

FCC PART 15, SUBPART B and C
TEST REPORT

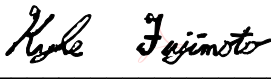
for

SiteWERX BASE STATION - WIRELESS VERSION

MODEL: SBS03-W

Prepared for

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DATE: JULY 16, 2009

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Device Tested: SiteWERX Base Station - Wireless Version
Model: SBS03-W
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified in order to meet the specifications.

Manufacturer: WirelessWERX, Inc.
100 South Chaparral Court, Suite 100
Anaheim, CA 92808

Test Dates: July 15 and 16, 2009

Test Specifications: EMI requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247

Test Procedure: ANSI C63.4: 2003

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207
2	Spurious Radiated RF Emissions, 30 MHz – 1000 MHz	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.209
3	Spurious Radiated RF Emissions, 10 kHz – 30 MHz and 1000 MHz – 25000 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, section 15.247(d)
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
5	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, and section 15.247 (d)
6	20 dB Bandwidth	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (a)(1) and (a)(1)(iii)
7	Peak Power Output	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(1)
8	RF Conducted Antenna Test	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (d)
9	Carrier Frequency Separation	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)
10	Average Time of Occupancy	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)(iii)
11	Peak Power Spectral Density from the Intentional Radiator to the Antenna	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (f)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the SiteWERX Base Station - Wireless Version, Model: SBS03-W. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2003. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

WirelessWERX, Inc.

Jim Ashley, Jr. Chief Technical Officer

Compatible Electronics Inc.

Alex Benitez Test Technician

Kyle Fujimoto Test Engineer

Michael Christensen Lab Manager, Brea Division

2.4 Date Test Sample was Received

The test sample was received prior to the date of testing.

2.5 Disposition of the Test Sample

The test sample was returned to WirelessWERX, Inc. on July 16, 2009.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
ANSI C63.4 2003	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The SiteWERX Base Station – Wireless Version, Model: SBS03-W (EUT) was connected to a power supply via its power port. The EUT was continuously transmitting and/or receiving continuously during the test depending on how the EUT was programmed.

Note #1: To verify operation during the unintentional radiator and conducted emission portion of the test, the EUT was transmitting and receiving to and from the Bluetooth Node Model: SLN05. The Bluetooth Node Model: SLN05 then was transmitting to the laptop via a wireless Bluetooth link. The laptop was also connected to a Linksys Access Point via an ethernet connection. The access point then re-sent the data to the EUT via an 802.11 link. The laptop was also used to verify the integrity of the data.

Note #2: The 802.11 portion of the EUT was not tested because the 802.11 portion is an RF module that was certified under the FCC ID: R68MTCHDRCT as a modular approval.

Operation of the EUT during the testing:

For the intentional radiator portion of the test: The EUT used a program that locked one channel at a time so that the low, middle, and high channels could be tested. This allowed the EUT to be in a no hopping mode. The EUT was tested in two orthogonal axis. The carrier was modulated in the same way it would be when the EUT was in its normal frequency hopping mode.

For the unintentional radiator and conducted emission portion of the test: The EUT used a program that allowed the EUT to function as normal (the channels frequency hopping) on a continuous basis.

The final radiated as well as the conducted data was taken in the modes above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

- Cable 1** This is a 2-meter unshielded cable connecting the access point with the laptop. The cable has an RJ-45 connector at each end.
- Cable 2** This is a 2-meter unshielded cable connecting the laptop to the AC Adapter. The cable has a 1 pin power connector at the laptop end and is hard wired into the AC Adapter.
- Cable 3** This is a 2-meter unshielded cable connecting the access point to the AC Adapter. The cable has a 1/8 inch power connector at the access point end and is hard wired into the AC Adapter.
- Cable 4** This is a 2-meter unshielded cable connecting the EUT to the AC Adapter. The cable has a 1/8 inch power connector at the EUT end and is hard wired into the AC Adapter.
- Cable 5** This is a 1-meter unshielded cable connecting the Bluetooth Node to its power supply. The cable is hard wired at each end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
SITEWERX BASE STATION – WIRELESS VERSION (EUT)	WirelessWERX, Inc.	SBS03-W	N/A	S8PSBS03-W
AC ADAPTER FOR EUT	ELJINTEK	GPSU15U-0	N/A	N/A
LAPTOP	DELL	PPO4X	CN-0HN341-48643-86J-3565	E2KWM3945ABG
AC ADAPTER FOR LAPTOP	DELL	FA90PS0-00	CN-OGX808-73245-84T-9828	N/A
BLUETOOTH NODE	WirelessWERX, Inc.	SLN05	10298 07 11 06	S8PSLN05
POWER SUPPLY FOR BLUETOOTH NODE	N/A	A71012A-D10	N/A	N/A
ACCESS POINT	LINKSYS	WRT54GL v1.1	CL7C1HC06292	Q87-WT54GV40
AC ADAPTER FOR ACCESS POINT	LINKSYS	AD12V/1A-SW	2103-40031231R	N/A

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	August 22, 2008	Aug. 22, 2009
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22262	August 22, 2008	Aug. 22, 2009
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	August 22, 2008	Aug. 22, 2009
EMI Receiver	Rohde & Schwarz	ESIB40	100194	September 17, 2008	Sept. 17, 2010
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com Power	AB-900	15182	February 23, 2009	Feb. 23, 2010
Log Periodic Antenna	Com Power	AL-100	16252	June 15, 2009	June 15, 2010
Preamplifier	Com-Power	PA-103	1582	January 12, 2009	Jan. 12, 2010
Loop Antenna	Com-Power	AL-130	17089	September 29, 2008	Sept. 29, 2009
Horn Antenna	Com-Power	AH-118	071175	June 27, 2008	June 27, 2010
Microwave Preamplifier	Com Power	PA-122	181921	March 12, 2009	March 12, 2010
Horn Antenna	Com-Power	AH826	71957	December 12, 2007	Dec. 12, 2009
Microwave Preamplifier	Com Power	PA-840	711013	March 12, 2009	March 12, 2010
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Emissions Program	Compatible Electronics	2.3 (SR19)	N/A	N/A	N/A
LISN	Com Power	LI-215	12076	September 29, 2008	Sept. 29, 2009
LISN	Com Power	LI-215	12090	September 29, 2008	Sept. 29, 2009
Transient Limiter	Com Power	252A910	1	September 26, 2008	Sept. 26, 2009

6. TEST SITE DESCRIPTION

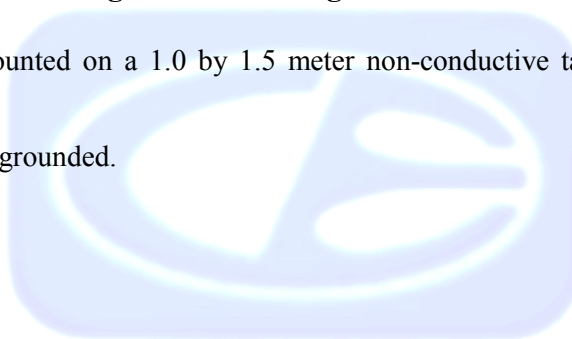
6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Transmitter Power

Transmit power is herein defined as the power delivered to a 50 ohm load at the RF output of the EUT.

Power	Channel
5.51 dBm	LOW
5.82 dBm	MIDDLE
5.35 dBm	HIGH

7.2 Channel Number and Frequencies

There are a total of 79 channels. The low channel is at 2402.0 MHz and the high channel is at 2480.0 MHz. There is a 1 MHz separation between channels.

Channel 1: 2402 MHz
Channel 2: 2403 MHz
(Etc.)

7.3 Antenna Gain

The antenna has a gain of 2 dBi.

8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2003. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer and EMI Receiver were used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz, the Com Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz, and the Com Power Microwave Preamplifier Model: PA-840 was used for frequencies above 18 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the spectrum analyzer to keep the amplitude reading calibrated.

After the readings above 1 GHz were average manually, the reading was further adjusted by a "duty cycle correction factor", derived from $20 \log (\text{dwell time} / 100 \text{ ms})$. Since the duty cycle was below 10%, the maximum allowed 20 dB was subtracted from the peak reading. The duty cycle correction factor is explained in Appendix E.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

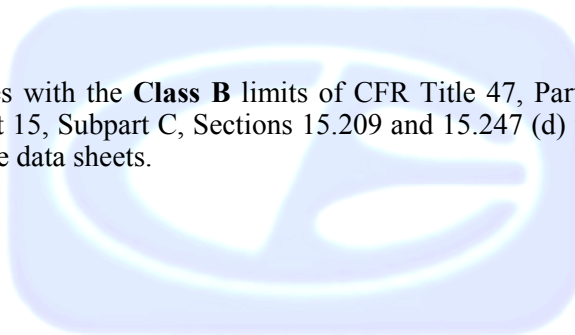
The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2003. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance from 10 kHz to 25 GHz to obtain the final test data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.247 (d) for radiated emissions. Please see Appendix E for the data sheets.

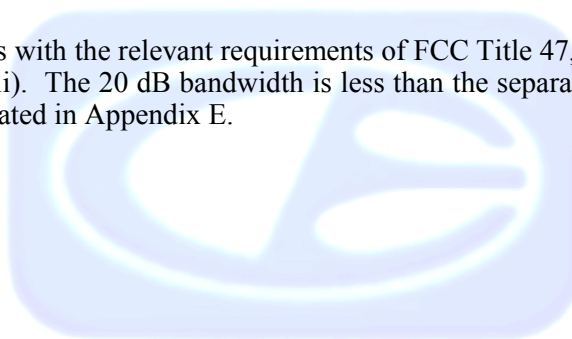


8.2 20 dB Bandwidth

The 20 dB Bandwidth was measured using the EMI Receiver. The bandwidth was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was 30 kHz and the video bandwidth was 100 kHz.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1) and (a)(1)(iii). The 20 dB bandwidth is less than the separation between channels. Please see the data sheets located in Appendix E.



8.3 Peak Output Power

The Peak Output Power was measured using the EMI Receiver. The peak output power was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was 3 MHz and the video bandwidth was 10 MHz. The cable loss was also added back into the reading using the reference level offset.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(1). The maximum peak output power is less than 1 watt. Please see the data sheets located in Appendix E.

8.4 RF Antenna Conducted Test

The RF antenna conducted test was performed using the EMI Receiver. The RF antenna conducted test measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth was 100 kHz, and the video bandwidth was 300 kHz. The spans were wide enough to include all the harmonics and emissions that were produced by the intentional radiator.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power. Please see the radiated emission data sheets located in Appendix E.

8.5 RF Band Edges

The RF band edges were taken at the edges of the ISM spectrum (2400 MHz when the EUT was on the low channel and 2483.5 MHz when the EUT was on the high channel) using the EMI Receiver. A preamplifier was used to boost the signal level, with the plots being taken at a 3 meter test distance. The radiated emissions test procedure as describe in section 8.2 of this test report was used to maximize the emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the band edges at 2400 MHz and 2483.5 MHz meet the requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). Please see the data sheets located in Appendix E.

8.6 Carrier Frequency Separation

The Channel Hopping Separation Test was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was 1 MHz, and the video bandwidth 1 MHz. The frequency span was wide enough to include the peaks of two adjacent channels.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1) and 15.247 (a)(1)(iii). The Channel Hopping Separation is greater than the 20 dB bandwidth. Please see the data sheets located in Appendix D.

8.7 Number of Hopping Frequencies

The Channel Hopping Separation Test was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was 1 MHz, and the video bandwidth was 1 MHz. The frequency span was wide enough to include all of the peaks in the frequency band of operation.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1) and 15.247 (a)(1)(iii). The number of hopping frequencies is 79. Please see the data sheets located in Appendix E.

8.8 Average Time of Occupancy Test

The Average Time of Occupancy Test was measured using the EMI Receiver. The EUT was operating in normal operating mode. The frequency span was taken to 0 Hz with a sweep time of 5 msec to determine the time for each transmission.

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. This means the time of occupancy of any one channel cannot be greater than 0.4 seconds in a 31.6 second period (0.4 seconds * 79 channels).

The sweep time was then changed to 2 seconds and the number of pulses taken. The number of pulses was then multiplied by 15.8 to determine the number of pulses in a 31.6 second period. The number of pulses in a 31.6 second period was then multiplied by the time for each pulse to determine the average time of occupancy.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1)(iii). The EUT does not transmit for more than 400 msec in a 31.6 second period on any frequency. Please see the data sheets located in Appendix E.

8.9 Spectral Density Test

The spectrum density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth 3 kHz, and the video bandwidth was 10 kHz. The highest 1.5 MHz of the signal was used as the frequency span with the sweep rate being 1 second for every 3 kHz of span.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (f).

9. CONCLUSIONS

The SiteWERX Base Station - Wireless Version Model: SBS03-W meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.247.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.



APPENDIX A

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

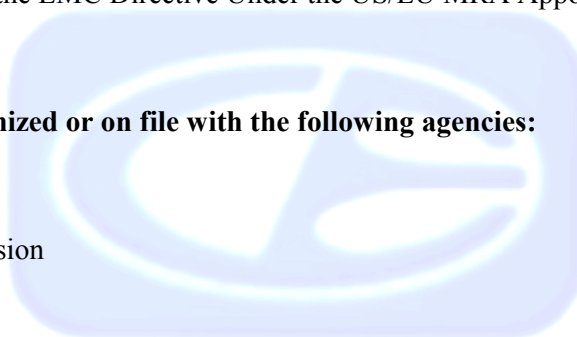
Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada



APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

There were no modifications made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

SiteWERX Base Station - Wireless Version
Model: SBS03-W
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

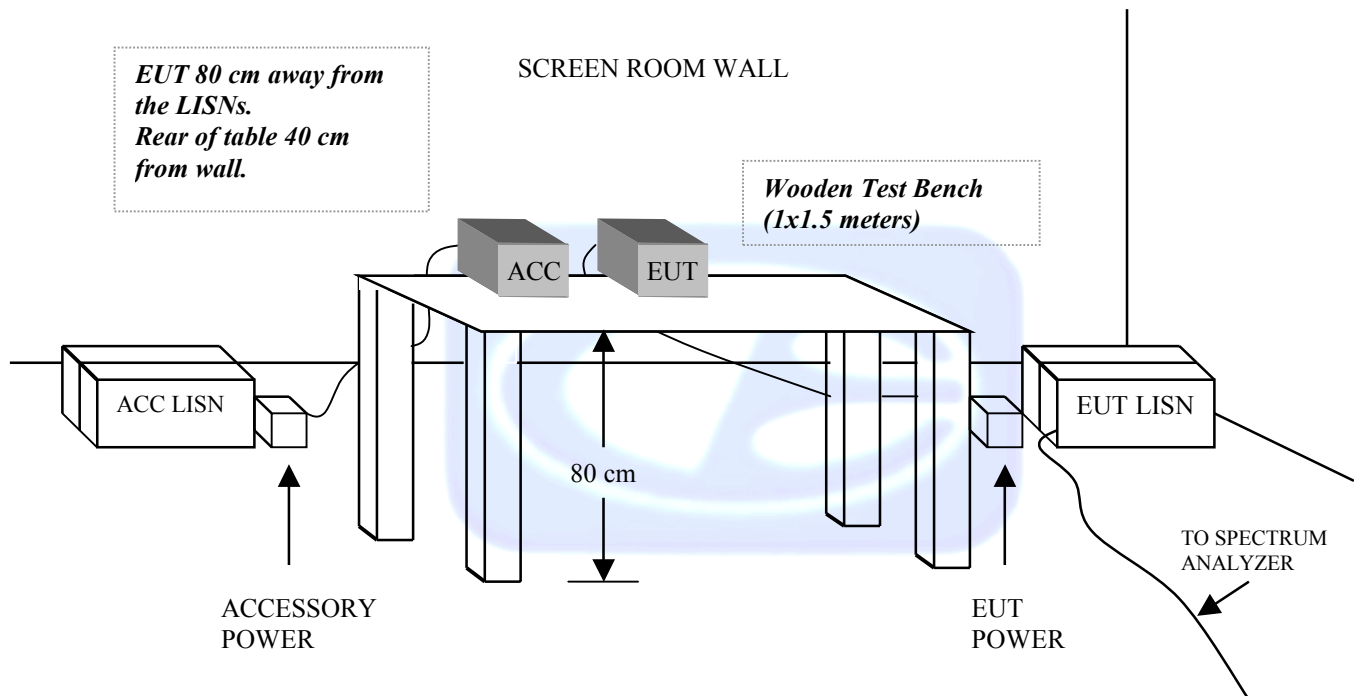
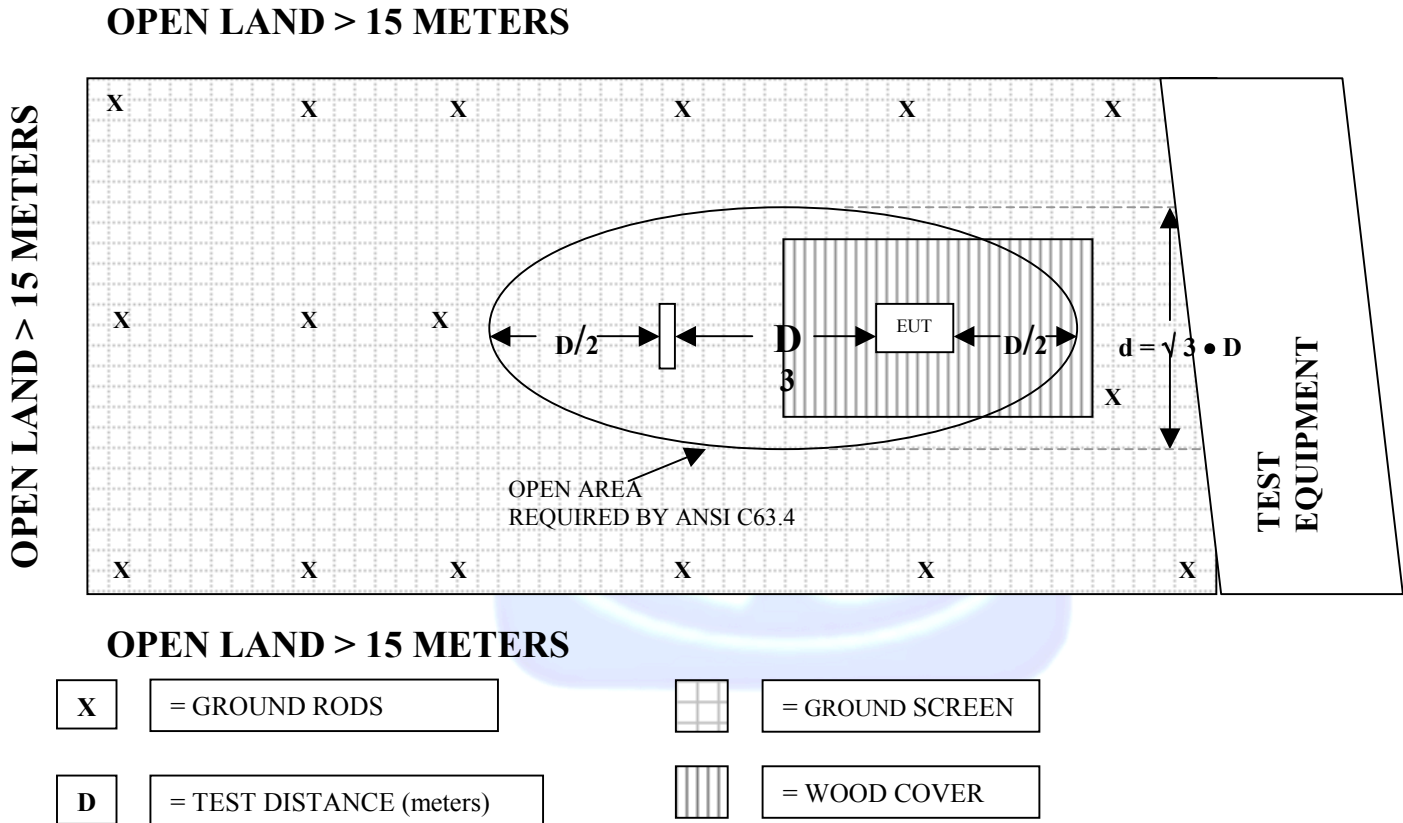


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE



COM-POWER AB-900**BICONICAL ANTENNA****S/N: 15182****CALIBRATION DATE: FEBRUARY 23, 2009**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	13.1	100	10.6
35	10.1	120	12.7
40	9.5	140	11.7
45	10.9	160	12.6
50	11.3	180	15.7
60	8.4	200	16.8
70	8.1	250	15.0
80	5.7	275	17.5
90	7.3	300	19.2

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16252

CALIBRATION DATE: JUNE 15, 2009

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.8	700	20.4
400	15.3	800	21.7
500	17.5	900	22.0
600	19.8	1000	22.7

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: JUNE 27, 2008

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.5	10.0	39.4
1.5	25.4	10.5	39.7
2.0	28.3	11.0	39.0
2.5	28.9	11.5	40.0
3.0	29.7	12.0	39.7
3.5	30.8	12.5	41.7
4.0	31.4	13.0	42.7
4.5	32.6	13.5	41.2
5.0	33.7	14.0	41.6
5.5	34.4	14.5	43.2
6.0	34.7	15.0	42.3
6.5	35.4	15.5	39.3
7.0	37.0	16.0	41.7
7.5	37.4	16.5	39.6
8.0	37.6	17.0	43.0
8.5	37.6	17.5	47.1
9.0	38.5	18.0	46.2
9.5	38.6		

COM-POWER PA-103**PREAMPLIFIER**

S/N: 1582

CALIBRATION DATE: JANUARY 12, 2009

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	33.6	300	33.4
40	33.7	350	33.2
50	33.6	400	33.2
60	33.5	450	33.1
70	33.6	500	32.9
80	33.6	550	33.0
90	33.7	600	32.8
100	33.7	650	33.0
125	33.5	700	32.7
150	33.6	750	32.9
175	33.7	800	32.6
200	33.4	850	32.6
225	33.4	900	32.6
250	33.4	950	32.4
275	33.3	1000	32.7

