EMC
TEST REPORT

Report No. : EME-030949
Model No. : WBD512
Issued Date : Aug. 28, 2003

Applicant : AboCom Systems, Inc.
300 1F, No. 21, R&D Rd. II, SBIP, Hsin-Chu, 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

Jerry Liu

Reviewed By

Elton Chen

Table of Contents

Summary of Tests

802.11b Wireless LAN/Disk-Model: WBD512
FCC ID: MQ4WBD512

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 Wireless LAN/Disk
Model No.	: WBD512
FCC ID.	: MQ4WBD512
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	: CCK (11Mps, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps)
Rated Power	: 5Vdc from Notebook
Power Cord	: N/A
Sample Received	: July 3, 2003
Test Date(s)	: July 3, 2003 ~ Aug. 20, 2003

A FCC DoC report has been generated for the client.

1.2 Additional information about the EUT

The EUT is a 802.11b USB adapter, it's integrated a flash disk, and they can NOT operate at the same time.

We verified that WUB1600 is series model to WBD512 (EUT), and the different between WBD512 & WUB1600 that WUB1600 was no Disk function.
The WBD512 has 4 types of memory size, which are 64MB, 128MB, 256MB, and 512MB.
We verified all models and performed that the WBD512 of 512MB is for all test item, as the final test data has been recorded on this report.

Each model has it's own product name for marketing purpose and listed as below:

Model No.	Product Name	Product Description
WBD512	802.11b Wireless LAN/Disk	802.11b with 512MB disk
WBD512	802.11b Wireless LAN/Disk	802.11b with 256MB disk
WBD512	802.11b Wireless LAN/Disk	802.11b with 128MB disk
WBD512	802.11b Wireless LAN/Disk	802.11b with 64MB disk
WUB1600	802.11b Wireless LAN USB Adapter	802.11b function only

For more detail features, please refer to user's Manual.

1.3 Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain : -1.88 dBi
Antenna Type : PCB Printed antenna
Connector Type : N/A

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
Notebook	Dell	PP01L	CN-03P83-48643-33O-3930	FCC DoC Approved
Printer	HP	C2642A	TH86K1N2ZB	FCC DoC Approved
Modem	Dynalink	V1456VQE	00V230A00051494	ARSCM560S

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 C63.4/1992.

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 operating function (802.11b WLAN, DISK), and they can't operate at the same time.

We verified the function of 802.11b WLAN and Disk individually.

Disk function:
The EUT was supplied with laptop PC and was tested in write-read-delete sequence mode.

802.11b WLAN function:

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

The EUT was transmitted continuously during all the test.

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
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	100186	Oct. 9, 2002
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
4GHz Source RF	HP	9KHz~4GHz	8648D	3847U00403	Sep. 7, 2002
Crystal Detector	Agilent	N/A	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:	56	%
Atmospheric Pressure	1023	hPa

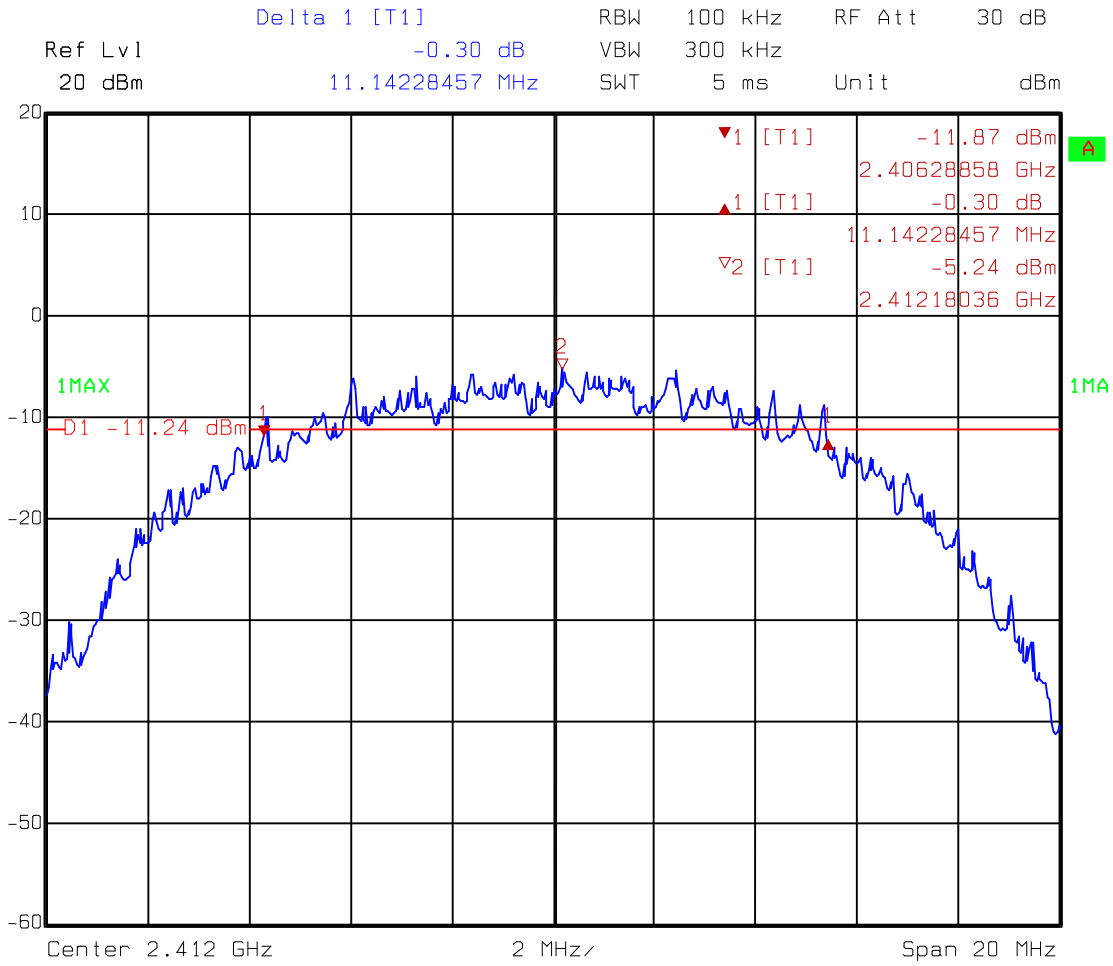
3.2 Test setup & procedure

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.

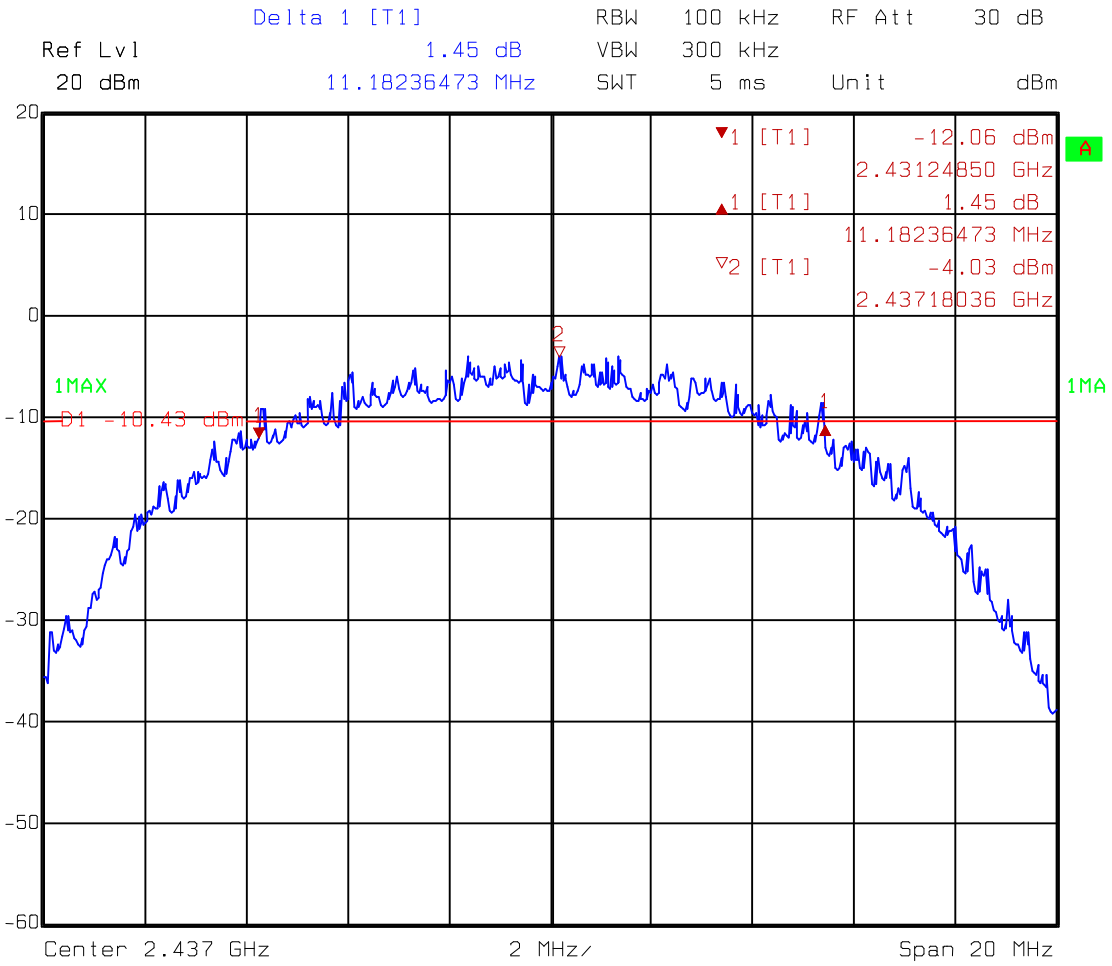
3.3 Measured data of Minimum 6dB Bandwidth test results

