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Atlas Compliance & Engineering, Inc.

FCC & Industry Canada Test Report

**FCC CFR 47 Part 15.207, 15.209, and 15.249, &
RSS-210 Issue 7 COMPLIANCE**

• • • • • • • • • •
*Unigen Corporation
45388 Warm Springs Blvd.
Fremont, CA 94539*

*Product:
San Gabriel WiFi 802.11b/g/n Module
Model:
UGWDR82NUH50A*

FCC ID: R8KUGWDR82N
IC ID: 5125A-UGWDR82N
Test Report Number: 0940UGCgabe_subc
Date of Report: October 2, 2009

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Table of Contents

Table of Contents	2
General Information	3
Test Equipment.....	4
EUT Technical Discription.....	5
Block Diagram	6
Test Configuration.....	7
EUT Description / Note:.....	7
EUT Support Program	7
EUT Modifications for Compliance	7
EUT Support Devices.....	8
I/O Ports and Cables.....	8
Equipment Under Test.....	9
Equipment Block Diagram	14
Test Setup (Radiated Emissions).....	15
Test Setup (Conducted Emissions).....	21
Test Methods for Emissions	23
Conducted Emission Testing	23
Temperature and Humidity.....	24
Sample Calculations	24
FCC Part 15 Subpart C 15.207 and 15.209 Limits	25
Report of Measurements 15.249 Radiated Data	27
Report of Measurements 15.209 Radiated Data	28
Conducted Data for FCC Class B Line.....	29
Conducted Data for FCC Class B Neutral.....	30
Direct RF Conducted Plots	31
The following are the 20 MHz Peak measurement plots	31
The following are the 40 MHz Peak measurement plots.....	33
The following are the 20 MHz Band Width, Band Edge plots.....	35
The following is the 20 MHz Band Width conducted measurements	37
The following are the 40 MHz Band Width, Band Edge plots.....	38
The following is the 40 MHz Band Width conducted measurements	40
COMPLIANCE VERIFICATION REPORT	41
Table 1 - Support Equipment Used For Test	8
Table 2 - EUT Port Termination's.....	8
Table 3 - Host Port Termination's	8
Table 4 - Radiated Emission Limits, General Requirements.....	25
Table 5 - Radiated Emission Limits, Part 15.249 Operation within the bands 902 – 928 MHz, 2400 – 2483.5 MHz, 5725 – 5875 MHz, and 24.0 – 24.25 GHz.....	26
Table 6 - Conducted Limits	26
Table 7 - Radiated Emission Level.....	27
Table 8 - Radiated Emission Level Below 2000 MHz	28
Table 9 - Line Scan Data	29
Table 10 - Neutral Scan Data	30
Figure 1 - Test Setup Diagram	14
Figure 2 - Line Scan	29
Figure 3 - Neutral Scan.....	30



General Information

Test Report Number: 0940UGCgabe_subc
Date Product Tested: September 28 - 30, 2009
Date of Report: October 2, 2009
Applicant: Unigen Corporation
45388 Warm Springs Blvd.
Fremont, CA 94539
Contact Person: Mark Morrissey
Equipment Tested: San Gabriel WiFi 802.11b/g/n Module
Trade Name: UGWDR82NUH50A
Model: UGWDR82NUH50A
Purpose Of Test: To demonstrate the compliance of the San Gabriel WiFi 802.11b/g/n Module, UGWDR82NUH50A, with the requirements of FCC CFR 47 Part 15 Rules and Regulations to the limits of Subpart C 15.207, 15.209, and 15.249 using the procedure stated in ANSI C63.4-2003. Also including the requirements for Industry Canada RSS 210, Issue 7.
Frequency Range Investigated: 150 kHz to 24,000 MHz
FCC ID: R8KUGWDR82N
IC ID: 5125A-UGWDR82N
Test Site Locations: Field Strength Measurement Facility:
Atlas Compliance & Engineering, Inc.
726 Hidden Valley Road
Royal Oaks, California 95076
Conducted Interference and Immunity Measurement Facility:
Atlas Compliance & Engineering, Inc.
1792 Little Orchard St.
San Jose, California 95125
FCC Site Registration Number: 90452
Industry Canada File Number: IC 4929
Test Personnel: Mario E. Baraona Sr.
EMC Engineer



Test Equipment

The following list contains the test equipment that was utilized in making the measurements in this report.

Description _ Model	Serial	Manufacturer	Calibrated	Calibration Due
BiLog Antenna _ CBL6141	4034	Chase Electronics Ltd.	1/3/08	1/3/10
Active Loop Antenna _ 6502	9108-2669	EMCO	8/18/05	8/18/07
Double Ridge Guide Horn Antenna _ 3115	9003-3340	EMCO	8/18/08	8/18/10
Standard Gain Horn Antenna _ 3160-09	00057143	EMCO	11/22/07	11/22/09
LISN _ 3825/2	9007-1683	EMCO	11/20/07	11/20/09
LISN _ 8012-50-R-24-BNC	8379587	Solar Electronic	10/29/07	10/29/09
Pre amp 9kHz-2GHz _ CPA9231A	3259	Schaffner	11/19/07	11/19/09
Pre amp 9kHz-2GHz _ CPA9231A	3323	Schaffner	10/18/07	10/18/09
RF Preselector 20Hz-2GHz _ 85685A	2926A00965	HP	8/30/08	8/30/10
Pre amp 1Ghz-26.5GHz _ 8449B	3008A00910	HP	8/29/08	8/29/10
Spectrum Analyzer 100Hz-22GHz _ 8566B	2542A13058 (IF) 2637A03426 (RF)	HP	8/29/08	8/29/10
Quasi-Peak Adapter _ 85650A	2521A00716	HP	8/30/08	8/30/10
Spectrum Analyzer 9kHz – 50 GHz 8565E	3517A00320	HP	10/23/08	10/23/09
EMI Test Receiver 9 kHz - 2500 MHz _ ESPC	DE15934 845296/0024	Rohde & Schwarz	12/11/07	12/11/09
EMI Test Receiver 9 kHz - 2500 MHz _ ESPC (bat)	DE14459 843820/0015	Rohde & Schwarz	2/21/08	2/21/10
OATS – LA290Cable 75 ft.	0001	Semflex	1/27/06	11/27/08
Chamber – HPI160SCable 50 ft.	0002	Semflex	7/31/08	7/31/10
Chamber – HP190S Cable 8 ft.	0003	Semflex	10/14/08	10/14/10
OATS – LA290Cable 75 ft.	0001	Semflex	1/27/08	1/27/10
Temperature and humidity probe _ RH-20F	200-97-082591	Omega Engineering	1/12/05	1/12/07
Multimeter _ 75	47410575	Fluke	12/2/07	12/2/09
Variable Transformer _ PowerSat	8P124201	Superior Electric Co.	N/A	N/A



EUT Technical Discription

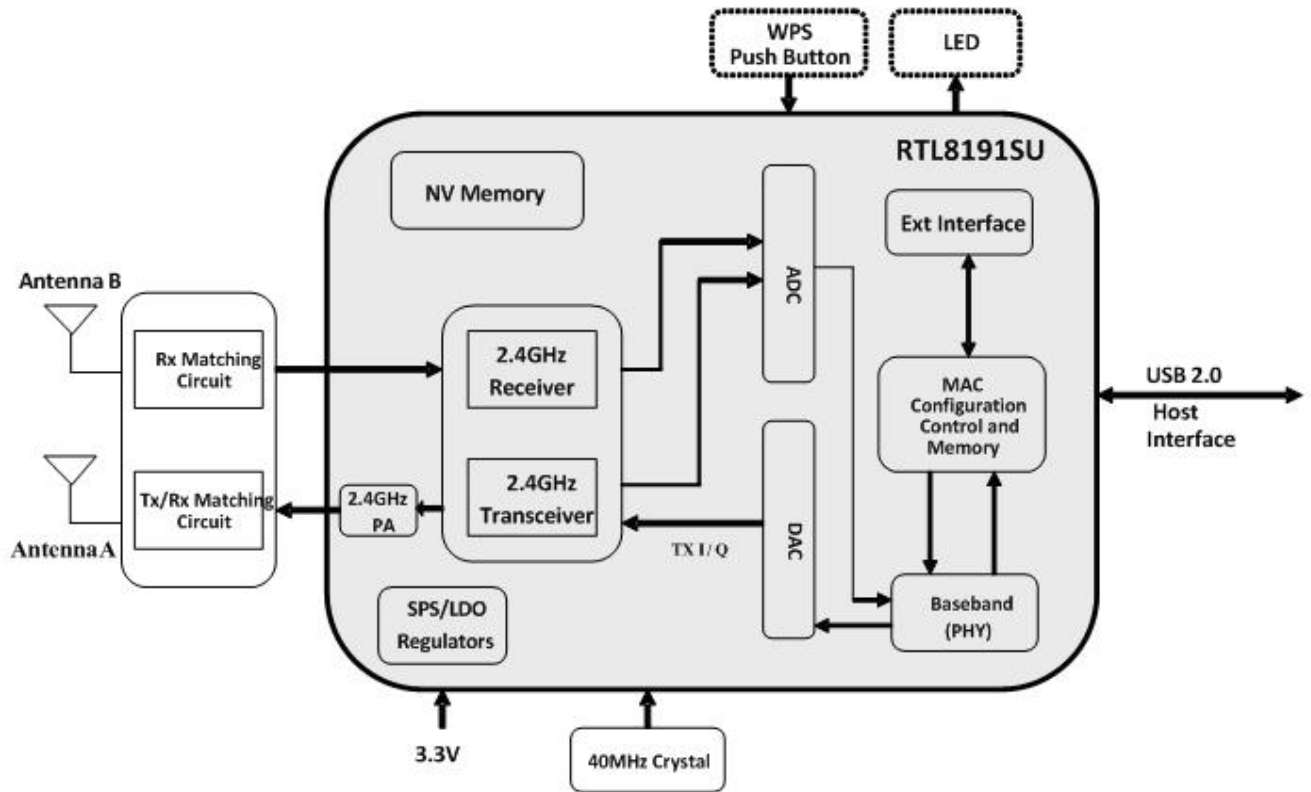
The Realtek RTL8191SU-GR is a highly integrated MIMO (Multiple In, Multiple Out) Wireless LAN (WLAN) USB 2.0 network interface controller complying with the IEEE 802.11n Draft specification 2.0. It combines a MAC, 1T2R capable baseband and RF in a single chip, the RTL8191SU-GR provides a complete solution for a high-performance wireless client.

