

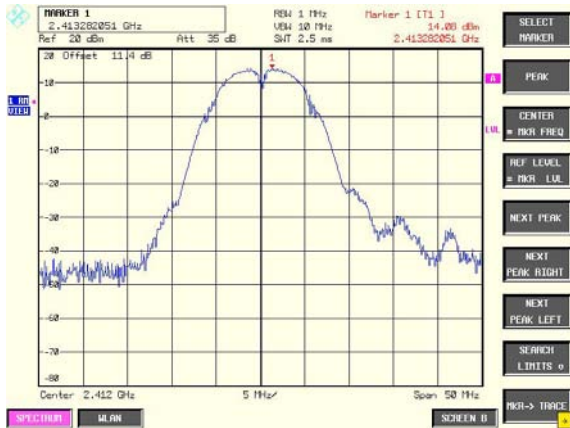
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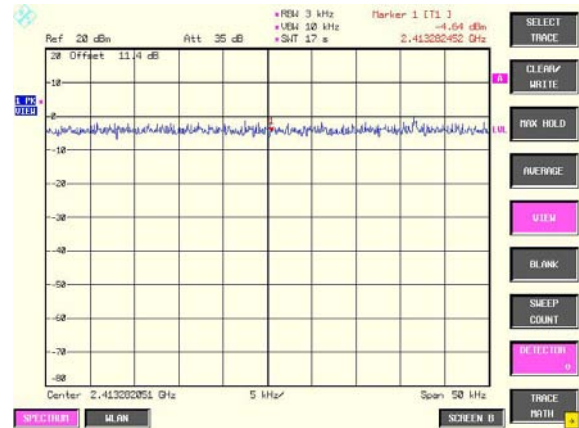
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

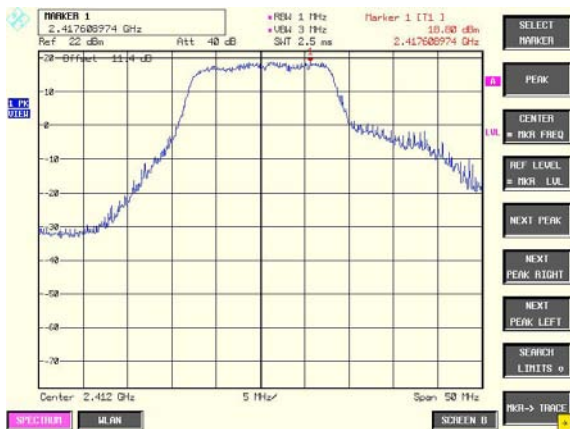
FCC ID: UGM-WBS2400-2S



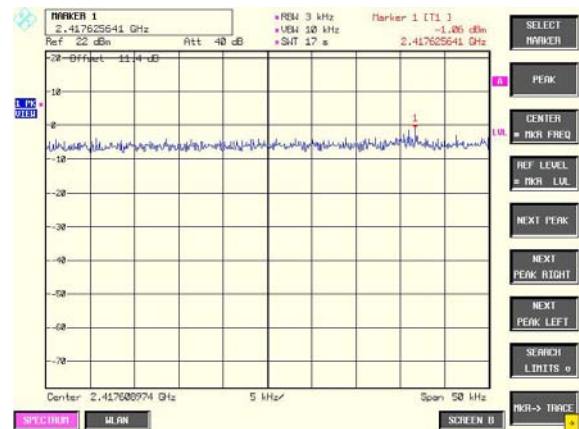
Plot # 105. Tx output 1. Max peak point.  
Fc-2412 MHz. 1Mbps rate.



Plot # 106. Tx output 1. PSD result.  
Fc-2412 MHz. 1Mbps rate



Plot # 107. Tx output 1. Max peak point.  
Fc-2412 MHz. 6Mbps rate.



Plot # 108. Tx output 1. PSD result.  
Fc-2412 MHz. 6Mbps rate

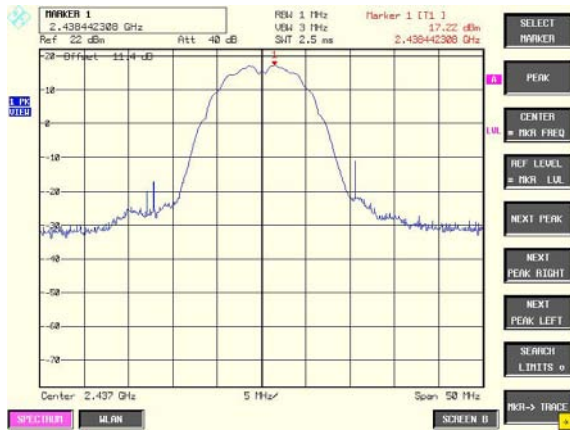
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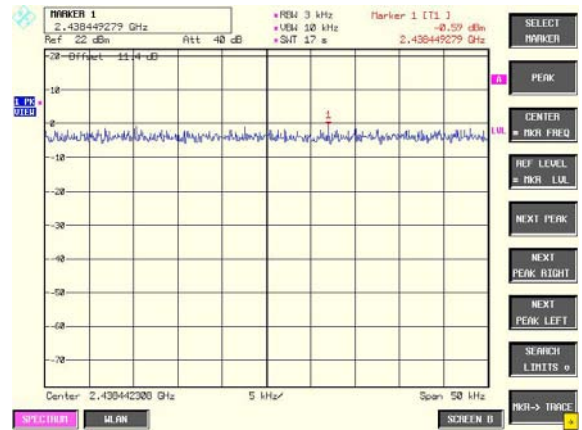
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

