

TEST REPORT

Report Number: M60227A2

April 13, 2006

Testing performed on the

**WLAN Xtender
Model Number: XDemo2B
FCC ID: T27-XDEMO2B
IC ID: 6403A-XDEMO2B**

to
FCC Part 15 Subpart C (15.247)

for
WiDeFi, Inc.

Test Performed by:
Suresh Kondapalli

Test Authorized by:
Kevin Bothmann

Prepared by: Kevin Bothmann **Date:** 4-13-06

Reviewed by: Jay Gandhi **Date:** 4-13-06

TABLE OF CONTENTS

1.0	Summary of Tests	3
2.0	General Description	4
2.1	Product Description	4
2.2	Related Submittal(s) Grants.....	4
2.3	Test Methodology	5
2.4	Test Facility	5
3.0	System Test Configuration.....	6
3.1	Support Equipment	6
3.2	Block Diagram of Test Setup.....	6
3.3	Justification.....	7
3.4	Software Exercise Program.....	7
3.5	Mode of Operation During Test.....	7
3.6	Modifications Required for Compliance	7
3.7	Additions, deviations and exclusions from standards.....	8
4.0	Measurement Results.....	9
4.1	Maximum Conducted Output Power at Antenna Terminals,.....	9
4.2	6 dB RF Bandwidth,	10
4.6	Transmitter Radiated Emissions in Restricted Bands,	15
4.7	AC Line Conducted Emission,	26
5.0	List of Test Equipment	31
6.0	Document History	32

1.0 Summary of Tests

FCC ID: T27-XDEMO2B

TEST	REFERENCE	RESULTS
RF output power	15.247(b)	Complies
6 dB Bandwidth	15.247(a)(2)	Complies
Power Density	15.247(d)	Complies
Out of Band Antenna Conducted Emission	15.247(c)	Complies
Out of Band Radiated Emission (except emissions in restricted bands)	15.247(c)	Not performed. The EUT passed out-of-band antenna conducted emission
Radiated Emission in Restricted Bands	15.247(c), 15.209, 15.205	Complies
AC Conducted Emission	15.207	Complies
Radiated Emission from Digital Part and Receiver	15.109	Complies. A separate verification report is issued
Antenna Requirement	15.203	Complies

2.0 General Description

2.1 Product Description

The WLAN Xtender™ is a repeater that operates on multiple frequency channels. It contains a 1 and 2Mbps internal modem and the components for repeating packets at the physical layer.

The current embodiment of the Xtender™ supports all known 802.11 WLAN protocols in operation in the 2.4 GHz ISM band. This includes 802.11b/g and all known security protocols such as WEP and WPA.

Overview of the Equipment under Test:

Applicant	WiDefi Inc
Model No.	XDemo2B
FCC Identifier	T27-XDEMO2B
Use of Product	WLAN Xtender™
Type of Transmission	Direct Sequence Spread Spectrum
Rated RF Output	+15dBm
Frequency Range	2412 - 2462
Type of modulation	DBPSK, CCK and OFDM
Number of Channel(s)	11
Antenna(s) & Gain,	Dipole antenna with 5dBi gain.
Antenna Requirement	Antenna permanently attached
Manufacturer Name & Address	Connex Wireless 14575 S. Centerpoint Way Bluffdale, Utah 84065

The product is operated with following power adapter:

Brand:	CUI
Model:	KSAFE0600400T1M2
Input:	100-240Vac, 50-60Hz, 0.6A Max.
Output:	6.0Vdc, 4.0A

EUT receive date: February 21, 2006

EUT receive condition: The EUT was received in good condition with no apparent damage.

Test start date: February 21, 2006

Test completion date: February 28, 2006

The test results in this report pertain only to the item tested.

2.2 Related Submittal(s) Grants

Verification Test Report for FCC Part 15 Subpart B

2.3 Test Methodology

Both AC mains line-conducted and radiated emissions measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Data Sheet**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

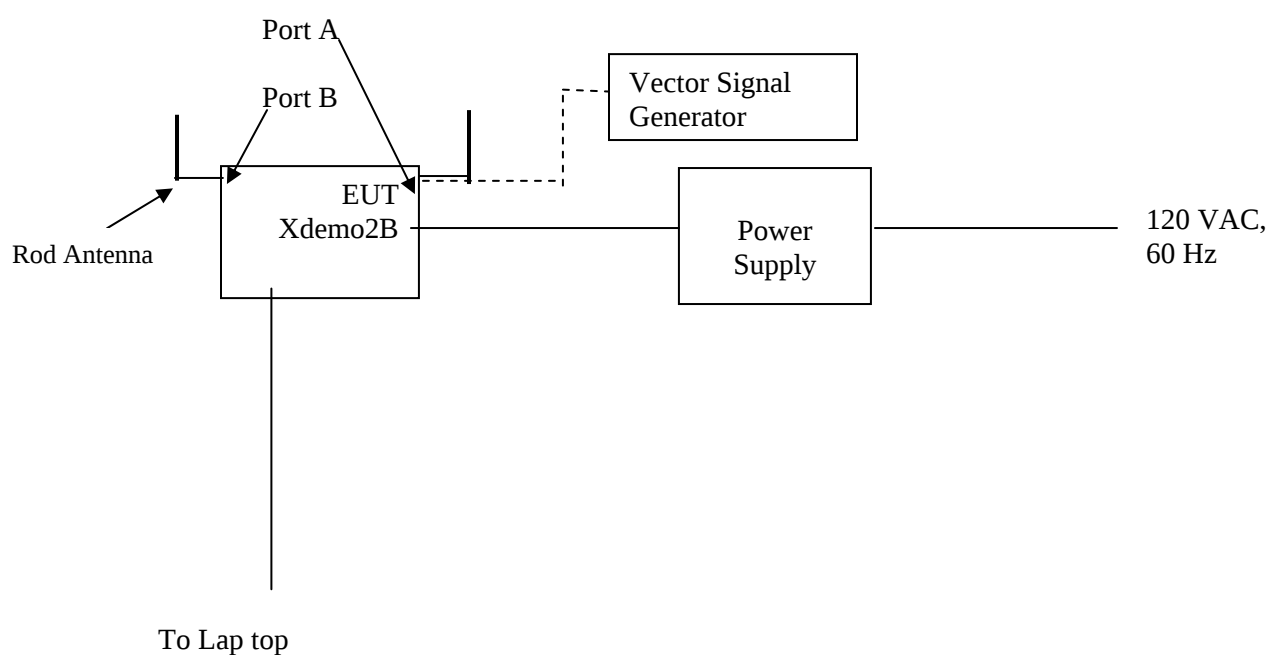
The open area test site and conducted measurement facility used to collect the radiated data is site 1, 10-m semi-anechoic chamber, IntertekTesting Services, Menlo park, California, USA. This test facility and site measurement data have been fully placed on file with the FCC and A2LA accredited.

