

# FCC COMPLIANCE REPORT

for

Unisen Industrial Limited

Wireless Handheld Keyboard and Mouse Touch Pad

Model Number: KP-810-XX

(XX in the model designation may be any alphanumeric characters denoting different configuration options.)

Prepared for : Unisen Industrial Limited  
Address : 128 Industrial Zone, Huangjiang Town, Dongguan City,  
Guangdong, China

Prepared By : NS Technology Co., Ltd.  
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Report Number : NSE-F09063397  
Date of Test : Jun. 15~Jul. 20, 2009  
Date of Report : Jul. 21, 2009





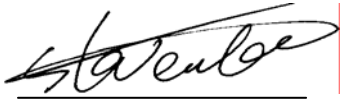
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# NS Technology Co., Ltd.

<b>Applicant:</b>	Unisen Industrial Limited		
<b>Address:</b>	128 Industrial Zone,Huangjiang Town,Dongguan City,Guangdong,China		
<b>Manufacturer:</b>	Unisen Industrial Limited		
<b>Address:</b>	128 Industrial Zone,Huangjiang Town,Dongguan City,Guangdong,China		
<b>E.U.T:</b>	Wireless Handheld Keyboard and Mouse Touch Pad		
<b>Model Number:</b>	KP-810-XX (XX in the model designation may be any alphanumeric characters denoting different configuration options.)		
<b>Trade Name:</b>	-----	<b>Operating Frequency:</b>	2402MHz~2479MHz
<b>Date of Receipt:</b>	May 14, 2009	<b>Date of Test:</b>	Jun. 15~Jul. 20, 2009
<b>Test Specification:</b>	FCC PART 15: 2008 Section 15.249 ANSI C63.4:2003		
<b>Test Result:</b>	The equipment under test was found to be compliance with the requirements of the standards applied.		
		<b>Issue Date: Jul. 21, 2009</b>	
Tested by:	Reviewed by:	Approved by:	
			
Jade / Engineer	Iceman Hu / Supervisor	Steven Lee / Manager	
<b>Other Aspects:</b>	None.		
Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of NS Technology Co., Ltd.			



# 1. GENERAL PRODUCT INFORMATION

## 1.1. Product Function

Details please refer to Technical Construction Form and User Manual.

## 1.2. Description of Device (EUT)

E.U.T.	: Wireless Handheld Keyboard and Mouse Touch Pad
Model No.	: KP-810-02
Operating Frequency	: 2402MHz-2479MHz
Number of Channels	: 3 Channels
Channel Separation	: 5MHz
Modulation type	: DSSS
Transfer rate	: 2.37 Mb/s
Antenna Type	: Integral
Output power	: -19dBm(Maximum measured)
Antenna Assembly Gain	: 0dBi (maximum)
System Input Voltage	: Nominal Voltage: DC 5V
Temperature Range(Operating)	: 0 ~ +35°C

## 1.3. Independent Operation Modes

The tested modes are:

1.3.1. Low Channel (2402MHz)

1.3.2. Middle Channel (2444MHz)

1.3.3. High Channel (2479MHz)



## 2. TEST SITES

### 2.1. Test Facilities

EMC Lab : Certificated by TUV Rheinland, Germany.  
Date of registration: July 28, 2003

Certificated by FCC, USA  
Registration No.: 502831  
Date of registration: February 09, 2009

Certificated by VCCI, Japan  
Registration No.: R-2527 & C-2770  
Date of registration: March 23, 2007

Certificated by CNAL, CHINA  
Registration No.: L1744  
Date of registration: November 25, 2004

Certificated by Intertek ETL SEMKO  
Registration No.: TMP-013  
Date of registration: June 11, 2005

Certificated by TUV/PS, Hong Kong  
Date of registration: December 1, 2005

Certificated by Industry Canada  
Registration No.: 5936A  
Date of registration: March 4, 2009

Certificated by ATCB, America  
Date of registration: August 03, 2006

Name of Firm : NS Technology Co., Ltd.

Site Location : Chenwu Industrial Zone, Houjie Town, Dongguan City,  
Guangdong, China



## 2.2. List of Test and Measurement Instruments

### 2.2.1. For radiated emission test (30MHz-1GHz, 10m Chamber)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	Jan.19, 09	Jan.19,10
Spectrum Analyzer	HP	E7405A	MY45118807	May 31,09	May 31,10
Bilog Antenna	Teseq	CBL 6111D	25758	Oct. 15,08	Oct. 15,09
Signal Amplifier	Agilent	8447D	2944A11174	Jan.19,09	Jan.19,10
50Ω Coaxial Switch	ANRITSU	MP59B	6200530579	Jan.19,09	Jan.19,10
RF Cable	IMRO	IMRO-400	10m Cable 1#10m	Jan.19,09	Jan.19,10
RF Cable	IMRO	IMRO-400	10m Cable 1#3m	Jan.19,09	Jan.19,10
RF Cable	DRAKA	M17/84-RG223	10m Cable 3#	Jan.19,09	Jan.19,10

### 2.2.2. For radiated emission test(1GHz-18GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	HP	8593E	3448U00806	May 31,09	May 31,10
Horn Antenna	EMCO	3117	00062558	Jan. 19,09	Jan. 19,11
Signal Amplifier	BURGEON	PEC-38-30M18G -12-SFF	NSEMC001	May 31,09	May 31,11
RF Cable	DRAKA	M06/25-RG102	966Cable 3#24G	May 2,09	May 2,10

### 2.2.3. For 20dB bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde & Schwarz	ESPI	100302	May 31,09	May 31,10

### 2.2.4. For Band edge compliance test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESCS30	100199	May 31,09	May 31,10
Spectrum Analyzer	HP	8593E	3448U00806	May 31,09	May 31,10
Signal Amplifier	Agilent	8447D	2944A10488	May 2,09	May 2,10
Horn Antenna	EMCO	3117	00062558	Jan. 13,09	Jan. 13,11

### **3. TEST SET-UP AND OPERATION MODES**

#### **3.1. Principle of Configuration Selection**

The equipment under test (EUT) was configured to measure its highest possible radiated level. The test modes were adapted accordingly in reference to the Operating Instructions.

#### **3.2. Test Operation Mode and Test Software**

Refer to clause 1.4

#### **3.3. Special Accessories and Auxiliary Equipment**

None.

#### **3.4. Countermeasures to Achieve EMC Compliance**

None.



## 4. TEST SUMMARY

Test items and result lists

No.	Item	Standard	Results
1	Conduction Emission Test	FCC Part15C: 15.209 ANSI C63.4-2003	N/A
2	Radiated Emission Test	FCC Part15C: 15.249 ANSI C63.4-2003	PASS
3	Band Edge Compliance Test	FCC Part15: 15.249	PASS
4	20dB Bandwidth Test	FCC Part 15: 15.215	PASS

**Note:** N/A is an abbreviation for Not Applicable.



#### 4.1. Conducted Emissions

According to paragraph(f) of FCC Part 15 Section 15.207, measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation, and which do not operate from the AC power lines or contain provision for operation while connected to the AC power.



## 4.2. Radiated Emission

### 4.2.1. Test limits

- 1) FCC part 15C section 15.209
- 2) FCC part 15C section 15.249(a)

### 4.2.2. Test procedure

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency band of 30MHz to 1GHz, The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 to 4 m for horizontal and vertical polarizations. The broadband antenna (calibrated by dipole antenna) was used as a receiving antenna. At the frequency band of 1GHz to 25GHz, The measuring antenna moved from 1 to 4 m for horizontal and vertical polarization. The horn antenna was used as a receiving antenna.

The resolution bandwidth and video bandwidth of the test receiver was 120 KHz and 300KHz for Quasi-peak detection at frequency below 1GHz.

The resolution bandwidth and video bandwidth of the test receiver was 1MHz and 1MHz for Peak detection at frequency above 1GHz.

For Average measurement at frequency above 1GHz. The resolution bandwidth of the test receiver was 1MHz ; due to the shortest pulse width T is 116us, according the video bandwidth should not smaller than  $1/T$ , so the video bandwidth is 10Hz.

In 18GHz to 25GHz, The EUT was checked by Horn ANT . But the test result is background.

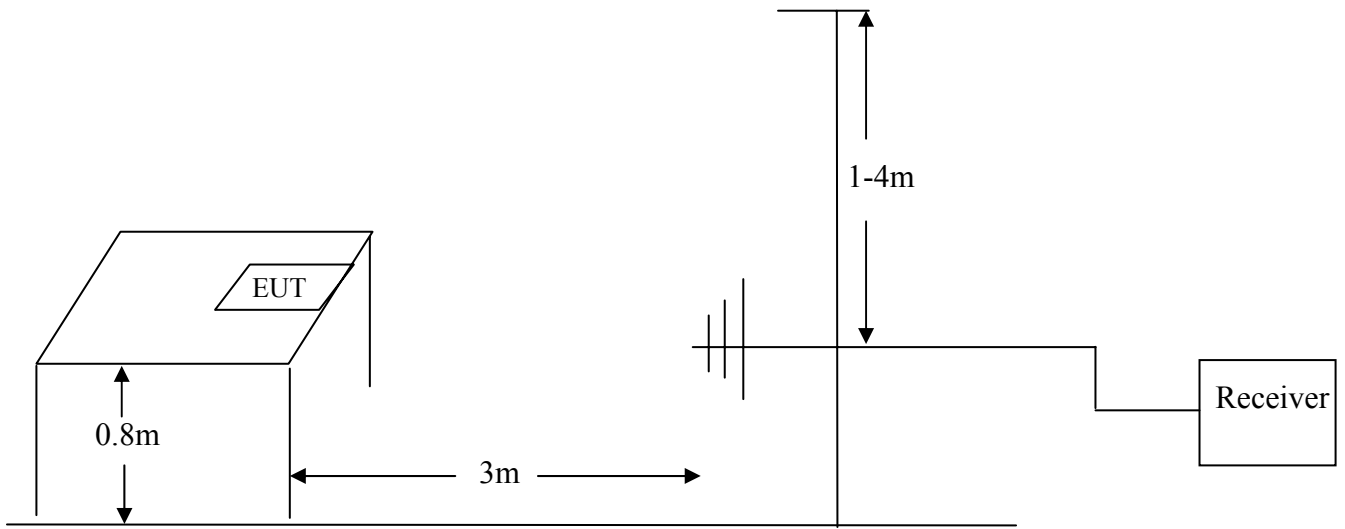
The EUT position(X. Y. Z) were checked and worse case was happened in Y position. So Y position was chose for find measurement.

The EUT was tested in Chamber Site.

