FCC PART 15, SUBPART C
TEST REPORT

for

REMOTE CONTROL
Model: RP PRESENTER
P/N: VP4300
FCC ID: IE3VP43XX03

Prepared for

INTERLINK ELECTRONICS
546 FLYNN ROAD
CAMARILLO, CA 93012

Prepared by: 

JOEY J. MADLANGBAYAN

Approved by: 

RUBY A. HALL

COMPATIBLE ELECTRONICS INC.
2337 TROUTDALE DRIVE
AGOURA, CALIFORNIA 91301
(818) 597-0600

DATE: JUNE 18, 2003

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

This electromagnetic emission 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 in any form except in full, without the written permission of Compatible Electronics.

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

Device Tested: Remote Control
Model: RP PRESENTER
P/N: VP4300
S/N: 1

Product Description: This is a wireless Remote Control.

Modifications: The EUT was not modified during the testing.

Manufacturer: Interlink Electronics
546 Flynn Road
Camarillo, CA 93012

Test Date: June 6, 2003

Test Specifications: EMI requirements
FCC CFR Title 47, Part 15 Subpart C
Test Procedure: ANSI C63.4: 2000.

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 10 kHz to 9.165 GHz	Complies with the limits of FCC CFR Title 47, Part 15 Subpart C 15.205, 15.209 & 15.249, and the requirements of 15.31(e).

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Remote Control Model: **RP Presenter**. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2000. 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 specification limits and requirements defined in FCC CFR Title 47, Part 15 Subpart A (15.31e), Subpart B and Subpart C (15.205, 15.209 and 15.249).

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 2337 Troutdale Drive, Agoura, California 91301.

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

Interlink Electronics

Ken Johnson	Senior Hardware/Firmware Engineer
Daniel Grieder	Member of Technical Staff

Compatible Electronics Inc.

Andre D. Khan	Test Technician
Joey J. Madlangbayan	Test Engineer
Ruby A. Hall	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on June 6, 2003.

2.5 Disposition of the Test Sample

The test sample remains at Compatible Electronics, Inc.

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
FCC CFR Title 47, Part 15 Subpart A	FCC Rules – General
FCC CFR Title 47, Part 15 Subpart B	FCC Rules – Unintentional Radiators
FCC CFR Title 47, Part 15 Subpart C	FCC Rules – Intentional Radiators.
CISPR 16 1993	Specification for radio disturbance and immunity measuring apparatus and methods.
ANSI C63.4 2000	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

The EUT was set-up in a tabletop configuration in all the three Orthogonal Axes with a new battery installed. The antenna of the EUT is a fixed element incorporated in the PCB design. The EUT was continuously transmitting.

The highest emissions were found when the EUT was running in the above configuration. The final radiated data was taken in this mode of operation. All initial investigations were performed with the spectrum analyzer in manual mode scanning the frequency range continuously. The EUT was setup and tested as shown in the photographs in Appendix D.

4.1.1 Cable Construction and Termination

The EUT does not have any external cables.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER
REMOTE CONTROL (EUT)	INTERLINK ELECTRONICS	RP PRESENTER	SN: 1 FCC ID: IE3VP43XX03

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Spectrum Analyzer	Hewlett Packard	8566B	2729A04566	Jan. 27, 2003	Jan. 27, 2004
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00682	Jan. 27, 2003	Jan. 27, 2004
Preamplifier	Com Power	CPPA-102	01249	Feb. 10, 2003	Feb. 10, 2004
Active Loop Antenna	Com Power	AL-130	17067	Mar. 06, 2003	Mar. 06, 2004
Biconical Antenna	Com Power	AB-100	01535	Mar. 10, 2003	Mar. 10, 2004
Log Periodic Antenna	Com Power	AL-100	01116	Jan. 23, 2003	Jan. 23, 2004
Horn Antenna	A. R. A.	DRG 118/A	1015	Nov. 18, 2002	Nov. 18, 2005
Microwave Amplifier	Com Power	PA-122	181915	Mar. 20, 2003	Mar. 20, 2004
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-106A	N/A	N/A	N/A
Computer	Hewlett Packard	Pavilion 4530	US91912022	N/A	N/A
Printer	Hewlett Packard	C6427B	MY066160TW	N/A	N/A
(Software) Radiated Emissions Transmitter Data Program	Compatible Electronics	DOC No: EMI_PART15TX-B-0-50	Rev. A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 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. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The Spectrum Analyzer was used as a measuring meter along with the quasi-peak adapter. 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 Spectrum Analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the Spectrum Analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions 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: 2000. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.15 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The EUT is a battery-powered unit; therefore this test was not performed.