The RTL8191SU-GR baseband implements MIMO Orthogonal Frequency Division Multiplexing (OFDM) with one transmit and two receive paths (1T2R). Features include one spatial stream transmissions, short Guard Interval (GI) of 400ns, spatial spreading, and support for both 20MHz and 40MHz channel bandwidth. The RTL8191SU-GR provides spatial stream Space-Time Block Code (STBC) to extend transmission range. As a receiver, extended range and good minimum sensitivity is achieved by having receiver diversity via 2 antennas.

For legacy compatibility, Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK) and OFDM baseband processing are included to support all IEEE 802.11b, and 802.11g data rates. Differential phase shift keying modulation schemes, DBPSK and DQPSK with data scrambling capability are available, and CCK provides support for legacy data rates, with long or short preamble. The high speed FFT/IFFT paths, combined with BPSK, QPSK, 16QAM, and 64QAM modulation of the individual subcarriers, and rate compatible punctured convolutional coding with coding rate of 1/2, 2/3, 3/4, and 5/6, provide the higher data rates of 54Mbps and 300Mbps for IEEE 802.11g and 802.11n MIMO OFDM respectively.



Block Diagram





Test Configuration

Customer:	Unigen Corporation
Test Date:	September 28 - 30, 2009
Specification:	FCC CRF 47 Part 15.207, 15.209, and 15.249 Limits, ANSI C63.4-2003 Methods Industry Canada RSS 210, Issue 7

EUT Description / Note:

The EUT, UGWDR82NUH50A, a San Gabriel WiFi 802.11b/g/n Module, USB dongle supports the 1TX/2RX MIMO antenna technology to support 300Mbps downstream and 150Mbps upstream PHY rates. The USB dongle is a self powered USB device utilizing the 5V power source supplied by VBUS. A host controller is required to support the full 802.11 protocol and driver. There was no change in the DC voltage of the EUT while the AC voltage was varied +/- 15% from the nominal voltage of 117 VAC. Conducted emissions testing was performed on the host unit with the EUT operating continuously. EUT frequencies of operation are 2412 MHz to 2480 MHz with 20 MHz or 40 MHz Band widths.

EUT Support Program

The EUT was tested while using the Realtek 11n MP diagnostic program. Transmit power was set to the default value of 45, with the max power being 63. Data rate is MCS 0. 12 channels are available for DSSS mode. The EUT was tested stopped at channel 2, 2412 MHz, channel 7, 2438 MHz, and channel 12, 2480 MHz. 2412 MHz was where the maximum emission level was observed. Band edge measurements were taken with the EUT operating throughout and stopped at 2412 MHz and 2480 MHz.

EUT Modifications for Compliance

There were no modifications performed on the EUT. The test results state the emission levels of the EUT in the condition as it was received on September 28, 2009.



EUT Support Devices

Table 1 - Support Equipment Used For Test

Model:	Description:	S/N	FCC ID#
GX270	Dell OptiPlex computer	H7LC851	DoC
VS10049	ViewSonic LCD VGA Monitor	P1S0508A0767	DoC
RT7D20	Dell PS2 Keyboard	TH-04N454-37171	DoC
M/NM-SAW34	Dell/Logitech PS2 Mouse	LZB243543371	DoC

I/O Ports and Cables

Table 2 - EUT Port Termination's

I/O Port	Cable Type	Length	Connector	Termination
USB 2.0	N/A	Direct	4 pin Type-A	Host Computer

Table 3 - Host Port Termination's

I/O Port	Cable Type	Length	Connector	Termination
USB 2.0	N/A	Direct	4 pin Type A	Host Computer
Video	Shielded, Braid, 2 ferrite cores	6 FT	15 P 'HD'	Monitor
Keyboard	Shielded, Braid	6 FT	6 P Mini Din	Keyboard
Mouse	Non-Shielded	6 FT	4 P Mini Din	Mouse
Power	Non-Shielded	7 FT	IEC	Power Mains



Equipment Under Test

The photographs below show the condition of the EUT for test.

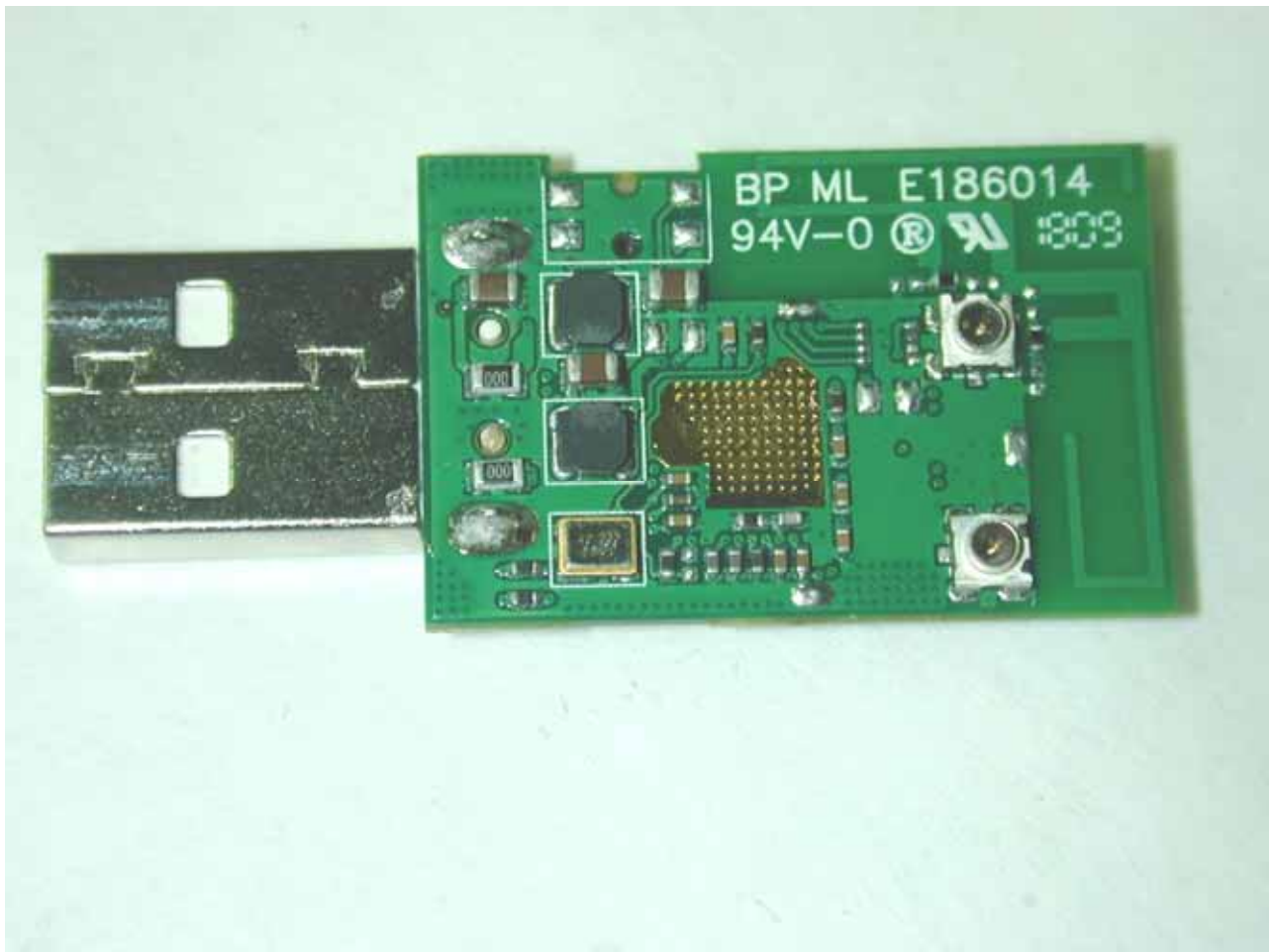








The antenna is an embedded PCB antenna, Type is Inverted F Antenna





The module shows the shield removed.

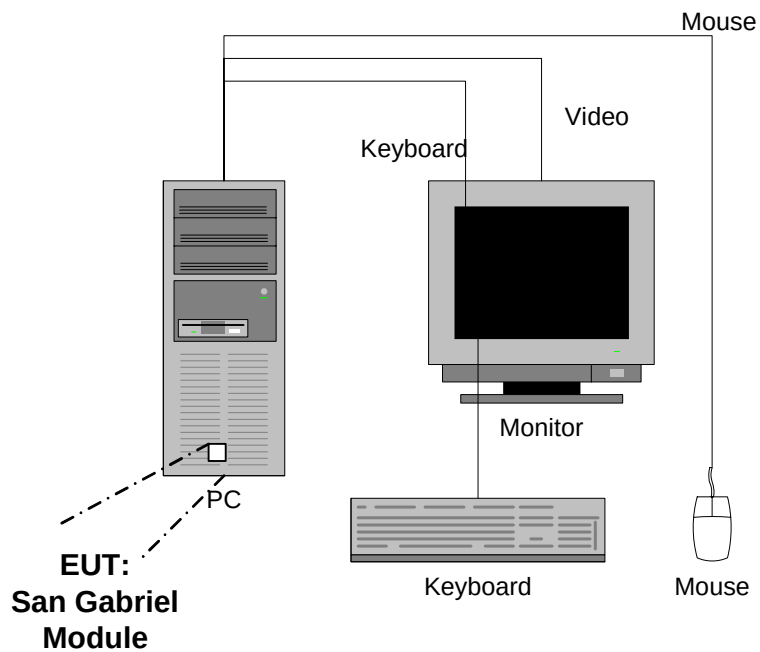




Equipment Block Diagram

Following is the block diagram of the test setup. Refer to TEST CONFIGURATION pages for port connections and information.