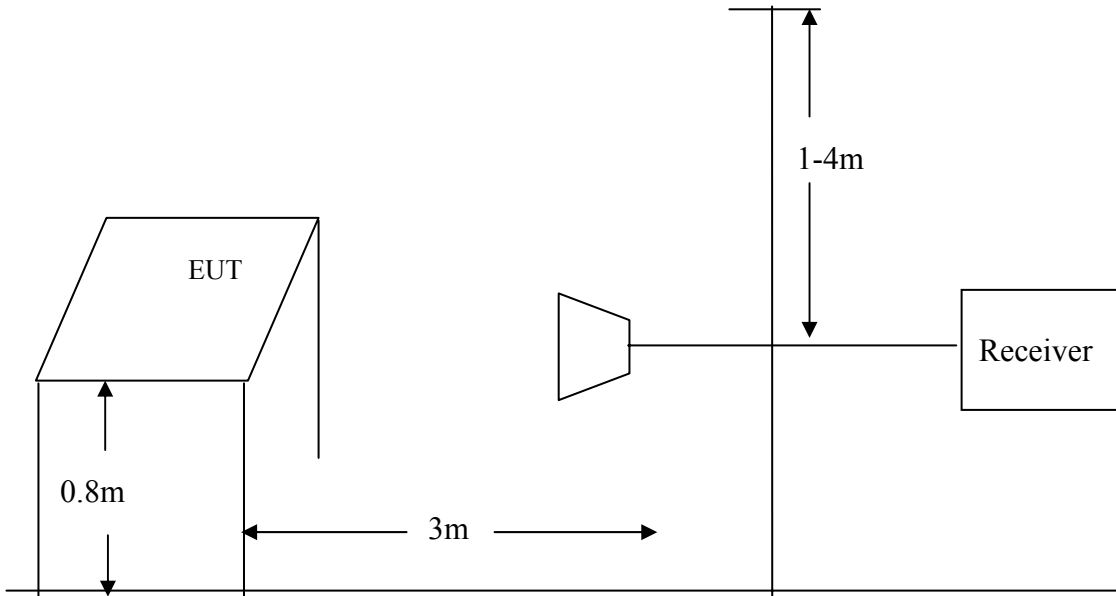


### 4.2.3. Test Setup Diagram

#### 4.2.3.1. Frequency range: 30MHz-1000MHz



#### 4.2.3.2. Frequency range: 1 GHz -18GHz



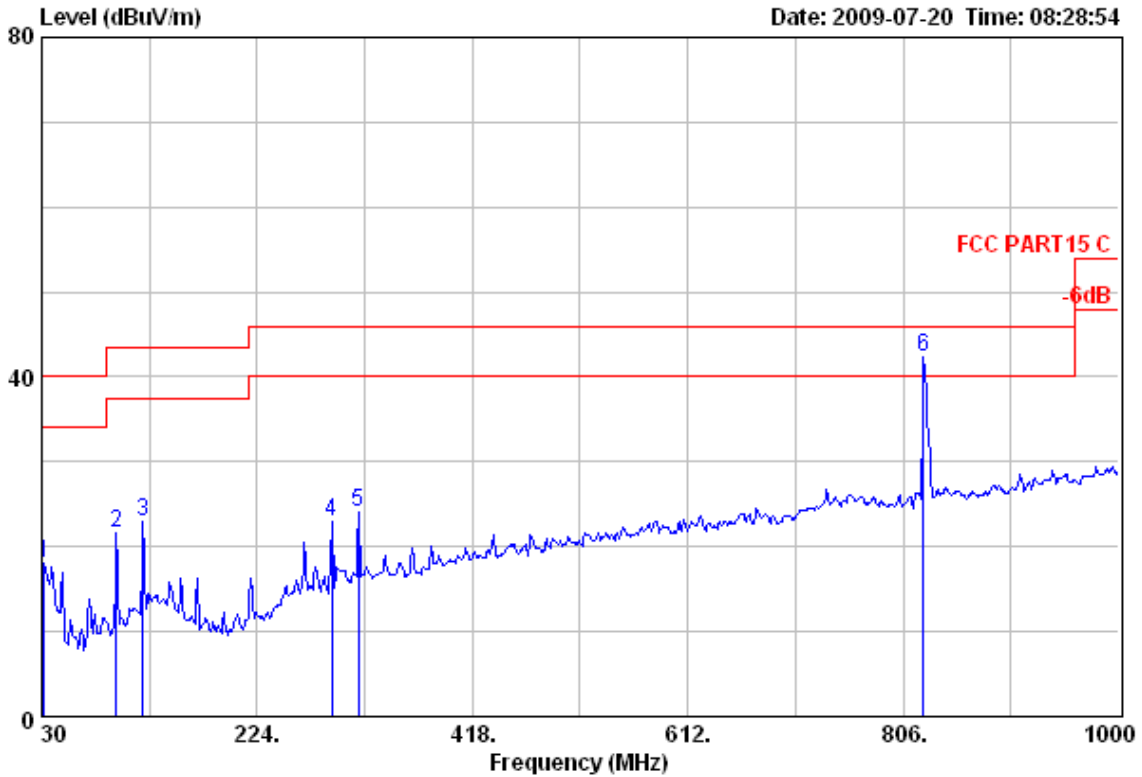
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Data: 77

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 08:28:54



Test Site : 966 Chamber  
 Limit : FCC PART15 C  
 Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX Mode

	Emission				Ant.	Cable		
	Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	31.94	17.99	40.00	22.01	0.12	17.28	0.59	QP
2	96.93	21.66	43.50	21.84	10.65	9.98	1.03	QP
3	121.18	22.89	43.50	20.61	9.92	11.82	1.15	QP
4	290.93	22.87	46.00	23.13	7.70	13.32	1.85	QP
5	315.18	24.03	46.00	21.97	8.06	14.03	1.94	QP
6	824.43	42.30	46.00	3.70	16.05	23.04	3.21	QP



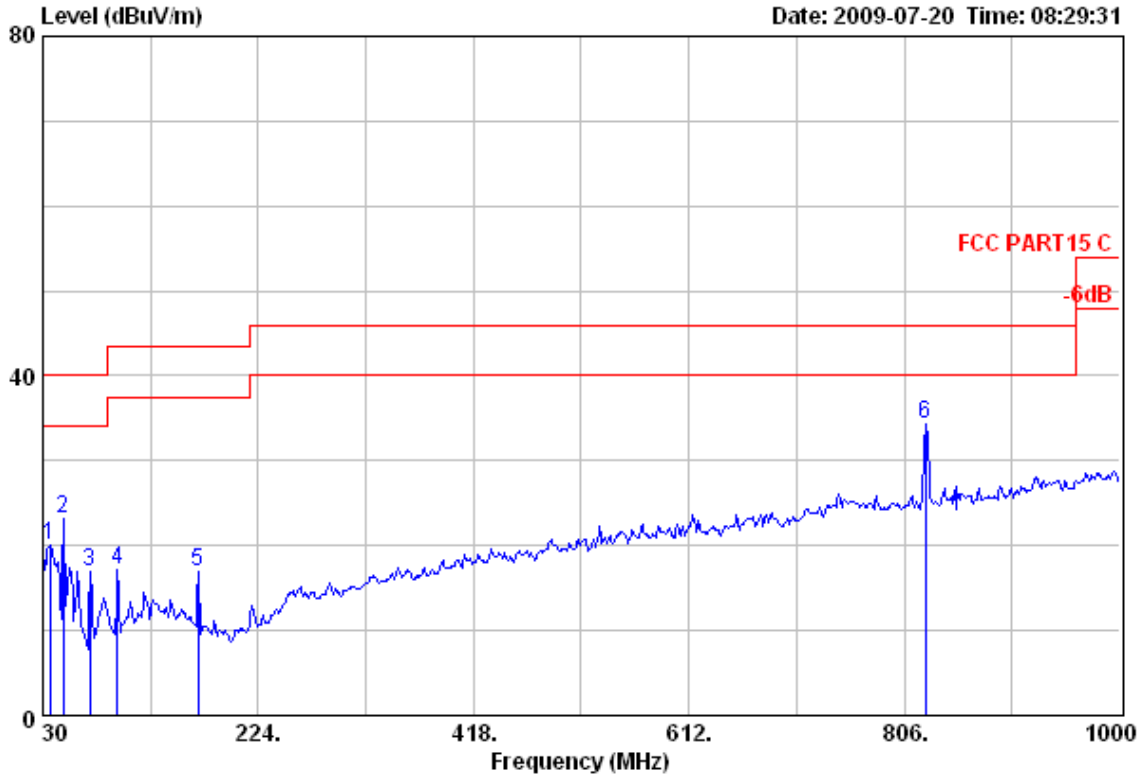
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Data: 78

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 08:29:31



Test Site : 966 Chamber  
 Limit : FCC PART15 C  
 Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX Mode

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1	36.79	40.00	19.92	3.72	15.76	0.60	QP
2	48.43	40.00	16.79	12.87	9.67	0.67	QP
3	72.68	40.00	23.05	9.46	6.64	0.85	QP
4	96.93	43.50	26.42	6.07	9.98	1.03	QP
5	169.68	43.50	26.61	5.59	9.90	1.40	QP
6	825.40	46.00	11.75	7.97	23.07	3.21	QP



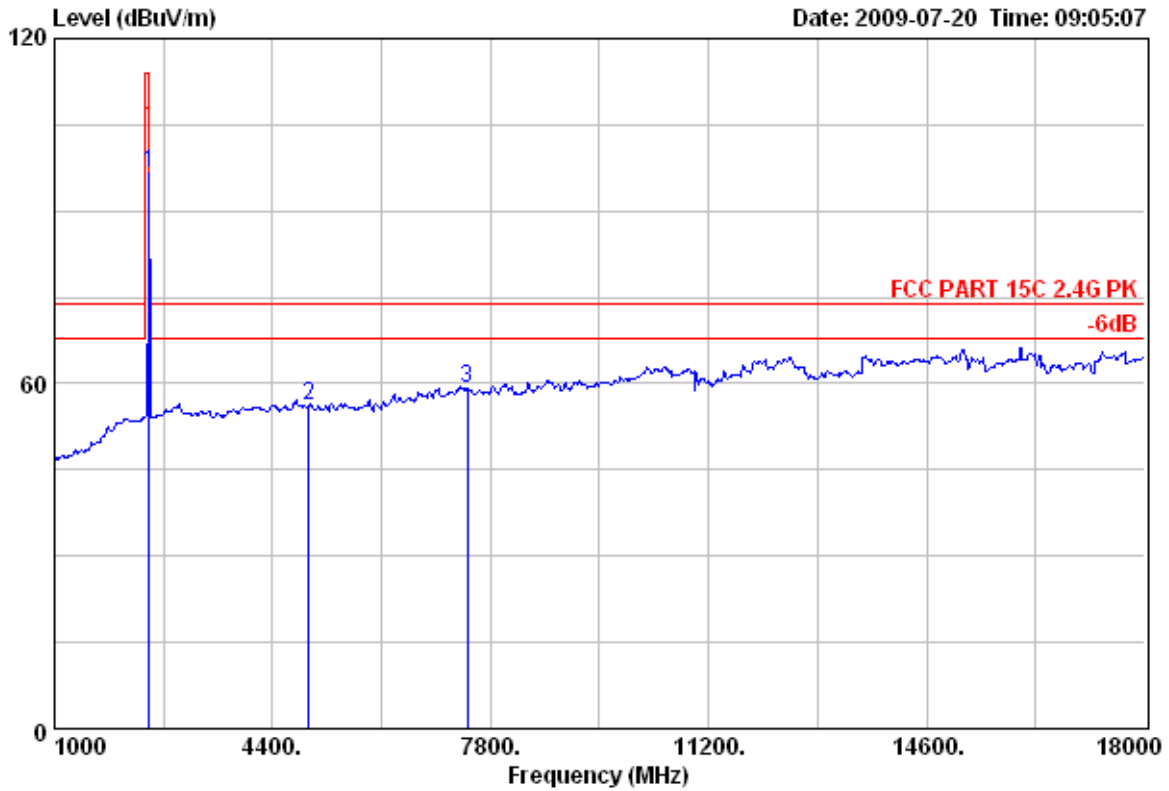
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Data: 79

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:05:07



Test Site : 966 Chamber  
 Limit : FCC PART 15C 2.4G PK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2479MHz

Freq. (MHz)	Emission		Margin (dB)	Reading (dBUV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBUV/m)	Limits (dBUV/m)					
1 2479.00	96.60	114.00	17.40	62.79	31.58	2.23	Peak
2 4958.00	56.21	74.00	17.79	19.15	34.67	2.39	Peak
3 7437.00	59.31	74.00	14.69	19.96	36.81	2.54	Peak



