EMC
TEST REPORT

Report No. : EME-040394
Model No. : WMG2600
Issued Date : May 12, 2004

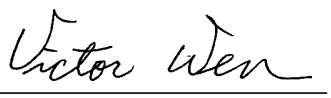
Applicant : AboCom Systems, Inc.
1F, No. 21, Yanfa 2nd Rd., SBIP, HsinChu City 300, Taiwan

Test By : Intertek Testing Services Taiwan Ltd.
No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li, Shiang-Shan District, Hsinchu City, Taiwan

Project Engineer

Jackey Chiu

Reviewed By



Victor Wen

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Summary of Tests

802.11b/g Wireless LAN MiniPCI Card -Model: WMG2600
FCC ID: MQ4WMG2K6

Test	Reference	Results
Minimum 6dB Bandwidth test	15.247(a)(2)	Complies
Maximum Output Power test	15.247(b)	Complies
Radiated Spurious Emission test	15.205, 15.209	Complies
Power Spectrum Density test	15.247(d)	Complies
Power Line Conducted Emission test	15.207	Complies

1. General information

1.1 Identification of the EUT

Applicant	: AboCom Systems, Inc.
Product	: 802.11b/g Wireless LAN MiniPCI Card
Model No.	: WMG2600
FCC ID.	: MQ4WMG2K6
Frequency Range	: 2412MHz to 2462MHz
Channel Number	: 11 Channels
Frequency of Each Channel	: 2412MHz, 2417MHz, 2422MHz, 2427MHz, 2432MHz, 2437MHz, 2442MHz, 2447MHz, 2452MHz, 2457MHz, 2462MHz
Type of Modulation	: DSSS, OFDM
Rated Power	: 5.0Vdc from notebook
Power Cord	: N/A
Sample Received	: Apr. 28, 2004
Test Date(s)	: Apr. 30, 2004 ~ May 6, 2004

1.2 Additional information about the EUT

The EUT is an 802.11b/g Wireless LAN Mini PCI Card, and was defined as information technology equipment.

The EUT meets special requirements for full modular approval on FCC Public Notice DA 00-1407 and the device is only for OEM integrator, please refer the test result in this report.

For more detail features, please refer to User's manual as file name “Installation guide.pdf”

1.3 Antenna description

The antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector.

Antenna Gain : 1.8dBi max
Antenna Type : Dipole antenna
Connector Type : N/A

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.
Notebook	DELL	PP01L	CN-06P83-48643-33V-0112
Printer	HP	C2642A	TH86K1N2ZB
Modem	Dynalink	V1456VQE	00V230A00051494
AP	SMC	WG 4005-17 2 (A3)	C-G 3030232-1-1-3*1000

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Section § 15.205、§15.207、§15.209、§15.247 and ANSI C63.4/2001.

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

2.2 Operation mode

The EUT has two antenna cables with different length. One is 11.5cm and the other is 14.5cm. For this report, the EUT was verified with both length, and the worst case comes up as the EUT equipped with 14.5cm cable

During Conducted emission test, the EUT was in normal mode connecting with AP.
While in other test, it worked in the status of continuously transmitting.

After verifying the maximum output power, we found the maximum output power was of 802.11b was occurred at 11Mbps date and 802.11g was occurred at 54Mbps data rate. The final test was executed under this condition and recorded in this report individually.

2.3 Test equipment

Equipment	Brand	Frequency range	Model No.	Intertek ID No.	Last Cal. Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	EC303	6/16/2003
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	EC317	6/24/2003
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	EC353	7/19/2003
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	EC365	10/20/2003
Horn Antenna	EMCO	1GHz~18GHz	3115	EC332	10/15/2003
Horn Antenna	SCHWARZBECK	15GHz~40GHz	BBHA 9170	EC351	6/21/2003
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	EC350	6/21/2003
Turn Table	HDGmbH	N/A	DS 420S	EP317-3	N/A
Antenna Tower	HDGmbH	N/A	MA 240	EP317-2	N/A
Pre-Amplifier	MITER	100MHz~26.5GHz	919981	EC373	5/13/2003
Pre-Amplifier	MITER	26GHz~40GHz	828825	EC374	5/13/2003
Crystal Detector	Agilent	10MHz~18GHz	8472B		N/A
Signal Generator	Rohde & Schwarz	20MHz~27GHz	SMR27	EC354	8/16/2003
Two Channel Digital Storage Oscilloscope	Tektronix	N/A	TDS1012		8/16/2003
LISN	Rohde & Schwarz	9KHz~30MHz	ESH3-Z5	EC344	1/ 20/2004

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

3. Minimum 6dB Bandwidth test

3.1 Operating environment

Temperature:	22	℃
Relative Humidity:	60	%
Atmospheric Pressure	1023	hPa

3.2 Test setup & procedure

The minimum 6dB bandwidth per FCC §15.247(a)(2) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 100kHz, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest channel). The minimum 6-dB modulation bandwidth is in the following Table.

3.3 Measured data of Minimum 6dB Bandwidth test results

Test Condition: 802.11b operation mode (DSSS modulation)

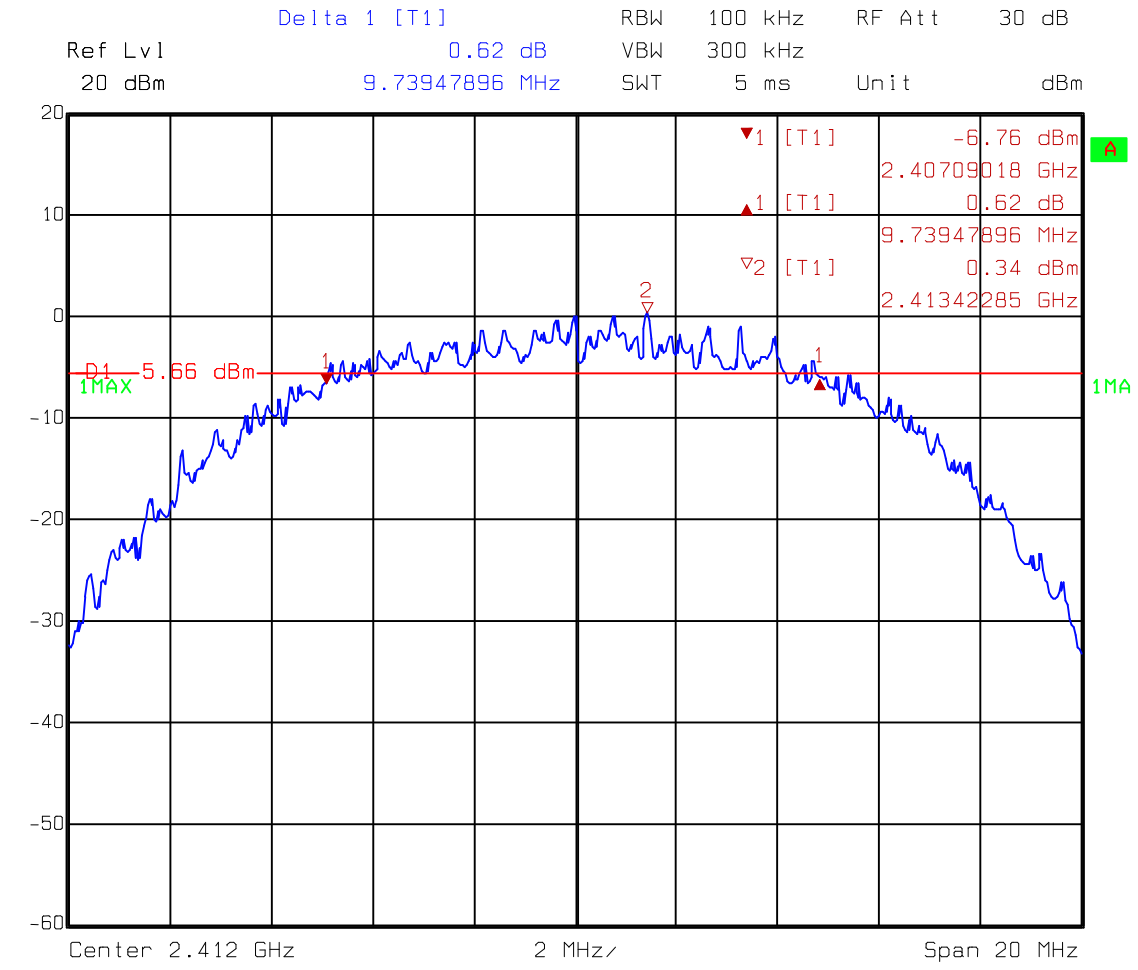
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2412	9.74	＞500kHz
Middle	2437	9.78	＞500kHz
High	2462	9.70	＞500kHz

Test Condition: 802.11g operation mode (OFDM modulation)

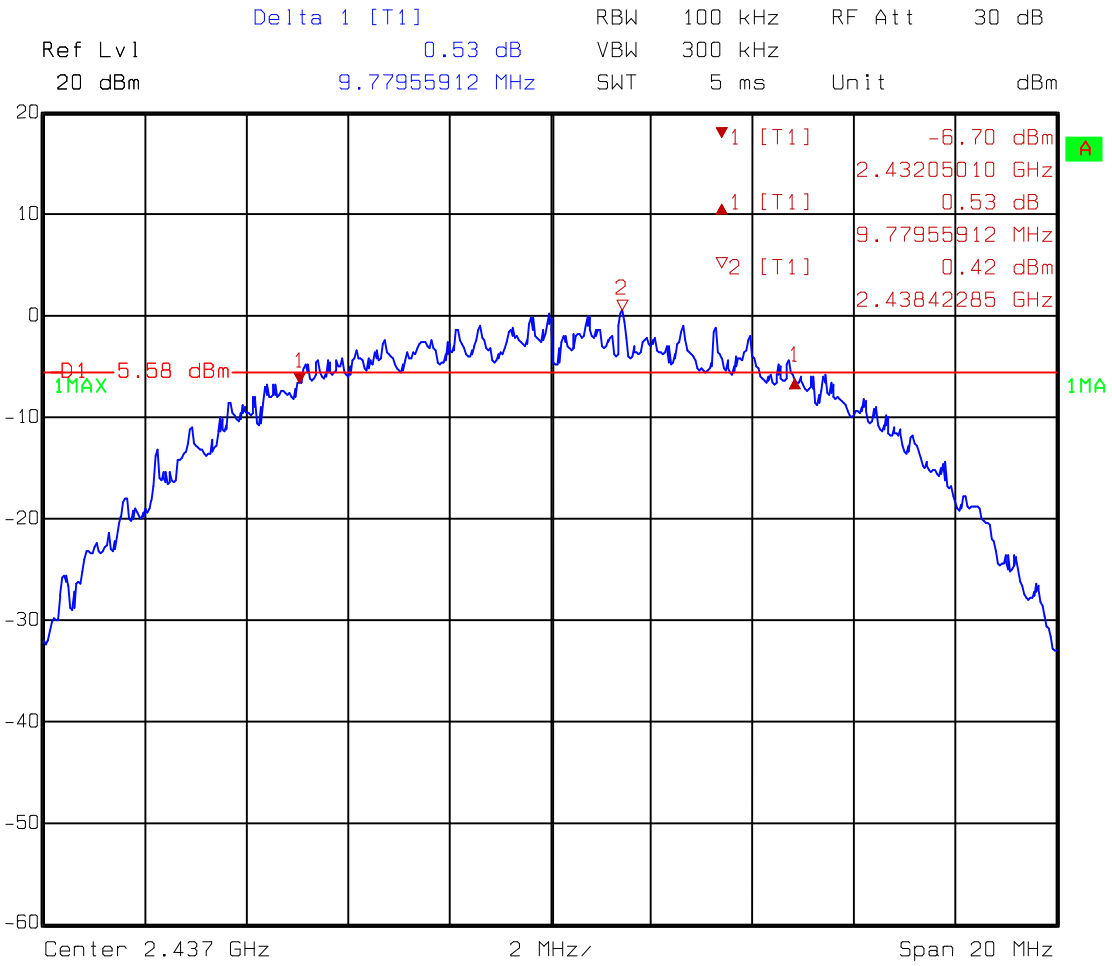
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2412	16.55	＞500kHz
Middle	2437	16.55	＞500kHz
High	2462	16.51	＞500kHz

Please see the plot below.

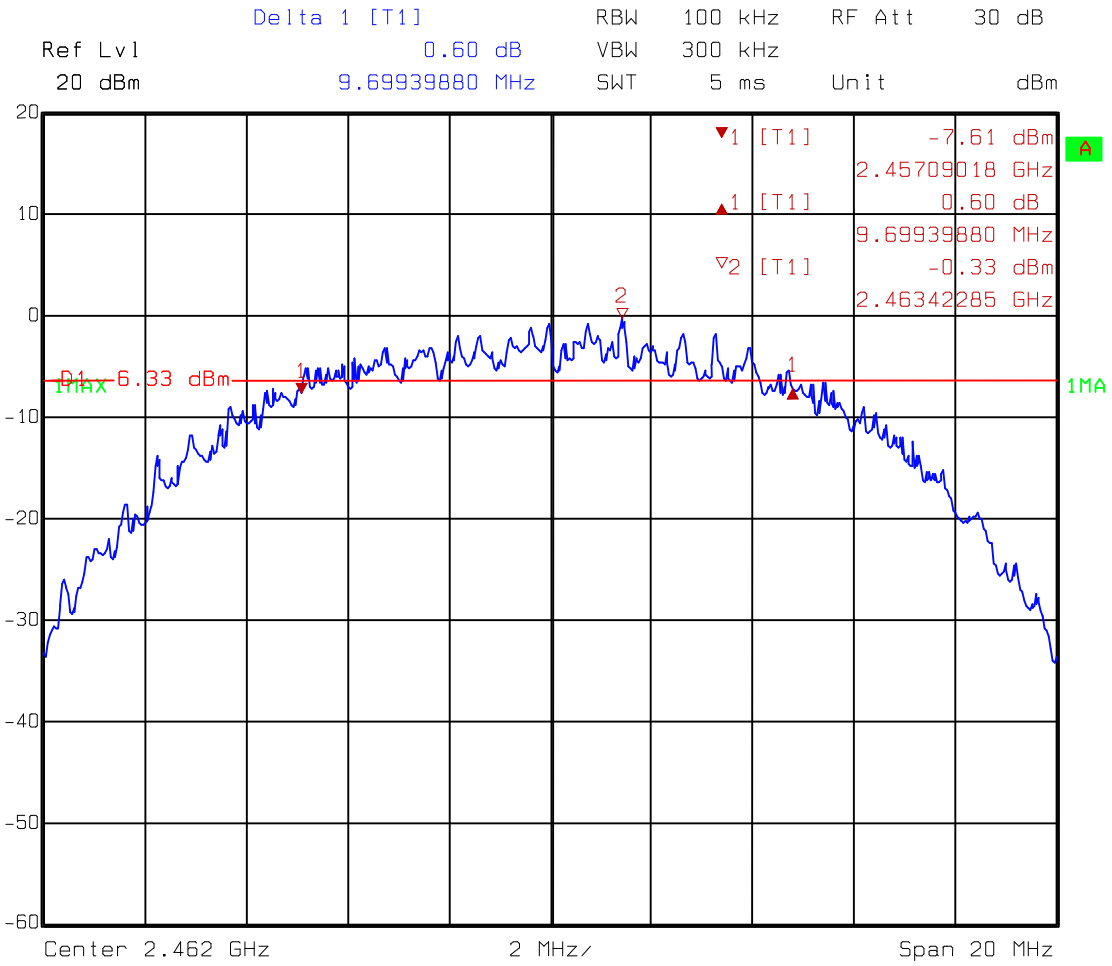
Test Condition: 802.11b operation mode (DSSS Modulation)



Comment A: 6dB bandwidth at low channel (EC365) 802.11b
Date: 03.MAY 2004 14:59:36

