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IC LAB Code: 3695A

April 15, 2005

## Test Record

**Product Verification**  
**According to FCC Part 15 Subparts B,C,E**

for

**Strix Systems, Inc**

**MODEL: OWS 2400**  
**ACCESS/ONE NETWORK**

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## 1 Certification of Test Record

### **CERTIFICATION.**

We, JMR Compliance Engineering, Chatsworth, CA, hereby certify that one sample of the designation product has been tested in our facility from March.1 to March 31 2005. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions herein specified.

**PRODUCT: IEEE 802.11 A/B/G WIRELESS ACCESS POINT**

**BRAND NAME: STRIX**

**MODEL: OWS 2400 ACCESS / ONE NETWORK**

**APPLICANT: STRIX SYSTEMS, INC**

**STANDARDS: 47 CFR FCC Part 15, Subpart C (Section 15.247)  
47 CFR FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.4-2003**

All measurements are traceable to the National Institute of Standards and Technology (NIST). This Report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the US Government.

Tests performed by



Sandra Sohn  
EMC Engineer

Test Record approved by::



Leon Kogan  
Technical Director

**JMR Compliance Engineering, 20400 Plummer Street,  
Chatsworth CA 91311. E-mail:emc@jmr.com**

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

**For freq: 2400~2483.5 MHz**

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type	Result	Comments
15.207	AC Power Conducted Emissions, 0.15 – 30 MHz	PASS	Meet the requirement
15.209	Radiated Emissions, 30-1000 MHz:	PASS	Meet the requirement of limit
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz (6dB bandwidth)	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Spurious Radiated Emissions Limit: Table 15.209: 1-40 GHz	PASS	Meet the requirement of class B limit
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit
15.205	Emissions produced in Restricted bands of operations Limit: Table 15.205	PASS	Meet the requirement of limit

**NOTE:** The information of measurement uncertainty is available upon the customer's request.

For freq. 5.25 ~ 5.35GHz

APPLIED STANDARD: 47 CFR Part 15, Subpart E			
Standard Section	Test Type	Result	Comments
15.407(b)(6)	AC Power Conducted Emissions Limit: Table 15.207	PASS	Meet the requirement of class B limit
15.407(b)(6)	Radiated Emissions, 30-1000 MHz: Limit: Table 15.209	PASS	Meet the requirement of class B limit
15.407(b)(1)(2)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz Limit: Table 15.247	PASS	Meet the requirement of limit
15.407(a)(1)(2)(3)	Peak Transmit Power	PASS	Meet the requirement of limit
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit
15.407(a)(1)(2)(3)	Peak Power Spectral Density	PASS	Meet the requirement of limit

**NOTE:** The information of measurement uncertainty is available upon the customer's request.



For freq. 5.725 ~ 5.850GHz

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	Comments
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Spurious Radiated Emissions Limit: Table 15.209: 1-40 GHz	PASS	Meet the requirement of class B limit
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit
15.205	Emissions produced in Restricted bands of operations Limit: Table 15.205	PASS	Meet the requirement of limit

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	IEEE 802.11 a/b/g Wireless Access Point
<b>MODEL NO.</b>	OWS 2400 Access/One Network
<b>OEM MODEL NO.</b>	N/A
<b>POWER SUPPLY</b>	AC : Internal, N2 Power, Model XL160 (Input: 100-240V~, 50-60Hz) DC : External Customer Supplied 12-24 Volt DC *All models employ additional board level regulation of power input.
<b>MODULATION TYPE</b>	BPSK, QPSK, CCK, 16QAM, 64QAM, DBPSK, DQPSK, CCK
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	up to 54Mbps *(Turbo mode : up to 108Mbps)
<b>FREQUENCY RANGE</b>	802.11/b /g: 2400~2483.5 MHz (47CFR15 subpart C); 802.11/a: 5.25~5.35GHz (47CFR15 subpart E) and 5.725~5.850GHz (47CFR15 subpart C)
<b>NUMBER OF CHANNEL</b>	802.11b and 802.11g: 11 for Normal mode / 1 for Turbo mode 802.11a: 8 for Normal mode / 3 for Turbo mode
<b>CHANNEL SPACING</b>	802.11b and 802.11g: 5MHz; 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
<b>TRANSMIT POWER</b>	802.11b and 802.11g: 20dBm; 802.11a: 20dBm
<b>DATA CABLE</b>	UTP cat.5
<b>ANTENNA TYPE</b>	(Note 3)
<b>ANTENNA GAIN</b>	(Note 3)
<b>I/O PORTS</b>	One Ethernet port
<b>ASSOCIATED DEVICES</b>	NA

**NOTE:**

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatible with 802.11a and 802.11b, 802.11g technology.
2. This EUT is capable of providing data rates of up to 108Mbps in Turbo Mode depending upon reception quality.
3. The following antennas provided with this EUT:
  - **External Vertically-Polarized Omni-Directional Antenna**  
**Gain:** 12.0 dBi at 2.4-2.5 GHz
  - **External Vertically-Polarized Directional 120° Sector Antenna**  
**Gain:** 16.4 dBi at 2.4-2.5 GHz
  - **External Vertically-Polarized Omni-Directional Antenna**  
**Gain:** 12.0 dBi at 5.15-5.85 GHz
  - **External Linear Vertically Polarized Directional Antenna**  
**Gain:** 23.0 dBi at 5.15-5.85 GHz
  - **External Grid Dish Parabolic Directional Antenna**  
**Gain:** 29.0 dBi at 5.15-5.85 GHz
4. The EUT was powered by AC mains through the supplied power cord.

**The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications.**

### 3.2 DESCRIPTION OF TEST MODES

For 802.11b and 802.11g: Eleven channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

One channel is provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
6	2437 MHz		

**NOTE:**

- Below 1GHz, the channels 6,11,52 and 165 . were used simultaneously with combination of external antennas
- Above 1GHz, the channel 1, 6, and 11 were tested individually (conductive tests).
- Data rates 1; 5.5; 6;11;24;54 Mbps were pre-tested to determined the worst case

For 802.11a: Eight channels are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
52	5260 MHz	64	5320 MHz
56	5280 MHz	149	5745 MHz
60	5300 MHz	153	5765 MHz
		157	5785 MHz
		161	5805 MHz
		165	5825 MHz

Three channels are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
58	5290 MHz	152	5760 MHz
		160	5800 MHz

**NOTE:**

- The EUT was tested in both normal mode (channel bandwidth of approximately 20MHz) and turbo mode (channel bandwidth of approximately 40MHz).
- “Normal Mode” allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).
- Channel 52, 60,64,149,157 and 165 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
- Channels 58,152 and 160 were chosen for final test of turbo mode.

### **3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a IEEE 802.11 a/b/g Wireless Access Point. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 15, Subpart C. (15.247),  
FCC 47 CFR Part 15, Subpart E (15.407).  
ANSI C63.4 : 2003**

All tests have been performed and recorded as per the above standards.

**NOTE:** The EUT is also has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC).

### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit. The following support units or accessories were used to set up a required test configurations.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	IBM	ThinkPad 2628	78-HLAW1 10/00	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1m Ethernet UTP cat.5; terminated with RJ45;

## 4 TEST TYPES AND RESULTS (FOR PART 802.11b & 802.11g)

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

#### NOTES:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

Device	Model No.	Serial No.	Last Cal.	Next Cal
Cable 1	RG-214/U	CBL-001	02/19/05	02/19/06
Analyzer	HP85462A	3325A00120	03/05/05	03/05/06
Preselector	HP85460A	3330A00117	03/05/05	03/05/06
QPeak Adapter	HP85462 Internal	Internal	03/05/05	03/05/06
Pre-Amplifier	None			
LISN	3825/2 LISN	9406-2232	12/03/04	12/03/05
Switch 1	N/A	N/A	N/A	N/A
Attenuator 1	33-10-34	BA9146	02/19/05	02/19/06
Temperature and Humidity Recorder	Dickson TH8-24C	5097755	09/16/03	09/16/05

#### **4.1.3 TEST PROCEDURES**

The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN).. The LISN provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

The frequency range from 150kHz to 30MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

#### **4.1.4 DEVIATION FROM TEST STANDARD**

No deviation



#### 4.1.5 TEST SETUP



**Conducted Emission Test  
(Front View)**



#### **4.1.6 EUT OPERATING CONDITIONS**

The EUT is under transmission/receiving condition continuously at specific channel frequency for both 801.11 a and /b/g by mixture of external antennas.

Please see page 11 for antennas information.

This program was repeated continuously for the duration of the testing. The above mentioned set-up allowed the article to perform sufficiently for the test purposes and required time, i.e. produce maximum of conducted emissions.

The measurement values are data presented as both graphical results of the spectrum check and tabulated QP and Averages of the strongest signals only (worst case).

#### 4.1.7 TEST RESULTS

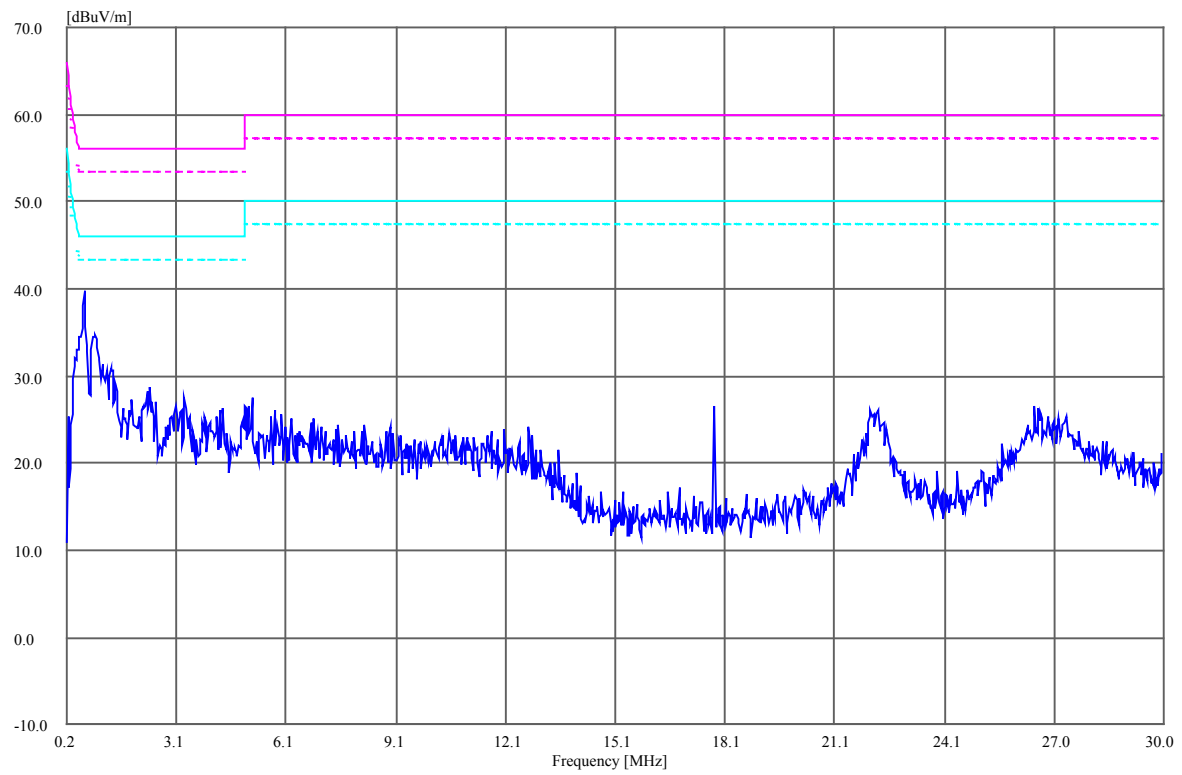
<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6,11,52,165	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH,	<b>TESTED BY:</b> Sandra Sohn	

