

*FCC PART 15, SUBPART B and C
TEST REPORT*

for

REMOTE CONTROLLED LOCKING WHEEL

MODEL: W-9200

Prepared for

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DATE: OCTOBER 25, 2006

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1	Plot Map And Layout of Test Site

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: Remote Controlled Locking Wheel
Model: W-9200
S/N: 173

Product Description: See Expository Statement.

Modifications: The EUT was not modified during the testing.

Manufacturer: Gatekeeper Systems, Inc.
8 Studebaker
Irvine, California 92618

Test Date: March 27, 2003

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

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	This test was not performed because the EUT operates on batteries only and cannot be plugged into the AC public mains.
2	Spurious Radiated RF Emissions, 10 kHz - 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)
3	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 40 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
4	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 40 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209(a), and section 15.247 (d)
5	6 dB Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(a)(2)
6	Peak Power Output	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(b)(3)
7	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
8	Peak Power Spectral Density Conducted from the Intentional Radiator to the Antenna	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (e)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Remote Controlled Locking Wheel, Model: W-9200. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. 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 for the digital and receiver portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.247 for the transmitter portion.

This test report covers the download mode, which was tested under section 15.247. For the uplink mode, please see the Compatible Electronics test report number: **B61009D1**.

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

Gatekeeper Systems, Inc.

Scott Carter Chief Scientist

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer

James Ross Test Engineer

2.4 Date Test Sample was Received

The test sample was received on September 27, 2006.

2.5 Disposition of the Test Sample

The sample was returned to Gatekeeper Systems, Inc. on October 16, 2006.

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

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Remote Controlled Locking Wheel, Model: W-9200 (EUT) was tested as a stand alone unit and placed at the center of the turntable. A remote control was used to control the locking and unlocking of the wheel. The EUT was also continuously transmitting or receiving, depending on the test performed.

The EUT was also controlled by the laptop connected to the serial transmit board placed 10 meters away from the test site. The laptop sent commands to the EUT via the serial transmit board so that the EUT could be placed in the low, middle, and high channels. For this test report, all of the data was taken in the download mode. For the uplink mode, please see Compatible Electronics report number: **B61009D1**

The final radiated data was taken in the mode above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

Cable 1 This is a 5-meter braid and foil shielded cable connecting the laptop to the serial transmit board. The cable has a D-9 pin metallic connector at each end. The shield of the cable was grounded to the chassis via the connectors.

Cable 2 This is a 2-meter unshielded cable connecting the laptop to the AC Adapter. The cable has a 1/8 inch 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 serial transmit board to the AC Adapter. The cable has a 1/8 inch power connector at the serial transmit board end and is hard wired into the AC Adapter.

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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
REMOTE CONTROLLED LOCKING WHEEL (EUT)	GATEKEEPER SYSTEMS, INC.	W-9200	173	SOXW9200
LAPTOP	DELL	LATITUDE D505	CN-0H2029-48643-4BM-2301	QDS-BRCM-1005-D
AC ADAPTER FOR LAPTOP	DELL	F8834	CN-0F8834-48661-63G-7105	N/A
REMOTE CONTROL	GATKEEPER SYSTEMS, INC.	CARTKEY	N/A	N/A
SERIAL TRANSMIT BOARD	GATEKEEPER SYSTEMS, INC.	CORONADO	10	N/A
AC ADAPTER FOR SERIAL TRANSMIT BOARD	ENG	3A-161WU09	N/A	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
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
EMI Receiver	Rohde & Schwarz	ESIB40	100172	October 28, 2004	October 28, 2006
Preamplifier	Com Power	PA-102	1017	January 19, 2006	Jan. 19, 2007
Biconical Antenna	Com Power	AB-900	15227	March 9, 2006	March 9, 2007
Log Periodic Antenna	Com Power	AL-100	16060	July 17, 2006	July 17, 2007
Loop Antenna	Com Power	AL-130	17089	September 21, 2005	Sept. 21, 2007
Horn Antenna	Antenna Research	DRG-118/A	1053	March 6, 2006	March 6, 2008
Microwave Preamplifier	Com Power	PA-840	711919	January 20, 2006	Jan. 20, 2007
Horn Antenna	Com Power	AH826	71957	December 12, 2005	Dec. 12, 2007
Microwave Preamplifier	Com Power	PA-122	181917	January 20, 2006	Jan. 20, 2007
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

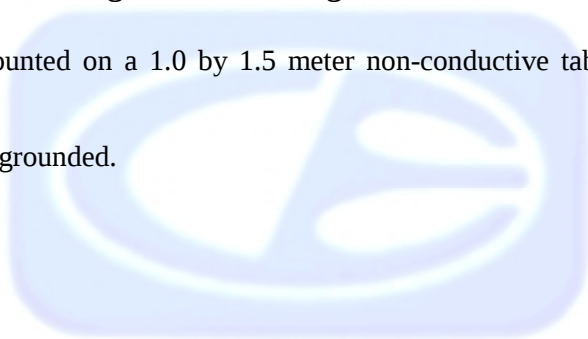
6.1 Test Facility Description

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 calculated using the following equation:

$$P = [(E \cdot D)^2] / (30 G)$$

P = Power in Watts for which you are solving

E = the measured maximum field strength in V/m utilizing the widest available RBW.

G = the numeric gain of the transmitting antenna over an isotropic radiator.

Power	Channel
-4.879 dBm	LOW
-4.159 dBm	MIDDLE
-4.489 dBm	HIGH

7.2 Channel Number and Frequencies

Please see Appendix F for the list of channels and their frequencies.

7.3 Antenna Gain

The antenna gain is -7 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 10 dB attenuation pad 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. 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:

This test was not performed because the EUT operates on batteries only and cannot be plugged into the AC public mains.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was 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, and the Com-Power Microwave Preamplifier Models: PA-122 and PA-840 were used for frequencies above 1 GHz. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

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 EMI Receiver to keep the amplitude reading calibrated.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 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. 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. 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. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

8.1.3 Radiated Emissions (Spurious and Harmonics) Test (Continued)

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 to obtain the final test data. The final qualification data sheets are located in Appendix E.

Test Results:

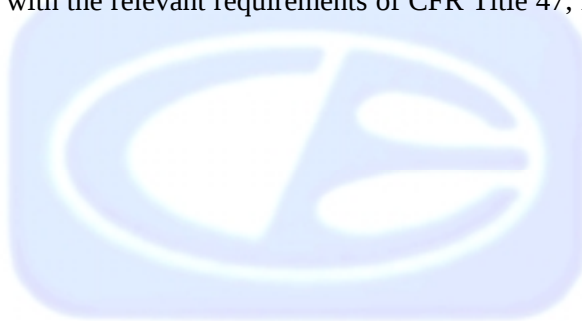
The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.247.

8.2 6 dB Bandwidth

The 6 dB bandwidth was measured using the EMI Receiver. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

Test Results:

This test complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (a)(2).



8.3 Peak Output Power

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, the peak output power was calculated by the following equation:

$$P = [(E \cdot D)^2] / (30 G)$$

P = Power in Watts for which you are solving

E = the measured maximum field strength in V/m utilizing the widest available RBW.

G = the numeric gain of the transmitting antenna over an isotropic radiator.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(3). The maximum peak output power is less than 1 watt. Please see the data sheets in Appendix E.

8.5 RF Antenna Conducted Test

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, all harmonics were tested using the radiated emissions test procedure located in section 8.1.2 and 8.1.3 of this test report.

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.

8.6 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 frequencies below 2390 MHz and above 2483.5 MHz were also 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.

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 limits of section 15.209. Please see the data sheets located in Appendix E.

8.7 Spectral Density Test

Since antenna conducted tests could not be performed on the EUT due to a lack of an antenna connector on the EUT, the spectral density was measured as follows:

A. The spectrum analyzer was tuned to the highest point of the maximized fundamental emission based on the procedure used in section 8.1.2. The spectrum analyzer was then set to an RBW of 3 kHz, VBW of 10 kHz, frequency span of 300 kHz, and a sweep time of 100 seconds. Using these settings, the peak level was obtained.

B. Using the peak level obtained in step 1, the field strength, E, was derived by applying the appropriate antenna factor, cable loss, and pre-amp gain for that frequency.

C. The following equation was then used to calculate the power level for comparison to the +8 dBm limit:

$$P = [(E \cdot D)^2] / (30 G)$$

P = Power in Watts for which you are solving

E = the field strength in V/m obtained in step 2.

G = the numeric gain of the transmitting antenna over an isotropic radiator.

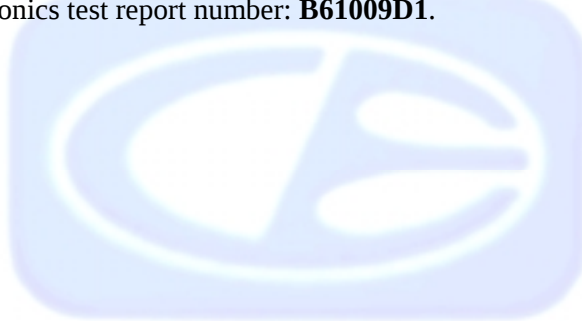
Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (e). The spectral density output does not exceed +8 dBm based on the procedure mentioned above. Please see the data sheets located in Appendix E.

9. CONCLUSIONS

The Remote Controlled Locking Wheel, Model: W-9200 meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.247 for the transmitter portion.

Note: This test report covers the download mode only for the EUT. For the uplink mode, please see Compatible Electronics test report number: **B61009D1**.



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

Radio-Frequency Technologies (Competent Body)

APPENDIX B

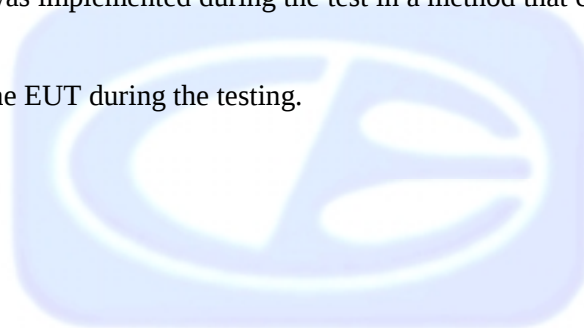
MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass 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.

No modifications were 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

Remote Controlled Locking Wheel
Model: W-9200
S/N: 173

There were no additional models covered under this report.

