Test Report

FOR

FCC Part 15 Subpart C

of

WLAN 802.11b Mini-PCI Module

Model

EM-200B

(Brand: Wistron NeWeb)

Applied by:

Wistron NeWeb Corporation
No. 10-1, Li-hsin Road I,
Science-based Industrial Park Hsinchu 300,
Taiwan, R. O. C

Test Performed by:

(NVLAP Lab. Code: 200234-0)

International Standards Laboratory

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Report Number: ISL-03LR007FC **Test Date: 2003/05/06**

NVLAP Lab. Code: 200234-0; VCCI: R-1435, C-1440; NEMKO Aut. No: ELA 113; BSMI Lab. Code: SL2-IN-E-0013

Contents of Report

1. . General 1
1.1 Certification of Accuracy of Test Data....1
2. Test Results Summary 2
3. Description of Equipment Under Test (EUT) 3
3.1 Test Standards and Procedure 4
3.2 General Test Conditions....4
4. Powerline Conducted Emissions [Section 15.207] 5
4.1 EUT Configuration....5
4.2 Test Procedure 5
4.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)....5
4.4 Test Data:....6
5. Bandwidth for DSSS [Section 15.247 (a)(2)]....8
5.1 Test Procedure 8
5.2 Test Setup 8
5.3 Test Data....8
6. DSSS Maximum Peak Output Power [Section 15.247 (b)(3)]....11
6.1 Test Procedure 11
6.2 Test Setup 11
6.3 Test Data:....11
7. Radiated Emission Measurement [Section [15.247(c)]....12
7.1 EUT Configuration....12
7.2 Test Procedure 12
7.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)....12
7.4 Test Data (30MHz – 1GHz) with 3m Test Distance :. 13
7.5 Test Data (1GHz – 25 GHz) with 3m Test Distance 17
8. Band Edge Measurement [Section 15.247(c)]....29
8.1 Test Procedure (Conducted)....29
8.2 Test Setup (Conducted)....29
8.3 Test Data:....29
8.4 Band Edge measurement Test Procedure (Radiated)....32
8.5 Test Setup (Radiated)....32
8.6 Test Data with 3m Test Distance:....33
9. DSSS Peak Power Spectral Density [Section 15.247(d)]....53
9.1 Test Procedure 53
9.2 Test Setup 53
9.3 Test Data:....53

10. Appendix 56
10.1 Appendix A: Measurement Procedure for Powerline Conducted Emissions 56
10.2 Appendix B: Test Procedure for Radiated Emissions 57
10.3 Appendix C: Test Equipment 58
10.3.1 Test Equipment List 58
10.3.2 Software for Controlling Spectrum/Receiver and Calculating Test Data 59
10.4 Appendix D: Layout of EUT and Support Equipment 60
10.4.1 General Conducted Test Configuration 60
10.4.2 General Radiation Test Configuration 61
10.5 Appendix E: Description of Support Equipment 62
10.5.1 Description of Support Equipment 62
10.5.2 Software for Controlling Support Unit 63
10.5.3 I/O Cable Condition of EUT and Support Units 64
10.6 Appendix F: Accuracy of Measurement 65
10.7 Appendix G: Photographs of EUT Configuration Test Set Up 67
10.8 Appendix H: Antenna Spec. 69

1. . General

1.1 Certification of Accuracy of Test Data

The electromagnetic interference tests which this report describes were conducted by an independent electromagnetic compatibility consultant, International Standards Laboratory in accordance with the test procedure specified in CFR 47 Part 15 Subpart C (Section 15.247), and ANSI C63.4 Rules.

The test results contained in this report accurately represent the measurements of the EMC characteristics and the energy generated by sample equipment under test at the time of the test.

Equipment Tested:	**WLAN 802.11b Mini-PCI Module** Model:EM-200B Applied by Wistron NeWeb Corp.	
Sample received Date:	2003/04/25	
Final test Date :	2003/05/6	
Test Site:		Chamber 02, Conduction 02
Temperature	24°C(Conduction Test);	23°C (Radiation Test)
Humidity:	60% (Conduction Test);	53% (Radiation Test)
Test Engineer:	Jerry Chiou	

The results show that the sample equipment tested as described in this report is in compliance with the Class B conducted and radiated emission limits of FCC Rules Part 15 Subpart B, and the limit of Part Subpart C Sec. 15.247.

Approve & Signature

Eddy Hsiung

Eddy Hsiung/Director

Test results given in this report apply only to the specific sample(s) tested under stated test conditions.
This report shall not be reproduced other than in full without the explicit written consent of ISL. This report totally contains 74 pages, including 1 cover page , 2 contents page, and 71 pages for the test description.
This report must not be use to claim product endorsement by NVLAP or any agency of the U.S. Government.

This test data shown below is traceable to NIST or national or international standard.
International Standards Laboratory certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

2. Test Results Summary

The 802.11b functions of EUT has been tested to the FCC regulations listed below:

Tested Standards: 47 CFR Part 15 Subpart C			
Standard Section	Test Type	Result	Remarks
15.207	AC Power Line Emissions	Pass	
15.247(a)(2)	Spectrum Bandwidth Of DSSS device	Pass	
15.247(b)(3)	Max. Peak Output Power	Pass	
15.247(c)	Radiated Emissions 30MHz – 25 GHz	Pass	
15.247 (c)	Band Edge Measurement	Pass	
15.247(b)(5), 1.1307(b)	Radiation Exposure	Pass	See Attach file for MPE
15.247 (d)	Power Spectral Density	Pass	

3. Description of Equipment Under Test (EUT)

Description:	WLAN 802.11b Mini-PCI Module
Model No.:	EM-200B
FCC ID:	NKREM200B
Brand:	Wistron NeWeb
Frequency Range :	2412 - 2462 MHz
Support channel:	11 Channels
Modulation Skill:	DBPSK(1Mbps), DQPSK(2Mbps), CCK(5.5/11Mbps)
Power Type of LAN module:	3.3V DC from Notebook PC

The channel and the operation frequency of 802.11b is listed below:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437		

There are four kinds of antenna been tested.. The Details are listed below:

Ant. Model:	CA8-I	5600	888E	M300N
Antennas Type:	PIFA Type in Metal	PIFA Type in Metal	PIFA Type in Metal	PIFA Type in Metal
Peak Gain at 2.4GHz:	0.35dBi	0.47dBi	3.12dBi	-2.95dBi
Ant. Manufacturer:	WNC	CLEVO	CLEVO	CLEVO

During the test, the EUT was tested as a modular device of a notebook PC using a PCMCIA extender board to extend the EUT outside the notebook PC enclosure. The EUT was then connected to a set of antennas via its transmit and receive connectors.

3.1 Test Standards and Procedure

Test Specification:	FCC Part 15 subpart C (Section 15.247) and subpart B and/or CISPR 22/EN55022, RSS210
Test Procedure:	ANSI C63.4, CFR 47 Sec. 15.247 as detailed in Appendices

3.2 General Test Conditions

1. During the test, the EUT was set in continuously transmitting mode with a duty cycle of 100%.
2. The channel 1, 6, 11 of of 802.11b of EUT were all tested.
3. **During the test, the EUT was tested as a modular device of A notebook PC using a PCMCIA extender board to extend the EUT outside the notebook PC enclosure.** The EUT was then connected to a set of antennas via its transmit and receive connectors.

4. Powerline Conducted Emissions [Section 15.207]

4.1 EUT Configuration

The EUT was set up on the non-conductive table that is 1.0 by 1.5 meter, 80cm above ground. The wall of the shielded room was located 40cm to the rear of the EUT.

Power to the EUT was provided through the LISN. The impedance vs. frequency characteristic of the LISN is complied with the limit shown on the figure 1 of ANSI C63.4-2001.

Both lines (neutral and hot) were connected to the LISN in series at testing. A coaxial-type connector which provides one 50 ohms terminating impedance was provided for connecting the test instrument. The excess length of the power cord was folded back and forth at the center of the lead so as to form a bundle not exceeding 40cm in length.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

If the EUT is a Personal Computer or a peripheral of personal computer, and the personal computer has an auxiliary AC outlet which can be used for providing power to an external monitor, then all measurements will be made with the monitor power from first the computer-mounted AC outlet and then a floor-mounted AC outlet.

4.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. The main power line conducted EMI tests were run on the hot and neutral conductors of the power cord and the results were recorded. The effect of varying the position of the interface cables has been investigated to find the configuration that produces maximum emission.

