TEST REPORT

Report Number: M61110A2

January 8, 2007

Testing performed on the

Wireless LAN Repeater
Model Number: WDF1001
FCC ID: T27-WDF1001
IC ID: 6403A-WDF1001

to
FCC Part 15 Subpart C (15.247)

for
WiDeFi, Inc.

Test Performed by:	**Test Authorized by:**
Suresh Kondapalli	Kevin Bothmann

Prepared by: Kevin Bothmann **Date:** January 8, 2007

Reviewed by: Jay Gandhi **Date:** January 8, 2007

TABLE OF CONTENTS

1.0 Summary of Tests

FCC ID: T27-WDF1001

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 EUT is a Wireless LAN Repeater that is designed to work with the 2.4 GHz 802.11 b/g standards. Once configured, the EUT extends the coverage area of an AP by amplifying and retransmitting all 802.11 b/g packets received from the AP on frequency F1 to a different frequency F2. Also, all packets received on F2 are amplified and re-transmitted on F1. Frequencies F1 and F2 conform to the 802.11 b/g standard and the FCC regulatory requirements.

Overview of the Equipment under Test:

Applicant	WiDefi Inc
Model No.	WDF1001
FCC Identifier	T27-WDF1001
Use of Product	WLAN Xtender™
Type of Transmission	Direct Sequence Spread Spectrum
Rated RF Output	+14dBm
Frequency Range	2412 – 2462
Type of modulation	DBPSK, CCK and OFDM
Number of Channel(s)	11
Antenna(s) & Gain,	PCB Dipole antenna with 4dBi Gain and Patch Antenna 5dBi.Gain
Antenna Requirement	Antennae are permanently attached
Manufacturer Name & Address	PCB Dipole Antenna: WiDeFi, Inc. Patch Antenna: Price Prototypes, Inc. 11094 Persimmon Blvd. Royal Palm Beach, FL 33411

The product is operated with following power adapter:

Brand:	Leader Electronics
Model:	MU12-2058138
Input:	100-240Vac, 50-60Hz, 0.5A Max.
Output:	5.8Vdc, 1.38A

EUT receive date: November 06, 2006

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

Test start date: November 06, 2006

Test completion date: November 10, 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

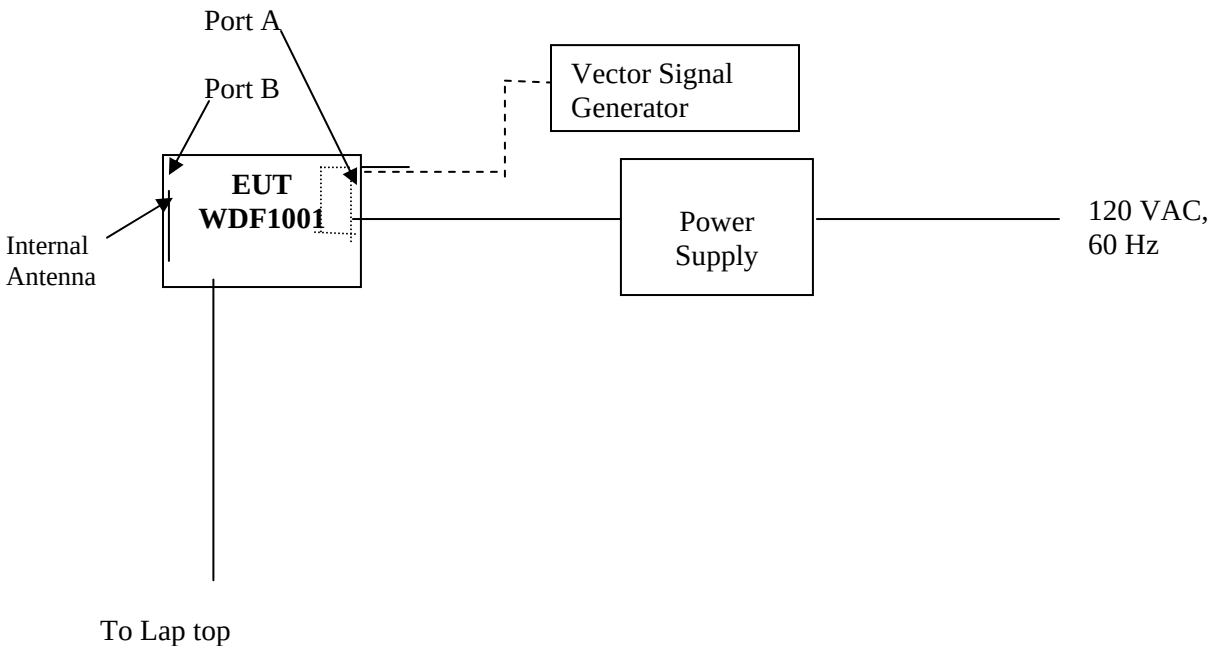
The open area test site and conducted measurement facility used to collect the radiated data is site 1, 10-m semi-anechoic chamber, IntertekTesting Services, Menlo park, California, USA. This test facility and site measurement data have been fully placed on file with the FCC and A2LA accredited.

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: Leader Electronics MU12-2058138

S = Shielded **U** = Unshielded	**F** = With Ferrite **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

No modifications were installed during compliance testing in order to bring the product into compliance (Please note that this does not include changes made specifically by Widefi 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	28.0	28.0
	CCK	51.0	60.0
	OFDM	68.0	84.0
2437 (channel 6)	DBPSK	20.0	21.0
	CCK	22.0	22.0
	OFDM	90.0	28.0
2462 (channel 11)	DBPSK	31.0	33.0
	CCK	60.0	62.0
	OFDM	105.0	106.0

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
2412	DBPSK	12.24	2.1
	OFDB	16.62	2.2
	CCK	10.02	2.3
2437	DBPSK	12.48	2.4
	OFDM	16.68	2.5
	CCK	10.38	2.6
2462	DBPSK	12.30	2.7
	OFDM	16.68	2.8
	CCK	11.22	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:

SWEEP TIME (SEC) = (Fstop, kHz - Fstart, kHz)/3 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	-10.7	3.1
	OFDM	-15.3	3.2
	CCK	-9.4	3.3
2437	DBPSK	-11.4	3.4
	OFDM	-23.1	3.5
	CCK	-11.4	3.6
2462	DBPSK	-12.0	3.7
	OFDM	-17.5	3.8
	CCK	-12.4	3.9

The EUT passed by 17.4 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(μV/m)
RA = Receiver Amplitude (including preamplifier) in dB(μV); 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(μV) 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(μV/m). This value in dB(μV/m) was converted to its corresponding level in μV/m.
RA = 52.0 dB(μV)
AF = 7.4 dB(1/m)
CF = 1.6 dB
AG = 29.0 dB
FS = 52.0+7.4+1.6-29.0 = 32 dB(μV/m)
Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/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 0.6 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.

