Test Report:	5W54150.4, issue 2
Applicant:	BelAir Networks Inc., 603 March Road, Ottawa, ON K2K 2M5
Apparatus:	BRM 3
FCC ID:	RAR20001003
In Accordance With:	FCC Part 15 Subpart E, 15.407 Unlicensed National Information Infrastructure Devices
Tested By:	Nemko Canada Inc. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	 Sim Jagpal, General Manager
Date:	February 8, 2006
Total Number of Pages:	66

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart E, 15.407. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	BRM 3
Specification:	FCC Part 15.407, Subpart E
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Xu Jin, Wireless Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

TABLE OF CONTENTS

Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:
BRM3

1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
1	BRM3	K001362009
2	Digital board LMP	K001245162
3	15dBi Belair Patch	203-B
4	MaxRad omnidirectional Antenna 4dBi	MMO58004NF
5	MaxRad omnidirectional Antenna 10dBi	MMO58010NF

The first samples were received on: Oct.17, 2005

1.3 Technical Specifications of the EUT

Manufacturer:	BelAir Networks Inc.
Frequency Band	5150MHz-5250MHz
Operation Frequency	5180MHz-5250MHz
Rated Conducted Output Power∗:	16dBm for 4dBi Maxrad Antenna 12dBm for 10dBi Maxrad Antenna 7dBm for 15dBi Belair Patch Antenna
Emission Designator	19M8G1W
Modulation:	802.11 a
Antenna Data:	(1) Maxrad 10dBi Antenna (2) Maxrad 4dBi Antenna (3) 15dBi BelAir Patch Antenna
Antenna Connector:	MCX

∗ Manufacture's rated power is average power measured using a wide band power meter with a thermocouple detector.

Section 2: Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart E, 15.407, Unlicensed National Information Infrastructure Devices

2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 ^{o}C
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde & Schwarz	FSP	FA001920	March 22/05	March 22/06
Spectrum Analyzer	Rohde & Schwarz	FSU	FA001877	May 17/05	May 17/06
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 18/05	May 18/06
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 18/05	May 18/06
Biconical (1) Antenna	EMCO	3109	FA000805	April 22/05	April 22/06
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 29/05	Aug. 29/06
Horn Antenna #1	EMCO	3115	FA000649	Dec. 22/04	Dec. 22/05
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	April 25/05	April 25/06
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	July 14/05	July 14/06
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	July 14/05	July 14/06
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	July 14/05	July 14/06
5.0 - 18GHz Amplifier	Narda	DWT-186N23U40	FA001409	COU	COU
18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU	COU
26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU	COU
Signal Generator	Rhode & Schwarz	SMR 40	FA001879	July 13/05	July 13/06
Power Meter	HP	4418B	FA001678	Mar 8/05	Mar 8/06
Power Probe	HP	8487A	FA001741	May 26/05	May 26/06
LISN	EMCO	4825/2	FA001545	Jan 13/05	Jan 13/06
Transient Limiter	Hewlett-Packard	1194 7A	FA000975	May 25/05	May 25/06
Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU

* COU (Calibrate on Use)

** NCR (No Calibration Required

Section 3: Observations

3.1 Modifications Performed During Assessment

No modifications were performed during assessment.

3.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

3.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

3.4 Test Deleted

No Tests were deleted from this assessment.

Section 4 : Results Summary

This section contains the following:

FCC Part 15.407, Subpart E: Test Result

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N	No: not applicable / not relevant.
Y	Yes: Mandatory i.e. the apparatus shall conform to these tests.
N/T	Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

4.1 FCC Part 15 Subpart E, 15.407 : Test Results

Section	Clause	Test Description	Required	Result
1	15.207(a)	Powerline Conducted Emissions	Y	PASS
2	15.403(i)	Emission Bandwidth	Y	PASS
3	15.407(a)(1)	Output Power	Y	PASS
4	15.407(b)(1)(6)	Spurious Emissions not within restricted bandwidth	Y	PASS
5	15.407(b)(7)	Spurious Emissions within restricted bandwidth	Y	PASS
6	15.407(a)(1)	Peak Power Spectral Density	Y	PASS
7	15.31(e)	Supply Voltage Variation	Y	PASS
8	15.407(a)(6)	Peak Excursion Measurement	Y	PASS
9	15.407(g)	Frequency Stability	Y	PASS

Appendix A: Test Results

Section 1. Power Line Conducted Emissions

Criteria: Clause 15.207(a)

Frequency of Conducted limit (dBμV)

Emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

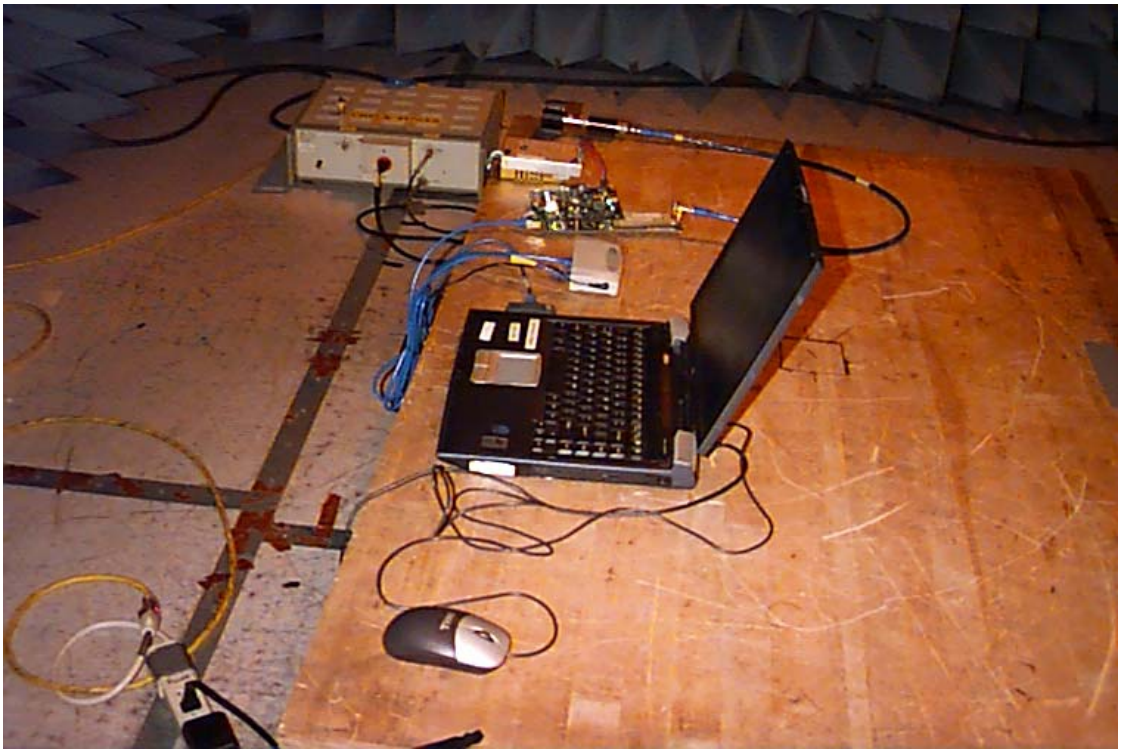
Test Conditions:

Sample Number:	1,2	**Temperature:**	22 ºC
Date:	Nov.8, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Results: Complies

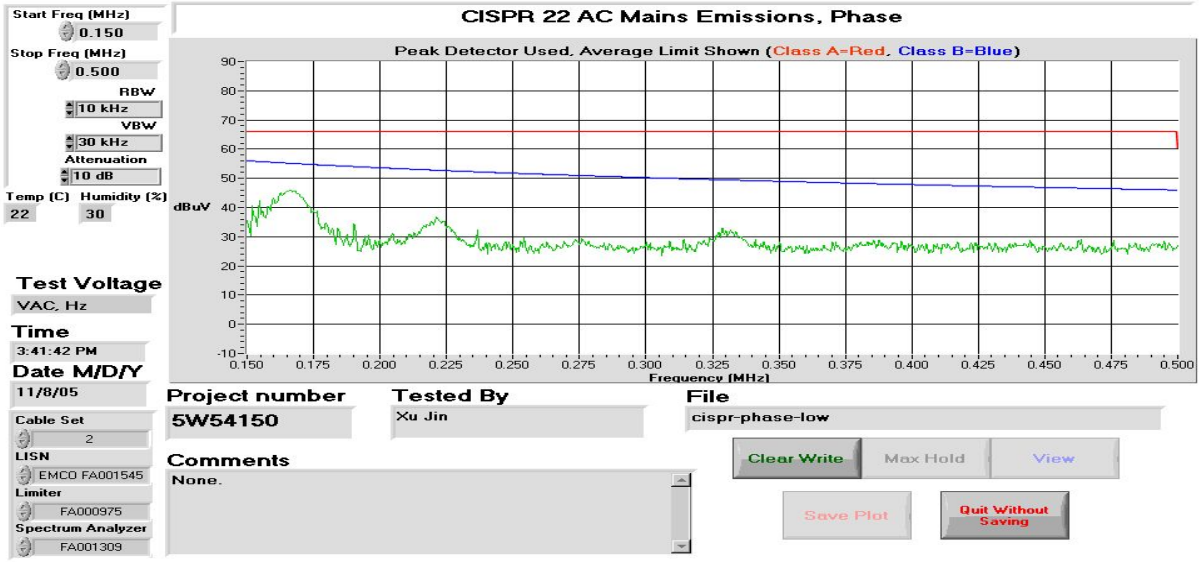
Test Data: See Attached Plots and Tables.