Figure 1 - Test Setup Diagram





Test Setup (Radiated Emissions)

The photographs below show worst case setup for radiated emission testing at 10 Meters with Bicon Antenna.







The photographs below show worst case setup for radiated emission testing at 3 Meters with Horn Antenna.







The photographs below show worst case setup for direct conducted emission testing.







Test Setup (Conducted Emissions)

The photograph below shows worst case setup for line conducted testing.







Test Methods for Emissions

The test procedure stated in ANSI C63.4-2003 was used to collect the test data. The radiated emission data of the EUT was taken with the Rohde & Schwarz EMI Test Receiver or HP 8566B. Incorporating the application of correction factors programmed into the Test Receiver and verified for distance, antenna, cable loss, and amplifier gain, the data was reduced as shown in the Sample Calculations. These correction factors are available upon request. The corrected data was then compared to the emission limits to determine compliance.

During radiated emission testing, the EUT was placed on a nonconductive rotating table 0.8 meter above the conductive grid. The nonconductive table dimensions were 1 meter deep by 1.5 meters wide at 0.8 meter high. The EUT is centered on the tabletop and the measurement antenna was placed 3 meters from the EUT as noted in the test data.

For radiated emissions testing, scans in the frequency range of 6 MHz to 24000 MHz were made. Each frequency between 9 kHz and 150 kHz was measured at a bandwidth of 200 Hz, between 150 kHz and 30 MHz was measured at a bandwidth of 10 kHz, between 30 MHz and 1000 MHz was measured at a bandwidth of 120 kHz and between 1000 MHz and above was measured at a bandwidth of 1 MHz. Measurements were made employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz, and above 1GHz which employed an average detector. All readings within 10 dB of the limits were recorded, and those emissions were then measured using the appropriate detector and bandwidth for a 2-second measurement time.

RF Measurements were made at a distance of 3 meters.

Conducted RF Measurements were made on the HP 8565E.

Conducted Emission Testing

For the conducted emissions testing, the EMCO LISN, Model No. 3825/2, was used for the EUT and the EMCO LISN, Model No. 4825/2, was used for the support equipment. During conducted emission testing the EUT was located on a wooden test bench measuring 0.8 meter high, 1 meter deep, and 1.5 meters in width. The vertical conducting surface was 0.4 meter from the back of the test bench. The LISNs were placed on the ground plane of the test area in accordance with ANSI C63.4-2003.

The metal plane used for conducted emission testing was grounded to the earth by a heavy gage braided wire attached to the plane. All other objects were kept a minimum of 1 meter away from the EUT during the conducted test.

For conducted emissions testing a scan of the frequency band 150 kHz to 30 MHz was made stepping every 5 kHz. Each frequency was measured at a bandwidth of 10 kHz for 20 msec. Due to the narrow specification of a 6 dB drop, the 10 kHz bandwidth meets the requirements of CISPR 16, band B (150 kHz to 30 MHz) and VDE 0876 as well as of various military standards that require tolerances of 10% for a 10 kHz



measurement bandwidth. All readings within 25 dB of the limits were recorded, and those emissions were then measured using the CISPR quasi-peak detector at a bandwidth of 10 kHz for a 2 second measurement time. All emissions within 6 dB of the limit were examined with additional measurements to ensure compliance with the FCC 15.207 limits. The results of the conducted emissions test are shown in Tables 8 and 9 and Figures 3 and 4.

Temperature and Humidity

The ambient temperature of the actual EUT was within the range of 10° to 40° C (50° to 104° F) unless the particular equipment requirements specify testing over a different temperature range. The humidity levels were within the range of 10% to 90% relative humidity unless the EUT operating requirements call for a different level.

Sample Calculations

An example of how the EMI Test Receiver reading is converted using correction factors is given for the emissions recorded in Table 6. These correction factors are programmed into the EMI Test Receiver and verified. For radiated emissions in dBμV/m, the EMI Test Receiver reading in dBμV is corrected by using the following formula:

$$\begin{aligned} &\text{Meter Reading (dB}\mu\text{V/m)} \\ &- \text{Pre amp Gain (dB)} \\ &+ \text{Cable Loss (dB)} \\ &+ \text{Antenna Factor (dB)} \\ &= \text{Corrected Reading (dB}\mu\text{V/m)} \end{aligned}$$

This reading is then compared to the applicable specification limits and the difference will determine compliance. For conducted emissions, no correction factors are needed when a 50 μH LISN is used.



FCC Part 15 Subpart C 15.207 and 15.209 Limits

Table 4 - Radiated Emission Limits, General Requirements

Frequency MHz	Field Strength $\mu\text{V/m}$	Measurement Distance Meters
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.
3. The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission.
4. The emission limits shown are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.



Table 5 - Radiated Emission Limits, Part 15.249

Operation within the bands 902 – 928 MHz, 2400 – 2483.5 MHz, 5725 – 5875 MHz, and 24.0 – 24.25 GHz.

Frequency MHz	Field Strength of fundamental millivolts/meter	Field Strength of harmonics microvolts/meter
902 – 928	50	500
2400 – 2483.5	50	500
5725 – 5875	50	500
24000 – 24250	250	2500

NOTE:

- Field strength limits are specified at a distance of 3 meters..
- Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.
- As shown in 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Table 6 - Conducted Limits

Frequency MHz	Limit Quasi-Peak dBμV	Limit Average dBμV
0.15-0.50	66-56	56-46
0.50-5	56	46
5-30	60	50

NOTE:

- The lower limit shall apply at the transition frequencies.
- Both Quasi-Peak and Average limits for power line conducted testing must be met.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



Report of Measurements 15.249 Radiated Data

The following tables reports the results of the radiated measurements for the San Gabriel WiFi 802.11b/g/n Module, UGWDR82NUH50A.

Table 7 - Radiated Emission Level

15.249 Limit dB μ V/m	Fundamental Frequency MHz	Level dB μ V/m	Detector	Azimuth, Height	Antenna	Polarity	Margin dB
114 @ 3 meters	2412	101.50	PK	10, 2.3M	Horn	H	-12.50
		84.62	PK	0, 1.6M	Horn	V	-29.38
94 @ 3 meters	2412	87.4	AV	10, 2.3M	Horn	H	-6.60
		74.8	AV	0, 1.6M	Horn	V	-19.20

15.249 Limit dB μ V/m	Harmonic Frequency MHz	Level dB μ V	Detector	Test Distance	Antenna	Polarity	Margin dB
54 @ 3 meters	4824	48.72	PK	10, 1.4M	Horn	H	-5.28
		36.02	PK	20, 1M	Horn	V	-17.98
54 @ 3 meters	7236	51.15	PK	70, 1.2M	Horn	H	-2.85
		48.05	PK	25, 1M	Horn	V	-5.95
54 @ 3 meters	9648	46.58	PK	90, 1M	Horn	H	-7.42
		44.25	PK	0, 1M	Horn	V	-9.75
54 @ 3 meters	12060	34.28	PK	0, 1M	Horn	H	-19.72
		33.61	PK	0, 1M	Horn	V	-20.39
54 @ 3 meters	14472	30<					
		30<					
54 @ 3 meters	16884	30<					
		30<					
54 @ 3 meters	19296	30<					
		30<					
54 @ 3 meters	21708	30<					
		30<					
54 @ 3 meters	24120	30<					
		30<					

74 @ 3 meters	Bandedge 2400	65.48	PK	130, 1.2M	Horn	H	-8.52
54 @ 3 meters	Bandedge 2400	48.48	AV	130, 1.2M	Horn	H	-5.52
74 @ 3 meters	Bandedge 2483.5	62.75	PK	120, 1.2M	Horn	H	-11.25
54 @ 3 meters	Bandedge 2483.5	51.75	AV	120, 1.2M	Horn	H	-2.25

Test Method: ANSI C63.4-2003
 Spec Limit: FCC 15.249
 No other emissions were observed.

PK = Peak,
 AV = Average
 V = Vertical, H = Horizontal

COMMENTS: System continuously running. Emission stop at the program default power setting. 2412 MHz was observed as the worst case emissions. Ambient temperature 74°F and relative humidity of 48%. Test distance of 3 meters. Average detector were not used since the peak readings were under the limits (unless noted otherwise). **No emissions observed after the fourth harmonic**, measurements taken are baseline measurements after the forth harmonic.