COM-POWER PA-122**PREAMPLIFIER****S/N: 181921****CALIBRATION DATE: MARCH 12, 2009**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.46	10.0	35.06
1.5	35.36	10.5	34.82
2.0	34.76	11.0	33.12
2.5	34.94	11.5	34.33
3.0	34.59	12.0	34.75
3.5	34.55	12.5	33.94
4.0	34.25	13.0	35.50
4.5	33.89	13.5	34.89
5.0	34.22	14.0	36.56
5.5	34.81	14.5	36.06
6.0	35.74	15.0	36.67
6.5	36.51	15.5	36.84
7.0	36.66	16.0	34.31
7.5	35.72	16.5	35.11
8.0	33.28	17.0	35.35
8.5	33.11	17.5	34.11
9.0	34.71	18.0	33.88
9.5	35.50	18.5	32.20

COM-POWER PA-840**MICROWAVE PREAMPLIFIER**

S/N: 711013

CALIBRATION DATE: MARCH 12, 2009

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.72	29.5	27.11
18.5	25.46	30.0	27.19
19.0	25.19	30.5	27.12
19.5	24.58	31.0	26.76
20.0	23.94	31.5	26.52
20.5	23.48	32.0	26.11
21.0	23.22	32.5	26.35
21.5	23.34	33.0	26.15
22.0	23.62	33.5	26.14
22.5	23.74	34.0	25.47
23.0	24.40	34.5	25.39
23.5	24.60	35.0	25.05
24.0	25.15	35.5	25.18
24.5	25.38	36.0	24.63
25.0	26.00	36.5	25.22
25.5	25.92	37.0	26.20
26.0	26.47	37.5	26.46
26.5	27.19	38.0	25.44
27.0	27.60	38.5	24.71
27.5	26.51	39.0	23.50
28.0	26.46	39.5	23.46
28.5	26.36	40.0	22.37
29.0	26.72		

COM-POWER AH826**HORN ANTENNA****S/N: 71957****CALIBRATION DATE: DECEMBER 12, 2007**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

COM-POWER AL-130**LOOP ANTENNA**

S/N: 17089

CALIBRATION DATE: SEPTEMBER 29, 2008

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.57	9.93
0.01	-42.06	9.44
0.02	-42.43	9.07
0.05	-42.50	9.00
0.07	-42.10	9.40
0.1	-42.03	9.47
0.2	-44.50	7.00
0.3	-41.93	9.57
0.5	-41.90	9.60
0.7	-41.73	9.77
1	-41.23	10.27
2	-40.90	10.60
3	-41.20	10.30
4	-41.30	10.20
5	-40.70	10.80
10	-41.10	10.40
15	-42.17	9.33
20	-42.00	9.50
25	-42.20	9.30
30	-43.10	8.40



FRONT VIEW

WirelessWERX, INC.
SiteWERX BASE STATION – WIRELESS VERSION
MODEL: SBS03-W
FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

WirelessWERX, INC.
SiteWERX BASE STATION – WIRELESS VERSION
MODEL: SBS03-W
FCC SUBPART B AND C – RADIATED EMISSIONS

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Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



FRONT VIEW

WirelessWERX, INC.
SiteWERX BASE STATION – WIRELESS VERSION
MODEL: SBS03-W
FCC SUBPART B AND C – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
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Lake Forest Division
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(949) 587-0400



REAR VIEW

WirelessWERX, INC.
SiteWERX BASE STATION – WIRELESS VERSION
MODEL: SBS03-W
FCC SUBPART B AND C – CONDUCTED EMISSIONS

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APPENDIX E

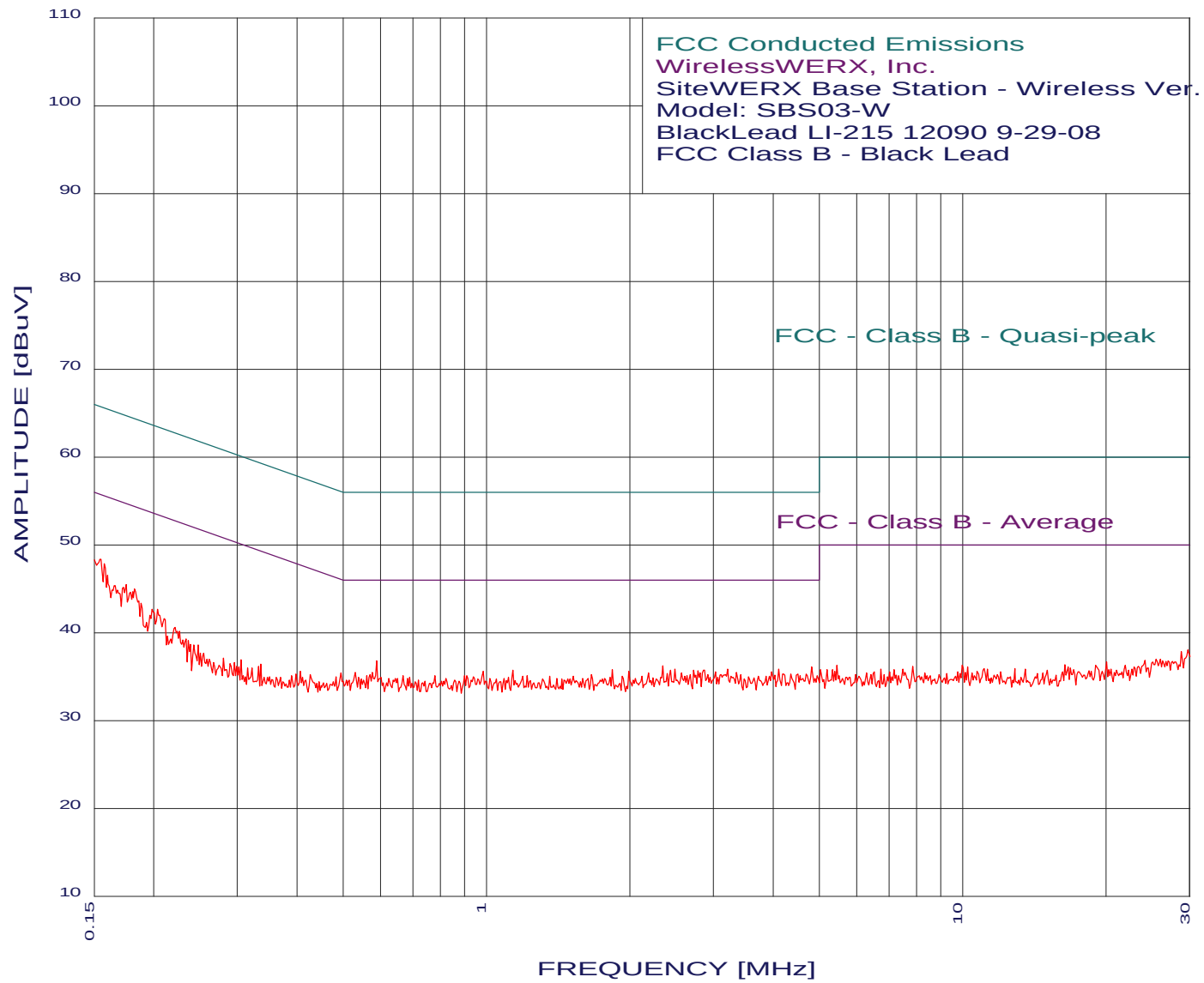
DATA SHEETS

CONDUCTED EMISIONS

DATA SHEETS

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

7/16/2009 14:26:47





**COMPATIBLE
ELECTRONICS**

7/16/2009

14:26:47

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

FCC Class B - Black Lead

TEST ENGINEER : Kyle Fujimoto

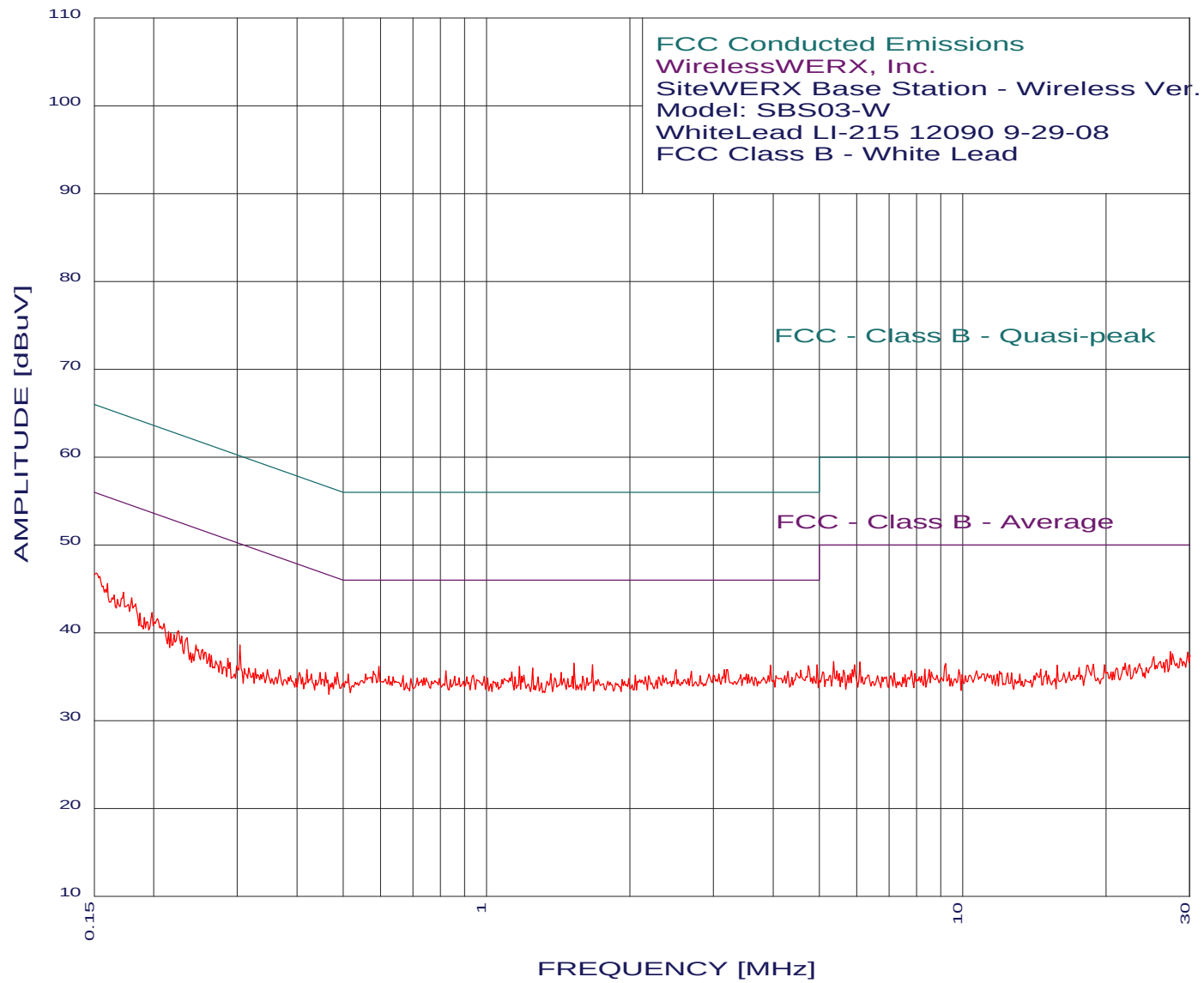
49 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.157	47.86	55.60	-7.74
2	0.160	46.56	55.47	-8.91
3	0.589	36.79	46.00	-9.21
4	0.175	45.46	54.72	-9.26
5	0.183	44.97	54.37	-9.40
6	2.346	36.22	46.00	-9.78
7	0.166	45.36	55.16	-9.80
8	4.825	36.07	46.00	-9.93
9	4.114	35.85	46.00	-10.15
10	3.209	35.84	46.00	-10.16
11	2.488	35.82	46.00	-10.18
12	1.840	35.81	46.00	-10.19
13	2.870	35.73	46.00	-10.27
14	2.722	35.73	46.00	-10.27
15	2.436	35.72	46.00	-10.28
16	1.136	35.70	46.00	-10.30
17	2.781	35.63	46.00	-10.37
18	1.992	35.61	46.00	-10.39
19	0.984	35.60	46.00	-10.40
20	3.966	35.55	46.00	-10.45
21	3.027	35.53	46.00	-10.47
22	0.530	35.49	46.00	-10.51
23	3.346	35.44	46.00	-10.56
24	2.568	35.42	46.00	-10.58
25	2.190	35.41	46.00	-10.59
26	2.397	35.32	46.00	-10.68
27	0.494	35.39	46.09	-10.70
28	4.696	35.27	46.00	-10.73
29	0.188	43.37	54.10	-10.74
30	4.361	35.26	46.00	-10.74
31	4.204	35.26	46.00	-10.74
32	3.419	35.24	46.00	-10.76
33	0.204	42.67	53.44	-10.77
34	2.679	35.22	46.00	-10.78
35	1.663	35.21	46.00	-10.79
36	1.217	35.10	46.00	-10.90
37	0.909	35.10	46.00	-10.90
38	0.899	35.10	46.00	-10.90
39	0.779	35.10	46.00	-10.90
40	0.669	35.10	46.00	-10.90
41	0.561	35.09	46.00	-10.91
42	3.722	35.05	46.00	-10.95
43	2.123	35.01	46.00	-10.99
44	1.929	35.01	46.00	-10.99
45	1.520	35.00	46.00	-11.00
46	0.199	42.67	53.67	-11.00
47	1.359	35.00	46.00	-11.00
48	1.191	35.00	46.00	-11.00
49	3.547	34.94	46.00	-11.06

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

7/16/2009 14:29:26





**COMPATIBLE
ELECTRONICS**

7/16/2009 14:29:26

WirelessWERX, Inc.
SiteWERX Base Station - Wireless Version
Model: SBS03-W
FCC Class B - White Lead
TEST ENGINEER : Kyle Fujimoto

49 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	1.528	36.56	46.00	-9.44
2	1.671	36.36	46.00	-9.64
3	4.954	36.32	46.00	-9.68
4	3.945	36.30	46.00	-9.70
5	4.748	36.22	46.00	-9.78
6	0.595	36.18	46.00	-9.82
7	1.172	36.15	46.00	-9.85
8	0.160	45.60	55.47	-9.87
9	1.249	35.96	46.00	-10.04
10	0.173	44.60	54.81	-10.21
11	3.209	35.79	46.00	-10.21
12	3.158	35.79	46.00	-10.21
13	2.501	35.77	46.00	-10.23
14	4.576	35.72	46.00	-10.28
15	0.822	35.65	46.00	-10.35
16	4.294	35.61	46.00	-10.39
17	0.580	35.60	46.00	-10.40
18	2.693	35.58	46.00	-10.42
19	1.130	35.55	46.00	-10.45
20	0.180	44.00	54.50	-10.50
21	1.434	35.46	46.00	-10.54
22	1.367	35.36	46.00	-10.64
23	3.511	35.29	46.00	-10.71
24	0.558	35.29	46.00	-10.71
25	3.075	35.28	46.00	-10.72
26	0.513	35.27	46.00	-10.73
27	0.486	35.48	46.23	-10.75
28	3.547	35.19	46.00	-10.81
29	3.419	35.19	46.00	-10.81
30	2.346	35.17	46.00	-10.83
31	2.055	35.16	46.00	-10.84
32	1.197	35.16	46.00	-10.84
33	0.939	35.15	46.00	-10.85
34	0.669	35.10	46.00	-10.90
35	2.811	35.08	46.00	-10.92
36	2.190	35.07	46.00	-10.93
37	1.594	35.06	46.00	-10.94
38	1.512	35.06	46.00	-10.94
39	0.990	35.05	46.00	-10.95
40	0.858	35.05	46.00	-10.95
41	2.156	34.97	46.00	-11.03
42	1.283	34.96	46.00	-11.04
43	1.148	34.95	46.00	-11.05
44	0.909	34.95	46.00	-11.05
45	1.389	34.86	46.00	-11.14
46	1.006	34.85	46.00	-11.15
47	0.747	34.85	46.00	-11.15
48	0.459	35.48	46.71	-11.23
49	1.992	34.76	46.00	-11.24

RADIATED EMISSIONS

DATA SHEETS

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2402	102.45	V	--	--	Peak	1.35	225	
2402	82.45	V	--	--	Avg	1.35	225	
4804	46.79	V	74	-27.21	Peak	1.46	135	
4804	26.79	V	54	-27.21	Avg	1.46	135	
7206	47.58	V	74	-26.42	Peak	1.58	135	
7206	27.58	V	54	-26.42	Avg	1.58	135	
9608		V	--	--	Peak			No Emission
9608		V	--	--	Avg			Detected
12010		V	74	-74	Peak			No Emission
12010		V	54	-54	Avg			Detected
14412		V	74	-74	Peak			No Emission
14412		V	54	-54	Avg			Detected
16814		V	74	-74	Peak			No Emission
16814		V	54	-54	Avg			Detected
19216		V	74	-74	Peak			No Emission
19216		V	54	-54	Avg			Detected
21618		V	74	-74	Peak			No Emission
21618		V	54	-54	Avg			Detected
24020		V	74	-74	Peak			No Emission
24020		V	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2402	90.93	H	--	--	Peak	1.35	225	
2402	70.93	H	--	--	Avg	1.35	225	
4804	47.04	H	74	-26.96	Peak	1.25	150	
4804	27.04	H	54	-26.96	Avg	1.25	150	
7206	46.65	H	74	-27.35	Peak	1.58	135	
7206	26.65	H	54	-27.35	Avg	1.58	135	
9608		H	--	--	Peak			No Emission
9608		H	--	--	Avg			Detected
12010		H	74	-74	Peak			No Emission
12010		H	54	-54	Avg			Detected
14412		H	74	-74	Peak			No Emission
14412		H	54	-54	Avg			Detected
16814		H	74	-74	Peak			No Emission
16814		H	54	-54	Avg			Detected
19216		H	74	-74	Peak			No Emission
19216		H	54	-54	Avg			Detected
21618		H	74	-74	Peak			No Emission
21618		H	54	-54	Avg			Detected
24020		H	74	-74	Peak			No Emission
24020		H	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2402	102.62	V	--	--	Peak	1.35	150	
2402	82.62	V	--	--	Avg	1.35	150	
4804	43.92	V	74	-30.08	Peak	1.55	125	
4804	23.92	V	54	-30.08	Avg	1.55	125	
7206	46.11	V	74	-27.89	Peak	1.45	135	
7206	26.11	V	54	-27.89	Avg	1.45	135	
9608		V	--	--	Peak			No Emission
9608		V	--	--	Avg			Detected
12010		V	74	-74	Peak			No Emission
12010		V	54	-54	Avg			Detected
14412		V	74	-74	Peak			No Emission
14412		V	54	-54	Avg			Detected
16814		V	74	-74	Peak			No Emission
16814		V	54	-54	Avg			Detected
19216		V	74	-74	Peak			No Emission
19216		V	54	-54	Avg			Detected
21618		V	74	-74	Peak			No Emission
21618		V	54	-54	Avg			Detected
24020		V	74	-74	Peak			No Emission
24020		V	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2402	92.53	H	--	--	Peak	1.35	150	
2402	72.53	H	--	--	Avg	1.35	150	
4804	48.09	H	74	-25.91	Peak	1.45	180	
4804	28.09	H	54	-25.91	Avg	1.45	180	
7206	45.12	H	74	-28.88	Peak	1.54	160	
7206	35.12	H	54	-18.88	Avg	1.54	160	
9608		H	--	--	Peak			No Emission
9608		H	--	--	Avg			Detected
12010		H	74	-74	Peak			No Emission
12010		H	54	-54	Avg			Detected
14412		H	74	-74	Peak			No Emission
14412		H	54	-54	Avg			Detected
16814		H	74	-74	Peak			No Emission
16814		H	54	-54	Avg			Detected
19216		H	74	-74	Peak			No Emission
19216		H	54	-54	Avg			Detected
21618		H	74	-74	Peak			No Emission
21618		H	54	-54	Avg			Detected
24020		H	74	-74	Peak			No Emission
24020		H	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2441	102.51	V	--	--	Peak	1.25	135	
2441	82.51	V	--	--	Avg	1.25	135	
4882	48.11	V	74	-25.89	Peak	1.25	150	
4882	28.11	V	54	-25.89	Avg	1.25	150	
7323	45.08	V	74	-28.92	Peak	1.35	180	
7323	25.08	V	54	-28.92	Avg	1.35	180	
9764		V	--	--	Peak			No Emission
9764		V	--	--	Avg			Detected
12205		V	74	-74	Peak			No Emission
12205		V	54	-54				Detected
14646		V	74	-74	Peak			No Emission
14646		V	54	-54	Avg			Detected
17087		V	74	-74	Peak			No Emission
17087		V	54	-54	Avg			Detected
19528		V	74	-74	Peak			No Emission
19528		V	54	-54	Avg			Detected
21969		V	74	-74	Peak			No Emission
21969		V	54	-54	Avg			Detected
24410		V	74	-74	Peak			No Emission
24410		V	54	-54	Avg			