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2412	11.14228	＞500kHz
Middle	2437	11.18236	＞500kHz
High	2462	11.10220	＞500kHz

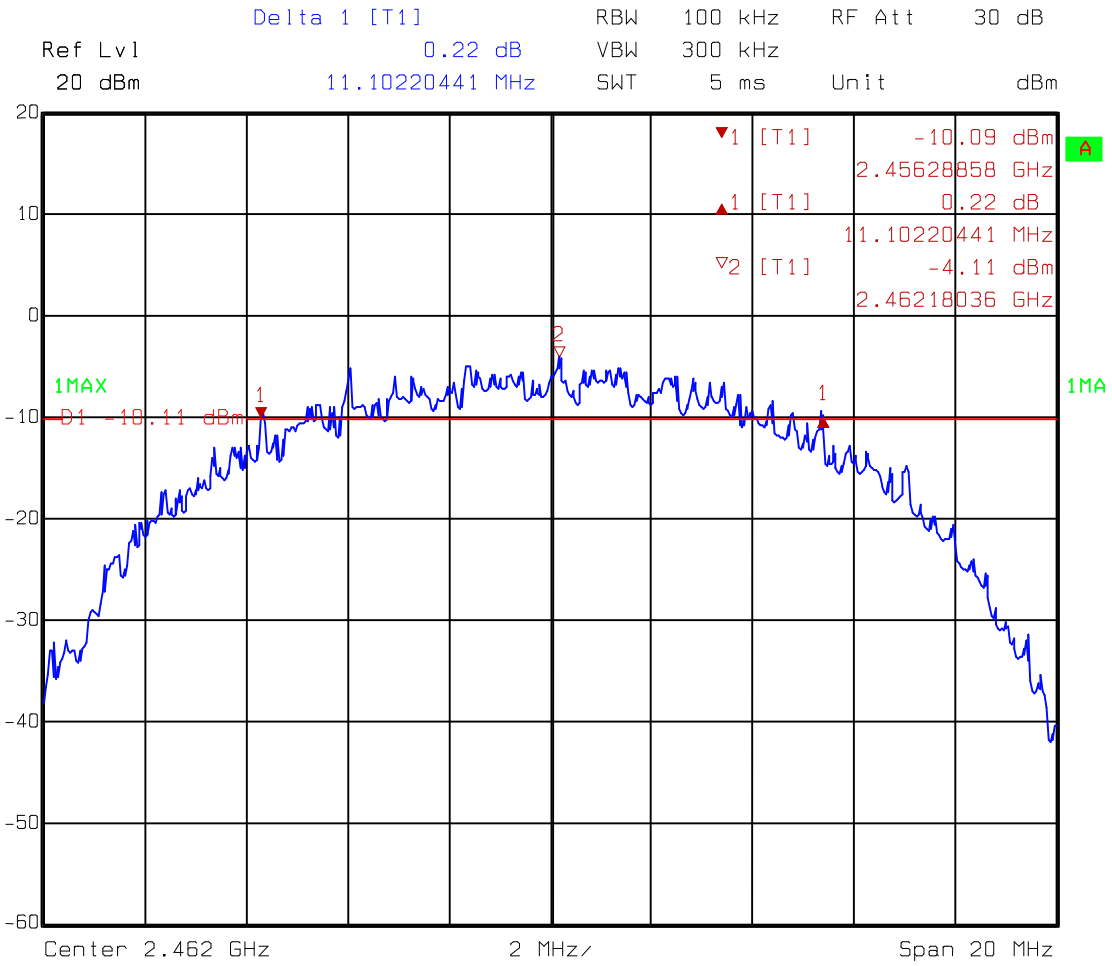
Please see the plot below.



Comment A: 6dB bandwidth at low channel (EC365)
Date: 24.SEP.2003 17:20:28



Comment A: 6dB bandwidth at middle channel (EC365)
Date: 24.SEP.2003 17:18:50



Comment A: 6dB bandwidth at high channel (EC365)
Date: 24.SEP.2003 17:16:30

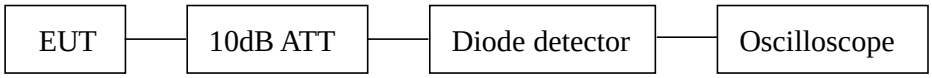
4. Maximum Output Power test

4.1 Operating environment

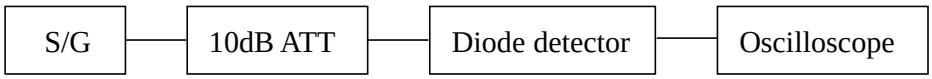
Temperature:	23	℃
Relative Humidity:	56	%
Atmospheric Pressure	1023	hPa

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

Channel	Frequency (MHz)	Reading (dBm)	Output Power		Limit (W)
			(dBm)	(mW)	
Lowest	2412	19.22	19.22	83.56	30
Middle	2437	18.93	18.93	78.162	30
Highest	2462	18.72	18.72	74.47	30

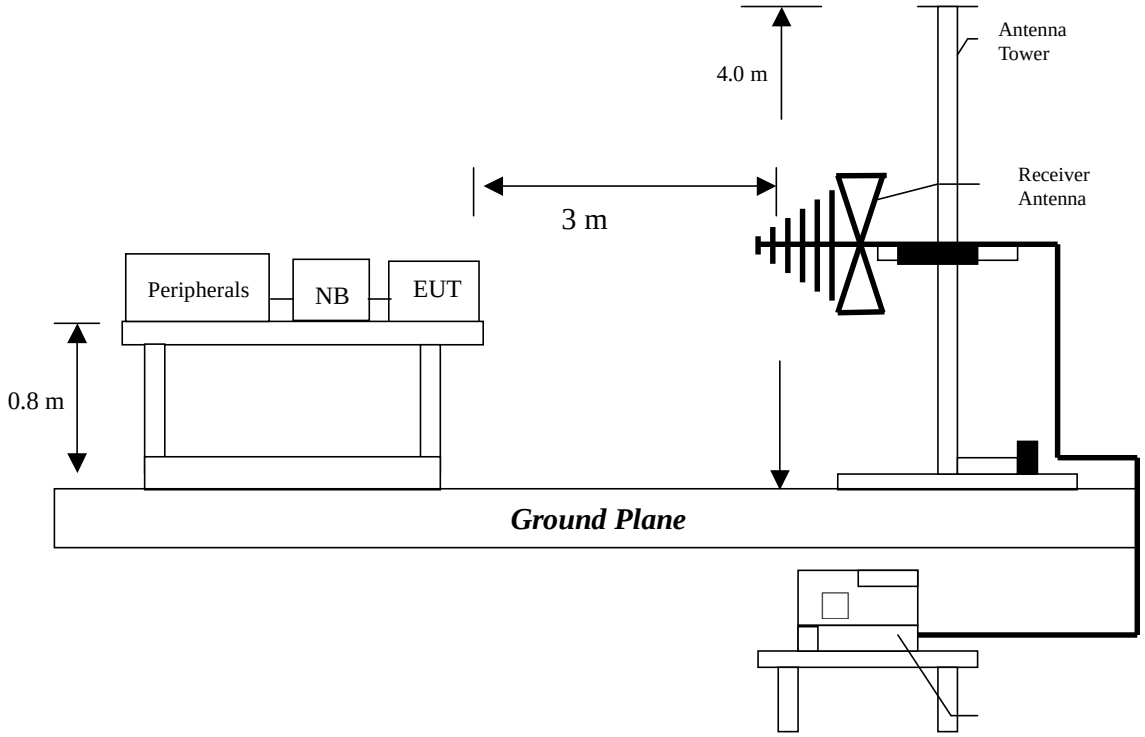
5. Radiated Emission test

5.1 Operating environment

Temperature:	24	℃	(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 : WBD512
Worst Case Condition : Tx at low channel in WLAN 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)
69.5290	QP	V	11.74	11.14	22.88	40.00	-17.12	101	181
167.7000	QP	V	14.43	18.51	32.94	43.50	-10.56	100	191
398.7400	QP	V	16.91	11.65	28.56	46.00	-17.44	119	174
664.2500	QP	V	21.76	4.46	26.22	46.00	-19.78	101	260
899.7600	QP	V	25.08	2.10	27.18	46.00	-18.82	189	220
930.1590	QP	V	25.36	3.40	28.76	46.00	-17.24	119	175
65.9900	QP	H	12.67	13.48	26.15	40.00	-13.85	226	166
174.3000	QP	H	13.97	10.99	24.96	43.50	-18.54	152	148
240.0370	QP	H	12.85	8.38	21.23	46.00	-24.77	100	141
398.6700	QP	H	16.91	17.64	34.55	46.00	-11.45	100	315
664.5400	QP	H	21.76	5.46	27.22	46.00	-18.78	105	142
930.5400	QP	H	25.36	7.49	32.85	46.00	-13.15	103	348

