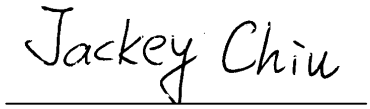
EMC
TEST REPORT

Report No. : EME-050231
Model No. : DWL-G550
Issued Date : Mar. 31, 2005

Applicant : D-Link Corporation Inc.
No. 8, Li-shing Road VII, Science-based Industrial Park, Hsinchu, Taiwan

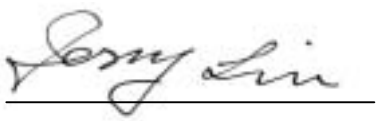
Test By : Intertek Testing Services Taiwan Ltd.
No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li, Shiang-Shan District, Hsinchu City, Taiwan

Project Engineer



Jackey Chiu

Reviewed By



Jerry Liu

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Summary of Tests

802.11b/g Wireless LAN PCI Adapter-Model: DWL-G550
FCC ID: KA2DWLG550A1

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	: D-Link Corporation Inc.
Product	: 802.11b/g Wireless LAN PCI Adapter
Model No.	: DWL-G550
FCC ID.	: KA2DWLG550A1
Frequency Range	: 2412MHz ~ 2462MHz
Channel Number	: 11channels
Frequency of Each Channel	: 2412MHz, 2417MHz, 2422MHz, 2427MHz, 2432MHz, 2437MHz, 2442MHz, 2447MHz, 2452MHz, 2457MHz, 2462MHz
Type of Modulation	: DSSS, OFDM
Rated Power	: 5Vdc from PC
Power Cord	: N/A
Sample Received	: Mar. 16, 2005
Test Date(s)	: Mar. 18, 2005 ~ Mar. 24, 2005

A FCC DoC report has been generated for the client.

1.2 Additional information about the EUT

The EUT DWL-G550 Wireless GPCIAdapter is an 802.11b/ 802.11g(2.4GHz) wireless adapter that supports high-speed wireless networking.

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 : 1dBi max
Antenna Type : Dipole antenna
Connector Type : Reverse

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
PC	HP	D8897	CN14835145	FCC DoC Approved
Key Board	HP	SK-2501K	M981289055	FCC DoC Approved
Monitor	BenQ	FP557	99L63726A132600064TAA6A1	FCC DoC Approved
Mouse	HP	850693-0001	LAZ82706831	FCC DoC Approved
Printer	HP	C2642A	TH86K1N2ZB	FCC DoC Approved
Modem	Dynalink	V1456VQE	00V230A00051494	FCC DoC Approved
Access Point	SMC	WG 4005-172 (A3)	C-G 3030232-1-1-3*1000	FCC DoC Approved

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 C63.4/2003.

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

Plug the EUT into Desktop PC, then turn on the PC power and run the test program “art.exe” under windows OS, which provide by manufacturer.

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

2.3 Test equipment

Equipment	Brand	Frequency range	Model No.	Intertek ID No.	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	EC303	04/13/2005
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	EC317	07/14/2005
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	EC353	07/13/2005
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	EC365	10/18/2005
Horn Antenna	EMCO	1GHz~18GHz	3115	EC338	08/16/2005
Horn Antenna	SCHWARZBECK	14GHz~40GHz	BBHA 9170	EC351	07/08/2005
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	EC368	05/20/2005
Pre-Amplifier	MITEQ	100MHz~26.5GHz	919981	EC373	4/13/2005
Pre-Amplifier	MITEQ	26GHz~40GHz	828825	EC374	1/28/2006
Wideband Peak Power Meter/ Sensor	Anritsu	100MHz~18GHz	ML2497A/ MA2491A	EC396	10/18/2005
Controller	HDGmbH	N/A	HD 100	EP317-1	N/A
Antenna Tower	HDGmbH	N/A	MA 240	EP317-2	N/A
Turn Table	HDGmbH	N/A	DS 420S	EP317-3	N/A
LISN	Rohde & Schwarz	9KHz~30MHz	ESH3-Z5	EC344	01/14/2006

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

3. Minimum 6dB Bandwidth test

3.1 Operating environment

Temperature:	20	℃
Relative Humidity:	54	%
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 300kHz, 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 Mode: 802.11b(DSSS Modulation) normal mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
1 (lowest)	2412	12.06	＞500kHz
6 (middle)	2437	12.02	＞500kHz
11 (highest)	2462	12.18	＞500kHz

Test Mode: 802.11g (OFDM Modulation) normal mode

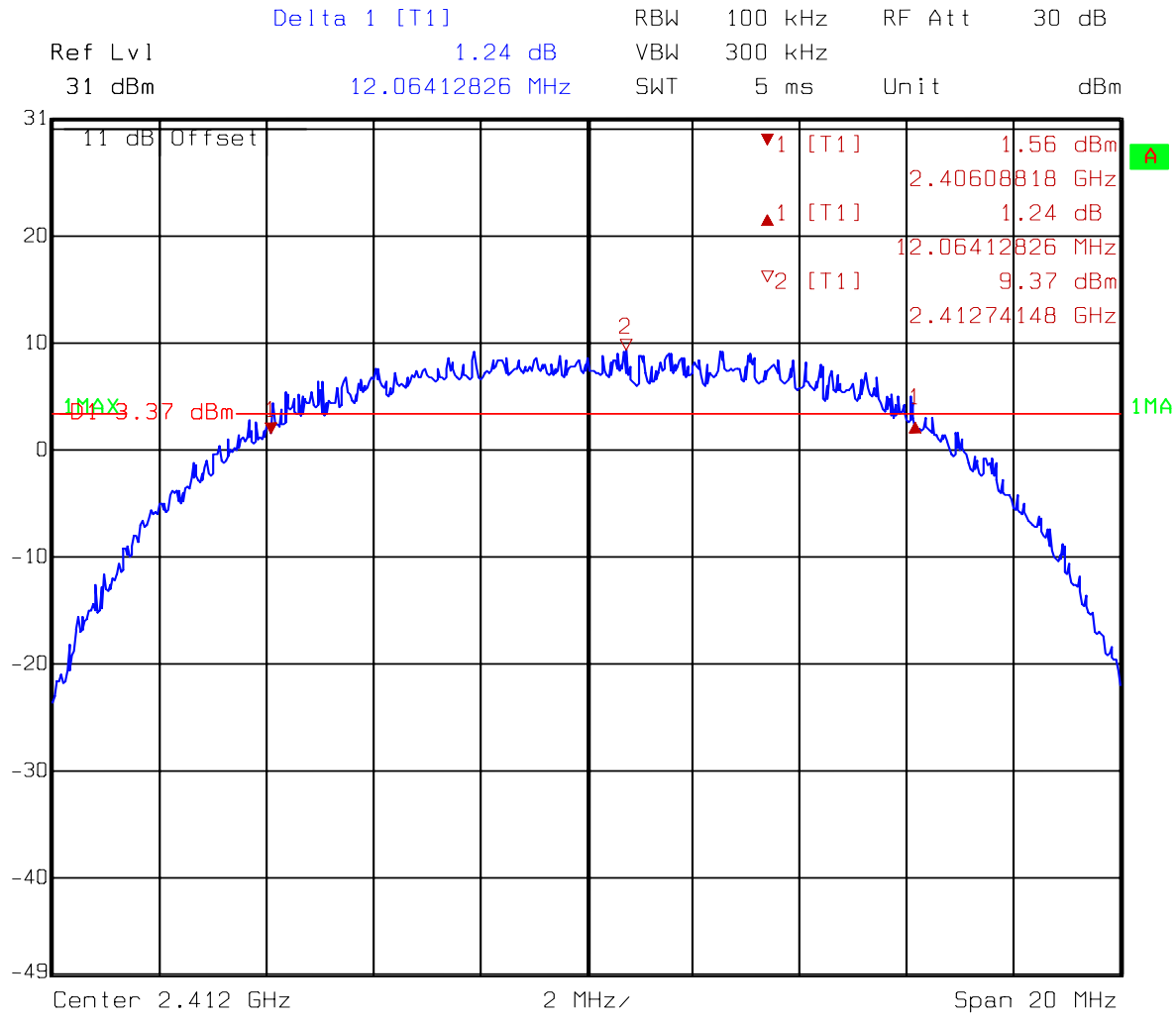
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
1 (lowest)	2412	16.55	＞500kHz
6 (middle)	2437	16.63	＞500kHz
11 (highest)	2462	16.59	＞500kHz

Test Mode: 802.11g(OFDM Modulation) turbo mode

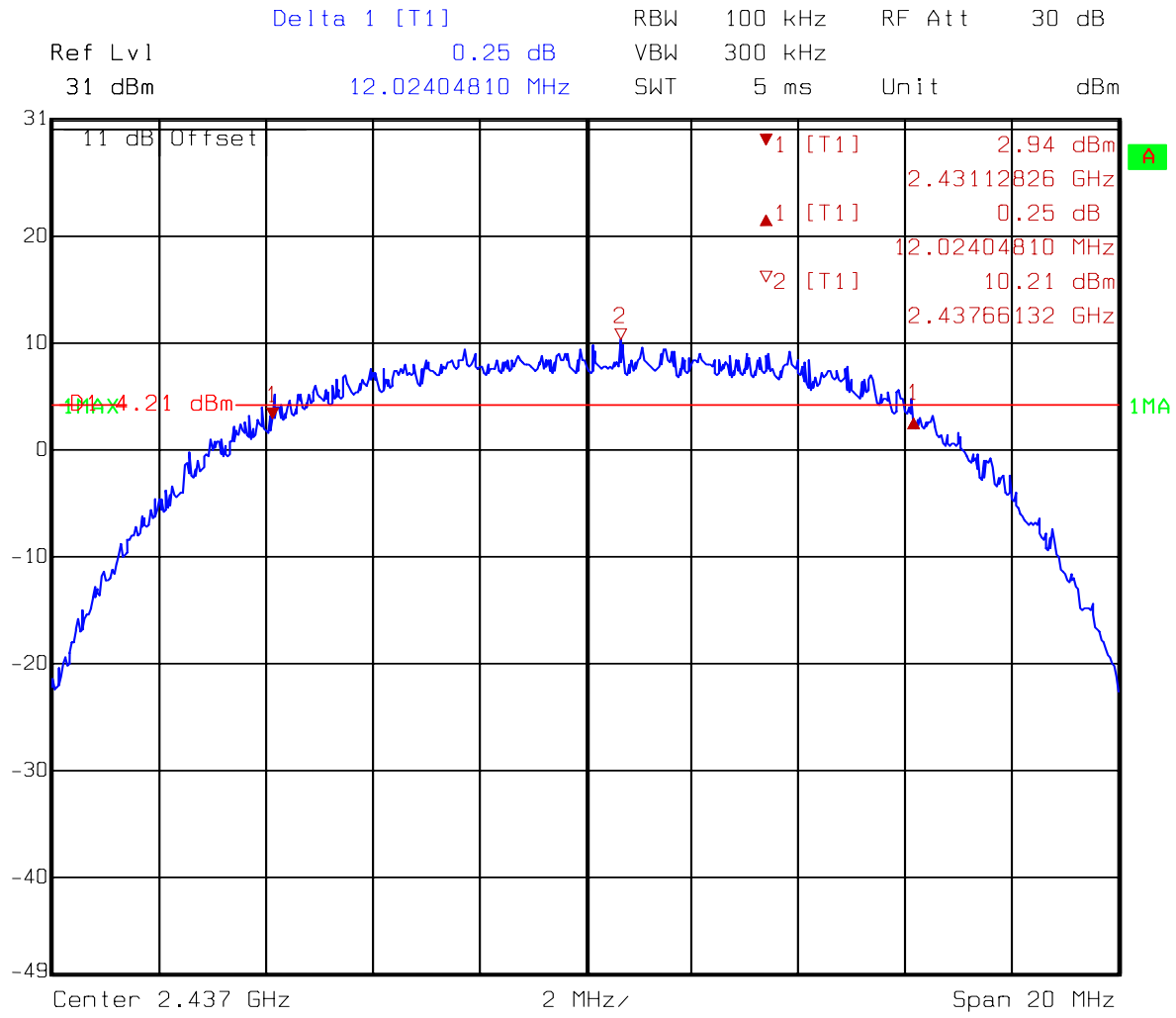
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
6 (middle)	2437	32.95	＞500kHz

Please see the plot below.

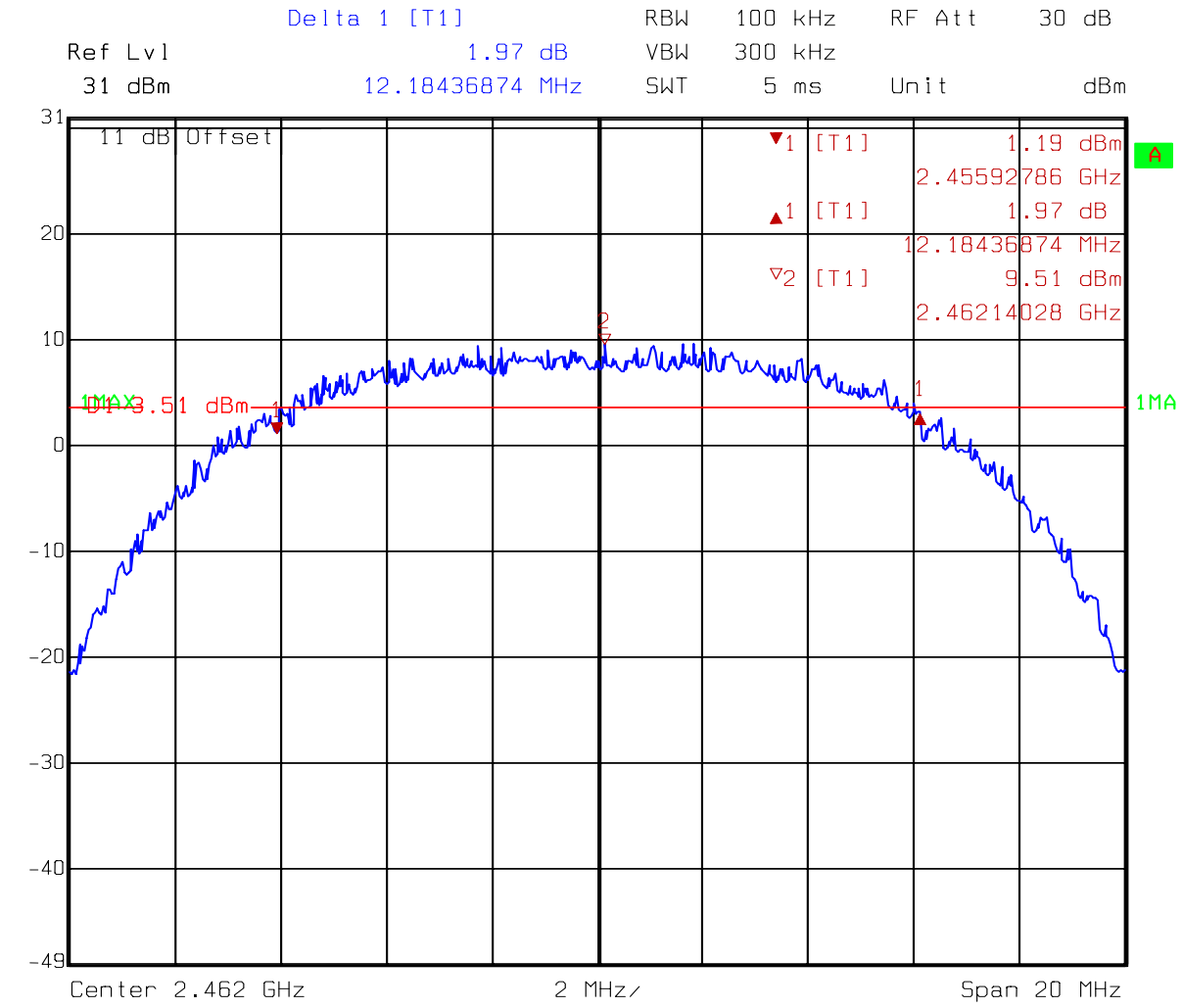
Test Mode: 802.11b(DSSS Modulation) normal mode