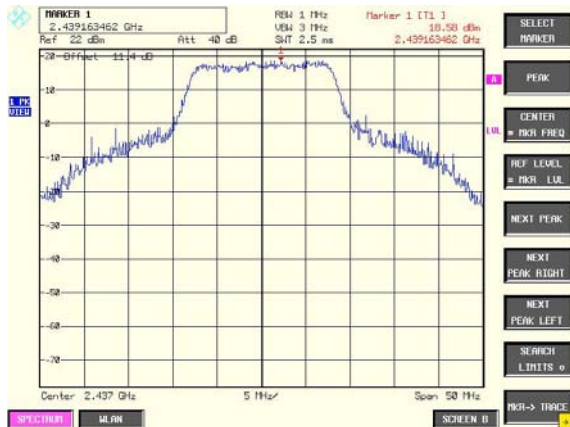
FCC ID: UGM-WBS2400-2S



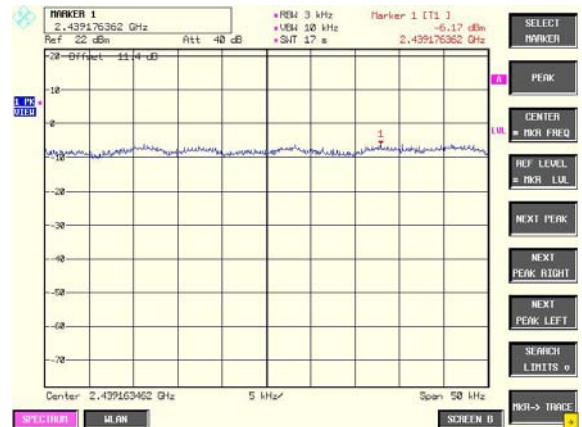
Plot # 109. Tx output 1. Max peak point.  
Fc-2437 MHz. 1Mbps rate.



Plot # 110. Tx output 1. PSD result.  
Fc-2437 MHz. 1Mbps rate.



Plot # 111. Tx output 1. Max peak point.  
Fc-2437 MHz. 6Mbps rate.



Plot # 112. Tx output 1. PSD result.  
Fc-2437 MHz. 6Mbps rate

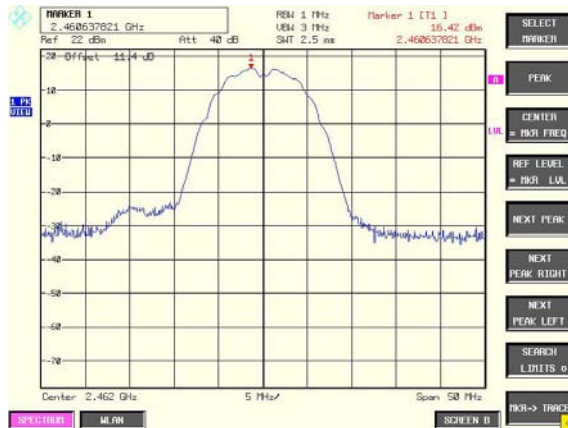
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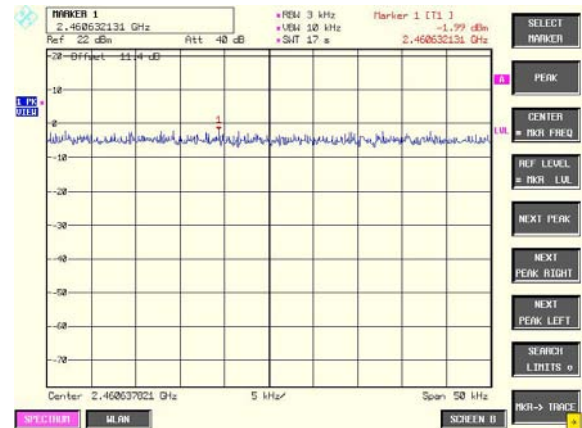
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