At the frequencies where the peak values of the emissions were higher than 6dß below the applicable limits, the emissions were also measured with the quasi-peak detectors. At the frequencies where the quasi-peak values of the emissions were higher than 6dß below the applicable average limits, the emissions were also measured with the average detectors.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

4.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	150 KHz--30MHz
Detector Function:	Quasi-Peak
Bandwidth (RBW):	9KHz

4.4 Test Data:

Table Power Line Conducted Emissions (Hot) Channel 1, 6, 11

	Corrective Factor		Quasi-Peak			Average		
Frequency (MHz)	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.21138	1.26	0.09	52.74	64.25	-11.51	42.16	54.25	-12.09
0.28216	1.03	0.11	48.00	62.22	-14.22	35.54	52.22	-16.69
0.42268	0.64	0.14	40.71	58.21	-17.50	35.83	48.21	-12.38
0.49506	0.62	0.14	39.84	56.14	-16.30	36.46	46.14	-9.68
0.56616	0.59	0.15	33.54	56.00	-22.46	27.81	46.00	-18.19
3.2415	0.45	0.34	41.98	56.00	-14.02	36.58	46.00	-9.42
3.30996	0.46	0.34	43.38	56.00	-12.62	37.58	46.00	-8.42
3.38305	0.46	0.35	42.58	56.00	-13.42	37.42	46.00	-8.58
3.58996	0.46	0.36	42.88	56.00	-13.12	37.36	46.00	-8.64
3.87269	0.46	0.38	43.56	56.00	-12.44	37.21	46.00	-8.79

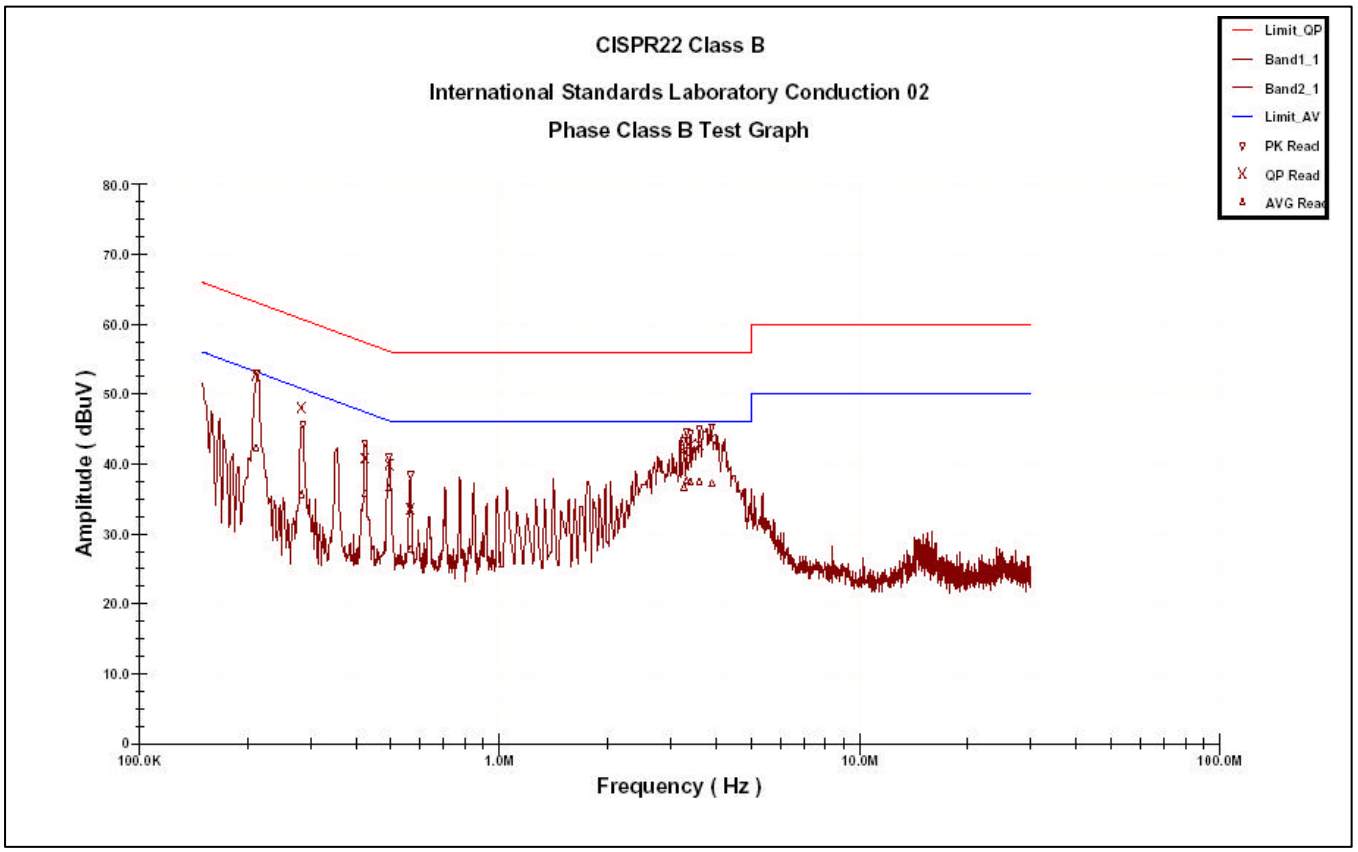
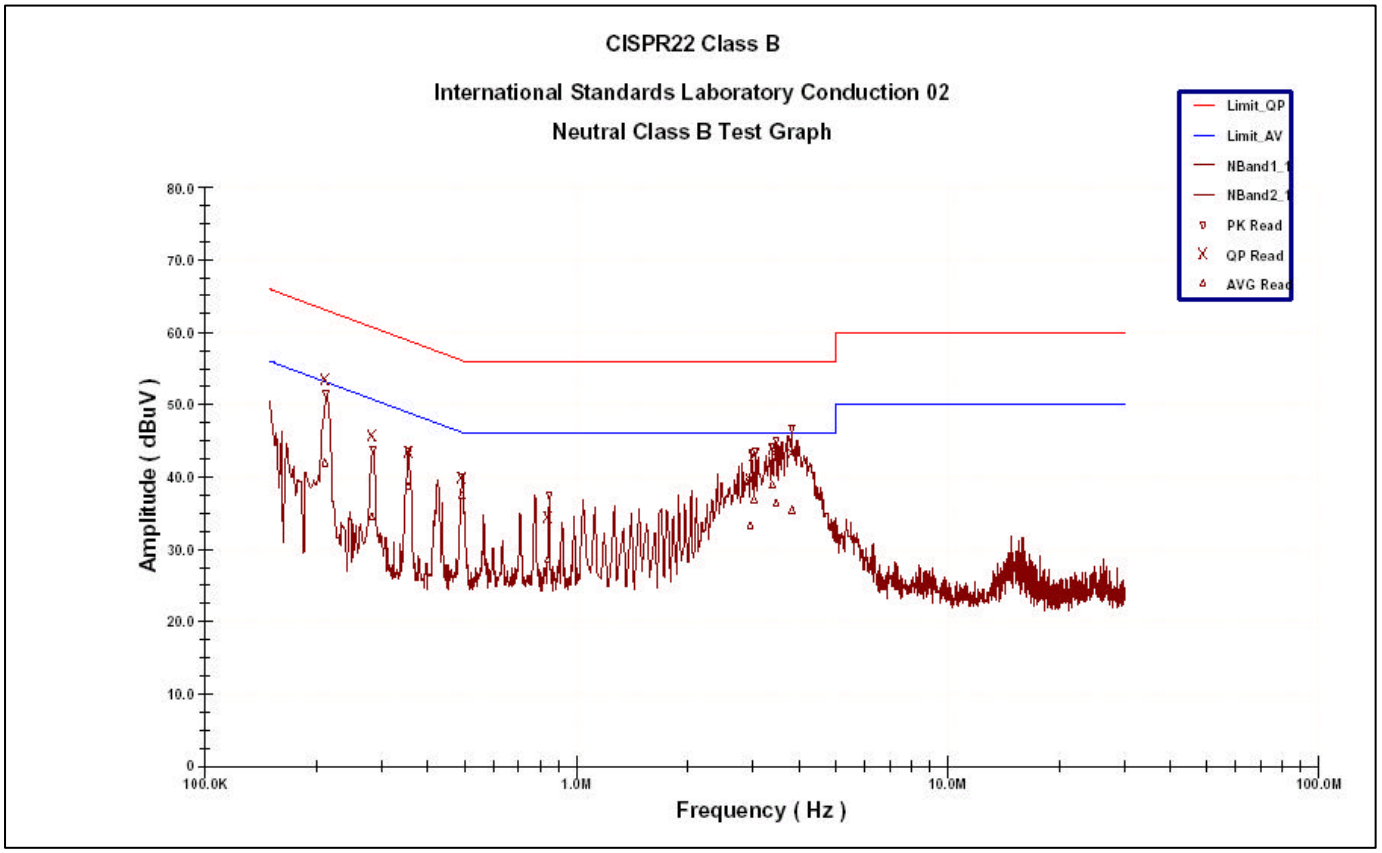