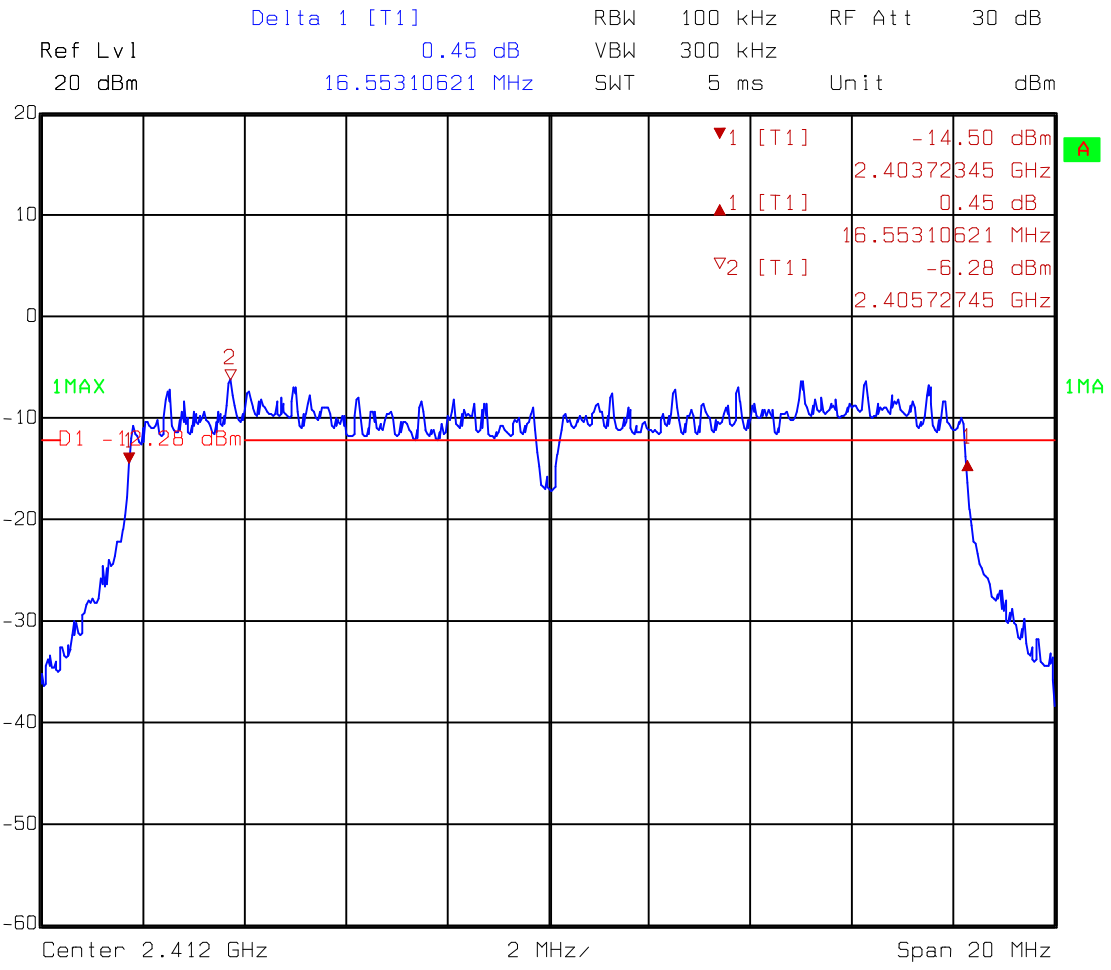


Comment A: 6dB bandwidth at middle channel (EC365) 802.11b
Date: 03.MAY 2004 14:58:16

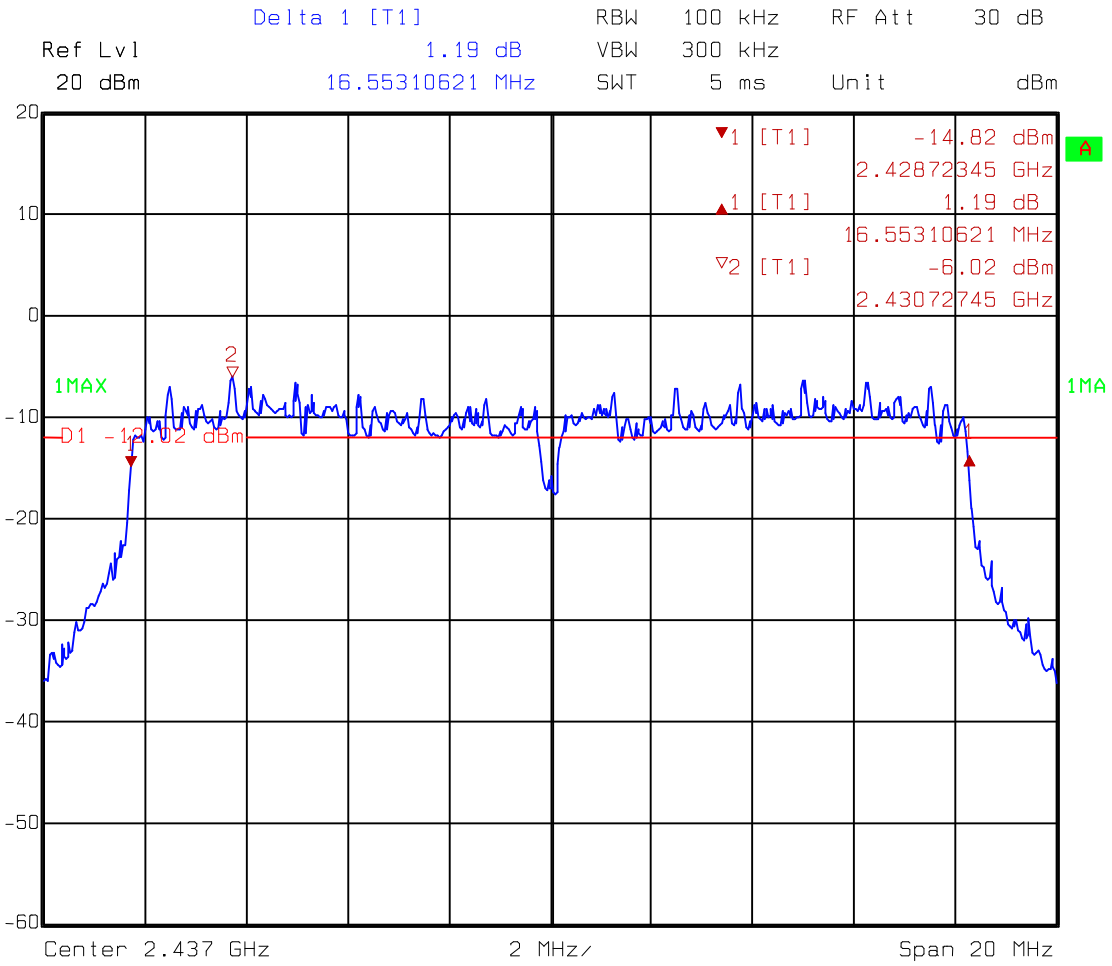


Comment A: 6dB bandwidth at high channel (EC365) 802.11b
Date: 03.MAY 2004 14:56:44

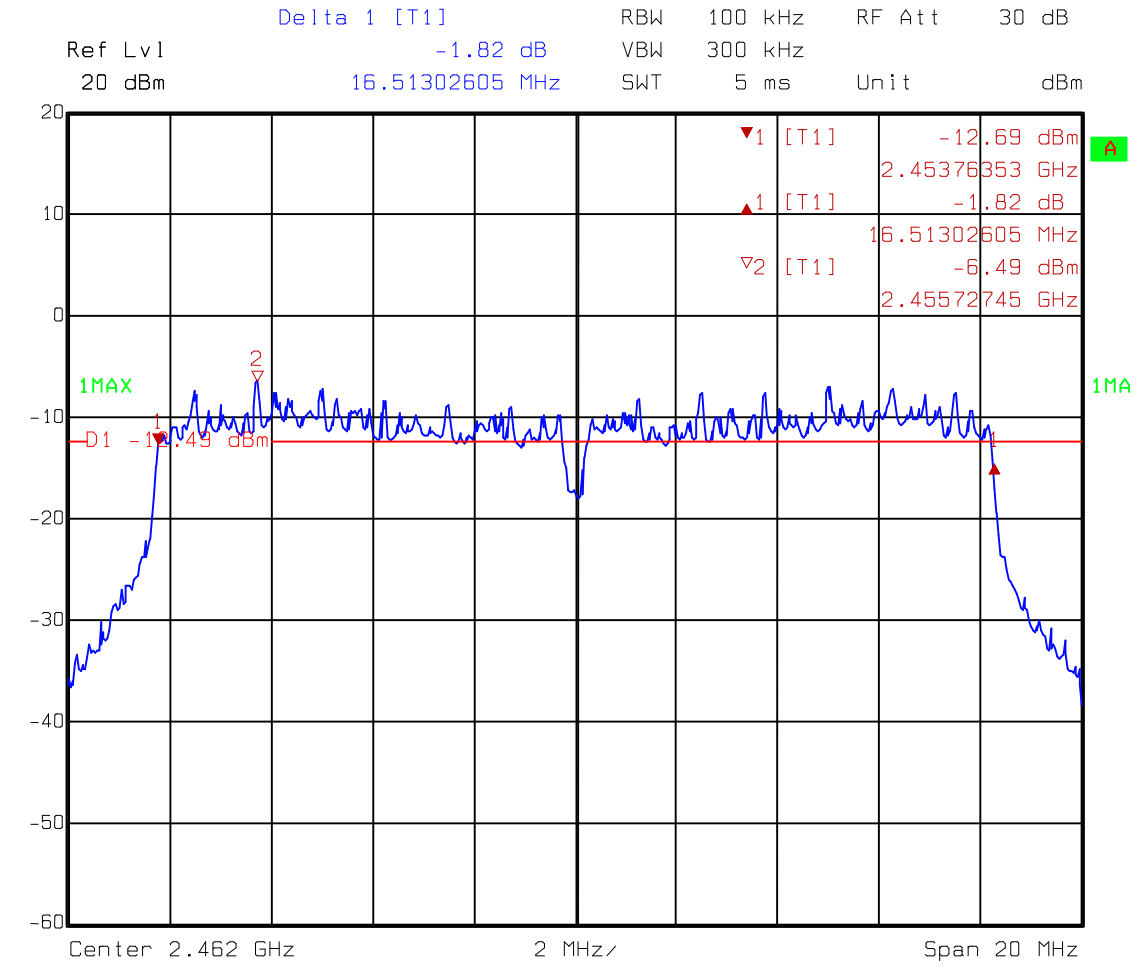
Test Condition: 802.11g operation mode (OFDM Modulation)



Comment A: 6dB bandwidth at low channel (EC365) 802.11g
Date: 03.MAY 2004 14:51:23



Comment A: 6dB bandwidth at middle channel (EC365) 802.11g
Date: 03.MAY 2004 14:52:58



Comment A: 6dB bandwidth at high channel (EC365) 802.11g
Date: 03.MAY 2004 14:54:48

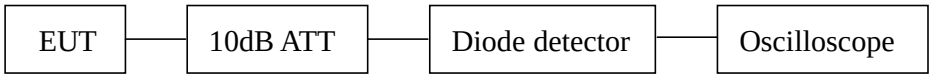
4. Maximum Output Power test

4.1 Operating environment

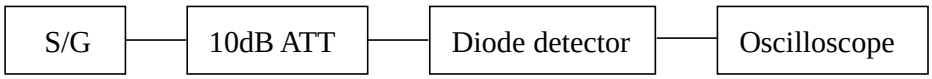
Temperature:	22	℃
Relative Humidity:	60	%
Atmospheric Pressure	1023	hPa

4.2 Test setup & procedure

A:



B:



1. The output of the transmitter via a 10 dB attenuator and coupled to a diode detector.
2. The output of the diode detector connected to the vertical channel of and oscilloscope. The observed trace of the oscilloscope shall be recorded as “A”.
3. The transmitter replaced by a signal generator. The output frequency of the signal made equal to the center of the frequency range occupied by the transmitter and unmodulated.
4. The output of the signal generator raised to reach the peak of trace “A” named X.
5. The signal generator output level X (dBm) is the transmitter peak output power.

4.3 Measured data of Maximum Output Power test results

Test Condition: 802.11b operation mode (DSSS modulation)

Channel	Frequency (MHz)	Reading (dBm)	Output Power		Limit (W)
			(dBm)	(mW)	
Lowest	2412	18.16	18.16	65.463	1
Middle	2437	18.28	18.28	67.297	1
Highest	2462	17.41	17.41	55.081	1

Test Condition: 802.11g operation mode (OFDM modulation)

Channel	Frequency (MHz)	Reading (dBm)	Output Power		Limit (W)
			(dBm)	(mW)	
Lowest	2412	18.09	18.09	64.417	1
Middle	2437	19.32	19.32	85.507	1
Highest	2462	18.38	18.38	68.865	1

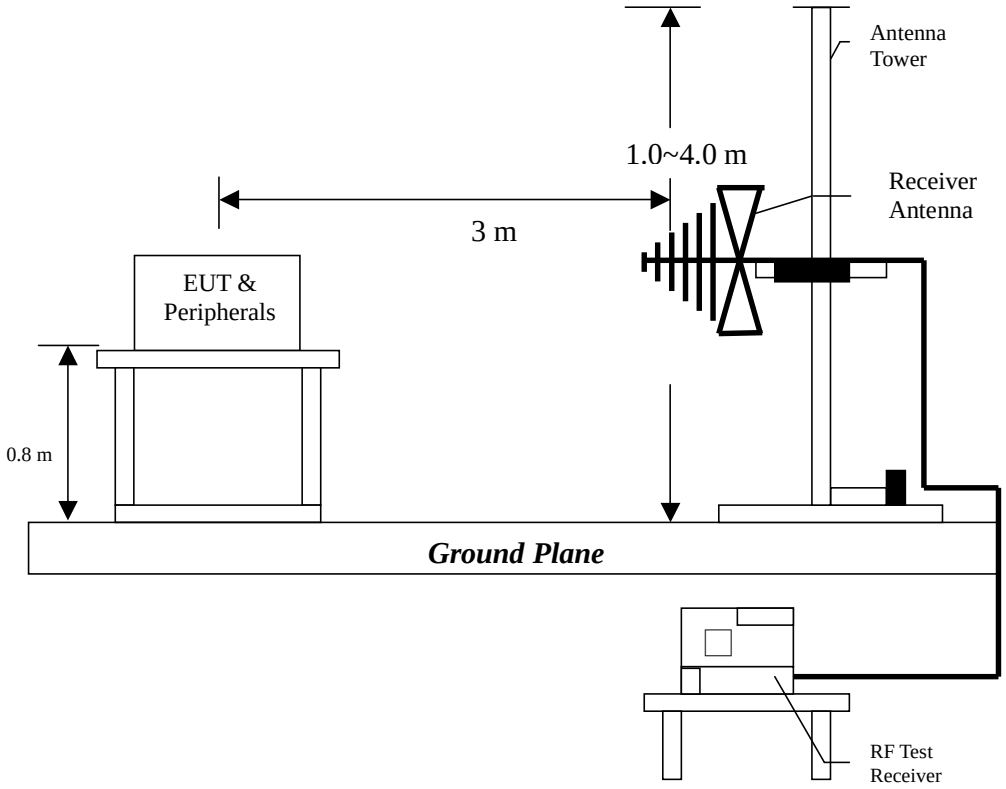
5. Radiated Emission test

5.1 Operating environment

Temperature:	21	℃	(10-40℃)
Relative Humidity:	55	%	(10-90%)
Atmospheric Pressure	1023	hPa	(860-1060hPa)

5.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emissions were invested cover the frequency range from 30MHz to 1000MHz using a receiver RBW of 120kHz record QP reading, and the frequency over 1GHz using a spectrum analyzer RBW of 1MHz and 10Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1MHz RBW/VBW) recorded also on the report.
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 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

The EUT configuration please refer to the "Spurious set-up photo.pdf".

5.3 Emission limits

The spurious Emission shall test through the 10th harmonic. 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).

Frequency (MHz)	Limits (dB μ V/m@3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:
1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Uncertainty was calculated in accordance with NAMAS NIS 81.
Expanded uncertainty (k=2) of radiated emission measurement is ±4.98 dB.
Expanded uncertainty (k=2) of conducted emission measurement is ±2.02 dB.

5.4 Radiated spurious emission test data

5.4.1 Measurement results: frequencies equal to or less than 1 GHz

EUT : WMG2600
Worst Case Condition : 802.11b Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
133.110	QP	V	13.53	14.76	28.29	43.50	-15.21	192.00	178.00
166.410	QP	V	14.48	16.63	31.11	43.50	-12.39	100.00	172.00
198.990	QP	V	13.01	11.81	24.82	43.50	-18.68	251.00	198.00
398.980	QP	V	16.37	21.90	38.27	46.00	-7.73	175.00	214.00
664.880	QP	V	21.51	10.61	32.12	46.00	-13.88	123.00	312.00
798.990	QP	V	24.34	6.01	30.35	46.00	-15.65	251.00	108.00
132.780	QP	H	13.53	23.06	36.59	43.50	-6.91	153.00	88.00
165.350	QP	H	14.58	23.26	37.84	43.50	-5.66	125.00	174.00
398.870	QP	H	16.37	22.83	39.20	46.00	-6.80	184.00	320.00
664.920	QP	H	21.51	16.14	37.65	46.00	-8.35	152.00	360.00
930.210	QP	H	25.56	11.87	37.43	46.00	-8.57	210.00	0.00

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss

EUT : WMG2600
Worst Case Condition : 802.11g Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
132.690	QP	V	13.53	13.44	26.97	43.50	-16.53	115.00	215.00
166.980	QP	V	14.48	15.04	29.52	43.50	-13.98	128.00	201.00
198.870	QP	V	13.01	13.11	26.12	43.50	-17.38	138.00	147.00
398.990	QP	V	16.37	13.08	29.45	46.00	-16.55	158.00	254.00
664.850	QP	V	21.51	10.40	31.91	46.00	-14.09	177.00	23.00
798.990	QP	V	24.34	6.23	30.57	46.00	-15.43	124.00	284.00
132.880	QP	H	13.53	22.80	36.33	43.50	-7.17	124.00	157.00
165.980	QP	H	14.58	21.03	35.61	43.50	-7.89	215.00	198.00
398.990	QP	H	16.37	17.40	33.77	46.00	-12.23	109.00	265.00
439.880	QP	H	17.40	17.52	34.92	46.00	-11.08	163.00	220.00
798.210	QP	H	24.32	11.02	35.34	46.00	-10.66	106.00	333.00
930.290	QP	H	25.56	10.79	36.35	46.00	-9.65	124.00	313.00

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss

5.4.2 Measurement results: frequency above 1GHz

EUT : WMG2600
Test Condition : 802.11b Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
4824	PK	V	39.59	35.572	53.178	49.16	74	-24.84	200	299
4824	AV	V	39.59	35.572	38.668	34.65	54	-19.35	200	299
9648	PK	V	37.89	42.945	40.475	45.53	74	-28.47	163	216
9648	PK	V	37.89	42.945	29.805	34.86	54	-19.14	163	216

Polarity : horizontal
EUT : WMG2600
Test Condition : 802.11b Tx at low channel

Test Result:
No spurious emission was found above the spectrum analyzer's noise floor.
The noise floor are listed as below:

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the noise floor, the others please refer to noise floor level.