No	Freq. [MHz]	Emission Level	Emission Level	Limit	Limit	Margin	Margin
		[dB (uV) ]	[dB (uV) ]	[dB (uV)]	[dB (uV)]	(dB)	(dB)
		QP	AV	QP	AV	QP	AV
1	0.6200	38.76	23.82	56	46	-17.24	-22.18
2	1.1155	25.42	13.06	56	46	-30.58	-32.94
3	17.775	23.98	18.37	60	50	-36.02	-31.63
4	22.089	21.45	13.96	60	50	-38.55	-36.04
5	26.530	20.53	12.99	60	50	-39.47	-37.01

#### REMARKS:

1. QP and AV. are abbreviations of Quasi-peak and average
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value

Peak traces were recorded



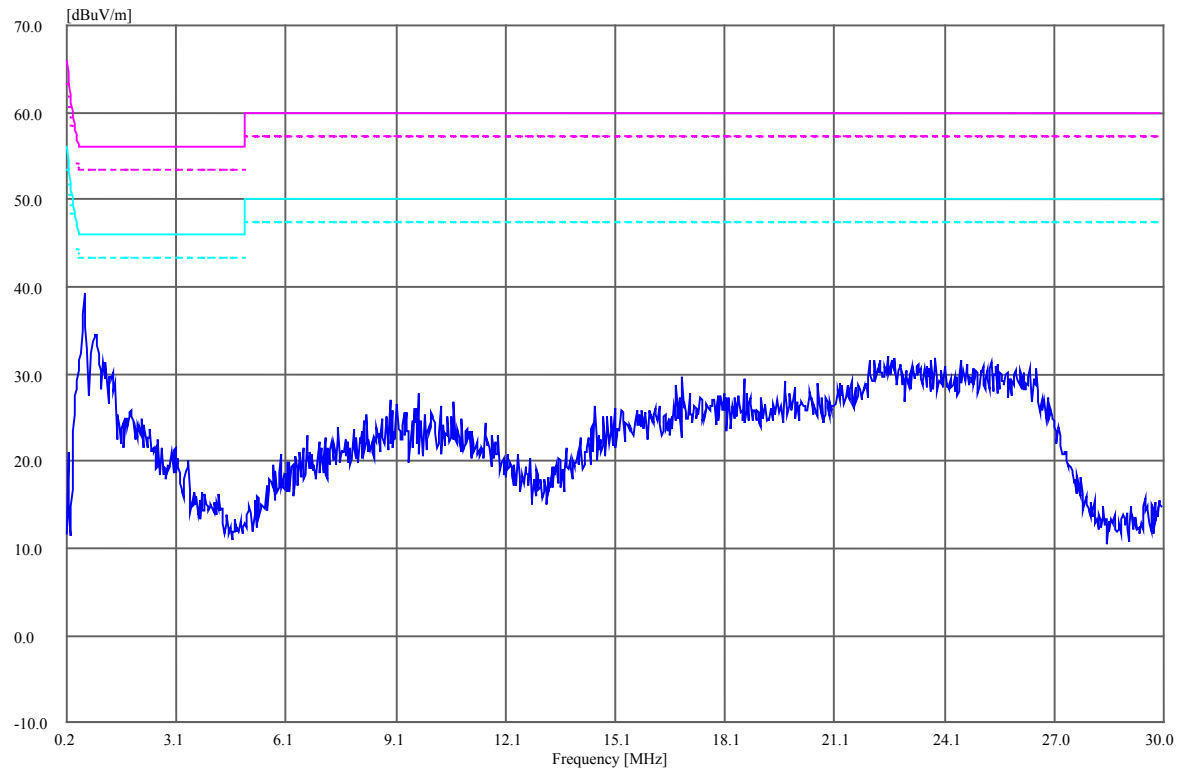
<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6,11,52,165	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH,	<b>TESTED BY:</b> Sandra Sohn	

No	Freq. [MHz]	Emission Level	Emission Level	Limit	Limit	Margin	Margin
		[dB (uV) ]	[dB (uV) ]	[dB (uV)]	[dB (uV)]	(dB)	(dB)
		QP	AV	QP	AV	QP	AV
1	0.6188	37.63	23.04	56.00	46	-18.37	-22.96
2	0.9160	27.00	13.14	56.00	46	-29.00	-32.86
3	9.7247	20.32	11.69	60.00	50	-39.68	-38.31
4	16.903	21.42	13.82	60.00	50	-38.58	-36.18
5	22.711	25.61	17.27	60.00	50	-34.39	-32.73

**REMARKS:**

1. QP and AV. are abbreviations of Quasi-peak and Average.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value

Peak traces were recorded



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
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. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 4.2.2 TEST INSTRUMENTS

Device	Model No.	Serial No.	Last Cal.	Next Cal
Cable 1	8214	CBL-006	02/19/05	02/19/06
Analyzer	HP85462A	3325A00120	03/05/05	03/05/06
Cable 2	8268	CBL-002	02/19/05	02/19/06
Preselector	HP85460A	3330A00117	03/05/05	03/05/06
Qpeak Adapter	HP85462 Internal	Internal	03/05/05	03/05/06
Cable 10	K316MM	CBL-010	9/14/04	9/14/05
Cable 11	K086MM	CBL-011	9/14/04	9/14/05
ROHDE & SCHWARZ EMI Test Receiver	ESIB 40	100201	01/23/05	01/23/06
Pre-Amplifier	HP83051	1065194A	10/11/04	10/11/05
Tower 1	EMCO 1050	9310-1786	N/A	N/A
Turntable 1	EMCO 1060	9409-1753	N/A	N/A
Bilog Antenna	CBL6112B	2604	09/03/04	09/03/05
Horn Antenna	SAS-200	175	03/04/05	03/04/06
Double Ridged Guide Antenna	ETS3116	0026390	05/23/04	05/24/05
Shielded Semi-Anechoic Chamber	RANTEC	N/A	02/11/05	02/11/06
Temperature and Humidity Recorder	Dickson TH8-24C	5097755	09/16/03	09/16/05

### 4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

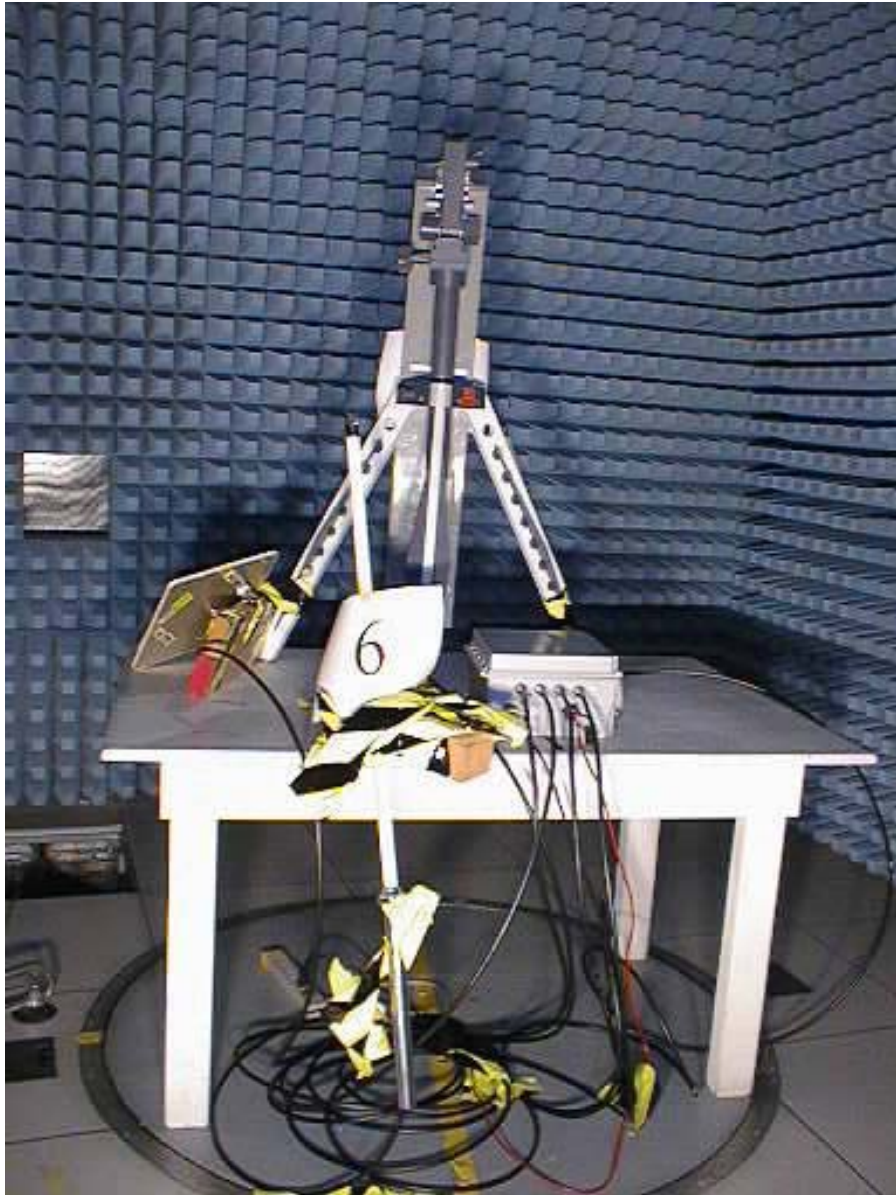
### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.5 TEST SETUP



**Radiated Emission Test with 4 Antenna  
(Front View)**



**Radiated Emission Test with 4 Antenna  
(Rear View)**

#### **4.2.6 EUT OPERATING CONDITIONS**

The EUT is under transmission/receiving condition continuously at specific channel frequency for both 801.11 a and /b/g by mixture of external antennas.

