NVLAP LAB CODE 200707-0

FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

Teledex, LLC

6311 San Ignacio Ave., San Jose, CA95119, U.S.A.

FCC ID: DXAAWiFiAP

This Report Concerns:	Equipment Type:
☒ Original Report	Airlink WiFi Ap Modul

Test Engineer:	Simon Mo simon mo
Report Number:	RSZ07121201a
Test Date:	2008-01-08 to 2008-01-30
Report Date:	2008-01-30
Reviewed By:	EMC Manager: Green Xu Green. Xu
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Teledex LLC*'s product, model number: *EB1-T002-TLD01 o*r the "EUT" as referred to in this report is a *Airlink WiFi Ap,* which measures approximately 20.0 cm L x 13.0 cm W x 4.0 cm H, rated input voltage: DC 12V adapter.

Adapter Information:
Manufacturer: Teledex LLC
Model: MA2A-06120-A
Input: 100-240V 50-60Hz 0.4A
Output: 12V DC =6W

** All measurement and test data in this report was gathered from production sample serial number: 0712012 (Assigned by BACL, Shenzhen). The EUT was received on 2007-12-12.*

Objective

This Type approval report is prepared on behalf of *Teledex LLC* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at
http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b/g mode, 11 channels are provided to the testing:

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

EUT Exercise Software

Engineer test software was provided by the manufacturer.

Special Accessories

The special accessories were provided by Bay Area Compliance Laboratories Corp. (Shenzhen).

Equipment Modifications

No modifications were made to the EUT.

Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	PC	DELL 170L	CN-0TC670-70821-560-F4Q6	DoC
DELL	Keyboard	SK-8110	CN07N244-71616-56A-1B1E	DoC
DELL	Mouse	M071KC	520027907	DoC
DELL	LCD Monitor	1505FP	Y4287-7168-571-GBSH	DoC
ProMOS	Memory	V826632K24SATG-C0	0525-K1933700	N/A
Intel	CPU	Celeron D-2533	N/A	N/A

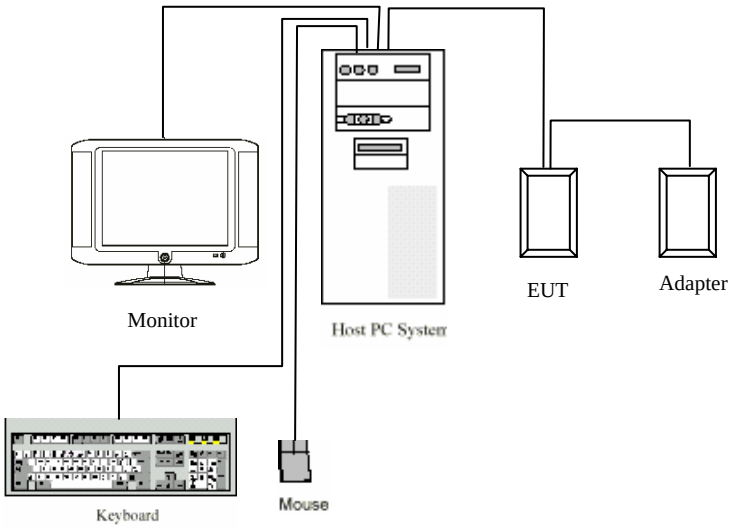
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Motherboard	OWC297	CN-OWC297-70821-564-00NI	DoC
DELL	Power	NPS-250KB D	CN-0H2678-17972-56E-80BM	DoC
Seagate	Hard Disk	ST340014A	5JXK3GXE	DoC
DELL	3.5' Floppy	N/A	CN-0N8893-69802-54Q-02P0	DoC
Lite-ON	CD-Rom	LTN-489S	N/A	DoC
Intel	Ethernet	PRO 10/100 VE	N/A	DoC
CS	Smart Card	ACOS2	N/A	DoC

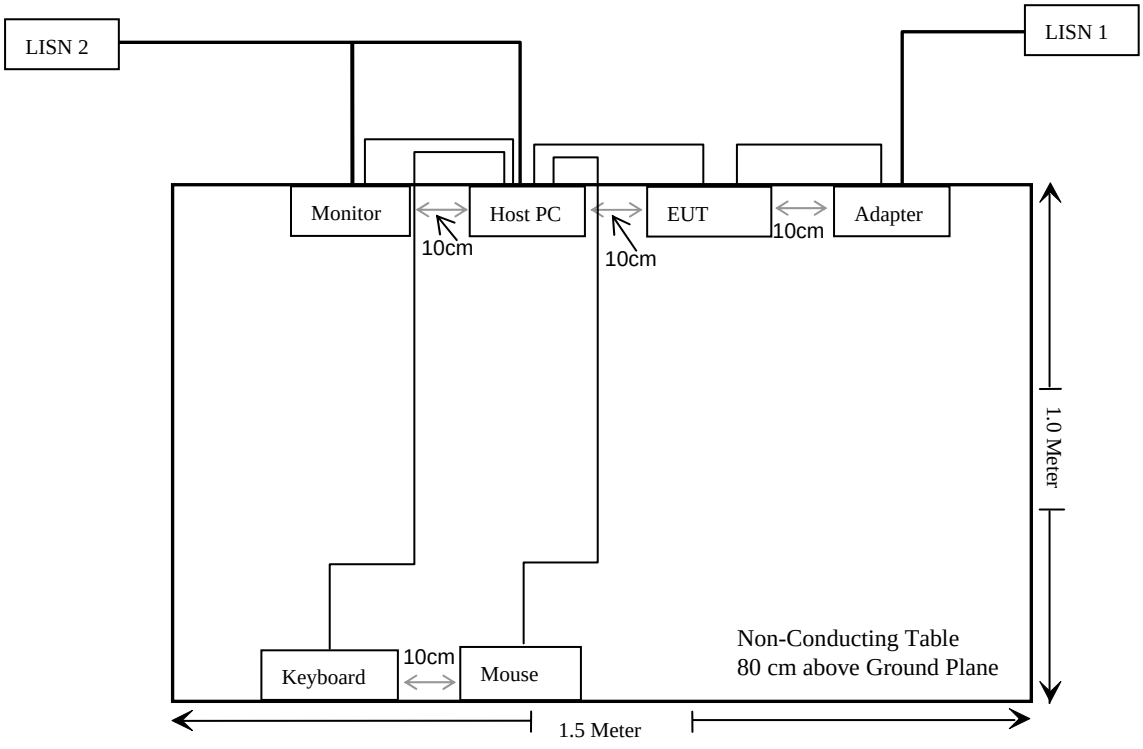
External I/O Cable

Cable Description	Length (M)	From Port	To
Shielded Detachable K/B Cable	1.5	K/B Port /Host	K/B
Shielded Detachable Mouse Cable	1.5	Mouse Port /Host	Mouse
Shielded Detachable VGA Cable	1.5	VGA Port/Host	Monitor
Shielded Detachable RJ 45 Cable	3.0	EUT	PC
Adapter Cable	2.9	EUT	Adapter

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247 (i), §1.1307 (b)(1)	Maximum Permissible exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	Conducted Emissions	Compliant
§15.247(d), §15.205, §15.209	Spurious Emissions and Band Edges	Compliant
§15.247 (a)(2)	6 dB Bandwidth	Compliant
§15.247(b)(3)	Peak Output Power Measurement	Compliant
§15.247(e)	Power Spectral Density	Compliant

§15.247 (i) and §1.1307(b) (1) - MAXIMUN PERMISSIBLE EXPOSURE

Standard Applicable

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Radio frequency radiation exposure was calculated based on § 1.1310 limits.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$
S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW) .
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally ***numeric*** gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For 802.11b Mode:

Maximum peak output power at antenna input terminal: 19.78(dBm)
Maximum peak output power at antenna input terminal: 95.06 (mW)
Prediction distance: 20 (cm)
Predication frequency: 2442 (MHz)
Antenna Gain (typical): 2.0(dBi)
Antenna Gain (typical): 1.585 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.03 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm^2)

For 802.11g Mode:

Maximum peak output power at antenna input terminal: 19.32 (dBm)
Maximum peak output power at antenna input terminal: 85.51 (mW)
Prediction distance: 20 (cm)
Predication frequency: 2442 (MHz)
Antenna Gain (typical): 2.0(dBi)
Antenna Gain (typical): 1.585 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.027 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm^2)

Result: EUT complies with 20 cm distance.

§15.203 - ANTENNA REQUIREMENT

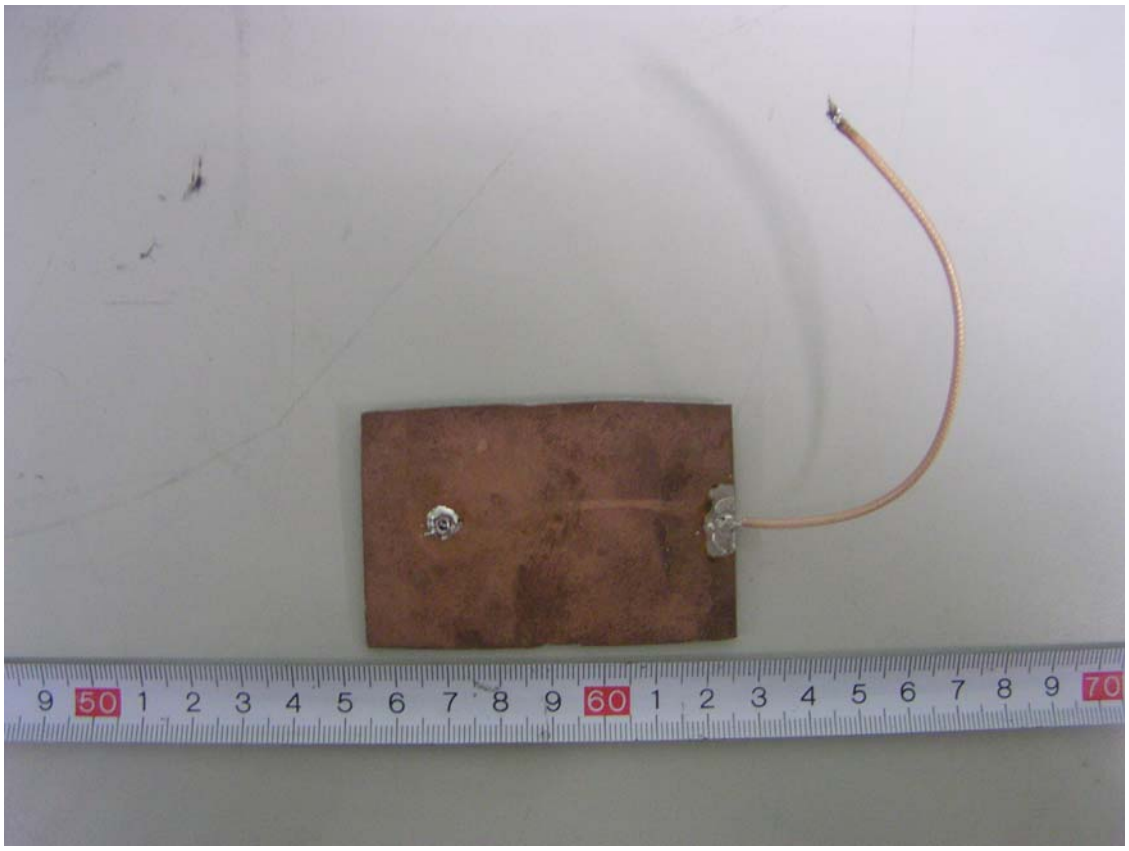
Standard Applicable

According to § 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to § 15.247 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT uses a unique coupling antenna. The maximum gain is 2.0 dBi. Please refer the EUT photo.



EUT Antenna Photo

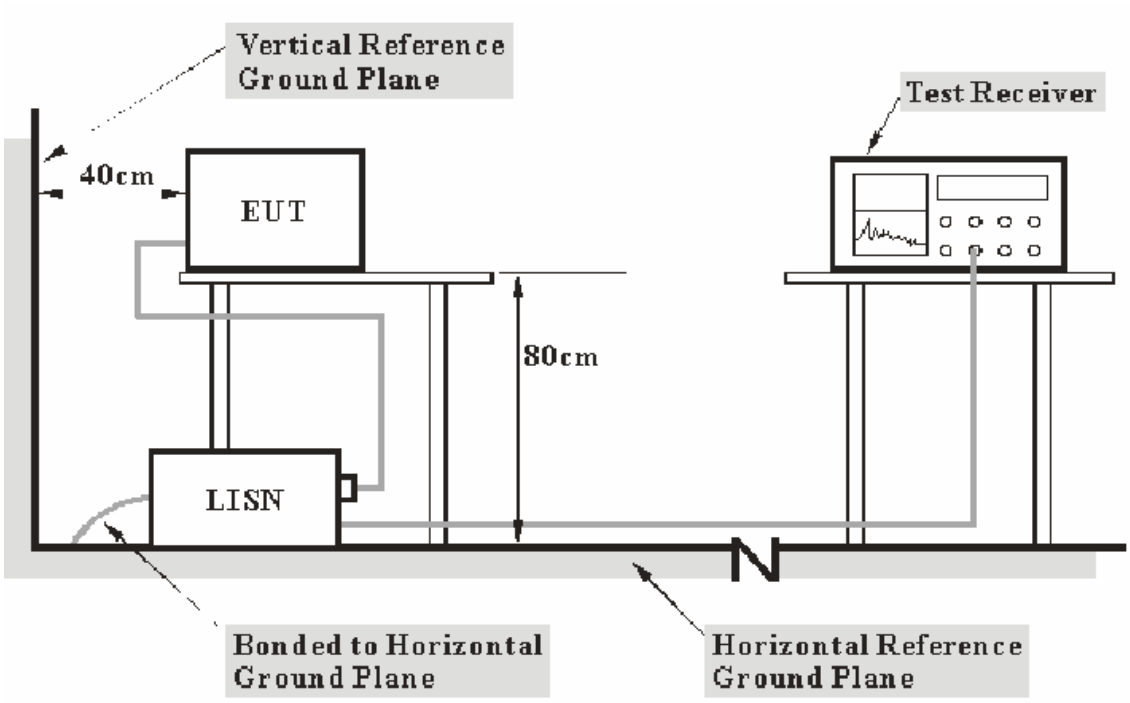
§15.207 (a) - CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ±2.4 dB.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12008	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2007-03-26	2008-03-26
Rohde&Schwarz	Spectrum Analyzer	FSEM30	849720/019	2007-05-09	2008-05-09

***** Com-Power's LISN were used as the supporting equipment.
*** Statement of Traceability:** Bay Area Compliance Laboratory Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN, and all other support equipment power cords were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

Transmitting mode: 4.80 dB at **3.80 MHz** in the **Hot** conductor mode, **802.11b mode**
Transmitting mode: 4.40 dB at **3.900 MHz** in the **Hot** conductor mode, **802.11g mode**

Test Data

Environmental Conditions

Temperature:	24 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa

The testing was performed by Simon Mo on 2008-01-12

Test Mode: Transmitting

802.11b mode

Line Conducted Emissions				FCC Part 15.207	
Frequency (MHz)	**Amplitude (dBμV)**	**Detector (QP/AV)**	**Conductor (Live/Neutral)**	**Limit (dBμV)**	**Margin (dB)**
3.800	41.20	AV	Hot	46.00	4.80
0.400	41.80	AV	Hot	47.85	6.05
1.500	39.50	AV	Hot	46.00	6.50
3.800	37.20	AV	Neutral	46.00	8.80
0.200	43.50	AV	Hot	53.61	10.11
23.590	39.40	AV	Hot	50.00	10.60
3.800	45.00	QP	Hot	56.00	11.00
0.200	50.60	QP	Hot	63.61	13.01
23.390	36.70	AV	Neutral	50.00	13.30
23.580	46.60	QP	Hot	60.00	13.40
0.200	39.50	AV	Neutral	53.61	14.11
7.490	35.70	AV	Hot	50.00	14.30
1.000	31.50	AV	Neutral	46.00	14.50
0.400	43.30	QP	Hot	57.85	14.55
0.500	41.10	QP	Neutral	56.00	14.90
1.500	40.90	QP	Hot	56.00	15.10
23.480	44.80	QP	Neutral	60.00	15.20
3.800	40.00	QP	Neutral	56.00	16.00
0.200	47.50	QP	Neutral	63.61	16.11
2.200	28.70	AV	Neutral	46.00	17.30
0.200	35.50	AV	Neutral	53.61	18.11
7.490	40.30	QP	Hot	60.00	19.70
1.000	34.60	QP	Neutral	56.00	21.40
2.200	32.00	QP	Neutral	56.00	24.00

802.11g mode

Line Conducted Emissions				FCC Part 15.207	
Frequency (MHz)	**Amplitude (dBμV)**	**Detector (QP/AV)**	**Phase (Live/Neutral)**	**Limit (dBμV)**	**Margin (dB)**
3.900	41.60	AV	Hot	46.00	4.40
0.400	41.70	AV	Hot	47.85	6.15
0.500	39.00	AV	Neutral	46.00	7.00
1.400	38.20	AV	Hot	46.00	7.80
3.900	37.70	AV	Neutral	46.00	8.30
3.895	46.10	QP	Hot	56.00	9.90
0.200	43.50	AV	Hot	53.61	10.11
23.690	39.60	AV	Hot	50.00	10.40
23.690	38.70	AV	Neutral	50.00	11.30
23.675	47.50	QP	Hot	60.00	12.50
0.200	50.90	QP	Hot	63.61	12.71
23.675	46.40	QP	Neutral	60.00	13.60
0.400	43.20	QP	Hot	57.85	14.65
6.595	35.10	AV	Hot	50.00	14.90
3.900	40.80	QP	Neutral	56.00	15.20
0.500	40.60	QP	Neutral	56.00	15.40
0.200	47.80	QP	Neutral	63.61	15.81
1.400	40.00	QP	Hot	56.00	16.00
1.000	29.90	AV	Neutral	46.00	16.10
0.200	36.60	AV	Neutral	53.61	17.01
6.595	41.50	QP	Hot	60.00	18.50
6.595	29.80	AV	Neutral	50.00	20.20
1.000	34.70	QP	Neutral	56.00	21.30
6.595	38.00	QP	Neutral	60.00	22.00