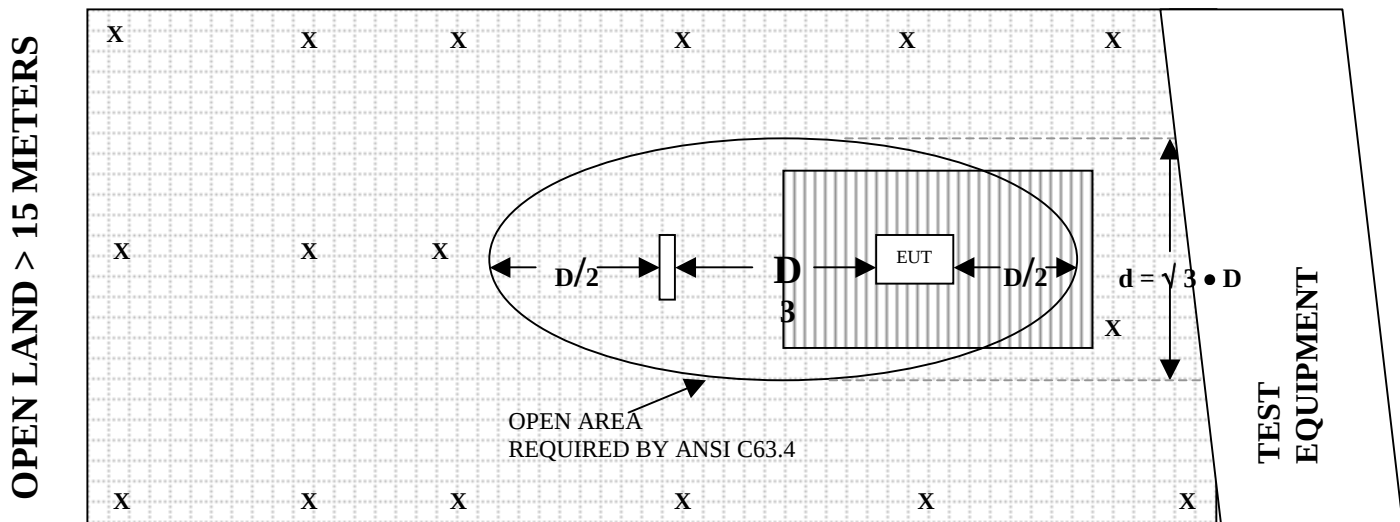


APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

X	= GROUND RODS		= GROUND SCREEN
D	= TEST DISTANCE (meters)		= WOOD COVER

COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15227

CALIBRATION DATE: MARCH 9, 2006

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	11.12	120	13.50
35	10.17	125	12.63
40	9.75	140	12.20
45	12.22	150	11.85
50	13.28	160	13.25
60	11.36	175	15.74
70	7.95	180	16.23
80	5.95	200	16.79
90	7.62	250	16.47
100	10.89	300	17.49

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: JULY 17, 2006

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	13.58	700	20.49
400	14.53	800	20.13
500	15.36	900	22.15
600	18.29	1000	22.76

COM-POWER PA-102**PREAMPLIFIER**

S/N: 1017

CALIBRATION DATE: JANUARY 19, 2006

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.3	300	38.4
40	38.4	350	38.4
50	38.3	400	38.0
60	38.4	450	38.1
70	38.5	500	37.5
80	38.4	550	38.0
90	38.4	600	38.0
100	38.4	650	37.7
125	38.1	700	37.7
150	38.5	750	37.7
175	38.4	800	37.0
200	38.3	850	37.2
225	38.3	900	36.6
250	38.1	950	36.3
275	38.3	1000	36.3

COM-POWER PA-122**PREAMPLIFIER****S/N: 181917****CALIBRATION DATE: JANUARY 20, 2006**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	34.697	10.0	36.558
1.5	33.817	10.5	35.048
2.0	33.587	11.0	33.258
2.5	33.804	11.5	32.960
3.0	33.850	12.0	33.312
3.5	33.943	12.5	33.836
4.0	34.399	13.0	34.178
4.5	34.847	13.5	34.197
5.0	35.172	14.0	33.769
5.5	35.383	14.5	33.392
6.0	35.539	15.0	33.387
6.5	34.802	15.5	34.038
7.0	33.793	16.0	34.884
7.5	33.511	16.5	35.740
8.0	33.910	17.0	35.341
8.5	34.907	17.5	34.729
9.0	36.036	18.0	33.760
9.5	36.661		

ANTENNA RESEARCH DRG-118/A**HORN ANTENNA**

S/N: 1053

CALIBRATION DATE: MARCH 6, 2006

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.46	10.0	39.55
1.5	25.05	10.5	39.86
2.0	28.42	11.0	38.49
2.5	29.91	11.5	40.71
3.0	31.46	12.0	40.59
3.5	31.91	12.5	40.17
4.0	31.55	13.0	39.70
4.5	31.94	13.5	40.84
5.0	32.90	14.0	41.58
5.5	34.07	14.5	45.14
6.0	35.69	15.0	42.20
6.5	33.11	15.5	39.42
7.0	36.51	16.0	38.80
7.5	37.27	16.5	41.08
8.0	37.21	17.0	44.11
8.5	37.16	17.5	46.29
9.0	38.27	18.0	41.61
9.5	39.73		

COM-POWER PA-840**MICROWAVE PREAMPLIFIER****S/N: 711919****CALIBRATION DATE: JANUARY 20, 2006**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	27.932	29.5	27.310
18.5	28.277	30.0	26.860
19.0	28.500	30.5	27.450
19.5	28.397	31.0	27.448
20.0	28.570	31.5	27.868
20.5	28.183	32.0	27.922
21.0	28.007	32.5	27.866
21.5	27.823	33.0	27.314
22.0	27.747	33.5	27.403
22.5	27.290	34.0	26.687
23.0	27.406	34.5	26.390
23.5	26.508	35.0	26.365
24.0	26.657	35.5	26.347
24.5	27.102	36.0	26.138
25.0	27.742	36.5	26.481
25.5	27.646	37.0	26.236
26.0	27.934	37.5	27.029
26.5	27.976	38.0	27.883
27.0	26.984	38.5	29.021
27.5	26.745	39.0	29.408
28.0	27.075	39.5	28.429
28.5	27.015	39.75	27.704
29.0	27.169	40.0	26.441

COM-POWER AH826

HORN ANTENNA

S/N: 71957

CALIBRATION DATE: DECEMBER 12, 2005

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	32.4	22.5	32.0
18.5	31.4	23.0	32.2
19.0	31.5	23.5	31.2
19.5	30.9	24.0	33.1
20.0	33.1	24.5	33.1
20.5	33.4	25.0	33.4
21.0	32.1	25.5	33.4
21.5	32.5	26.0	32.9
22.0	32.3	26.5	33.6

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

S/N: 17089

CALIBRATION DATE: SEPTEMBER 21, 2005

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-42.84	8.66
0.01	-41.93	9.57
0.02	-41.29	10.21
0.05	-42.37	9.13
0.07	-41.8	9.7
0.1	-41.83	9.67
0.2	-44.13	7.37
0.3	-41.73	9.77
0.5	-41.8	9.7
0.7	-41.53	9.97
1	-41.46	10.04
2	-41.14	10.36
3	-41.26	10.24
4	-41.46	10.04
5	-41.10	10.40
10	-40.83	10.67
15	-41.47	10.03
20	-35.44	16.06
25	-42.37	9.13
30	-42.94	8.56



FRONT VIEW

GATEKEEPER SYSTEMS, INC.
REMOTE CONTROLLED LOCKING WHEEL
MODEL: W-9200

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

**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

GATEKEEPER SYSTEMS, INC.
REMOTE CONTROLLED LOCKING WHEEL
MODEL: W-9200

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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



FRONT VIEW

GATEKEEPER SYSTEMS, INC.
REMOTE CONTROLLED LOCKING WHEEL
MODEL: W-9200

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

**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

GATEKEEPER SYSTEMS, INC.
REMOTE CONTROLLED LOCKING WHEEL
MODEL: W-9200

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

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Agoura Division
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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

APPENDIX E

DATA SHEETS

RADIATED EMISIONS

DATA SHEETS

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06

Lab: D

Tested By: Kyle Fujimoto

Low Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4803	57.98	V	74	-16.02	Peak	1	180	
4803	44.29	V	54	-9.71	Avg	1	180	
7205	54.52	V	74	-19.48	Peak	1	90	
7205	40.24	V	54	-13.76	Avg	1	90	
								No Emission
9606		V	74	-74	Peak			Detected
9606		V	54	-54	Avg			
								No Emission
12007		V	74	-74	Peak			Detected
12007		V	54	-54	Avg			
								No Emission
14409		V	74	-74	Peak			Detected
14409		V	54	-54	Avg			
								No Emission
16810		V	74	-74	Peak			Detected
16810		V	54	-54	Avg			
								No Emission
19212		V	--	--	Peak			Detected
19212		V	--	--	Avg			
								No Emission
21614		V	--	--	Peak			Detected
21614		V	--	--	Avg			
								No Emission
24015		V	--	--	Peak			Detected
24015		V	--	--	Avg			

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06

Lab: D

Tested By: Kyle Fujimoto

Low Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4803	61.62	H	74	-12.38	Peak	2	90	
4803	45.54	H	54	-8.46	Avg	2	90	
7205	54.98	H	74	-19.02	Peak	1.75	45	
7205	40.13	H	54	-13.87	Avg	1.75	45	
								No Emission
9606		H	74	-74	Peak			Detected
9606		H	54	-54	Avg			
								No Emission
12007		H	74	-74	Peak			Detected
12007		H	54	-54	Avg			
								No Emission
14409		H	74	-74	Peak			Detected
14409		H	54	-54	Avg			
								No Emission
16810		H	74	-74	Peak			Detected
16810		H	54	-54	Avg			
								No Emission
19212		H	--	--	Peak			Detected
19212		H	--	--	Avg			
								No Emission
21614		H	--	--	Peak			Detected
21614		H	--	--	Avg			
								No Emission
24015		H	--	--	Peak			Detected
24015		H	--	--	Avg			

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

Middle Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4882.3	57.34	V	74	-16.66	Peak	1	180	
4882.3	44.09	V	54	-9.91	Avg	1	180	
7323.56	53.02	V	74	-20.98	Peak	1	135	
7323.56	39.26	V	54	-14.74	Avg	1	135	
9764.7		V	74	-74	Peak			No Emission
9764.7		V	54	-54	Avg			Detected
12206		V	74	-74	Peak			No Emission
12206		V	54	-54	Avg			Detected
14647		V	74	-74	Peak			No Emission
14647		V	54	-54	Avg			Detected
17088		V	74	-74	Peak			No Emission
17088		V	54	-54	Avg			Detected
19529		V	--	--	Peak			No Emission
19529		V	--	--	Avg			Detected
21970		V	--	--	Peak			No Emission
21970		V	--	--	Avg			Detected
24411		V	--	--	Peak			No Emission
24411		V	--	--	Avg			Detected

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06

Lab: D

Tested By: Kyle Fujimoto

Middle Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4882.3	60.74	H	74	-13.26	Peak	1.25	90	
4882.3	46.4	H	54	-7.6	Avg	1.25	90	
7323.56	52.72	H	74	-21.28	Peak	1.35	225	
7323.56	39.55	H	54	-14.45	Avg	1.35	225	
9764.7		H	74	-74	Peak			No Emission
9764.7		H	54	-54	Avg			Detected
12206		H	74	-74	Peak			No Emission
12206		H	54	-54	Avg			Detected
14647		H	74	-74	Peak			No Emission
14647		H	54	-54	Avg			Detected
17088		H	74	-74	Peak			No Emission
17088		H	54	-54	Avg			Detected
19529		H	--	--	Peak			No Emission
19529		H	--	--	Avg			Detected
21970		H	--	--	Peak			No Emission
21970		H	--	--	Avg			Detected
24411		H	--	--	Peak			No Emission
24411		H	--	--	Avg			Detected

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

High Channel
Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4962.22	57.12	V	74	-16.88	Peak	1	180	
4962.22	43.58	V	54	-10.42	Avg	1	180	
7443.27	52.34	V	74	-21.66	Peak	1.25	135	No Emission
7443.27	39.76	V	54	-14.24	Avg	1.25	135	Detected
9924		V	74	-74	Peak			No Emission
9924		V	54	-54	Avg			Detected
12405		V	74	-74	Peak			No Emission
12405		V	54	-54	Avg			Detected
14886		V	74	-74	Peak			No Emission
14886		V	54	-54	Avg			Detected
17367		V	74	-74	Peak			No Emission
17367		V	54	-54	Avg			Detected
19848		V	--	--	Peak			No Emission
19848		V	--	--	Avg			Detected
22329		V	--	--	Peak			No Emission
22329		V	--	--	Avg			Detected
24811		V	--	--	Peak			No Emission
24811		V	--	--	Avg			Detected