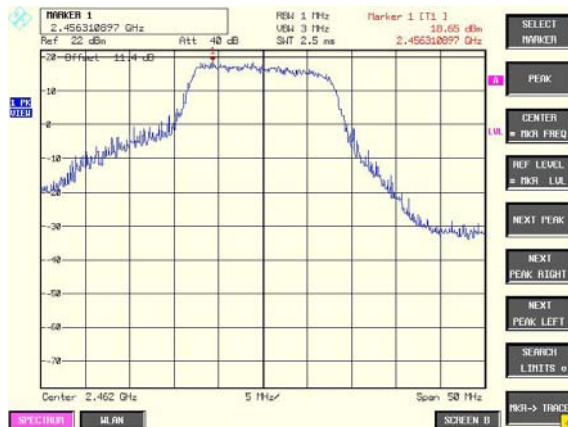
FCC ID: UGM-WBS2400-2S



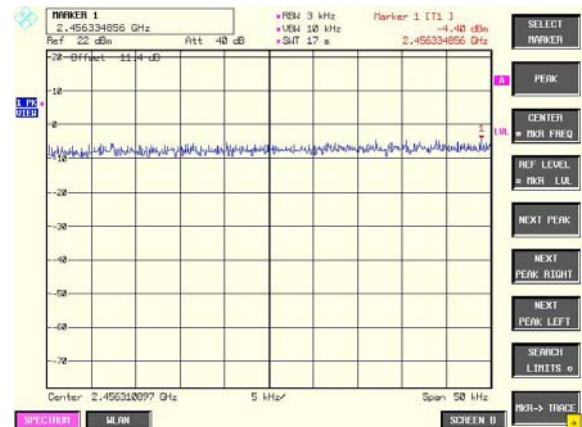
Plot # 113. Tx output 1. Max peak point.  
Fc-2462 MHz. 1Mbps rate.



Plot # 114. Tx output 1. PSD result.  
Fc-2462 MHz. 1Mbps rate.



Plot # 115. Tx output 1. Max peak point.  
Fc-2462 MHz. 6Mbps rate.



Plot # 116. Tx output 1. PSD result.  
Fc-2462 MHz. 6Mbps rate.



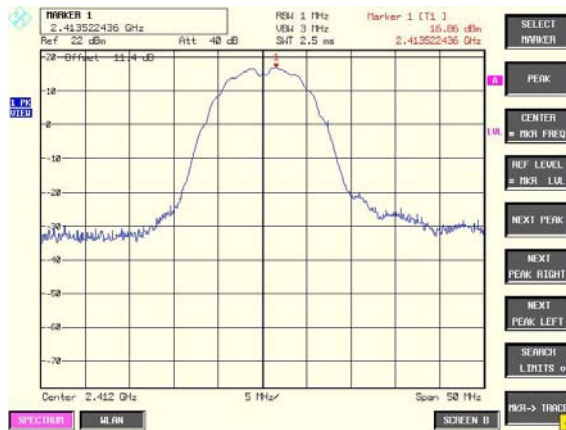
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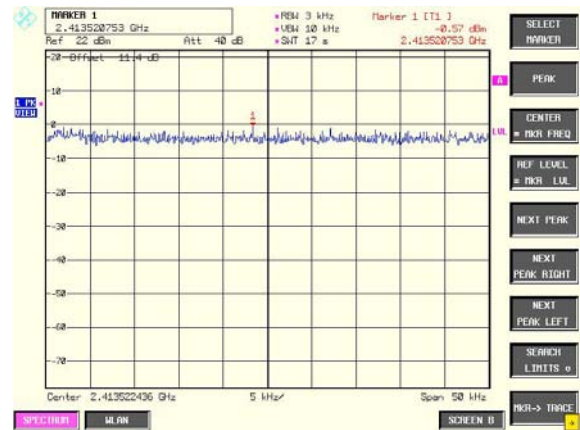
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

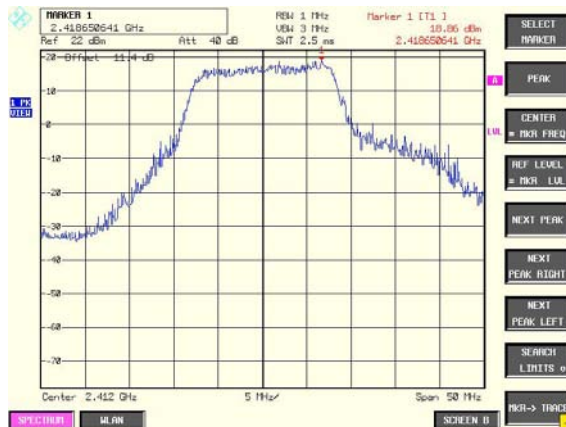
FCC ID: UGM-WBS2400-2S



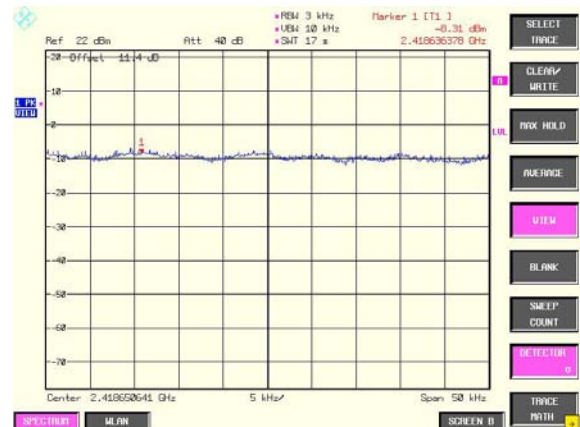
Plot # 117. Tx output 2. Max peak point.  
Fc-2412 MHz. 1Mbps rate.



Plot # 118. Tx output 2. PSD result.  
Fc-2412 MHz. 1Mbps rate.