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

EUT : WBD512
Test Condition : Disk 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)
58.2400	QP	V	13.12	12.58	25.70	40.00	-14.30	116	215
263.9600	QP	V	13.48	8.68	22.16	46.00	-23.84	179	206
307.9700	QP	V	14.66	14.26	28.92	46.00	-17.08	152	173
398.7900	QP	V	16.91	10.97	27.88	46.00	-18.12	121	176
446.6200	QP	V	17.99	8.93	26.92	46.00	-19.08	121	236
929.1400	QP	V	25.35	1.65	27.00	46.00	-19.00	130	0
240.0400	QP	H	12.85	9.21	22.06	46.00	-23.94	117	91
207.4300	QP	H	11.56	2.66	14.22	43.50	-29.28	165	151
308.0000	QP	H	14.66	13.80	28.46	46.00	-17.54	123	247
354.3400	QP	H	15.71	18.13	33.84	46.00	-12.16	123	6
398.3000	QP	H	16.90	13.20	30.10	46.00	-15.90	123	338
447.7900	QP	H	18.02	17.29	35.31	46.00	-10.69	123	0

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

5.4.2 Measurement results: frequency above 1GHz

The radiated spurious emissions at

Frequency(MHz)	Margin
7236	-3.35
7386	-2.27
9648	-2.08
9648	-3.24

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : WBD512
Test Condition : Tx at low channel in WLAN 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	34.32	38.42	52.92	57.02	74	-16.98	161	183
7236	AV	V	34.32	38.42	46.55	50.65	54	-3.35	161	183
9648	PK	V	35.808	41.35	52.268	57.81	74	-16.19	147	73
9648	AV	V	35.808	41.35	46.378	51.92	54	-2.08	147	73
7236	PK	H	34.32	38.42	49.33	53.43	74	-20.57	163	263
7236	AV	H	34.32	38.42	40.96	45.06	54	-8.94	163	263
9648	PK	H	35.808	41.35	51.318	56.86	74	-17.14	143	17
9648	AV	H	35.808	41.35	45.218	50.76	54	-3.24	143	17

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: 50dBuV
3GHz-14GHz: 54dBuV
14GHz-26.5GHz: 60dBuV

For AV:
1GHz-3GHz: 41.5dBuV
3GHz-14GHz: 46dBuV
14GHz-26.5GHz: 46.5dBuV

EUT : WBD512
Test Condition : Tx at middle channel in WLAN 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)
7311	PK	V	34.32	38.42	52.23	56.33	74	-17.67	183	184
7311	AV	V	34.32	38.42	44.59	48.69	54	-5.31	183	184
9748	PK	V	35.808	41.35	49.668	55.21	74	-18.79	112	306
9748	AV	V	35.808	41.35	39.238	44.78	54	-9.22	112	306
7311	PK	H	34.32	38.42	49.29	53.39	74	-20.61	131	125
7311	AV	H	34.32	38.42	39.98	44.08	54	-9.92	131	125
9748	PK	H	35.808	41.35	49.198	54.74	74	-19.26	137	9
9748	AV	H	35.808	41.35	39.148	44.69	54	-9.31	137	9

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: 50dBuV
3GHz-14GHz: 54dBuV
14GHz-26.5GHz: 60dBuV

For AV:
1GHz-3GHz: 41.5dBuV
3GHz-14GHz: 46dBuV
14GHz-26.5GHz: 46.5dBuV

EUT : WBD512
Test Condition : Tx at high channel in WLAN 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)
7386	PK	V	34.32	38.42	54.3	58.4	74	-15.6	150	186
7386	AV	V	34.32	38.42	47.63	51.73	54	-2.27	150	186
9848	PK	V	35.919	41.55	52.769	58.4	74	-15.6	142	307
9848	AV	V	35.919	41.55	36.759	42.39	54	-11.61	142	307
7386	PK	H	34.32	38.42	48.41	52.51	74	-21.49	100	131
7386	AV	H	34.32	38.42	38.6	42.7	54	-11.3	100	131

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: 50dBuV
3GHz-14GHz: 54dBuV
14GHz-26.5GHz: 60dBuV

For AV:
1GHz-3GHz: 41.5dBuV
3GHz-14GHz: 46dBuV
14GHz-26.5GHz: 46.5dBuV

6. Power Spectrum Density test

6.1 Operating environment

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

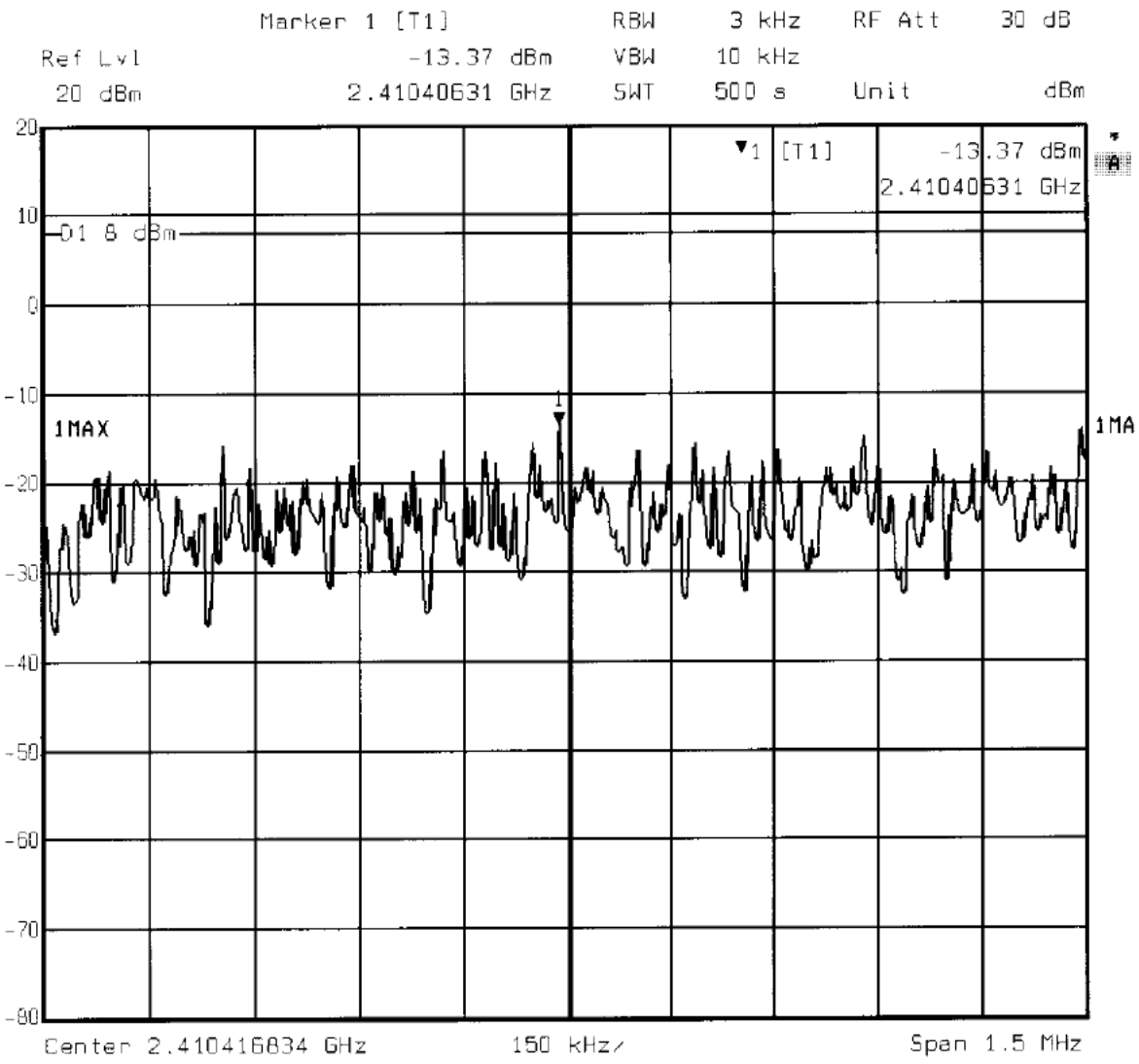
6.2 Test setup & procedure

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 and cable loss (2.63dB)/external attenuator (3dB) 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.