Comment A: 6dB bandwidth at ch1 (EC365) 802.11b
Date: 24.MAR.2005 11:36:03

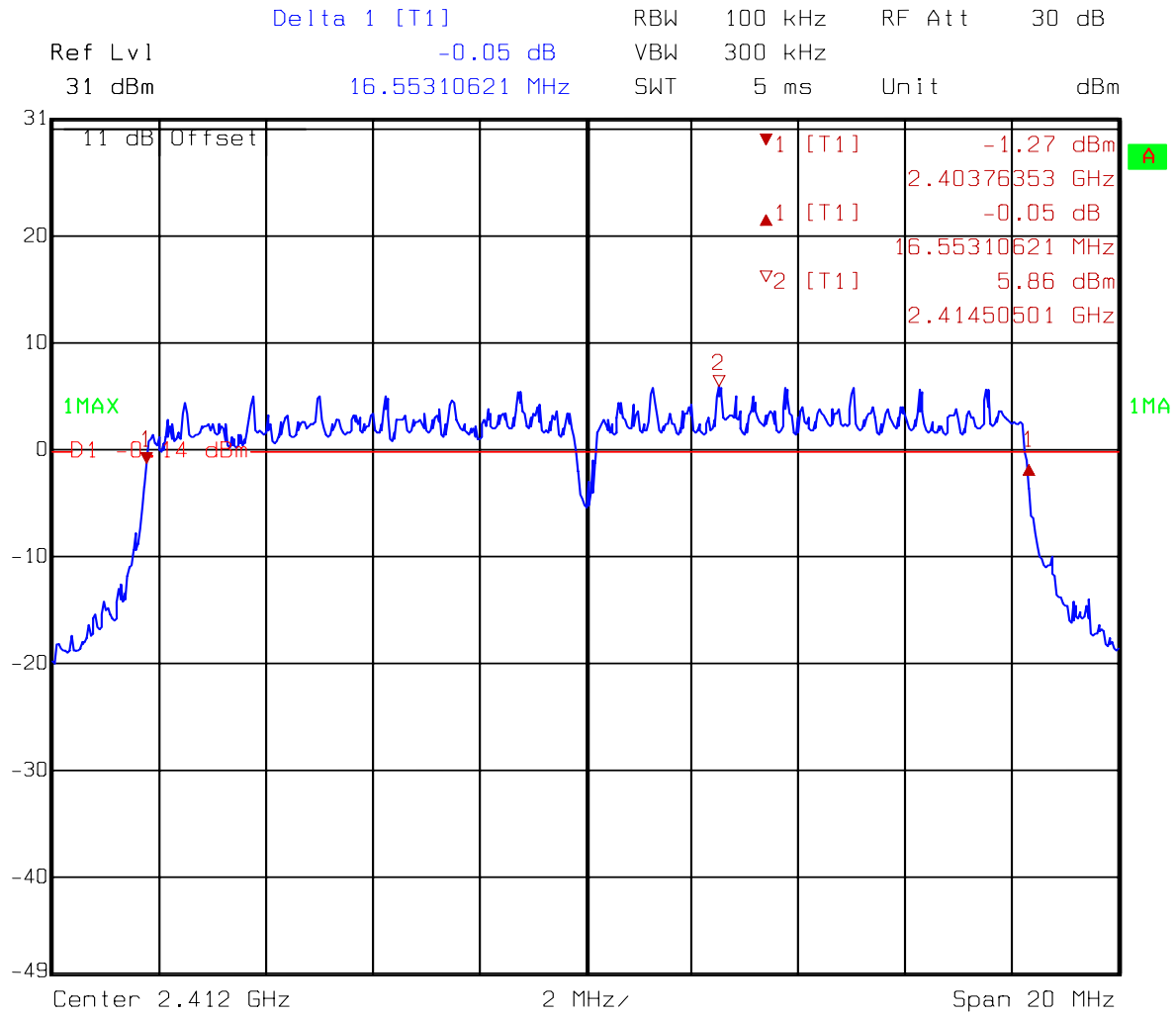


Comment A: 6dB bandwidth at ch6 (EC365) 802.11b
Date: 24.MAR.2005 11:34:14



Comment A: 6dB bandwidth at ch11 (EC365) 802.11b
Date: 24.MAR.2005 11:32:38

Test Mode: 802.11g(OFDM Modulation) normal mode



Comment A: 6dB bandwidth at ch1 (EC365) 802.11g
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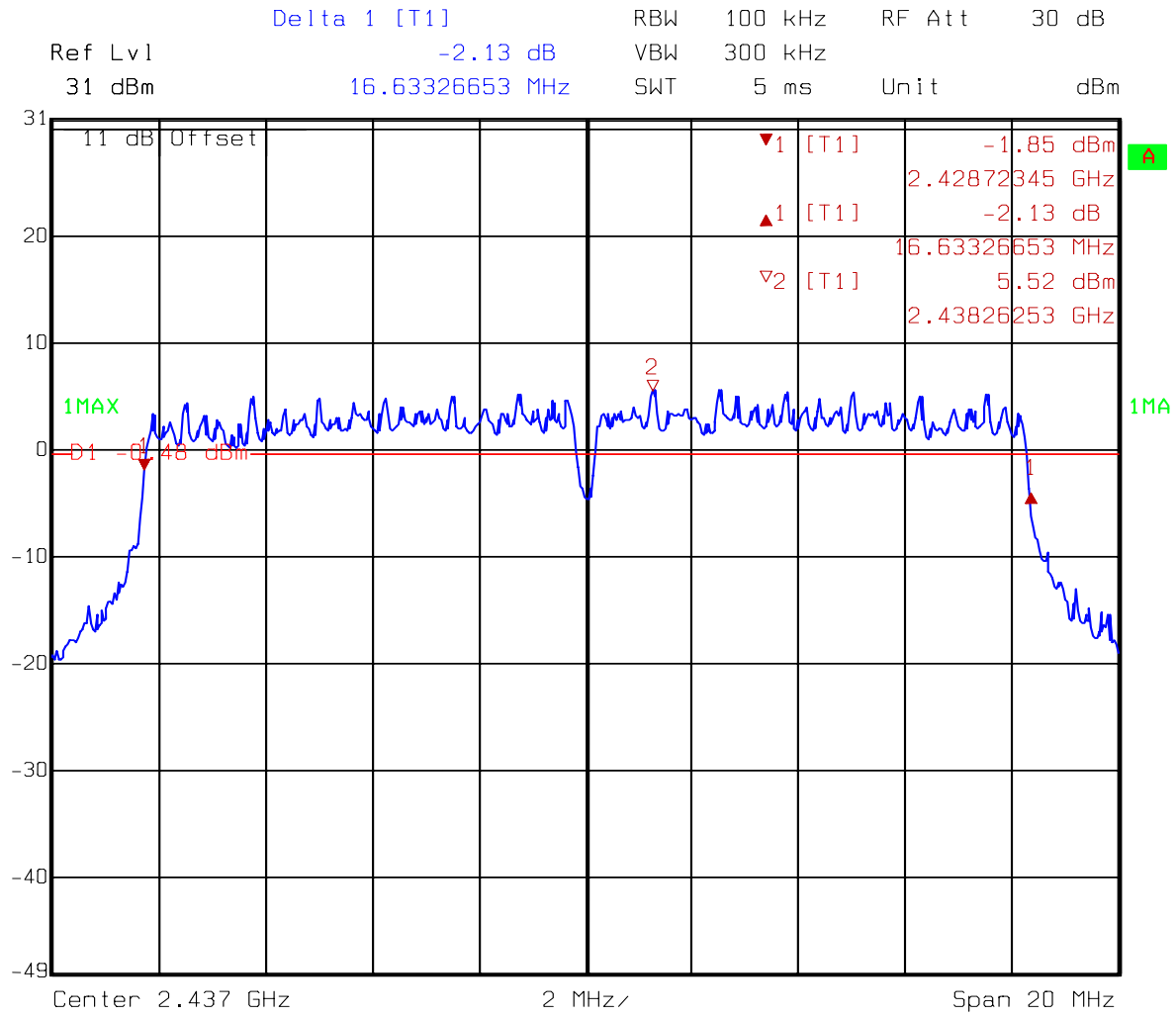

Comment A: 6dB bandwidth at ch6 (EC365) 802.11g
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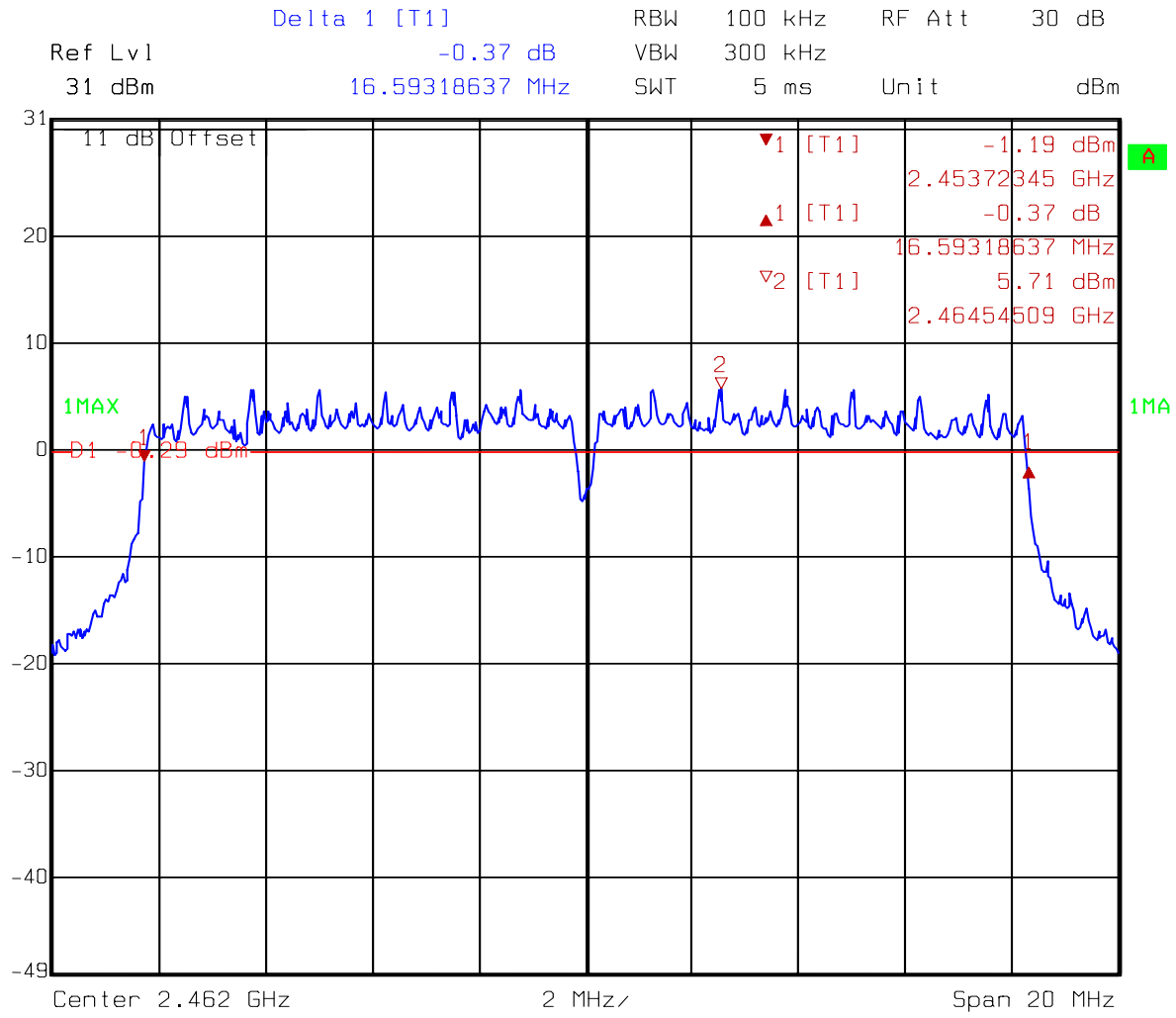

Comment A: 6dB bandwidth at ch11 (EC365) 802.11g
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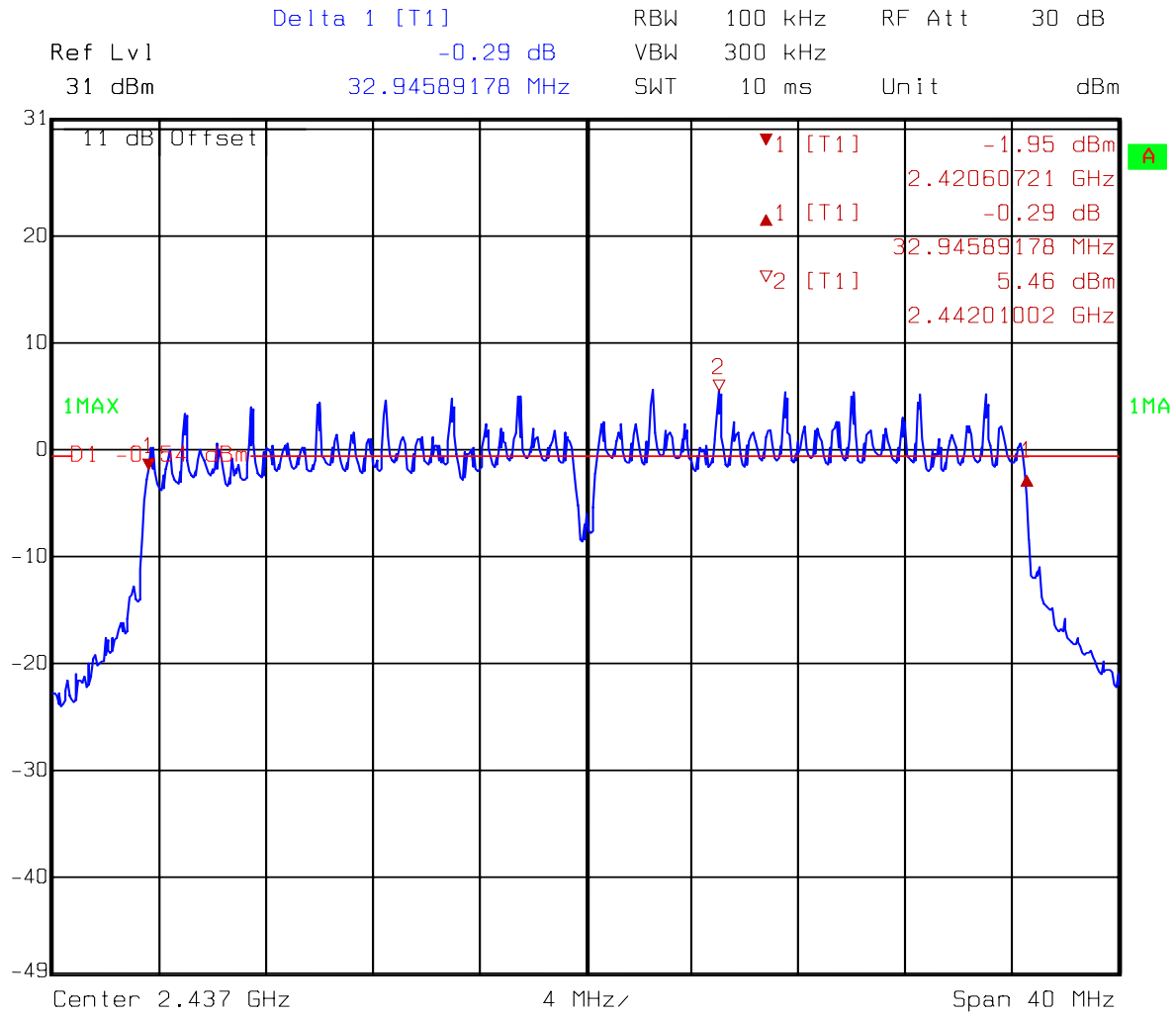
Test Mode: 802.11g(OFDM Modulation) turbo mode



Comment A: 6dB bandwidth at ch6 (EC365) 802.11g Turbo mode
Date: 24.MAR.2005 11:38:04

4. Maximum Output Power test

4.1 Operating environment

Temperature: 22 ℃
Relative Humidity: 56 %
Atmospheric Pressure: 1023 hPa

4.2 Test setup & procedure

The power output per FCC §15.247(b) was measured on the EUT using a 50 ohm SMA cable connected to peak power meter via power sensor. Power was read directly and cable loss correction (1.0 dB) 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).