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2441	91.69	H	--	--	Peak	1.35	155	
2441	71.69	H	--	--	Avg	1.35	155	
4882	46.85	H	74	-27.15	Peak	1.55	165	
4882	26.85	H	54	-27.15	Avg	1.55	165	
7323	45.11	H	74	-28.89	Peak	1.25	135	
7323	25.11	H	54	-28.89	Avg	1.25	135	
9764		H	--	--	Peak			No Emission
9764		H	--	--	Avg			Detected
12205		H	74	-74	Peak			No Emission
12205		H	54	-54	Avg			Detected
14646		H	74	-74	Peak			No Emission
14646		H	54	-54	Avg			Detected
17087		H	74	-74	Peak			No Emission
17087		H	54	-54	Avg			Detected
19528		H	74	-74	Peak			No Emission
19528		H	54	-54	Avg			Detected
21969		H	74	-74	Peak			No Emission
21969		H	54	-54	Avg			Detected
24410		H	74	-74	Peak			No Emission
24410		H	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2441	102.82	V	--	--	Peak	1.35	135	
2441	82.82	V	--	--	Avg	1.35	135	
4882	46.38	V	74	-27.62	Peak	1.35	225	
4882	26.38	V	54	-27.62	Avg	1.35	225	
7323	48.13	V	74	-25.87	Peak	1.25	135	
7323	28.13	V	54	-25.87	Avg	1.25	135	
9764		V	--	--	Peak			No Emission
9764		V	--	--	Avg			Detected
12205		V	74	-74	Peak			No Emission
12205		V	54	-54	Avg			Detected
14646		V	74	-74	Peak			No Emission
14646		V	54	-54	Avg			Detected
17087		V	74	-74	Peak			No Emission
17087		V	54	-54	Avg			Detected
19528		V	74	-74	Peak			No Emission
19528		V	54	-54	Avg			Detected
21969		V	74	-74	Peak			No Emission
21969		V	54	-54	Avg			Detected
24410		V	74	-74	Peak			No Emission
24410		V	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

Bluetooth Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2441	90.31	H	--	--	Peak	1.55	150	
2441	70.31	H	--	--	Avg	1.55	150	
4882	48.99	H	74	-25.01	Peak	1.35	150	
4882	28.99	H	54	-25.01	Avg	1.35	150	
7323	54.28	H	74	-19.72	Peak	1.55	150	
7323	24.65	H	54	-29.35	Avg	1.55	150	
9764		H	--	--	Peak			No Emission
9764		H	--	--	Avg			Detected
12205		H	74	-74	Peak			No Emission
12205		H	54	-54	Avg			Detected
14646		H	74	-74	Peak			No Emission
14646		H	54	-54	Avg			Detected
17087		H	74	-74	Peak			No Emission
17087		H	54	-54	Avg			Detected
19528		H	74	-74	Peak			No Emission
19528		H	54	-54	Avg			Detected
21969		H	74	-74	Peak			No Emission
21969		H	54	-54	Avg			Detected
24410		H	74	-74	Peak			No Emission
24410		H	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2480	102.08	V	--	--	Peak	1.25	225	
2480	80.08	V	--	--	Avg	1.25	225	
4960	47.88	V	74	-26.12	Peak	1.35	225	
4960	27.88	V	54	-26.12	Avg	1.35	225	
7440	45.49	V	74	-28.51	Peak	1.25	150	
7440	25.49	V	54	-28.51	Avg	1.25	150	
9920		V	--	--	Peak			No Emission
9920		V	--	--	Avg			Detected
12400		V	74	-74	Peak			No Emission
12400		V	54	-54				Detected
14880		V	74	-74	Peak			No Emission
14880		V	54	-54	Avg			Detected
17360		V	74	-74	Peak			No Emission
17360		V	54	-54	Avg			Detected
19840		V	74	-74	Peak			No Emission
19840		V	54	-54	Avg			Detected
22320		V	74	-74	Peak			No Emission
22320		V	54	-54	Avg			Detected
24410		V	74	-74	Peak			No Emission
24410		V	54	-54	Avg			

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2480	90.53	H	--	--	Peak	1.35	150	
2480	80.53	H	--	--	Avg	1.35	150	
4960	41.14	H	74	-32.86	Peak	1.25	135	
4960	21.14	H	54	-32.86	Avg	1.25	135	
7440	44.36	H	74	-29.64	Peak	1.58	150	
7440	24.36	H	54	-29.64	Avg	1.58	150	
9920		H	--	--	Peak			No Emission
9920		H	--	--	Avg			Detected
12400		H	74	-74	Peak			No Emission
12400		H	54	-54	Avg			Detected
14880		H	74	-74	Peak			No Emission
14880		H	54	-54	Avg			Detected
17360		H	74	-74	Peak			No Emission
17360		H	54	-54	Avg			Detected
19840		H	74	-74	Peak			No Emission
19840		H	54	-54	Avg			Detected
22320		H	74	-74	Peak			No Emission
22320		H	54	-54	Avg			Detected
24410		H	74	-74	Peak			No Emission
24410		H	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2480	102.12	V	--	--	Peak	1.05	135	
2480	80.12	V	--	--	Avg	1.05	135	
4960	45.13	V	74	-28.87	Peak	1.25	150	
4960	25.13	V	54	-28.87	Avg	1.25	150	
7440	47.03	V	74	-26.97	Peak	1.58	150	
7440	27.03	V	54	-26.97	Avg	1.58	150	
9920		V	--	--	Peak			No Emission
9920		V	--	--	Avg			Detected
12400		V	74	-74	Peak			No Emission
12400		V	54	-54	Avg			Detected
14880		V	74	-74	Peak			No Emission
14880		V	54	-54	Avg			Detected
17360		V	74	-74	Peak			No Emission
17360		V	54	-54	Avg			Detected
19840		V	74	-74	Peak			No Emission
19840		V	54	-54	Avg			Detected
22320		V	74	-74	Peak			No Emission
22320		V	54	-54	Avg			Detected
24410		V	74	-74	Peak			No Emission
24410		V	54	-54	Avg			Detected

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2480	91.21	H	--	--	Peak	1.35	225	
2480	71.21	H	--	--	Avg	1.35	225	
4960	46.7	H	74	-27.3	Peak	1.25	90	
4960	26.7	H	54	-27.3	Avg	1.25	90	
7440	45.25	H	74	-28.75	Peak	1.58	90	
7440	25.25	H	54	-28.75	Avg	1.58	90	
9920		H	--	--	Peak			No Emission
9920		H	--	--	Avg			Detected
12400		H	74	-74	Peak			No Emission
12400		H	54	-54	Avg			Detected
14880		H	74	-74	Peak			No Emission
14880		H	54	-54	Avg			Detected
17360		H	74	-74	Peak			No Emission
17360		H	54	-54	Avg			Detected
19840		H	74	-74	Peak			No Emission
19840		H	54	-54	Avg			Detected
22320		H	74	-74	Peak			No Emission
22320		H	54	-54	Avg			Detected
24410		H	74	-74	Peak			No Emission
24410		H	54	-54	Avg			Detected

WirelessWERX, Inc.
SiteWERX Base Station - Wireless Version
Model: SLN05

Date: 07/15/09
Lab: B
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion 1 GHz to 25 GHz

[illegible]

Test Location : Compatible Electronics
 Customer : WirelessWERX, Inc.
 Manufacturer : WirelessWERX, Inc.
 Eut name : Bluetooth Base Station - Wireless
 Model : SBS03-W
 Serial # : N/A
 Specification : FCC B
 Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
 Test Mode : Radiated Emissions: 10 kHz to 1000 MHz
 Vertical and Horizontal Polarization
 07/16/2009
 Tested By: Kyle Fujimoto

Page : 1/1
 Date : 7/16/2009
 Time : 8:20:19
 Lab : A
 Test Distance : 3.0

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1H	33.200	43.60	0.97	11.13	33.64	22.06	40.00	-17.94
2V	38.000	44.90	1.06	9.73	33.68	22.01	40.00	-17.99
3V	50.000	47.90	1.30	11.30	33.60	26.90	40.00	-13.10
4V	78.700	55.20	1.86	5.99	33.60	29.46	40.00	-10.54
5H	85.874	46.30	2.02	6.66	33.66	21.32	40.00	-18.68
6V	108.678	38.50	2.35	11.56	33.63	18.78	43.50	-24.72
7H	109.874	38.20	2.37	11.68	33.62	18.64	43.50	-24.86
8V	110.657	51.40	2.38	11.77	33.61	31.94	43.50	-11.56
9V	124.014	46.90	2.59	12.49	33.51	28.47	43.50	-15.03
10H	125.036	40.20	2.60	12.43	33.50	21.73	43.50	-21.77
11V	132.814	45.40	2.70	12.04	33.53	26.61	43.50	-16.89
12V	139.318	51.40	2.78	11.73	33.56	32.35	43.50	-11.15
13V	149.583	49.40	2.90	12.15	33.60	30.84	43.50	-12.66
14V	158.350	39.30	2.94	12.53	33.64	21.13	43.50	-22.37
15V	174.363	47.60	3.00	14.86	33.70	31.76	43.50	-11.74
16V	223.163	34.60	3.40	15.92	33.40	20.52	46.00	-25.48
17V	264.060	59.50	3.86	16.44	33.34	46.45	46.00	0.45
18V	264.062Qp	58.12	3.86	16.44	33.34	45.07	46.00	-0.93
19H	264.092	58.50	3.86	16.44	33.34	45.45	46.00	-0.55
20H	264.092Qp	58.28	3.86	16.44	33.34	45.23	46.00	-0.77
21V	288.054	45.10	4.11	18.41	33.35	34.27	46.00	-11.73
22H	296.600	36.30	4.25	18.98	33.39	26.14	46.00	-19.86
23H	300.096	43.80	4.30	12.80	33.40	27.50	46.00	-18.50
24V	300.108	44.00	4.30	12.80	33.40	27.70	46.00	-18.30
25V	324.340	43.20	4.50	13.48	33.30	27.88	46.00	-18.12
26H	336.132	47.20	4.60	13.79	33.25	32.33	46.00	-13.67
27H	352.070	55.70	4.72	14.19	33.20	41.41	46.00	-4.59
28H	400.070	45.50	5.20	15.30	33.20	32.80	46.00	-13.20
29V	432.300	39.30	5.40	16.07	33.13	27.63	46.00	-18.37
30H	440.070	48.30	5.44	16.24	33.12	36.87	46.00	-9.13
31H	494.470	43.50	6.04	17.39	32.92	34.01	46.00	-11.99
32H	625.036	36.60	7.00	19.96	32.90	30.65	46.00	-15.35
33H	625.986	31.70	6.99	19.97	32.91	25.75	46.00	-20.25
34V	696.420	37.00	7.74	20.38	32.72	32.40	46.00	-13.60
35H	700.098	38.80	7.80	20.40	32.70	34.30	46.00	-11.70

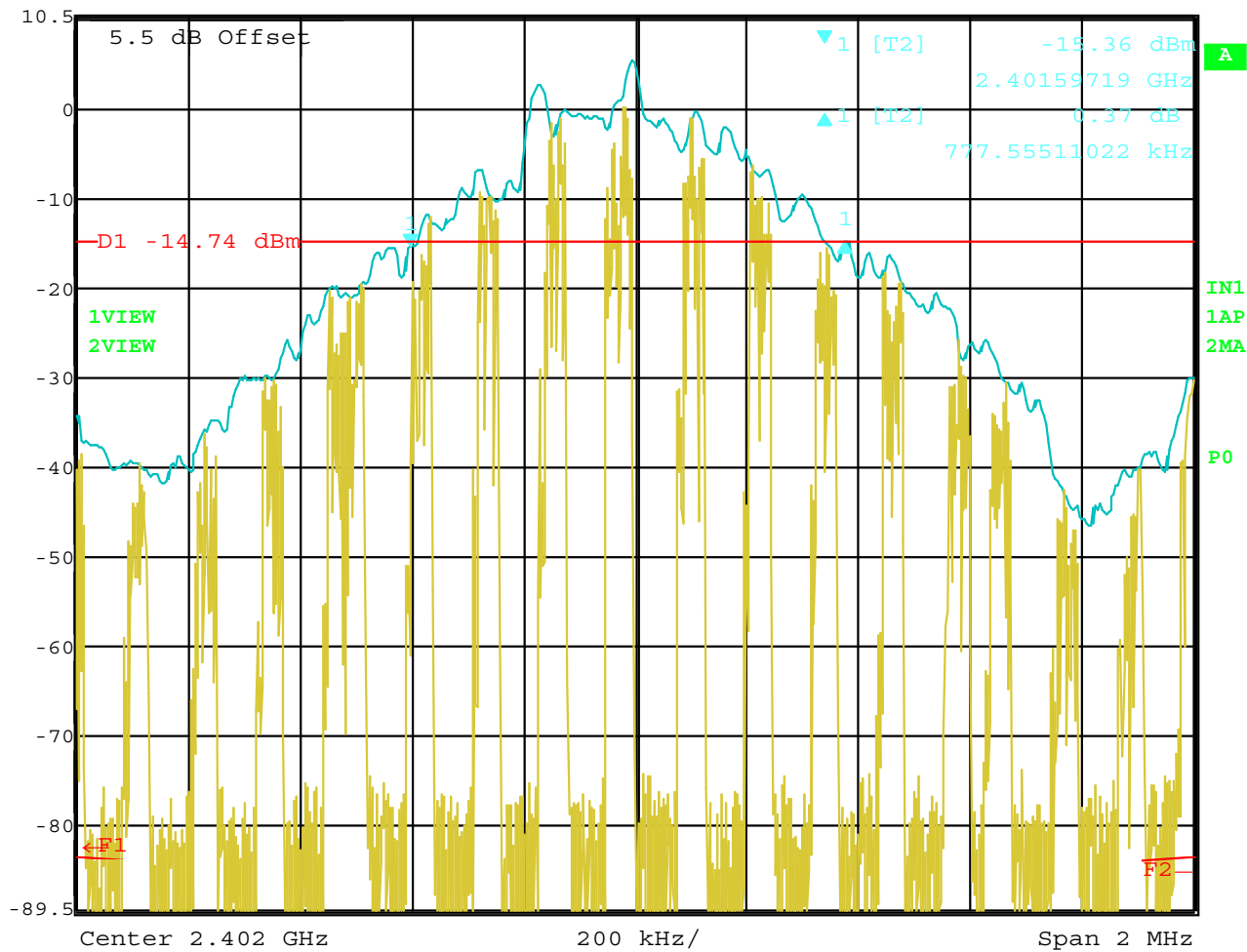


-20 dB BANDWIDTH

DATA SHEETS



Delta 1 [T2] RBW 30 kHz RF Att 20 dB
Ref Lvl 0.37 dB VBW 100 kHz
10.5 dBm 777.55511022 kHz SWT 6 ms Unit dBm

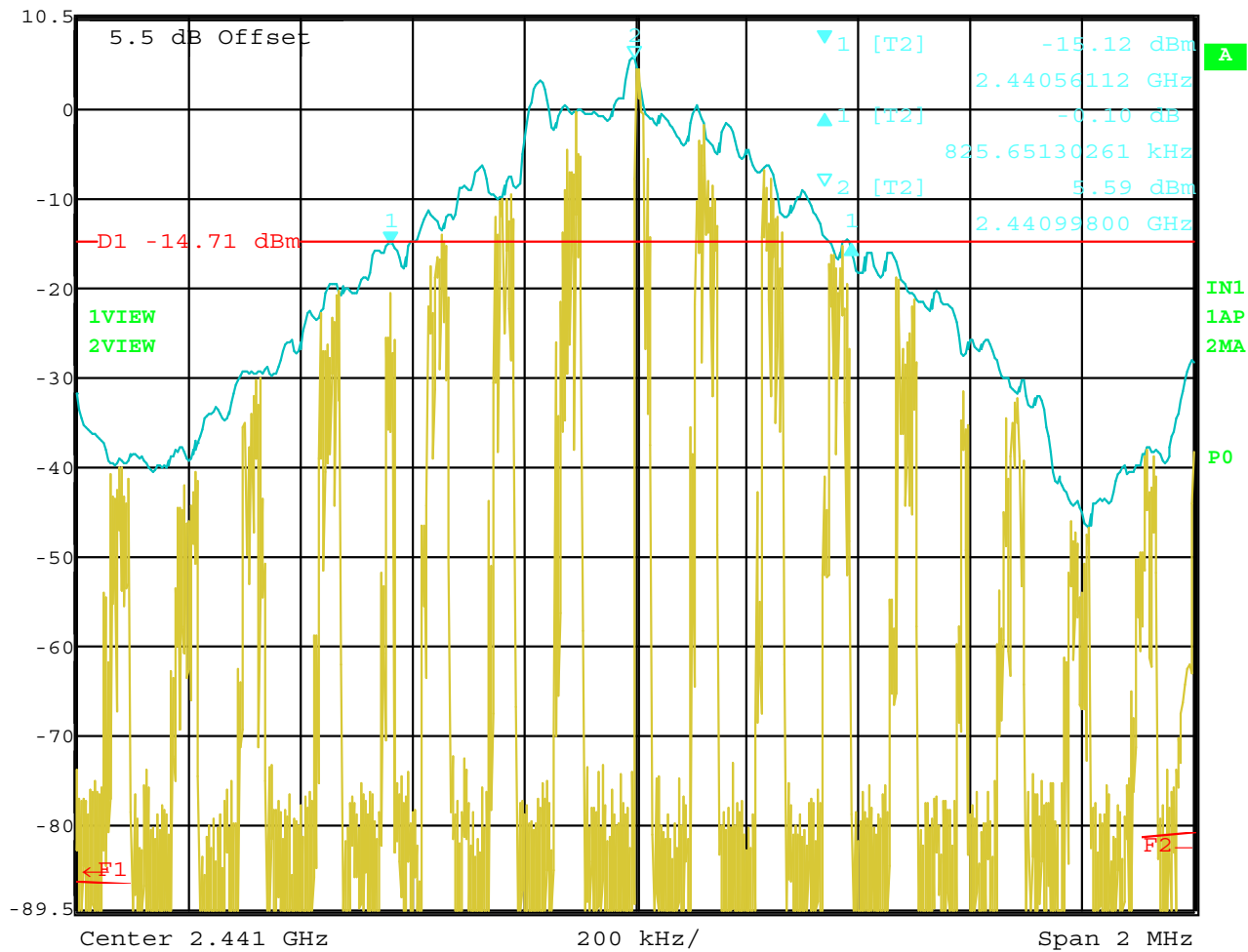


Date: 15.JUL.2009 13:05:13

20 dB Bandwidth of Fundamental – Low Channel



Delta 1 [T2] RBW 30 kHz RF Att 20 dB
Ref Lvl -0.10 dB VBW 100 kHz
10.5 dBm 825.65130261 kHz SWT 6 ms Unit dBm

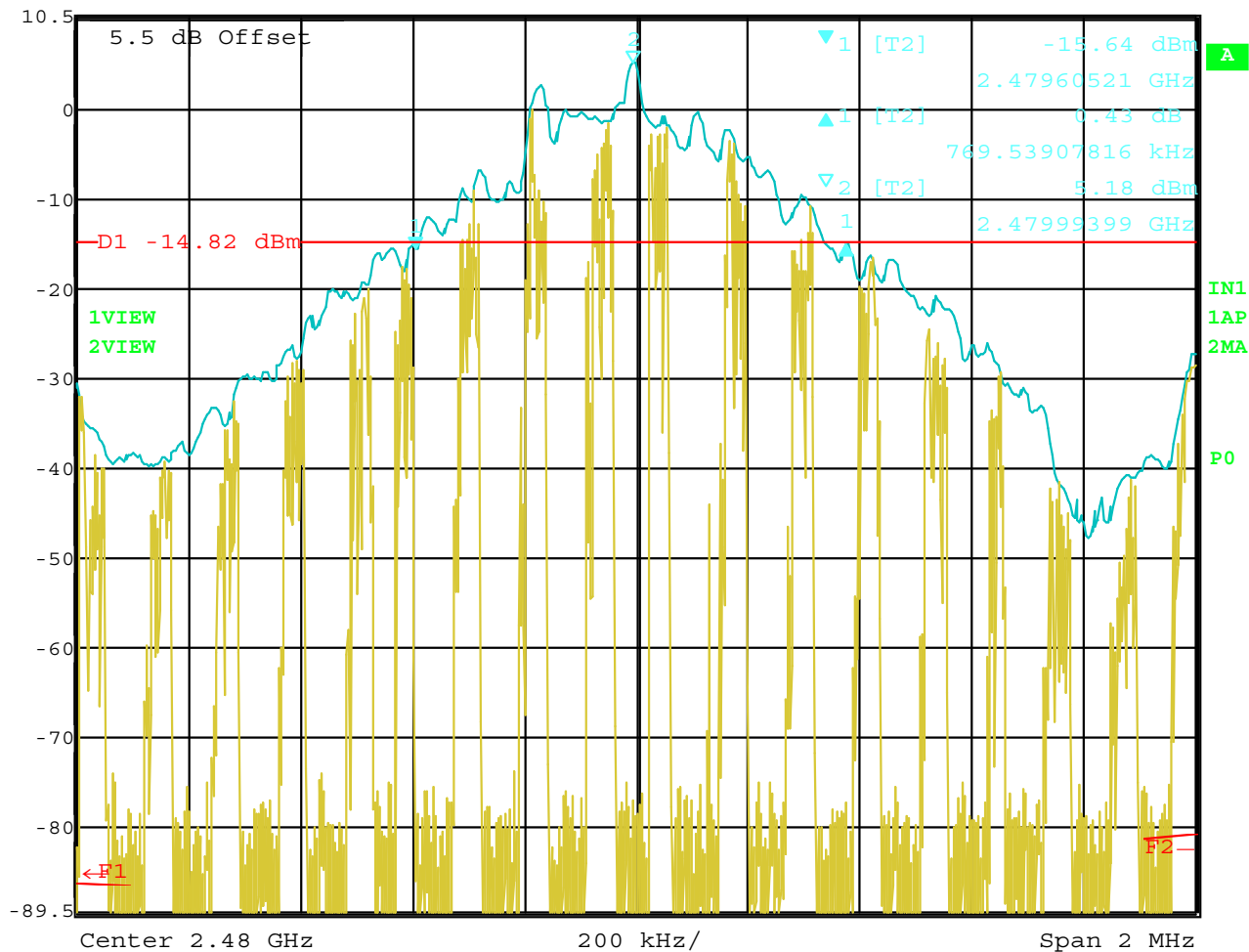


Date: 15.JUL.2009 13:45:14

20 dB Bandwidth of Fundamental – Middle Channel



Delta 1 [T2] RBW 30 kHz RF Att 20 dB
Ref Lvl 0.43 dB VBW 100 kHz
10.5 dBm 769.53907816 kHz SWT 6 ms Unit dBm