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: GS2V2

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

Middle Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4882.3	60.74	H	74	-13.26	Peak	1.25	90	
4882.3	46.4	H	54	-7.6	Avg	1.25	90	
7323.56	52.72	H	74	-21.28	Peak	1.35	225	
7323.56	39.55	H	54	-14.45	Avg	1.35	225	
9764.7		H	74	-74	Peak			No Emission
9764.7		H	54	-54	Avg			Detected
12206		H	74	-74	Peak			No Emission
12206		H	54	-54	Avg			Detected
14647		H	74	-74	Peak			No Emission
14647		H	54	-54	Avg			Detected
17088		H	74	-74	Peak			No Emission
17088		H	54	-54	Avg			Detected
19529		H	--	--	Peak			No Emission
19529		H	--	--	Avg			Detected
21970		H	--	--	Peak			No Emission
21970		H	--	--	Avg			Detected
24411		H	--	--	Peak			No Emission
24411		H	--	--	Avg			Detected

FCC 15.247

Gatekeeper Systems, Inc.
Remote Controlled Locking Wheel
Model: GS2V2

Date: 10/09/06
Lab: D
Tested By: Kyle Fujimoto

**High Channel
Download Mode -- 500 kpbs**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4962.22	57.12	V	74	-16.88	Peak	1	180	
4962.22	43.58	V	54	-10.42	Avg	1	180	
7443.27	52.34	V	74	-21.66	Peak	1.25	135	No Emission
7443.27	39.76	V	54	-14.24	Avg	1.25	135	Detected
9924		V	74	-74	Peak			No Emission
9924		V	54	-54	Avg			Detected
12405		V	74	-74	Peak			No Emission
12405		V	54	-54	Avg			Detected
14886		V	74	-74	Peak			No Emission
14886		V	54	-54	Avg			Detected
17367		V	74	-74	Peak			No Emission
17367		V	54	-54	Avg			Detected
19848		V	--	--	Peak			No Emission
19848		V	--	--	Avg			Detected
22329		V	--	--	Peak			No Emission
22329		V	--	--	Avg			Detected
24811		V	--	--	Peak			No Emission
24811		V	--	--	Avg			Detected

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: GS2V2

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

High Channel

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4962.22	59.93	H	74	-14.07	Peak	2	135	
4962.22	46.38	H	54	-7.62	Avg	2	135	
7443.27	52.56	H	74	-21.44	Peak	1.75	225	
7443.27	39.82	H	54	-14.18	Avg	1.75	225	
9924		H	74	-74	Peak			No Emission
9924		H	54	-54	Avg			Detected
12405		H	74	-74	Peak			No Emission
12405		H	54	-54	Avg			Detected
14886		H	74	-74	Peak			No Emission
14886		H	54	-54	Avg			Detected
17367		H	74	-74	Peak			No Emission
17367		H	54	-54	Avg			Detected
19848		H	--	--	Peak			No Emission
19848		H	--	--	Avg			Detected
22329		H	--	--	Peak			No Emission
22329		H	--	--	Avg			Detected
24811		H	--	--	Peak			No Emission
24811		H	--	--	Avg			Detected

Gatekeeper Systems, Inc.
Remote Controlled Locking Wheel
Model: GS2V2

Date: 10/09/06
Lab: D
Tested By: Kyle Fujimoto

Middle Channel - Receive Mode
Download Mode -- 500 kpbs

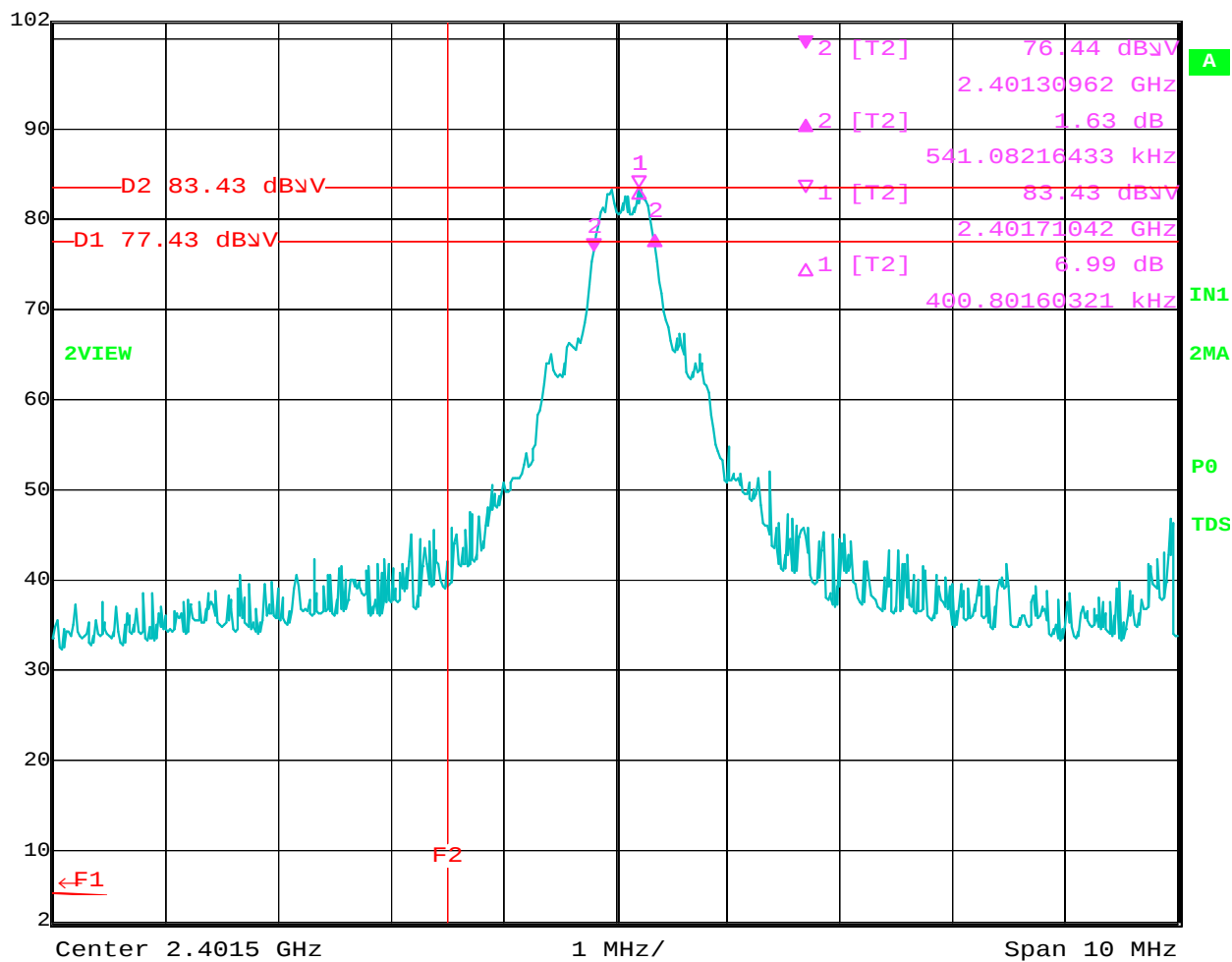
[illegible]

-6 dB BANDWIDTH

DATA SHEETS



Ref Lvl 102 dBμV
Delta 2 [T2] 1.63 dB
541.08216433 kHz
RBW 100 kHz
VBW 300 kHz
SWT 5 ms
RF Att 10 dB
Unit dBμV

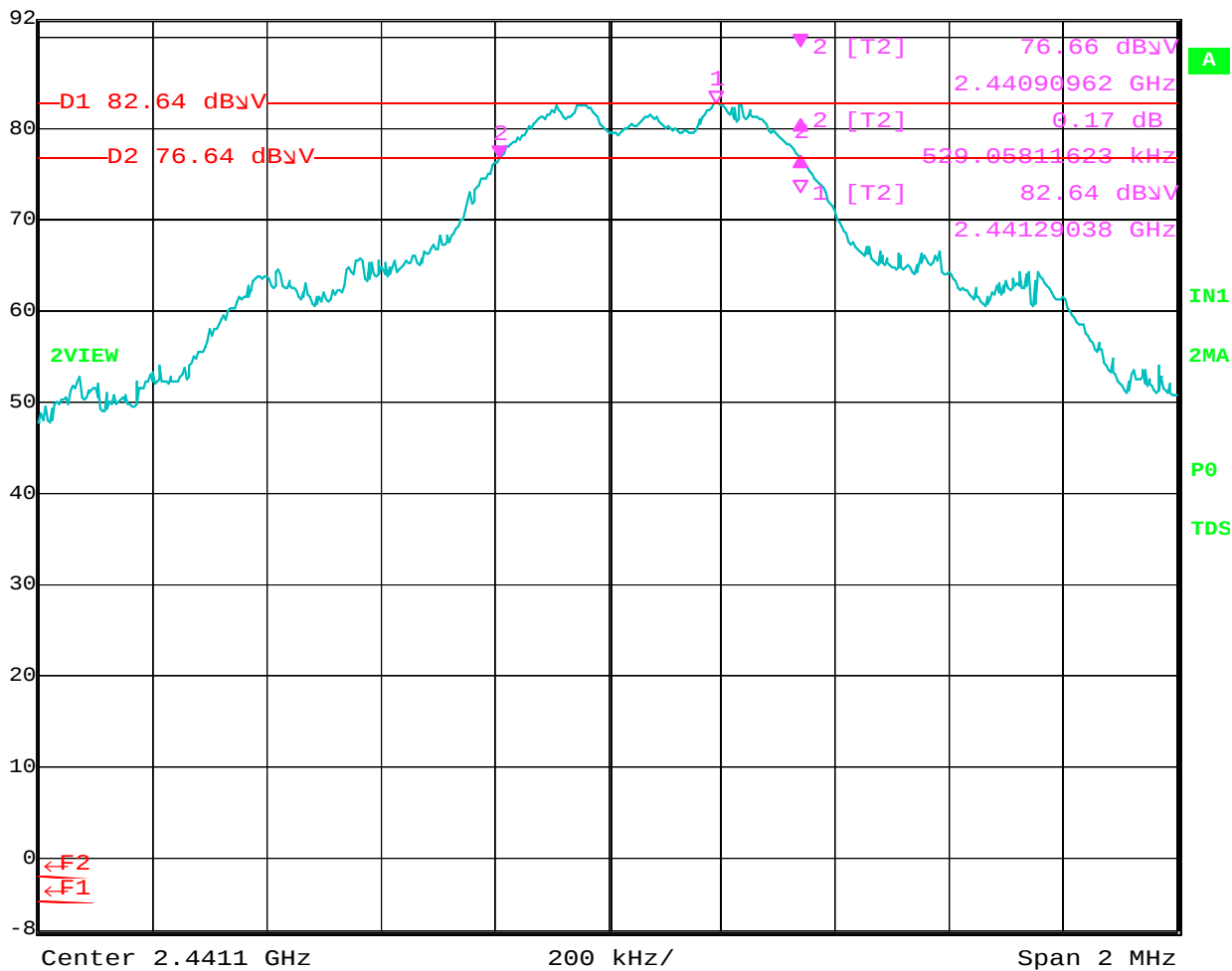


Date: 9.OCT.2006 10:05:10

-6 dB Bandwidth – Low Channel – Download Mode



Ref Lvl 92 dBμV
Delta 2 [T2] 0.17 dB
529.05811623 kHz
RBW 100 kHz
VBW 300 kHz
SWT 5 ms
RF Att 0 dB
Unit dBμV

