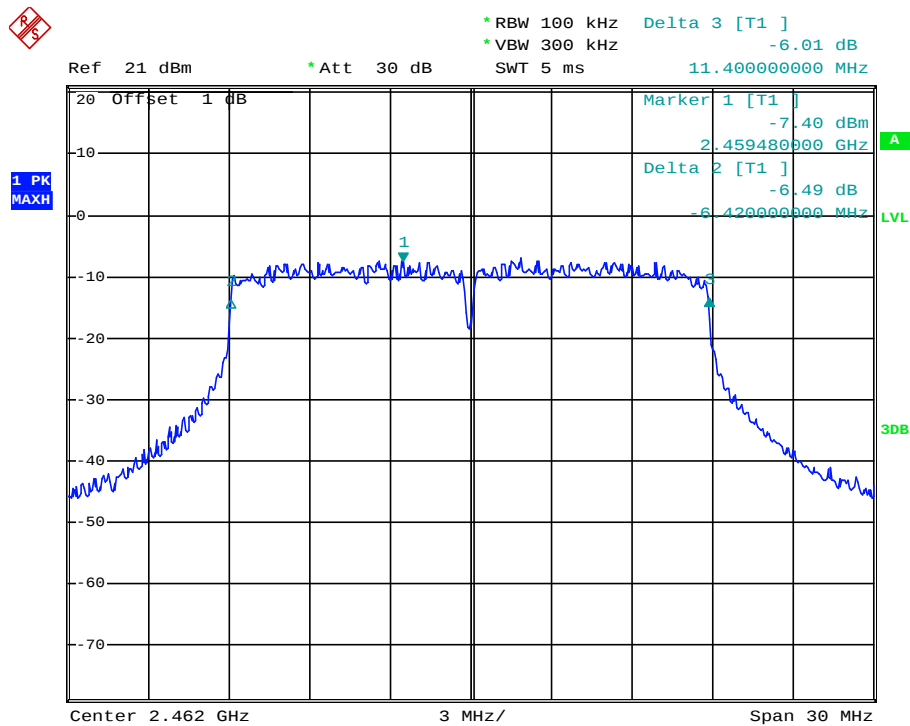
802.11n20 Mode channel 1

Date: 21.JAN.2013 19:11:41

802.11n20 Mode channel 6

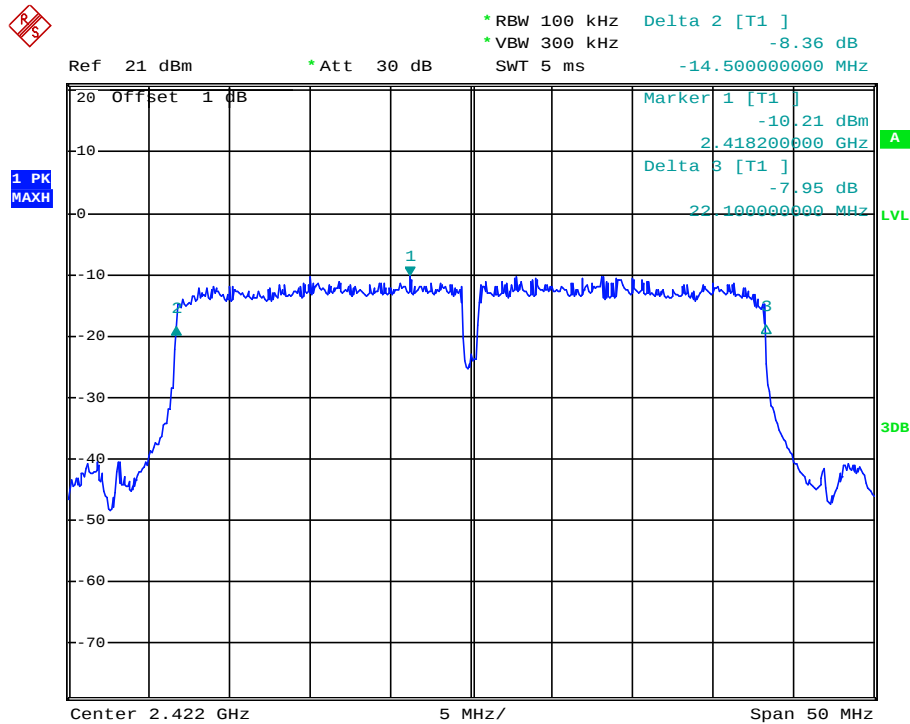
Date: 21.JAN.2013 19:12:35

802.11n20 Mode channel 11