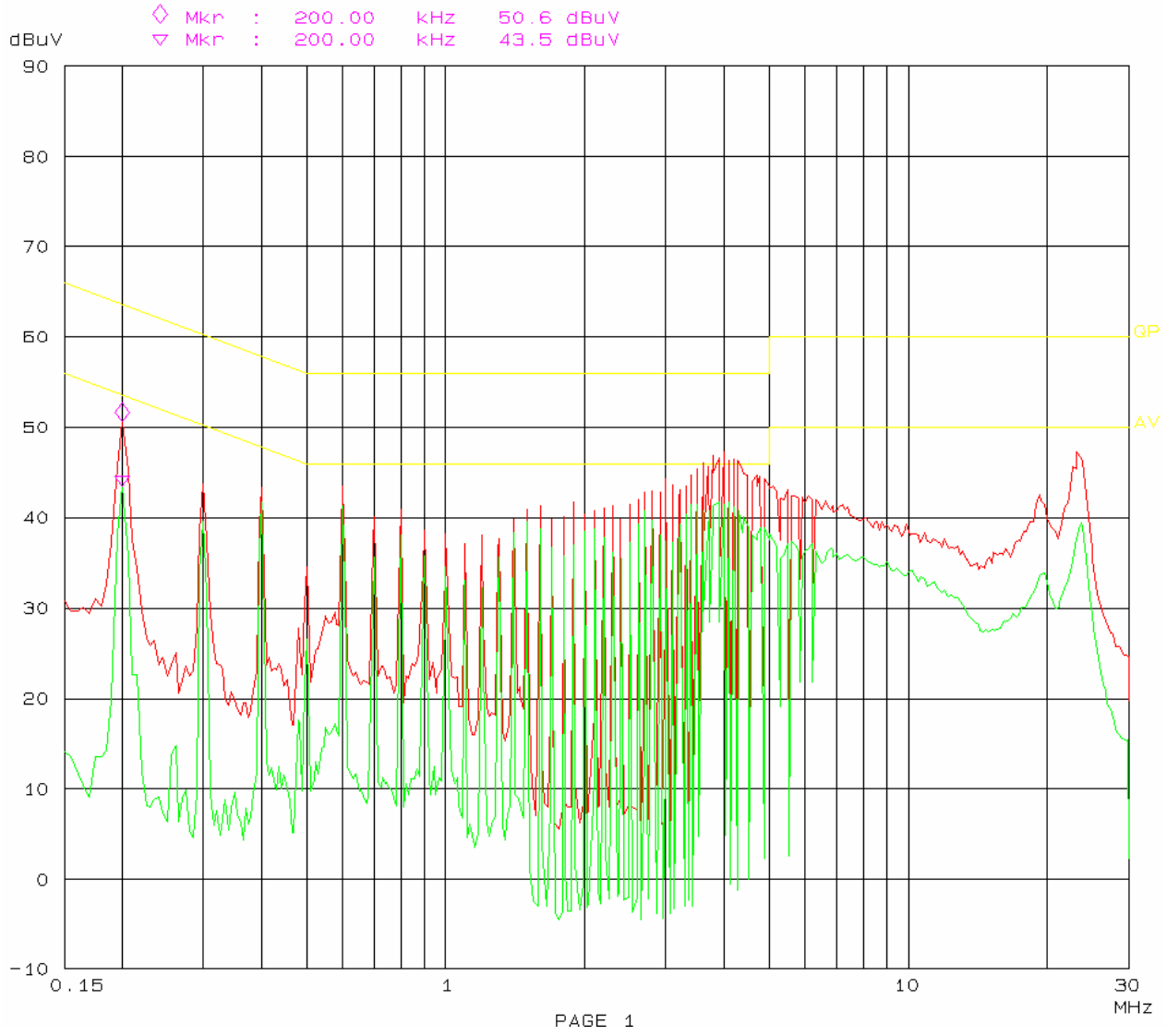
Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

CONDUCTED EMISSION TEST
FCC PART 15

12. Jan 08 13:13

EUT: Airlink Wifi Ap M/N:EB1-T002-TLD01
Manuf: Teledex LLC
Op Cond: TRANSMITTING (802.11b)
Operator: SIMON
Test Spec: AC 120V/60HZ Hot
Comment: Temp:24 Humi:50%



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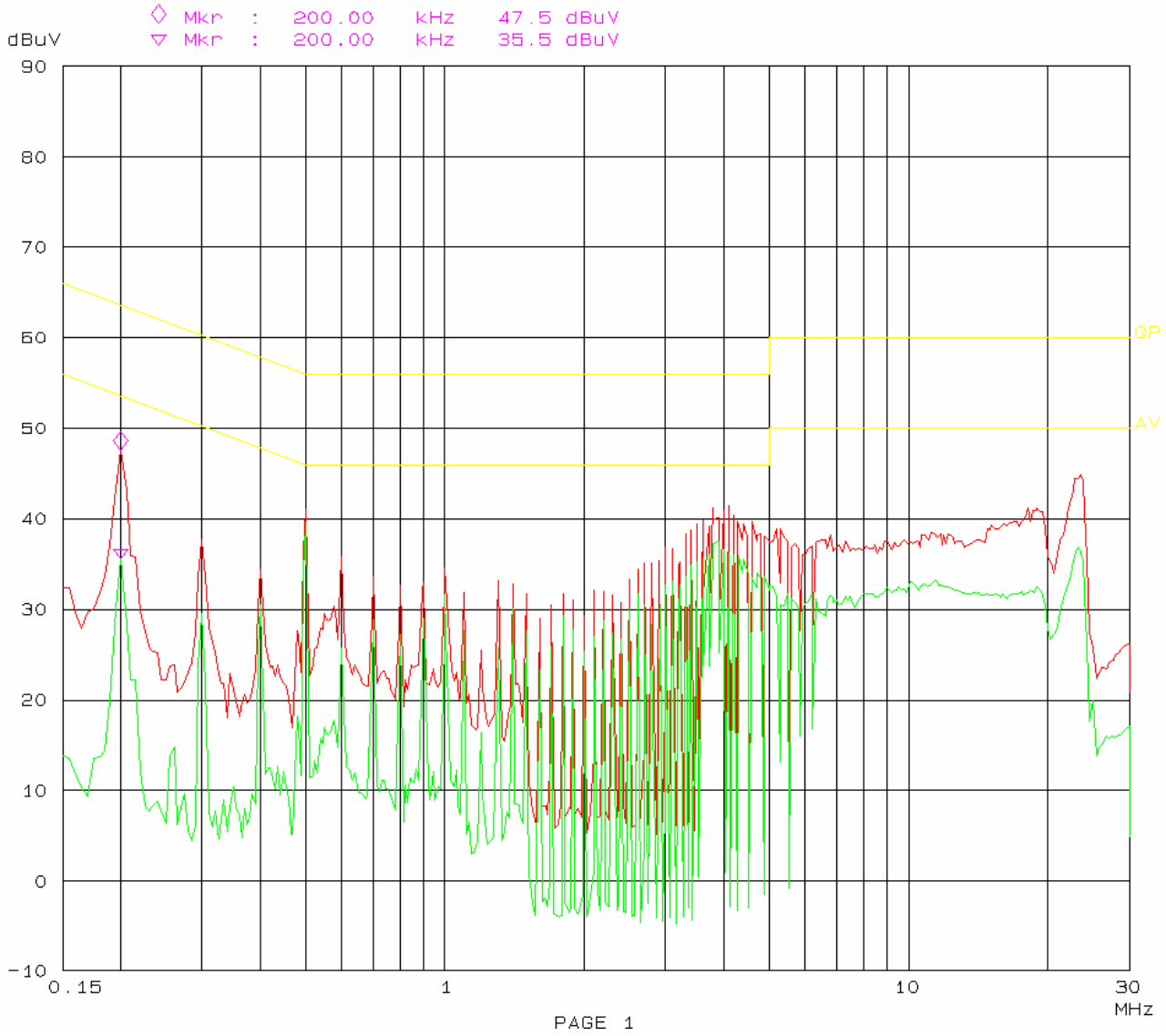
CONDUCTED EMISSION TEST

12. Jan 08 13:00

FCC PART 15

EUT: Airlink Wifi Ap M/N:EB1-T002-TLD01
Manuf: Teledex LLC
Op Cond: TRANSMITTING (802.11b)
Operator: SIMON
Test Spec: AC 120V/60HZ Neutral
Comment: Temp:24 Humi:50%



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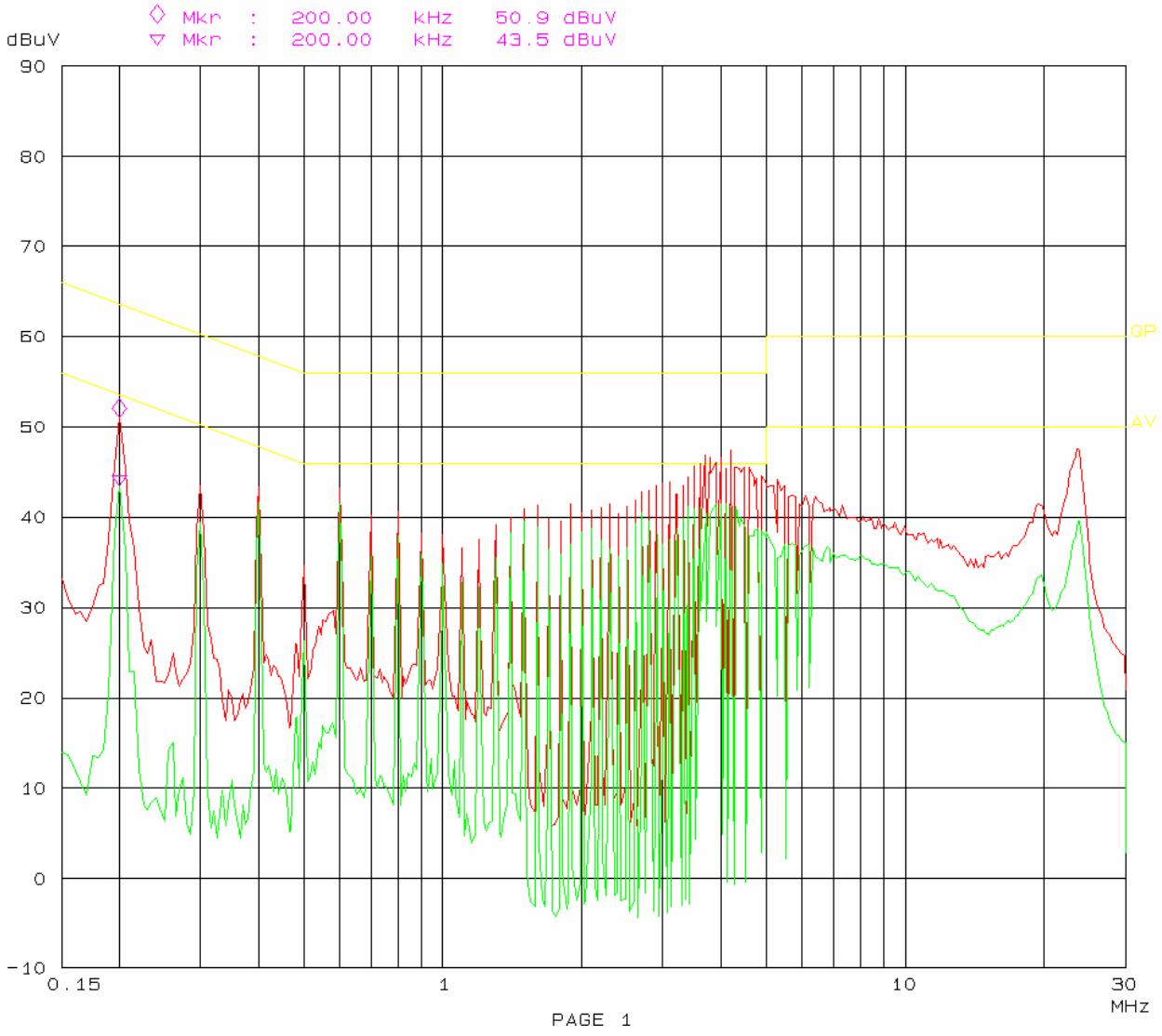
CONDUCTED EMISSION TEST

12. Jan 08 13:29

FCC PART 15

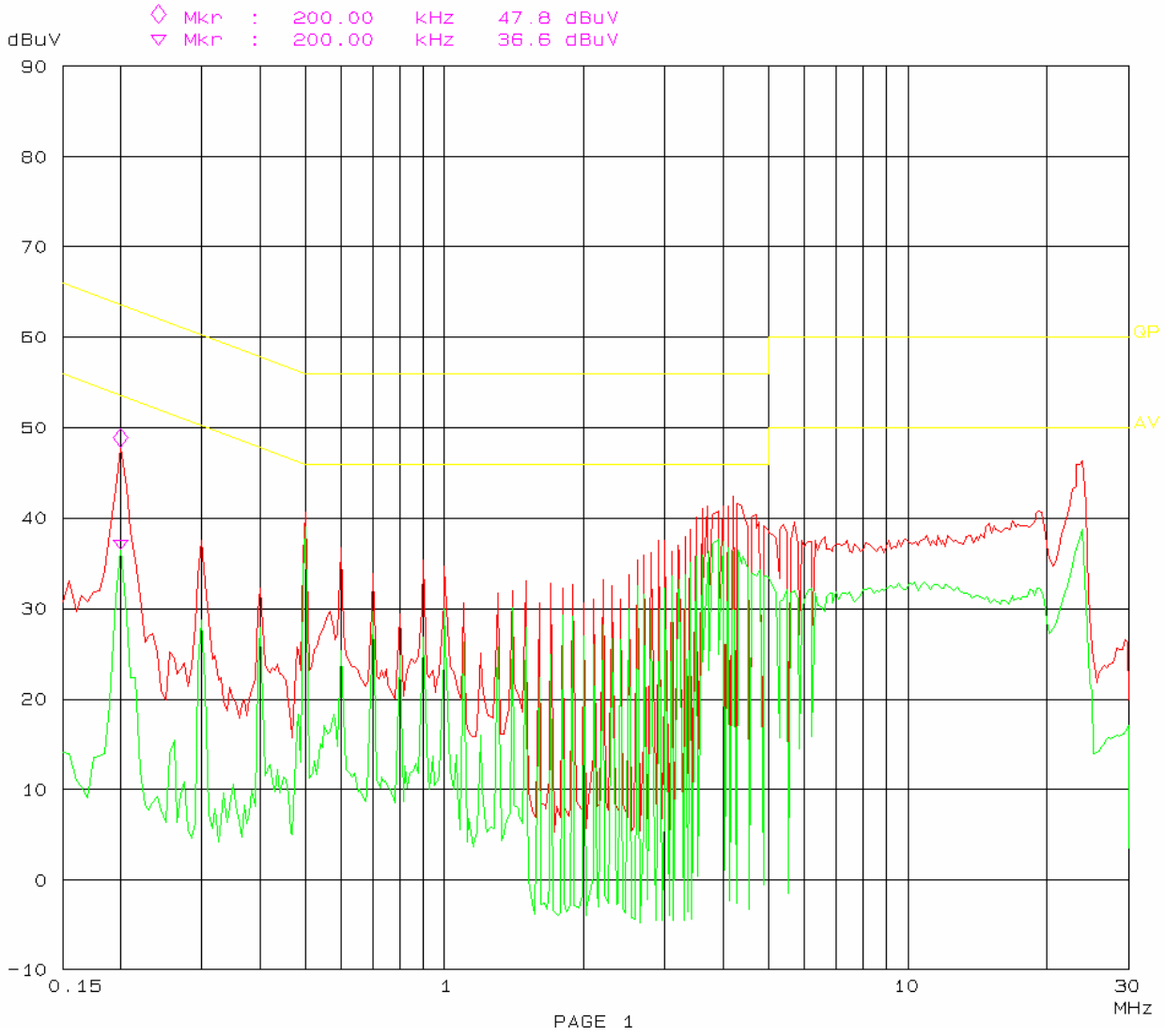
EUT: Airlink Wifi Ap M/N:EB1-T002-TLD01
Manuf: Teledex LLC
Op Cond: TRANSMITTING(802.11g)
Operator: SIMON
Test Spec: AC 120V/60HZ Hot
Comment: Temp:24 Humi:50%



CONDUCTED EMISSION TEST
FCC PART 15

12. Jan 08 13:44

EUT: Airlink Wifi Ap M/N:EB1-T002-TLD01
Manuf: Teledex LLC
Op Cond: TRANSMITTING(802.11g)
Operator: SIMON
Test Spec: AC 120V/60HZ Neutral
Comment: Temp:24 Humi:50%



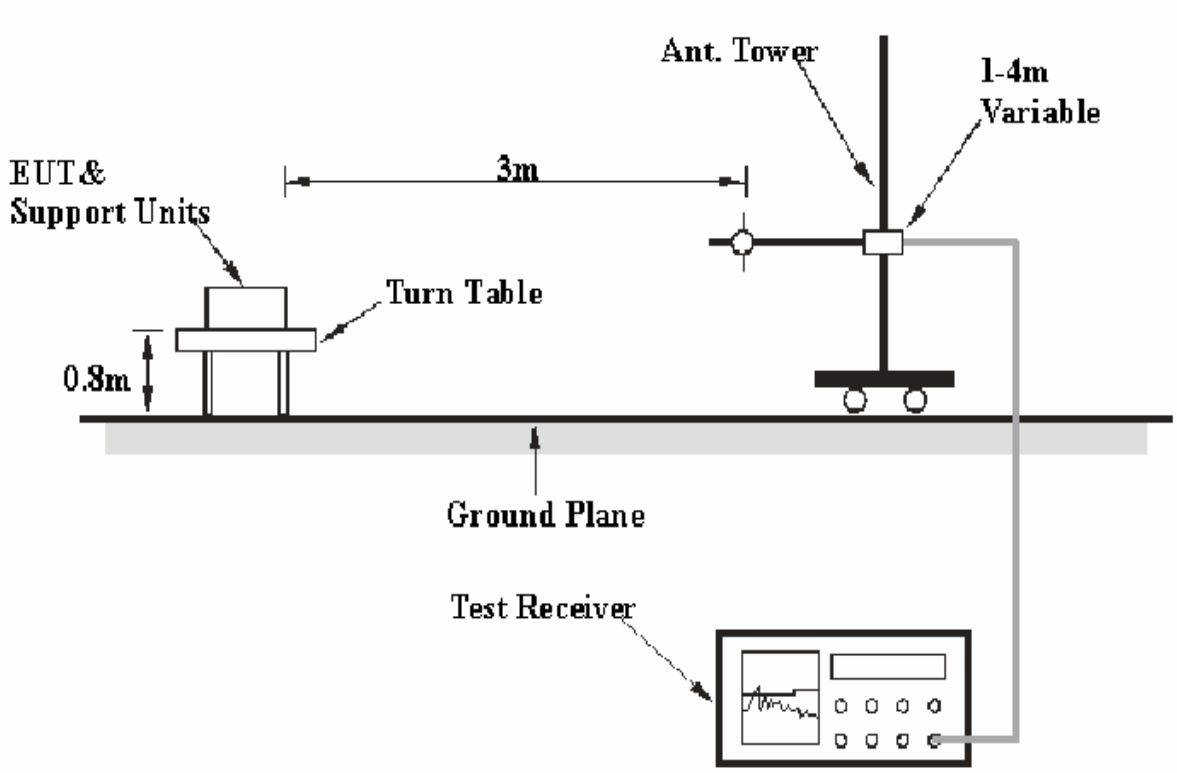
§15.247(d), §15.205, §15.209- SPURIOUS EMISSIONS AND BAND EDGES

Applicable Standard

According to FCC §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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) (see §15.205(c)).

Test System Setup



The radiated emission tests were performed in the 3 meters chamber B, using the setup accordance with the CISPR 16-1: 2002, CISPR16-2: 2002. The specification used was EN 55022 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 25GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency	*RB/W*	*VB/W*
30 MHz-1 GHz	100 kHz	300 kHz
1000MHz-25GHz	1MHz	3MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde&Schwarz	EMI Test Receiver	ESCI	100035	2007-10-16	2008-10-16
HP	Amplifier	HP8447D	2944A09795	2007-11-15	2008-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2007-10-16	2008-10-16
Sunol Sciences	Boardband Antenna	JB1	A040904-1	2007-08-14	2008-08-14
HP	Preamplifier	8449B	3008A00277	2007-09-29	2008-09-29
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2007-09-25	2008-09-25

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

For the radiated emissions test, the host PC and other support equipment were connected to AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recordewd in Quasi-peak detection mode or frequency range of 30 MHz-1GHz and peak and Average detection modes for frequencies above 1 GHz.