7.1.2 Radiated Emissions Test

The spectrum analyzer was used as a measuring meter along with a quasi-peak adapter. A Preamplifier was used to increase the sensitivity of the instrument. 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. This final reading is then recorded into the a Computer data recording program, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The quasi-peak measurement was used only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 10kHz-150kHz, 9 kHz for 0.150kHz-30MHz, 120 kHz for 30-1000MHz and 1 MHz for 1000 MHz and above).

Broadband loop, biconical, log periodic and horn antennas were used as transducers during the measurement. The loop antenna was used from 10 kHz to 30 MHz, the biconical antenna was used from 30 MHz to 300 MHz, the bg periodic antenna was used from 300 MHz to 1 GHz and the horn antenna was used from 1 GHz to 9.165 GHz. The frequency spans were wide (10 kHz to 30 MHz, 30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz, 300 MHz to 1 GHz and 1 GHz to 9.165 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

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: 2000. 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 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 test distance of 3 meters to obtain final test data. The test data is located in Appendix E.

Preliminary Testing and Monitoring:

Preliminary testing was done at a distance of 1 meter instead of 3 meters to determine the predominant harmonics and spurious emission frequencies. An open field test site was used for the preliminary investigations. Broadband antennas were used to scan large frequency bands while manipulating the X, Y and Z azimuth of the unit. If and when any frequency was found to be above 30 microvolts/meter level (at a 1 meter distance), this frequency was recorded as a significant frequency. All significant frequencies were further examined carefully at a frequency span on the spectrum analyzer while changing the antenna height and EUT orientation. The EUT was tested again at a test distance of 3 meters to obtain the final test data. The bandwidth of the spectrum analyzer was varied to ensure that pulse desensitization did not occur.

7.1.3 RF Emissions Test Results

The fundamental and up to the 10th harmonic emissions are within the specifications.

INTERLINK ELECTRONICS
REMOTE CONTROL

RADIATED EMISSIONS – SPURIOUS

Table 1.0
The following bands were specifically scanned.
Frequency Band 10 kHz – 9.165 GHz

No spurious emissions were found.

RF Energy From Transmitter in MHz at 3 meters (µV/m)

0.090-0.110	<50	37.5-38.25	<100
0.495-0.505	<50	73-74.6	<100
2.1735-2.1905	<50	74.8-75.2	<100
4.125-1.128	<50	108-121.94	<100
4.17725-4.17775	<50	123-138	<150
4.20725-4.20775	<50	149.9-150.05	<150
6.215-6.218	<50	156.52-156.52	<150
6.26775-6.26825	<50	162.01-167.17	<150
6.31175-6.31225	<50	167.72-173.2	<150
8.291-8.294	<50	240-285	<200
8.362-8.366	<50	322-335.4	<200
8.37625-8.38675	<50	399.9-410	<200
8.41425-8.41475	<50	608-614	<200
12.29-12.293	<50	960-1240	<500
12.51975-12.52025	<50	1300-1427	<500
12.57675-12.57725	<50	1435-1626.5	<500
13.36-13.41	<50	1645.5-1646.5	<500
16.42-16.423	<50	1660-1710	<500
16.69475-16.69525	<50	1718.8-1722.2	<500
16.80425-16.80475	<50		
25.5-25.67	<50		

7.1.3.1 RF Emissions Test Results (Continued)

RF Energy From Transmitter in MHz at 3 meters (µV/m)

2200-2300	<500	4500-5150	<500
2310-2390	<500	5350-5460	<500
2483.5-2500	<500	7250-7750	<500
2655-2900	<500	8025-8500	<500
3260-3267	<500	9000-9200	<500
3332-3339	<500		
3345.8-3358	<500		
3600-4400	<500		

7.1.4 Sample Calculations

A correction factor for the antenna, cable and a distance factor (if any) must be applied to the meter reading before a true field strength reading can be obtained. For greater efficiency and convenience, instead of using these correction factors for each meter reading, the specification limit was modified to reflect these correction factors at each frequency, so that the meter readings can be compared directly to the modified specification limit, referred to henceforth as the corrected meter reading limit (CML).