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

EUT : WMG2600
Test Condition : 802.11b Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
4876	PK	V	39.59	35.572	51.008	46.99	74	-27.01	200	271
4876	AV	V	39.59	35.572	36.298	32.28	54	-21.72	200	271

Polarity : horizontal
EUT : WMG2600
Test Condition : 802.11b Tx at low channel

Test Result:
No spurious emission was found above the spectrum analyzer's noise floor.
The noise floor are listed as below:

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the noise floor, the others please refer to noise floor level.

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

EUT : WMG2600
Test Condition : 802.11b Tx at high channel

Test Result:
No spurious emission was found above the spectrum analyzer's noise floor.
The noise floor are listed as below:

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

EUT : WMG2600
Test Condition : 802.11g Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
7228	PK	V	39.25	39.632	57.438	57.82	74	-16.18	170	131
7228	AV	V	39.25	39.632	29.268	29.65	54	-24.35	170	131
7228	PK	H	39.25	39.632	57.338	57.72	74	-16.28	144	123
7228	AV	H	39.25	39.632	27.928	28.31	54	-25.69	144	123

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the noise floor, the others please refer to noise floor level.

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

EUT : WMG2600
Test Condition : 802.11g Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
7312	PK	V	39.25	39.632	58.868	59.25	74	-14.75	162	177
7312	AV	V	39.25	39.632	29.078	29.46	54	-24.54	162	177
7312	PK	H	39.25	39.632	57.548	57.93	74	-16.07	145	123
7312	AV	H	39.25	39.632	28.498	28.88	54	-25.12	145	123

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the noise floor, the others please refer to noise floor level.

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

EUT : WMG2600
Test Condition : 802.11g Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
7383	PK	V	39.25	39.632	58.168	58.55	74	-15.45	175	120
7383	AV	V	39.25	39.632	28.768	29.15	54	-24.85	175	120
7383	PK	H	39.25	39.632	50.728	51.11	74	-22.89	122	151
7383	AV	H	39.25	39.632	28.588	28.97	54	-25.03	122	151

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the noise floor, the others please refer to noise floor level.

For PK:
1GHz-3GHz: 20dBuV
3GHz-14GHz: 27dBuV
14GHz-26.5GHz: 39dBuV

For AV:
1GHz-3GHz: 10dBuV
3GHz-14GHz: 16dBuV
14GHz-26.5GHz: 28dBuV

6. Power Spectrum Density test

6.1 Operating environment

Temperature:	22	℃
Relative Humidity:	48	%
Atmospheric Pressure	1023	hPa

6.2 Test setup & procedure

The power spectrum density per FCC §15.247(d) was measured from the antenna port of the EUT using a 50ohm spectrum analyzer with the resolution bandwidth set at 3kHz, the video bandwidth set at 30kHz, a span of 1.5 MHz, and the sweep time set at 500 seconds. Power Density was read directly and cable loss (2.63dB)/external attenuator (4dB) 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 channel). The Power Spectral Density measured result is in the following table.

6.3 Measured data of Power Spectrum Density test results

Test Condition: 802.11b operation mode (DSSS modulation)

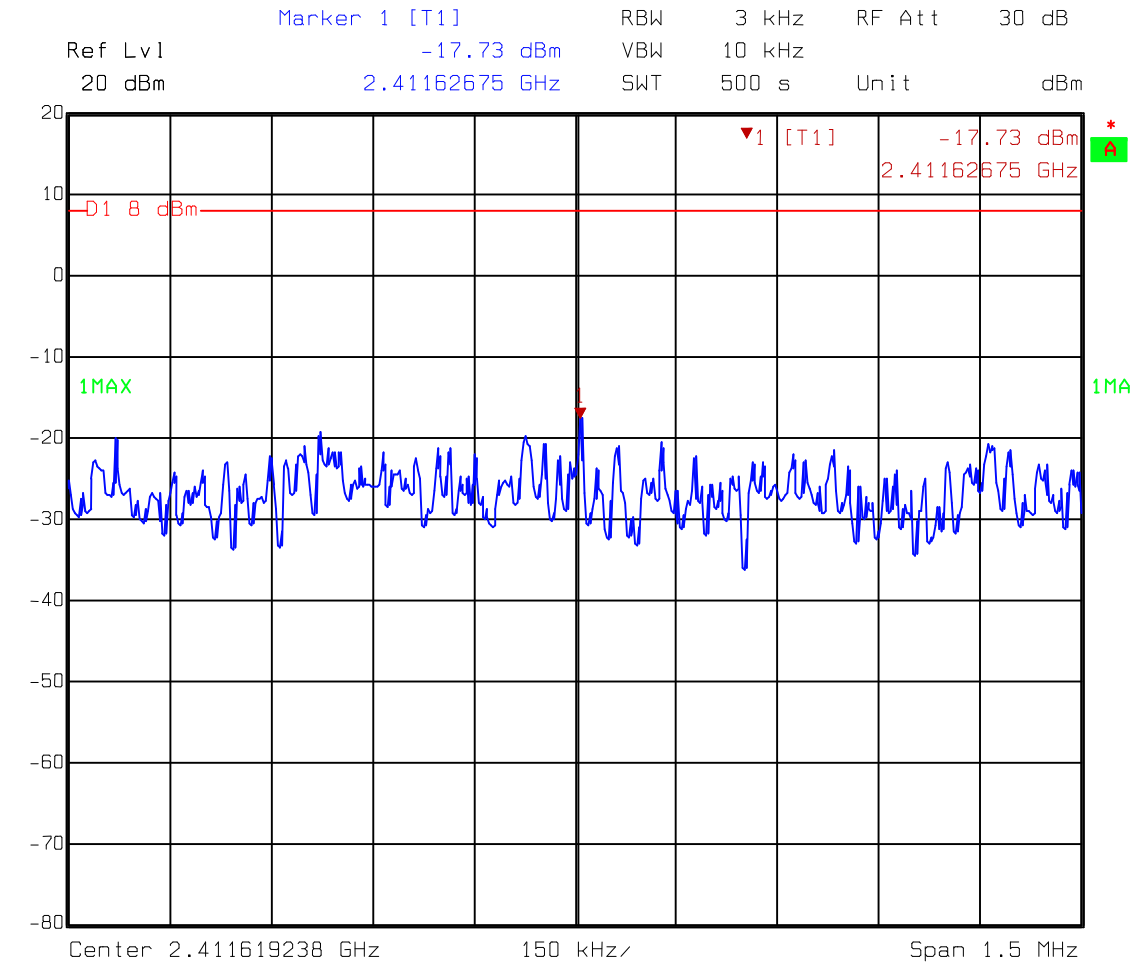
Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2411.63	-11.10	8
Middle	2436.63	-11.30	8
High	2461.63	-11.95	8

Test Condition: 802.11g operation mode (OFDM modulation)

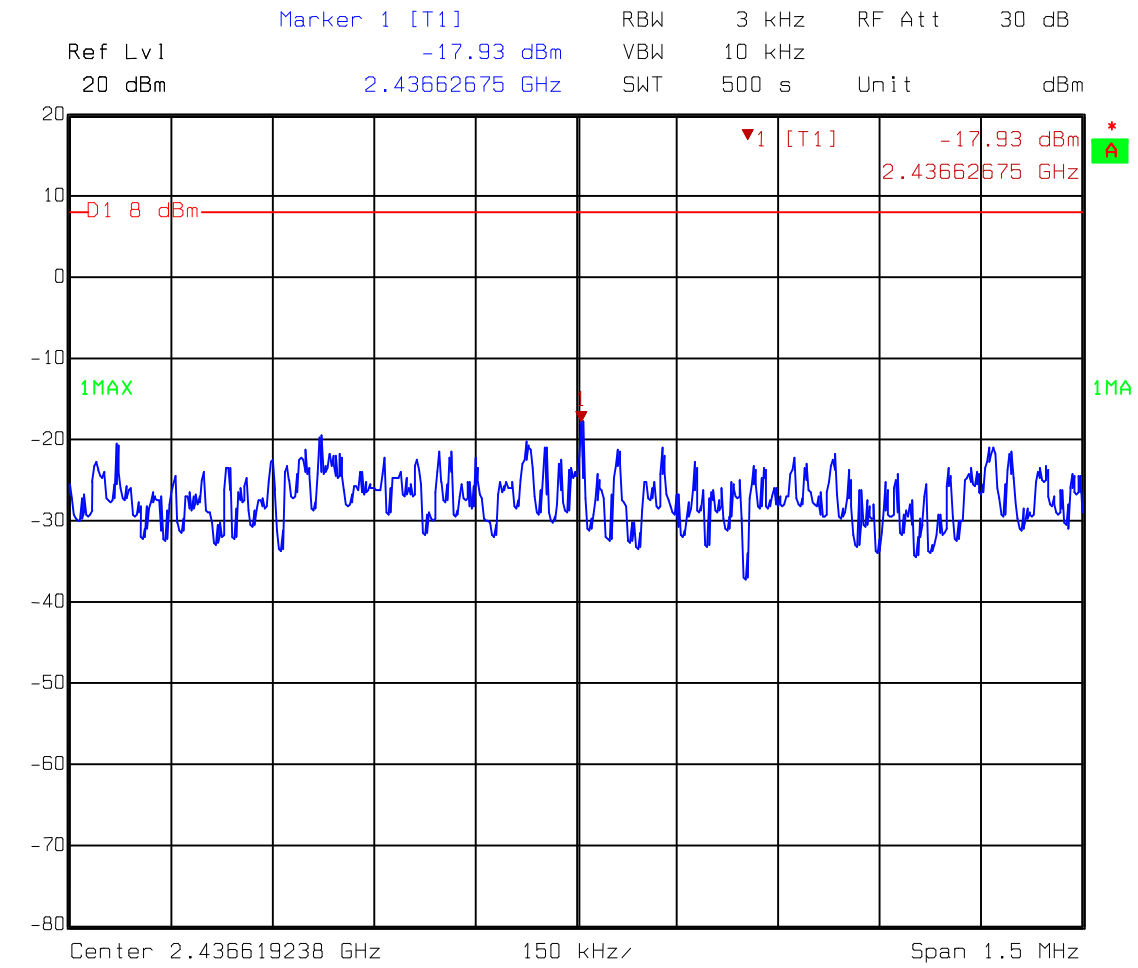
Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2419.48	-19.85	8
Middle	2430.71	-18.93	8
High	2455.71	-19.14	8

Please see the plot below.

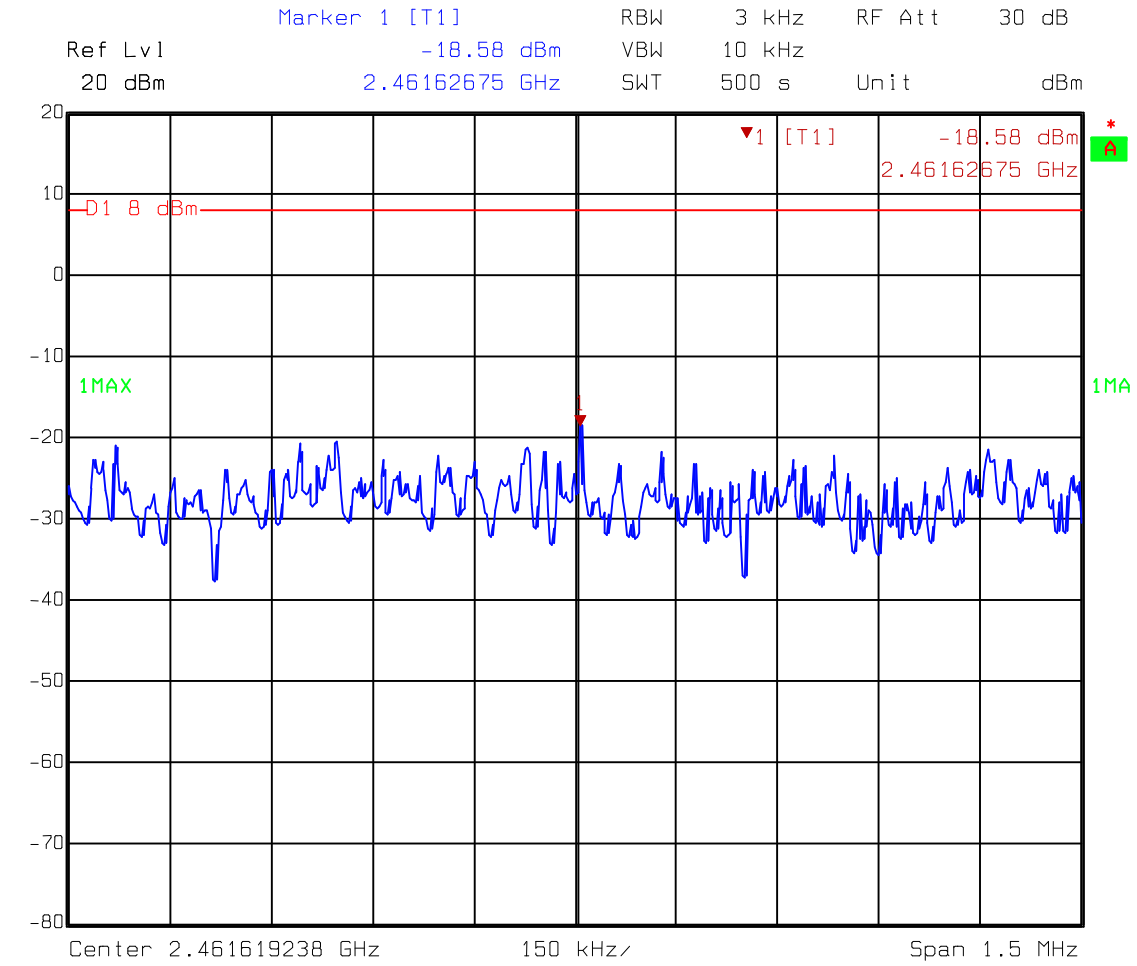
Test Condition: 802.11b operation mode (DSSS Modulation)



Comment A: Power spectrum density at low channel
ATT=4dB CL=2.63dB (EC365) 11b
Date: 03.MAY 2004 15:35:36