Test Data

Environmental Conditions

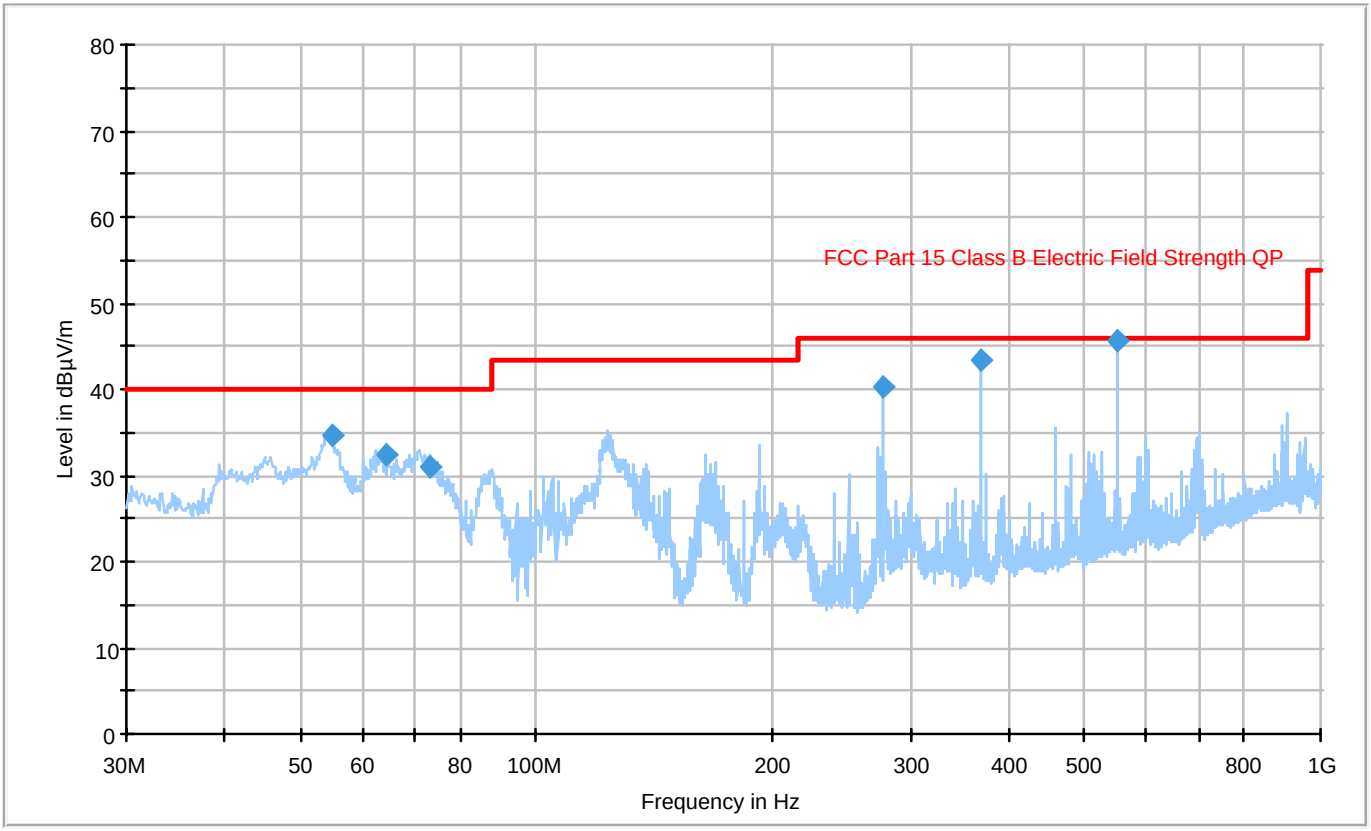
Temperature:	25 ° C
Relative Humidity:	53%
ATM Pressure:	100.9kPa

The testing was performed by Simon Mo on 2008-01-08, 2008-01-10.

Test Mode: Transmitting

Test Result: Compliant.

Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
551.995425	44.6	178.0	H	2.0	-5.8	46.0	1.4*
368.002200	43.3	105.0	H	269.0	-9.2	46.0	2.7*
54.949375	34.6	105.0	V	147.0	-17.7	40.0	5.4
276.007250	40.2	106.0	H	243.0	-11.1	46.0	5.8
64.167150	32.5	104.0	V	125.0	-17.1	40.0	7.5
73.188575	31.1	103.0	V	0.0	-16.9	40.0	9.0

** Within the measurement uncertainty*

Above 1 GHz:

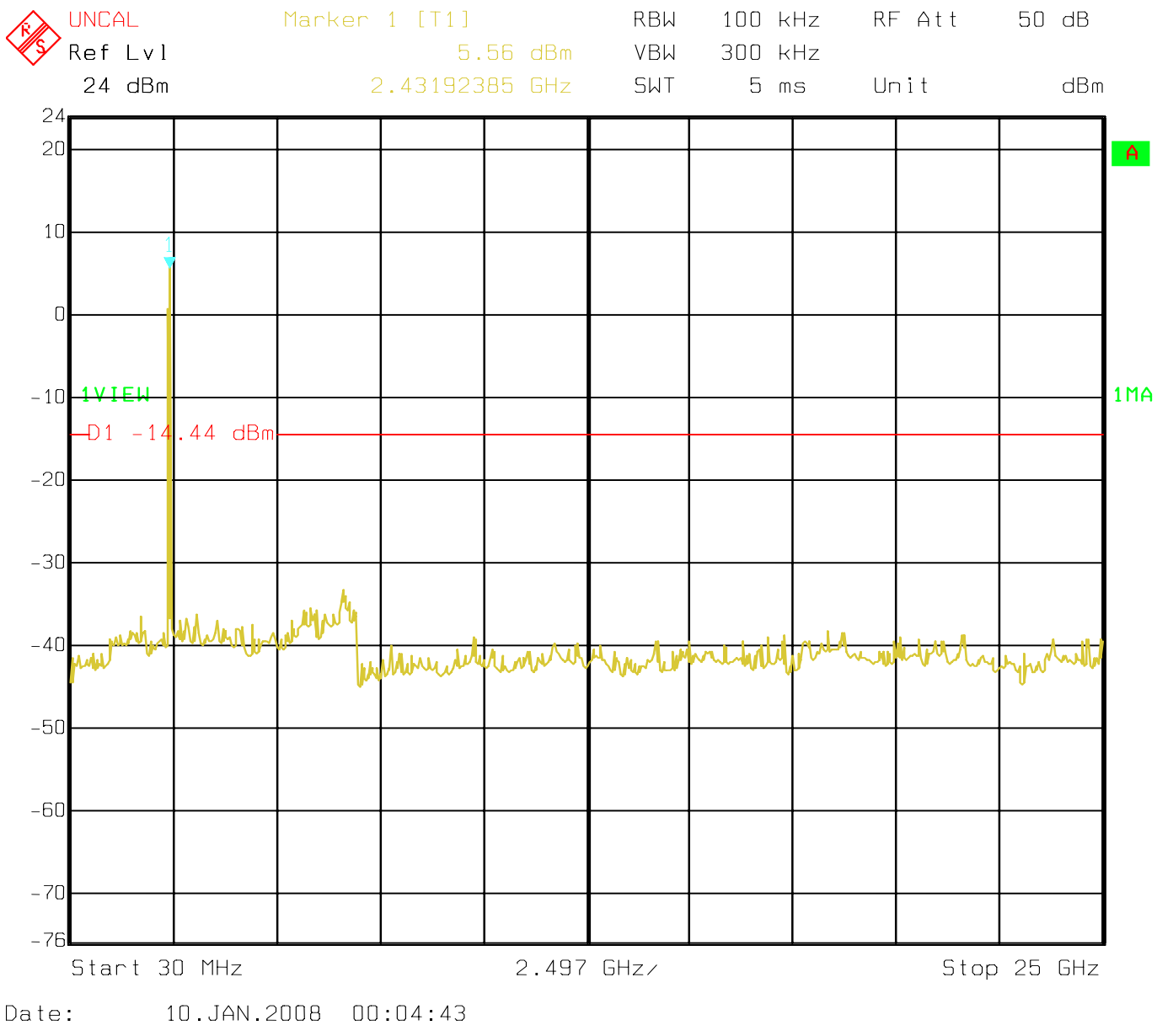
Freq. (MHz)	Receiver Reading (dBµV)	Detector PK/QP/AV	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Corr. Amp. (dBµV/m)	FCC Part 15.247/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
802.11b Channel 1 (2412MHz)											
4824	44.36	AV	170	1.3	V	35.4	4.64	33.4	51.00	54	3.0
4824	42.57	AV	150	1.5	H	36.6	4.64	33.4	50.41	54	3.59
2138.9	48.82	AV	90	1.45	V	30.0	3.09	35.0	46.91	54	7.09
2017.2	48.30	AV	60	1.45	V	30.0	3.09	35.0	46.39	54	7.61
1721	50.10	AV	145	1.2	H	26.5	2.80	35.5	43.90	54	10.01
1679	50.20	AV	120	1.4	H	26.5	2.77	35.5	43.97	54	10.03
4824	53.90	PK	180.0	1.2	H	36.6	4.64	33.4	61.74	74	12.26
4824	54.40	PK	175.0	1.2	V	35.4	4.64	33.4	61.04	74	12.96
2138.9	56.38	PK	45.0	1.2	V	30.0	3.09	35.0	54.47	74	19.53
2017.2	55.54	PK	45	1.5	V	30.0	3.09	35.0	53.63	74	20.37
1679	57.41	PK	60.0	1.0	H	26.5	2.77	35.5	51.18	74	22.82
1721	57.38	PK	120	1.2	H	26.5	2.80	35.5	51.18	74	22.82
802.11b Channel 6 (2437MHz)											
4874	45.81	AV	175	1.2	V	35.4	4.64	33.4	52.45	54	1.55
4874	43.65	AV	150	1.5	H	36.6	4.64	33.4	51.49	54	2.51
2187.6	49	AV	60	1	H	29.7	3.09	35	46.79	54	7.21
2187.97	48	AV	80	1	V	30	3.62	35	46.62	54	7.38
1663	49.2	AV	120	1.2	H	26.5	2.77	35.5	42.97	54	11.03
4874	55.7	PK	145	1.2	V	35.4	4.64	33.4	62.34	74	11.66
1661.7	48.8	AV	90	1.45	V	26	2.77	35.5	42.07	54	11.93
4874	54.22	PK	180	1.2	H	36.6	4.64	33.4	62.06	74	11.94
2187.6	57.3	PK	90	1	H	29.7	3.09	35	55.09	74	17.91
2187.97	57.13	PK	170	1.3	V	30	3.62	35	55.75	74	18.25
1661.7	58.03	PK	45	1.2	V	26	2.77	35.5	51.3	74	22.7
1663	57.4	PK	120	1.4	H	26.5	2.77	35.5	51.17	74	22.83
802.11b Channel 11 (2462MHz)											
4924	45.36	AV	170	1.3	V	35.4	4.55	33.4	51.91	54	2.09
4924	44.06	AV	150	1.5	H	36.6	4.55	33.4	51.81	54	2.19
2237.47	48.2	AV	90	1.45	V	30.2	3.62	34.5	47.52	54	6.48
2107.2	48.1	AV	60	1.45	V	30.0	3.09	34..8	46.39	54	7.61
1484.5	49.3	AV	120	1.4	H	26.5	2.77	35.5	43.07	54	10.93
4924	54.7	PK	180	1.2	H	36.6	4.55	33.4	62.45	74	11.55
4924	54.41	PK	175	1.2	V	35.4	4.55	33.4	60.96	74	13.04
1078.1	49.3	AV	145	1.2	H	25.1	1.19	36	39.59	54	14.41
2237.47	57.48	PK	45	1.2	V	30.2	3.62	34.5	56.8	74	17.2
2107.2	55.64	PK	45	1.5	V	30	3.09	34.8	53.93	74	20.07
1484.5	57.97	PK	60	1	H	26.5	2.77	35.5	51.74	74	22.26
1078.1	57.18	PK	120	1.2	H	25.1	1.19	36	47.47	74	26.53

Freq. (MHz)	Receiver Reading (dBµV)	Detector PK/QP/AV	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Corr. Amp. (dBµV/m)	FCC Part 15.247/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
802.11g Channel 1 (2412MHz)											
4824	43.65	AV	150	1.5	H	36.6	4.64	33.4	51.49	54	2.51
4824	44.35	AV	170	1.3	V	35.4	4.64	33.4	51.99	54	3.01
1685.1	48.65	AV	90	1.45	V	30	2.8	35	46.45	54	7.55
1664.3	49.7	AV	120	1.4	H	26.5	2.77	35.5	43.47	54	10.53
1716	48.65	AV	145	1.2	H	26.5	2.8	35.5	42.45	54	11.55
4824	54.3	PK	180	1.2	H	36.6	4.64	33.4	62.14	74	11.86
4824	55.01	PK	175	1.2	V	35.4	4.64	33.4	61.65	74	12.35
1026	47.92	AV	60	1.45	V	23.8	1.19	35	37.91	54	16.09
1685.1	56.84	PK	45	1.2	V	30	2.8	35	54.64	74	19.36
1664.3	57.57	PK	60	1	H	26.5	2.77	35.5	51.34	74	22.66
1716	57.48	PK	120	1.2	H	26.5	2.8	35.5	51.28	74	22.72
1026	56.7	PK	45	1.5	V	23.8	1.19	35	46.69	74	27.31
802.11g Channel 6 (2437MHz)											
4874	37.43	AV	150	1.5	H	36.6	4.64	33.4	51.27	54	2.73
4874	44.2	AV	175	1.2	V	35.4	4.64	33.4	50.84	54	3.16
1857.1	47.95	AV	90	1.45	V	29	2.82	35.2	44.57	54	9.43
1747.69	48.8	AV	80	1	V	28	2.77	35.3	44.27	54	9.73
1742.48	49.78	AV	120	1.2	H	26.5	2.8	35.5	43.58	54	10.42
1646.09	49.03	AV	60	1	H	26.5	2.77	35.5	42.8	54	11.2
4874	54.81	PK	180	1.2	H	36.6	4.64	33.4	62.65	74	11.35
4874	54.84	PK	145	1.2	V	35.4	4.64	33.4	61.48	74	12.52
1747.69	57.49	PK	170	1.3	V	28	2.77	35.3	52.96	74	21.04
1857.1	56.28	PK	45	1.2	V	29	2.82	35.2	52.9	74	21.1
1742.48	58.21	PK	120	1.4	H	26.5	2.8	35.5	52.01	74	21.99
1646.09	58.08	PK	90	1	H	26.5	2.77	35.5	51.85	74	22.15
802.11g Channel 11 (2462MHz)											
4924	43.42	AV	170	1.3	V	35.4	4.55	33.4	49.97	54	4.03
4924	42.21	AV	150	1.5	H	36.6	4.55	33.4	49.96	54	4.04
2237.47	48.35	AV	90	1.45	V	30.1	3.62	34.5	47.57	54	6.43
2107.2	47.86	AV	60	1.45	V	30	3.6	34.6	46.86	54	7.14
1570.5	49.15	AV	145	1.2	H	26.5	2.78	35.5	42.93	54	11.07
1677.35	49.05	AV	120	1.4	H	26.5	2.77	35.4	42.92	54	11.08
4924	54.64	PK	180	1.2	H	36.6	4.55	33.4	62.39	74	11.61
4924	55.08	PK	175	1.2	V	35.4	4.55	33.4	61.63	74	12.37
2237.47	56.76	PK	45	1.2	V	30	3.62	34.5	55.88	74	18.12
2107.2	56.63	PK	45	1.5	V	30.1	3.6	34.6	55.73	74	18.27
1677.35	58.06	PK	60	1	H	26.5	2.77	35.4	51.93	74	22.07
1570.5	57.6	PK	120	1.2	H	26.5	2.78	35.5	51.38	74	22.62

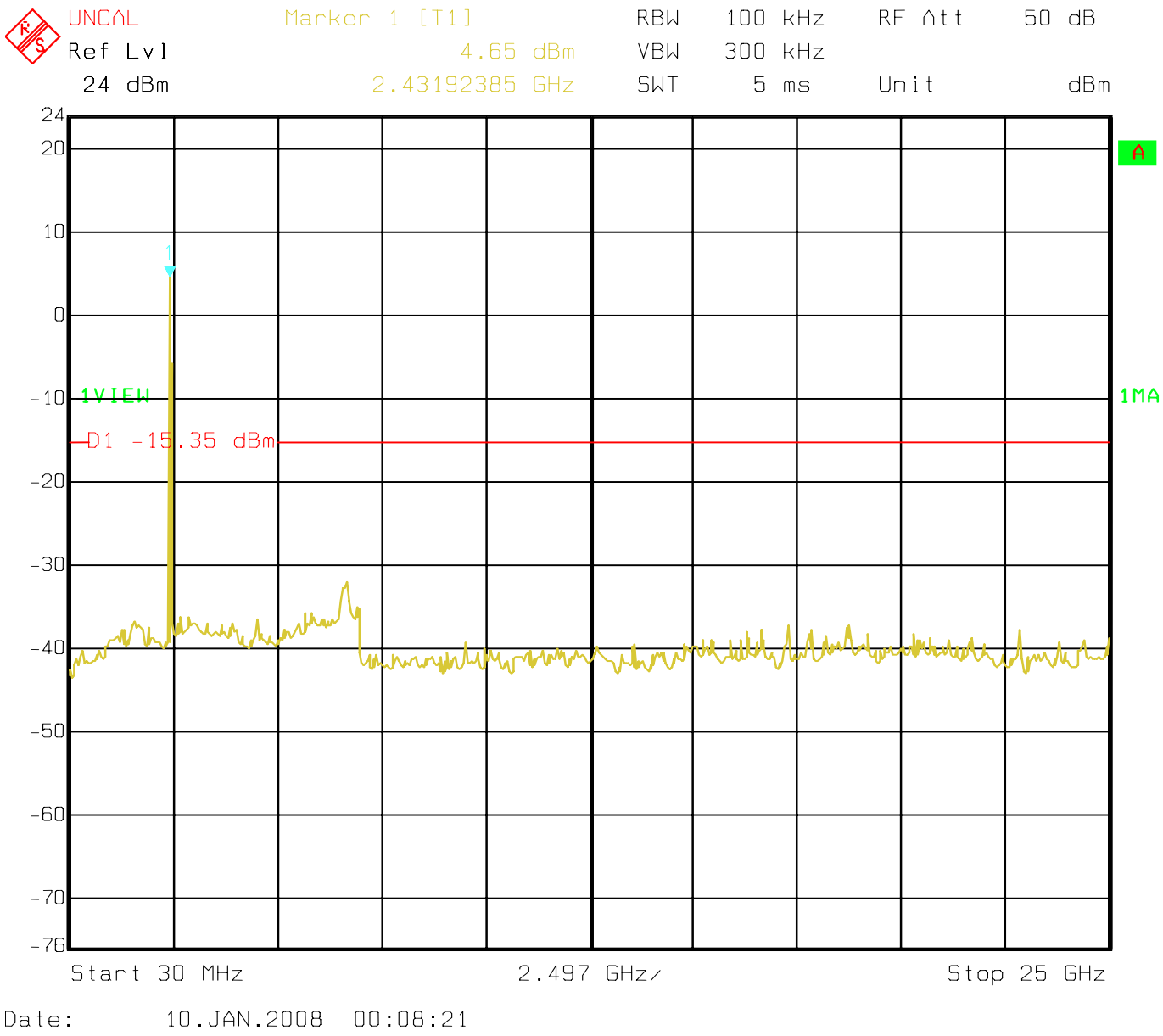
Antenna Port Conducted Spurious Emissions