Table Power Line Conducted Emissions (Neutral) Channel 1, 6, 11

	Corrective Factor		Quasi-Peak			Average		
Frequency (MHz)	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.21101	1.26	0.09	53.55	64.26	-10.71	41.84	54.26	-12.42
0.28135	1.04	0.11	45.68	62.25	-16.57	34.40	52.25	-17.85
0.35226	0.81	0.13	43.45	60.22	-16.77	38.72	50.22	-11.50
0.49393	0.61	0.14	39.89	56.17	-16.29	37.36	46.17	-8.82
0.8427	0.47	0.16	34.51	56.00	-21.49	28.56	46.00	-17.44
2.95435	0.42	0.32	39.80	56.00	-16.20	33.15	46.00	-12.85
3.02723	0.42	0.32	42.91	56.00	-13.09	36.82	46.00	-9.18
3.3796	0.43	0.35	43.85	56.00	-12.15	38.80	46.00	-7.20
3.44768	0.43	0.35	42.73	56.00	-13.27	36.37	46.00	-9.63
3.80251	0.43	0.38	43.42	56.00	-12.58	35.31	46.00	-10.69



* NOTE: During the test, the EMI receiver was set to Max. Hold then switch the EUT Channel between 1 , 6, 11 to get the maximum reading of all these channels .
Margin = Amplitude + Insertion Loss- Limit
A margin of -8dB means that the emission is 8dB below the limit

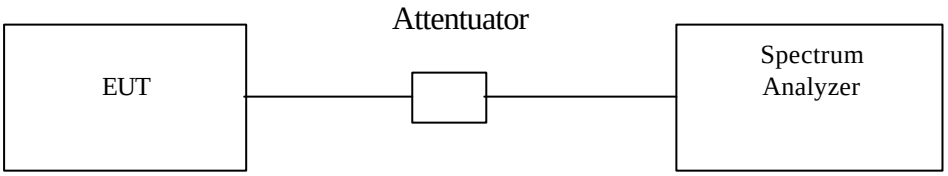
5. Bandwidth for DSSS [Section 15.247 (a)(2)]

5.1 Test Procedure

The Transmitter output of EUT was connected to the spectrum analyzer through an attenuator. The 6 dB bandwidth of the fundamental frequency was measured. The setting of spectrum analyzer is as follows

Equipment mode: Spectrum analyzer
Detector function: Peak mode
RBW: 100KHz
VBW: 100KHz