Conducted Disturbance at Mains, Setup Photos

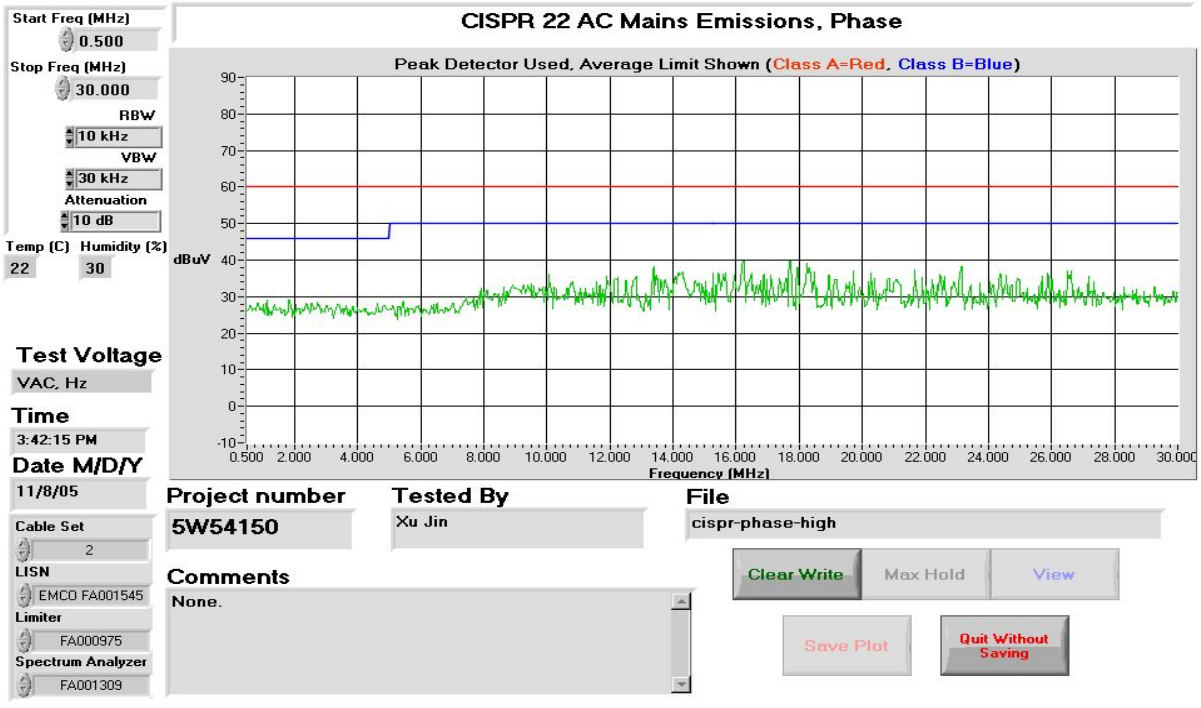


Conducted Disturbance at Mains, Plots

Phase, 0.150 – 0.500 MHz

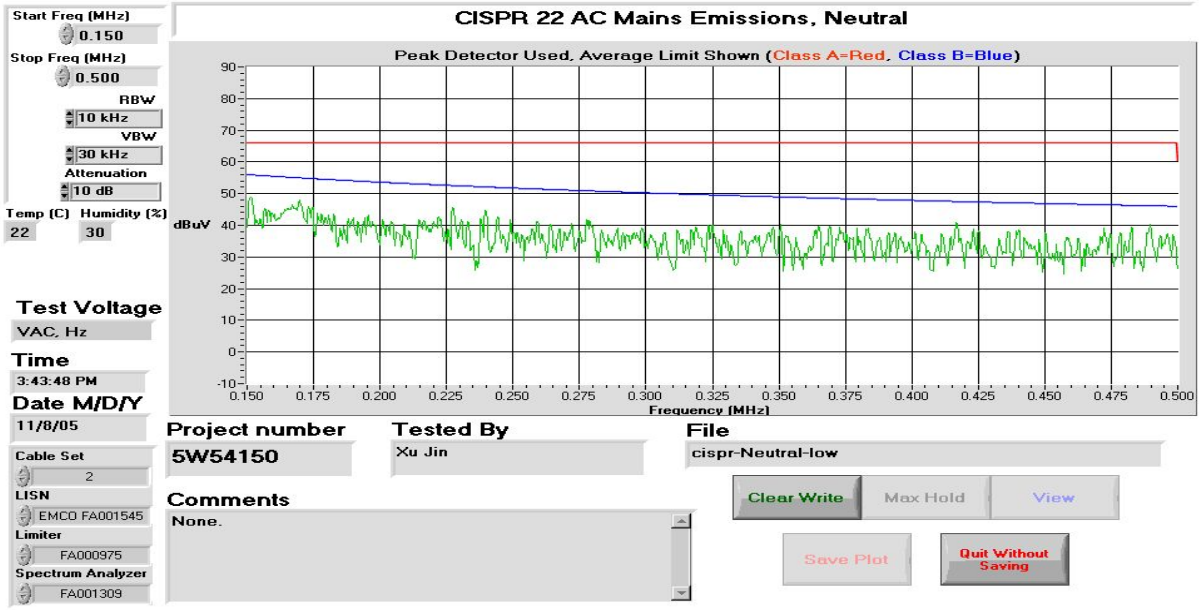


Phase, 0.500 – 30 MHz

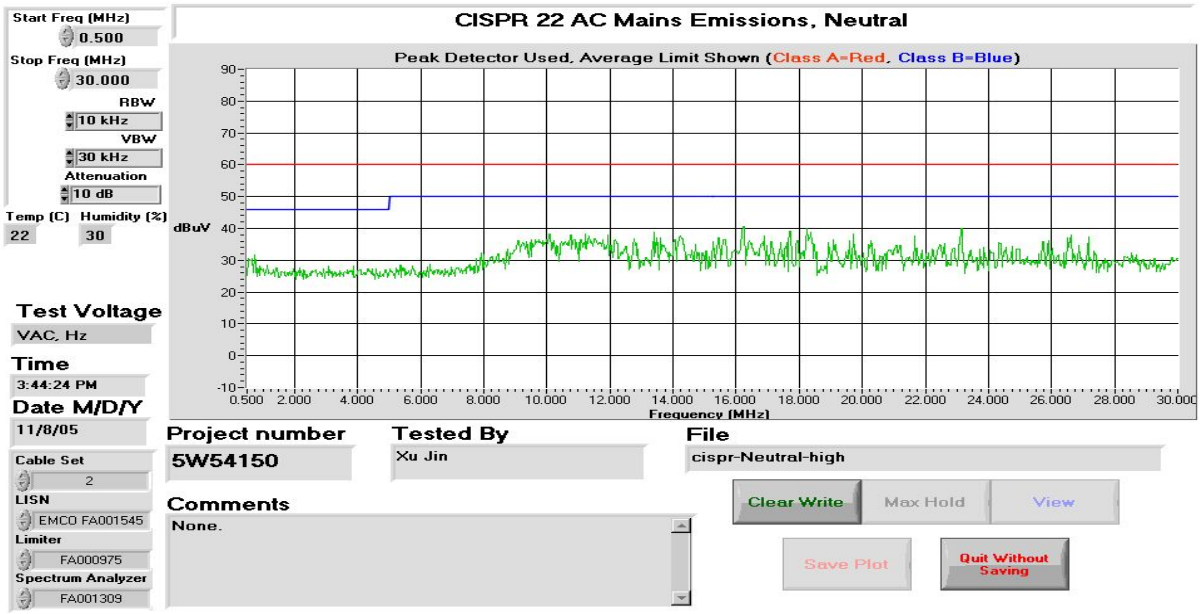


Conducted Disturbance at Mains Plots, continued

Neutral, 0.150 – 0.500 MHz



Neutral, 0.500 – 30 MHz



Section 2. Emission Bandwidth

Criteria: Clause 15.403(i)

(i) Emission bandwidth. For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22 ºC
Date:	Nov.8, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

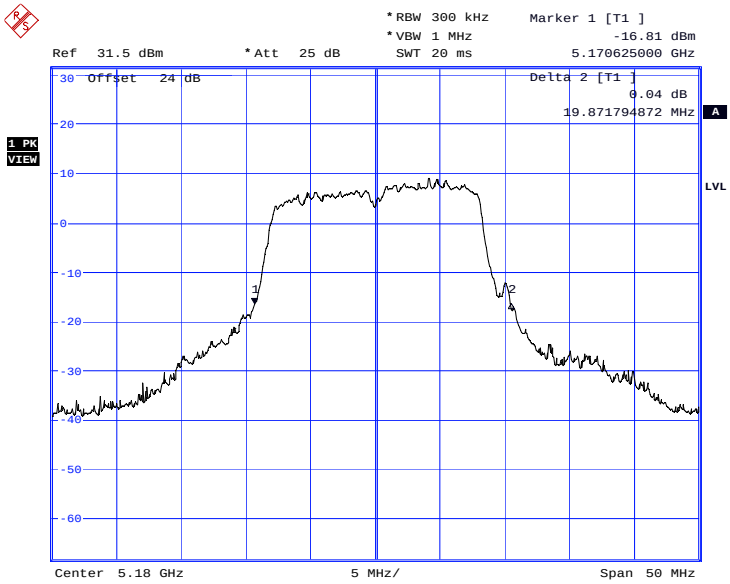
Test Results: Complies

Test Data: See attached table and graphics

26dB Bandwidth (MHz)

Frequency (MHz)	26dB Bandwidth (MHz)
5180	19.87
5220	18.75
5250	18.83

5180MHz



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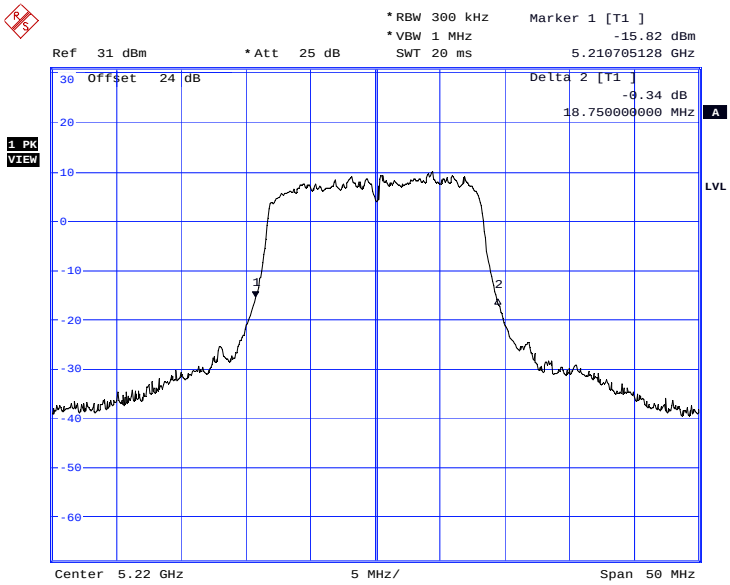
5220MHz



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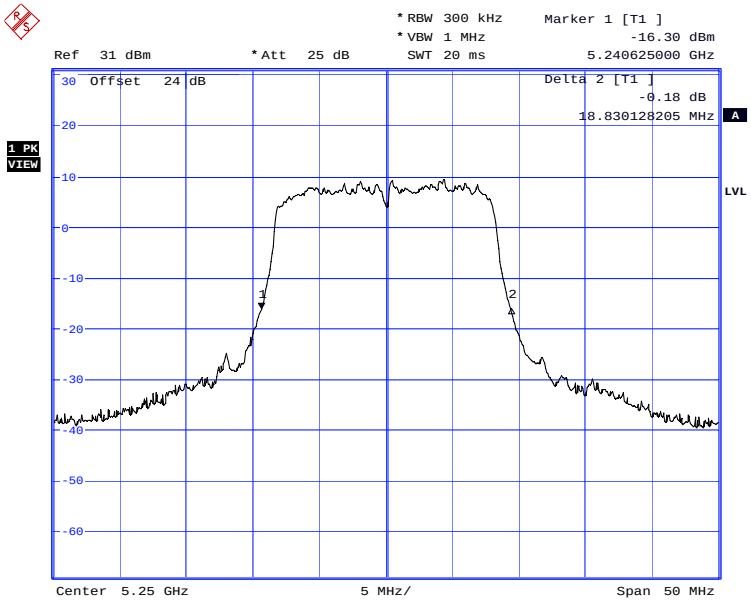
5250MHz



Date: 8.NOV.2005 11:00:53

Section 3. Output Power

Criteria: Clause 15.407(a)(1)

(1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22 ºC
Date:	Nov.8, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Method: Output power was measured using sample detector on the spectrum analyser according to FCC Public Notice: DA 02-2138.

Test Results: Complies

Test Data: See attached table and graphics

4dBi Maxrad Antenna

Conducted Output Power Test Data (dBm)

Frequeuency (MHz)	Conducted Output Power(dBm)
5180	15.78
5220	16.71
5250	16.80

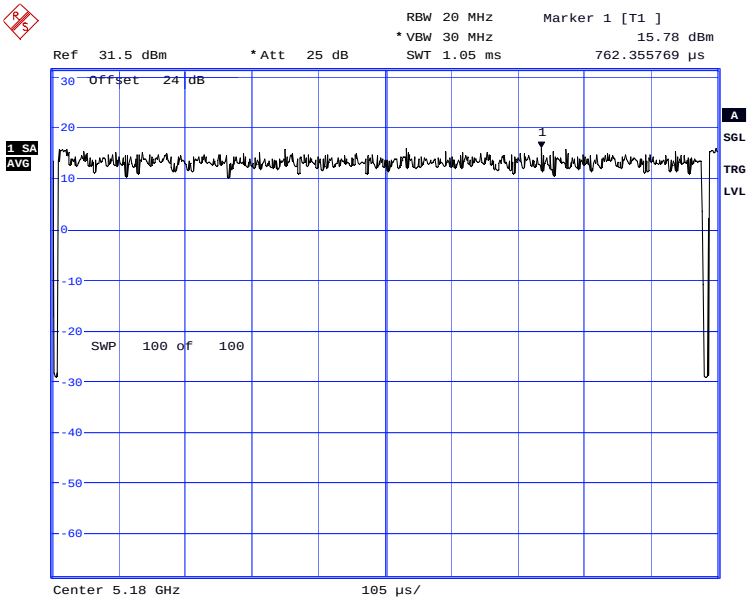
Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum Conducted Power for 4dBi antenna
=16.80dBm-1dB=15.80dBm

Limit:

Conducted Power Limit for 4dBi Maxrad Antenna
17dBm

5180MHz



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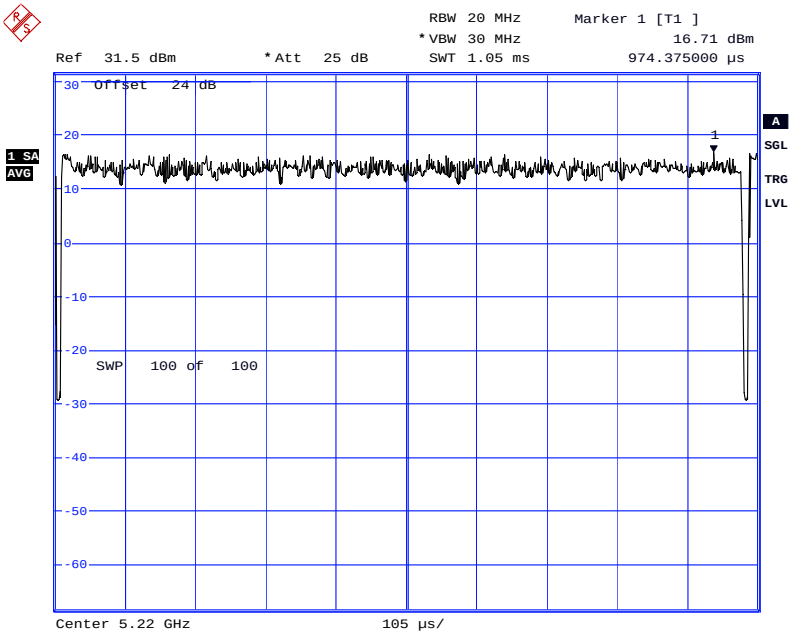
5220MHz



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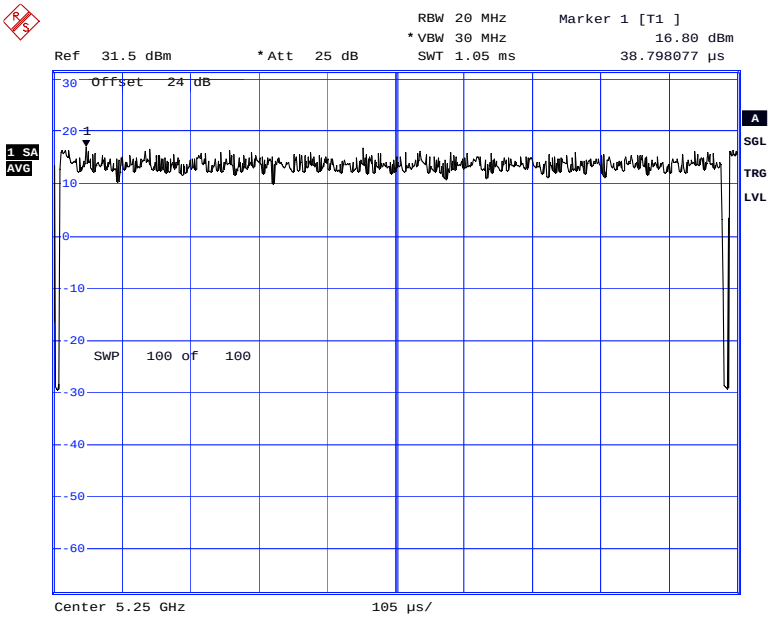
5250MHz



Date: 8.NOV.2005 10:33:04

10dBi Maxrad Antenna
Conducted Output Power Test Data (dBm)

