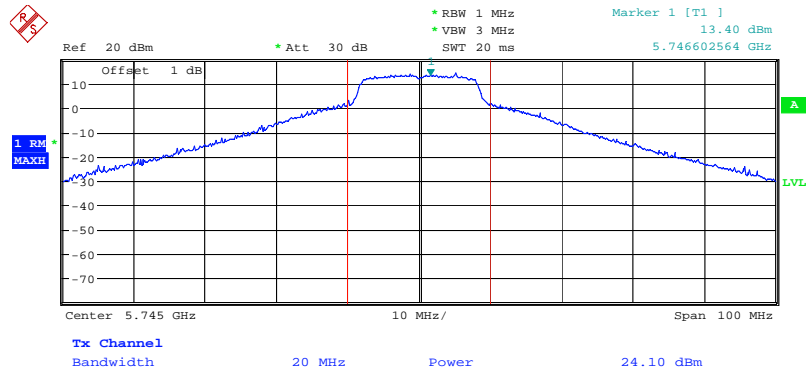
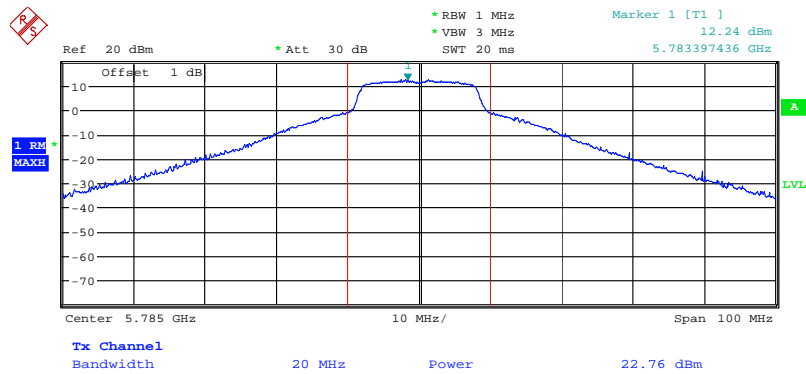


Conducted Output Power Plot on Configuration IEEE 802.11a Ant. 5-3/ 5745 MHz



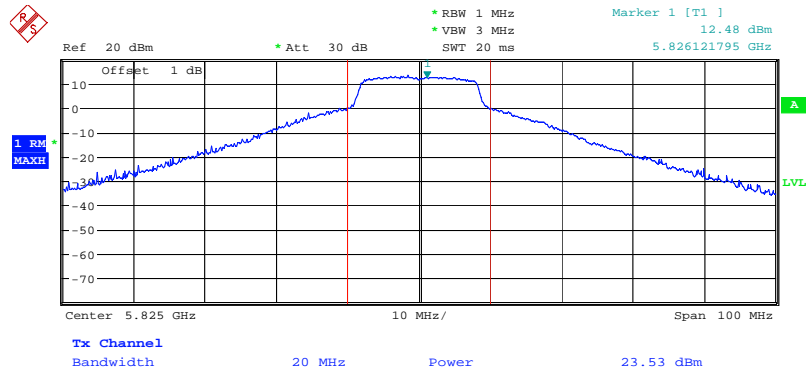
Date: 21.MAR.2008 15:51:00

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. 5-1/ 5785 MHz



Date: 21.MAR.2008 15:47:39

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. 6-3/ 5825 MHz



Date: 21.MAR.2008 15:45:02

4.3. Power Spectral Density Measurement

4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

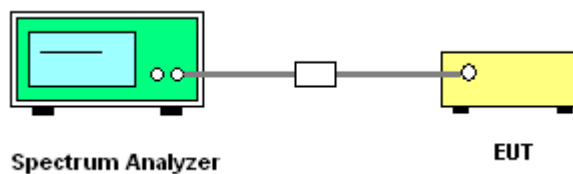
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	1.5MHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	500s

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz. Set Detector to Peak, Trace to Max Hold.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.
5. Measuring multiple antennas, the connector is required to link with spectrum analyser through a combiner.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11a/b/g / Antenna 1

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-0.57	8.00	Complies
6	2437 MHz	1.43	8.00	Complies
11	2462 MHz	2.56	8.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-4.80	8.00	Complies
6	2437 MHz	1.62	8.00	Complies
11	2462 MHz	-3.63	8.00	Complies

Configuration IEEE 802.11a

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	4.49	8.00	Complies
157	5785 MHz	5.14	8.00	Complies
165	5825 MHz	4.11	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 2

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-4.65	8.00	Complies
6	2437 MHz	-1.96	8.00	Complies
11	2462 MHz	-1.73	8.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-9.44	8.00	Complies
6	2437 MHz	-7.24	8.00	Complies
11	2462 MHz	-6.63	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 3

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-2.66	8.00	Complies
6	2437 MHz	3.35	8.00	Complies
11	2462 MHz	-0.15	8.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-6.80	8.00	Complies
6	2437 MHz	1.78	8.00	Complies
11	2462 MHz	-4.08	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 4

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-3.02	8.00	Complies
6	2437 MHz	-3.57	8.00	Complies
11	2462 MHz	-1.73	8.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-3.62	8.00	Complies
6	2437 MHz	-4.28	8.00	Complies
11	2462 MHz	-1.40	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11a/b/g / Antenna 5

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-1.08	8.00	Complies
6	2437 MHz	-1.96	8.00	Complies
11	2462 MHz	-0.47	8.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-4.35	8.00	Complies
6	2437 MHz	5.77	8.00	Complies
11	2462 MHz	-2.61	8.00	Complies

Configuration IEEE 802.11a

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	6.80	8.00	Complies
157	5785 MHz	4.26	8.00	Complies
165	5825 MHz	3.08	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11a / Antenna 6

Configuration IEEE 802.11a

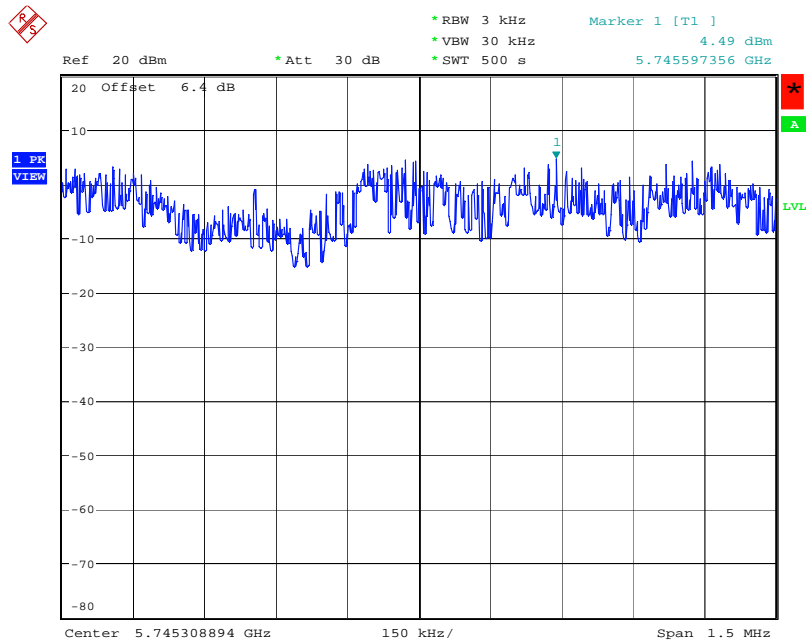
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	-1.57	8.00	Complies
157	5785 MHz	-2.72	8.00	Complies
165	5825 MHz	-1.96	8.00	Complies

Temperature	23°C	Humidity	62%
Test Engineer	Sam Chen	Configurations	802.11a / Antenna 7

Configuration IEEE 802.11a

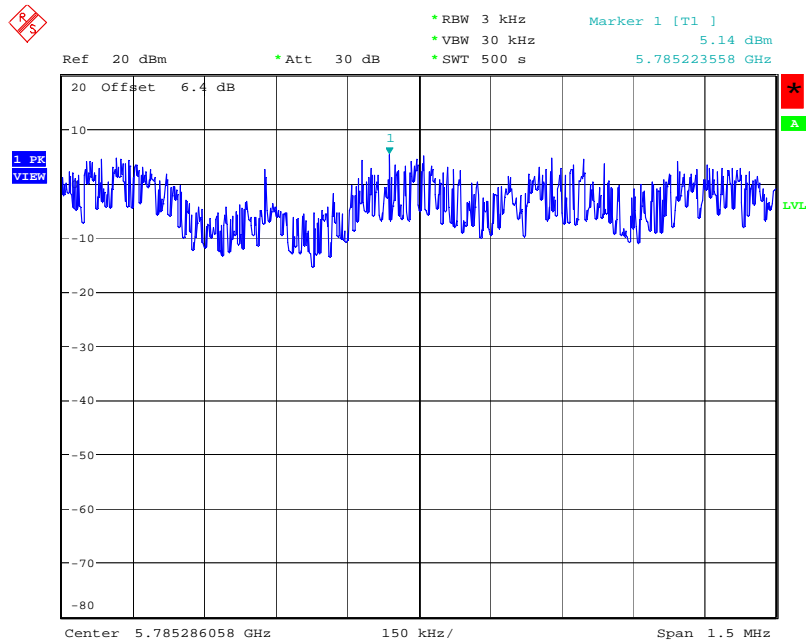
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	4.49	8.00	Complies
157	5785 MHz	4.26	8.00	Complies
165	5825 MHz	4.34	8.00	Complies