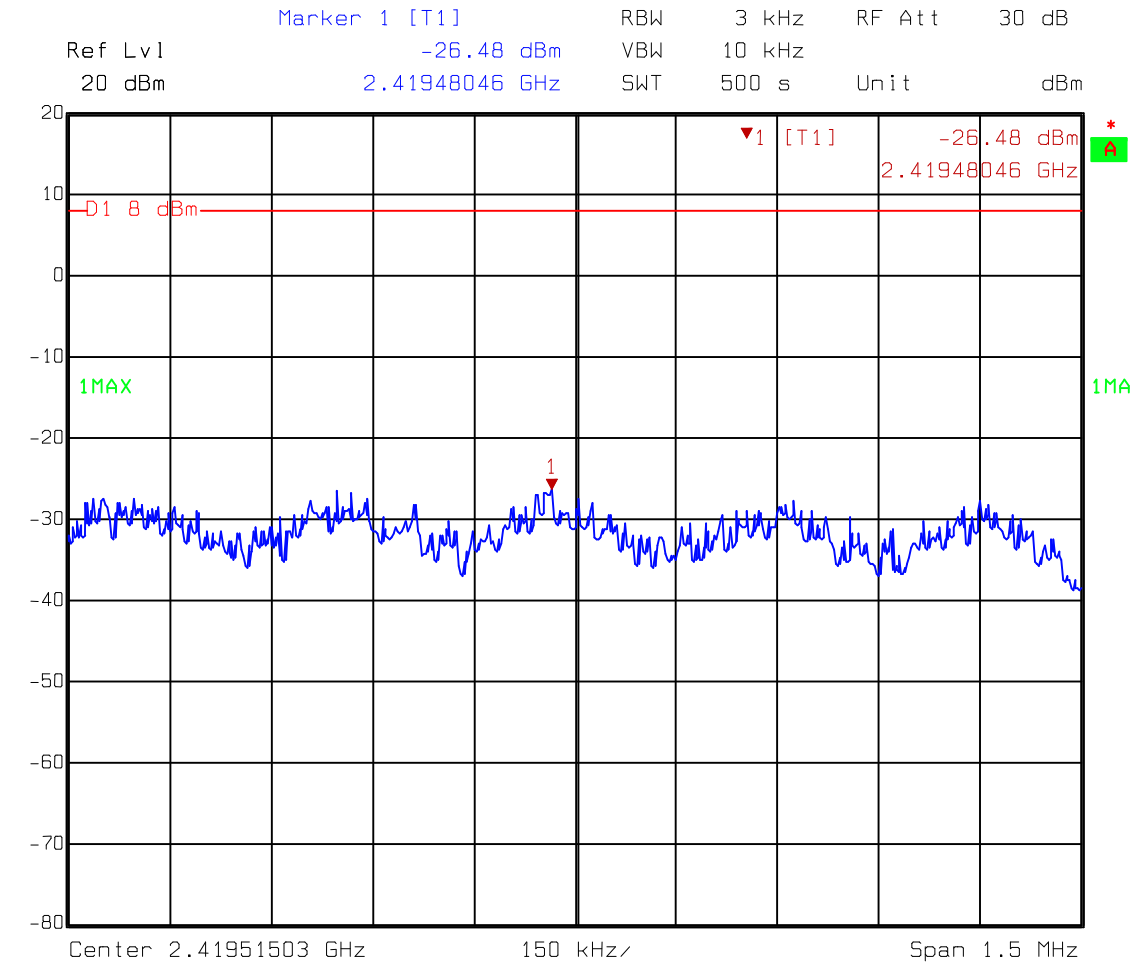


Comment A: Power spectrum density at middle channel
ATT=4dB CL=2.63dB (EC365) 11b
Date: 03.MAY 2004 15:37:00

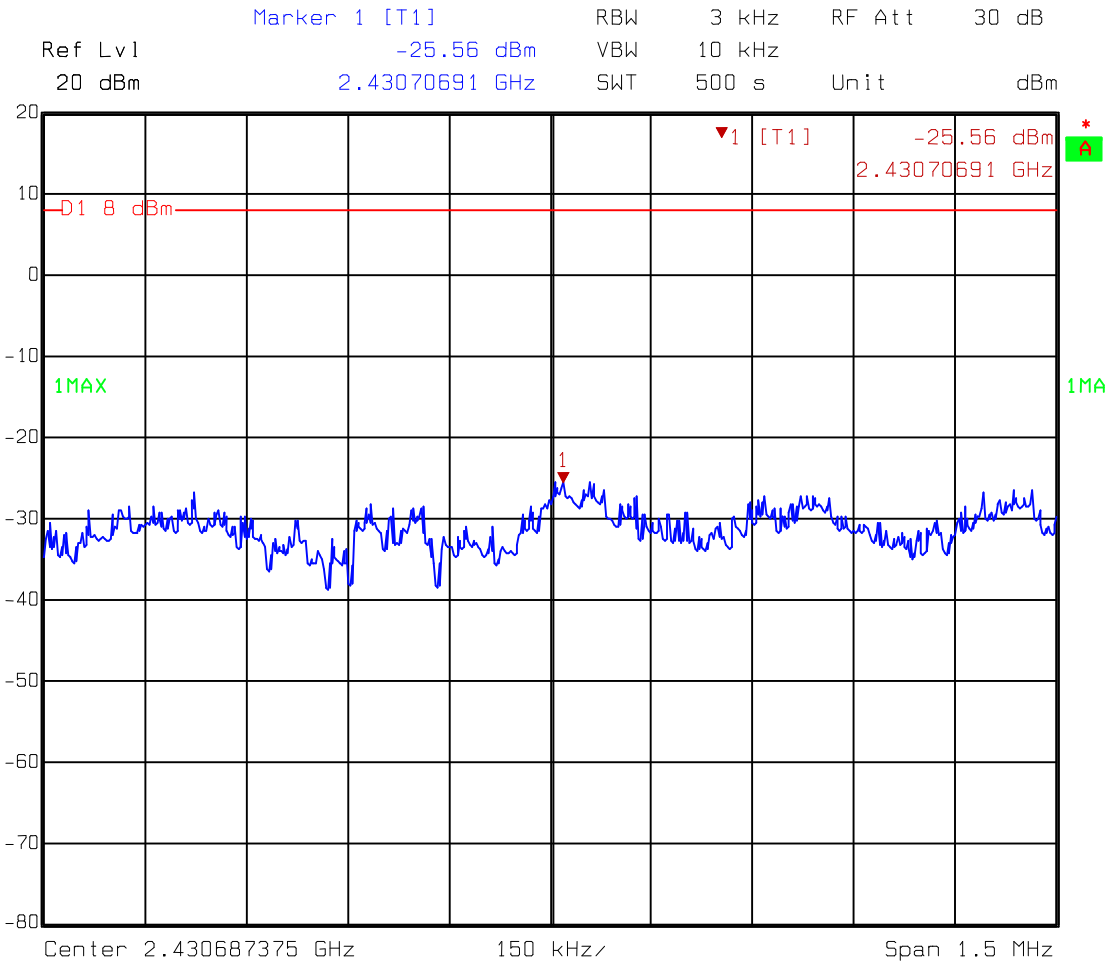


Comment A: Power spectrum density at high channel
ATT=4dB CL=2.63dB (EC365) 11b
Date: 03.MAY 2004 15:39:05

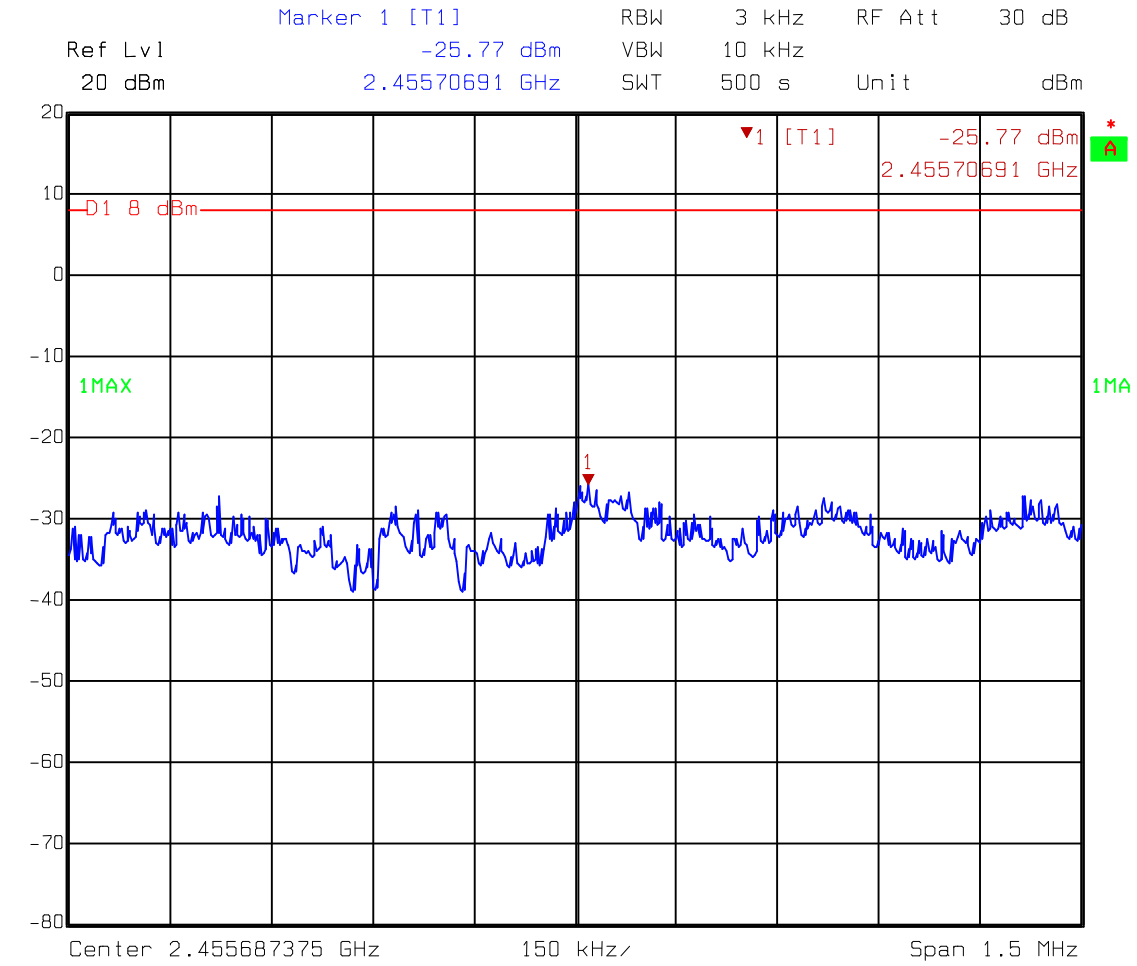
Test Condition: 802.11g operation mode (OFDM Modulation)



Comment A: Power spectrum density at low channel
ATT=4dB CL=2.63dB (EC365) 11g
Date: 03.MAY 2004 15:42:42



Comment A: Power spectrum density at middle channel
ATT=4dB CL=2.63dB (EC365) 11g
Date: 03.MAY 2004 15:41:47



Comment A: Power spectrum density at high channel
ATT=4dB CL=2.63dB (EC365) 11g
Date: 03.MAY 2004 15:40:43

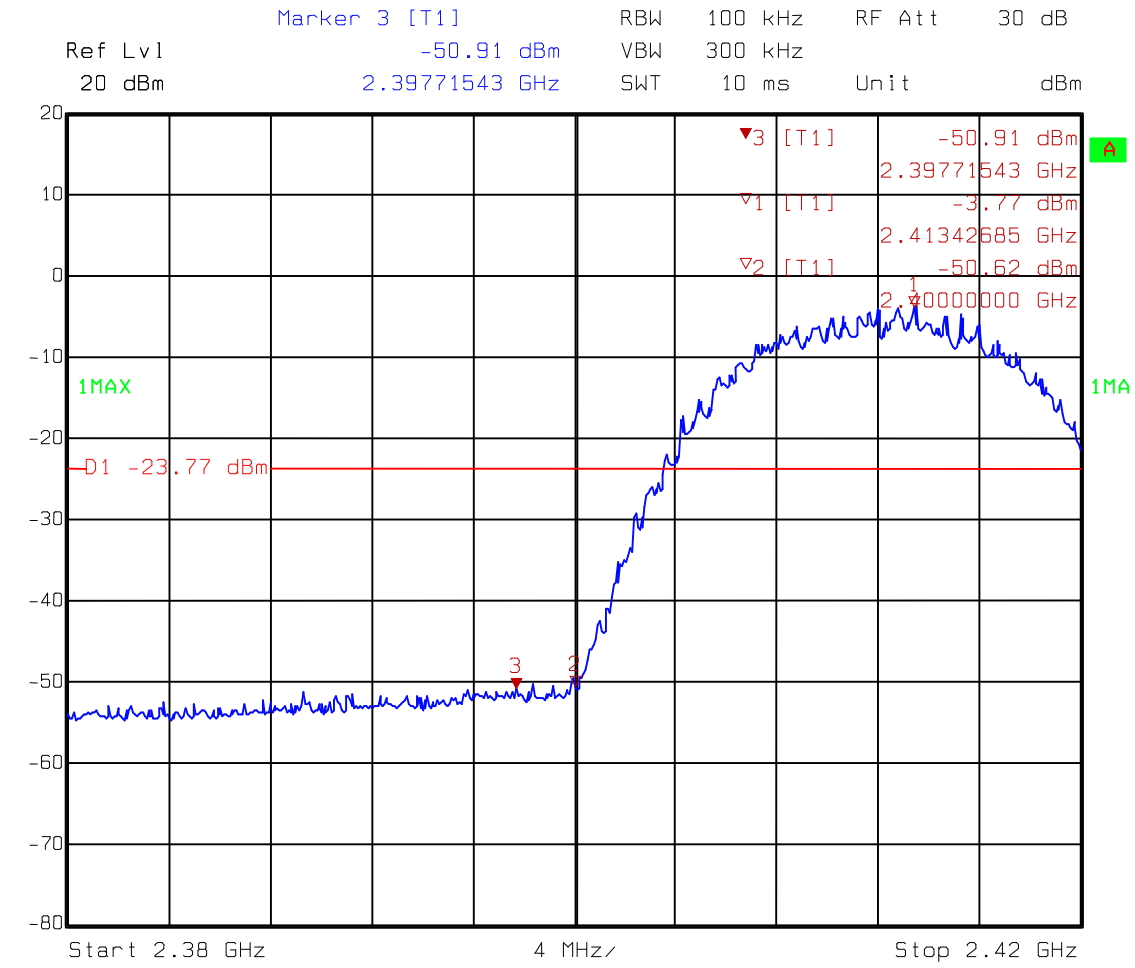
7. Emission on the band edge §FCC 15.247(C)

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.

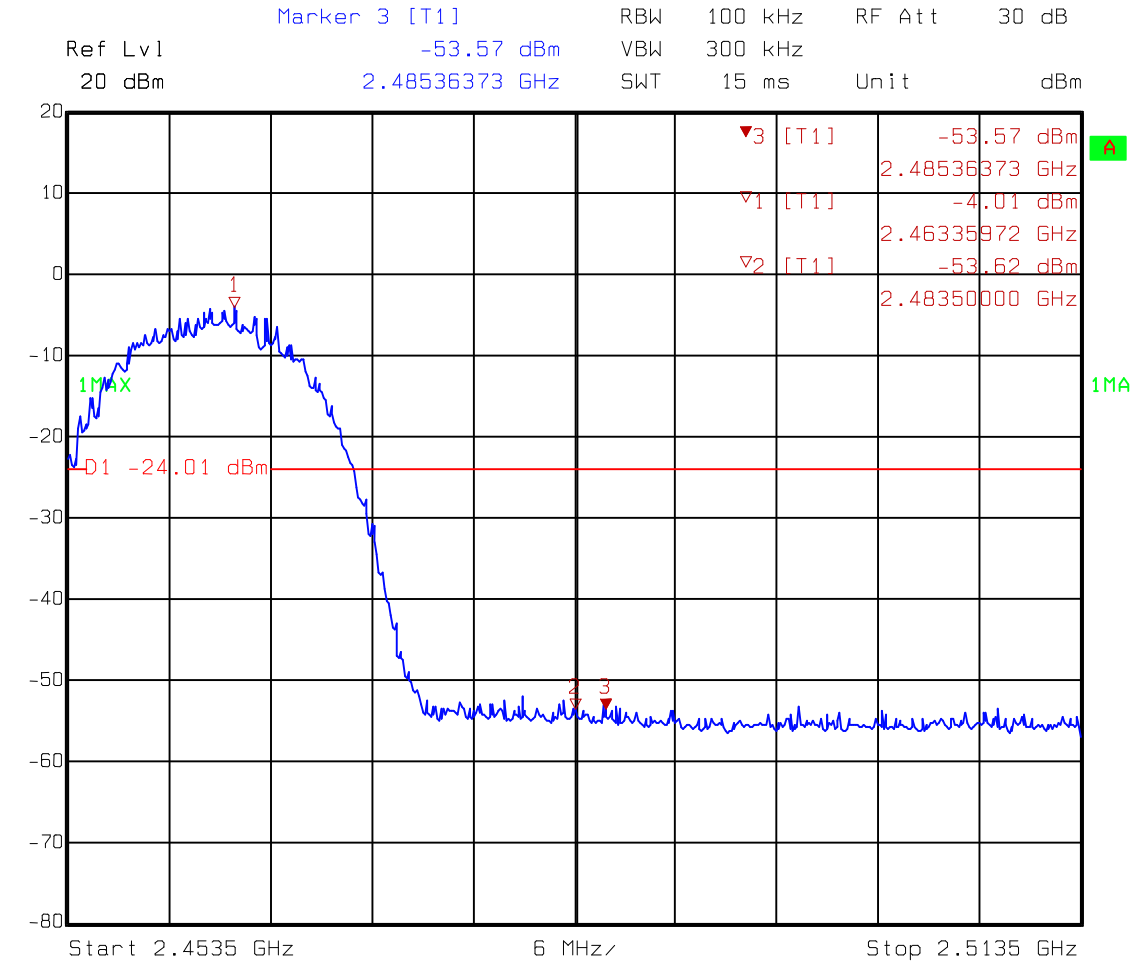
Please see the plot below.

