EMC
TEST REPORT

Report No. : EME-031162
Model No. : XG-350
Issued Date : Nov. 3, 2003

Applicant : Z-COM, Inc.
7F-2, No. 9, Prosperity 1st RD., Science-Based Industrial Park, Hsinchu, Taiwan

Test By : Intertek Testing Services Taiwan Ltd.
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Reviewed By

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Summary of Tests

56Mbps WLAN Card Bus-Model: XG-350
FCC ID: M4Y-0XG350

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	: Z-COM, Inc.
Product	: 56Mbps WLAN Card Bus
Model No.	: XG-350
FCC ID.	: M4Y-0XG350
Frequency Range	: 2412~2462 MHz
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	: 3.3Vdc
Power Cord	: N/A
Sample Received	: Oct. 15, 2003
Test Date(s)	: Oct. 16, 2003 to Oct. 24, 2003

A FCC DoC report has been generated for the client.

1.2 Additional information about the EUT

The IEEE802.11g Cardbus Wireless LAN Card is an enhanced high-performance, that supports high-speed wireless networking at home, or at office. IEEE802.11g Cardbus Wireless LAN Card is able to communicate with any 802.11b and 802.11g compliant products.

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

1.3 Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain : 2dBi
Antenna Type : Dipole antenna
Connector Type : N/A

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
Notebook	DELL	PP01L	CN-06P83-48643-33V-0112	5ZXMUL-36273-FB-E
Printer	HP	C2642A	TH86K1N2ZB	FCC DoC Approved
Modem	Dynalink	V1456VQE	00V230A00051494	FCC DoC Approved
Access Point	SMC	WG 4005-17 2 (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 C63.4/2001.

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

During Conducted Emission test, the EUT was in normal mode communicating with AP. While in other tests, the EUT works in the status of continuously transmitted.

After verifying the maximum output power, we found the maximum output power of 802.11b was occurred at 11Mbps data rate 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.	Series No.	Last Cal.Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	825788/014	Feb. 18, 2003
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	825428/005	June 10, 2003
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	100137	July 10, 2003
Horn Antenna	EMCO	1GHz~18GHz	3115	9906-5890	Sep. 19, 2002
Horn Antenna	SCHWARZBECK	14GHz~40GHz	BBHA 9170	159	June 21, 2003
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	3133	Feb. 21, 2003
Turn Table	HDGmbH	N/A	DS 420S	420/669/01	N/A
Antenna Tower	HDGmbH	N/A	MA 240	240/573	N/A
Microwave Amplifier	Agilent	2GHz~26.5GHz	8348A	3111A00567	Dec. 20, 2002
Crystal Detector	Agilent	10MHz~18GHz	8472B	MY42240243	N/A
Signal Generator	Rohde & Schwarz	20MHz~27GHz	SMR27	100036	Aug. 15, 2003
Two Channel Digital Storage Oscilloscope	Tektronix	N/A	TDS1012	C031679	Aug. 16, 2003

Note:
1. The calibration interval of the above instruments is 12 months.

3. Minimum 6dB Bandwidth test

3.1 Operating environment

Temperature:	23	℃
Relative Humidity:	50	%
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 Condition: 802.11b function (DSSS Modulation)

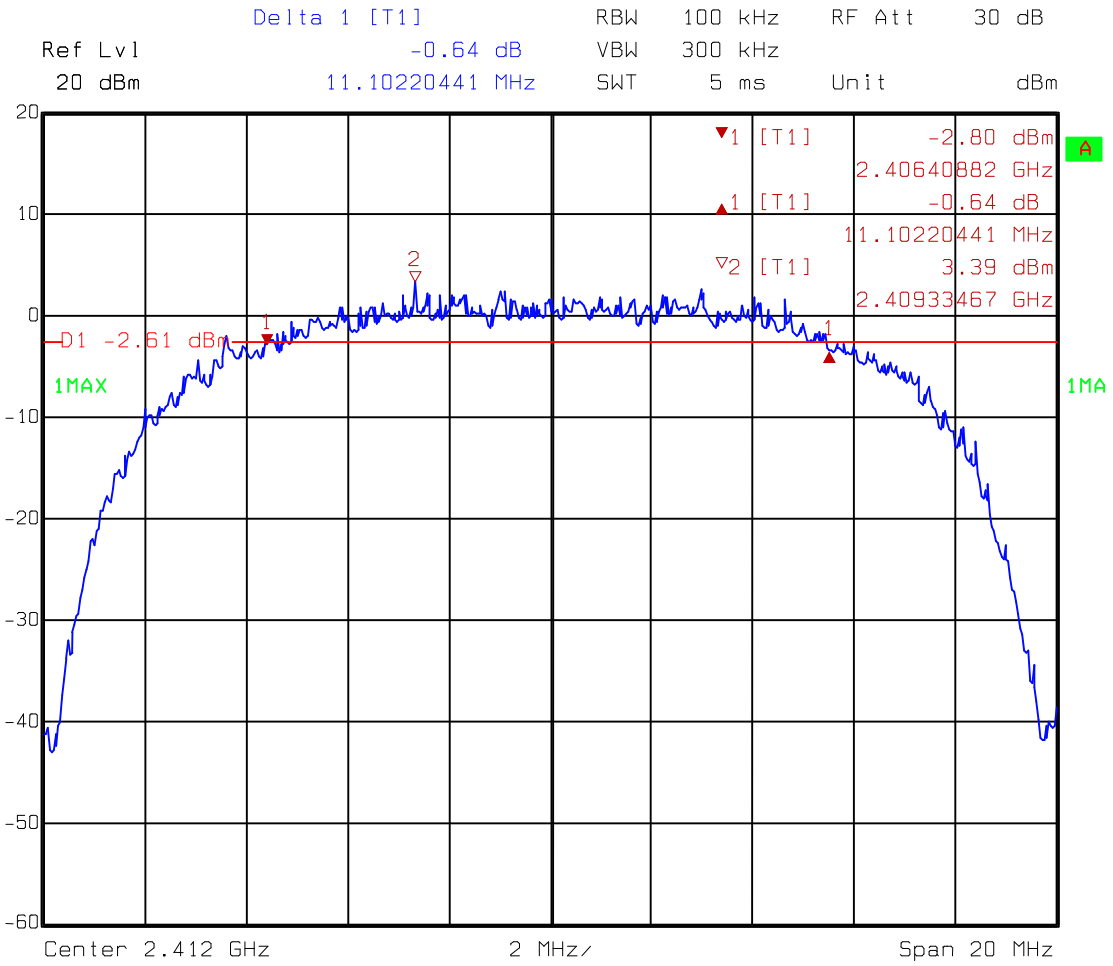
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2409.334	11.102	＞500kHz
Middle	2434.374	10.782	＞500kHz
High	2464.264	12.385	＞500kHz

Test Condition: 802.11g function (OFDM Modulation)

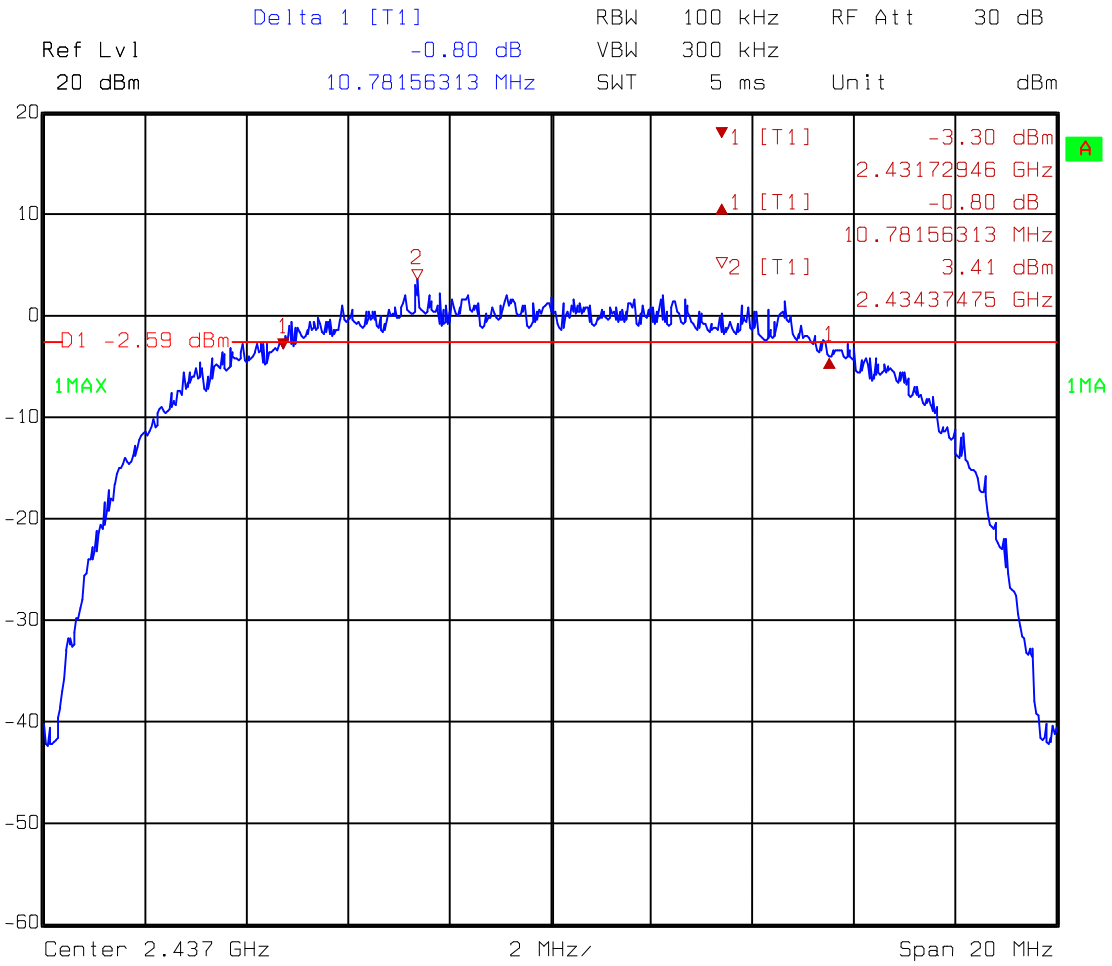
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2406.970	16.593	＞500kHz
Middle	2431.970	16.553	＞500kHz
High	2450.701	16.593	＞500kHz

Please see the plot below.

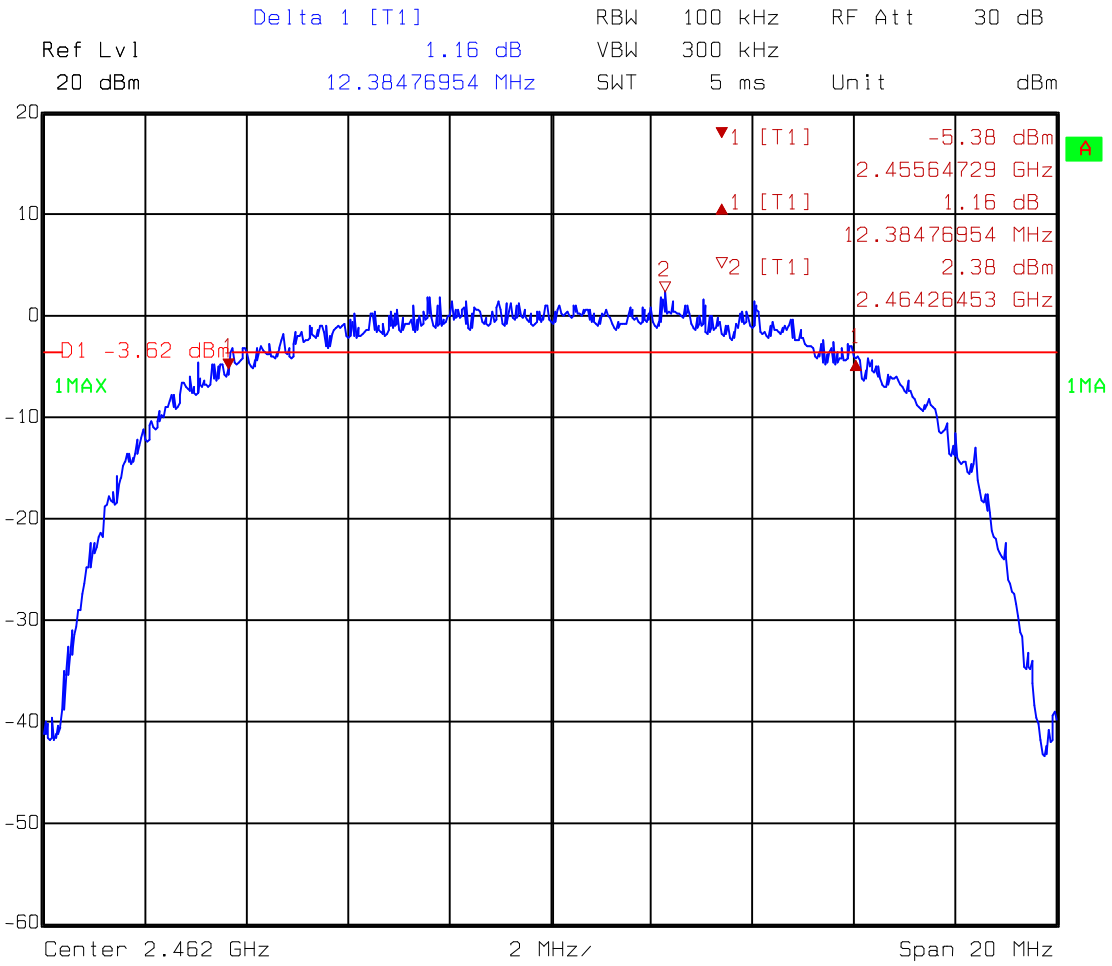
802.11b function (DSSS Modulation)