Date: 15.JUL.2009 14:41:14

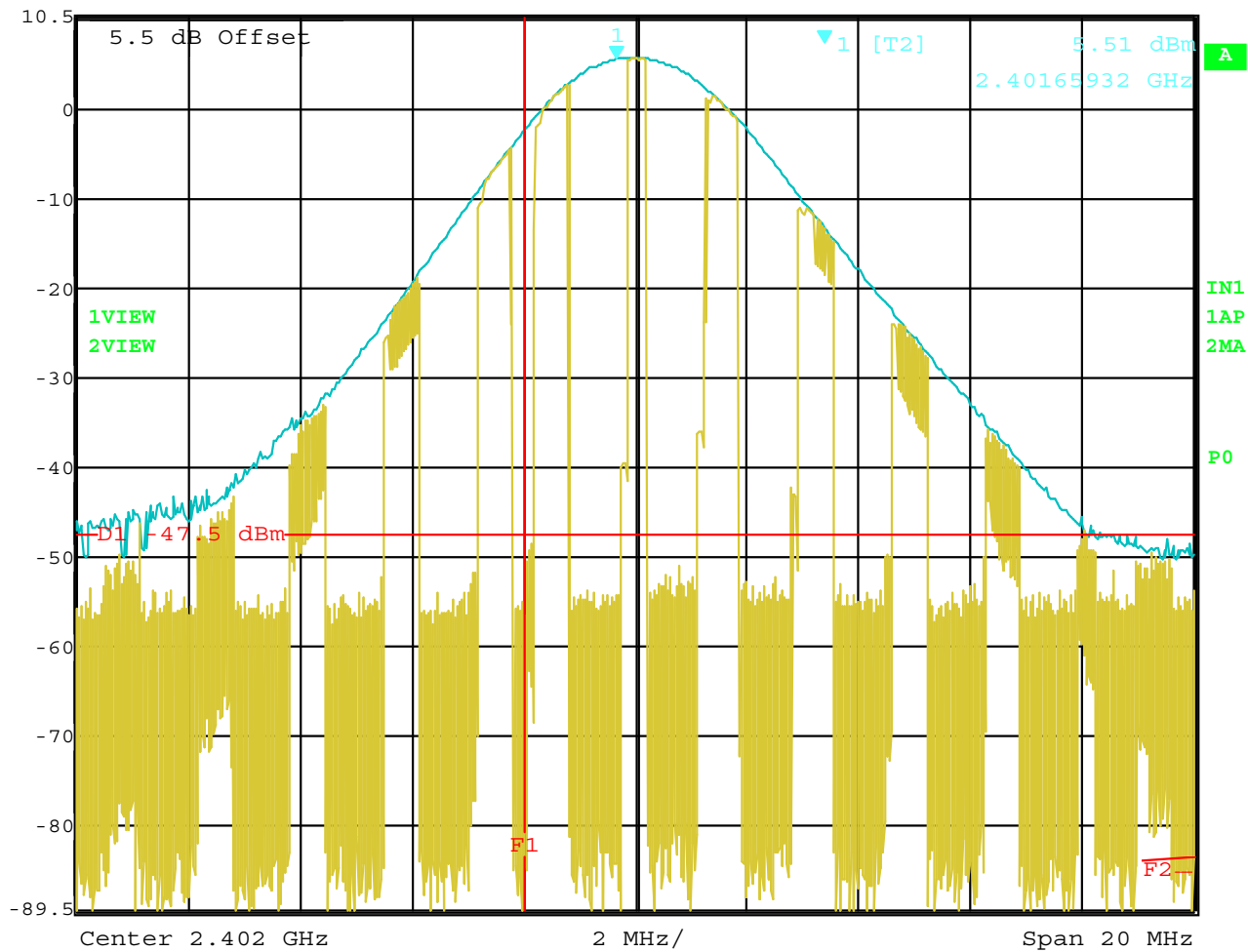
20 dB Bandwidth of Fundamental - High Channel

PEAK POWER OUTPUT

DATA SHEETS



Ref Lvl 10.5 dBm
Marker 1 [T2] 5.51 dBm
2.40165932 GHz
RBW 3 MHz
VBW 10 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm

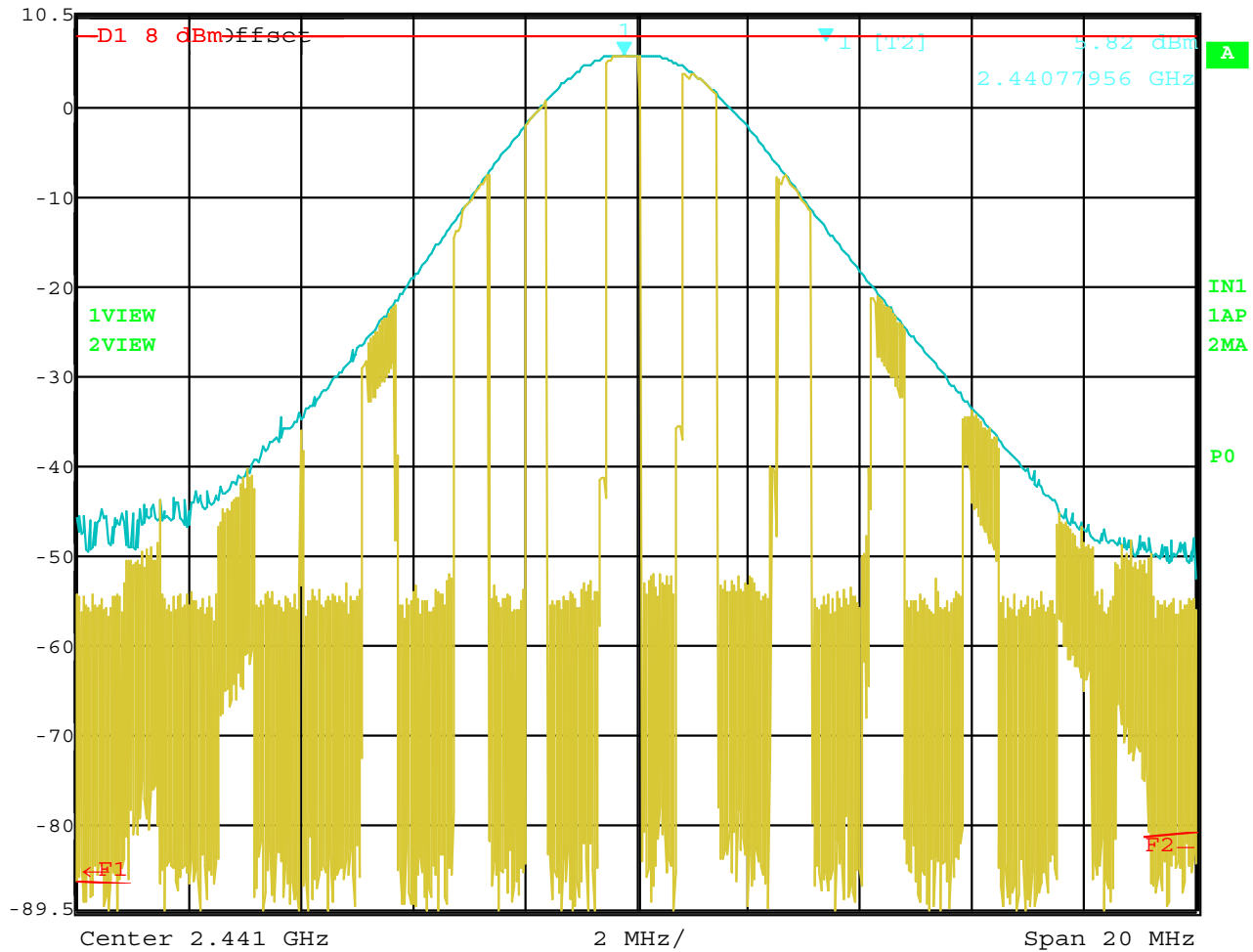


Date: 15.JUL.2009 13:01:10

Peak Power Output - Low Channel



Marker 1 [T2] RBW 3 MHz RF Att 20 dB
Ref Lvl 5.82 dBm VBW 10 MHz
10.5 dBm 2.44077956 GHz SWT 5 ms Unit dBm

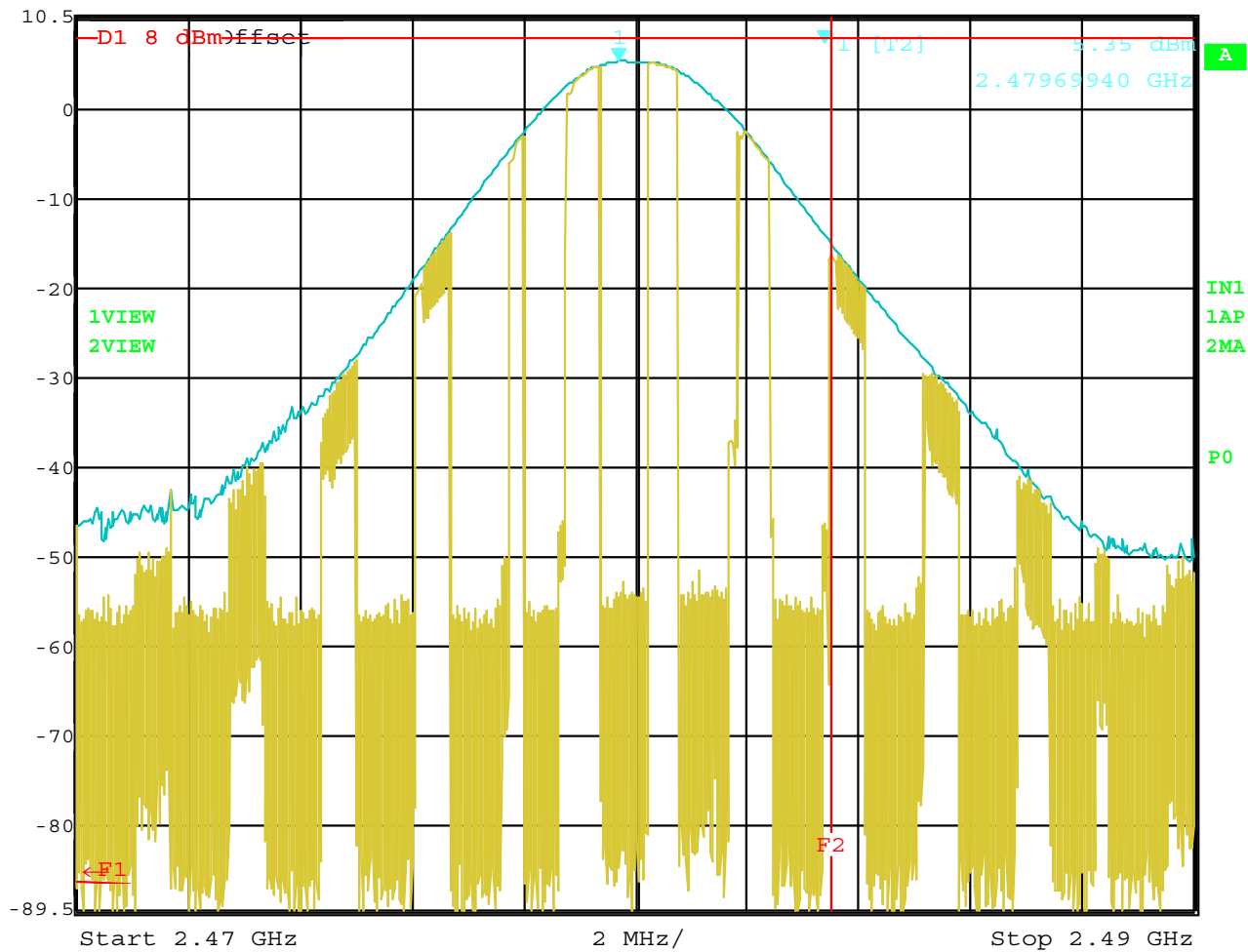


Date: 15.JUL.2009 13:41:29

Peak Power Output -Middle Channel



Ref Lvl	Marker 1 [T2]	RBW	3 MHz	RF Att	20 dB
10.5 dBm	5.35 dBm	VBW	10 MHz		
	2.47969940 GHz	SWT	5 ms	Unit	dBm



Date: 15.JUL.2009 14:37:33

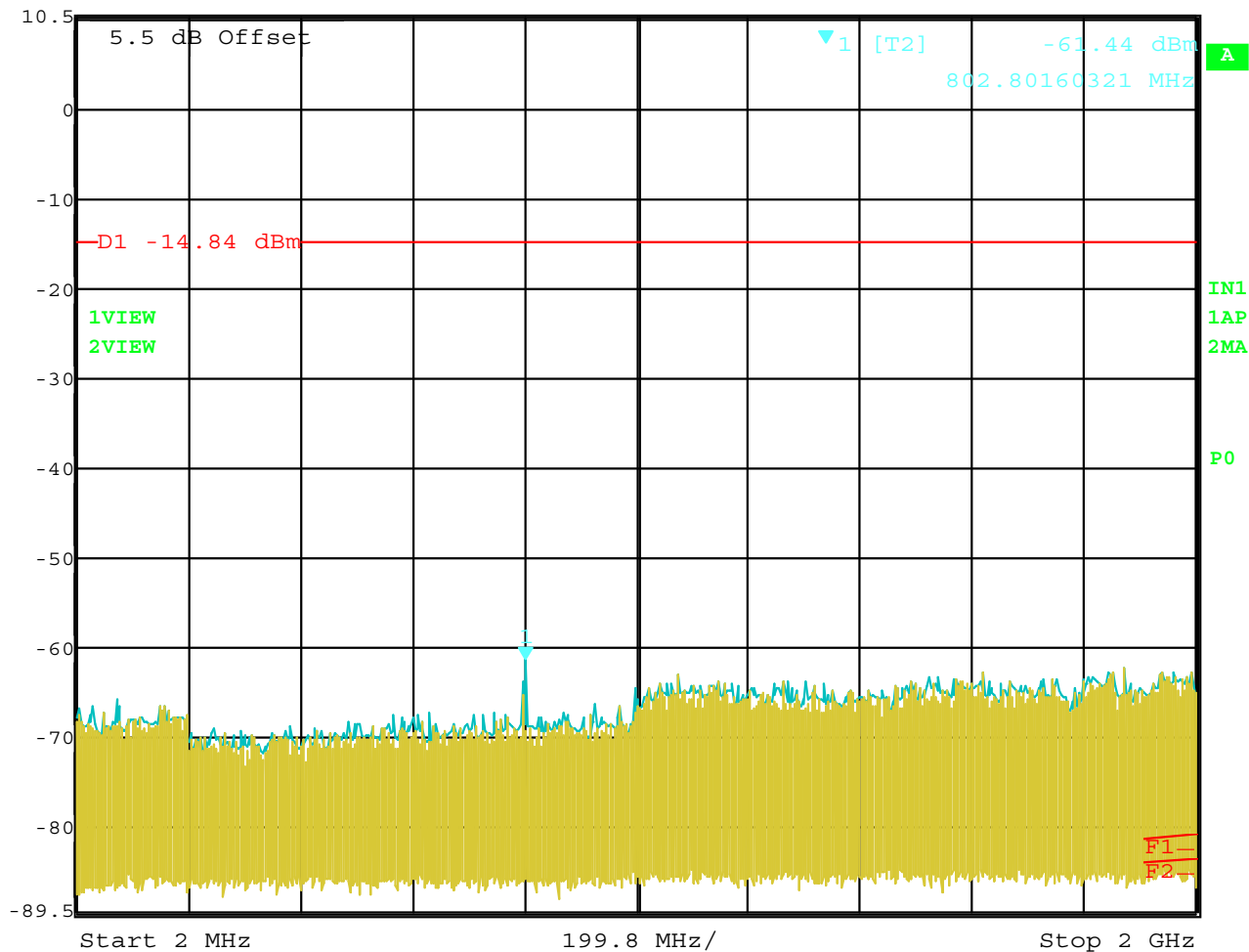
Peak Power Output – High Channel

RF CONDUCTED ANTENNA TEST

DATA SHEETS



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -61.44 dBm VBW 300 kHz
10.5 dBm 802.80160321 MHz SWT 1.15 s Unit dBm

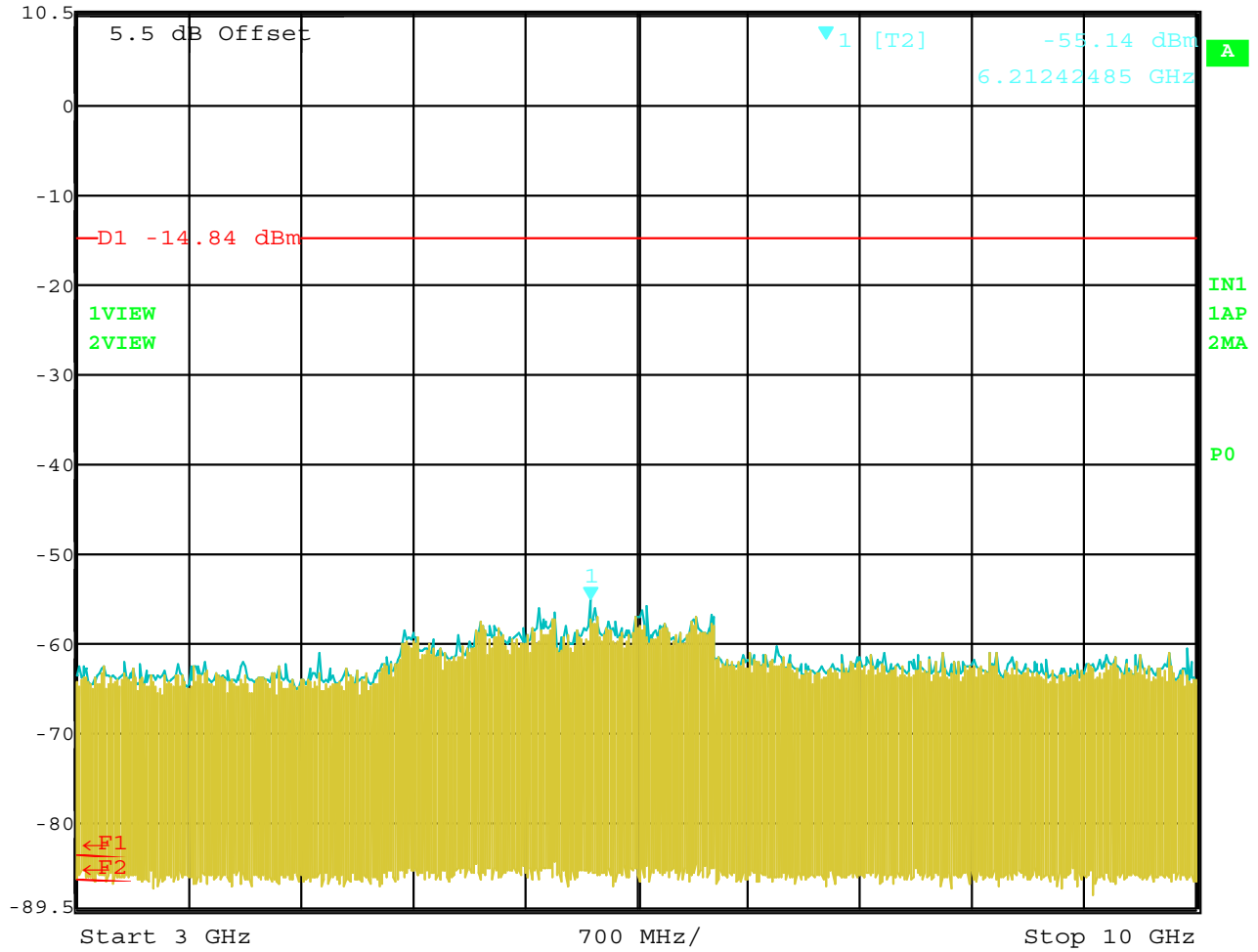


Date: 15.JUL.2009 13:15:44

RF Antenna Conducted Test – Low Channel – 2 MHz to 2 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -55.14 dBm VBW 300 kHz
10.5 dBm 6.21242485 GHz SWT 1.75 s Unit dBm