3.0 System Test Configuration

3.1 Support Equipment

Item #	Description	Model No.	Serial No.
1	Vector Signal Generator Rohde & Schwarz	SMJ 100A	1403.4507K02
2	Laptop Dell Inspiron 8600	PP02X	CN-0D5689-12961-4CQ-3493-RevA06

3.2 Block Diagram of Test Setup



Power Supply: model: CUI KSAFE0600400T1M2

S = Shielded	F = With Ferrite
U = Unshielded	m = Length in Meters

3.3 Justification

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst case emissions.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters.

Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. All readings are extrapolated back to the equivalent three-meter reading using inverse scaling with distance.

3.4 Software Exercise Program

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

3.5 Mode of Operation During Test

During testing, the transmitter was setup to transmit continuously at maximum RF power on low, middle and high channels with three types of modulation: DBPSK, CCK, and OFDM. The transmitter was controlled by the Laptop and Vector Signal Generator, Laptop was disconnected after setup. Care was taken to ensure proper power supply voltages during testing.

3.6 Modifications Required for Compliance

Intertek installed no modifications during compliance testing in order to bring the product into compliance (Please note that this does not include changes made specifically by Wifefi prior to compliance testing)

3.7 Additions, deviations and exclusions from standards

No additions, deviations or exclusions from the standard were made.

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rule 15.247(b)

Requirement

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm).
For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6) dBm.

Procedure

The antenna port of the EUT was connected to the input of a peak power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

Test Results

Frequency (MHz)	Modulation	Port A Output in mWatt	Port B Output in mWatt
2412 (channel 1)	DBPSK	11.4	11.0
	CCK	6.9	10.2
	OFDM	15.2	21.8
2437 (channel 6)	DBPSK	14.0	12.0
	CCK	8.4	12.2
	OFDM	19.5	26.8
2462 (channel 11)	DBPSK	16.4	15.0
	CCK	10.0	13.6
	OFDM	23.0	31.5

4.2 6 dB RF Bandwidth, FCC Rule 15.247(a)(2)

Requirement

The minimum 6-dB bandwidth shall be at least 500 kHz

Procedure

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6-dB bandwidth was determined from where the channel output spectrum intersected the display line.

Test Result

Frequency (MHz)	Modulation	6 dB Bandwidth (MHz)	Plot
2437	DBPSK	10.14	2.1
	OFDB	15.60	2.2
	CCK	9.06	2.3
2412	DBPSK	10.14	2.4
	OFDM	15.72	2.5
	CCK	9.60	2.6
2462	DBPSK	10.26	2.7
	OFDM	16.38	2.8
	CCK	9.00	2.9

Plots 2.1 to 2.9 are placed in Appendix A

4.3 Power Density FCC Rule 15.247(d)

Requirement

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Procedure

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output passband. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. Total SWEEP TIME is calculated as follows:

$$\text{SWEEP TIME (SEC)} = (\text{Fstop, kHz} - \text{Fstart, kHz}) / 3 \text{ kHz}$$

Frequency Span = 1200 kHz

Sweep Time = Frequency Span / 3 kHz = 400 seconds

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable is used, those losses are compensated for with the analyzer OFFSET function.

Test Result

Refer to the table below and plots.

Frequency (MHz)	Modulation	Power Density (dBm)	Plot
2412	DBPSK	-11.16	3.1
	OFDM	-16.10	3.2
	CCK	-15.49	3.3
2437	DBPSK	-10.67	3.4
	OFDM	-15.03	3.5
	CCK	-16.69	3.6
2462	DBPSK	-9.96	3.7
	OFDM	-15.33	3.8
	CCK	-15.84	3.9

The EUT passed by 19.6 dB
Plots 3.1 to 3.9 are placed in Appendix B

4.4 Out-of-Band Conducted Emissions, FCC Rule 15.247(c)

Requirement

In any 100 kHz bandwidths outside the EUT pass-band, the RF power shall be at least 20 dB below that of the maximum in-band 100 kHz emissions.

Procedure

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 100 kHz. For each channel investigated, the in-band and out-of-band emission measurements were performed. The out-of-band emissions were measured from 10 MHz to 25 GHz.

Test Result

Refer to the table below and plots.

Port B

Frequency (MHz)	Modulation	Description	Plot
2412	OFDM	Scan 10 MHz – 1 GHz	4.1
	OFDM	Scan 1 GHz – 2.4 GHz	4.2
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.3
	OFDM	Scan 2.4835 GHz – 10 GHz	4.4
	OFDM	Scan 10 GHz – 25 GHz	4.5
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.6
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.7
2437	OFDM	Scan 10 MHz – 1 GHz	4.8
	OFDM	Scan 1 GHz – 2.4 GHz	4.9
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.10
	OFDM	Scan 2.4835 GHz – 10 GHz	4.11
	OFDM	Scan 10 GHz – 25 GHz	4.12
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.13
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.14
2462	OFDM	Scan 10 MHz – 1 GHz	4.15
	OFDM	Scan 1 GHz – 2.4 GHz	4.16
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.17
	OFDM	Scan 2.4 GHz – 10GHz	4.18
	OFDM	Scan 10 GHz – 25 GHz	4.19
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.20
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.21

Plots 4.1 to 4.21 are placed in Appendix C

Port A

Frequency (MHz)	Modulation	Description	Plot
2412	OFDM	Scan 10 MHz – 1 GHz	4.22
	OFDM	Scan 1 GHz – 2.4 GHz	4.23
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.24
	OFDM	Scan 2.4835 GHz – 10 GHz	4.25
	OFDM	Scan 10 GHz – 25 GHz	4.26
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.27
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.28
2437	OFDM	Scan 10 MHz – 1 GHz	4.29
	OFDM	Scan 1 GHz – 2.4 GHz	4.30
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.31
	OFDM	Scan 2.4835 GHz – 10 GHz	4.32
	OFDM	Scan 10 GHz – 25 GHz	4.33
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.34
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.35
2462	OFDM	Scan 10 MHz – 1 GHz	4.36
	OFDM	Scan 1 GHz – 2.4 GHz	4.37
	OFDM	Scan 2.4 GHz – 2.4835 GHz	4.38
	OFDM	Scan 2.4 GHz – 10GHz	4.39
	OFDM	Scan 10 GHz – 25 GHz	4.40
	DBPSK	Scan 2.4 GHz – 2.4835 GHz	4.41
	CCK	Scan 2.4 GHz – 2.4835 GHz	4.42

Plots 4.21 to 4.42 are placed in Appendix C

4.5 Out of Band Radiated Emissions (except emissions in restricted bands)
FCC Rule 15.247(c)

Procedure

For out of band radiated emissions (except for frequencies in restricted bands) that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Test Result

Test was not performed, the EUT passed out-of-band antenna conducted emission test.

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.247(c), 15.209, 15.205

Procedure

Radiated emission measurements were performed from 30 MHz to 25,000 MHz. Spectrum Analyzer Resolution Bandwidth is 100 kHz or greater for frequencies 30 MHz to 1000 MHz, 1 MHz - for frequencies above 1000 MHz.

The EUT is placed on a plastic turntable. If the EUT attaches to peripherals, they are connected and operational (as typical as possible). During testing, all cables were manipulated to produce worst case emissions. The signal is maximized through rotation. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters.

Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. All readings are extrapolated back to the equivalent three-meter reading using inverse scaling with distance.

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels).

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength in dB(μ V/m)

RA = Receiver Amplitude (including preamplifier) in dB(μ V); AF = Antenna Factor in dB(1/m)

CF = Cable Attenuation Factor in dB; AG = Amplifier Gain in dB

Assume a receiver reading of 52.0 dB(μ V) is obtained. The antennas factor of 7.4 dB(1/m) and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB(μ V/m). This value in dB(μ V/m) was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}(\mu\text{V})$$

$$AF = 7.4 \text{ dB}(1/\text{m})$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = 52.0 + 7.4 + 1.6 - 29.0 = 32 \text{ dB}(\mu\text{V}/\text{m})$$

$$\text{Level in } \mu\text{V}/\text{m} = \text{Common Antilogarithm } [(32 \text{ dB}\mu\text{V}/\text{m})/20] = 39.8 \mu\text{V}/\text{m}$$

The Field Strength at the band-edge frequency in the restricted band, adjacent to the operating band, was calculated as $E_f = E_0 - \Delta$

Where:

E_f = Field Strength of Band-edge Frequency

E_0 = Field Strength of Fundamental Frequency

Δ = Delta between the levels of emissions at Fundamental Frequency and at Band-edge Frequency

Test Result

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance for the worst-case configuration.

The EUT passed the test by 5.7 dB.

For radiated Spurious emissions test using DBPSK modulation, both internal modulation and repeated signal case were investigated, worst case results are placed in the test report.

Radiated spurious emissions test using OFDM and DSSS modulation, both internal modulation and repeated signal case were investigated, the worst case results are placed in the report.

Test Data

Temperature: 21.0 C							Widifi			
Humidity: 39.8 %							Model: XDemo2B			
Measured at 3 m										
Frequency	Polarity	Detector	SA reading	Cable loss	Pre- amp gain	Ant. factor	D.C.F	Field Strength	Limit	Margin
MHz			dB(uV)	dB	dB	dB(1/m)	dB	dB(uV/m)	dB(uV/m)	dB
Tx, @ 2412 MHz										
4824	V	Peak	47.2	8.5	35.8	34.9	0	54.8	74	-19.2
4824	V	Aver	38.7	8.5	35.8	34.9	0	46.3	54	-7.7
7236	H	Peak	45.0	9.2	35.4	37.7	0	56.5	74	-17.5
7236	H	Aver	32.4	9.2	35.4	37.7	0	43.9	54	-10.1
12060	V/H	Peak	38.2*	6.5	37.1	41.2	0	48.8	74	-25.2
12060	V/H	Aver	27.6*	6.5	37.1	41.2	0	38.3	54	-15.7
14472	V/H	Peak	45.5*	7.3	37.1	41.2	0	56.9	74	-17.1
14472	V/H	Aver	37.2*	7.3	37.1	41.2	0	48.6	54	-5.4
19296	V/H	Peak	38.7*	9.7	24.0	40.2	0	64.6	74	-9.4
19296	V/H	Aver	24.7*	9.7	24.0	40.2	0	50.6	54	-3.4
Tx, @ 2437 MHz										
4874	V	Peak	50.8	8.5	35.8	34.9	0	58.7	74	-15.4
4874	V	Aver.	36.8	8.5	35.8	34.9	0	44.4	54	-9.6
7311	H	Peak	50.3	9.2	35.4	37.7	0	59.8	74	-14.2
7311	H	Aver	36.6	9.2	35.4	37.7	0	48.1	54	-5.9
12185	V/H	Peak	38.2*	6.5	37.1	41.2	0	48.8	74	-25.2
12185	V/H	Aver	27.6*	6.5	37.1	41.2	0	38.3	54	-15.7
19496	V/H	Peak	38.7*	9.7	24.0	40.2	0	64.6	74	-9.4
19496	V/H	Aver	24.7*	9.7	24.0	40.2	0	50.6	54	-3.4
Tx, @ 2462 MHz										
4924	H	Peak	50.7	8.5	35.8	34.9	0	58.5	74	-15.5
4924	H	Aver	38.7	8.5	35.8	34.9	0	46.3	54	-7.7
7386	V	Peak	50.5	9.2	35.4	37.7	0	62.0	74	-12.0
7386	V	Aver	36.8	9.2	35.4	37.7	0	48.3	54	-5.7
12310	V/H	Peak	39.2*	6.5	37.1	41.2	0	49.8	74.0	-24.2
12310	V/H	Aver	28.7*	6.5	37.1	41.2	0	37.2	54.0	-16.8
19696	V/H	Peak	38.7*	9.7	24.0	40.2	0	64.6	74	-9.4
19696	V/H	Aver	24.7*	9.7	24.0	40.2	0	50.6	54	-3.4
22158	V/H	Peak	36.0*	11.5	24.0	40.3	0	63.8	74.0	-10.2
22158	V/H	Aver	20.4*	11.5	24.0	40.3	0	48.2	54.0	-5.8

* Noise floor

Radiated Emission in Restricted Bands at the band-edge frequencies
(measured using the “delta” method)

CCK Modulation

Frequency GHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Ant. factor dB(1/m)	Field Strength at 3 m dB(uV/m)	Limit at 3 m dB(uV/m)	Margin dB
2.462	V	Peak	75.9	5.4	30.5	111.8	-	-
2.462	V	Aver.	58.8	5.4	30.5	94.7	-	-
2.4835 –2.5	V	Peak	-	-	-	111.8 –61.2=50.6*	74.0	-23.4
2.4835 –2.5	V	Aver.	-	-	-	94.7 –61.2=33.5*	54.0	-20.5

* delta = 61.2 dB obtained from plot 5.5. Measurements were done both A and B ports. Worst case results are reported here.

OFDM Modulation

Frequency GHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Ant. factor dB(1/m)	Field Strength at 3 m dB(uV/m)	Limit at 3 m dB(uV/m)	Margin dB
2.462	V	Peak	73.7	5.4	30.5	109.6	-	-
2.462	V	Aver.	59.5	5.4	30.5	95.4	-	-
2.4835 –2.5	V	Peak	-	-	-	109.6 –50.3=59.3*	74.0	-14.7
2.4835 –2.5	V	Aver.	-	-	-	95.4 –50.3=45.1*	54.0	-8.9