Comment A: 6dB bandwidth at low channel (EC365) 802.11b
Date: 23.OCT.2003 14:35:06

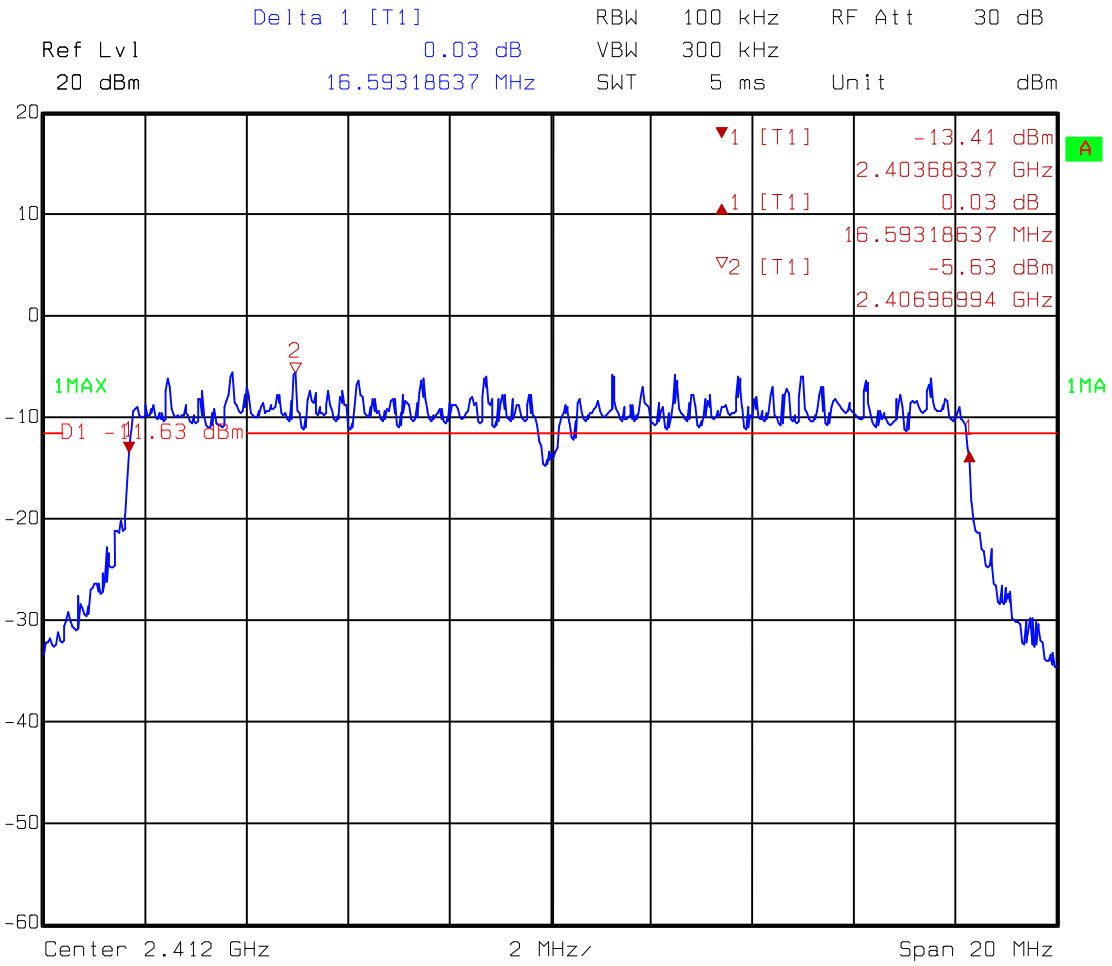


Comment A: 6dB bandwidth at middle channel (EC365) 802.11b
Date: 23.OCT.2003 14:44:16

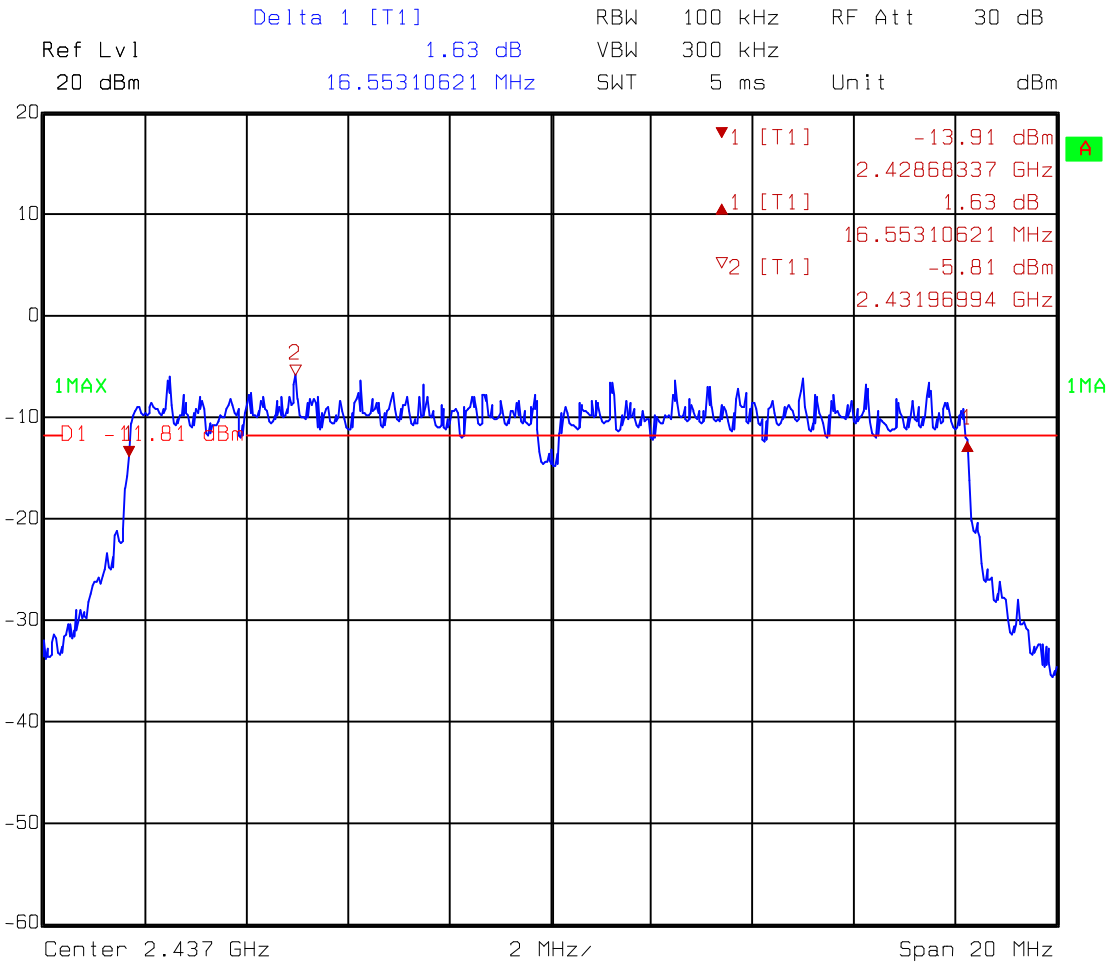


Comment A: 6dB bandwidth at high channel (EC365) 802.11b
Date: 23.OCT.2003 14:46:50

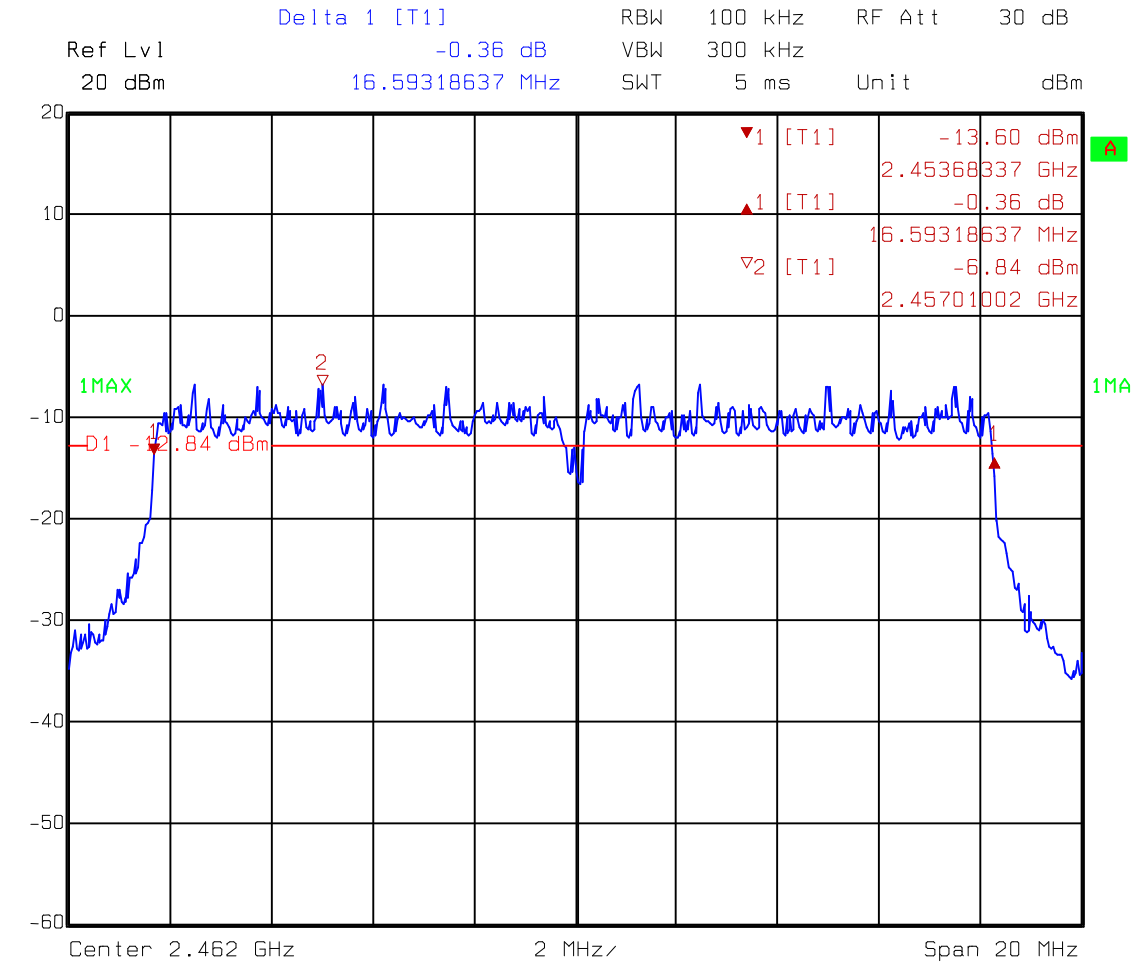
802.11g (OFDM Modulation)



Comment A: 6dB bandwidth at low channel (EC365) 802.11g
Date: 23.OCT.2003 14:38:50



Comment A: 6dB bandwidth at middle channel (EC365) 802.11g
Date: 23.OCT.2003 14:41:04



Comment A: 6dB bandwidth at high channel (EC365) 802.11g
Date: 23.OCT.2003 14:48:32

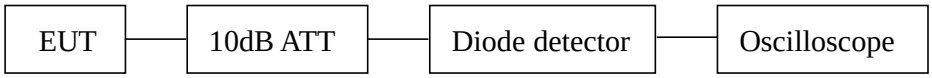
4. Maximum Output Power test

4.1 Operating environment

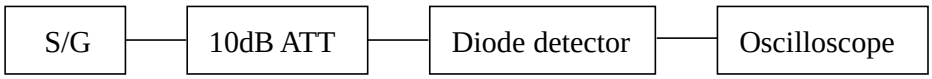
Temperature:	22	℃
Relative Humidity:	50	%
Atmospheric Pressure	1023	hPa

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 (DSSS Modulation)

Channel	Frequency (MHz)	Reading (dBm)	Output Power		Limit (W)
			(dBm)	(mW)	
Lowest	2412	19.53	19.53	89.74	1
Middle	2437	19.43	19.43	87.70	1
Highest	2462	19.73	19.73	93.97	1

Test Condition: 802.11g (OFDM Modulation)

Channel	Frequency (MHz)	Reading (dBm)	Output Power		Limit (W)
			(dBm)	(mW)	
Lowest	2412	19.43	19.43	87.70	1
Middle	2437	19.23	19.23	83.75	1
Highest	2462	19.53	19.53	89.74	1