Please see page 11 for antennas information.

This program was repeated continuously for the duration of the testing. The above mentioned set-up allowed the article to perform sufficiently for the test purposes and required time, i.e. produce maximum of radiated emissions.

The measurement recorded values are data presented as both graphical results of the spectrum check and tabulated data of the strongest signals only (worst case).

#### 4.2.7 TEST RESULTS (A)

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6,11,52,165	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH	<b>TESTED BY:</b> Sandra Sohn	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)
1	49.131248	22.82	40.00	-17.18	3.09	8
2	109.46200	26.98	43.50	-16.52	1.57	45
3	200.00649	35.27	43.50	-8.23	1.96	55
4	225.01875	35.51	46.00	-10.49	1.44	41
5	283.16300	30.76	46.00	-15.24	1.48	41
6	350.02624	32.37	46.00	-13.63	1.07	57

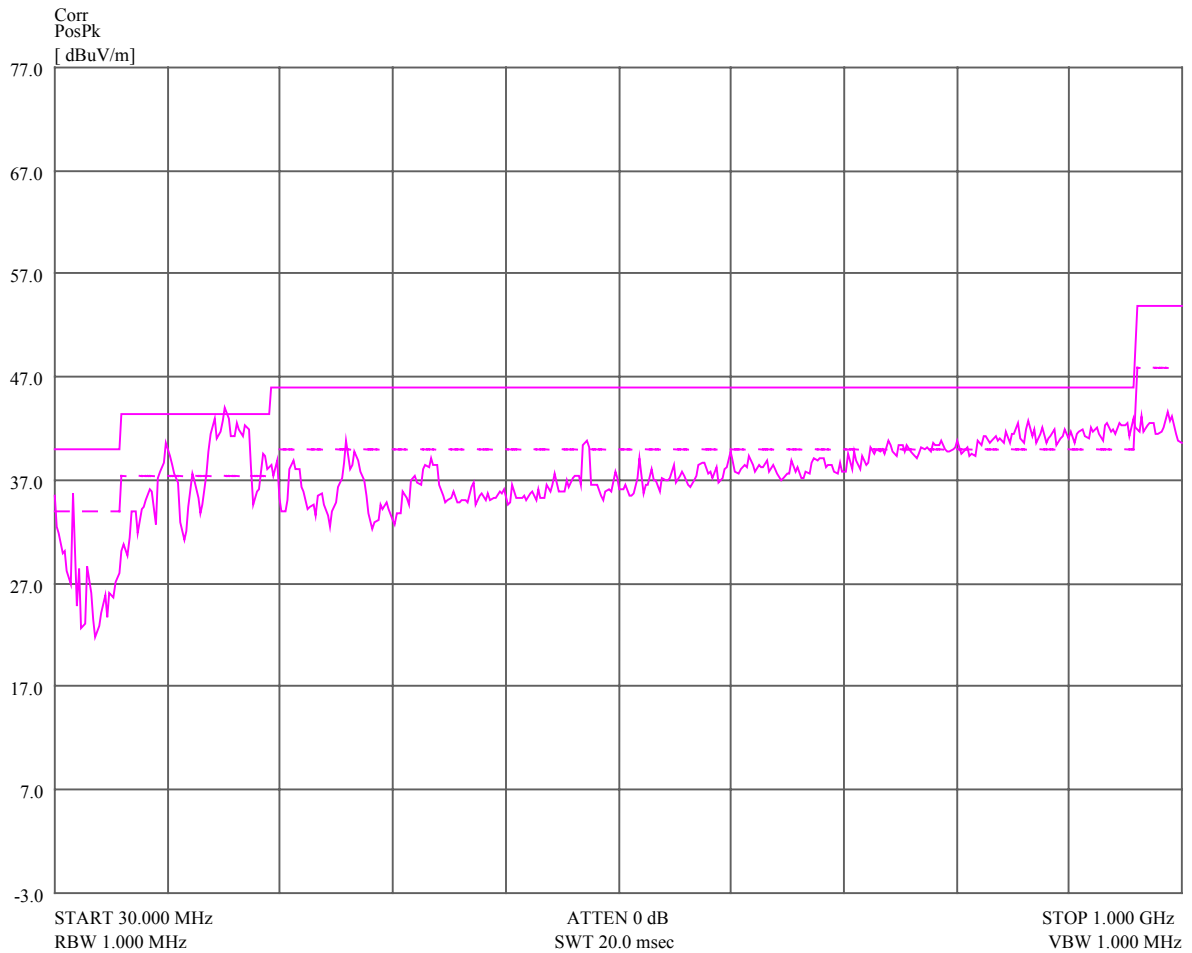
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)
1	41.220248	33.45	40.00	-6.55	1.09	51
2	43.782500	34.88	40.00	-5.12	1.02	60
3	49.196500	32.79	40.00	-7.21	1.20	28
4	107.39575	28.24	43.50	-15.26	.94	73
5	146.67600	22.22	43.50	-21.28	.95	352
6	168.49000	29.68	43.50	-13.82	.96	204
7	200.01800	30.16	43.50	-13.34	1.52	88
8	280.00851	32.24	46.00	-13.76	1.52	95
9	500.03324	40.17	46.00	-5.83	1.29	92

#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

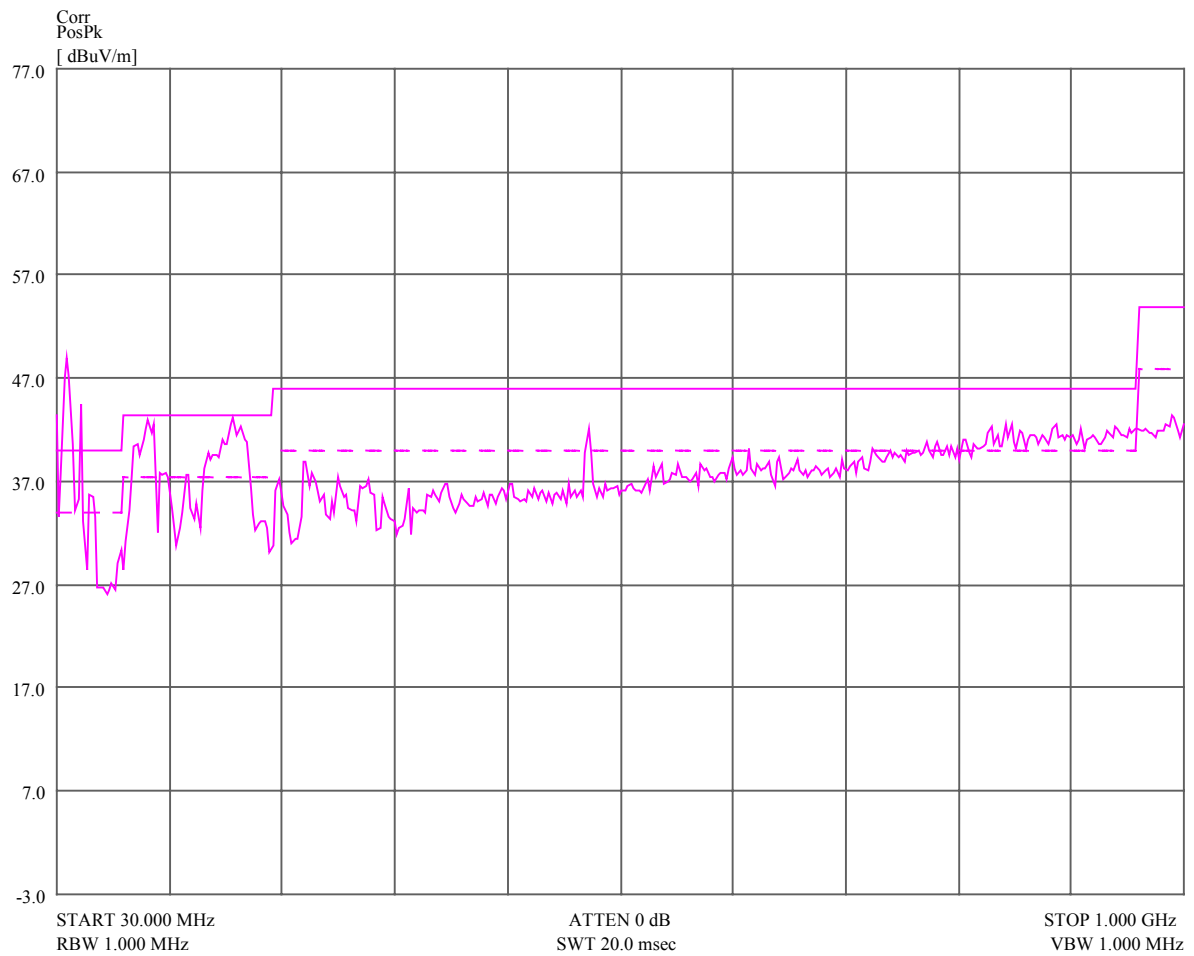
Both Horizontal, Vertical Max hold Peak traces were recorded for verification.