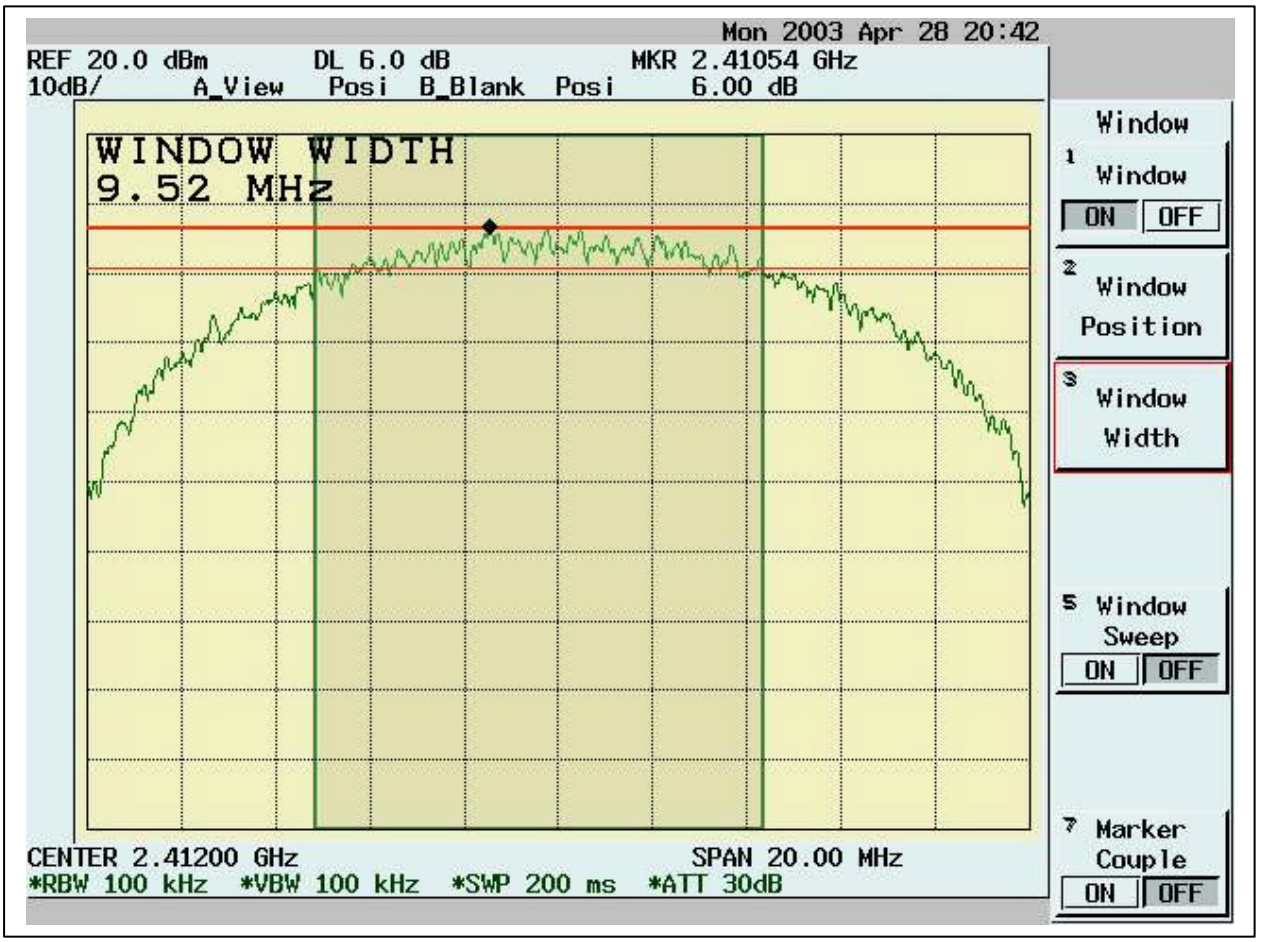
5.2 Test Setup

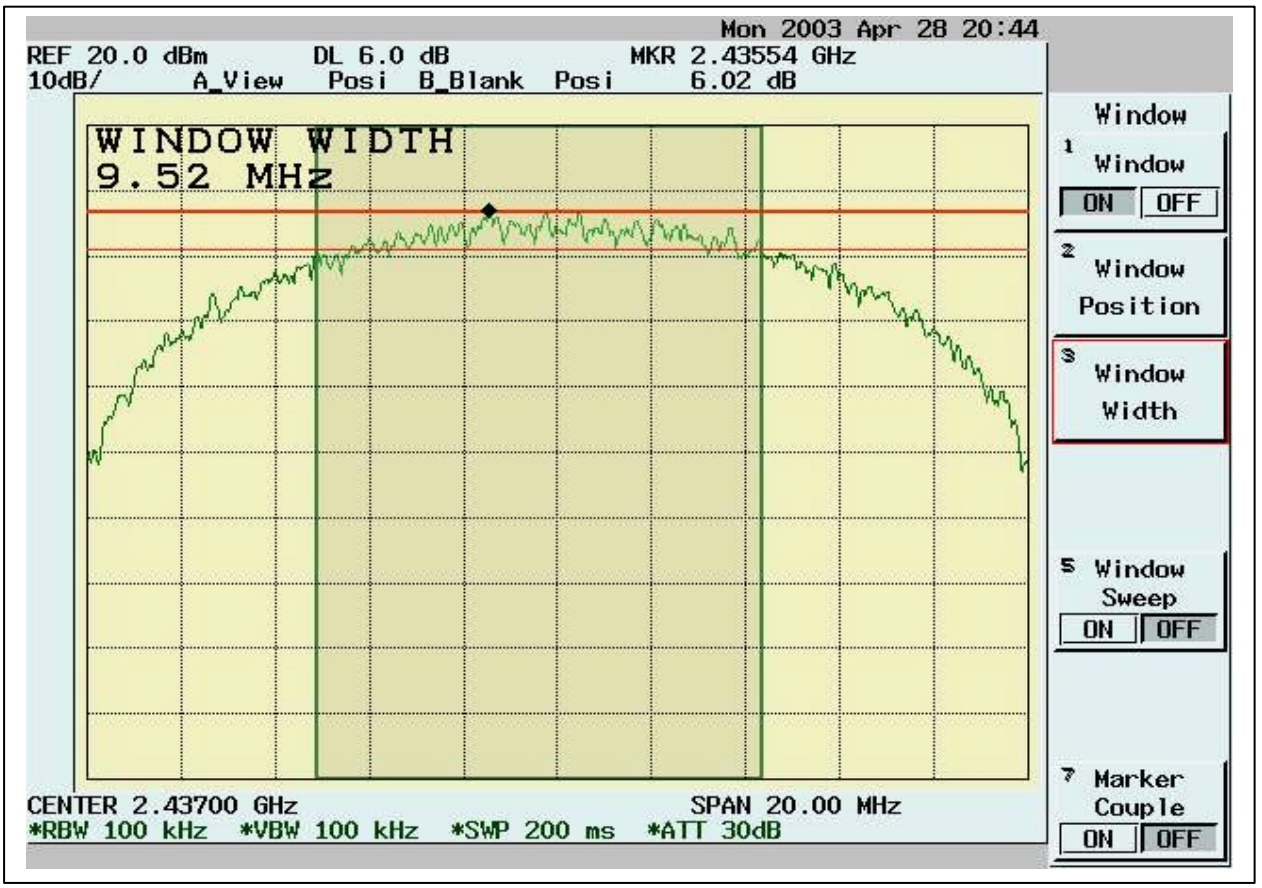


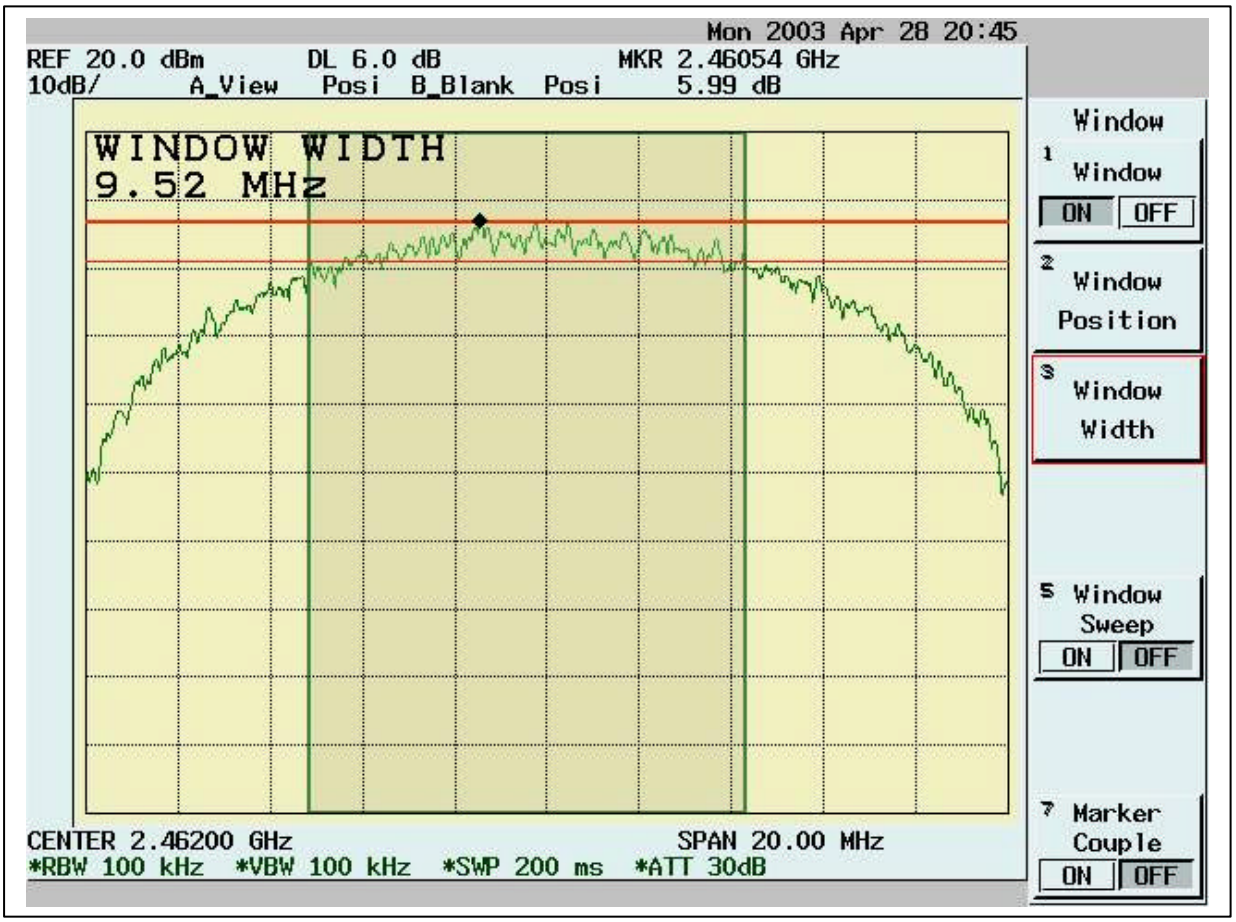
5.3 Test Data

Table 6dB Bandwidth

Chennel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Pass/Fail
1	2412	9.52	0.5	Pass
6	2437	9.52	0.5	Pass
11	2462	9.52	0.5	Pass


Mon 2003 Apr 28 20:42
REF 20.0 dBm
DL 6.0 dB
MKR 2.41054 GHz
10dB/
A_View
Posi
B_Blank
Posi
6.00 dB
WINDOW WIDTH
9.52 MHz
CENTER 2.41200 GHz
SPAN 20.00 MHz
*RBW 100 kHz
*VBW 100 kHz
*SWP 200 ms
*ATT 30dB
Window
1 Window
ON OFF
2 Window Position
3 Window Width
5 Window Sweep
ON OFF
7 Marker Couple
ON OFF


Mon 2003 Apr 28 20:44
REF 20.0 dBm
DL 6.0 dB
MKR 2.43554 GHz
10dB/
A_View
Posi
B_Blank
Posi
6.02 dB
WINDOW WIDTH
9.52 MHz
CENTER 2.43700 GHz
SPAN 20.00 MHz
*RBW 100 kHz
*VBW 100 kHz
*SWP 200 ms
*ATT 30dB
Window
1 Window
ON OFF
2 Window Position
3 Window Width
5 Window Sweep
ON OFF
7 Marker Couple
ON OFF

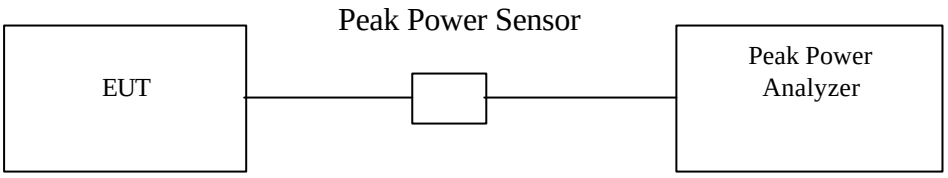

Mon 2003 Apr 28 20:45
REF 20.0 dBm
DL 6.0 dB
MKR 2.46054 GHz
10dB/
A_View
Posi
B_Blank
Posi
5.99 dB
WINDOW WIDTH
9.52 MHz
CENTER 2.46200 GHz
SPAN 20.00 MHz
*RBW 100 kHz
*VBW 100 kHz
*SWP 200 ms
*ATT 30dB
Window
1 Window
ON
OFF
2 Window Position
3 Window Width
5 Window Sweep
ON
OFF
7 Marker Couple
ON
OFF

6. DSSS Maximum Peak Output Power [Section 15.247 (b)(3)]

6.1 Test Procedure

1. The Transmitter output of EUT was connected to the peak power analyzer through an attenuator.

6.2 Test Setup



6.3 Test Data:

Table Maximum Peak Output Power

Chennel	Frequency (MHz)	Peak Power Output (mW)	Peak Power Output (dBm)	Limit (dBm)	Pass/Fail
1	2412	76.348	18.828	30	Pass
6	2437	79.708	19.015	30	Pass
11	2462	82.928	19.187	30	Pass

7. Radiated Emission Measurement [Section [15.247(c)]

7.1 EUT Configuration

The equipment under test was set up on the 10 meter chamber with measurement distance of 3 meters. The EUT was placed on a non-conductive table 80cm above ground.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

7.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. We found the maximum readings by varying the height of antenna and then rotating the turntable. Both polarization of antenna, horizontal and vertical, are measured.