The equation can be derived in the following manner:

Specification limit (µV/m) log x 20 = Specification Limit in dBuV

(Specification distance / test distance) log x 40 = distance factor

(Specification Limit dBuV + distance factor) + Antenna factor – effective gain = Corrected Meter Limit

Note: When using an Active Antenna, the Antenna factor shall be subtracted due to the combination of the internal amplification and antenna loss. At lower frequencies the cable loss is negligible.

OR

Corrected Meter Reading = meter reading + F – A + C

where: F = antenna factor
A= amplifier gain
C = cable loss

Therefore, the equation for determining the corrected meter reading is:

CMR = spec. limit - F - A + C

A table of corrected meter reading limits was used to permit immediate comparison of the meter reading and determine if the emission level exceeded the specification limit at that frequency. The correction factors for the antenna and the amplifier gain are attached in Appendix D of this report. The data sheets are attached in Appendix E.

The distance factor D is 0 when the test is performed at the required specification distance.

8. CONCLUSIONS

The Remote Control Model: **RP Presenter** meets all of the requirements of the FCC CFR, Title 47, Part 15, Subpart A, B and C (15.205, 15.209 and 15.249).

APPENDIX A

LABORATORY ACCREDITATIONS

LABORATORY ACCREDITATIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200063-0

Voluntary Control Council for Interference - Registration Numbers: R-826, C-862, R-653 and C-669

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

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

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)

Conformity Assessment Body for the EMC directive under the US/EU MRA appointed by NIST.

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

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

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

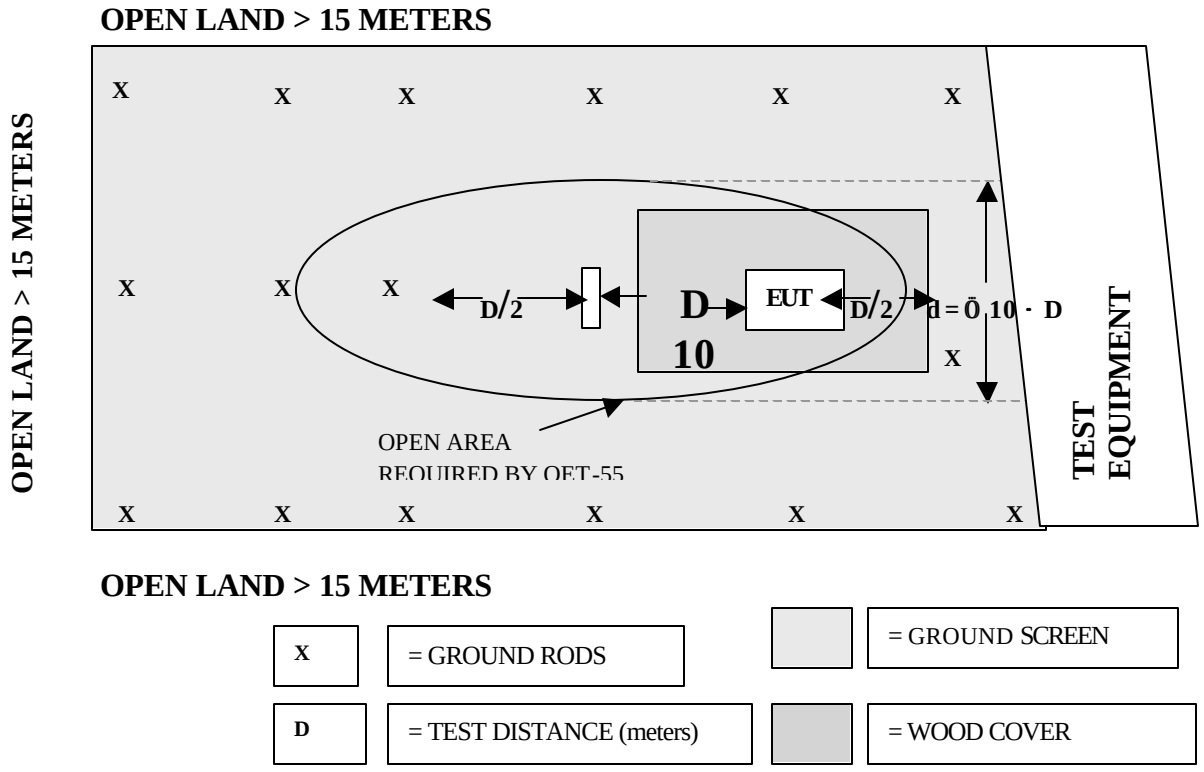
USED FOR THE PRIMARY TEST	REMOTE CONTROL Model: RP PRESENTER