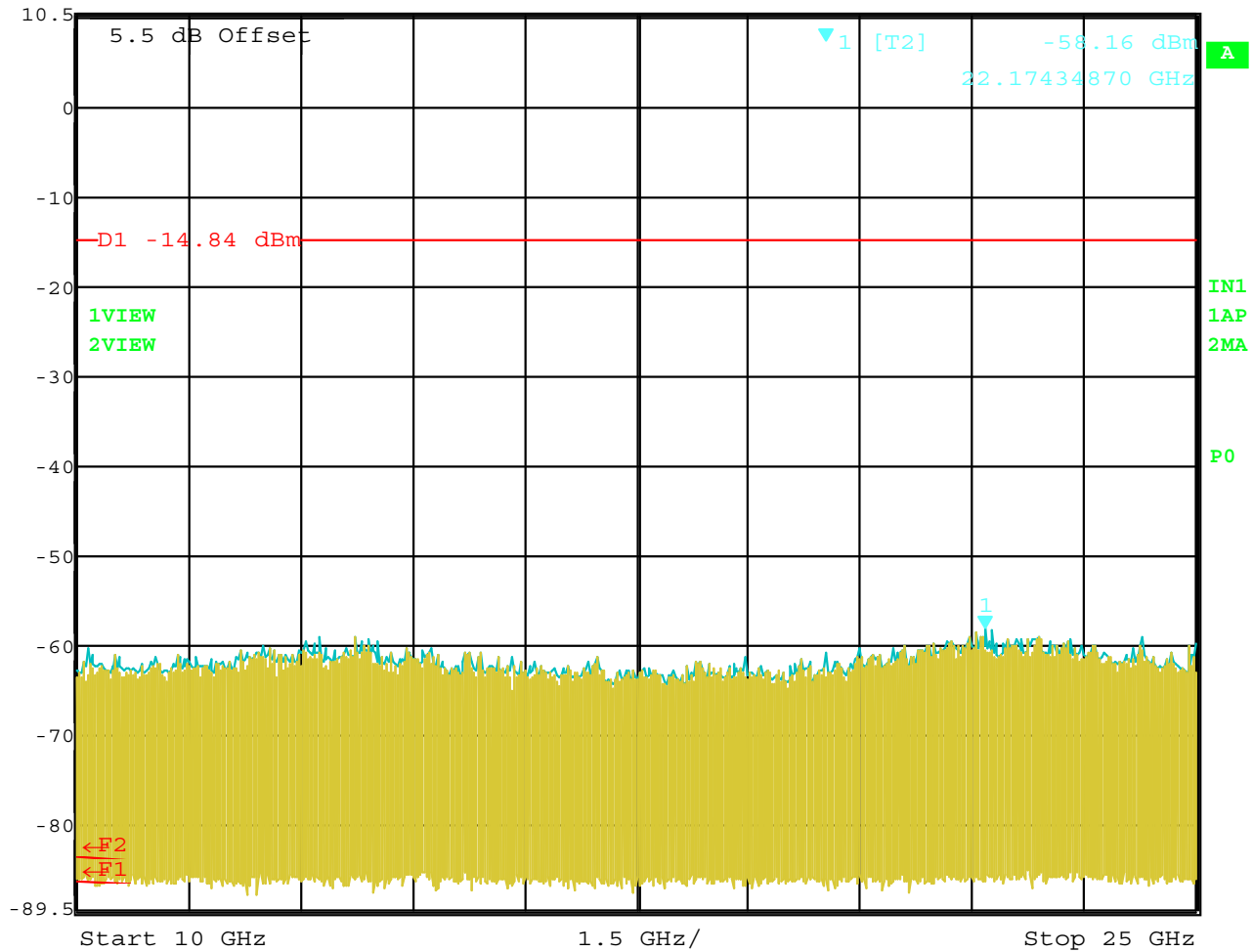


Date: 15.JUL.2009 13:16:12

RF Antenna Conducted Test – Low Channel – 3 GHz to 10 GHz



Ref Lvl 10.5 dBm Marker 1 [T2] RBW 100 kHz RF Att 20 dB
-58.16 dBm VBW 300 kHz
22.17434870 GHz SWT 3.8 s Unit dBm

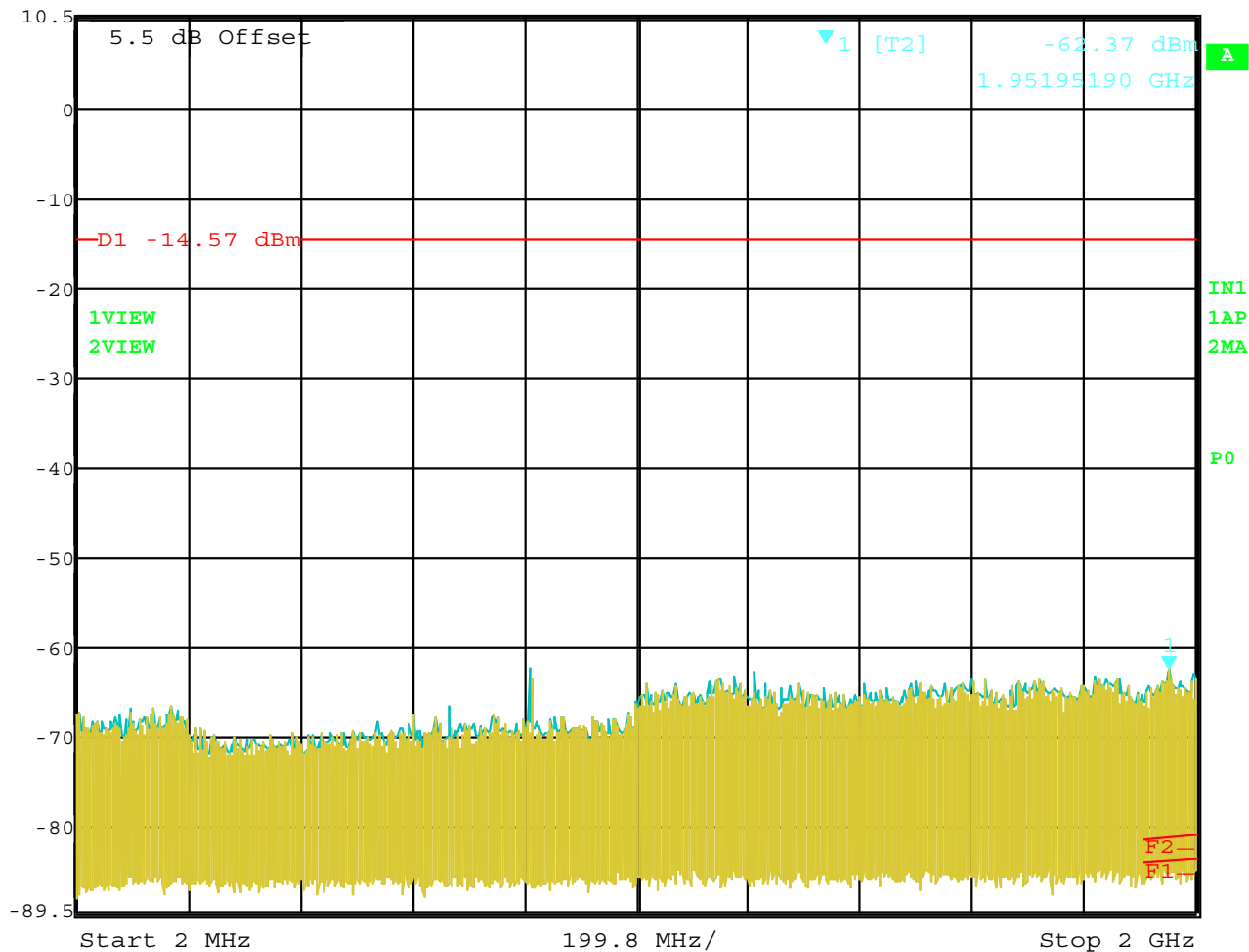


Date: 15.JUL.2009 13:16:48

RF Antenna Conducted Test – Low Channel – 10 GHz to 25 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -62.37 dBm VBW 300 kHz
10.5 dBm 1.95195190 GHz SWT 1.15 s Unit dBm

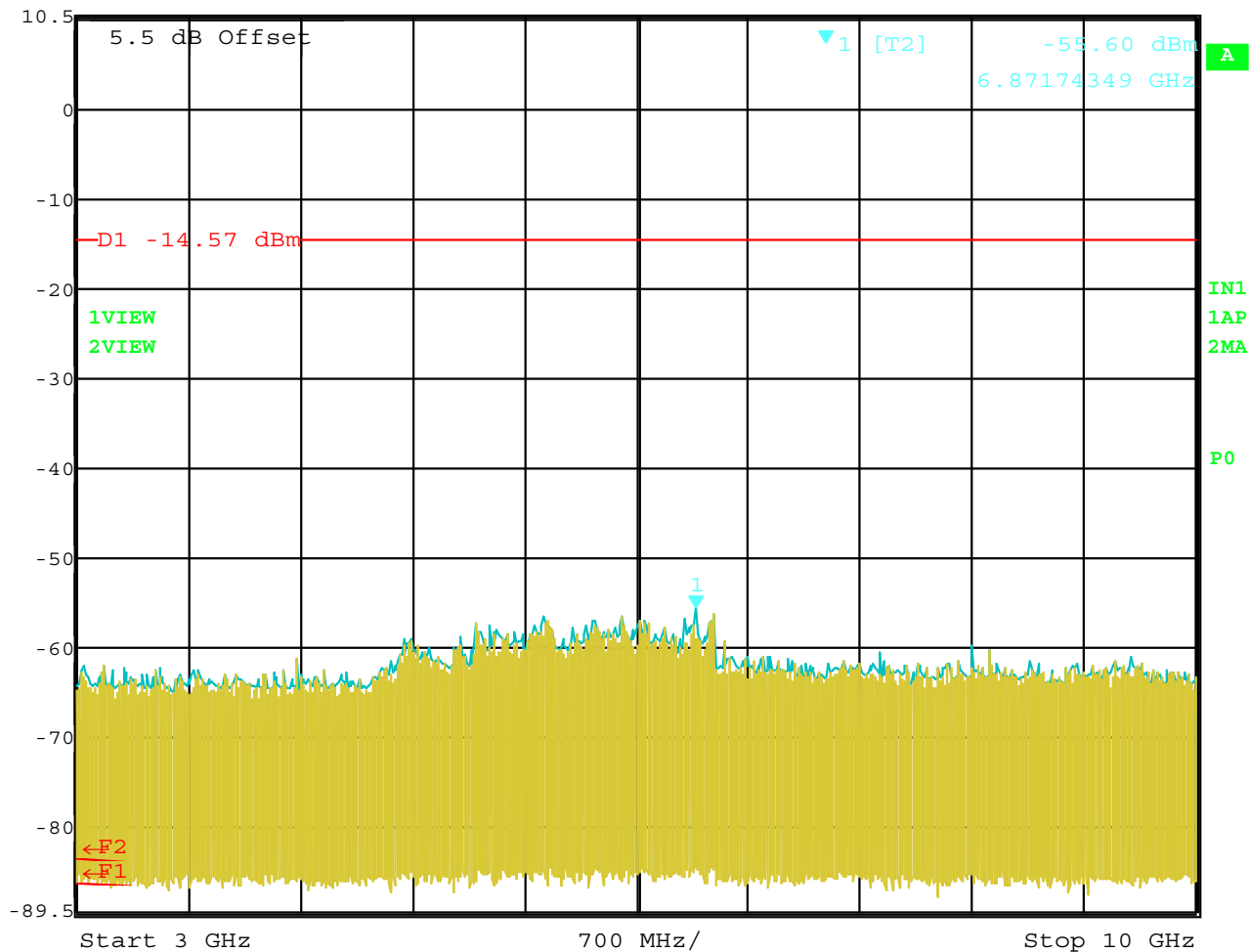


Date: 15.JUL.2009 13:55:26

RF Antenna Conducted Test – Middle Channel – 2 MHz to 2 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -55.60 dBm VBW 300 kHz
10.5 dBm 6.87174349 GHz SWT 1.75 s Unit dBm

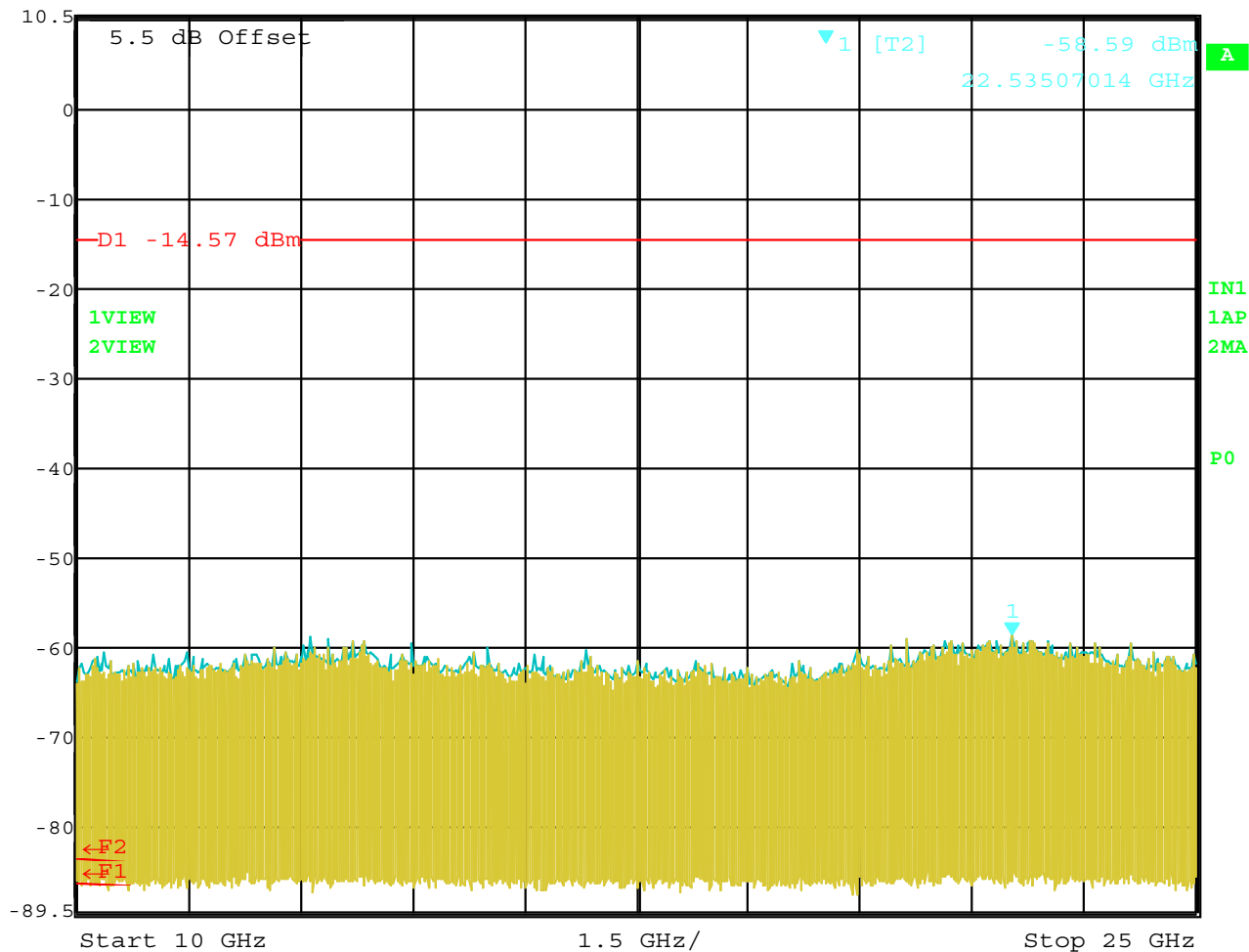


Date: 15.JUL.2009 13:55:52

RF Antenna Conducted Test – Middle Channel – 3 GHz to 10 GHz



Ref Lvl 10.5 dBm
Marker 1 [T2] -58.59 dBm
22.53507014 GHz
RBW 100 kHz
VBW 300 kHz
SWT 3.8 s
RF Att 20 dB
Unit dBm

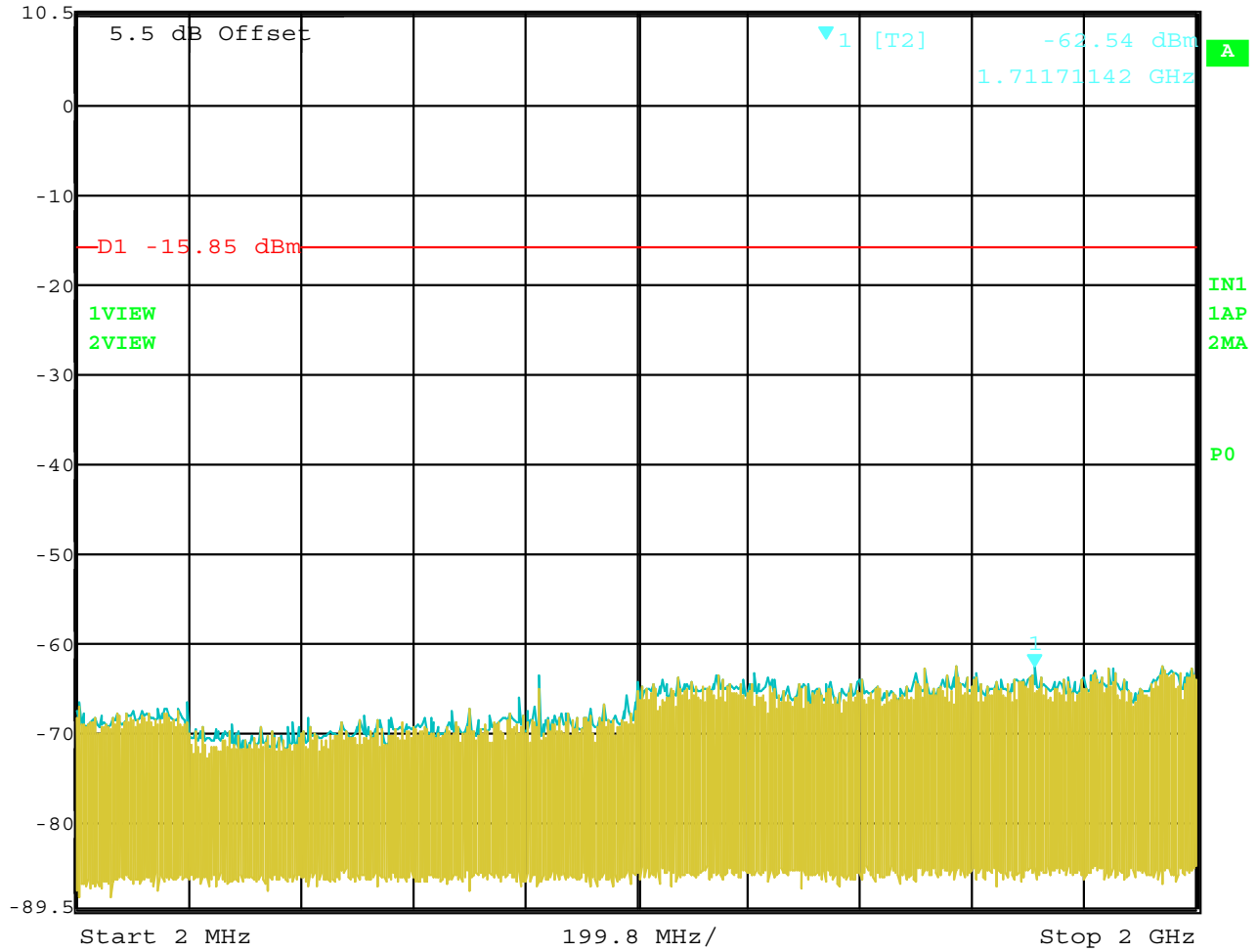


Date: 15.JUL.2009 13:56:23

RF Antenna Conducted Test – Middle Channel – 10 GHz to 25 GHz



Ref Lvl 10.5 dBm
Marker 1 [T2] -62.54 dBm
1.71171142 GHz
RBW 100 kHz RF Att 20 dB
VBW 300 kHz
SWT 1.15 s Unit dBm

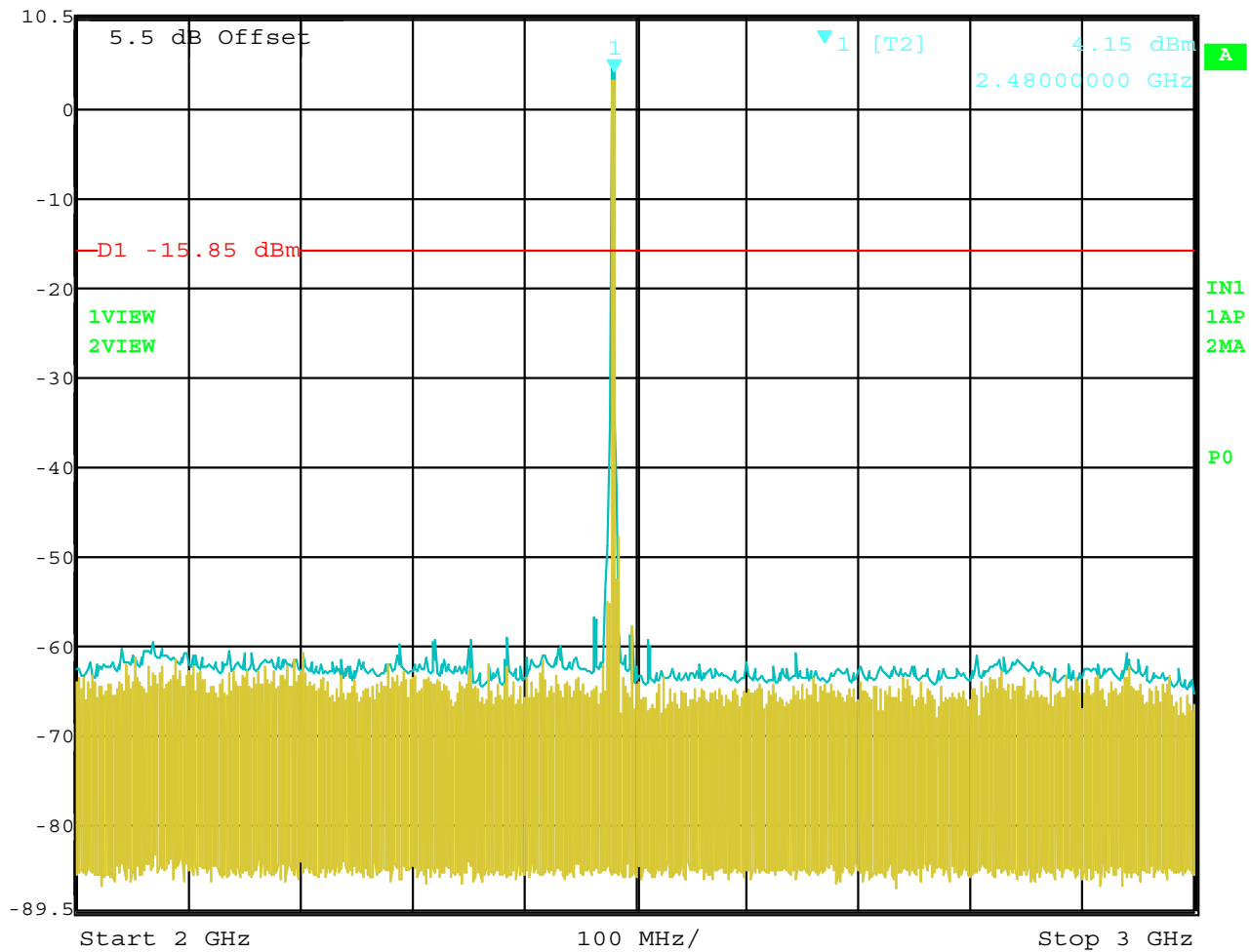


Date: 15.JUL.2009 14:54:31

RF Antenna Conducted Test – High Channel – 2 MHz to 2 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl 4.15 dBm VBW 300 kHz
10.5 dBm 2.48000000 GHz SWT 250 ms Unit dBm