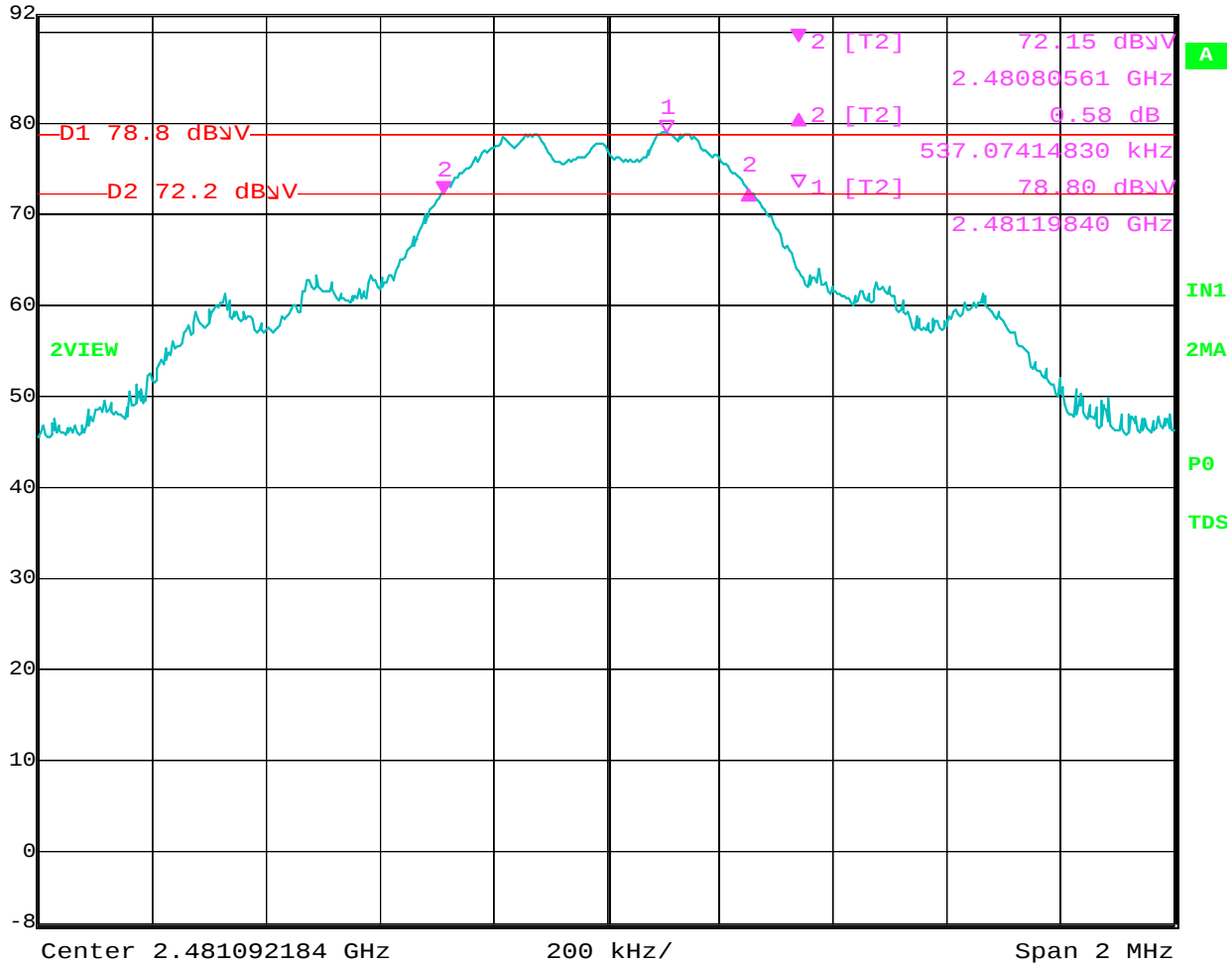


Date: 9.OCT.2006 10:50:19

-6 dB Bandwidth – Middle Channel – Download Mode



Ref Lvl 92 dBμV
Delta 2 [T2] 0.58 dB
537.07414830 kHz
RBW 100 kHz
VBW 300 kHz
SWT 5 ms
RF Att 0 dB
Unit dBμV



Date: 9.OCT.2006 11:33:24

-6 dB Bandwidth – High Channel – Download Mode

PEAK POWER OUTPUT

DATA SHEETS

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

Peak Output Power

Freq. (MHz)	Level (dBuV)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	Power Output (Watts)	Power Output (mW)	Power Output (dBm)	Comments
2401.5	83.35	0.0147062	-7	0.199526	0.0003252	0.32518	-4.8788	Vertical
2441.1	82.51	0.0133506	-7	0.199526	0.000268	0.26799	-5.7188	Vertical
2481.2	78.82	0.0087297	-7	0.199526	0.0001146	0.11458	-9.4088	Vertical
2401.5	82.9	0.0139637	-7	0.199526	0.0002932	0.29317	-5.3288	Horizontal
2441.1	84.07	0.0159772	-7	0.199526	0.0003838	0.38381	-4.1588	Horizontal
2481.2	83.74	0.0153815	-7	0.199526	0.0003557	0.35573	-4.4888	Horizontal

W.C. = Worst Case

The Power in Watts is obtained by the following Formula Below:

$$P = [(E \cdot D)^2] / (30 \cdot G)$$

P = Power in Watts

E = The Measured Maximum Field Strength in V/m

G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator

SPECTRAL DENSITY OUTPUT

DATA SHEETS

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

Spectral Density Test

Freq. (MHz)	Level (dBuV)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	Power Output (Watts)	Power Output (mW)	Power Output (dBm)	Comments
2401.5	70.39	0.00331	-7	0.199526	1.6448E-05	0.01645	-17.839	(Vert) Limit = +8 dBm
2441.1	69.11	0.00285	-7	0.199526	1.225E-05	0.01225	-19.119	(Vert) Limit = +8 dBm
2481.1	65.72	0.00193	-7	0.199526	5.612E-06	0.00561	-22.509	(Vert) Limit = +8 dBm
2401.5	69.59	0.00302	-7	0.199526	1.3681E-05	0.01368	-18.639	(Horiz) Limit = +8 dBm
2441.1	70.84	0.00348	-7	0.199526	1.8244E-05	0.01824	-17.389	(Horiz) Limit = +8 dBm
2481.2	70.43	0.00332	-7	0.199526	1.6601E-05	0.0166	-17.799	(Horiz) Limit = +8 dBm

Level in dBuV obtained by maximizing fundamental emission then setting the EMI Receiver to
 RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep Time = 100 Seconds

The Power in Watts is obtained by the following Formula Below:

$$P = [(E \cdot D)^2] / (30 \cdot G)$$

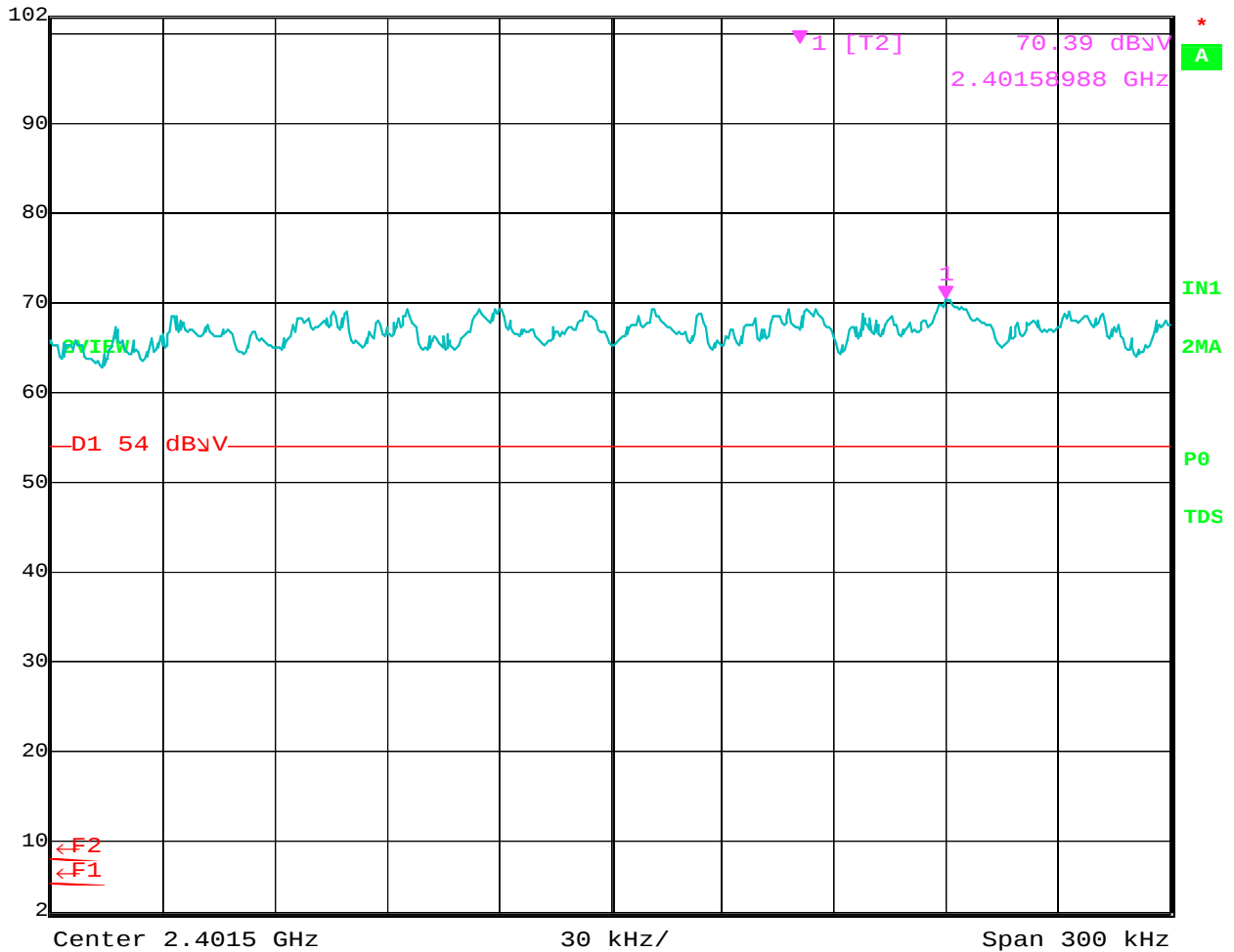
P = Power in Watts

E = The Measured Maximum Field Strength in V/m

G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator



Ref Lvl 102 dBμV
Marker 1 [T2] 70.39 dBμV
2.40158988 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 10 dB
Unit dBμV