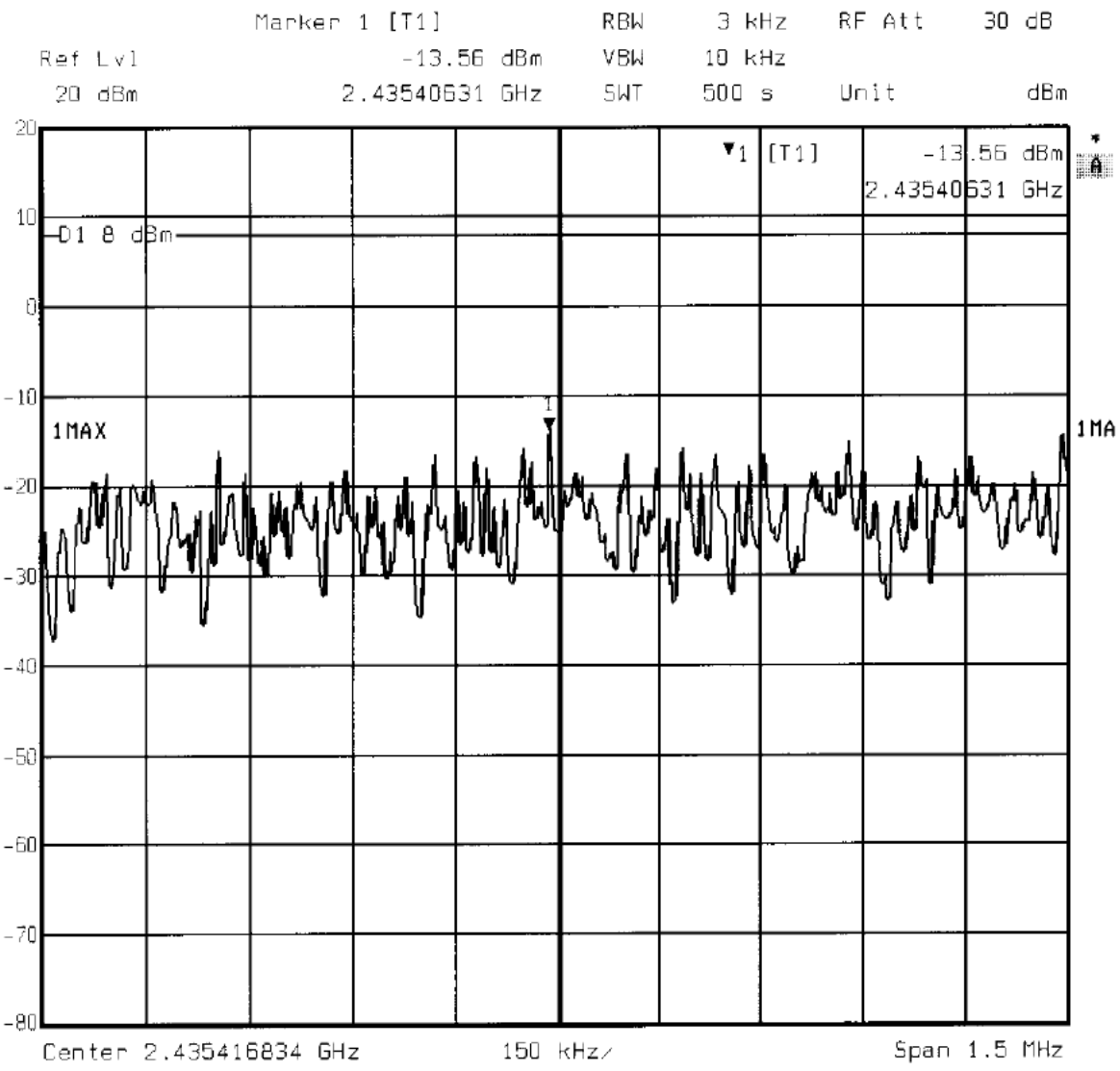
6.3 Measured data of Power Spectrum Density test results

Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2410.406	-7.74	8
Middle	2435.406	-7.93	8
High	2460.406	-8.19	8

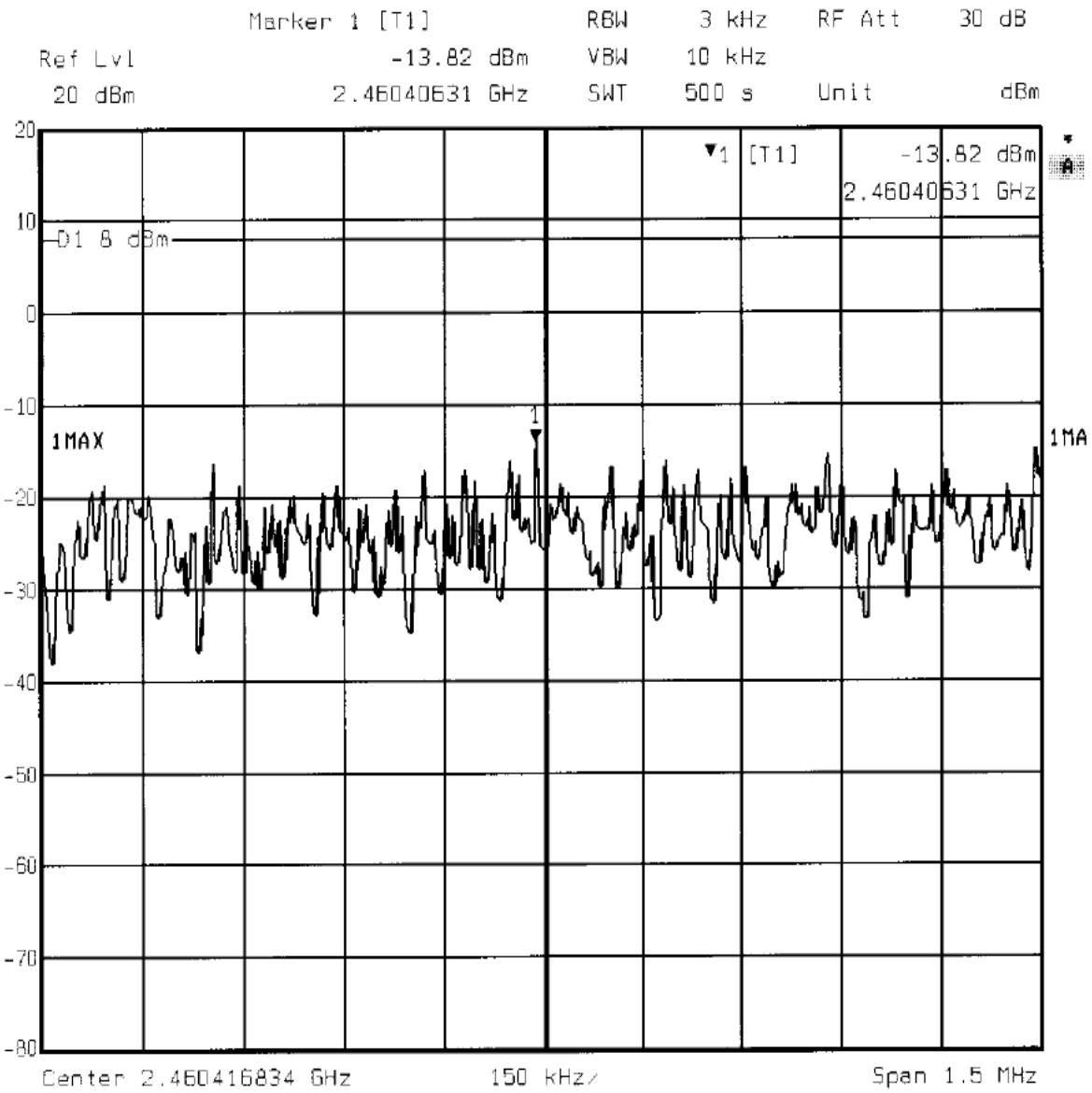
Please see the plot below.



Comment A: Power spectrum density at low channel
ATT=3dB CL=2.63dB



Comment A: Power spectrum density at middle channel
ATT=3dB CL=2.63dB



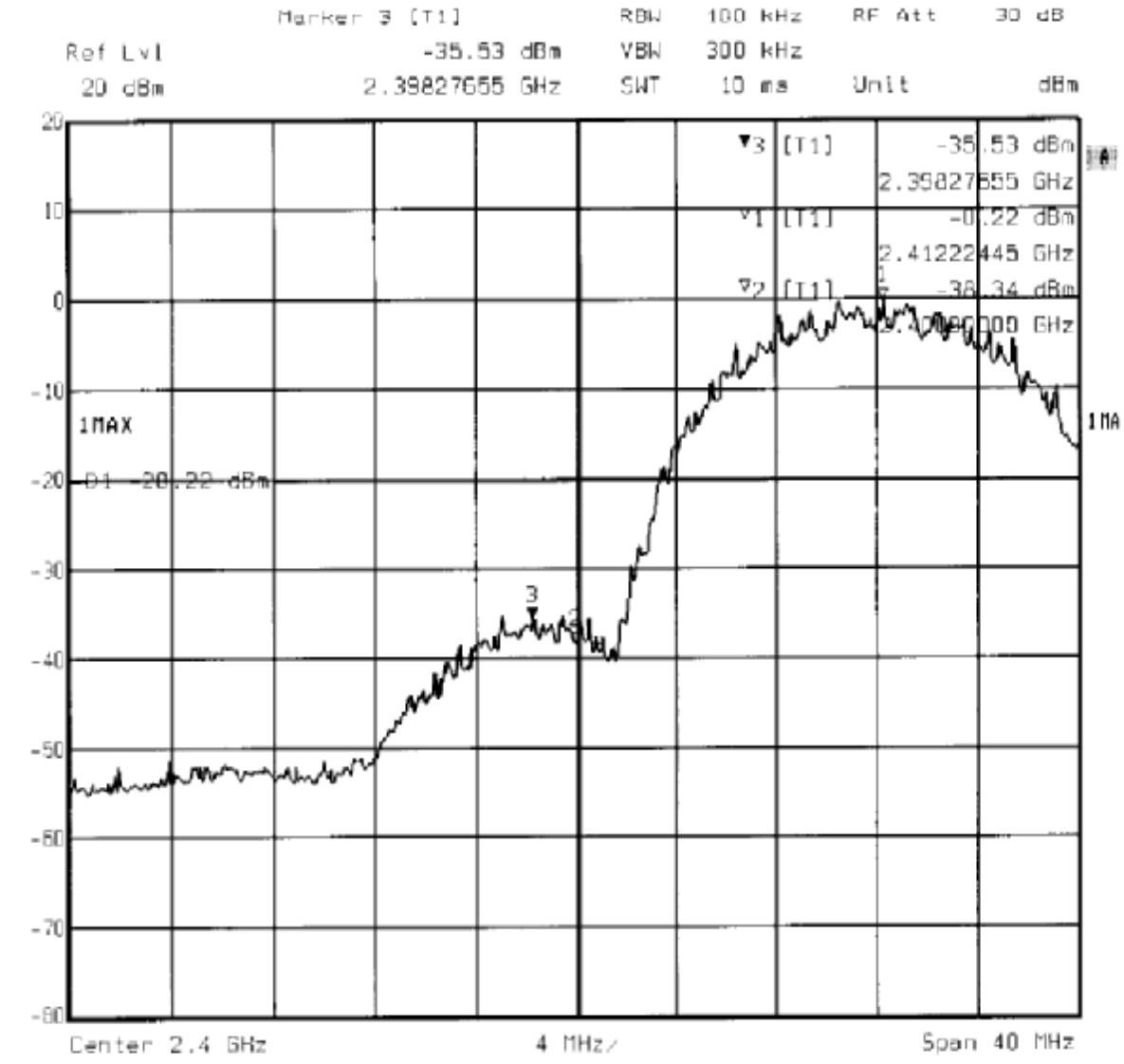
Comment A: Power spectrum density at high channel
ATT=3dB CL=2.63dB