Plot # 119. Tx output 2. Max peak point.  
Fc-2412 MHz. 6Mbps rate



Plot # 120. Tx output 2. PSD result.  
Fc-2412 MHz. 6Mbps rate

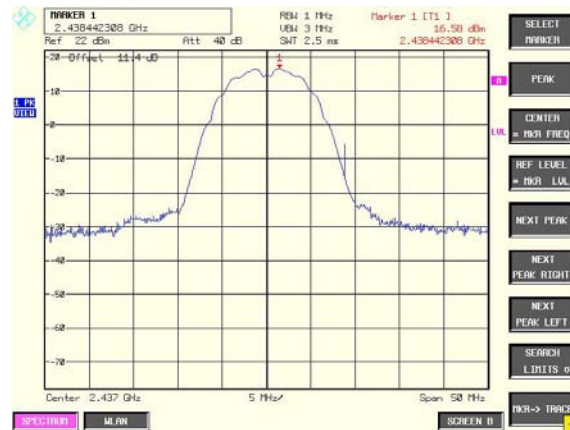
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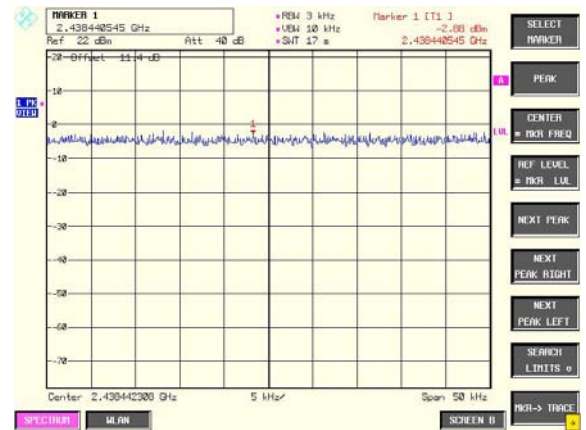
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

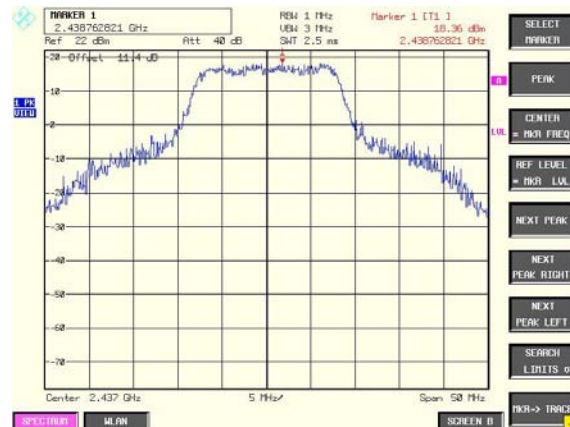
FCC ID: UGM-WBS2400-2S



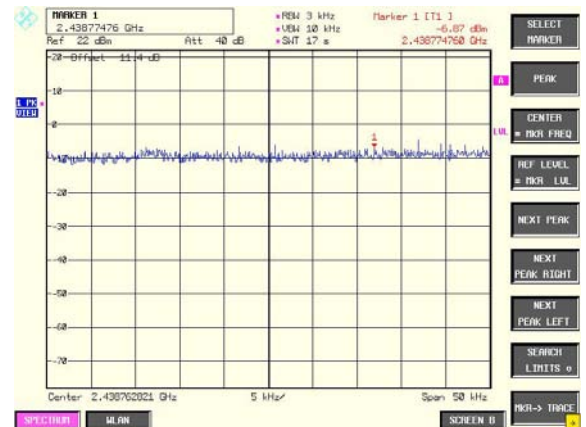
Plot # 121. Tx output 2. Max peak point.  
Fc-2437 MHz. 1Mbps rate



Plot # 122. Tx output 2. PSD result.  
Fc-2437 MHz. 1Mbps rate



Plot # 123. Tx output 2. Max peak point.  
Fc-2437 MHz. 6Mbps rate



Plot # 124. Tx output 2. PSD result.  
Fc-2437 MHz. 6Mbps rate

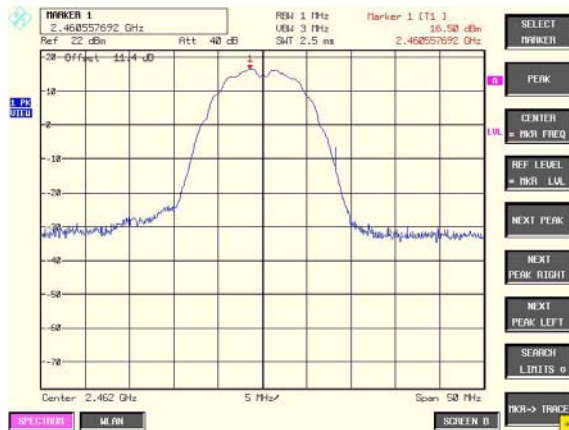
Test Report No.: 8912323629

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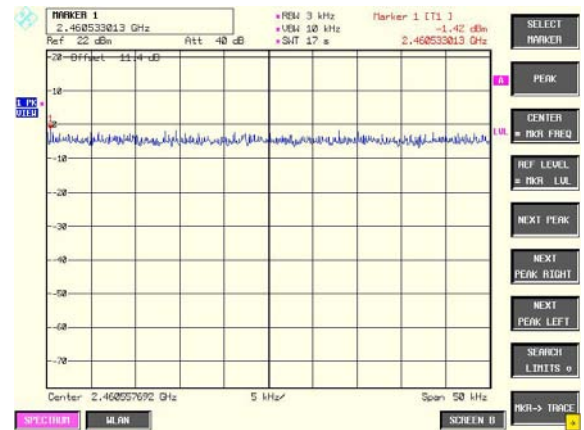
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