7.1 Band-edge (Conducted method)

Test Condition: 802.11b operation mode (DSSS Modulation)

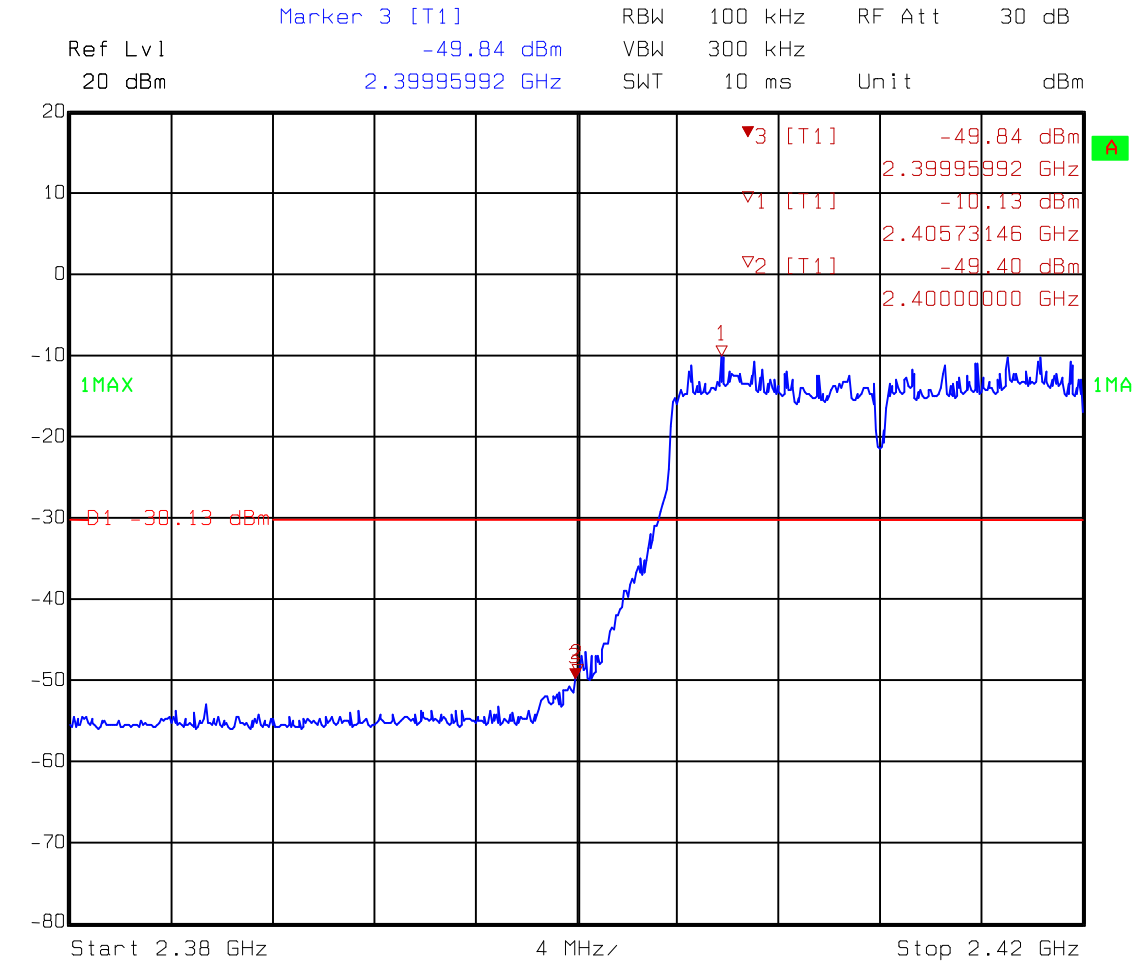


Comment A: Band-edge at low channel (EC365) ATT=4dB
Date: 03.MAY 2004 15:46:21

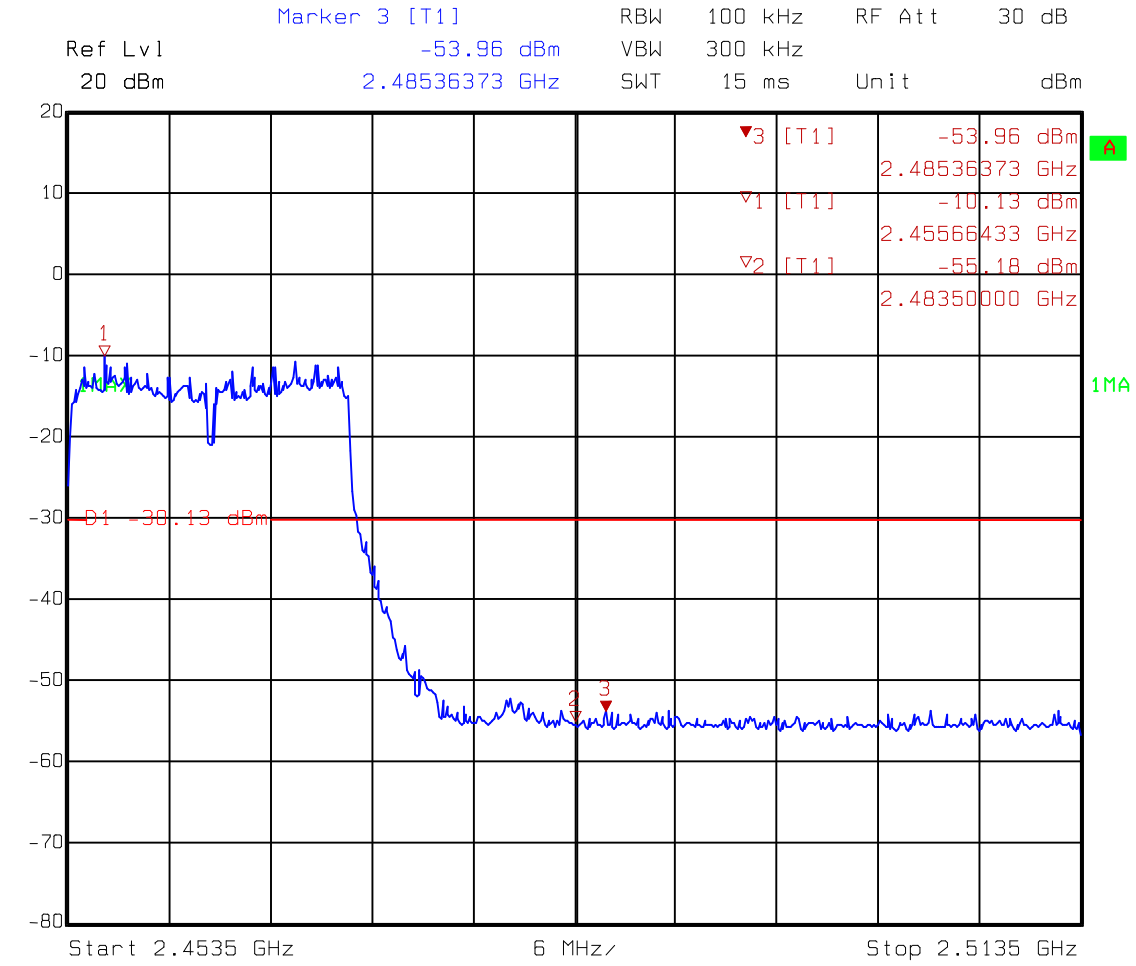


Comment A: Band-edge at high channel (EC365) ATT=4dB
Date: 03.MAY 2004 15:50:47

Test Condition: 802.11g opation mode (OFDM Modulation)



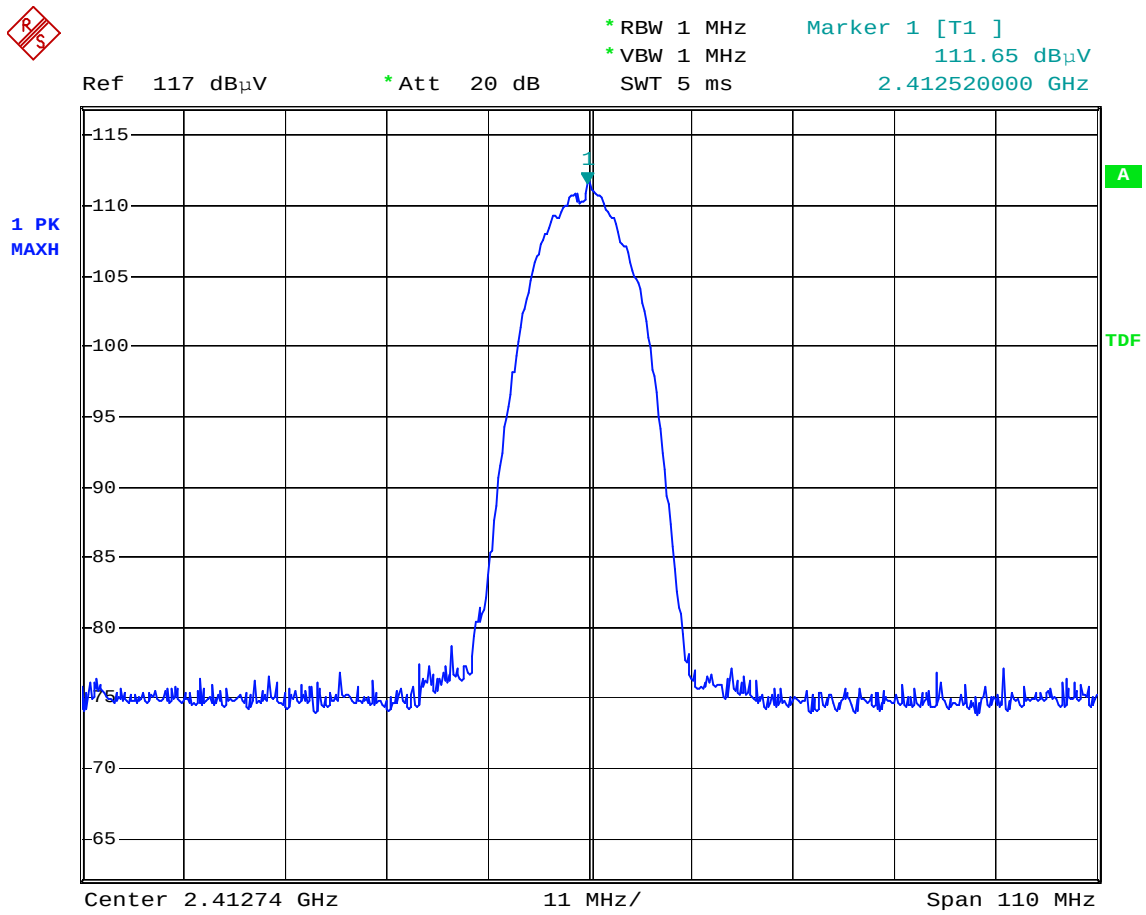
Comment A: Band-edge at low channel (EC365) ATT=4dB
Date: 03.MAY 2004 15:48:31



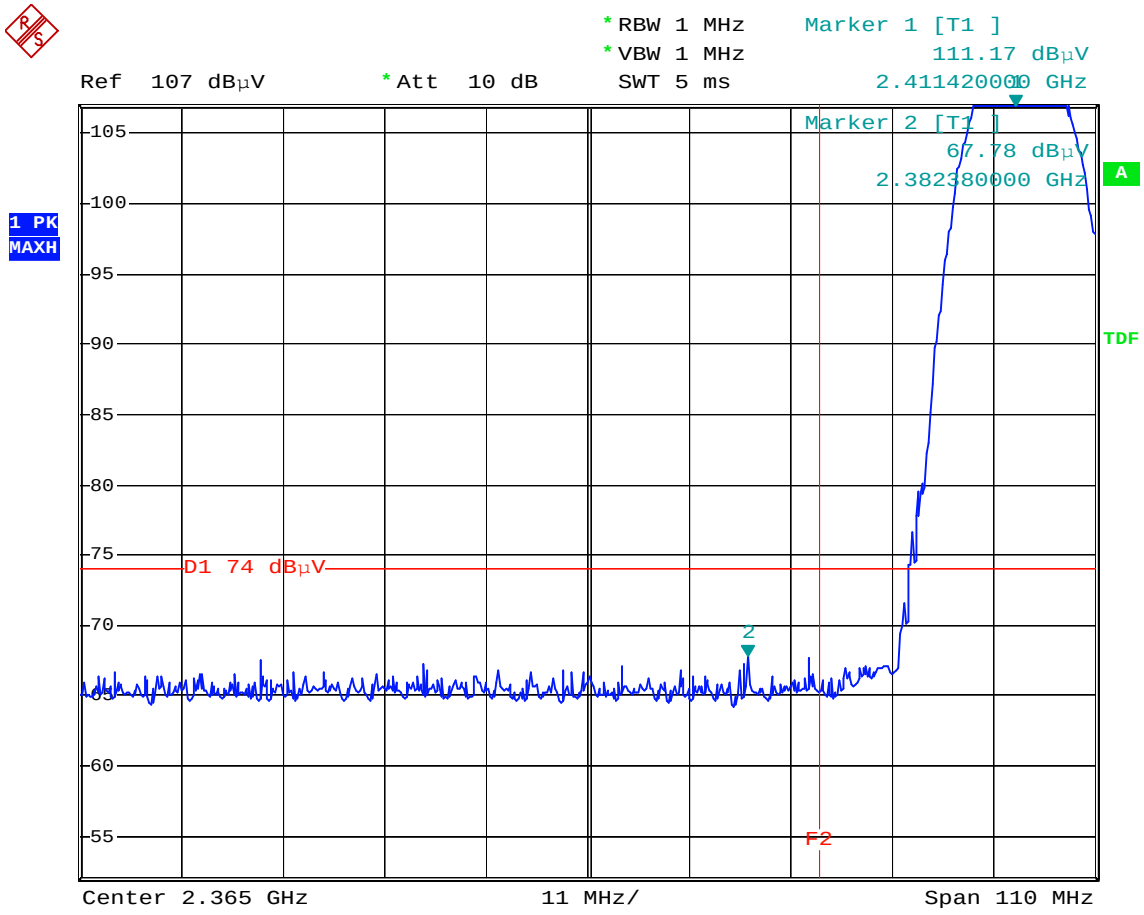
Comment A: Band-edge at high channel (EC365) ATT=4dB
Date: 03.MAY 2004 15:49:48

7.2 Band-edge (Radiated method)

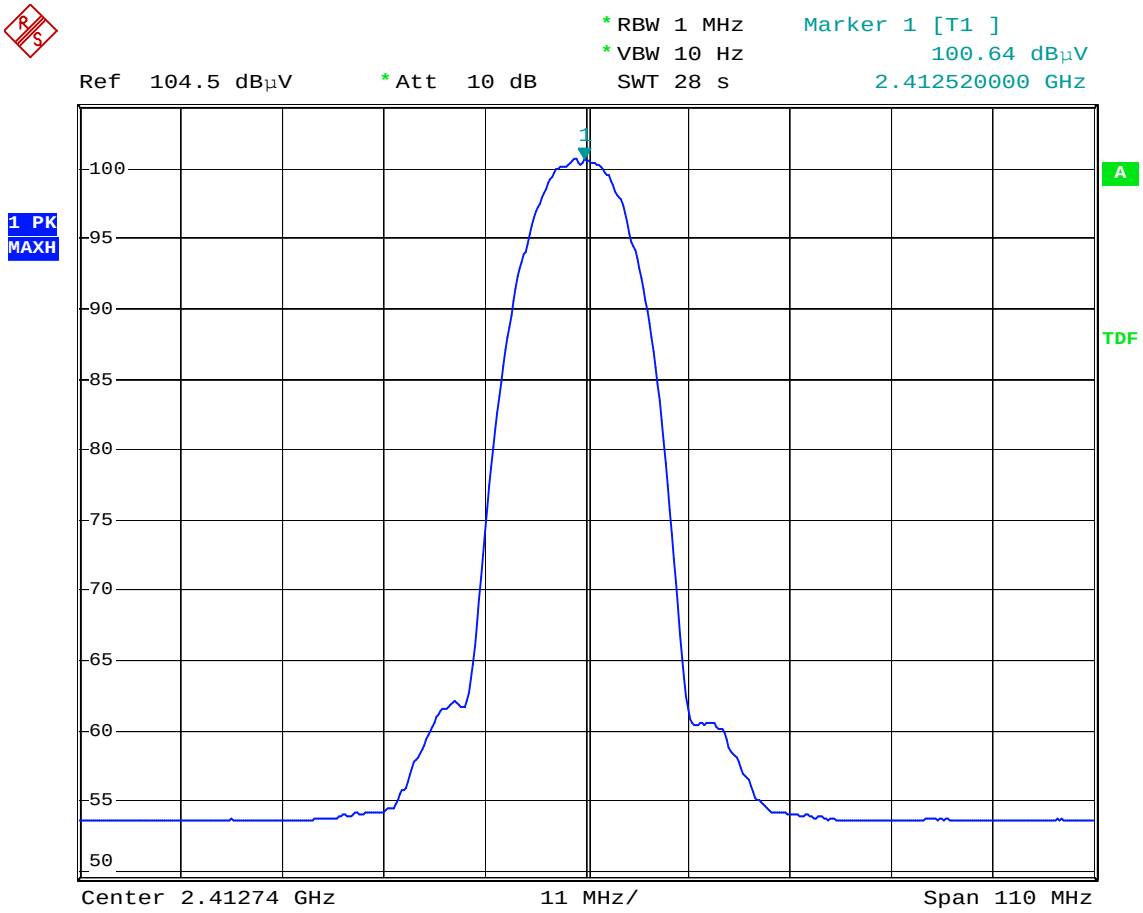
Test Condition: 802.11b operation mode (DSSS Modulation)