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

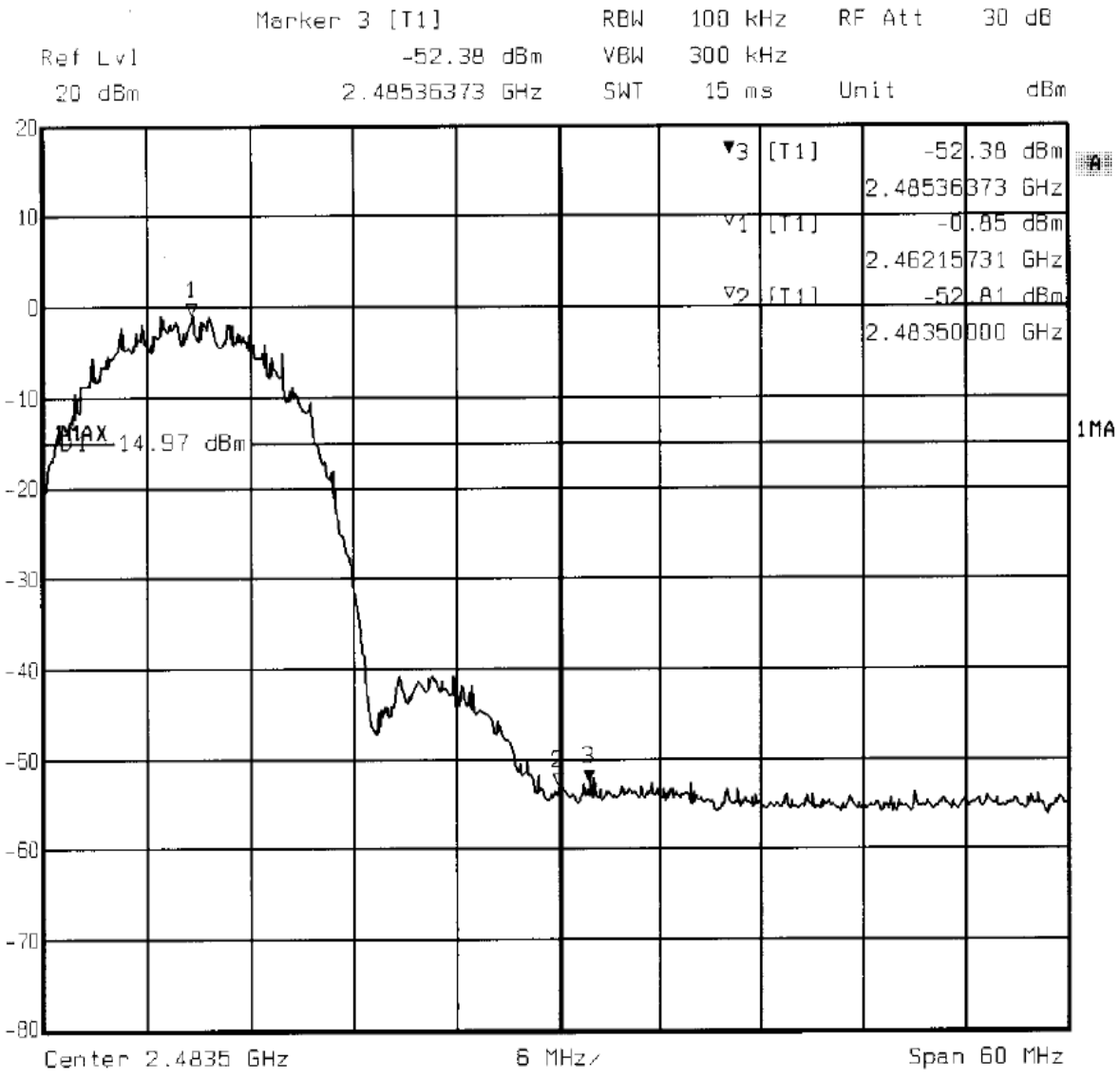
In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the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

Please see the plot below.