Power Density Plot on Configuration IEEE 802.11a Ant. 1/ 5745 MHz



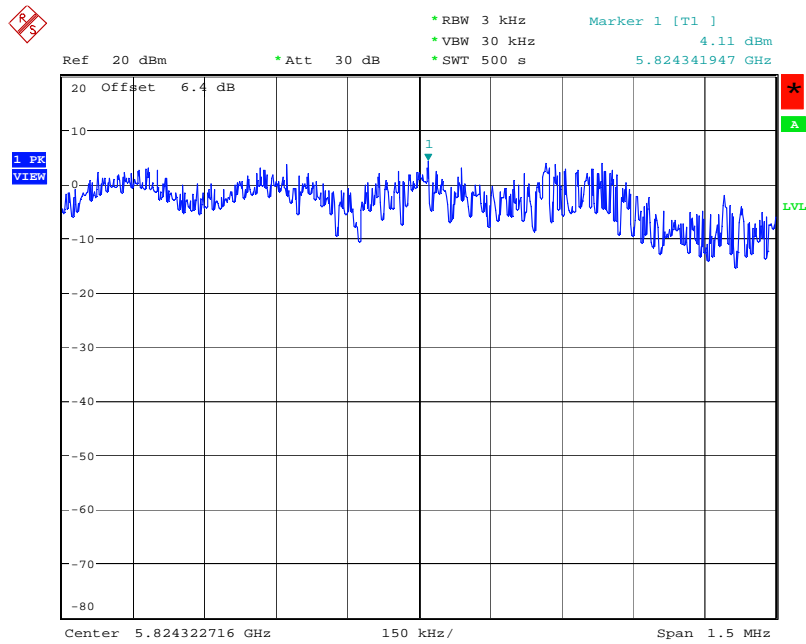
Date: 20.MAR.2008 20:43:17

Power Density Plot on Configuration IEEE 802.11a Ant. 1/ 5785 MHz



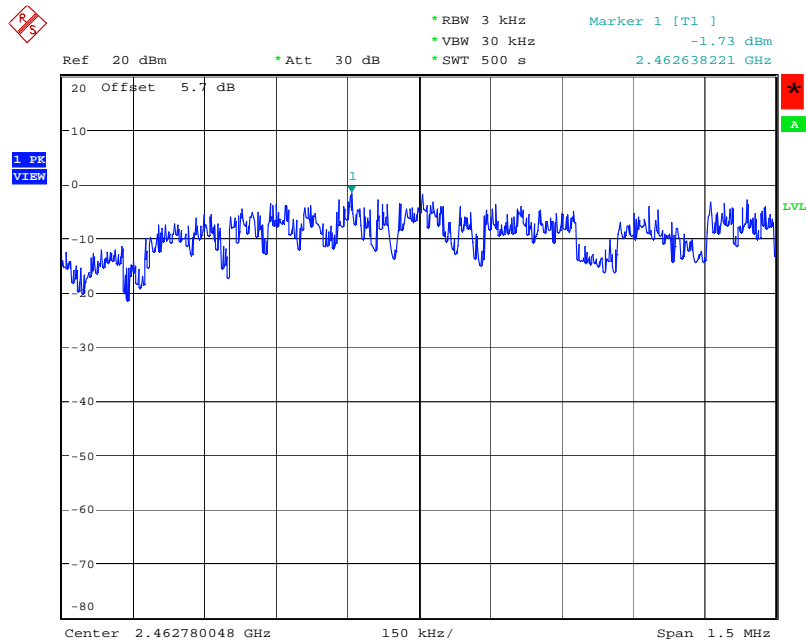
Date: 20.MAR.2008 20:44:29

Power Density Plot on Configuration IEEE 802.11a Ant. 1/ 5825 MHz



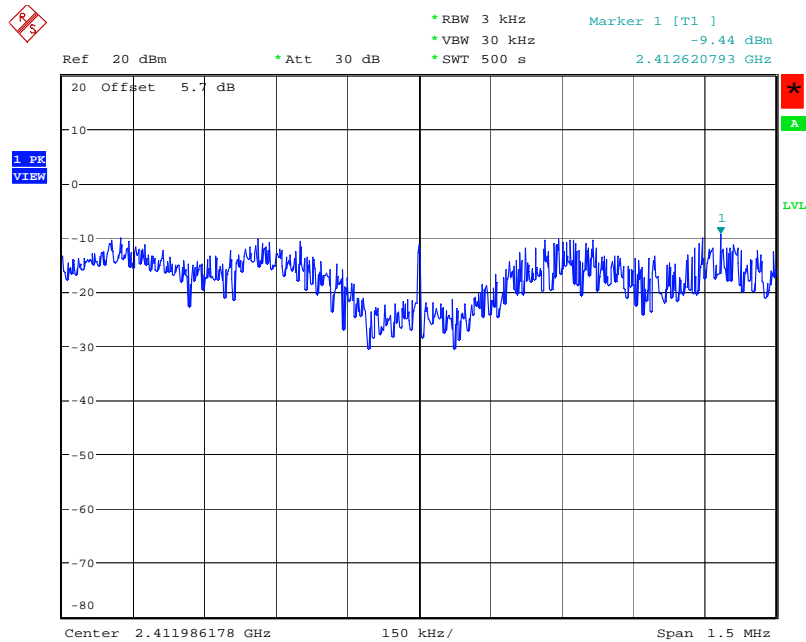
Date: 20.MAR.2008 20:45:20

Power Density Plot on Configuration IEEE 802.11b Ant. 2/ 2462 MHz



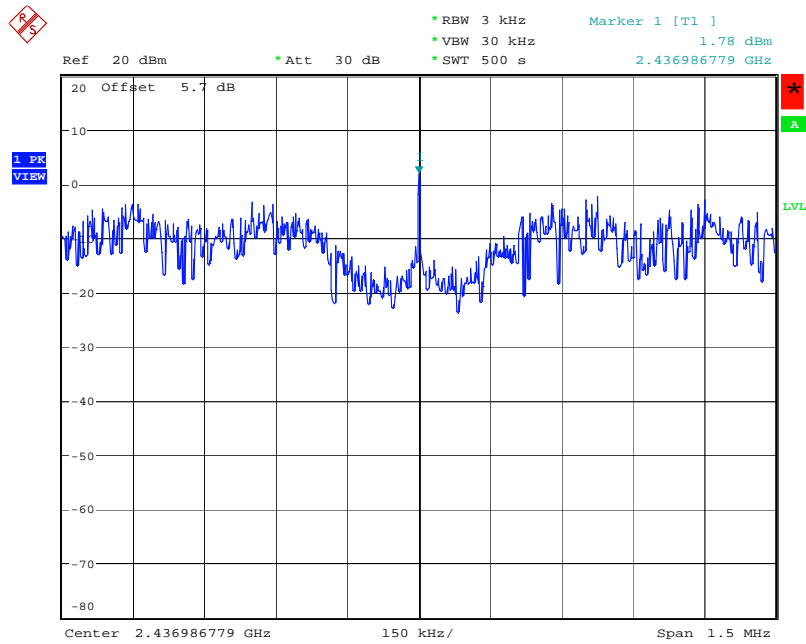
Date: 21.MAR.2008 19:25:28

Power Density Plot on Configuration IEEE 802.11g Ant. 2/ 2412 MHz



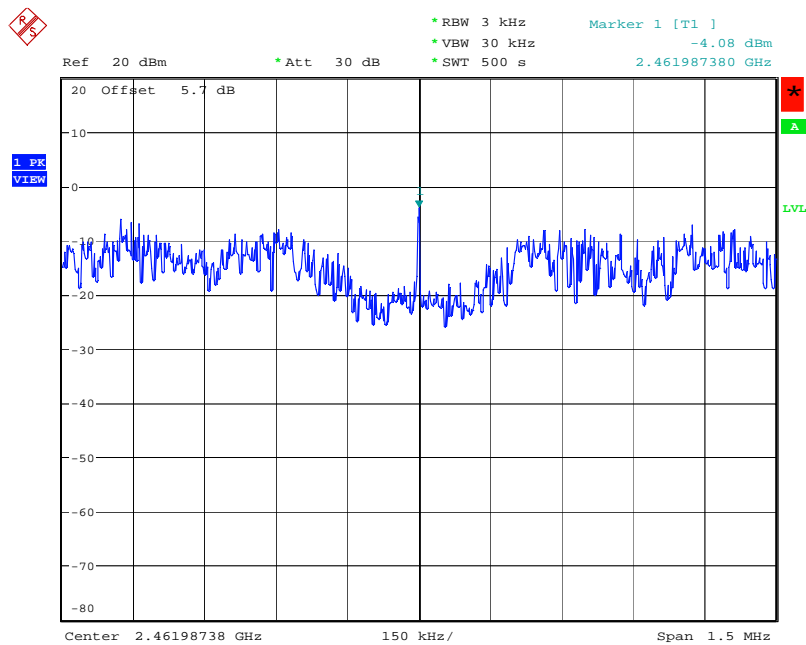
Date: 22.MAR.2008 16:34:35

Power Density Plot on Configuration IEEE 802.11g Ant. 3/ 2437 MHz



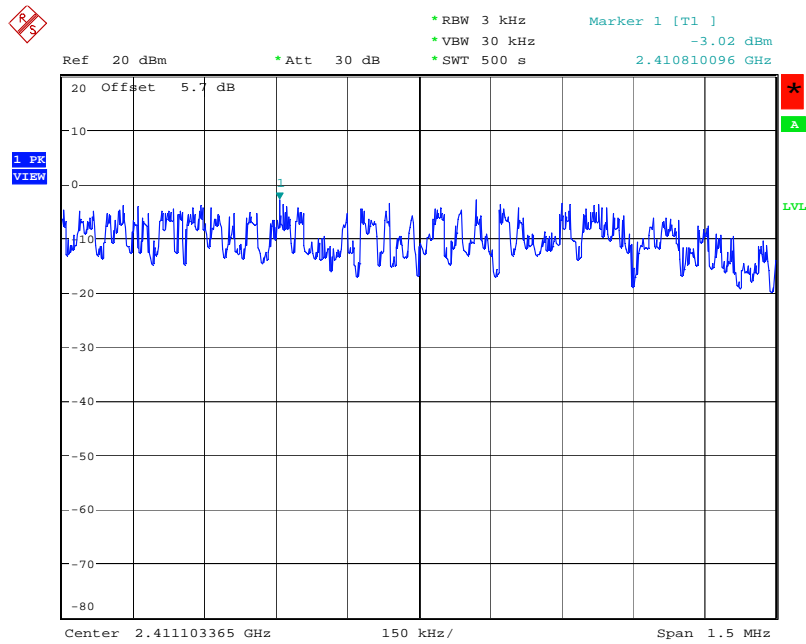
Date: 22.MAR.2008 16:31:37

Power Density Plot on Configuration IEEE 802.11g Ant. 3/ 2462 MHz



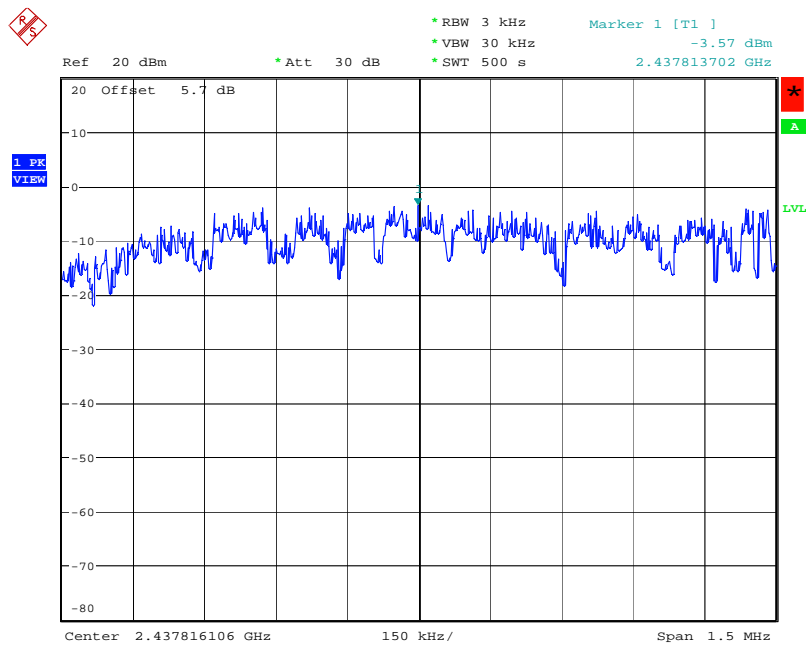
Date: 22.MAR.2008 16:23:07

Power Density Plot on Configuration IEEE 802.11b Ant. 4/ 2412 MHz



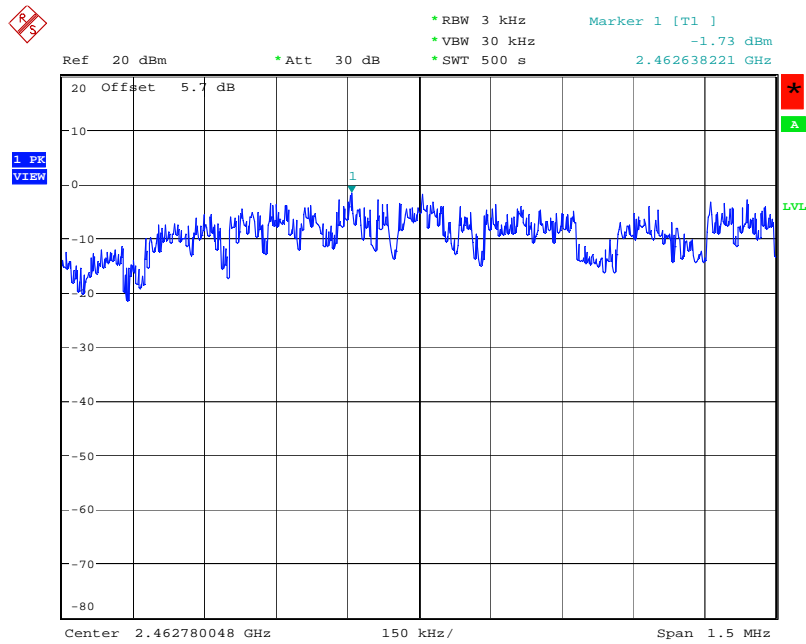
Date: 21.MAR.2008 19:27:04

Power Density Plot on Configuration IEEE 802.11b Ant. 4/ 2437 MHz



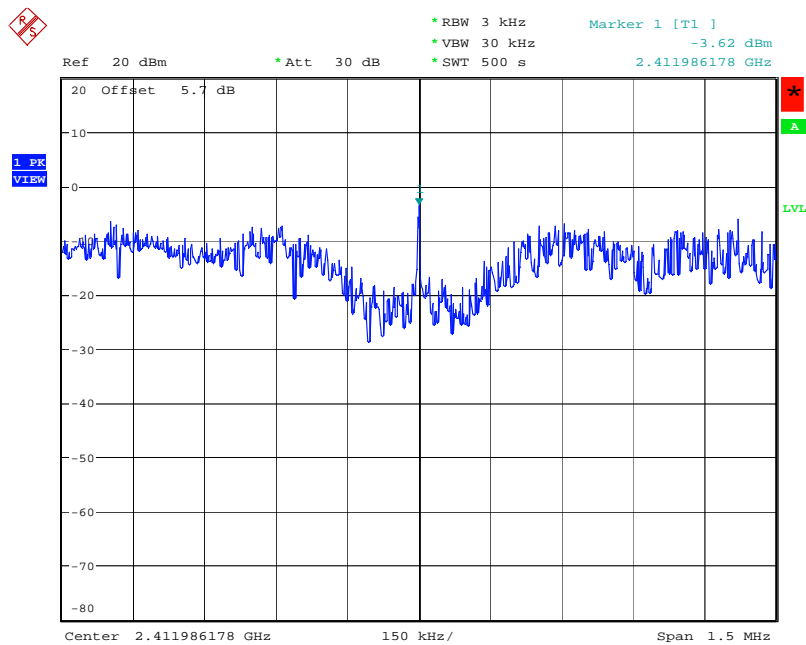
Date: 21.MAR.2008 19:26:17

Power Density Plot on Configuration IEEE 802.11b Ant. 4/ 2462 MHz



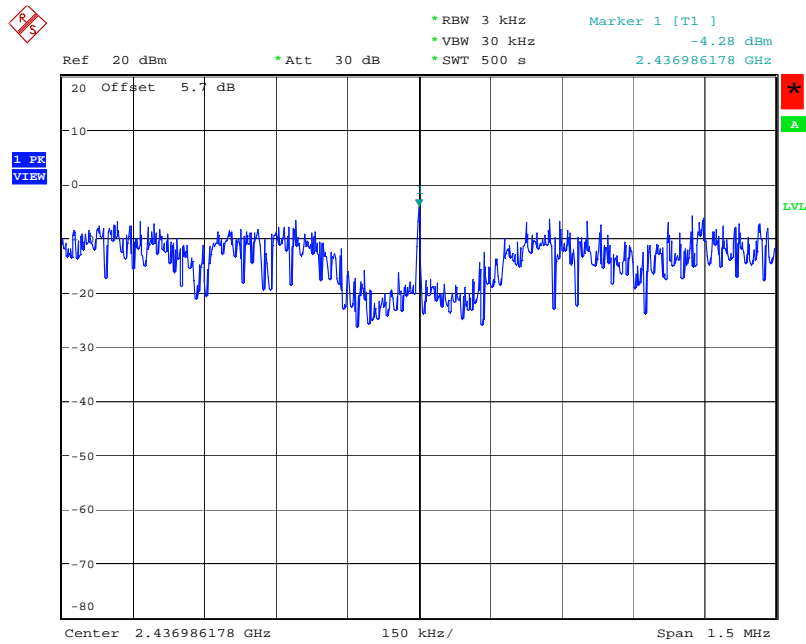
Date: 21.MAR.2008 19:25:28

Power Density Plot on Configuration IEEE 802.11g Ant. 4/ 2412 MHz



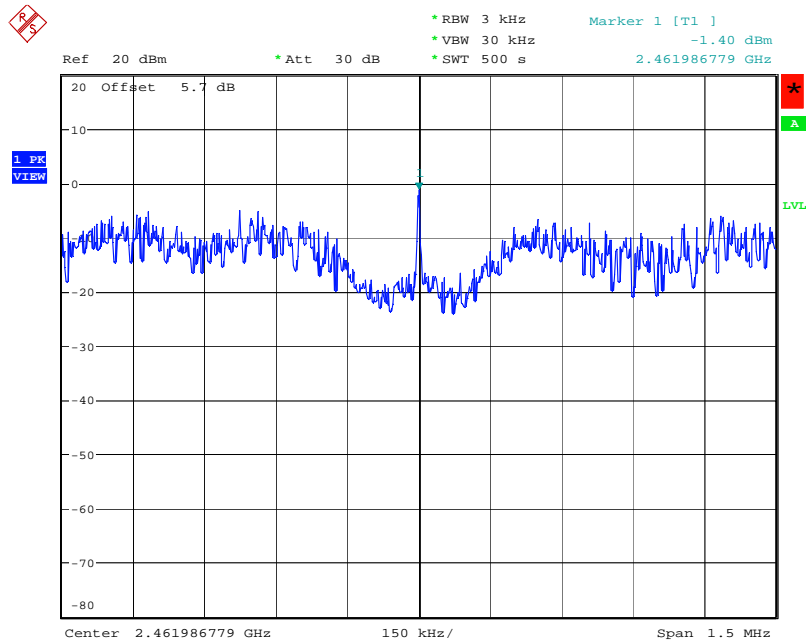
Date: 21.MAR.2008 19:20:23

Power Density Plot on Configuration IEEE 802.11g Ant. 4/ 2437 MHz



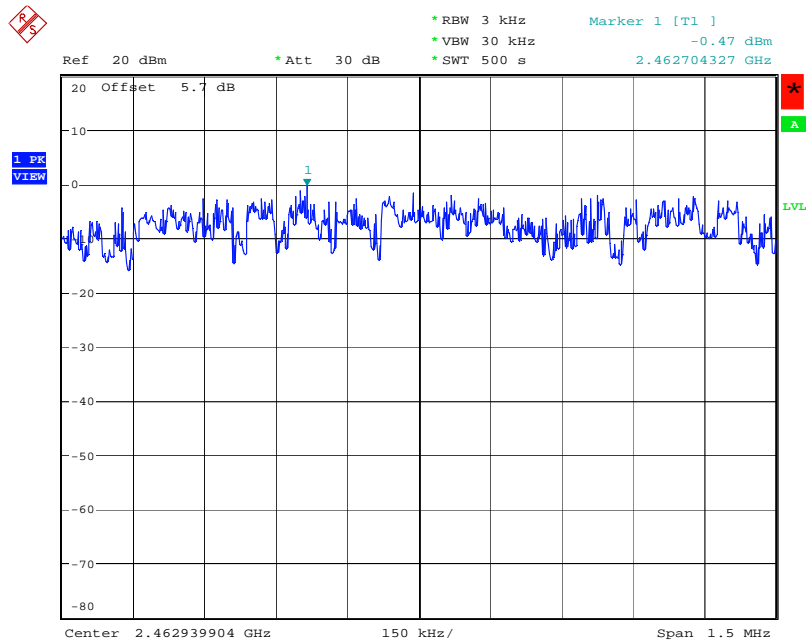
Date: 21.MAR.2008 19:23:52

Power Density Plot on Configuration IEEE 802.11g Ant. 4/ 2462 MHz



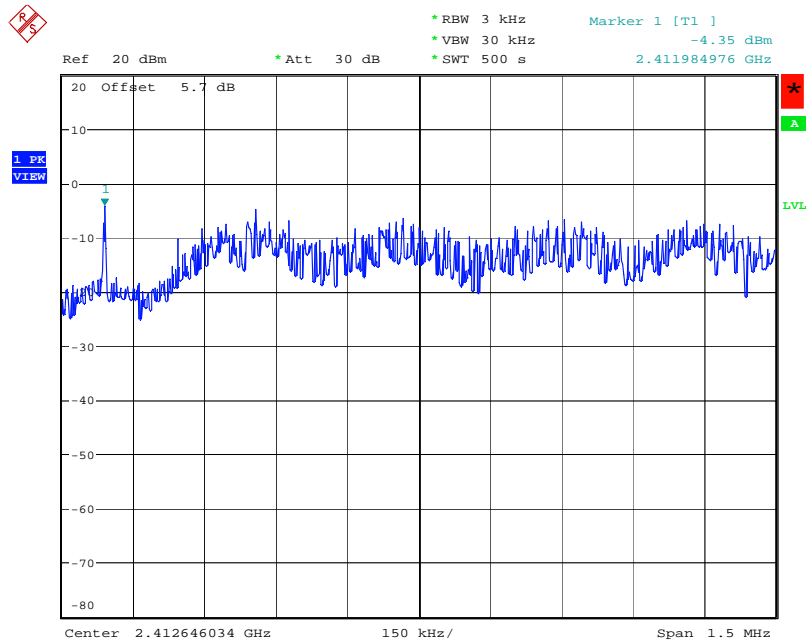
Date: 21.MAR.2008 19:24:29

Power Density Plot on Configuration IEEE 802.11b Ant. 5/ 2462 MHz



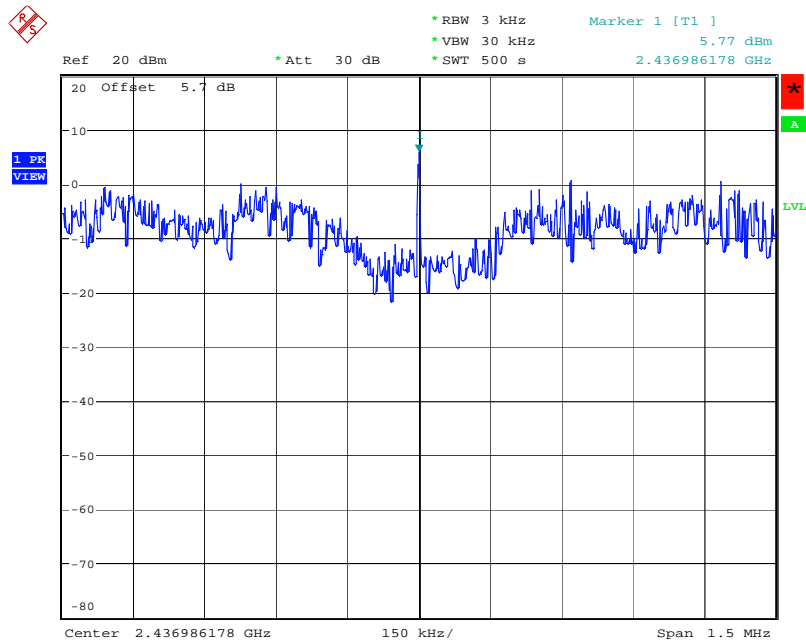
Date: 21.MAR.2008 16:15:43

Power Density Plot on Configuration IEEE 802.11g Ant. 5/ 2412 MHz



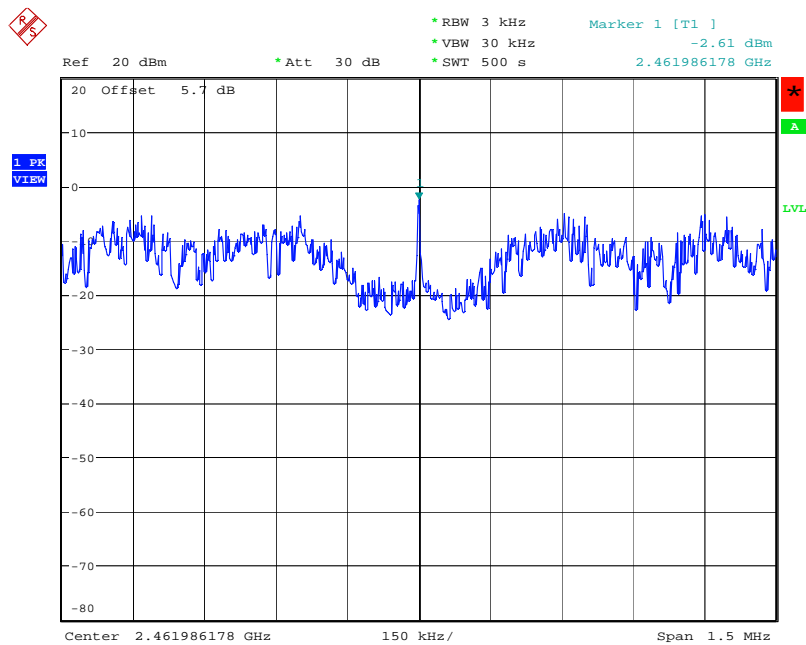
Date: 21.MAR.2008 16:18:33

Power Density Plot on Configuration IEEE 802.11g Ant. 5/ 2437 MHz



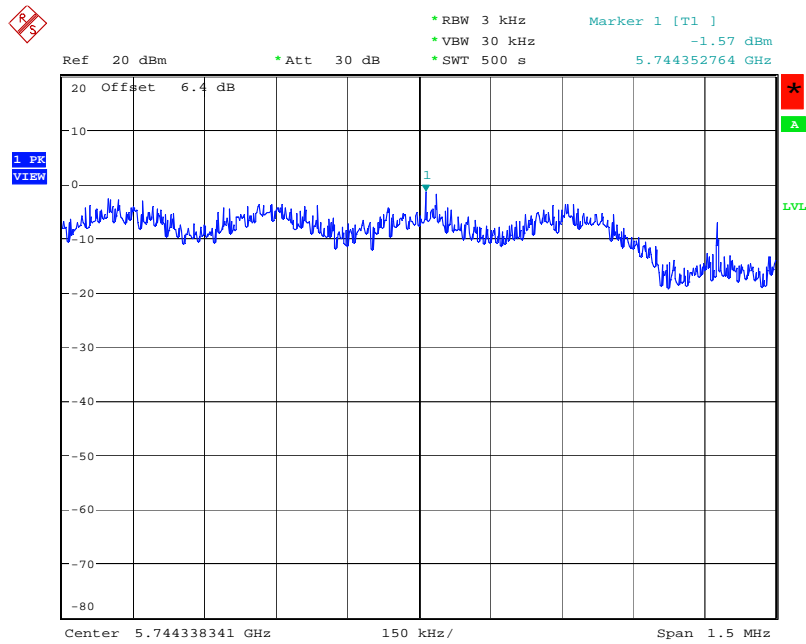
Date: 21.MAR.2008 16:17:34

Power Density Plot on Configuration IEEE 802.11g Ant. 5/ 2462 MHz



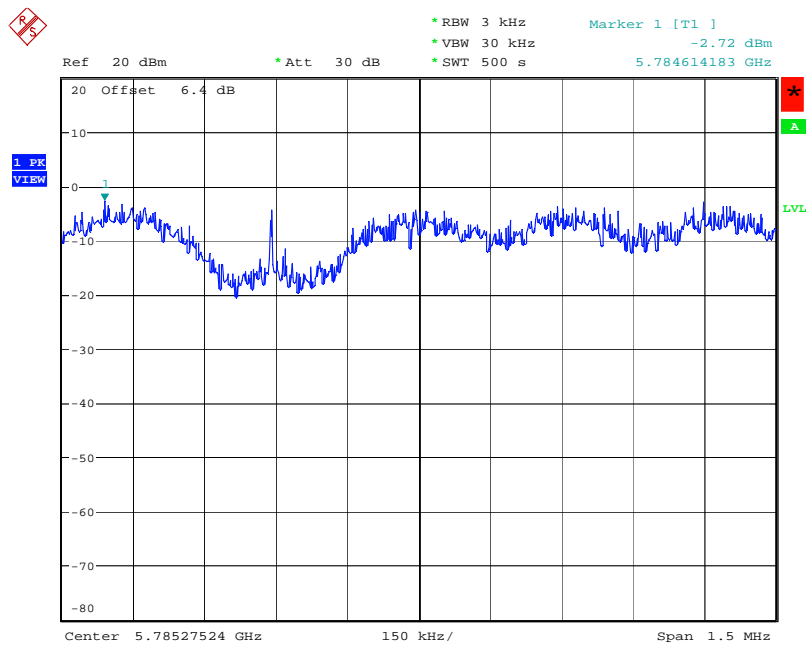
Date: 21.MAR.2008 16:16:36

Power Density Plot on Configuration IEEE 802.11a Ant. 6/ 5745 MHz



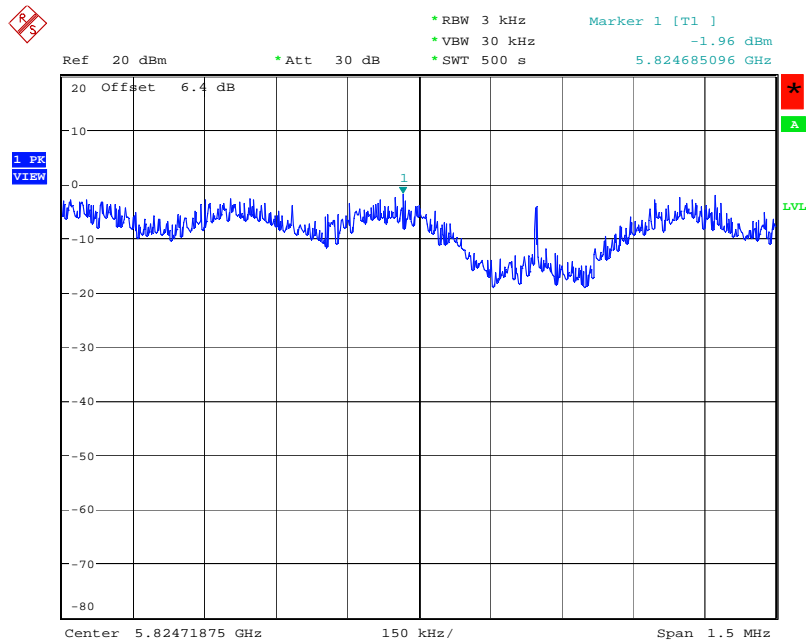
Date: 25.MAR.2008 15:33:15

Power Density Plot on Configuration IEEE 802.11a Ant. 6/ 5785 MHz



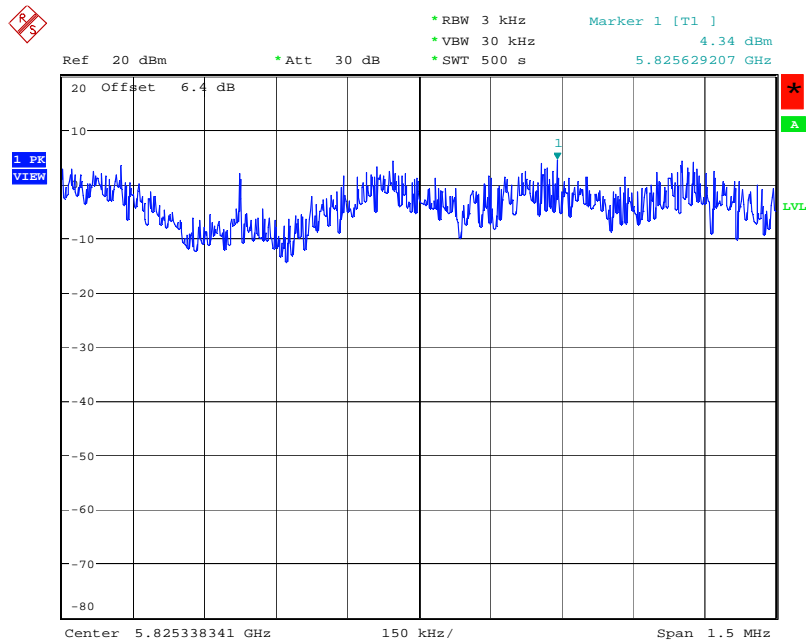
Date: 25.MAR.2008 15:36:04

Power Density Plot on Configuration IEEE 802.11a Ant. 6/ 5825 MHz



Date: 25.MAR.2008 15:37:07

Power Density Plot on Configuration IEEE 802.11a Ant. 7/ 5825 MHz



Date: 26.MAR.2008 17:31:42

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

4.4.2. Measuring Instruments and Setting

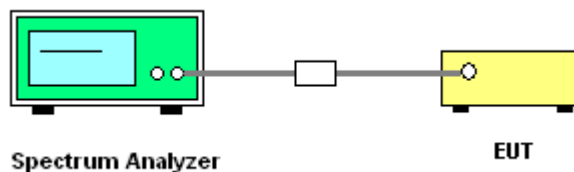