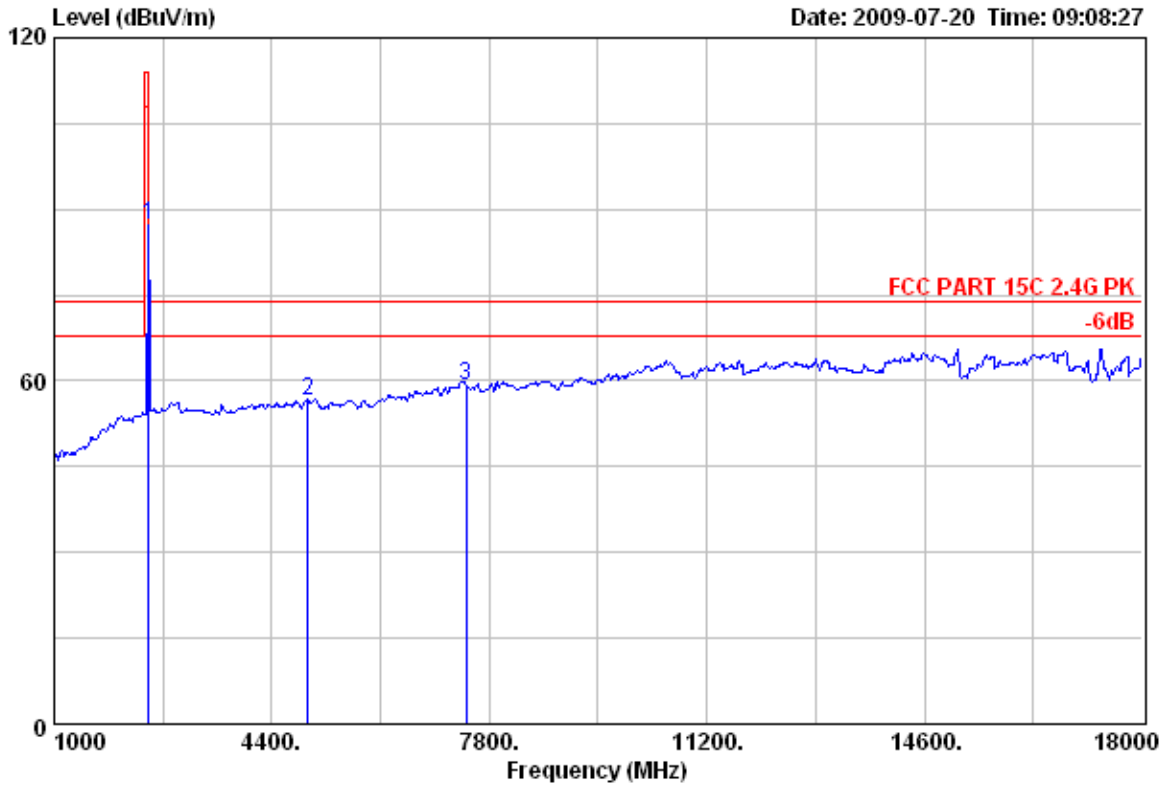
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Data: 80

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Date: 2009-07-20 Time: 09:08:27



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Test Site      : 966 Chamber
Limit          : FCC PART 15C 2.4G PK
Dis. / Ant.   : 3m 3117           Ant. Pol.: VERTICAL
EUT           : Wireless Handheld Keyboard and Mouse
               : Touch Pad
M/N           : KP-810-02
Power         : DC 5V
Test Engineer : Jade
Comment       : Temp.:25.2'C   Humi.:56%
Test Mode     : TX 2479MHz
    