7.1 Band-edge (Conducted method)

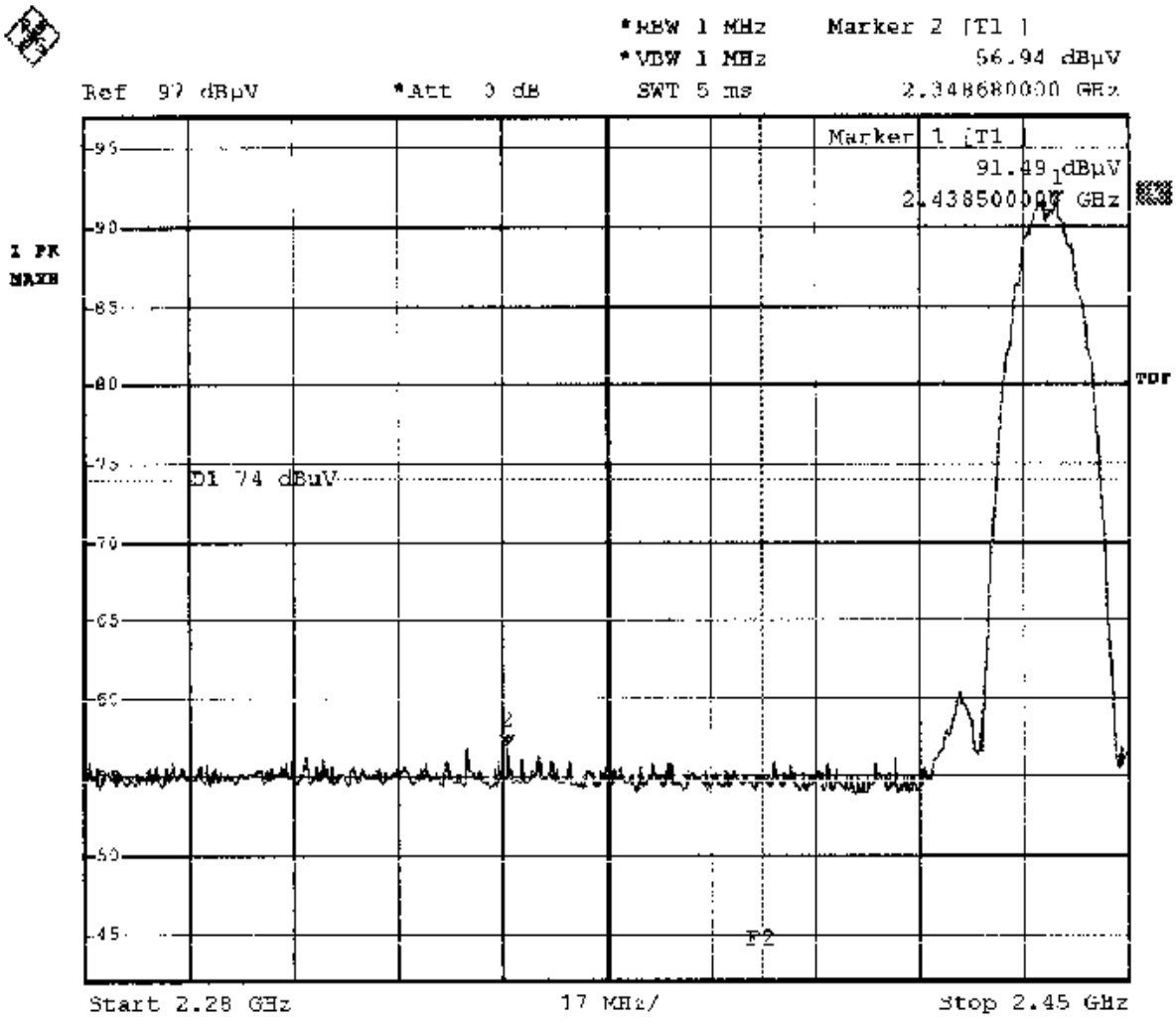


Comment A: Band-edge at low channel

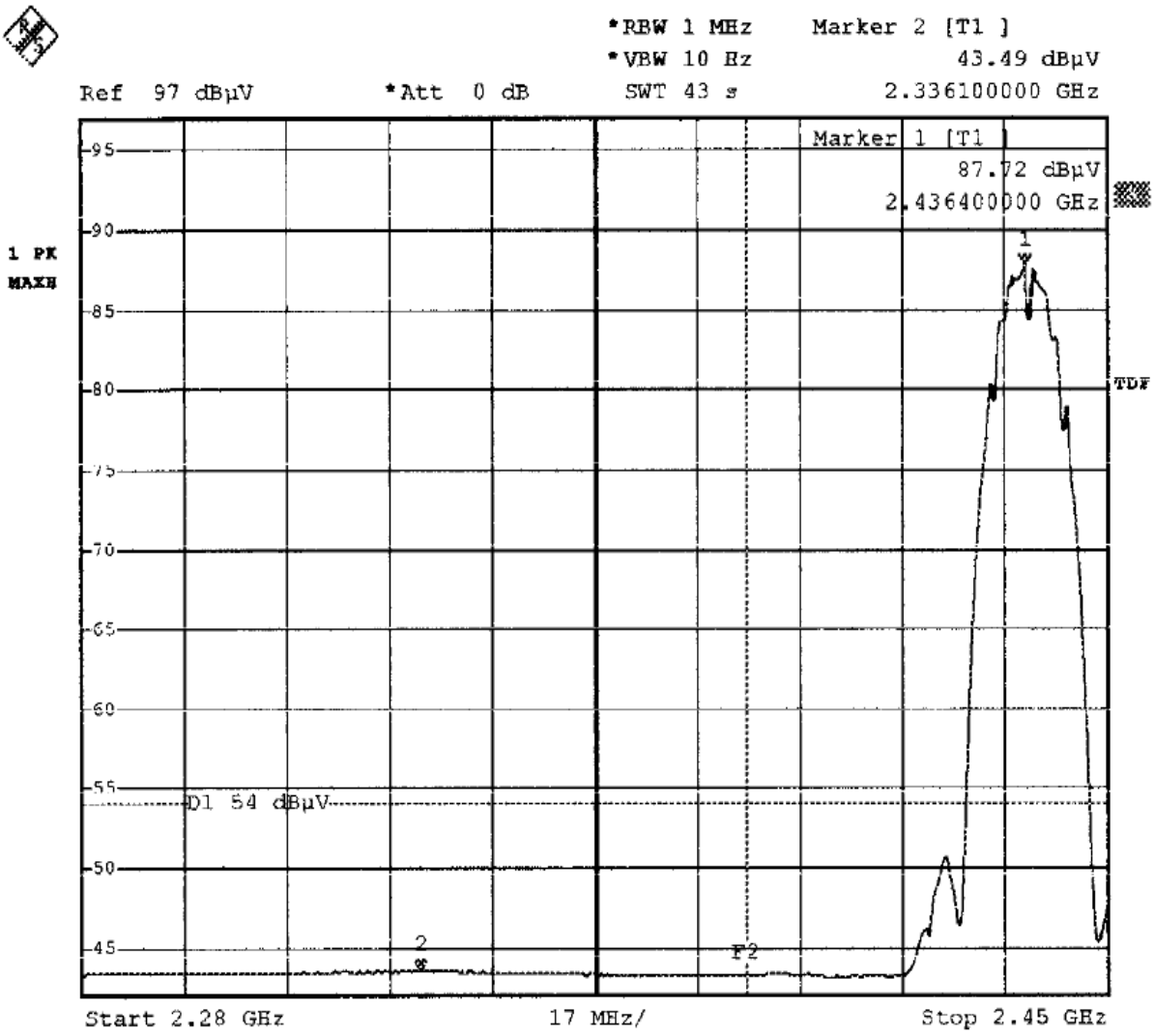


Comment A: Band-edge at high channel

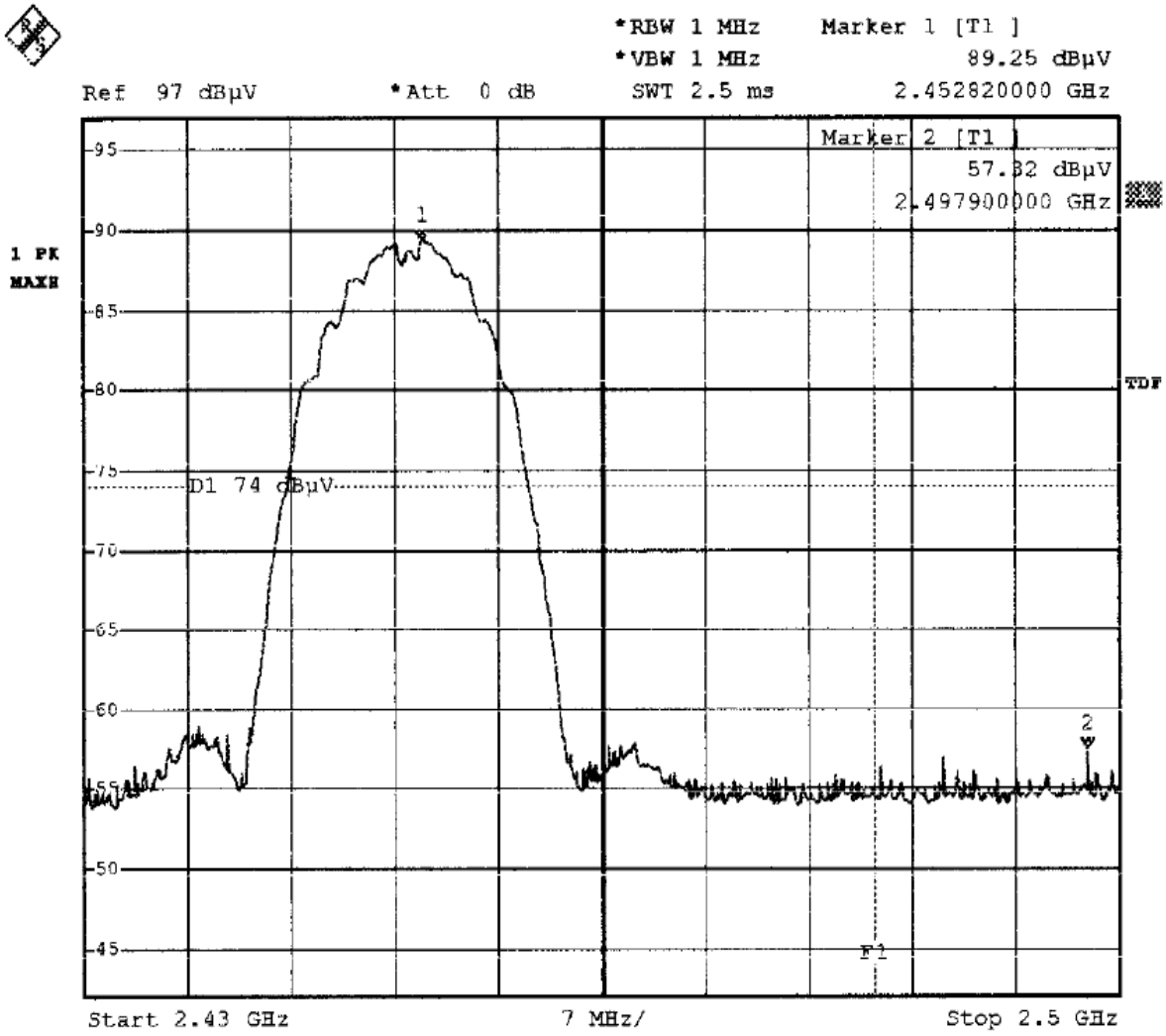
7.2 Band-edge (Radiated method)