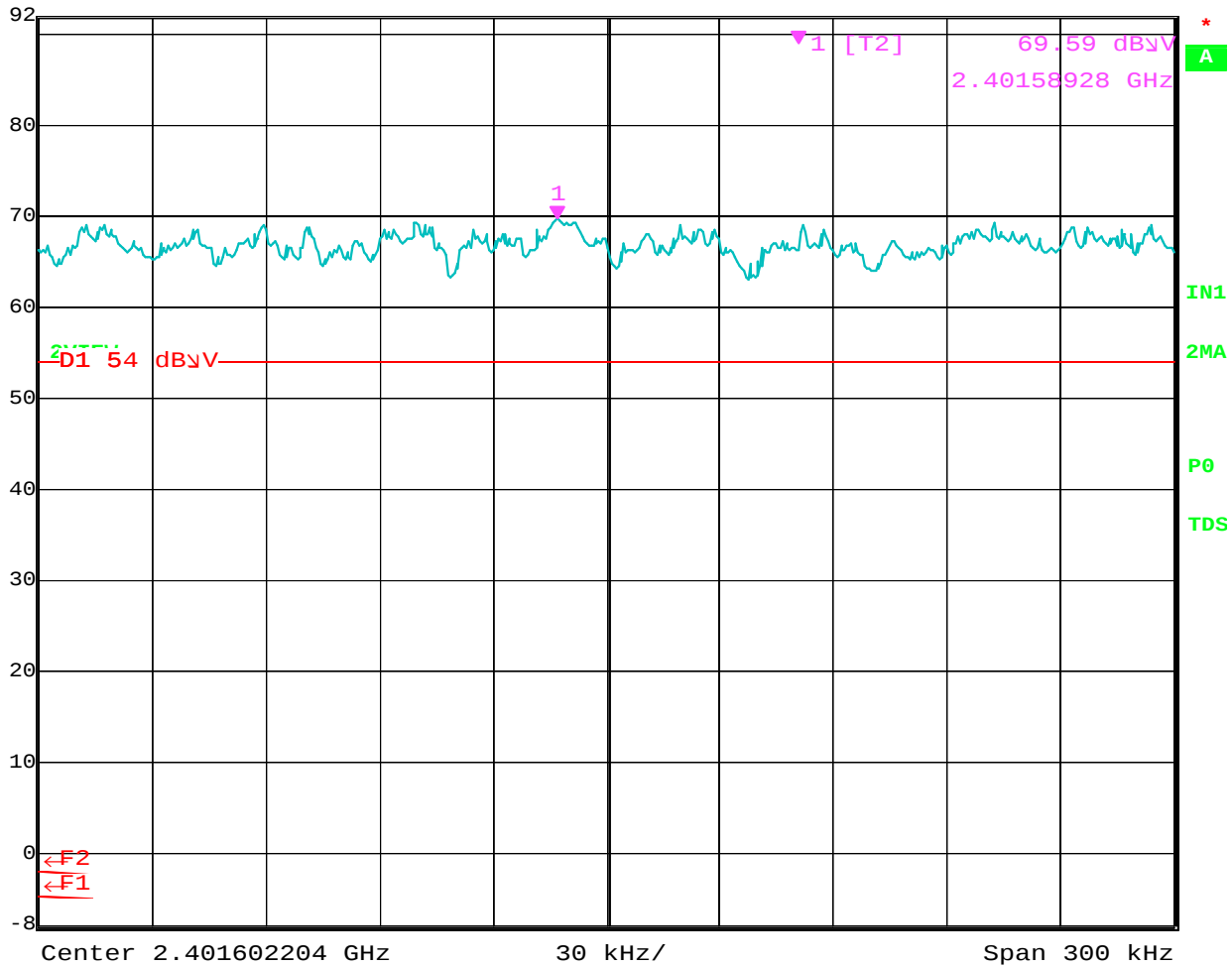


Date: 9.OCT.2006 09:28:01

Spectral Density Output – Low Channel – Vertical Polarization – Steps A & B
Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown



Ref Lvl 92 dBμV
Marker 1 [T2] 69.59 dBμV
2.40158928 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 0 dB
Unit dBμV

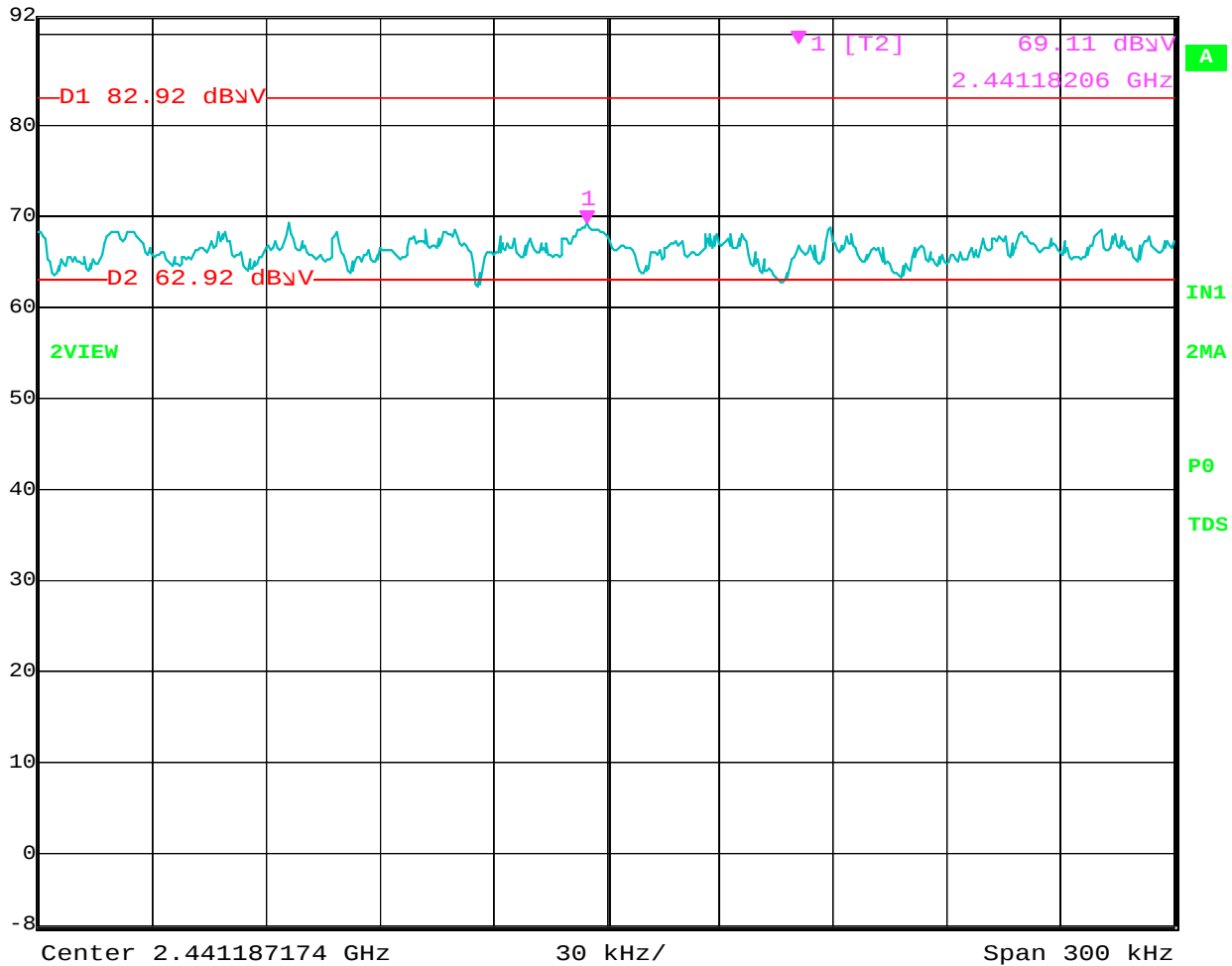


Date: 9.OCT.2006 13:54:31

Spectral Density Output – Low Channel – Horizontal Polarization – Steps A & B
Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown



Ref Lvl 92 dBμV
Marker 1 [T2] 69.11 dBμV
2.44118206 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 0 dB
Unit dBμV

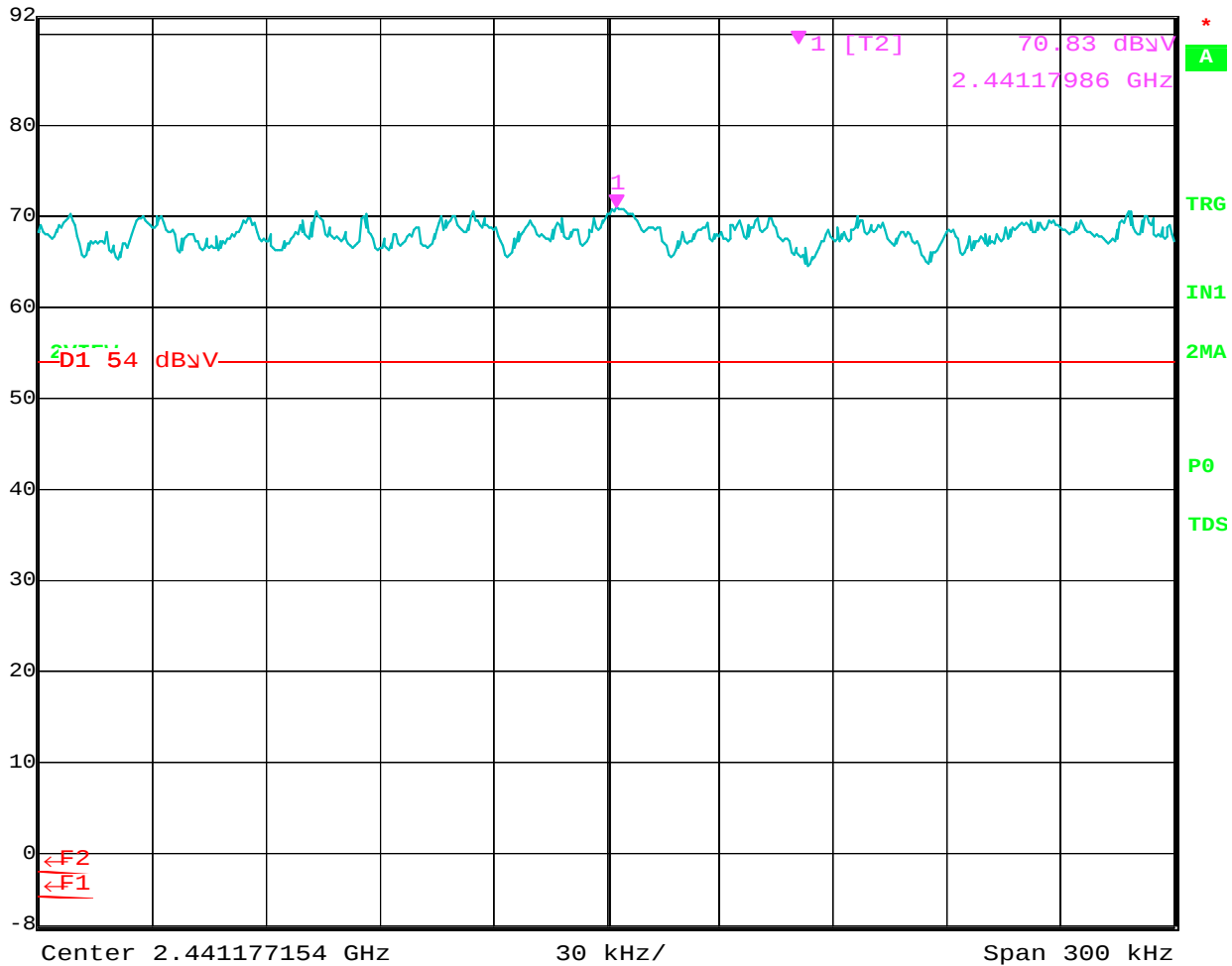


Date: 9.OCT.2006 10:55:41

Spectral Density Output – Middle Channel – Vertical Polarization – Steps A & B
Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown



Ref Lvl 92 dBμV
Marker 1 [T2] 70.83 dBμV
2.44117986 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 0 dB
Unit dBμV