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE



COM-POWER AL-130

ACTIVE LOOP ANTENNA

S/N: 17067

CALIBRATION DATE: MARCH 6, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
0.009	11.9	1	10.8
0.01	11.8	2	11.5
0.02	10.7	3	11.0
0.03	12.4	4	10.9
0.04	12.1	5	11.6
0.05	10.5	6	11.5
0.06	10.9	7	11.4
0.07	10.6	8	11.2
0.08	10.2	9	11.6
0.09	10.1	10	11.0
0.1	10.0	12	10.2
0.2	7.8	14	10.3
0.3	10.1	15	10.3
0.4	10.1	16	10.3
0.5	10.3	18	10.4
0.6	10.4	20	10.3
0.7	10.5	25	10.0
0.8	10.5	30	8.4
0.9	10.5		

COM-POWER AB-100

BICONICAL ANTENNA

S/N: 1535

CALIBRATION DATE: MARCH 10, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	12.8	120	9.6
35	11.6	125	10.0
40	11.5	140	11.9
45	11.7	150	12.1
50	12.2	160	13.4
55	10.9	175	13.6
60	10.2	180	13.6
65	7.9	200	14.8
70	9.7	225	15.1
80	8.1	250	16.7
90	9.0	275	17.6
100	9.3	300	18.8

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 01116

CALIBRATION DATE: JAN. 23, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	16.0	650	20.2
330	15.1	700	21.5
340	15.4	725	21.9
350	15.6	750	21.3
360	16.4	800	21.0
370	14.1	850	22.5
400	15.1	900	22.9
425	15.1	925	23.1
450	16.7	950	24.2
500	17.0	975	24.3
550	18.7	1000	26.2
600	19.4		

COM-POWER PA-102

PREAMPLIFIER

S/N: 1249

CALIBRATION DATE: FEB. 10, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	35.5	300	34.6
40	35.4	350	34.8
50	35.6	400	34.6
60	35.3	450	34.2
70	35.5	500	35.0
80	35.1	550	34.6
90	35.4	600	35.0
100	35.2	650	35.4
125	35.4	700	35.0
150	35.1	750	36.4
175	35.0	800	34.6
200	35.1	850	32.2
225	35.0	900	24.9
250	34.7	950	30.5
275	34.8	1000	30.8

COM-POWER PA-122

PREAMPLIFIER

S/N: 181915

CALIBRATION DATE: MARCH 20, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1000	27.3	7000	29.1
1100	27.3	7500	30.5
1200	27.1	8000	29.7
1300	27.1	8500	29.2
1400	27.6	9000	28.8
1500	27.3	9500	25.9
1600	28.0	10000	30.0
1700	28.7	11000	29.5
1800	31.2	12000	29.5
1900	31.2	13000	27.6
2000	31.9	14000	29.2
2500	31.3	15000	29.7
3000	31.0	16000	30.2
3500	32.5	17000	23.2
4000	30.7	18000	26.4
4500	31.5		
5000	32.0		
5500	30.7		
6000	30.6		
6500	29.5		