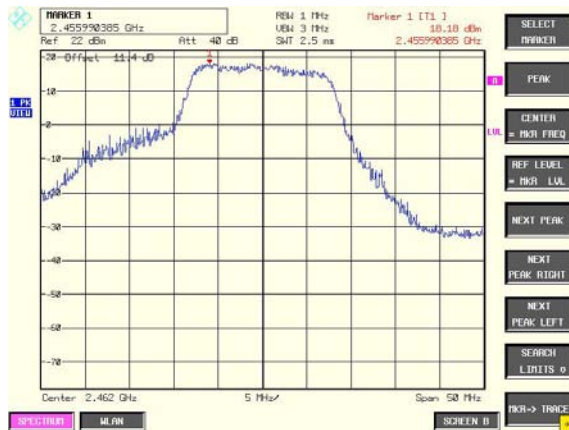
FCC ID: UGM-WBS2400-2S



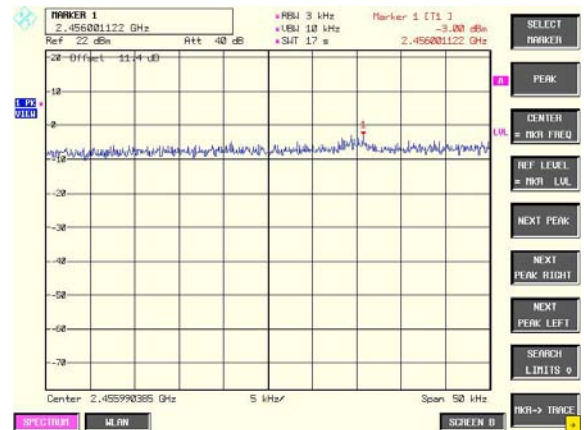
Plot # 125. Tx output 2. Max peak point.  
Fc-2462 MHz. 1Mbps rate



Plot # 126. Tx output 2. PSD result.  
Fc-2462 MHz. 1Mbps rate



Plot # 127. Tx output 2. Max peak point.  
Fc-2462 MHz. 6Mbps rate



Plot # 128. Tx output 2. PSD result.  
Fc-2462 MHz. 6Mbps rate



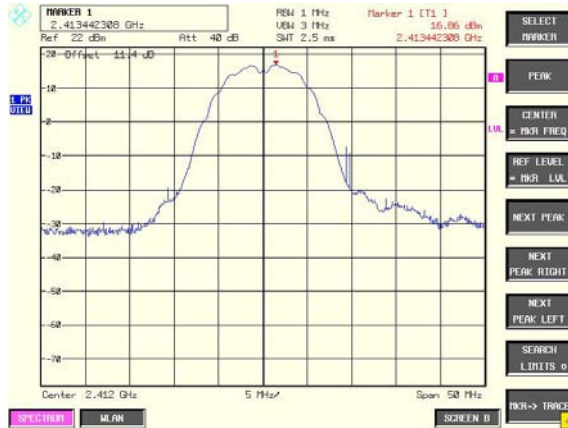
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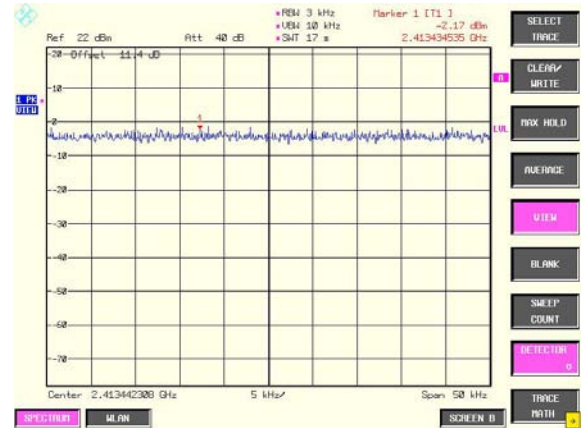
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