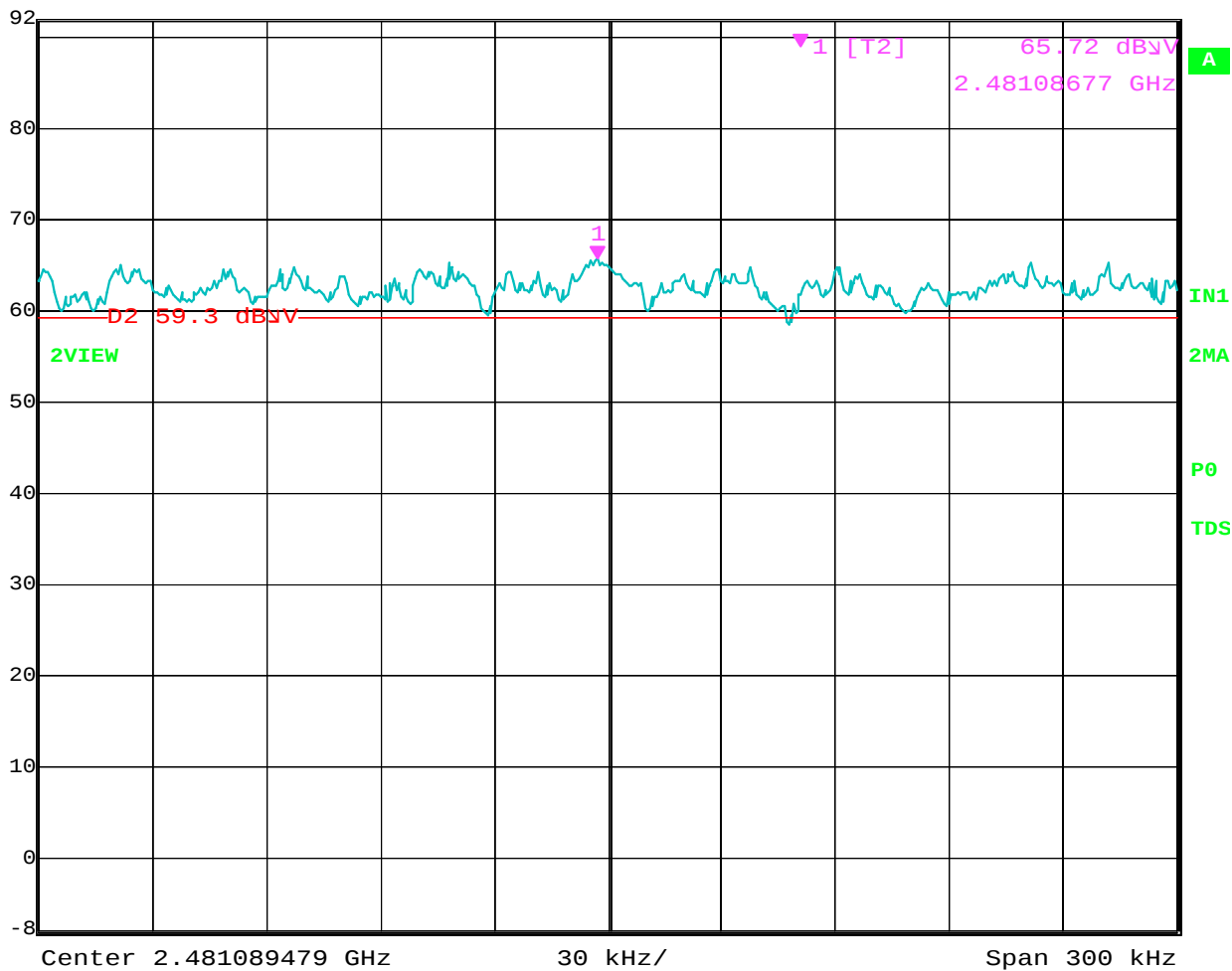
Date: 9.OCT.2006 14:18:16

Spectral Density Output – Middle Channel – Horizontal Polarization – Steps A & B

Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown



Ref Lvl 92 dBμV
Marker 1 [T2] 65.72 dBμV
2.48108677 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 0 dB
Unit dBμV

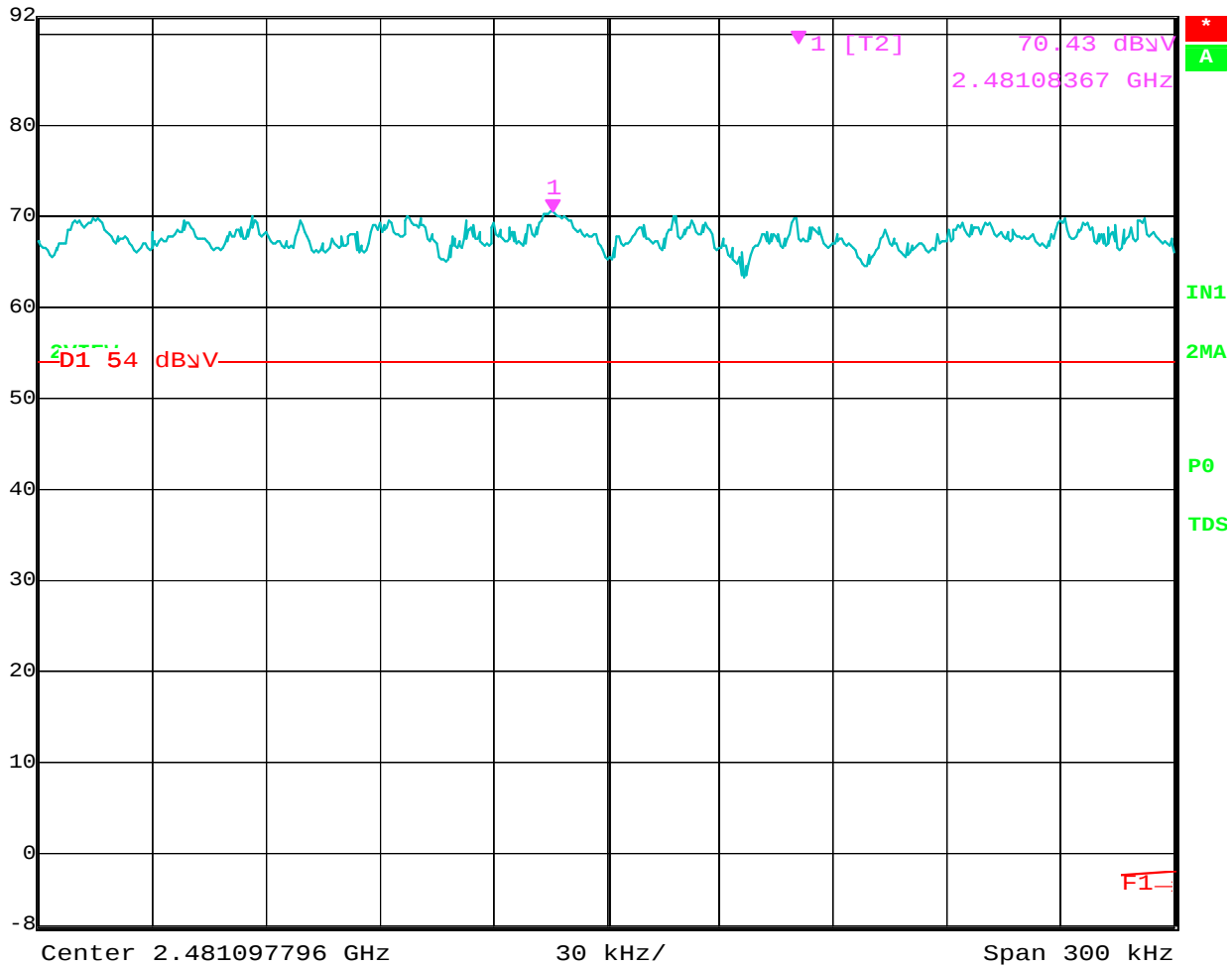


Date: 9.OCT.2006 11:41:16

Spectral Density Output – High Channel – Vertical Polarization – Steps A & B
Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown



Ref Lvl 92 dB μ V
Marker 1 [T2] 70.43 dB μ V
2.48108367 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 0 dB
Unit dB μ V



Date: 9.OCT.2006 14:49:42

Spectral Density Output – High Channel – Horizontal Polarization – Steps A & B
Note: The EMI Receiver already has the transducers programmed and thus the corrected reading is already shown

BAND EDGES

DATA SHEETS

FCC 15.247

Gatekeeper Systems, Inc.
 Remote Controlled Locking Wheel
 Model: W-9200

Date: 10/09/06
 Lab: D
 Tested By: Kyle Fujimoto

Band Edges

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2401.9	83.35	V	--	--	Peak	1	135	Fundamental of Low Channel
								@ 3 Meters
2390	46.96	V	54	-7.04	Peak	1	135	Band Edge Low Channel
2441.1	82.51	V	--	--	Peak	1	0	Fundamental -- Middle Channel
								@ 3 Meters
2481.24	78.82	V	--	--	Peak	1.25	225	Fundamental of High Channel
								@ 3 Meters
2483.5	55.03	V	74	-18.97	Peak	1.25	225	Band Edge High Channel
2483.5	29.73	V	54	-24.27	Avg	1.25	225	Band Edge High Channel