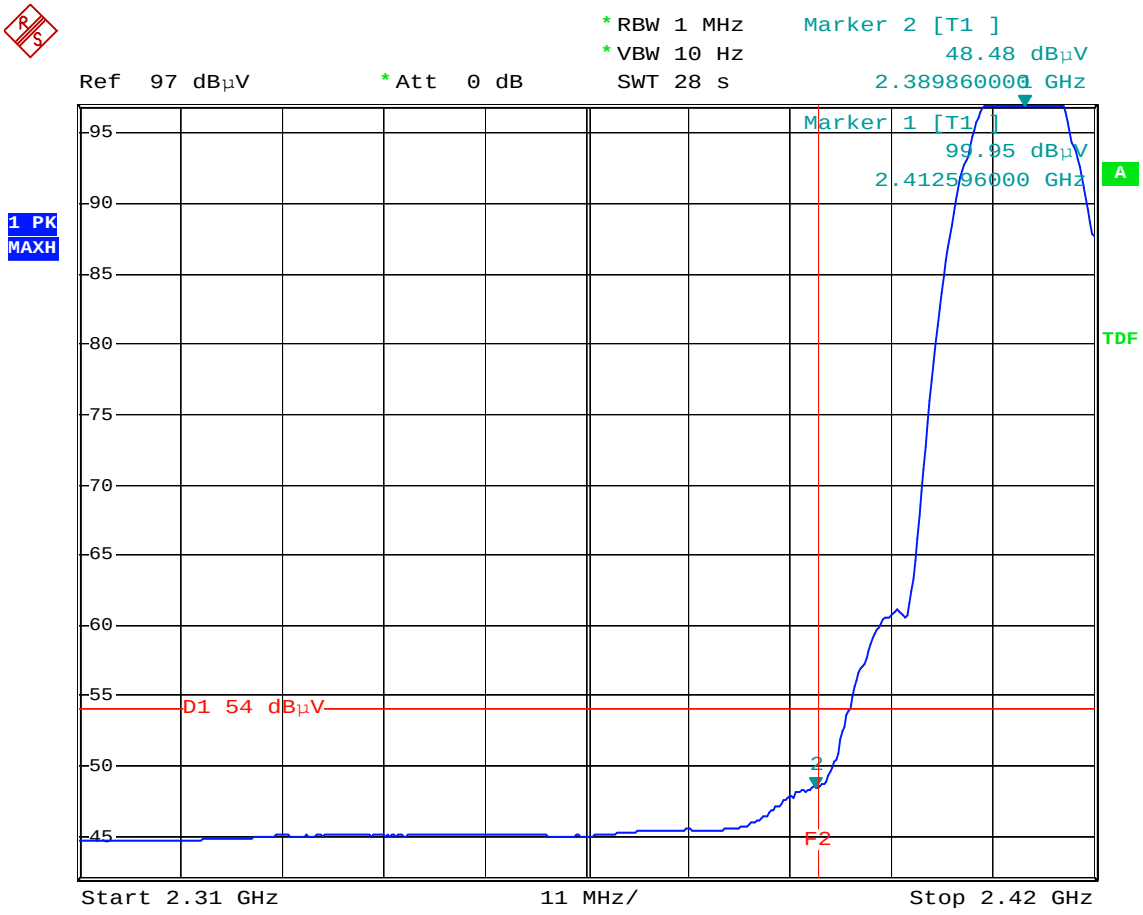
Comment: Band-edge test at low channel
Comment: Peak detector F2=2390MHz
Date: 30.APR.2004 17:44:34



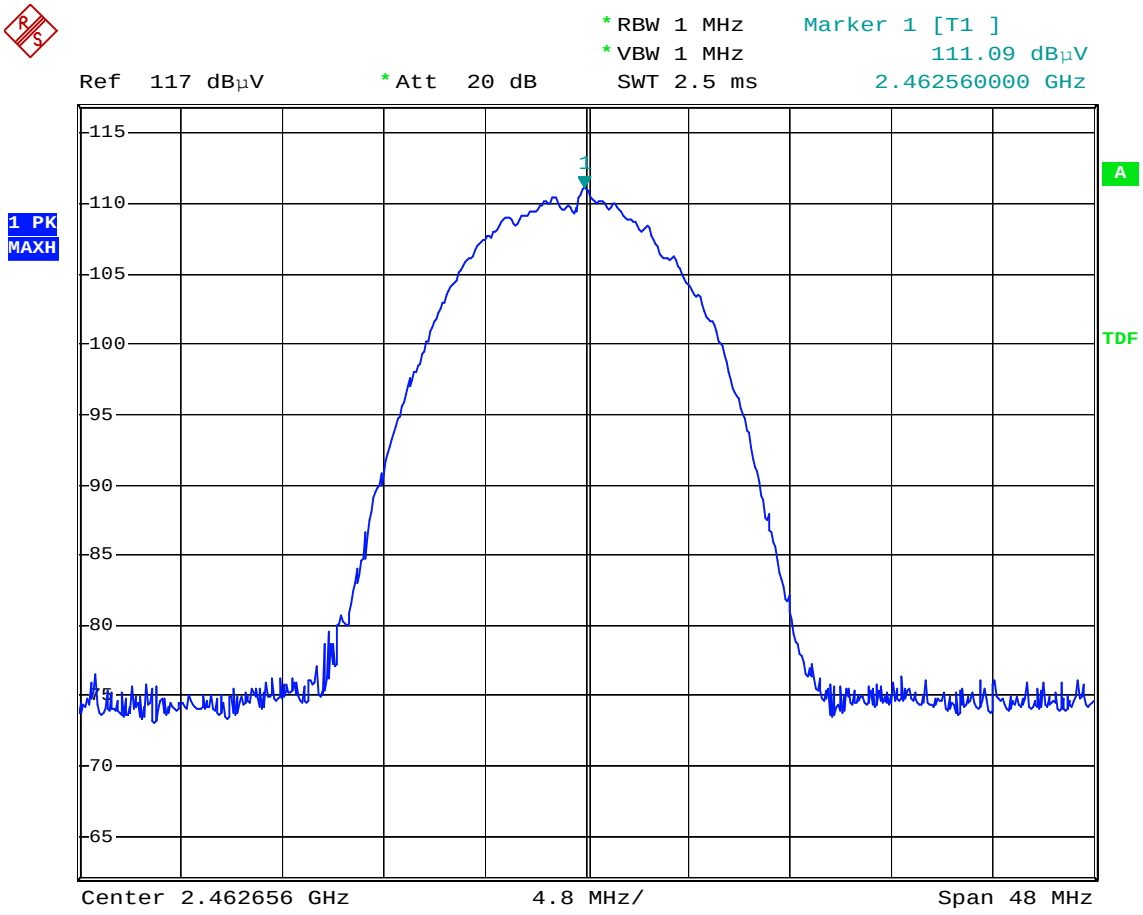
Comment: Band-edge test at low channel
Comment: Peak detector F2=2390MHz
Date: 7.MAY.2004 15:46:36



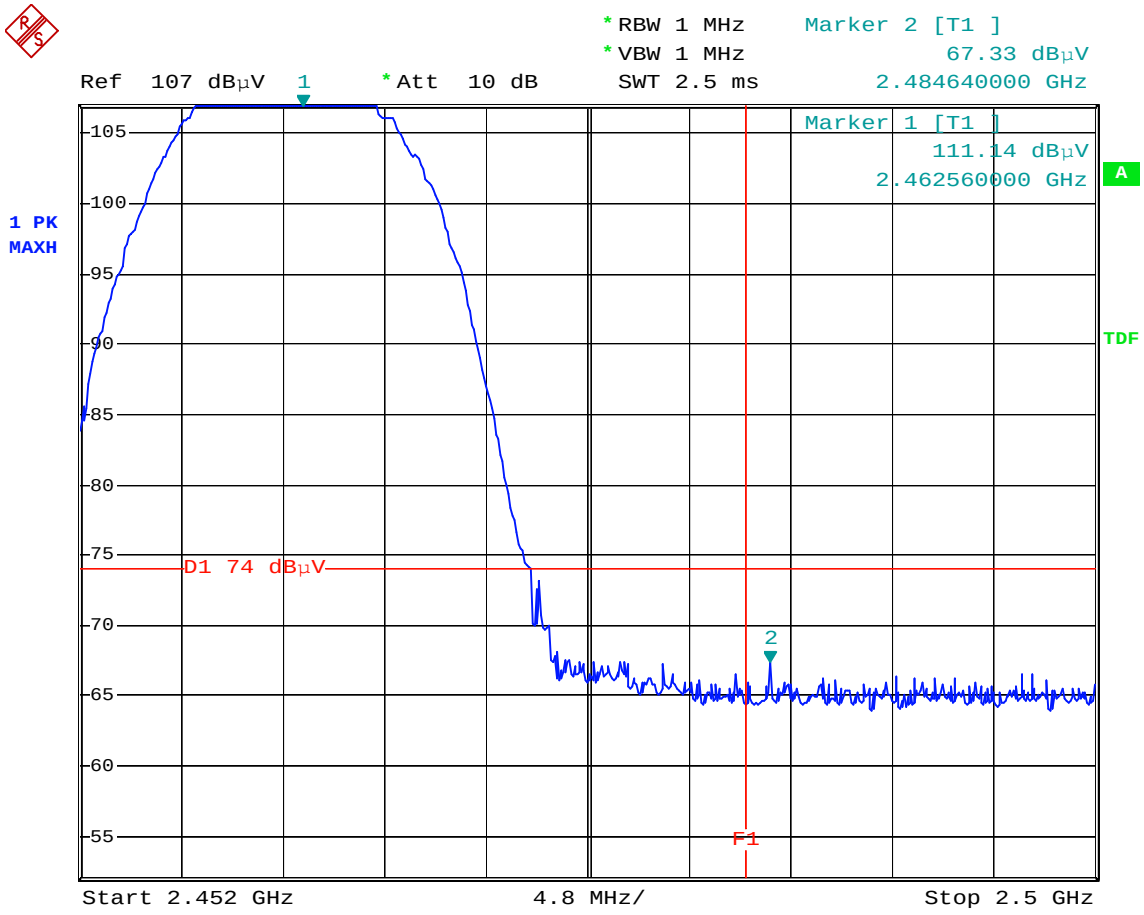
Comment: Band-edge test at low channel
Comment: Average detector F2=2390MHz
Date: 30.APR.2004 17:48:16



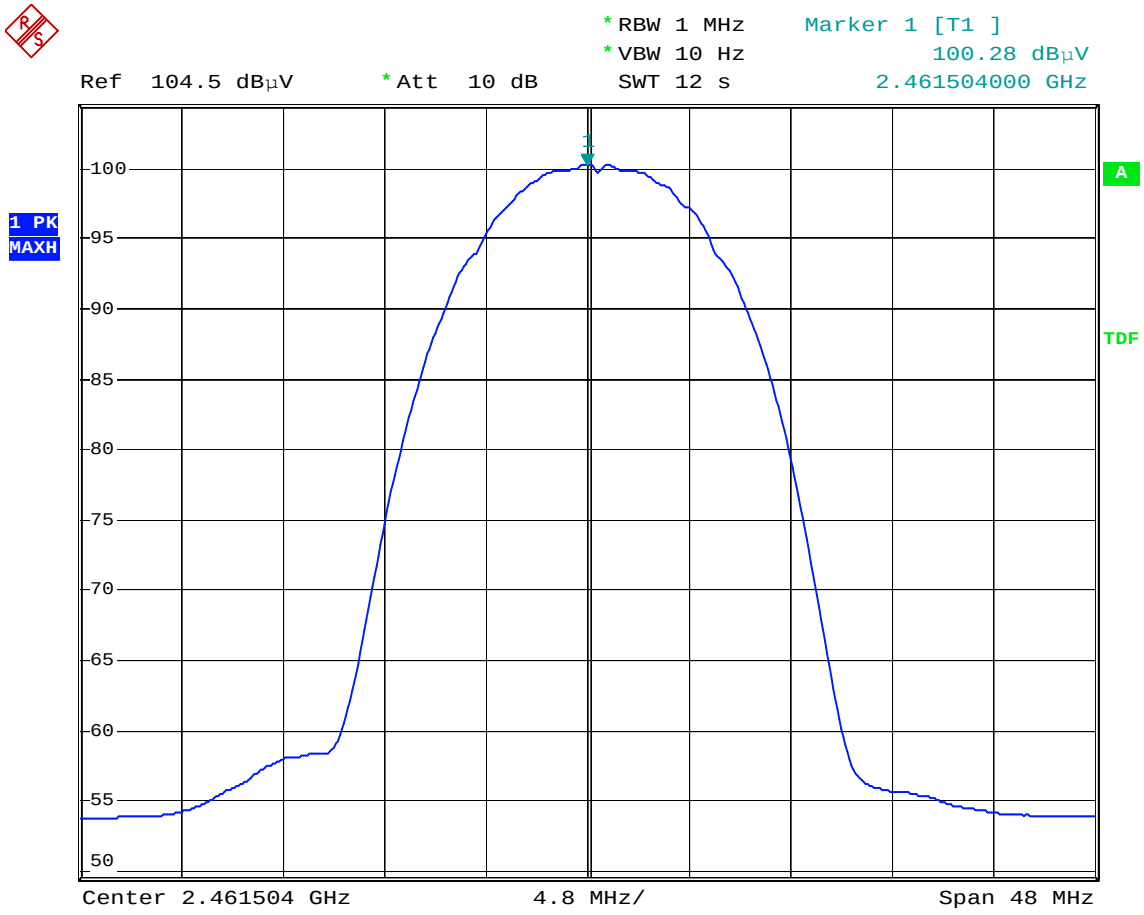
Comment: Band-edge test at low channel
Comment: Average detector F2=2390MHz
Date: 30.APR.2004 17:46:26



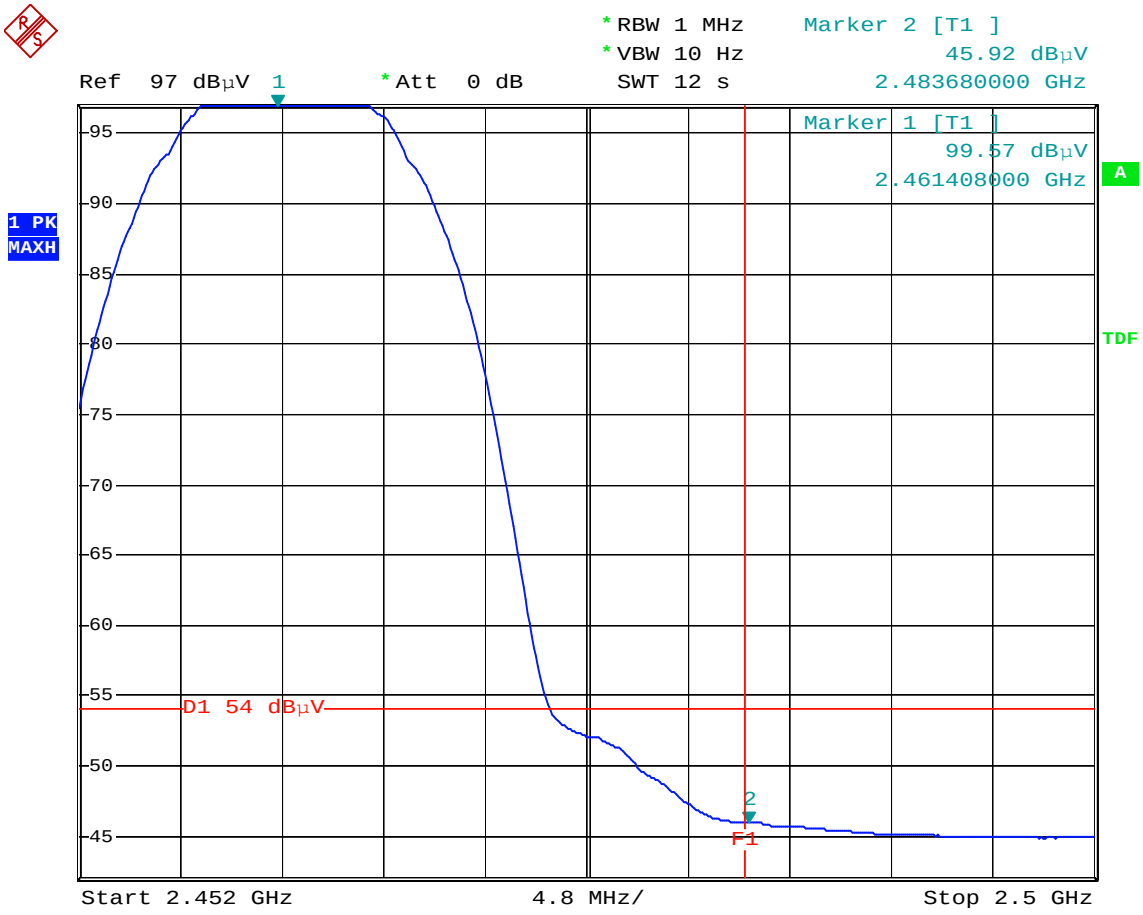
Comment: Band-edge test at high channel
Comment: Peak detector F1=2483.5MHz
Date: 30.APR.2004 18:03:09