Report of Measurements 15.209 Radiated Data

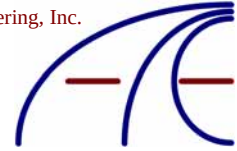
Table 8 - Radiated Emission Level Below 2000 MHz

Frequency MHz	QP Level dBμV	QP Limit dBμV	Margin dB	Azimuth, Height	Antenna, Polarization
69.2	22.32	30.00	-7.68	135, 3.8M	Bilog, H
72.23	20.65	30.00	-9.35	135, 3.8M	Bilog, H
73.295	16.15	30.00	-13.85	135, 3.8M	Bilog, H
159.995	18.79	30.00	-11.21	290, 3.6M	Bilog, H
233.175	26.65	37.00	-10.35	45, 3M	Bilog, H
240.035	23.81	37.00	-13.19	135, 3.2M	Bilog, H
299.835	25.33	37.00	-11.67	200, 2.7M	Bilog, H
1200.155	28.69	44.00	-15.31	335, 1.5M	Bilog, H
68.97	18.12	30.00	-11.88	85, 1.7M	Bilog, V
160.02	14.09	30.00	-15.91	10, 1.4M	Bilog, V
233.12	24.66	37.00	-12.34	30, 1.7M	Bilog, V
299.92	27.72	37.00	-9.28	315, 1.5M	Bilog, V
1200.125	38.43	44.00	-5.57	350, 2.5M	Bilog, V

<u>Start Freq.</u>	<u>Stop Freq.</u>	<u>Step</u>	<u>IF BW</u>	<u>Detector</u>	<u>Scan-Time</u>	<u>Atten.</u>
30MHz	2000MHz	25kHz	120kHz	PK	10msec	0dB

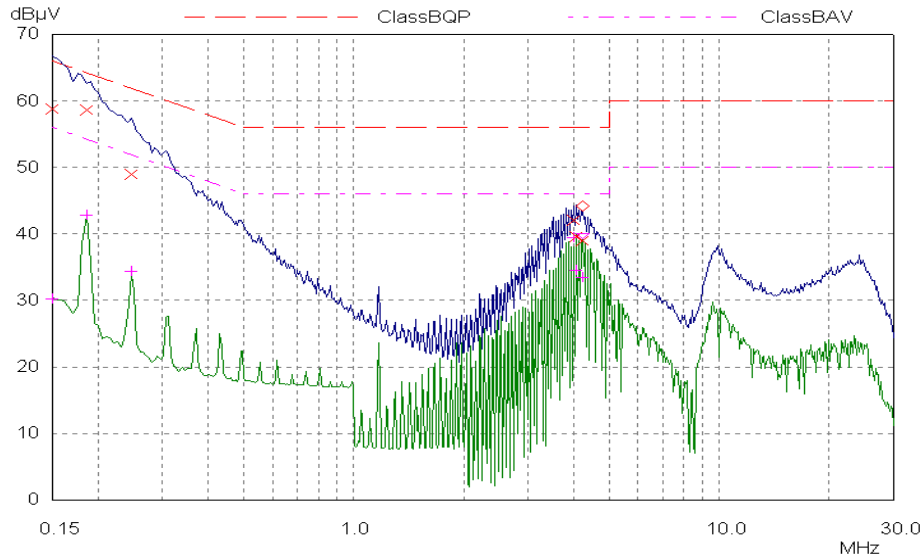
Test Method: ANSI C63.4-2003
 Spec Limit: FCC 15.209

Note: AV = Average
 QP = Quasi Peak



Conducted Data for FCC Class B Line

Figure 2 - Line Scan



Start Freq. 0.15MHz Stop Freq. 30MHz Step 5kHz IF BW 9kHz Detector PK/AV Scan-Time 20msec Atten. 0dB
 Blue Trace: Peak Measurement Green Trace: Average Measurement
 Final Measurement: x = QP / + = AV at 2 second measurement time.

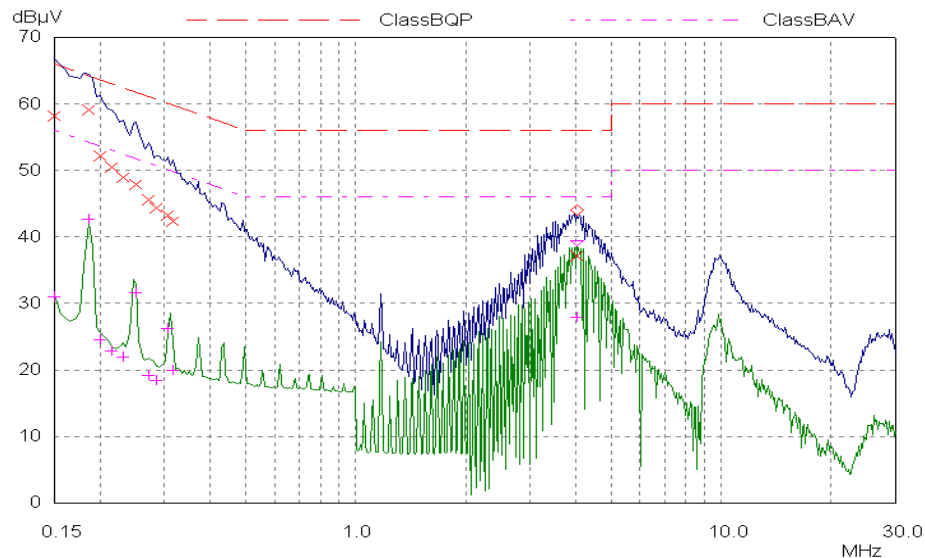
Table 9 - Line Scan Data

Freq. MHz	Level dBμV	Detector	Limit dBμV	Margin dB	Phase	PE
0.15	58.82	QP	66.00	-7.18	L1	gnd
0.185	58.70	QP	64.26	-5.56	L1	gnd
0.245	48.92	QP	61.92	-13.00	L1	gnd
4.0	42.07	QP	56.00	-13.93	L1	gnd
4.065	39.62	QP	56.00	-16.38	L1	gnd
4.25	38.90	QP	56.00	-17.10	L1	gnd
0.15	30.25	AV	56.00	-25.75	L1	gnd
0.185	42.85	AV	54.26	-11.41	L1	gnd
0.245	34.37	AV	51.92	-17.55	L1	gnd
4.0	39.39	AV	46.00	-6.61	L1	gnd
4.065	34.48	AV	46.00	-11.52	L1	gnd
4.25	33.46	AV	46.00	-12.54	L1	gnd



Conducted Data for FCC Class B Neutral

Figure 3 - Neutral Scan



Start Freq. Stop Freq. Step IF BW Detector Scan-Time Atten.
 0.15MHz 30MHz 5kHz 9kHz PK/AV 20msec 0dB
 Blue Trace: Peak Measurement Green Trace: Average Measurement
 Final Measurement: x = QP / + = AV at 2 second measurement time.