EUT was tested with minimum and maximum input levels into the AGC circuit only worst case results are reported here.

Test Data

Temperature: 21.0 C							Widefi		
Humidity: 39.8 %							Model: WDF1001		
Measured at 3 m									
Date of Test:11/07/2006 Tx ON									
Frequency MHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Ant. factor dB(1/m)	D.C.F dB	Field Strength dB(uV/m)	Limit dB(uV/m)	Margin dB
1166	V	Peak	27.1	2.1	24.7	0	53.9	74	-20.1
1166	V	Aver	6.3	2.1	24.7	0	33.1	54	-20.9
1401	V	Peak	22.0	2.0	25.8	0	47.8	74	-26.2
1401	V	Aver	7.1	2.0	25.8	0	34.9	54	-19.1
1498	V	Peak	27.0	2.0	25.8	0	54.8	74	-19.2
1498	V	Aver	8.0	2.0	25.8	0	53.8	54	-18.2
2355	V	Peak	18.1	3.3	29.6	0	51.0	74	-23.0
2355	V	Aver	4.7	3.3	29.6	0	37.6	54	-16.4
4004	V	Peak	16.7	5.0	33.3	0	55.0	74	-19.0
4004	V	Aver	9.5	5.0	33.3	0	47.8	54	-6.2

All other Sprious emissions were below the noise floor level

Test Data

Temperature: 21.0 C							Widefi			
Humidity: 39.8 %							Model: WDF1001			
Measured at 3 m										
Date of Test:11/07/2006										
Frequency MHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Pre- amp gain dB	Ant. factor dB(1/m)	D.C.F dB	Field Strength dB(uV/m)	Limit dB(uV/m)	Margin dB
Tx, @ 2412 MHz										
4824	V	Peak	49.9	8.5	37.2	33.2	0	54.4	74	-19.6
4824	V	Aver	35.6	8.5	37.2	33.2	0	40.1	54	-13.9
7236	V	Peak	38.7	9.2	34.2	37.7	0	51.4	74	-22.6
7236	V	Aver	25.1	9.2	34.2	37.7	0	37.8	54	-16.2
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	46.1	8.5	37.2	33.2	0	50.6	74	-23.4
4874	V	Aver.	37.1	8.5	37.2	33.2	0	41.6	54	-12.4
7311	V	Peak	50.3	9.2	35.4	37.7	0	63.0	74	-11.0
7311	V	Aver	36.6	9.2	35.4	37.7	0	49.3	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	V	Peak	45.3	8.5	37.2	33.2	0	49.8	74	-24.2
4924	V	Aver	32.2	8.5	37.2	33.2	0	36.7	54	-17.3
7386	V	Peak	42.8	9.2	34.2	37.7	0	55.5	74	-18.5
7386	V	Aver	29.0	9.2	34.2	37.7	0	41.7	54	-12.3
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	71.0	1.1	29.1	101.2	-	-
2.462	V	Aver.	61.4	1.1	29.1	91.6	-	-
2.4835 –2.5	V	Peak	-	-	-	101.2–43.6=58.2*	74.0	-15.8
2.4835 –2.5	V	Aver.	-	-	-	91.6 –43.6=48.0*	54.0	-6.0

* delta = 43.6 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	H	Peak	78.9	1.1	29.1	109.1	-	-
2.462	H	Aver.	63.4	1.1	29.1	93.6	-	-
2.4835 –2.5	H	Peak	-	-	-	109.1 –40.2=67.0*	74.0	-7.0
2.4835 –2.5	H	Aver.	-	-	-	93.6 –40.2=53.4*	54.0	-0.6