4.3 Measured data of Maximum Output Power test results

Test Mode: 802.11b(DSSS Modulation) normal mode

Channel	Freq. (MHz)	C.L. (dB)	Reading (dBm)	Conducted Peak Output Power		Limit (dBm)
				(dBm)	(mW)	
1 (lowest)	2412	1.0	21.38	22.38	172.98	30
6 (middle)	2437	1.0	21.36	22.36	172.19	30
11 (highest)	2462	1.0	21.55	22.55	179.89	30

Remark:
Conducted Peak Output Power = Reading + C.L.

Test Mode: 802.11g(OFDM Modulation) normal mode

Channel	Freq. (MHz)	C.L. (dB)	Reading (dBm)	Conducted Peak Output Power		Limit (dBm)
				(dBm)	(mW)	
1 (lowest)	2412	1.0	23.60	24.60	288.40	30
6 (middle)	2437	1.0	23.77	24.77	299.92	30
11 (highest)	2462	1.0	23.75	24.75	298.54	30

Remark:
Conducted Peak Output Power = Reading + C.L.

Test Mode: 802.11g(OFDM Modulation) turbo mode

Channel	Freq. (MHz)	C.L. (dB)	Reading (dBm)	Conducted Peak Output Power		Limit (dBm)
				(dBm)	(mW)	
6 (middle)	2437	1.0	23.37	24.37	273.53	30

Remark:

Conducted Peak Output Power = Reading + C.L.

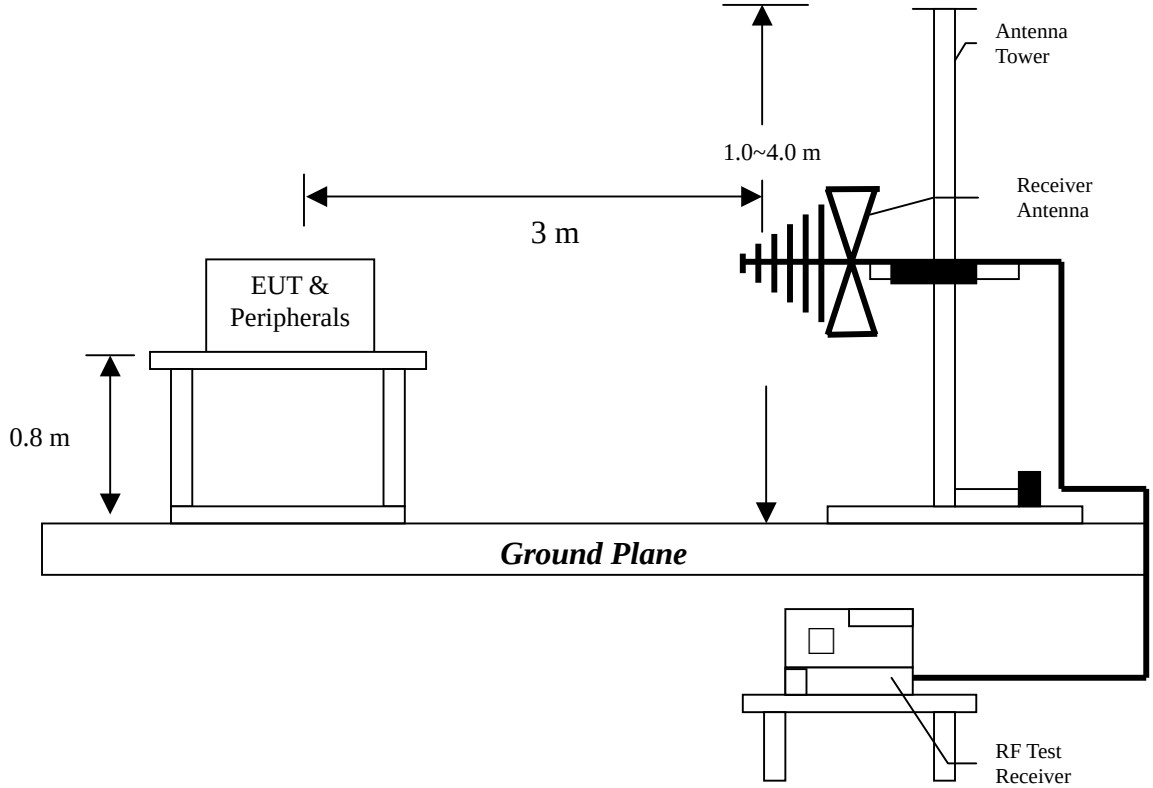
5. Radiated Emission test

5.1 Operating environment

Temperature:	20	℃
Relative Humidity:	54	%
Atmospheric Pressure:	1023	hPa

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.

5.4 Radiated spurious emission test data

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

The test was performed on EUT under 802.11b and 802.11g normal operating modes. The worst case occurred at 802.11g normal operating mode.

EUT : DWL-G550
Worst Case : 802.11g normal operating mode

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 (m)	Turn Table angle (degree)
780.780	QP	V	23.61	15.40	39.01	46.00	-6.99	1.05	252
813.760	QP	V	24.20	15.62	39.82	46.00	-6.18	1.00	188
815.700	QP	V	24.20	15.63	39.83	46.00	-6.17	1.06	265
868.080	QP	V	24.42	15.41	39.83	46.00	-6.17	1.08	232
895.240	QP	V	24.66	15.72	40.38	46.00	-5.62	1.00	114
930.160	QP	V	25.26	14.72	39.98	46.00	-6.02	1.09	18
725.620	QP	H	22.65	14.98	37.63	46.00	-8.37	1.26	222
767.880	QP	H	23.58	15.08	38.66	46.00	-7.34	1.22	258
796.300	QP	H	23.95	15.30	39.25	46.00	-6.75	1.62	147
837.220	QP	H	24.26	15.07	39.33	46.00	-6.67	1.00	165
873.900	QP	H	24.23	16.02	40.25	46.00	-5.75	1.02	10
897.180	QP	H	24.66	15.42	40.08	46.00	-5.92	1.10	112

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

5.4.2 Measurement results: frequency above 1GHz

EUT : DWL-G550
Test Condition : 802.11b Tx at channel 1

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 (m)	Turn Table angle (degree)
3215.000	PK	V	35.54	38.78	51.28	54.52	74	-19.48	1.79	168.00
3215.000	AV	V	35.54	38.78	48.95	52.19	54	-1.81	1.79	168.00
3215.000	PK	H	35.54	38.78	44.84	48.08	74	-25.92	1.07	153.00
3215.000	AV	H	35.54	38.78	40.48	43.72	54	-10.28	1.07	153.00

Remark:
1. Corrected Level = Reading + 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.

Noise floor level is :

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 : DWL-G550
Test Condition : 802.11b Tx at channel 6

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 (m)	Turn Table angle (degree)
3249.200	PK	V	35.54	38.78	48.02	51.26	74	-22.74	1.70	175.00
3249.200	AV	V	35.54	38.78	44.51	47.75	54	-6.25	1.70	175.00

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.

Noise floor level is:

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 : DWL-G550
Test Condition : 802.11b Tx at channel 11

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 (m)	Turn Table angle (degree)
3282.300	PK	V	35.54	38.78	47.01	50.25	74	-23.75	1.71	174.00
3282.300	AV	V	35.54	38.78	43.38	46.62	54	-7.38	1.71	174.00

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.

Noise floor level is:

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 : DWL-G550
Test Condition : 802.11g Tx at channel 1

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 (m)	Turn Table angle (degree)
3196.000	PK	V	35.54	38.78	51.54	54.78	74	-19.22	1.74	172.00
3196.000	AV	V	35.54	38.78	48.99	52.23	54	-1.77	1.74	172.00

Remark:
1. Corrected Level = Reading + 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.

Noise floor level is :

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 : DWL-G550
Test Condition : 802.11g Tx at channel 6

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 (m)	Turn Table angle (degree)
3249.600	PK	V	35.54	38.78	48.24	51.48	74	-22.52	1.70	175.00
3249.600	AV	V	35.54	38.78	45.41	48.65	54	-5.35	1.70	175.00

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.

Noise floor level is:

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 : DWL-G550
Test Condition : 802.11g Tx at channel 11

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 (m)	Turn Table angle (degree)
3282.400	PK	V	35.54	38.78	49.29	52.53	74	-21.47	1.25	191.00
3282.400	AV	V	35.54	38.78	45.97	49.21	54	-4.79	1.25	191.00
3282.400	PK	H	35.54	38.78	42.94	46.18	74	-27.82	1.64	123.00
3282.400	AV	H	35.54	38.78	35.71	38.95	54	-15.05	1.64	123.00

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.

Noise floor level is:

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 : DWL-G550
Test Condition : 802.11g turbo mode Tx at channel 6

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 (m)	Turn Table angle (degree)
3249.300	PK	V	35.54	38.78	47.16	50.4	74	-23.6	1.01	285.00
3249.300	AV	V	35.54	38.78	42.25	45.49	54	-8.51	1.01	285.00
3249.300	PK	H	35.54	38.78	43.07	46.31	74	-27.69	1.01	195.00
3249.300	AV	H	35.54	38.78	36.64	39.88	54	-14.12	1.01	195.00

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.

Noise floor level is:

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:	23	℃
Relative Humidity:	55	%
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 10kHz, a span of 1.5 MHz, and the sweep time set at 500 seconds. Power Density was read directly correction was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel). The Power Spectral Density measured result is in the following table.

6.3 Measured data of Power Spectrum Density test results

Test Mode: 802.11b(DSSS Modulation) normal mode

Channel	Frequency (MHz)	Power spectrum density (dBm)	Limit (dBm)
1 (lowest)	2412	-4.02	8
6 (middle)	2437	-2.79	8
11 (highest)	2462	-4.15	8

Test Mode: 802.11g(OFDM Modulation) normal mode

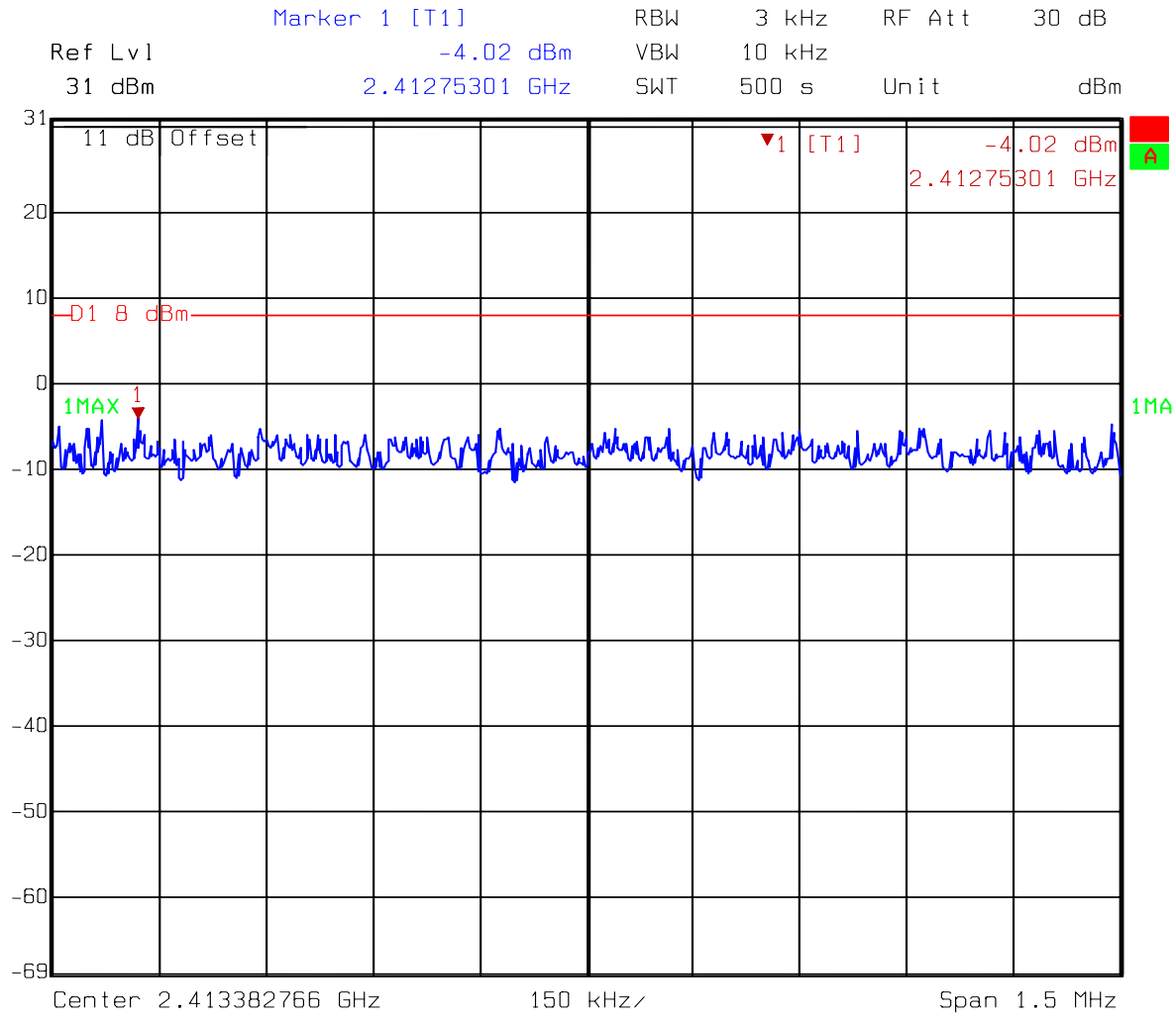
Channel	Frequency (MHz)	Power spectrum density (dBm)	Limit (dBm)
1 (lowest)	2412	-8.31	8
6 (middle)	2437	-8.46	8
11 (highest)	2462	-10.06	8