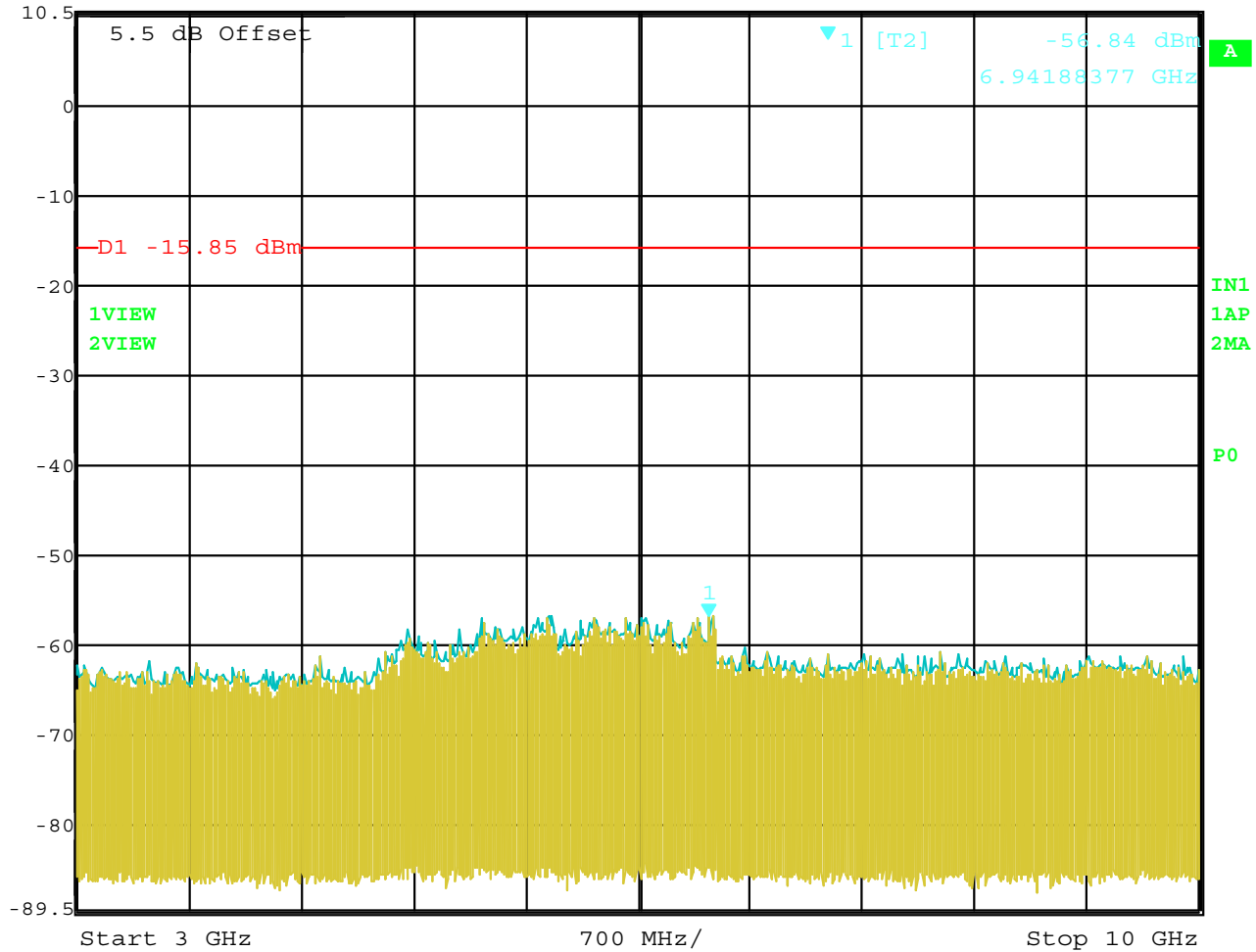


Date: 15.JUL.2009 14:52:44

RF Antenna Conducted Test – High Channel – 2 GHz to 3 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -56.84 dBm VBW 300 kHz
10.5 dBm 6.94188377 GHz SWT 1.75 s Unit dBm

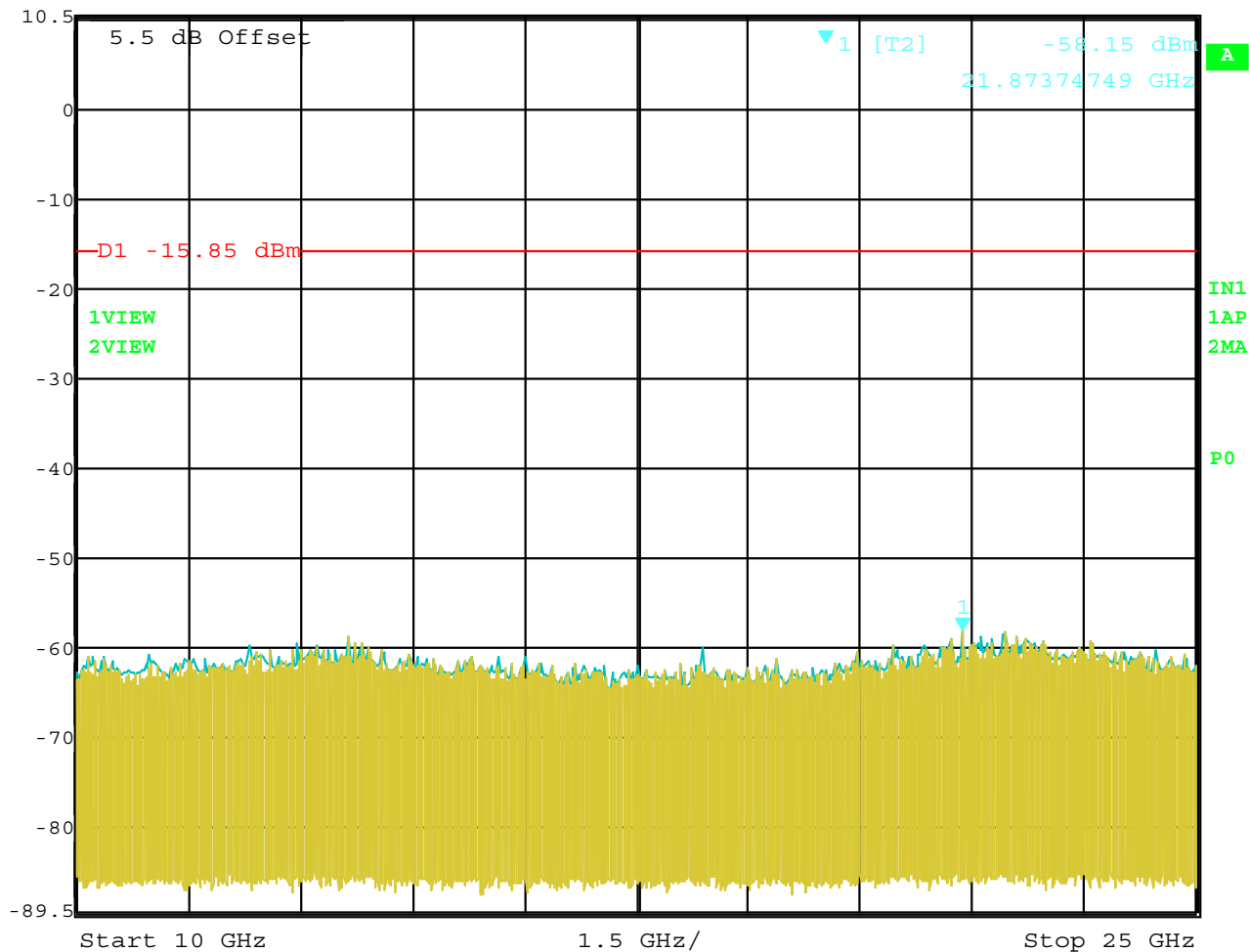


Date: 15.JUL.2009 14:55:01

RF Antenna Conducted Test – High Channel – 3 GHz to 10 GHz



Marker 1 [T2] RBW 100 kHz RF Att 20 dB
Ref Lvl -58.15 dBm VBW 300 kHz
10.5 dBm 21.87374749 GHz SWT 3.8 s Unit dBm



Date: 15.JUL.2009 14:55:40

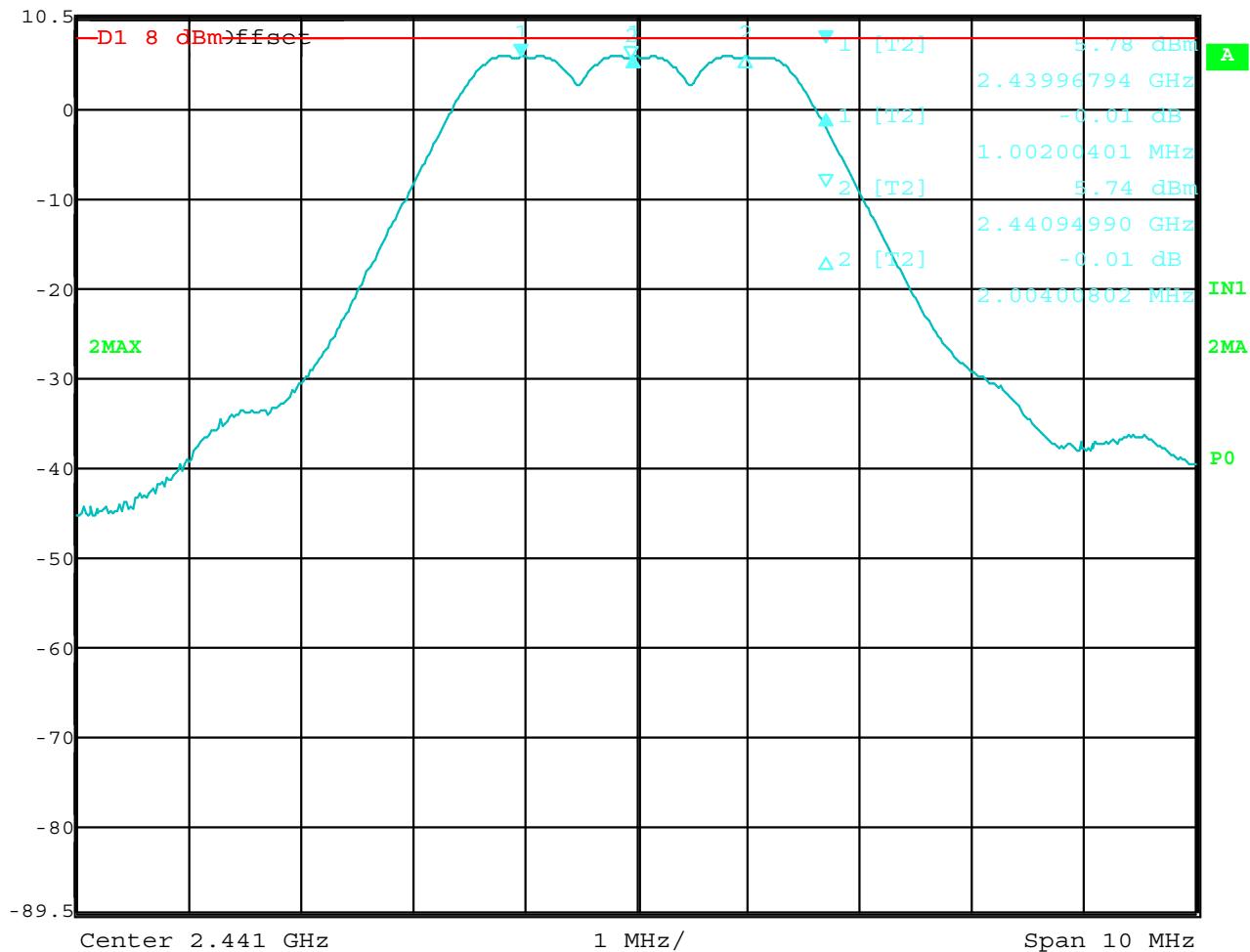
RF Antenna Conducted Test – High Channel – 10 GHz to 25 GHz

CHANNEL HOPPING SEPARATION

DATA SHEET



Ref Lvl	Delta 1 [T2]	RBW	1 MHz	RF Att	20 dB
10.5 dBm	-0.01 dB	VBW	1 MHz		
	1.00200401 MHz	SWT	20 ms	Unit	dBm



Date: 15.JUL.2009 15:14:49

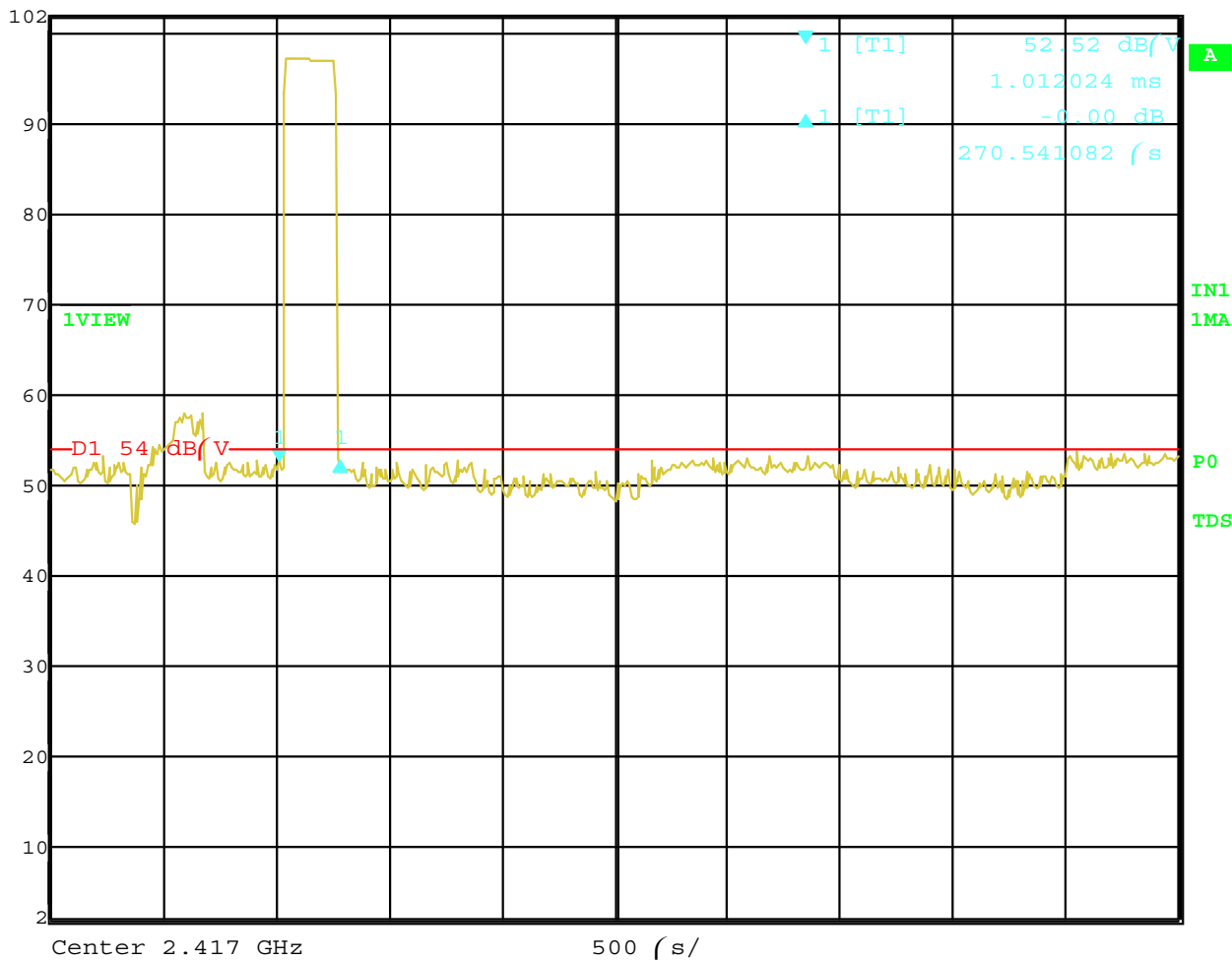
Channel Frequency Separation Test

AVERAGE TIME OF OCCUPANCY

DATA SHEETS



Delta 1 [T1] RBW 1 MHz RF Att 20 dB
Ref Lvl -0.00 dB VBW 1 MHz
102 dB/V 270.541082 (s) SWT 5 ms Unit dB/V

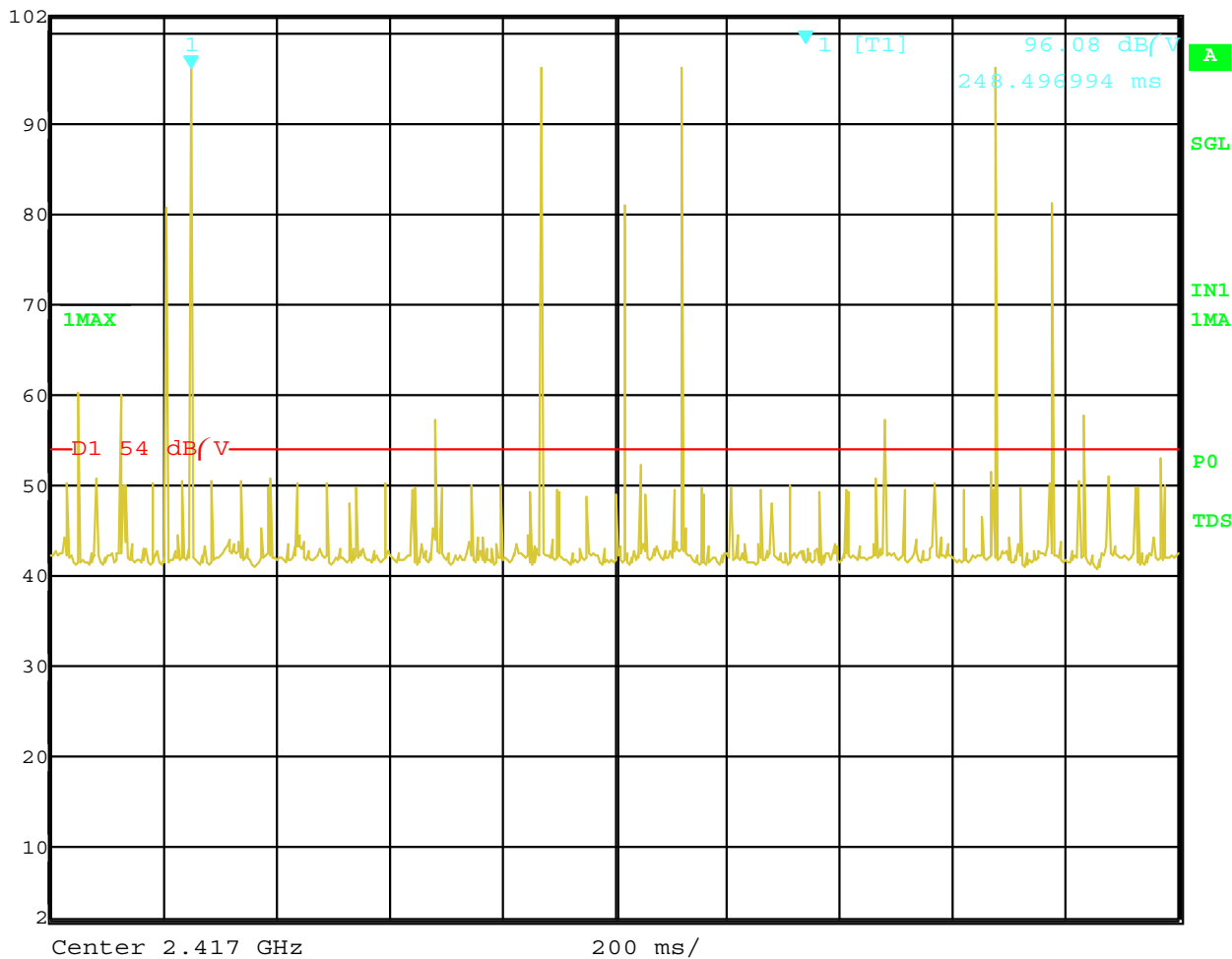


Date: 15.JUL.2009 08:38:08

Time of 1 Pulse = 270.541082 uS



Ref Lvl 102 dB/V
Marker 1 [T1] 96.08 dB/V
248.496994 ms
RBW 1 MHz
VBW 1 MHz
SWT 2 s
RF Att 20 dB
Unit dB/V