```

Freq. (MHz)	Emission		Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)					
1 2479.00	87.16	114.00	26.84	53.35	31.58	2.23	Peak
2 4958.00	56.56	74.00	17.44	19.50	34.67	2.39	Peak
3 7437.00	59.14	74.00	14.86	19.79	36.81	2.54	Peak



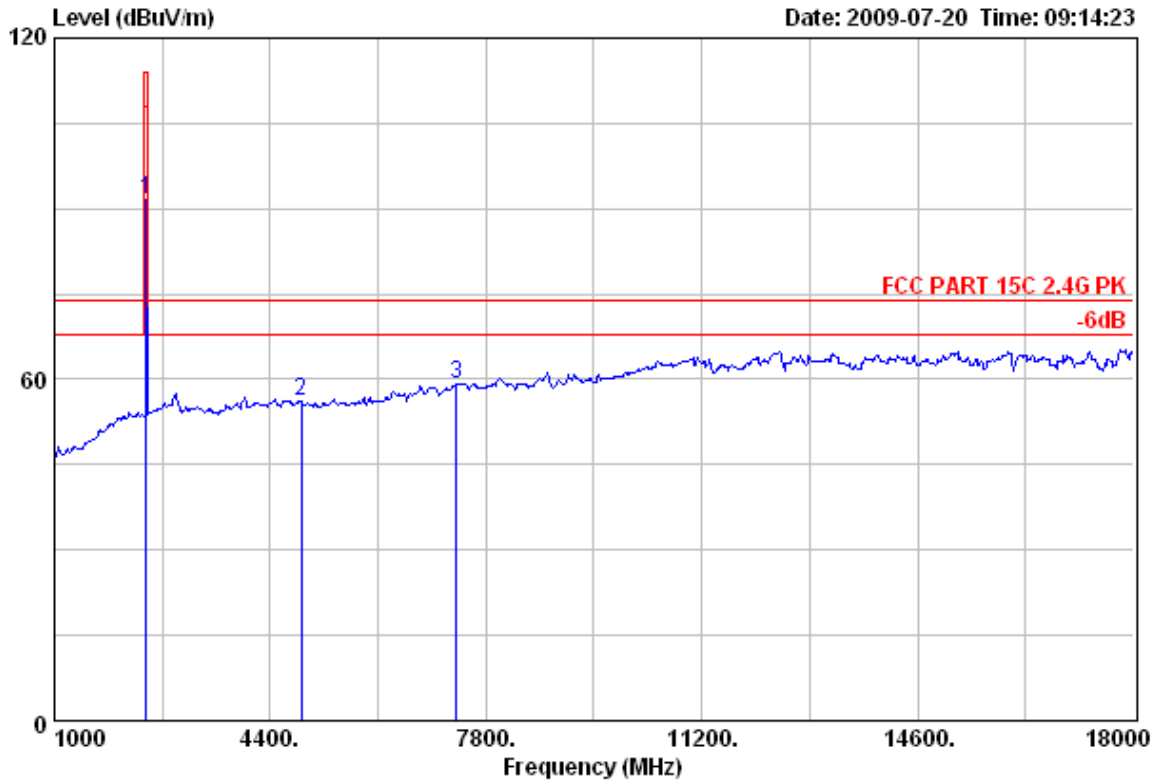
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Data: 82

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:14:23



Test Site : 966 Chamber  
 Limit : FCC PART 15C 2.4G PK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2444MHz

	Emission			Margin	Reading	Ant. Factor	Cable Loss	Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)					
1	2444.00	91.71	114.00	22.29	57.94	31.54	2.23	Peak
2	4888.00	56.00	74.00	18.00	18.99	34.63	2.38	Peak
3	7332.00	59.15	74.00	14.85	19.79	36.83	2.53	Peak





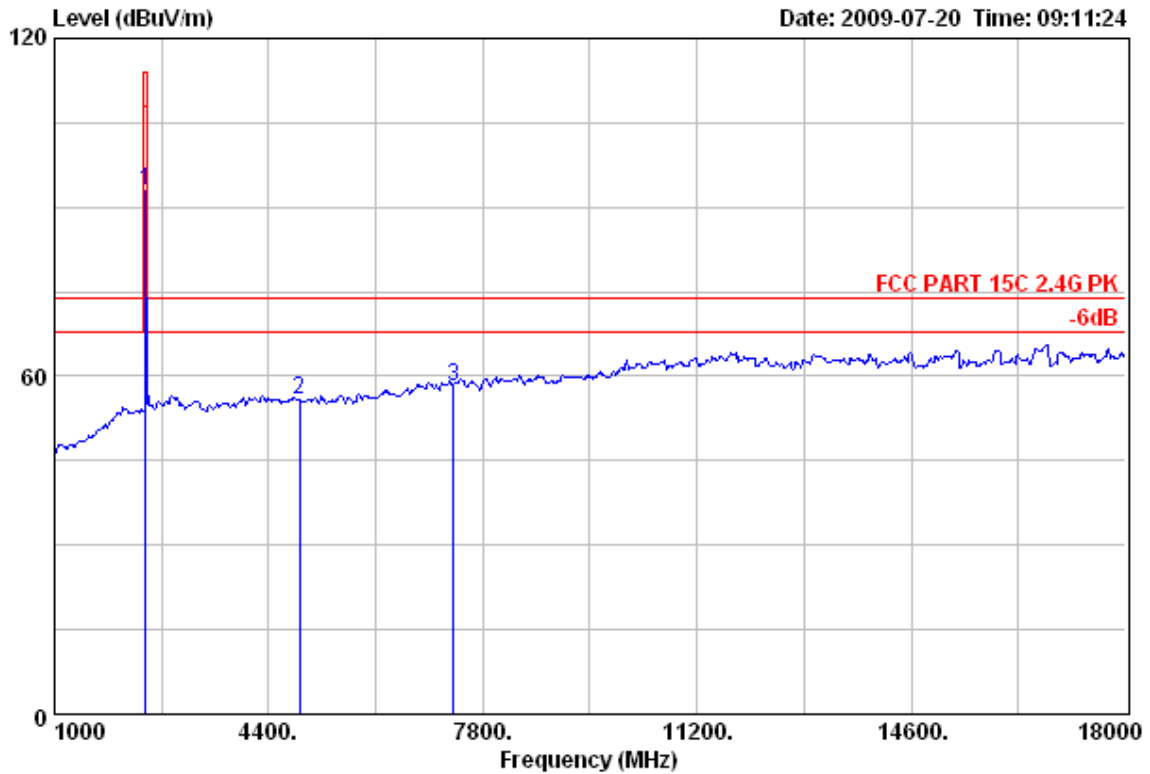
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Data: 81

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:11:24



Test Site : 966 Chamber  
 Limit : FCC PART 15C 2.4G PK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2444MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2444.00	92.98	114.00	21.02	59.21	31.54	2.23	Peak
2 4888.00	55.83	74.00	18.17	18.82	34.63	2.38	Peak
3 7332.00	58.27	74.00	15.73	18.91	36.83	2.53	Peak

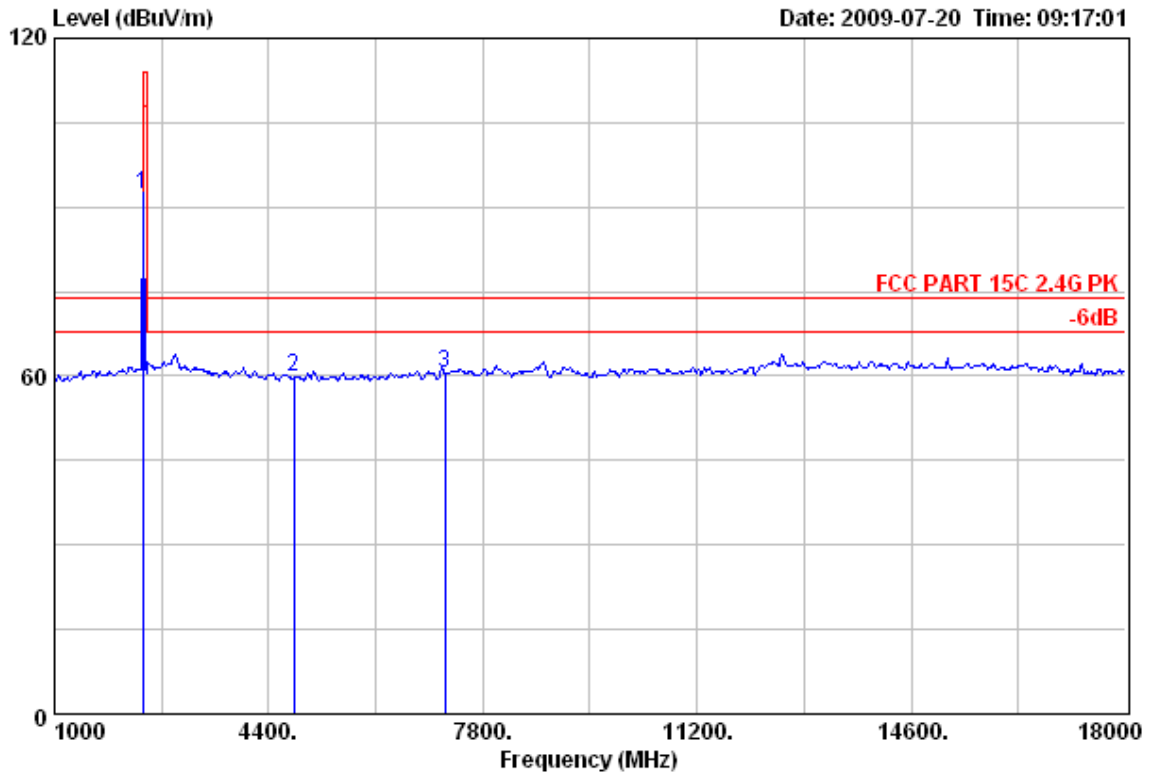


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Test Site : 966 Chamber  
 Limit : FCC PART 15C 2.4G PK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission				Ant.	Cable	
Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1 2402.00	92.13	114.00	21.87	58.40	31.50	2.23	Peak
2 4804.00	59.74	74.00	14.26	22.78	34.58	2.38	Peak
3 7206.00	60.55	74.00	13.45	21.16	36.86	2.53	Peak



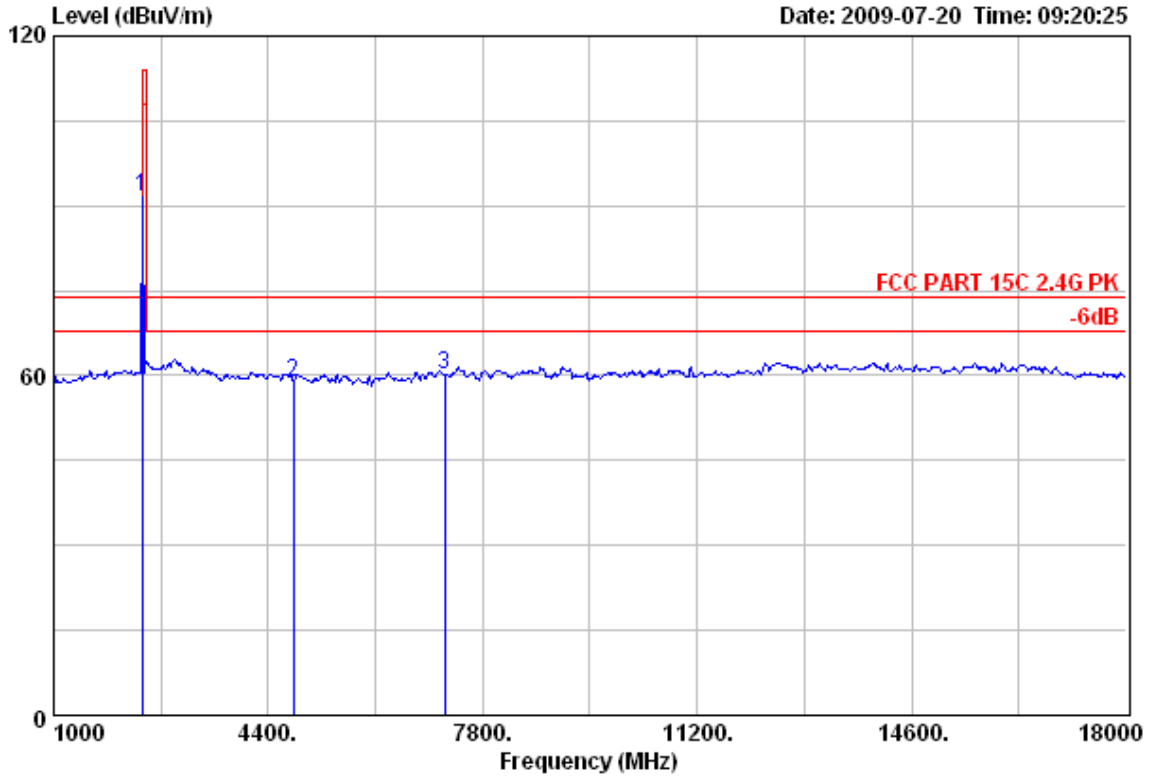
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Data: 84

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:20:25



Test Site : 966 Chamber  
 Limit : FCC PART 15C 2.4G PK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission		Margin		Ant.	Cable	Remark
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	(dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	
1 2402.00	91.71	114.00	22.29	57.98	31.50	2.23	Peak
2 4804.00	58.99	74.00	15.01	22.03	34.58	2.38	Peak