Test Mode: 802.11g(OFDM Modulation) turbo mode

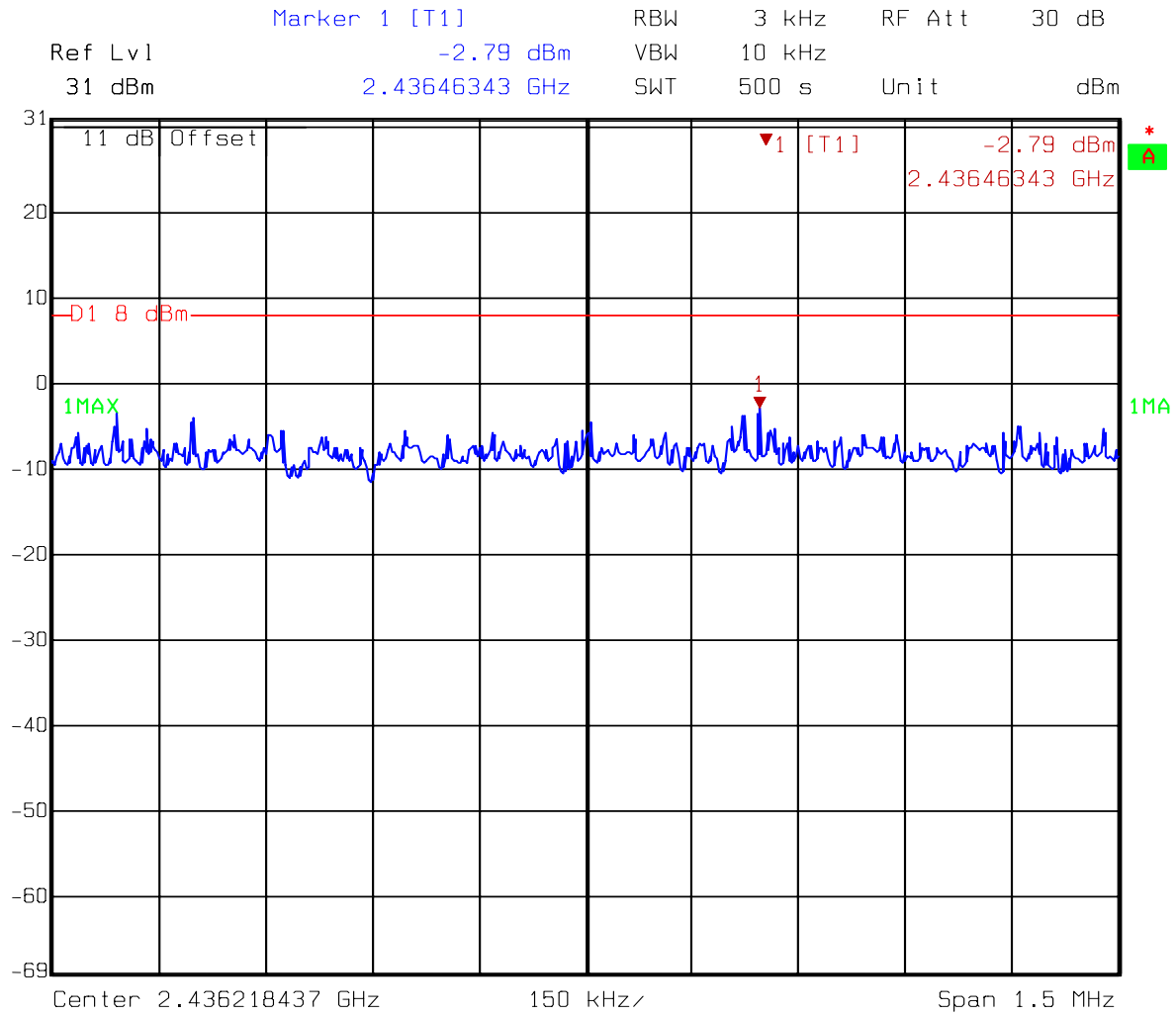
Channel	Frequency (MHz)	Power spectrum density (dBm)	Limit (dBm)
6 (middle)	2437	-8.46	8

Please see the plot below.

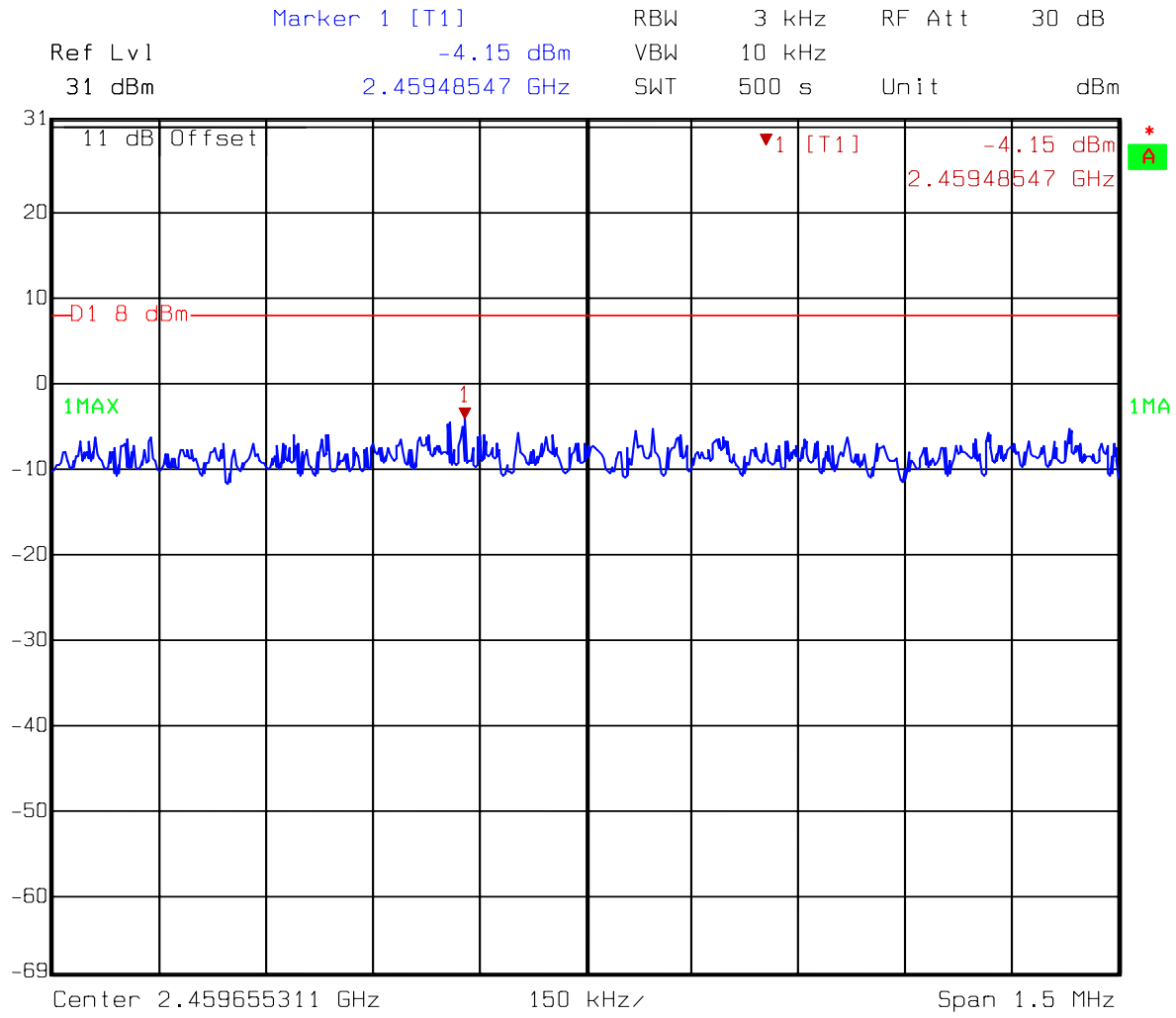
Test Mode: 802.11b(DSSS Modulation) normal mode



Comment A: Power spectrum density at ch1 (EC365) 802.11b
Date: 24.MAR.2005 11:44:21

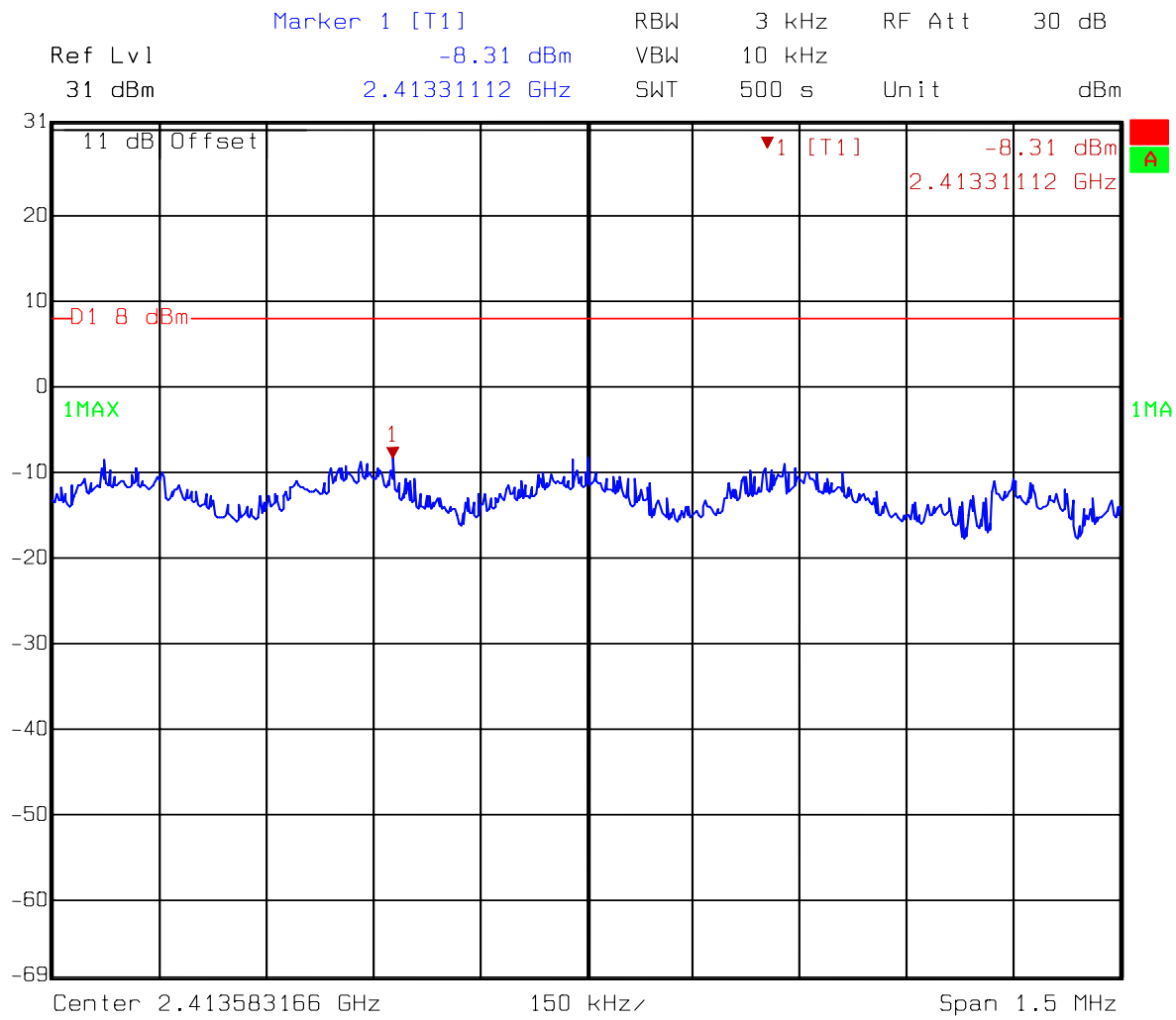


Comment A: Power spectrum density at ch6 (EC365) 802.11b
Date: 24.MAR.2005 11:45:29

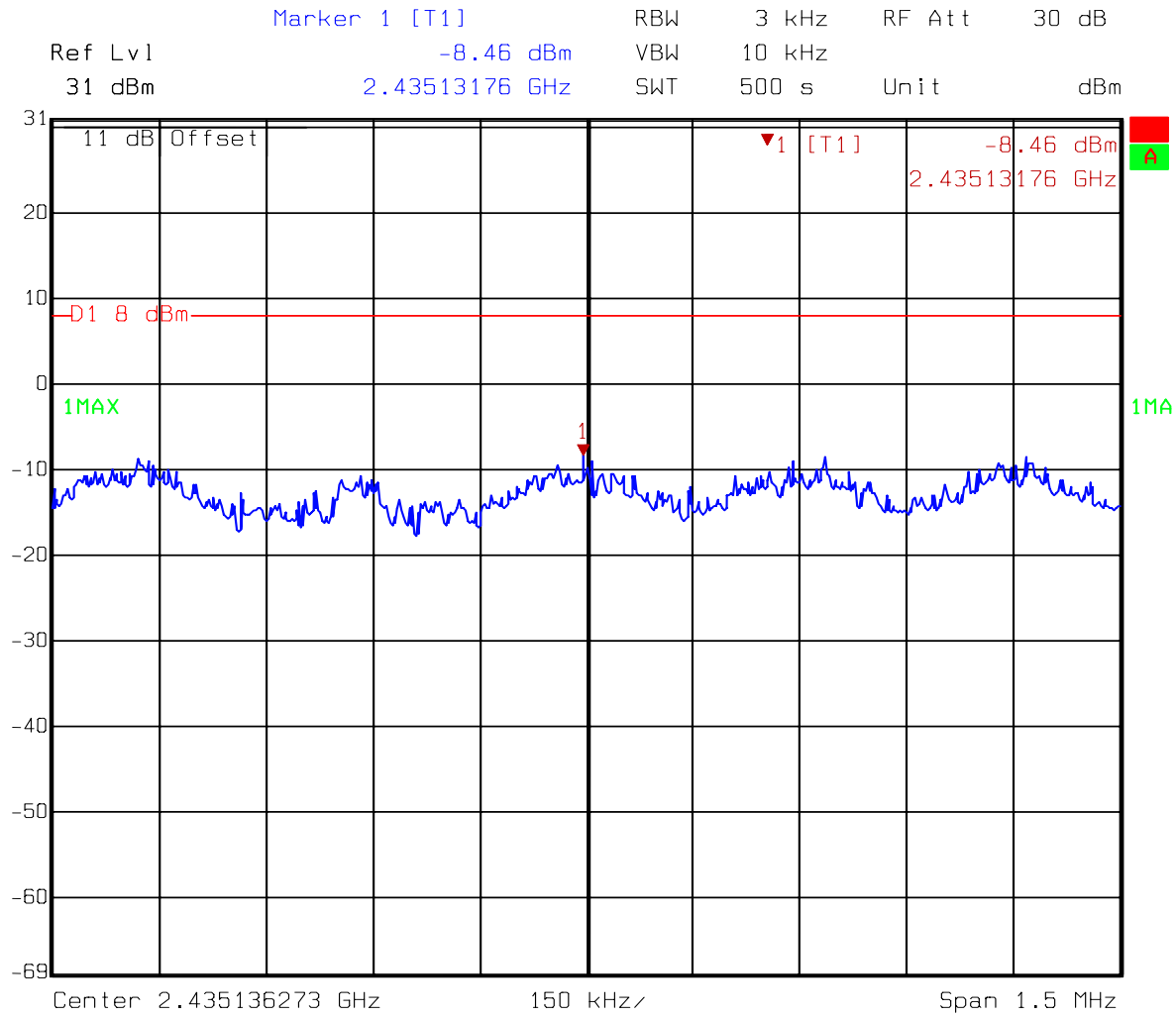


Comment A: Power spectrum density at ch11 (EC365) 802.11b
Date: 24.MAR.2005 11:46:27