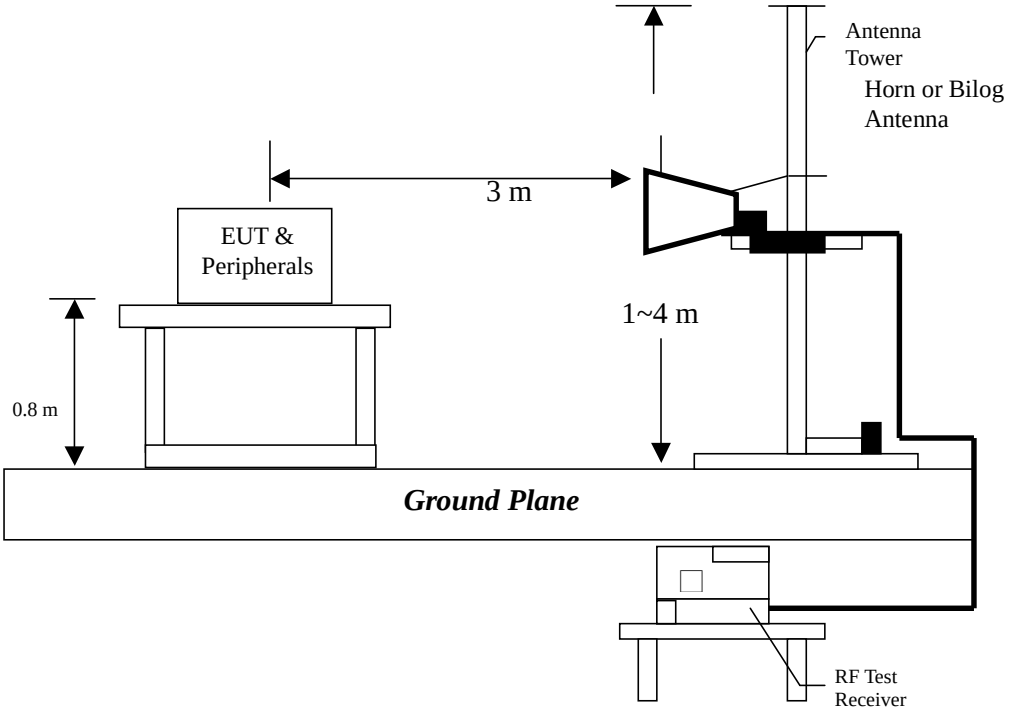
5. Radiated Emission test

5.1 Operating environment

Temperature:	25	℃	(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 : XG-350
Worst Case Condition : Tx at low channel at 802.11b function

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)
200.00000	QP	V	11.52	12.61	24.13	43.50	-19.37	101	1
333.10000	QP	V	14.99	8.72	23.71	46.00	-22.29	142	356
397.50000	QP	V	16.40	21.52	37.92	46.00	-8.08	160	226
529.71000	QP	V	19.15	7.37	26.52	46.00	-19.48	125	328
596.81000	QP	V	20.62	8.16	28.78	46.00	-17.22	100	228
666.42000	QP	V	21.72	10.75	32.47	46.00	-13.53	109	208
198.79000	QP	H	12.03	15.27	27.30	43.50	-16.20	163	195
300.00000	QP	H	14.45	15.32	29.77	46.00	-16.23	107	343
397.53000	QP	H	16.40	20.17	36.57	46.00	-9.43	100	313
533.14000	QP	H	19.15	15.15	34.30	46.00	-11.70	175	202
663.09000	QP	H	21.72	15.20	36.92	46.00	-9.08	123	200
799.99000	QP	H	23.49	4.68	28.17	46.00	-17.83	100	217

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

EUT : XG-350
Worst Case Condition : Tx at low channel at 802.11g function

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)
199.98000	QP	V	12.03	11.49	23.52	43.50	-19.98	140	176
300.00000	QP	V	14.45	8.59	23.04	46.00	-22.96	171	259
399.72000	QP	V	16.40	19.95	36.35	46.00	-9.65	138	193
532.66000	QP	V	19.15	11.74	30.89	46.00	-15.11	108	293
662.55000	QP	V	21.72	7.63	29.35	46.00	-16.65	100	237
912.07000	QP	V	24.76	1.84	26.60	46.00	-19.40	117	236
199.99000	QP	H	12.03	14.23	26.26	43.50	-17.24	127	113
264.02000	QP	H	13.38	9.31	22.69	46.00	-23.31	102	321
397.56000	QP	H	16.40	22.23	38.63	46.00	-7.37	101	317
464.04000	QP	H	18.21	11.82	30.03	46.00	-15.97	100	259
529.76000	QP	H	19.15	9.46	28.61	46.00	-17.39	189	235
664.00000	QP	H	21.72	4.79	26.51	46.00	-19.49	121	82

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

5.4.2 Measurement results: frequency above 1GHz

EUT : XG-350
Test Condition : Tx at low channel at 802.11b function

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)
7236	PK	V	34.17	39.966	49.604	55.4	74	-18.6	158	0
7236	AV	V	34.17	39.966	37.454	43.25	54	-10.75	158	0
7232	PK	V	34.17	39.966	48.574	54.37	74	-19.63	148	290
7232	AV	V	34.17	39.966	37.974	43.77	54	-10.23	148	290

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. We measured both vertical and horizontal polarization, 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 : XG-350
Test Condition : Tx at middle and high channel at 802.11b function

Remark:
The emissions were very low against the noise floor in the frequency range from 1GHz to 25GHz. The noise floor level please refer to 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 : XG-350
Test Condition : Tx at low channel at 802.11g function

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)
5279	PK	V	32.65	38.066	51.624	57.04	74	-16.96	192	253
5279	AV	V	32.65	38.066	28.824	34.24	54	-19.76	192	253

EUT : XG-350
Test Condition : Tx at middle channel at 802.11g function

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)
5276	PK	V	32.65	38.066	51.474	56.89	74	-17.11	139	60
5276	AV	V	32.65	38.066	28.884	34.3	54	-19.7	139	60

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. We measured both vertical and horizontal polarization, 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 : XG-350
Test Condition : Tx at high channel at 802.11g function

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)
5274	PK	V	32.65	38.066	51.594	57.01	74	-16.99	137	63
5274	AV	V	32.65	38.066	28.924	34.34	54	-19.66	137	63

Remark:
1. Corrected Level = Reading Level + Correction Factor－Preamp
2. Correction Factor = Antenna Factor + Cable Loss
3. We measured both vertical and horizontal polarization, 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:	24	℃
Relative Humidity:	50	%
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 and cable loss (2.13dB) 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 function (DSSS Modulation)

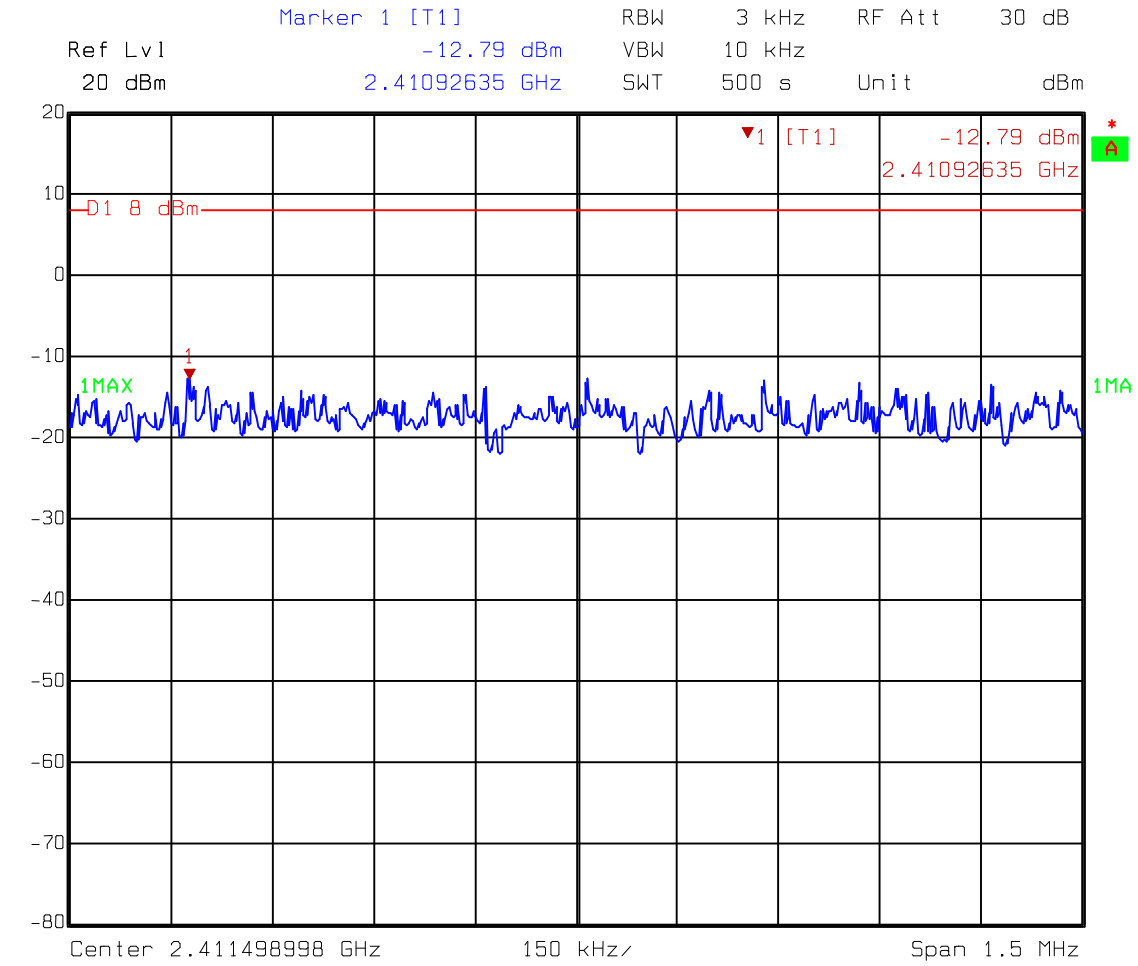
Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2410.926	-10.66	8
Middle	2435.924	-10.83	8
High	2461.516	-11.35	8

Test Condition: 802.11g function (OFDM Modulation)

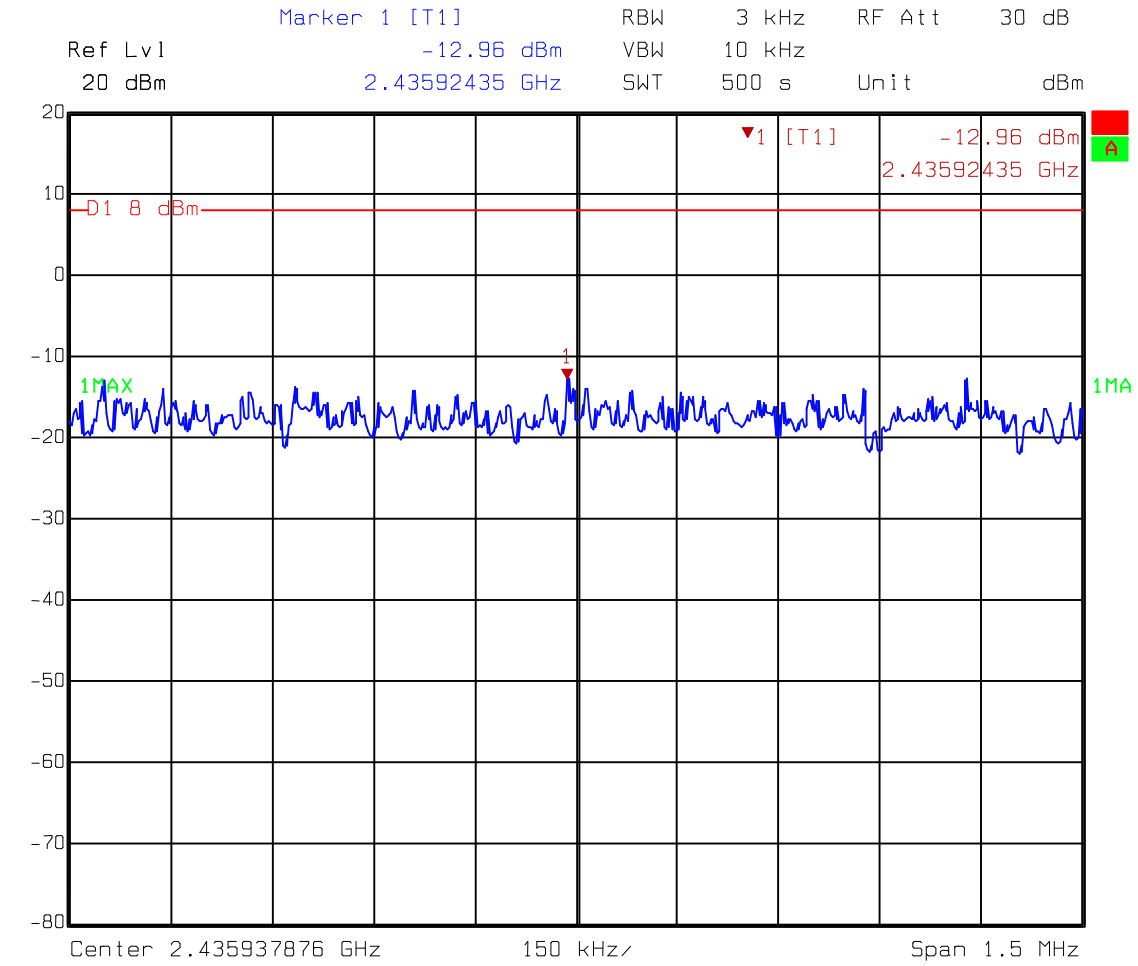
Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2411.975	-17.43	8
Middle	2436.973	-18.52	8
High	2461.973	-18.70	8

Please see the plot below.