* delta = 40.2 dB obtained from plot 5.1

DBPSK Modulation

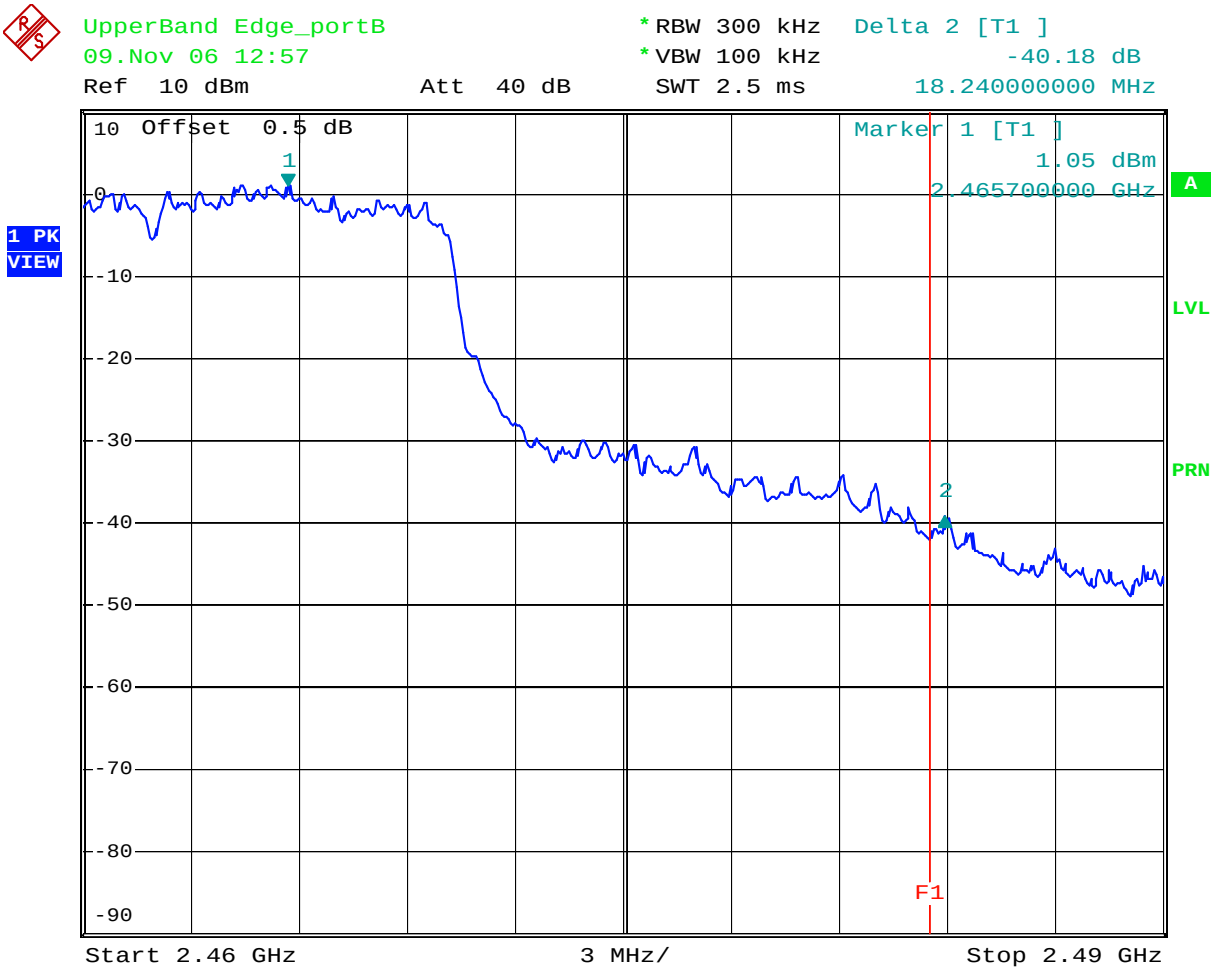
Frequency GHz	Polarity	Detector	SA reading dB(uV)	Cable loss dB	Ant. factor dB(1/m)	Field Strength at 3 m dB(uV/m)	Limit at 3 m dB(uV/m)	Margin dB
2.462	V	Peak	73.3	1.1	29.1	103.5	-	-
2.462	V	Aver.	66.2	1.1	29.1	96.4	-	-
2.4835 –2.5	V	Peak	-	-	-	103.5-47.9=55.6	74.0	-18.4
2.4835 –2.5	V	Aver.	-	-	-	96.4-47.9=48.5	54.0	-5.5

* delta = 47.9 dB obtained from plot 5.3

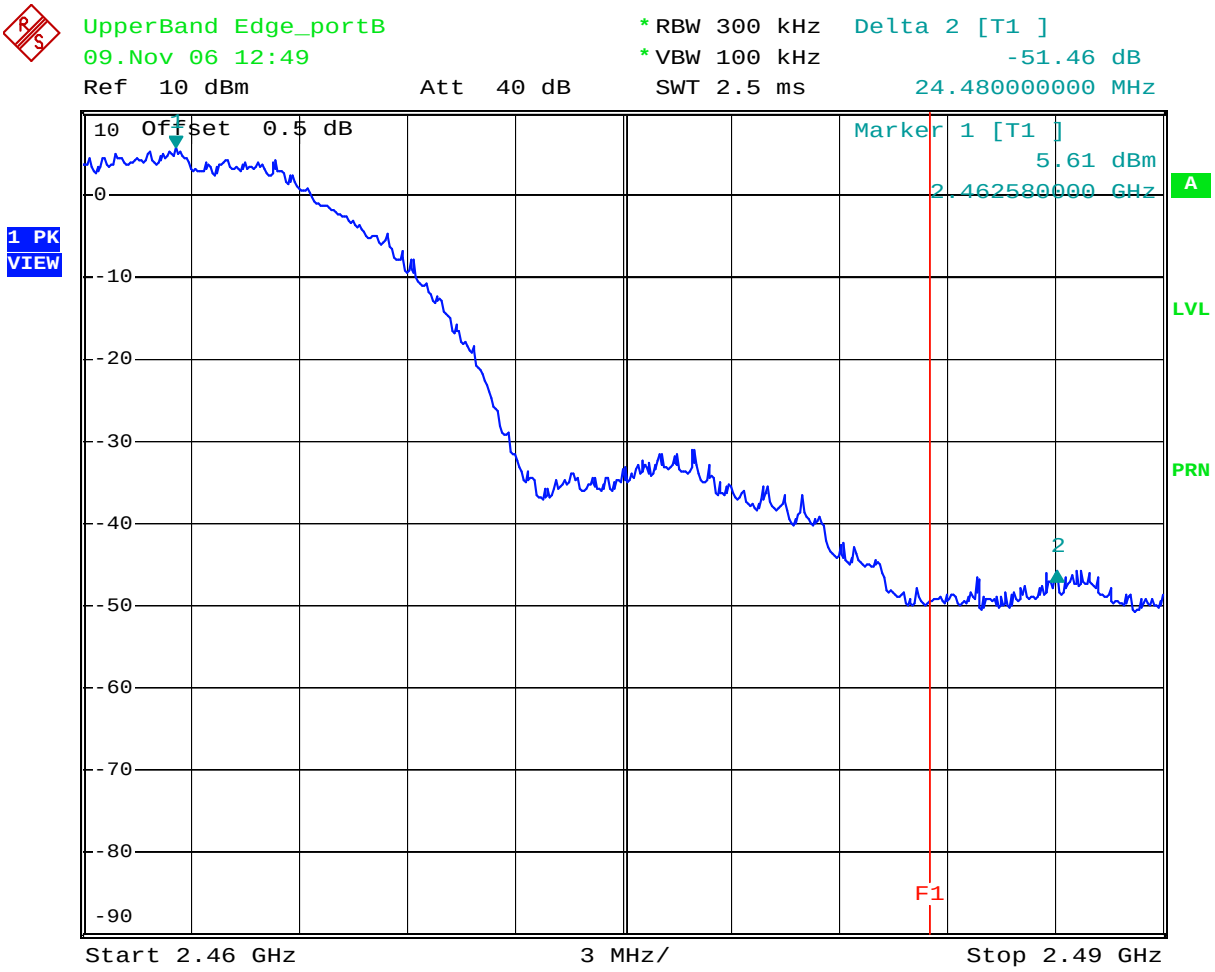
Refer to the following plots

Band-edge frequency	**Modulation**	**Delta, dB**	**Plot**
2483.5 MHz Port B	OFDM	40.18	5.1
	CCK	51.46	5.2
	DBPSK	47.92	5.3
2483.5 MHz Port A	OFDM	41.33	5.4
	CCK	43.67	5.5
	DBPSK	48.67	5.6