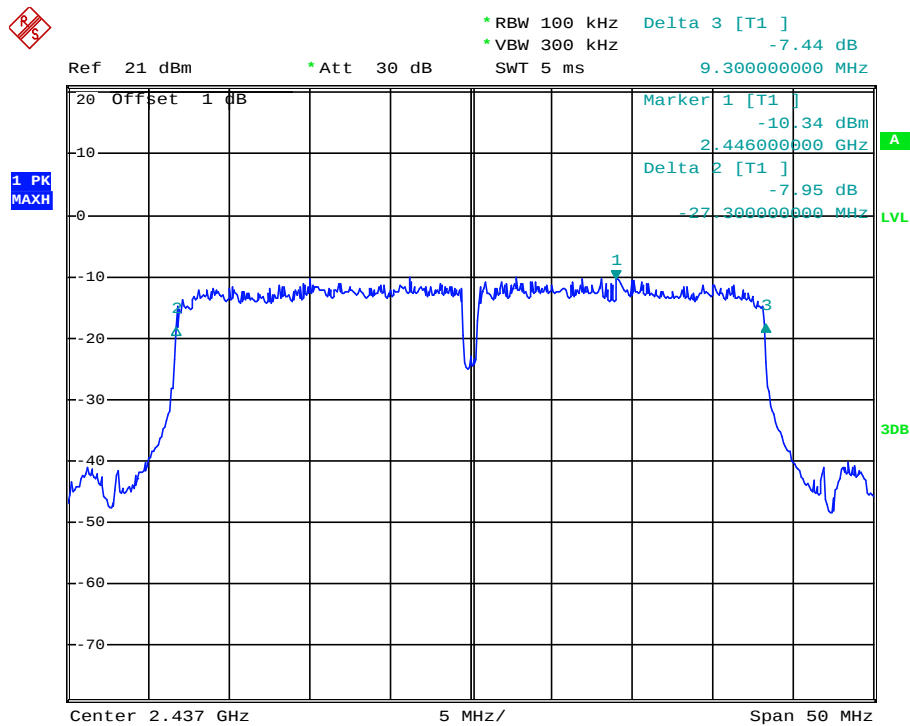
Date: 21.JAN.2013 19:13:27

802.11n40 Mode channel 3



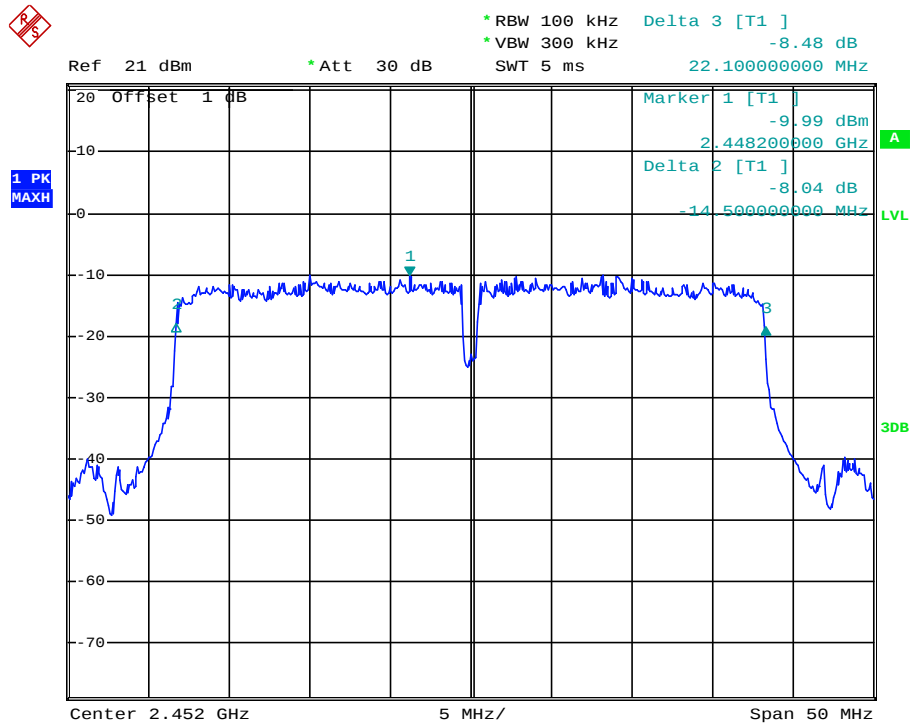
Date: 21.JAN.2013 19:15:06

802.11n40 Mode channel 6



Date: 21.JAN.2013 19:15:50

802.11n40 Mode channel 9