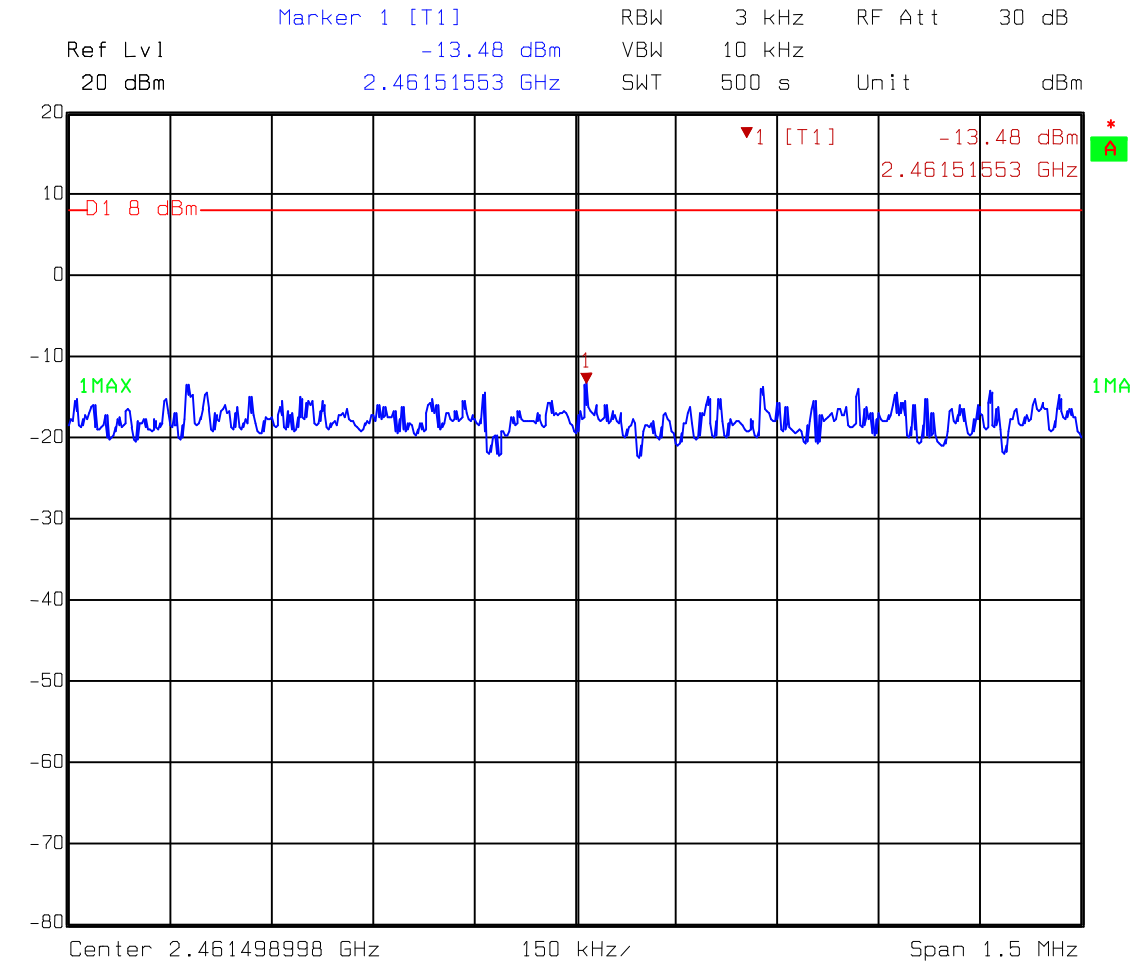
802.11b function (DSSS Modulation)



Comment A: Power spectrum density at low channel
CL=2.13dB 802.11b
Date: 23.OCT.2003 15:07:56

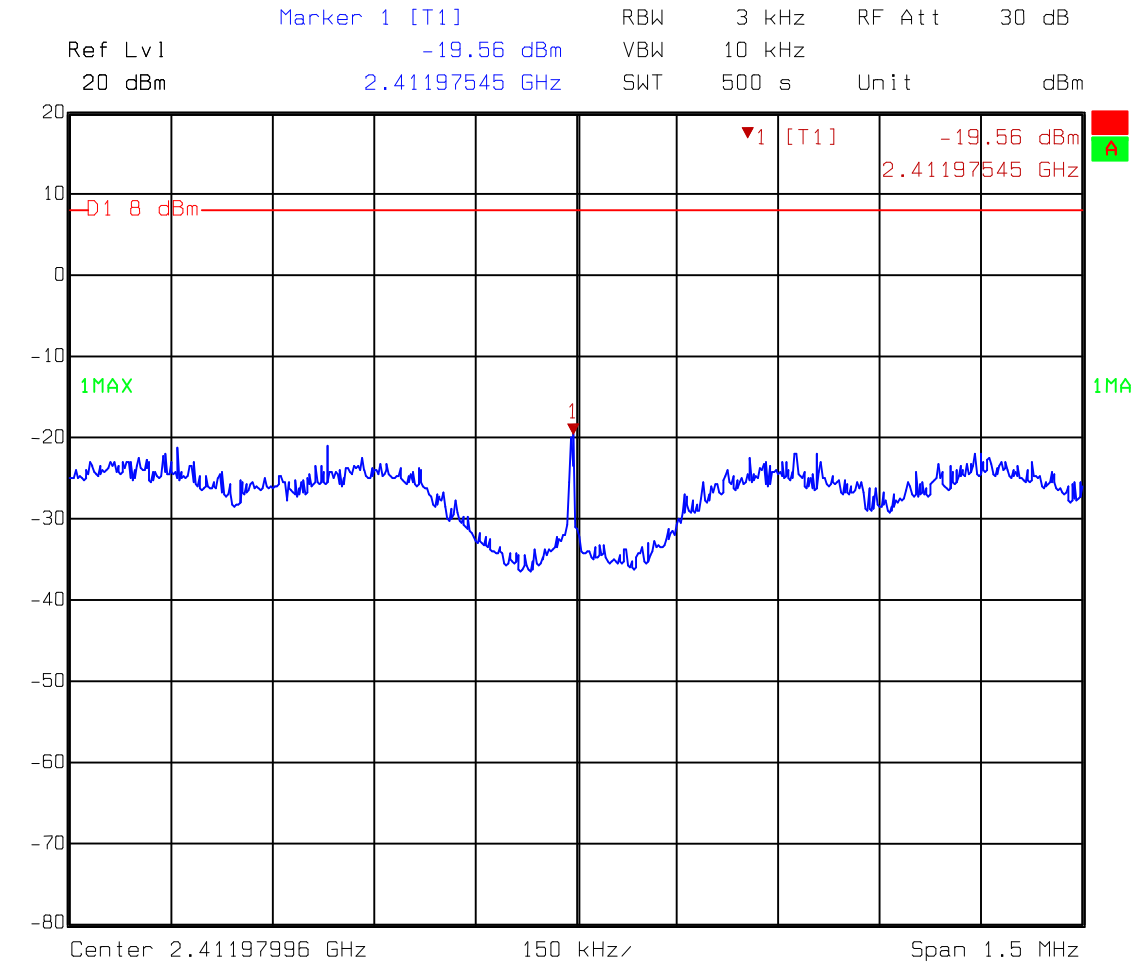


Comment A: Power spectrum density at middle channel
CL=2.13dB 802.11b
Date: 23.OCT.2003 14:59:44



Comment A: Power spectrum density at high channel
CL=2.13 802.11b
Date: 23.OCT.2003 14:56:35

802.11g function (OFDM Modulation)



Comment A: Power spectrum density at low channel
CL=2.13dB 802.11g
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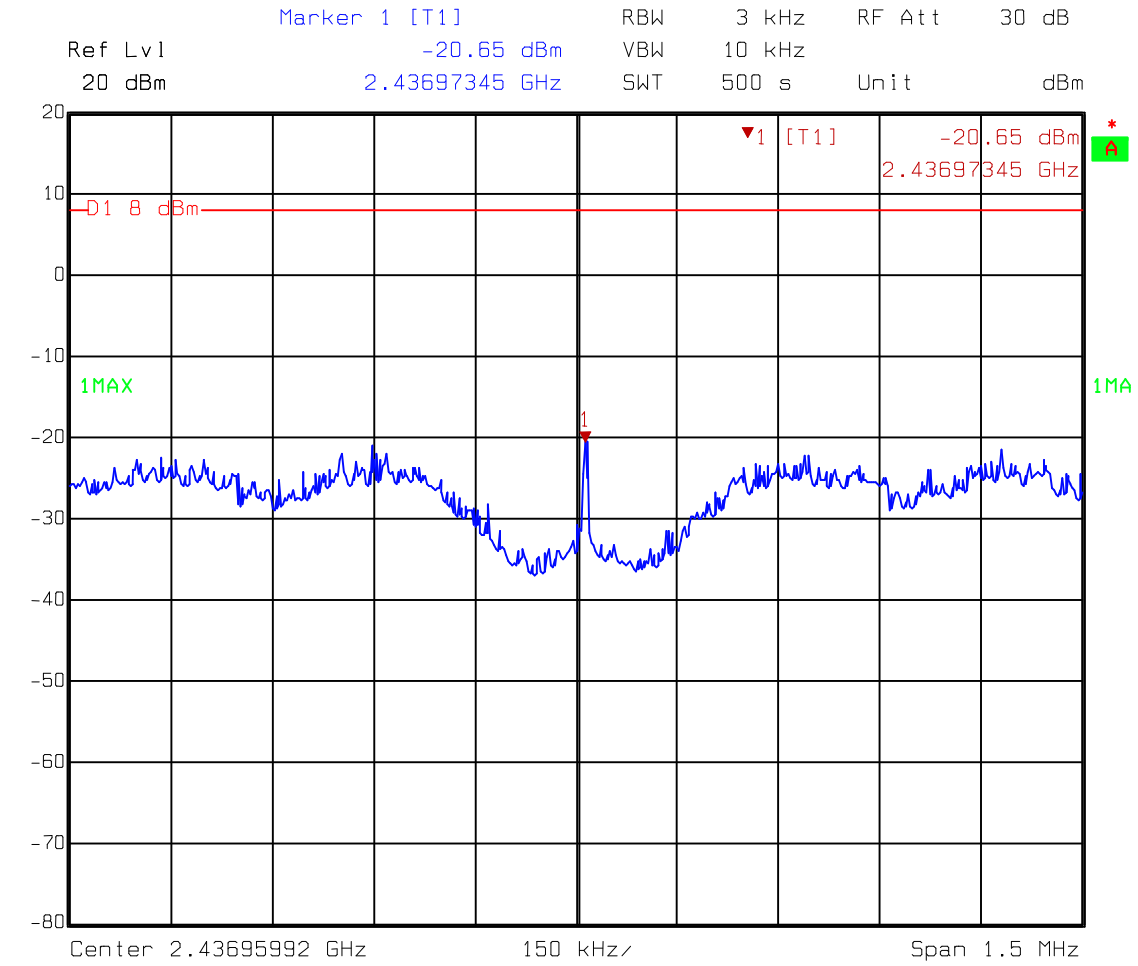
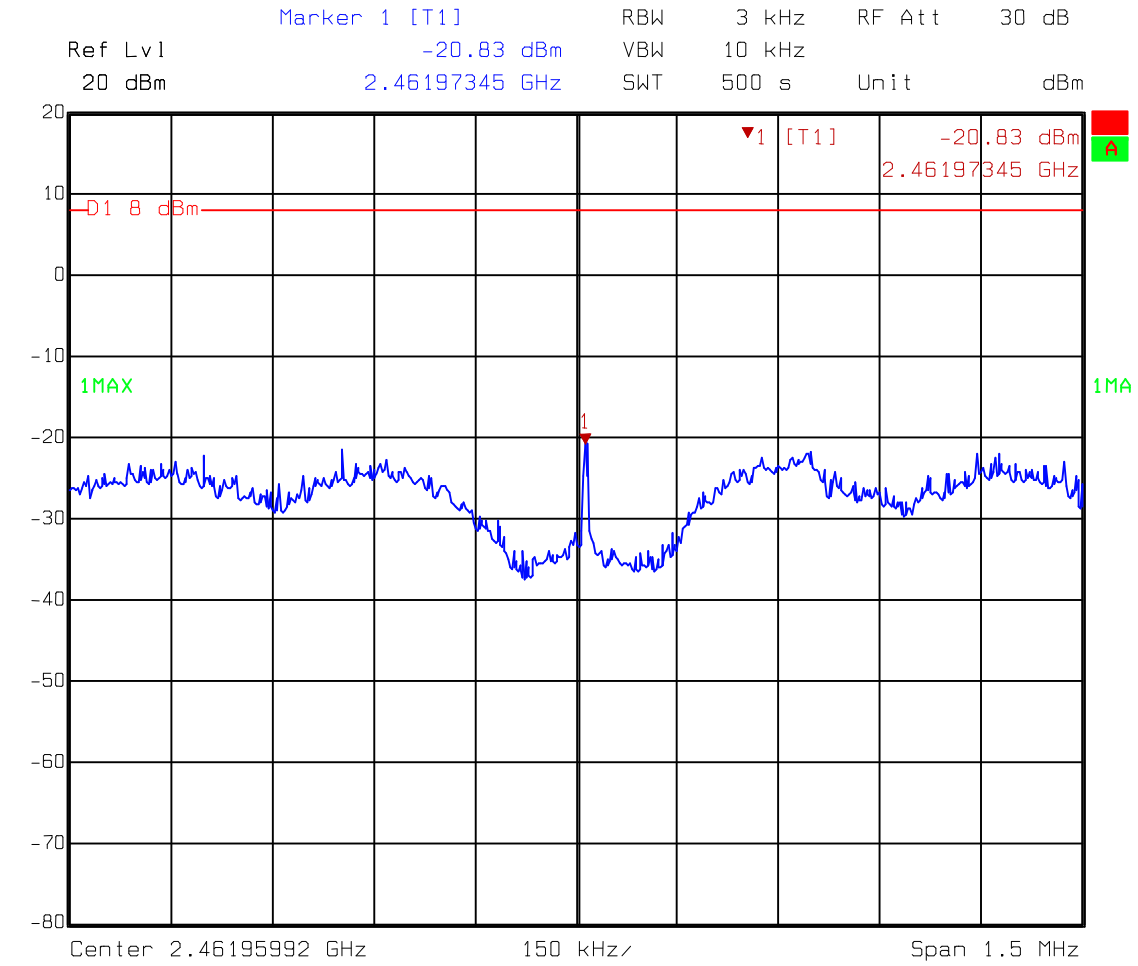