Date: 15.JUL.2009 08:47:08

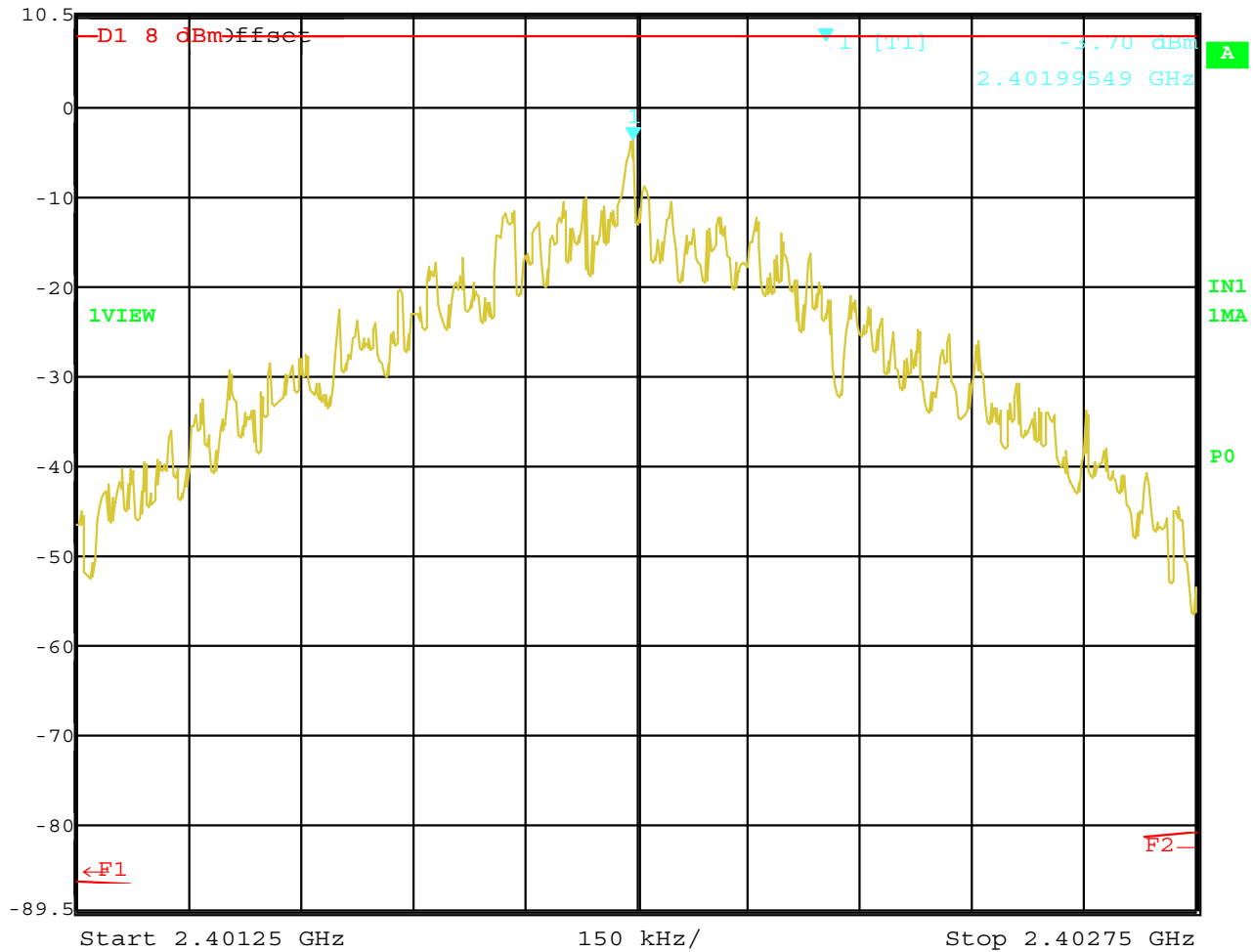
Number of Pulses in 2 Seconds = 7
Number of Pulses in 31.6 Seconds = $10 \times 15.8 = 110.6$ Pulses in a 31.6 Second Period
Time of Occupancy = $110.6 \times 270.541082 \text{ uS} = 29.92 \text{ mS}$ per 31.6 Second Period
Limit = 400 mS per 31.6 Second Period (79 Channel * 400 mS)

SPECTRAL DENSITY OUTPUT

DATA SHEETS



Ref Lvl 10.5 dBm
Marker 1 [T1] 2.40199549 GHz
RBW 3 kHz
VBW 10 kHz
RF Att 20 dB
SWT 500 s
Unit dBm

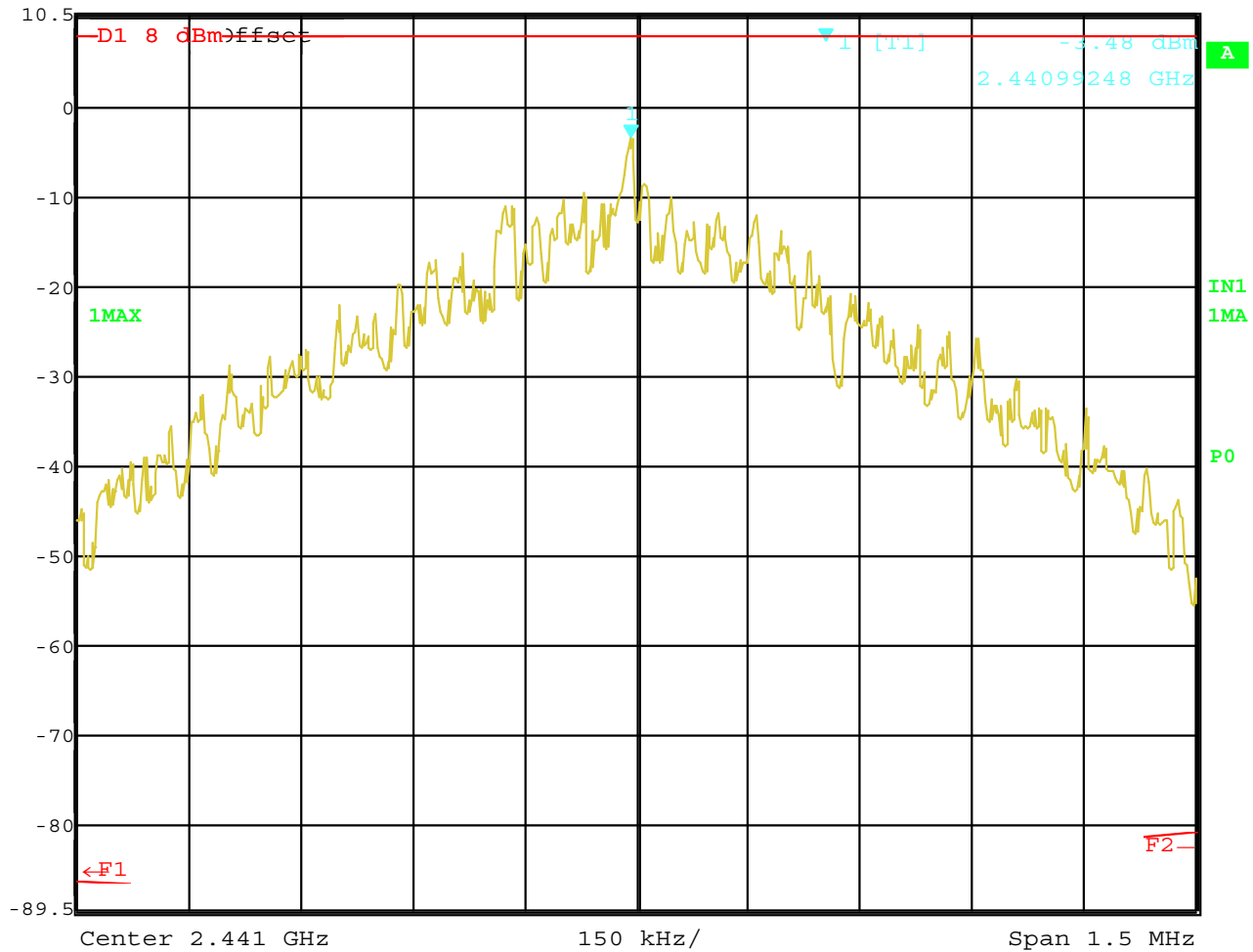


Date: 15.JUL.2009 13:33:14

Spectral Density Output – Low Channel



Ref Lvl 10.5 dBm
Marker 1 [T1] -3.48 dBm
2.44099248 GHz
RBW 3 kHz
VBW 10 kHz
SWT 500 s
RF Att 20 dB
Unit dBm

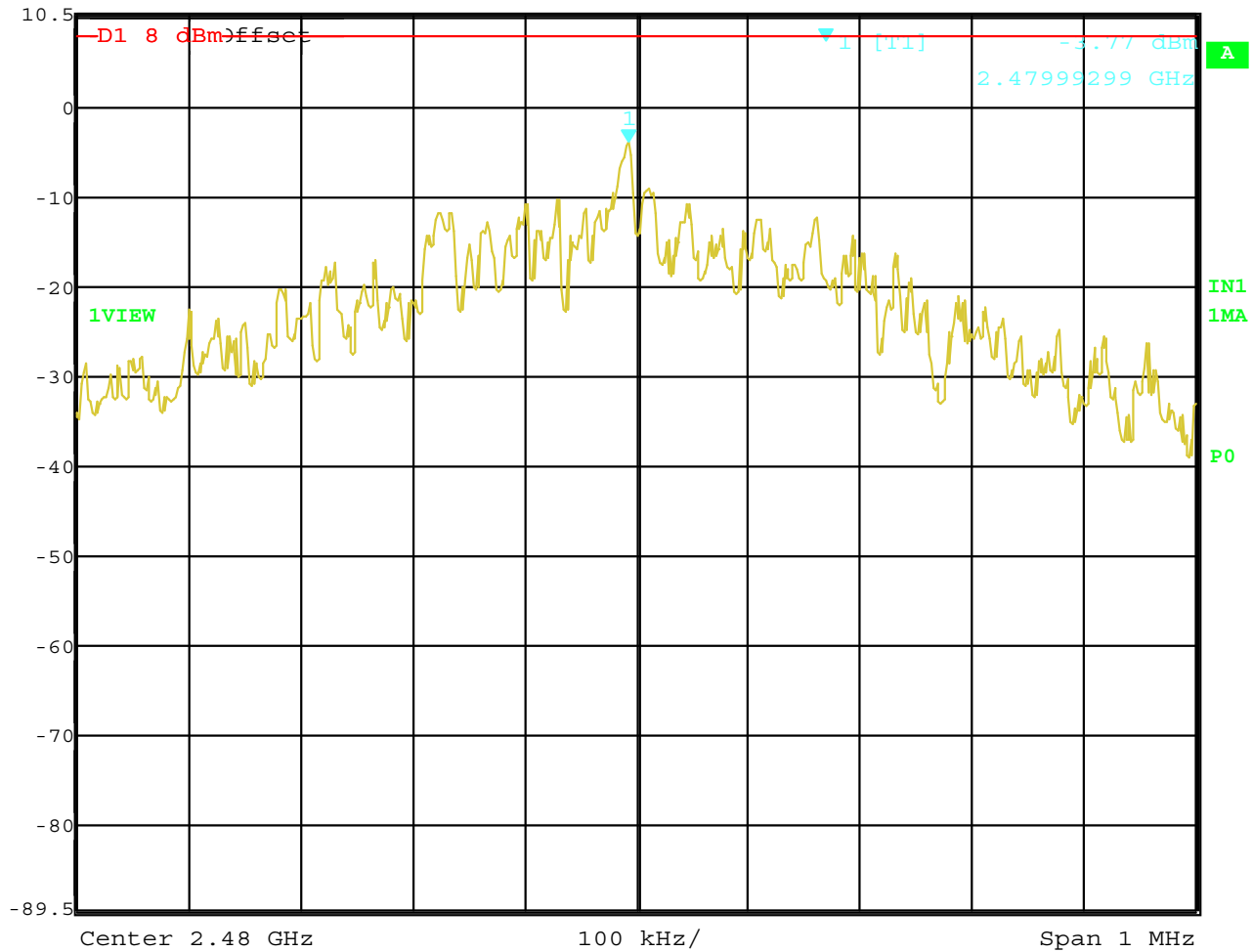


Date: 15.JUL.2009 14:25:17

Spectral Density Output – Middle Channel



Ref Lvl	Marker 1 [T1]	RBW	3 kHz	RF Att	20 dB
10.5 dBm	-3.77 dBm	VBW	10 kHz		
	2.47999299 GHz	SWT	500 s	Unit	dBm



Date: 15.JUL.2009 15:09:29

Spectral Density Output – High Channel

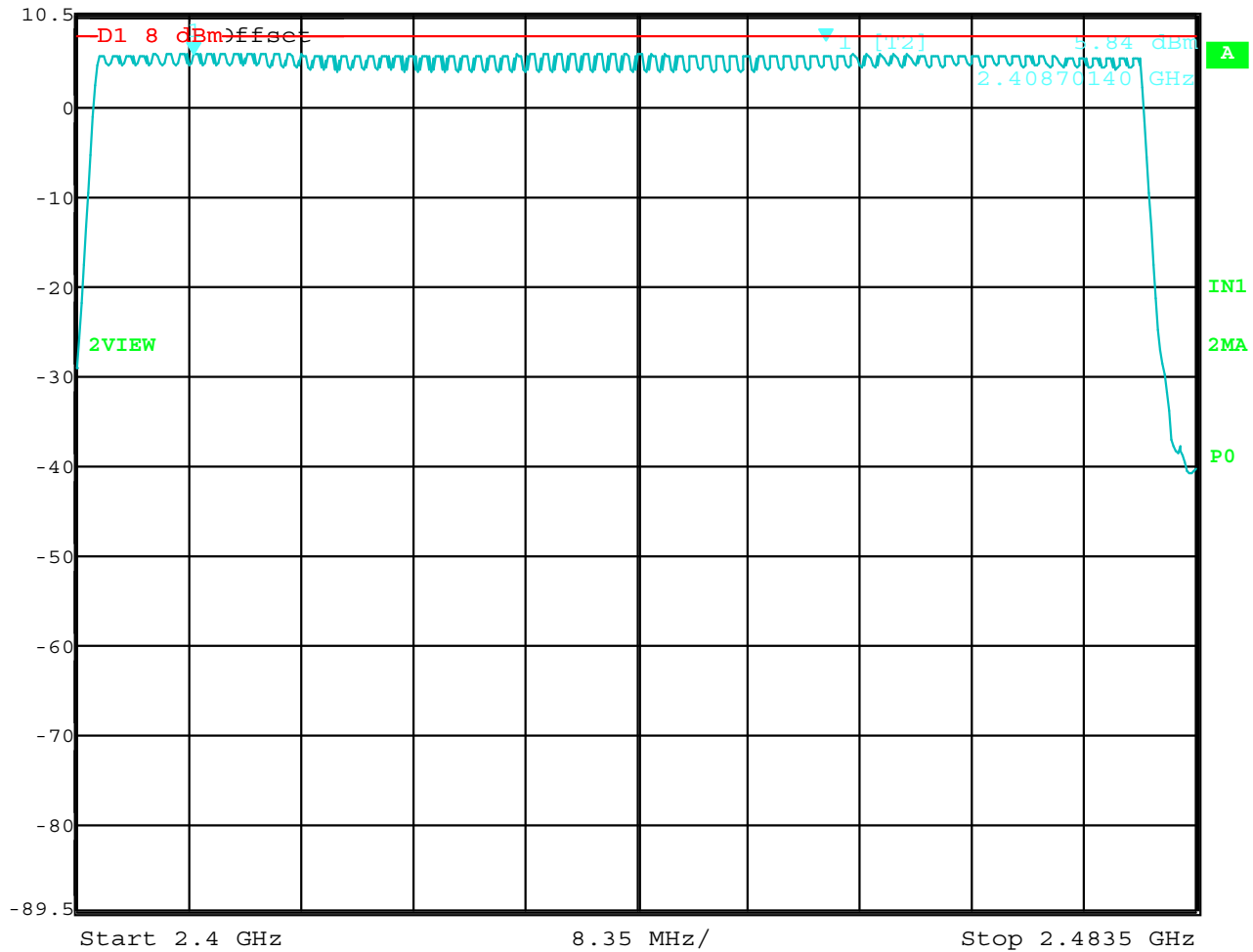


NUMBER OF HOPPING FREQUENCIES

DATA SHEET

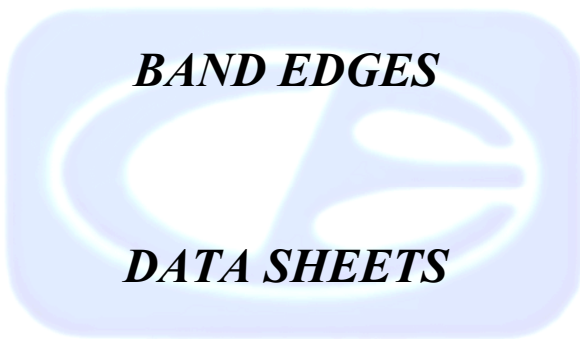


Marker 1 [T2] RBW 1 MHz RF Att 20 dB
Ref Lvl 5.84 dBm VBW 1 MHz
10.5 dBm 2.40870140 GHz SWT 20 ms Unit dBm



Date: 15.JUL.2009 15:36:31

Number of Frequencies (79 Total)



BAND EDGES

DATA SHEETS

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

Tested By: Kyle Fujimoto

Band Edges (Worst Case)

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2402	102.62	V	--	--	Peak	1.35	150	Fundamental of Low Channel
2402	82.62	V	--	--	Avg	1.35	150	Y-Axis @ 3 Meters
2386.09	46.57	V	54	-7.43	Peak	1.35	150	No Marker Delta Method
								Method Used
2402	92.53	H	--	--	Peak	1.35	150	Fundamental of Low Channel
2402	72.53	H	--	--	Avg	1.35	150	Y-Axis @ 3 Meters
2385.95	43.14	H	54	-10.86	Peak	1.35	150	No Marker Delta Method
								Method Used

FCC 15.247

WirelessWERX, Inc.

SiteWERX Base Station - Wireless Version

Model: SBS03-W

Date: 07/15/09

Lab: B

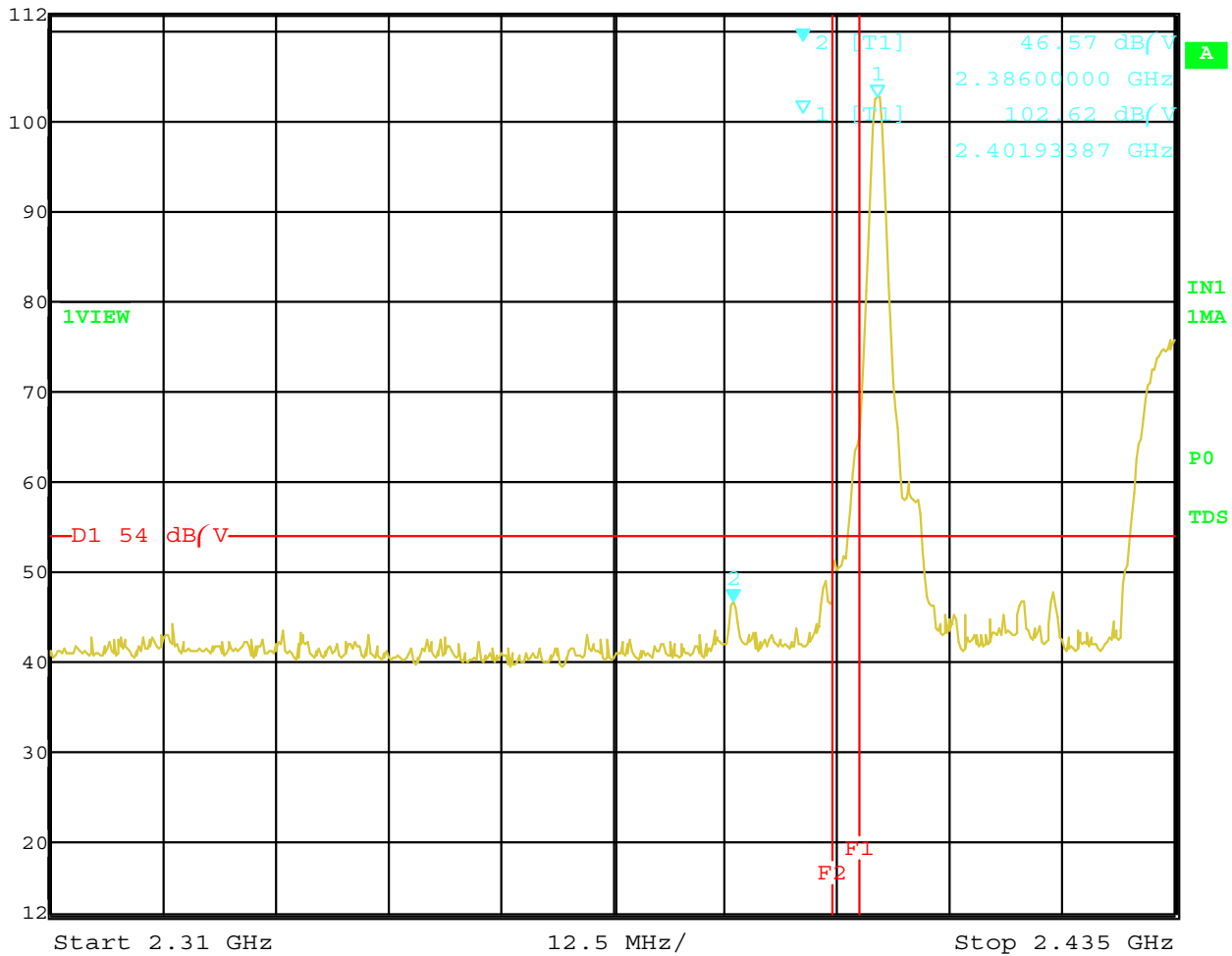
Tested By: Kyle Fujimoto

Band Edges (Worst Case)

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2480	102.12	V	--	--	Peak	1.05	135	Fundamental of Low Channel
2480	80.12	V	--	--	Avg	1.05	135	Y-Axis @ 3 Meters
2483.5	59.45	V	54	5.45	Peak	1.05	135	No Marker Delta Method
2484.27	50.21	V	54	-3.79	Avg	1.05	135	Method Used
2480	91.21	H	--	--	Peak	1.35	225	Fundamental of Low Channel
2480	71.21	H	--	--	Avg	1.35	225	Y-Axis @ 3 Meters
2483.5	47.14	H	54	-6.86	Peak	1.35	225	No Marker Delta Method
								Method Used