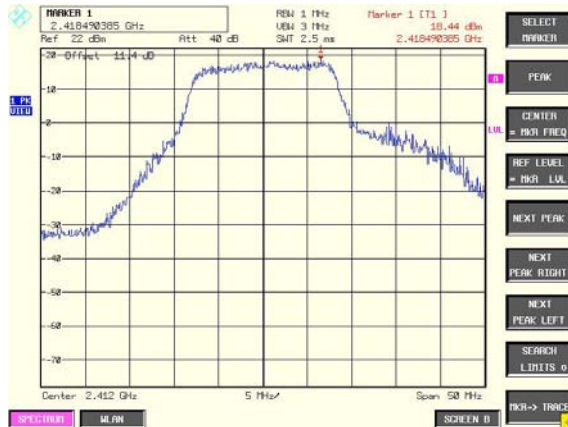
FCC ID: UGM-WBS2400-2S



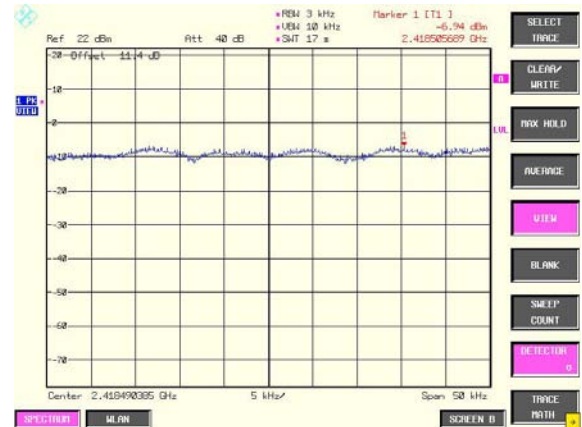
Plot # 129. Tx output 3. Max peak point.  
Fc-2412 MHz. 1Mbps rate



Plot # 130. Tx output 3. PSD result.  
Fc-2412 MHz. 1Mbps rate



Plot # 131. Tx output 3. Max peak point.  
Fc-2412 MHz. 6Mbps rate



Plot # 132. Tx output 3. PSD result.  
Fc-2412 MHz. 6Mbps rate

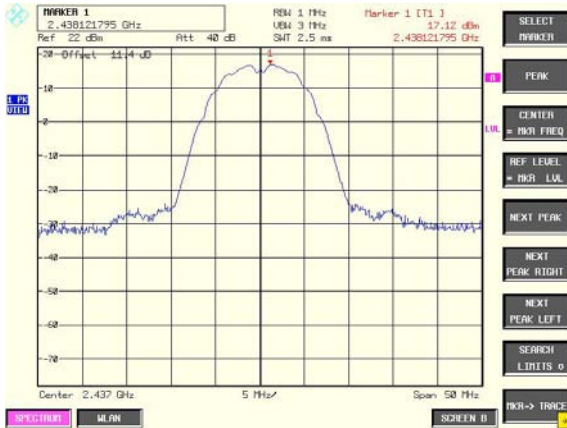
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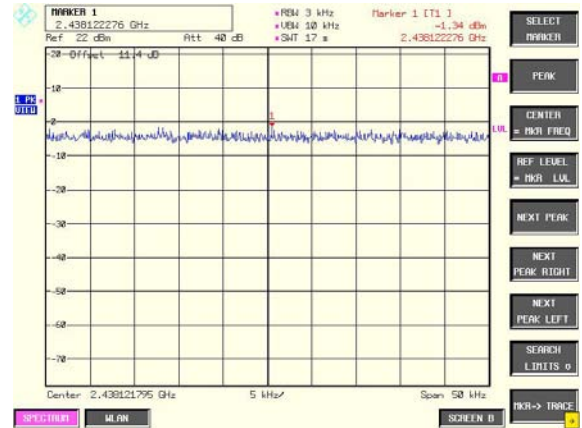
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

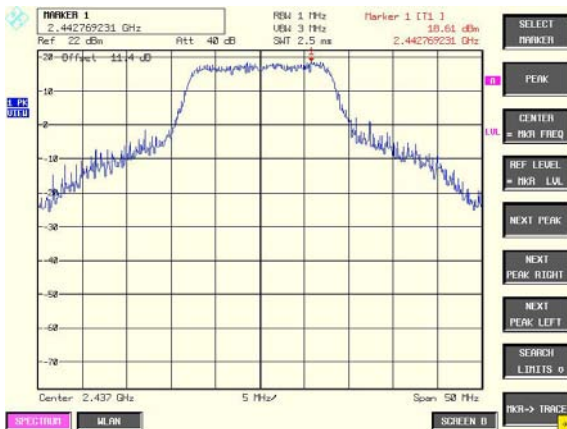
FCC ID: UGM-WBS2400-2S



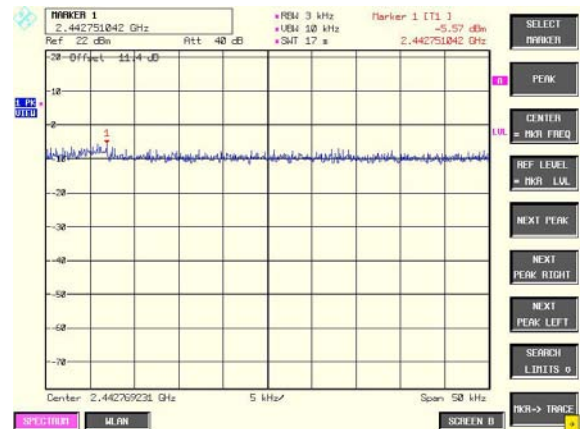
Plot # 133. Tx output 3. Max peak point.  
Fc-2437 MHz. 1Mbps rate