Comment A: Power spectrum density at middle channel
CL=2.13dB 802.11g
Date: 23.OCT.2003 15:01:46



Comment A: Power spectrum density at high channel
CL=2.13 802.11g
Date: 23.OCT.2003 14:53:46

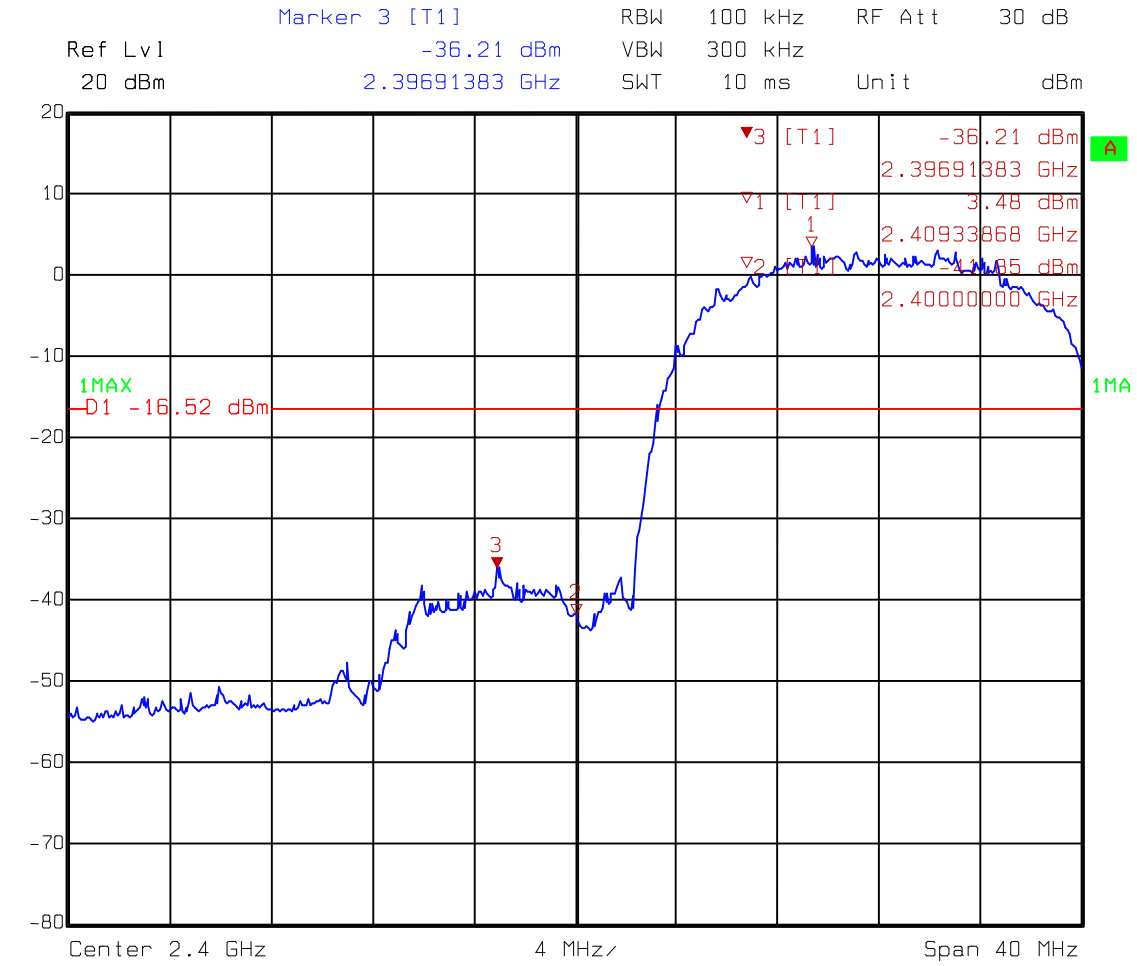
7. Emission on the band edge §FCC 15.247(C)

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.

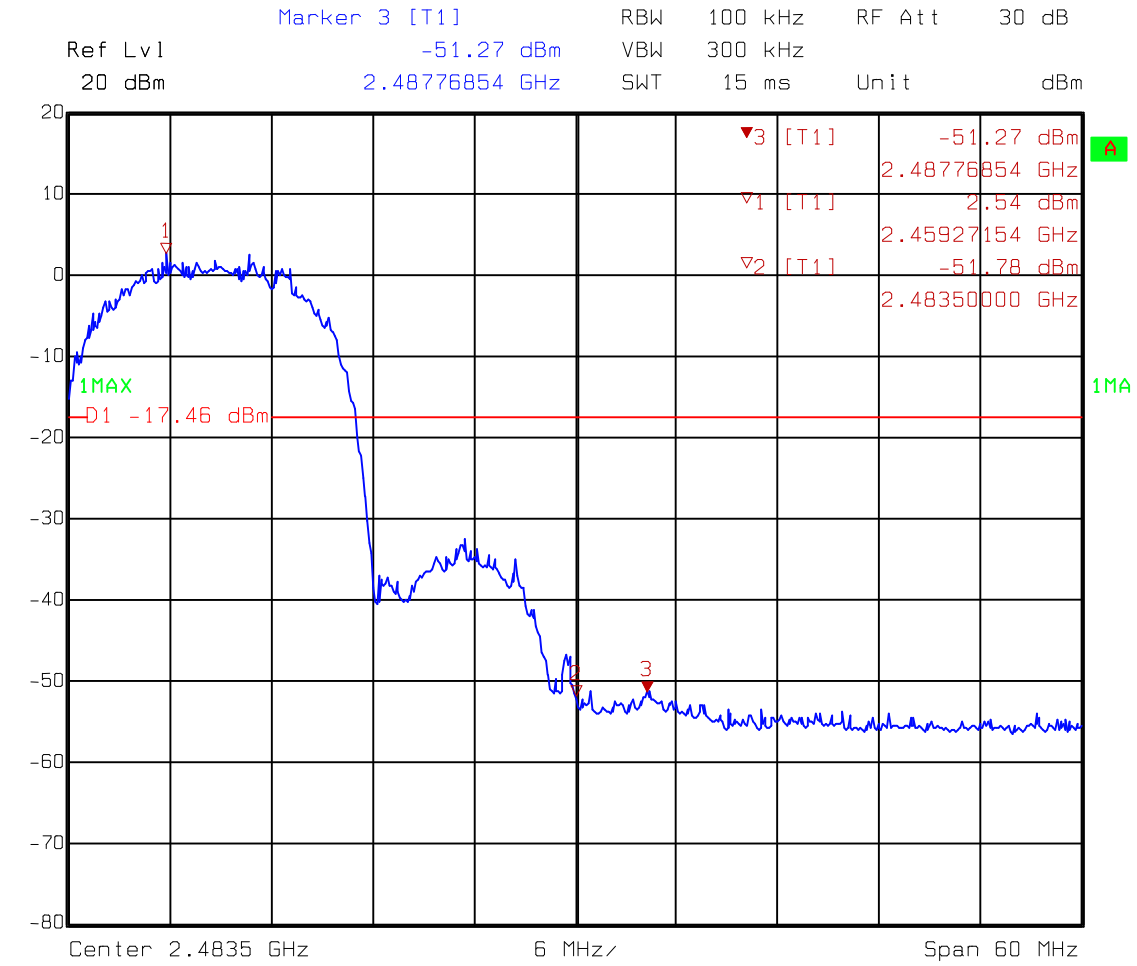
Please see the plot below.

7.1 Band-edge (Conducted method)

802.11b function (DSSS Modulation)

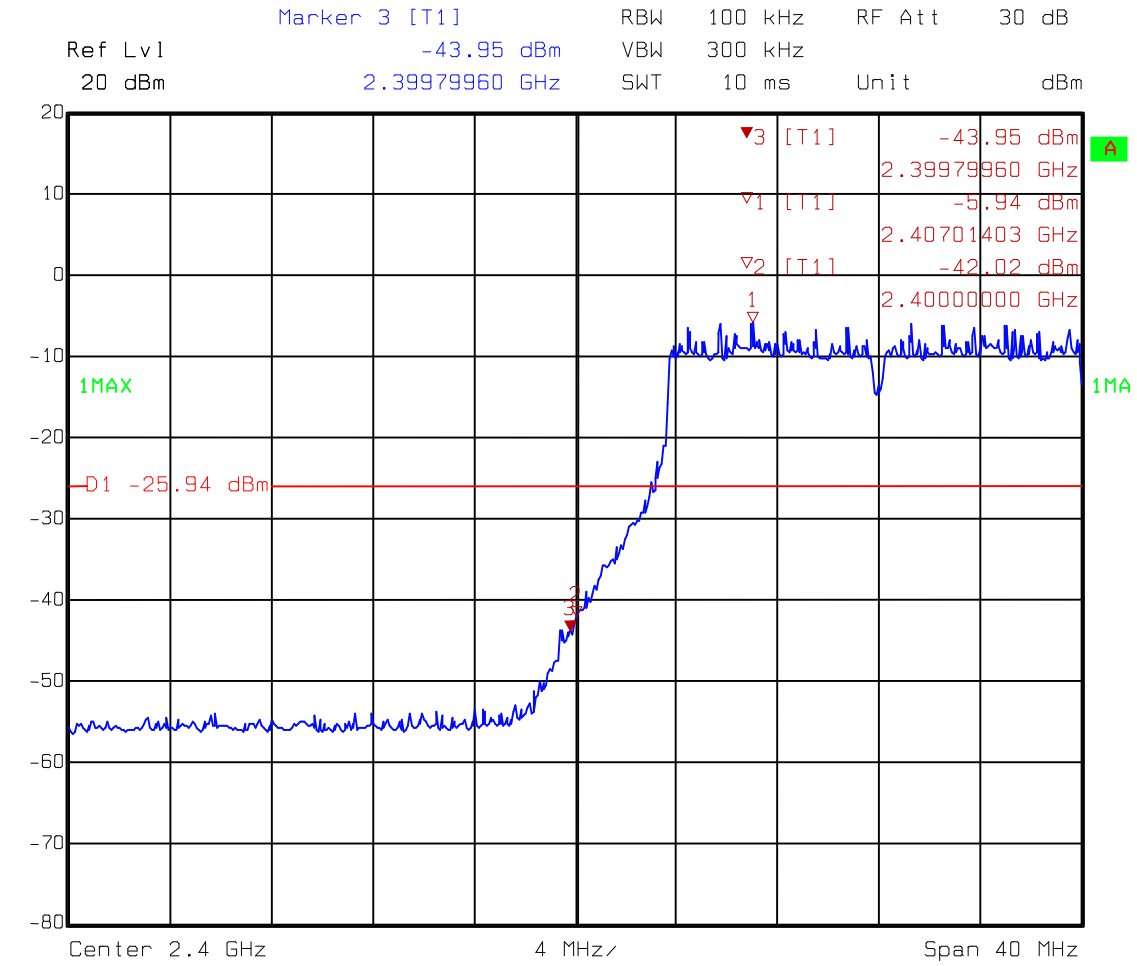


Comment A: Band-edge at low channel 802.11b
Date: 23.OCT.2003 15:12:05

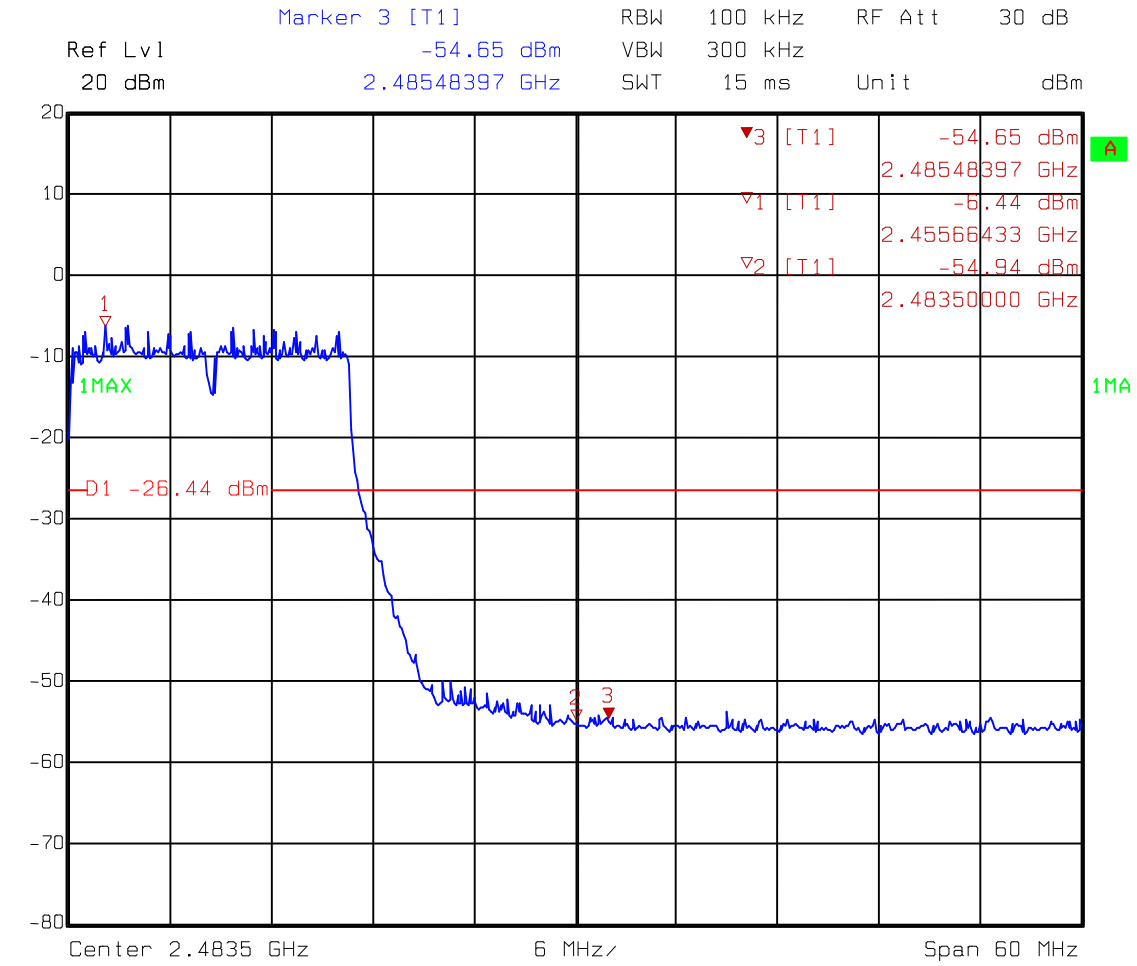


Comment A: Band-edge at high channel 802.11b
Date: 23.OCT.2003 15:20:31

802.11g function (OFDM Modulation)