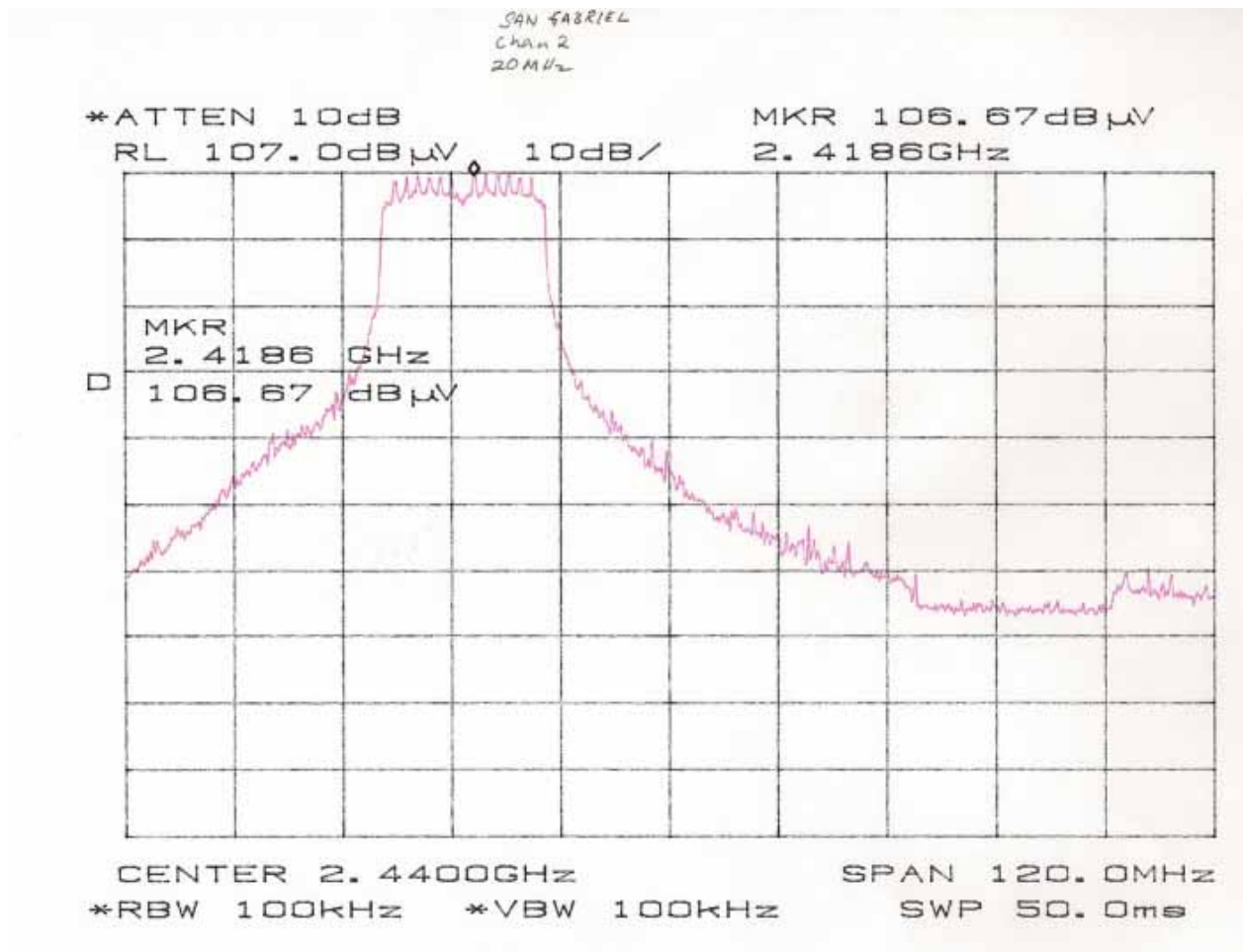
Table 10 - Neutral Scan Data

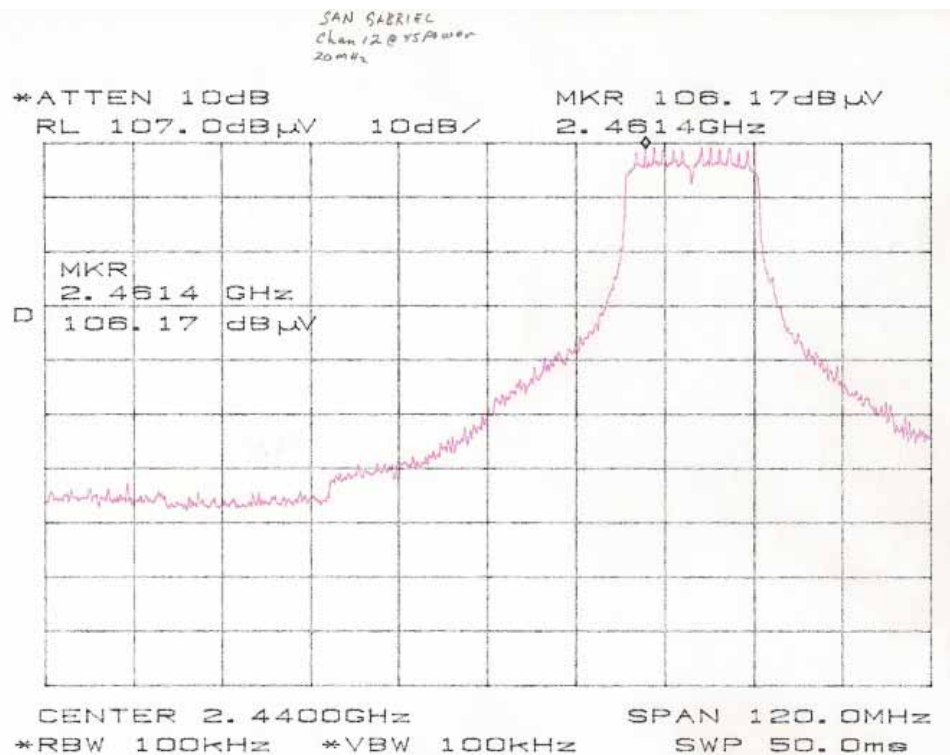
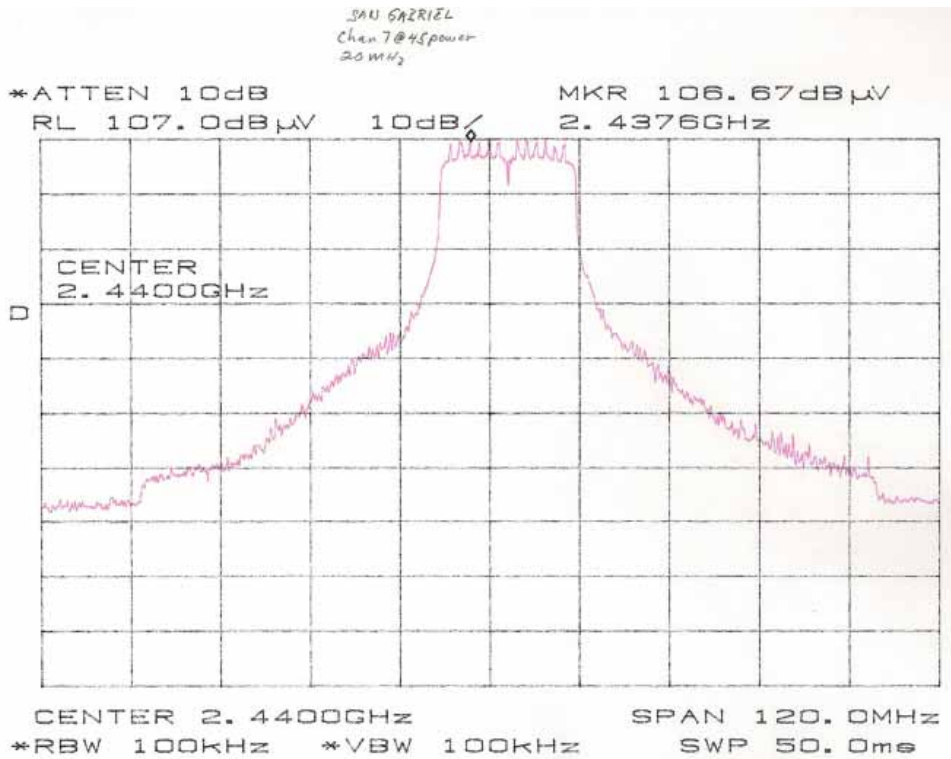
Freq. MHz	Level dBμV	Detector	Limit dBμV	Margin dB	Phase	PE
0.15	58.15	QP	66.00	-7.85	N	gnd
0.185	59.06	QP	64.26	-5.20	N	gnd
0.2	52.13	QP	63.61	-11.48	N	gnd
0.215	50.50	QP	63.01	-12.51	N	gnd
0.23	49.01	QP	62.45	-13.44	N	gnd
0.25	47.82	QP	61.76	-13.94	N	gnd
4.01999	37.12	QP	56.00	-18.88	N	gnd
0.15	31.05	AV	56.00	-24.95	N	gnd
0.185	42.70	AV	54.26	-11.56	N	gnd
0.2	24.51	AV	53.61	-29.10	N	gnd
0.215	22.90	AV	53.01	-30.11	N	gnd
0.23	21.88	AV	52.45	-30.57	N	gnd
0.25	31.62	AV	51.76	-20.14	N	gnd
4.01999	27.87	AV	46.00	-18.13	N	gnd



Direct RF Conducted Plots

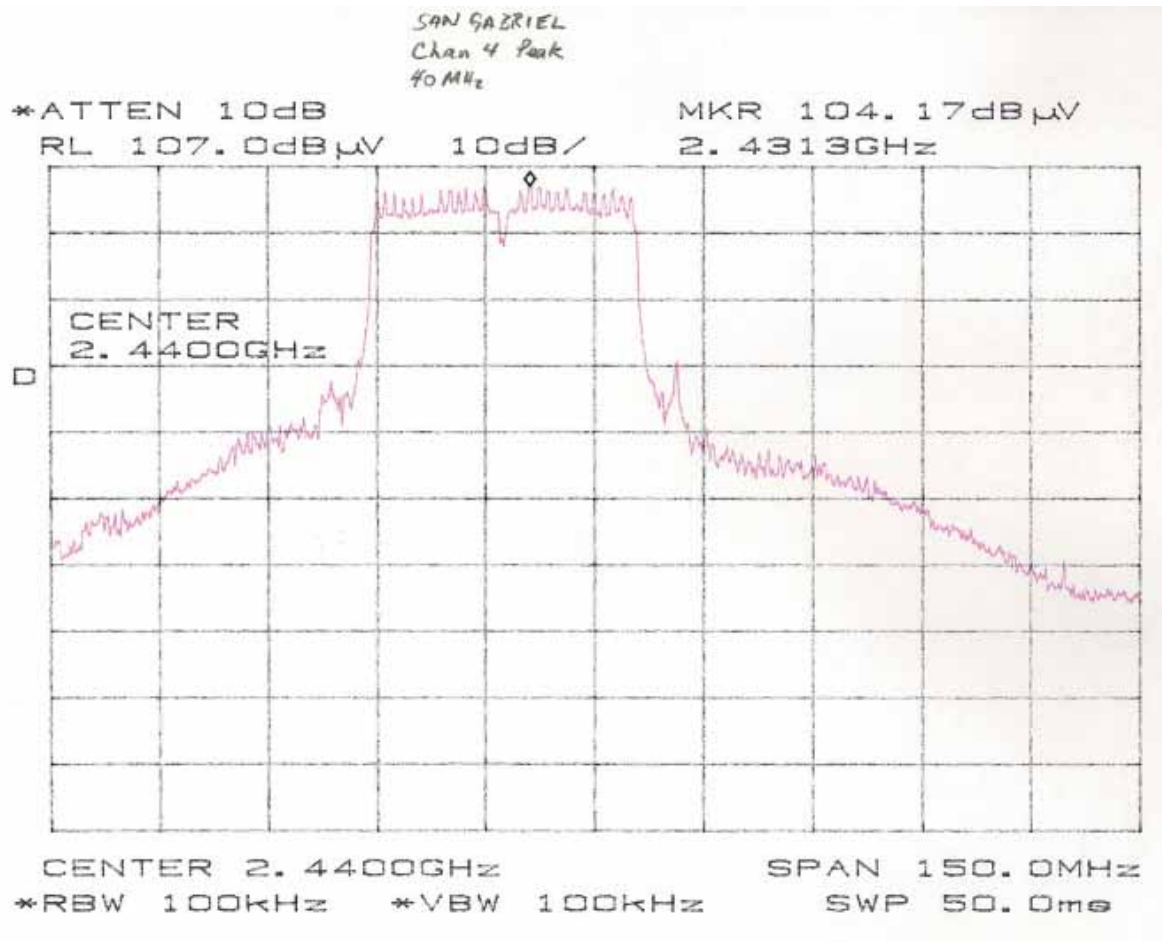
The following are the 20 MHz Peak measurement plots