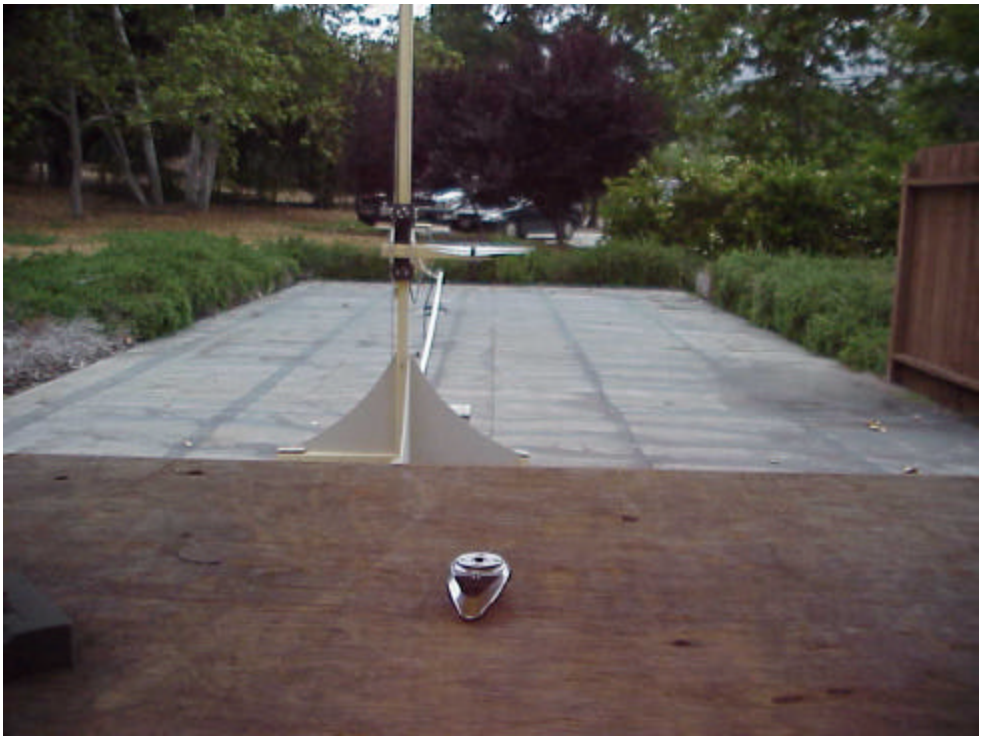
A.R.A DRG-118/A

HORN ANTENNA

S/N: 1015

CALIBRATION DATE: NOVEMBER 18, 2002

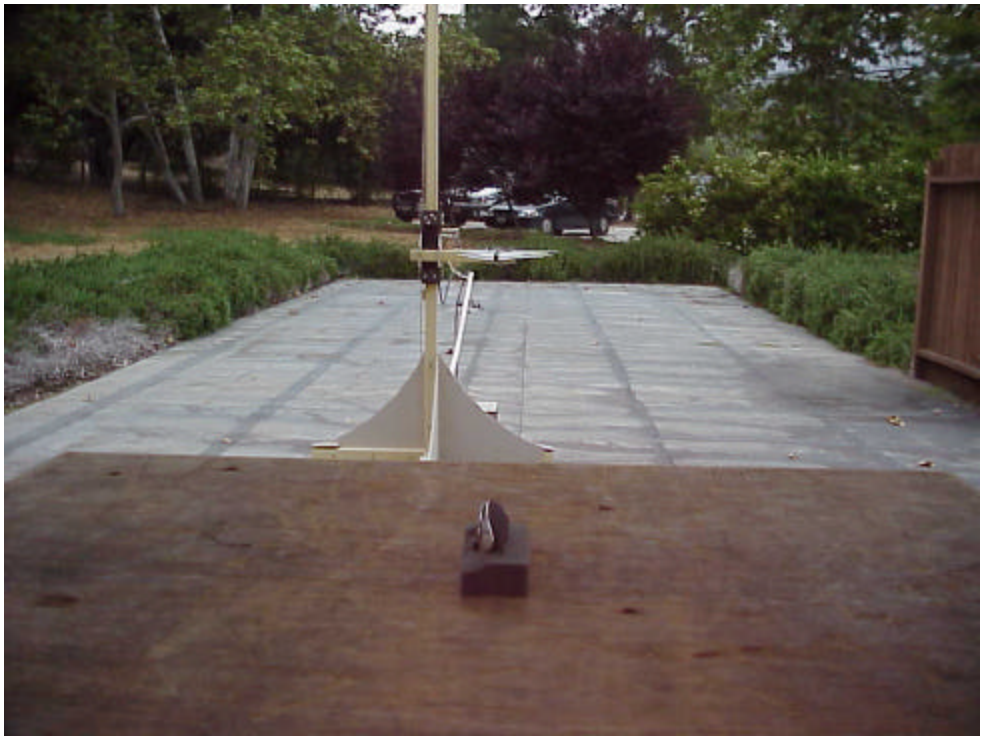
FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1000	25.5	10000	39.7
1500	26.7	10500	41.1
2000	30.1	11000	40.6
2500	30.6	11500	41.4
3000	31.5	12000	42.8
3500	32.3	12500	43.7
4000	32.7	13000	41.7
4500	33.0	13500	40.5
5000	35.1	14000	40.7
5500	35.2	14500	41.8
6000	36.4	15000	43.2
6500	36.9	15500	42.5
7000	39.7	16000	42.4
7500	38.8	16500	41.2
8000	37.9	17000	41.7
8500	37.9	17500	43.8
9000	39.9	18000	45.2
9500	39.0		