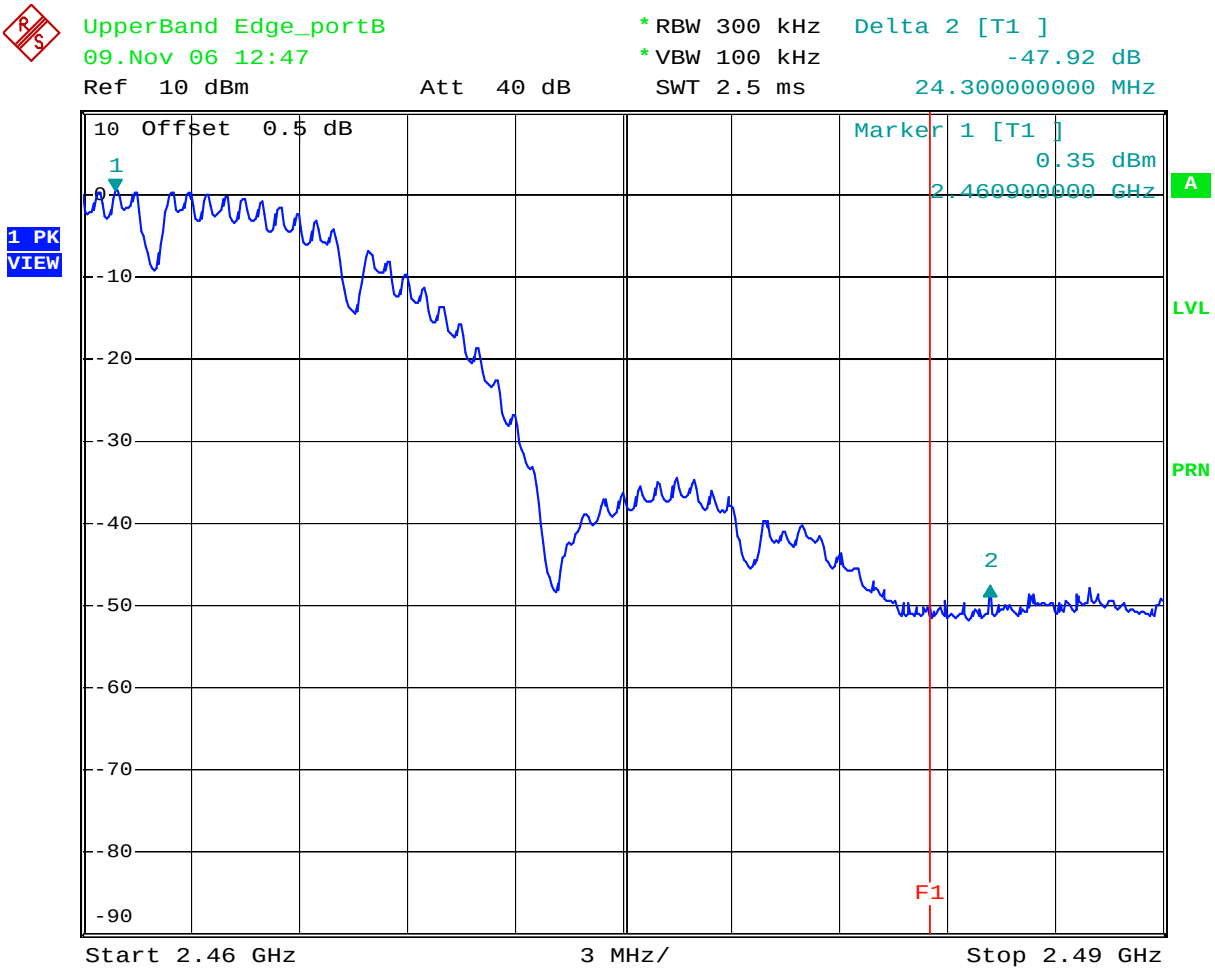
Plot 5.1


UpperBand Edge_portB
09.Nov 06 12:57
*RBW 300 kHz
*VBW 100 kHz
SWT 2.5 ms
Delta 2 [T1]
-40.18 dB
18.240000000 MHz
Ref 10 dBm
Att 40 dB
10 Offset 0.5 dB
Marker 1 [T1]
1.05 dBm
2.465700000 GHz
1 PK
VIEW
A
LVL
PRN
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
2
F1
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