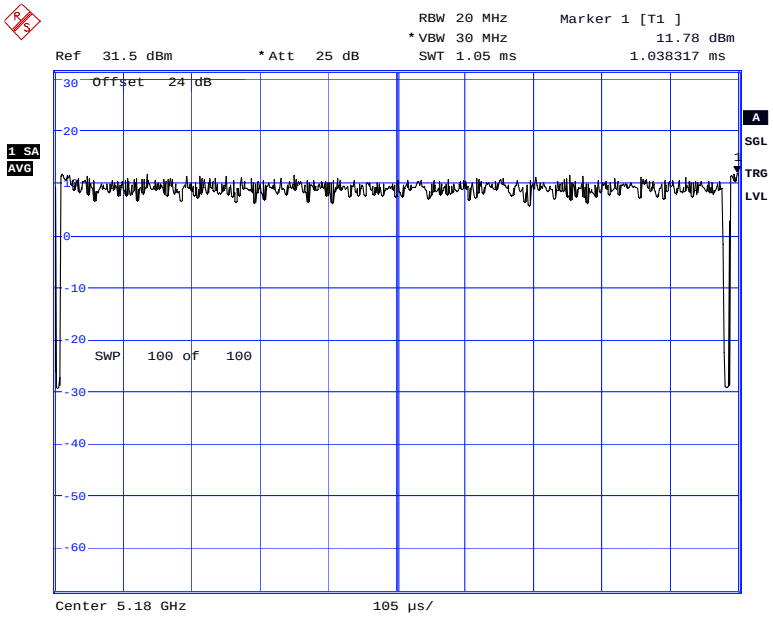
Frequency (MHz)	Conducted Output Power(dBm)
5180	11.78
5220	11.99
5250	11.37

Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum Conducted Power for 10dBi Maxrad Antenna
=11.99dBm-1dB=10.99dBm

Limit: Conducted Power Limit for 10dBi Maxrad Antenna
17dBm-(10dBi-6dBi)=13dBm

5180MHz



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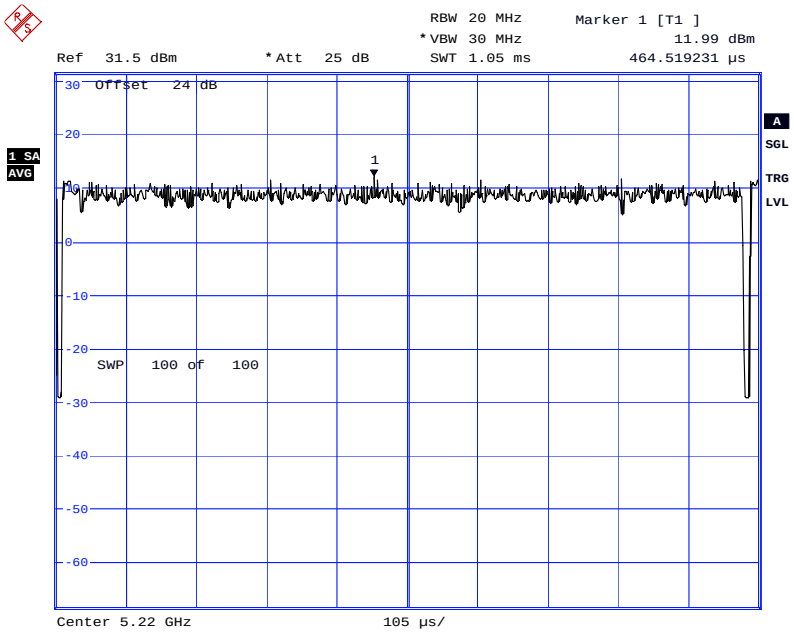
5220MHz



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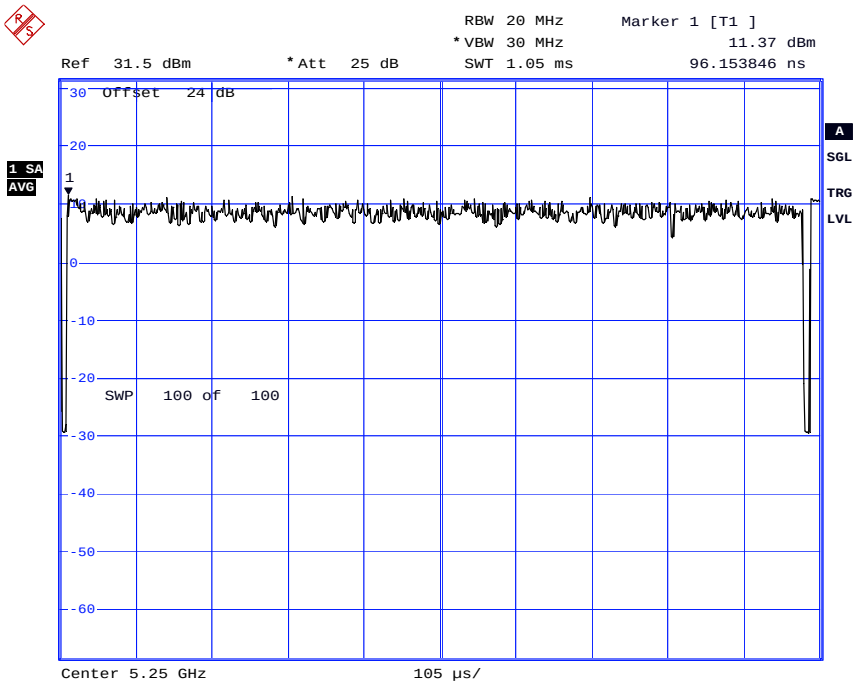
5250MHz



Date: 8.NOV.2005 10:40:06

15dBi Belair Patch Antenna
Conducted Output Power Test Data (dBm)

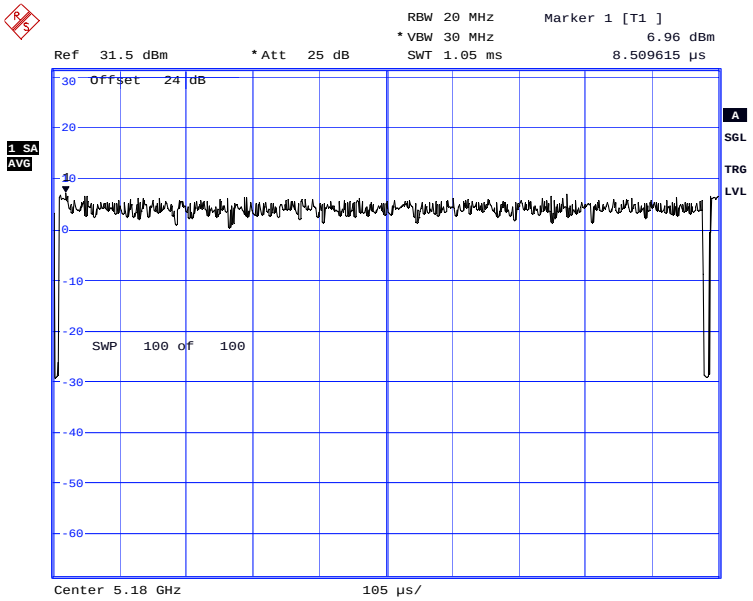
Frequency (MHz)	Conducted Output Power (dBm)
5180	6.96
5220	6.60
5250	6.22

Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum Conducted Power for 15dBi Belair Patch Antenna
=6.96dBm-1dB=5.96dBm

Limit: Conducted Power Limit for 15dBi Belair Patch Antenna
17dBm-(15dBi-6dBi)=8dBm

5180MHz



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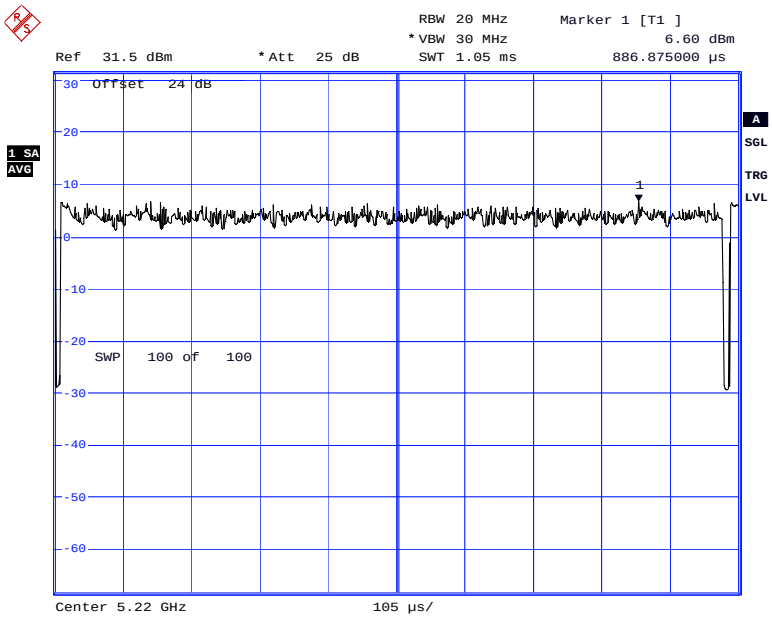
5220MHz



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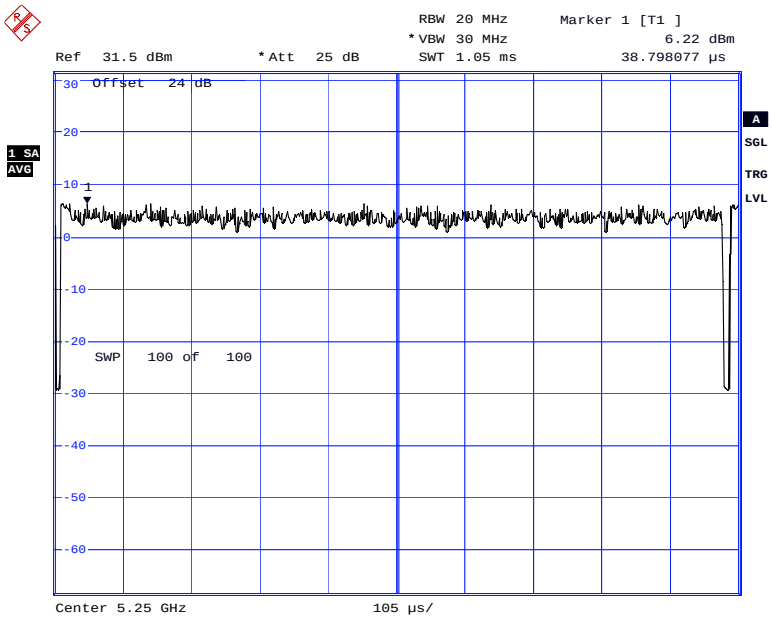
5250MHz



Date: 8.NOV.2005 10:45:39

Section 4. Spurious Emissions not in Restricted Band

Criteria: Clause 15.407(b)(1)

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz

Criteria: Clause 15.407(b)(6)

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209

Test Conditions:

Sample Number:	1,2,3,4,5	**Temperature:**	22 ºC
Date:	Oct. 27 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Result: Complies

Test Data: See attached plots and tables

Note:

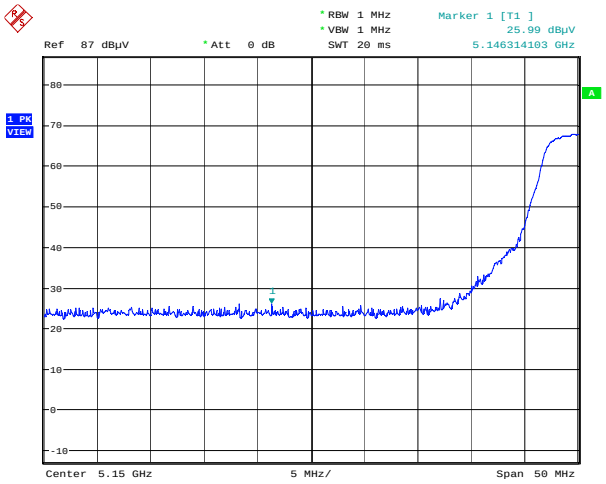
Emissions were searched for all possible antenna configurations.

The DUT was searched from 30MHz to the 10th harmonic of the EUT, and for low, medium and high frequencies. Only worst case was reported.

4dBi Maxrad Antenna

Band Edge Check, _Ch36, 5180MHz,

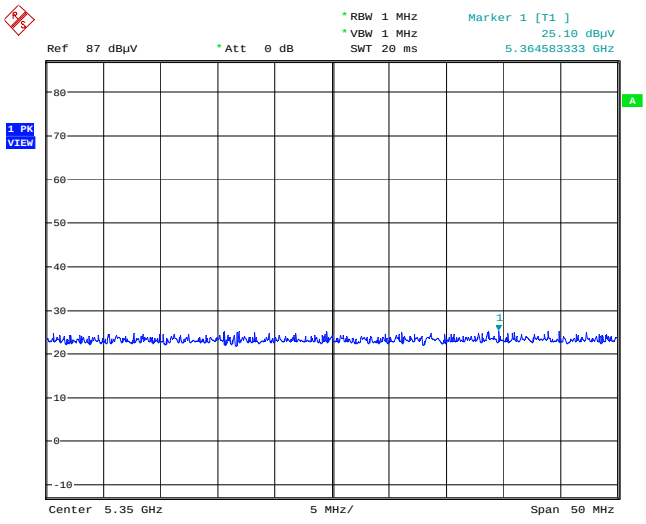
Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
25.99dBuV	-56.87	-30.88	-27.0



Date: 8.NOV.2005 11:50:03

Band Edge Check, _Ch50, 5250MHz,

Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
25.10	-56.87	-31.77	-27.0



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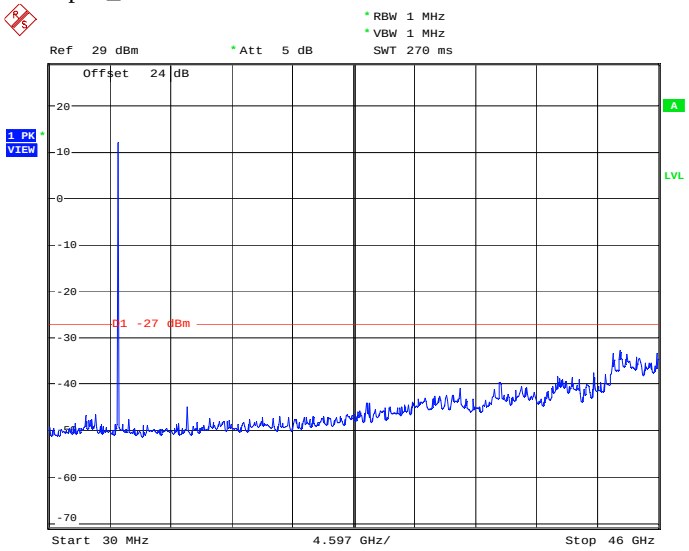
Full Span_ Conducted Emissions