* delta = 50.5 dB obtained from plot 5.1

DBPSK Modulation

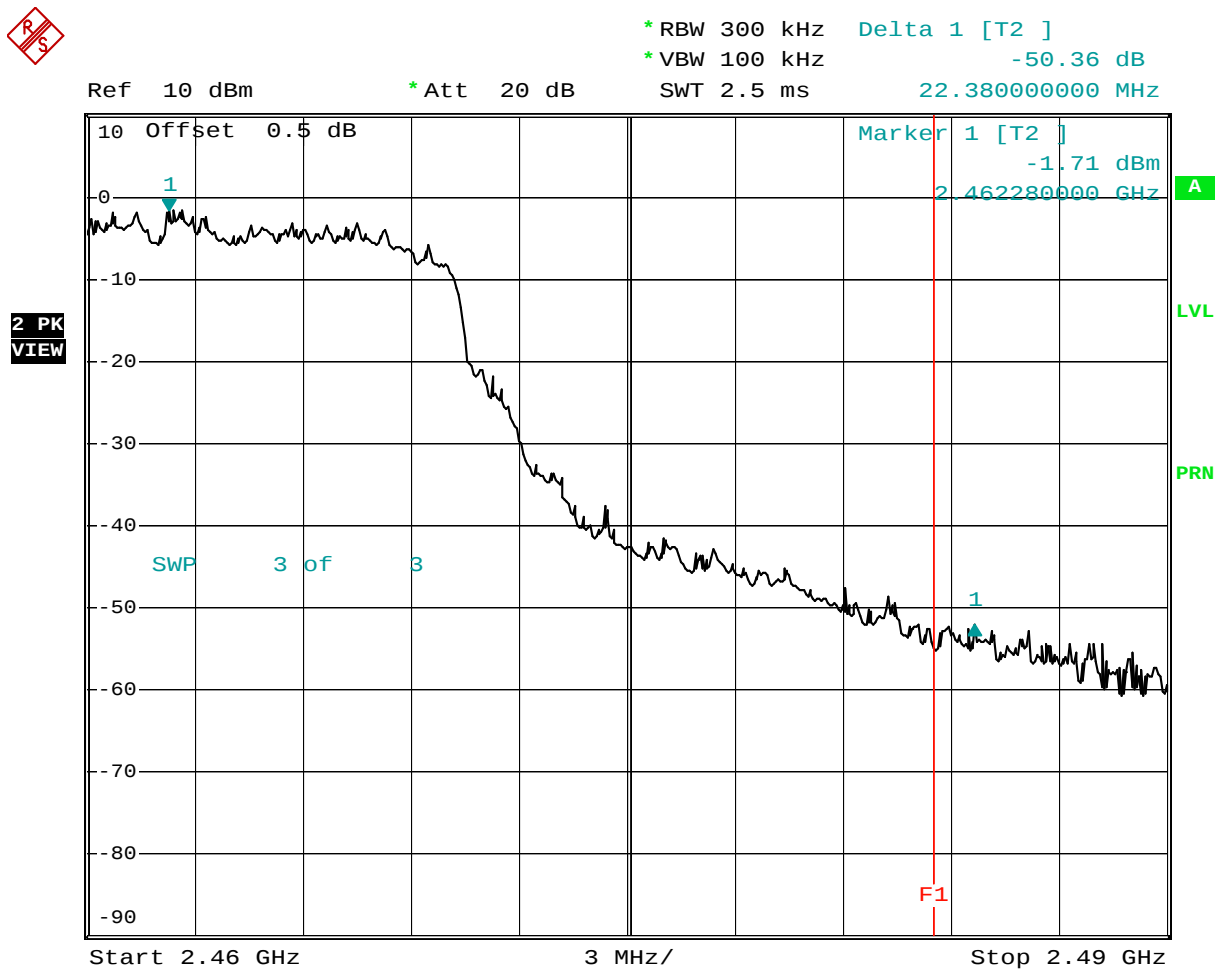
Frequency GHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Ant. factor dB(1/m)	Field Strength at 3 m dB(uV/m)	Limit at 3 m dB(uV/m)	Margin dB
2.462	V	Peak	74.8	5.4	30.5	110.7	-	-
2.462	V	Aver.	69.6	5.4	30.5	105.5	-	-
2.4835 –2.5	V	Peak	-	-	-	110.7 –61.5=49.2*	74.0	-24.8
2.4835 –2.5	V	Aver.	-	-	-	105.5 –61.5=44.0*	54.0	-10.0

* delta = 61.4 dB obtained from plot 5.3

Refer to the following plots

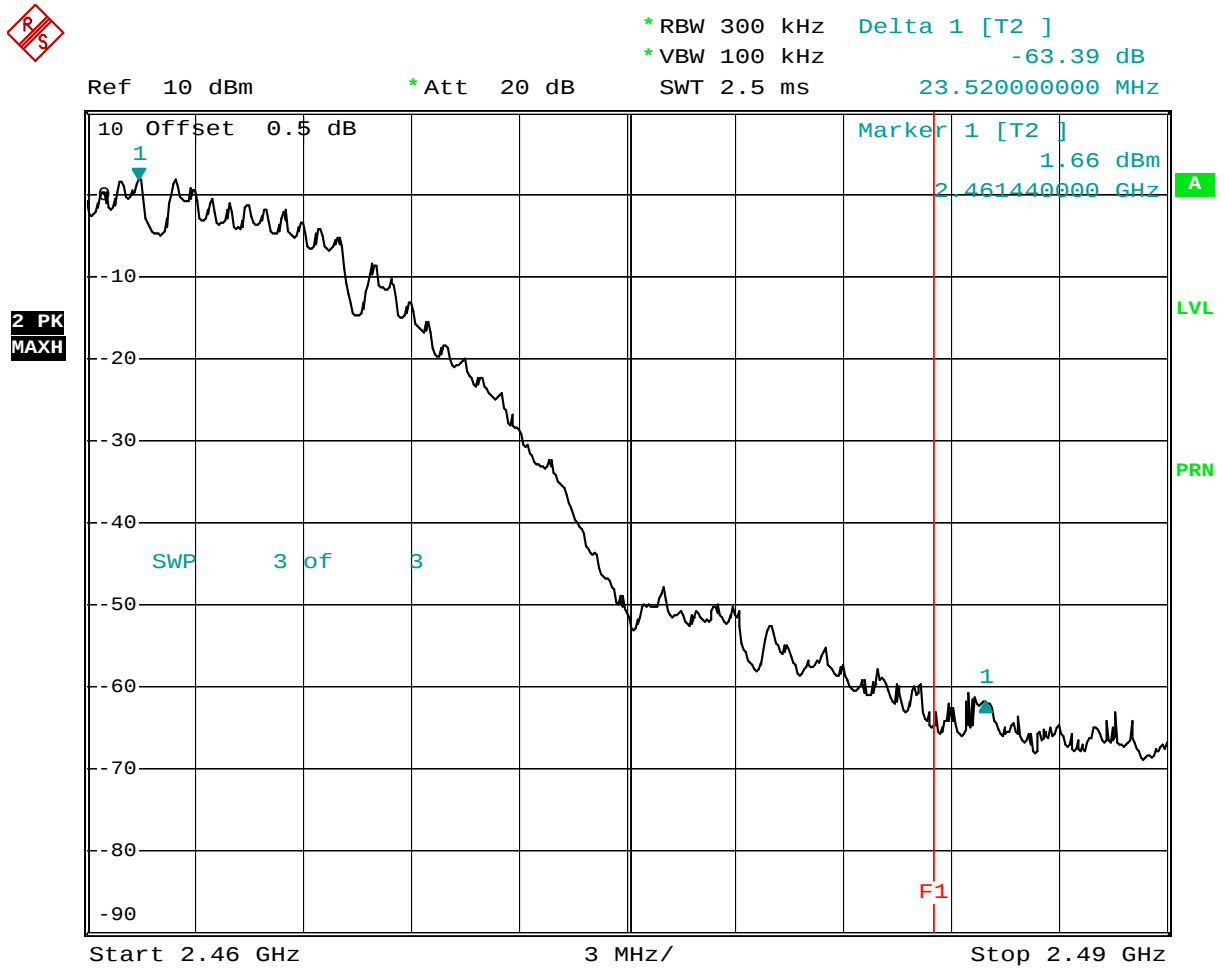
Band-edge frequency	Modulation	Delta, dB	Plot
2483.5 MHz Port B	OFDM	-50.3	5.1
	CCK	-63.4	5.2
	DBPSK	-61.5	5.3
2483.5 MHz Port A	OFDM	-54.9	5.4
	CCK	-61.2	5.5
	DBPSK	-63.2	5.6