3 7206.00	60.19	74.00	13.81	20.80	36.86	2.53	Peak



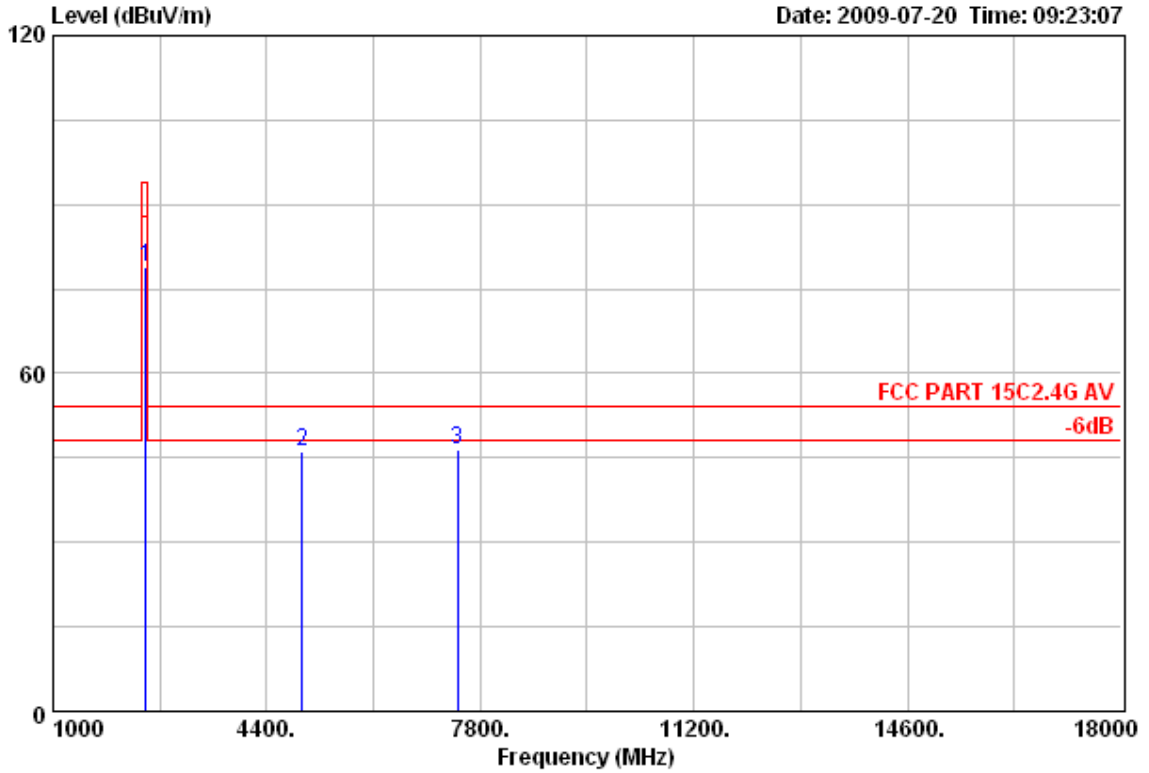
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Data: 85

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:23:07



Test Site : 966 Chamber  
 Limit : FCC PART 15C2.4G AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2479MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2479.00	78.83	94.00	15.17	45.02	31.58	2.23	Average
2 4958.00	46.18	54.00	7.82	9.12	34.67	2.39	Average
3 7437.00	46.62	54.00	7.38	7.27	36.81	2.54	Average



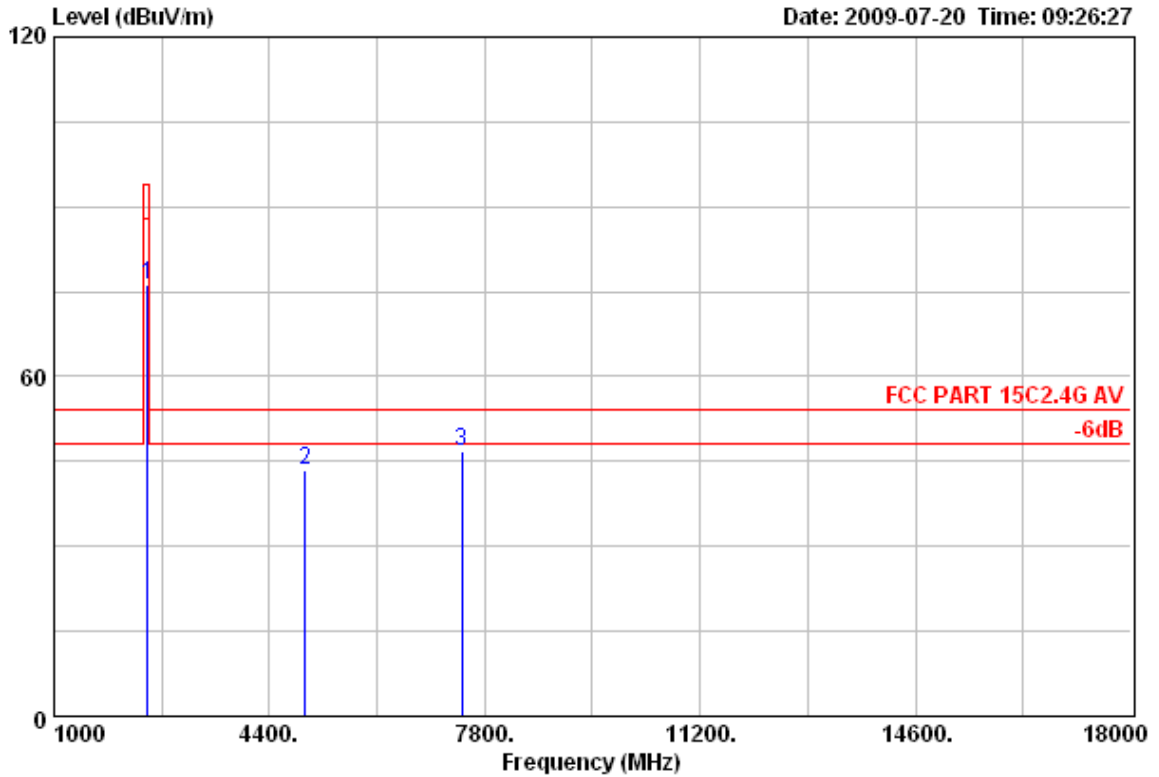
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File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:26:27



Test Site : 966 Chamber  
 Limit : FCC PART 15C2.4G AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2479MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2479.00	76.13	94.00	17.87	42.32	31.58	2.23	Average
2 4958.00	43.59	54.00	10.41	6.53	34.67	2.39	Average
3 7437.00	46.79	54.00	7.21	7.44	36.81	2.54	Average



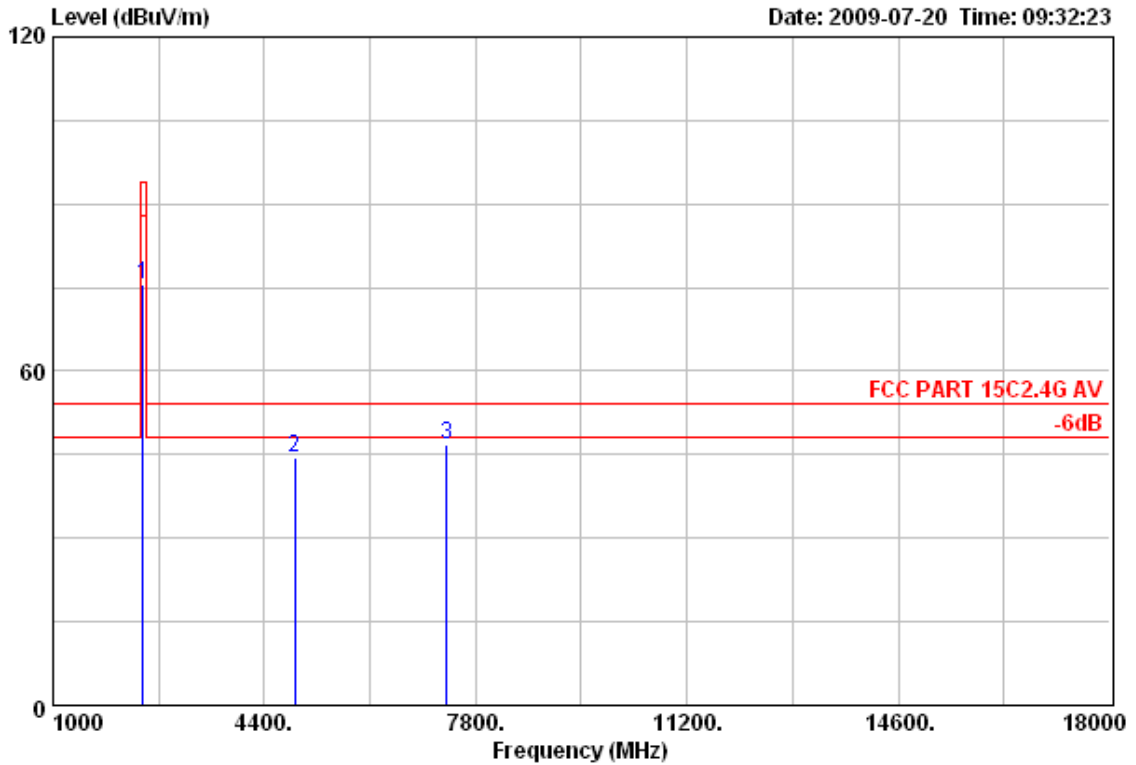
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Data: 88

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:32:23



Test Site : 966 Chamber  
 Limit : FCC PART 15C2.4G AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2444MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2444.00	75.63	94.00	18.37	41.86	31.54	2.23	Average
2 4888.00	44.30	54.00	9.70	7.29	34.63	2.38	Average
3 7332.00	46.73	54.00	7.27	7.37	36.83	2.53	Average



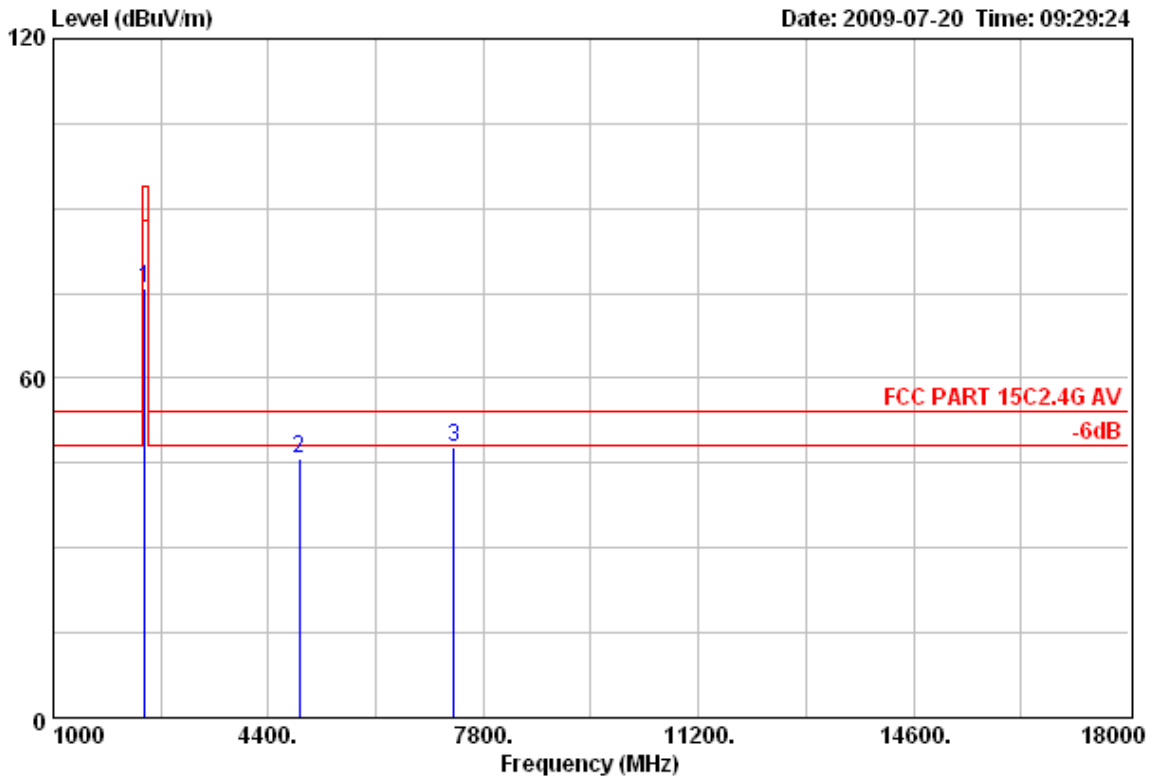
# NS Technology

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Data: 87

File: D:\Radiation 10m data\UUnisen.EMI (90)

Date: 2009-07-20 Time: 09:29:24



Test Site : 966 Chamber  
 Limit : FCC PART 15C2.4G AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2444MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2444.00	75.80	94.00	18.20	42.03	31.54	2.23	Average
2 4888.00	45.83	54.00	8.17	8.82	34.63	2.38	Average
3 7332.00	47.69	54.00	6.31	8.33	36.83	2.53	Average



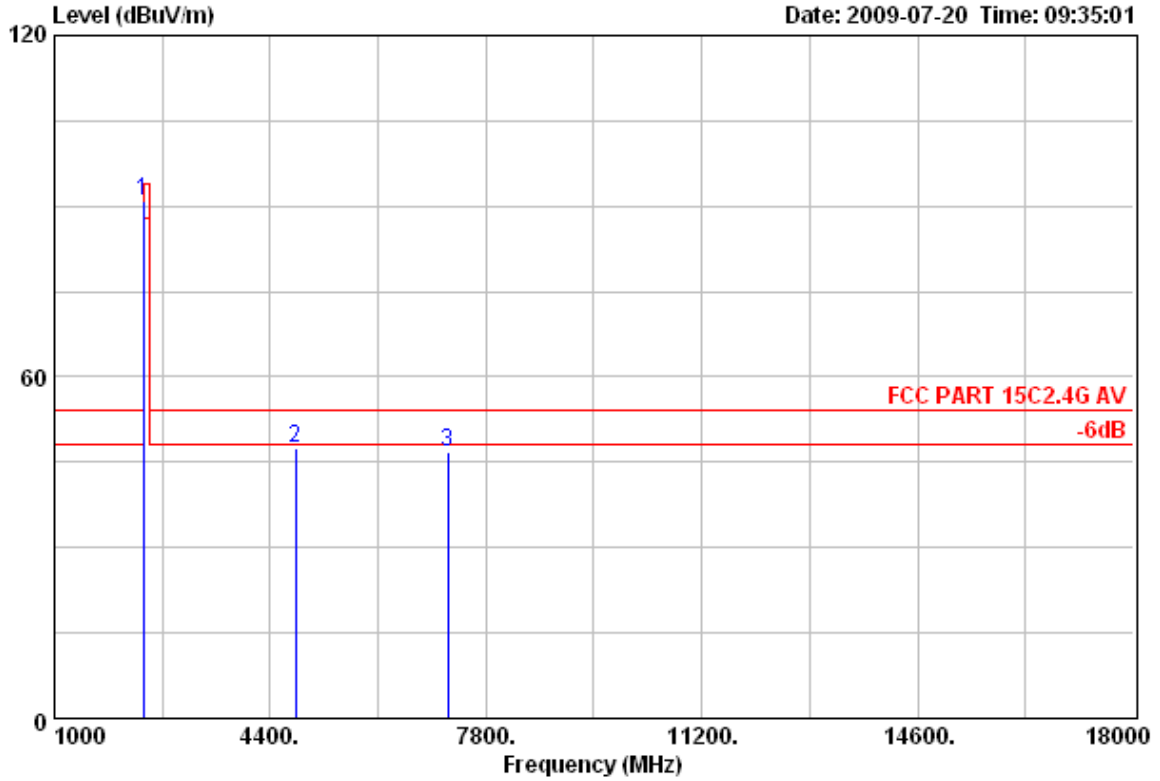
# NS Technology

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Data: 89

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:35:01