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.
4. Measuring multiple antennas, the connector is required to link with spectrum analyzer through a combiner.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of 6dB Spectrum Bandwidth

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a/b/g / Antenna 1

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.06	15.19	500	Complies
6	2437 MHz	10.06	15.38	500	Complies
11	2462 MHz	9.58	15.51	500	Complies

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.05	16.44	500	Complies
6	2437 MHz	15.70	16.41	500	Complies
11	2462 MHz	16.37	16.44	500	Complies

Configuration IEEE 802.11a

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.02	17.88	500	Complies
157	5785 MHz	16.31	18.20	500	Complies
165	5825 MHz	16.25	18.42	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 2

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	11.02	15.28	500	Complies
6	2437 MHz	10.12	15.28	500	Complies
11	2462 MHz	11.08	15.38	500	Complies

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.92	16.41	500	Complies
6	2437 MHz	16.02	16.44	500	Complies
11	2462 MHz	16.31	16.44	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 3

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	11.02	15.32	500	Complies
6	2437 MHz	12.08	15.54	500	Complies
11	2462 MHz	11.08	15.32	500	Complies

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.02	16.44	500	Complies
6	2437 MHz	16.02	16.41	500	Complies
11	2462 MHz	16.31	16.44	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11b/g / Antenna 4

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.09	15.25	500	Complies
6	2437 MHz	11.98	15.28	500	Complies
11	2462 MHz	11.08	15.38	500	Complies

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.34	16.41	500	Complies
6	2437 MHz	16.31	16.41	500	Complies
11	2462 MHz	16.08	16.41	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a/b/g / Antenna 5

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	10.06	15.19	500	Complies
6	2437 MHz	10.12	15.28	500	Complies
11	2462 MHz	10.06	15.32	500	Complies

Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.67	16.41	500	Complies
6	2437 MHz	16.31	16.41	500	Complies
11	2462 MHz	16.34	16.41	500	Complies

Configuration IEEE 802.11a

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	15.06	18.23	500	Complies
157	5785 MHz	16.31	16.82	500	Complies
165	5825 MHz	15.67	16.53	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a/ Antenna 6

Configuration IEEE 802.11a

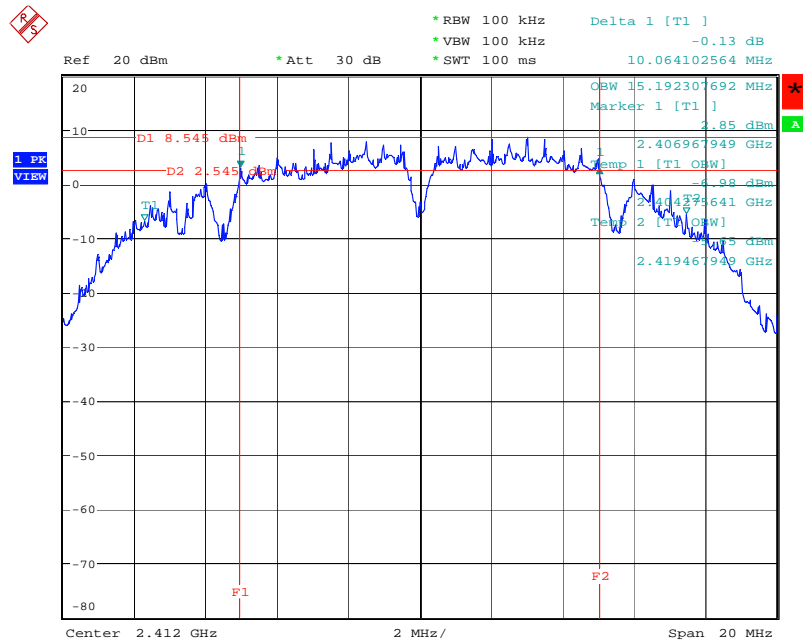
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	15.28	17.59	500	Complies
157	5785 MHz	16.28	17.62	500	Complies
165	5825 MHz	15.64	17.62	500	Complies

Temperature	23°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a/ Antenna 7

Configuration IEEE 802.11a

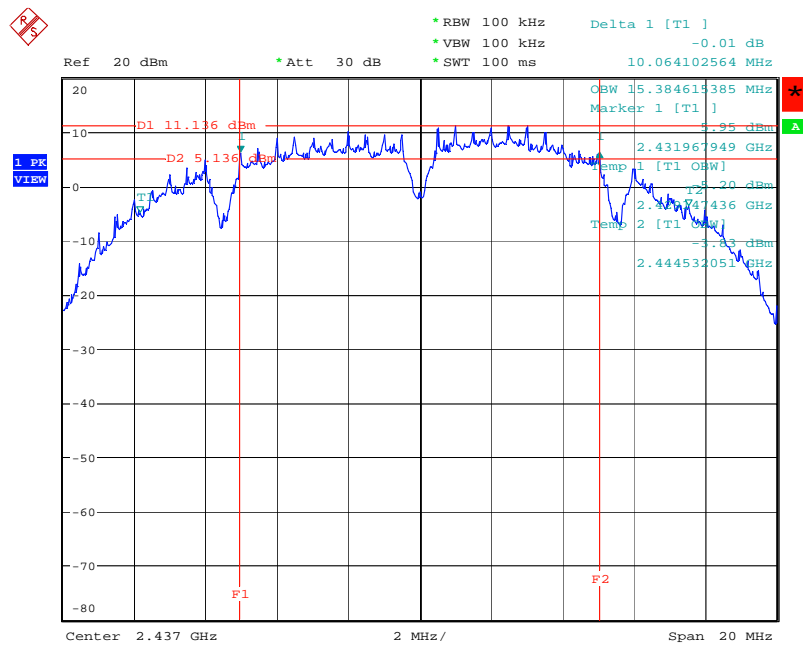
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.02	17.88	500	Complies
157	5785 MHz	16.31	16.82	500	Complies
165	5825 MHz	16.25	17.56	500	Complies