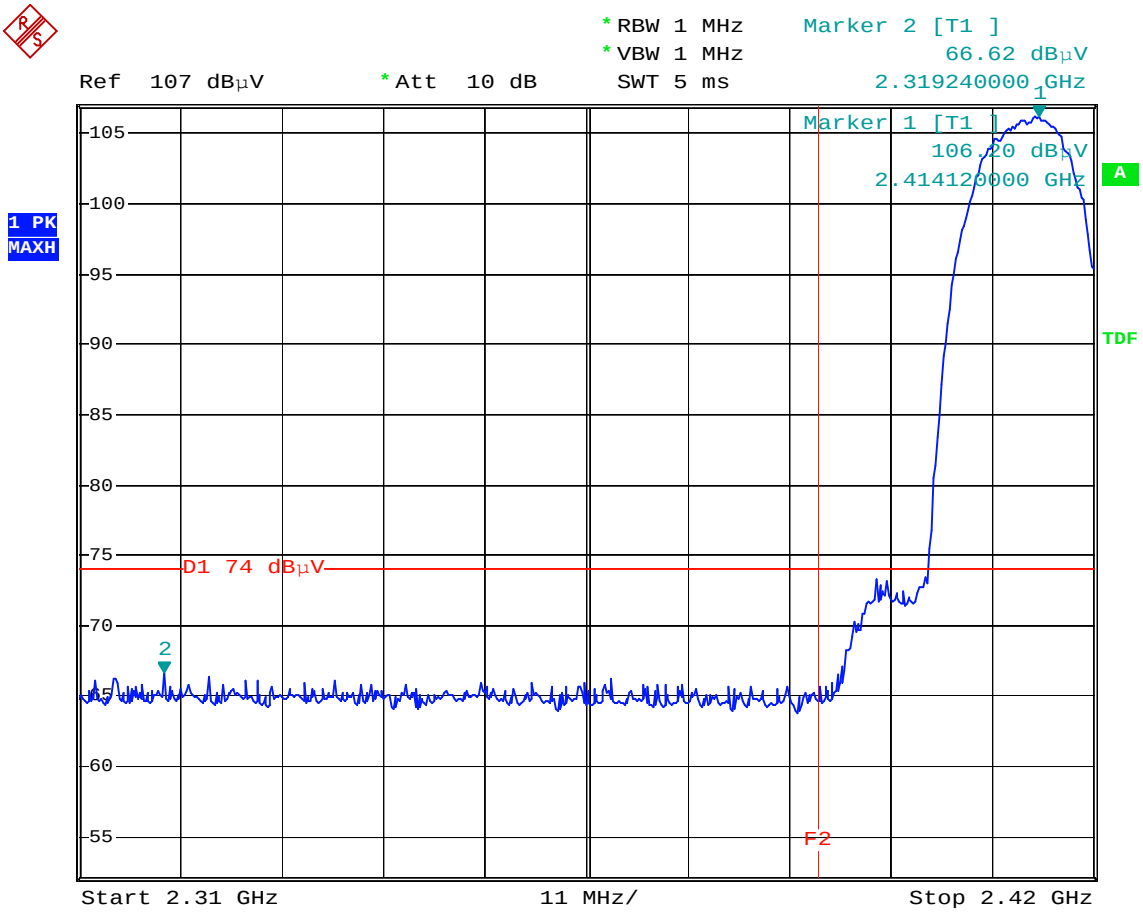
Comment A: Band-edge at low channel 802.11g
Date: 23.OCT.2003 15:16:13



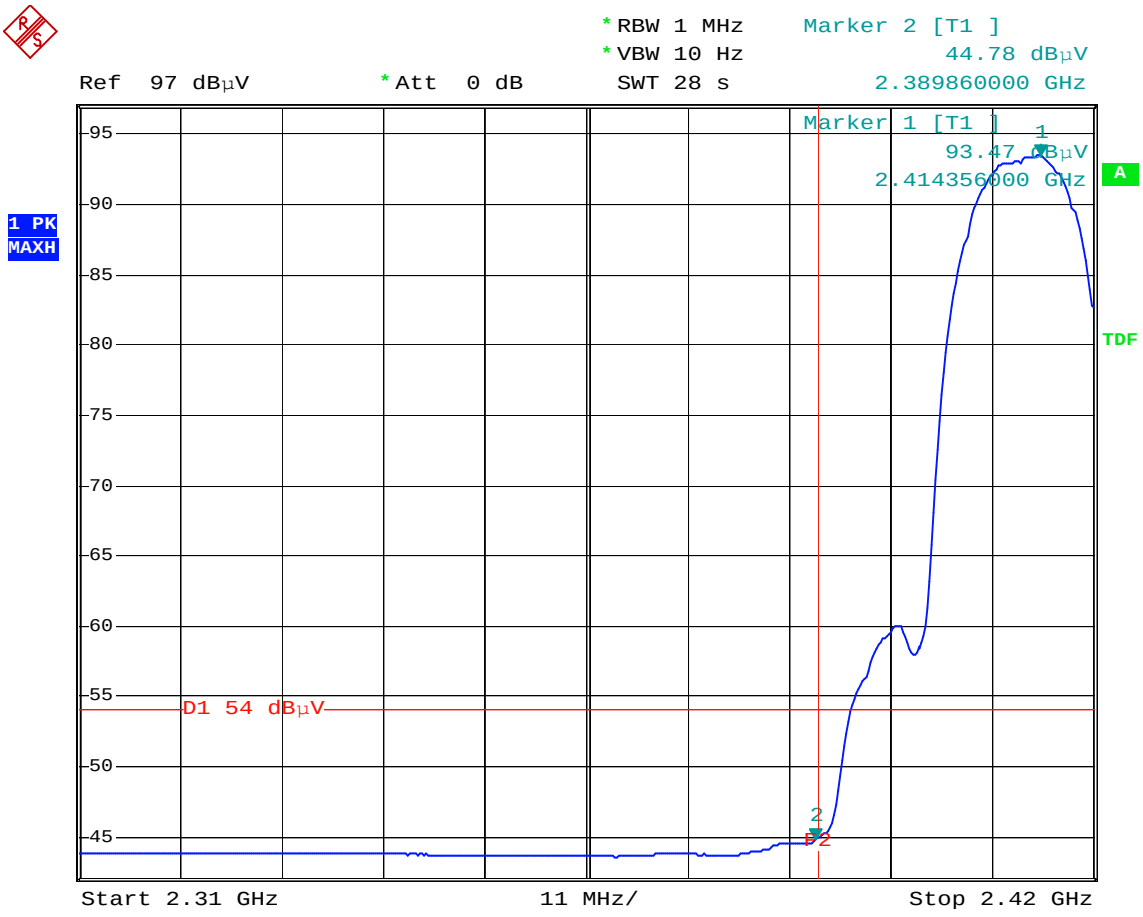
Comment A: Band-edge at high channel 802.11g
Date: 23.OCT.2003 15:18:19

7.2 Band-edge (Radiated method)

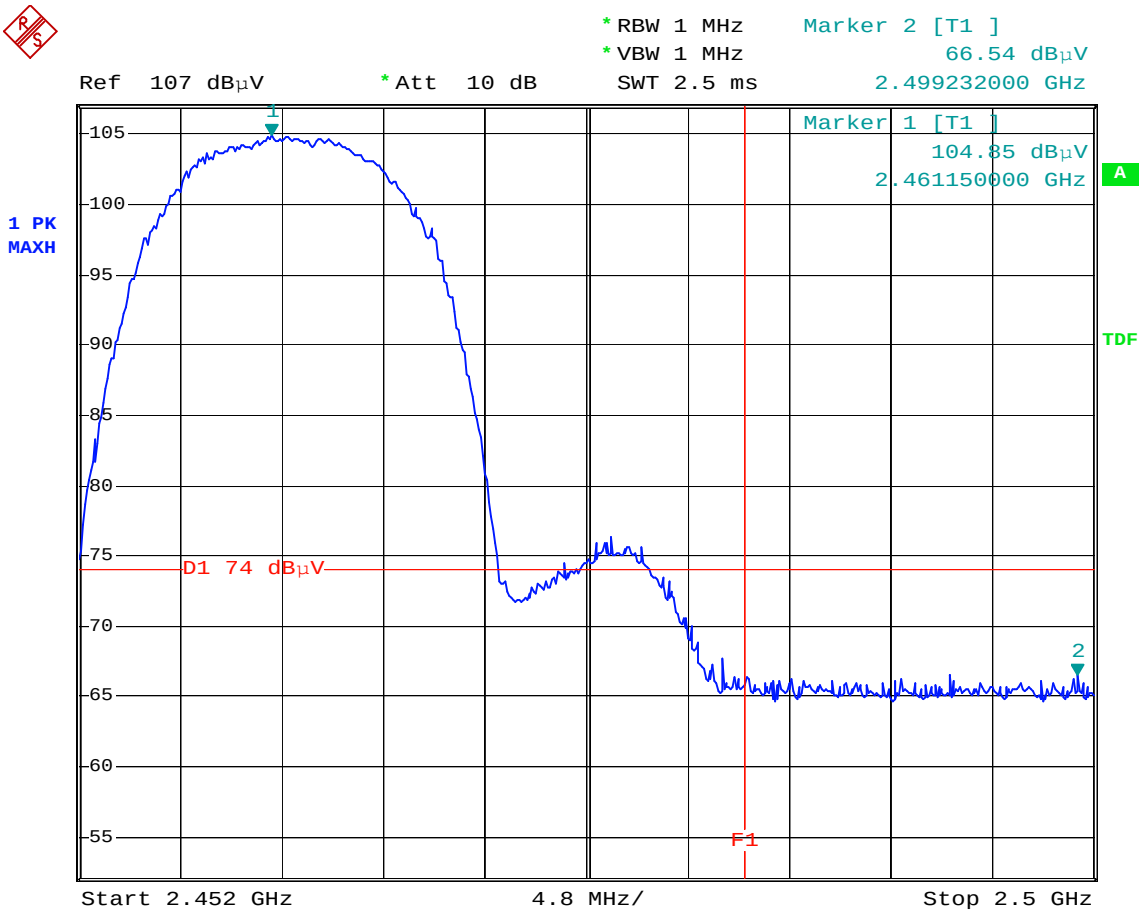
802.11b function (DSSS Modulation)



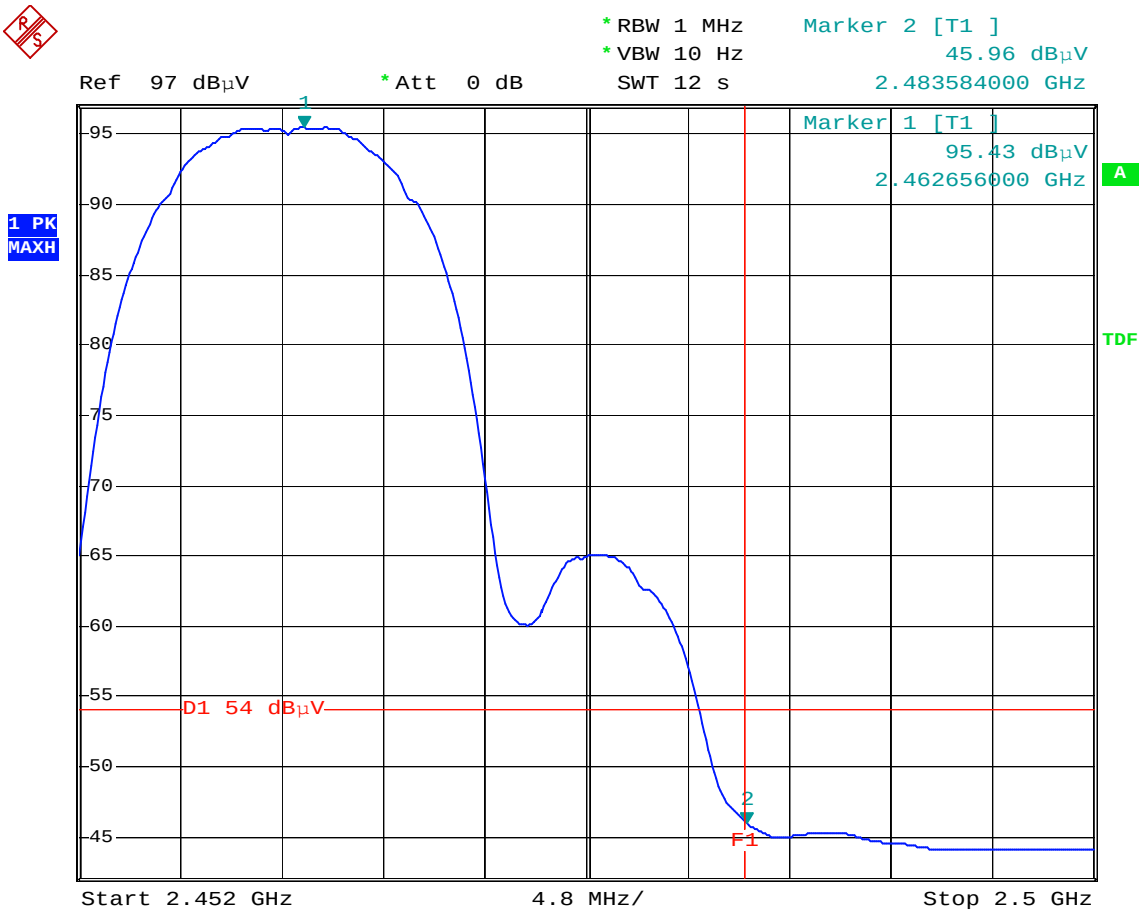
Comment A: Band-edge test at low channelEN B
Peak detector F2=2390MHz 802.11b PK
Date: 24.OCT.2003 12:46:08