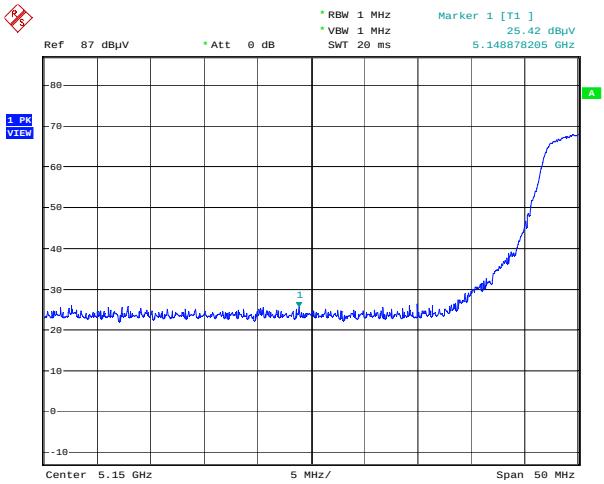


Date: 10.NOV.2005 11:05:10

10dBi Maxrad Antenna

Band Edge Check, _Ch26, 5180MHz,

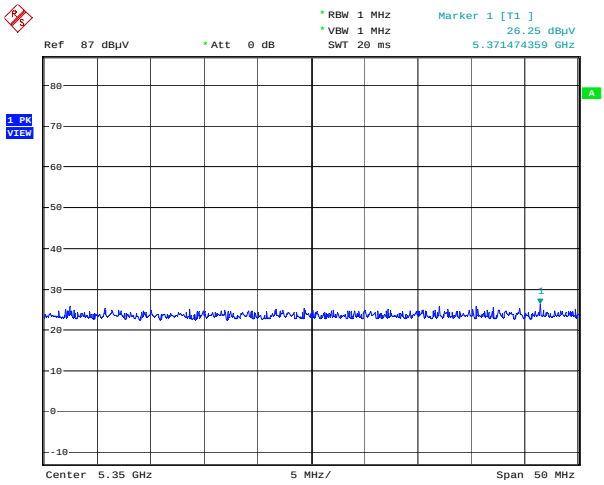
Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
25.42	-56.87	-31.45	-27.0



Date: 8.NOV.2005 13:29:01

Band Edge Check, _Ch50, 5250MHz,

Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
26.25	-56.87	-30.62	-27.0



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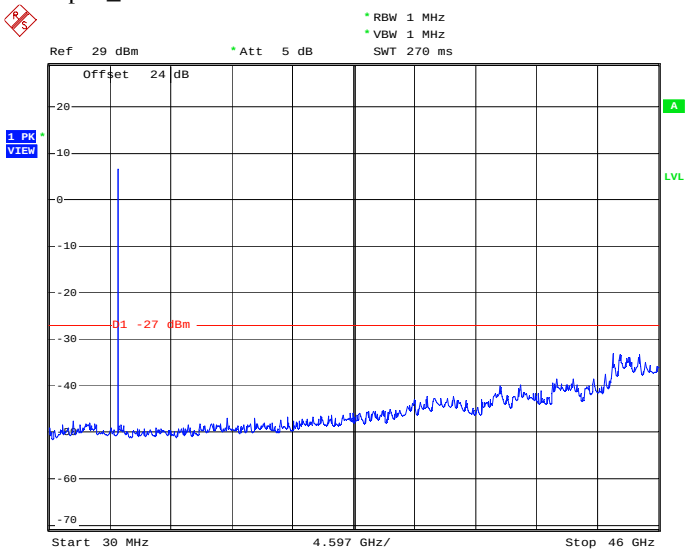
Full Span_ Conducted Emissions

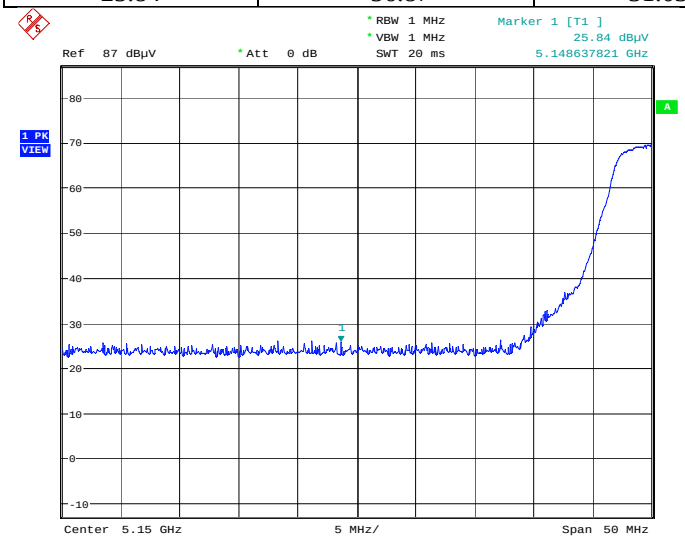


Date: 10.NOV.2005 11:09:36

15dBi Belair Patch Antenna

Band Edge Check, _Ch26, 5180MHz,

Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
25.84	-56.87	-31.03	-27.0



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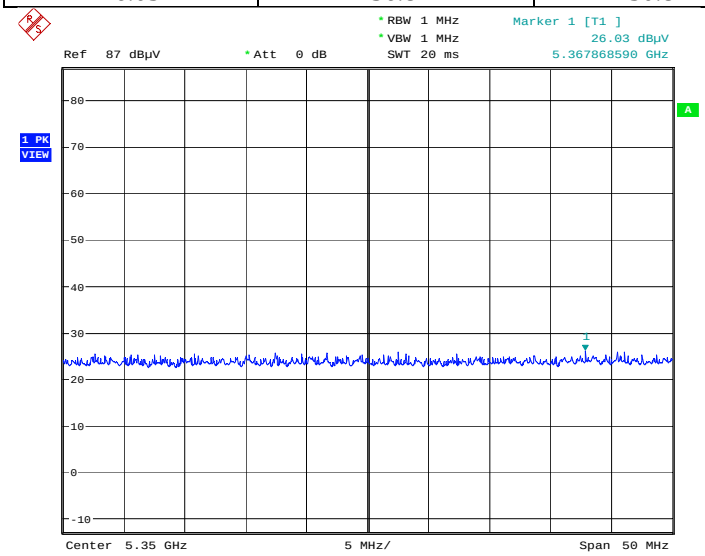
Band Edge Check, _Ch50, 5250MHz,

Band Edge Level (dBuV)	Signal Substitution Level (dB)	Emission Level (dBm/MHz)	Limit (dBm/MHz)
26.03	-56.87	-30.84	-27.0



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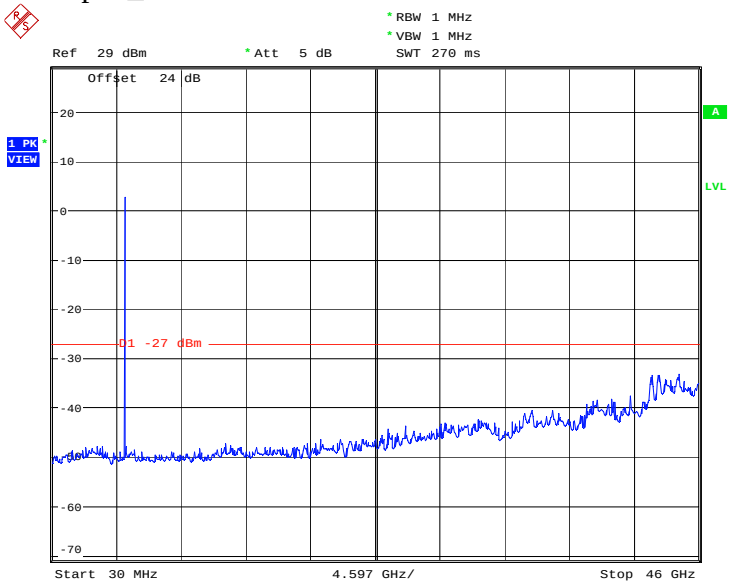
Full Span_ Conducted Emissions

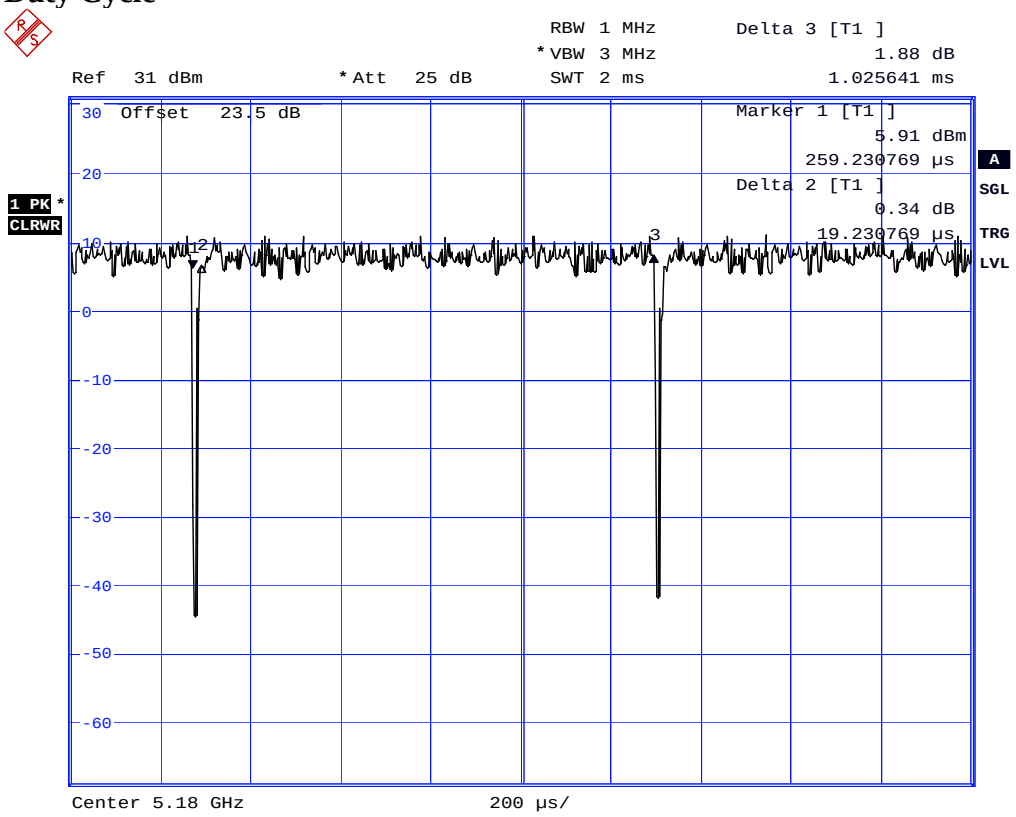


Date: 10.NOV.2005 11:10:25

Radiated Emissions Test Data

Test Date: Nov. 10, 2005										
Engineer's Name: Xu Jin										
Tested as per: Table Top										
Mains Input Voltage: 120VAC							Mains Input Frequency: 60Hz			
Test Distance (meters): 3							Dome: 1			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
115.3000	BC2	V	16.6	12.1	N/A	4.3	39.7	46.0	6.3	Q-Peak
115.3000	BC2	H	17.5	11.4	N/A	1.8	30.5	43.5	13.0	Q-Peak
450.3200	LP1	H	18.3	16.9	N/A	3.1	38.3	46.0	7.7	Q-Peak
450.3200	LP1	V	16.8	17.1	N/A	3.1	37.0	46.0	9.0	Q-Peak
579.1200	LP1	V	15.6	18.7	N/A	3.3	37.6	46.0	8.4	Q-Peak
579.1200	LP1	H	16.9	19.2	N/A	3.3	39.4	46.0	6.6	Q-Peak
808.8000	LP1	V	12.6	21.5	N/A	4.3	38.4	46.0	7.6	Q-Peak
808.8000	LP1	H	13.3	22.1	N/A	4.3	39.7	46.0	6.3	Q-Peak
825.2600	LP1	H	15.7	22.6	N/A	4.3	42.6	46.0	3.4	Q-Peak
825.2600	LP1	V	13.8	21.8	N/A	4.3	39.9	46.0	6.1	Q-Peak
Legend: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole Detector Legend: Q-Peak = 120kHz RBW, Average = 1.0MHz RBW, 10Hz VBW, Peak=1.0MHz RBW, 1.0MHz VBW										

Duty Cycle



Date: 7.NOV.2005 14:14:38

Duty Cycle=(1-19.2µs/1025µs)×100%=98.13%

Section 5. Spurious Emissions within Restricted Bands

Criteria: Clause 15.407(b)(7)

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Criteria: Clause 15.209(a) Radiated Emissions within Restricted Bands

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Conditions:

Sample Number:	1,2,3,4,5	**Temperature:**	22 ºC
Date:	Nov.9, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Result: Complies

Test Data: See attached plots and tables

Note:

Emissions were searched for all possible antenna configurations, and for low, medium and high frequencies

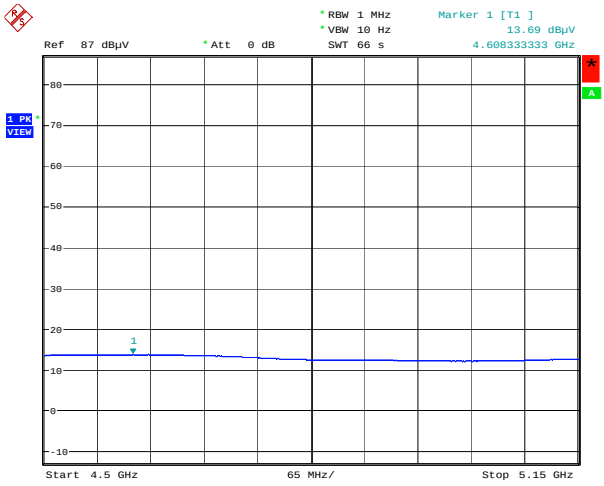
Only worst case was reported.