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1/ 2412 MHz



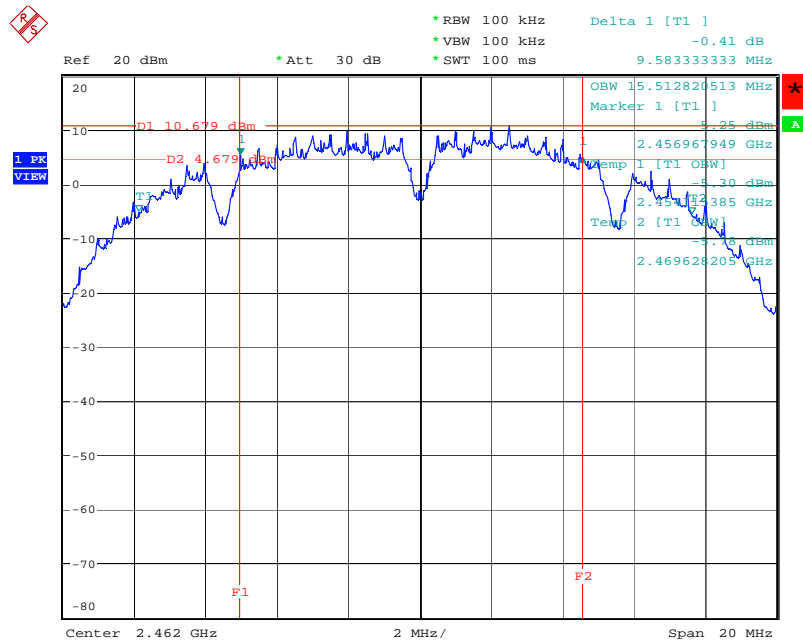
Date: 20.MAR.2008 20:47:20

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1/ 2437 MHz



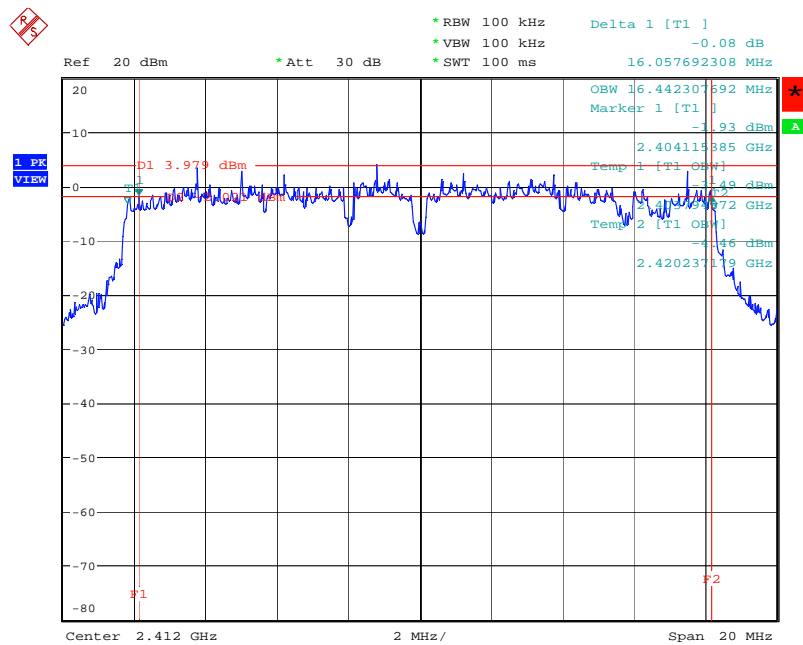
Date: 20.MAR.2008 20:48:23

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1/ 2462 MHz



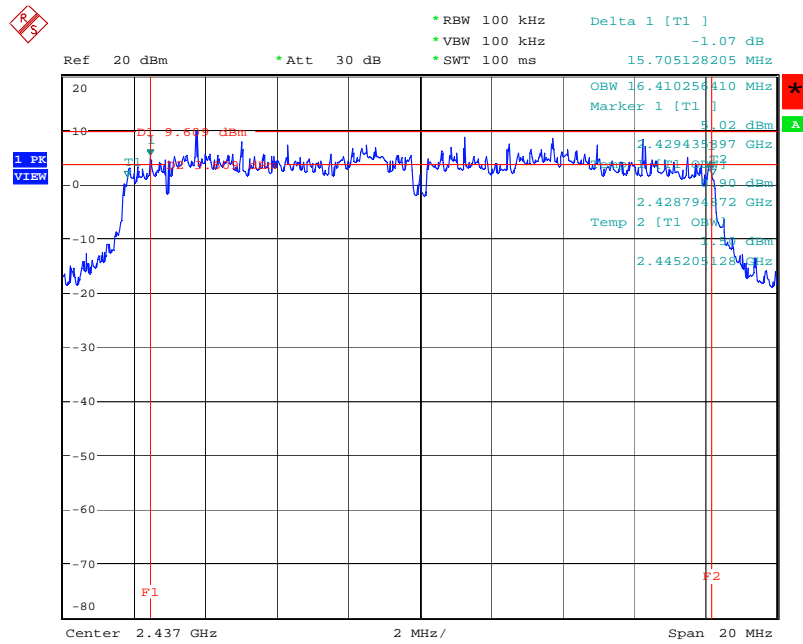
Date: 20.MAR.2008 20:49:15

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1/ 2412 MHz



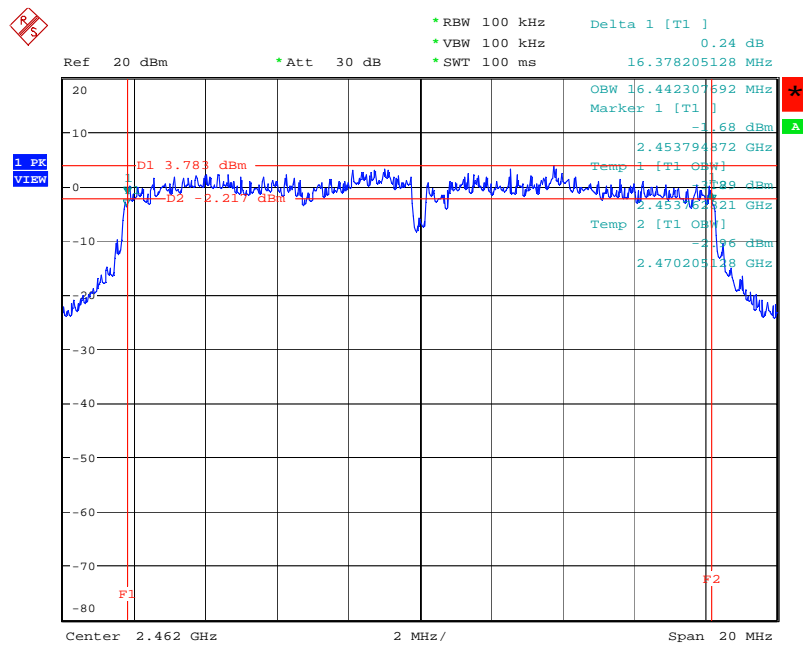
Date: 20.MAR.2008 20:52:14

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1/ 2437 MHz



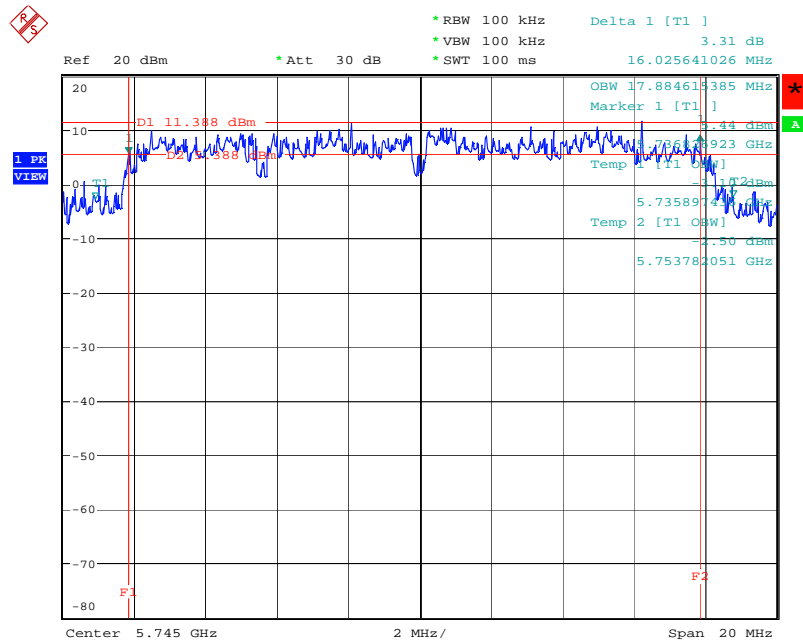
Date: 20.MAR.2008 20:51:24

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1/ 2462 MHz



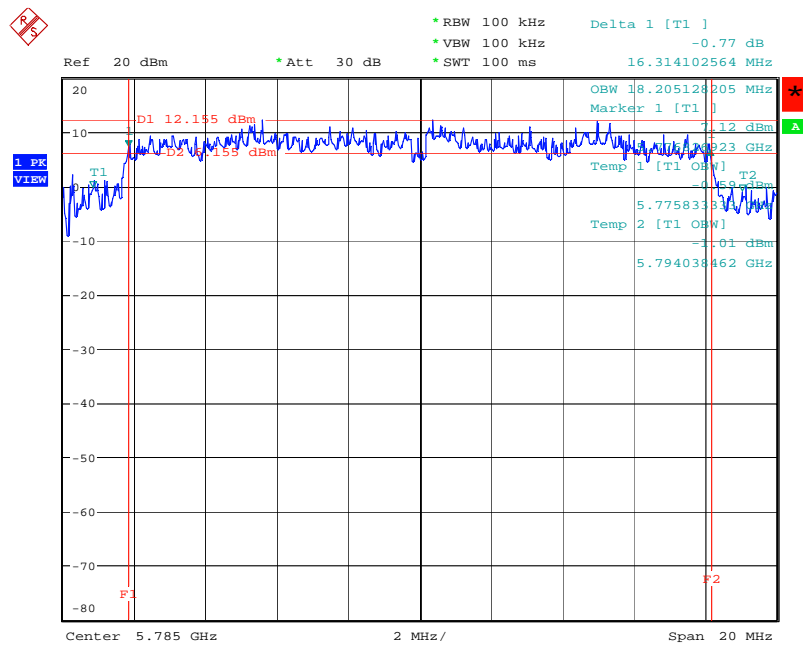
Date: 20.MAR.2008 20:50:25

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 1/ 5745 MHz



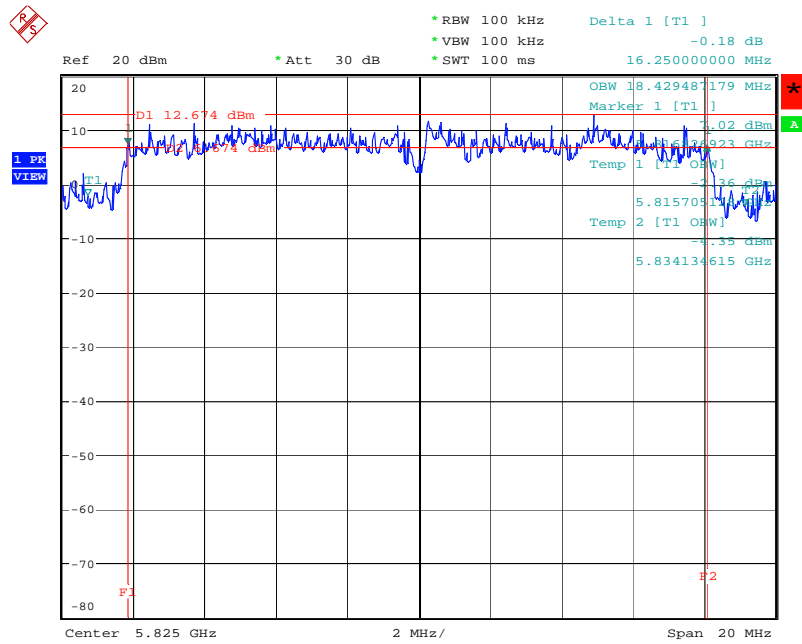
Date: 20.MAR.2008 20:42:51

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 1/ 5785 MHz



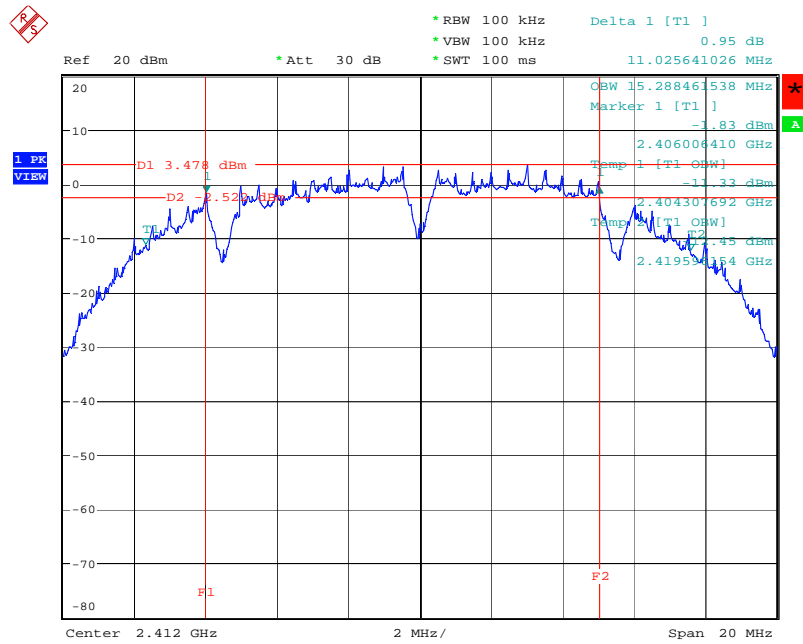
Date: 20.MAR.2008 20:44:03

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 1/ 5825 MHz



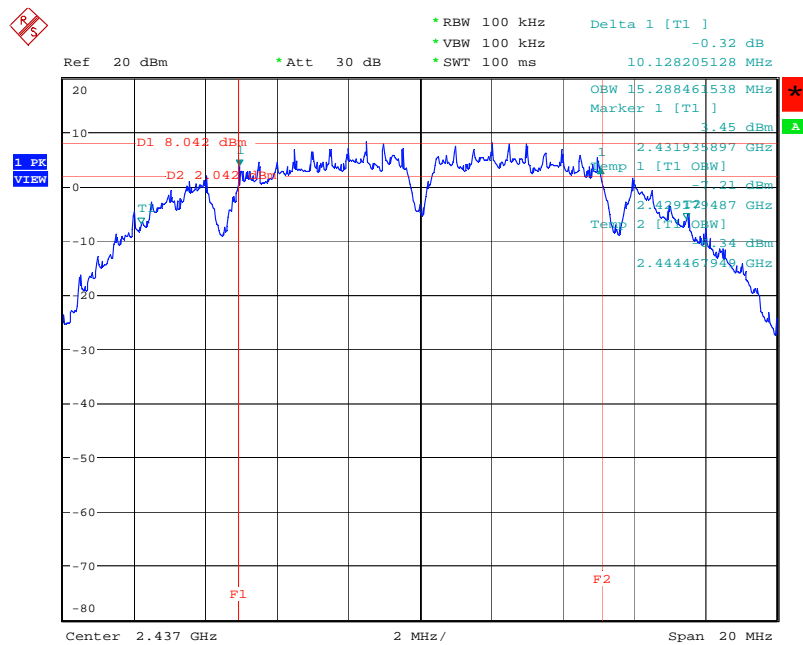
Date: 20.MAR.2008 20:44:55

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2/ 2412 MHz



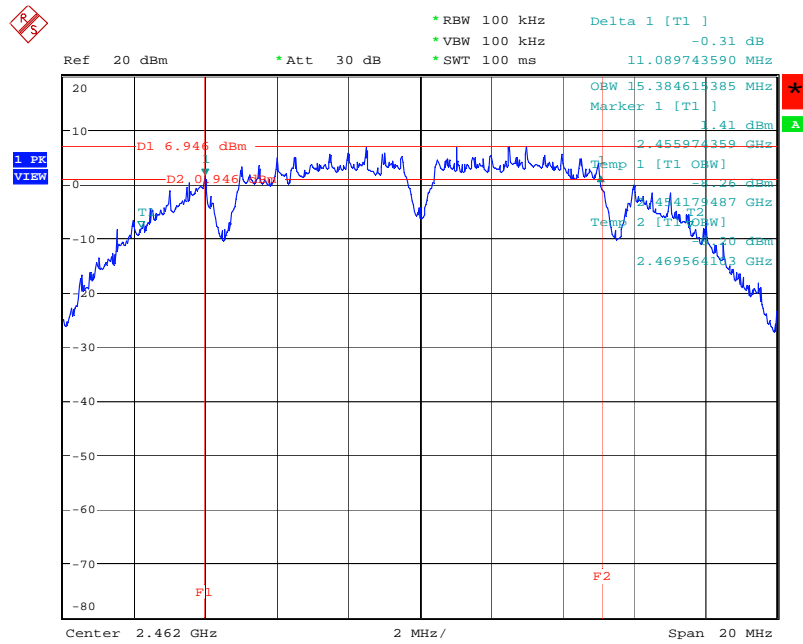
Date: 22.MAR.2008 16:35:41

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2/ 2437 MHz



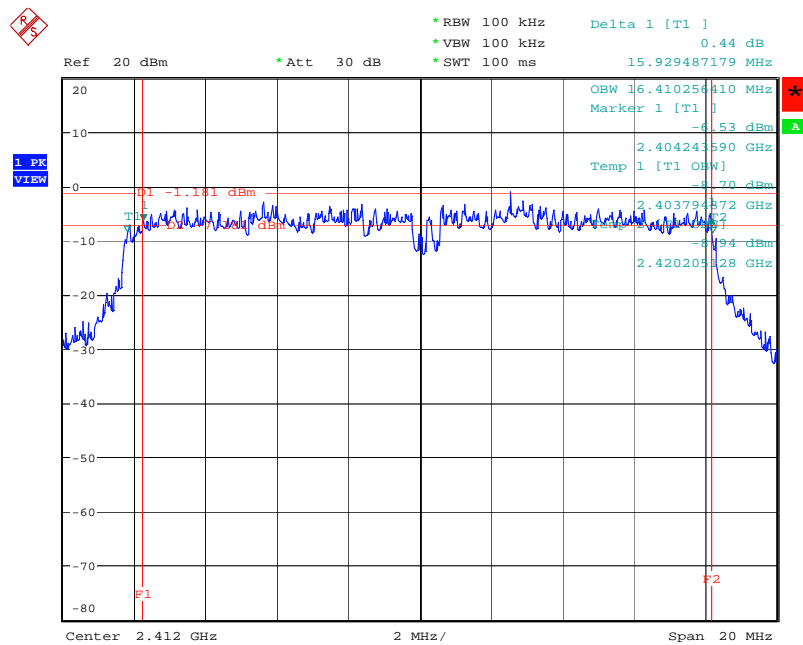
Date: 21.MAR.2008 16:13:30

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2/ 2462 MHz



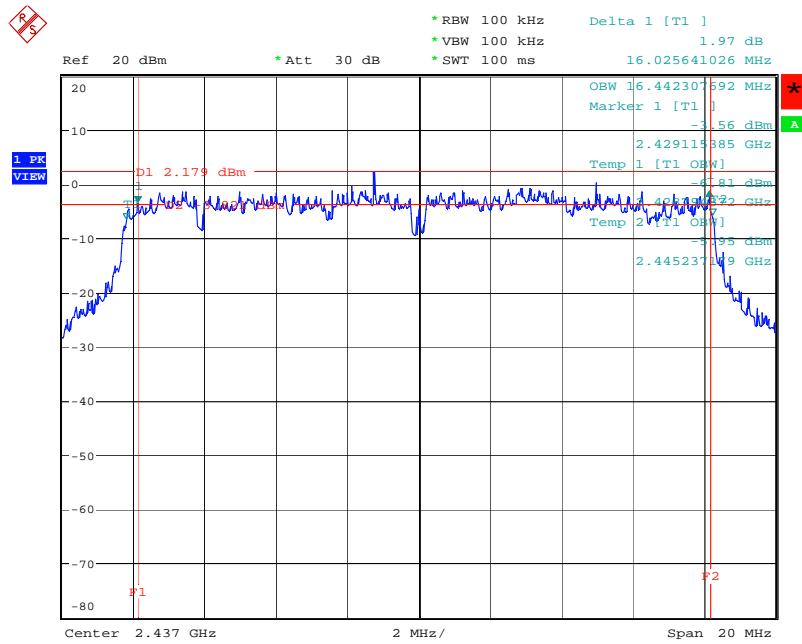
Date: 21.MAR.2008 19:25:12

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2/ 2412 MHz



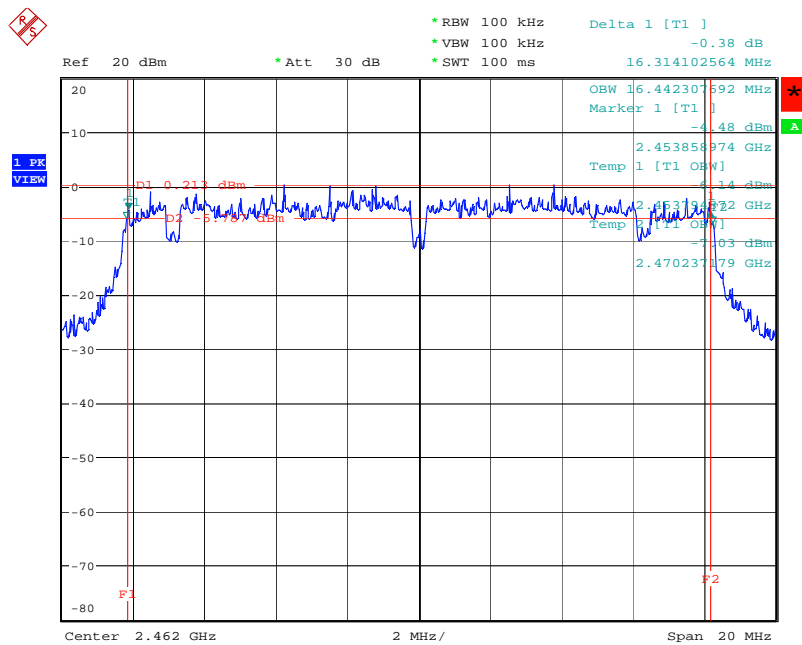
Date: 22.MAR.2008 16:34:10