Comment: Band-edge test at high channel
Comment: Peak detector F1=2483.5MHz
Date: 30.APR.2004 18:03:55

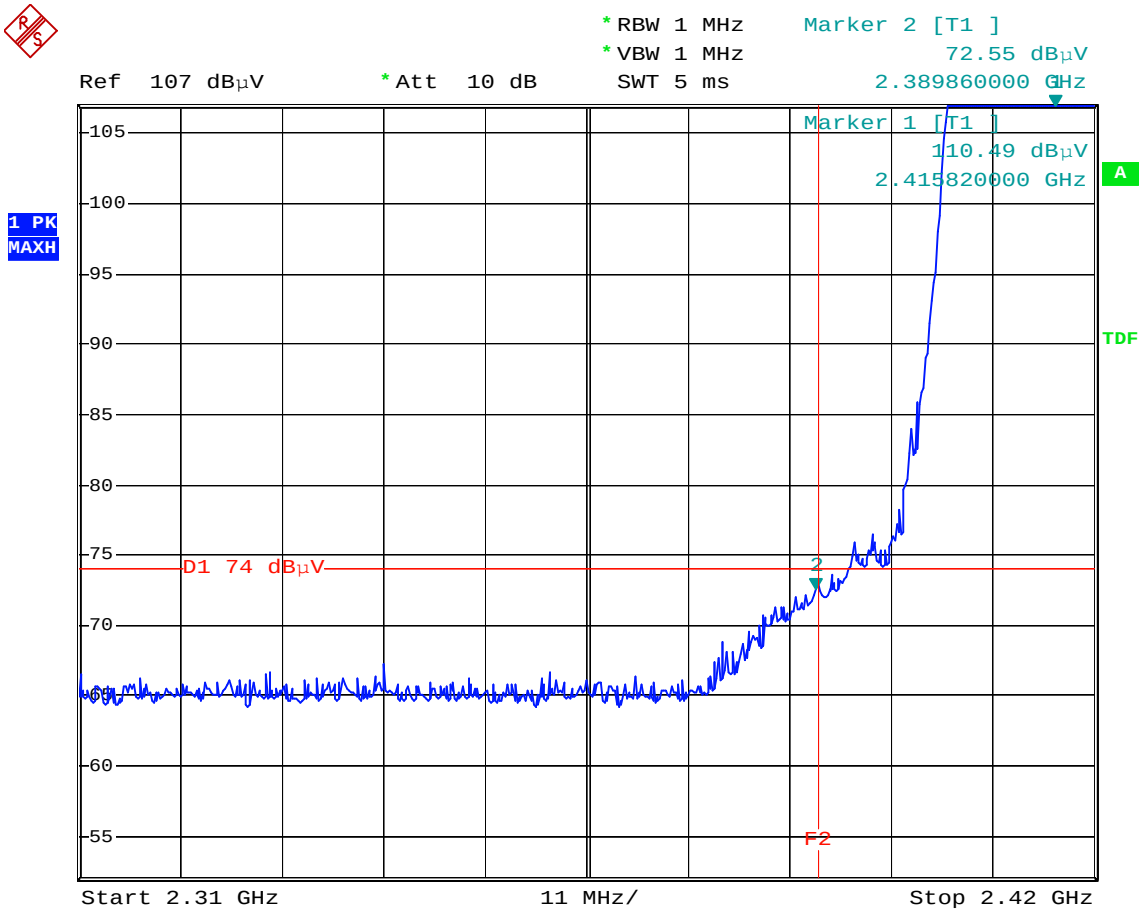


Comment: Band-edge test at high channel
Comment: Average detector F1=2483.5MHz
Date: 30.APR.2004 18:05:19

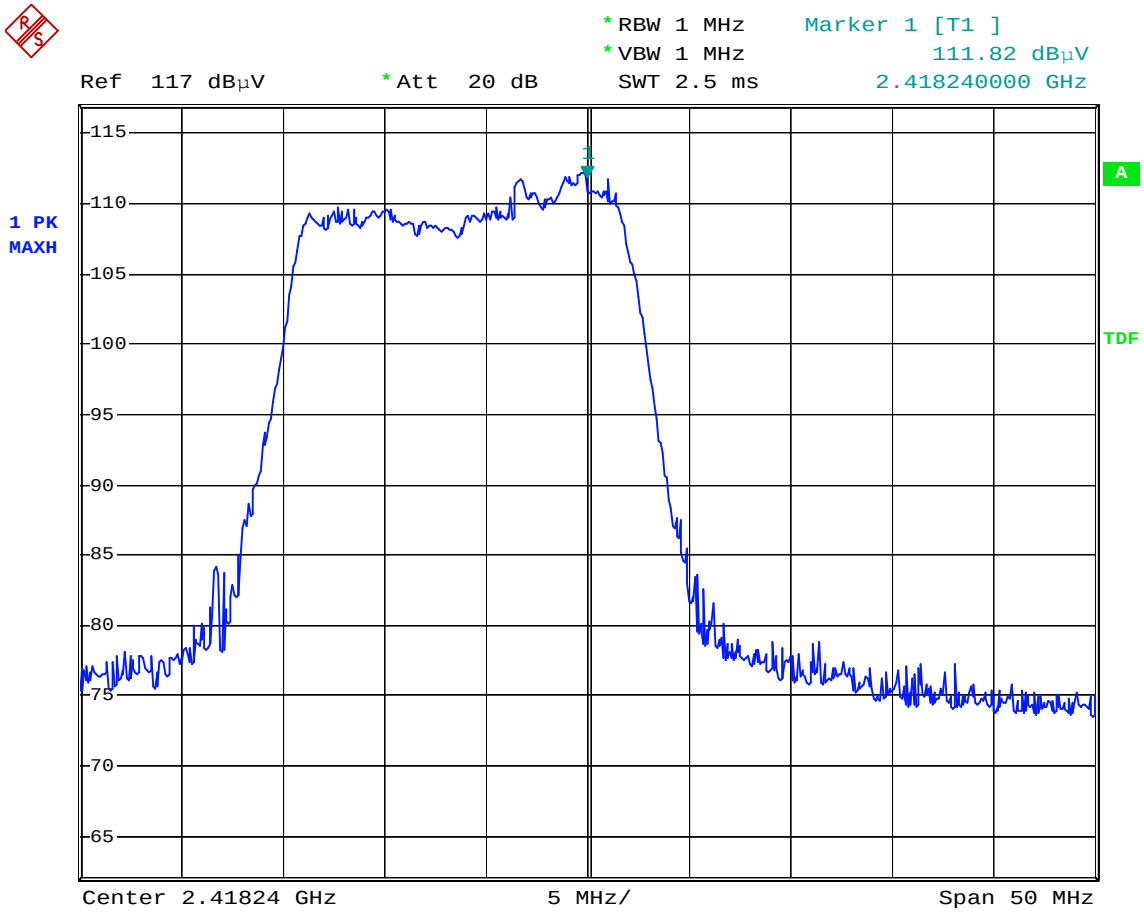


Comment: Band-edge test at high channel
Comment: Average detector F1=2483.5MHz
Date: 30.APR.2004 18:06:17

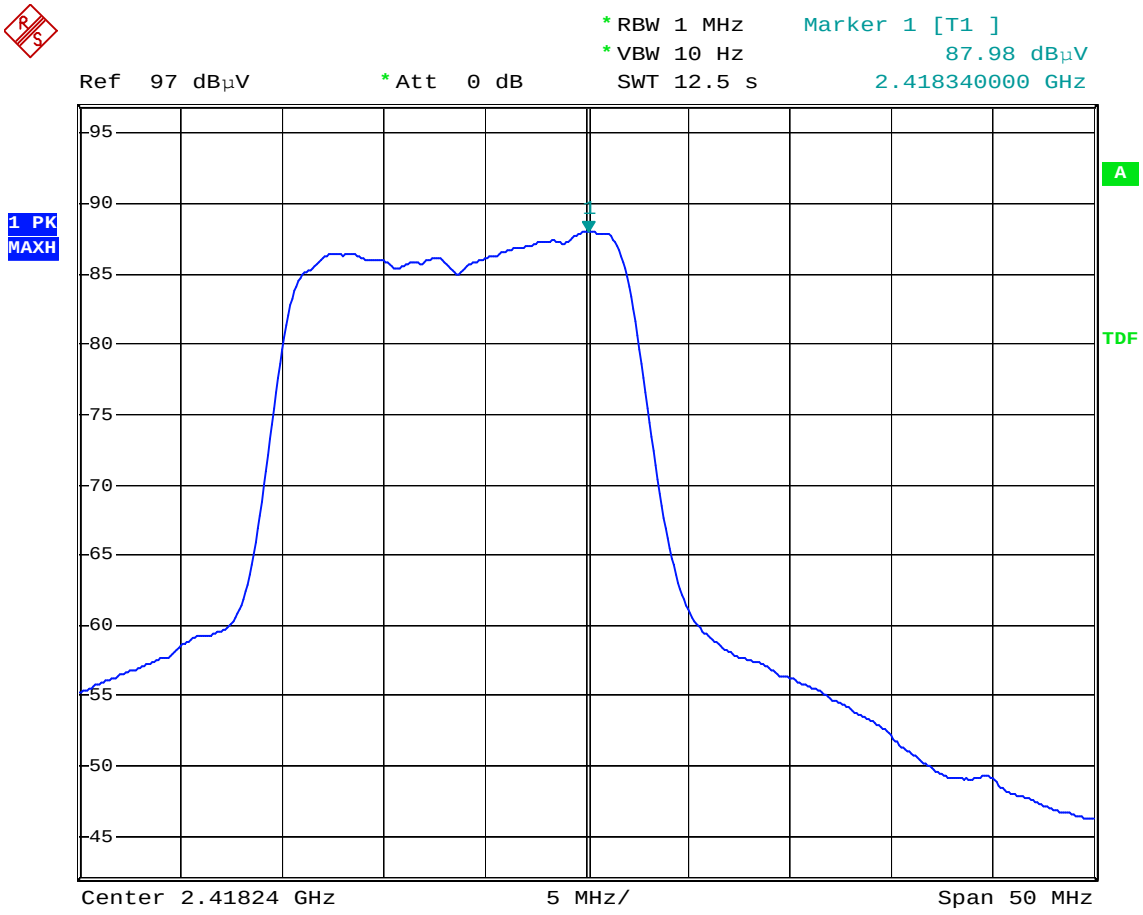
Test Condition: 802.11g operation mode (OFDM Modulation)



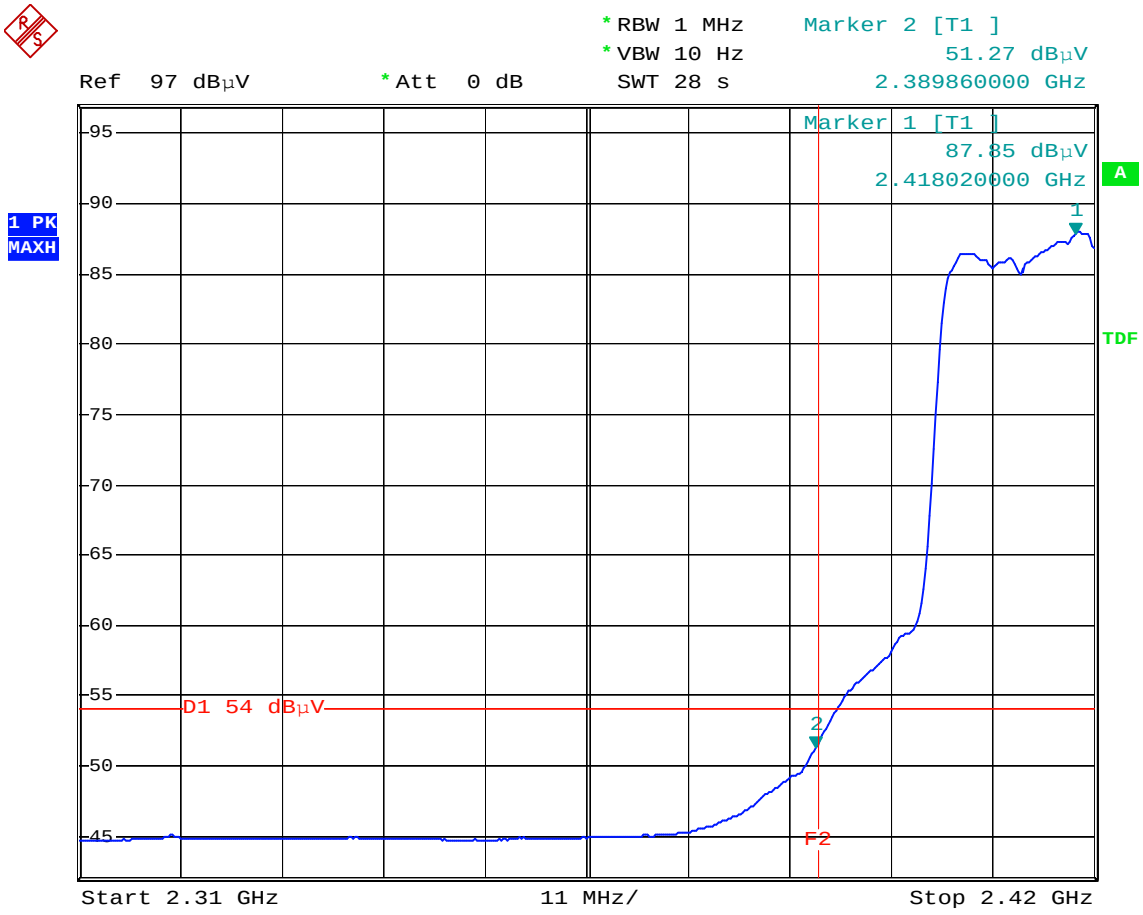
Comment: Band-edge test at low channel
Comment: Peak detector F2=2390MHz
Date: 30.APR.2004 17:52:33



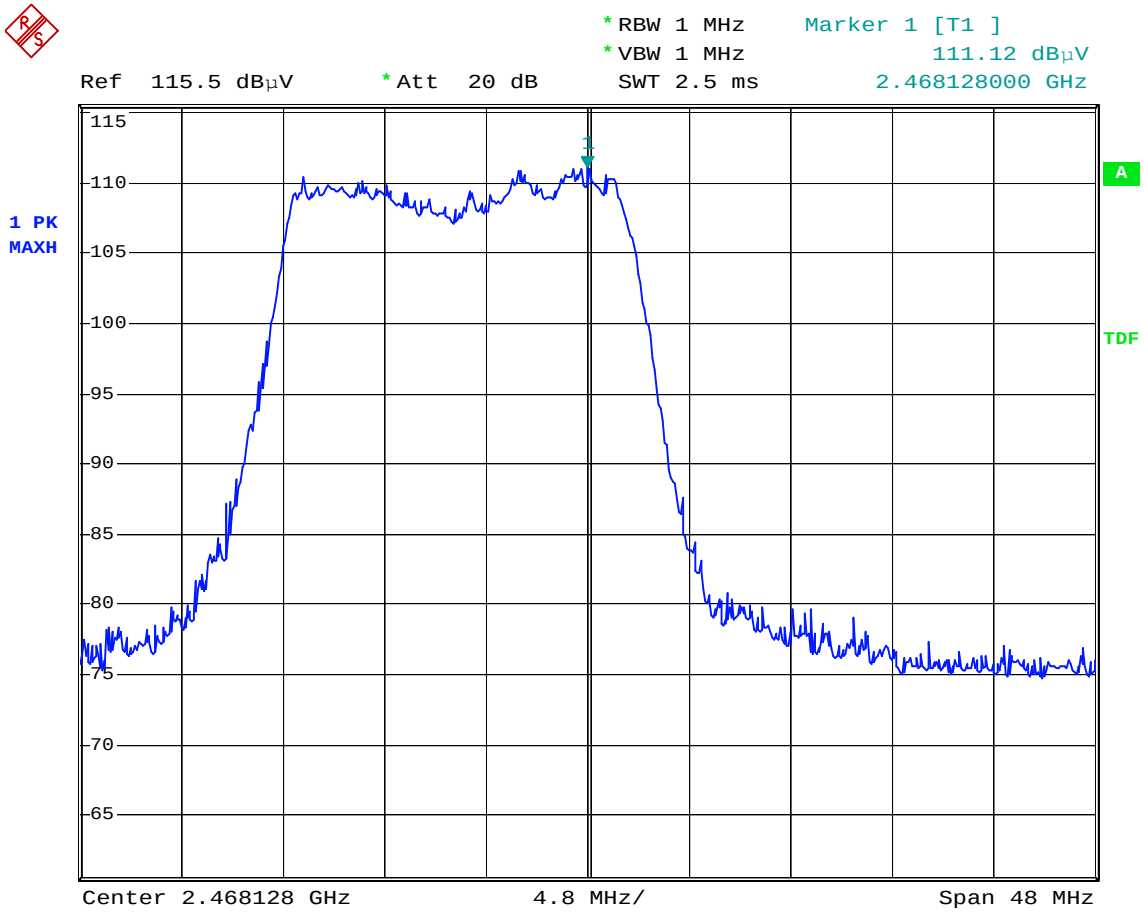
Comment: Band-edge test at low channel
Comment: Peak detector F2=2390MHz
Date: 30.APR.2004 17:51:34