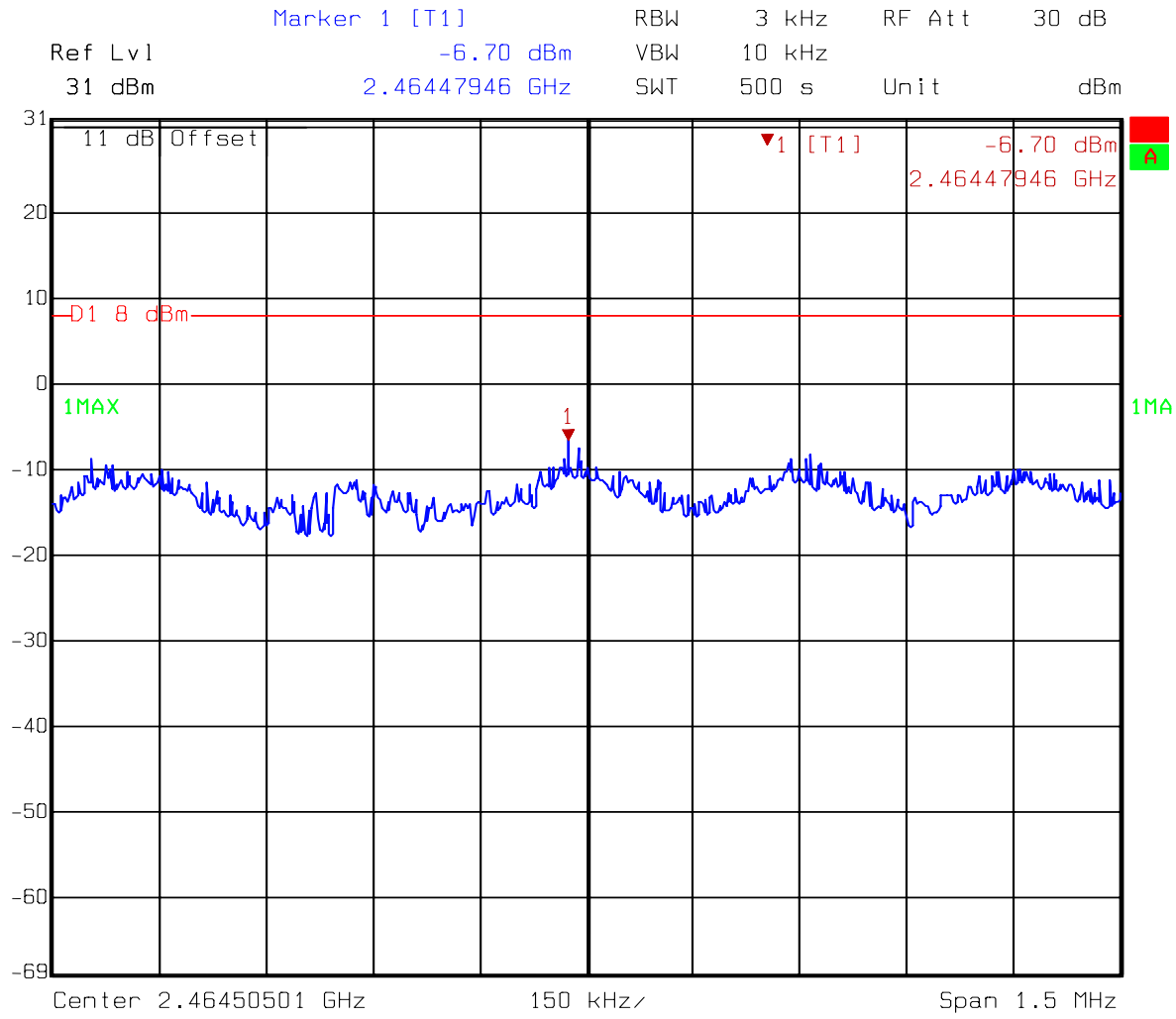
Test Mode: 802.11g(OFDM Modulation) normal mode



Comment A: Power spectrum density at ch1 (EC365) 802.11g
Date: 24.MAR.2005 11:50:49

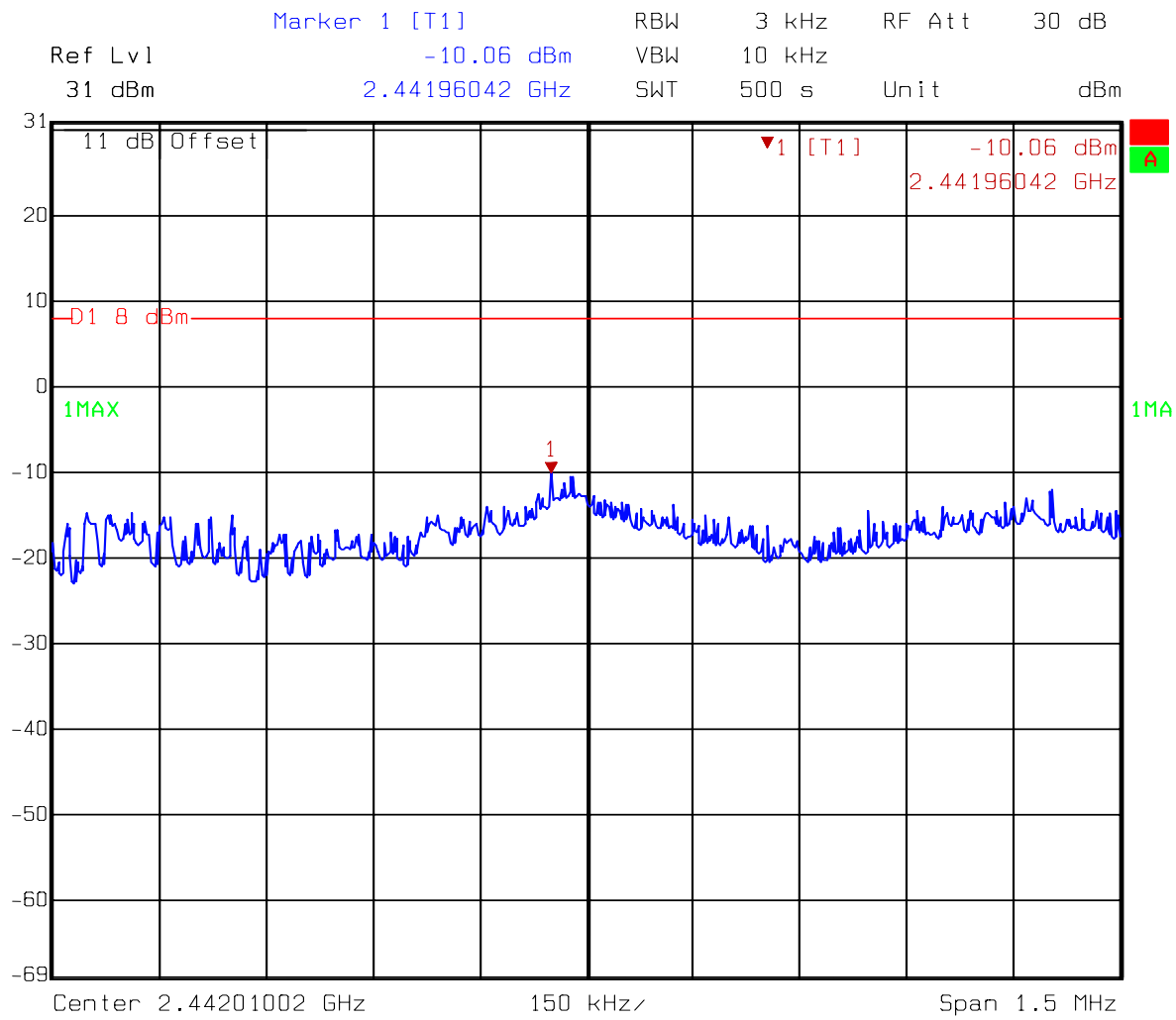


Comment A: Power spectrum density at ch6 (EC365) 802.11g
Date: 24.MAR.2005 11:49:52



Comment A: Power spectrum density at ch11 (EC365) 802.11g
Date: 24.MAR.2005 11:48:52

Test Mode: 802.11g(OFDM Modulation) turbo mode



Comment A: Power spectrum density at ch6 (EC365) 802.11g Turbo mode
Date: 24.MAR.2005 11:51:59

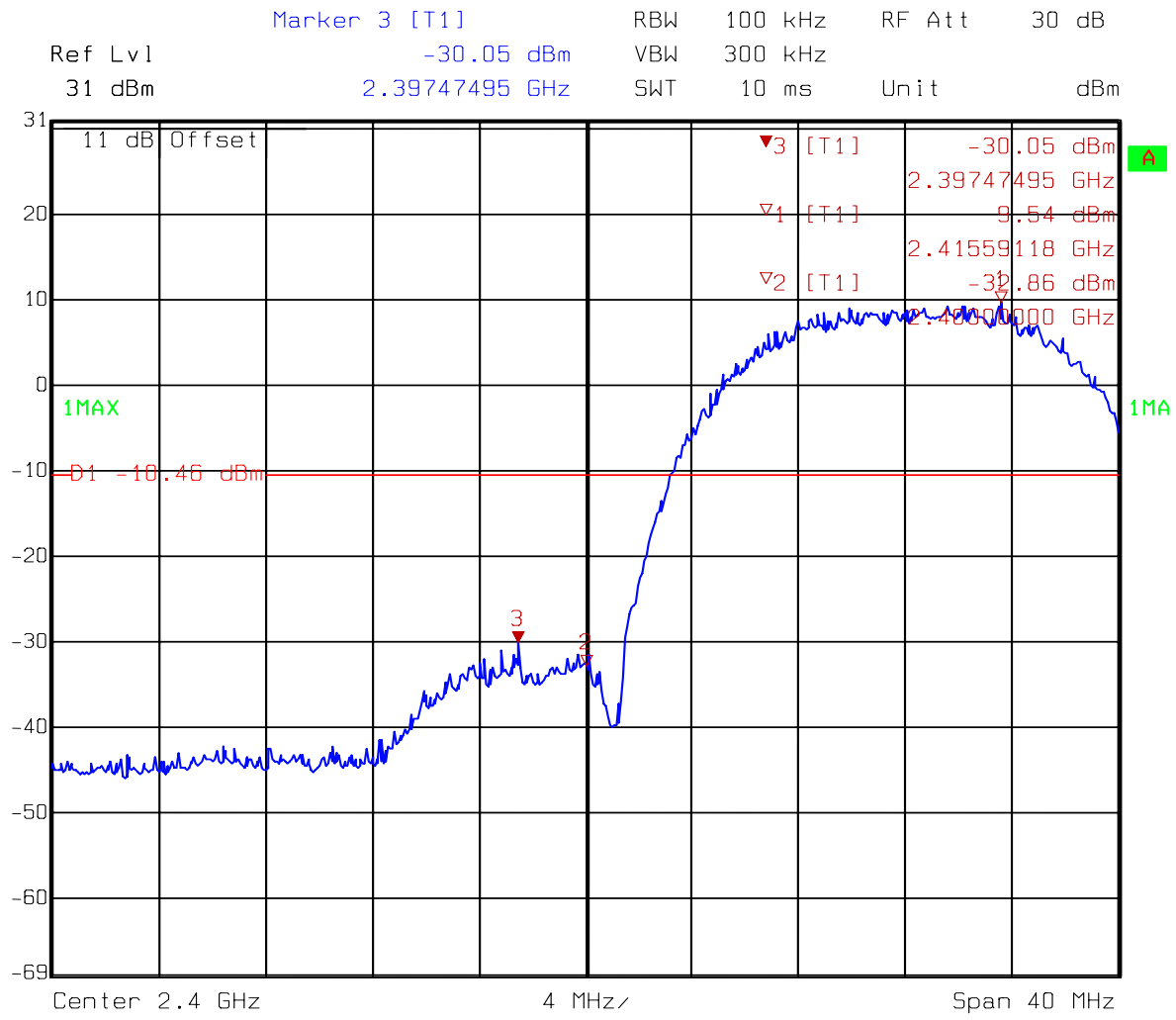
7. Emission on the band edge §FCC 15.247(C)

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.

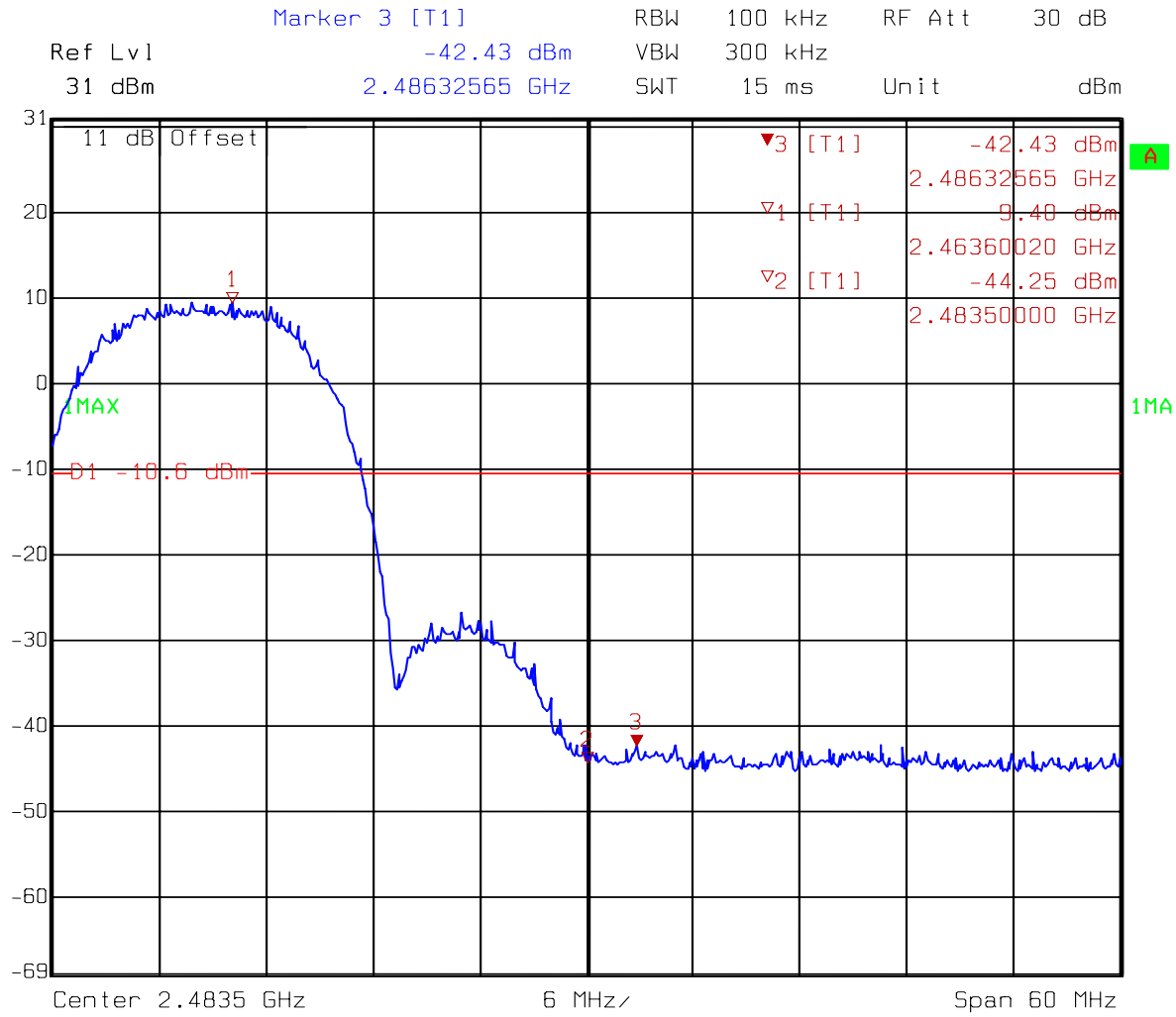
Please see the plot below.