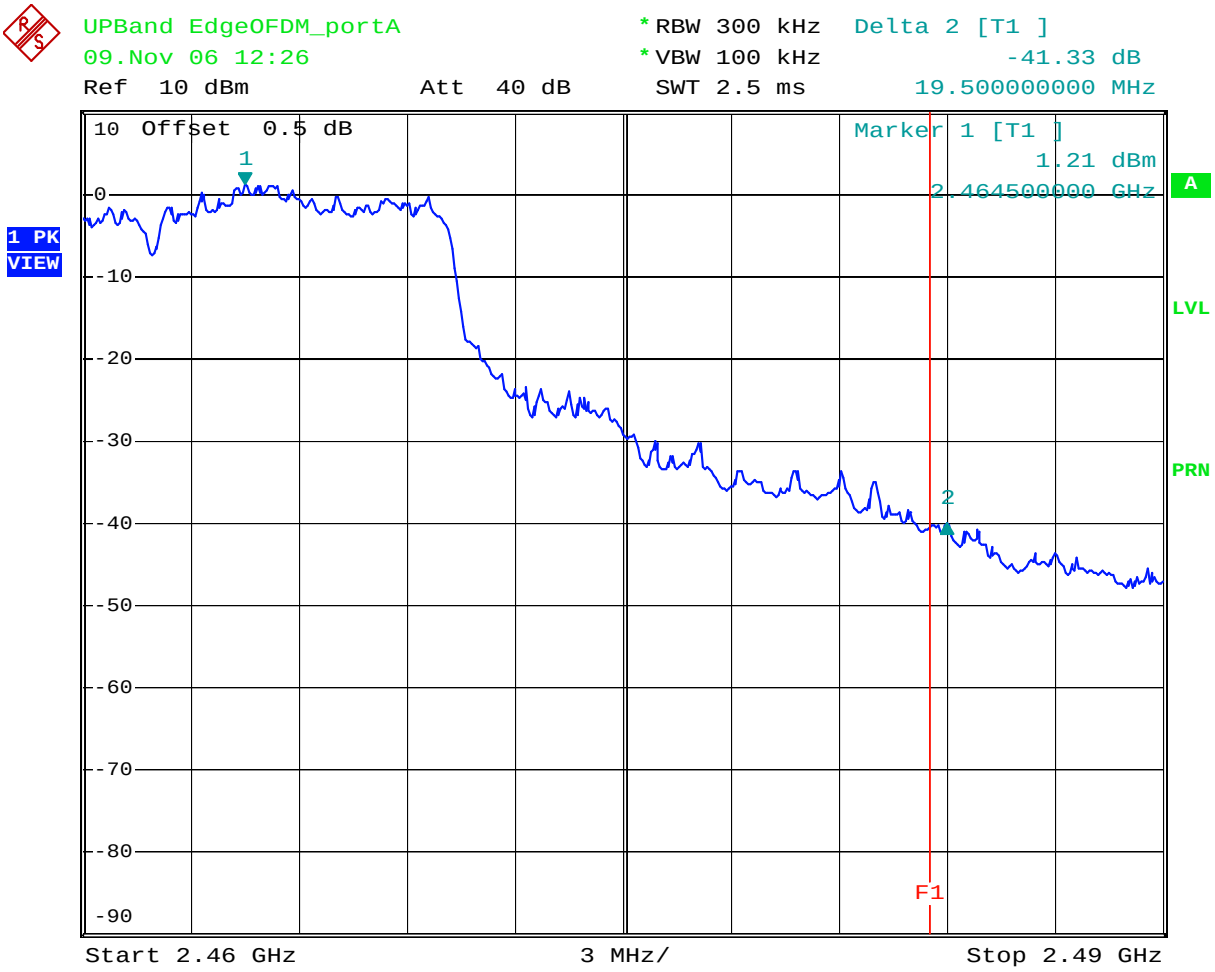
Plot 5.2


UpperBand Edge_portB
09.Nov 06 12:49
Ref 10 dBm
Att 40 dB
*RBW 300 kHz
*VBW 100 kHz
SWT 2.5 ms
Delta 2 [T1]
-51.46 dB
24.480000000 MHz
10 Offset 0.5 dB
Marker 1 [T1]
5.61 dBm
2.462580000 GHz
1 PK
VIEW
A
LVL
PRN
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
F1
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