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2/ 2437 MHz



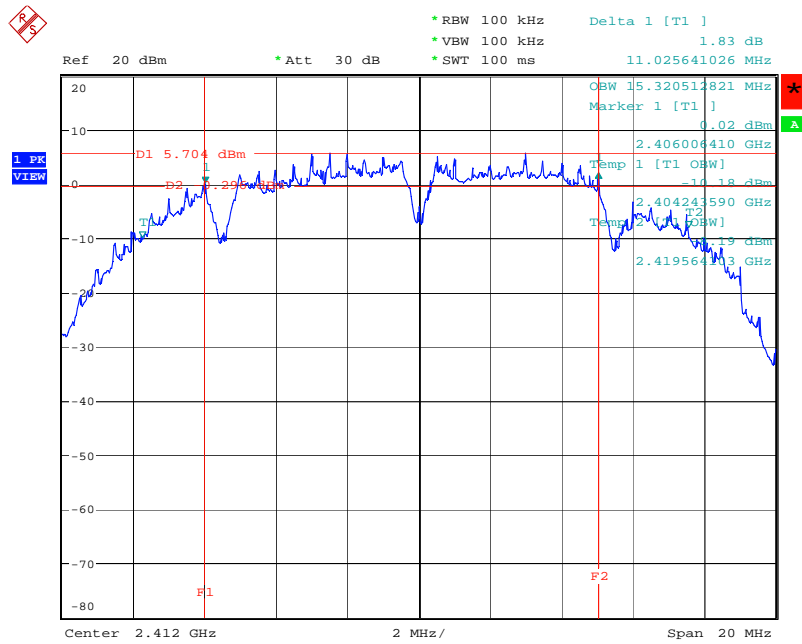
Date: 22.MAR.2008 16:30:27

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2/ 2462 MHz



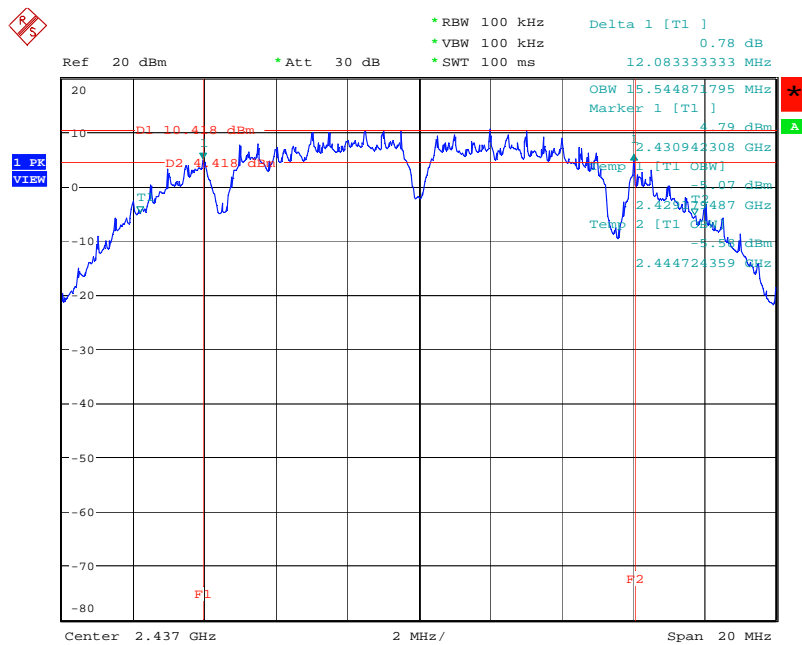
Date: 22.MAR.2008 16:25:42

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 3/ 2412 MHz



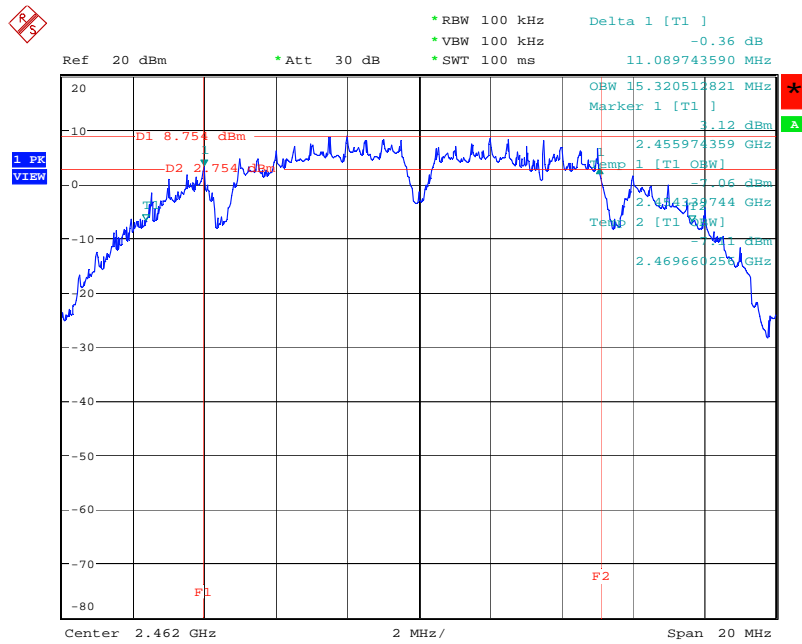
Date: 22.MAR.2008 16:37:58

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 3/ 2437 MHz



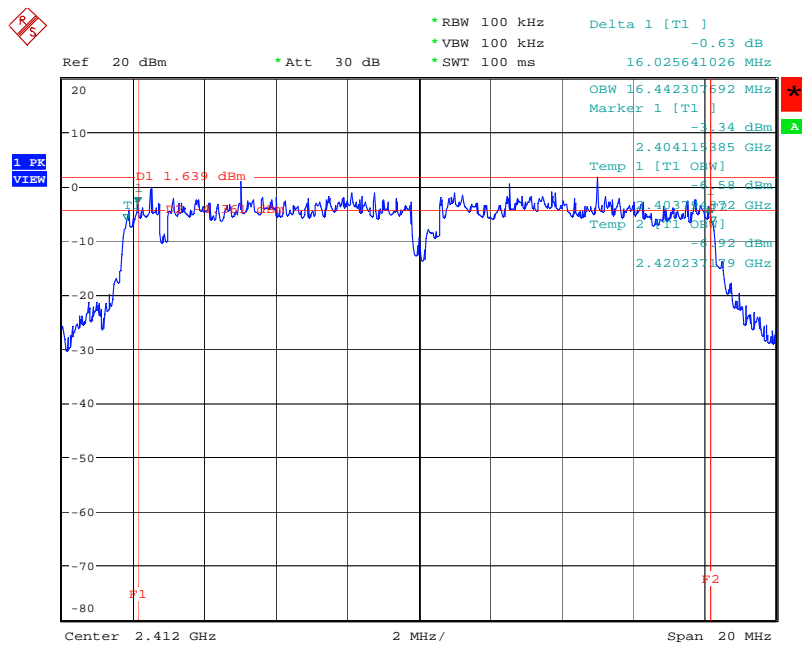
Date: 22.MAR.2008 16:39:23

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 3/ 2462 MHz



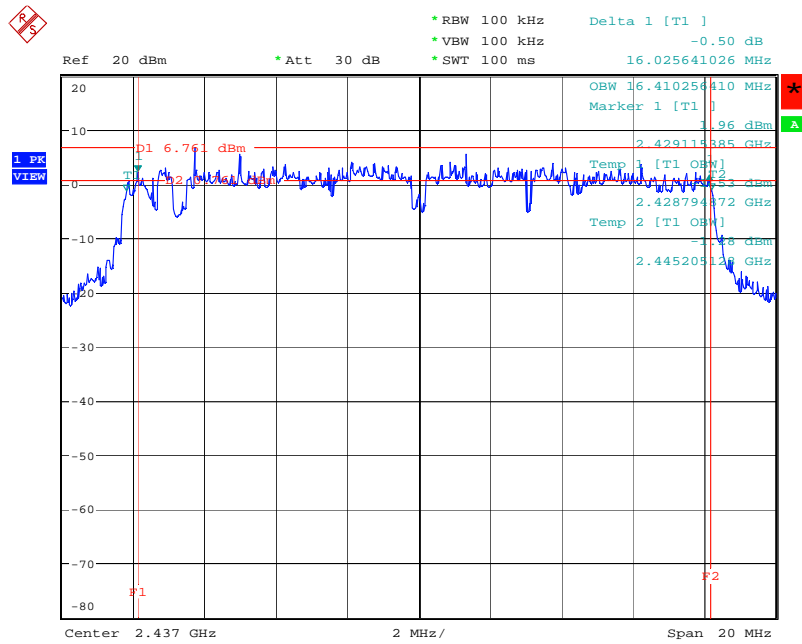
Date: 22.MAR.2008 16:40:29

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 3/ 2412 MHz



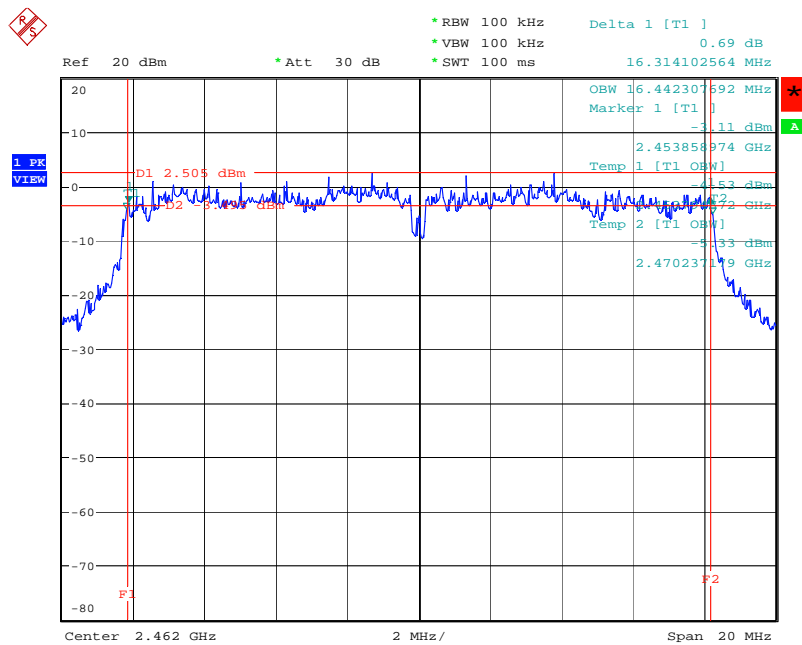
Date: 22.MAR.2008 16:32:44

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 3/ 2437 MHz



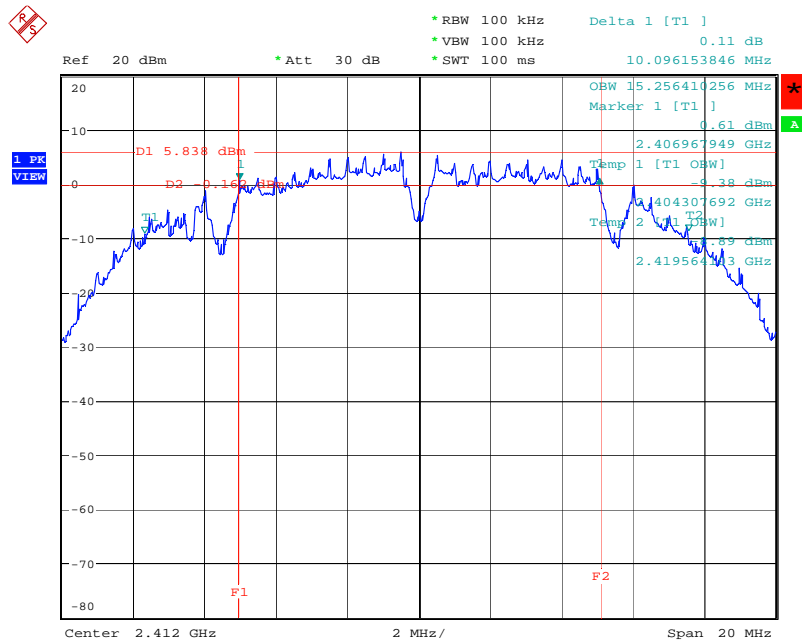
Date: 22.MAR.2008 16:31:20

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 3/ 2462 MHz



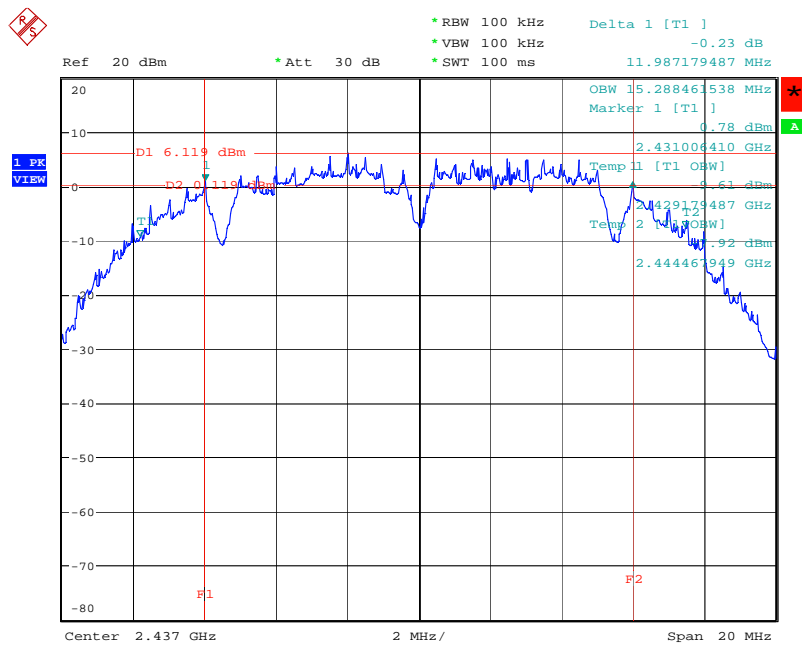
Date: 22.MAR.2008 16:22:52

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 4/ 2412 MHz



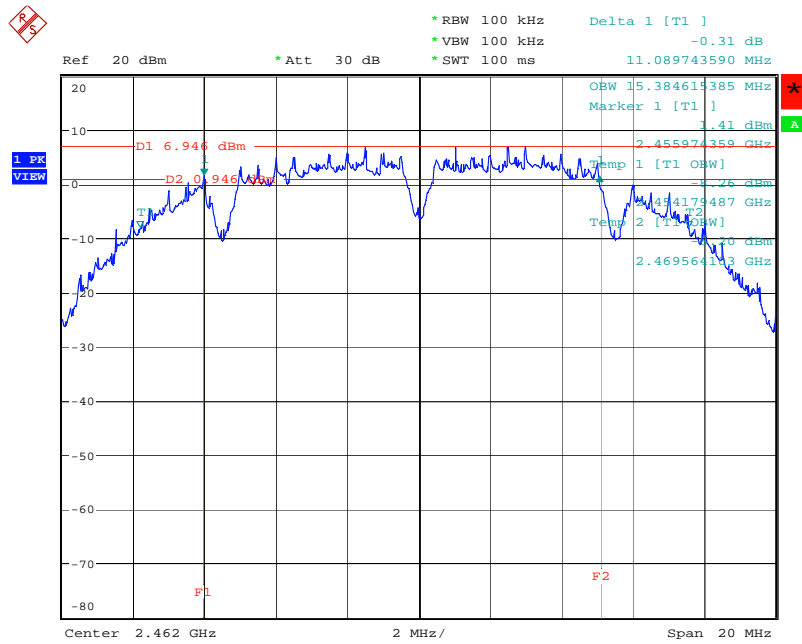
Date: 21.MAR.2008 19:26:38

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 4/ 2437 MHz



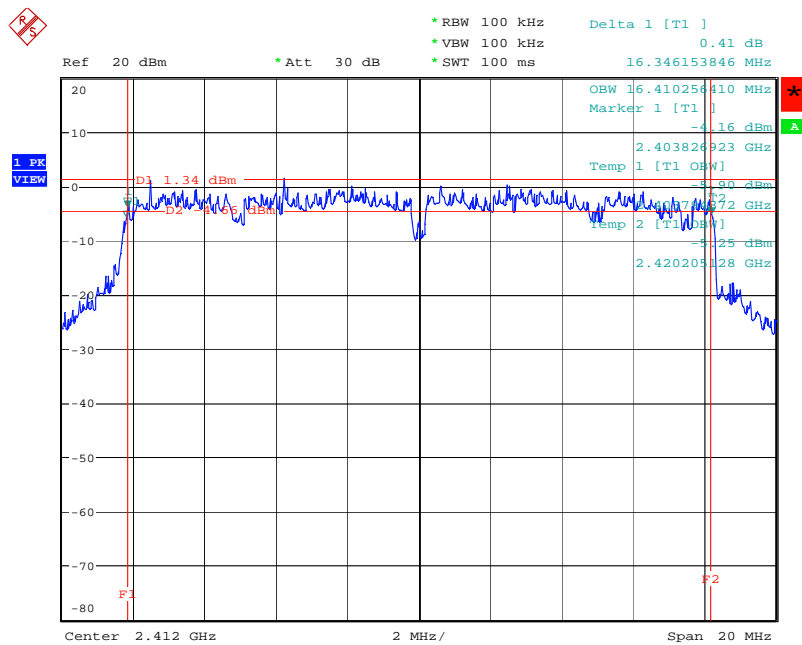
Date: 21.MAR.2008 19:26:00

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 4/ 2462 MHz



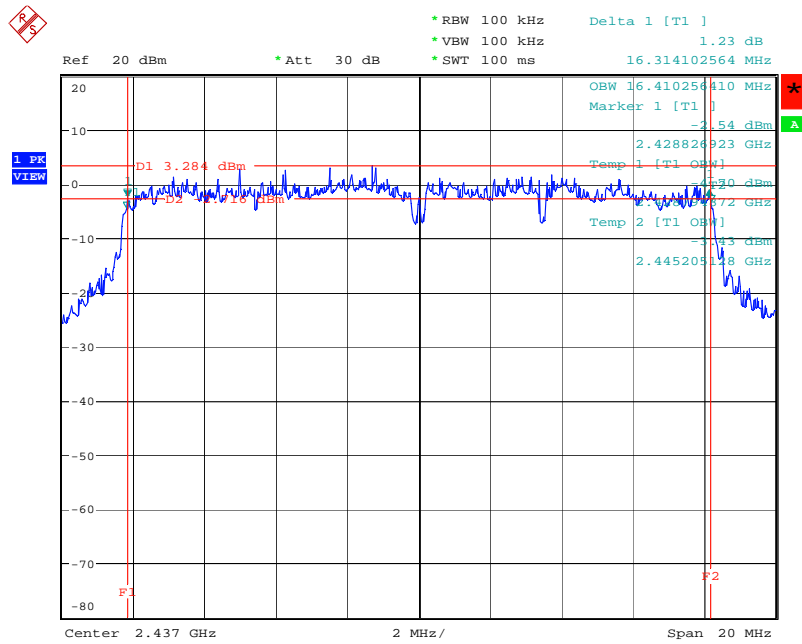
Date: 21.MAR.2008 19:25:12

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 4/ 2412 MHz



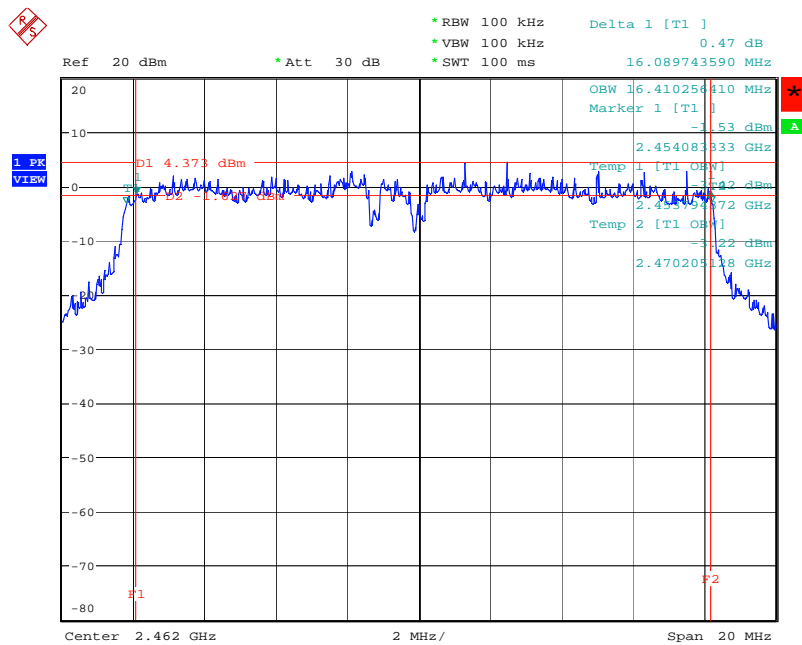
Date: 21.MAR.2008 19:19:56

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 4/ 2437 MHz



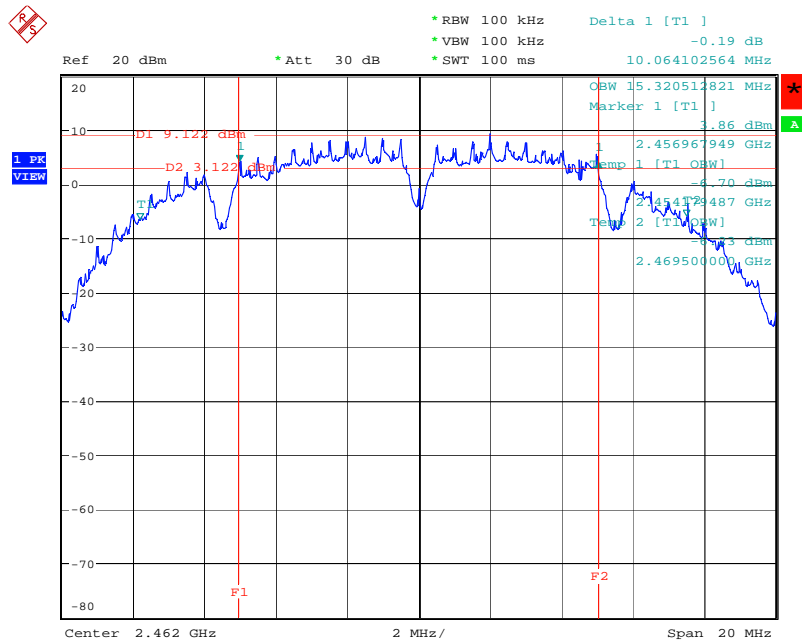
Date: 21.MAR.2008 19:23:35