Plot 5.1



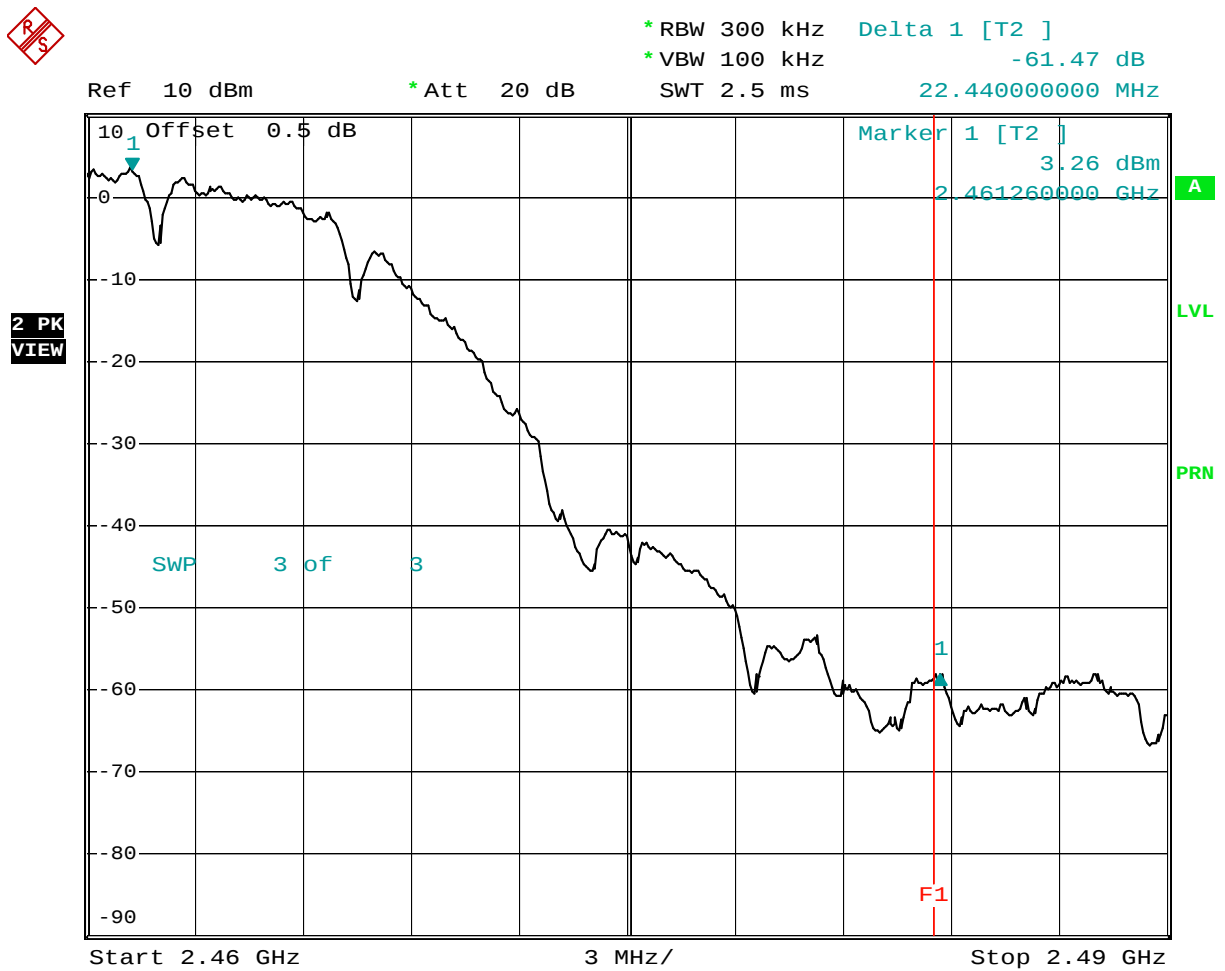
Comment: Upper Bandedge, PortB_OFDM mod 1.0Mbps, Max power
 Date: 21.FEB.2006 13:03:24

Plot 5.2



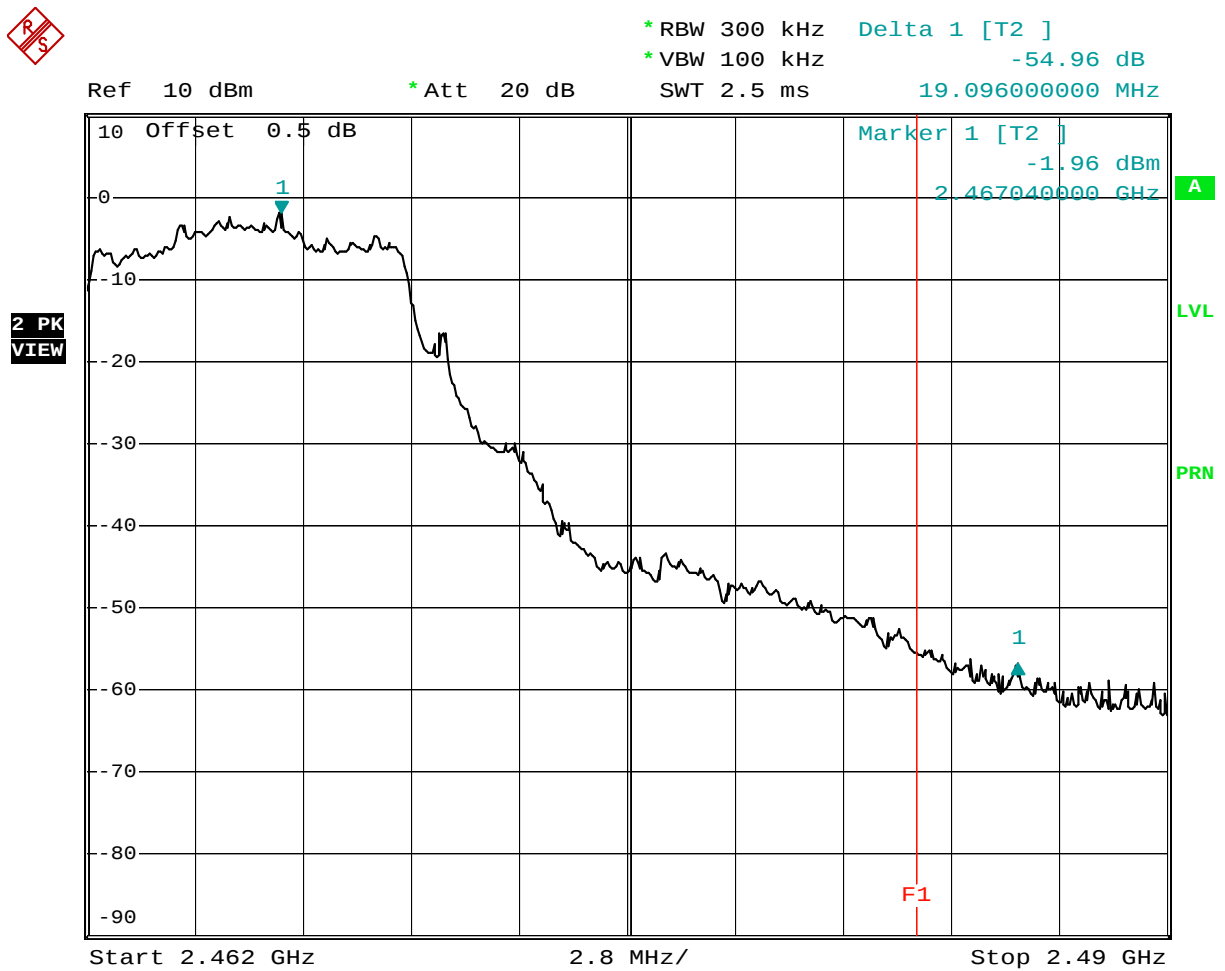
Comment: Upper Bandedge, PortB_CCK mod 1.0Mbps, Max power
 Date: 21.FEB.2006 12:59:38