FCC 15.247

Gatekeeper Systems, Inc.
Remote Controlled Locking Wheel
Model: W-9200

Date: 10/09/06
Lab: D
Tested By: Kyle Fujimoto

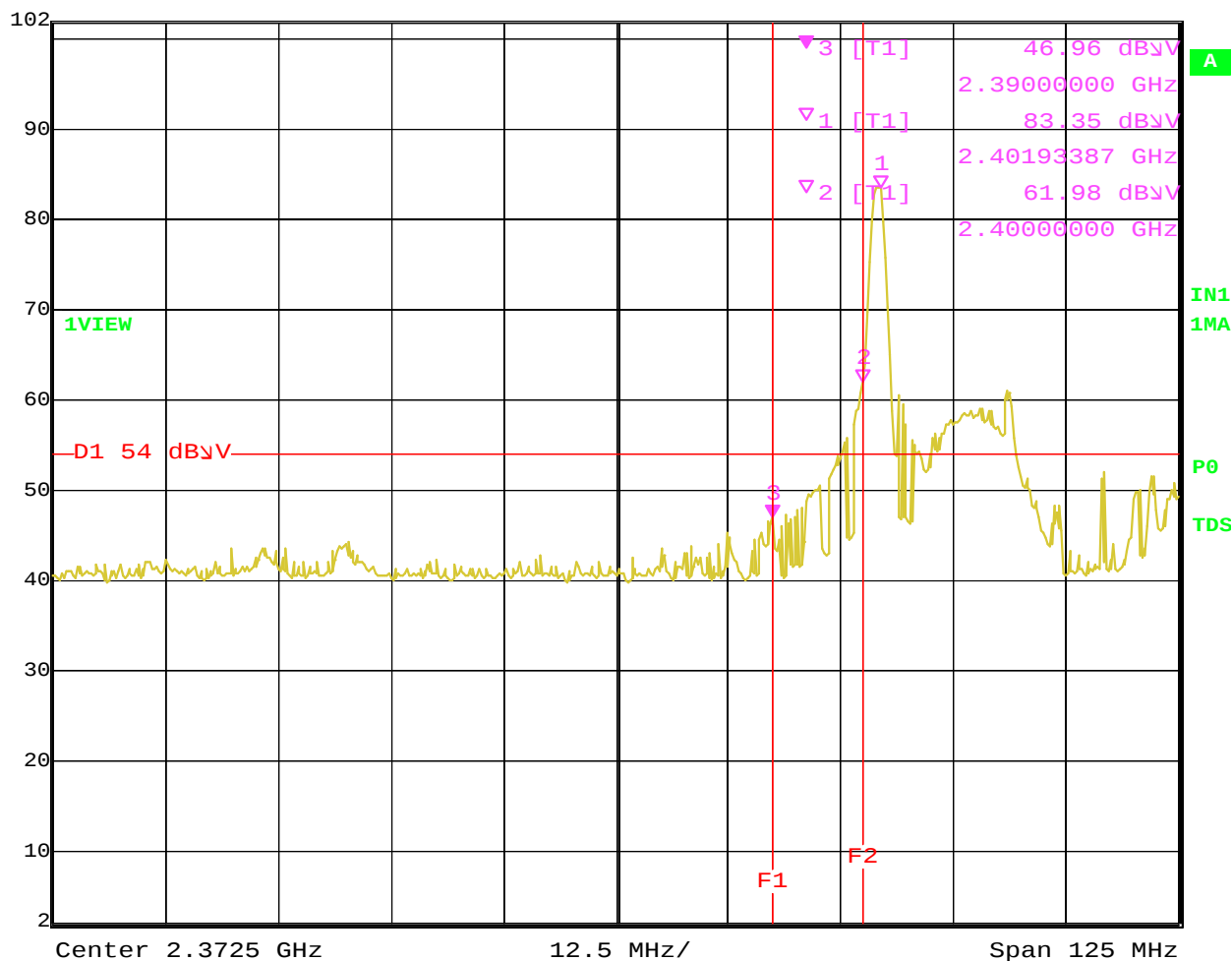
Band Edges

Download Mode -- 500 kpbs

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2401.90	82.9	H	94	-11.1	Peak	1.5	90	Fundamental of Low Channel
								@ 3 Meters
2389.33	45.64	H	54	-8.36	Peak	1.5	90	Band Edge Low Channel
2441.1	84.07	H	--	--	Peak	1.5	90	Fundamental -- Middle Channel
								@ 3 Meters
2481.2	83.74	H	--	--	Peak	1	90	Fundamental of High Channel
								@ 3 Meters
2483.5	59.99	H	74	-14.01	Peak	1	90	Band Edge High Channel
2483.5	31.11	H	54	-22.89	Avg	1	90	Band Edge High Channel



Ref Lvl 102 dBμV
Marker 3 [T1] 46.96 dBμV
2.39000000 GHz
RBW 1 MHz
VBW 1 MHz
SWT 5 ms
RF Att 10 dB
Unit dBμV

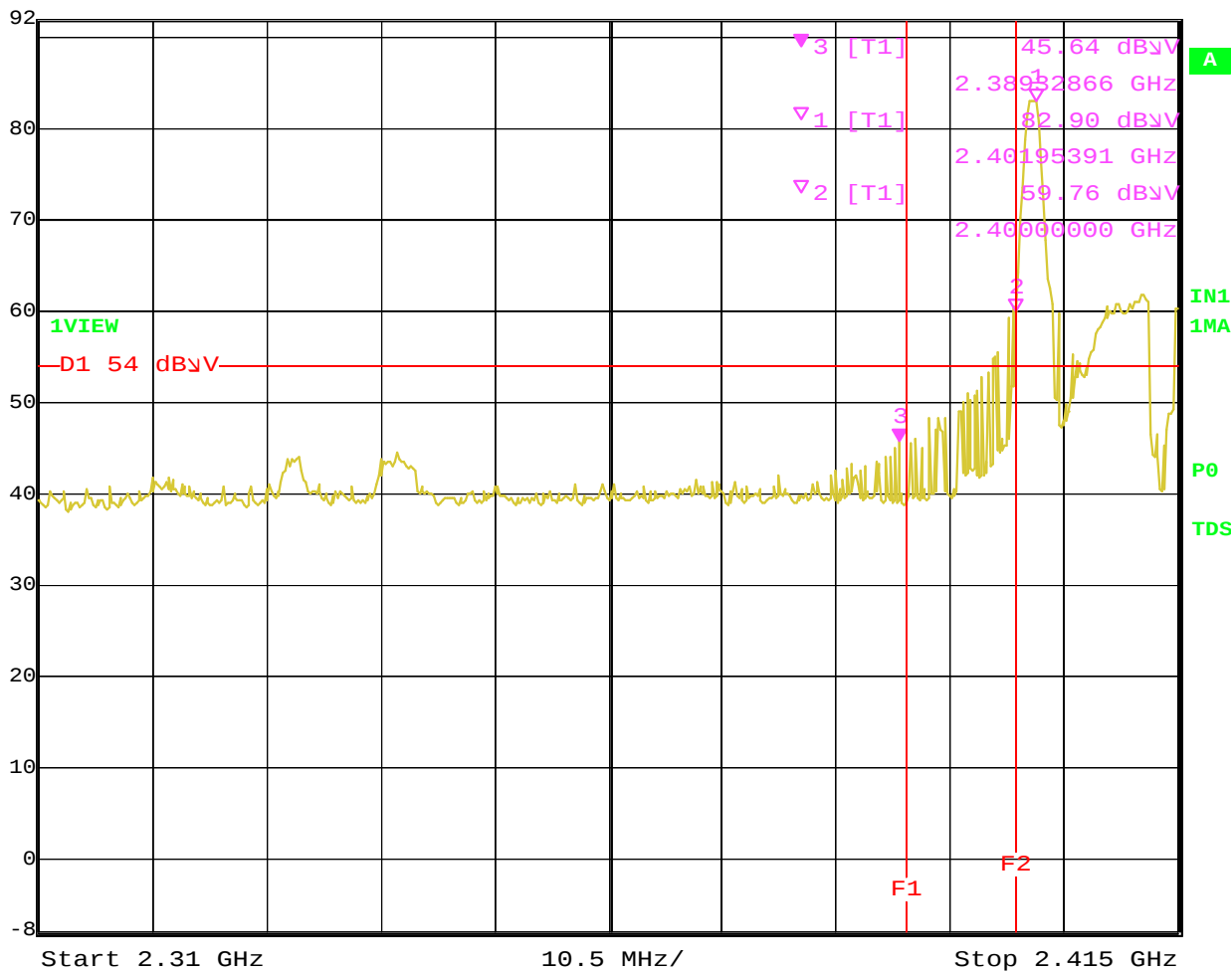


Date: 9.OCT.2006 09:24:16

Band Edge – Low Channel – Vertical Polarization – Download Mode



Ref Lvl 92 dBμV
Marker 3 [T1] 45.64 dBμV
2.38932866 GHz
RBW 1 MHz
VBW 1 MHz
SWT 5 ms
RF Att 0 dB
Unit dBμV

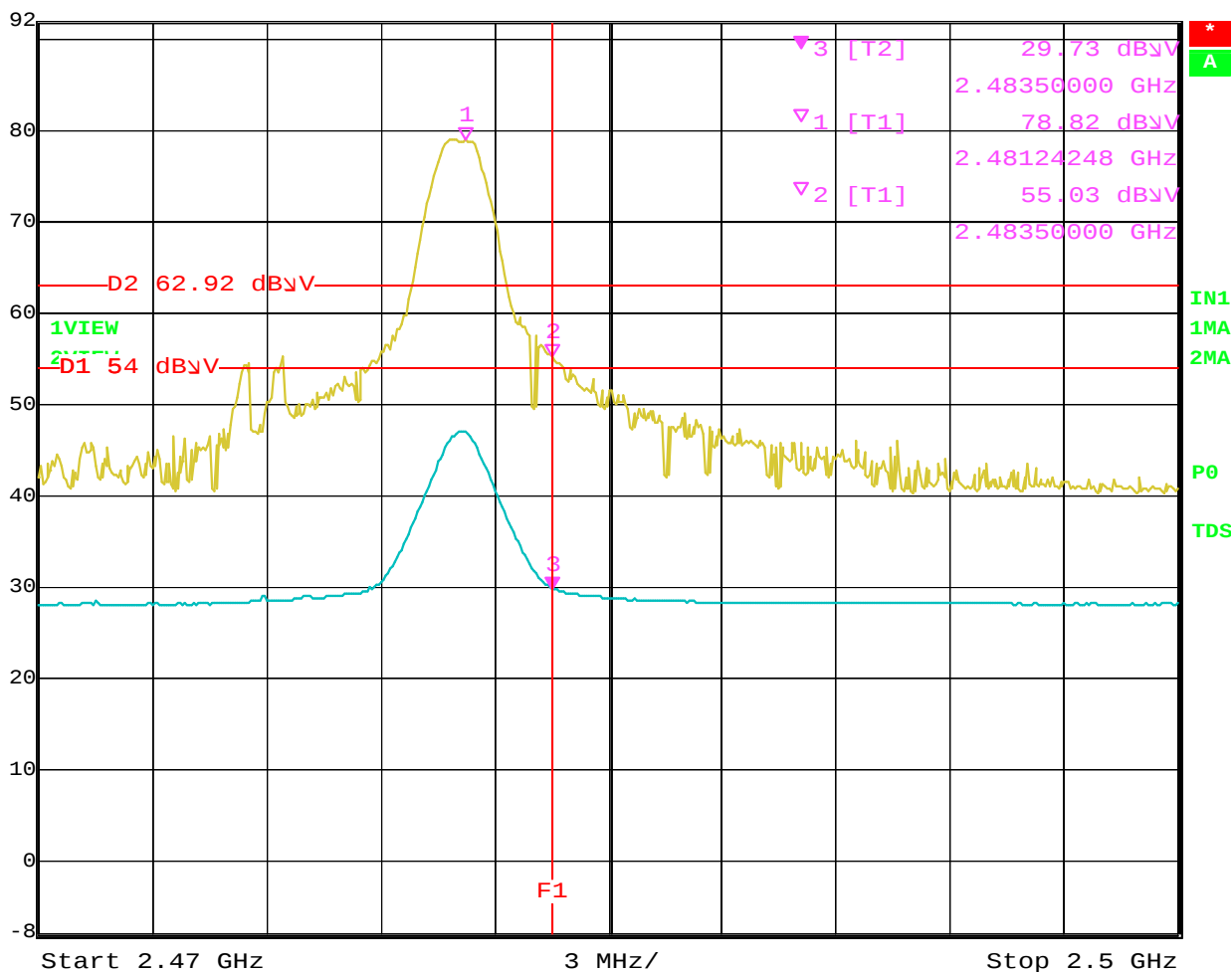


Date: 9.OCT.2006 13:50:05

Band Edge – Low Channel – Horizontal Polarization – Download Mode



Ref Lvl 92 dBμV
Marker 3 [T2] 29.73 dBμV
2.48350000 GHz
RBW 1 MHz
VBW 10 Hz
SWT 7.6 s
RF Att 0 dB
Unit dBμV