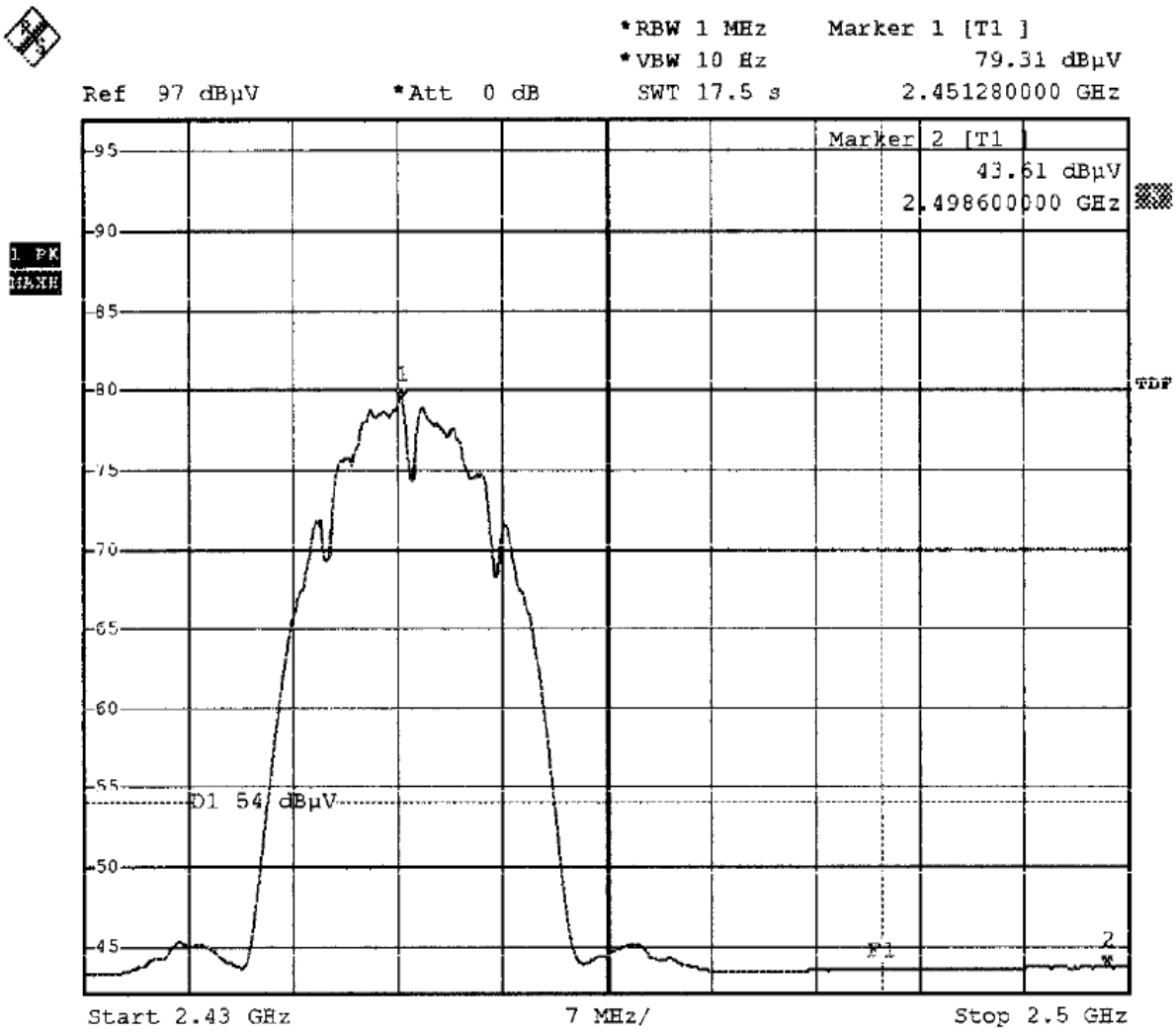
Comment A: Band edge test at low channel0
Peak detector F2-2390MHz
Date: 19.AUG.2003 17:26:12



Comment A: Band-edge test at low channel
Average detector F2=2390MHz



Comment A: Band-edge test at high channel
Peak detector F1=2483.5MHz (EC338/353)



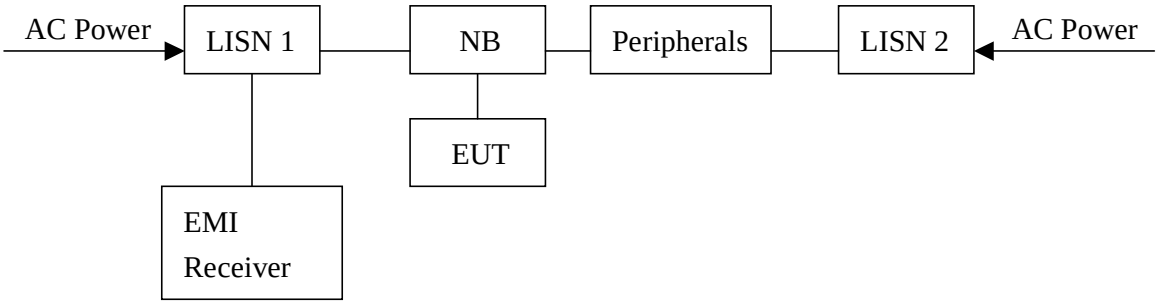
Comment A: Band-edge test at high channel
Average detector F1=2483.5MHz(EC338/353)

8. Power Line Conducted Emission test §FCC 15.207

8.1 Operating environment

Temperature:	23	℃	(10-40℃)
Relative Humidity:	56	%	(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".

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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 : WBD512

Worst Case Condition : Tx at low channel in WLAN 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
0.17500	52.20	64.72	42.90	54.72	-12.52	-11.82
0.23500	41.70	62.27	32.60	52.27	-20.57	-19.67
0.29000	37.00	60.52	28.40	50.52	-23.52	-22.12
0.35000	38.50	58.96	30.10	48.96	-20.46	-18.86
0.41000	33.10	57.65	27.30	47.65	-24.55	-20.35
0.46500	32.90	56.60	28.40	46.60	-23.70	-18.20

(2) Neutral

EUT : WBD512

Worst Case Condition : Tx at low channel in WLAN 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
0.17500	51.50	64.72	42.80	54.72	-13.22	-11.92
0.23500	40.90	62.27	32.10	52.27	-21.37	-20.17
0.29000	36.00	60.52	25.80	50.52	-24.52	-24.72
0.35000	35.30	58.96	30.20	48.96	-23.66	-18.76
0.41000	29.70	57.65	22.40	47.65	-27.95	-25.25
0.46500	30.10	56.60	26.90	46.60	-26.50	-19.70

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.

Please see the plot below.

(1) Line

EUT : WBD512

Test Condition : Disk 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
0.17400	53.90	64.77	43.40	54.77	-10.87	-11.37
0.23000	45.90	62.45	36.40	52.45	-16.55	-16.05
0.28600	40.50	60.64	30.90	50.64	-20.14	-19.74
0.35000	34.70	58.96	26.40	48.96	-24.26	-22.56
0.40600	35.30	57.73	27.80	47.73	-22.43	-19.93
0.46200	31.30	56.66	24.20	46.66	-25.36	-22.46

(2) Neutral

EUT : WBD512

Test Condition : Disk 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
0.17400	54.50	64.77	44.40	54.77	-10.27	-10.37
0.23000	47.80	62.45	37.80	52.45	-14.65	-14.65
0.28600	42.10	60.64	33.50	50.64	-18.54	-17.14
0.34200	34.30	59.15	26.30	49.15	-24.85	-22.85
0.40600	32.90	57.73	24.80	47.73	-24.83	-22.93
0.46200	31.90	56.66	26.80	46.66	-24.76	-19.86

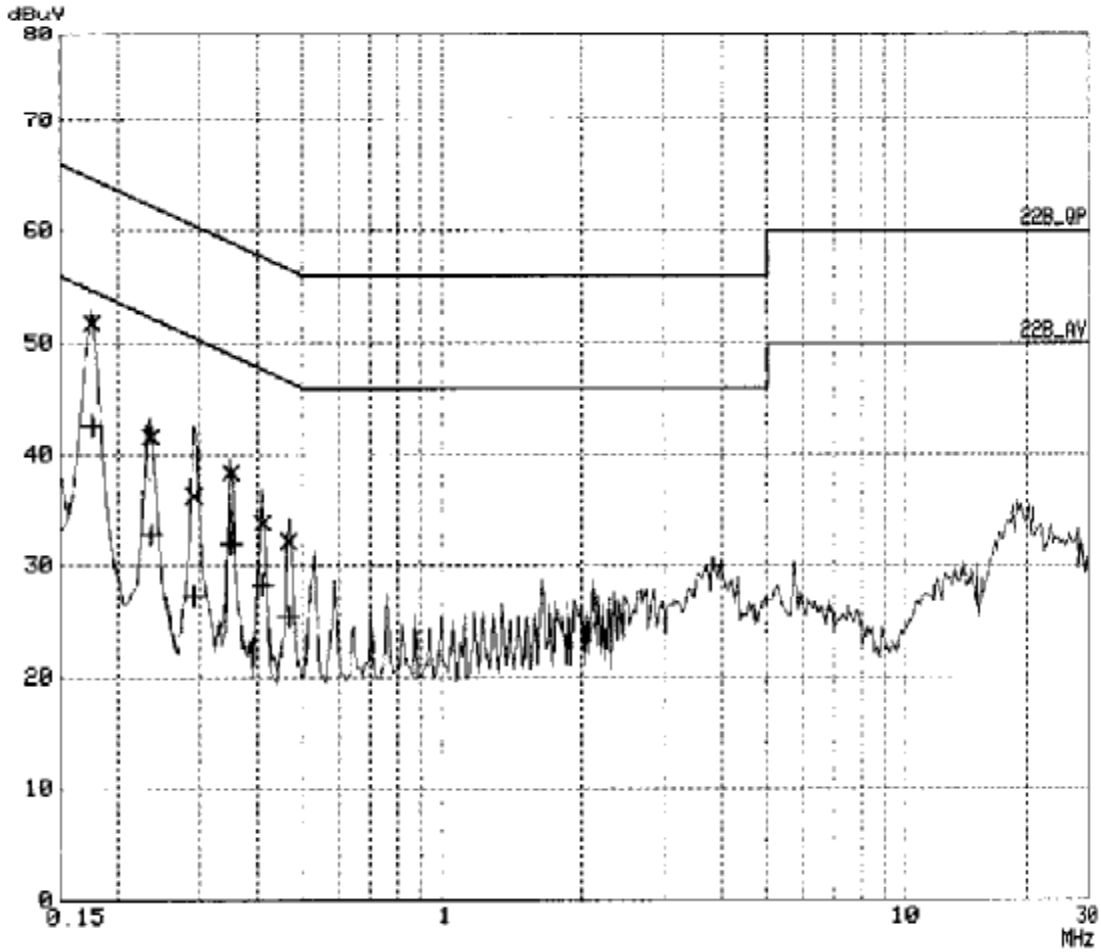
Remark:

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.