## Horizontal





## Vertical

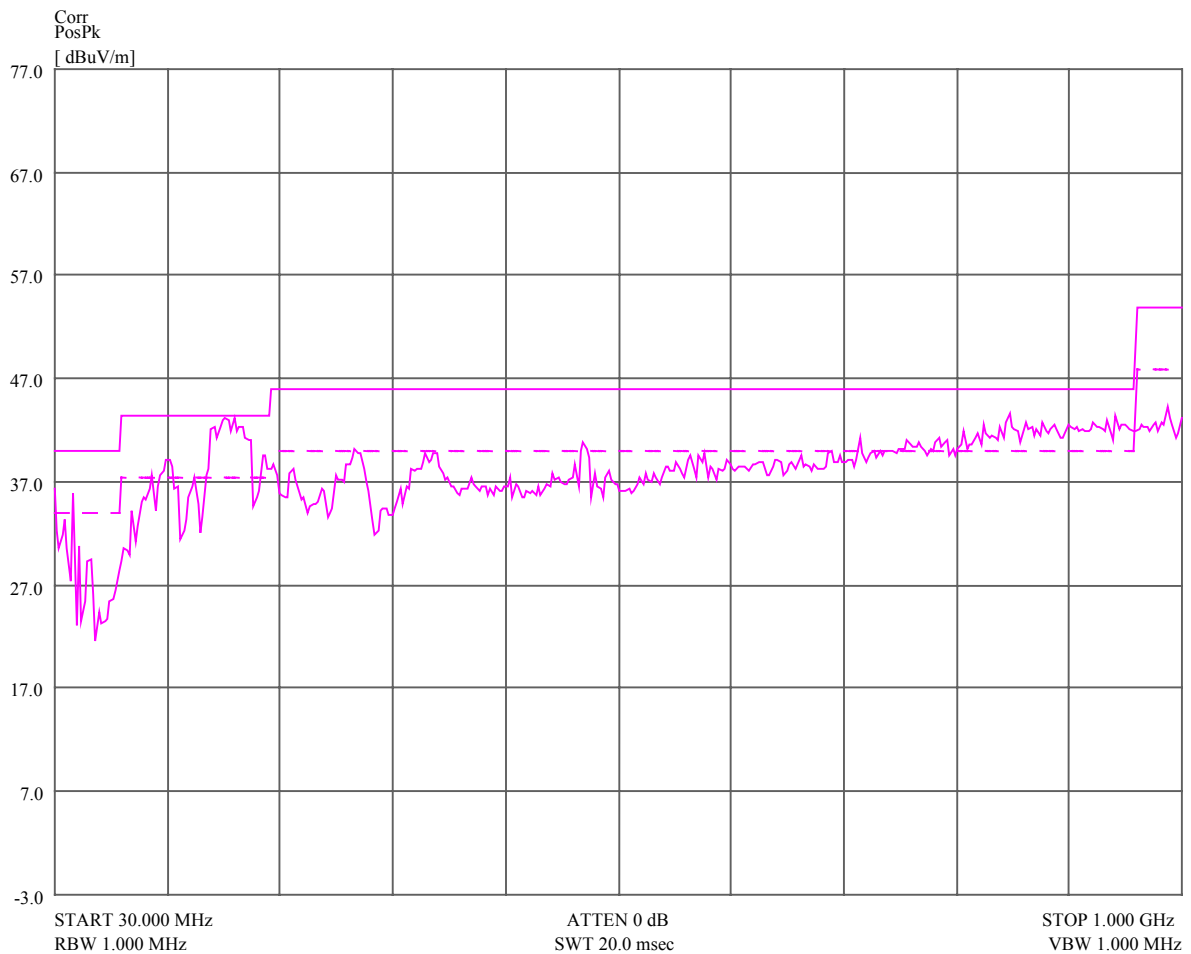




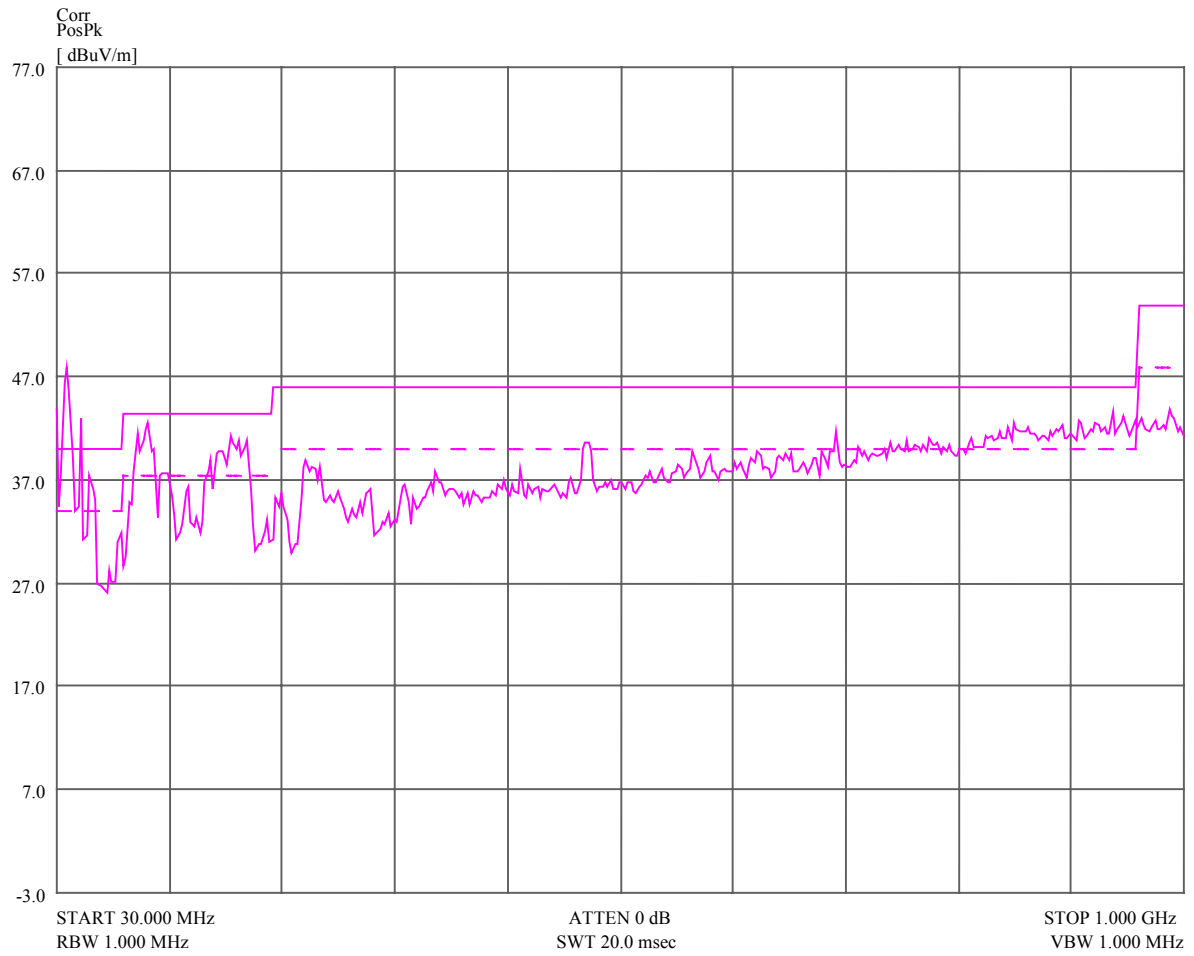
<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400,
<b>MODE</b>	Channel 6,11,52,165	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH	<b>TESTED BY:</b> Sandra Sohn	

Both Horizontal, Vertical Max hold Peak traces were recorded for verification.

#### Horizontal



# Vertical



#### 4.2.8 TEST RESULTS (B): Harmonics & Spurious emissions

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 1&6;(11Mbps)  Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	1000-18000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	MaxPeak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH	<b>TESTED BY:</b> Sandra Sohn	

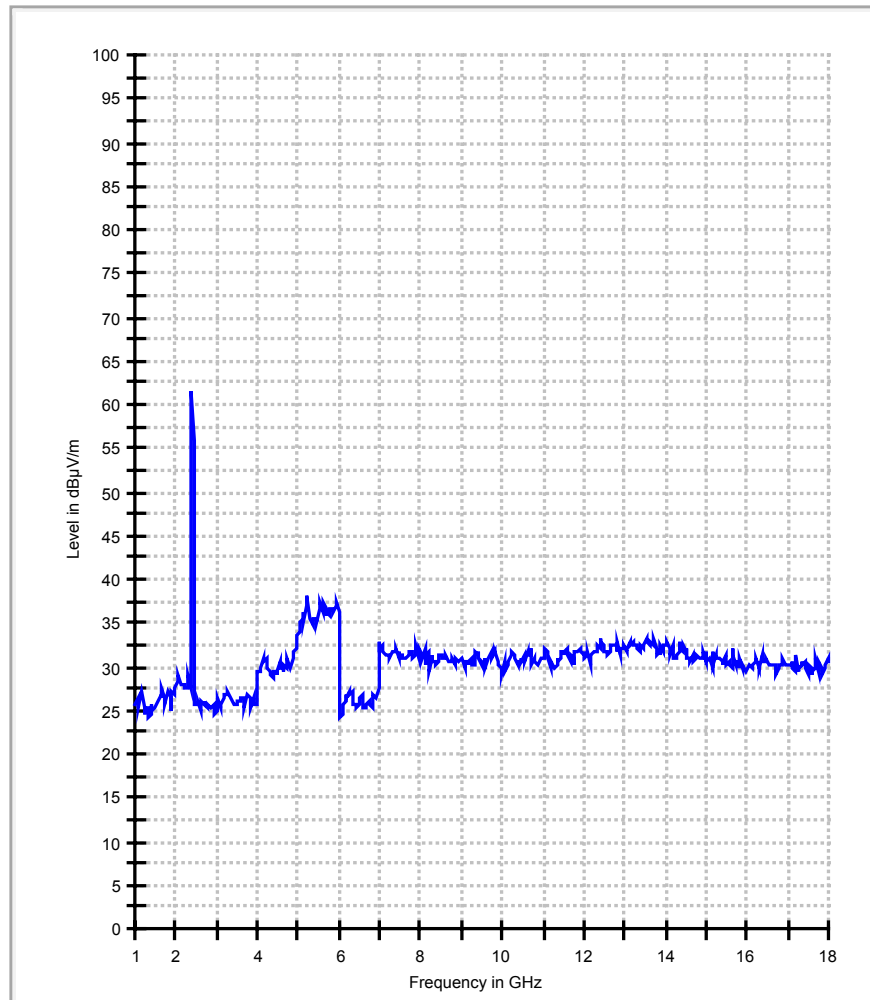
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
F	2430.8 (P)	92.1 (P)			1.2	4	61.3 (P)	30.8
F	2430.8 (AV)	80.1 (AV)			1.2	4	49.3 (AV)	30.8
1* <sub>R</sub>	4270.5 (P)	46.6 (P)	74 (P)	-27.4	1	12	43.8 (P)	2.8
2* <sub>R</sub>	4917 (P)	49.15 (P)	74 (P)	-24.85	1	13	43.2 (P)	5.95
3* <sub>R</sub>	7404 (P)	45.6 (P)	74 (P)	-28.4	1	8	37.1 (P)	8.5
4*	9857 (P)	46.1 (P)	72.1 (P)	-26	1	2	35.7 (P)	10.4
5* <sub>R</sub>	12310 (P)	50.75 (P)	74 (P)	-23.25	1	4	37.6 (P)	13.15

#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247 and per 15.205.
6. \* Pre-amp and Filter are used
7. F is fundamental.
8. <sub>R</sub> is for restricted band.

