

6.3. 6dB Bandwidth

6.3.1. Test limits

>500kHz.

6.3.2. 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.
3. Set SA Center Frequency = Operation frequency, RBW=100kHz,VBW=300kHz.
4. Set SA trace max hold, then view.

6.3.3. Test result

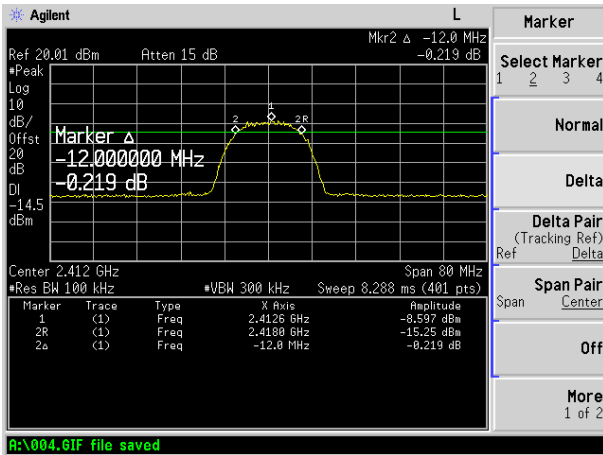
Pass

Test Channel	Frequency MHz	6dB bandwidth MHz	Conclusion
802.11b CH1	2412MHz	12.0	Pass
802.11b CH6	2437MHz	12.0	Pass
802.11b CH11	2462MHz	11.8	Pass
802.11g CH1	2412MHz	17.2	Pass
802.11g CH6	2437MHz	17.2	Pass
802.11g CH11	2462MHz	17.2	Pass
802.11n HT20 CH1	2412MHz	17.4	Pass
802.11 n HT20 CH6	2437MHz	17.4	Pass
802.11 n HT20 CH11	2462MHz	17.4	Pass
802.11 n HT20 CH1	2422MHz	36.2	Pass
802.11 n HT20 CH4	2437MHz	36.4	Pass
802.11 n HT20 CH7	2452MHz	36.4	Pass

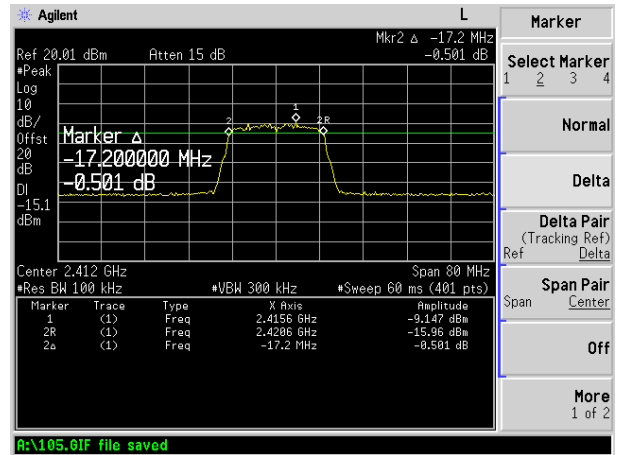
When IEEE 802.11b's data rate was 11Mbps ; IEEE 802.11g's data rate was 54Mbps, When IEEE 802.11n HT20's data rate was 130Mbps ; IEEE 802.11n HT40's data rate was 135Mbps the EUT have maximum output power and all the test was performed in this data rate set.

The test plots as following:

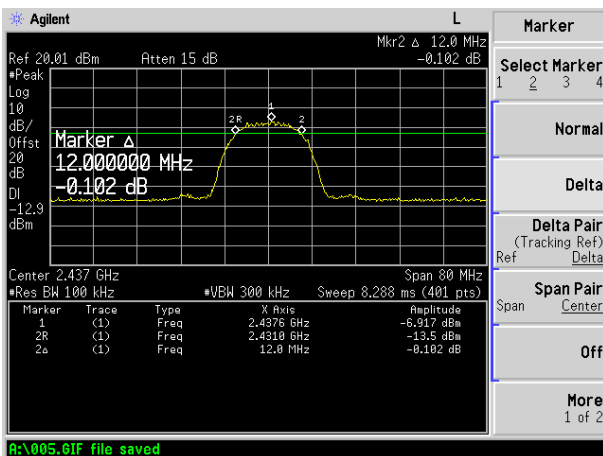
802.11b CH1 2412MHz



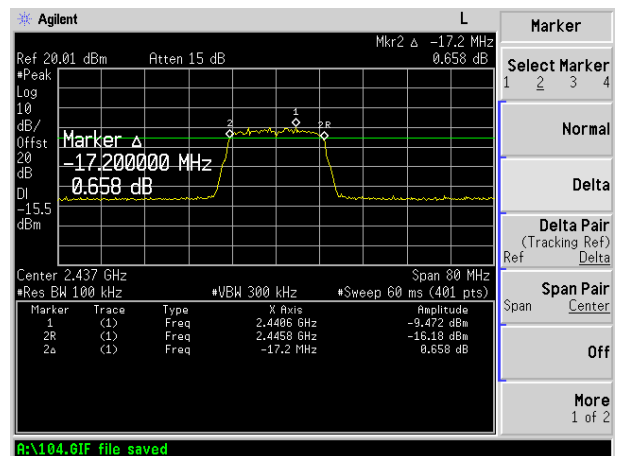
802.11g CH1 2412MHz



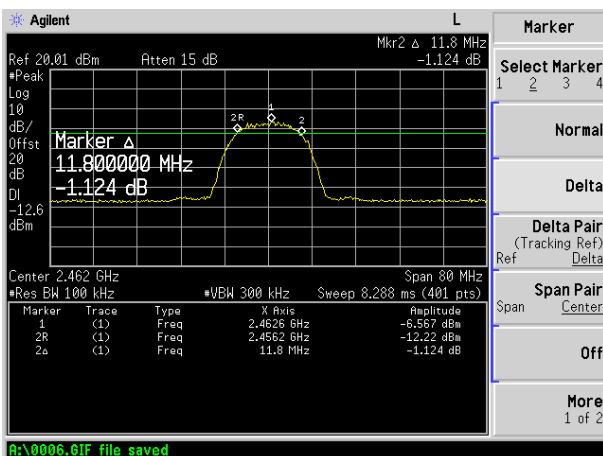
802.11b CH6 2437MHz



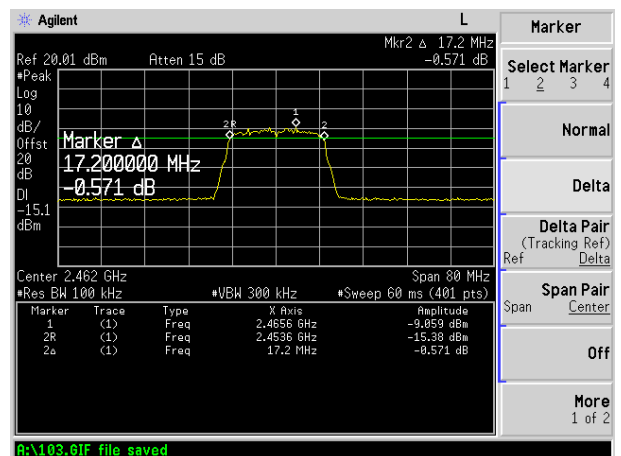
802.11g CH6 2437MHz



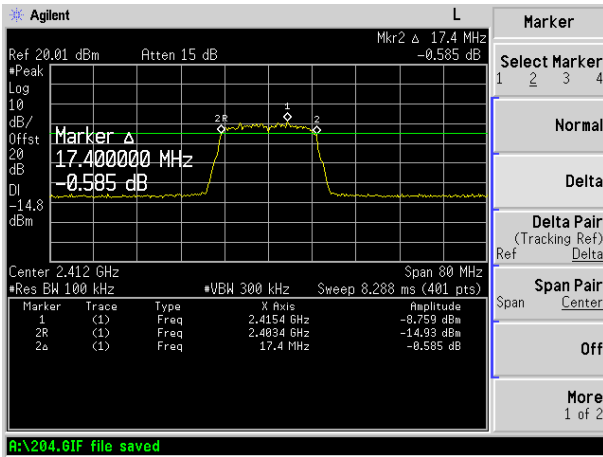
802.11b CH11 2462MHz



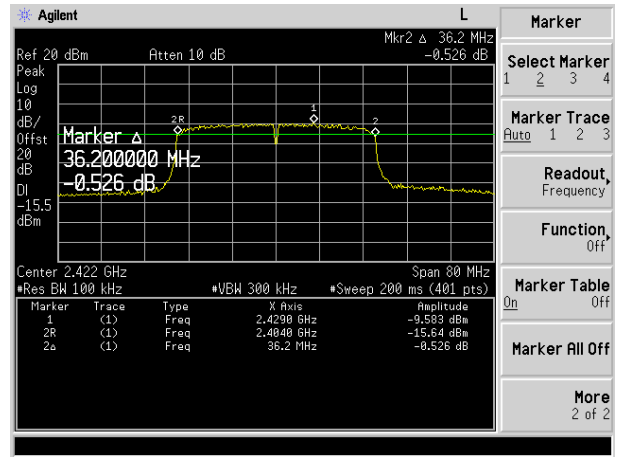
802.11g CH11 2462MHz



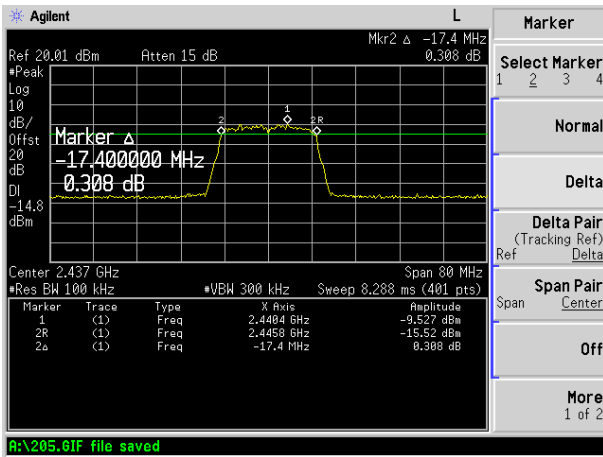
802.11n HT20 CH1 2412MHz



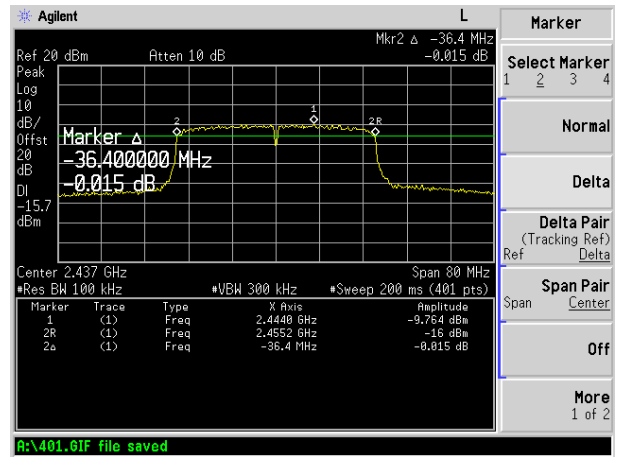
802.11n HT40 CH1 2422MHz



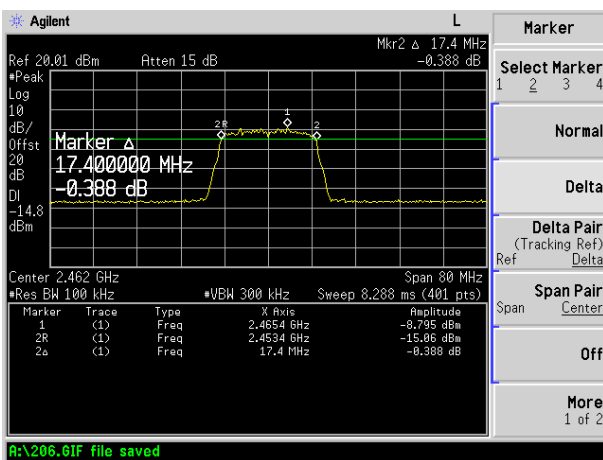
802.11 n HT20 CH6 2437MHz



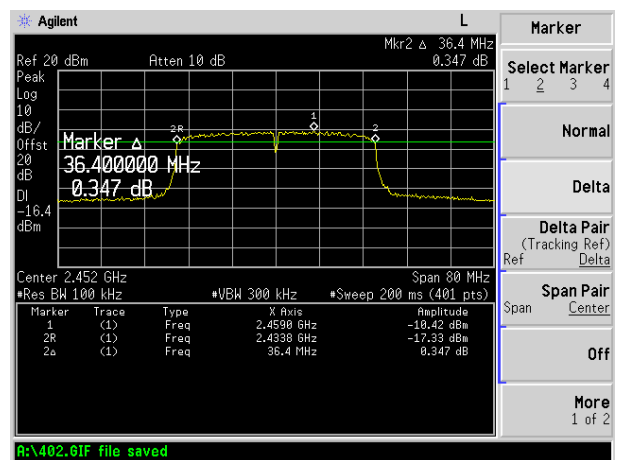
802.11 n HT40 CH4 2437MHz



802.11 n HT20 CH11 2462MHz



802.11 n HT40 CH7 2452MHz



6.4. Power Spectral Density Test

6.4.1. 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.
3. Set SA Center Frequency = Operation frequency, RBW=3kHz, VBW=300kHz.
4. Set SA trace max hold, then view.

6.4.2. Test result

Pass

Test Channel	Read (dBm)	Cable loss (dB)	Result (dBm)	Limit
802.11b CH1	-18.57	3	-15.57	8.0
802.11b CH6	-20.07	3	-17.07	8.0
802.11b CH11	-14.90	3	-11.90	8.0
802.11g CH1	-18.84	3	-15.84	8.0
802.11g CH6	-20.22	3	-17.22	8.0
802.11g CH11	-15.01	3	-12.01	8.0
802.11n HT20 CH1	-18.94	3	-15.94	8.0
802.11 n HT20 CH6	-20.32	3	-17.32	8.0
802.11 n HT20 CH11	-15.12	3	-12.12	8.0
802.11 n HT40 CH1	-23.85	3	-20.85	8.0
802.11 n HT40 CH4	-25.89	3	-22.89	8.0
802.11 n HT40 CH7	-26.57	3	-23.57	8.0

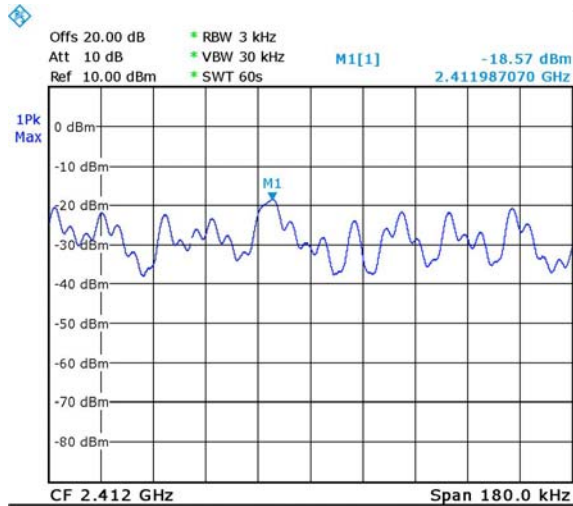
Note: Result=Read+cable loss

Factor=antenna gain(2dB)+cable loss(3dB)

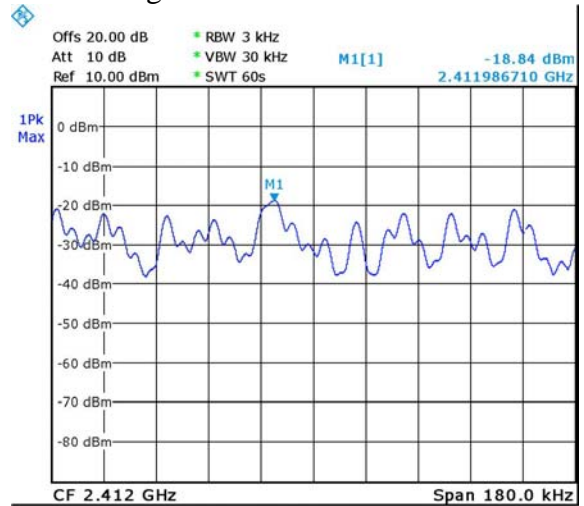
The test plots as following:

When IEEE 802.11b's data rate was 11Mbps ; IEEE 802.11g's data rate was 54Mbps,
When IEEE 802.11n HT20's data rate was 130Mbps ; IEEE 802.11n HT40's data rate
was 135Mbps the EUT have maximum output power and all the test was performed
in this data rate set.