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 4/ 2462 MHz



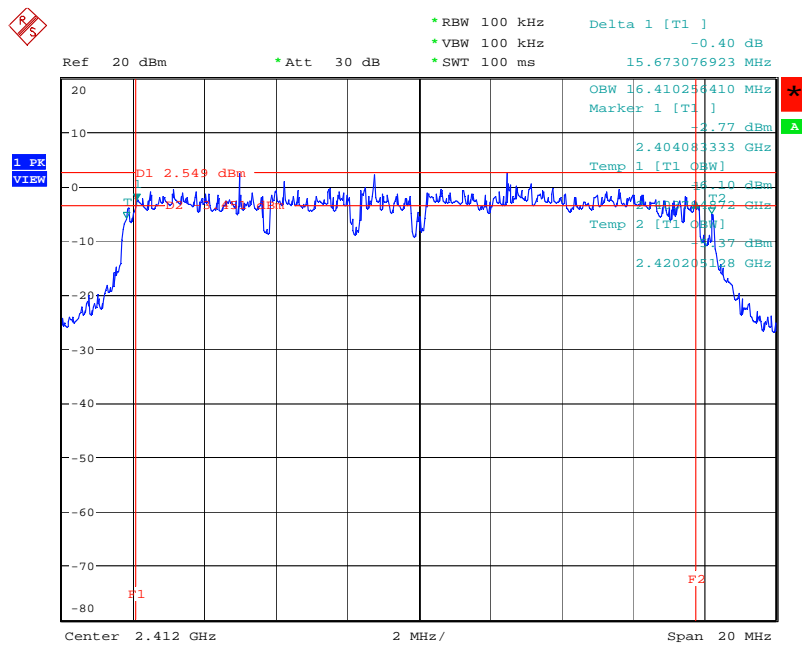
Date: 21.MAR.2008 19:24:13

6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 5/ 2462 MHz



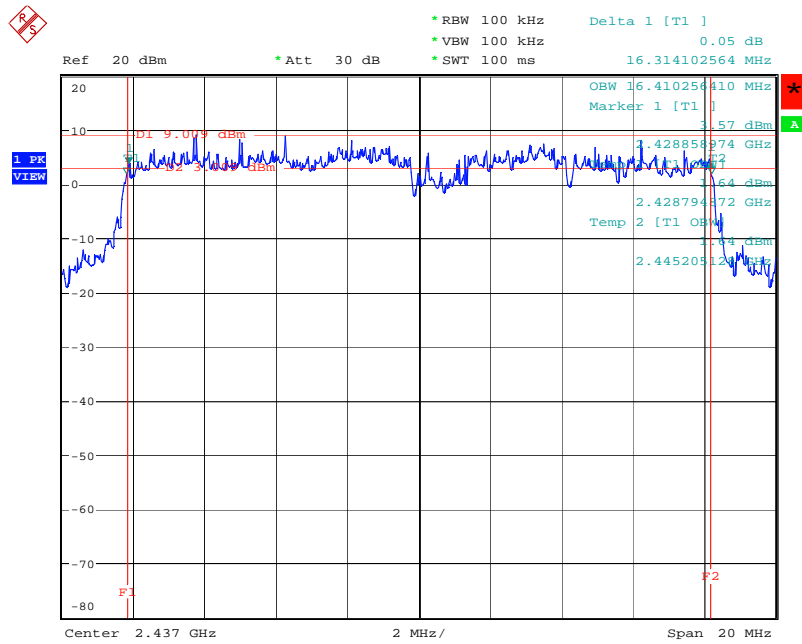
Date: 21.MAR.2008 16:15:27

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 5/ 2412 MHz



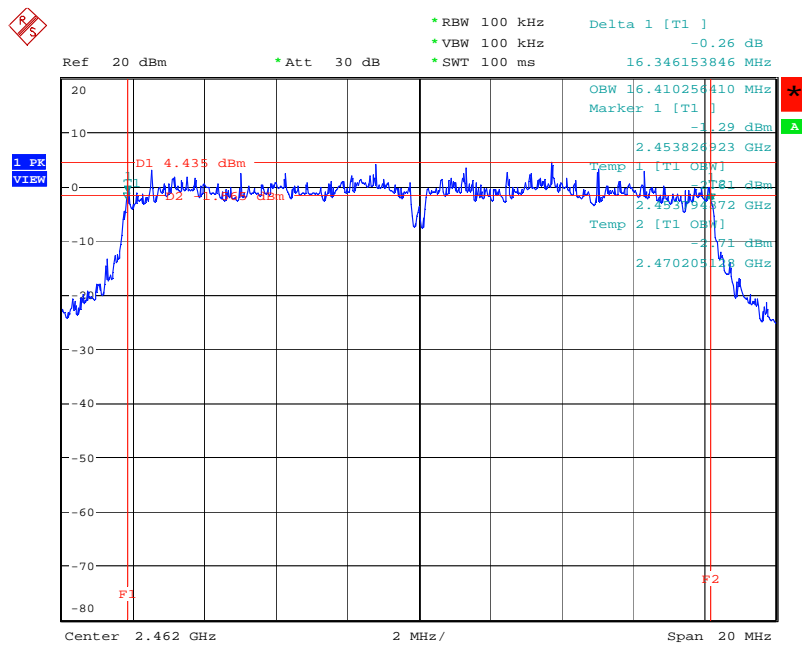
Date: 21.MAR.2008 16:18:07

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 5/ 2437 MHz



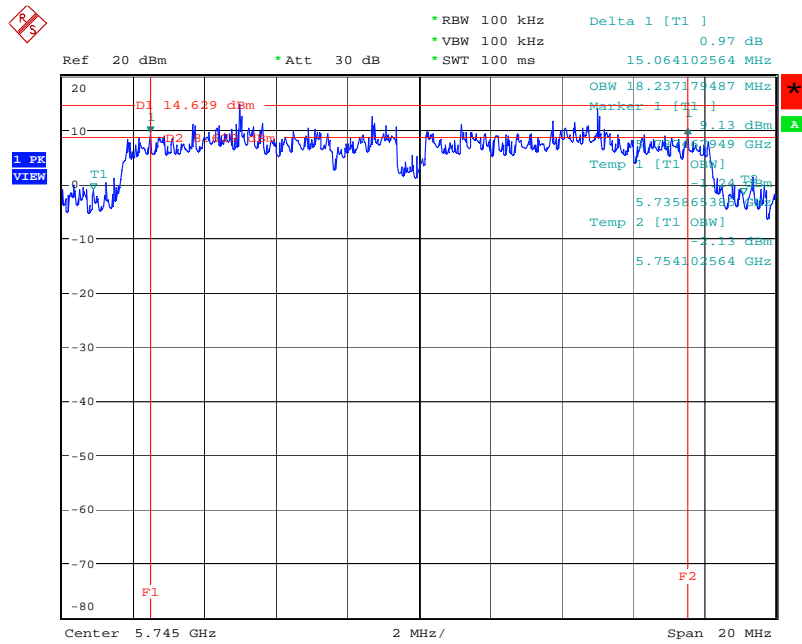
Date: 21.MAR.2008 16:17:17

6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 5/ 2462 MHz



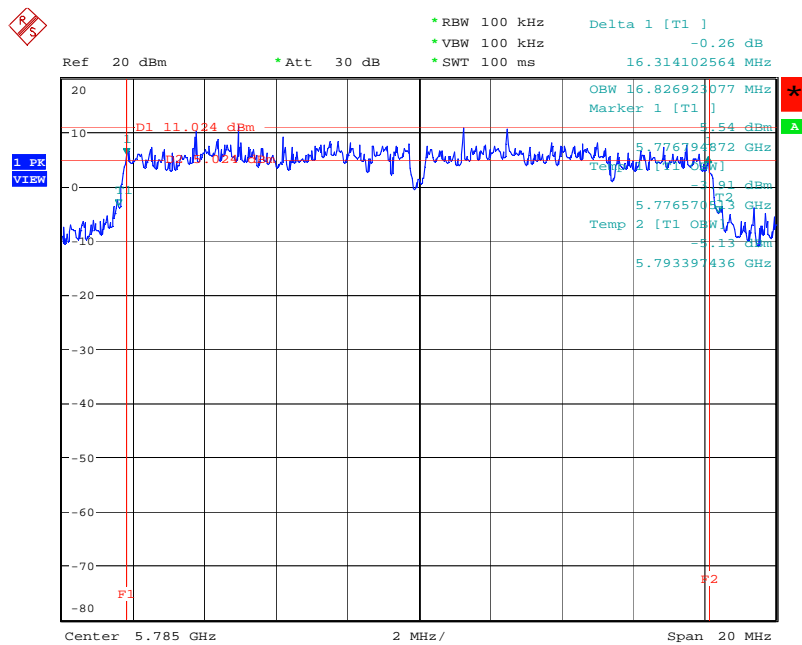
Date: 21.MAR.2008 16:16:21

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5/ 5745 MHz



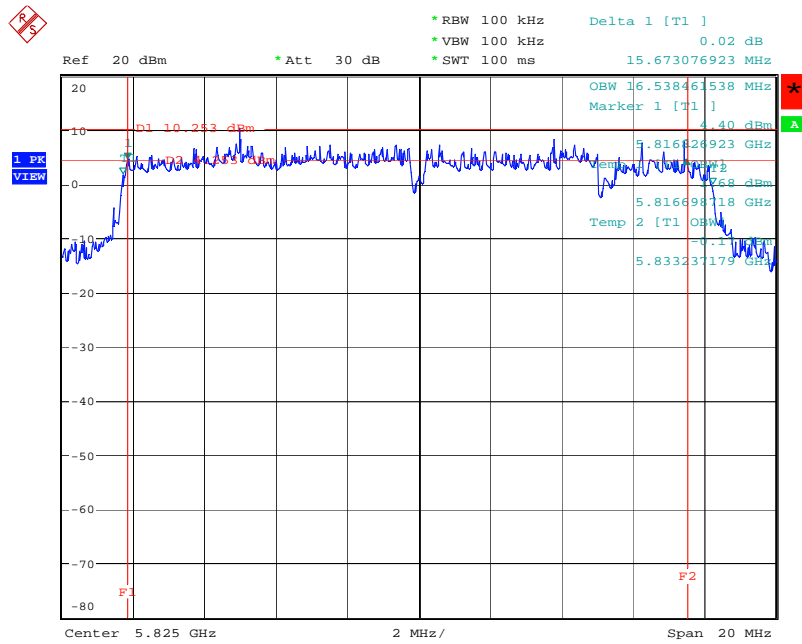
Date: 21.MAR.2008 16:00:21

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5/ 5785 MHz



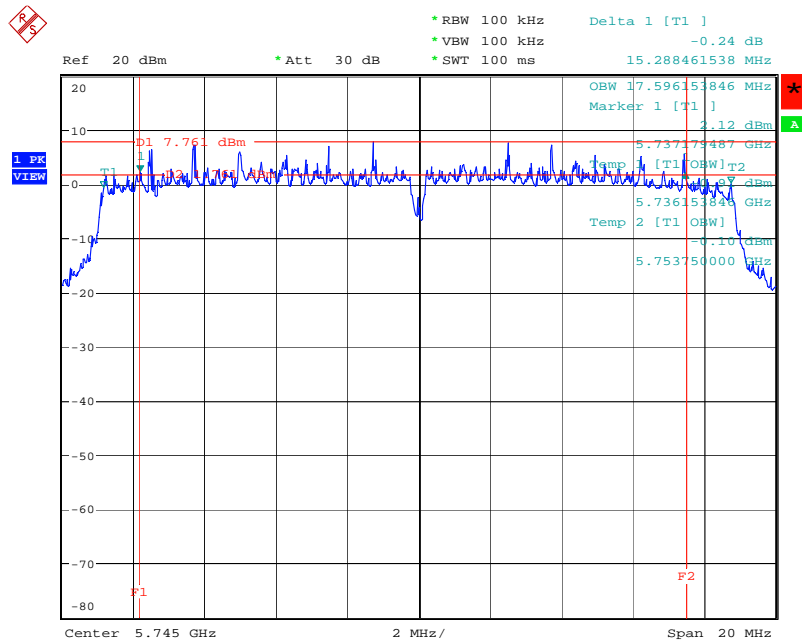
Date: 21.MAR.2008 16:03:39

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5/ 5825 MHz



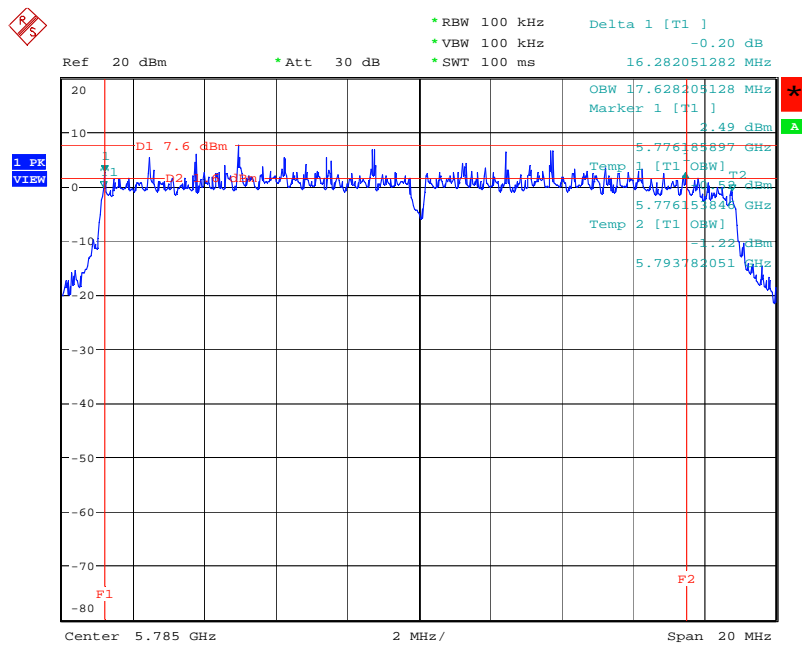
Date: 21.MAR.2008 16:08:20

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 6/ 5745 MHz



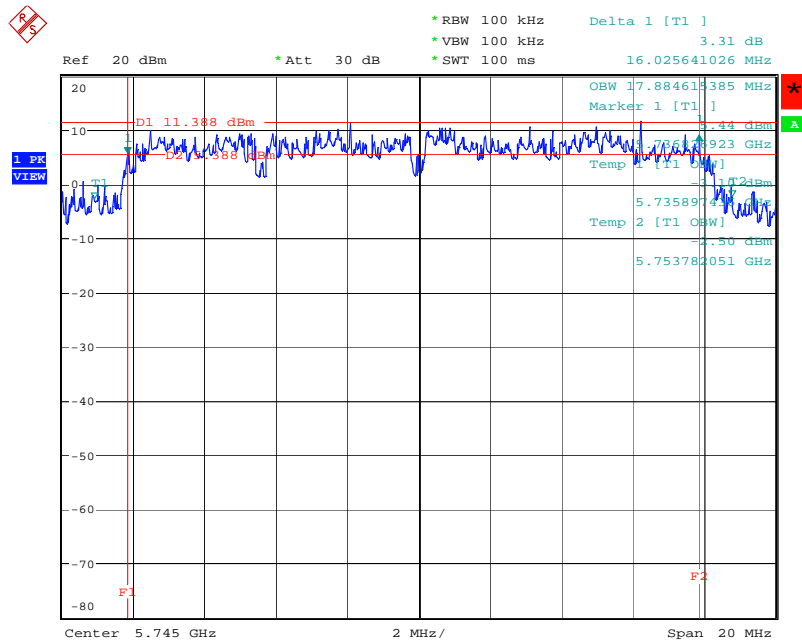
Date: 25.MAR.2008 15:32:50

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 6/ 5785 MHz



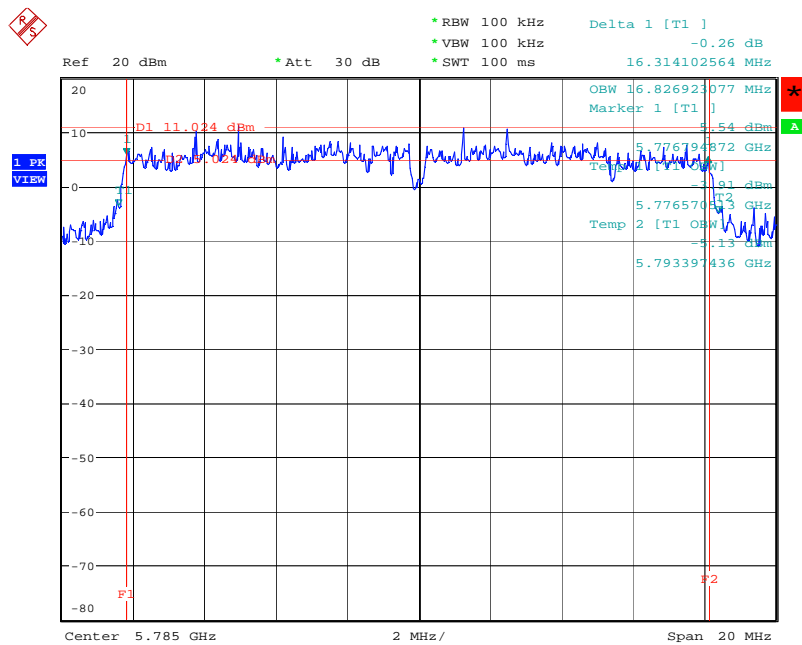
Date: 25.MAR.2008 15:35:38

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 7/ 5745 MHz



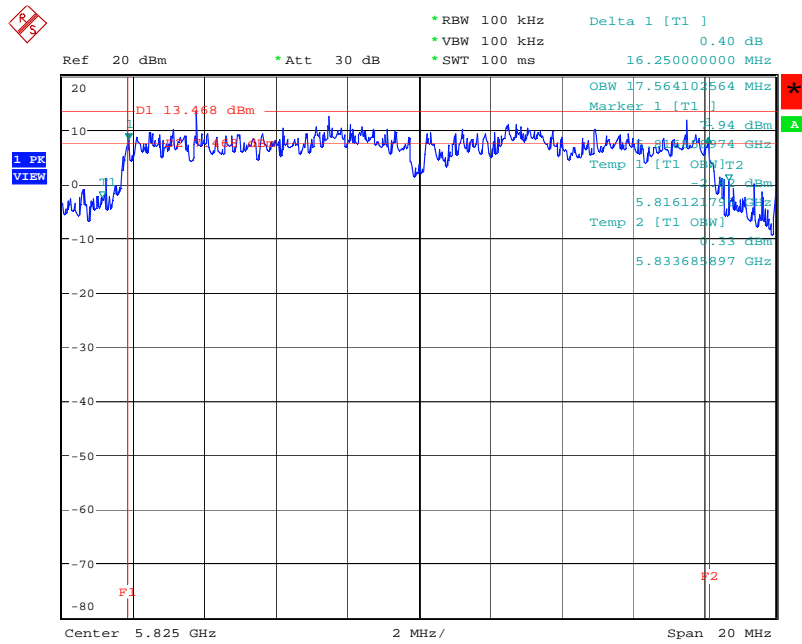
Date: 20.MAR.2008 20:42:51

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 7/ 5785 MHz



Date: 21.MAR.2008 16:03:39

6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 7/ 5825 MHz



Date: 26.MAR.2008 17:31:16

4.5. Radiated Emissions Measurement

4.5.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100KHz / 100KHz for peak