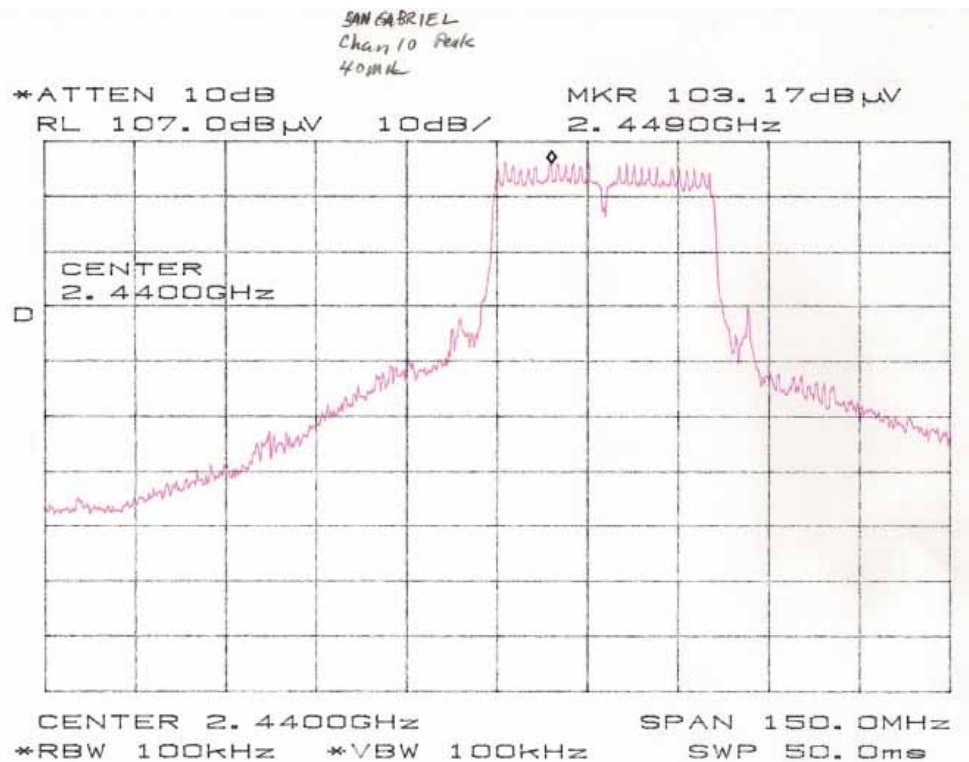
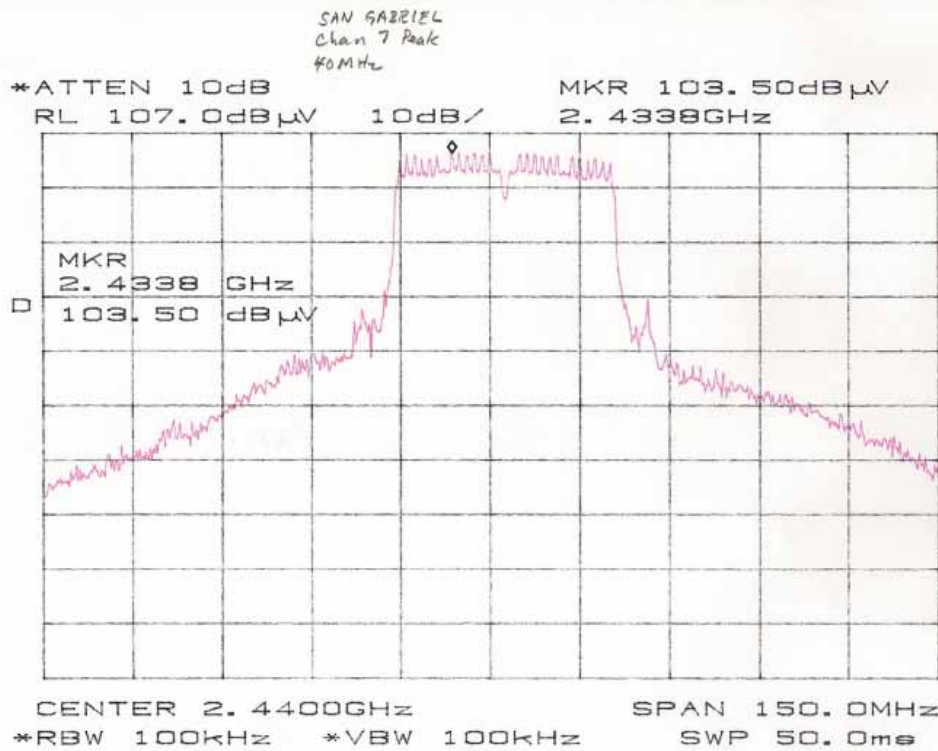






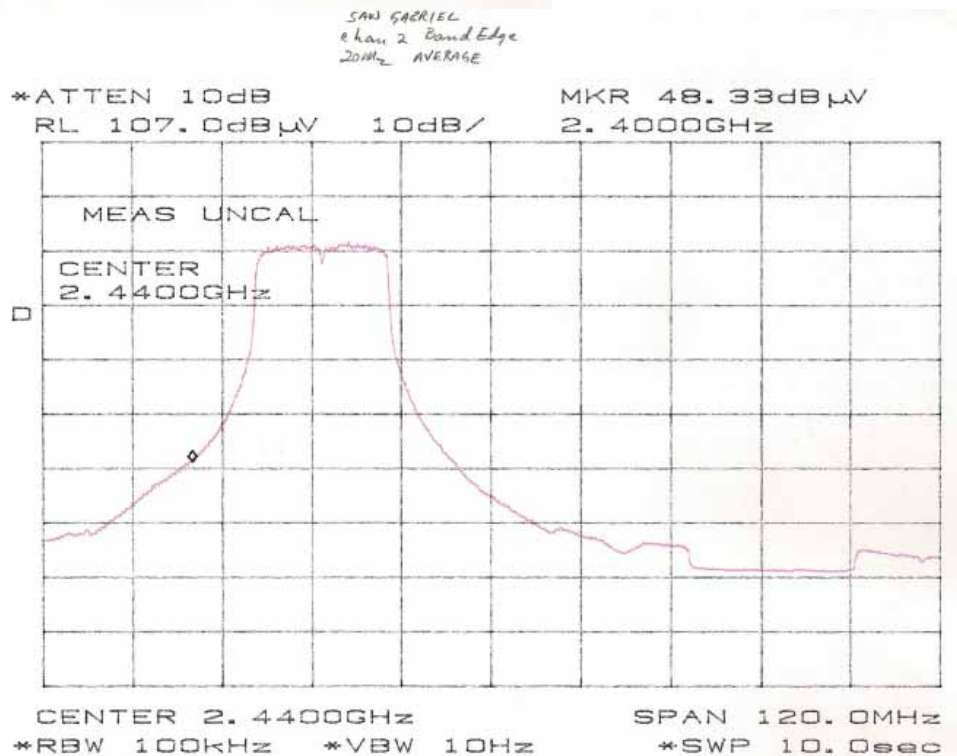
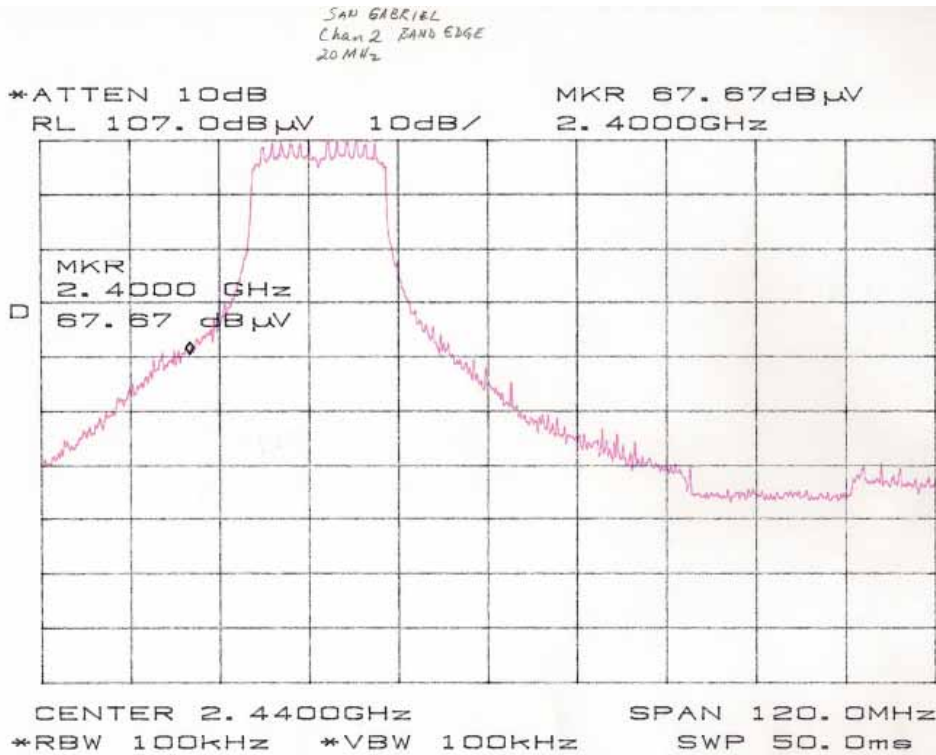
The following are the 40 MHz Peak measurement plots