7.1 Band-edge (Conducted method)

Test Mode: 802.11b(DSSS Modulation) normal mode

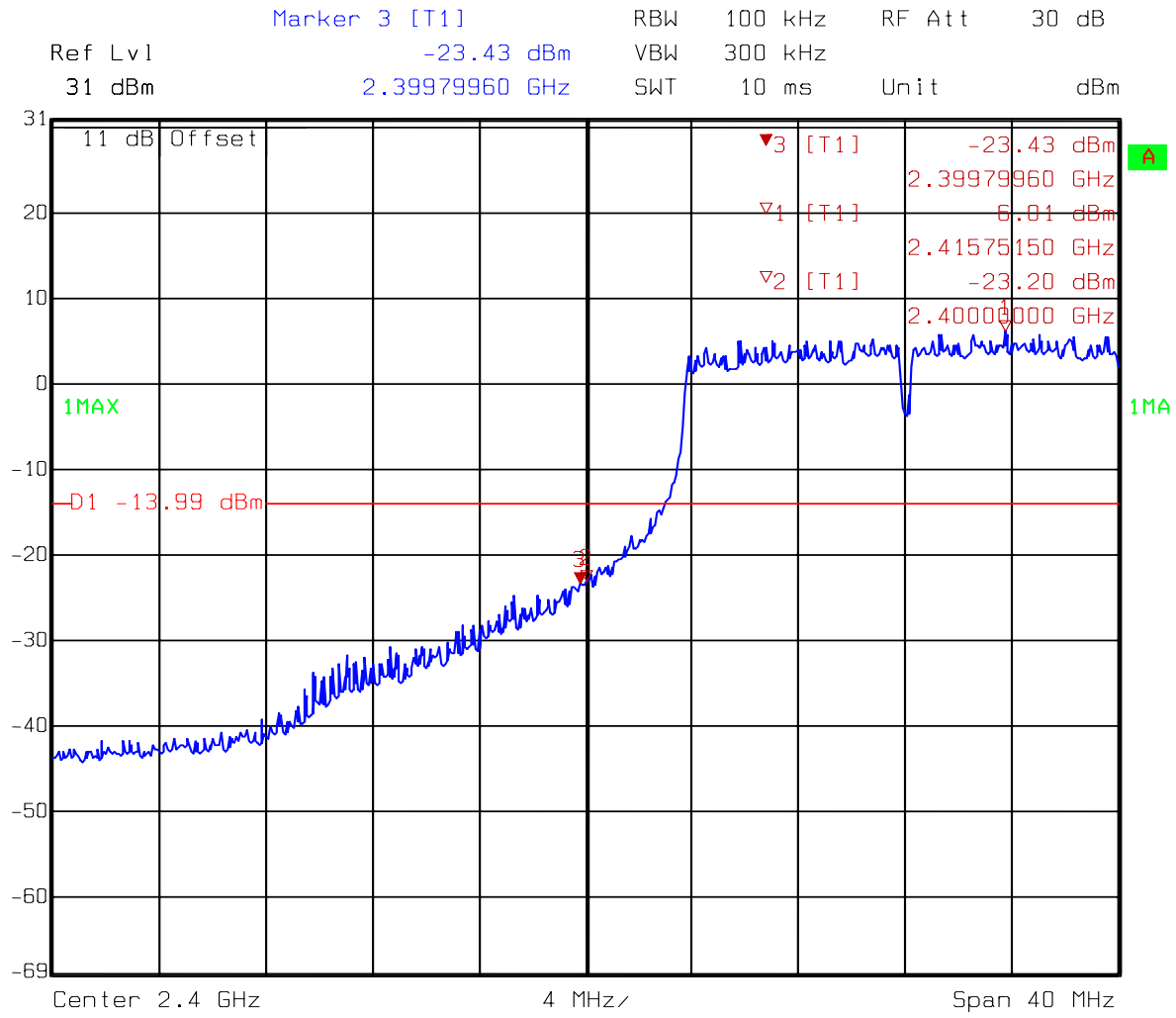


Comment A: Band-edge at ch1 (EC365) 802.11b
Date: 24.MAR.2005 11:57:56

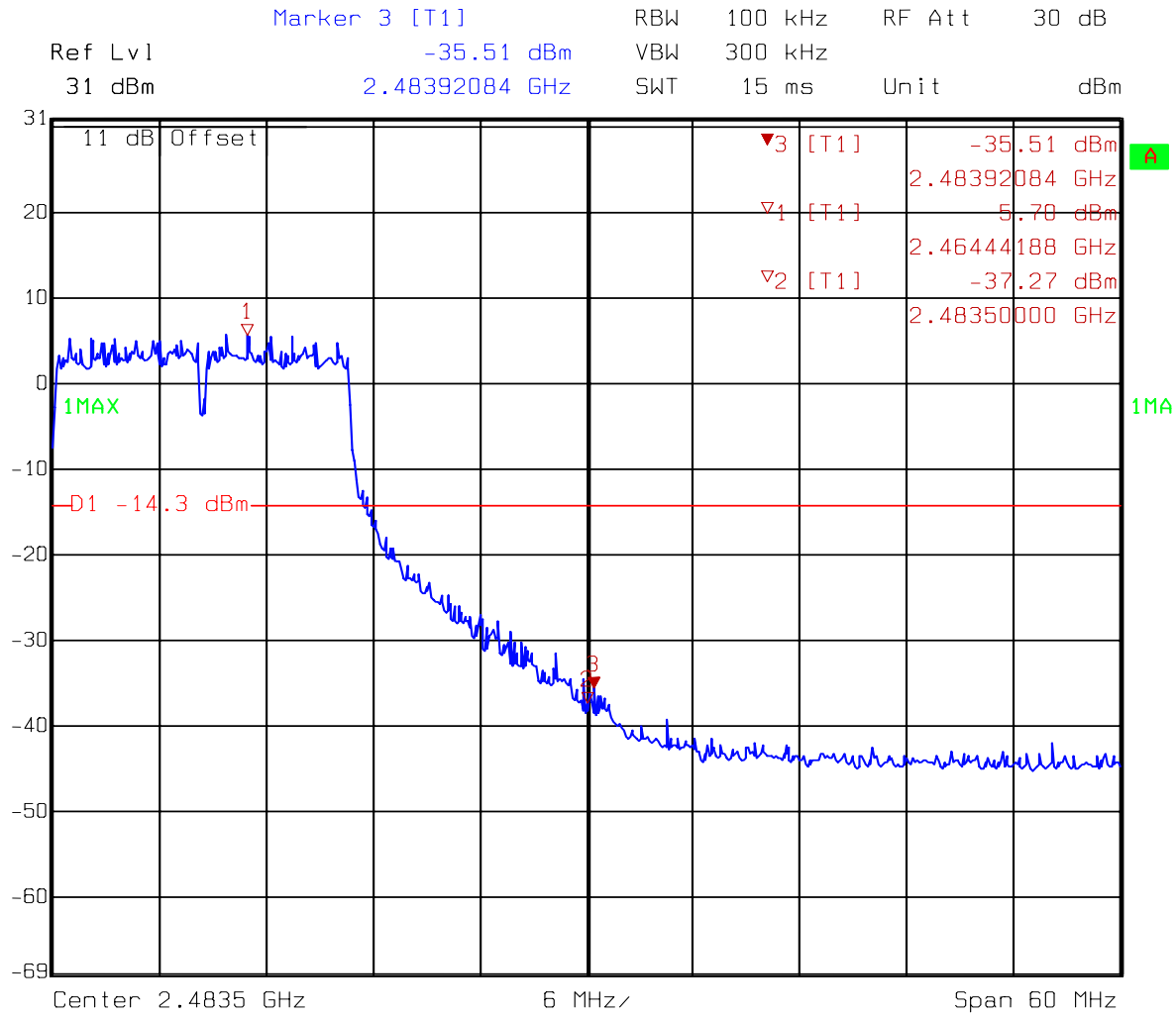


Comment A: Band-edge at ch11 (EC365) 802.11b
Date: 24.MAR.2005 11:59:41

Test Mode: 802.11g(OFDM Modulation) normal mode



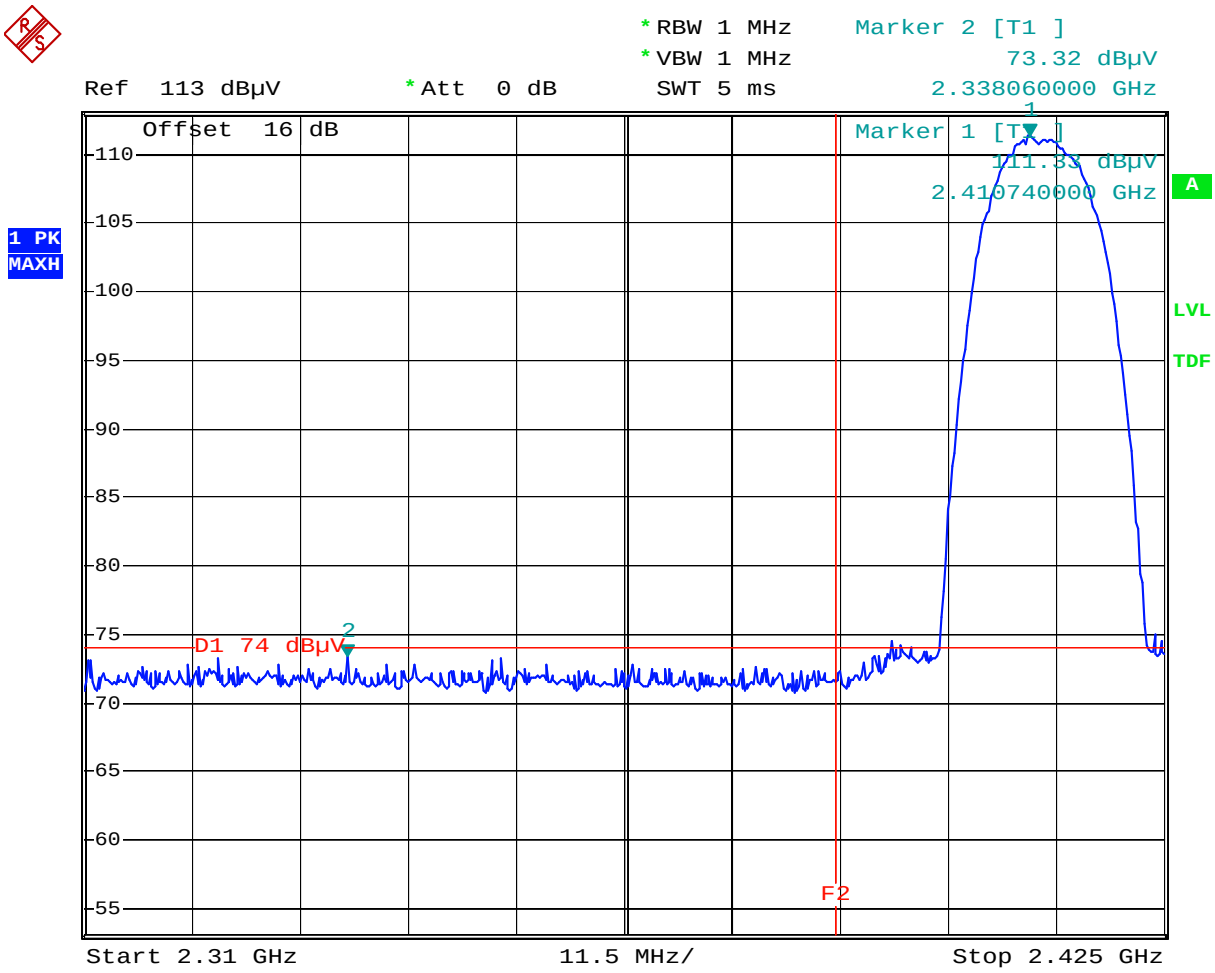
Comment A: Band-edge at ch1 (EC365) 802.11g
Date: 24.MAR.2005 11:56:40



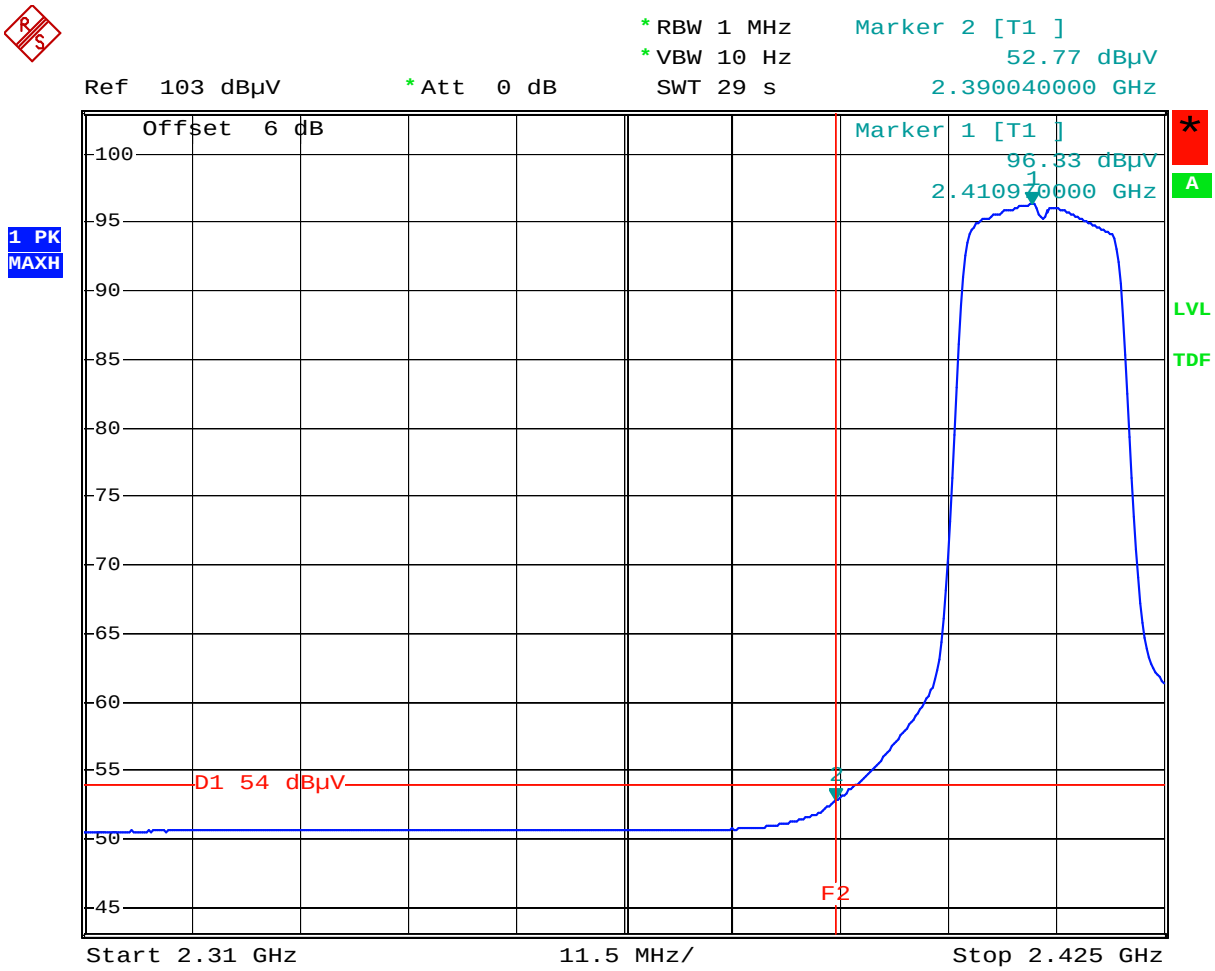
Comment A: Band-edge at ch11 (EC365) 802.11g
Date: 24.MAR.2005 12:00:33