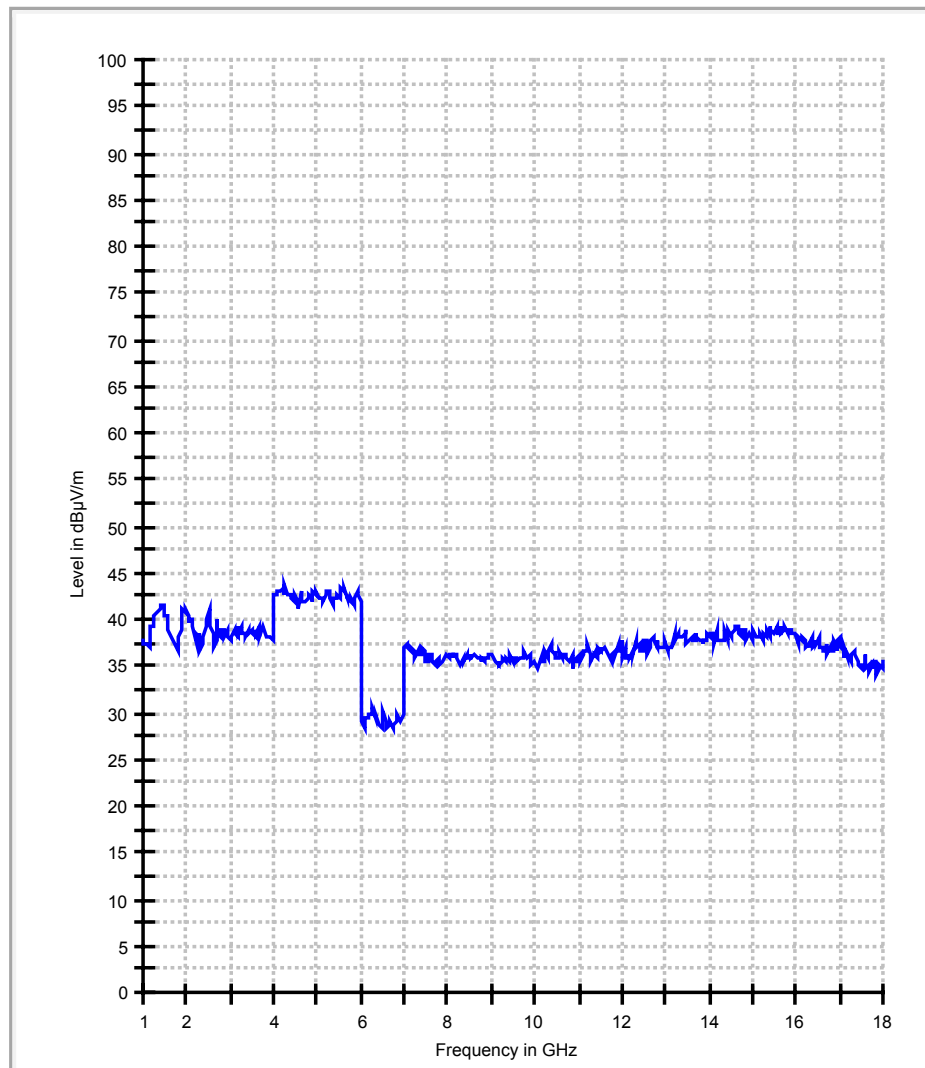
Vertical MaxPeak before correction (without preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



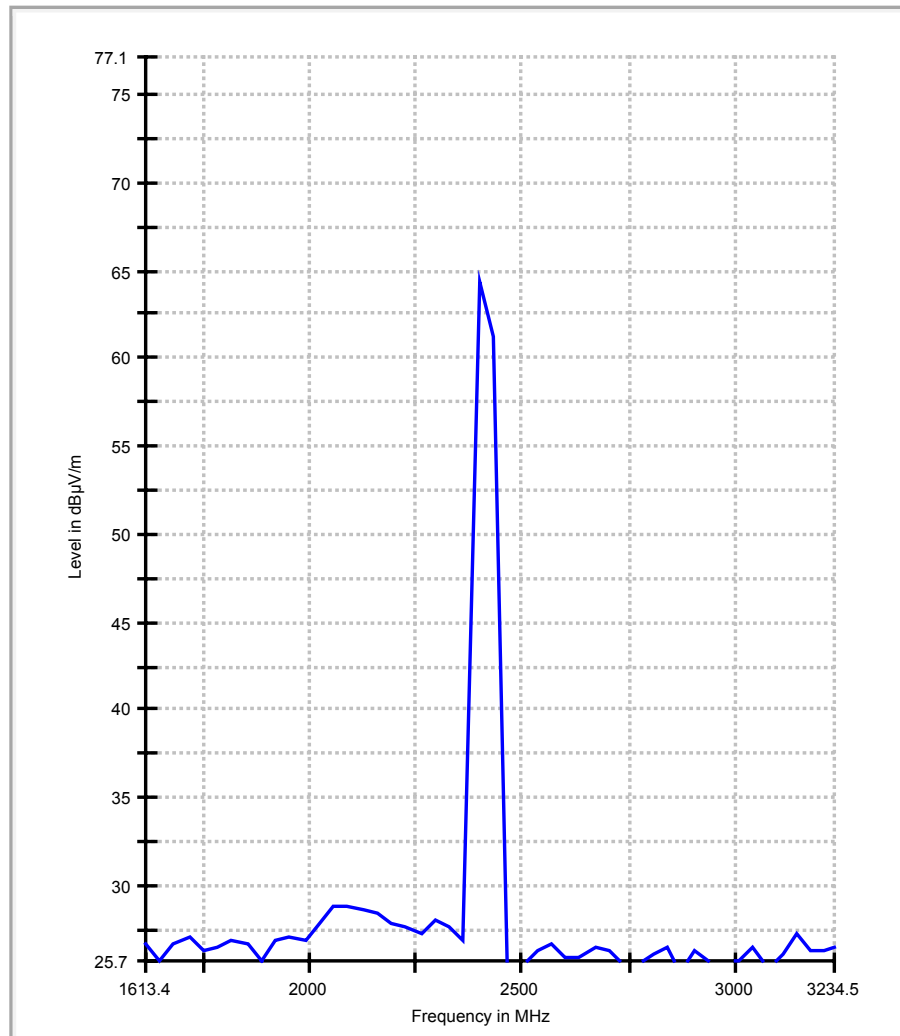
### Vertical MaxPeak before correction (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



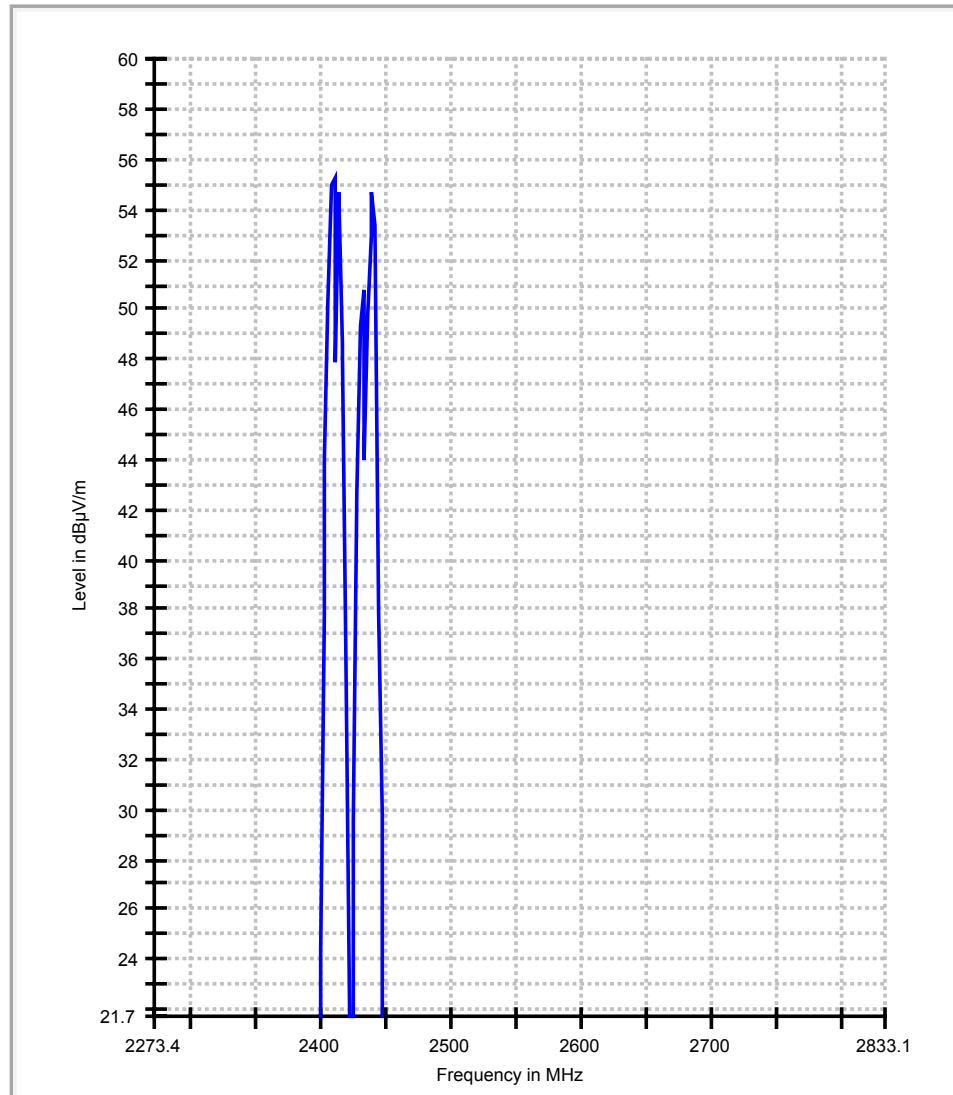
Vertical MaxPeak before correction (without preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



Vertical Average before correction (without preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz



## Harmonics &amp; Spurious emissions:1-18GHz

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6&11;(11Mbps)  Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	1000-18000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	MaxPeak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 40%RH	<b>TESTED BY:</b> Sandra Sohn	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
F	2430.8 (P)	92.9 (P)			1.2	4	62.1 (P)	30.8
F	2430.8 (AV)	68.6 (AV)			1.2	4	37.8 (AV)	30.8
1* <sub>R</sub>	4270.5 (P)	48.1 (P)	74 (P)	-25.9	1	12	45.9 (P)	2.2
2* <sub>R</sub>	4917 (P)	48.65 (P)	74 (P)	-25.35	1	13	42.7 (P)	5.95
3* <sub>R</sub>	7404 (P)	45.8 (P)	74 (P)	-28.2	1	8	37.3 (P)	8.5
4*	9857 (P)	46 (P)	72.9 (P)	-26.9	1	2	35.6 (P)	10.4
5* <sub>R</sub>	12310 (P)	50.65 (P)	74 (P)	-23.35	1	4	37.5 (P)	13.15