Date: 21.JAN.2013 19:16:32

4.8. Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

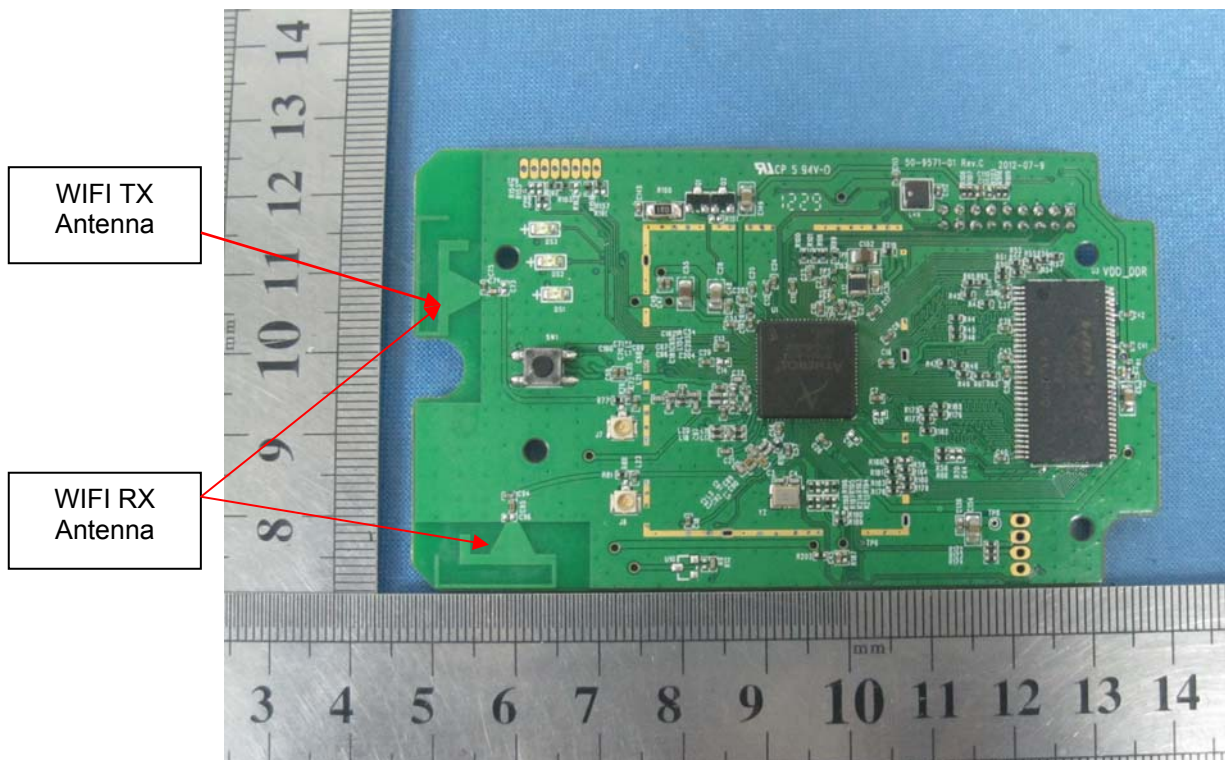
And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The Gain of the antenna is 2.0dBi.