30M to 1GHz: The highest emissions between 30 MHz to 1000 MHz were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in quasi-peak mode to determine the precise amplitude of the emissions. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission.

1GHz – 25GHz: The highest emissions were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in peak mode to determine the precise amplitude of the emission. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission. During test the EMI receiver and spectrum was setup according to *EMI Receiver/Spectrum Analyzer Configuration*.
For the test of 2nd to 10th harmonics frequencies , the equipment setup was also refer to *EMI Receiver/Spectrum Analyzer Configuration*. The frequencies were tested using Peak mode first, if the test data is higher than the emissions limit, an additional measurement using Average mode will be performed and the average reading will be compared to the limit and record in test report.

7.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range Tested:	30MHz~1000MHz
Detector Function:	Quasi-Peak Mode
Resolution Bandwidth (RBW):	120KHz
Video Bandwidth (VBW)	1MHz

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Peak Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	1MHz

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Average Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	10 Hz

7.4 Test Data (30MHz – 1GHz) with 3m Test Distance :.

(a)Antenna __ CA8-I:

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
42.61	14.47	11.16	1.09	0.00	26.72	40.00	-13.28	100.00	89.00
207.51	16.80	8.80	2.67	0.00	28.27	43.50	-15.23	100.00	61.00
325.85	15.07	13.59	3.37	0.00	32.02	46.00	-13.98	150.00	116.00
335.55	17.34	13.79	3.42	0.00	34.55	46.00	-11.45	100.00	144.00
399.57	21.21	15.58	3.80	0.00	40.59	46.00	-5.41	200.00	34.00
455.83	9.29	16.43	4.06	0.00	29.78	46.00	-16.22	150.00	116.00
847.71	4.69	20.30	5.79	0.00	30.78	46.00	-15.22	100.00	144.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
43.58	15.38	10.63	1.10	0.00	27.12	40.00	-12.88	100.00	270.00
215.27	17.42	8.62	2.72	0.00	28.76	43.50	-14.74	100.00	243.00
674.08	7.60	18.83	5.05	0.00	31.49	46.00	-14.51	150.00	353.00
719.67	8.47	19.39	5.26	0.00	33.12	46.00	-12.88	100.00	325.00
799.21	9.73	19.90	5.63	0.00	35.25	46.00	-10.75	200.00	298.00
815.7	5.49	20.01	5.68	0.00	31.19	46.00	-14.81	150.00	133.00
832.19	7.08	20.22	5.74	0.00	33.04	46.00	-12.96	100.00	325.00

(b) Antenna __ 5600:

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
42.61	13.15	11.16	1.09	0.00	25.40	40.00	-14.60	100.00	78.00
79.47	16.16	6.69	1.57	0.00	24.43	40.00	-15.57	100.00	270.00
227.88	18.33	9.69	2.79	0.00	30.81	46.00	-15.19	150.00	242.00
386.96	16.78	15.01	3.72	0.00	35.51	46.00	-10.49	200.00	133.00
533.43	13.23	17.25	4.41	0.00	34.89	46.00	-11.11	200.00	352.00
632.37	7.24	19.00	4.86	0.00	31.11	46.00	-14.89	100.00	352.00
796.3	5.08	19.90	5.61	0.00	30.59	46.00	-15.41	100.00	78.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
74.62	16.93	5.79	1.51	0.00	24.23	40.00	-15.77	100.00	336.00
129.91	17.03	11.10	2.06	0.00	30.20	43.50	-13.30	100.00	226.00
227.88	18.32	9.69	2.79	0.00	30.80	46.00	-15.20	150.00	61.00
698.33	12.72	18.97	5.16	0.00	36.85	46.00	-9.15	100.00	254.00
719.67	6.91	19.39	5.26	0.00	31.56	46.00	-14.44	100.00	226.00
815.7	6.54	20.01	5.68	0.00	32.24	46.00	-13.76	200.00	226.00
832.19	6.31	20.22	5.74	0.00	32.27	46.00	-13.73	100.00	226.00

(c) Antenna __888E:

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
207.51	15.57	8.80	2.67	0.00	27.04	43.50	-16.46	100.00	243.00
325.85	14.20	13.59	3.37	0.00	31.15	46.00	-14.85	150.00	215.00
532.46	9.45	17.08	4.41	0.00	30.94	46.00	-15.06	150.00	105.00
565.44	15.45	18.65	4.56	0.00	38.65	46.00	-7.35	200.00	105.00
599.39	14.08	18.50	4.71	0.00	37.29	46.00	-8.71	200.00	78.00
799.21	4.83	19.90	5.63	0.00	30.35	46.00	-15.65	100.00	78.00
899.12	2.72	20.40	5.96	0.00	29.08	46.00	-16.92	100.00	243.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
79.47	16.21	6.69	1.57	0.00	24.48	40.00	-15.52	100.00	35.00
87.23	15.41	8.05	1.67	0.00	25.13	40.00	-14.87	150.00	173.00
224	17.59	9.32	2.77	0.00	29.68	46.00	-16.32	150.00	8.00
670.2	6.51	18.85	5.04	0.00	30.39	46.00	-15.61	200.00	255.00
674.08	7.66	18.83	5.05	0.00	31.55	46.00	-14.45	100.00	255.00
719.67	6.52	19.39	5.26	0.00	31.18	46.00	-14.82	100.00	228.00
815.7	4.21	20.01	5.68	0.00	29.91	46.00	-16.09	200.00	228.00

(d) Antenna __ M300N:

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
40.67	15.80	12.23	1.06	0.00	29.10	40.00	-10.90	100.00	61.00
129.91	17.65	11.10	2.06	0.00	30.82	43.50	-12.68	100.00	144.00
260.86	16.60	12.63	2.99	0.00	32.21	46.00	-13.79	150.00	116.00
335.55	17.34	13.79	3.42	0.00	34.55	46.00	-11.45	150.00	171.00
360.77	15.17	14.52	3.57	0.00	33.26	46.00	-12.74	200.00	144.00
719.67	9.83	19.39	5.26	0.00	34.48	46.00	-11.52	200.00	116.00
832.19	7.84	20.22	5.74	0.00	33.80	46.00	-12.20	200.00	171.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
77.53	19.87	6.31	1.55	0.00	27.72	40.00	-12.28	100.00	78.00
129.91	20.67	11.10	2.06	0.00	33.84	43.50	-9.66	100.00	242.00
211.39	16.71	8.67	2.70	0.00	28.08	43.50	-15.42	150.00	242.00
674.08	7.10	18.83	5.05	0.00	30.99	46.00	-15.01	200.00	352.00
677.96	6.15	18.81	5.07	0.00	30.03	46.00	-15.97	200.00	352.00
719.67	7.53	19.39	5.26	0.00	32.19	46.00	-13.81	150.00	325.00
815.7	5.11	20.01	5.68	0.00	30.81	46.00	-15.19	150.00	325.00

NOTE:
During the test, the EUT was set to Channel 1 , 6, 11 respectively to get the maximum reading of all the critical emission frequencies.
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss – Pre-Amplifier Gain
A margin of –8dB means that the emission is 8dB below the limit
All frequencies from 30MHz to 1GHz have been tested, and the test distance is 3m.

7.5 Test Data (1GHz – 25 GHz) with 3m Test Distance .

(a) Antenna __ CA8-I:

1GHz~ 25 GHz (Horizontal), Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	67.05 (pk)	33.9	1.9	49.21	53.64	74	-20.36	100	92
4824	54.16 (av)	33.9	1.9	49.21	40.75	54	-13.25	100	92
7236	48.19(pk)	39.88	2.32	48.01	42.38	54	-11.62	100	10
9648	41.44(pk)	38.93	2.72	44.59	38.5	54	-15.5	100	0

1GHz~ 25 GHz (Vertical), , Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	72.45(pk)	33.9	1.9	49.21	59.04	74	-15.96	100	85
4824	59.46(av)	33.9	1.9	49.21	46.05	54	-7.95	100	88
7236	49.5(pk)	39.88	2.32	48.01	43.69	54	-10.31	100	5
9648	43.97(pk)	38.93	2.72	44.59	41.03	54	-12.97	100	10

Note:

" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested , and the test distance is 3m,.