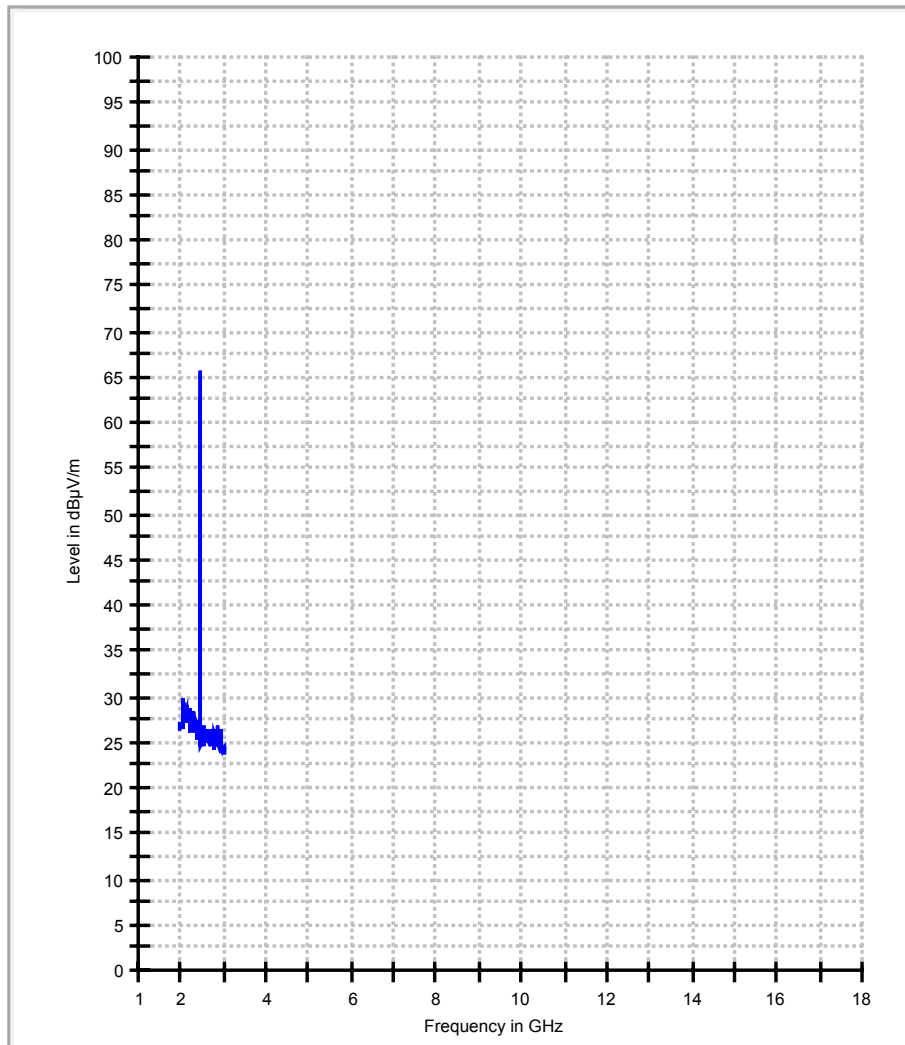
**REMARKS:**

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247 and per 15.205.
6. \* Pre-amp and Filter are used
7. F is fundamental.
8. <sub>R</sub> is for restricted band.



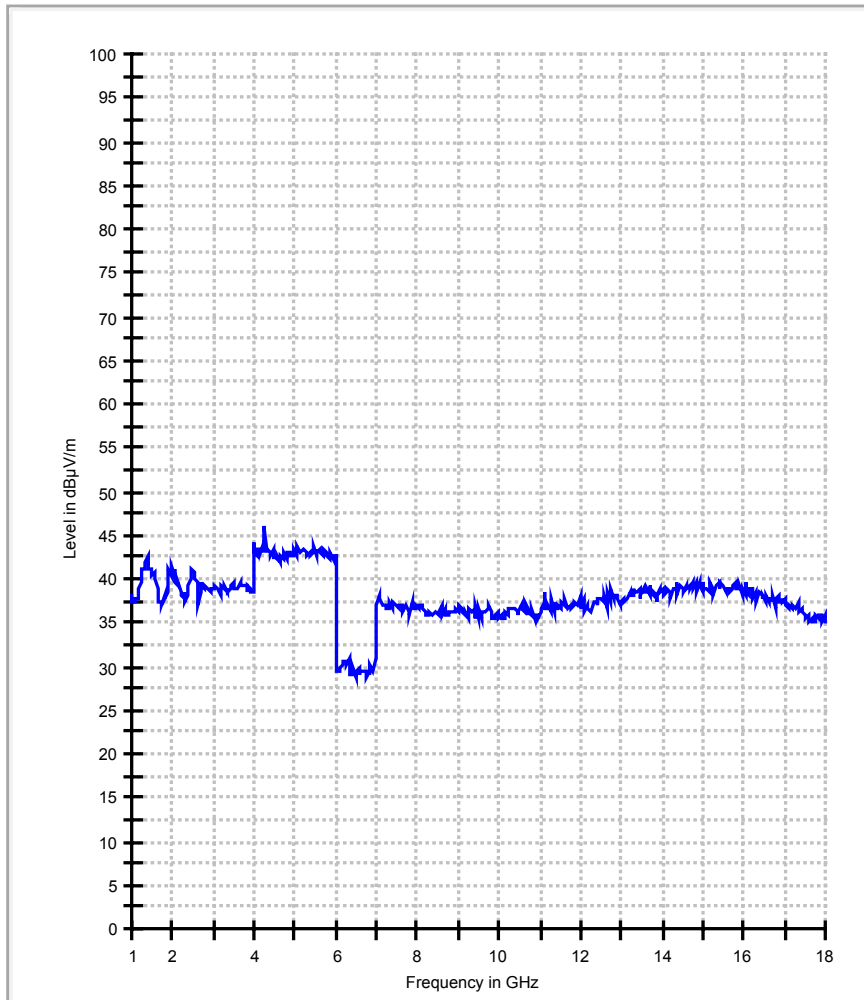
Vertical MaxPeak before correction (without pre-amp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



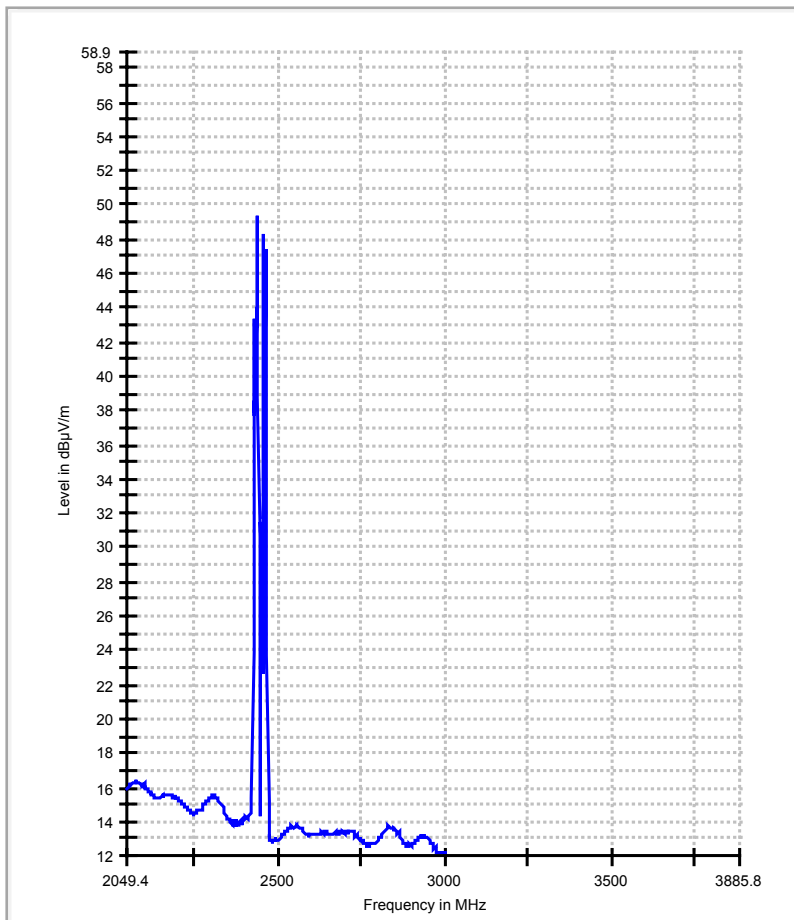
# Vertical MaxPeak before correction (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



# Vertical Average before correction (without preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz



## Harmonics &amp; Spurious emissions:1-18GHz

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6 (Turbo mode) Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	1000-18000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Peak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	21deg. C, 45%RH	<b>TESTED BY:</b> Sandra Sohn	

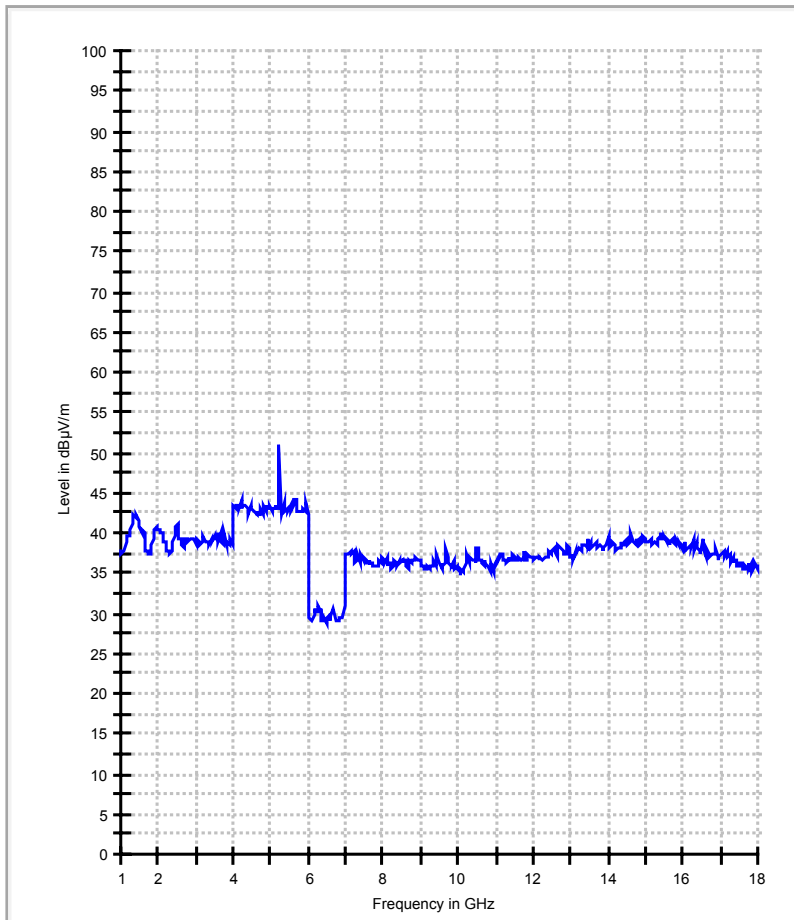
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
F	2430.8 (P)	92.1 (P)			1.2	4	61.3 (P)	30.8
F	2430.8 (AV)	80.1 (AV)			1.2	4	49.3 (AV)	30.8
1* <sub>R</sub>	4849 (P)	48.7 (P)	74 (P)	-25.3	1	5	42.8 (P)	5.9
2* <sub>R</sub>	7302 (P)	45 (P)	74 (P)	-29	1	13	36.5 (P)	8.5
3*	9755 (P)	44.9 (P)	72.1 (P)	-27.2	1	6	36.3 (P)	8.6

**REMARKS:**

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247 and per 15.205.
6. \* Pre-amp and Filter are used
7. F is fundamental.
8. <sub>R</sub> is for restricted band.