7.2 Band-edge (Radiated method)

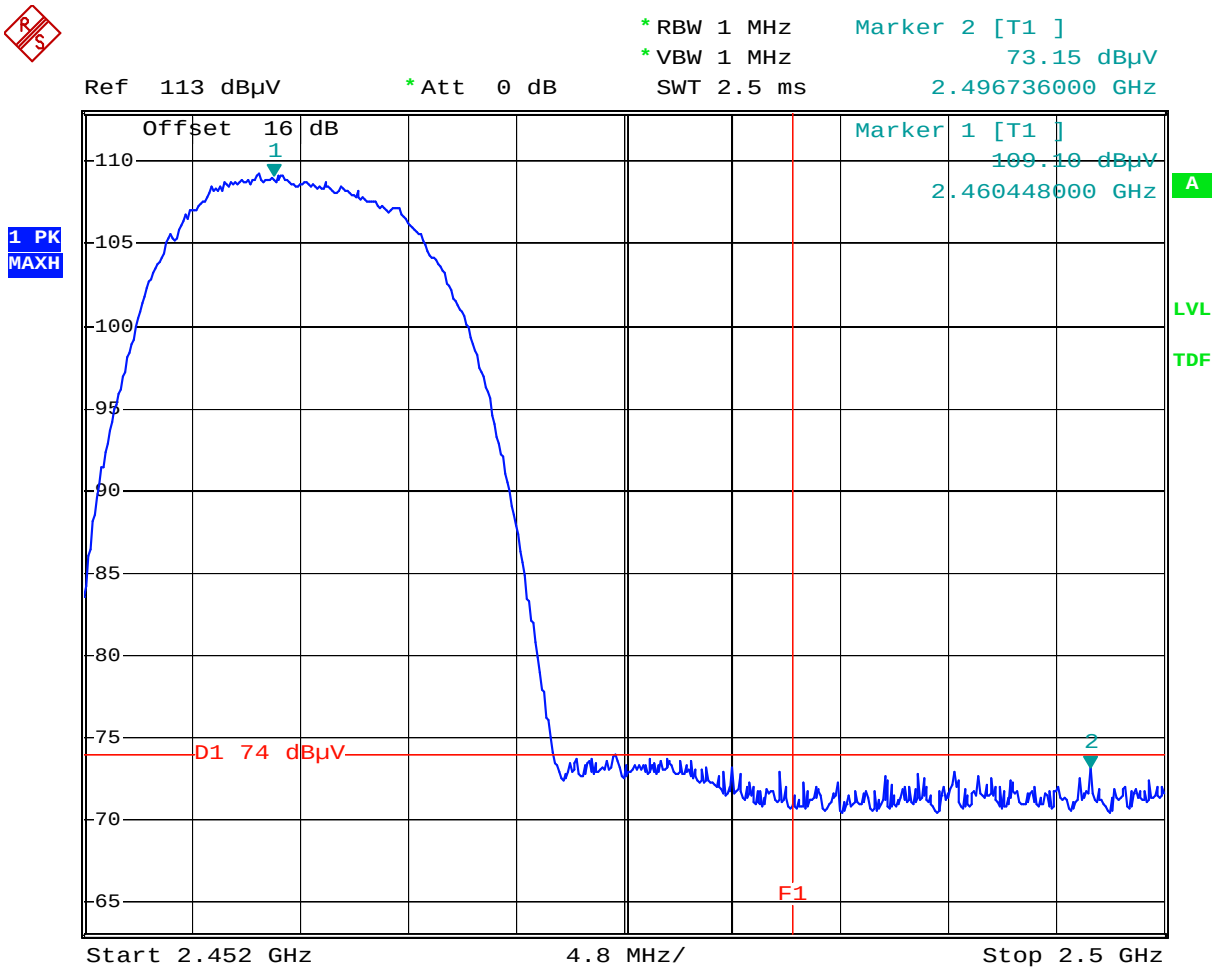
Test Mode: 802.11b(DSSS Modulation) normal mode



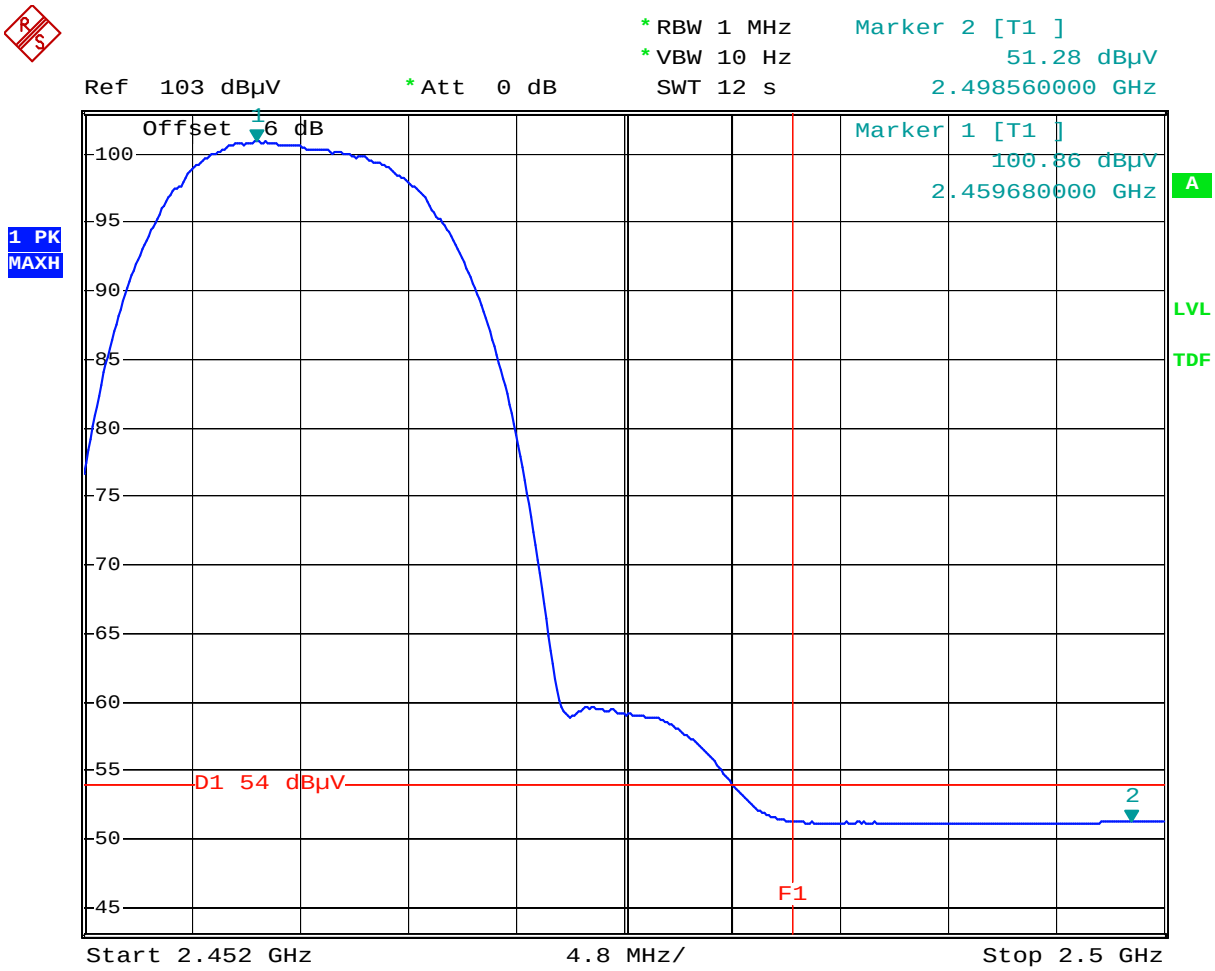
Comment: Band-Edge at ch1 F2=2390MHz
Comment: Peak Detector external ATT=16dB (EC371/EC353) 802.11b
Date: 22.MAR.2005 11:05:57



Comment: Band-Edge at ch1 F2=2390MHz
Comment: Average Detector external ATT=6dB (EC371/EC353) 802.11g
Date: 22.MAR.2005 11:11:23

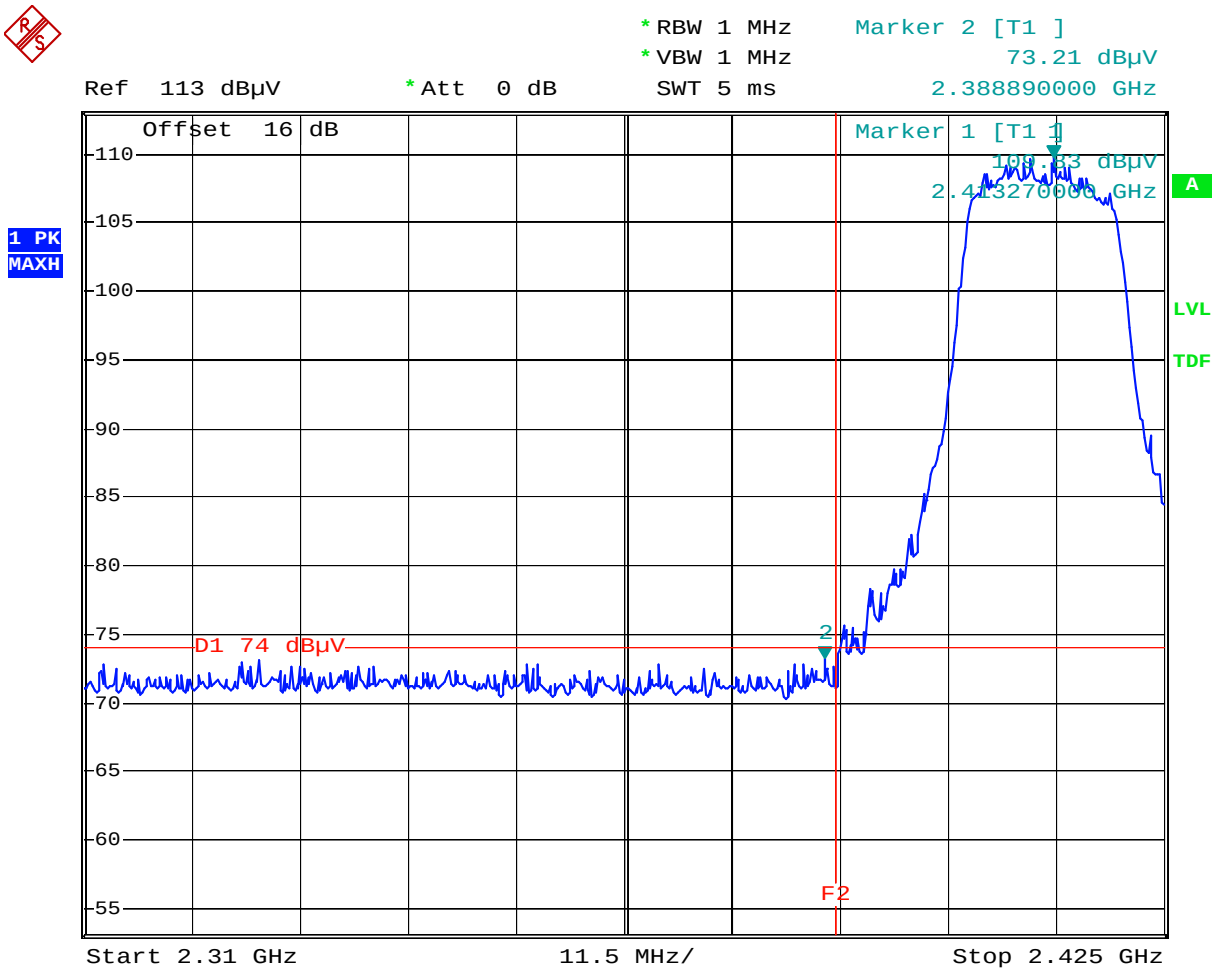


Comment: Band-Edge at ch11 F1=2483.5MHz
Comment: Peak Detector external ATT=16dB (EC371/EC353) 802.11b
Date: 22.MAR.2005 11:26:56

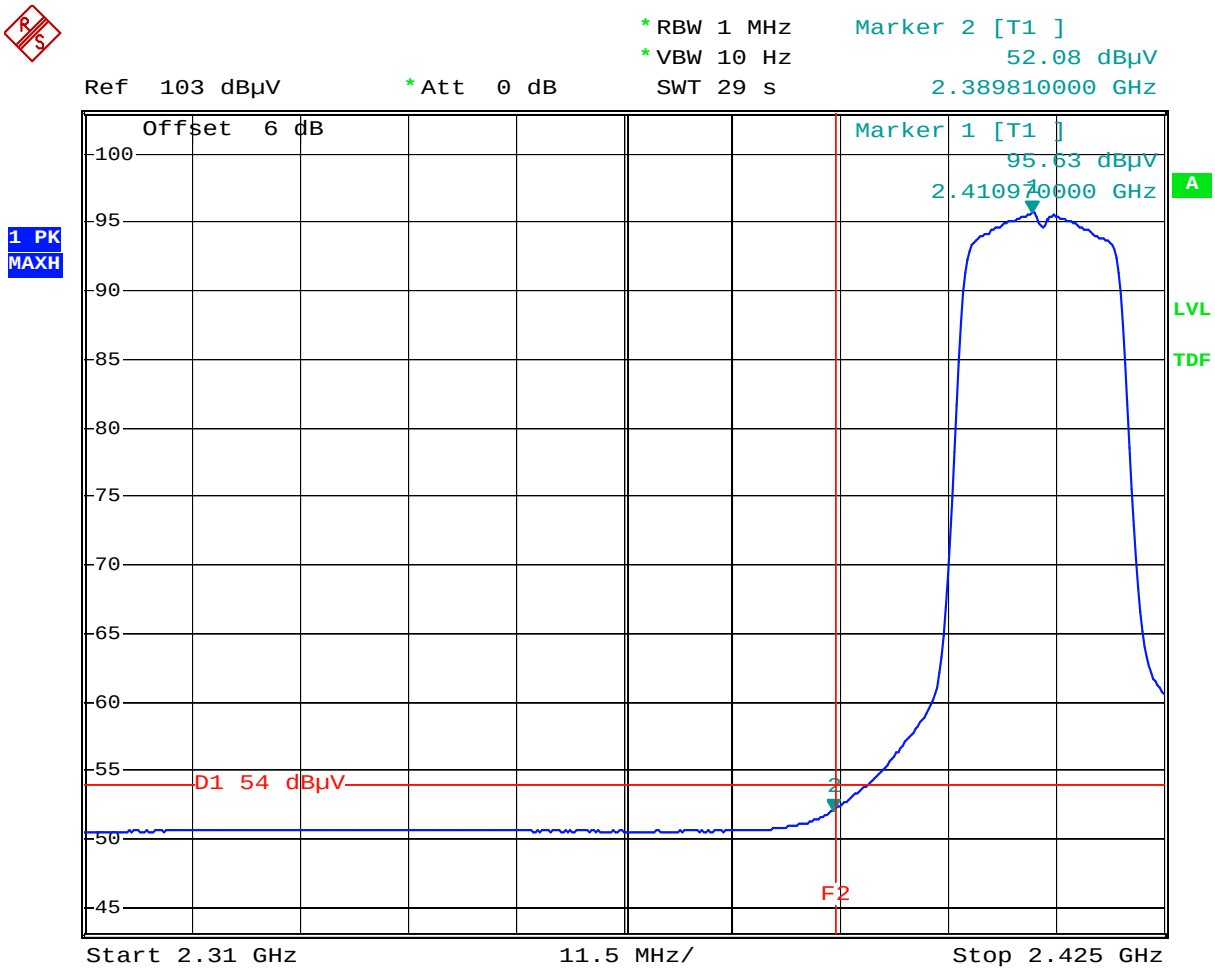


Comment: Band-Edge at ch11 F1=2483.5MHz
Comment: Average Detector external ATT=6dB (EC371/EC353) 802.11b
Date: 22.MAR.2005 11:25:09