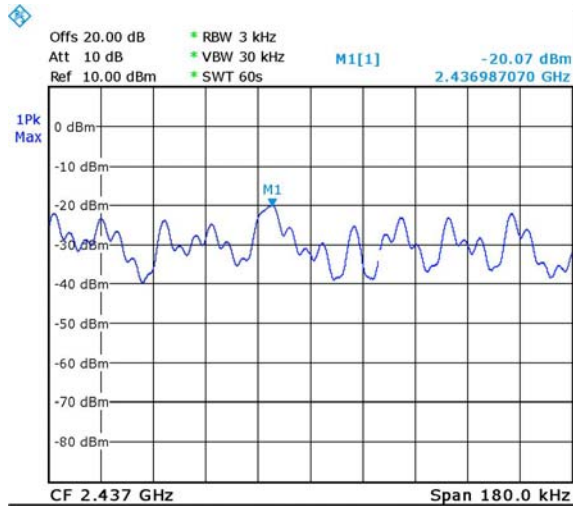
802.11b CH1 2412MHz



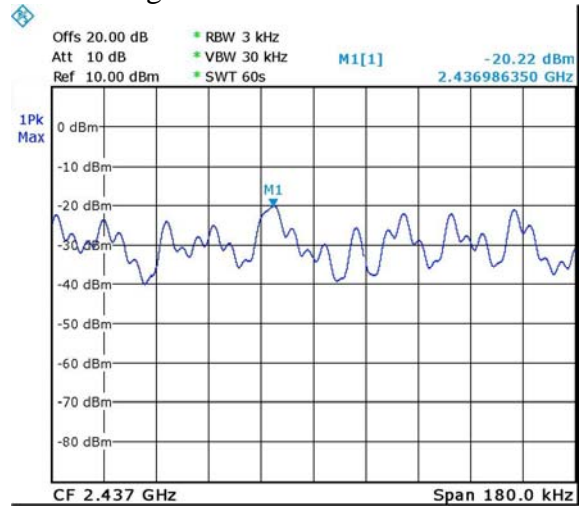
802.11g CH11 2412MHz



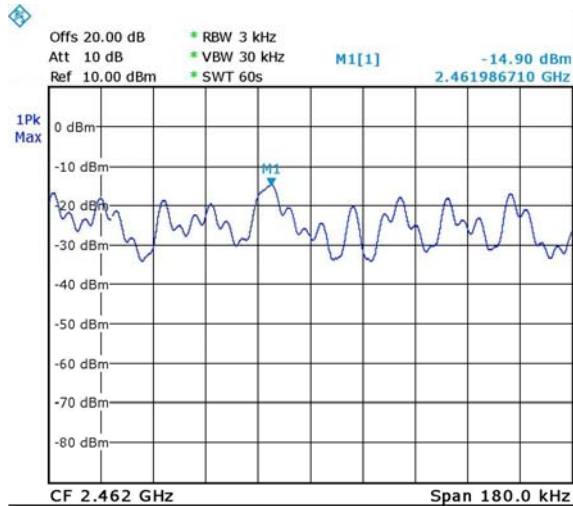
802.11b CH6 2437MHz



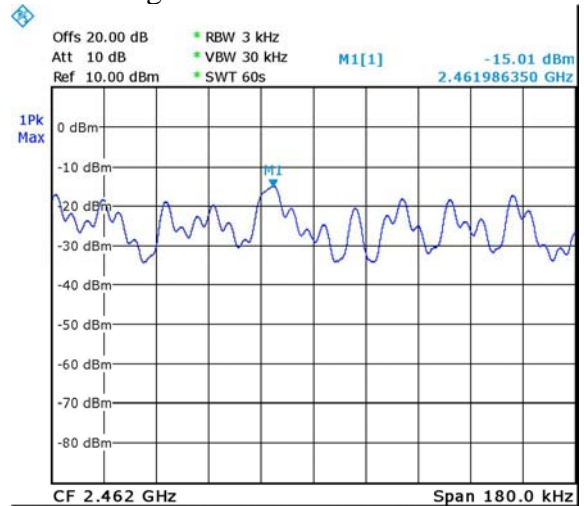
802.11g CH11 2437MHz



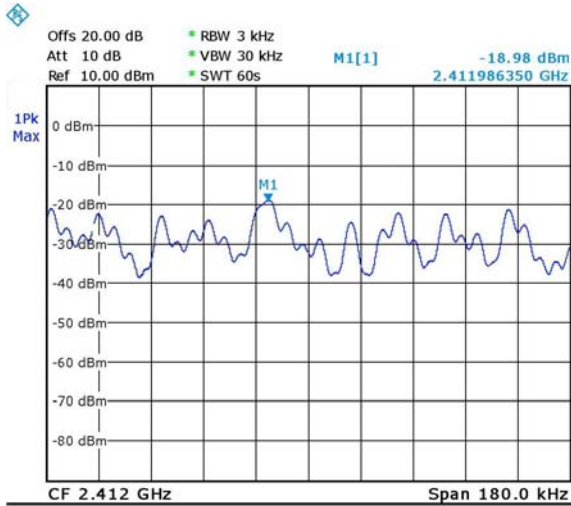
802.11b CH11 2462MHz



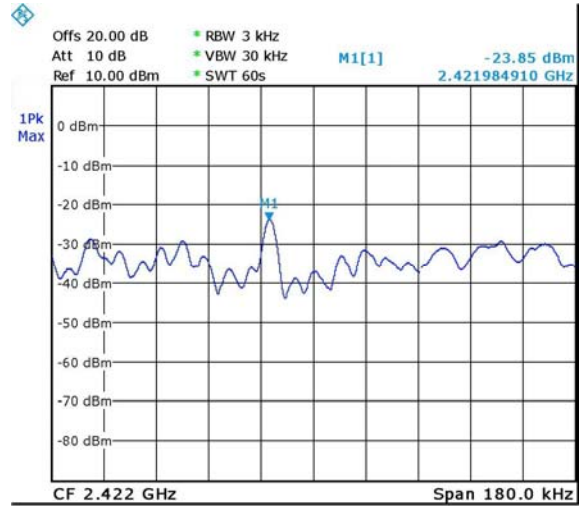
802.11g CH11 2462MHz



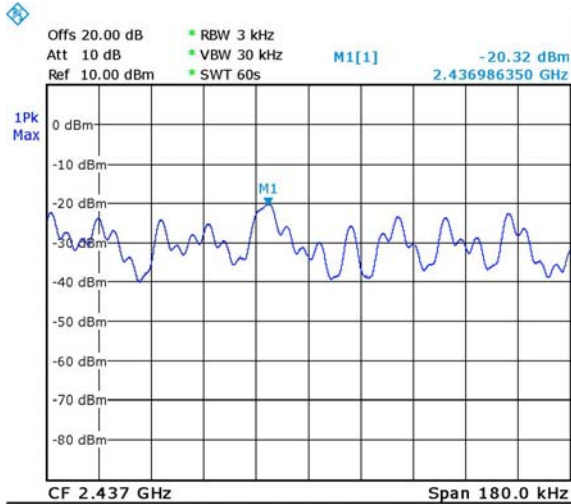
802.11n HT20 CH1 2412MHz



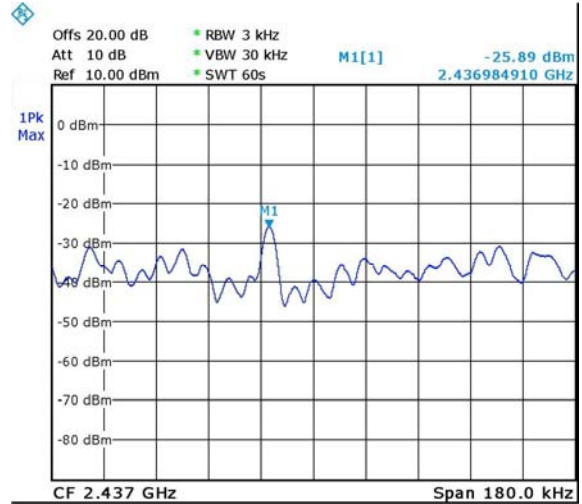
802.11n HT40 CH1 2422MHz



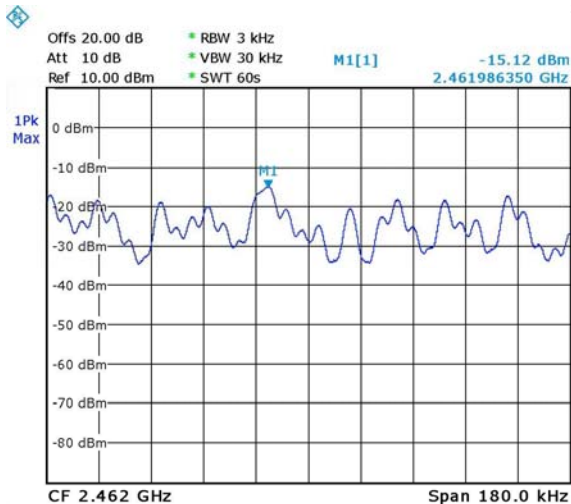
802.11n HT20 CH6 2437MHz



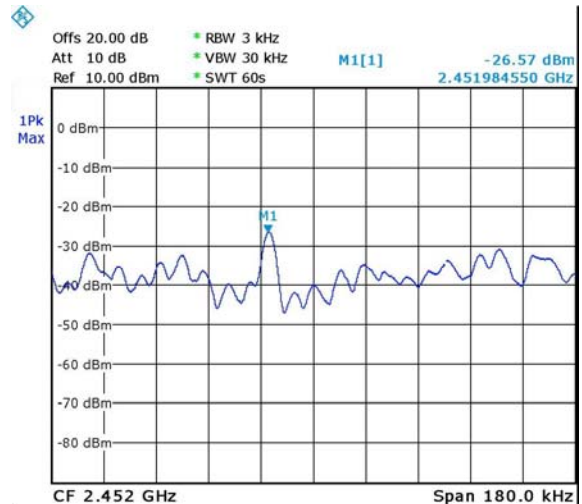
802.11n HT40 CH4 2437MHz



802.11n HT20 CH11 2462MHz



802.11n HT40 CH7 2452MHz



6.5. Output Power Test

6.5.1. 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 Power meter through an RF attenuator.

6.5.2. Test result

Pass

Test Channel	Read (dBm)	Cable loss (dB)	Result (dBm)	Limit
802.11b CH1	7.03	3	10.03	30.00
802.11b CH6	7.06	3	10.06	30.00
802.11b CH11	6.97	3	9.97	30.00
802.11g CH1	6.87	3	9.87	30.00
802.11g CH6	7.05	3	10.05	30.00
802.11g CH11	6.76	3	9.76	30.00
802.11n HT20 CH1	5.96	3	8.96	30.00
802.11 n HT20 CH6	6.18	3	9.18	30.00
802.11n HT20 CH11	5.97	3	8.97	30.00
802.11 n HT40 CH1	5.25	3	8.25	30.00
802.11 n HT40 CH4	5.21	3	8.21	30.00
802.11 n HT40 CH7	5.08	3	8.08	30.00

Note:Result=Read+cable loss

Factor=antenna gain(2dB)+cable loss(3dB)

When 802.11b's data rate was 11MHz;802.11g's data rate was 54MHz;the EUT have Maximum output and all the test was performed in this data rate set.

6.6. Band Edge

6.6.1. Test limits

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

6.6.2. 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

The EUT was tested in Chamber Site.

6.6.3. Test result

PASS.

The test plots as following:

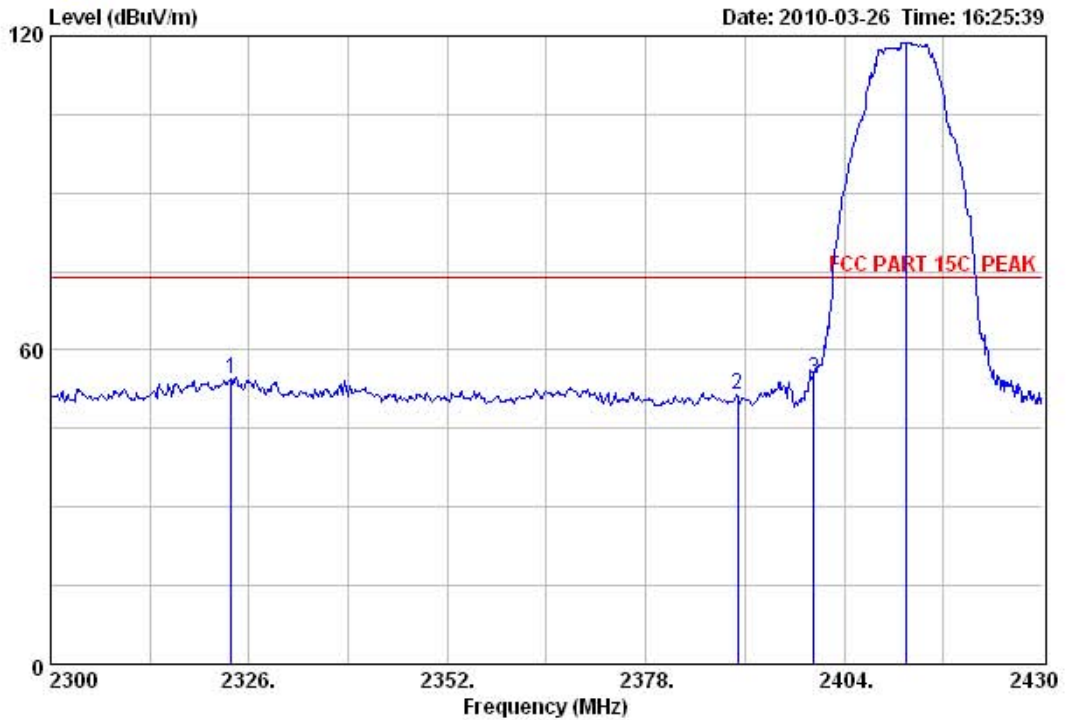
NS Technology

Chenwu Industrial Zone, Houjie Town,
Dongguan, Guangdong, China
Tel: +86-769-85935656
Fax: +86-769-85991080