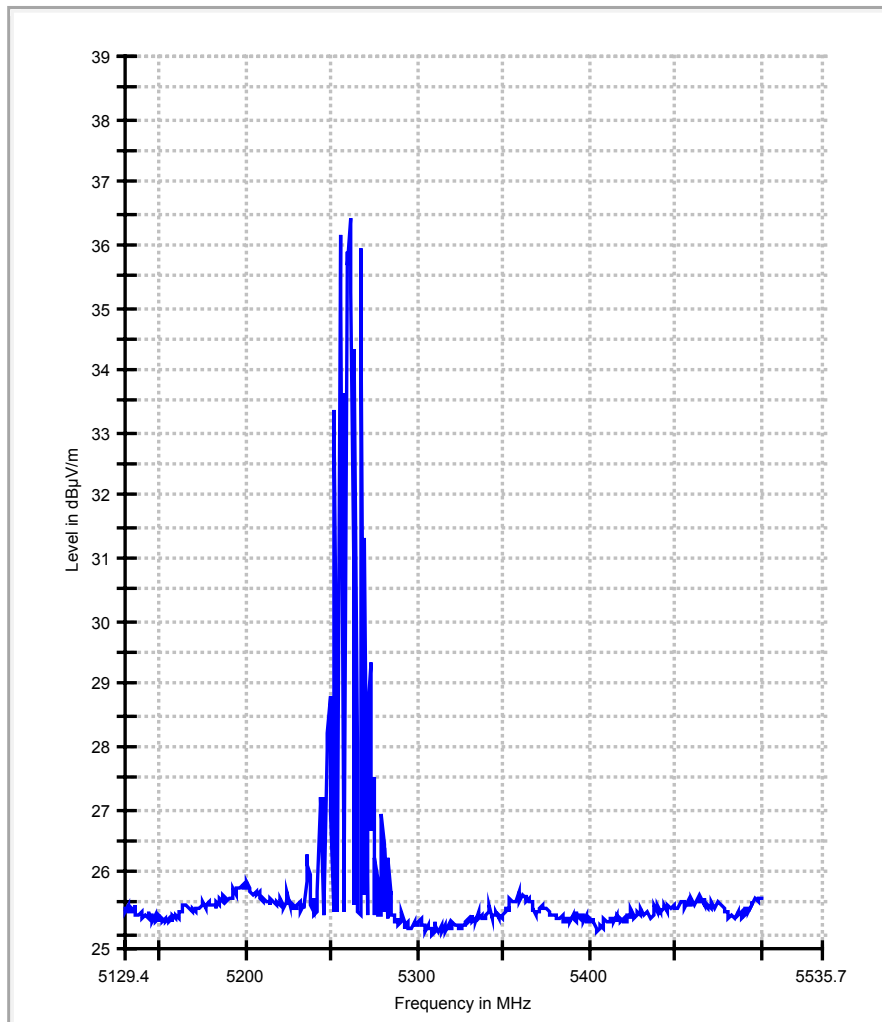
Vertical MaxPeak before correction (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



Vertical Average before correction No.1\* (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz



#### 4.2.9 TEST RESULTS (C) : Harmonics & Spurious emissions

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 1, 6 ;(11Mbps)  Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	18000-40000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Peak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 48%RH	<b>TESTED BY:</b> Sandra Sohn	

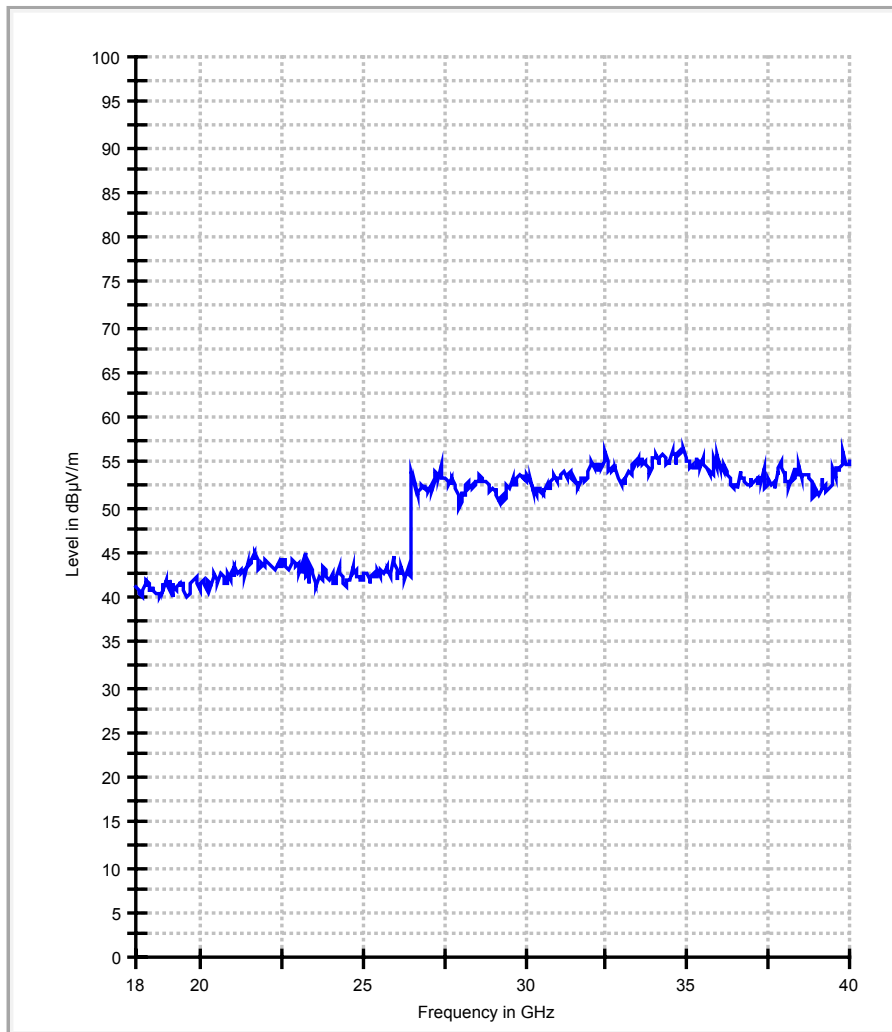
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
F	2430.8 (P)	92.1 (P)			1.2	4	61.3 (P)	30.8
F	2430.8 (AV)	80.1 (AV)			1.2	4	49.3 (AV)	30.8
1*	32416 (P)	70.6 (P)	72.1 (P)	-1.5	1	4	50.4 (P)	20.2
1^	32435 (AV)	43.151 (AV)	52.1 (AV)	-8.949	1	4	32.951	10.2
2*	34841 (P)	70.5 (P)	72.1 (P)	-1.6	1	4	50.3 (P)	20.2
2^	34837 (AV)	44.195 (AV)	52.1 (AV)	-7.905	1	4	33.995 (AV)	10.2

#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB) - ^ Distance factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. \* Pre-amp and Filter are used.
7. F is fundamental.
8. ^ is measured at 1m.

### Vertical MaxPeak before correction (with preamp and filter)

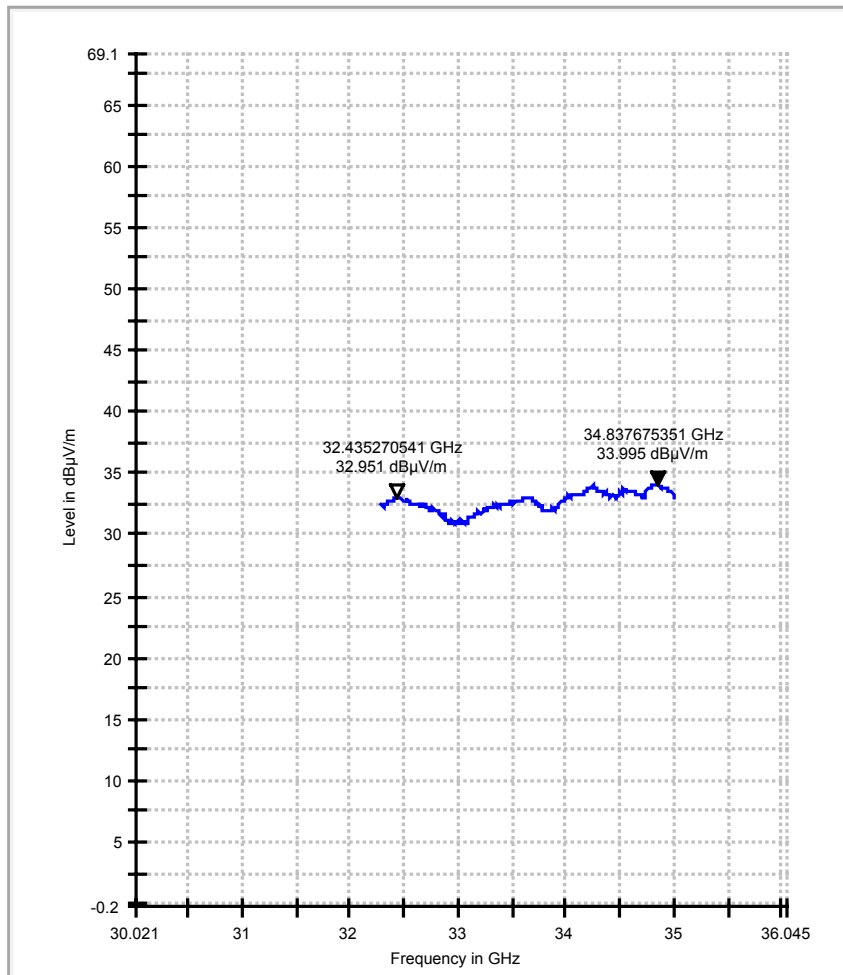
Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz





Vertical Average before correction (with preamp and filter and at 1m)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz



### Harmonics & Spurious emissions:18-40GHz

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6,11 ;(11Mbps)  Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	18000-40000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Peak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 48%RH	<b>TESTED BY:</b> Sandra Sohn	