Plot 5.3



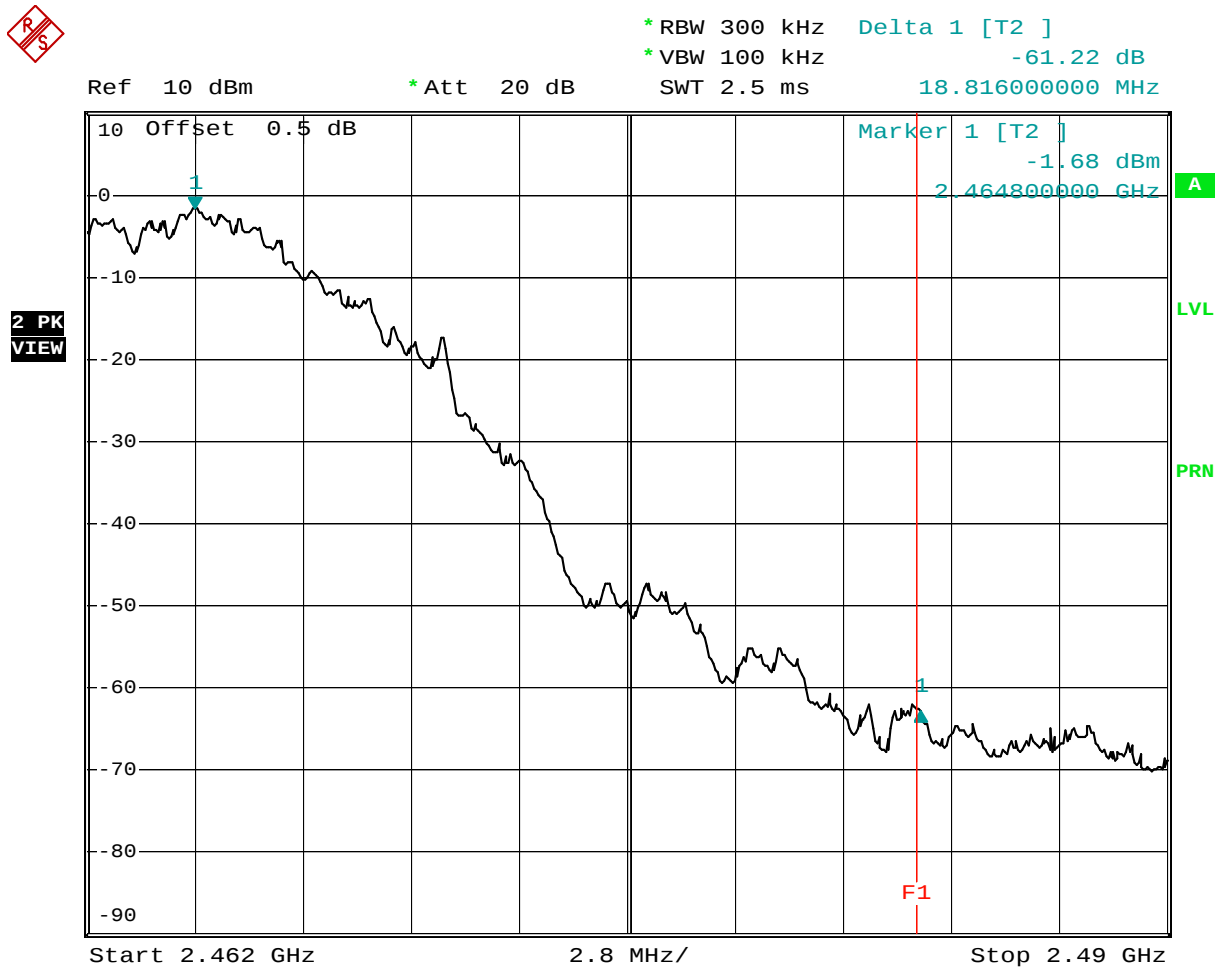
Comment: Upper Bandedge, Internal PortB_CCK mod 1.0Mbps, Max power
 Date: 21.FEB.2006 13:11:30