X-AXIS

INTERLINK ELECTRONICS
REMOTE CONTROL
Model: RP PRESENTER
FCC PART 15 SUBPART C - RADIATED EMISSIONS – 6-6-03

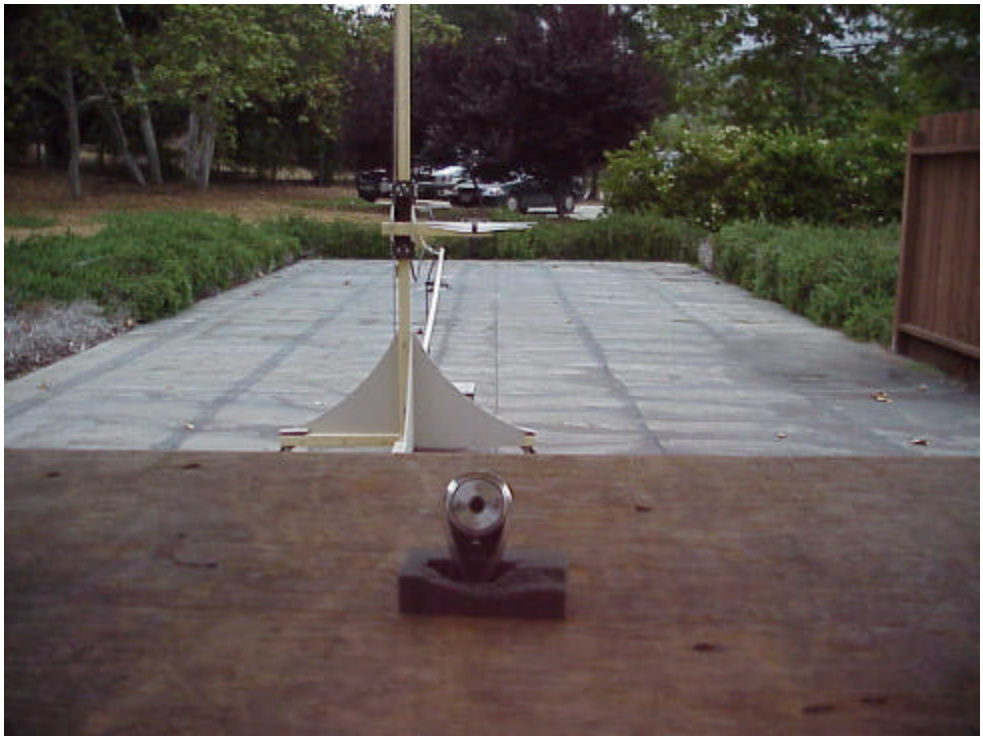
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



Y-AXIS

INTERLINK ELECTRONICS
REMOTE CONTROL
Model: RP PRESENTER
FCC PART 15 SUBPART C - RADIATED EMISSIONS – 6-6-03

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



Z-AXIS

INTERLINK ELECTRONICS
REMOTE CONTROL
Model: RP PRESENTER
FCC PART 15 SUBPART C - RADIATED EMISSIONS – 6-6-03

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

EUT AND LAB INFORMATION

COMPANY:	Interlink Electronics
EUT NAME:	Remote Control
EUT MODEL:	RP Presenter
EUT S/N:	S/N: 1 P/N:VP4300
EUT MODE:	TRANSMIT
LOW CHANNEL (MHz):	916.5
MEDIUM CHANNEL (MHz):	0
HIGH CHANNEL (MHz):	0
FULL BANDWIDTH (MHz):	0
DUTY CYCLE %	
LEAVE BLANK FOR 3 AXIS	
LAB:	F
TEST DATE:	6/6/03
DATA SHEET TITLE:	RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)
TEST ENGINEER:	Andre D. Khan
TEST DISTANCE:	3 METERS

ENTER "0" IF THERE IS NO DUTY CYCLE PERCENTAGE

ENTER "0" IF TESTING ONLY ONE AXIS

LAB FACTORS (CHANNEL 1)