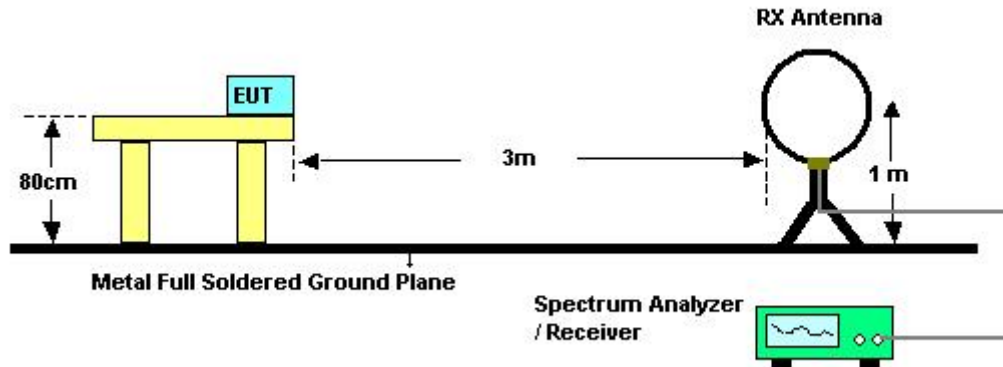
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.5.3. Test Procedures

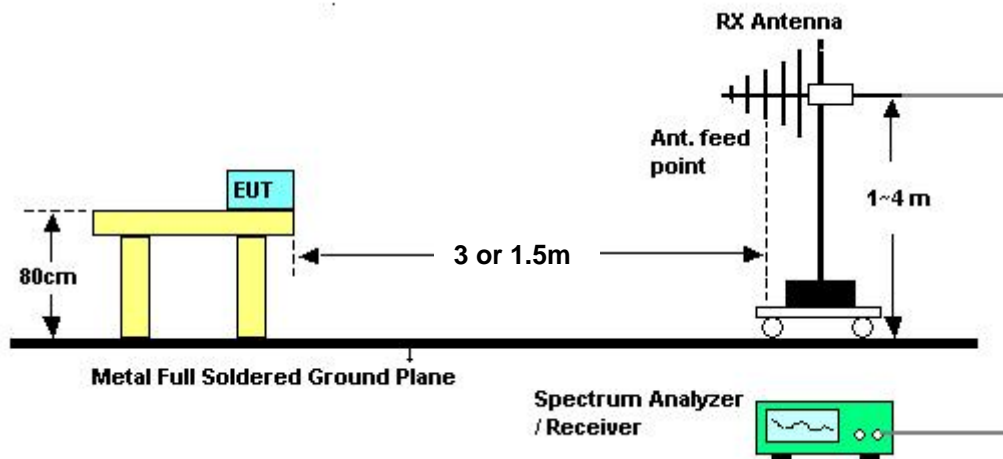
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1.5m]})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

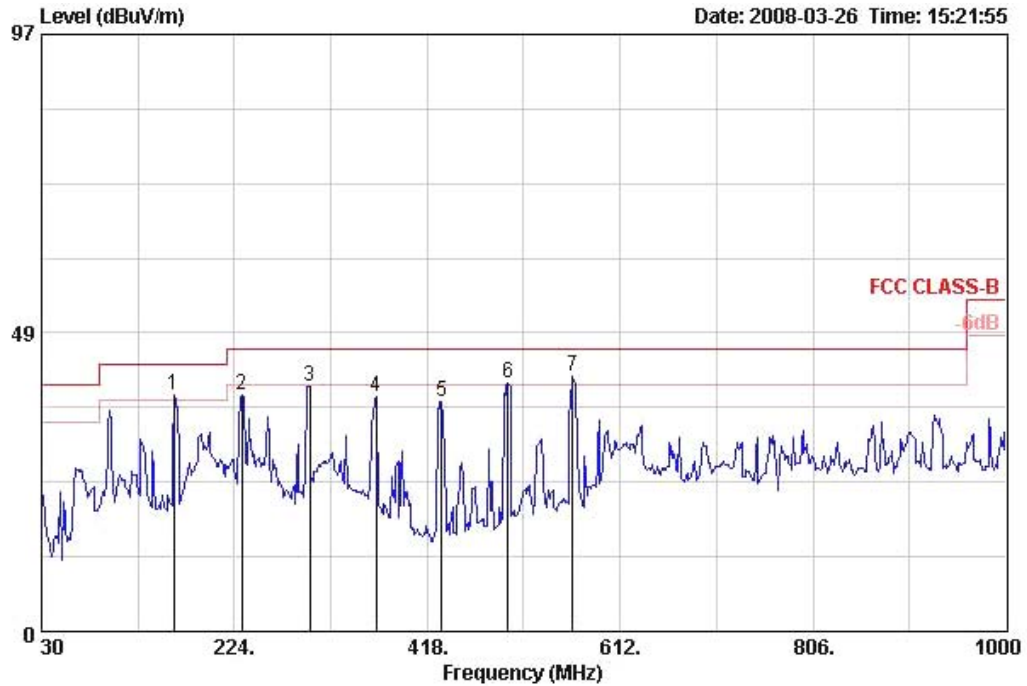
Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

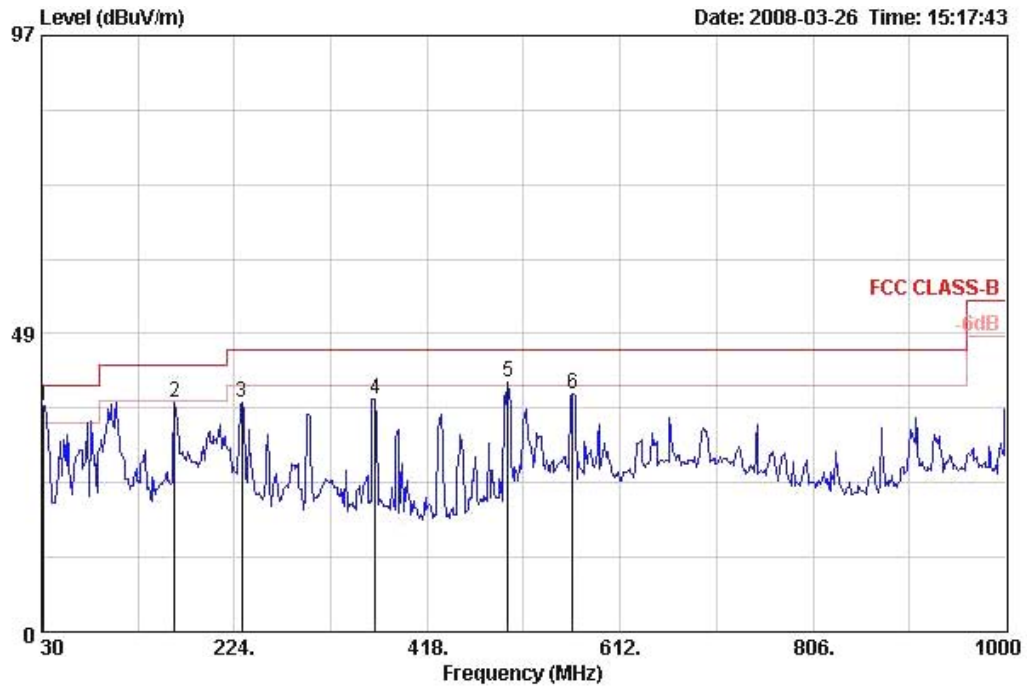
Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 1

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	162.890	38.33	-5.17	43.50	57.35	10.51	2.00	31.53	Peak	100	-1	HORIZONTAL
2	231.760	38.54	-7.46	46.00	56.41	11.30	2.21	31.38	Peak	100	-1	HORIZONTAL
3	299.660	39.92	-6.08	46.00	55.04	14.00	2.20	31.32	Peak	100	-1	HORIZONTAL
4	366.590	38.01	-7.99	46.00	50.88	15.80	2.50	31.17	Peak	100	-1	HORIZONTAL
5	432.550	37.21	-8.79	46.00	48.35	16.99	2.83	30.96	Peak	100	-1	HORIZONTAL
6 !	499.480	40.42	-5.58	46.00	50.19	17.89	3.28	30.94	Peak	100	-1	HORIZONTAL
7 ☺	564.470	41.45	-4.55	46.00	50.07	18.96	3.17	30.75	Peak	100	-1	HORIZONTAL

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	31.940	36.76	-3.24	40.00	48.84	18.66	0.93	31.67	Peak	400	-1	VERTICAL
2	163.860	37.34	-6.16	43.50	56.39	10.48	2.00	31.53	Peak	400	-1	VERTICAL
3	231.760	37.18	-8.82	46.00	55.05	11.30	2.21	31.38	Peak	400	-1	VERTICAL
4	365.620	37.92	-8.08	46.00	50.83	15.78	2.49	31.17	Peak	400	-1	VERTICAL
5	499.480	40.52	-5.48	46.00	50.29	17.89	3.28	30.94	Peak	400	-1	VERTICAL
6	564.470	38.82	-7.18	46.00	47.44	18.96	3.17	30.75	Peak	400	-1	VERTICAL

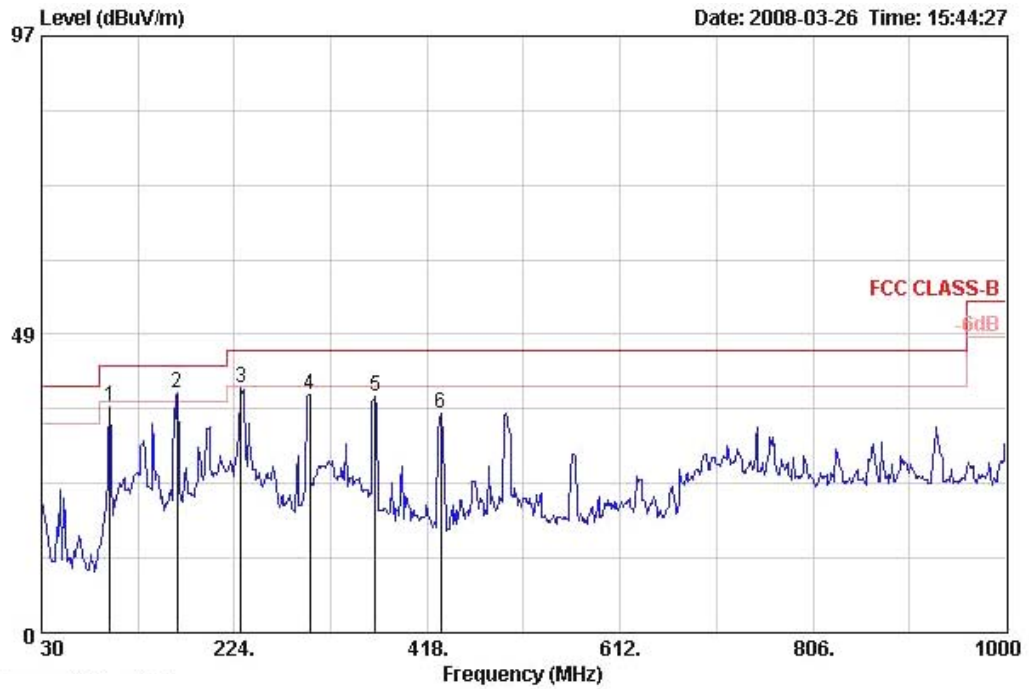
Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

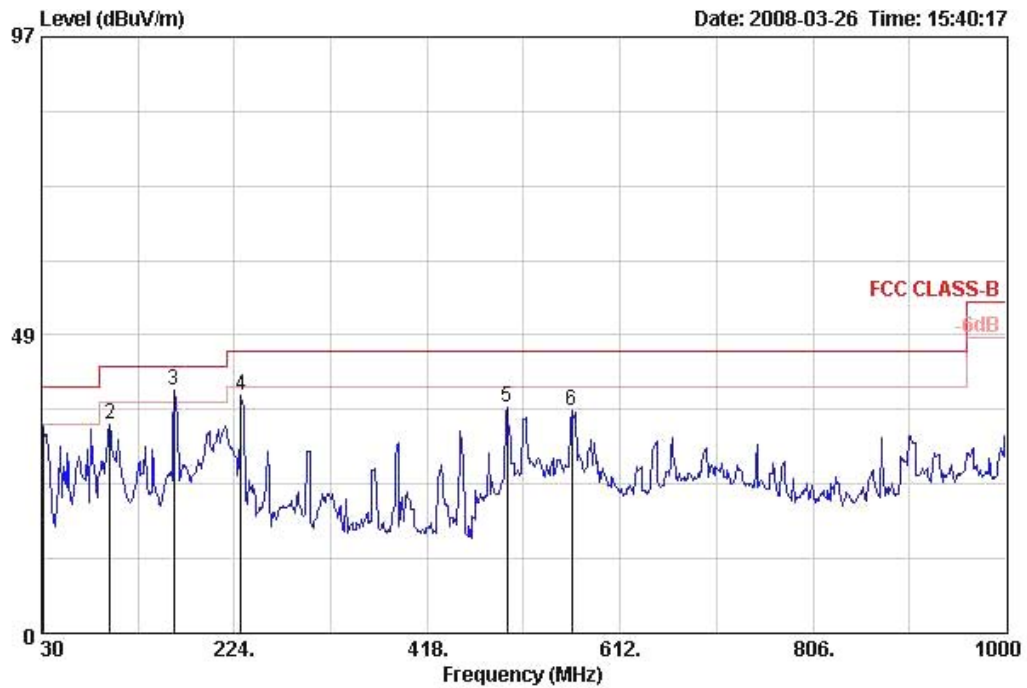
Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 2

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	98.870	36.73	-6.77	43.50	55.93	11.02	1.50	31.72	Peak	100	-4	HORIZONTAL
2	166.770	38.85	-4.65	43.50	58.01	10.39	2.00	31.55	Peak	100	-4	HORIZONTAL
3	230.790	39.68	-6.32	46.00	57.65	11.20	2.21	31.38	Peak	100	-4	HORIZONTAL
4	299.660	38.61	-7.39	46.00	53.73	14.00	2.20	31.32	Peak	100	-4	HORIZONTAL
5	365.620	38.37	-7.63	46.00	51.27	15.78	2.49	31.17	Peak	100	-4	HORIZONTAL
6	431.580	35.51	-10.49	46.00	46.66	16.98	2.83	30.96	Peak	100	-4	HORIZONTAL

Vertical



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos Pol/Phase
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	30.970	33.60	-6.40	40.00	45.09	19.38	0.80	31.67	Peak	400	-1 VERTICAL
2	98.870	34.12	-9.38	43.50	53.32	11.02	1.50	31.72	Peak	400	-1 VERTICAL
3	162.890	39.65	-3.85	43.50	58.67	10.51	2.00	31.53	Peak	400	-1 VERTICAL
4	230.790	38.62	-7.38	46.00	56.59	11.20	2.21	31.38	Peak	400	-1 VERTICAL
5	498.510	36.65	-9.35	46.00	46.43	17.87	3.28	30.94	Peak	400	-1 VERTICAL
6	563.500	36.22	-9.78	46.00	44.85	18.95	3.17	30.75	Peak	400	-1 VERTICAL

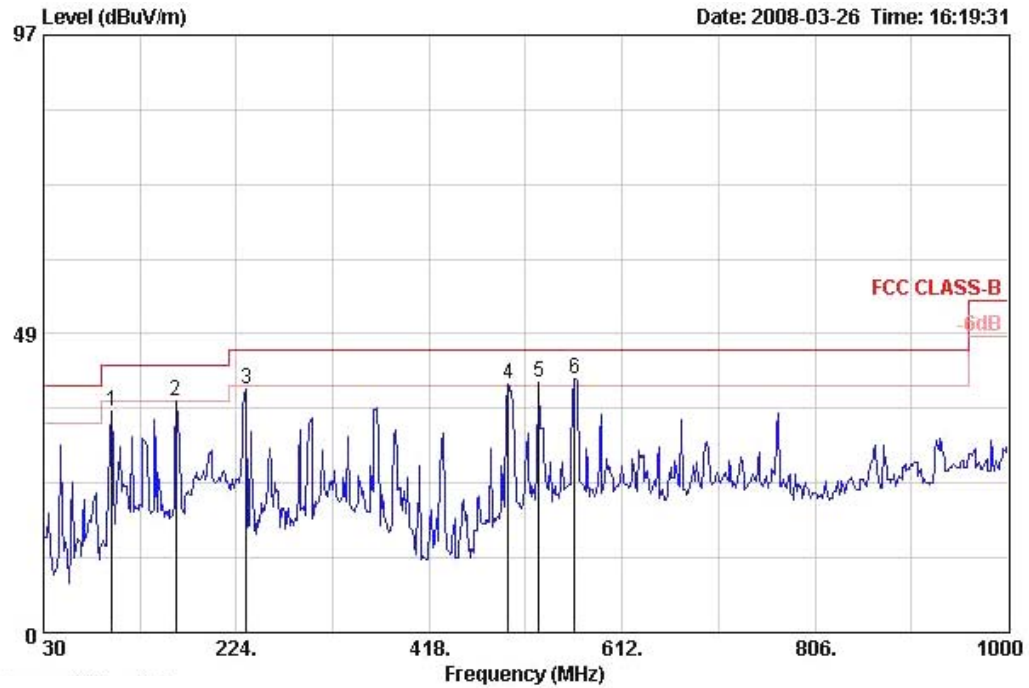
Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