802.11b Mode

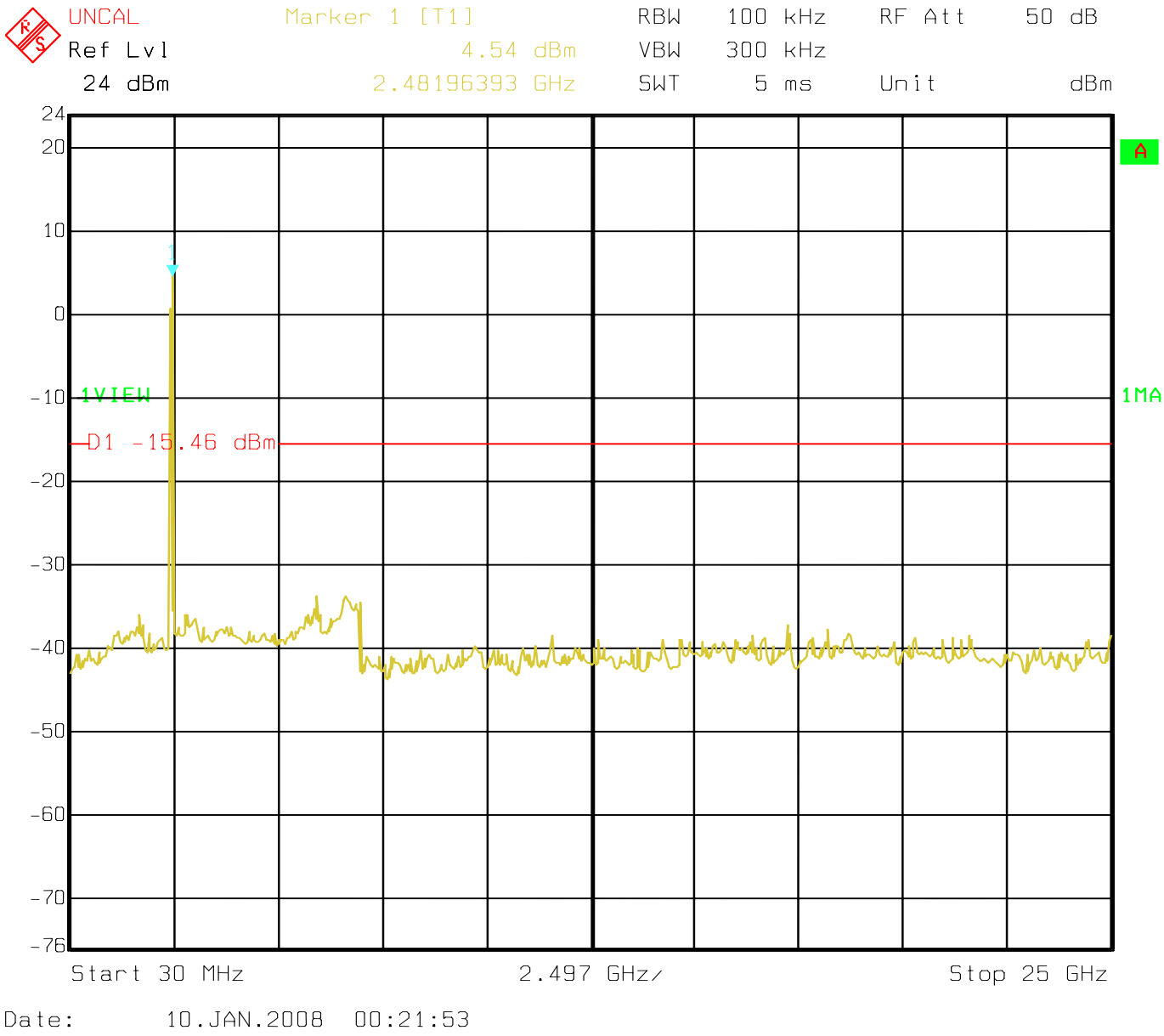
Low Channel



Middle Channel

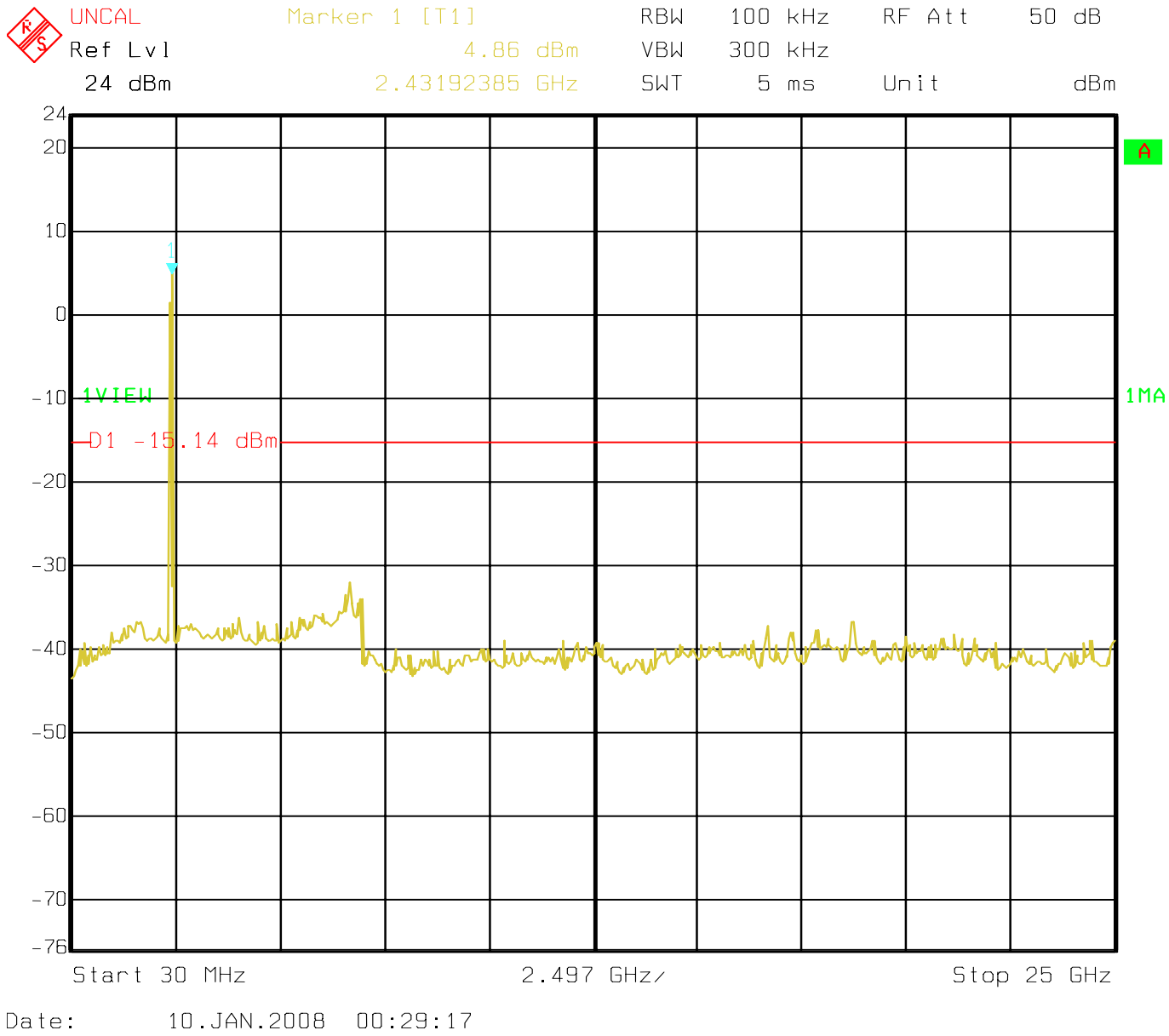


High Channel

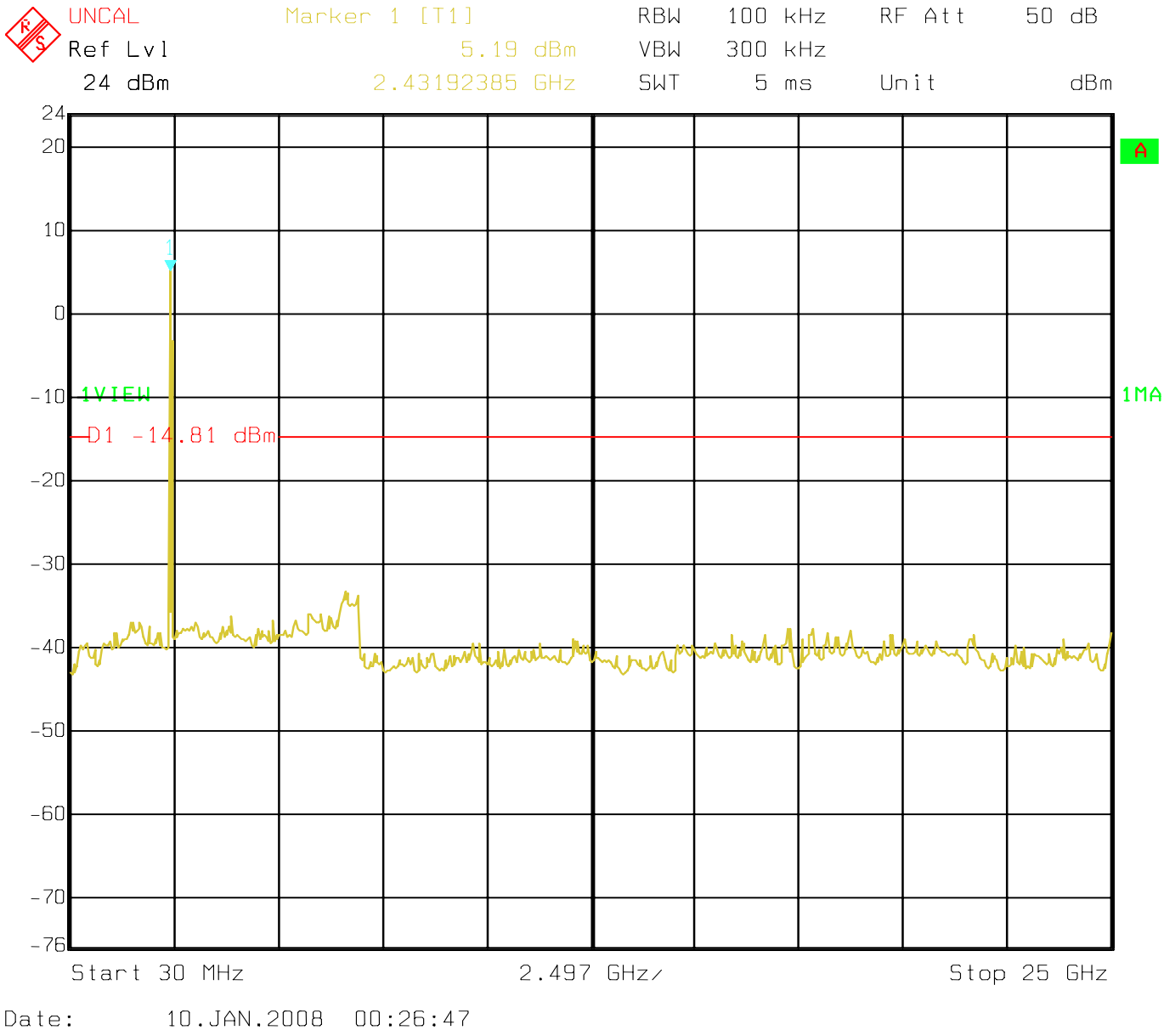


802.11g Mode

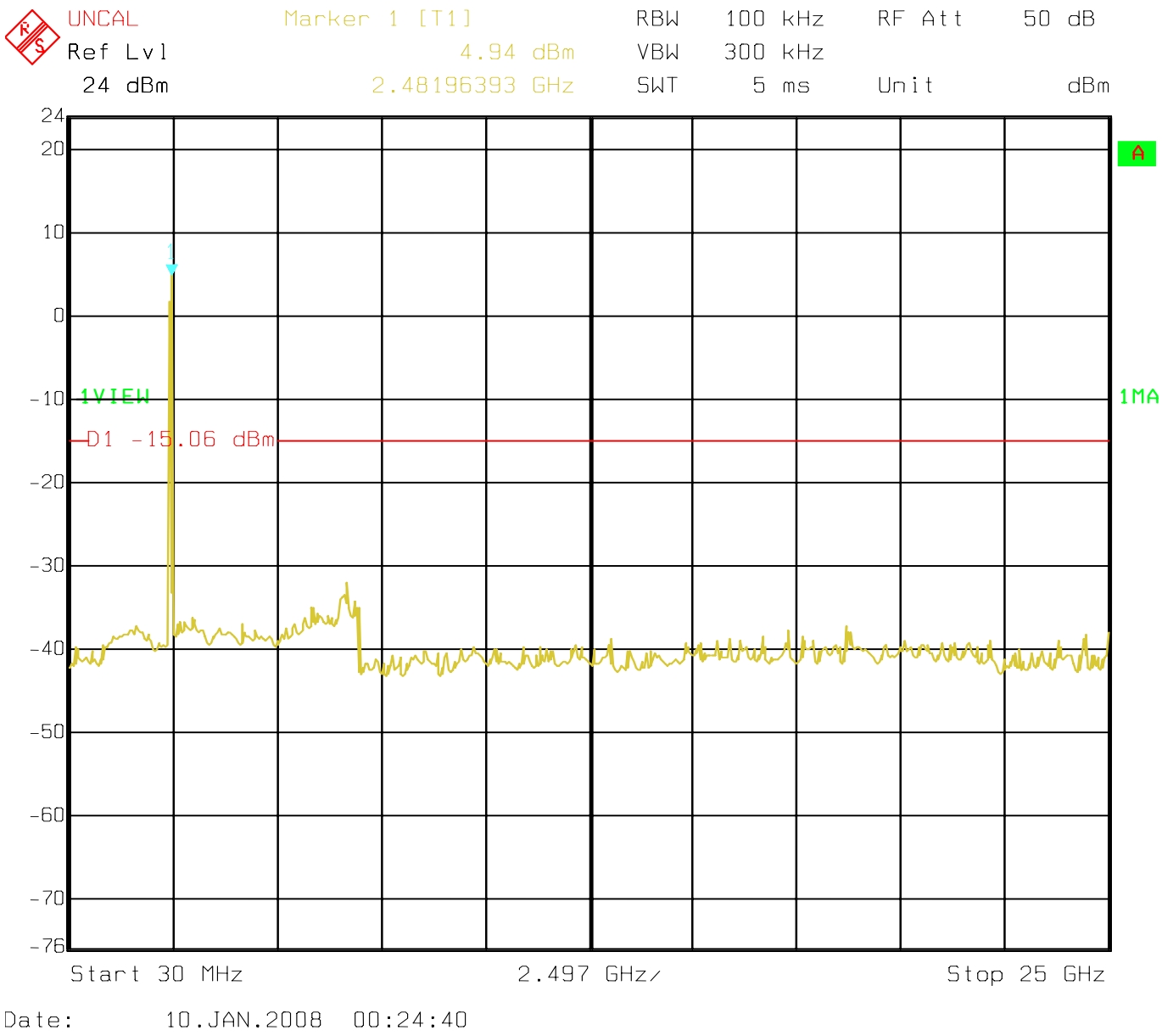
Low Channel



Middle CHannel



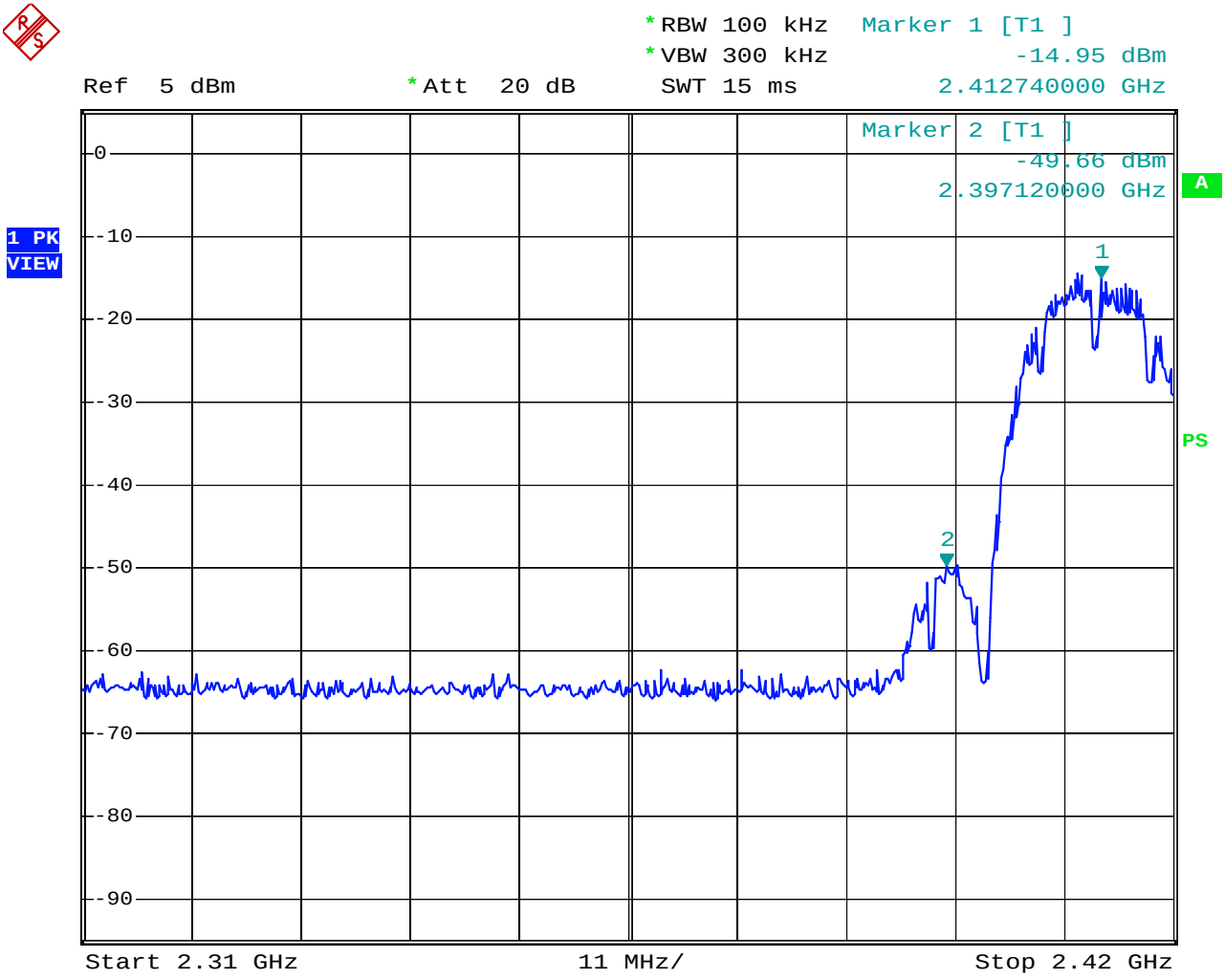
High Channel



100 kHz Band Edge

802.11b Mode:

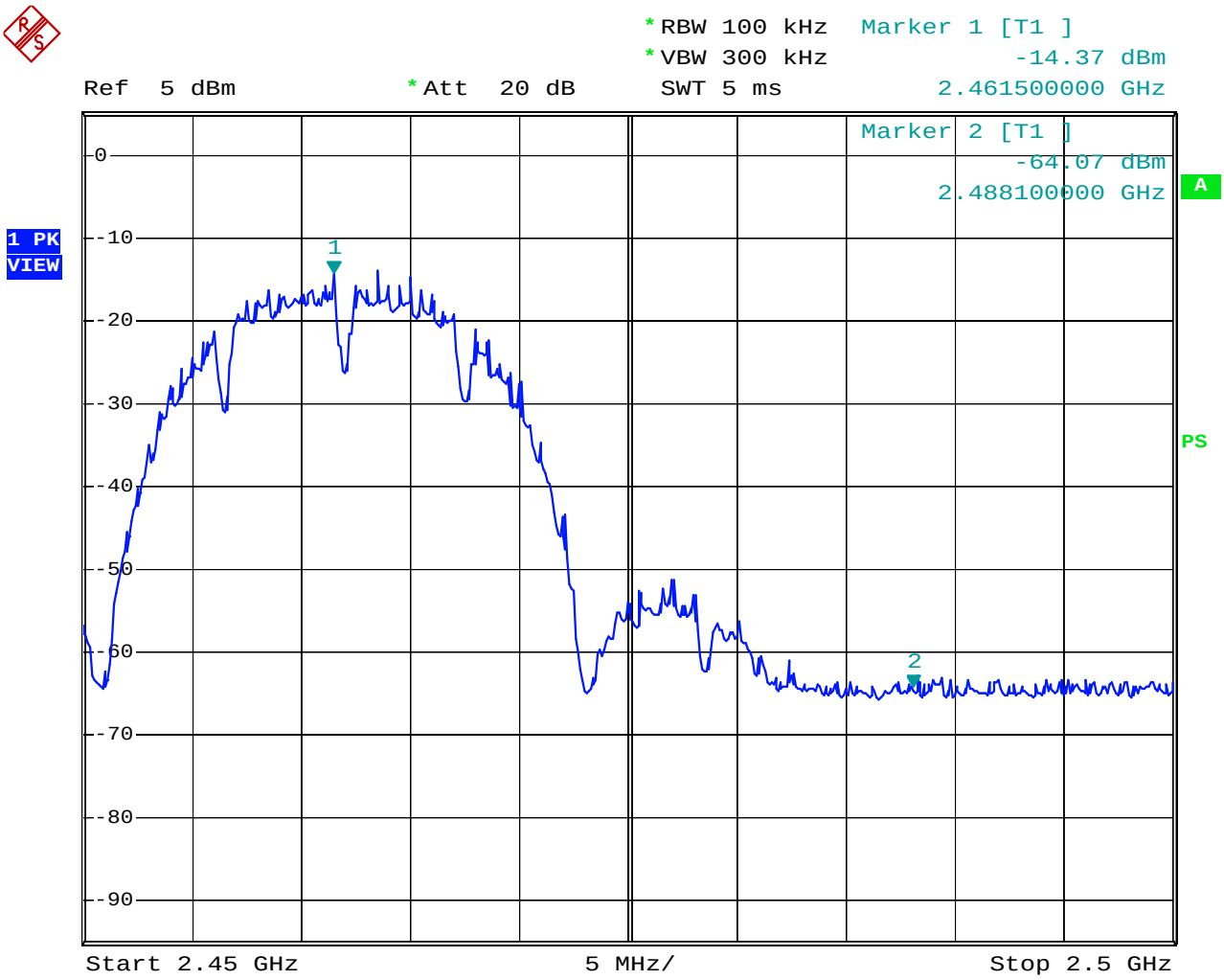
Lowest Channel



802.11B OUT OF BANDEDGE(LEFT)

Date: 8.JAN.2008 08:12:00

Highest Channel

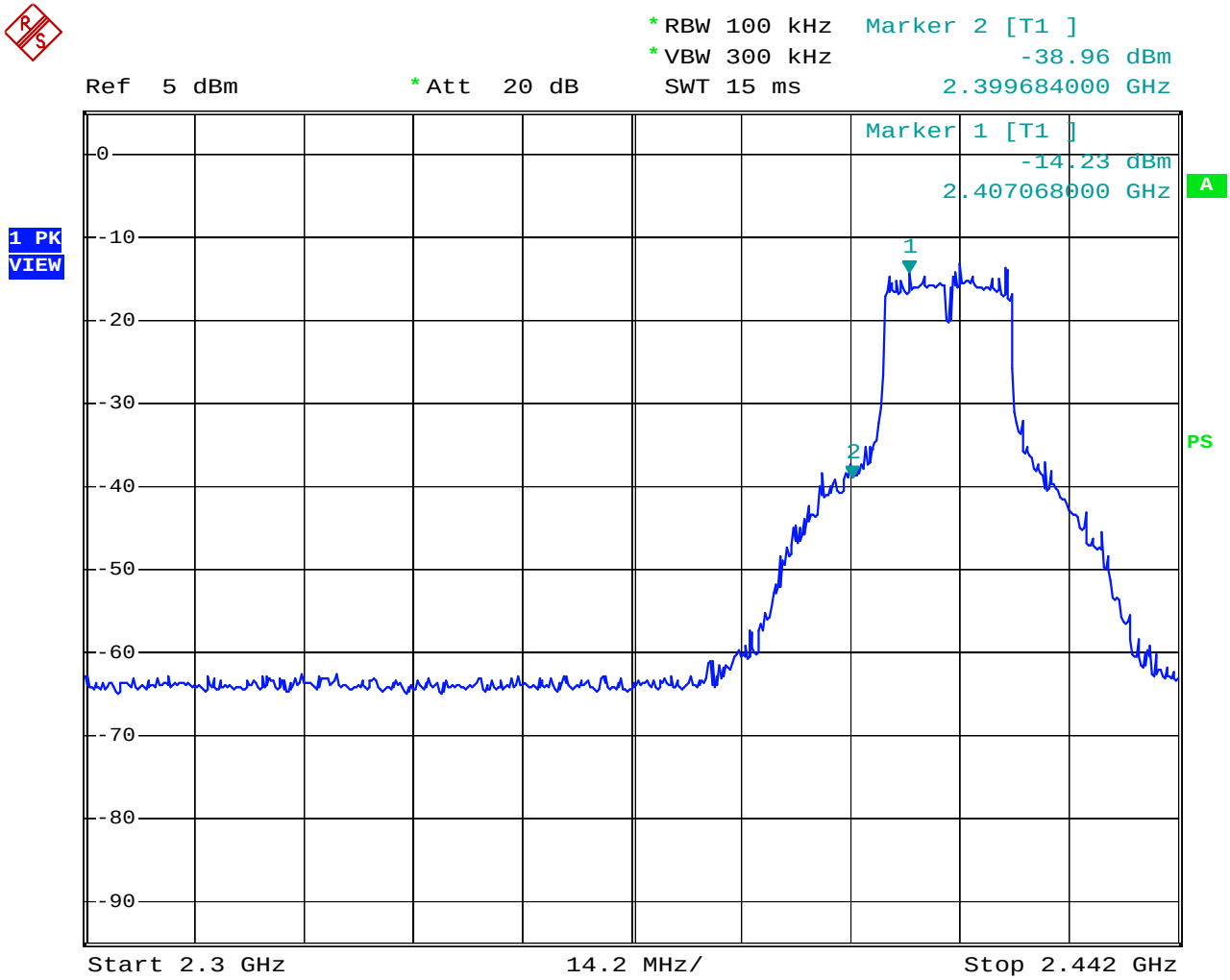


802.11B OUT OF BANDEDGE(RIGHT)

Date: 8.JAN.2008 08:19:44

802.11g Mode:

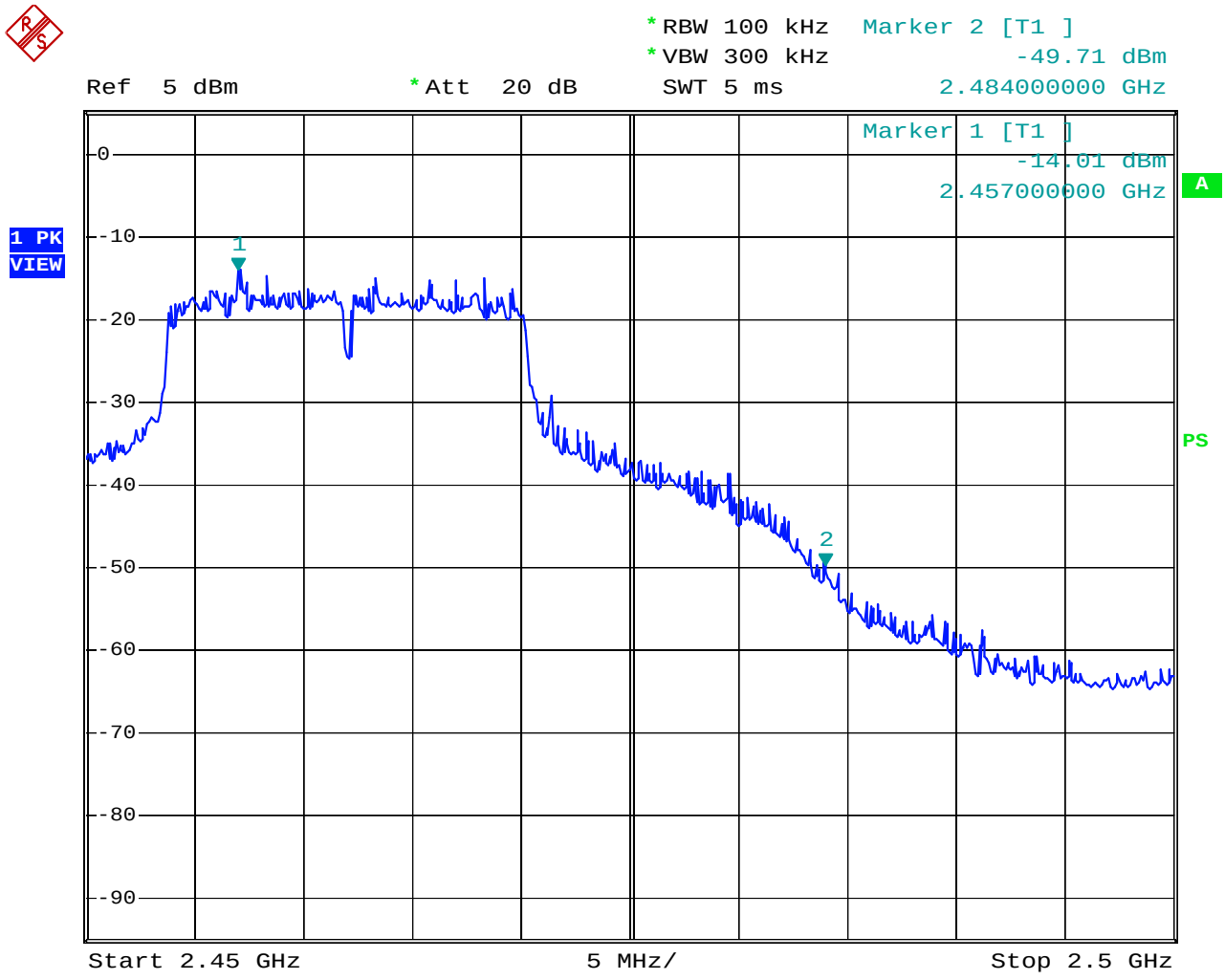
Lowest Channel



802.11G OUT OF BANDEDGE(LEFT)

Date: 8.JAN.2008 08:35:08

Highest Channel



802.11G OUT OF BANDEDGE(RIGHT)

Date: 8.JAN.2008 08:41:51

Spurious Emission near the restricted band: (RBW=1MHz, VBW=3MHz)

Freq. (MHz)	Receiver Reading (dBµV)	Detector PK/AV	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Corr. Amp. (dBµV/m)	FCC Part 15.209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
802.11b (2310 – 2390 MHz)											
2388.2	50.70	PK	45	1.2	V	30.6	3.61	35	49.91	54	4.09
2358.2	50.40	PK	180	1.2	H	30.6	3.61	35	49.61	54	4.39
2352.2	49.52	PK	90	1	V	30.6	3.61	35	48.73	54	5.27
2389.03	47.80	PK	180	1.2	V	30.6	3.61	35	47.01	54	6.99
2346.7	47.42	PK	60	1.5	H	30.6	3.61	35	46.63	54	7.37
802.11b (2483.5 – 2500 MHz)											
2492.69	51.64	PK	243	1.4	H	30.6	3.61	35	50.85	54	3.15
2491.08	50.12	PK	234	1.6	V	30.6	3.61	35	49.33	54	4.67
2489.08	48.90	PK	153	1.5	H	30.6	3.61	35	48.11	54	5.89
2490.2	47.52	PK	156	1.4	V	30.6	3.61	35	46.73	54	7.27
802.11g (2310 – 2390 MHz)											
2358.9	50.40	PK	234	1.6	V	30.6	3.61	35	49.61	54	4.39
2358.5	49.6	PK	153	1.5	H	30.6	3.61	35	48.81	54	5.19
2580.5	48.9	PK	156	1.4	V	30.6	3.61	35	48.11	54	5.89
23.56.2	48.7	PK	243	1.4	H	30.6	3.61	35	47.91	54	6.09
802.11g (2483.5 – 2500 MHz)											
2496.66	50.35	PK	156	1.4	V	30.6	3.61	35	49.56	54	4.44
2492.55	50.1	PK	243	1.4	H	30.6	3.61	35	49.31	54	4.69
2488.5	49.8	PK	234	1.6	V	30.6	3.61	35	49.01	54	4.99
2487.6	48.7	PK	153	1.5	H	30.6	3.61	35	47.91	54	6.09

§15.247(a) (2) –6dB BANDWIDTH TESTING

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-10-16	2008-10-16

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.9 kPa

The testing was performed by Simon Mo on 2008-01-08.

Test Mode: Transmitting

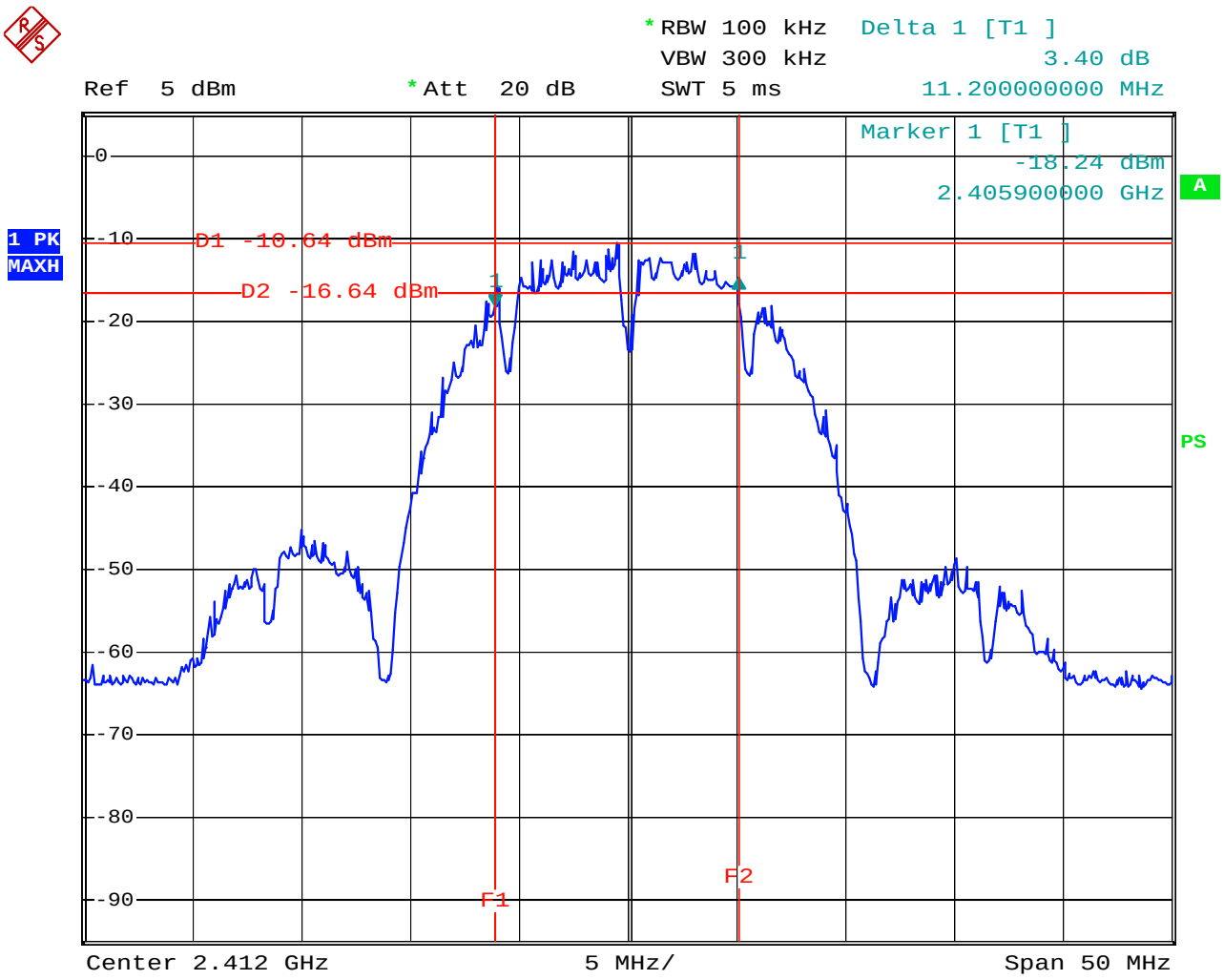
Test Result: Compliant.

Please refer to following table and plots.

Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (kHz)	Limit (kHz)	Ref. Plot
802.11b Mode				
2412	1	11200	＞500	PLOT 1
2437	1	12000	＞500	PLOT 2
2462	1	11900	＞500	PLOT 3
802.11g Mode				
2412	6	16400	＞500	PLOT 4
2437	6	16500	＞500	PLOT 5
2462	6	16400	＞500	PLOT 6

802.11b Mode:

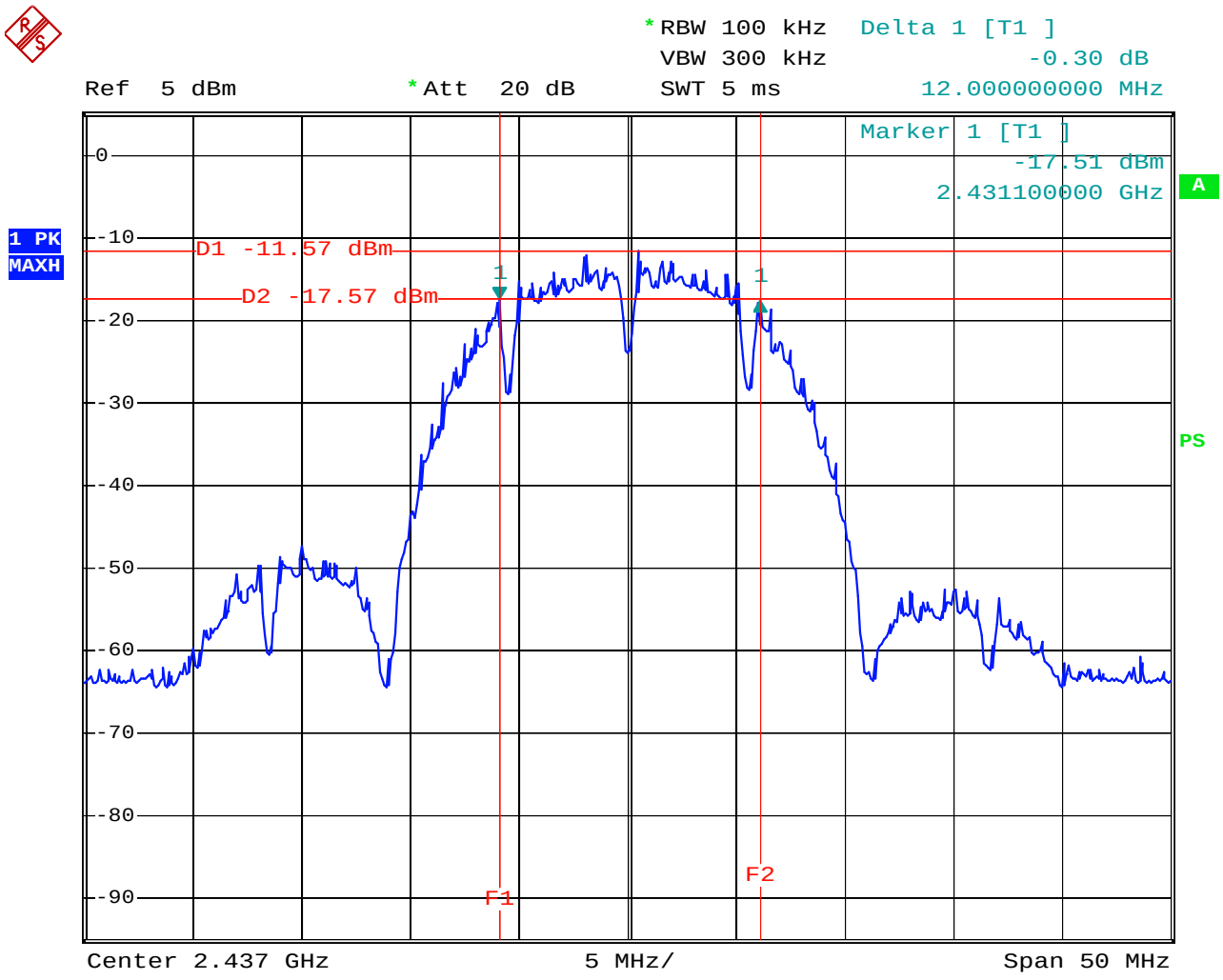
Low Channel



802.11B 6dB BANDWIDTH(LOW CHANNEL)

Date: 8.JAN.2008 09:36:48

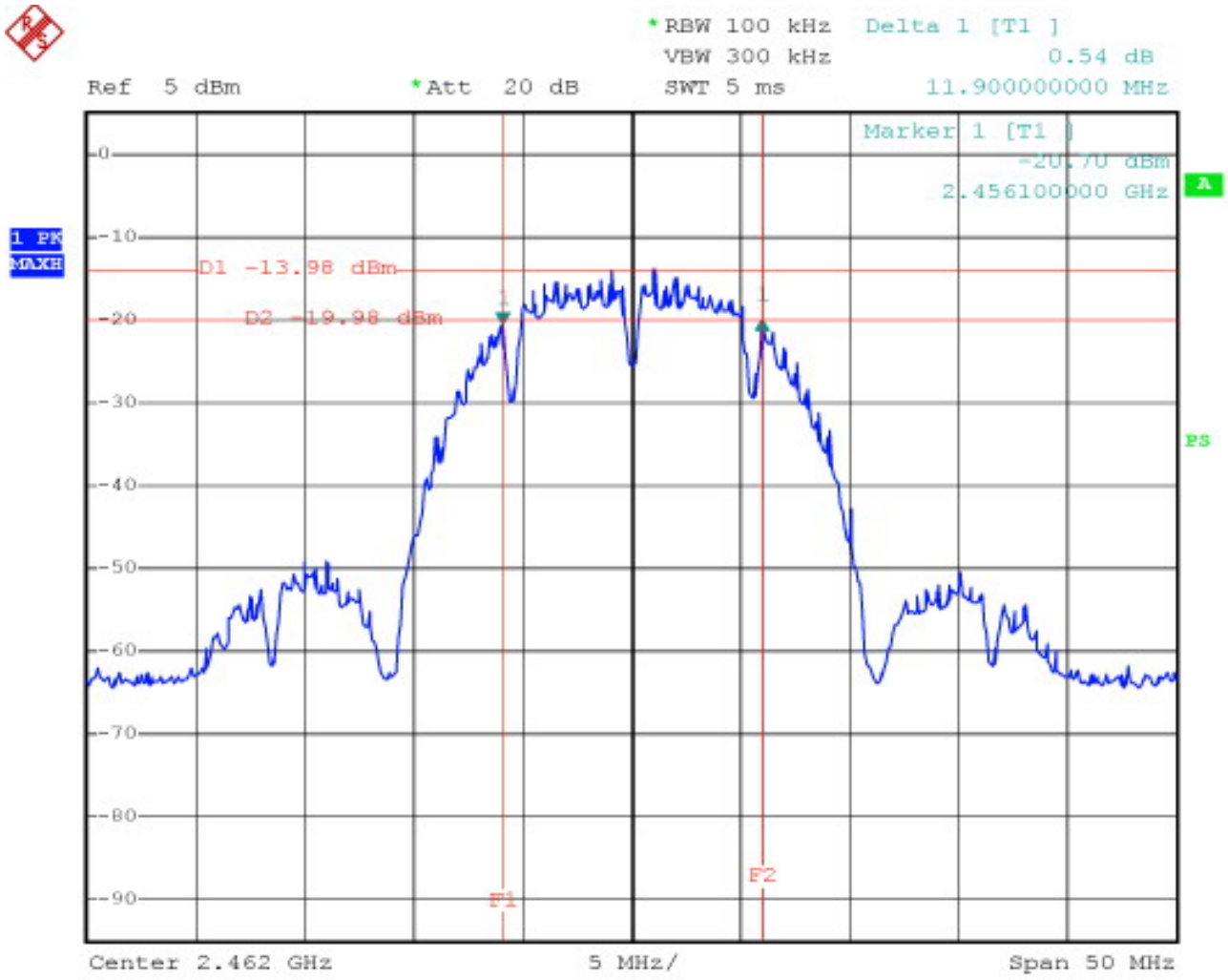
Middle Channel



802.11B 6dB BANDWIDTH(MIDDLE CHANNEL)

Date: 8.JAN.2008 09:43:04

High Channel

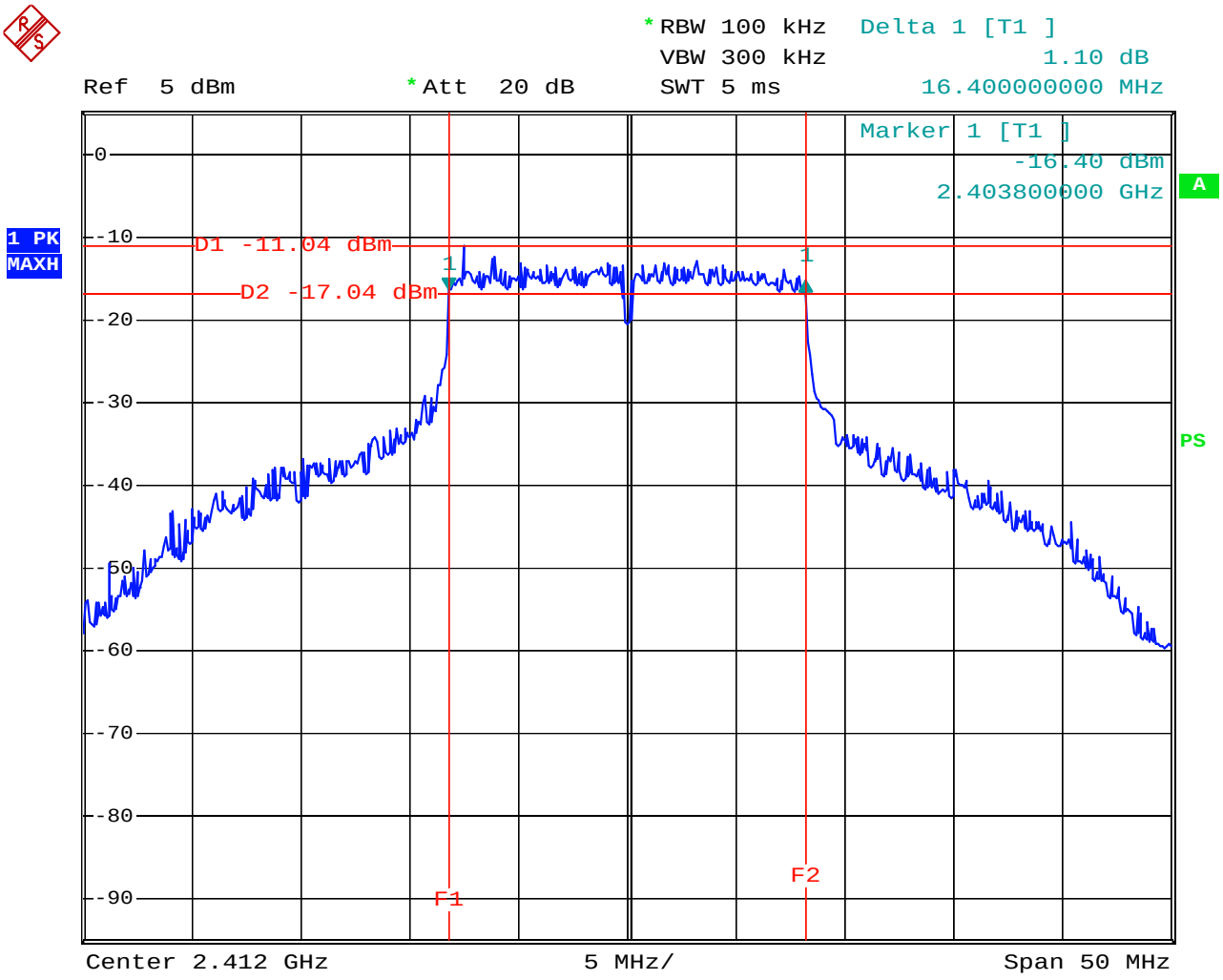


802.11B 6dB BANDWIDTH(HIGHCHANNEL)

Date: 8.JAN.2008 09:48:22

802.11b Mode:

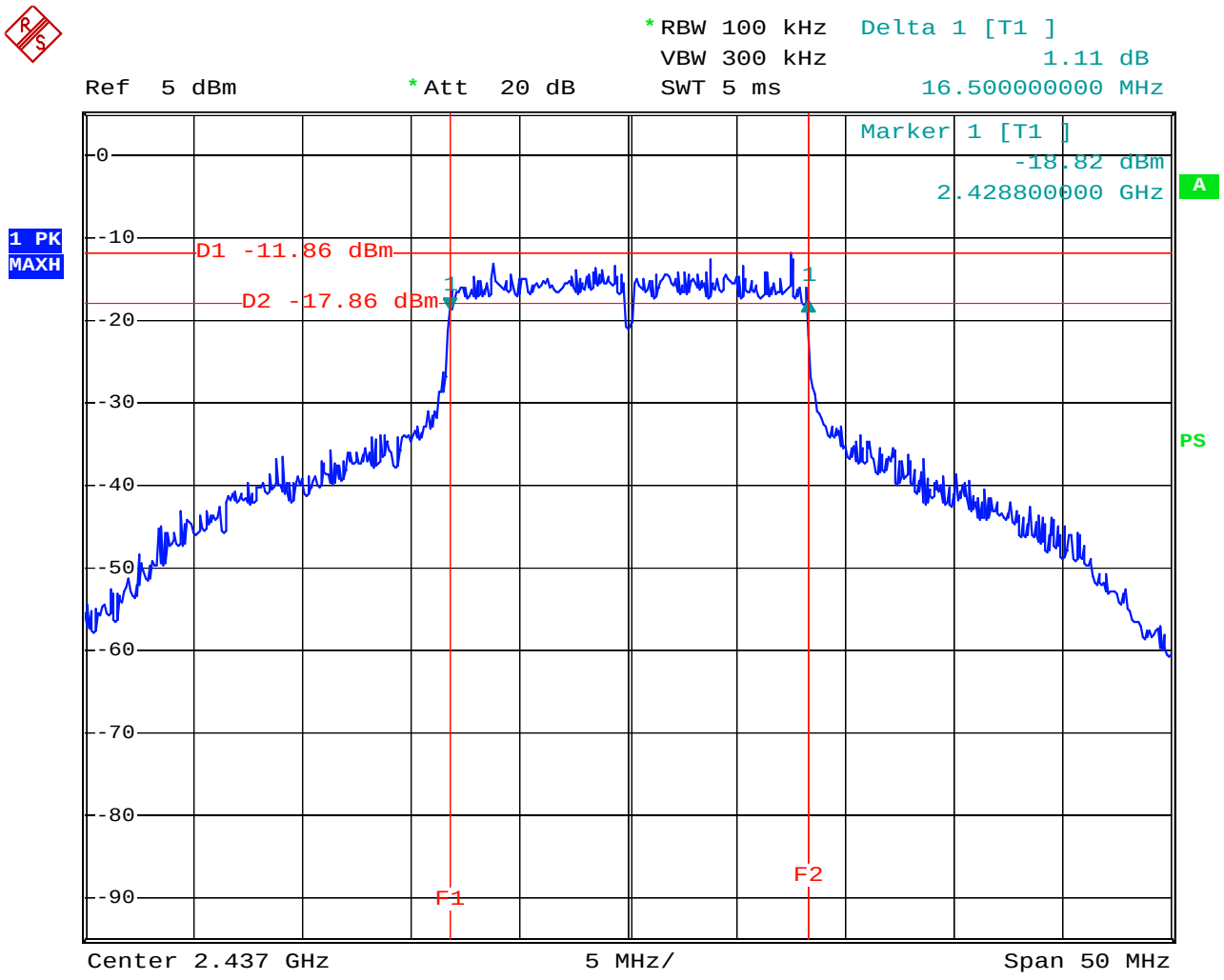
Low Channel



802.11G 6dB BANDWIDTH(LOW CHANNEL)

Date: 8.JAN.2008 09:28:56

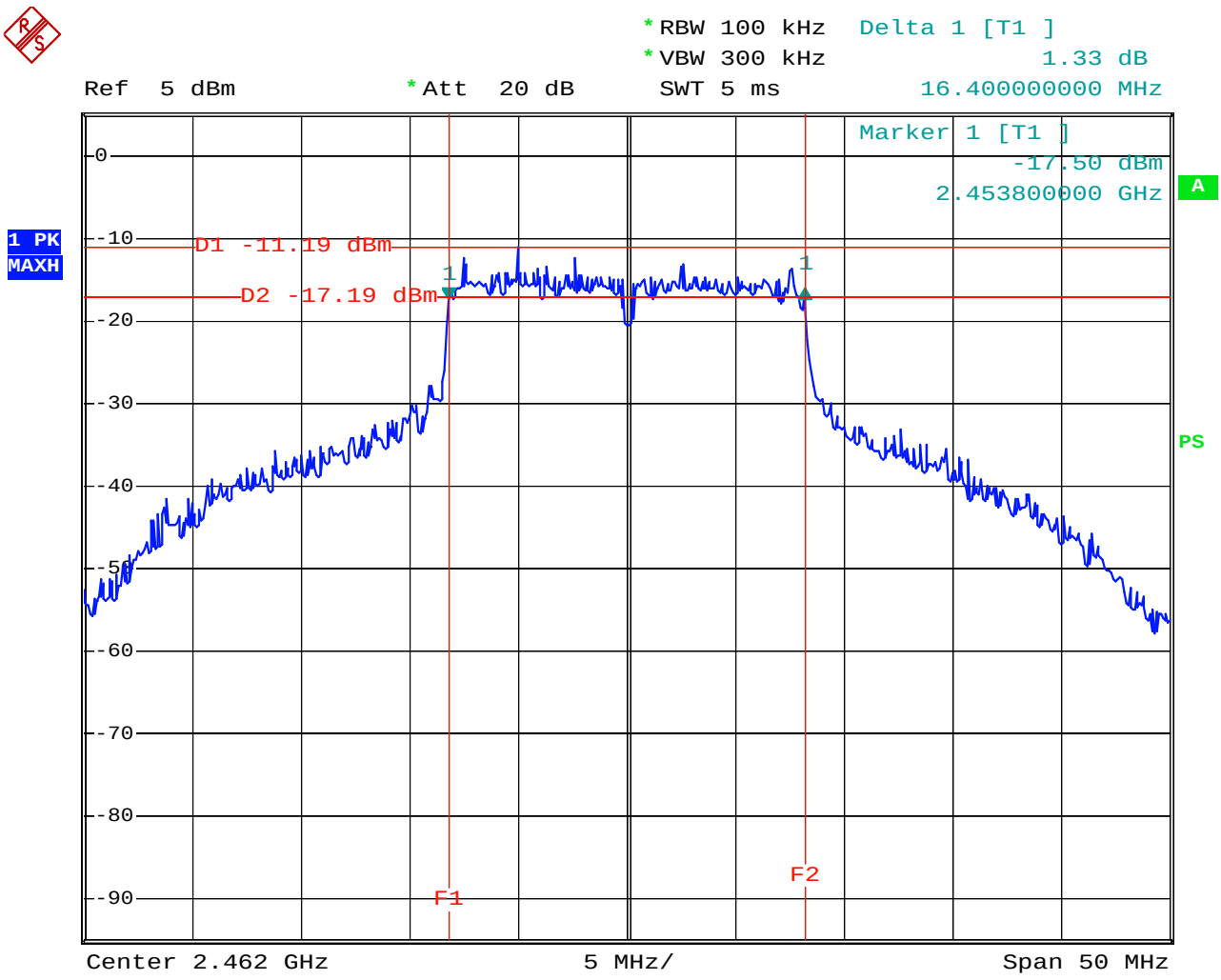
Middle Channel



802.11G 6dB BANDWIDTH(MIDDLE CHANNEL)

Date: 8.JAN.2008 09:22:25

High Channel



802.11G 6dB BANDWIDTH(HIGH CHANNEL)

Date: 8.JAN.2008 09:06:34

§15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

Applicable Standard

According to §15.247(b) (3), for systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

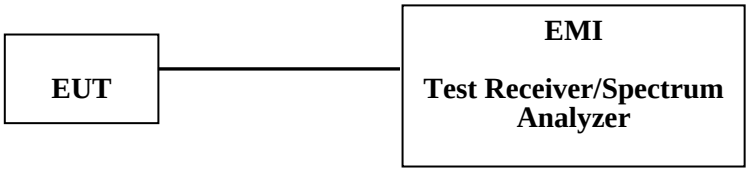
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-10-16	2008-10-16

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI Test Receiver.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	100.9 kPa

The testing was performed by Simon Mo on 2008-01-30.

Test mode: Transmitting

Test Result: Compliant.

Please refer to following tables and plots.