Restricted Band Check

4dBi Maxrad Antenna

4.5GHz-5.15GHz Range -----Ch36, 5180MHz

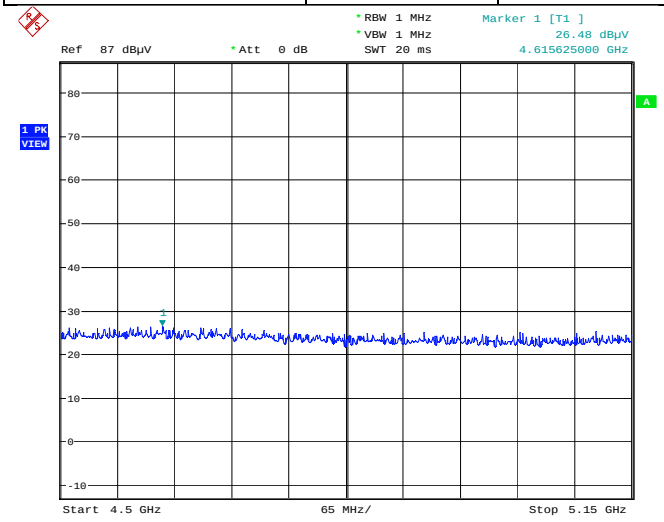
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
13.69	32.66	4	50.35	54



Date: 8.NOV.2005 14:26:20

4.5GHz-5.15GHz Range -----Ch36, 5180MHz

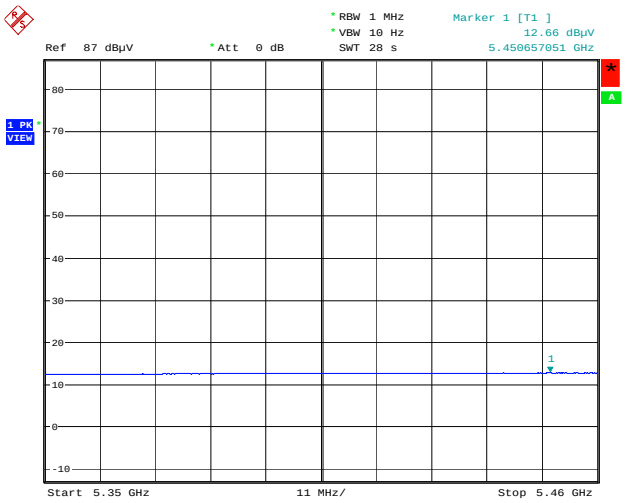
Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss(dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
26.48	32.66	4	63.14	74



Date: 8.NOV.2005 14:26:52

5.35GHz-5.46GHz Range---Ch50, 5250MHz

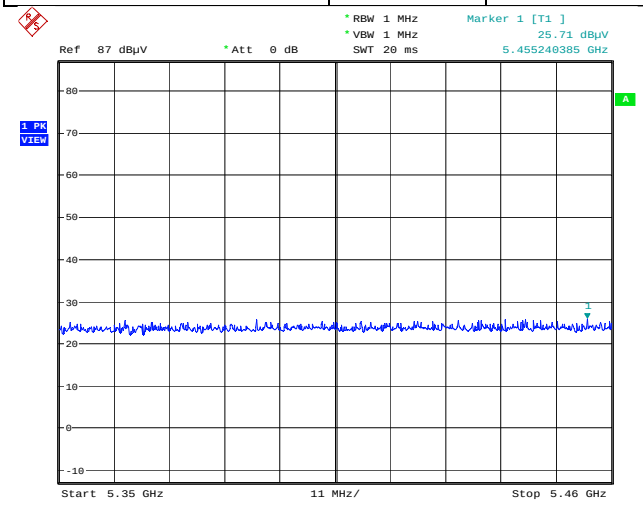
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
12.66	32.66	4	49.32	54



Date: 8.NOV.2005 14:28:51

5.35GHz-5.46GHz Range---Ch50, 5250MHz

Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
25.71	32.66	4	63.37	74

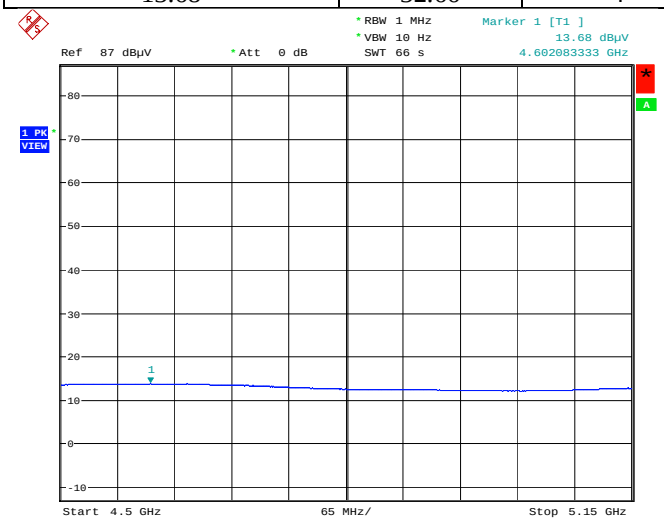


Date: 8.NOV.2005 14:27:50

10dBi Maxrad Antenna

4.5GHz-5.15GHz Range---Ch36, 5180MHz

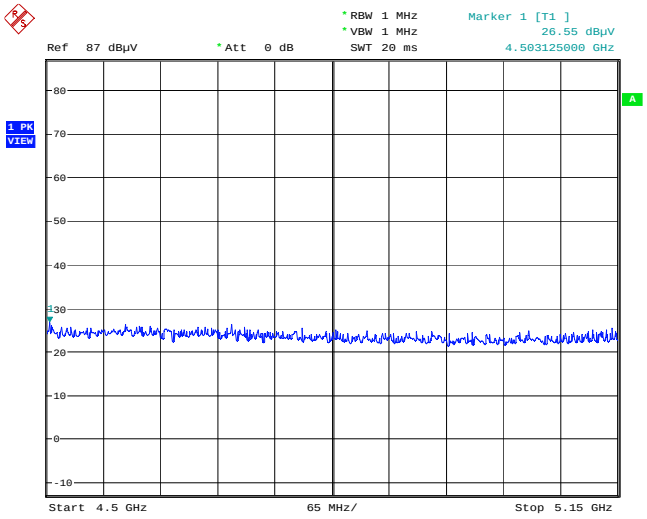
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
13.68	32.66	4	50.34	54



Date: 8.NOV.2005 14:11:27

4.5GHz-5.15GHz Range---Ch36, 5180MHz

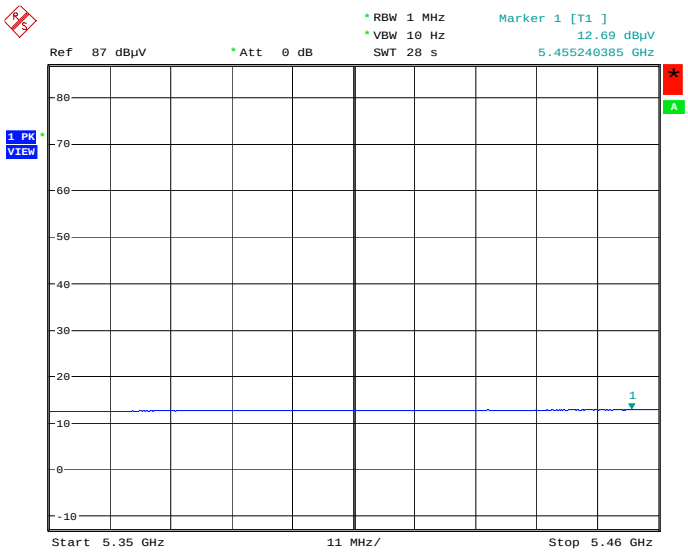
Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
26.55	32.66	4	63.21	74



Date: 8.NOV.2005 14:12:11

5.35GHz-5.46GHz Range --- Ch50, 5250MHz

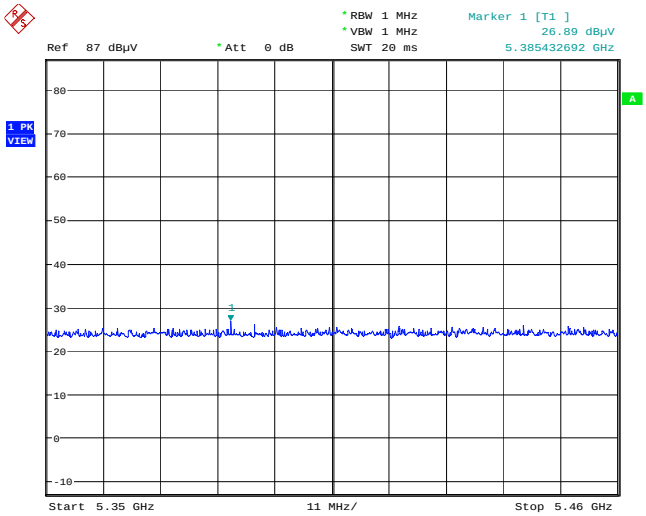
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
12.69	32.66	4	49.36	54



Date: 8.NOV.2005 14:15:28

5.35GHz-5.46GHz Range --- Ch50, 5250MHz

Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss(dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
26.39	32.66	4	63.05	74

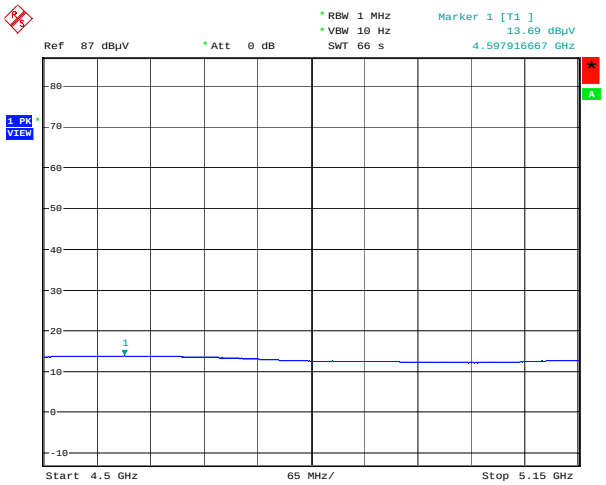


Date: 8.NOV.2005 14:16:02

15dBi Belair PatchAntenna

4.5GHz-5.15GHz Range---Ch36, 5180MHz

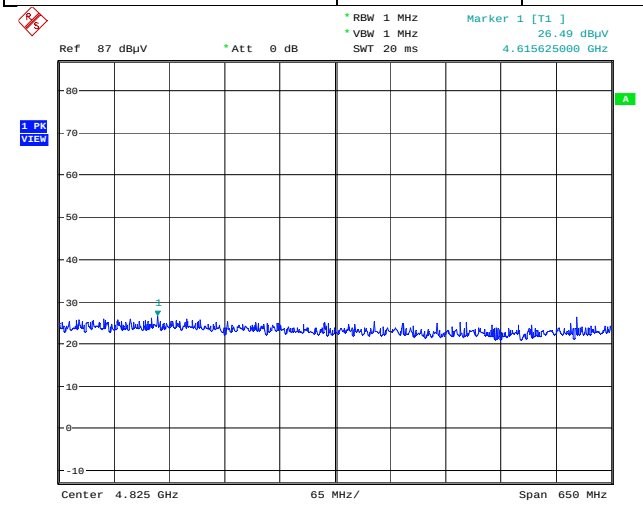
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
13.69	32.66	4	50.35	54



Date: 8.NOV.2005 13:57:33

4.5GHz-5.15GHz Range---Ch36, 5180MHz

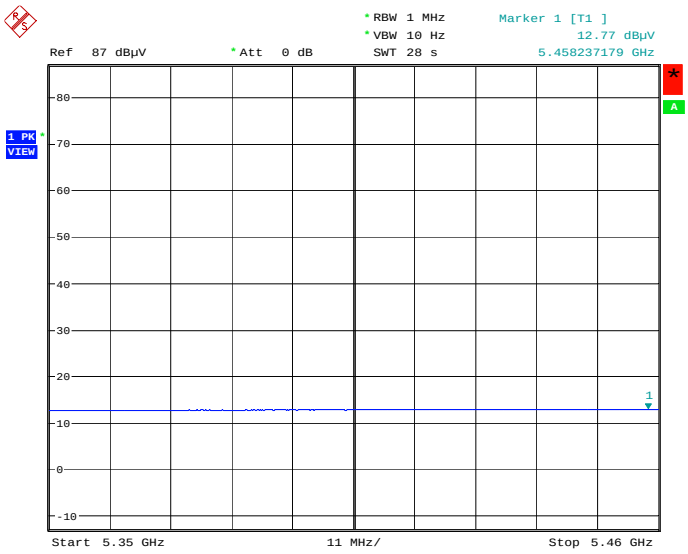
Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss(dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
26.49	32.66	4	63.15	74



Date: 8.NOV.2005 13:58:17

5.35GHz-5.46GHz Range --- Ch50, 5250MHz

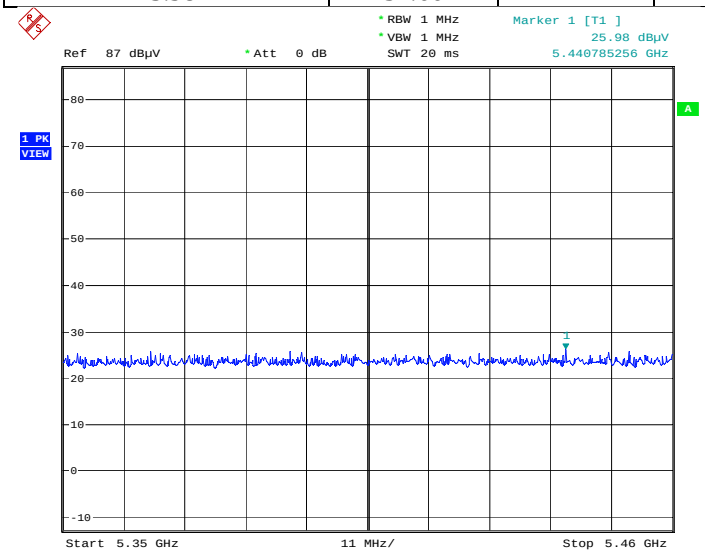
Band Edge Level (Avg) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
12.77	32.66	4	49.43	54