(b) Antenna __ 5600:

1GHz~ 25 GHz (Horizontal), Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4823.88	57.88(pk)	33.9	1.9	49.21	44.47	54	-9.53	100	94
7235.58	48.97(pk)	39.88	2.32	48.01	43.16	54	-10.84	100	0
9648.09	49.84(pk)	38.93	2.72	44.59	46.9	54	-7.1	100	348
12060.3	42.04(pk)	42.09	3.03	45.42	41.74	54	-12.26	100	38

1GHz~ 25 GHz (Vertical), , Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824.06	62.02(pk)	33.9	1.9	49.21	48.61	54	-5.39	100	121
7235.64	51.59(pk)	39.88	2.32	48.01	45.78	54	-8.22	100	300
9648	53.98(pk)	38.93	2.72	44.59	51.04	54	-2.96	100	0
12061	44.77(pk)	42.09	3.03	45.42	44.47	54	-9.53	100	312

Note:

" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(c) Antenna __ 888E:

1GHz~ 25 GHz (Horizontal), Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	63.65(pk)	33.9	1.9	49.21	50.24	54	-3.76	100	65
7236	45.73(pk)	39.88	2.32	48.01	39.92	54	-14.08	100	6
9648	43.72(pk)	38.93	2.72	44.59	40.78	54	-13.22	100	25

1GHz~ 25 GHz (Vertical), , Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	68.93(pk)	33.9	1.9	49.21	55.52	74	-18.48	100	70
4824	56.38(av)	33.9	1.9	49.21	42.97	54	-11.03	100	70
7236	47.66(pk)	39.88	2.32	48.01	41.85	54	-12.15	100	63
9648	47.5(pk)	38.93	2.72	44.59	44.56	54	-9.44	100	32

Note:

" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(d) Antenna __ M300N:

1GHz~ 25 GHz (Horizontal), Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	65.51(pk)	33.9	1.9	49.21	52.1	74	-21.9	100	65
4824	53.12(av)	33.9	1.9	49.21	39.71	54	-14.29	100	65
7235.55	47.4(pk)	39.88	2.32	48.01	41.59	54	-12.41	100	100
9647.85	46.02(pk)	38.93	2.72	44.59	43.08	54	-10.92	100	105
12060.7	41.23(pk)	42.09	3.03	45.42	40.93	54	-13.07	100	125

1GHz~ 25 GHz (Vertical), , Channel 1 : 2412 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4824	71.24(pk)	33.9	1.9	49.21	57.83	74	-16.17	100	0
4824	58.28(av)	33.9	1.9	49.21	44.87	54	-9.13	100	0
7235.55	51.21(pk)	39.88	2.32	48.01	45.4	54	-8.6	100	180
9648.24	48.21(pk)	38.93	2.72	44.59	45.27	54	-8.73	100	98
12060.1	45.35(pk)	42.09	3.03	45.42	45.05	54	-8.95	100	15

Note:

" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(a) Antenna __ CA8-I:

1GHz~ 25 GHz (Horizontal), , Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4874	66.02(pk)	34.1	1.91	49.24	52.79	74	-18.79	100	141
4874	54.11(av)	34.1	1.91	49.24	40.88	54	-13.12	100	141
7311	47.43(pk)	39.72	2.34	47.9	41.59	54	-12.41	100	0
9748	44.16(pk)	38.75	2.74	44.45	41.2	54	-12.8	100	98

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4874	72.58(pk)	34.1	1.91	49.24	59.35	74	-14.65	100	5
4874	59.46(av)	34.1	1.91	49.24	46.23	54	-7.77	100	5
7311	48.67(pk)	39.72	2.34	47.9	42.83	54	-11.17	100	74
9748	45.04(pk)	38.75	2.74	44.45	42.08	54	-11.92	100	106

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested , and the test distance is 3m.

(b) Antenna __ 5600:

1GHz~ 25 GHz (Horizontal), , Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4874	53.5(pk)	34.1	1.91	49.24	40.27	54	-13.73	100	141
7310.73	46.04(pk)	39.72	2.34	47.9	40.2	54	-13.8	100	0
9747.84	47.16(pk)	38.75	2.74	44.45	44.2	54	-9.8	100	98

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4874	62.09(pk)	34.1	1.91	49.24	48.86	54	-5.14	100	125
7310.7	51.06(pk)	39.72	2.34	47.9	45.22	54	-8.78	100	5
9747.99	54.17(pk)	38.75	2.74	44.45	51.21	74	-22.79	100	93
9748	47.18(av)	38.75	2.74	44.45	44.22	54	-9.78	100	93

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(c) Antenna __ 888E:

1GHz~ 25 GHz (Horizontal), , Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4874	62.63(pk)	34.1	1.91	49.24	49.4	54	-4.6	100	141
7311	44.96(pk)	39.72	2.34	47.9	39.12	54	-14.88	100	0
9748	46.41(pk)	38.75	2.74	44.45	43.45	54	-10.55	100	98

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4874	68.8(pk)	34.1	1.91	49.24	55.57	74	-18.43	100	110
4874	56.2(av)	34.1	1.91	49.24	42.97	54	-11.03	100	110
7311	47.46(pk)	39.72	2.34	47.9	41.62	54	-12.38	100	23
9748	45.34(pk)	38.75	2.74	44.45	42.38	54	-11.62	100	30

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(d) Antenna __ M300N:

1GHz~ 25 GHz (Horizontal), , Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
4874	52.86(pk)	34.1	1.91	49.24	39.63	54	-14.37	100	141
7311	45.05(pk)	39.72	2.34	47.9	39.21	54	-14.79	100	0
9748	46.81(pk)	38.75	2.74	44.45	43.85	54	-10.15	100	98

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4874	61.44(pk)	34.1	1.91	49.24	48.21	54	-5.79	100	120
7311	47.07(pk)	39.72	2.34	47.9	41.23	54	-12.77	100	10
9748	49.44(pk)	38.75	2.74	44.45	46.48	54	-7.52	100	10

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(a) Antenna __ CA8-I:

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	68.48(pk)	34.3	1.92	49.26	55.44	74	-18.56	100	94
4924	55.49(av)	34.3	1.92	49.26	42.45	54	-11.55	100	94
7386	45.52(pk)	39.55	2.35	47.79	39.63	54	-14.37	100	12
9848	41.46(pk)	38.57	2.75	44.31	38.47	54	-15.53	100	18

1GHz~ 25 GHz (Vertical), Main antenna , Channel 11 : 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	72.66(pk)	34.3	1.92	49.26	59.62	74	-14.38	100	155
4924	60.77(av)	34.3	1.92	49.26	47.73	54	-6.27	100	155
7386	45.72(pk)	39.55	2.35	47.79	39.83	54	-14.17	100	5
9848	43.63(pk)	38.57	2.75	44.31	40.64	54	-13.36	100	2

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(b) Antenna __ 5600:

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	55.54(pk)	34.3	1.92	49.26	42.5	54	-11.5	100	35
7386	52.59(pk)	39.55	2.35	47.79	46.7	54	-7.3	100	10
9848	46.77(pk)	38.57	2.75	44.31	43.78	54	-10.22	100	100

1GHz~ 25 GHz (Vertical), Main antenna , Channel 11 : 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924.1	62.68(pk)	34.3	1.92	49.26	49.64	54	-4.36	100	15
7385.5	59.66(pk)	39.55	2.35	47.79	53.77	74	-20.23	100	20
7386	47.8(av)	39.55	2.35	47.79	41.91	54	-12.09	100	20
9848.0	54.79(pk)	38.57	2.75	44.31	51.8	74	-22.2	100	110
9848	47.25(av)	38.57	2.75	44.31	44.26	54	-9.74	100	110

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(c) Antenna __ 888E:

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	60.57(pk)	34.3	1.92	49.26	47.53	54	-6.47	100	0
7386	47.74(pk)	39.55	2.35	47.79	41.85	54	-12.15	100	32
9848	45.35(pk)	38.57	2.75	44.31	42.36	54	-11.64	100	73

1GHz~ 25 GHz (Vertical), Main antenna , Channel 11 : 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	68.29(pk)	34.3	1.92	49.26	55.25	74	-18.75	100	25
4924	54.48(av)	34.3	1.92	49.26	41.44	54	-12.56	100	25
7386	50.17(pk)	39.55	2.35	47.79	44.28	54	-9.72	100	10
9848	45.8(pk)	38.57	2.75	44.31	42.81	54	-11.19	100	31