802.11b Mode

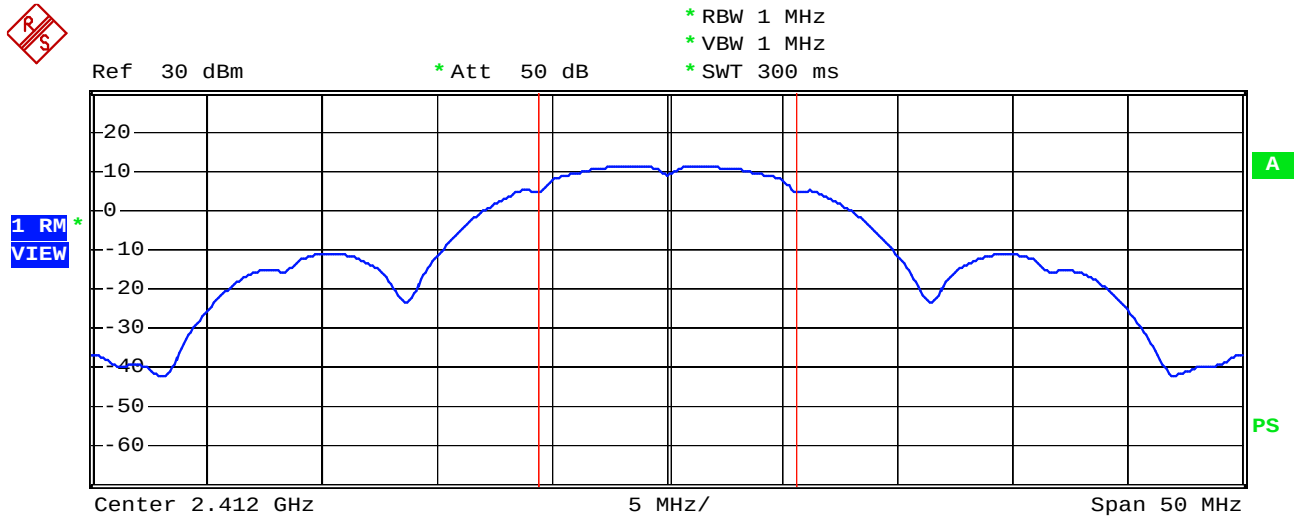
Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	1	19.78	30
Mid	2437	1	19.74	30
High	2462	1	19.51	30

802.11g Mode

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	6	19.05	30
Mid	2437	6	19.32	30
High	2462	6	19.19	30

802.11 b Mode:

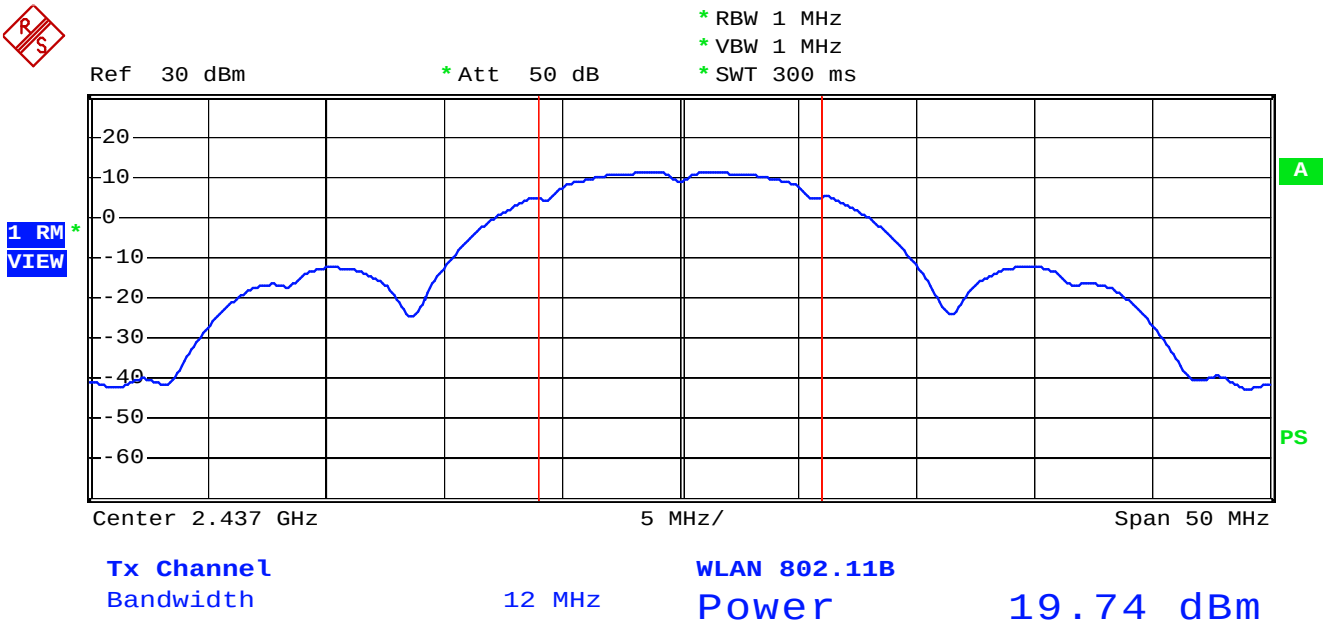
Low Channel



802.11B(LOW CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:58:03

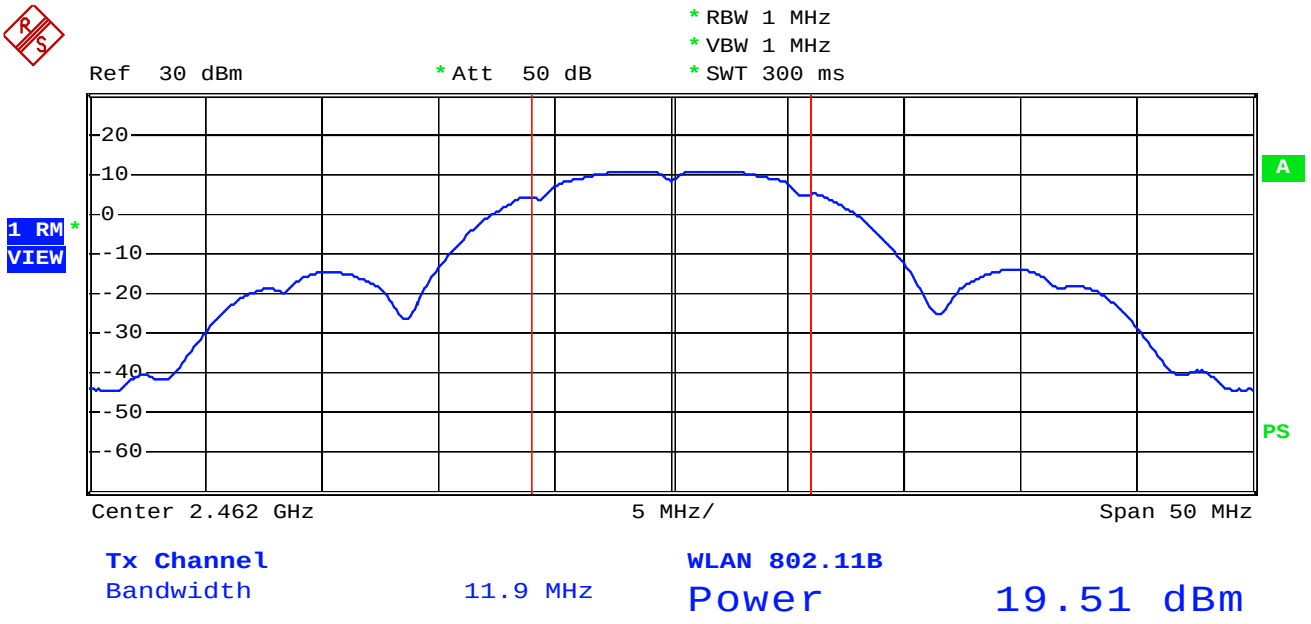
Middle Channel



802.11B(MIDDLE CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:56:12

High Channel

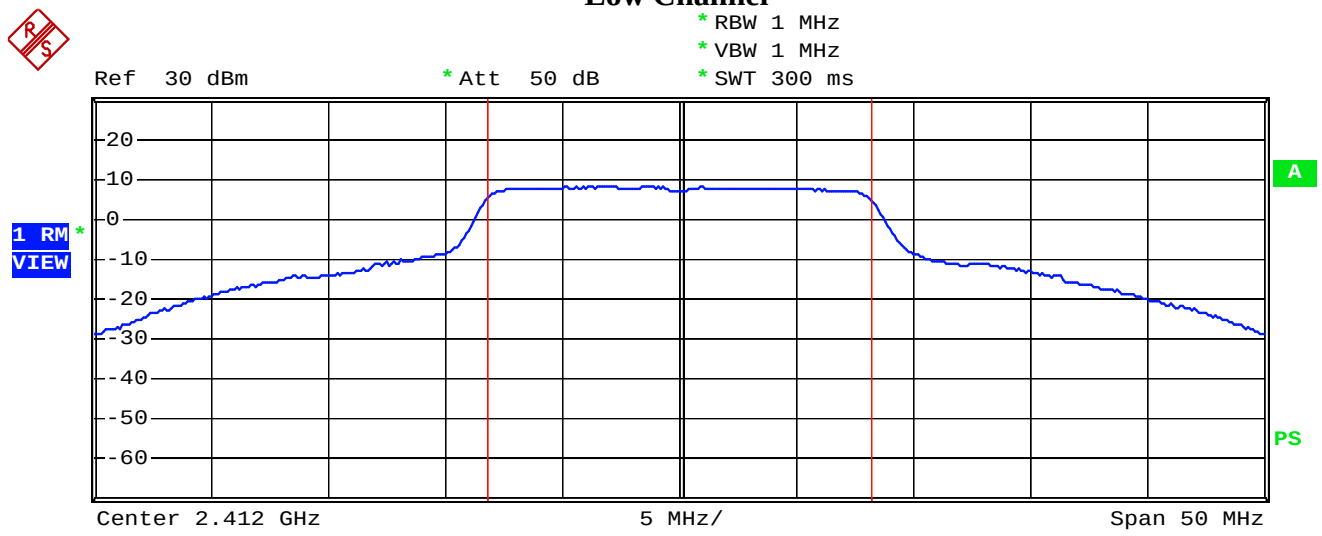


802.11B(HIGH CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:59:59

802.11 g Mode:

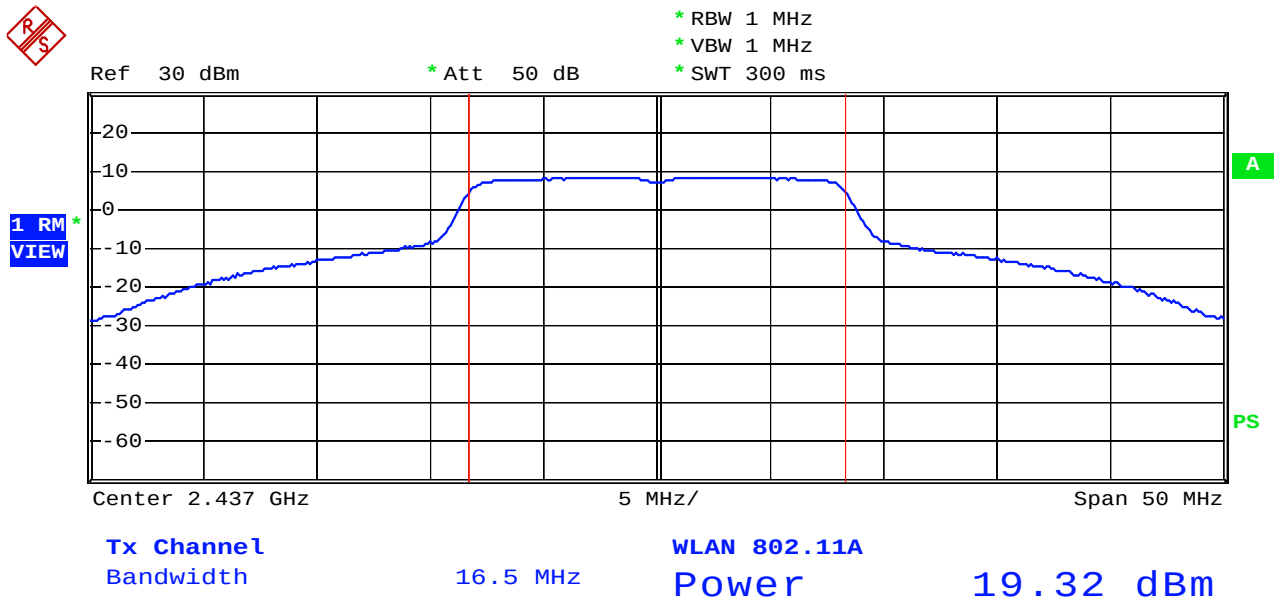
Low Channel



802.11G(LOW CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:26:18

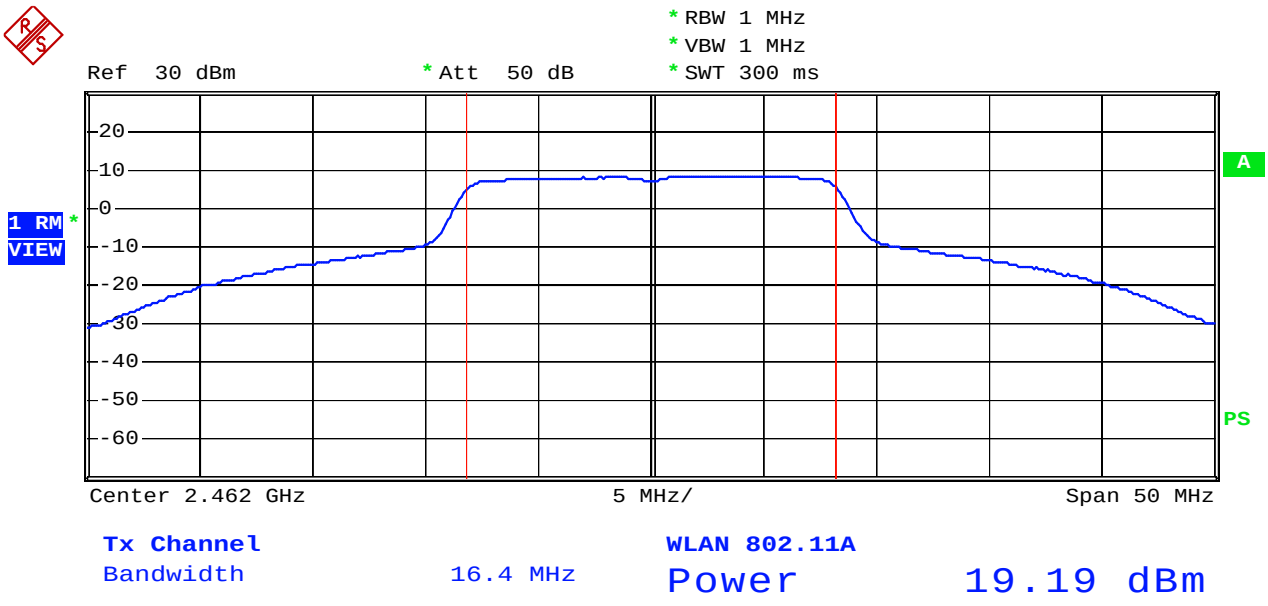
Middle Channel



802.11G(MIDDLE CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:32:03

High Channel



802.11G(HIGH CHANNEL PEAK OUTPUT POWER)

Date: 30.JAN.2008 09:35:18

§15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-10-16	2008-10-16

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to 1.5MHz span mode. And then, set RBW and VBW of spectrum analyzer to proper value. (DTS)
4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	53%
ATM Pressure:	100.9kPa

The testing was performed by Simon Mo on 2008-01-10.

Test Mode: Transmitting

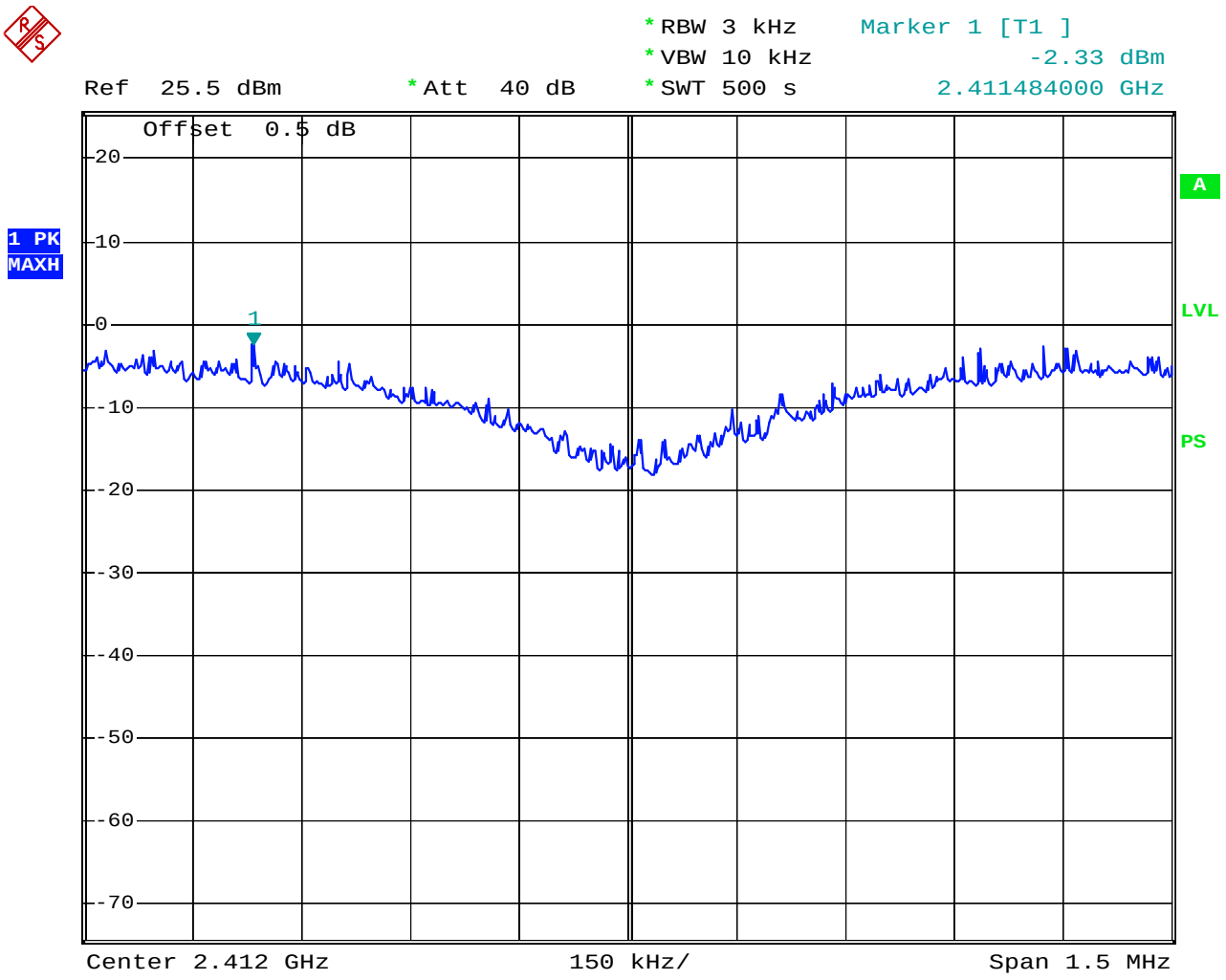
Test Result: Compliant.

Please refer to following table and plots.