Data: 304

File: D:\Radiation data\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:25:39



Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH1 2412MHz

No.	Emission				Reading (dBuV)	Ant. Cable		Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)		Factor (dB/m)	Loss (dB)	
1	2323.66	54.53	74.00	19.47	20.88	31.43	2.22	Peak
2	2390.00	51.49	74.00	22.51	17.79	31.48	2.22	Peak
3	2400.00	54.63	74.00	19.37	20.90	31.50	2.23	Peak
4	2412.06	118.70	74.00	-44.70	84.97	31.50	2.23	Peak



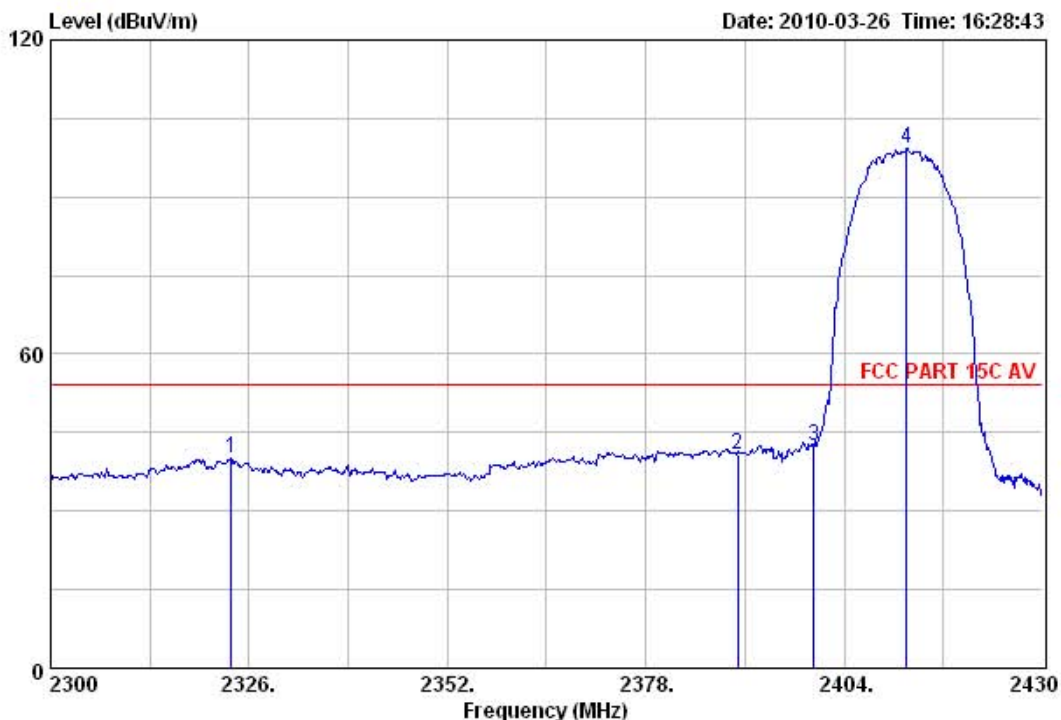
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Fax: +86-769-85991080

Data: 305

File: D:\Radiation data\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:28:43



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WL0149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2323.66	39.99	54.00	14.01	6.34	31.43	2.22	Average	
2 2390.00	40.89	54.00	13.11	7.19	31.48	2.22	Average	
3 2400.00	42.42	54.00	11.58	8.69	31.50	2.23	Average	
4 2412.19	99.42	54.00	-45.42	65.69	31.50	2.23	Average	



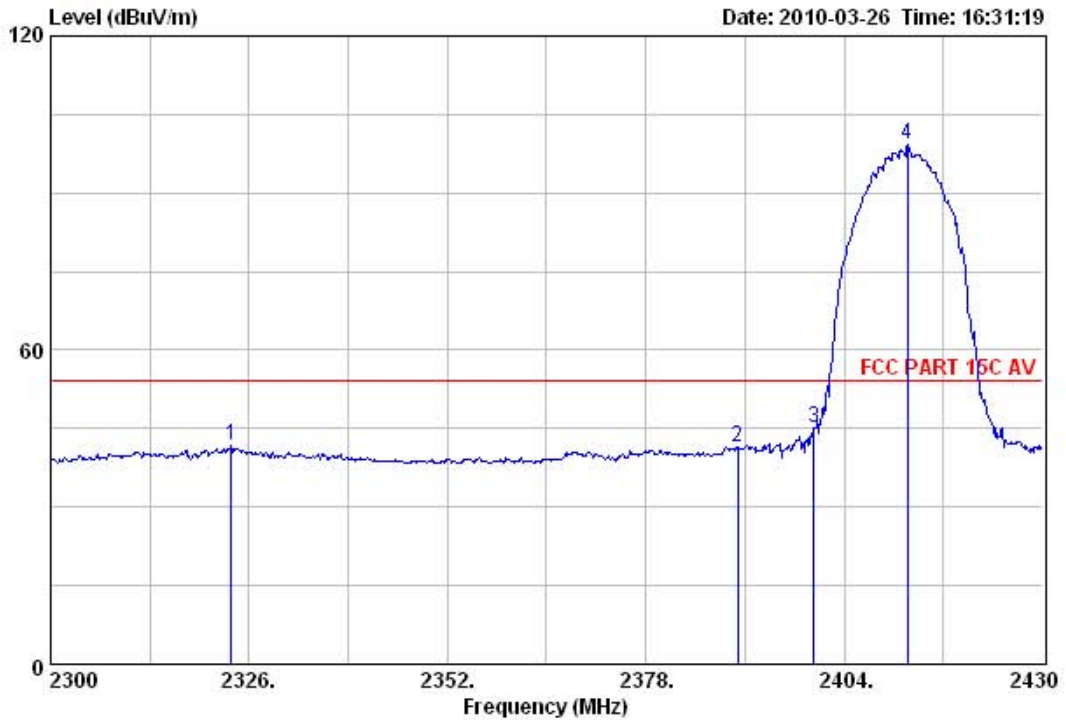
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Dongguan, Guangdong, China
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Fax: +86-769-85991080

Data: 306

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:31:19



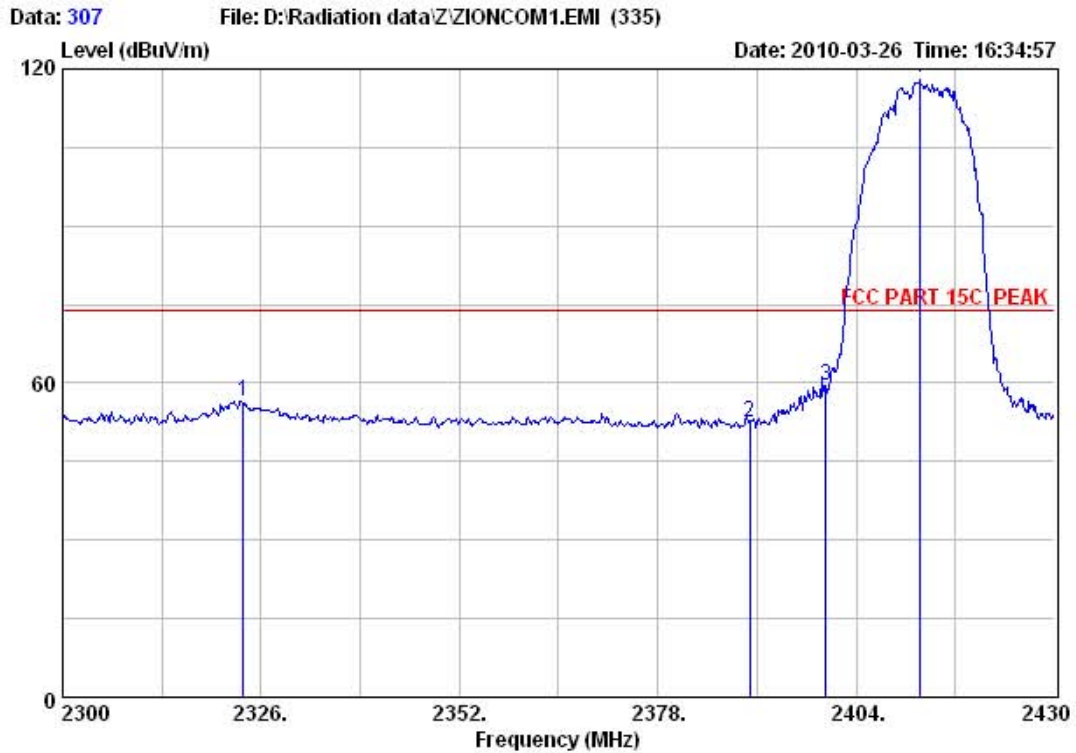
Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WL0149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2°C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2323.66	41.63	54.00	12.37	7.98	31.43	2.22	Average	
2 2390.00	41.45	54.00	12.55	7.75	31.48	2.22	Average	
3 2400.00	45.17	54.00	8.83	11.44	31.50	2.23	Average	
4 2412.32	99.16	54.00	-45.16	65.43	31.50	2.23	Average	



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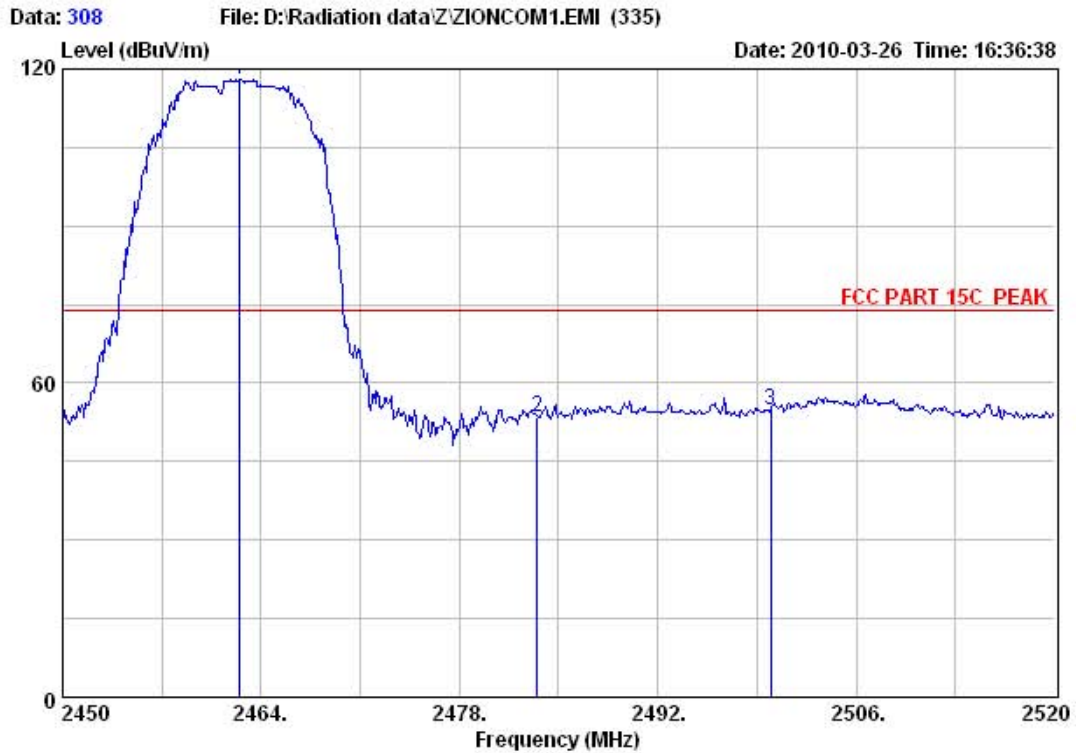
Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2323.66	56.62	74.00	17.38	22.97	31.43	2.22	Peak	
2 2390.00	52.38	74.00	21.62	18.68	31.48	2.22	Peak	
3 2400.00	59.42	74.00	14.58	25.69	31.50	2.23	Peak	
4 2412.32	118.34	74.00	-44.34	84.61	31.50	2.23	Peak	



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2462.53	117.95	74.00	-43.95	84.16	31.56	2.23	Peak	
2 2483.50	53.49	74.00	20.51	19.68	31.58	2.23	Peak	
3 2500.00	54.92	74.00	19.08	21.09	31.60	2.23	Peak	



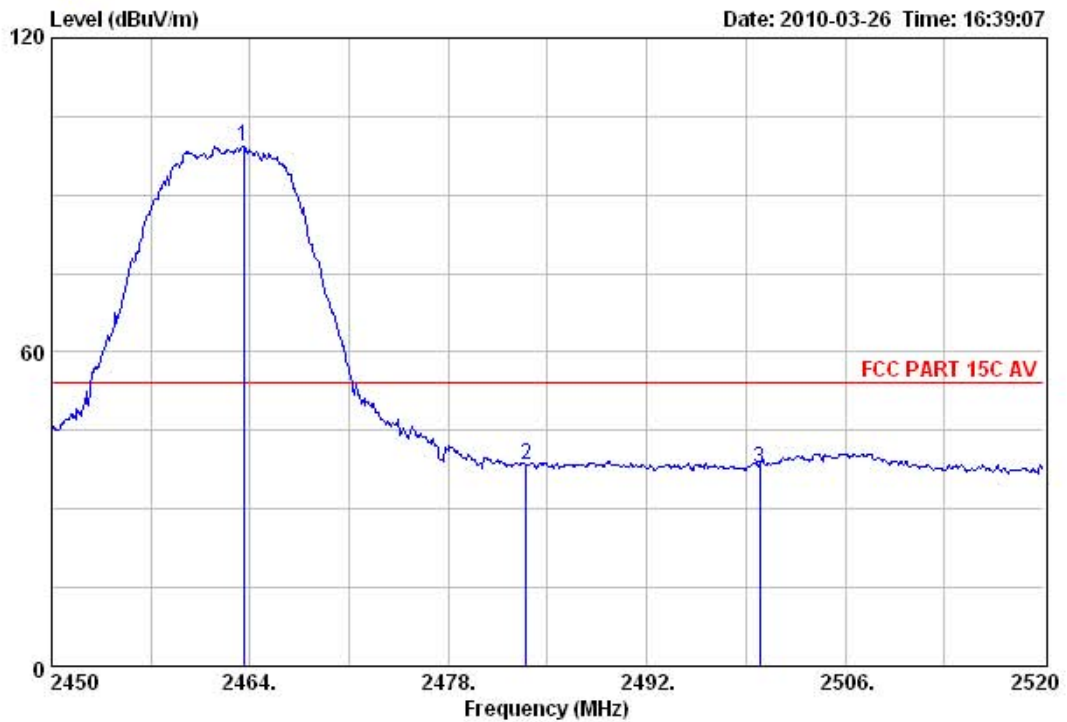
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Fax: +86-769-85991080