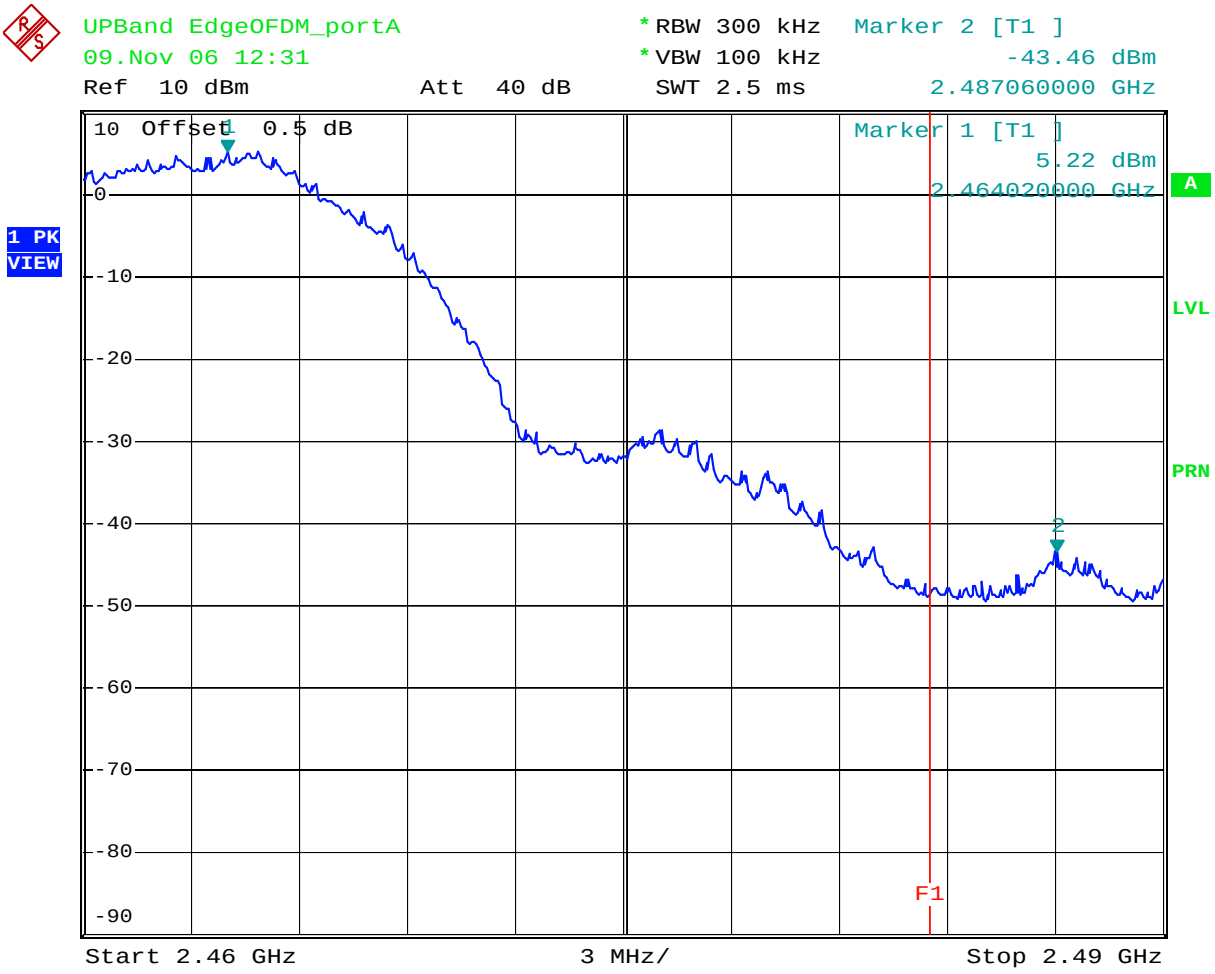
Plot 5.3


UpperBand Edge_portB
09.Nov 06 12:47
*RBW 300 kHz
*VBW 100 kHz
SWT 2.5 ms
Delta 2 [T1]
-47.92 dB
24.300000000 MHz
Ref 10 dBm
Att 40 dB
10 Offset 0.5 dB
Marker 1 [T1]
0.35 dBm
2.460900000 GHz
1 PK
VIEW
A
LVL
PRN
1
2
F1
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

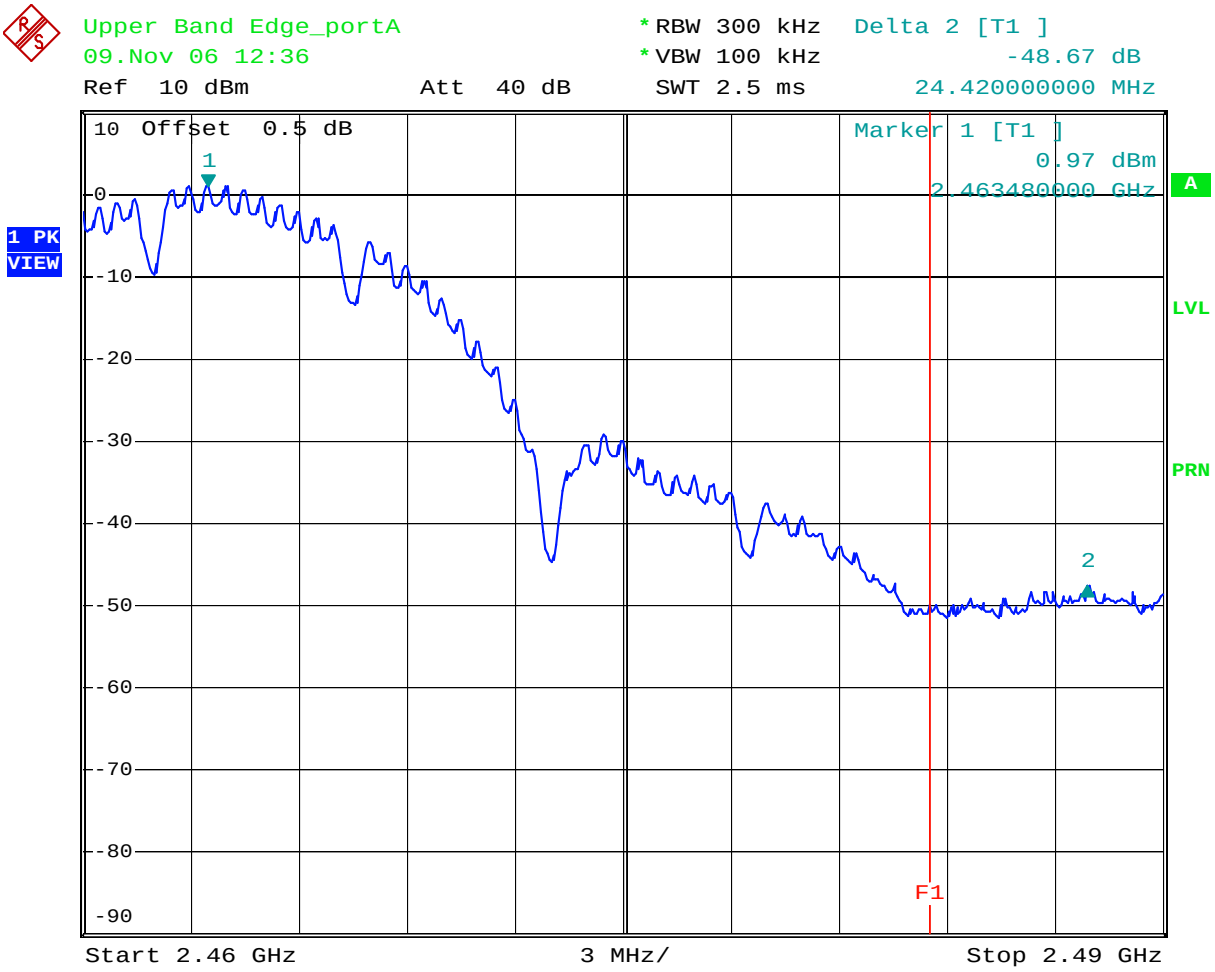
Plot 5.4


UPBand EdgeOFDM_portA
09.Nov 06 12:26
*RBW 300 kHz
*VBW 100 kHz
Delta 2 [T1]
-41.33 dB
Ref 10 dBm
Att 40 dB
SWT 2.5 ms
19.500000000 MHz
10 Offset 0.5 dB
Marker 1 [T1]
1.21 dBm
2.464500000 GHz
1 PK
VIEW
A
LVL
PRN
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
F1
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