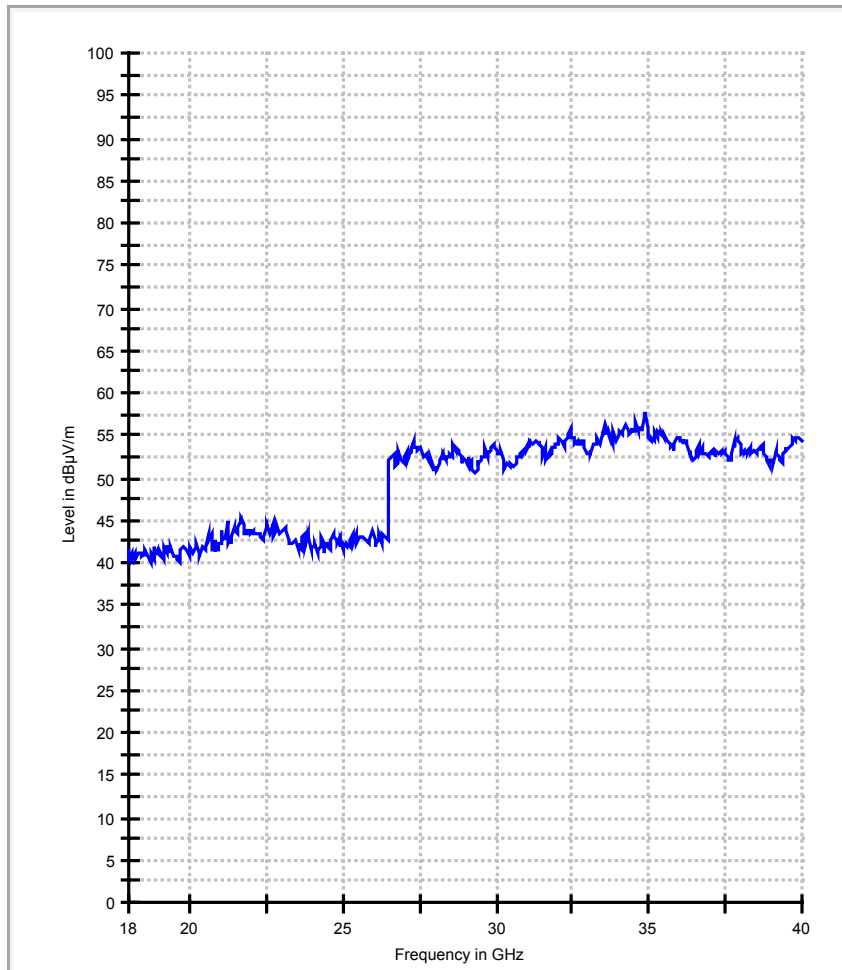
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
F	2430.8 (P)	92.9 (P)			1.2	4	62.1 (P)	30.8
F	2430.8 (AV)	68.6 (AV)			1.2	4	37.8 (AV)	30.8
1*	32416 (P)	71.1 (P)	72.9 (P)	-1.8	1	5	50.9 (P)	20.2
1^	32418 (AV)	43.654 (AV)	52.9 (AV)	-9.246	1	5	33.454 (AV)	10.2
2*	34841 (P)	70.6 (P)	72.9 (P)	-2.3	1	6	50.4 (P)	20.2
2^	34840 (AV)	44.325 (AV)	52.9 (AV)	-8.575	1	6	34.125 (AV)	10.2

#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB) - ^ Distance factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. \* Pre-amp and Filter are used.
7. F is fundamental.
8. ^ is measured at 1m.

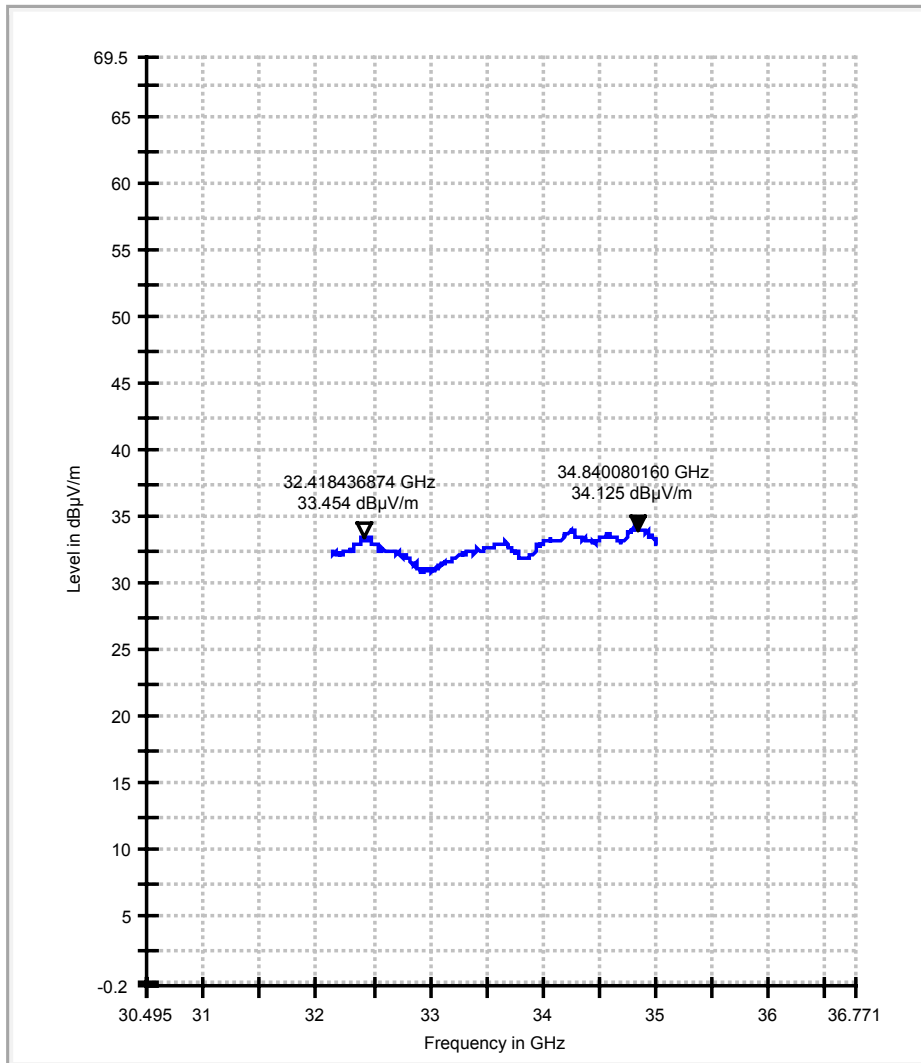
# Vertical MaxPeak before correction (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



Vertical Average before correction (with preamp and filter and at 1m)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz



### Harmonics & Spurious emissions:18-40GHz

<b>EUT</b>	IEEE 802.11 A/B/G WIRELESS ACCESS POINT	<b>MODEL</b>	ACCESS / ONE NETWORK: OWS 2400
<b>MODE</b>	Channel 6 (Turbo mode)  Vertically-Polarized Omni-Directional Antenna Gain: 12.0 dBi at 2.4-2.5 GHz  Vertically-Polarized Directional 120° Sector Antenna Gain: 16.4 dBi at 2.4-2.5 GHz	<b>FREQUENCY RANGE</b>	18000-40000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>DETECTOR FUNCTION</b>	Peak (P) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 45%RH	<b>TESTED BY:</b> Sandra Sohn	

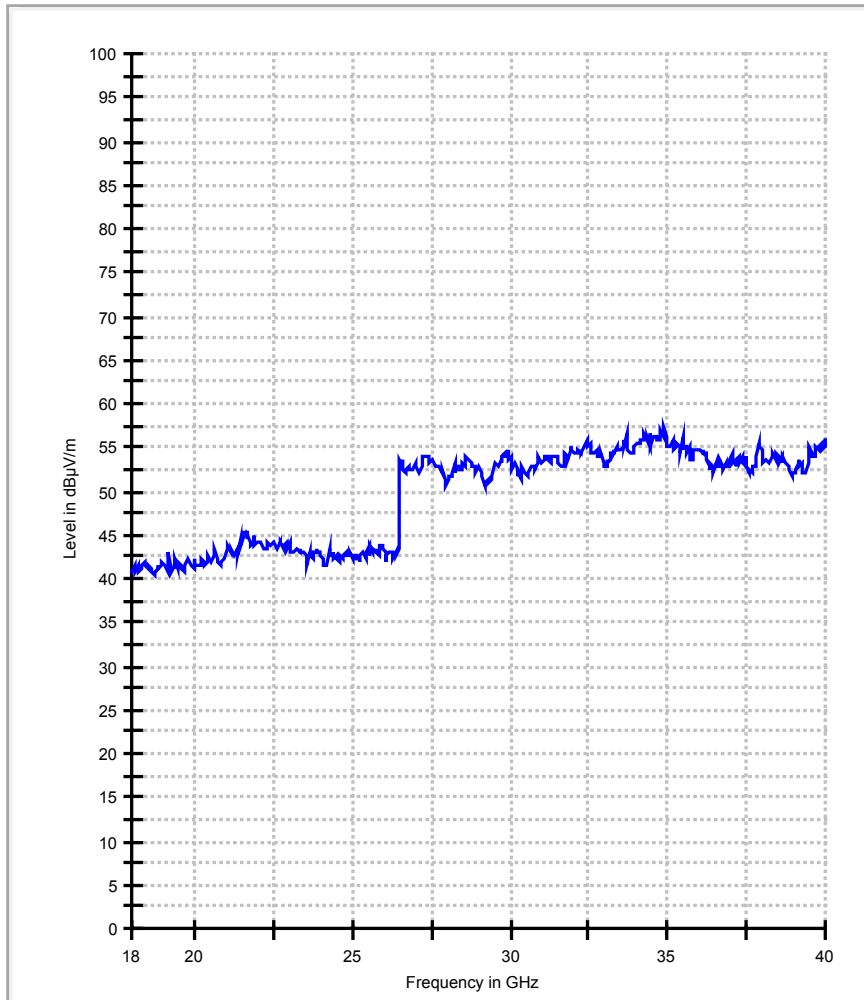
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
F	2430.8 (P)	92.1 (P)			1.2	4	61.3 (P)	30.8
F	2430.8 (AV)	80.1 (AV)			1.2	4	49.3 (AV)	30.8
1*	34136 (P)	70.6 (P)	72.1 (P)	-1.5	1	3	50.4 (P)	20.2
1^	34134 (AV)	43.475 (AV)	52.1 (AV)	-8.625	1	3	33.275 (AV)	10.2
2*	34709 (P)	70.9 (P)	72.1 (P)	-1.2	1	2	50.7 (P)	20.2
2^	34699 (AV)	43.42 (AV)	52.1 (AV)	-8.68	1	2	33.220 (AV)	10.2

#### REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – \*Pre-Amplifier (dB) + \*Filter Loss (dB) - ^Distance factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247 (20dB below from fundamental level).
6. \* Pre-amp and Filter are used.
7. F is fundamental.
8. ^ is measured at 1m.

Vertical MaxPeak before correction (with preamp and filter)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 1 MHz



Vertical Average before correction (with preamp and filter and at 1m distance)

Resolution Bandwidth: 1MHz  
Video Bandwidth: 300 Hz