FREQ. (MHz)					CABLE LOSS	PREAMP GAIN	ANT. FACTORS
.01-30 S/N CAL DUE							
30-300 S/N CAL DUE					RG-8/U 3548 3/3/04	PA-102 1249 2/10/04	AB-100 1535 3/10/04
300-1000 S/N CAL DUE					RG-8/U 3548 3/3/04	PA-102 1249 2/10/04	AL-100 1116 1/23/04
1G-13G S/N CAL DUE					FSJ1-50 3567 3/20/04	PA-122 3580 3/20/04	DRG-118A 1015 11/18/05
13G-18G S/N CAL DUE					FSJ1-50 3567 3/20/04	PA-122 3580 3/20/04	DRG-118A 1015 11/18/05
18G-26.5G S/N CAL DUE	RESTRICTED? PEAK	RESTRICTED? BAND	A or QP	SPEC LIMIT (dBuV/m)			
916.50	0	0	QP	94.0	9.8	26.8	23.0
1833.00	0	0	A	54.0	5.5	31.2	29.0
2749.50	1	0	A	54.0	6.6	31.2	31.1
3666.00	1	0	A	54.0	7.9	31.9	32.4
4582.50	1	0	A	54.0	9.6	31.6	33.3
5499.00	0	0	A	54.0	9.1	30.7	35.2
6415.50	0	0	A	54.0	10.8	29.7	36.8
7332.00	1	0	A	54.0	11.4	30.0	39.1
8248.50	1	0	A	54.0	12.0	29.5	37.9
9165.00	1	0	A	54.0	13.3	27.9	39.6

LAB FACTORS (CHANNEL 2)

FREQ. (MHz)					CABLE LOSS	PREAMP GAIN	ANT. FACTORS
.01-30 S/N CAL DUE							
30-300 S/N CAL DUE							
300-1000 S/N CAL DUE							
1G-13G S/N CAL DUE							
13G-18G S/N CAL DUE							
18G-26.5G S/N CAL DUE	RESTRICTED? PEAK	RESTRICTED? BAND	A or QP	SPEC LIMIT (dBuV/m)			
0.00	#N/A	#N/A	QP				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				

LAB FACTORS (CHANNEL 3)