Plot 5.5

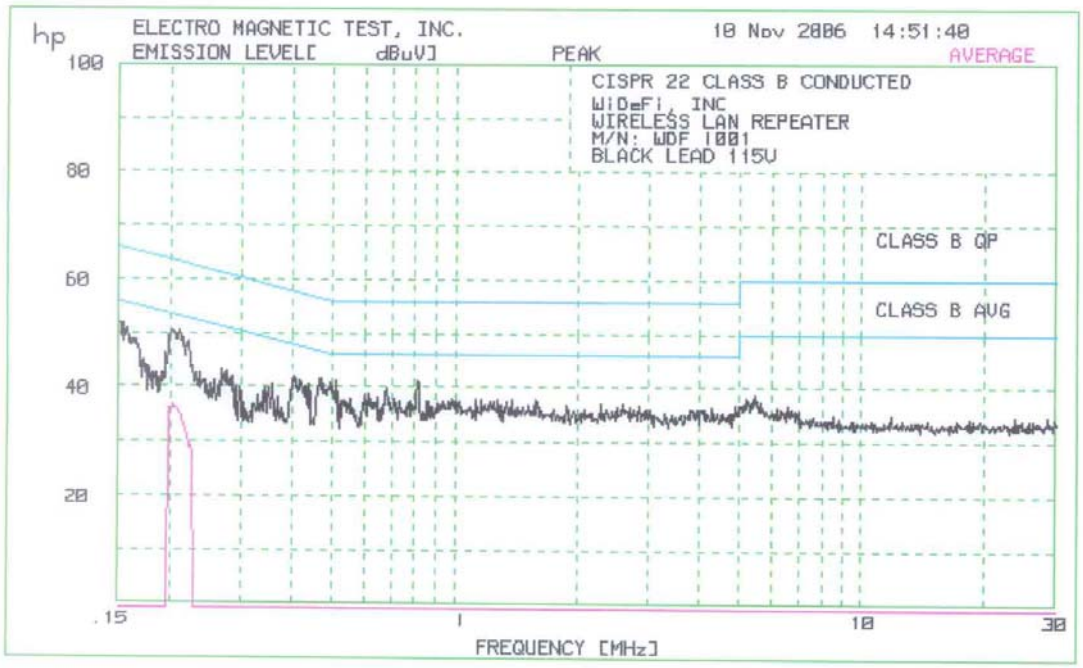

UPBand EdgeOFDM_portA
09.Nov 06 12:31
Ref 10 dBm
Att 40 dB
*RBW 300 kHz
*VBW 100 kHz
SWT 2.5 ms
Marker 2 [T1]
-43.46 dBm
2.487060000 GHz
10 Offset 0.5 dB
Marker 1 [T1]
5.22 dBm
2.464020000 GHz
1 PK
VIEW
A
LVL
PRN
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
F1
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

Plot 5.6


Upper Band Edge_portA
09.Nov 06 12:36
*RBW 300 kHz
*VBW 100 kHz
SWT 2.5 ms
Delta 2 [T1]
-48.67 dB
24.420000000 MHz
Ref 10 dBm
Att 40 dB
10 Offset 0.5 dB
Marker 1 [T1]
0.97 dBm
2.463480000 GHz
1 PK
VIEW
A
LVL
PRN
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
F1
Start 2.46 GHz
3 MHz/
Stop 2.49 GHz

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

See attached data on the following pages.


hp
ELECTRO MAGNETIC TEST, INC.
10 Nov 2006 14:51:40
EMISSION LEVELS dBuV
PEAK
AVERAGE
CISPR 22 CLASS B CONDUCTED
WiDeFi, INC
WIRELESS LAN REPEATER
M/N: WDF 1001
BLACK LEAD 115V
CLASS B QP
CLASS B AVG
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]

ELECTRO MAGNETIC TEST, INC. 10 Nov 2006 14:51:40

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

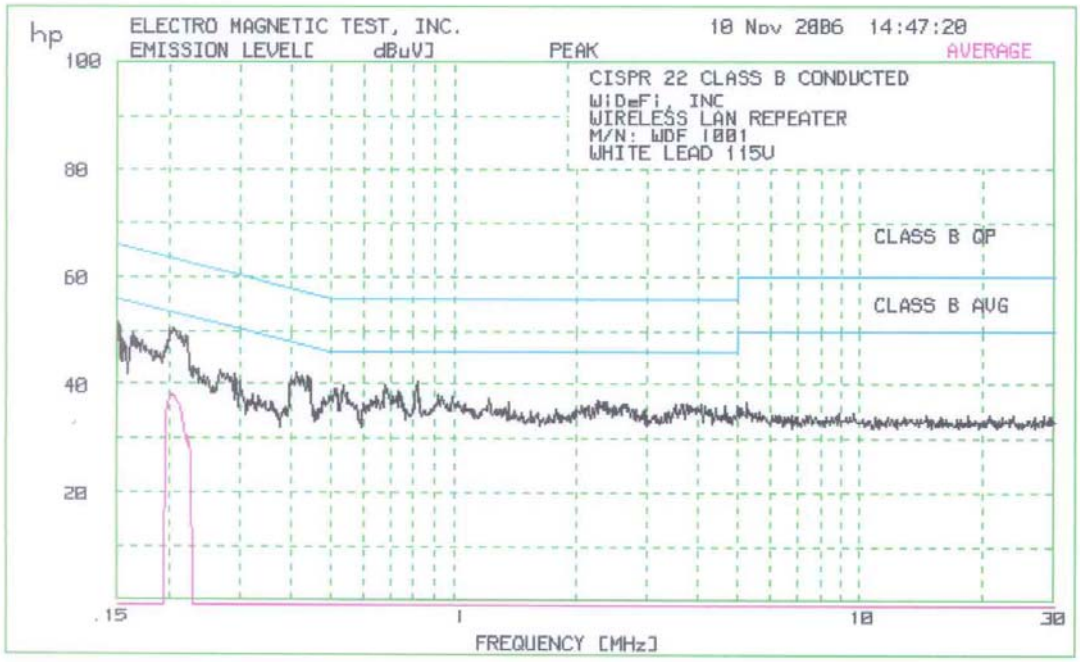
PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.2116	50.4	-2.7
2	.2039	50.4	-3.0
3	.2061	50.2	-3.1
4	.2161	49.1	-3.8
5	.1532	51.8	-4.0
6	.2231	48.5	-4.2
7	.1573	51	-4.6
8	.2196	48	-4.8
9	.4656	41.6	-4.9
10	.8117	41.1	-4.9
11	.5121	41	-5.0
12	.4706	41.3	-5.2
13	.4961	40.8	-5.2
14	.4781	40.5	-5.8
15	.4036	41.8	-5.9
16	.5014	40	-6.0
17	.1624	49	-6.3
18	.4144	41.2	-6.3
19	.6852	39.7	-6.3
20	.165	48.9	-6.3
21	.4079	41.3	-6.3
22	.4909	39.8	-6.3
23	.4393	40.6	-6.4
24	.1607	48.7	-6.7
25	.4188	40.7	-6.7
26	.4857	39.5	-6.7
27	.4301	40	-7.2
28	.1676	47.7	-7.3
29	.1954	46.5	-7.3
30	.4607	39.3	-7.3
31	.6164	38.6	-7.4
32	.6035	38.3	-7.7
33	.6465	38.1	-7.9
34	.2685	43.1	-8.0
35	.3573	40.6	-8.1
36	.2772	42.7	-8.2
37	.5545	37.8	-8.2
38	1.163	37.7	-8.3
39	1.581	37.7	-8.3
40	.2742	42.5	-8.4
41	.7111	37.6	-8.4
42	.9821	37.6	-8.4
43	1.133	37.6	-8.4
44	1.28	37.6	-8.4
45	1.378	37.6	-8.4
46	.5343	37.5	-8.5
47	1.003	37.5	-8.5
48	1.22	37.5	-8.5
49	.6099	37.4	-8.6
50	.7301	37.4	-8.6
51	.8558	37.4	-8.6
52	.8649	37.4	-8.6
53	1.342	37.4	-8.6
54	.2267	43.8	-8.7
55	.5287	37.3	-8.7
56	.7822	37.3	-8.7
57	.9364	37.3	-8.7
58	.9666	37.3	-8.7
59	1.03	37.3	-8.7
60	1.246	37.3	-8.7