Data: 309

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:39:07



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Test Site      : 966 Chamber
Limit         : FCC PART 15C AV
Dis. / Ant.   : 3m 3117           Ant. Pol.: HORIZONTAL
EUT          : Wireless USB Adapter
M/N          : WLO149
Power        : DC 5V from PC input AC 120V/60Hz
Test Engineer : Jade
Comment      : Temp.:25.2'C Humi.:56% Press:101.51kPa
Test Mode    : TX Mode 802.11b CH11 2462MHz
    
```

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2463.58	99.34	54.00	-45.34	65.55	31.56	2.23	Average	
2 2483.50	38.36	54.00	15.64	4.55	31.58	2.23	Average	
3 2500.00	37.91	54.00	16.09	4.08	31.60	2.23	Average	



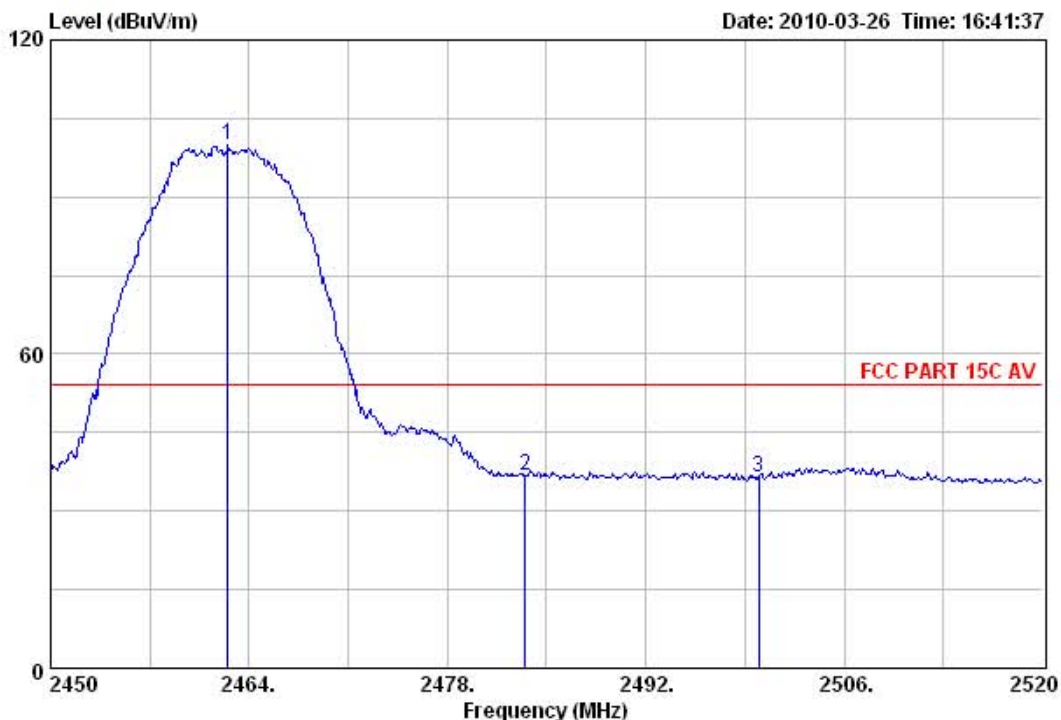
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Chenwu Industrial Zone, Houjie Town,
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Fax: +86-769-85991080

Data: 310

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:41:37



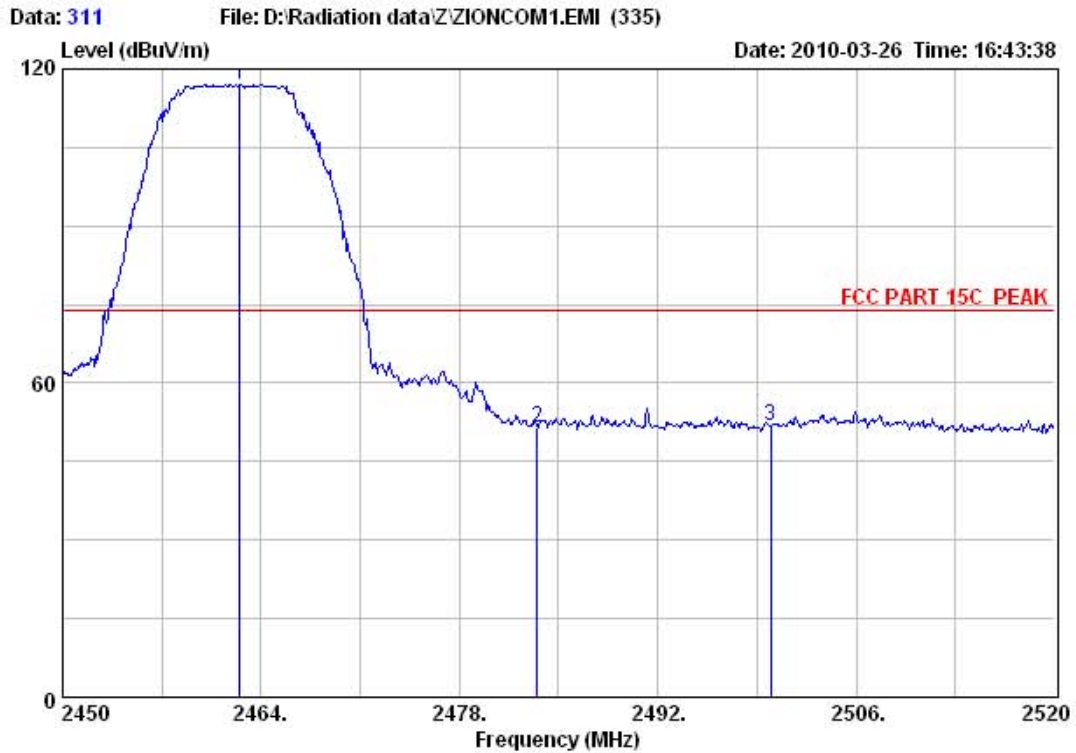
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 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2462.53	99.92	54.00	-45.92	66.13	31.56	2.23	Average	
2 2483.50	36.88	54.00	17.12	3.07	31.58	2.23	Average	
3 2500.00	36.48	54.00	17.52	2.65	31.60	2.23	Average	



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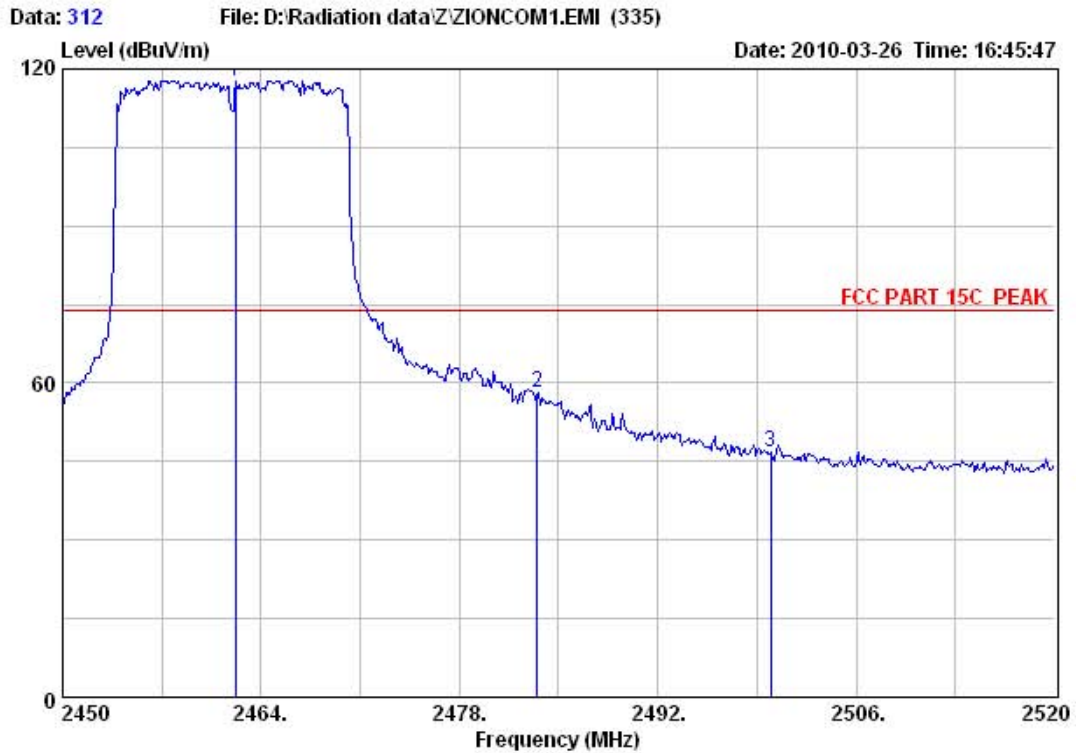
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 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11b CH11 2462MHz

Freq. (MHz)	Emission		Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)			Factor (dB/m)	Loss (dB)	
1 2462.53	117.01	74.00	-43.01	83.22	31.56	2.23	Peak
2 2483.50	51.35	74.00	22.65	17.54	31.58	2.23	Peak
3 2500.00	51.79	74.00	22.21	17.96	31.60	2.23	Peak



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	117.78	74.00	-43.78	83.99	31.56	2.23	Peak	
2 2483.50	58.28	74.00	15.72	24.47	31.58	2.23	Peak	
3 2500.00	46.71	74.00	27.29	12.88	31.60	2.23	Peak	



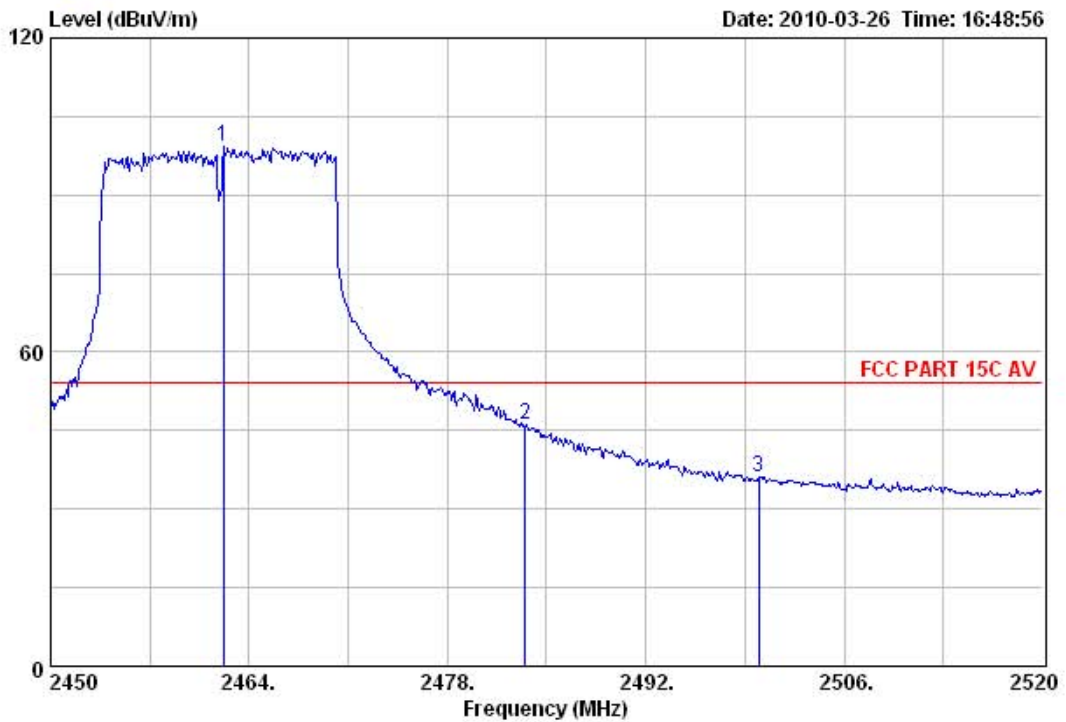
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Data: 313

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:48:56



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	99.28	54.00	-45.28	65.49	31.56	2.23	Average	
2 2483.50	46.01	54.00	7.99	12.20	31.58	2.23	Average	
3 2500.00	36.25	54.00	17.75	2.42	31.60	2.23	Average	



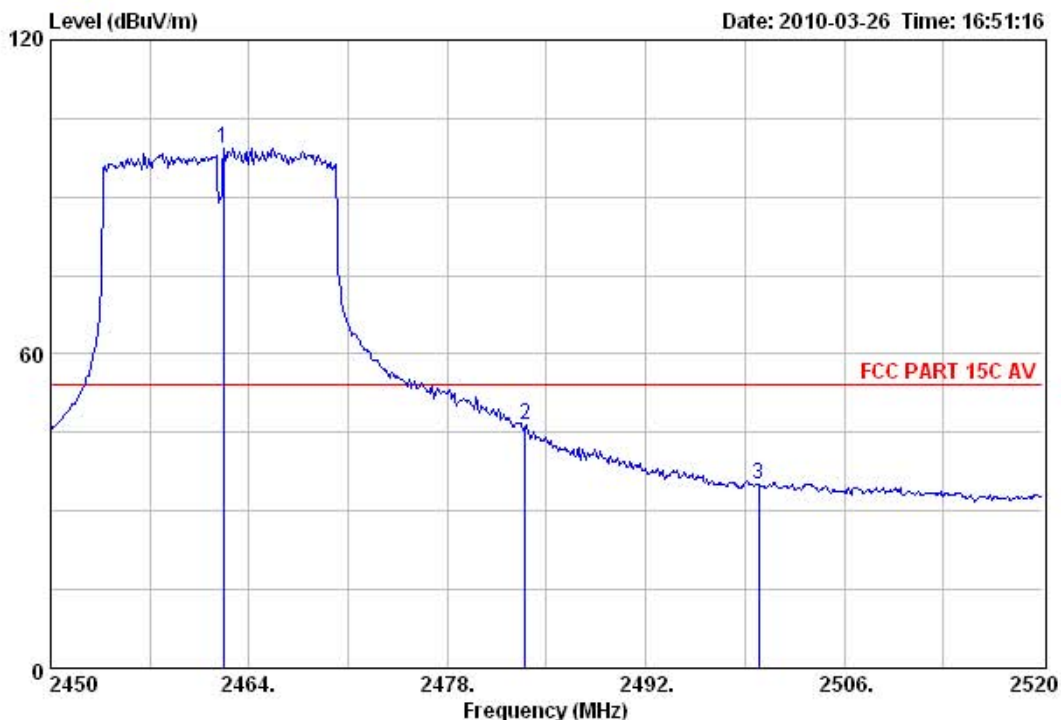
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Data: 314

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:51:16



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	99.32	54.00	-45.32	65.53	31.56	2.23	Average	