Date: 9.OCT.2006 11:30:40

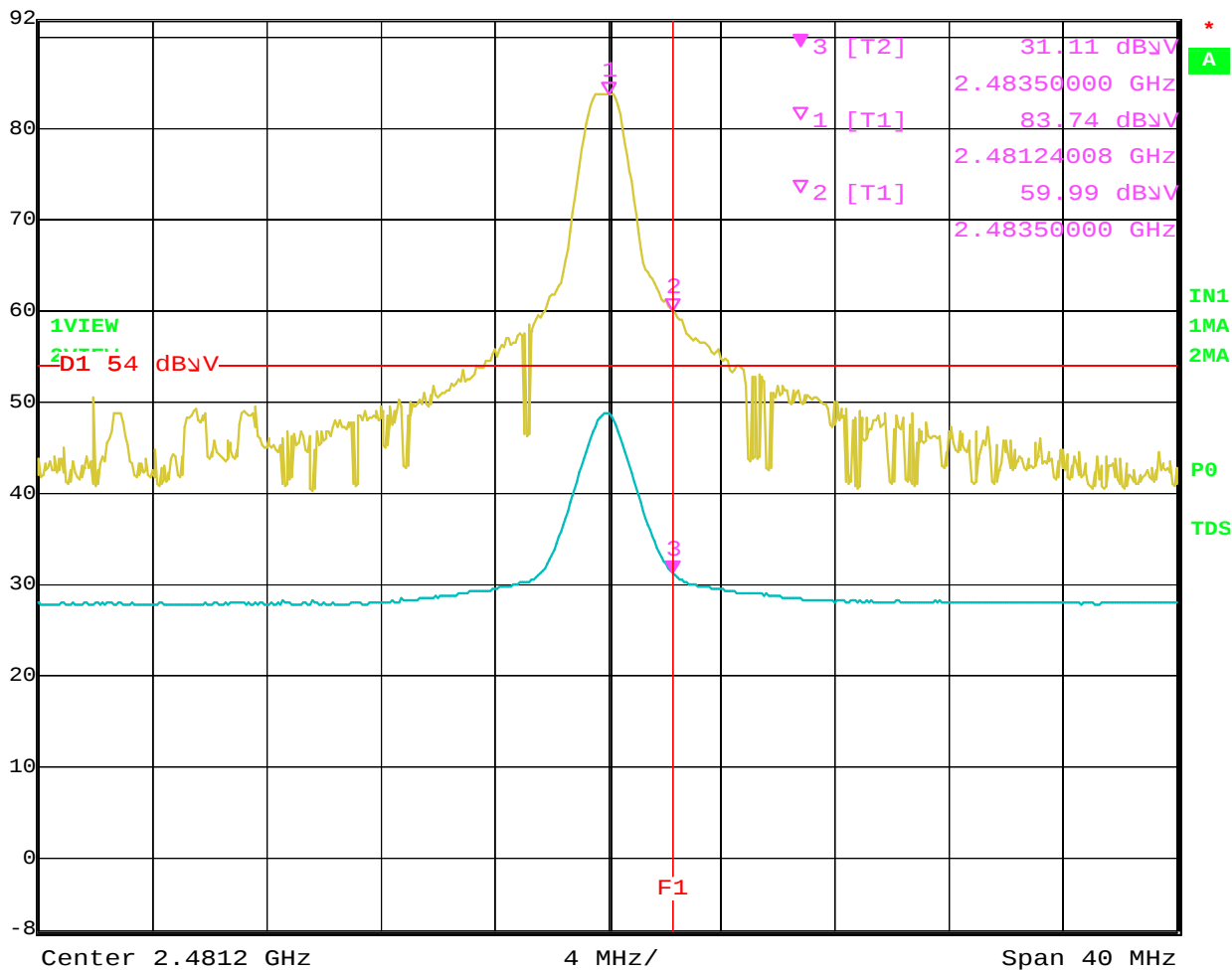
Band Edge – High Channel – Vertical Polarization – Download Mode



Ref Lvl
92 dBμV

Marker 3 [T2]
31.11 dBμV
2.48350000 GHz

RBW 1 MHz RF Att 0 dB
VBW 10 Hz
SWT 10 s Unit dBμV



Date: 9.OCT.2006 14:45:37

Band Edge – High Channel – Horizontal Polarization – Download Mode

APPENDIX F***LIST OF CHANNELS AND FREQUENCIES***

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

channel	uplink mode nominal center frequency (MHz)	download mode nominal center frequency (MHz)	
0	2401.0	2401.0	Note - channels 0-2 are not used in uplink mode
1	2401.2	2401.3	Note - channels 0-2 are not used in download mode
2	2401.4	2401.6	
3	2401.6	2401.9	
4	2401.8	2402.3	
5	2402.0	2402.6	
6	2402.2	2402.9	
7	2402.4	2403.2	
8	2402.6	2403.5	
9	2402.8	2403.8	
10	2403.0	2404.1	
11	2403.2	2404.5	
12	2403.4	2404.8	
13	2403.6	2405.1	
14	2403.8	2405.4	
15	2404.0	2405.7	
16	2404.2	2406.0	
17	2404.4	2406.3	
18	2404.6	2406.7	
19	2404.8	2407.0	
20	2405.0	2407.3	
21	2405.2	2407.6	
22	2405.4	2407.9	
23	2405.6	2408.2	
24	2405.8	2408.5	
25	2406.0	2408.9	
26	2406.2	2409.2	
27	2406.4	2409.5	
28	2406.6	2409.8	
29	2406.8	2410.1	
30	2407.0	2410.4	
31	2407.2	2410.7	
32	2407.4	2411.1	
33	2407.6	2411.4	
34	2407.8	2411.7	
35	2408.0	2412.0	
36	2408.2	2412.3	
37	2408.4	2412.6	
38	2408.6	2412.9	
39	2408.8	2413.3	
40	2409.0	2413.6	
41	2409.2	2413.9	
42	2409.4	2414.2	
43	2409.6	2414.5	
44	2409.8	2414.8	
45	2410.0	2415.1	

46	2410.2	2415.5
47	2410.4	2415.8
48	2410.6	2416.1
49	2410.8	2416.4
50	2411.0	2416.7
51	2411.2	2417.0
52	2411.4	2417.3
53	2411.6	2417.7
54	2411.8	2418.0
55	2412.0	2418.3
56	2412.2	2418.6
57	2412.4	2418.9
58	2412.6	2419.2
59	2412.8	2419.5
60	2413.0	2419.9
61	2413.2	2420.2
62	2413.4	2420.5
63	2413.6	2420.8
64	2413.8	2421.1
65	2414.0	2421.4
66	2414.2	2421.7
67	2414.4	2422.1
68	2414.6	2422.4
69	2414.8	2422.7
70	2415.0	2423.0
71	2415.2	2423.3
72	2415.4	2423.6
73	2415.6	2423.9
74	2415.8	2424.3
75	2416.0	2424.6
76	2416.2	2424.9
77	2416.4	2425.2
78	2416.6	2425.5
79	2416.8	2425.8
80	2417.0	2426.1
81	2417.2	2426.5
82	2417.4	2426.8
83	2417.6	2427.1
84	2417.8	2427.4
85	2418.0	2427.7
86	2418.2	2428.0
87	2418.4	2428.3
88	2418.6	2428.7
89	2418.8	2429.0
90	2419.0	2429.3
91	2419.2	2429.6
92	2419.4	2429.9
93	2419.6	2430.2
94	2419.8	2430.5
95	2420.0	2430.9
96	2420.2	2431.2
97	2420.4	2431.5

98	2420.6	2431.8
99	2420.8	2432.1
100	2421.0	2432.4
101	2421.2	2432.7
102	2421.4	2433.1
103	2421.6	2433.4
104	2421.8	2433.7
105	2422.0	2434.0
106	2422.2	2434.3
107	2422.4	2434.6
108	2422.6	2434.9
109	2422.8	2435.3
110	2423.0	2435.6
111	2423.2	2435.9
112	2423.4	2436.2
113	2423.6	2436.5
114	2423.8	2436.8
115	2424.0	2437.1
116	2424.2	2437.5
117	2424.4	2437.8
118	2424.6	2438.1
119	2424.8	2438.4
120	2425.0	2438.7
121	2425.2	2439.0
122	2425.4	2439.3
123	2425.6	2439.7
124	2425.8	2440.0
125	2426.0	2440.3
126	2426.2	2440.6
127	2426.4	2440.9
128	2426.6	2441.2
129	2426.8	2441.5
130	2427.0	2441.9
131	2427.2	2442.2
132	2427.4	2442.5
133	2427.6	2442.8
134	2427.8	2443.1
135	2428.0	2443.4
136	2428.2	2443.7
137	2428.4	2444.1
138	2428.6	2444.4
139	2428.8	2444.7
140	2429.0	2445.0
141	2429.2	2445.3
142	2429.4	2445.6
143	2429.6	2445.9
144	2429.8	2446.3
145	2430.0	2446.6
146	2430.2	2446.9
147	2430.4	2447.2
148	2430.6	2447.5
149	2430.8	2447.8

150	2431.0	2448.1
151	2431.2	2448.5
152	2431.4	2448.8
153	2431.6	2449.1
154	2431.8	2449.4
155	2432.0	2449.7
156	2432.2	2450.0
157	2432.4	2450.3
158	2432.6	2450.7
159	2432.8	2451.0
160	2433.0	2451.3
161	2433.2	2451.6
162	2433.4	2451.9
163	2433.6	2452.2
164	2433.8	2452.5
165	2434.0	2452.9
166	2434.2	2453.2
167	2434.4	2453.5
168	2434.6	2453.8
169	2434.8	2454.1
170	2435.0	2454.4
171	2435.2	2454.7
172	2435.4	2455.1
173	2435.6	2455.4
174	2435.8	2455.7
175	2436.0	2456.0
176	2436.2	2456.3
177	2436.4	2456.6
178	2436.6	2456.9
179	2436.8	2457.3
180	2437.0	2457.6
181	2437.2	2457.9
182	2437.4	2458.2
183	2437.6	2458.5
184	2437.8	2458.8
185	2438.0	2459.1
186	2438.2	2459.5
187	2438.4	2459.8
188	2438.6	2460.1
189	2438.8	2460.4
190	2439.0	2460.7
191	2439.2	2461.0
192	2439.4	2461.3
193	2439.6	2461.7
194	2439.8	2462.0
195	2440.0	2462.3
196	2440.2	2462.6
197	2440.4	2462.9
198	2440.6	2463.2
199	2440.8	2463.5
200	2441.0	2463.9
201	2441.2	2464.2

202	2441.4	2464.5
203	2441.6	2464.8
204	2441.8	2465.1
205	2442.0	2465.4
206	2442.2	2465.7
207	2442.4	2466.1
208	2442.6	2466.4
209	2442.8	2466.7
210	2443.0	2467.0
211	2443.2	2467.3
212	2443.4	2467.6
213	2443.6	2467.9
214	2443.8	2468.3
215	2444.0	2468.6
216	2444.2	2468.9
217	2444.4	2469.2
218	2444.6	2469.5
219	2444.8	2469.8
220	2445.0	2470.1
221	2445.2	2470.5
222	2445.4	2470.8
223	2445.6	2471.1
224	2445.8	2471.4
225	2446.0	2471.7
226	2446.2	2472.0
227	2446.4	2472.3
228	2446.6	2472.7
229	2446.8	2473.0
230	2447.0	2473.3
231	2447.2	2473.6
232	2447.4	2473.9
233	2447.6	2474.2
234	2447.8	2474.5
235	2448.0	2474.9
236	2448.2	2475.2
237	2448.4	2475.5
238	2448.6	2475.8
239	2448.8	2476.1
240	2449.0	2476.4
241	2449.2	2476.7
242	2449.4	2477.1
243	2449.6	2477.4
244	2449.8	2477.7
245	2450.0	2478.0
246	2450.2	2478.3
247	2450.4	2478.6
248	2450.6	2478.9
249	2450.8	2479.3
250	2451.0	2479.6
251	2451.2	2479.9
252	2451.4	2480.2
253	2451.6	2480.5

254	2451.8	2480.8	Note - channel 255 is not used in download mode
255	2452.0	2481.1	