Channel Frequency (MHz)	Data Rate (Mbps)	PSD (dBm/3kHz)	Limit (dBm/3kHZ)	RESULT
802.11b Mode				
2412	1	-2.33	8	Compliant
2437	1	-2.40	8	Compliant
2462	1	-3.40	8	Compliant
802.11g Mode				
2412	6	-3.95	8	Compliant
2437	6	-4.07	8	Compliant
2462	6	-3.60	8	Compliant

802.11 b Mode:

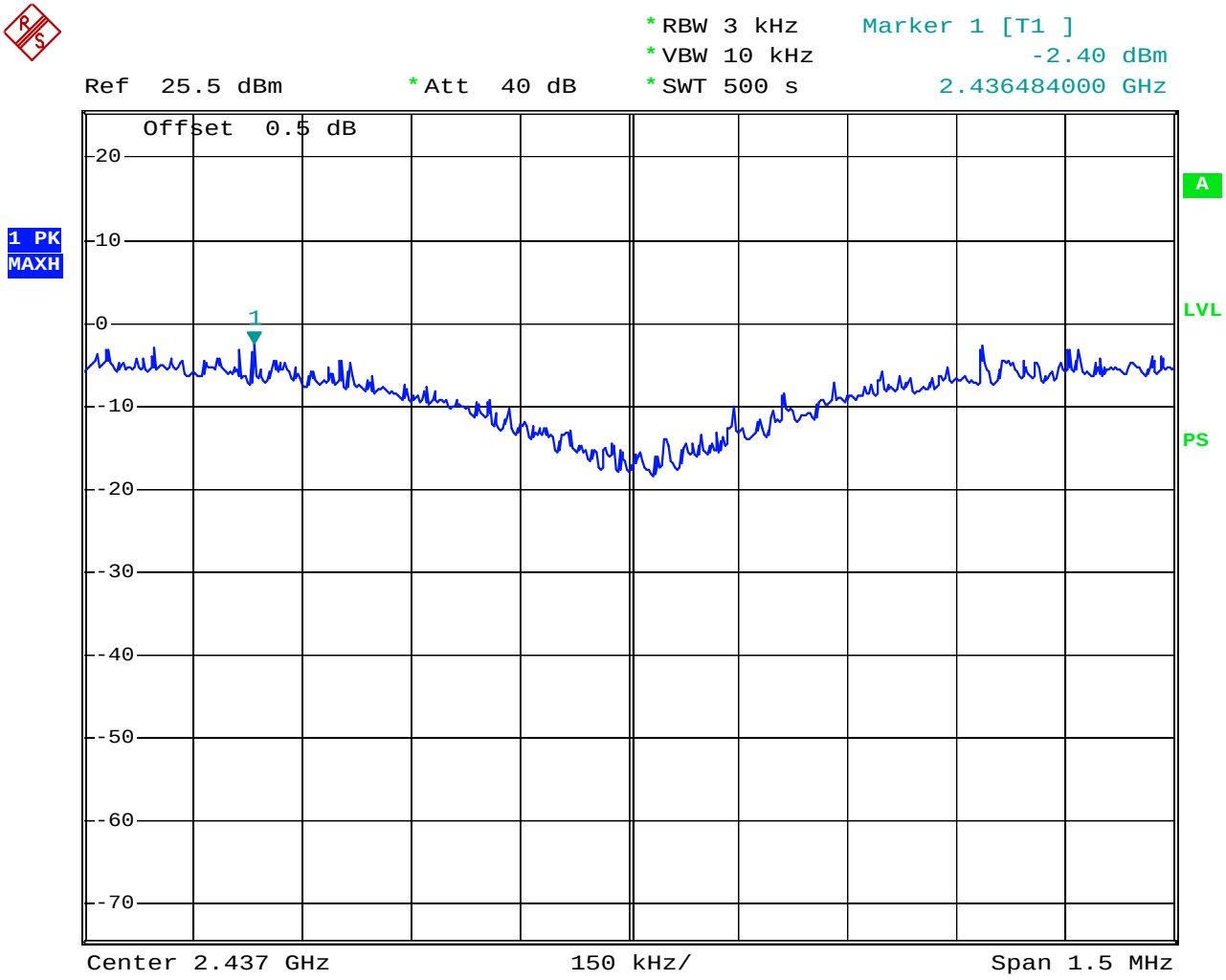
Low Channel



802.11B(LOW CHANNEL POWER DENSITY)

Date: 10.JAN.2008 11:26:02

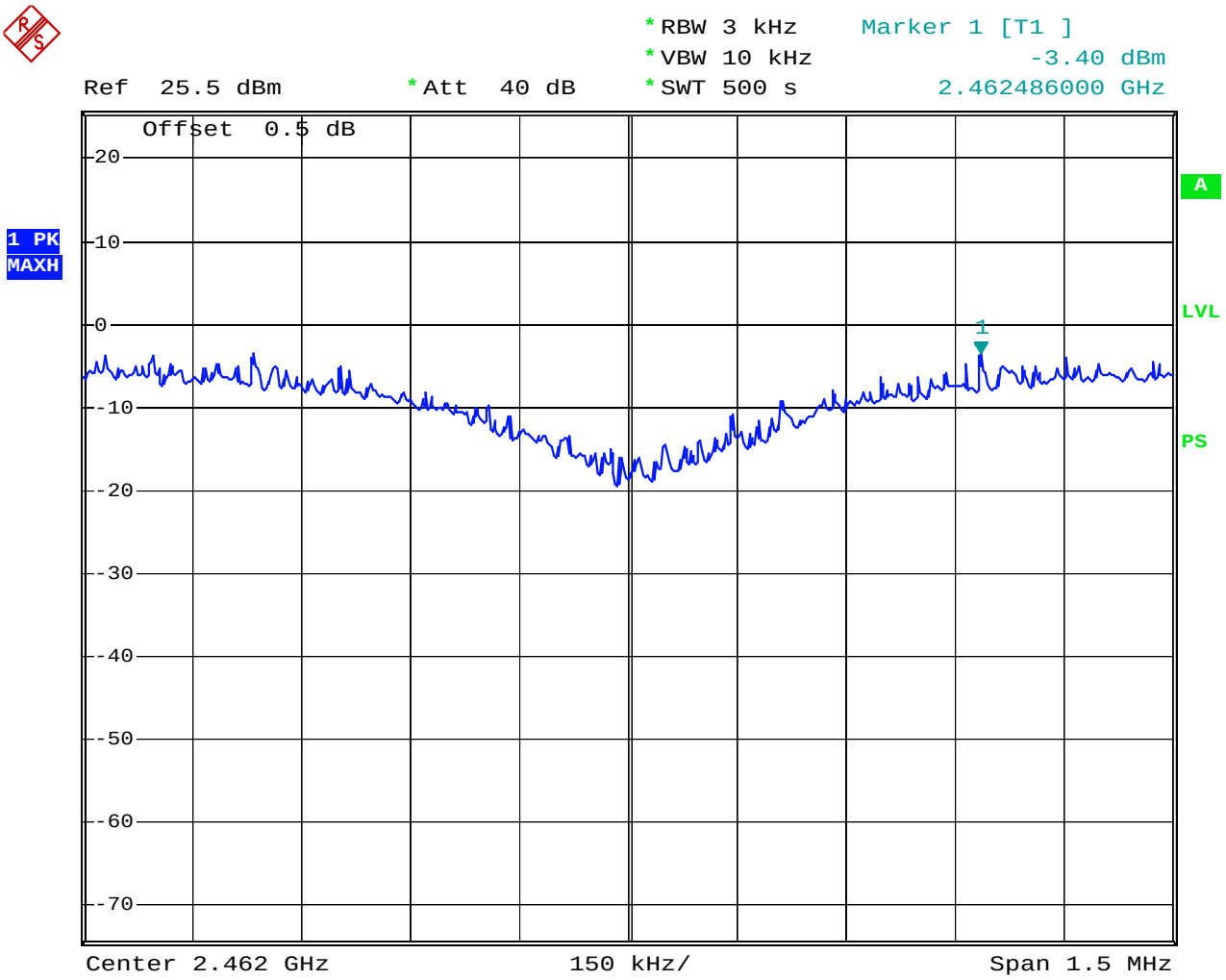
Middle Channel



802.11B(MIDDLE CHANNEL POWER DENSITY)

Date: 10.JAN.2008 11:07:38

High Channel

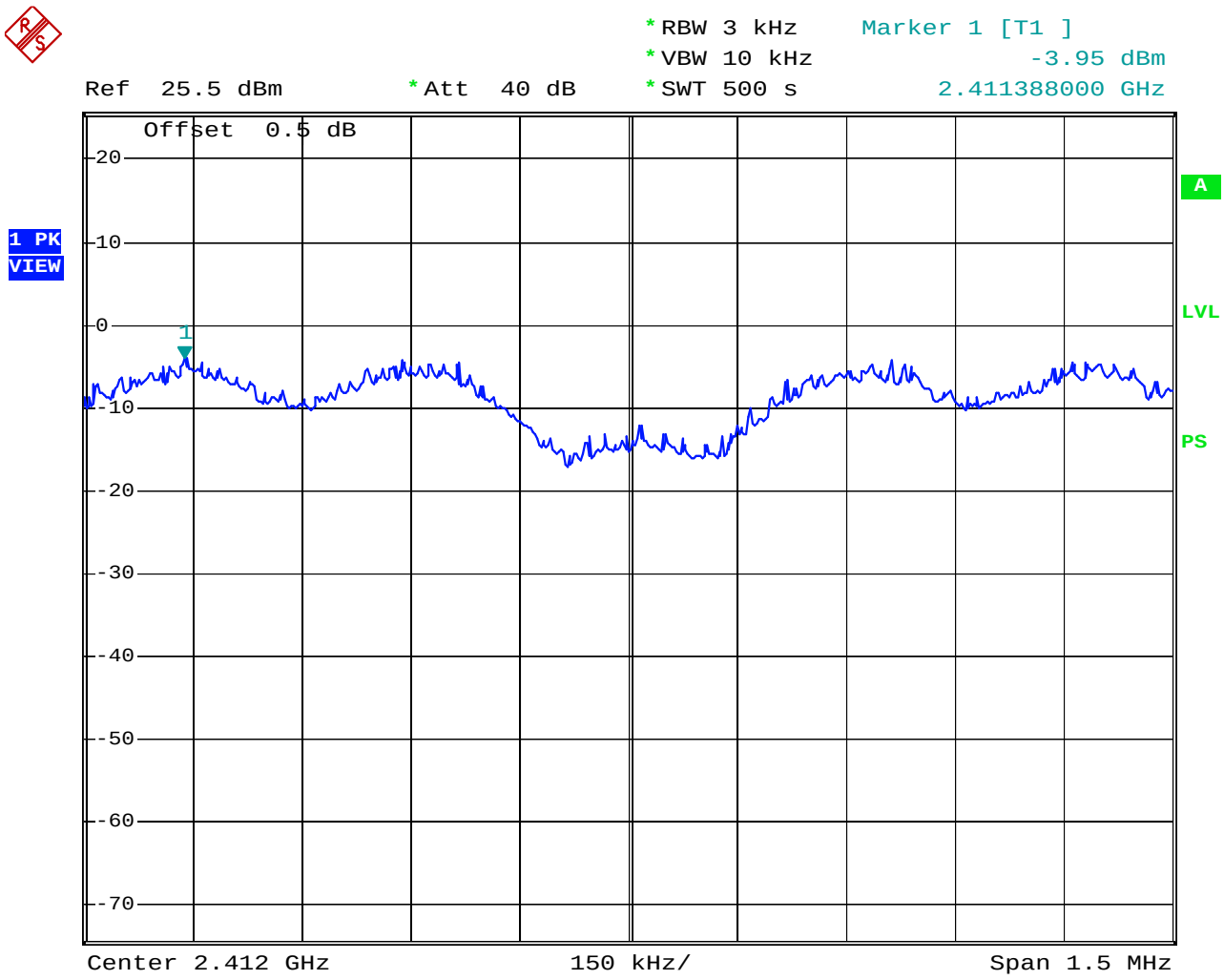


802.11B(HIGH CHANNEL POWER DENSITY)

Date: 10.JAN.2008 10:48:39

802.11 g Mode:

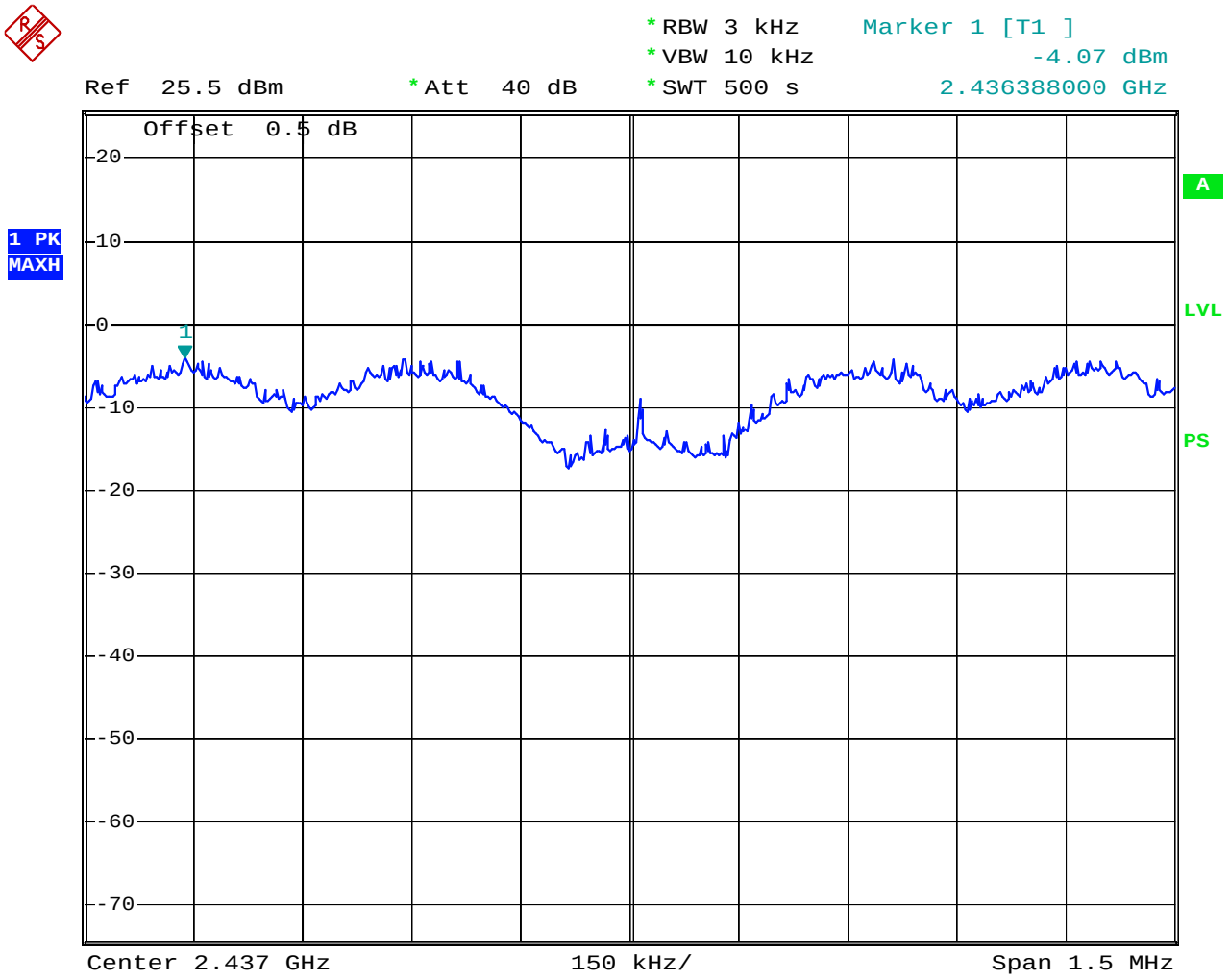
Low Channel



802.11G(LOW CHANNEL POWER DENSITY)

Date: 10.JAN.2008 09:46:09

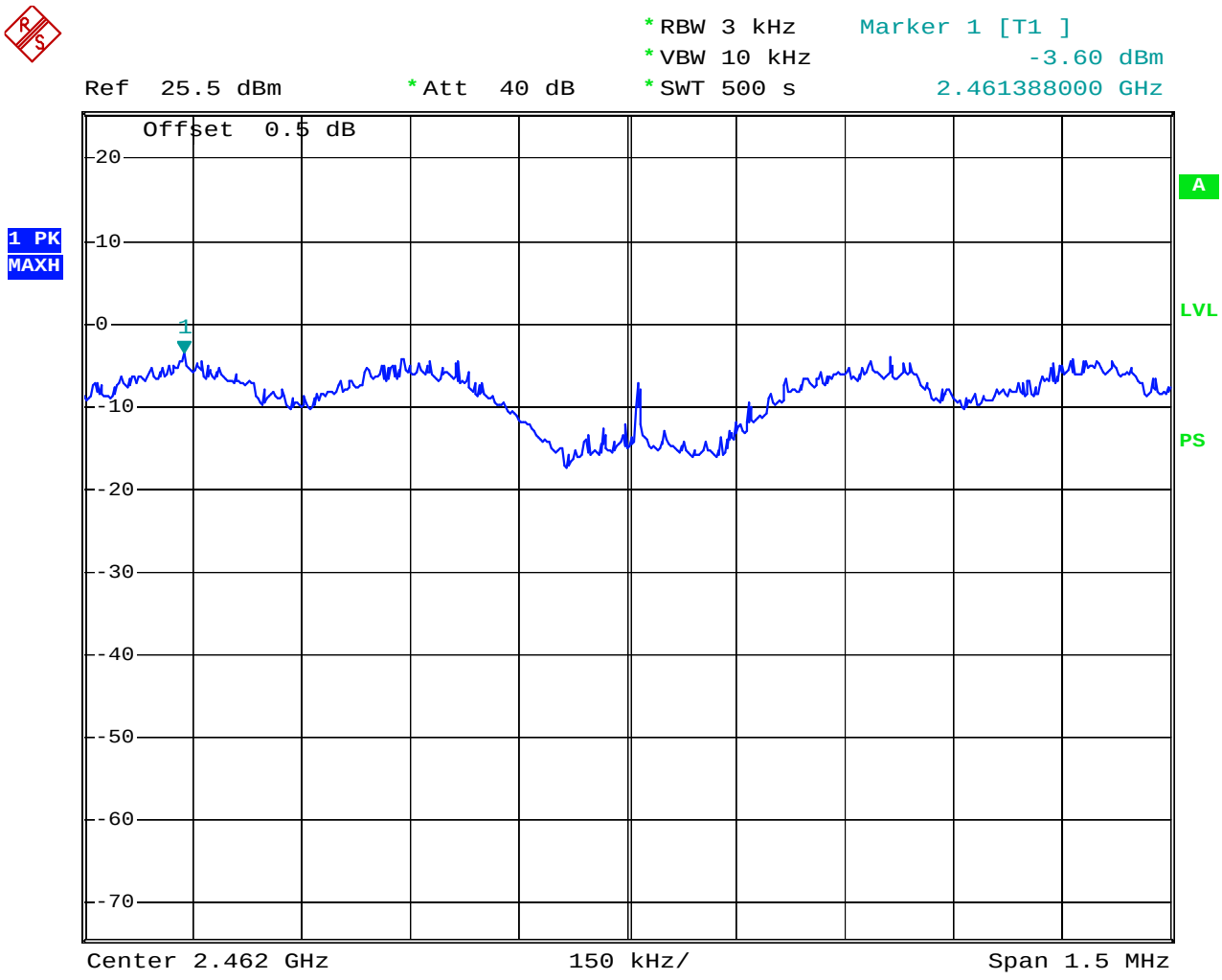
Middle Channel



802.11G(MIDDLE CHANNEL POWER DENSITY)

Date: 10.JAN.2008 10:09:26

High Channel



802.11G(HIGH CHANNEL POWER DENSITY)

Date: 10.JAN.2008 10:29:12

******* END OF REPORT *******