Date: 8.NOV.2005 14:01:27

5.35GHz-5.46GHz Range --- Ch50, 5250MHz

Band Edge Level (PK) (dBµv)	Af (dB/m)	Cable Loss (dB)	Emission Level (dBµv/m)	Limit (dBµv/m)
25.98	32.66	4	62.64	74



Date: 8.NOV.2005 14:00:26

Section 6. Peak Power Spectrum Density

Criteria: Clause 15.407(a)(1)

In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22 °C
Date:	Nov.8, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Method: Test was conducted according to FCC Public Notice: DA 02-2138

Test Result: Complies

Test Data: See Attached Tables and Graphics

4dBi Maxrad Antenna
PPSD Measurement Data (dBm/MHz)

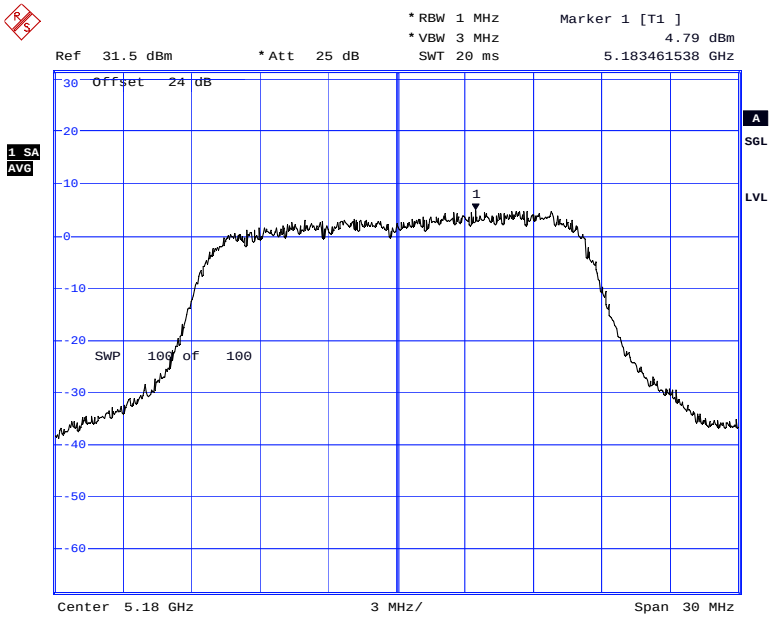
Frequency (MHz)	PPSD (dBm/MHz)
5180	4.79
5220	4.59
5250	4.21

Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum PPSD Value
=4.79dBm/MHz-1dB=3.79dBm/MHz

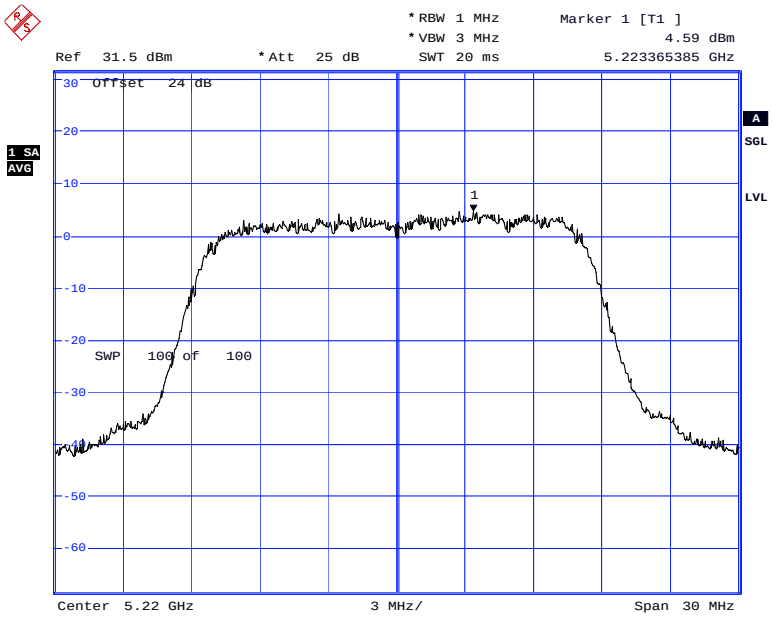
Limit: Conducted PPSD Limit for 4dBi Maxrad Antenna:
4dBm/MHz

5180MHz



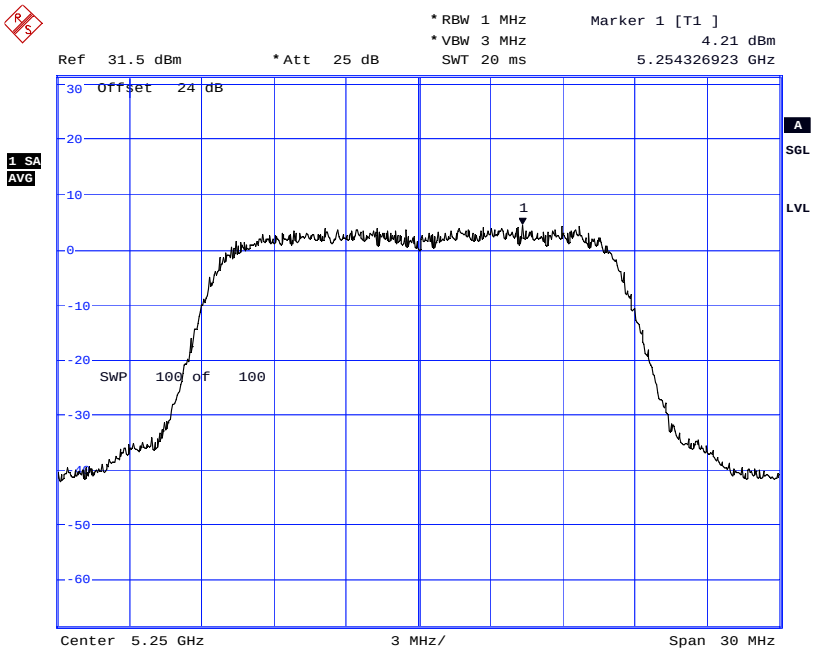
Date: 8.NOV.2005 09:45:04

5220MHz



Date: 8.NOV.2005 09:49:11

5250MHz



Date: 8.NOV.2005 09:50:22

10dBi Maxrad Antenna
PPSD Measurement Data (dBm/MHz)

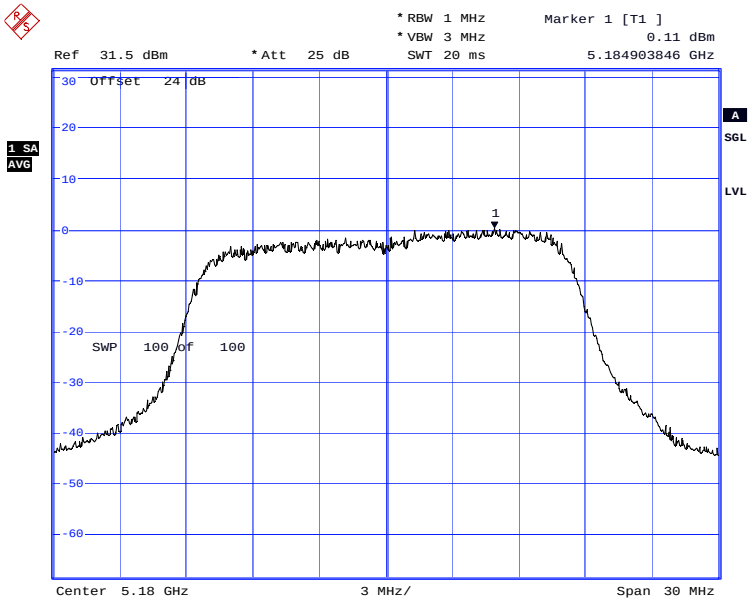
Frequency (MHz)	PPSD (dBm/MHz)
5180	0.11
5220	-0.64
5250	-0.86

Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum PPSD Value
=0.11dB-1dB=-0.89dBm/MHz

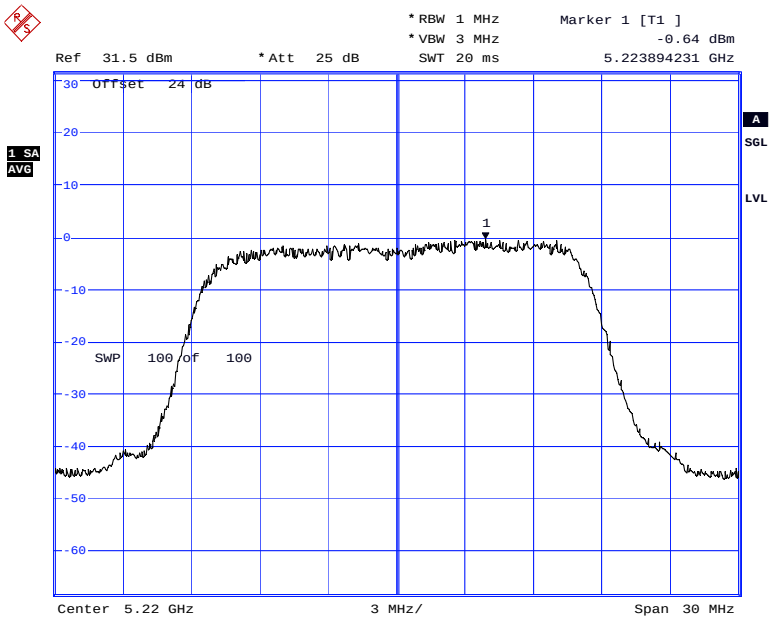
Limit: Conducted PPSD Limit for 10dBi Belair Patch Antenna
4dBm/MHz -(10dBi-6dBi)=0dBm/MHz

5180MHz



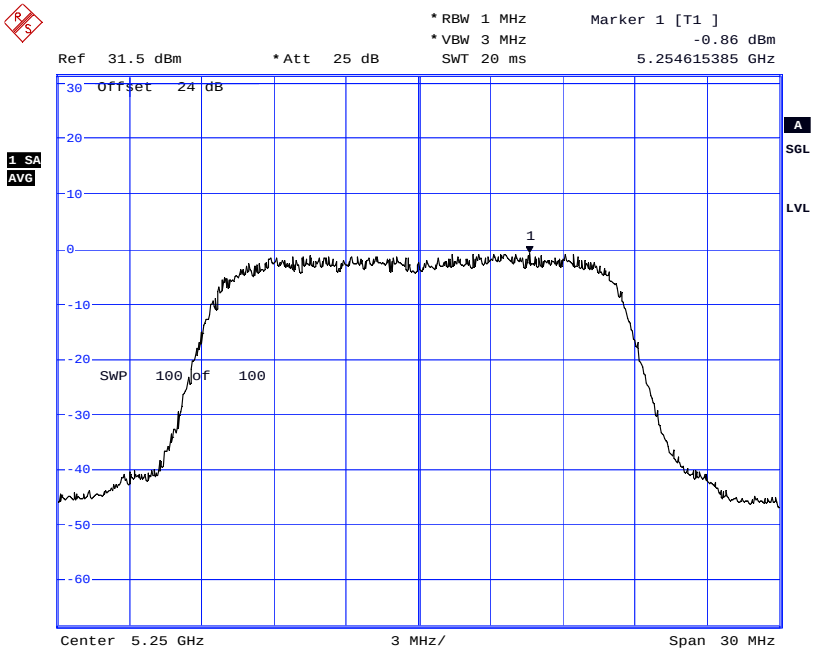
Date: 8.NOV.2005 10:04:08

5220MHz



Date: 8.NOV.2005 10:05:20

5250MHz


*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-0.86 dBm
5.254615385 GHz
Ref 31.5 dBm
*Att 25 dB
Offset 24 dB
1 SA
AVG
A
SGL
LVL
SWP 100 of 100
Center 5.25 GHz
3 MHz/
Span 30 MHz
Date: 8.NOV.2005 10:06:22

15dBi Belair Patch Antenna
PPSD Measurement Data (dBm/MHz)

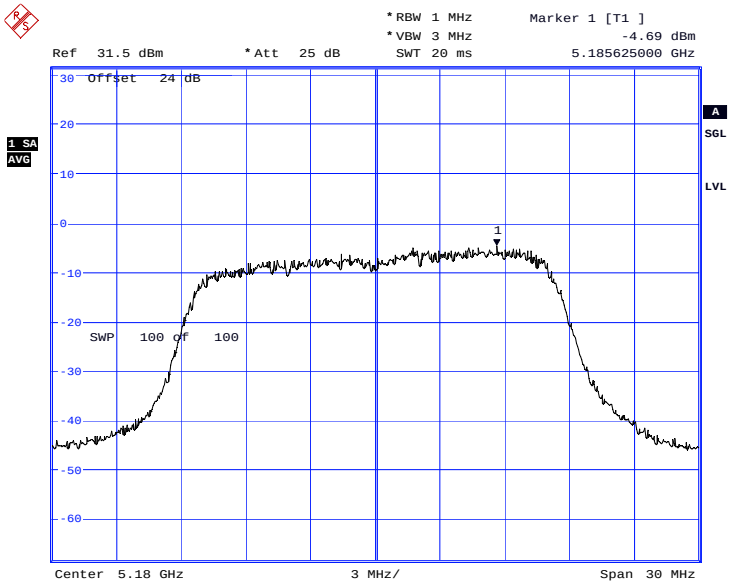
Frequency (MHz)	PPSD (dBm/MHz)
5180	-4.69
5220	-5.84
5250	-5.56

Manufacturer has declared there is 1dB cable loss between the radio module and antenna connector.