Ref Lvl 112 dB/V
Marker 2 [T1] 46.57 dB/V
2.38600000 GHz
RBW 1 MHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dB/V

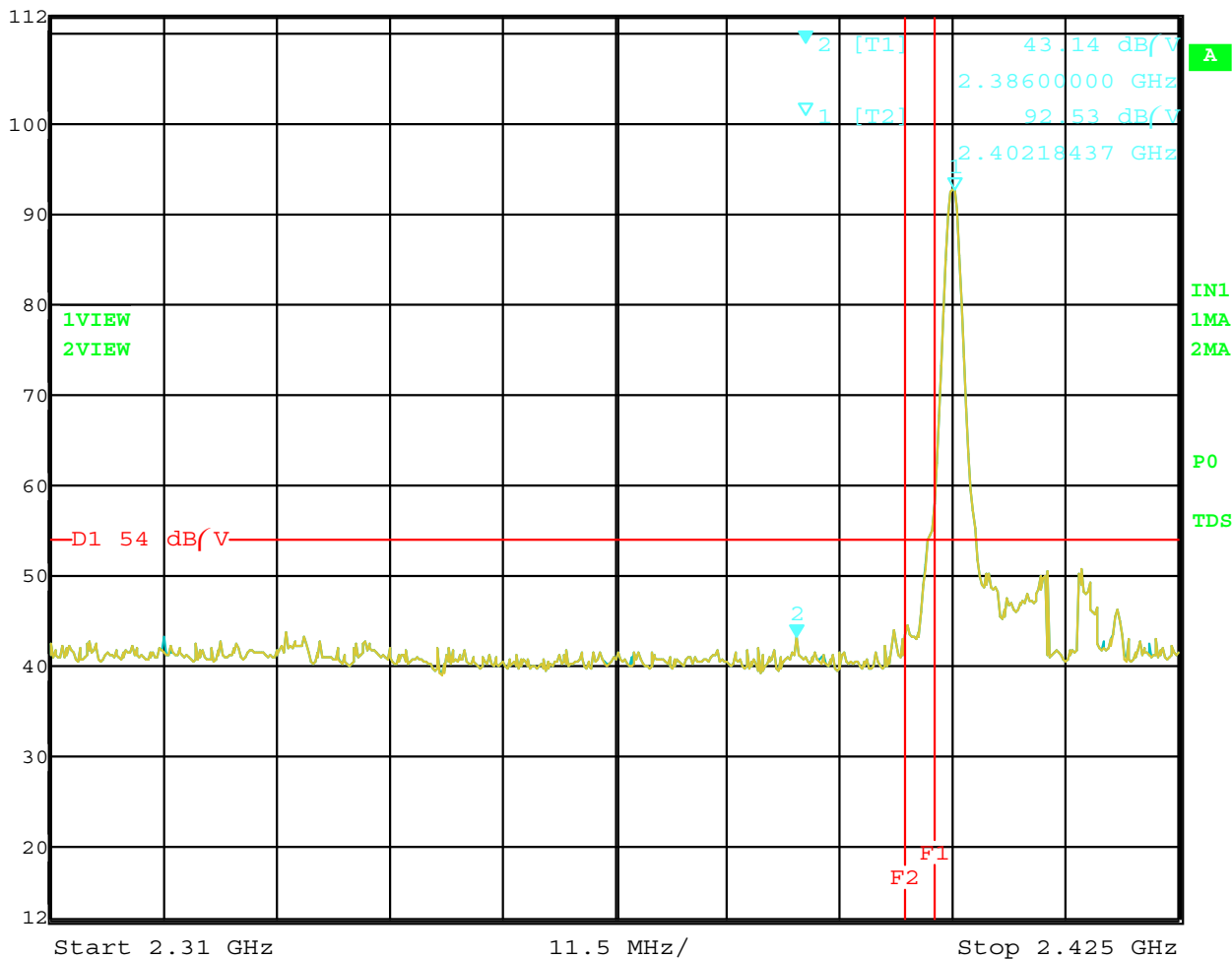


Date: 15.JUL.2009 09:25:44

Band Edge – Low Channel – Vertical Polarization – Y-Axis (Worst Case)



Ref Lvl 112 dB/V
Marker 2 [T1] 43.14 dB/V
2.38600000 GHz
RBW 1 MHz
RF Att 20 dB
VBW 1 MHz
SWT 5 ms
Unit dB/V

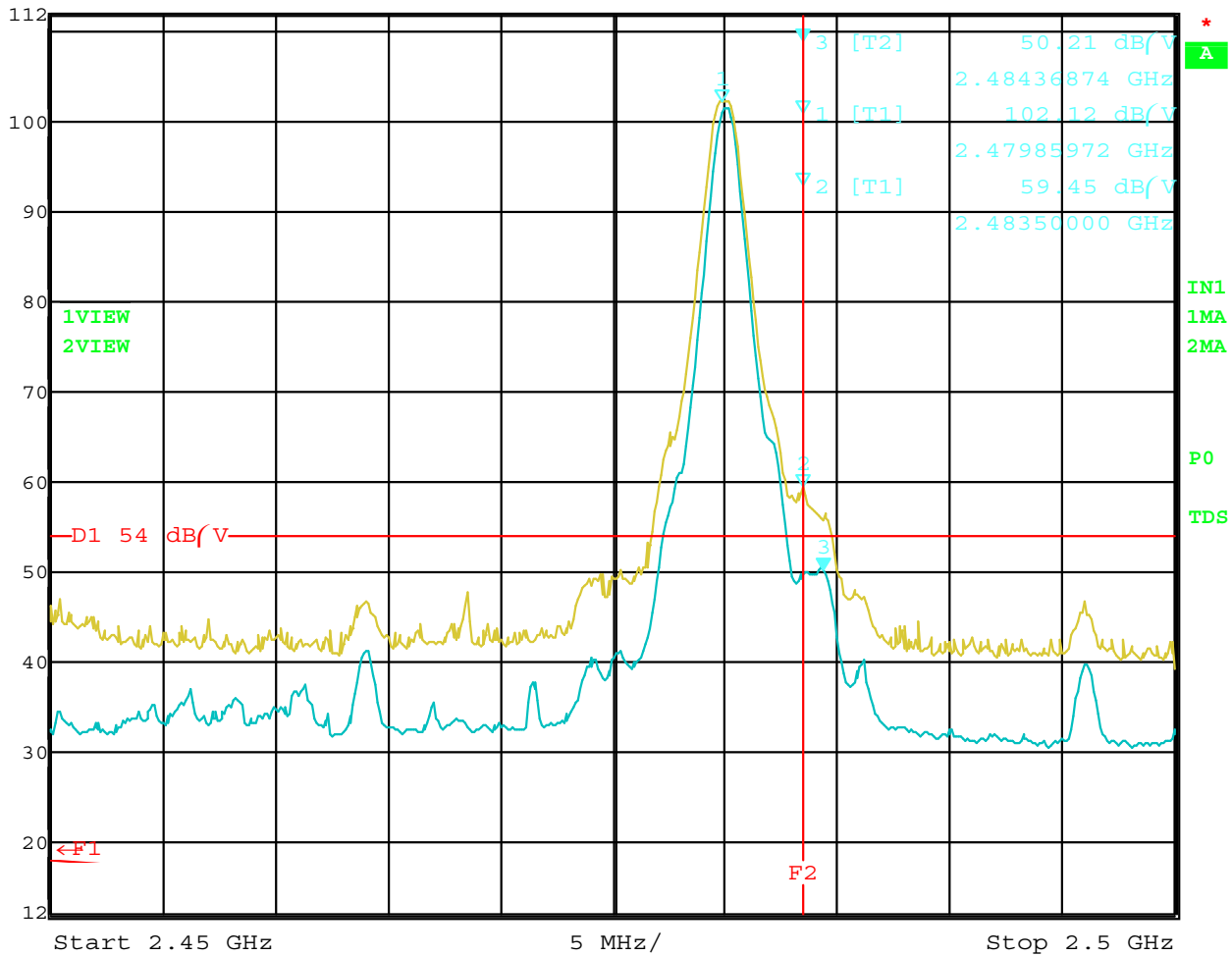


Date: 15.JUL.2009 09:20:07

Band Edge – Low Channel – Horizontal Polarization – Y-Axis (Worst Case)



Ref Lvl 112 dB/V
Marker 3 [T2] 50.21 dB/V
2.48436874 GHz
RBW 1 MHz
VBW 5 kHz
SWT 25 ms
RF Att 20 dB
Unit dB/V

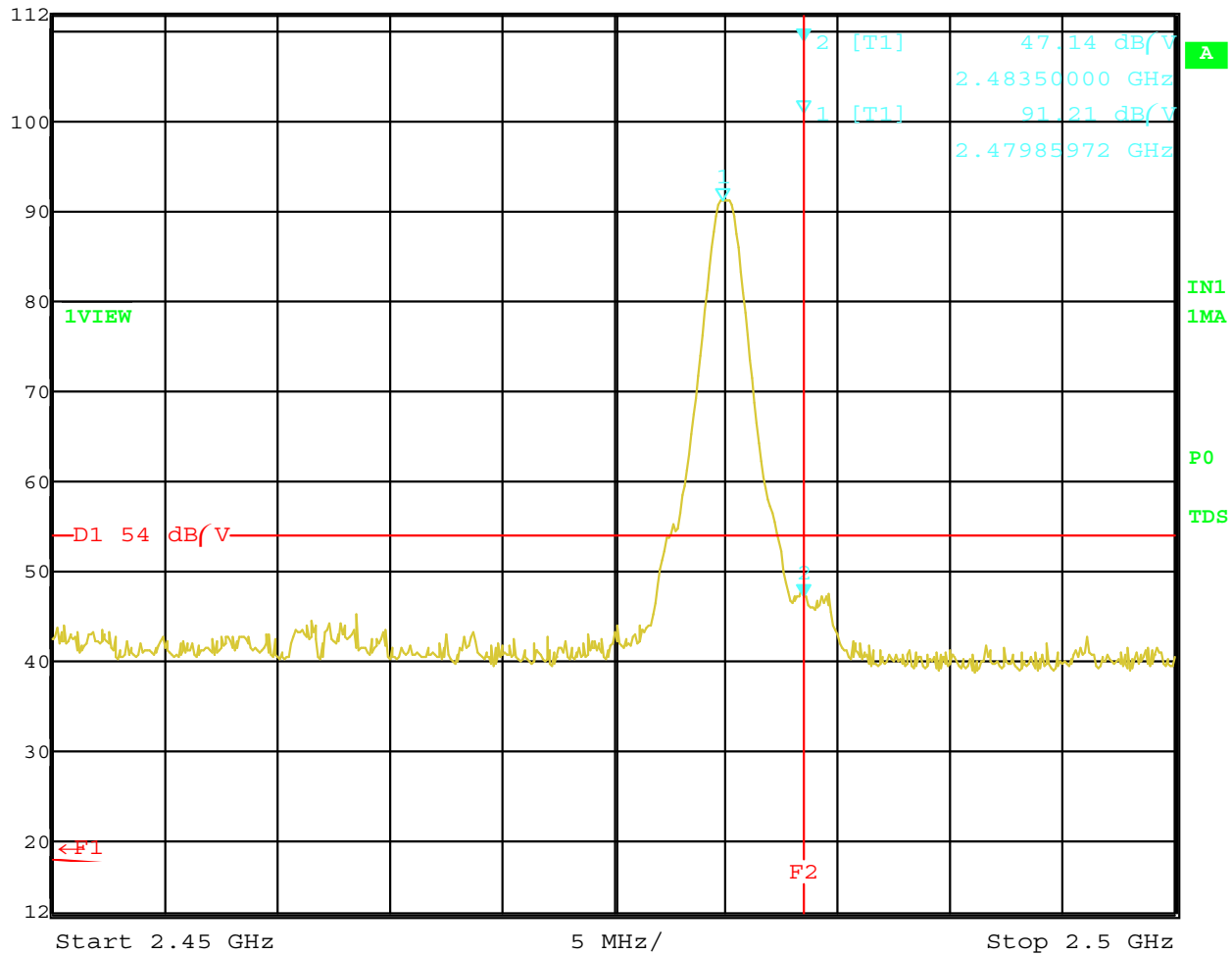


Date: 15.JUL.2009 10:45:08

Band Edge – High Channel – Vertical Polarization – Y-Axis (Worst Case)

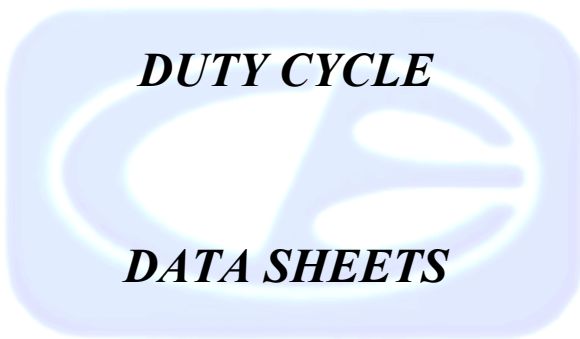


Ref Lvl 112 dB/V
Marker 2 [T1] 47.14 dB/V
2.48350000 GHz
RBW 1 MHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dB/V



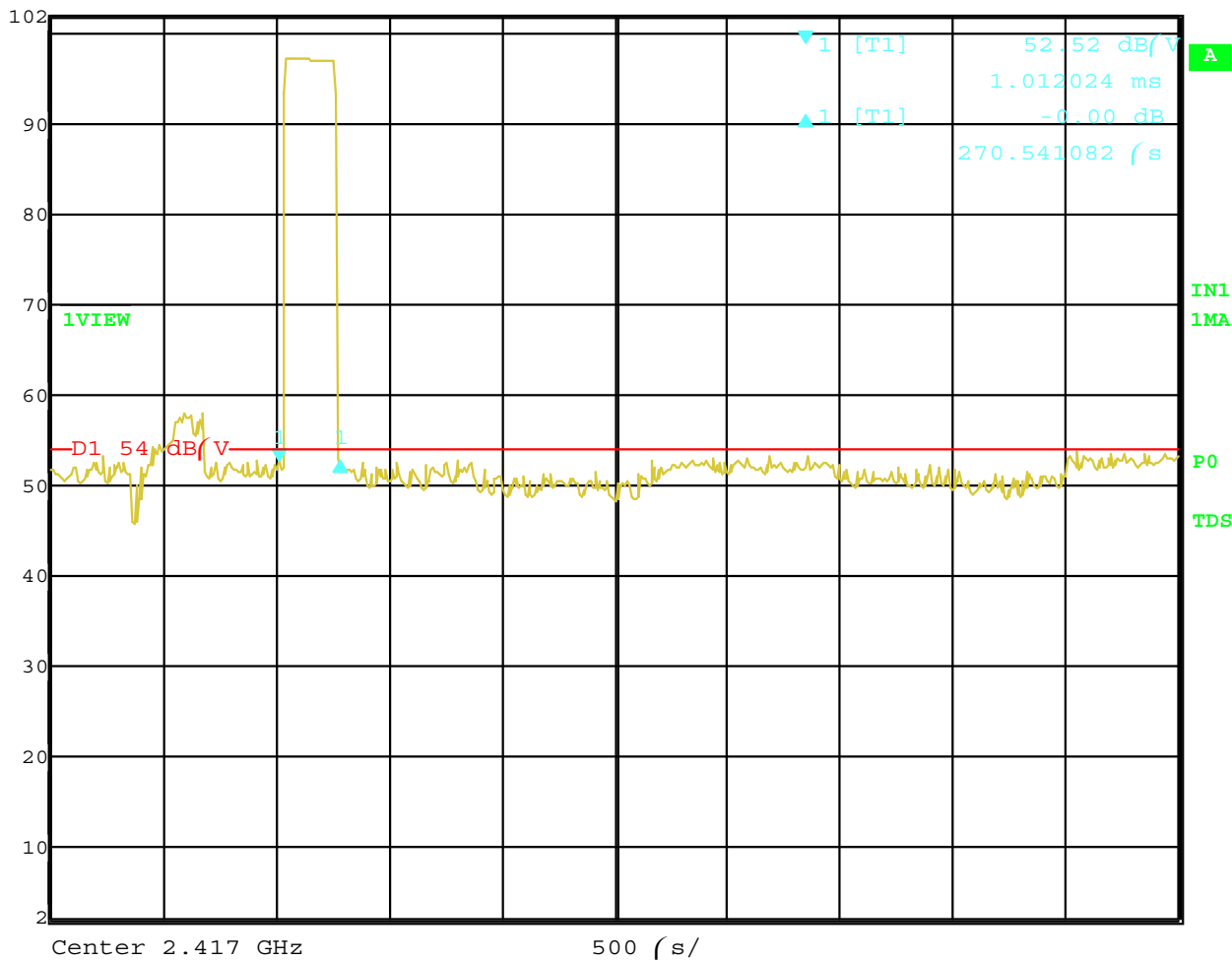
Date: 15.JUL.2009 10:23:12

Band Edge – High Channel – Horizontal Polarization – Y-Axis (Worst Case)


DUTY CYCLE***DATA SHEETS***



Ref Lvl 102 dB/V Delta 1 [T1] 270.541082 (s) RBW 1 MHz RF Att 20 dB
-0.00 dB VBW 1 MHz Unit dB/V
SWT 5 ms

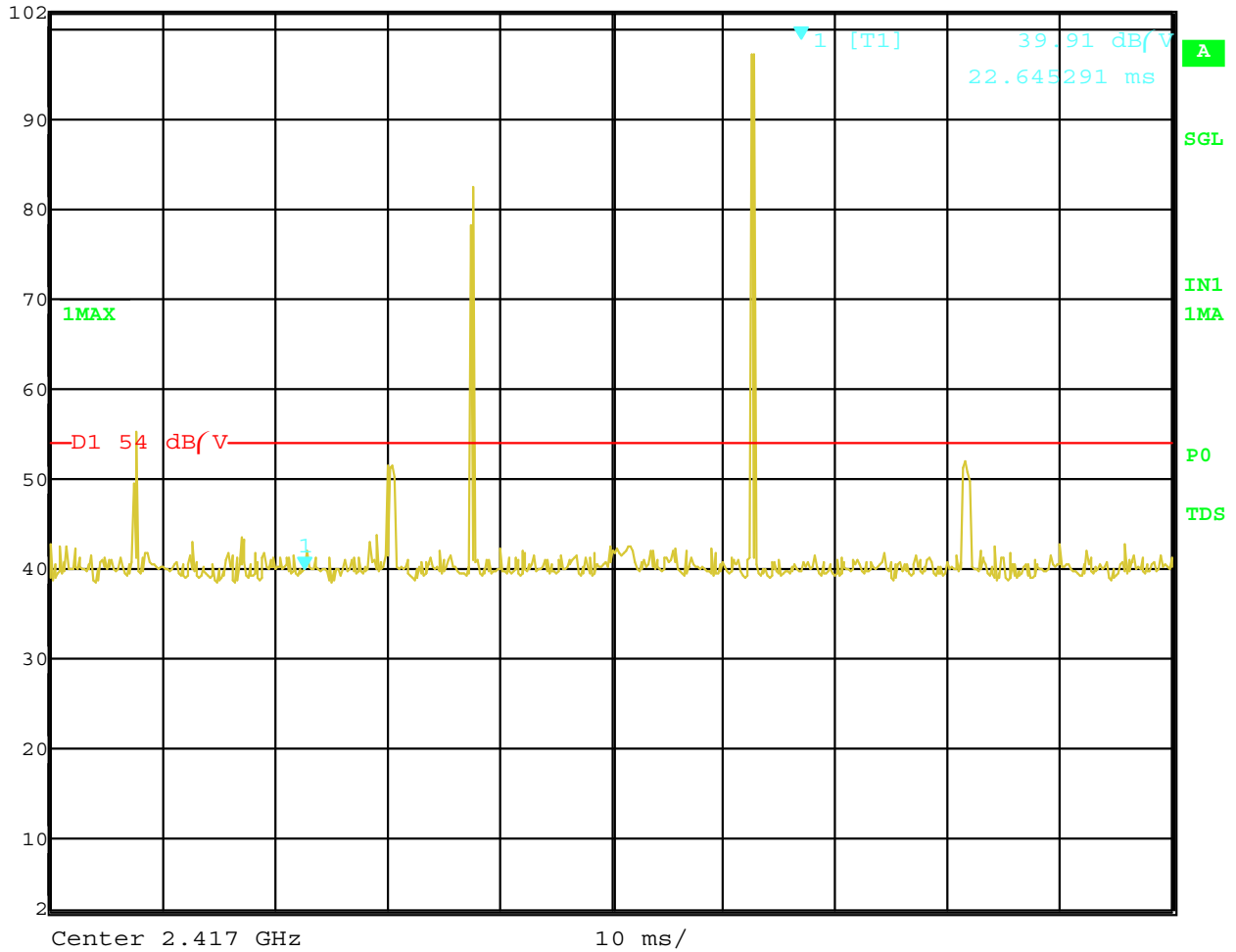


Date: 15.JUL.2009 08:38:08

Time of 1 Pulse = 270.541082 uS



Marker 1 [T1] RBW 1 MHz RF Att 20 dB
Ref Lvl 39.91 dB/V VBW 1 MHz
102 dB/V 22.645291 ms SWT 100 ms Unit dB/V



Date: 15.JUL.2009 08:40:08

Number of Pulses in Worst Case 100 mS = 2
Duty Cycle = $270.541082 \mu\text{S} \times 2 = 541.082164 \mu\text{S}$ per 100 mS = 0.541082164%
The Maximum of 20 dB Peak to Average can be taken since the Duty Cycle is less than 10%