Comment A: Band-edge test at low channel1
Average detector F2=2390MHz 802.11b AV
Date: 24.OCT.2003 12:50:17

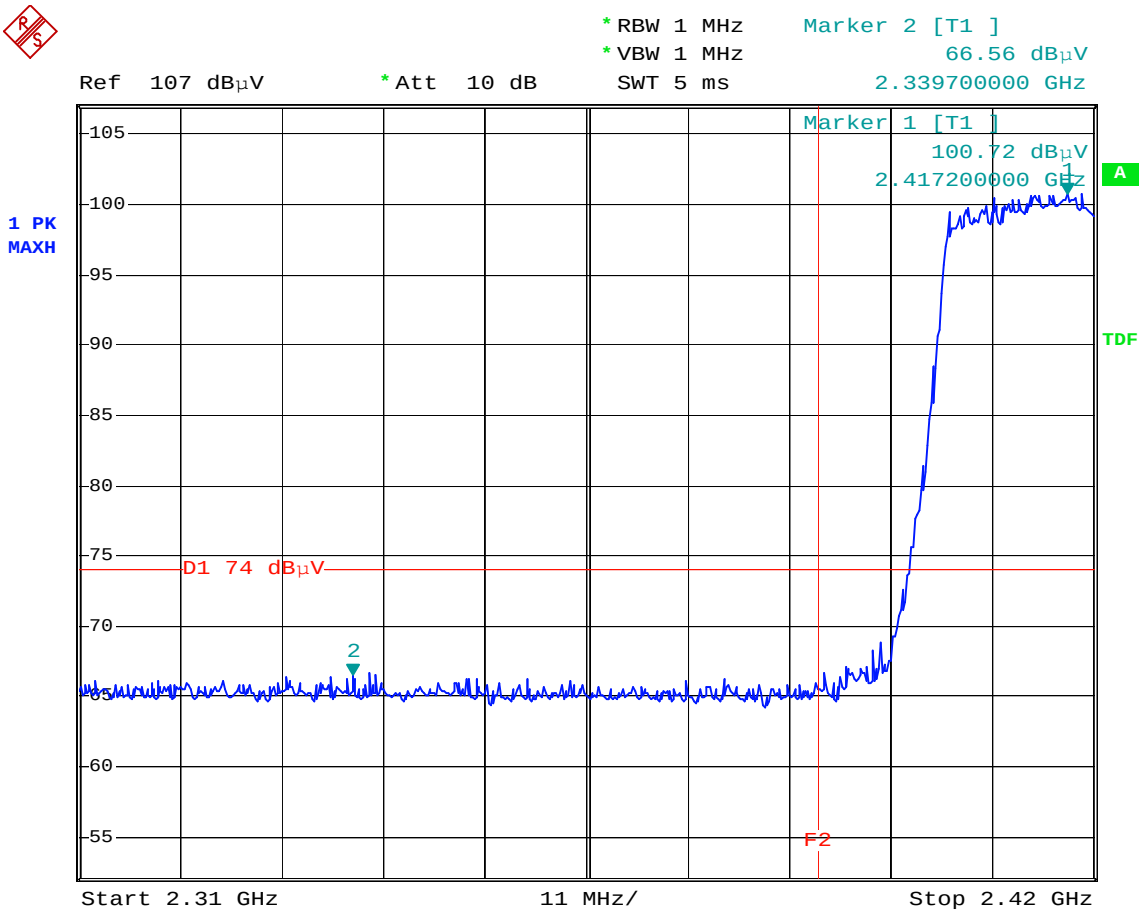


Comment A: Band-edge test at high channelN B
Peak detector F1=2483.5MHz 802.11b
Date: 24.OCT.2003 12:21:35

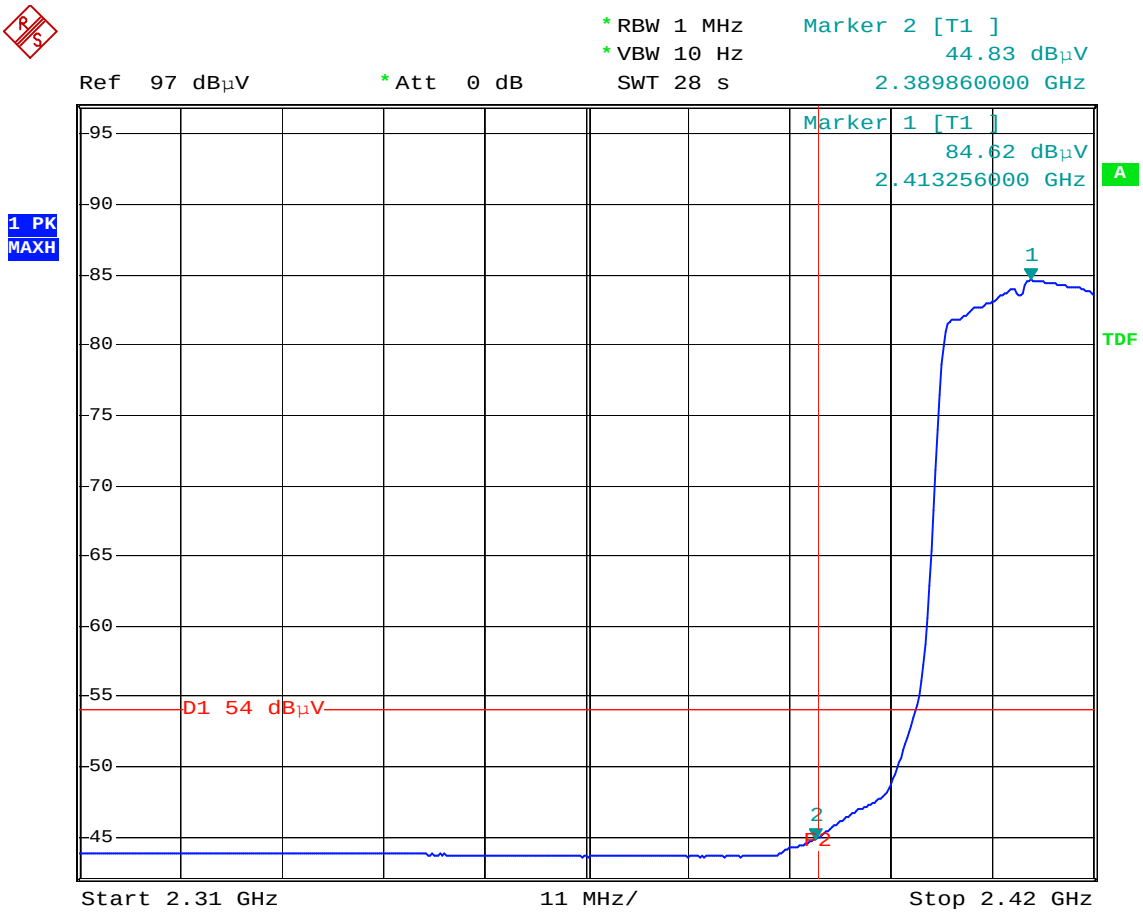


Comment A: Band-edge test at high channelN B
Average detector F1=2483.5MHz 802.11b
Date: 24.OCT.2003 12:25:37

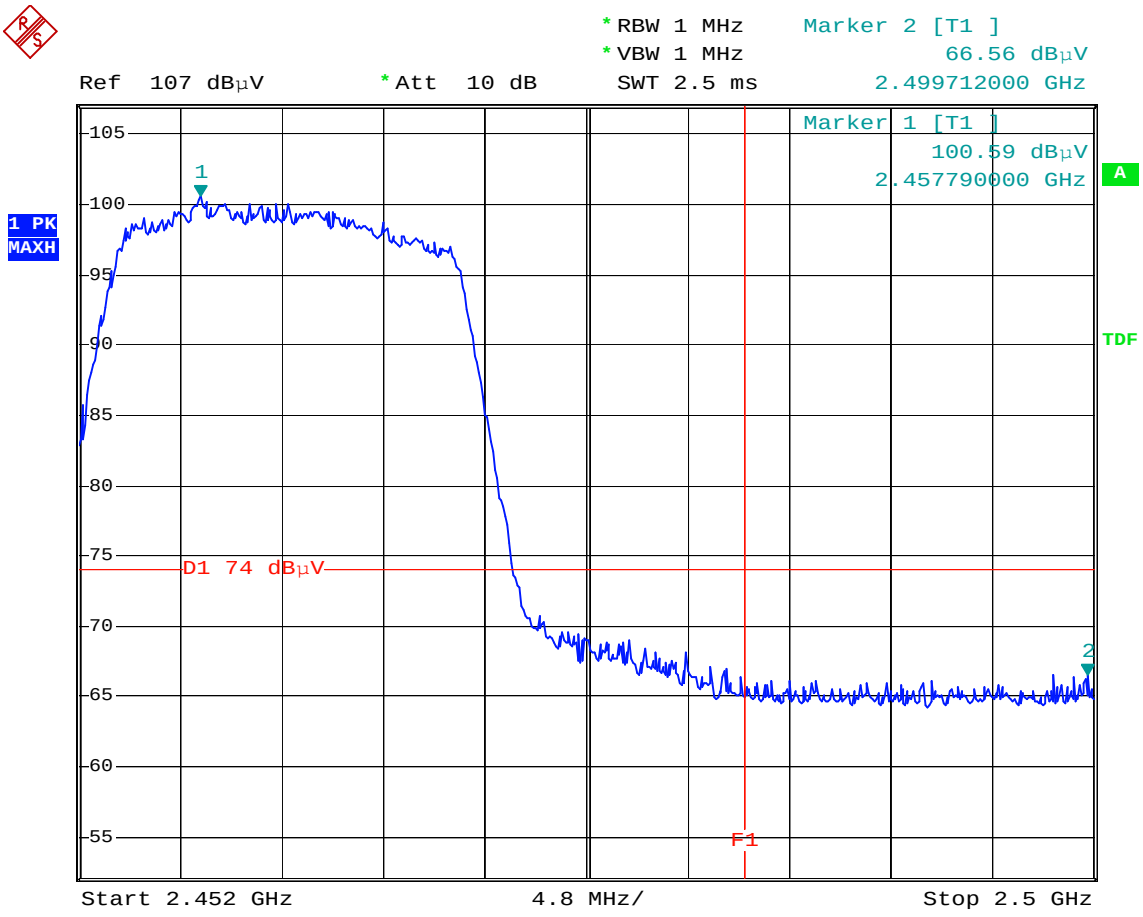
802.11g function (OFDM Modulation)



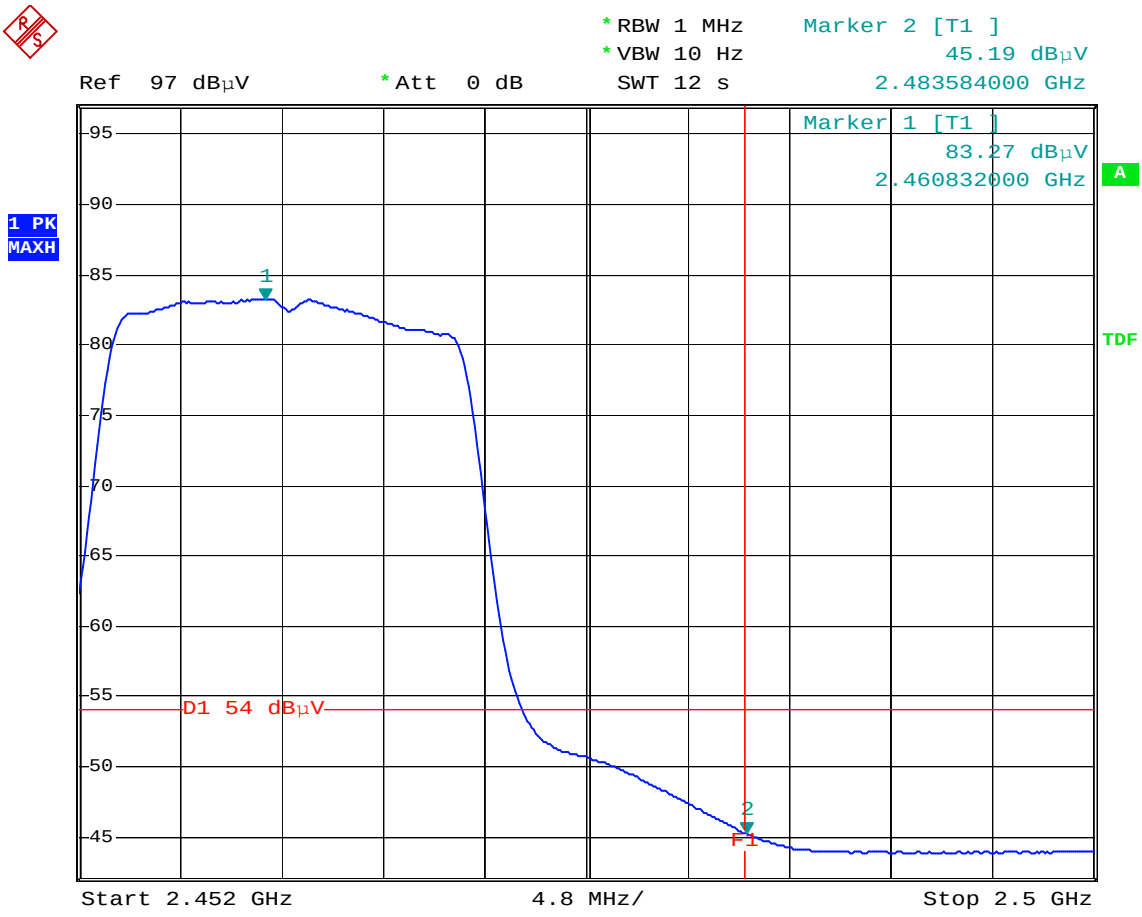
Comment A: Band-edge test at low channelEN B
Peak detector F2=2390MHz 802.11g PK
Date: 24.OCT.2003 12:40:04