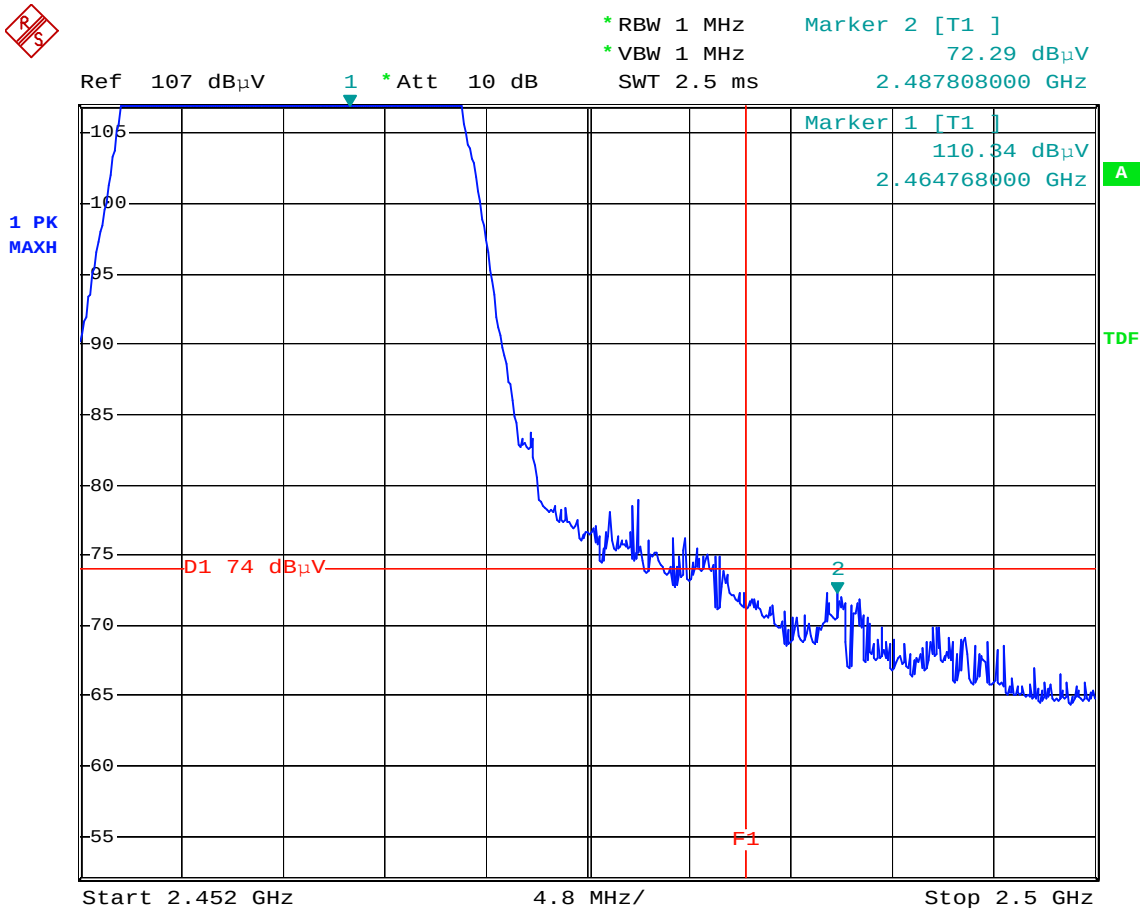
Comment: Band-edge test at low channel
Comment: Average detector F2=2390MHz
Date: 30.APR.2004 17:55:03



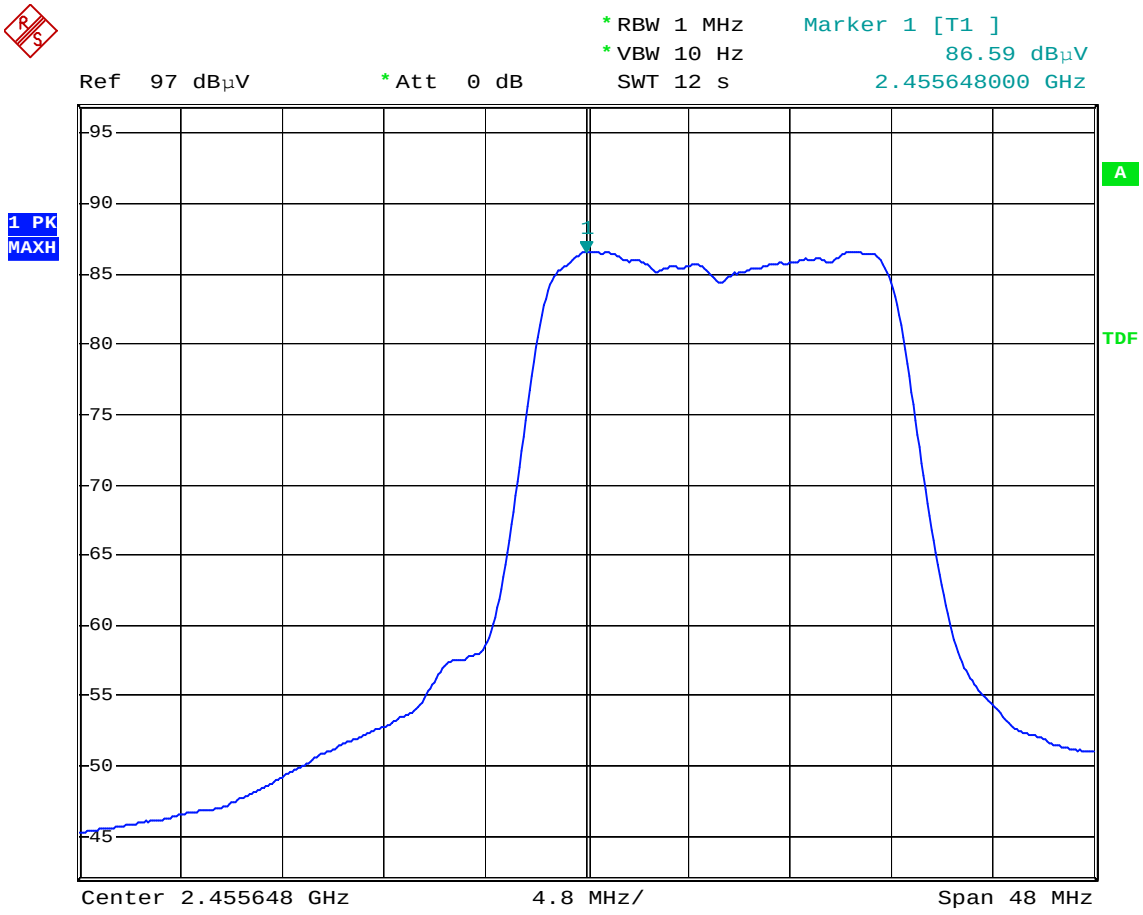
Comment: Band-edge test at low channel
Comment: Average detector F2=2390MHz
Date: 30.APR.2004 17:53:45



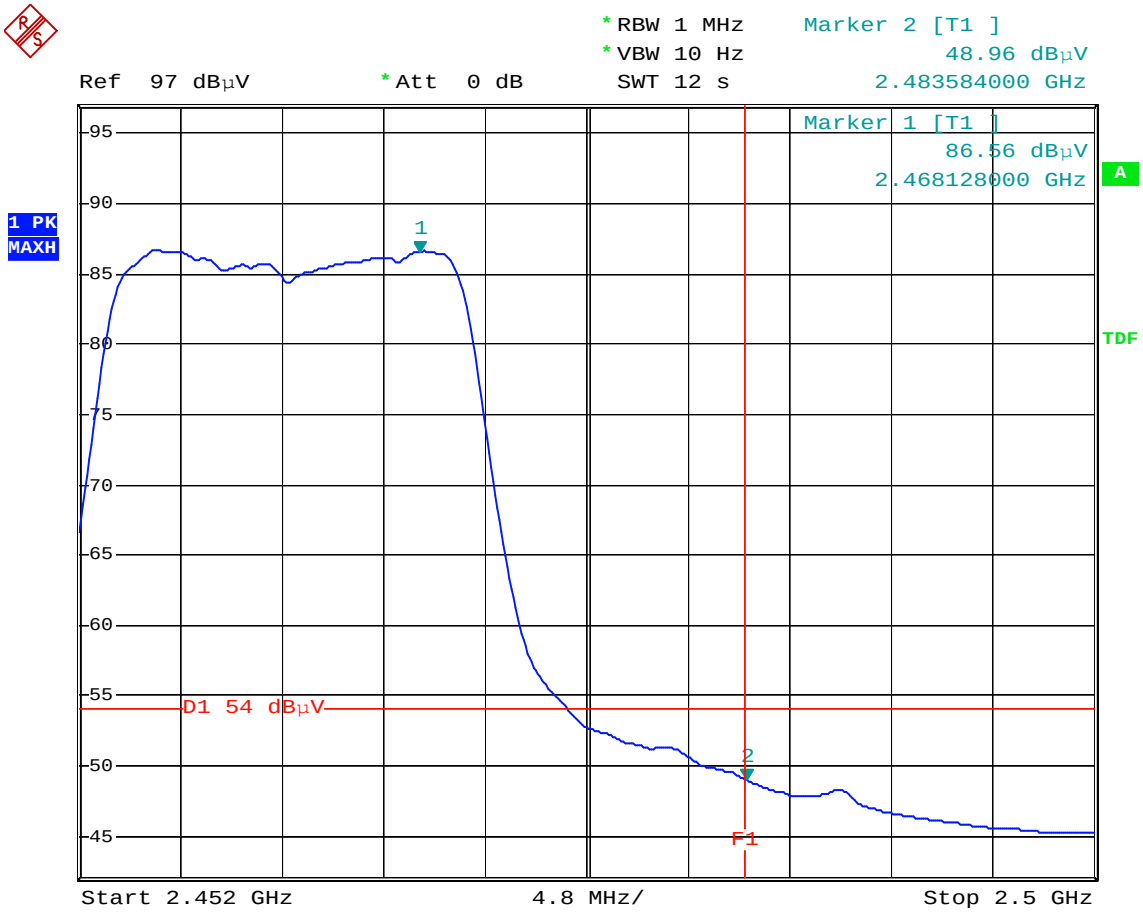
Comment: Band-edge test at high channel
Comment: Peak detector F1=2483.5MHz
Date: 30.APR.2004 17:57:49



Comment: Band-edge test at high channel
Comment: Peak detector F1=2483.5MHz
Date: 30.APR.2004 17:58:35



Comment: Band-edge test at high channel
Comment: Average detector F1=2483.5MHz
Date: 30.APR.2004 18:00:10



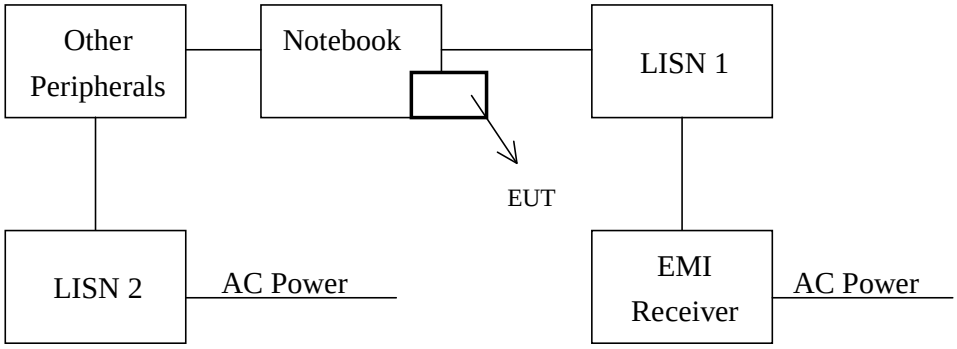
Comment: Band-edge test at high channel
Comment: Average detector F1=2483.5MHz
Date: 30.APR.2004 17:59:18

8. Power Line Conducted Emission test §FCC 15.207

8.1 Operating environment

Temperature:	23	℃	(10-40℃)
Relative Humidity:	55	%	(10-90%)
Atmospheric Pressure	1023	hPa	(860-1061hPa)

8.2 Test setup & procedure



The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
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 C63.4/1992 on conducted measurement. The AC power conducted emissions was invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz. (15.207 paragraph)

The EUT configuration please refer to the “Conducted set-up photo.pdf”.

Please see the plot below.

Emission Limit

Freq. (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

*Decreases with the logarithm of the frequency.

8.3 Power Line Conducted Emission test data

(1) Line

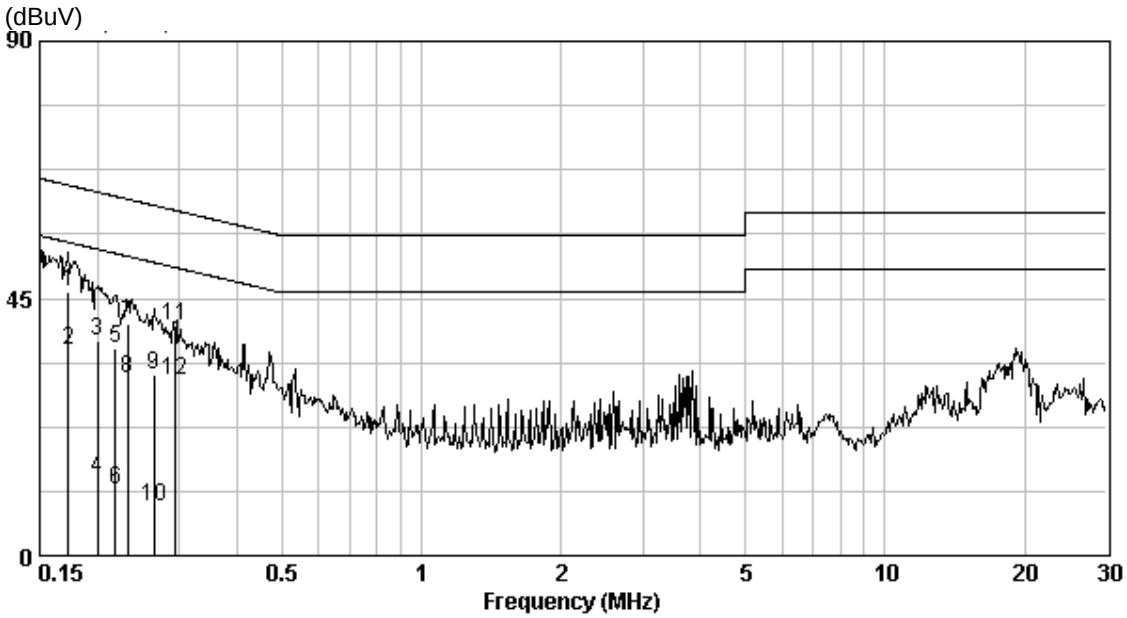
EUT : WMG2600

Test Condition : Normal operation mode

Freq. (MHz)	Correction Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.173	0	46.2	64.81	-18.61	QP
0.173	0	36.02	54.81	-18.79	AVERAGE
0.199	0	37.62	63.62	-26	QP
0.199	0	13.38	53.62	-40.24	AVERAGE
0.218	0	36.29	62.89	-26.6	QP
0.218	0	11.69	52.89	-41.2	AVERAGE
0.233	0	40.59	62.36	-21.77	QP
0.233	0	30.98	52.36	-21.38	AVERAGE
0.264	0	31.76	61.3	-29.54	QP
0.264	0	8.42	51.3	-42.88	AVERAGE
0.296	0	40.24	60.37	-20.13	QP
0.296	0	30.66	50.37	-19.71	AVERAGE

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)



(2) Neutral

EUT : WMG2600

Test Condition : Normal operation mode

Freq. (MHz)	Correction Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.176	0	48.3	64.68	-16.38	QP
0.176	0	38.22	54.68	-16.46	AVERAGE
0.234	0	41.62	62.29	-20.67	QP
0.234	0	30.59	52.29	-21.7	AVERAGE
0.295	0	35.7	60.37	-24.67	QP
0.295	0	30.26	50.37	-20.11	AVERAGE
0.360	0	27.73	58.72	-30.99	QP
0.360	0	16.21	48.72	-32.51	AVERAGE
3.491	0	26.85	56	-29.15	QP
3.491	0	18.98	46	-27.02	AVERAGE
3.903	0	31.35	56	-24.65	QP
3.903	0	23.97	46	-22.03	AVERAGE

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)