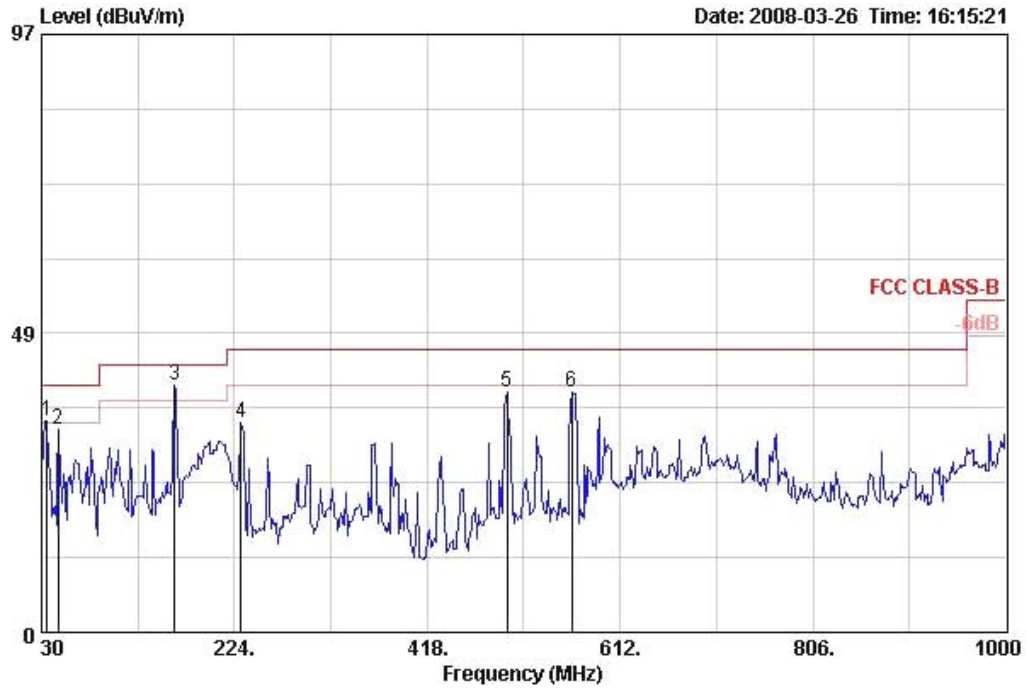
Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 3

Horizontal



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	98.870	36.00	-7.50	43.50	55.20	11.02	1.50	31.72	Peak	100	-1 HORIZONTAL
2 !	162.890	37.55	-5.95	43.50	56.57	10.51	2.00	31.53	Peak	100	-1 HORIZONTAL
3	233.700	39.50	-6.50	46.00	57.15	11.50	2.23	31.38	Peak	100	-1 HORIZONTAL
4 !	497.540	40.30	-5.70	46.00	50.11	17.86	3.27	30.94	Peak	100	-1 HORIZONTAL
5 !	528.580	40.74	-5.26	46.00	49.86	18.47	3.24	30.83	Peak	100	-1 HORIZONTAL
6 !	564.470	41.19	-4.81	46.00	49.81	18.96	3.17	30.75	Peak	100	-1 HORIZONTAL

Vertical



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos Pol/Phase
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 !	35.820	34.33	-5.67	40.00	48.85	15.98	1.20	31.70	Peak	400	-1 VERTICAL
2	46.490	32.86	-7.14	40.00	52.89	10.67	1.10	31.79	Peak	400	-1 VERTICAL
3 ☺	163.860	39.96	-3.54	43.50	59.01	10.48	2.00	31.53	Peak	400	-1 VERTICAL
4	230.790	33.89	-12.11	46.00	51.86	11.20	2.21	31.38	Peak	400	-1 VERTICAL
5	498.510	38.97	-7.03	46.00	48.75	17.87	3.28	30.94	Peak	400	-1 VERTICAL
6	563.500	38.86	-7.14	46.00	47.48	18.95	3.17	30.75	Peak	400	-1 VERTICAL

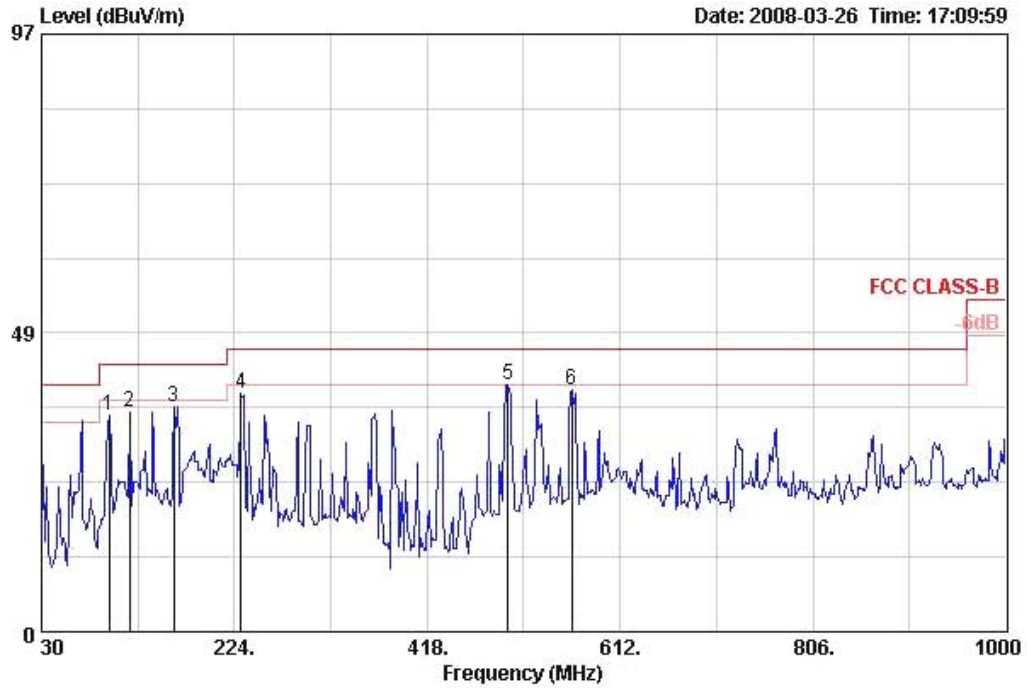
Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

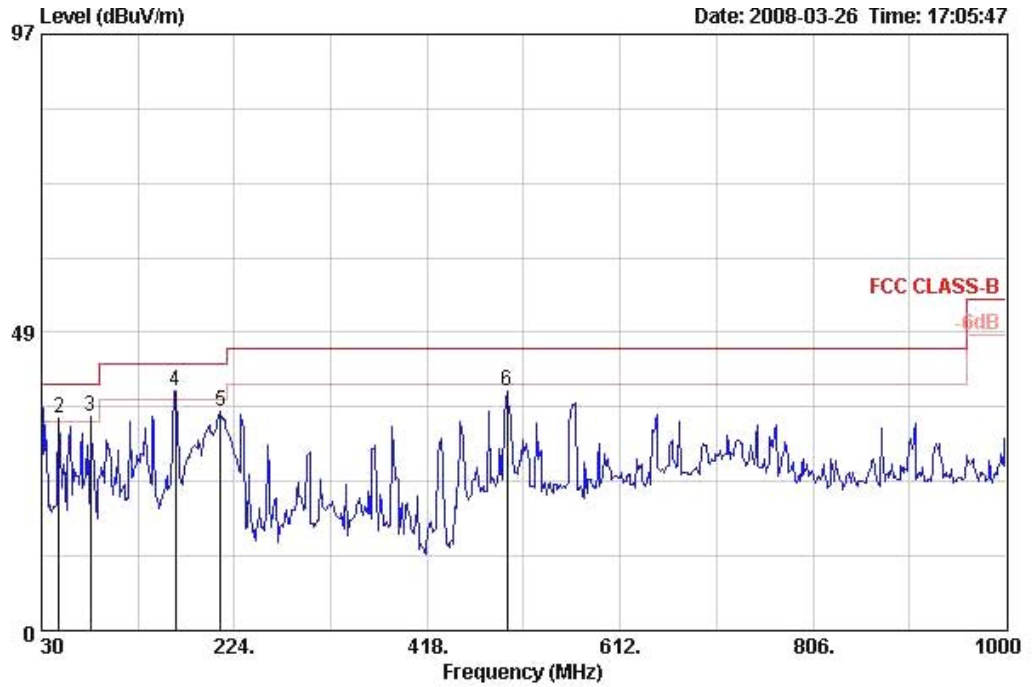
Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 4

Horizontal



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos	Pol/Phase
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	97.900	35.03	-8.47	43.50	54.42	10.84	1.50	31.73	Peak	100	-4	HORIZONTAL
2	118.270	35.55	-7.95	43.50	52.86	12.88	1.57	31.76	Peak	100	-4	HORIZONTAL
3	162.890	36.55	-6.95	43.50	55.57	10.51	2.00	31.53	Peak	100	-4	HORIZONTAL
4	230.790	38.65	-7.35	46.00	56.62	11.20	2.21	31.38	Peak	100	-4	HORIZONTAL
5 !	499.480	40.14	-5.86	46.00	49.91	17.89	3.28	30.94	Peak	100	-4	HORIZONTAL
6	563.500	39.16	-6.84	46.00	47.78	18.95	3.17	30.75	Peak	100	-4	HORIZONTAL

Vertical



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	30.000	36.19	-3.81	40.00	46.96	20.10	0.80	31.67	Peak	400	-1 VERTICAL
2	47.460	34.56	-5.44	40.00	54.97	10.30	1.10	31.81	Peak	400	-1 VERTICAL
3	79.470	34.93	-5.07	40.00	57.87	7.51	1.30	31.75	Peak	400	-1 VERTICAL
4	164.830	39.06	-4.44	43.50	58.15	10.45	2.00	31.54	Peak	400	-1 VERTICAL
5	210.420	35.61	-7.89	43.50	54.37	10.60	2.06	31.42	Peak	400	-1 VERTICAL
6	498.510	38.86	-7.14	46.00	48.64	17.87	3.28	30.94	Peak	400	-1 VERTICAL

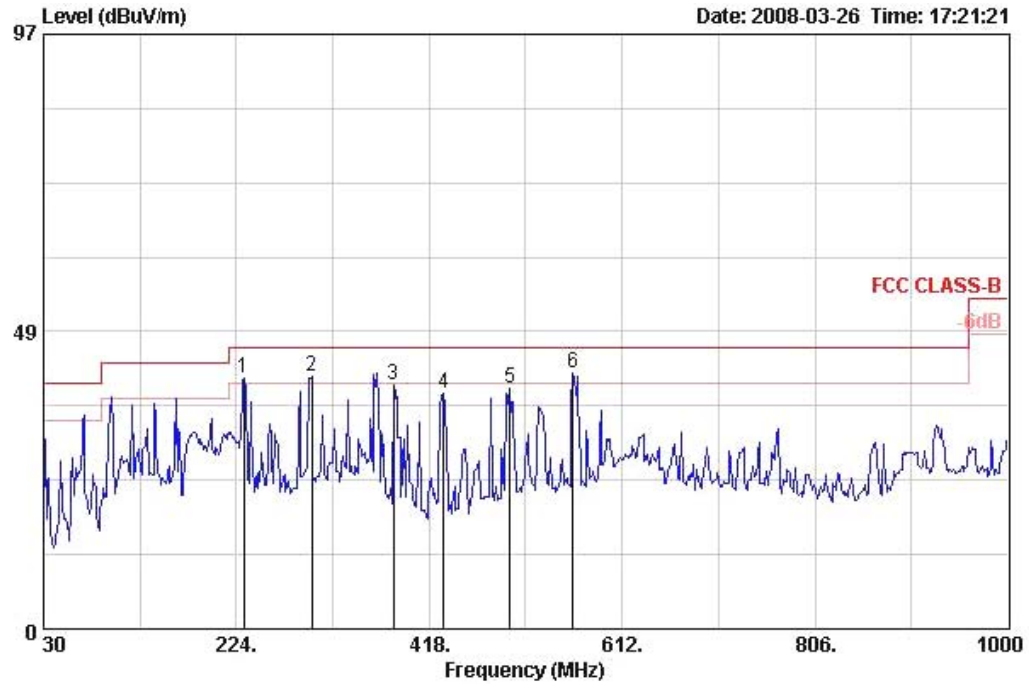
Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

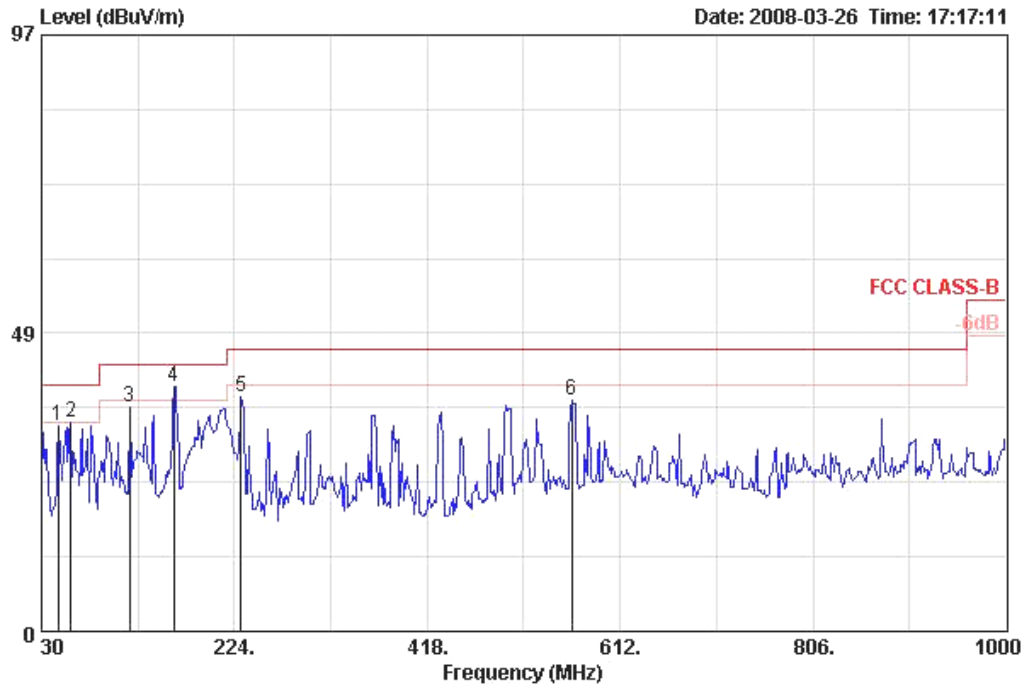
Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 5

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	231.760	40.85	-5.15	46.00	58.72	11.30	2.21	31.38	Peak	100	-5	HORIZONTAL
2 !	299.660	41.09	-4.91	46.00	56.21	14.00	2.20	31.32	Peak	100	-5	HORIZONTAL
3	382.110	39.90	-6.10	46.00	52.23	16.18	2.60	31.10	Peak	100	-5	HORIZONTAL
4	432.550	38.54	-7.46	46.00	49.68	16.99	2.83	30.96	Peak	100	-5	HORIZONTAL
5	499.480	39.35	-6.65	46.00	49.12	17.89	3.28	30.94	Peak	100	-5	HORIZONTAL
6 !	562.530	41.70	-4.30	46.00	50.32	18.95	3.18	30.75	Peak	100	-5	HORIZONTAL

Vertical



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	46.490	33.36	-6.64	40.00	53.38	10.67	1.10	31.79	Peak	400	-5 VERTICAL
2	59.100	34.00	-6.00	40.00	57.50	6.86	1.40	31.76	Peak	400	-5 VERTICAL
3	118.270	36.39	-7.11	43.50	53.69	12.88	1.57	31.76	Peak	400	-5 VERTICAL
4	162.890	39.87	-3.63	43.50	58.89	10.51	2.00	31.53	Peak	400	-5 VERTICAL
5	230.790	38.25	-7.75	46.00	56.22	11.20	2.21	31.38	Peak	400	-5 VERTICAL
6	563.500	37.47	-8.53	46.00	46.09	18.95	3.17	30.75	Peak	400	-5 VERTICAL

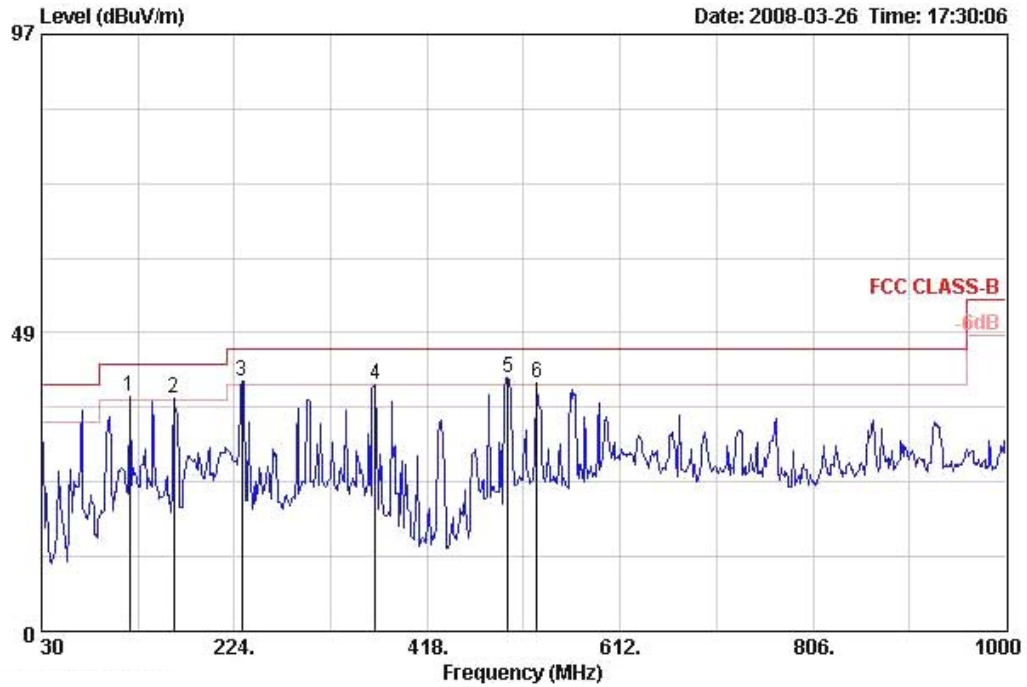
Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23°C	Humidity	62%
Test Engineer	Jax Chen	Configurations	Normal Link / Ant. 6

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	118.270	38.16	-5.34	43.50	55.46	12.88	1.57	31.76	Peak	100	-1	HORIZONTAL
2 !	162.890	37.79	-5.71	43.50	56.81	10.51	2.00	31.53	Peak	100	-1	HORIZONTAL
3 !	231.760	40.66	-5.34	46.00	58.53	11.30	2.21	31.38	Peak	100	-1	HORIZONTAL
4	365.620	39.94	-6.06	46.00	52.85	15.78	2.49	31.17	Peak	100	-1	HORIZONTAL
5 ☹	499.480	41.31	-4.69	46.00	51.08	17.89	3.28	30.94	Peak	100	-1	HORIZONTAL
6 !	528.580	40.41	-5.59	46.00	49.53	18.47	3.24	30.83	Peak	100	-1	HORIZONTAL