Note:
" * " : Fundamental Frequency
"**" Not in the restricted band, Limit level=Fundamental Emission-20dB
" pk": peak reading
"av": average reading
"---" : No meter reading data due to the emission level is smaller than spectrum noise level.
The Spectrum noise level + Correction Factor < Limit - 6 dB
Margin = Corrected Amplitude – Limit
Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain
A margin of -8dB means that the emission is 8dB below the limit
All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

(d) Antenna __ M300N:

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	56.14(pk)	34.3	1.92	49.26	43.1	54	-10.9	100	0
7386	51.68(pk)	39.55	2.35	47.79	45.79	54	-8.21	100	50
9848	48.19(pk)	38.57	2.75	44.31	45.2	54	-8.8	100	22

1GHz~ 25 GHz (Vertical), Main antenna , Channel 11 : 2462 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin* (dB)	Height (cm)	Position (°)
4924	62.48(pk)	34.3	1.92	49.26	49.44	54	-4.56	100	20
7386	52.71(pk)	39.55	2.35	47.79	46.82	54	-7.18	100	25
9848	52.37(pk)	38.57	2.75	44.31	49.38	54	-4.62	100	45

Note:

" * " : Fundamental Frequency

"**" Not in the restricted band, Limit level=Fundamental Emission-20dB

" pk": peak reading

"av": average reading

"---" : No meter reading data due to the emission level is smaller than spectrum noise level.

The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 25 GHz have been tested, and the test distance is 3m.

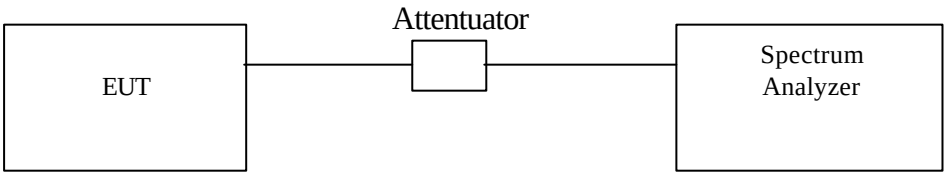
8. Band Edge Measurement [Section 15.247(c)]

8.1 Test Procedure (Conducted)

1. The Transmitter output of EUT was connected to the spectrum analyzer.
   Equipment mode: Spectrum analyzer
   Detector function: Peak mode
   SPAN: 100MHz
   RBW: 100KHz
   VBW: 100KHz
   Center frequency: 2.4GHz, 2.4835GHz.
   Sweep time= 200ms sec.

2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.

8.2 Test Setup (Conducted)



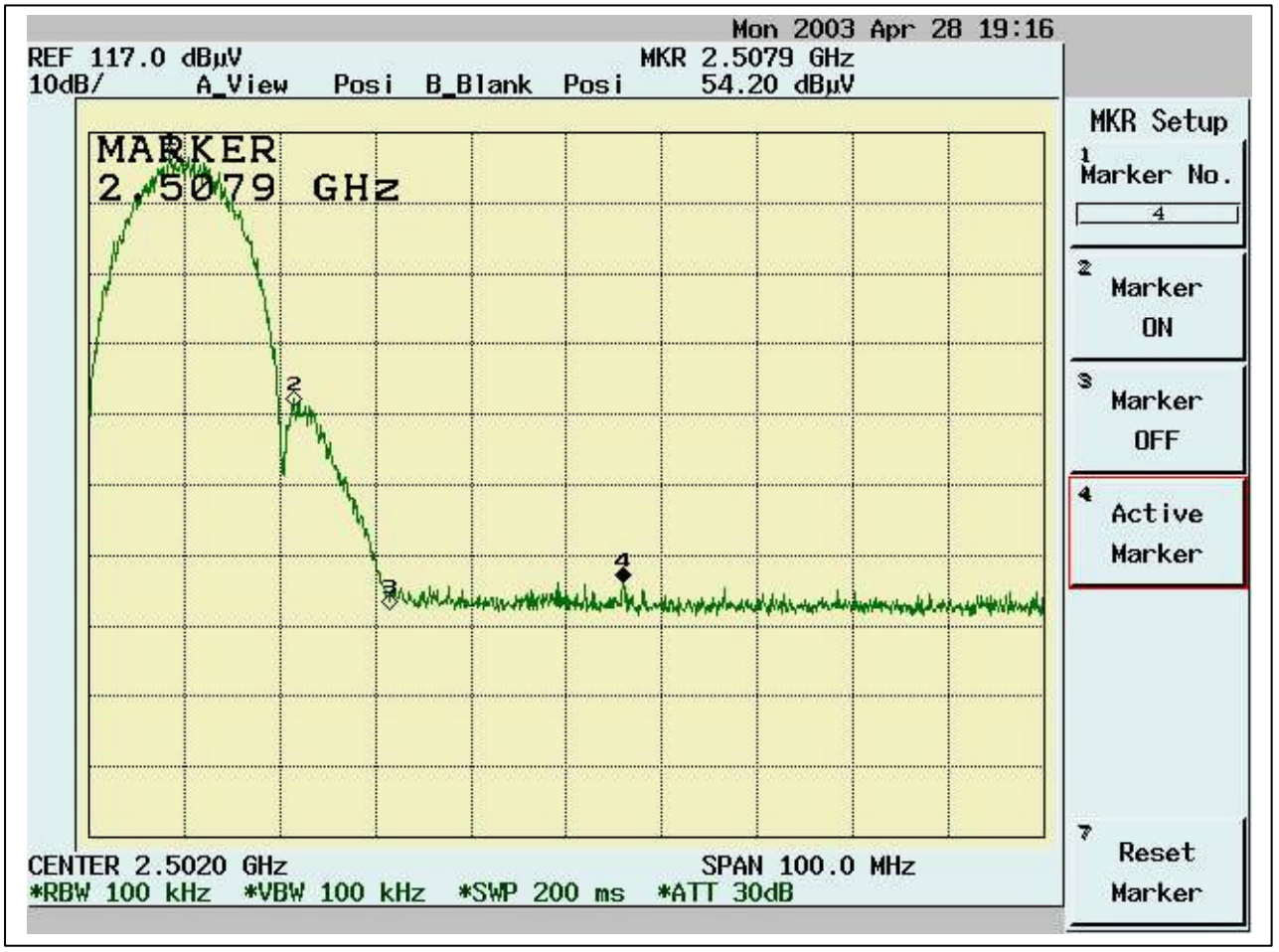
8.3 Test Data:

Table Band Edge measurement (Conducted)

Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Carrier - Outsideband Limit: > 20dB (dB)	Pass/Fail
1	2410.5	113.84	---	---
Outside band	2400	78.56	35.28	Pass
11	2460.5	114.13	---	---
Outside band	2473.4	79.13	35	Pass

Band Edge Conducted measurement

Band Edge Conducted Measurement



8.4 Band Edge measurement Test Procedure (Radiated)

1. Antenna and Turntable test procedure same as *Radiated Emission Measurement*
   Equipment mode: Spectrum analyzer
   Detector function: Peak mode
   SPAN:100MHz
   RBW: 100KHz
   VBW: 100KHz
   Center frequency: 2.395GHz, 2.48 GHz.

2. Using Peak Search to read the peak power of Carrier frequencies after Maximun Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.

4. For peak frequency emission level measurement in Restricted Band ,
   Change RBW: 1MHz ,
   VBW: 10Hz,
   Span: 100MHz.
5. Get the spectrum reading after Maximun Hold function is completed.