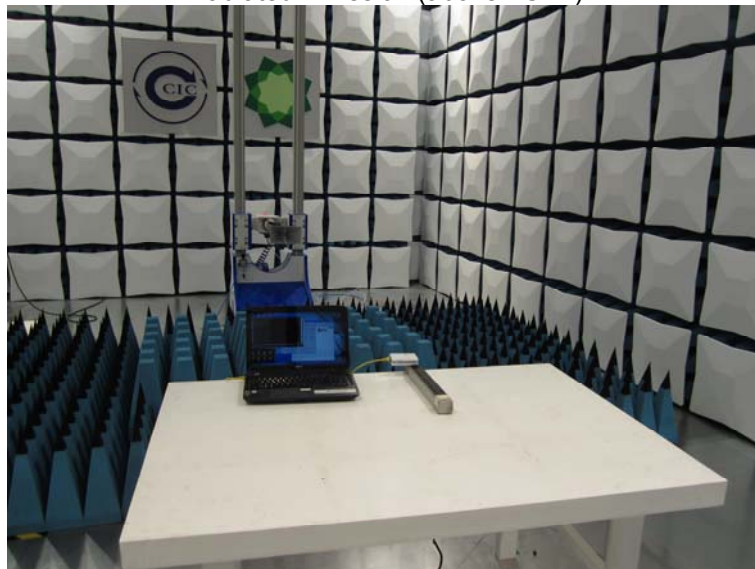


5. Test Setup Photos of the EUT

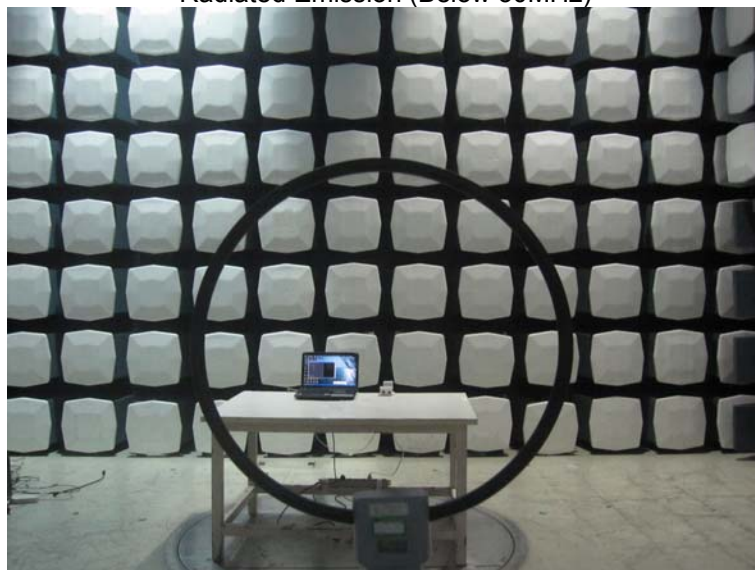
Radiated Emission (30MHz-1GHz)



Radiated Emission (above 1GHz)



Radiated Emission (Below 30MHz)



Conducted Emission (AC Mains)