Plot # 134. Tx output 3. PSD result.  
Fc-2437 MHz. 1Mbps rate



Plot # 135. Tx output 3. Max peak point.  
Fc-2437 MHz. 6Mbps rate



Plot # 136. Tx output 3. PSD result.  
Fc-2437 MHz. 6Mbps rate



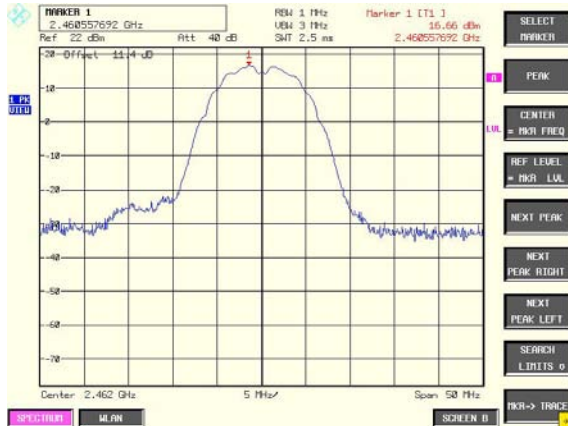
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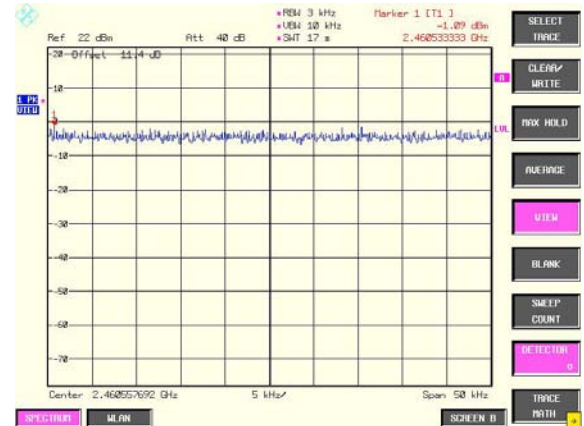
Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

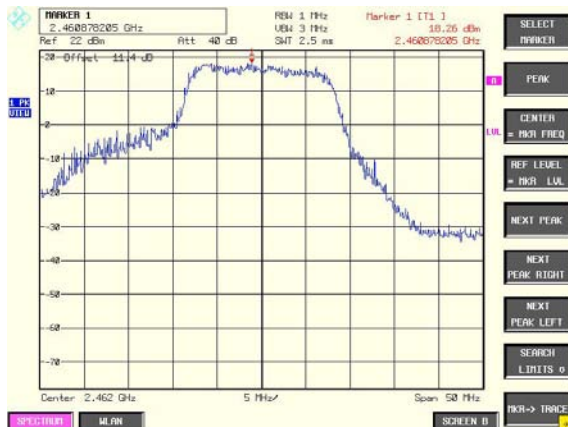
FCC ID: UGM-WBS2400-2S



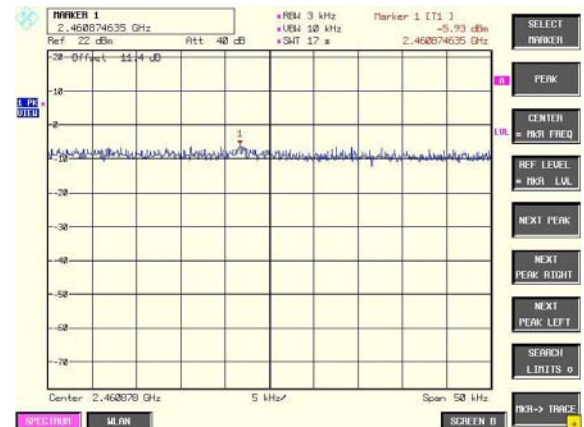
Plot # 137. Tx output 3. Max peak point.  
Fc-2462 MHz. 1Mbps rate



Plot # 138. Tx output 3. PSD result.  
Fc-2462 MHz. 1Mbps rate



Plot # 139. Tx output 3. Max peak point.  
Fc-2462 MHz. 6Mbps rate



Plot # 140. Tx output 3. PSD result.  
Fc-2462 MHz. 6Mbps rate

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Title: Test on 2.4 GHz Band Outdoor WiFi (802.11b/g) Wireless Base Station

Model: WBS-2400

FCC ID: UGM-WBS2400-2S

## 8. Appendix 1: Test equipment used

All measurements equipment is on SII calibration schedule with a recalibration interval not exceeding once a year.

Instrument	Manufacturer	Model	Serial No.	Due calibration date
Signal Analyzer	Rohde&Schwarz	FSQ 8	100138	11/09
EMI Analyzer	HP	E7405A	SII 4944	04/09
Antenna Double Ridge 1-18 GHz	EMCO	3115	SII 4873	09/09
Antenna SHF-EHF Horn 14-40 GHz	Schwarzbeck	BBHA 9170	SII 5854	09/09
Biconilog Antenna 30 – 2000 MHz	Schaffner- Chase	CBL-6112D	S/N 23181	09/09
Antenna Mast	R&S	HCM	-	N/A
Metallic turntable	R&S	HCT12	100001	N/A
Positioning controller	R&S	HCC	-	N/A
LISN 9 kHz – 30 MHz	FCC	LISN- 50/250-32-4-16	SII 5023	10/09
Transient limiter 0.009-200 MHz	HP	11947A	31074A3105	03/09