ELECTRO MAGNETIC TEST, INC. 10 Nov 2006 14:51:40

1. CONDUCTED WITH PRESELECTOR
   1.2 CISPR 22 CLASS B CONDUCTED

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

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.2028	36.7	-16.7
2	.2072	36.2	-17.1
3	.205	36.3	-17.1
4	.2161	33.4	-19.5
5	.2243	29.3	-23.3


hp
ELECTRO MAGNETIC TEST, INC.
10 Nov 2006 14:47:20
EMISSION LEVEL[dBuV]
PEAK
AVERAGE
CISPR 22 CLASS B CONDUCTED
WiDeFi, INC
WIRELESS LAN REPEATER
M/N: WDF 1001
WHITE LEAD 115V
CLASS B QP
CLASS B AVG
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]

ELECTRO MAGNETIC TEST, INC. 10 Nov 2006 14:47:20

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	.205	50.4	-3.0
2	.2072	50.2	-3.1
3	.2018	50.1	-3.4
4	.2127	49.6	-3.4
5	.2207	49.2	-3.5
6	.2161	48.7	-4.2
7	.1524	50.9	-4.9
8	.4122	42.2	-5.4
9	.4393	41.5	-5.5
10	.816	40.5	-5.5
11	.1633	49.6	-5.6
12	.4255	41.6	-5.7
13	.4439	41.1	-5.8
14	.5371	39.9	-6.1
15	.6816	39.9	-6.1
16	.1659	48.9	-6.2
17	.1721	48.3	-6.5
18	.4166	41	-6.5
19	.1965	47.1	-6.6
20	.6889	39.2	-6.8
21	.5094	39	-7.0
22	.5176	39	-7.0
23	.4015	40.7	-7.1
24	.1685	47.8	-7.2
25	.4057	40.5	-7.2
26	.7301	38.6	-7.4
27	.1758	47.1	-7.5
28	.5486	38.4	-7.6
29	.3972	40.2	-7.7
30	.7418	38.3	-7.7
31	.1548	47.9	-7.8
32	.1777	46.6	-7.9
33	.1805	46.4	-8.0
34	.1854	46.2	-8.0
35	.1873	46.1	-8.0
36	.9216	38	-8.0
37	.6499	37.9	-8.1
38	.9413	37.9	-8.1
39	.1903	45.8	-8.2
40	.4961	37.6	-8.4
41	.6962	37.6	-8.4
42	.7073	37.6	-8.4
43	.9925	37.6	-8.4
44	.1565	47.1	-8.5
45	.5014	37.5	-8.5
46	.2685	42.5	-8.6
47	.8247	37.4	-8.6
48	1.22	37.4	-8.6
49	.2922	41.7	-8.7
50	.5545	37.2	-8.8
51	.6263	37.2	-8.8
52	.9514	37.2	-8.8
53	.4806	37.4	-8.9
54	.1598	46.4	-9.0
55	.6568	37	-9.0
56	.7186	37	-9.0
57	2.254	37	-9.0
58	.2786	41.7	-9.1
59	.2742	41.8	-9.1
60	.6709	36.9	-9.1

ELECTRO MAGNETIC TEST, INC. 10 Nov 2006 14:47:20

1. CONDUCTED WITH PRESELECTOR
   1.2 CISPR 22 CLASS B CONDUCTED

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

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.205	38.1	-15.3
2	.2028	38	-15.4
3	.2219	30.2	-22.5
4	.2243	29.2	-23.4

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	9/11/07
EMI Receiver	Hewlett Packard	8546A	3710A00373	12	9/11/07
Spectrum Analyzer	R & S	FSP40	036612004	12	09//12/07
BI-Log Antenna	EMCO	3143	9509-1160	12	11/29/06
Horn Antenna	EMCO	3115	9170-3712	12	05/10/07
Horn Antenna	EMCO	3160-09	Not Labeled	#	#
Pre-Amplifier	Sonoma Inst.	310	185634	12	3/29/07
Pre-Amplifier	Miteq	AMF-4D-001180-24-10P	799159	12	2/20/07
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	12	10/29/07
RF Preselector	Hewlett Packard	85685A	3010A01157	12	10/29/07
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00584	12	10/29/07
RF Attenuator	Mini-CirLeader Electronicsts	CAT-10	Asset #1000	12	12/08/06
LISN	Com-Power	LI-200	12012	12	6/17/07
LISN	Com-Power	LI-200	12214	12	6/17/07
LISN	Com-Power	LI-200	1767	12	6/17/07
LISN	Com-Power	LI-200	1768	12	6/17/07

No Calibration required

6.0 Document History

Revision/ Job Number	Writer Initials	Date	Change
1	KB	12-05-06	Original document
2	KB	01-08-07	Changes according to TCB comments