2 2483.50	46.58	54.00	7.42	12.77	31.58	2.23	Average	
3 2500.00	35.07	54.00	18.93	1.24	31.60	2.23	Average	



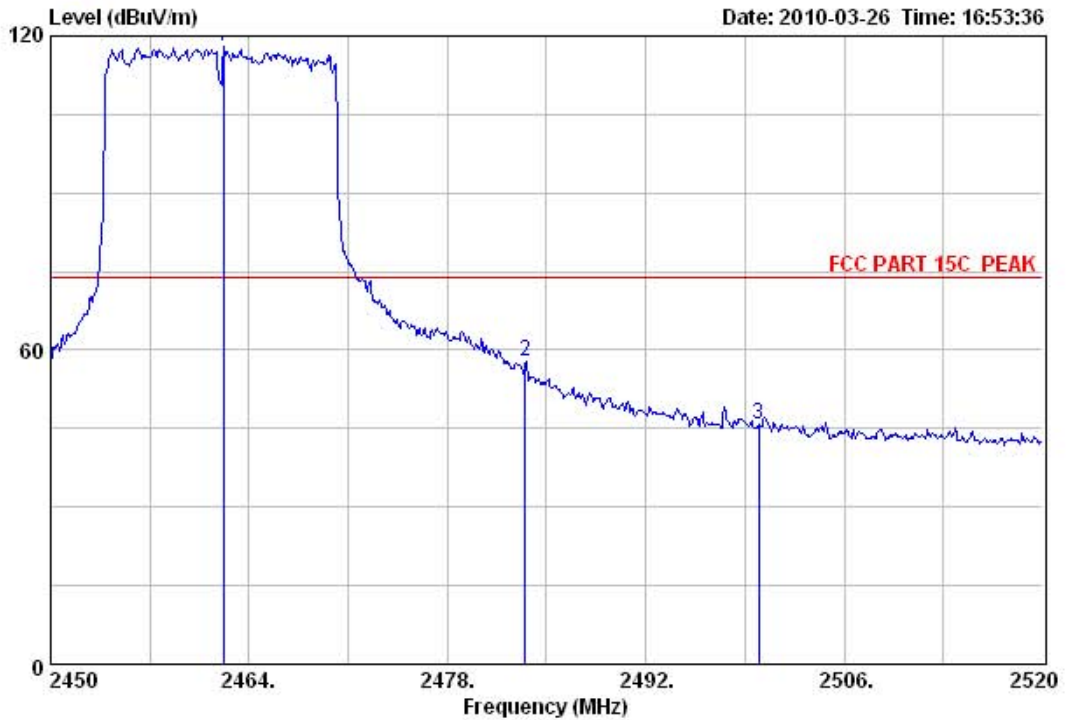
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Data: 315

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:53:36



Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	117.98	74.00	-43.98	84.19	31.56	2.23	Peak	
2 2483.50	57.76	74.00	16.24	23.95	31.58	2.23	Peak	
3 2500.00	45.83	74.00	28.17	12.00	31.60	2.23	Peak	



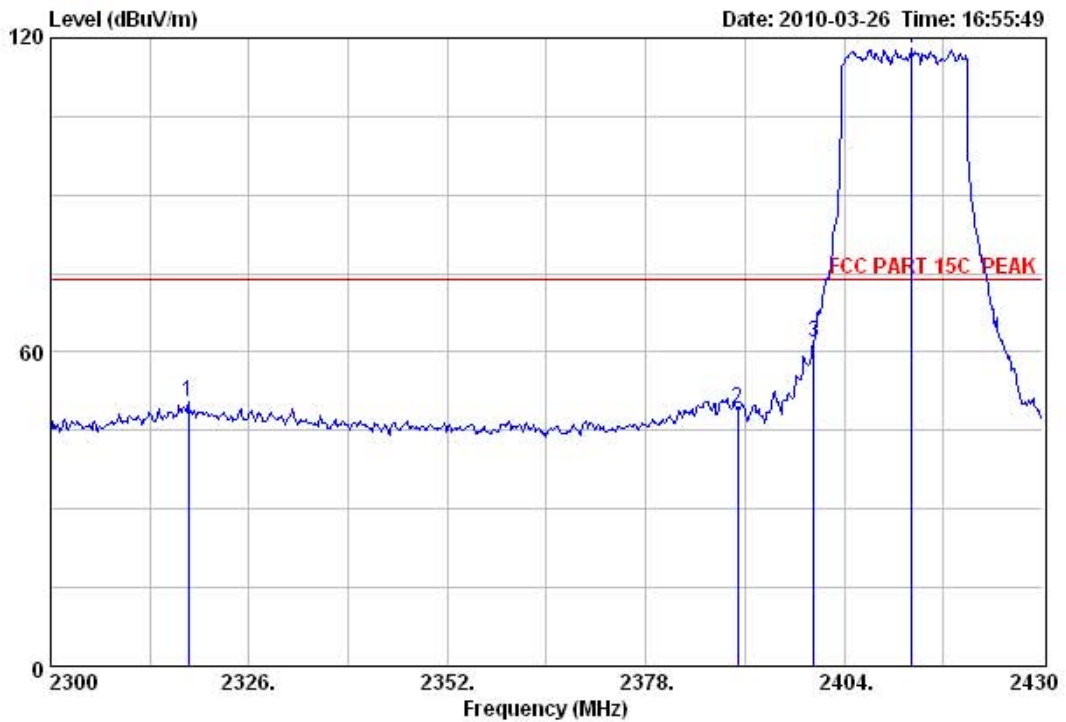
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Data: 316

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:55:49



Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2°C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2412MHz

	Emission				Ant. Cable		
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2318.07	50.38	74.00	23.62	16.75	31.41	2.22	Peak
2 2390.00	49.08	74.00	24.92	15.38	31.48	2.22	Peak
3 2400.00	61.72	74.00	12.28	27.99	31.50	2.23	Peak
4 2412.71	117.85	74.00	-43.85	84.12	31.50	2.23	Peak



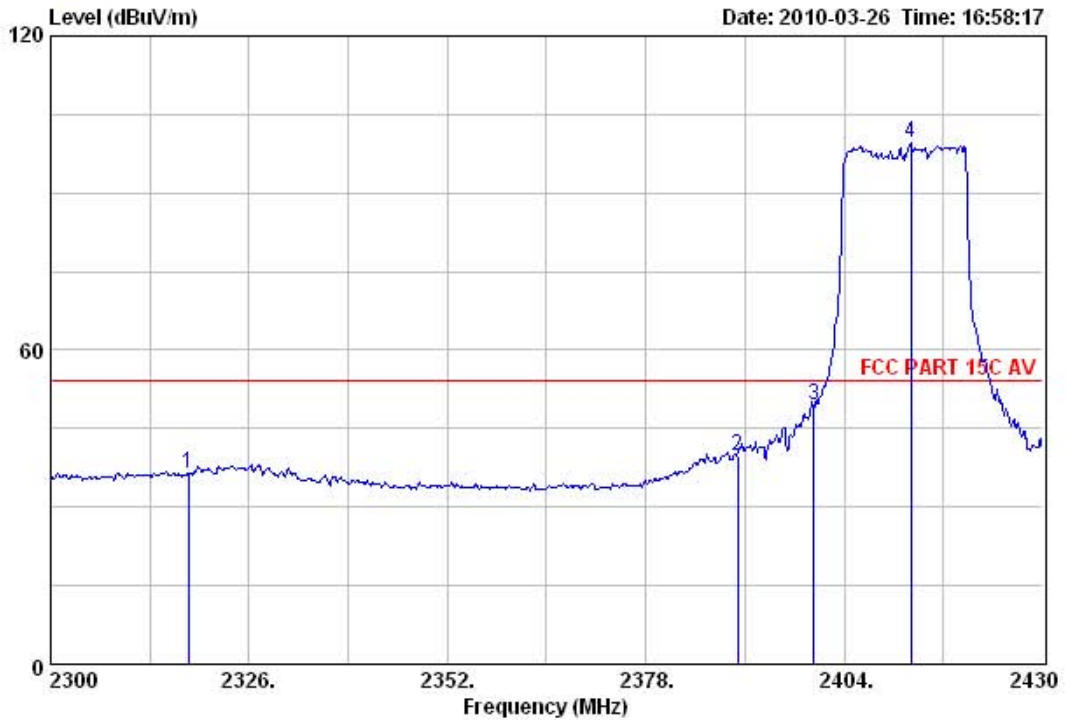
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Data: 317

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 16:58:17



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WL0149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2318.07	36.39	54.00	17.61	2.76	31.41	2.22	Average	
2 2390.00	39.81	54.00	14.19	6.11	31.48	2.22	Average	
3 2400.00	49.62	54.00	4.38	15.89	31.50	2.23	Average	
4 2412.71	99.59	54.00	-45.59	65.86	31.50	2.23	Average	



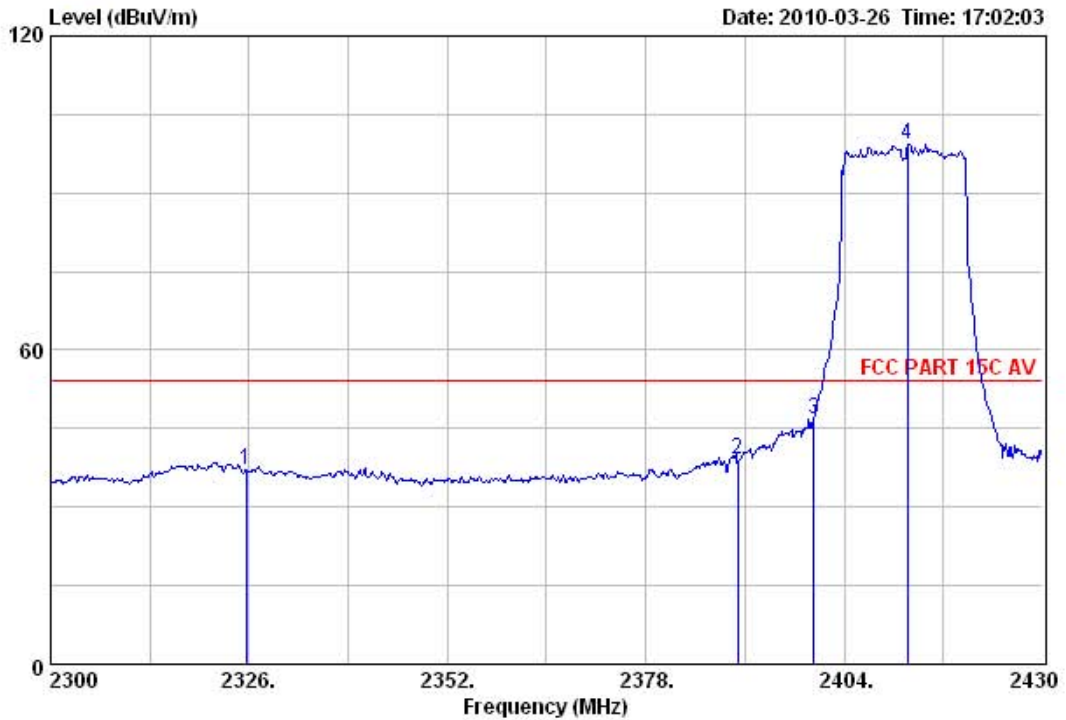
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Data: 318

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:02:03



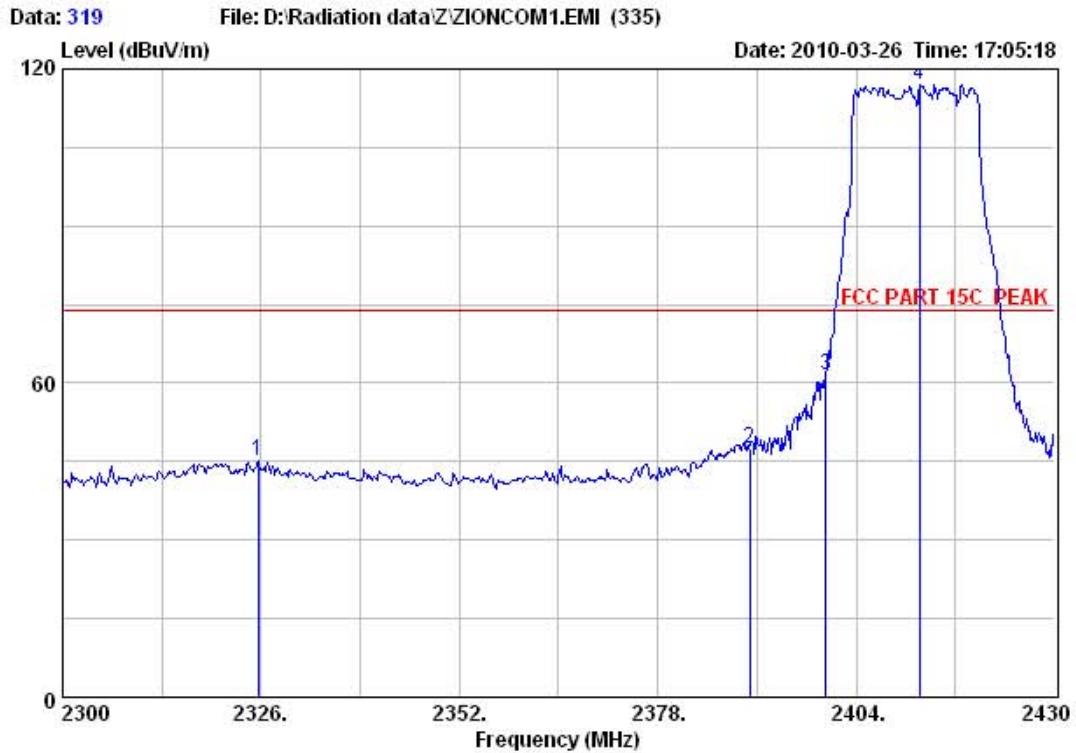
Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2325.61	37.25	54.00	16.75	3.60	31.43	2.22	Average	
2 2390.00	39.21	54.00	14.79	5.51	31.48	2.22	Average	
3 2400.00	46.83	54.00	7.17	13.10	31.50	2.23	Average	
4 2412.32	99.36	54.00	-45.36	65.63	31.50	2.23	Average	



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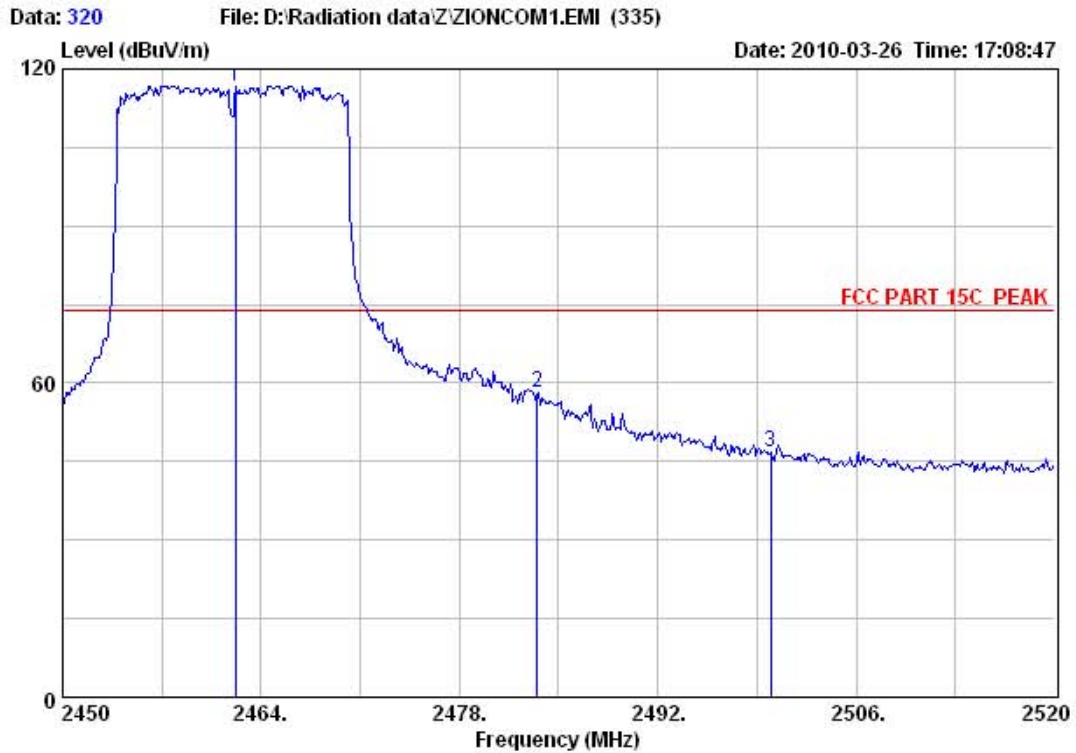
Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11g CH11 2412MHz

	Emission				Ant. Cable		
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2325.61	45.25	74.00	28.75	11.60	31.43	2.22	Peak
2 2390.00	47.54	74.00	26.46	13.84	31.48	2.22	Peak
3 2400.00	61.48	74.00	12.52	27.75	31.50	2.23	Peak
4 2412.32	117.06	74.00	-43.06	83.33	31.50	2.23	Peak



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	116.78	74.00	-42.78	82.99	31.56	2.23	Peak	