Please see the plot below.

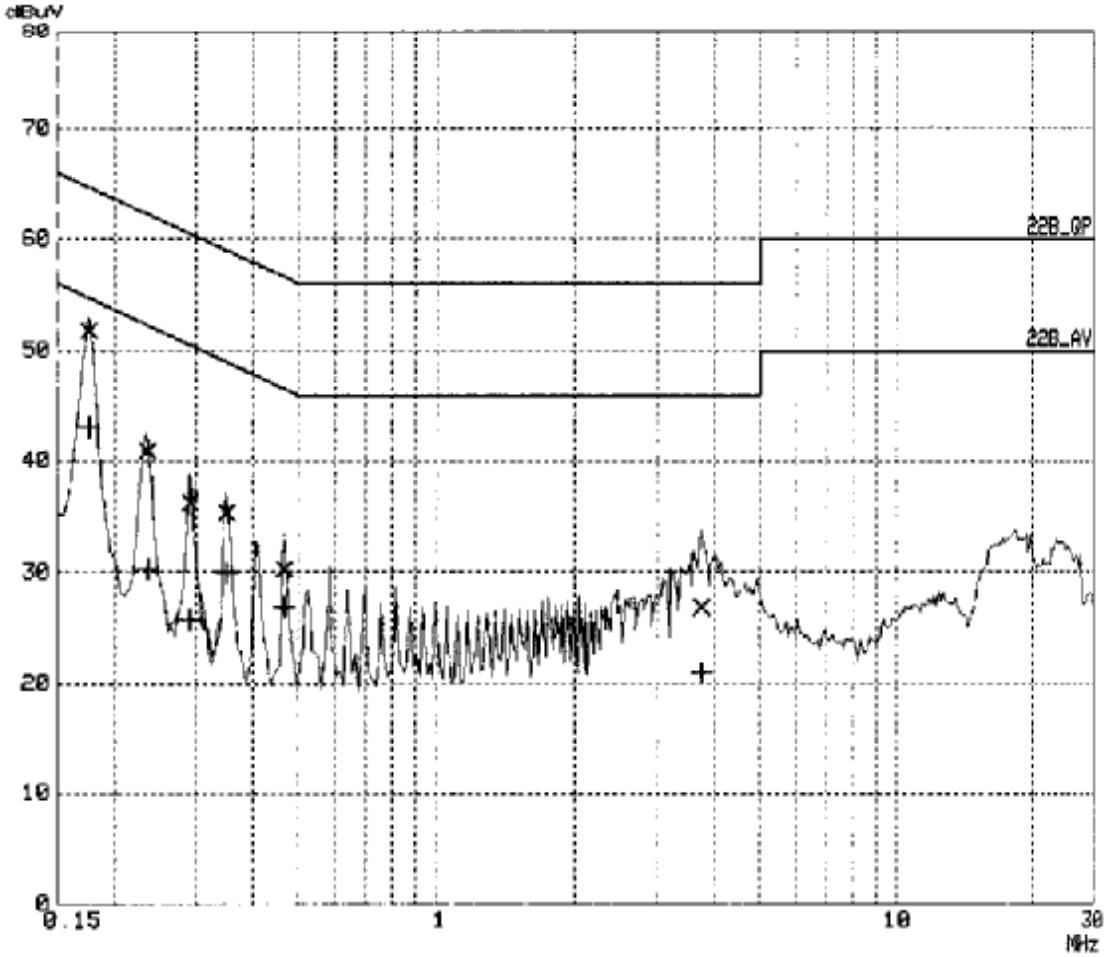
RF Voltage

EUT : WBD512
Manufacturer : AboCom
Op Cond : LISN-L
Operator : Jerry
Test Spec. : FCC CLASS B Tx at low channel in WLAN function
Comment : EMI Rx: EC303 LISN: EC320
TEMP: 23℃ R.H.: 56% TEST: 120V 60HZ EME-030949
Date : Jul. 31, 2003 10:47



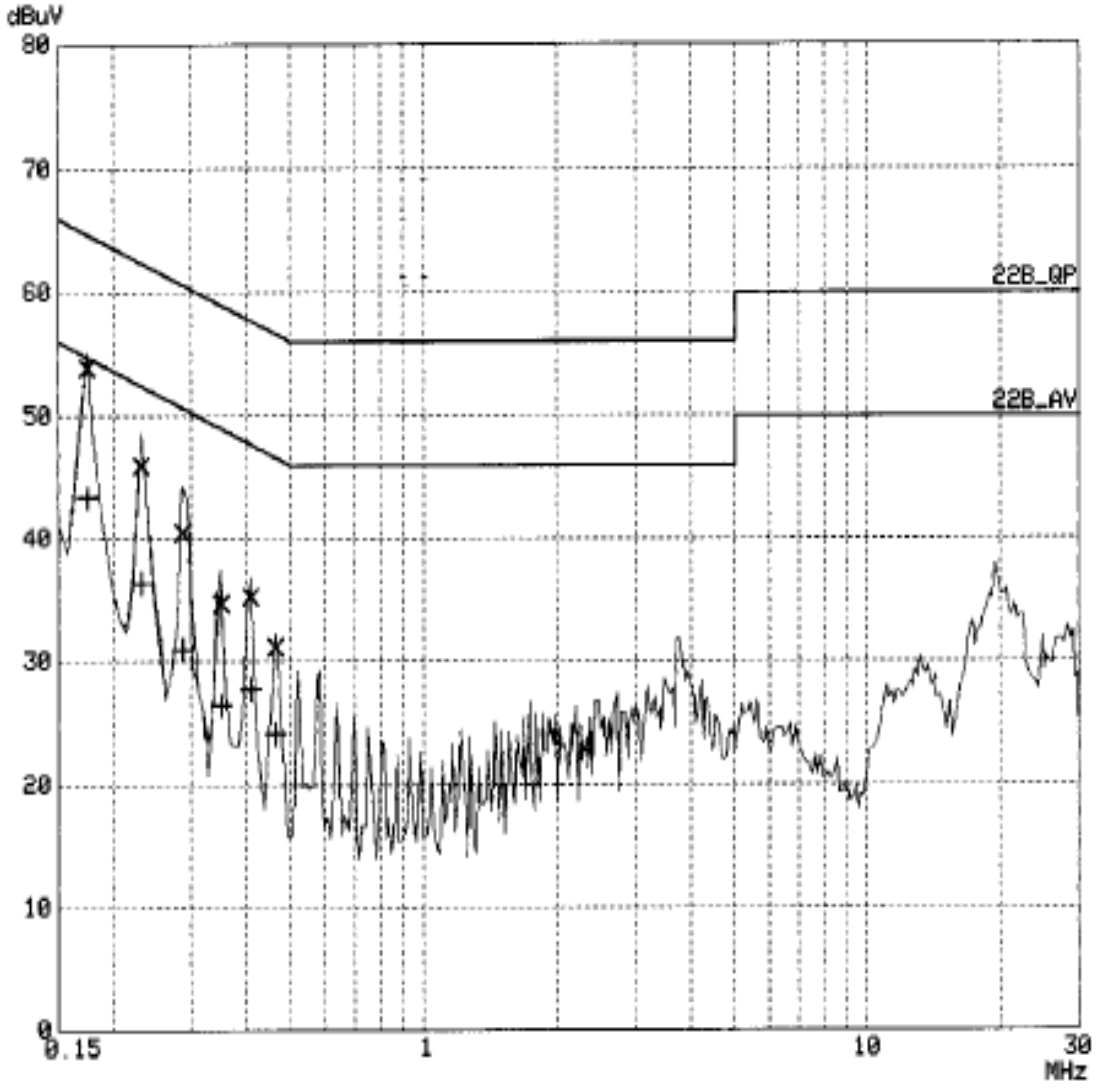
RF Voltage

EUT : WBD512
Manufacturer : AboCom
Op Cond : LISN-N
Operator : Jerry
Test Spec. : FCC CLASS B Tx at low channel in WLAN function
Comment : EMI Rx: EC303 LISN: EC320
TEMP: 23℃ R.H.: 56% TEST: 120V 60HZ EME-030949
Date : Jul. 31, 2003 11:19



RF Voltage

EUT : WBD512
Manufacturer : AboCom
Op Cond : LISN-L
Operator : Jerry
Test Spec. : FCC CLASS B Disk function
Comment : EMI Rx: EC303 LISN: EC320
TEMP: 23℃ R.H.: 56% TEST: 120V 60HZ EME-030949
Date : Jul. 31, 2003 09:47



RF Voltage

EUT : WBD512
Manufacturer : AboCom
Op Cond : LISN-N
Operator : Jerry
Test Spec. : FCC CLASS B Disk function
Comment : EMI Rx: EC303 LISN: EC320
TEMP: 23℃ R.H.: 56% TEST: 120V 60HZ EME-030949
Date : Jul. 31, 2003 09:40