```

Test Site      : 966 Chamber
Limit          : FCC PART 15C2.4G AV
Dis. / Ant.   : 3m 3117           Ant. Pol.: HORIZONTAL
EUT           : Wireless Handheld Keyboard and Mouse
               : Touch Pad
M/N           : KP-810-02
Power         : DC 5V
Test Engineer : Jade
Comment       : Temp.:25.2'C   Humi.:56%
Test Mode     : TX 2402MHz
    
```

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2402.00	90.96	94.00	3.04	57.23	31.50	2.23	Average
2 4804.00	47.48	54.00	6.52	10.52	34.58	2.38	Average
3 7206.00	46.65	54.00	7.35	7.26	36.86	2.53	Average





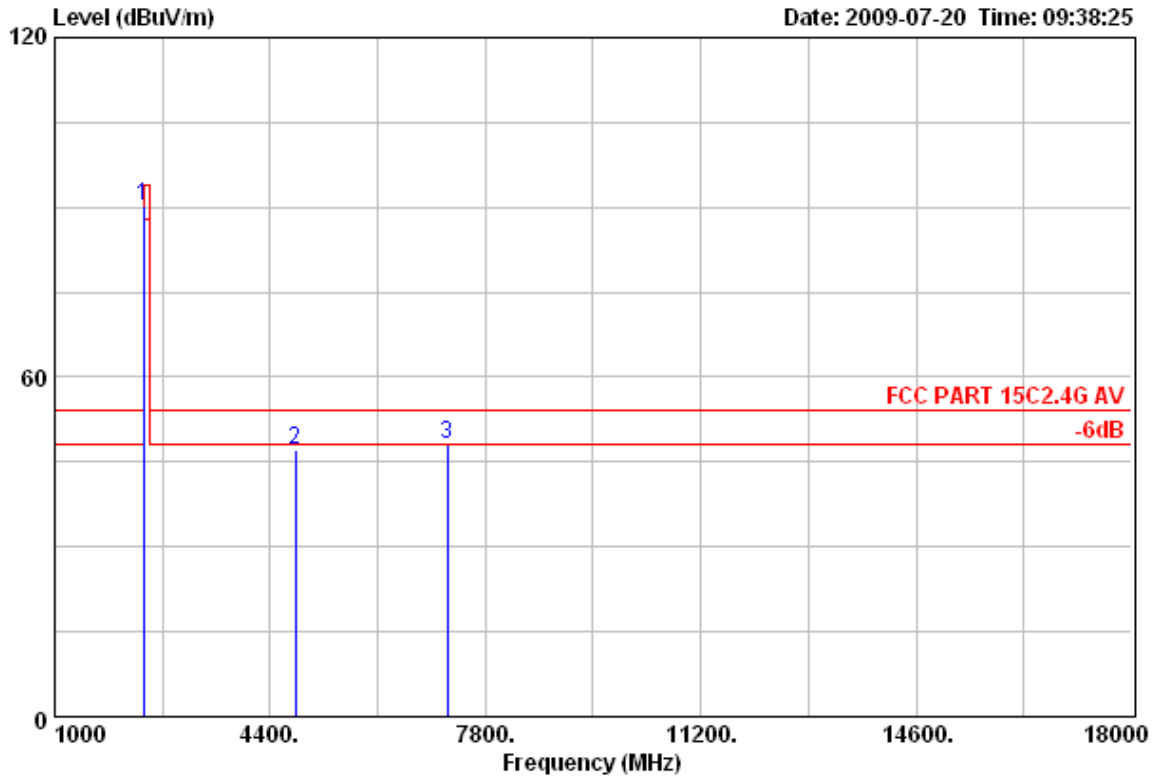
# NS Technology

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Data: 90

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 09:38:25



Test Site : 966 Chamber  
 Limit : FCC PART 15C2.4G AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2402.00	90.35	94.00	3.65	56.62	31.50	2.23	Average
2 4804.00	47.22	54.00	6.78	10.26	34.58	2.38	Average
3 7206.00	48.01	54.00	5.99	8.62	36.86	2.53	Average



### 4.3. 20dB Bandwidth

#### 4.3.1. Test limits

No requirement.

#### 4.3.2. Test procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to the spectrum analyzer through an RF attenuator.
2. Set the EUT work on the Low Channel, Middle Channel, High Channel individually.
3. Set SA Center Frequency = Operation frequency, RBW=1MHz,VBW=1MHz.
4. Set SA trace max hold, then view.

#### 4.3.3. Test setup diagram



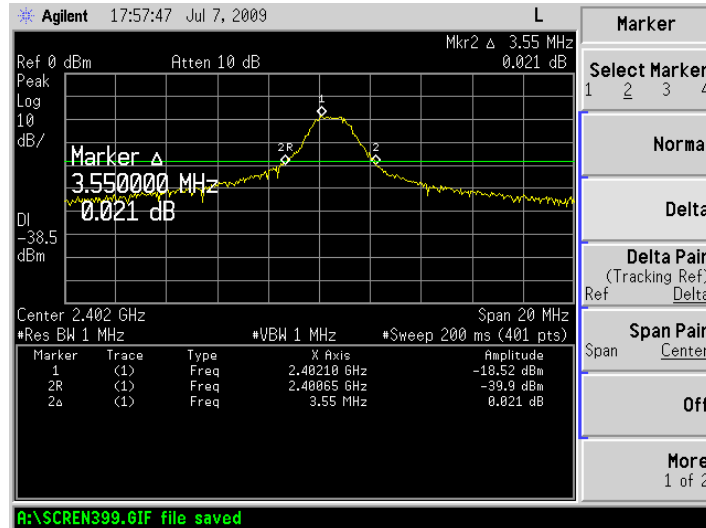
#### 4.3.4. Test result

**Pass**

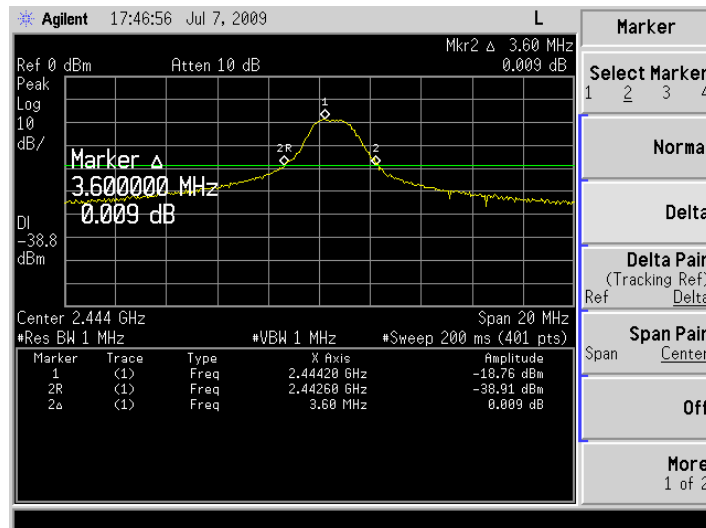
Test Channel	Frequency MHz	20dB bandwidth MHz
Low Channel	2402	3.55
Middle Channel	2444	3.60
High Channel	2479	3.50

The test plots as following:

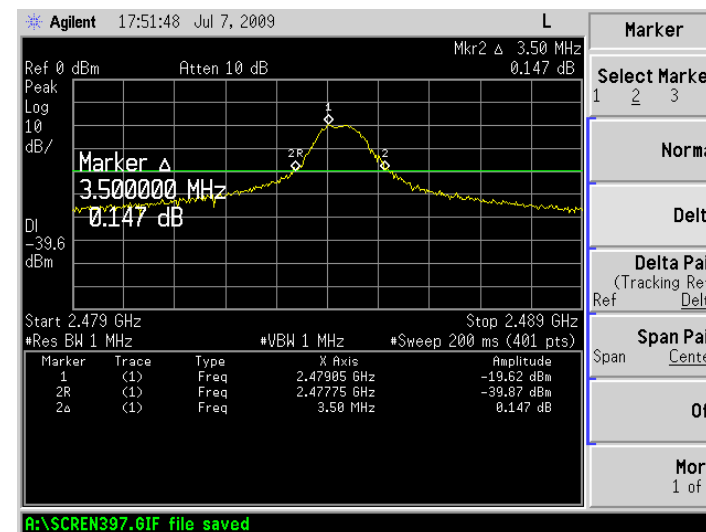
### Low Channel (2402MHz)



### Middle Channel (2444MHz)



### High Channel (2479MHz)



## 4.4. Band Edge

### 4.4.1. Test limits

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 Section 15.209, whichever is the lesser attenuation.

### 4.4.2. Test procedure

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

### 4.4.3. Test result

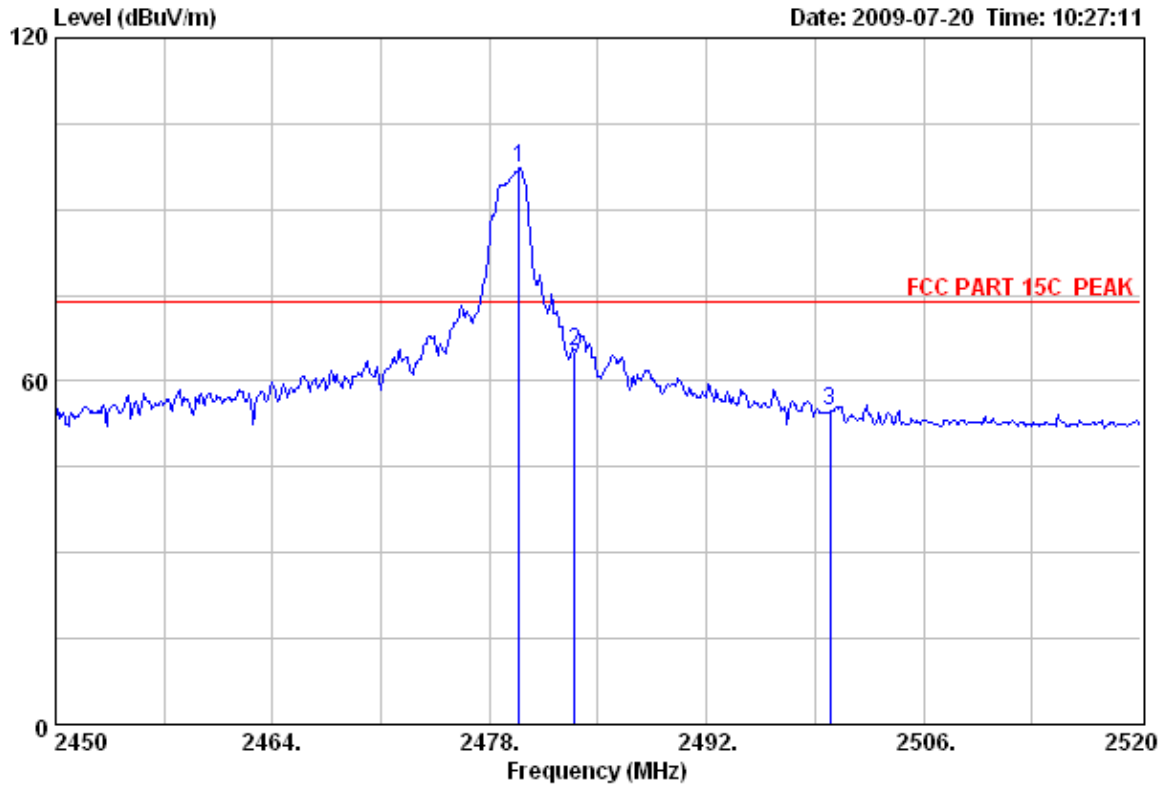
**PASS.**

The test plots as following:

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Data: 69 File: D:\Radiation 10m data\U\Unisen.EMI (90)



```

Test Site      : 966 Chamber
Limit         : FCC PART 15C PEAK
Dis. / Ant.   : 3m 3117           Ant. Pol.: HORIZONTAL
EUT          : Wireless Handheld Keyboard and Mouse
              : Touch Pad
M/N          : KP-810-02
Power        : DC 5V
Test Engineer : Jade
Comment      : Temp.:25.2'C  Humi.:56%
Test Mode    : TX 2479MHz
    
```

Freq. (MHz)	Emission			Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)				
1 2479.89	97.30	74.00	-23.30	63.49	31.58	2.23	Peak
2 2483.50	65.06	74.00	8.94	31.25	31.58	2.23	Peak
3 2500.00	54.92	74.00	19.08	21.09	31.60	2.23	Peak



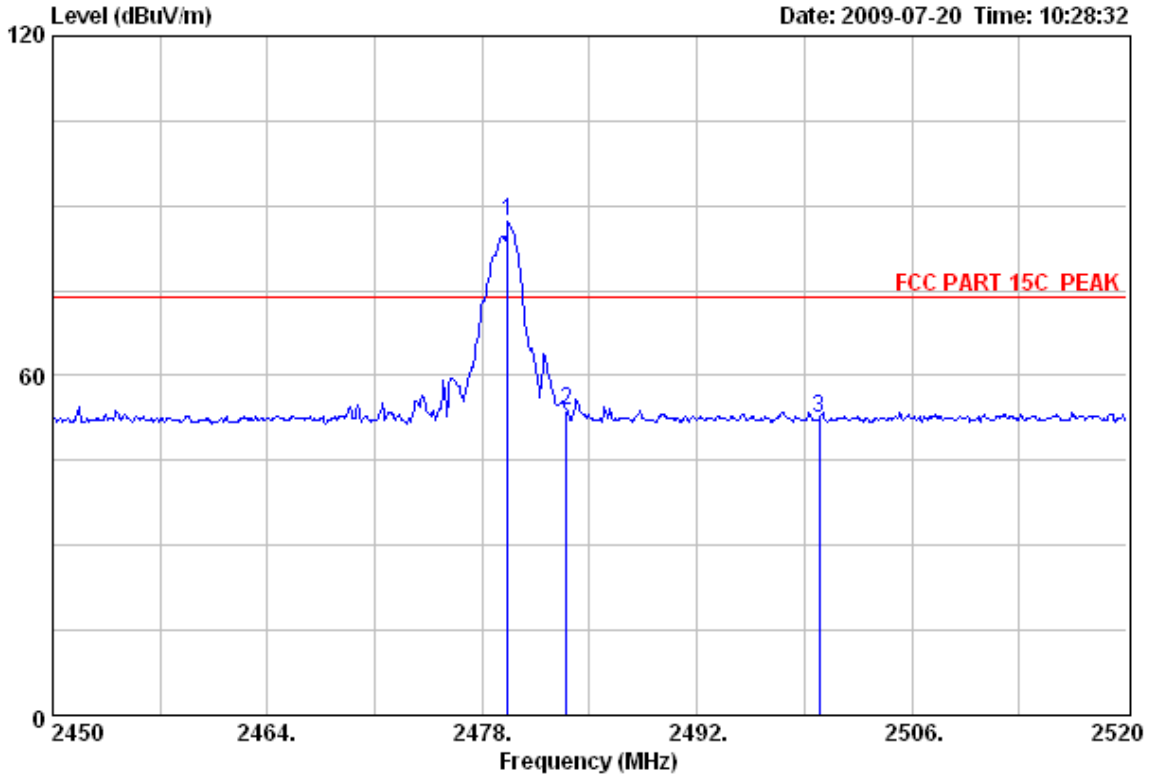
# NS Technology

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Data: 70

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:28:32