2 2483.50	58.28	74.00	15.72	24.47	31.58	2.23	Peak	
3 2500.00	46.71	74.00	27.29	12.88	31.60	2.23	Peak	



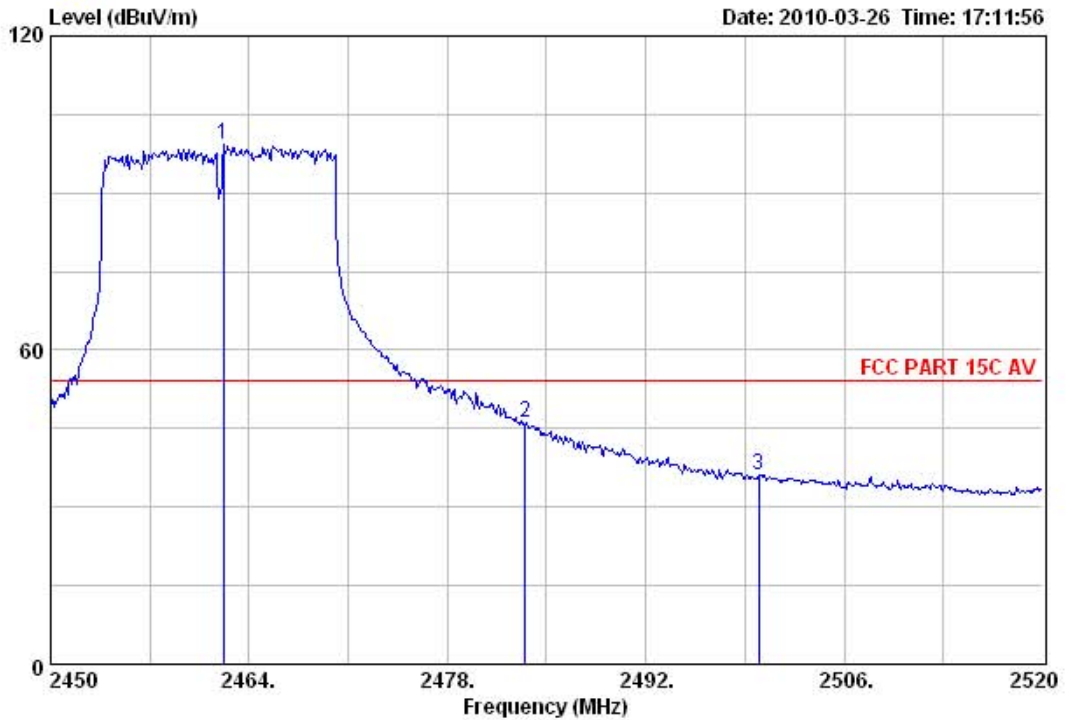
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Data: 321

File: D:\Radiation data\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:11:56



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	99.28	54.00	-45.28	65.49	31.56	2.23	Average	
2 2483.50	46.01	54.00	7.99	12.20	31.58	2.23	Average	
3 2500.00	36.25	54.00	17.75	2.42	31.60	2.23	Average	



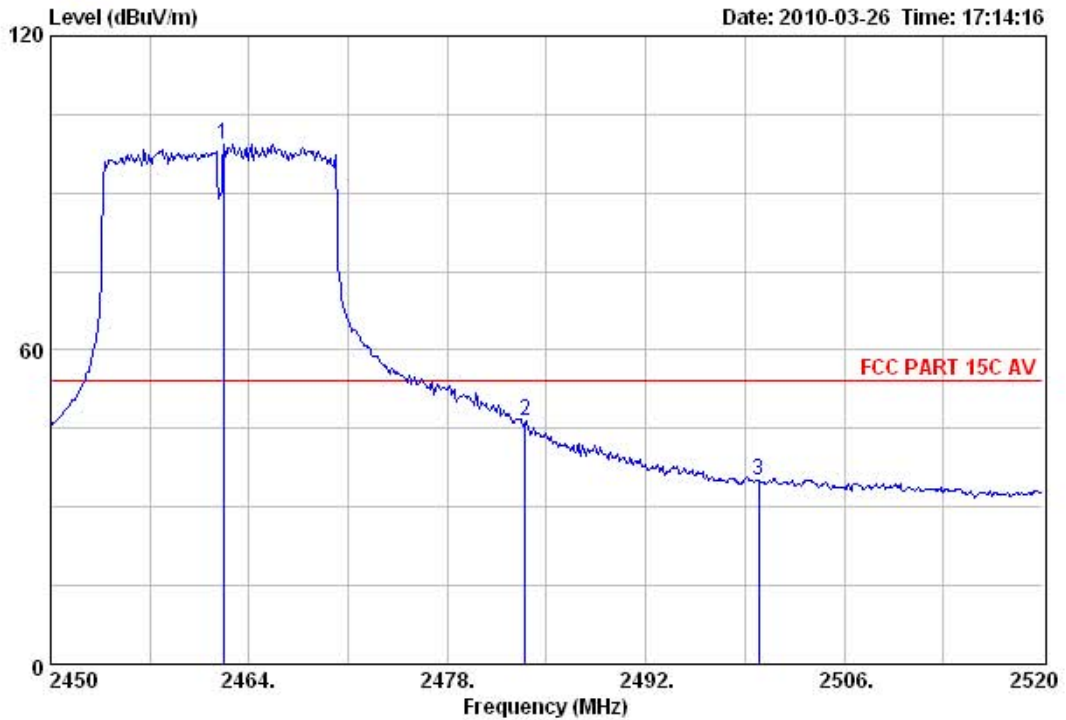
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Data: 322

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:14:16



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH11 2462MHz

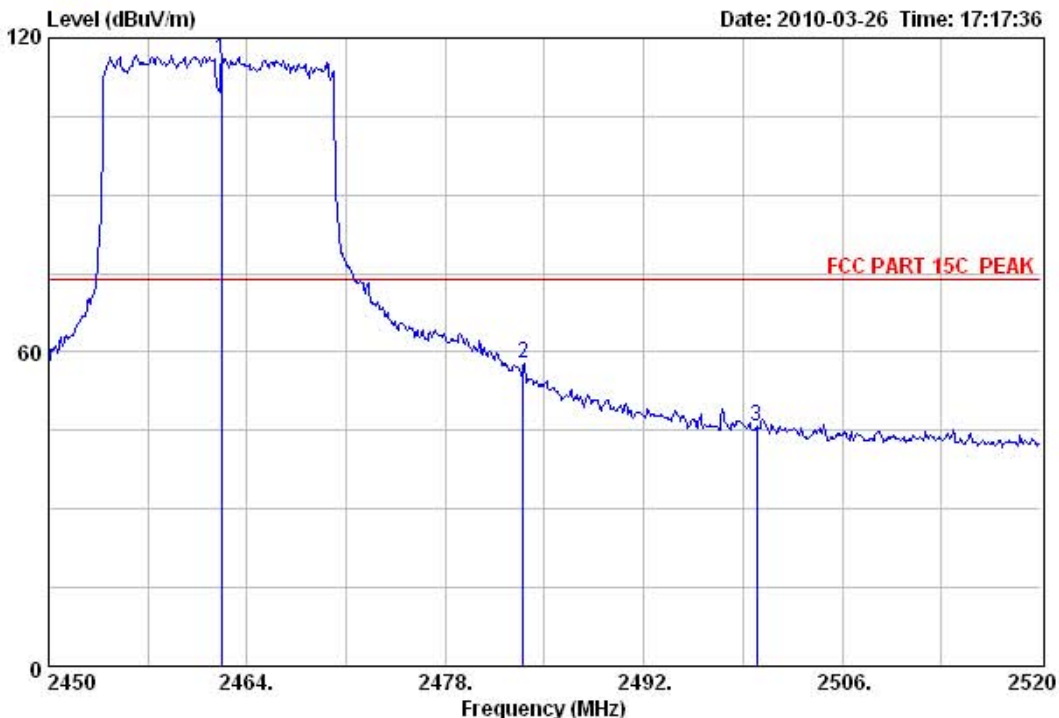
Freq. (MHz)	Emission		Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)			Factor (dB/m)	Loss (dB)	
1 2462.18	99.32	54.00	-45.32	65.53	31.56	2.23	Average
2 2483.50	46.58	54.00	7.42	12.77	31.58	2.23	Average
3 2500.00	35.07	54.00	18.93	1.24	31.60	2.23	Average



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Data: 323 File: D:\Radiation data\ZIONCOM1.EMI (335) Date: 2010-03-26 Time: 17:17:36



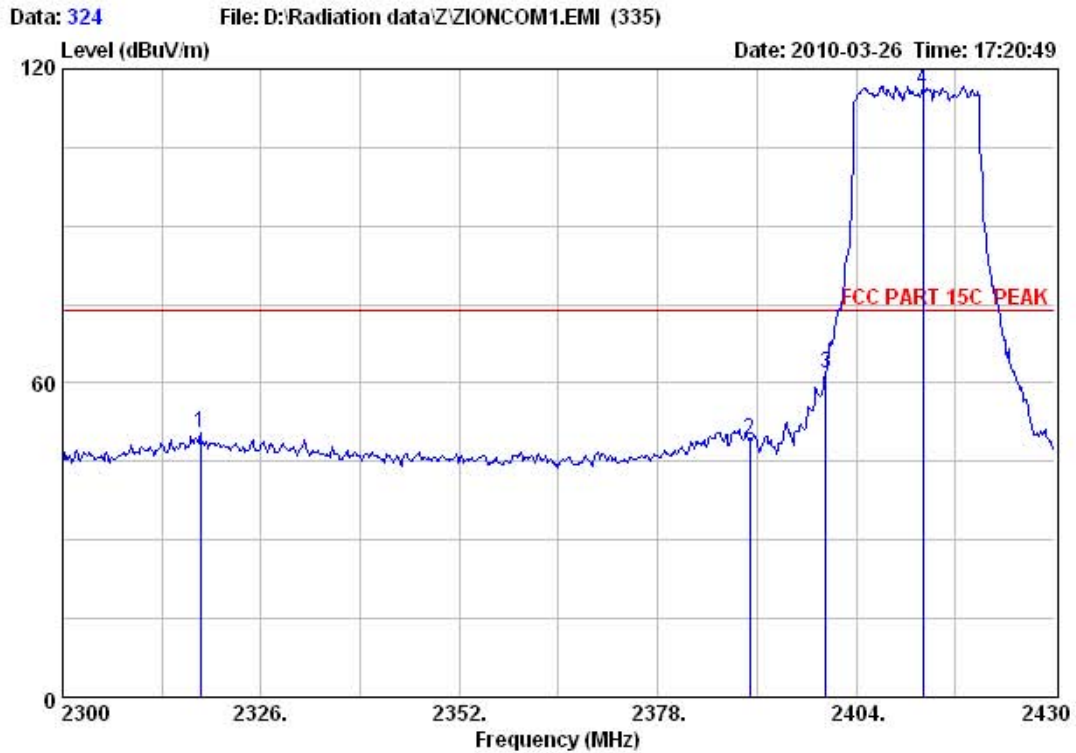
Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH11 2462MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2462.18	115.98	74.00	-41.98	82.19	31.56	2.23	Peak	
2 2483.50	57.76	74.00	16.24	23.95	31.58	2.23	Peak	
3 2500.00	45.83	74.00	28.17	12.00	31.60	2.23	Peak	



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2°C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH1 2412MHz

	Emission					Ant. Cable		
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark	
1 2318.07	50.38	74.00	23.62	16.75	31.41	2.22	Peak	
2 2390.00	49.08	74.00	24.92	15.38	31.48	2.22	Peak	
3 2400.00	61.72	74.00	12.28	27.99	31.50	2.23	Peak	
4 2412.71	115.85	74.00	-41.85	82.12	31.50	2.23	Peak	



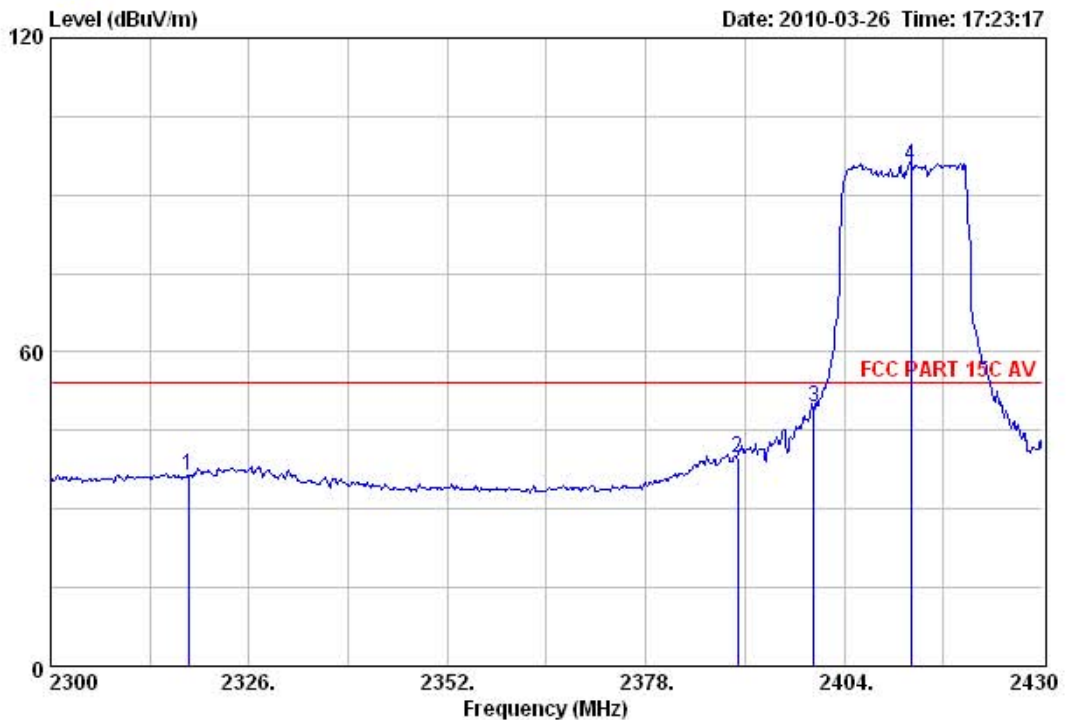
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Data: 325

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:23:17



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WL0149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2318.07	36.39	54.00	17.61	2.76	31.41	2.22	Average	
2 2390.00	39.81	54.00	14.19	6.11	31.48	2.22	Average	
3 2400.00	49.62	54.00	4.38	15.89	31.50	2.23	Average	
4 2412.71	95.59	54.00	-41.59	61.86	31.50	2.23	Average	



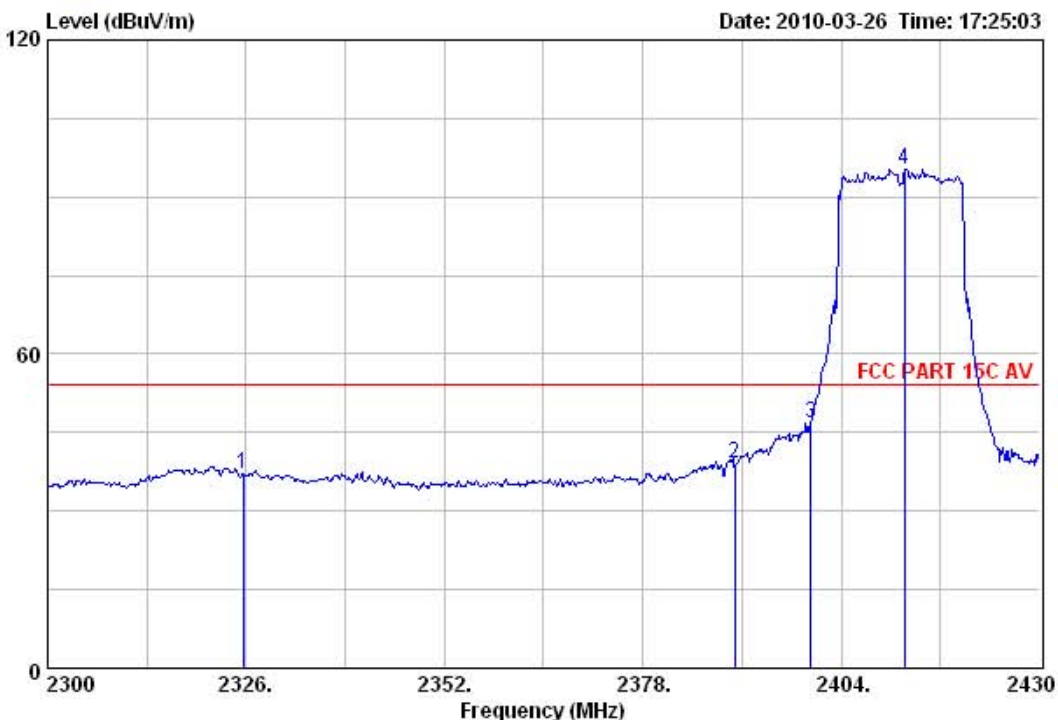
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Data: 326

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:25:03