Plot 5.4



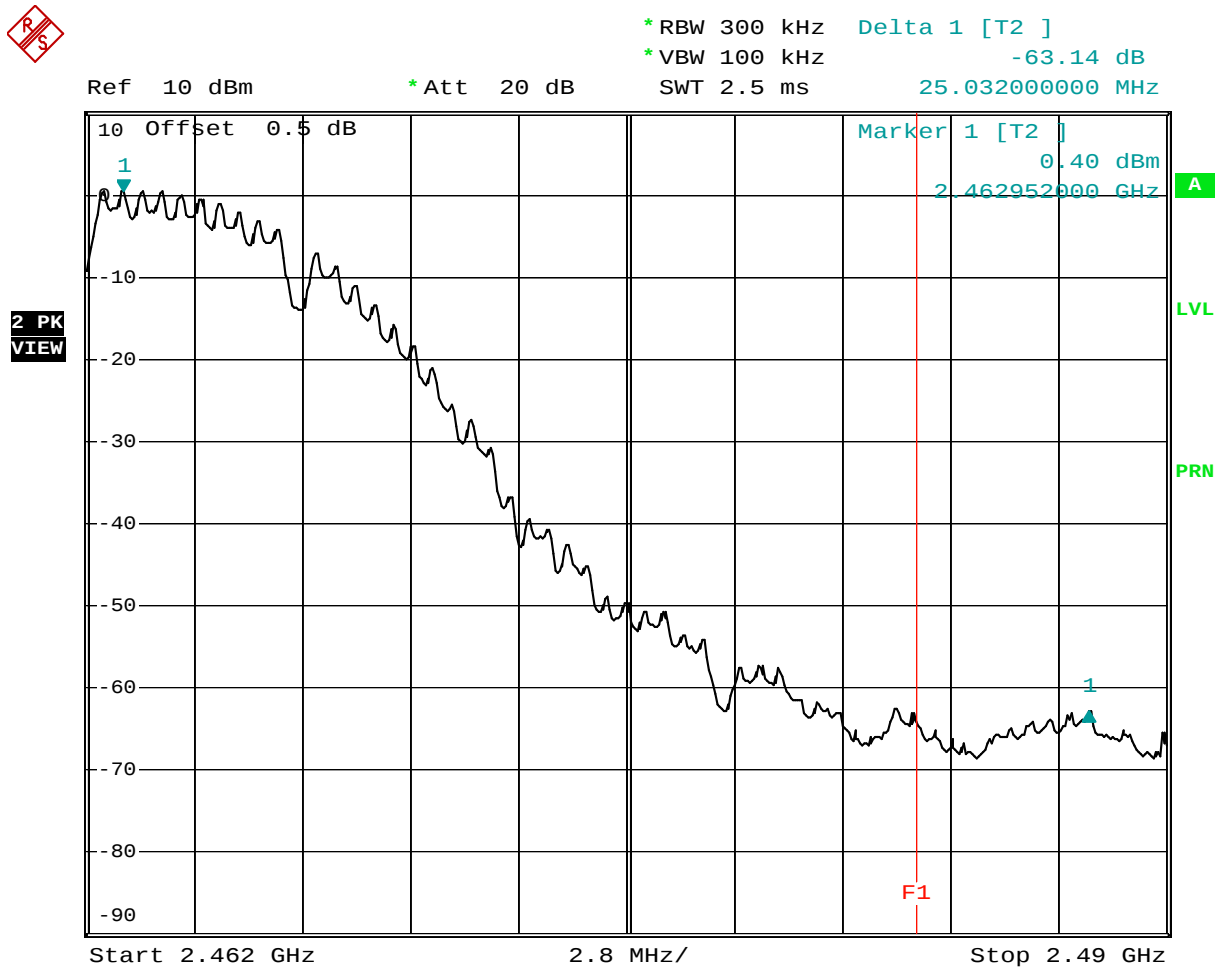
Comment: Upper band edge, Port A OFDM mod
 Date: 23.FEB.2006 12:02:45

Plot 5.5



Comment: Upper band edge, Port A CCK mod
Date: 23.FEB.2006 11:58:49

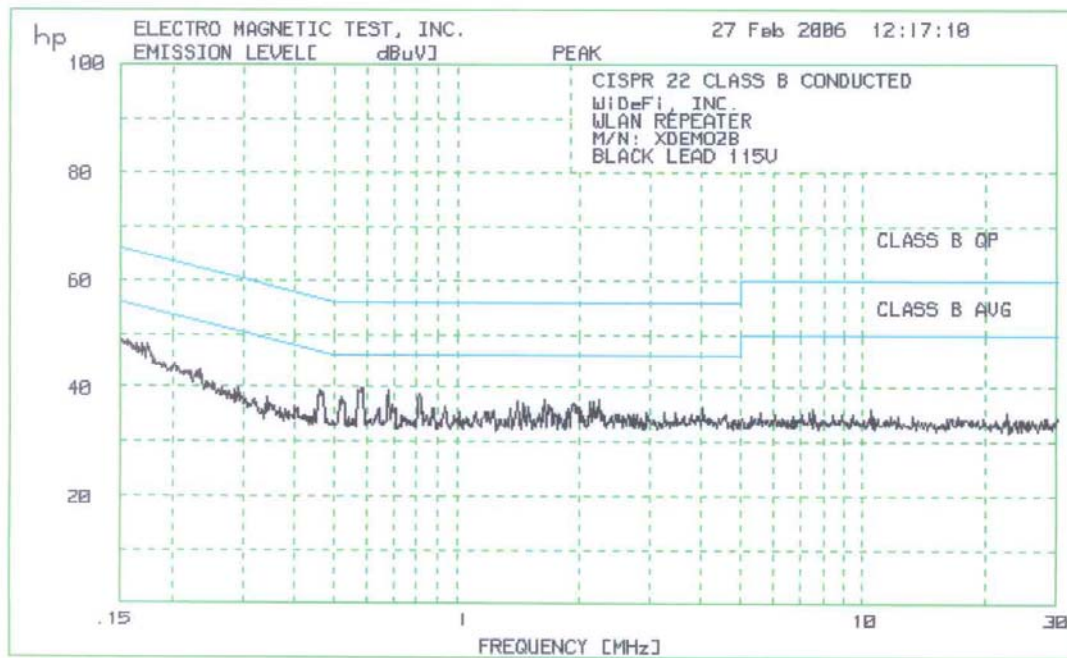
Plot 5.6



Comment: Upper band edge, Port A Internal BPSKmod
 Date: 23.FEB.2006 11:51:20

4.7 AC Line Conducted Emission,
FCC Rule 15.207: Complies.

See attached data on the following pages.