```

Test Site      : 966 Chamber
Limit          : FCC PART 15C PEAK
Dis. / Ant.    : 3m 3117           Ant. Pol.: VERTICAL
EUT           : Wireless Handheld Keyboard and Mouse
               : Touch Pad
M/N           : KP-810-02
Power         : DC 5V
Test Engineer  : Jade
Comment       : Temp.:25.2'C   Humi.:56%
Test Mode     : TX 2479MHz
    
```

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2479.68	87.27	74.00	-13.27	53.46	31.58	2.23	Peak
2 2483.50	53.74	74.00	20.26	19.93	31.58	2.23	Peak
3 2500.00	52.34	74.00	21.66	18.51	31.60	2.23	Peak



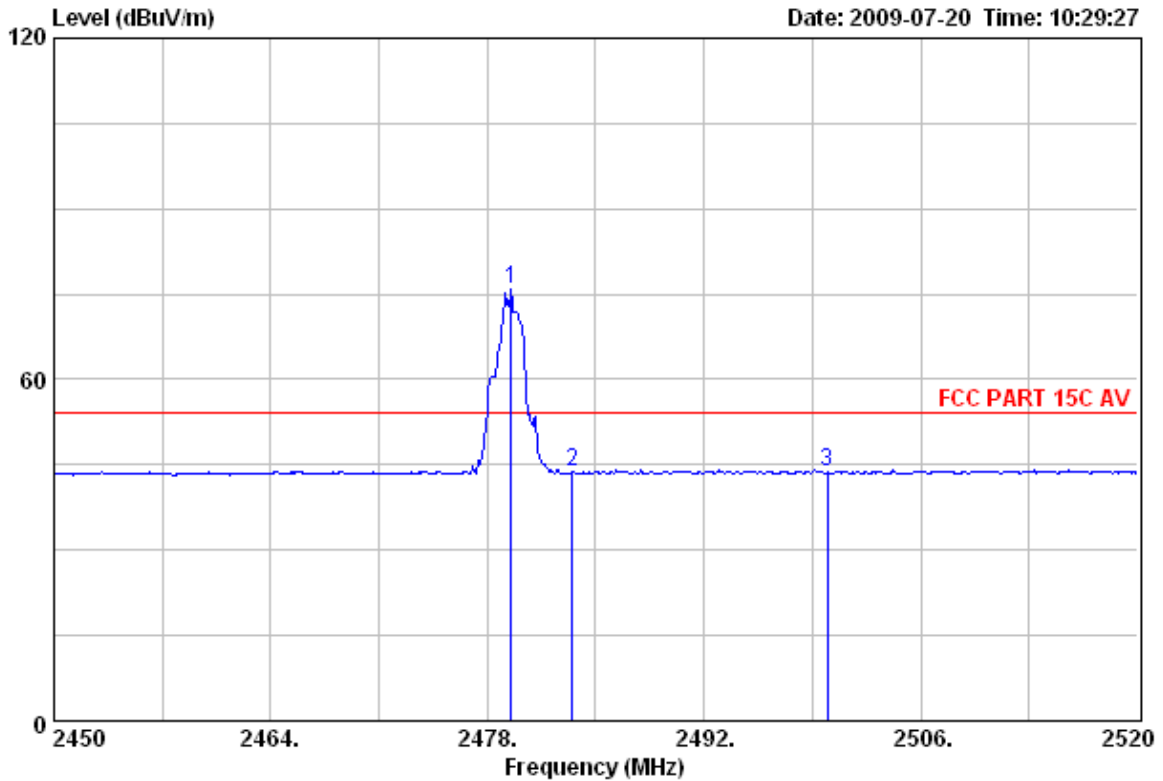
# NS Technology

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Data: 71

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:29:27



Test Site : 966 Chamber  
 Limit : FCC PART 15C AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2479MHz

	Emission				Reading	Ant. Factor	Cable Loss	Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)				
1	2479.54	75.99	54.00	-21.99	42.18	31.58	2.23	Average
2	2483.50	43.70	54.00	10.30	9.89	31.58	2.23	Average
3	2500.00	43.64	54.00	10.36	9.81	31.60	2.23	Average



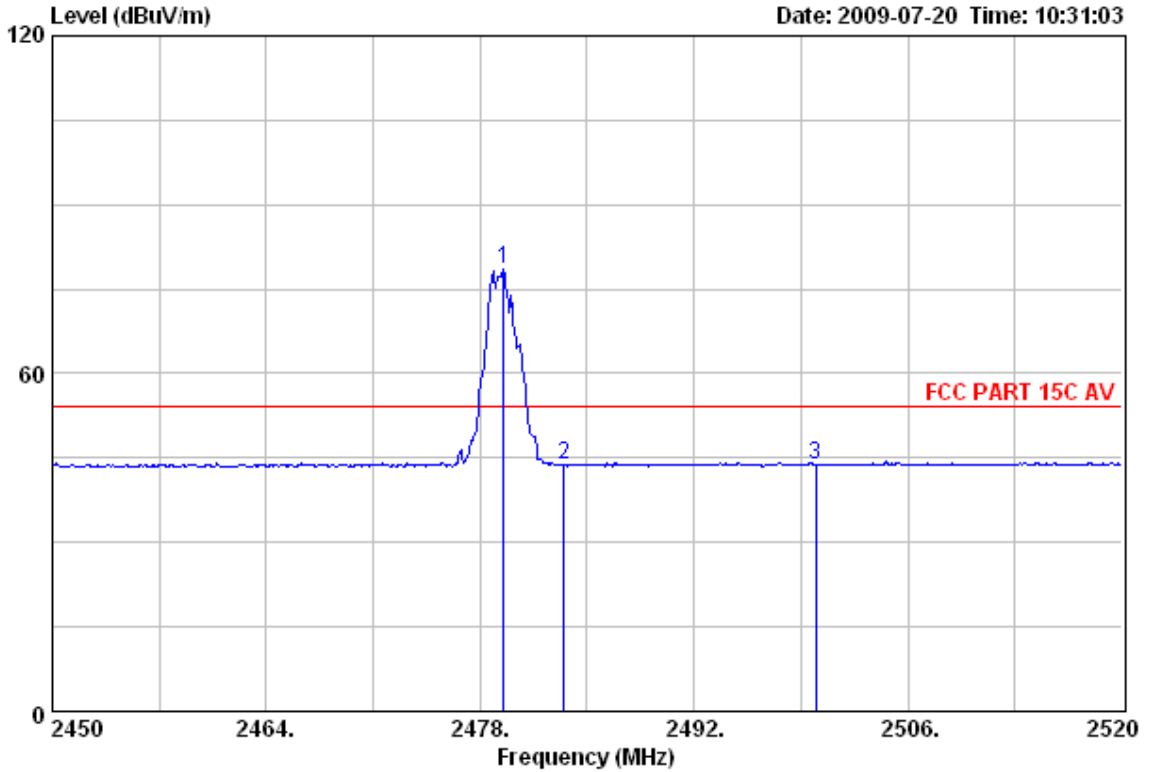
# NS Technology

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Data: 72

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:31:03



```

Test Site      : 966 Chamber
Limit         : FCC PART 15C AV
Dis. / Ant.   : 3m 3117           Ant. Pol.: HORIZONTAL
EUT          : Wireless Handheld Keyboard and Mouse
              : Touch Pad
M/N          : KP-810-02
Power        : DC 5V
Test Engineer : Jade
Comment      : Temp.:25.2'C  Humi.:56%
Test Mode    : TX 2479MHz
    