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2325.61	37.25	54.00	16.75	3.60	31.43	2.22	Average	
2 2390.00	39.21	54.00	14.79	5.51	31.48	2.22	Average	
3 2400.00	46.83	54.00	7.17	13.10	31.50	2.23	Average	
4 2412.32	95.36	54.00	-41.36	61.63	31.50	2.23	Average	



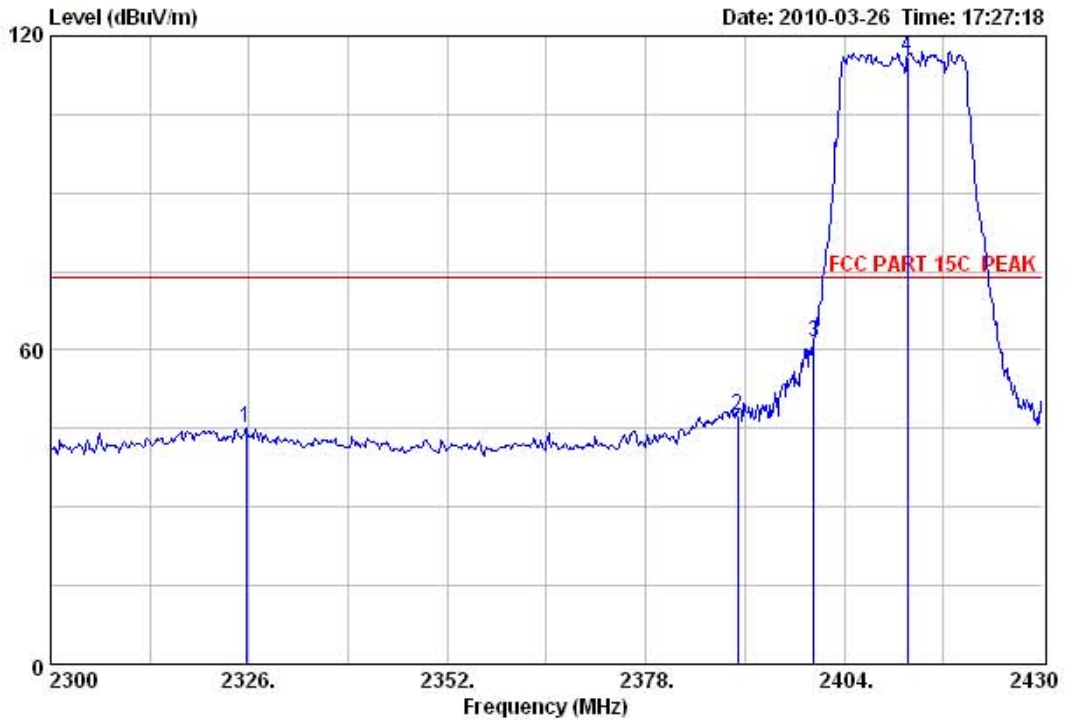
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Data: 327

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:27:18



Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp.:25.2'C Humi.:56% Press:101.51kPa
 Test Mode : TX Mode 802.11n HT20 CH1 2412MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)						
1 2325.61	45.25	74.00	28.75	11.60	31.43	2.22	Peak	
2 2390.00	47.54	74.00	26.46	13.84	31.48	2.22	Peak	
3 2400.00	61.48	74.00	12.52	27.75	31.50	2.23	Peak	
4 2412.32	116.06	74.00	-42.06	82.33	31.50	2.23	Peak	



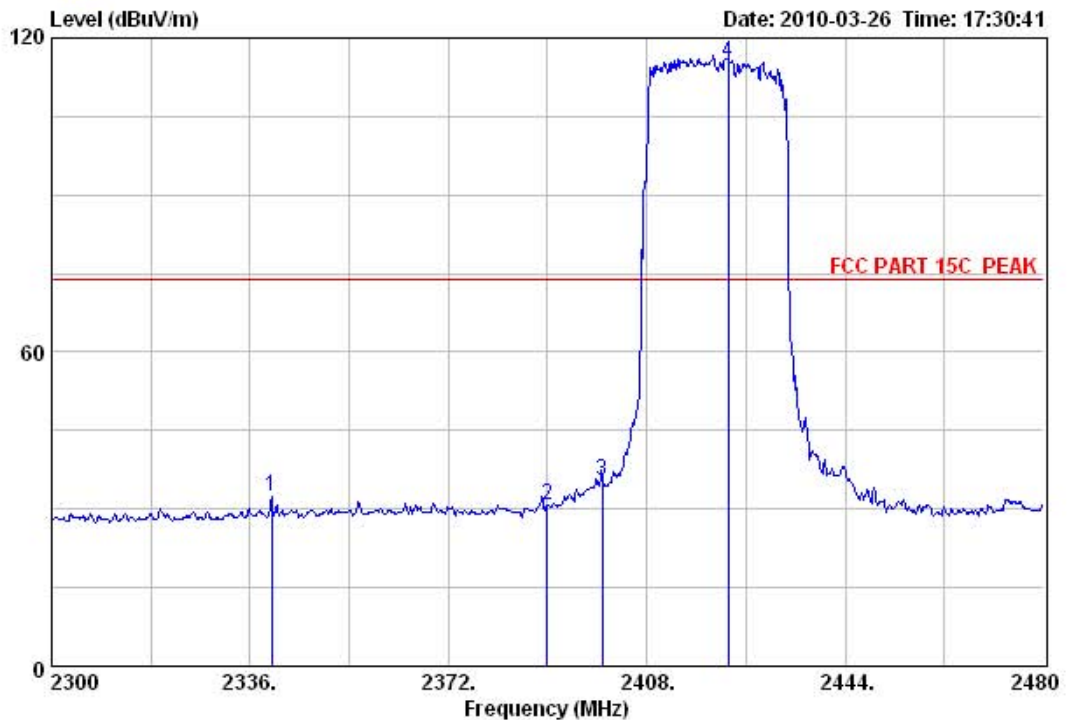
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Data: 328

File: D:\Radiation data\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:30:41



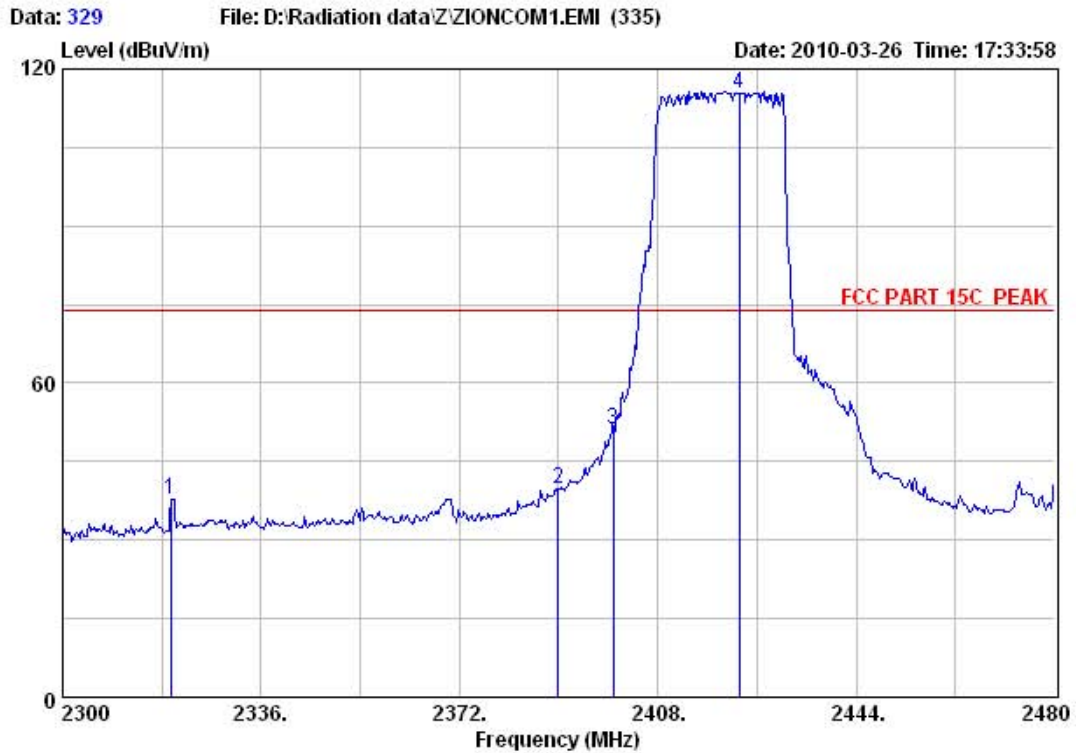
Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH1 2422MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)						
1 2339.96	32.36	74.00	41.64	-1.31	31.45	2.22	Peak	
2 2390.00	30.75	74.00	43.25	-2.95	31.48	2.22	Peak	
3 2400.00	35.60	74.00	38.40	1.87	31.50	2.23	Peak	
4 2422.76	115.20	74.00	-41.20	81.45	31.52	2.23	Peak	



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WL0149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH1 2422MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2319.62	37.81	74.00	36.19	4.18	31.41	2.22	Peak	
2 2390.00	39.62	74.00	34.38	5.92	31.48	2.22	Peak	
3 2400.00	51.28	74.00	22.72	17.55	31.50	2.23	Peak	
4 2422.76	115.44	74.00	-41.44	81.69	31.52	2.23	Peak	



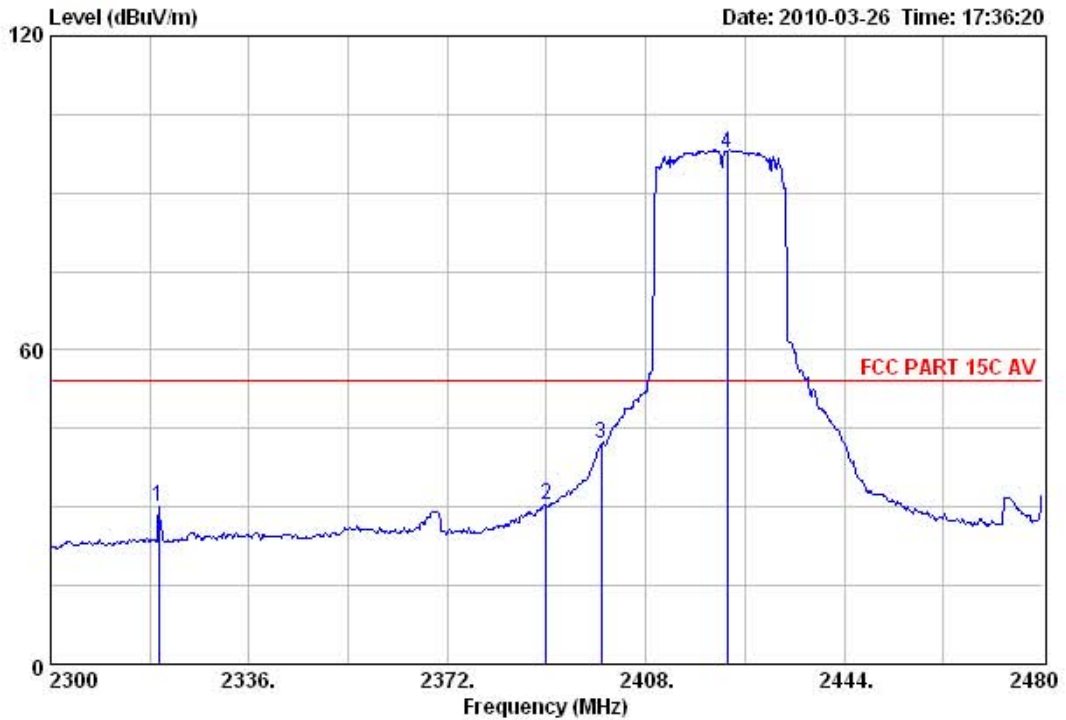
NS Technology

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Fax: +86-769-85991080

Data: 330

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:36:20



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH1 2422MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2319.62	30.11	54.00	23.89	-3.52	31.41	2.22	Average	
2 2390.00	30.31	54.00	23.69	-3.39	31.48	2.22	Average	
3 2400.00	42.17	54.00	11.83	8.44	31.50	2.23	Average	
4 2422.76	97.73	54.00	-43.73	63.98	31.52	2.23	Average	



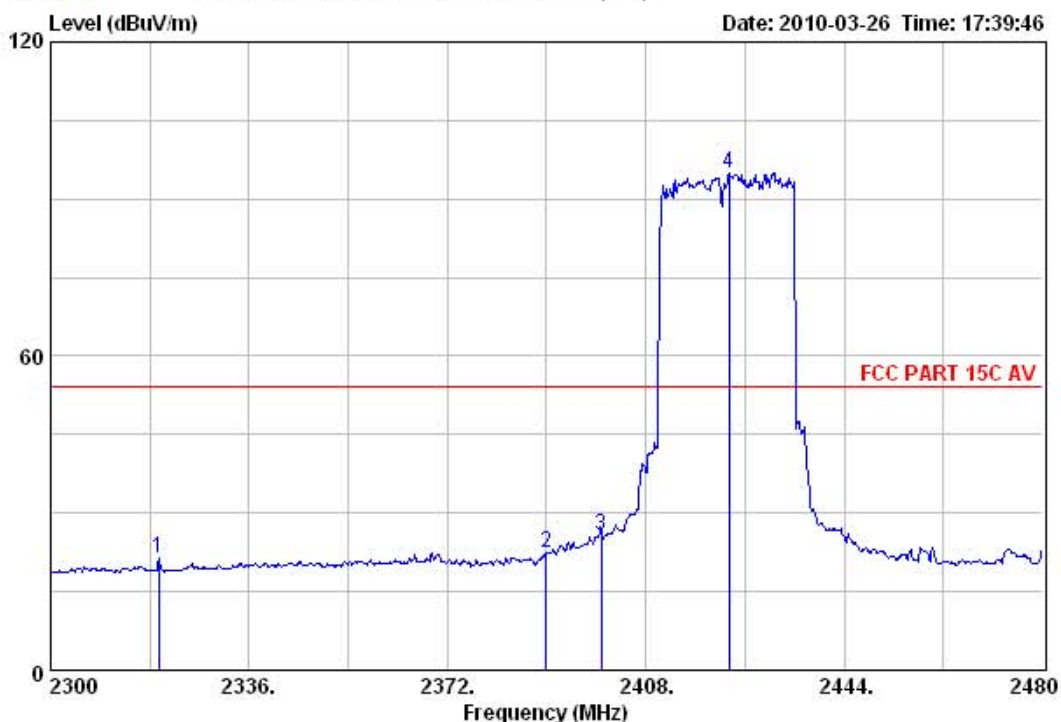
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Data: 331

File: D:\Radiation data\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:39:46



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH1 2422MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2319.62	21.37	54.00	32.63	-12.26	31.41	2.22	Average	