6. External and Internal Photos of the EUT

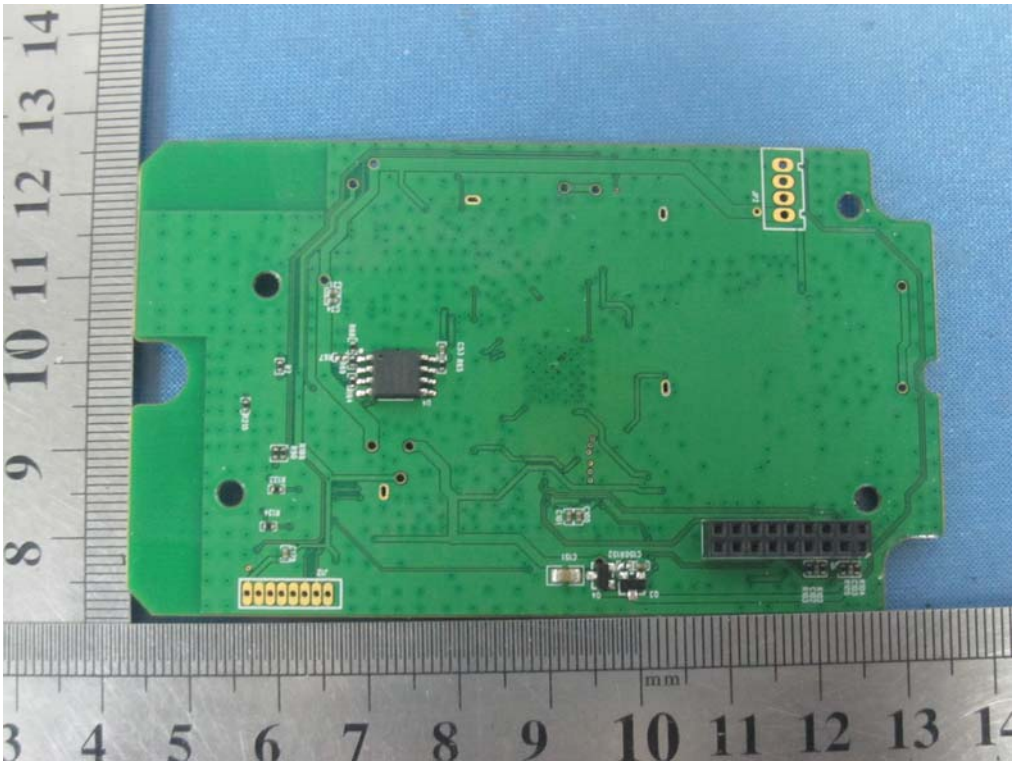
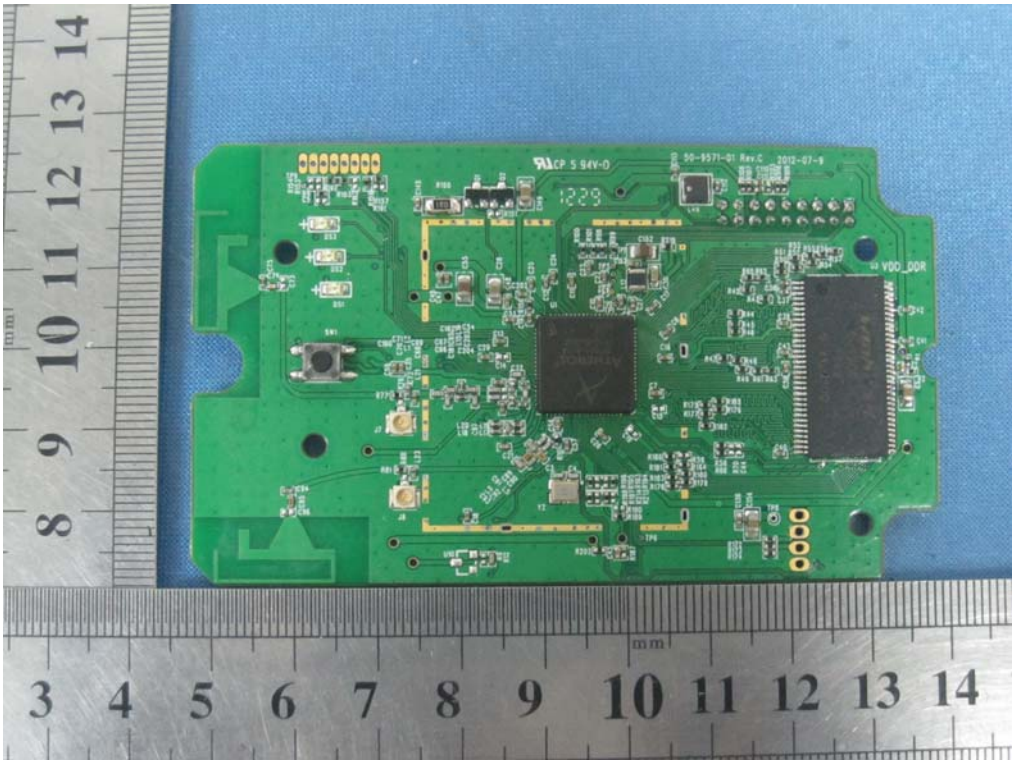
External Photos