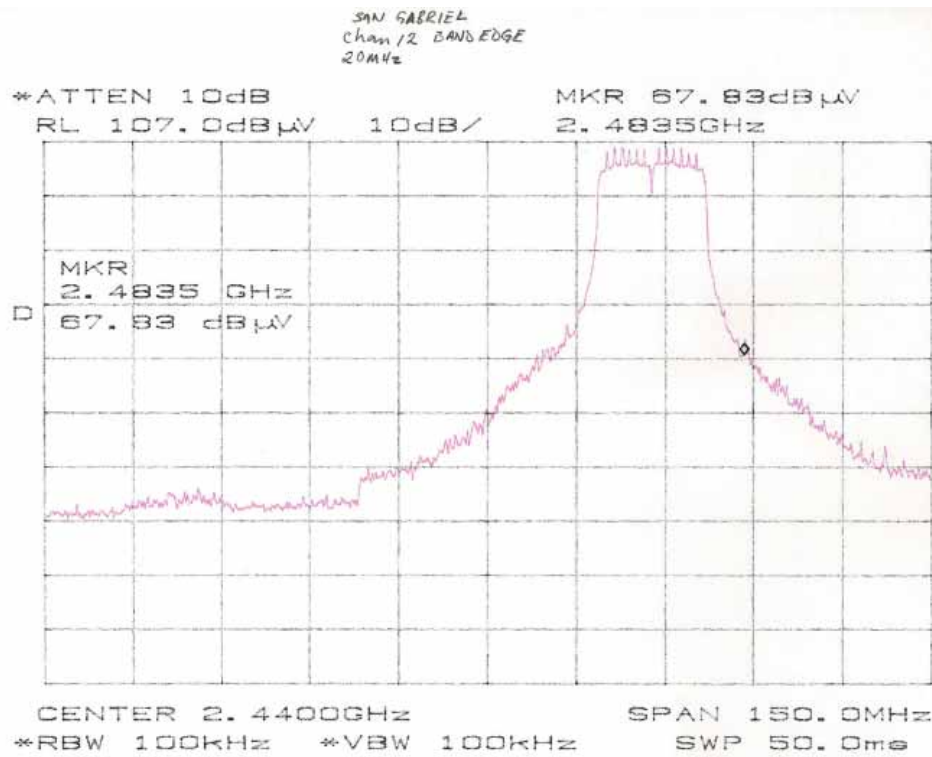






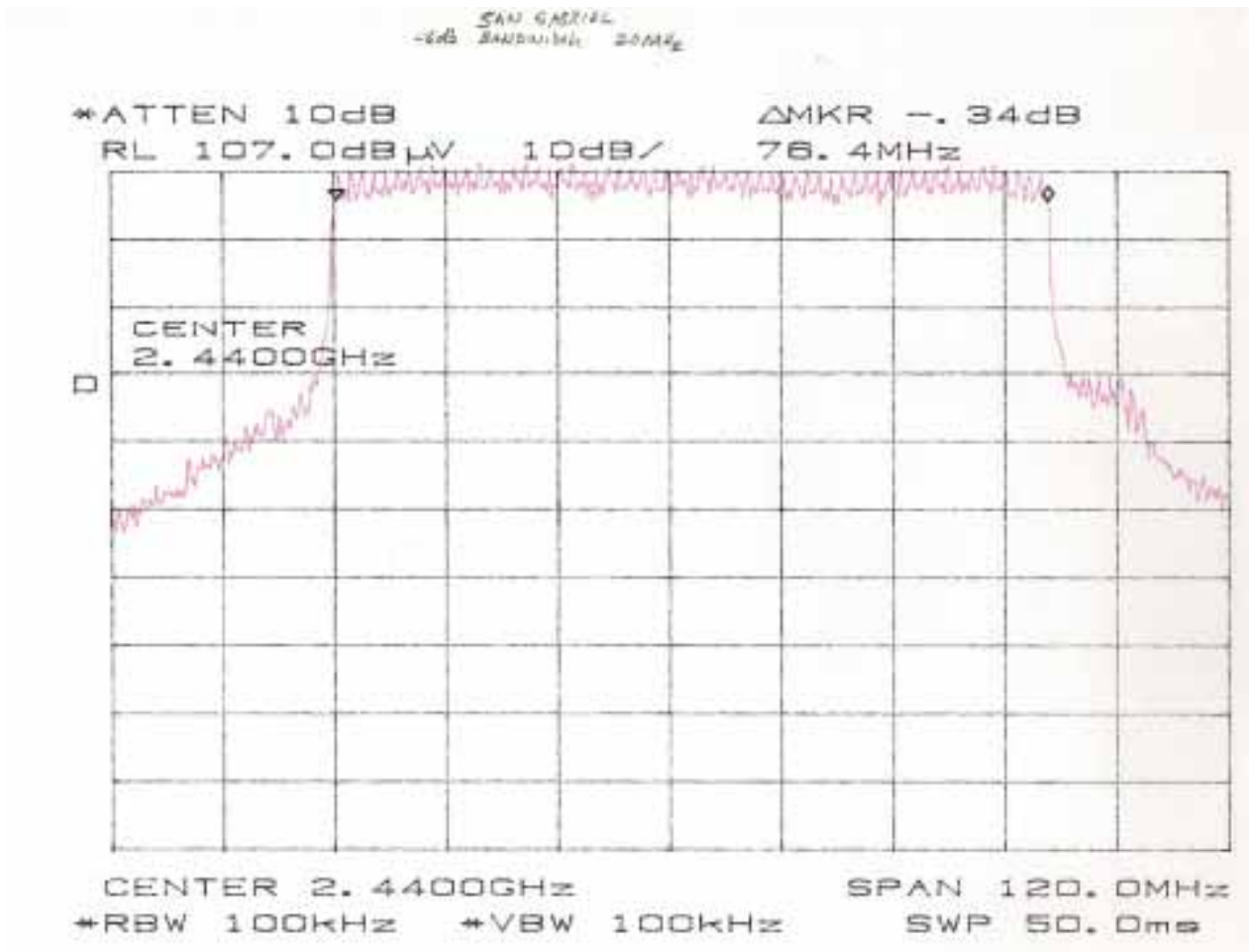
The following are the 20 MHz Band Width, Band Edge plots





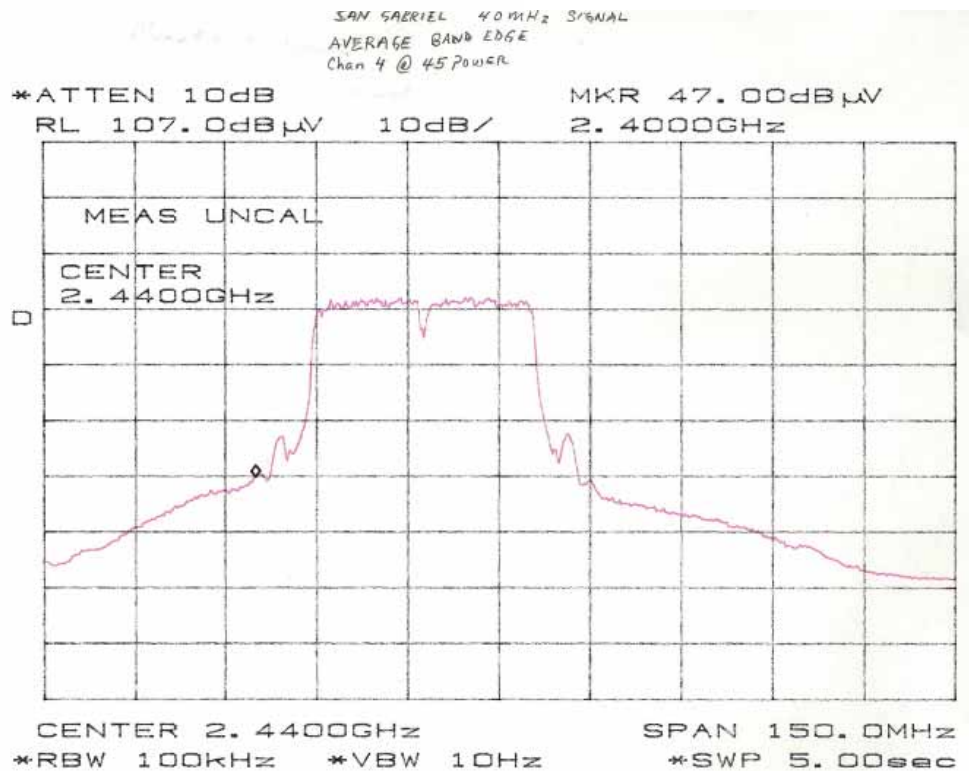
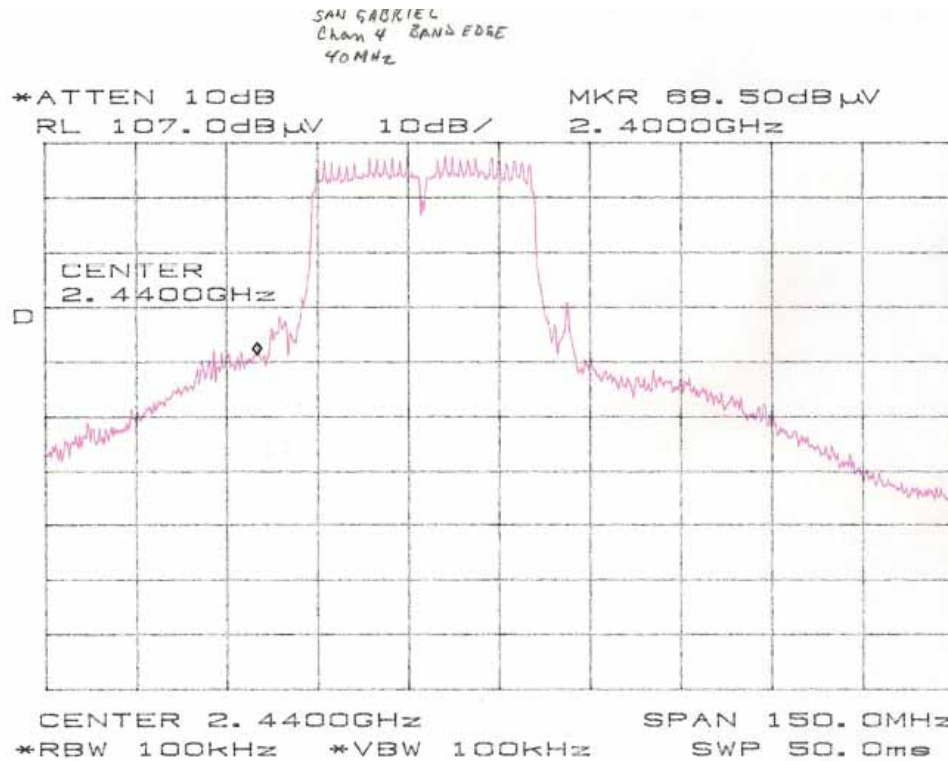