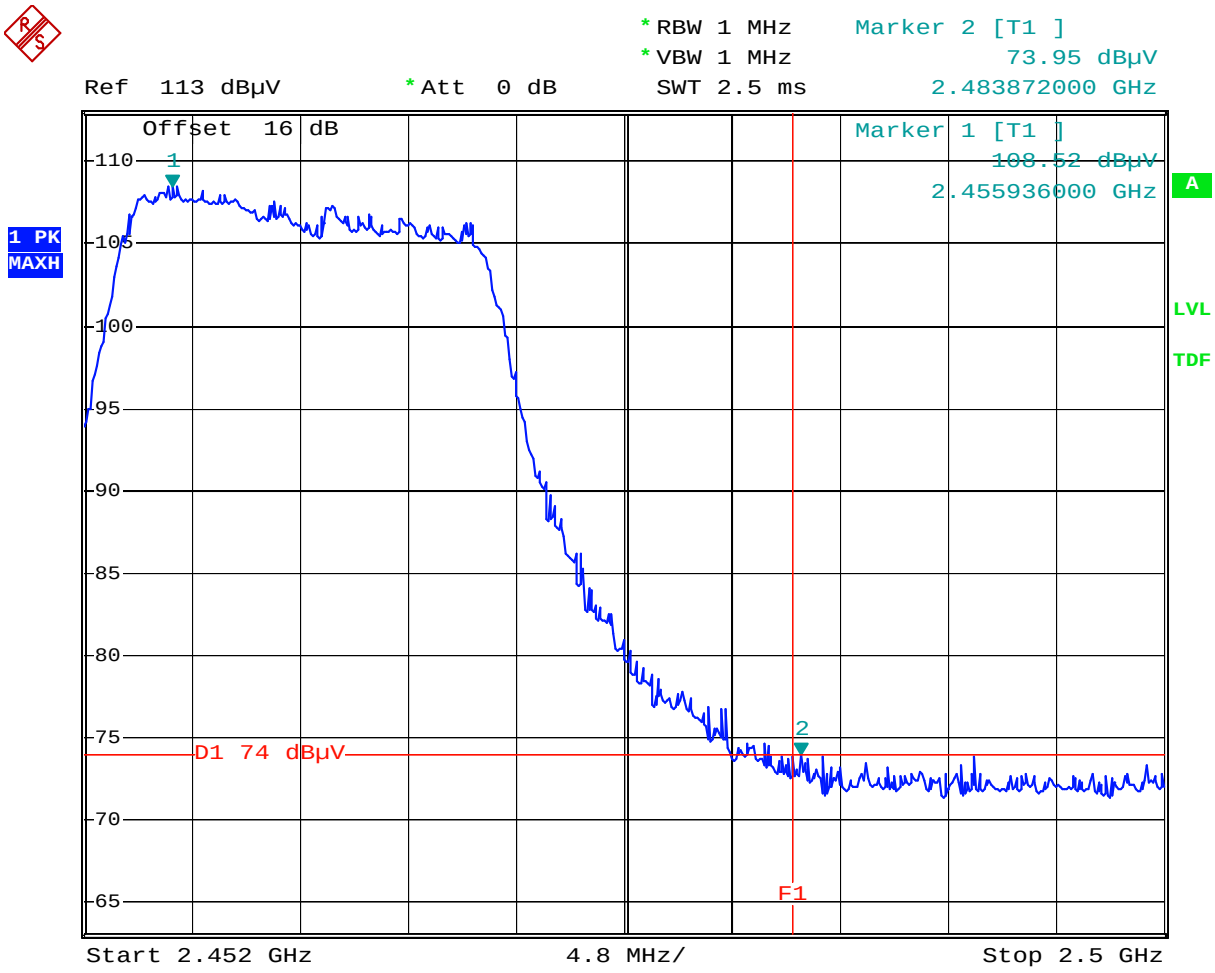
Test Mode: 802.11g(OFDM Modulation) normal mode



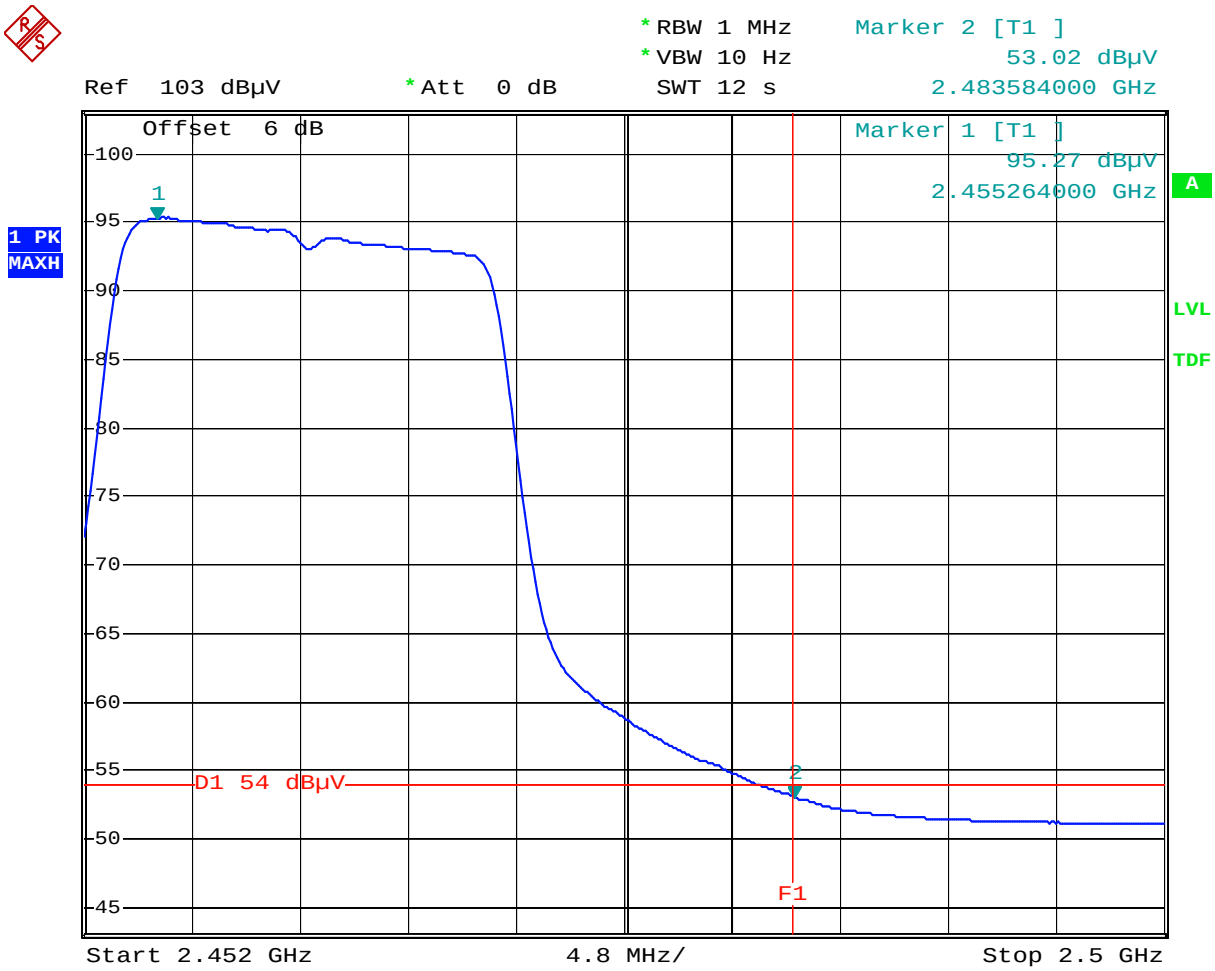
Comment: Band-Edge at ch1 F2=2390MHz
Comment: Peak Detector external ATT=16dB (EC371/EC353) 802.11g
Date: 22.MAR.2005 11:13:25



Comment: Band-Edge at ch1 F2=2390MHz
Comment: Average Detector external ATT=6dB (EC371/EC353) 802.11g
Date: 22.MAR.2005 11:31:41



Comment: Band-Edge at ch11 F1=2483.5MHz
Comment: Peak Detector external ATT=16dB (EC371/EC353)
Date: 22.MAR.2005 11:18:42



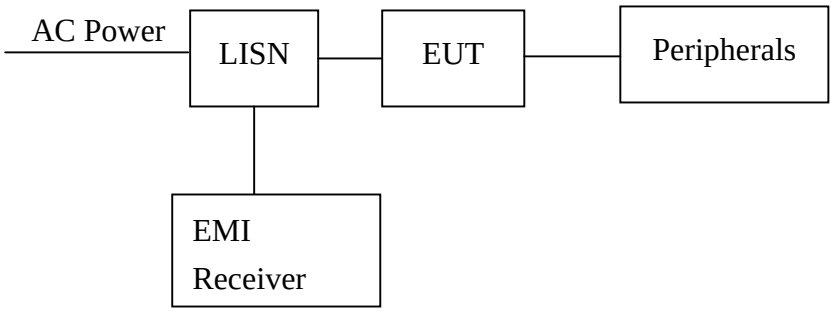
Comment: Band-Edge at ch11 F1=2483.5MHz
Comment: Average Detector external ATT=6dB (EC371/EC353)
Date: 22.MAR.2005 11:23:19

8. Power Line Conducted Emission test §FCC 15.207

8.1 Operating environment

Temperature:	23	℃
Relative Humidity:	55	%
Atmospheric Pressure	1023	hPa

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 C63.4/2003 on conducted measurement.
The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

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

8.3 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.

8.4 Uncertainty of Conducted Emission

Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.

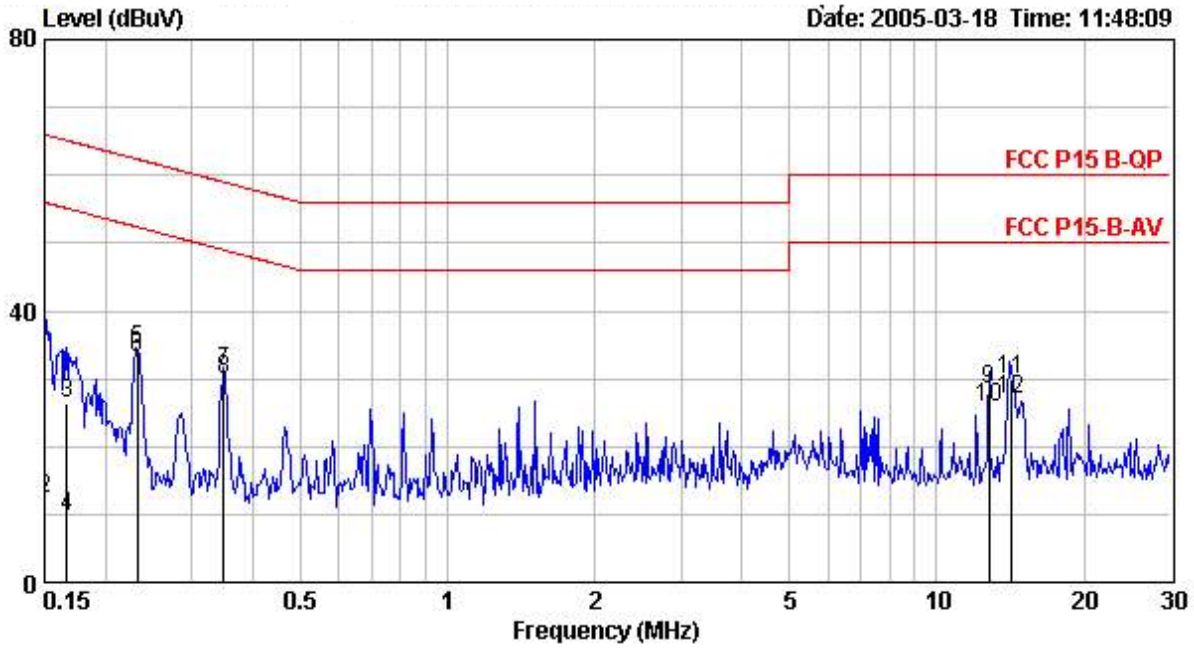
8.5 Power Line Conducted Emission test data

The test was performed the 802.11b and 802.11g normal operating modes, the worst case was occurred at 802.11g normal operating mode.

Phase	: Line
EUT	: DWL-G550
Worst Case	: 802.11g Normal operating mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level AV (dBuV)	Limit Av (dBuV)	Margin (dB) Qp	Av
0.150	0.10	34.00	66.00	12.18	56.00	-32.00	-43.82
0.166	0.10	26.39	65.14	9.64	55.14	-38.75	-45.50
0.232	0.10	34.30	62.36	32.98	52.36	-28.06	-19.38
0.349	0.10	31.01	58.98	29.79	48.98	-27.97	-19.19
12.796	0.68	28.50	60.00	25.67	50.00	-31.50	-24.33
14.192	0.77	29.78	60.00	26.98	50.00	-30.22	-23.02

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



Phase : Neutral
EUT : DWL-G550
Worst Case : 802.11g Normal operating mode

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level AV (dBuV)	Limit Av (dBuV)	Margin (dB) Qp	Av
0.152	0.10	32.69	65.87	11.25	55.87	-33.18	-44.62
0.232	0.10	31.23	62.36	25.15	52.36	-31.13	-27.21
0.349	0.10	29.15	58.98	28.14	48.98	-29.83	-20.84
0.465	0.10	26.82	56.60	26.00	46.60	-29.78	-20.60
12.796	0.42	30.55	60.00	27.57	50.00	-29.45	-22.43
14.306	0.49	29.62	60.00	27.35	50.00	-30.38	-22.65

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