The Maximum PPSD Value
=-4.69dBm/MHz-1dB=-5.69dBm/MHz

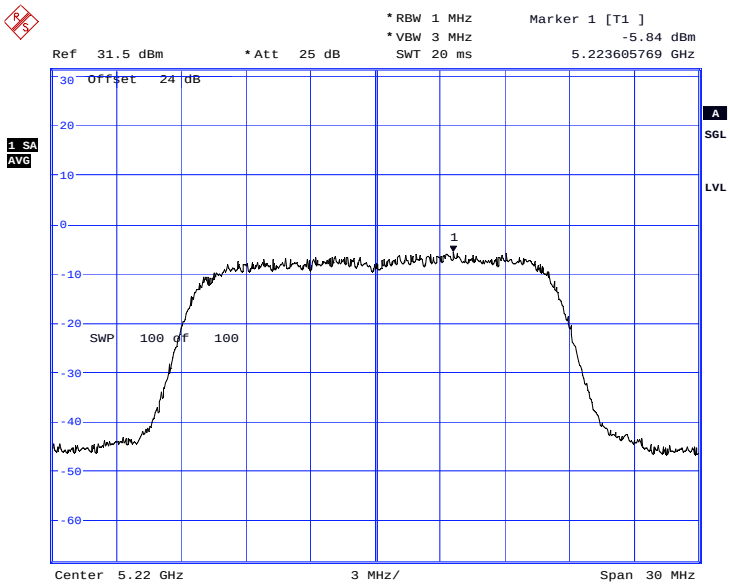
Limit: Conducted PPSD Limit for 15dBi Belair Patch Antenna
4dBm/MHz -(15dBi-6dBi)=-5dBm/MHz

5180MHz



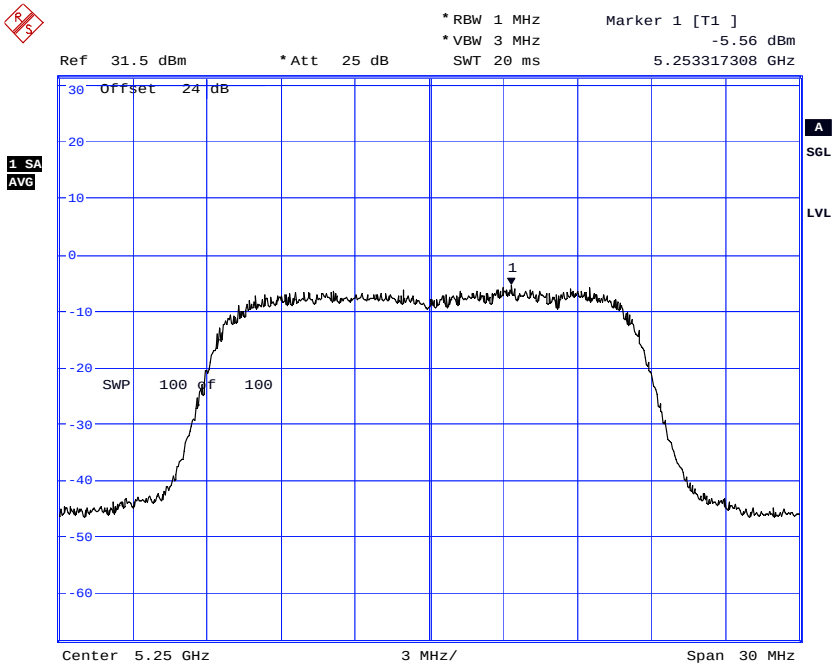
Date: 8.NOV.2005 10:18:51

5220MHz



Date: 8.NOV.2005 10:20:08

5250MHz



Date: 8.NOV.2005 10:21:17

Section 7. Supply Voltage Variation

Criteria: Clause 15.31

§ 15.31 (e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22 °C
Date:	Nov. 9, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Method: Average power was verified under voltage extreme conditions using a wideband power meter with thermocouple detector.

Extreme Voltage: ±15% of AC Mains

Test Result: No major changed was noticed during the test. Refer to the attached tables.

	120VAC	Low Voltage Extreme		High Voltage Extreme	
Frequency	Ave. Power	Ave. Power	Deviation	Ave. Power	Deviation
5180MHz	15.64dBm	15.66dBm	0.1%	15.66dBm	0.1%

Section 8. Peak Excursion Measurement

Criteria: Clause 15.407(a)(6)

(6) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22 °C
Date:	Nov. 9, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Method: Test was conducted according to FCC Public Notice: DA 02-2138

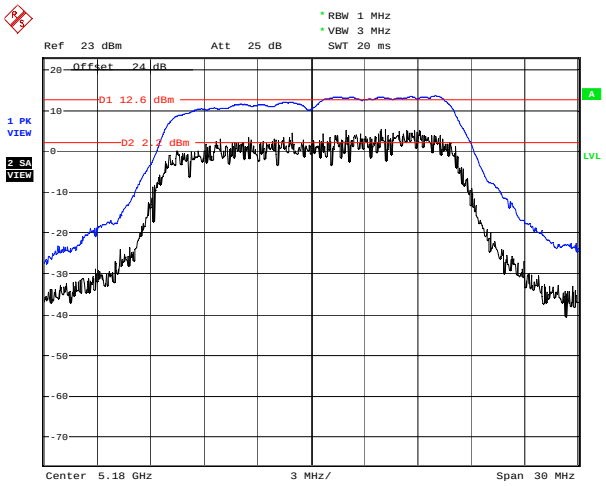
Test Result: Complies

Test Data: See attaché tables and graphics

4dBi Maxrad Antenna
Peak Excursion Measurement Data (dB)

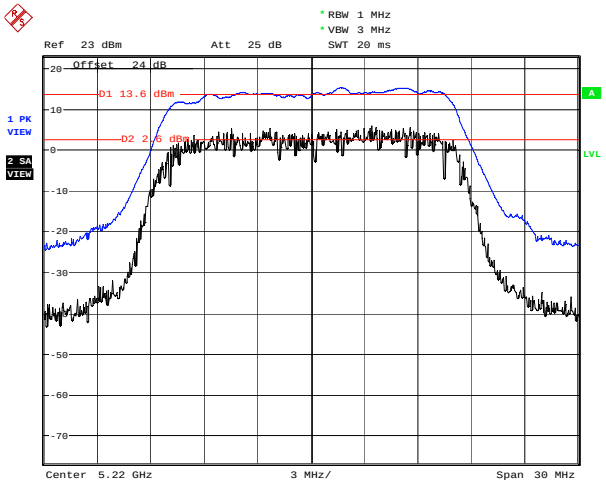
Frequency (MHz)	Peak Excursion (dB)
5180	10.4
5220	11
5250	11.7

5180MHz



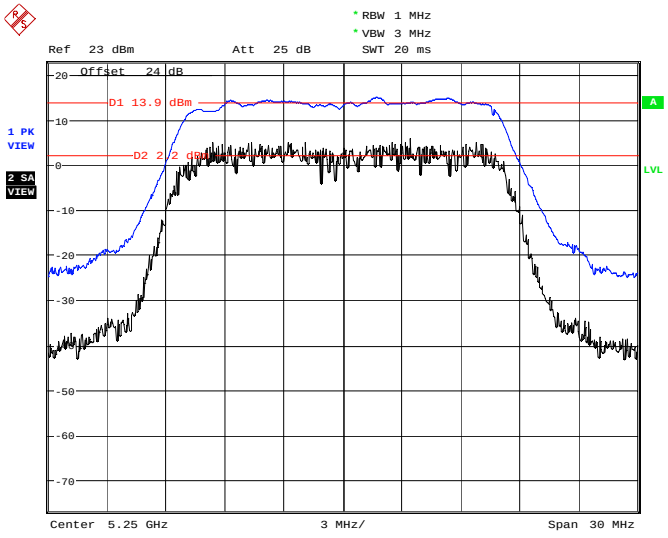
Date: 9.NOV.2005 11:25:43

5220MHz



Date: 9.NOV.2005 11:27:45

5250MHz

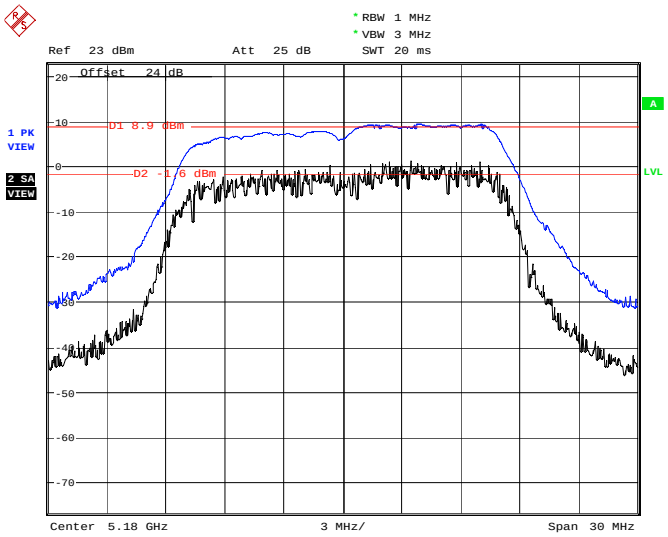


Date: 9.NOV.2005 11:29:51

10dBi Maxrad Antenna
Peak Excursion Measurement Data (dB)

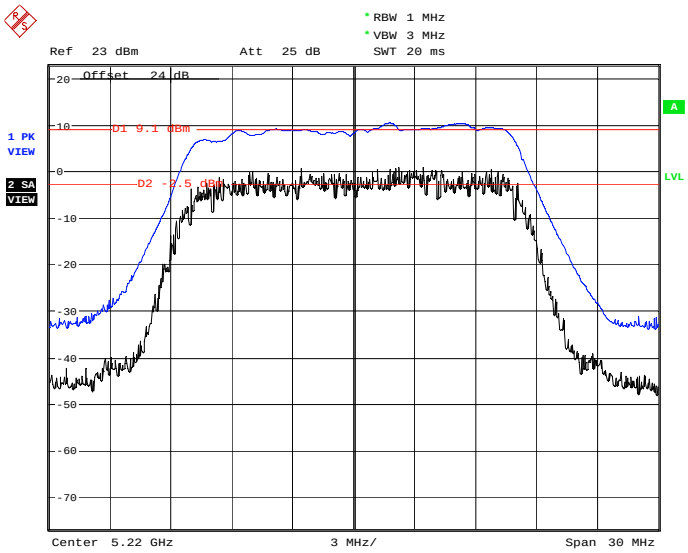
Frequency (MHz)	Peak Excursion (dB)
5180	10.5
5220	11.6
5250	11.5

5180MHz



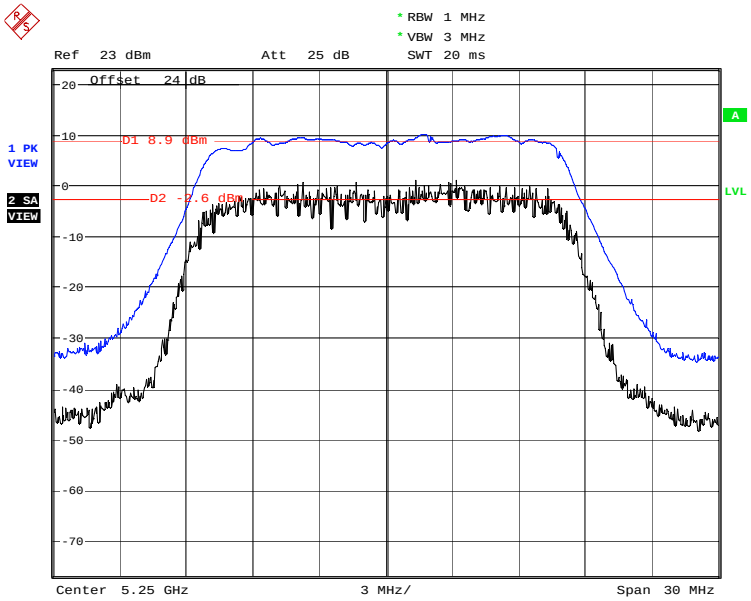
Date: 9.NOV.2005 11:31:30

5220MHz



Date: 9.NOV.2005 11:33:16

5250MHz

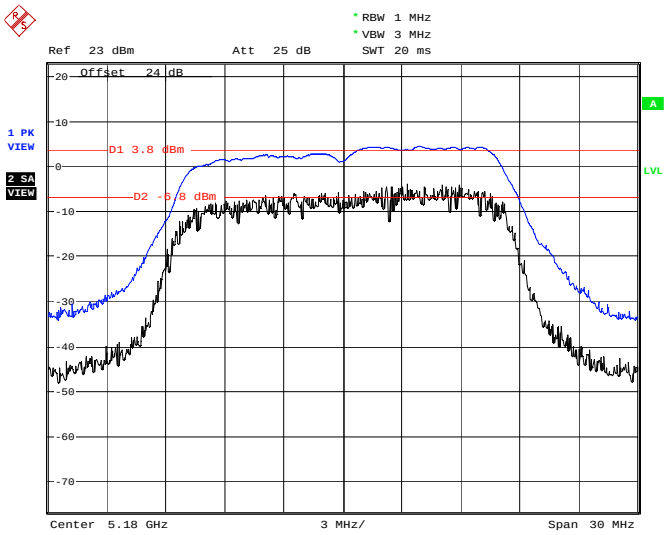


Date: 9.NOV.2005 11:35:17

15dBi Maxrad Antenna
Peak Excursion Measurement Data (dB)

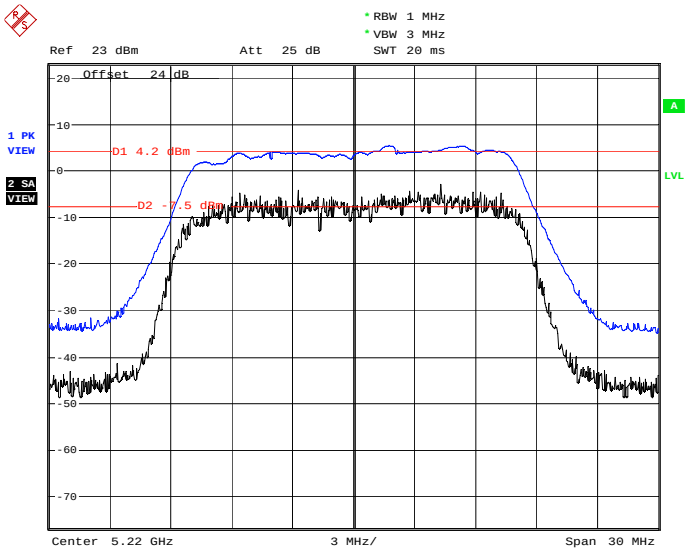
Frequency (MHz)	Peak Excursion (dB)
5180	10.6
5220	11.7
5250	11.8