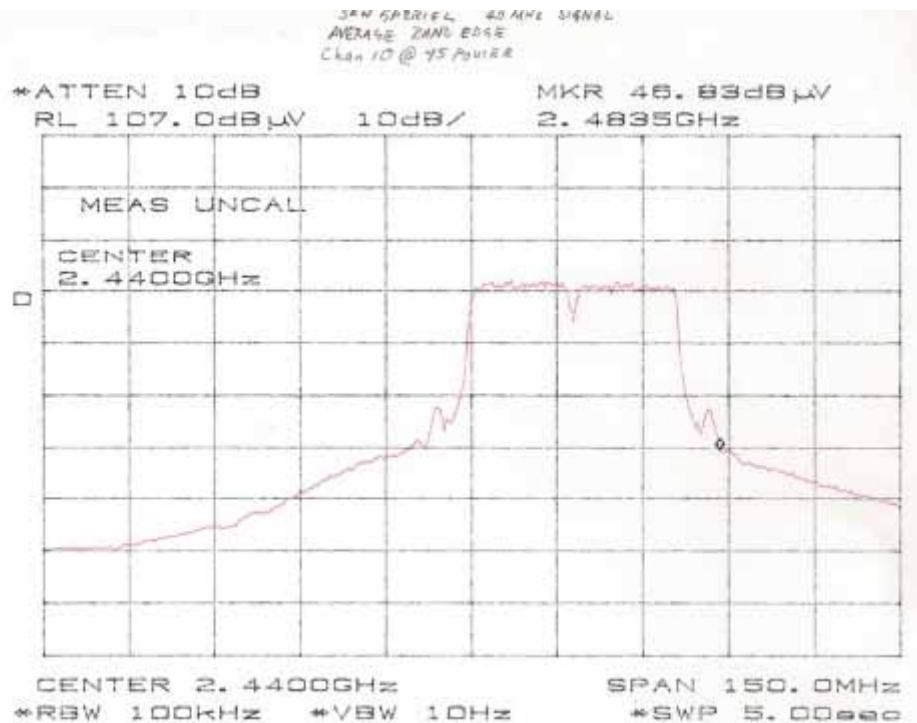
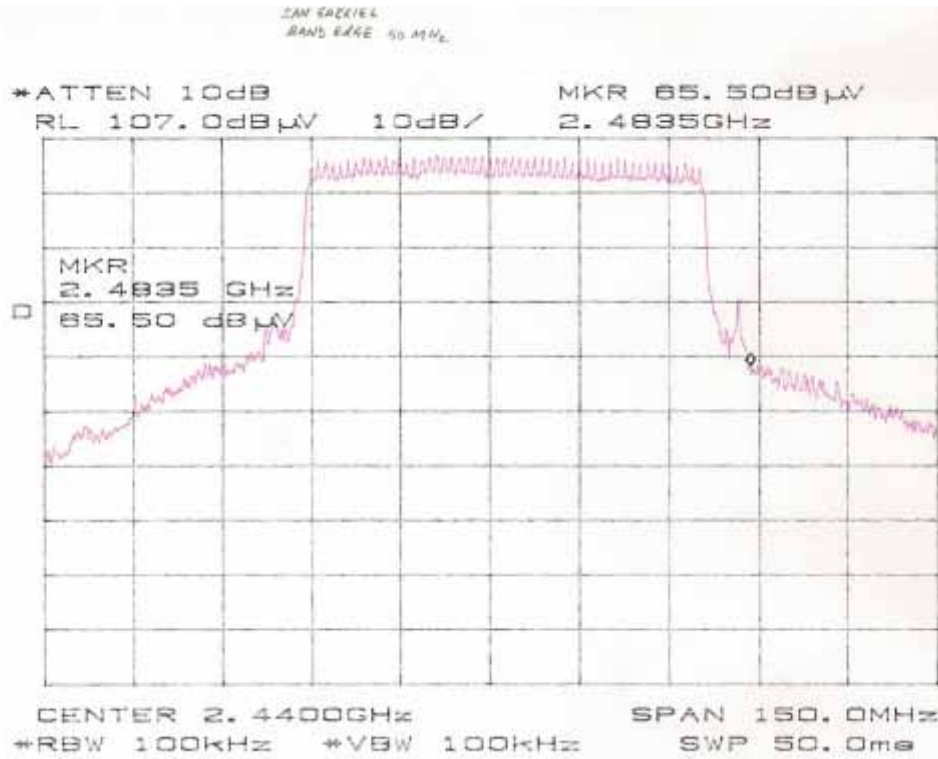
The following is the 20 MHz Band Width conducted measurements





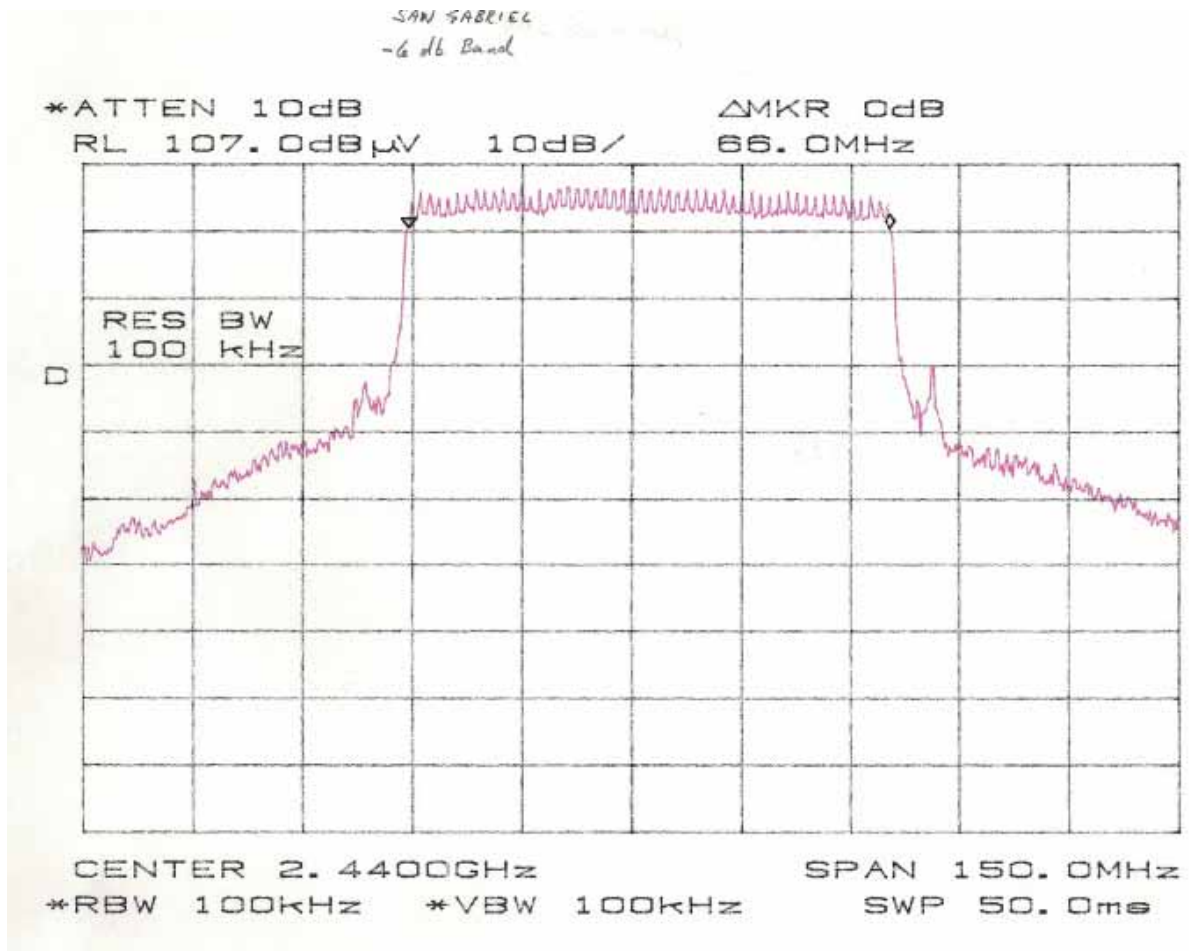
The following are the 40 MHz Band Width, Band Edge plots







The following is the 40 MHz Band Width conducted measurements





1007.01

Atlas Compliance & Engineering, Inc.
1792 Little Orchard St.
San Jose, CA 95125
Phone 408.971.9743
Fax 408.971.9783



COMPLIANCE VERIFICATION REPORT

TEST CERTIFICATE

APPLICANT: Unigen Corporation
45388 Warm Springs Blvd.
Fremont, CA 94539

Trade Name: San Gabriel WiFi 802.11b/g/n Module

Model: UGWDR82NUH50A

I HEREBY CERTIFY THAT:

The measurements shown in this report were made in accordance with the procedures indicated and that the energy emitted by this equipment, as received, was found to be within the FCC CFR 47 Part 15 Subpart C section 15.249 and 15.209 for Radiated emissions and FCC CFR 47 Part 15 Subpart C section 15.207 for Conducted emissions. Additionally, it should be noted that the results in this report apply only to the items tested, as identified herein.

I FURTHER CERTIFY THAT:

On the basis of the measurements taken at the test site, the equipment tested is capable of operation in compliance with the requirements set forth in FCC CFR 47 Part 15.207, 15.209, and 15.249 Rules and Regulations and Industry Canada RSS 210, Issue7.

FCC measurement facility registration number 90452,
Industry Canada test site file number IC 4929

On this Date: October 2, 2009

Mario E. Baraona Sr.
Atlas Compliance & Engineering, Inc.

Printed Name

Signature

Unigen Corporation Representative