8.5 Test Setup (Radiated)

Same as *Radiated Emission Measurement*

8.6 Test Data with 3m Test Distance:

(a) Antenna _ CA8-I:

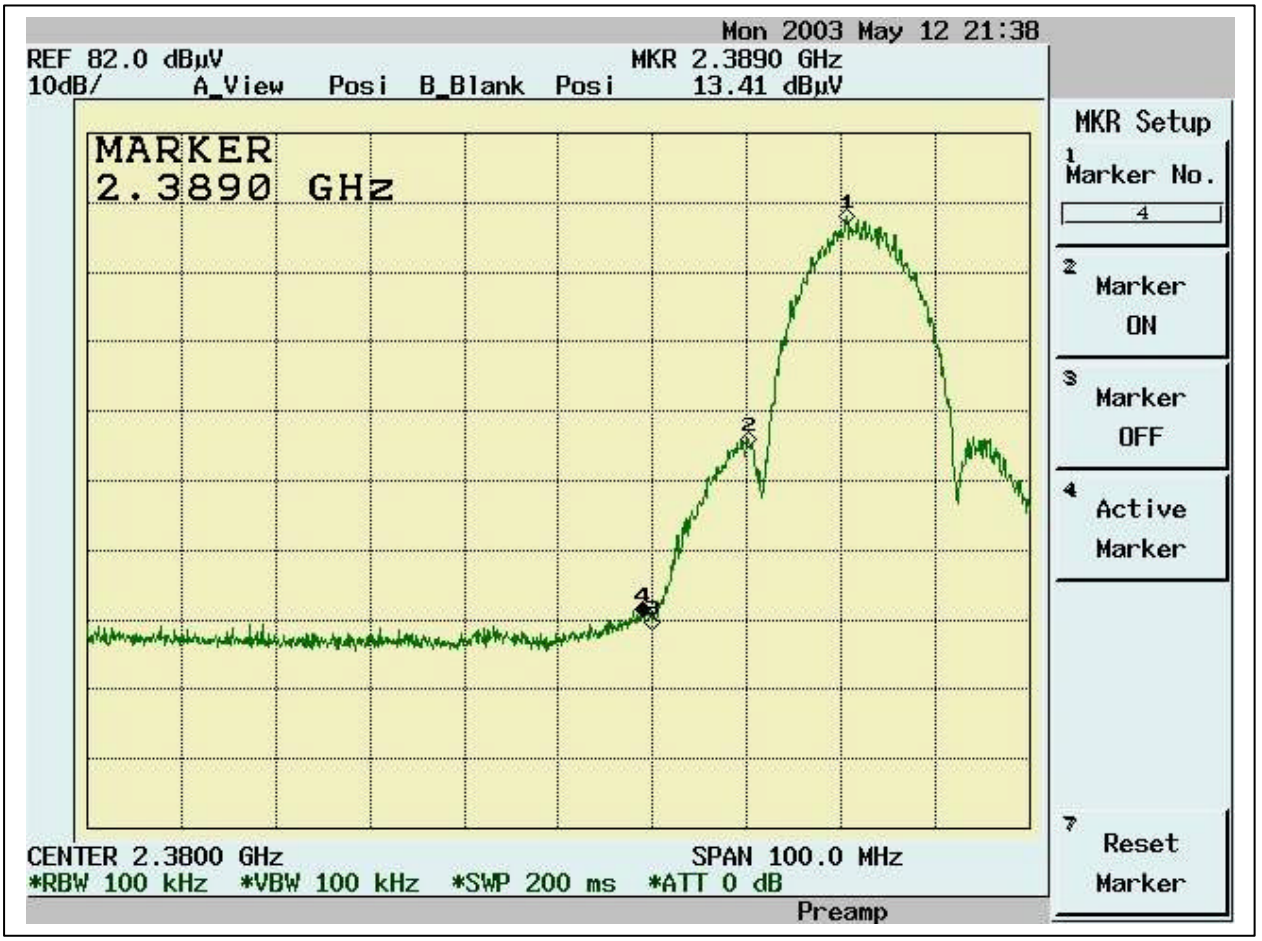
Table Band Edge measurement (Radiated)

Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit: > 20dB (dBC)	Limit (dBuV/m)	Equip. Setup VBW	Pass or Fail
1(peak mode)	2410.5	69.98	30.97	100.95	---	---	100KHz	---
Outside band	2400.0	37.94	30.97	68.91	32.04	---	100KHz	Pass
1(average mode)	2411.3	69.17	30.97	100.14	---	---	10Hz	---
Restricted band	2388.7	11.22	30.97	42.19	-----	54	10Hz	Pass
11(peak mode)	2460.5	72.72	30.98	103.70	----	---	100KHz	---
Outside band	2474. 0	41.12	30.98	72.10	31.6	---	100KHz	Pass
11(average mode)	2462.6	72.14	30.98	103.12	----	---	10Hz	---
Restricted band	2483.5	16.10	30.98	47.08	-----	54	10Hz	Pass

Note: The Spectrum plot of emission level measurement in Restricted band is attached.
Emission Level = Spectrum Reading + Correction Factor
Correction Factor = Antenna Factor + cable loss – amplifier gain
The test distance is 3m.

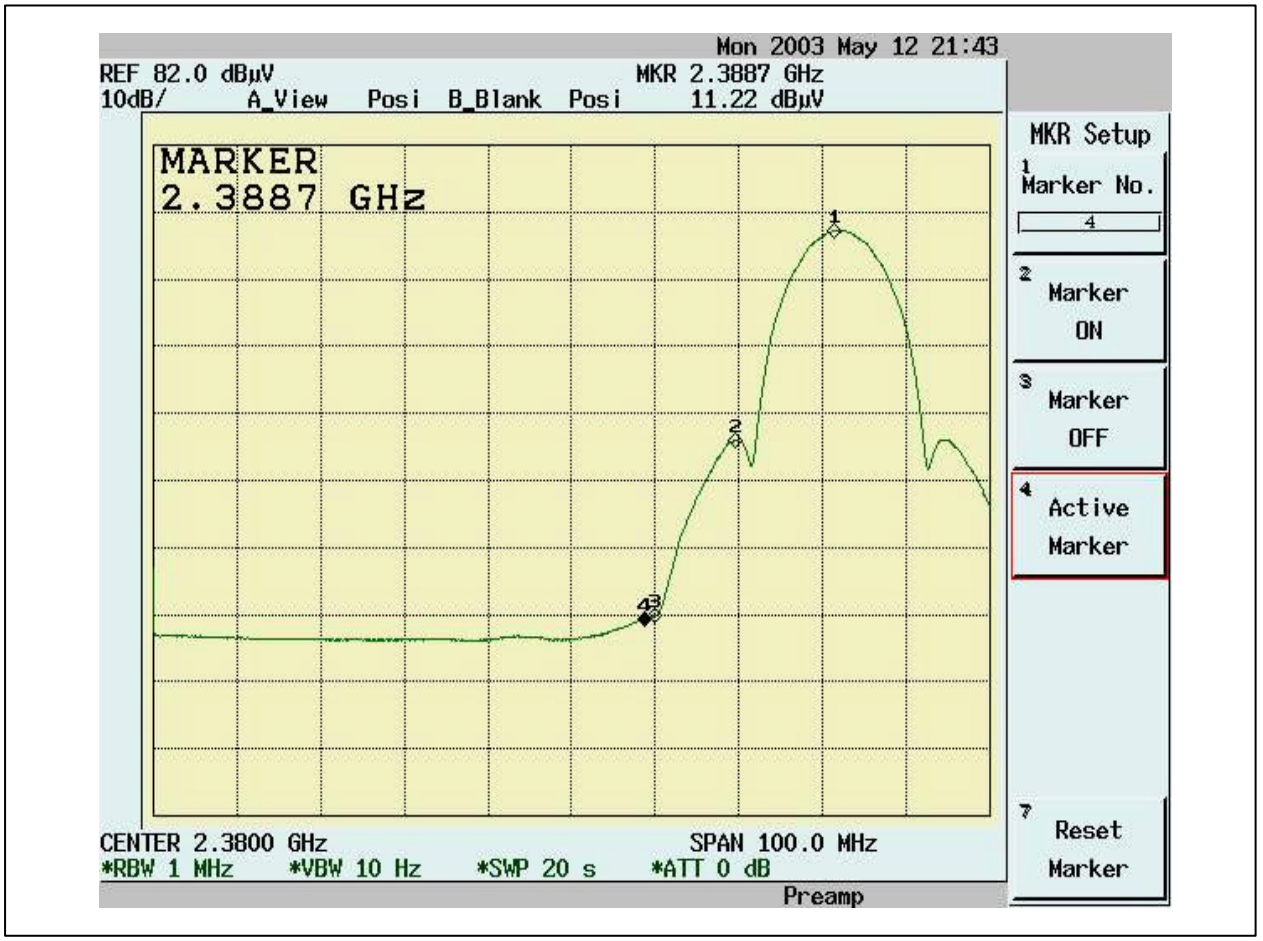
Band Edge measurement for radiated emission in Restricted Band(Radiated)

Peak Mode (Channel 1)



Band Edge measurement for radiated emission in Restricted Band(Radiated)

Average Mode (Channel 1)



Band Edge measurement for radiated emission in Ristricted Band(Radiated)

Peak Mode (Channel 11)

Band Edge measurement for radiated emission in Restricted Band(Radiated)

Average Mode (Channel 11)