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FCC ID: UGM-WBS2400-2S

## 9. Appendix 2. Antenna Factor and Cable Loss

Cable Loss (10m cable + Mast)

Point	Frequency (MHz)	Cable Loss (dB)	Point	Frequency (MHz)	Cable Loss (dB)
1	30	0.53	21	1000	3.68
2	50	0.75	22	1100	3.82
3	100	1.08	23	1200	4.07
4	150	1.39	24	1300	4.24
5	200	1.61	25	1400	4.43
6	250	1.752	26	1500	4.6
7	300	2.00	27	1600	4.7
8	350	2.15	28	1700	4.85
9	400	2.26	29	1800	4.98
10	450	2.383	30	1900	5.19
11	500	2.52	31	2000	5.34
12	550	2.606	32	2100	5.51
13	600	2.75	33	2200	5.69
14	650	2.856	34	2300	5.89
15	700	3.06	35	2400	6.07
16	750	3.201	36	2500	6.22
17	800	3.27	37	2600	6.28
18	850	3.38	38	2700	6.41
19	900	3.46	39	2800	6.53
20	950	3.55	40	2900	6.84





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**Antenna Factors:**For Bilog Antenna, Model Number: CBL 6112D,  
S/N: 23181For Double Ridged Guide Antenna mfr  
EMCO model 3115

No.	f / MHz	AF / dB/m	f / MHz	AF / dB/m
1	30	19.1	160	10.0
2	35	16.0	180	9.5
3	40	13.4	200	9.4
4	45	10.4	250	12.0
5	50	8.3	300	13.1
6	60	6.8	400	15.7
7	70	6.3	500	17.2
8	80	6.8	600	18.3
9	90	8.7	700	19.1
10	100	10.8	800	19.8
11	120	12.2	900	20.7
12	140	11.3	1000	21.2

No.	F MHz	AF dB/m	F MHz	AF dB/m	F MHz	AF dB/m
1	1000	23.9	7000	36	13000	39.8
2	1500	25.4	7500	37.4	13500	40.9
3	2000	27.7	8000	37.8	14000	42.5
4	2500	28.8	8500	38.1	14500	41.5
5	3000	30.5	9000	38.2	15000	39.3
6	3500	32	9500	38.3	15500	38.5
7	4000	32.9	10000	38.5	16000	38.7
8	4500	32.9	10500	38.4	16500	39.5
9	5000	33.9	11000	38.7	17000	41.6
10	5500	34.7	11500	39.4	17500	45
11	6000	35.3	12000	39.4	1800	46.8
12	6500	34.5	12500	39.1		

For SHF-EHF Horn Antenna Model Number: BBHA 9170, S/N: 5854  
1m Calibration (Vertical and Horizontal polarizations)

Point	Frequency (GHz)	Antenna Factor (dB/m)
1	15	38.5
2	16	37.7
3	17	38.1
4	18	37.9
5	19	38.0
6	20	38.0
7	21	37.9
8	22	38.2
9	23	39.6
10	24	39.6
11	25	39.3
12	26	39.5
13	28	39.6
14	30	40.1
15	32	41.2
16	34	41.5
17	35	41.9
18	36	42.2
19	38	43.8
20	40	43.2

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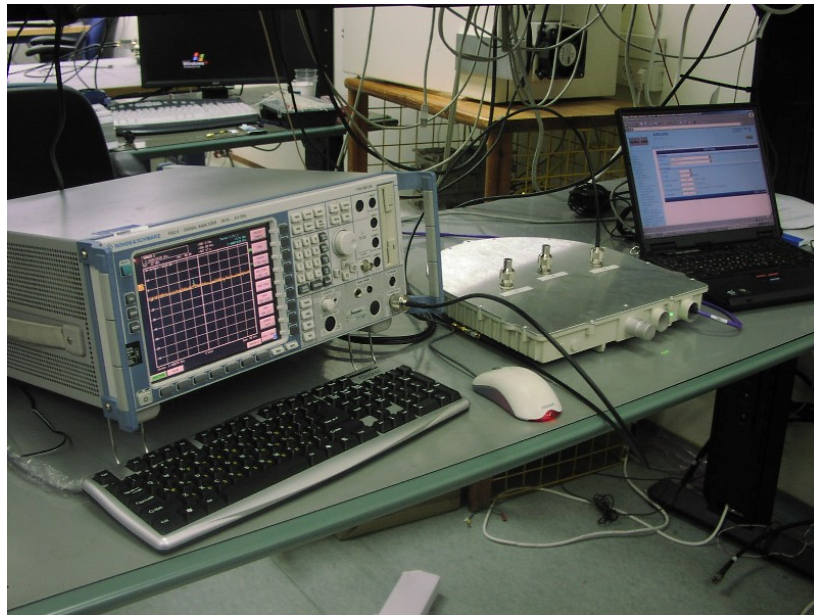
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FCC ID: UGM-WBS2400-2S

## 10. Appendix 3: Test configuration illustration



**Photo # 1.**  
**Conducted measurements test set up.**



**Photo # 2.**  
**Radiated emission test. Spurious & restricted bands. Test distance 1m.**

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Photo # 3. Radiated emission test on OATS