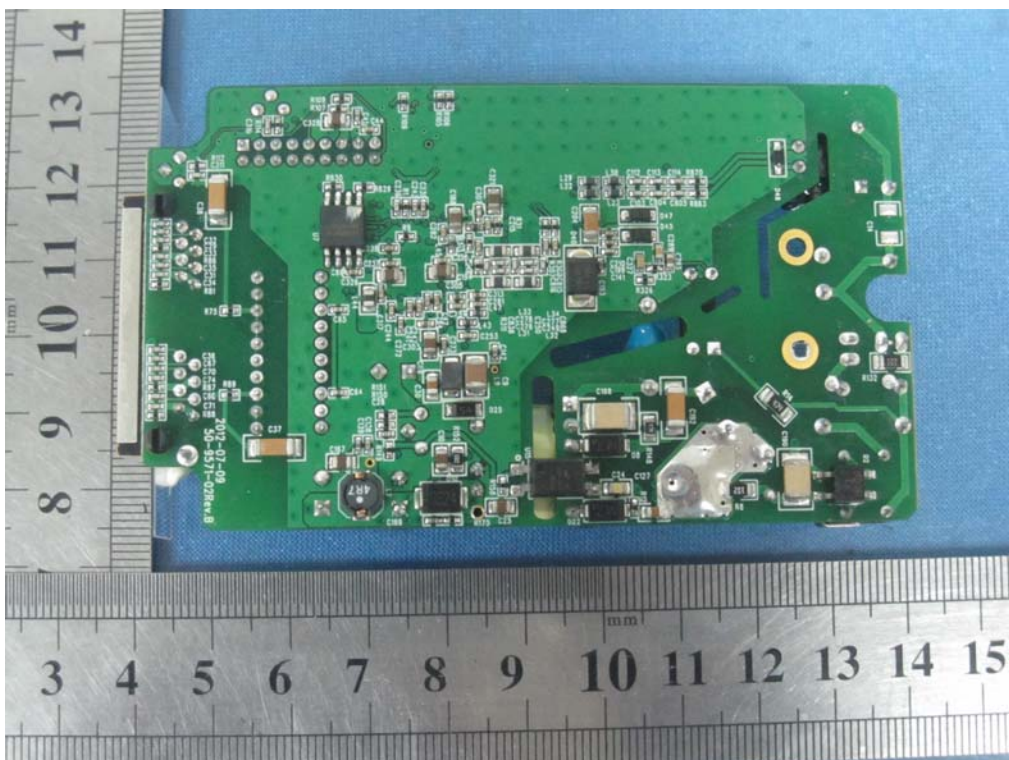
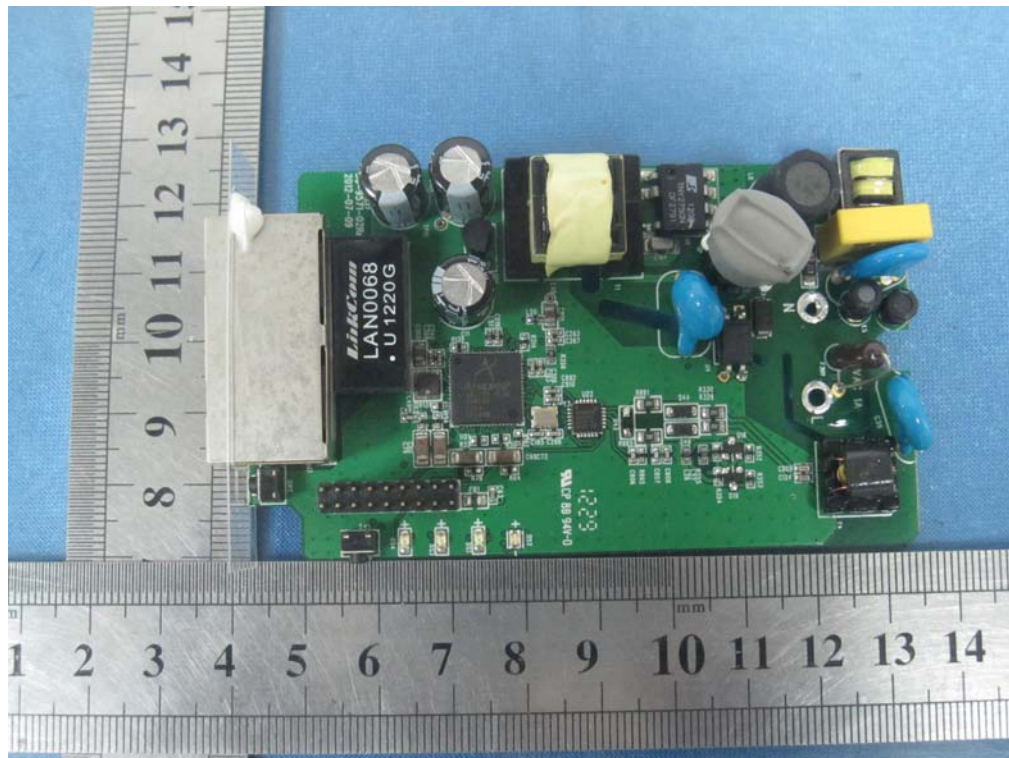




Internal Photos







.....End of Report.....