```

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2479.54	78.71	54.00	-24.71	44.90	31.58	2.23	Average
2 2483.50	43.87	54.00	10.13	10.06	31.58	2.23	Average
3 2500.00	43.74	54.00	10.26	9.91	31.60	2.23	Average





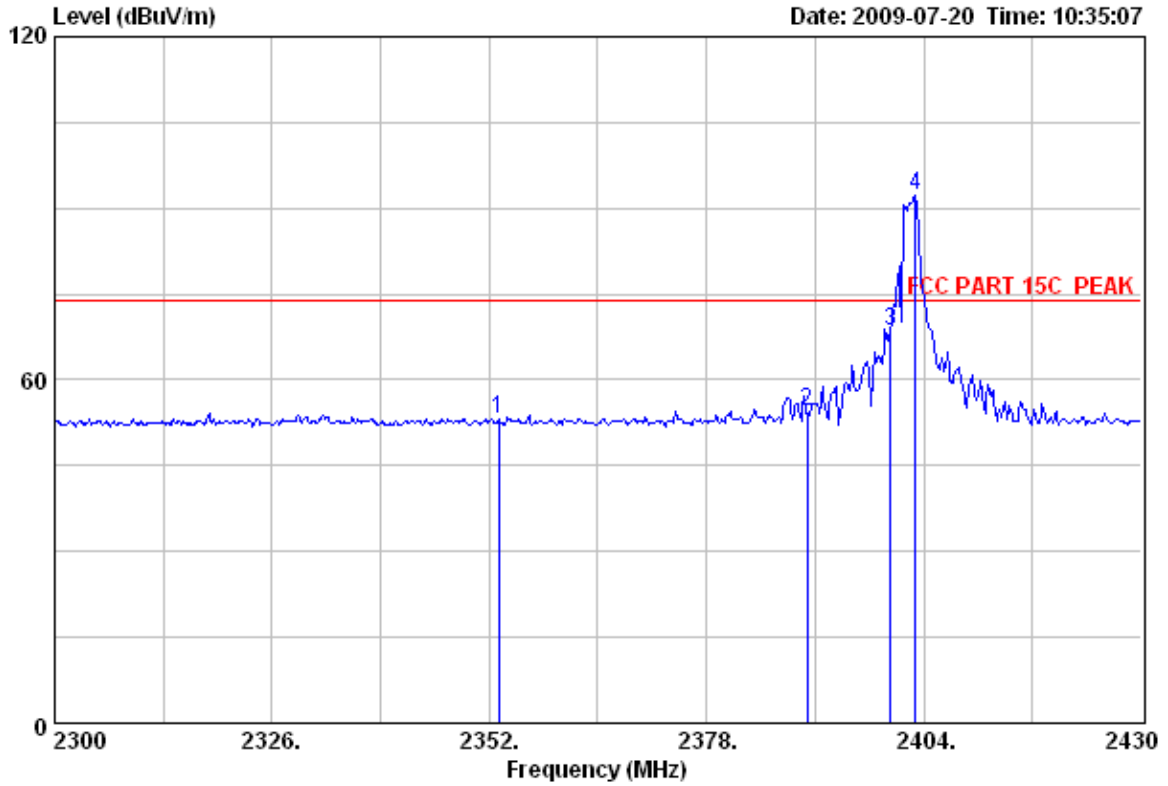
# NS Technology

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Data: 73

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:35:07



Test Site : 966 Chamber  
 Limit : FCC PART 15C PEAK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

Freq. (MHz)	Emission		Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)					
1 2353.17	53.01	74.00	20.99	19.34	31.45	2.22	Peak
2 2390.00	54.56	74.00	19.44	20.86	31.48	2.22	Peak
3 2400.00	68.61	74.00	5.39	34.88	31.50	2.23	Peak
4 2402.96	92.17	74.00	-18.17	58.44	31.50	2.23	Peak

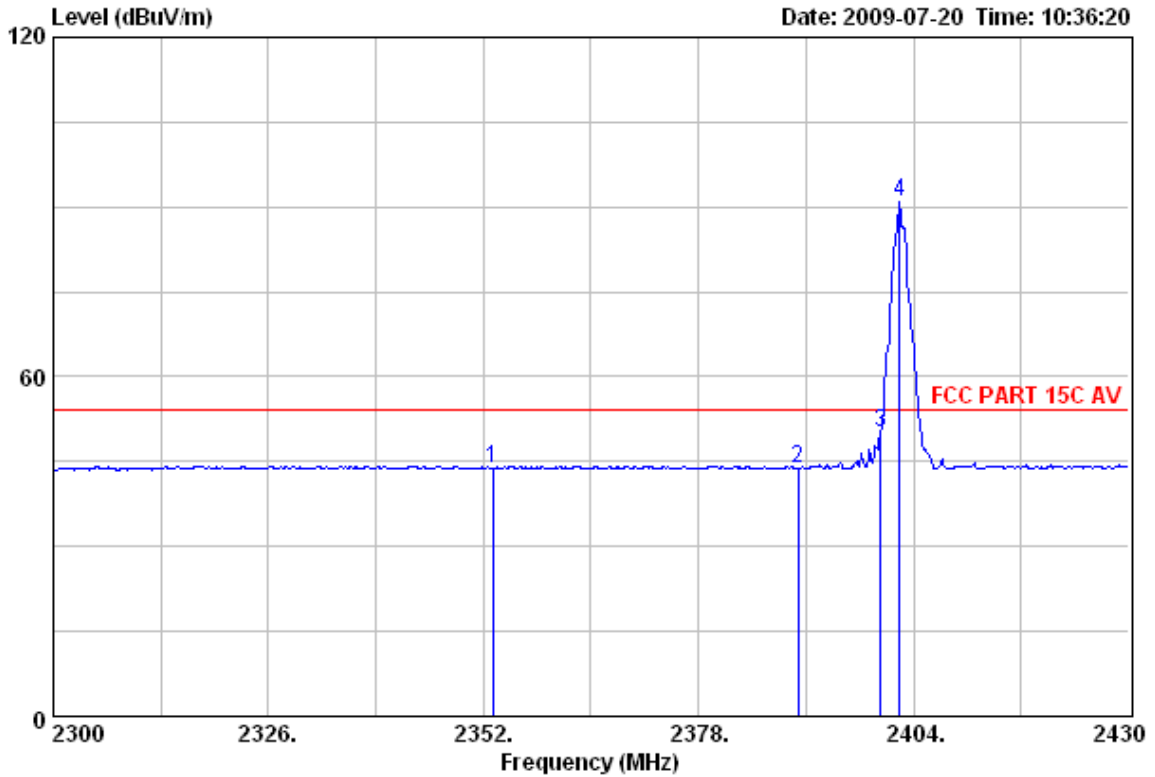


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Data: 74

File: D:\Radiation 10m data\U\Unisen.EMI (90)



Test Site : 966 Chamber  
 Limit : FCC PART 15C AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL  
 EUT : Wireless Handheld Keyboard and Mouse  
 : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission				Ant.	Cable		
	Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	2353.17	43.76	54.00	10.24	10.09	31.45	2.22	Average
2	2390.00	43.80	54.00	10.20	10.10	31.48	2.22	Average
3	2400.00	49.98	54.00	4.02	16.25	31.50	2.23	Average
4	2402.31	90.87	54.00	-36.87	57.14	31.50	2.23	Average



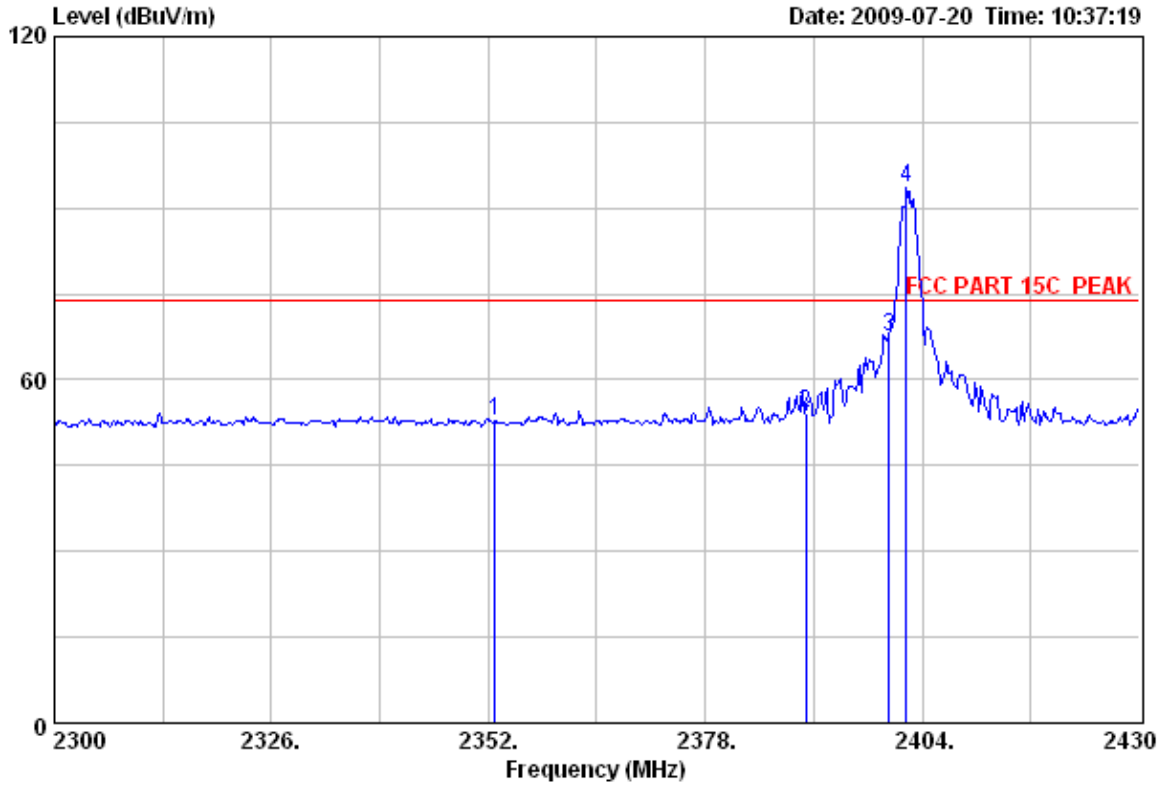
# NS Technology

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Data: 75

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:37:19



Test Site : 966 Chamber  
 Limit : FCC PART 15C PEAK  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2352.78	52.77	74.00	21.23	19.10	31.45	2.22	Peak
2 2390.00	54.29	74.00	19.71	20.59	31.48	2.22	Peak
3 2400.00	67.58	74.00	6.42	33.85	31.50	2.23	Peak
4 2402.05	93.51	74.00	-19.51	59.78	31.50	2.23	Peak



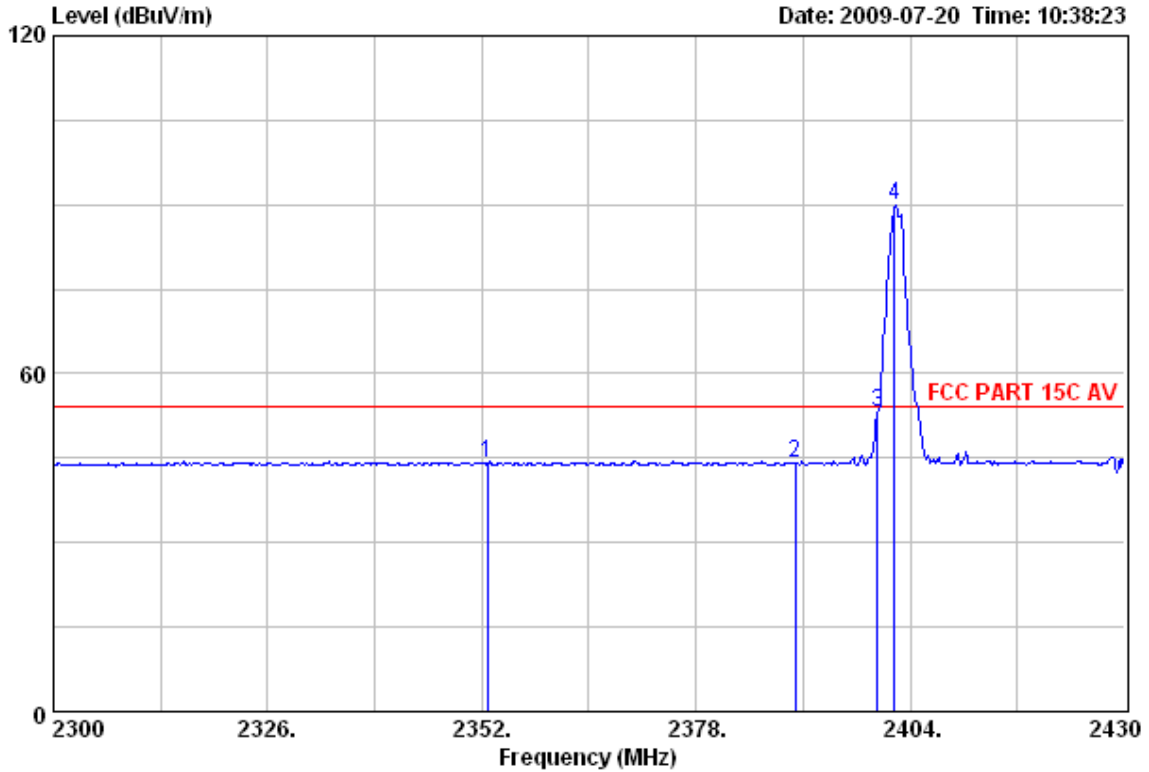
# NS Technology

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Data: 76

File: D:\Radiation 10m data\U\Unisen.EMI (90)

Date: 2009-07-20 Time: 10:38:23



Test Site : 966 Chamber  
 Limit : FCC PART 15C AV  
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL  
 EUT : Wireless Handheld Keyboard and Mouse  
       : Touch Pad  
 M/N : KP-810-02  
 Power : DC 5V  
 Test Engineer : Jade  
 Comment : Temp.:25.2'C Humi.:56%  
 Test Mode : TX 2402MHz

	Emission				Ant.	Cable	
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2352.65	44.04	54.00	9.96	10.37	31.45	2.22	Average
2 2390.00	44.17	54.00	9.83	10.47	31.48	2.22	Average
3 2400.00	53.25	54.00	0.75	19.52	31.50	2.23	Average
4 2402.05	90.03	54.00	-36.03	56.30	31.50	2.23	Average