2 2390.00	22.23	54.00	31.77	-11.47	31.48	2.22	Average	
3 2400.00	25.76	54.00	28.24	-7.97	31.50	2.23	Average	
4 2423.12	94.79	54.00	-40.79	61.04	31.52	2.23	Average	



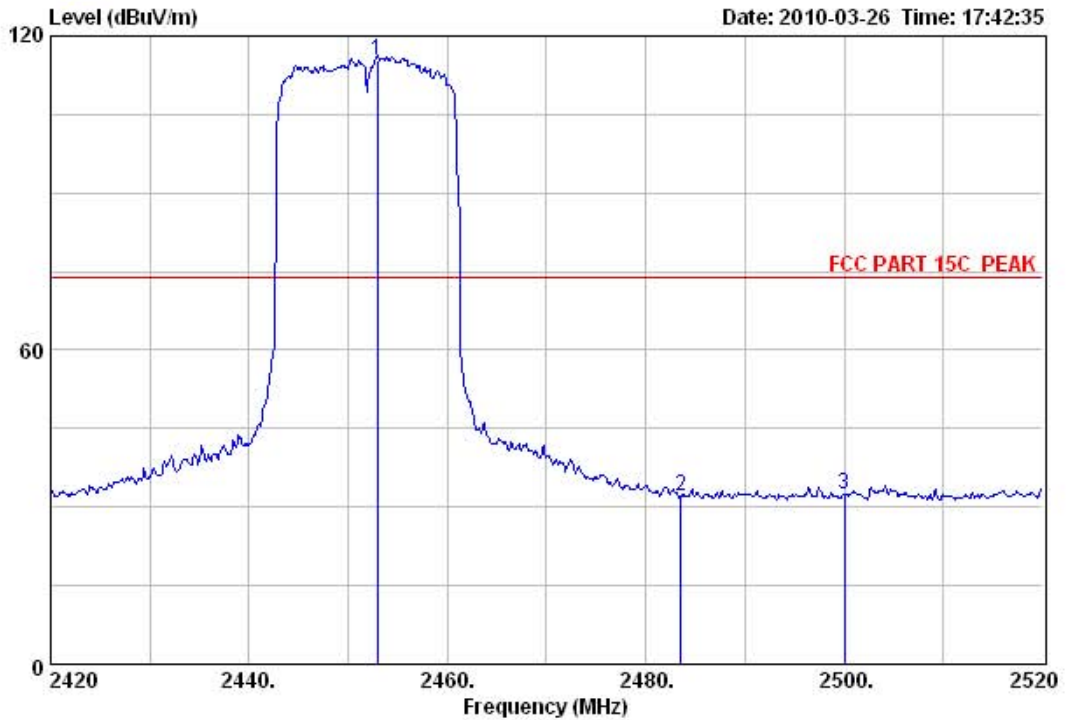
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Data: 332

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:42:35



Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH7 2452MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
	Level (dBuV/m)	Limits (dBuV/m)						
1 2452.90	115.19	74.00	-41.19	81.42	31.54	2.23	Peak	
2 2483.50	31.94	74.00	42.06	-1.87	31.58	2.23	Peak	
3 2500.00	32.54	74.00	41.46	-1.29	31.60	2.23	Peak	



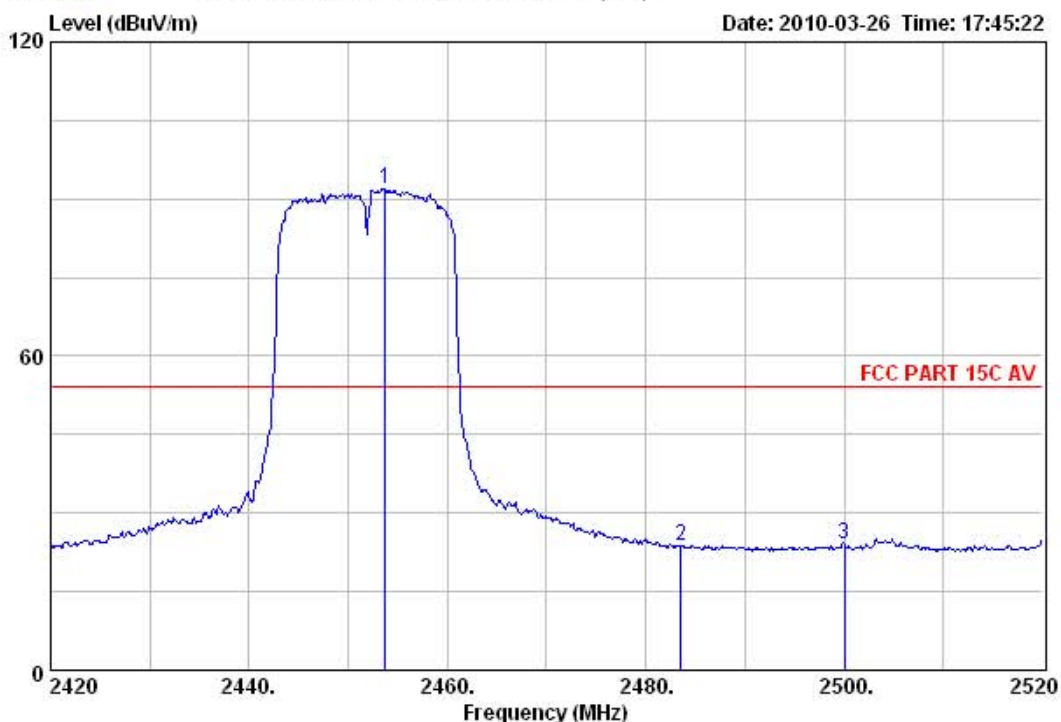
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Data: 333

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:45:22



Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH7 2452MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2453.70	92.02	54.00	-38.02	58.23	31.56	2.23	Average	
2 2483.50	23.69	54.00	30.31	-10.12	31.58	2.23	Average	
3 2500.00	24.00	54.00	30.00	-9.83	31.60	2.23	Average	



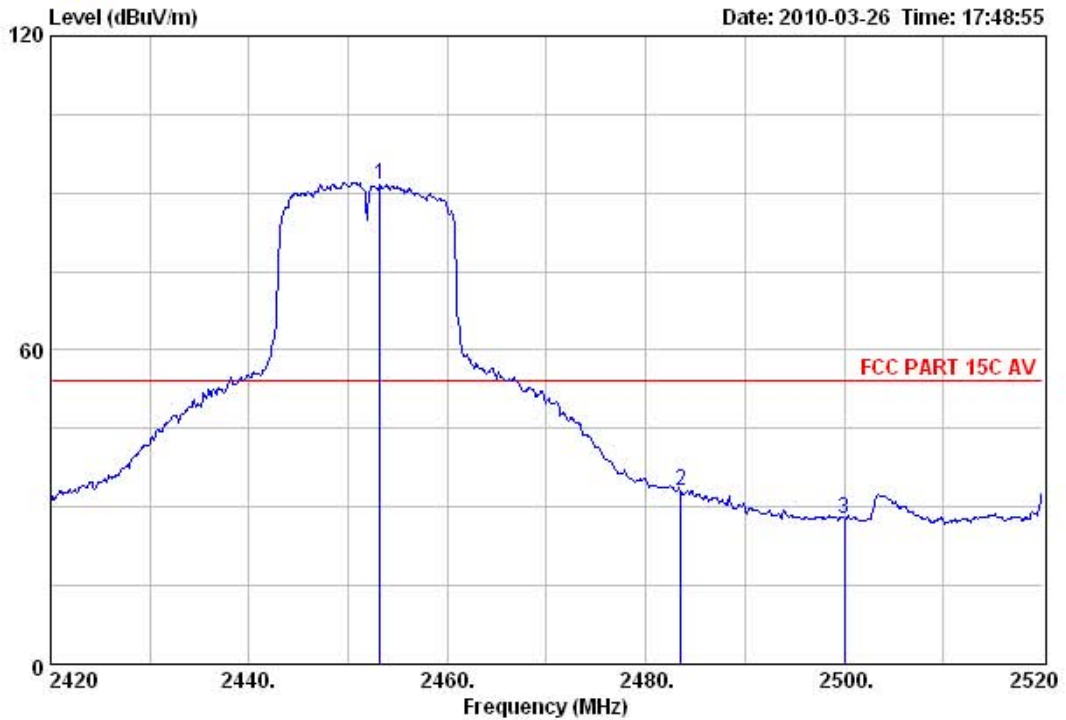
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Data: 334

File: D:\Radiation data\Z\ZIONCOM1.EMI (335)

Date: 2010-03-26 Time: 17:48:55



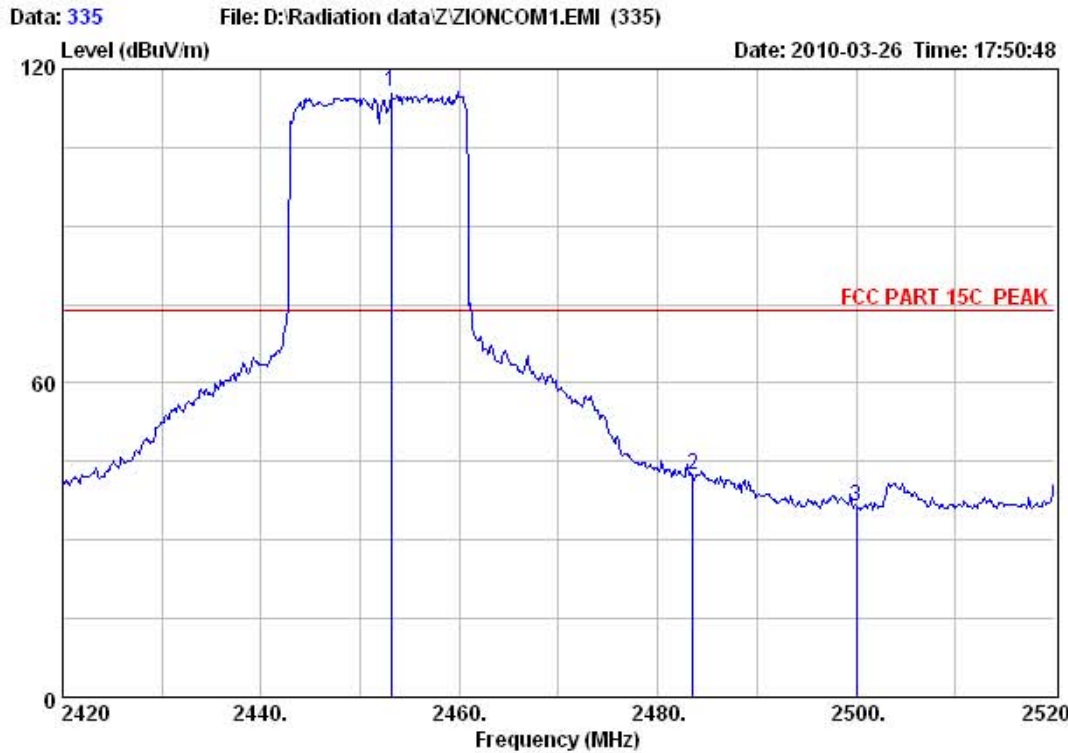
Test Site : 966 Chamber
 Limit : FCC PART 15C AV
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH7 2452MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2453.20	91.64	54.00	-37.64	57.87	31.54	2.23	Average	
2 2483.50	33.21	54.00	20.79	-0.60	31.58	2.23	Average	
3 2500.00	27.87	54.00	26.13	-5.96	31.60	2.23	Average	



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Test Site : 966 Chamber
 Limit : FCC PART 15C PEAK
 Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
 EUT : Wireless USB Adapter
 M/N : WLO149
 Power : DC 5V from PC input AC 120V/60Hz
 Test Engineer : Jade
 Comment : Temp:25.2'C Humi:55% Press:101.45KPa
 Test Mode : TX Mode 802.11n HT40 CH7 2452MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2453.10	115.64	74.00	-41.64	81.87	31.54	2.23	Peak	
2 2483.50	42.30	74.00	31.70	8.49	31.58	2.23	Peak	
3 2500.00	36.58	74.00	37.42	2.75	31.60	2.23	Peak	



6.7. ANTENNA REQUIREMENT

6.7.1. STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

6.7.2. ANTENNA CONNECTED CONSTRUCTION

The antenna used for this product is internal antenna (see EUT photo) that no antenna other than that furnished by the responsible party shall be used with the device, The maximum peak gain of this antenna is only 2dBi.