=====

ELECTRO MAGNETIC TEST, INC. 27 Feb 2006 12:17:10

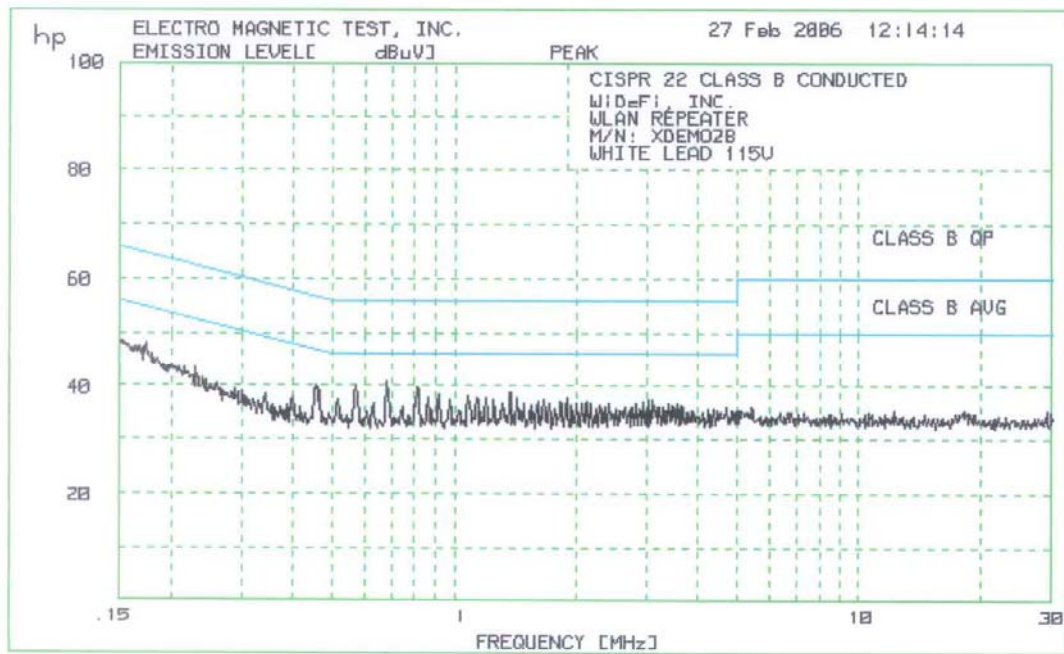
=====

1. CONDUCTED WITH PRESELECTOR
 1.2 CISPR 22 CLASS B CONDUCTED

=====

60 highest Peaks above -50 dB of Limit Line #2
 peak criteria = .1 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5846	39.8	-6.2
2	.5754	39.5	-6.5
3	.174	48.1	-6.6
4	.6816	39.3	-6.7
5	.1694	48.1	-6.8
6	.1557	48.7	-6.9
7	.1633	48.2	-7.0
8	.1767	47.6	-7.0
9	.4631	39.5	-7.1
10	.8117	38.9	-7.1
11	.1532	48.6	-7.2
12	.1573	48.4	-7.2
13	.159	48.1	-7.4
14	.1659	47.6	-7.5
15	.4681	39	-7.5
16	.1607	47.7	-7.7
17	.1721	47.1	-7.7
18	.5203	38.1	-7.9
19	1.641	37.7	-8.3
20	2.231	37.7	-8.3
21	2.138	37.5	-8.5
22	.5259	37.4	-8.6
23	1.415	37.3	-8.7
24	2.172	37.3	-8.7
25	.2028	44.6	-8.8
26	1.461	37.2	-8.8
27	.2352	43.2	-9.0
28	1.934	37	-9.0
29	.1805	45.1	-9.3
30	.1914	44.6	-9.3
31	.6925	36.7	-9.3
32	1.676	36.7	-9.3
33	.1873	44.6	-9.5
34	.9413	36.5	-9.5
35	1.5	36.5	-9.5
36	1.996	36.5	-9.5
37	.2303	42.8	-9.6
38	1.694	36.4	-9.6
39	4.036	36.4	-9.6
40	.1834	44.6	-9.7
41	.1934	44.1	-9.7
42	.2072	43.4	-9.9
43	.6465	36.1	-9.9
44	.7073	36.1	-9.9
45	.8741	36.1	-9.9
46	.2219	42.8	-9.9
47	.2173	42.9	-10.0
48	.2196	42.7	-10.1
49	.2138	42.9	-10.1
50	1.349	35.9	-10.1
51	1.712	35.9	-10.1
52	1.883	35.9	-10.1
53	1.233	35.8	-10.2
54	2.196	35.8	-10.2
55	2.254	35.8	-10.2
56	.2267	42.2	-10.3
57	.2105	42.8	-10.3
58	2.028	35.6	-10.4
59	1.182	35.5	-10.5
60	1.195	35.5	-10.5



ELECTRO MAGNETIC TEST, INC. 27 Feb 2006 12:14:14

1. CONDUCTED WITH PRESELECTOR
1.2 CISPR 22 CLASS B CONDUCTED

60 highest Peaks above -50 dB of Limit Line #2
peak criteria = .1 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.6852	40.7	-5.3
2	.5754	40.1	-5.9
3	.8117	39.7	-6.3
4	.174	48.1	-6.6
5	.4583	40.1	-6.6
6	.1524	48.5	-7.3
7	1.371	38.7	-7.3
8	.1668	47.6	-7.5
9	.4656	39	-7.5
10	.1557	47.9	-7.7
11	.9168	38.3	-7.7
12	.1703	47.1	-7.8
13	.1633	47.4	-7.8
14	1.08	38	-8.0
15	1.43	37.9	-8.1
16	1.893	37.9	-8.1
17	.8649	37.8	-8.2
18	.159	47.2	-8.3
19	.1786	46.1	-8.4
20	1.139	37.6	-8.4
21	1.201	37.6	-8.4
22	.5149	37.5	-8.5
23	1.667	37.5	-8.5
24	1.253	37.4	-8.6
25	3.032	37.4	-8.6
26	.9769	37.3	-8.7
27	3.097	37.3	-8.7
28	1.607	37.2	-8.8
29	.8031	37.1	-8.9
30	1.834	37.1	-8.9
31	2.127	37.1	-8.9
32	2.922	37	-9.0
33	.1854	45.1	-9.1
34	.2303	43.3	-9.1
35	.6329	36.9	-9.1
36	1.484	36.9	-9.1
37	1.712	36.9	-9.1
38	2.071	36.9	-9.1
39	2.801	36.9	-9.1
40	2.172	36.8	-9.2
41	1.321	36.7	-9.3
42	2.402	36.7	-9.3
43	.1815	45	-9.4
44	.2018	44.1	-9.4
45	2.007	36.6	-9.4
46	3.389	36.6	-9.4
47	3.554	36.6	-9.4
48	.1873	44.6	-9.5
49	1.548	36.5	-9.5
50	1.944	36.5	-9.5
51	2.291	36.5	-9.5
52	3.63	36.5	-9.5
53	.2161	43.3	-9.6
54	.1903	44.3	-9.7
55	.1996	43.9	-9.7
56	.2105	43.4	-9.7
57	3.443	36.3	-9.7
58	.1965	43.9	-9.8
59	.2039	43.5	-9.9
60	.7458	36.1	-9.9

5.0 List of Test Equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list:

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. INTERVAL	CAL. DUE
RF Filter Section	Hewlett Packard	85460A	3448A00267	12	9/12/06
EMI Receiver	Hewlett Packard	8546A	3710A00373	12	9/12/06
Spectrum Analyzer	R & S	FSP40	036612004	12	10//03/06
BI-Log Antenna	EMCO	3143	9509-1160	12	11/29/06
Horn Antenna	EMCO	3115	9170-3712	12	6/08/06
Horn Antenna	EMCO	3160-09	Not Labeled	#	#
Pre-Amplifier	Sonoma Inst.	310	185634	12	3/29/06
Pre-Amplifier	Miteq	AMF-4D-001180-24-10P	799159	12	3/29/06
Pre-Amplifier	CTT	ALO/400-8023	47526	12	06/01/06
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	12	10/28/06
RF Preselector	Hewlett Packard	85685A	3010A01157	12	10/28/06
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00584	12	10/28/06
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	12	12/08/06
LISN	Com-Power	LI-200	12012	12	6/04/06
LISN	Com-Power	LI-200	12214	12	6/04/06
LISN	Com-Power	LI-200	1767	12	6/04/06
LISN	Com-Power	LI-200	1768	12	6/04/06

No Calibration required

6.0 Document History

Revision/ Job Number	Writer Initials	Date	Change
1	KB	3-14-06	Original document
2	KB	4-13-06	Changes according to TCB comments