Comment A: Band-edge test at low channelEN B
Average detector F2=2390MHz 802.11g AV
Date: 24.OCT.2003 12:43:28



Comment A: Band-edge test at high channel
Peak detector F1=2483.5MHz 802.11g PK
Date: 24.OCT.2003 12:31:00



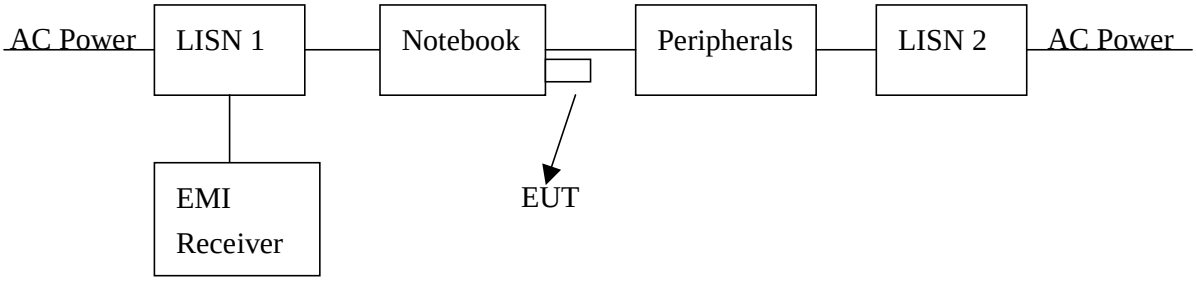
Comment A: Band-edge test at high channelN B
Average detector F1=2483.5MHz 802.11g AV
Date: 24.OCT.2003 12:34:11

8. Power Line Conducted Emission test §FCC 15.207

8.1 Operating environment

Temperature:	25	℃	(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 : XG-350

Test Condition : Normal operation mode at 802.11b function

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.15000	37.3	66.00	13.7	56.00	-28.70	-42.30
0.20000	46.3	63.61	36.1	53.61	-17.31	-17.51
0.27000	39.7	61.12	31.8	51.12	-21.42	-19.32
0.34000	34.2	59.20	25.5	49.20	-25.00	-23.70
0.40500	34.8	57.75	31.7	47.75	-22.95	-16.05
0.54000	30.0	56.00	29.2	46.00	-26.00	-16.80

(2) Neutral

EUT : XG-350

Test Condition : Normal operation mode at 802.11b function

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.20500	47.4	63.41	37.0	53.41	-16.01	-16.41
0.27000	38.9	61.12	29.4	51.12	-22.22	-21.72
0.34000	33.5	59.20	24.6	49.20	-25.70	-24.60
0.40500	34.2	57.75	29.2	47.75	-23.55	-18.55
0.47500	29.9	56.43	27.5	46.43	-26.53	-18.93
0.54000	26.6	56.00	24.8	46.00	-29.40	-21.20

Remark:

1. The reading value included cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81.
   Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.

(1) Line

EUT : XG-350

Test Condition : Normal operation mode at 802.11g function

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.15000	38.1	66.00	13.1	56.00	-27.90	-42.90
0.17000	31.8	64.97	8.6	54.97	-33.17	-46.37
0.20500	46.7	63.41	37.0	53.41	-16.71	-16.41
2.97500	34.3	56.00	25.3	46.00	-21.70	-20.70
3.24500	33.8	56.00	22.3	46.00	-22.20	-23.70
3.58500	34.2	56.00	25.4	46.00	-21.80	-20.60

(2) Neutral

EUT : XG-350

Test Condition : Normal operation mode at 802.11g function

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.20500	46.8	63.41	36.5	53.41	-16.61	-16.91
0.27000	38.2	61.12	28.9	51.12	-22.92	-22.22
0.40500	34.1	57.75	29.2	47.75	-23.65	-18.55
3.11500	26.8	56.00	24.2	46.00	-29.20	-21.80
3.24540	26.4	56.00	23.5	46.00	-29.60	-22.50
3.38500	25.0	56.00	19.8	46.00	-31.00	-26.20

Remark:

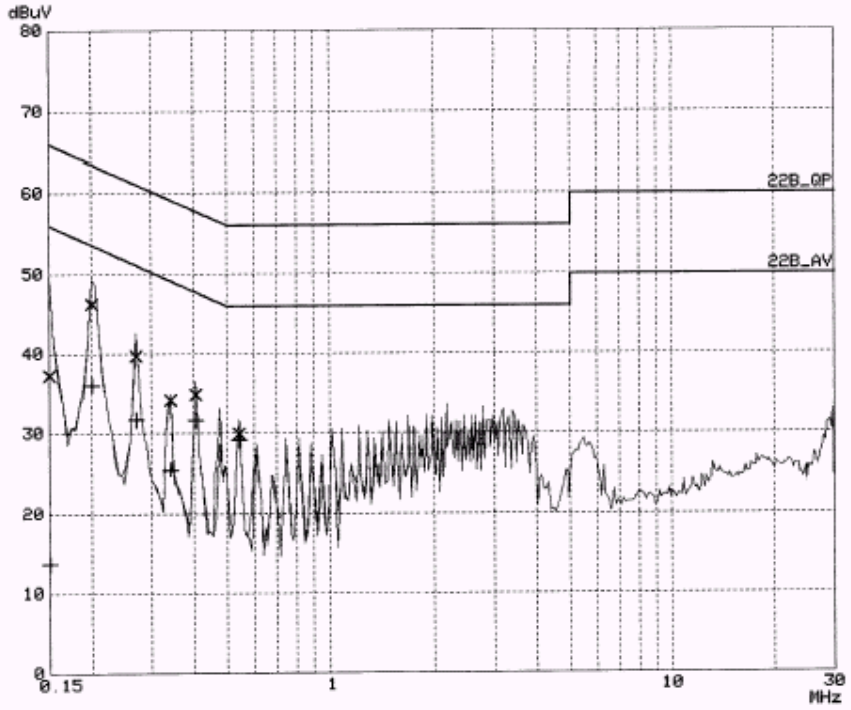
1. The reading value included cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81.
   Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.

802.11b function (DSSS Modulation)

```
Intertek Testing Services
RF VOLTAGE
EUT:            XG-350
Manuf:          Z-com
Op Cond:        LISN-L
Operator:       Jackey
Test Spec:      FCC P15 Class B
Comment:        RCV:EC303  LISN:EC320
                120V 60Hz 23'c 55%RH  normal operation 802.11b
Date:           16. Oct 03  11:39

Scan Settings (1 Range)
|--------- Frequencies -----------||--------- Receiver Settings ---------|
   Start       Stop        Step      IF BW  Detector  M-Time  Atten Preamp
 150k         30M          5k          9k       PK      20ms AUTO LN   OFF

Final Measurement: x QP / + AV
                   Meas Time:    1 s
```



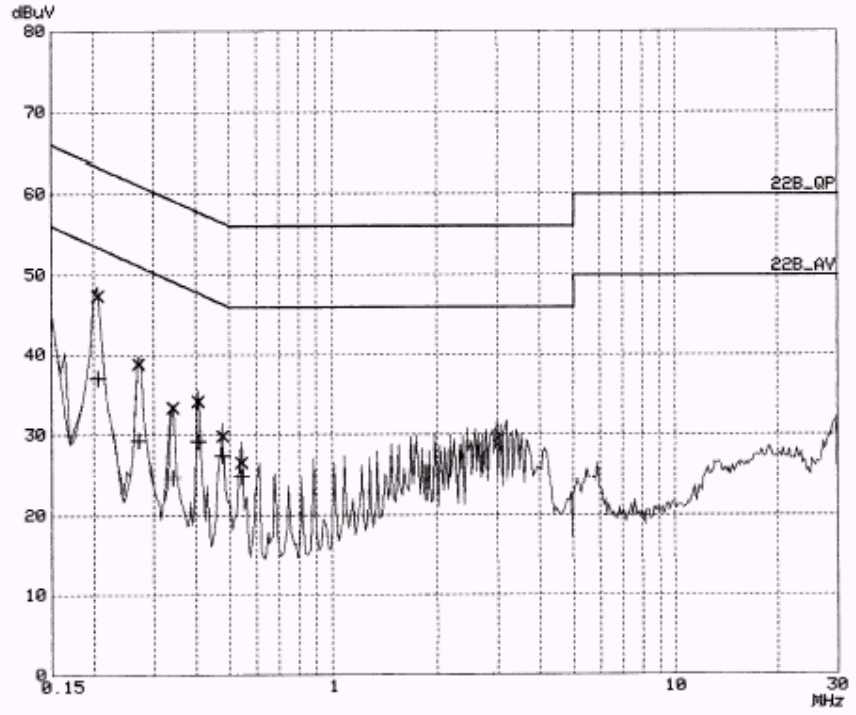
Intertek Testing Services
RF VOLTAGE

EUT:	XG-350
Manuf:	Z-com
Op Cond:	LISN-N
Operator:	Jackey
Test Spec:	FCC P15 Class B
Comment:	RCV:EC303 LISN:EC320
	120V 60Hz 23'c 55%RH normal operation 802.11b
Date:	16. Oct 03 11:31

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	AUTO LN	OFF

Final Measurement: x QP / + AV
Meas Time: 1 s

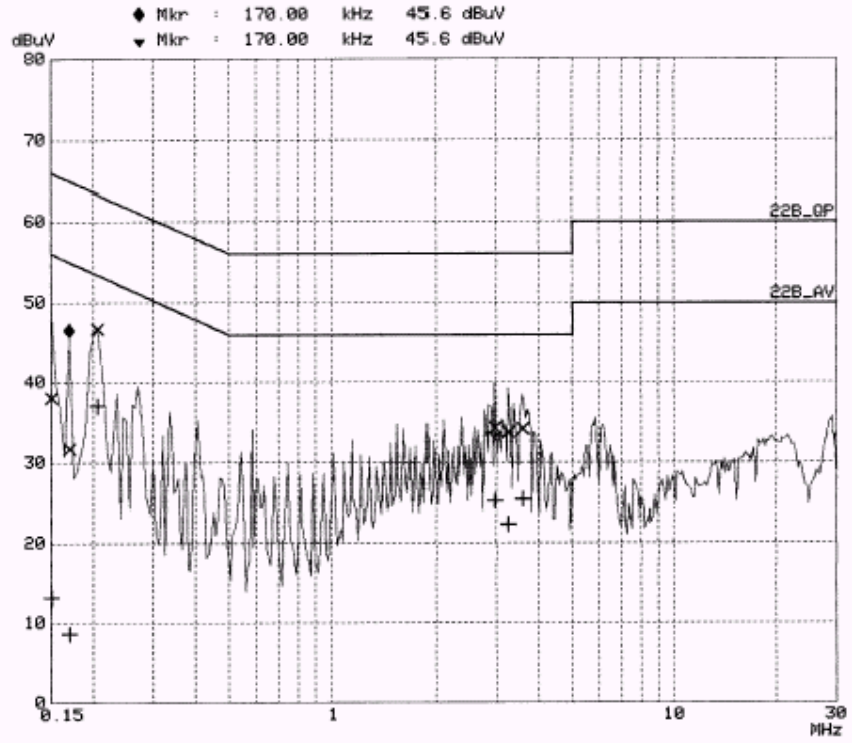


802.11g function (OFDM Modulation)

```
Intertek Testing Services
RF VOLTAGE
EUT:            XG-350
Manuf:          Z-com
Op Cond:        LISN-L
Operator:       Jackey
Test Spec:      FCC P15 Class B
Comment:        RCV:EC303  LISN:EC320
                120V 60Hz 23'c 55%RH  normal operation 802.11g
Date:           16. Oct 03  11:02

Scan Settings (1 Range)
|--------- Frequencies -----------||--------- Receiver Settings ---------|
   Start       Stop        Step      IF BW  Detector  M-Time  Atten Preamp
 150k          30M         5k          9k       PK       20ms AUTO LN   OFF

Final Measurement: x QP / + AV
                   Meas Time:    1 s
```



Intertek Testing Services
RF VOLTAGE

EUT:	XG-350
Manuf:	Z-com
Op Cond:	LISN-N
Operator:	Jackey
Test Spec:	FCC P15 Class B
Comment:	RCV:EC303 LISN:EC320
	120V 60Hz 23'c 55%RH normal operation 802.11g
Date:	16. Oct 03 11:22

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	AUTO LN	OFF

Final Measurement: x QP / + AV
Meas Time: 1 s