5180MHz



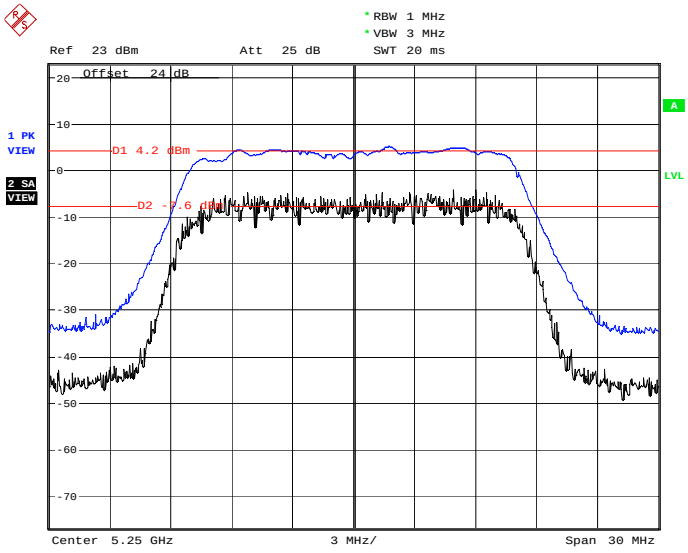
Date: 9.NOV.2005 12:00:00

5220MHz



Date: 9.NOV.2005 12:01:05

5250MHz



Date: 9.NOV.2005 12:02:09

Section 9. Frequency Stability

Clause 15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Test Conditions:

Sample Number:	1,2	**Temperature:**	22°C
Date:	Nov.2, 2005	**Humidity:**	50 %
Modification State:	0	**Tester:**	Xu Jin
		Laboratory:	Ottawa

Test Results: Complies

Test Conditions Ambient Temperature: 22°C
Extreme Temperature: -30°C to +50°C
Extreme Voltage Conditions: +/-15% of 120VAC

Test Data: See Attached tables

Frequency Stability Test Data

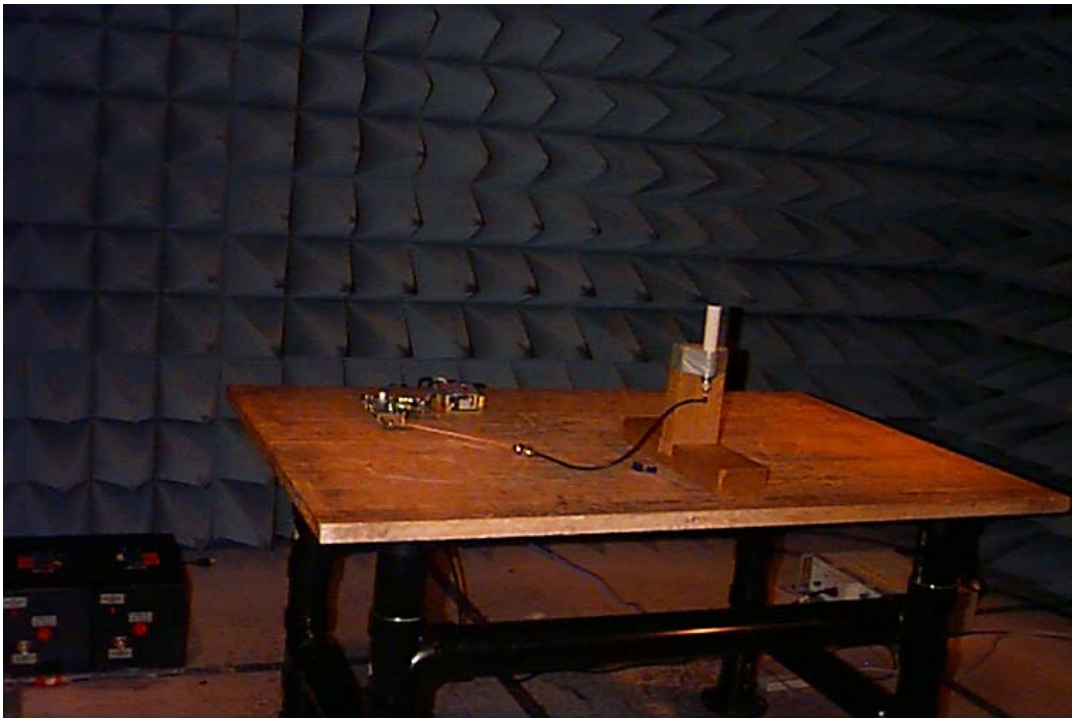
Test Condition	Measured Frequency (MHz)	Frequency Drift (ppm)
+22°C, 120VAC	5219.9636985	----
+22°C, 102VAC	5219.9636780	-0.00392723
+22°C, 138VAC	5219.9637040	0.001053647
+50°C, 120VAC	5219.9585604	-0.98431719
+40°C, 120VAC	5219.9647032	0.192472603
+30°C, 120VAC	5219.9707382	1.348610911
+20°C, 120VAC	5219.9875932	4.57756057
+10°C, 120VAC	5219.9885071	4.752638415
0°C, 120VAC	5219.9932035	5.652338159
-10°C, 120VAC	5219.9864035	4.349647107
-20°C, 120VAC	5219.9972065	6.419192151
-30°C, 120VAC	5220.0006804	7.084694863

Appendix B: Setup Photographs

Radiated Emission Setup Photos_Front

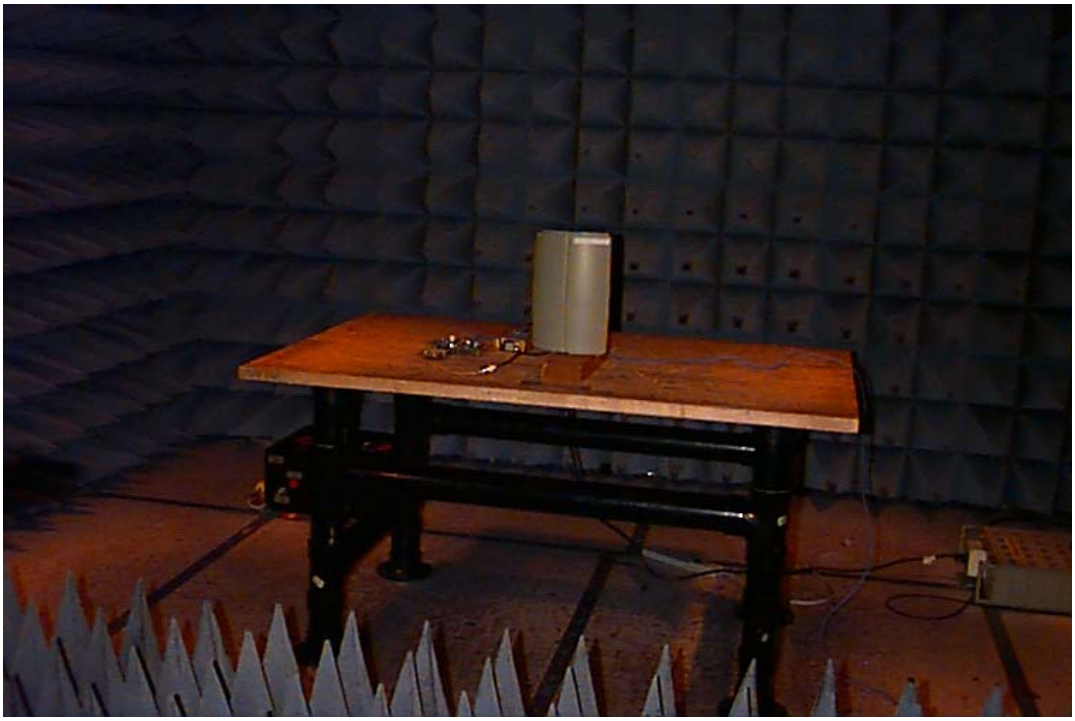
Radiated Emissions Setup Photos_Back

4dBi Maxrad Antenna



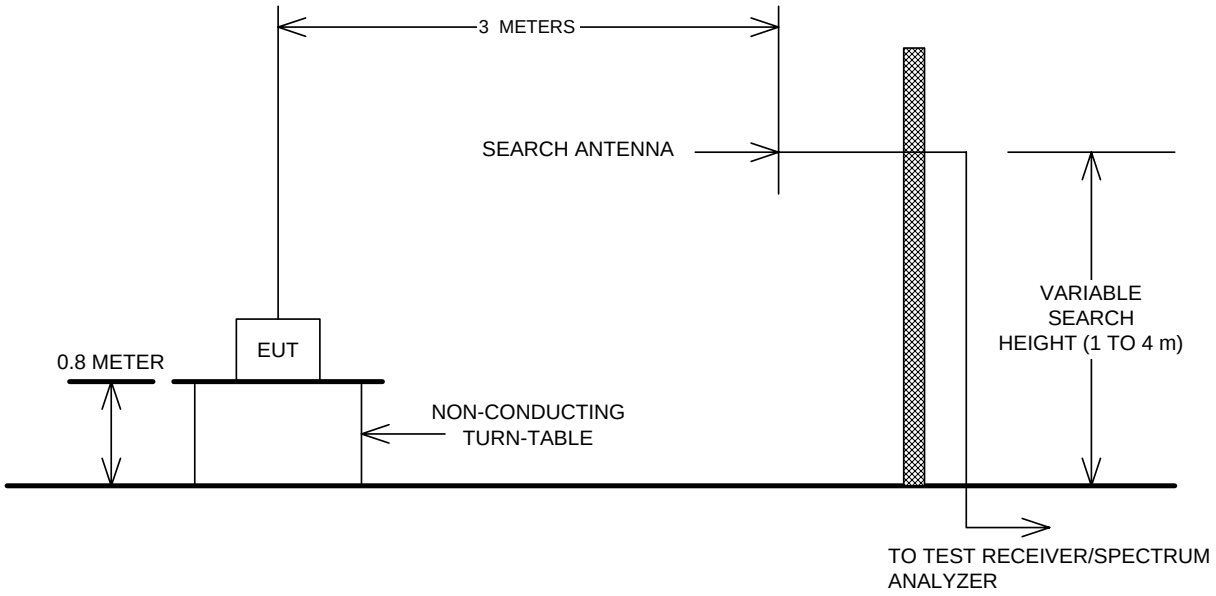
10dBi Maxrad Antenna

15dBi Belair Patch Antenna

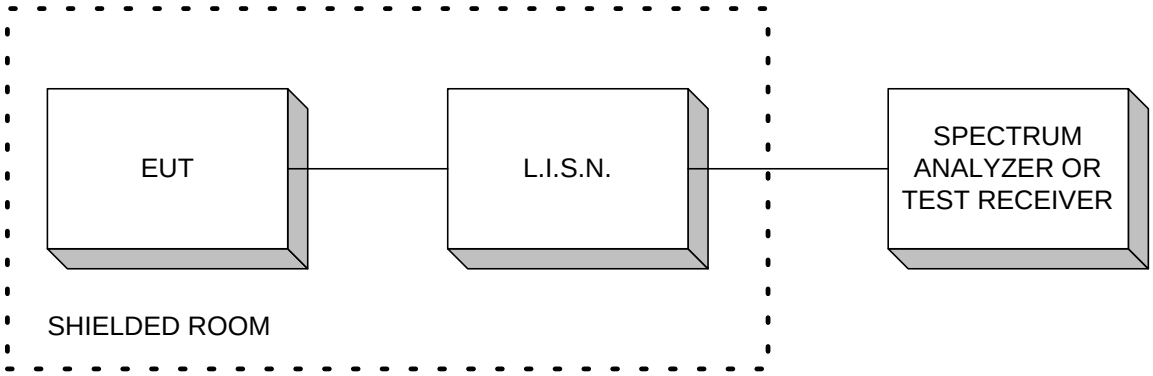


Appendix C : Block Diagram of Test Setups

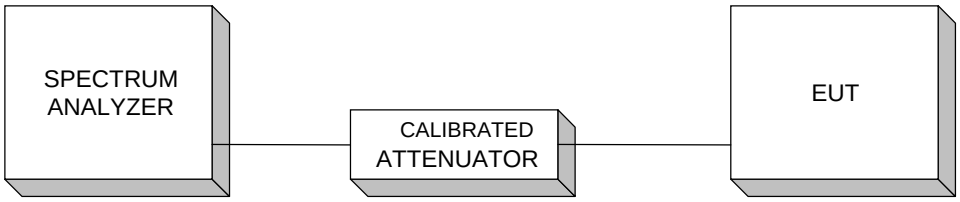
Test Site For Radiated Emissions



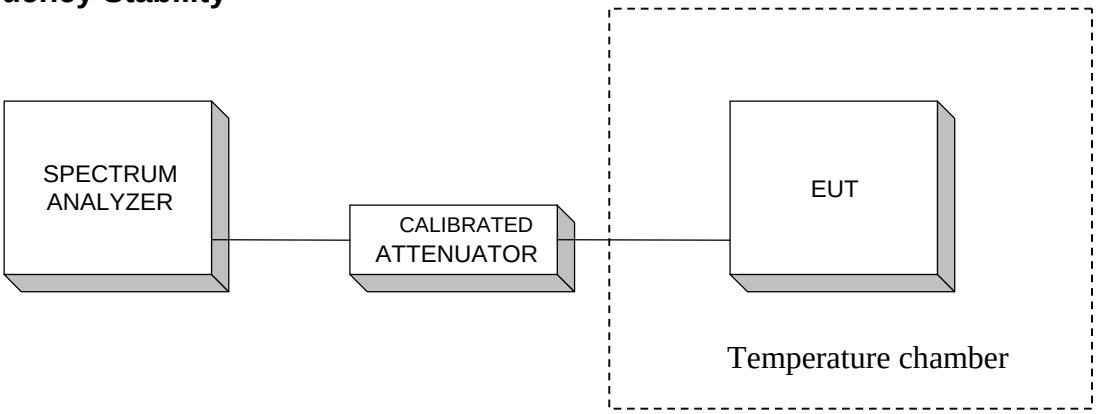
Conducted Emissions



Conducted Measurements



Frequency Stability



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