FREQ. (MHz)					CABLE LOSS	PREAMP GAIN	ANT. FACTORS
.01-30 S/N CAL DUE							
30-300 S/N CAL DUE							
300-1000 S/N CAL DUE							
1G-13G S/N CAL DUE							
13G-18G S/N CAL DUE							
18G-26.5G S/N CAL DUE	RESTRICTED? PEAK	RESTRICTED? BAND	A or QP	SPEC LIMIT (dBuV/m)			
0.00	#N/A	#N/A	QP				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
916.5000	88.5	86.7 QP	H	1.0	270	X	LOW	23.0	9.8	26.8	**92.8**	**-1.3**	**94.0**	
916.5000	87.1	85.7 QP	H	1.0	270	Y	LOW	23.0	9.8	26.8	**91.8**	**-2.3**	**94.0**	
916.5000	82.2	QP	H	1.0	180	Z	LOW	23.0	9.8	26.8	**88.3**	**-5.8**	**94.0**	
916.5000	84.3	QP	V	1.5	170	X	LOW	23.0	9.8	26.8	**90.4**	**-3.7**	**94.0**	
916.5000	80.1	QP	V	1.0	160	Y	LOW	23.0	9.8	26.8	**86.2**	**-7.9**	**94.0**	
916.5000	88.8	85.8 QP	V	1.0	200	Z	LOW	23.0	9.8	26.8	**91.9**	**-2.2**	**94.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1833.0000	43.8	A	H	3.0	180	X	LOW	29.0	5.5	31.2	**47.1**	**-7.0**	**54.0**	
1833.0000	45.4	A	H	3.0	270	Y	LOW	29.0	5.5	31.2	**48.7**	**-5.4**	**54.0**	
1833.0000	44.9	A	H	2.5	160	Z	LOW	29.0	5.5	31.2	**48.2**	**-5.9**	**54.0**	
1833.0000	45.4	A	V	1.0	180	X	LOW	29.0	5.5	31.2	**48.7**	**-5.4**	**54.0**	
1833.0000	46.2	A	V	1.5	160	Y	LOW	29.0	5.5	31.2	**49.5**	**-4.6**	**54.0**	
1833.0000	47.2	A	V	1.0	200	Z	LOW	29.0	5.5	31.2	**50.5**	**-3.6**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2749.5000		A	H			X	LOW	31.1	6.6	31.2			**54.0**	**NO READINGS FOUND**
2749.5000		A	H			Y	LOW	31.1	6.6	31.2			**54.0**	
2749.5000		A	H			Z	LOW	31.1	6.6	31.2			**54.0**	**NO READINGS FOUND**
2749.5000		A	V			X	LOW	31.1	6.6	31.2			**54.0**	
2749.5000		A	V			Y	LOW	31.1	6.6	31.2			**54.0**	
2749.5000		A	V			Z	LOW	31.1	6.6	31.2			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3666.0000		A	H			X	LOW	32.4	7.9	31.9			**54.0**	**NO READINGS FOUND**
3666.0000		A	H			Y	LOW	32.4	7.9	31.9			**54.0**	
3666.0000		A	H			Z	LOW	32.4	7.9	31.9			**54.0**	**NO READINGS FOUND**
3666.0000		A	V			X	LOW	32.4	7.9	31.9			**54.0**	
3666.0000		A	V			Y	LOW	32.4	7.9	31.9			**54.0**	
3666.0000		A	V			Z	LOW	32.4	7.9	31.9			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
4582.5000		A	H			X	LOW	33.3	9.6	31.6			**54.0**	**NO READINGS FOUND**
4582.5000		A	H			Y	LOW	33.3	9.6	31.6			**54.0**	
4582.5000		A	H			Z	LOW	33.3	9.6	31.6			**54.0**	**NO READINGS FOUND**
4582.5000		A	V			X	LOW	33.3	9.6	31.6			**54.0**	
4582.5000		A	V			Y	LOW	33.3	9.6	31.6			**54.0**	
4582.5000		A	V			Z	LOW	33.3	9.6	31.6			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
5499.0000		A	H			X	LOW	35.2	9.1	30.7			**54.0**	**NO READINGS FOUND**
5499.0000		A	H			Y	LOW	35.2	9.1	30.7			**54.0**	
5499.0000		A	H			Z	LOW	35.2	9.1	30.7			**54.0**	**NO READINGS FOUND**
5499.0000		A	V			X	LOW	35.2	9.1	30.7			**54.0**	
5499.0000		A	V			Y	LOW	35.2	9.1	30.7			**54.0**	
5499.0000		A	V			Z	LOW	35.2	9.1	30.7			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
6415.5000		A	H			X	LOW	36.8	10.8	29.7			**54.0**	**NO READINGS FOUND**
6415.5000		A	H			Y	LOW	36.8	10.8	29.7			**54.0**	
6415.5000		A	H			Z	LOW	36.8	10.8	29.7			**54.0**	**NO READINGS FOUND**
6415.5000		A	V			X	LOW	36.8	10.8	29.7			**54.0**	
6415.5000		A	V			Y	LOW	36.8	10.8	29.7			**54.0**	
6415.5000		A	V			Z	LOW	36.8	10.8	29.7			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
7332.0000		A	H			X	LOW	39.1	11.4	30.0			**54.0**	**NO READINGS FOUND**
7332.0000		A	H			Y	LOW	39.1	11.4	30.0			**54.0**	
7332.0000		A	H			Z	LOW	39.1	11.4	30.0			**54.0**	**NO READINGS FOUND**
7332.0000		A	V			X	LOW	39.1	11.4	30.0			**54.0**	
7332.0000		A	V			Y	LOW	39.1	11.4	30.0			**54.0**	
7332.0000		A	V			Z	LOW	39.1	11.4	30.0			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
8248.5000		A	H			X	LOW	37.9	12.0	29.5			**54.0**	**NO READINGS FOUND**
8248.5000		A	H			Y	LOW	37.9	12.0	29.5			**54.0**	
8248.5000		A	H			Z	LOW	37.9	12.0	29.5			**54.0**	**NO READINGS FOUND**
8248.5000		A	V			X	LOW	37.9	12.0	29.5			**54.0**	
8248.5000		A	V			Y	LOW	37.9	12.0	29.5			**54.0**	
8248.5000		A	V			Z	LOW	37.9	12.0	29.5			**54.0**	**NO READINGS FOUND**

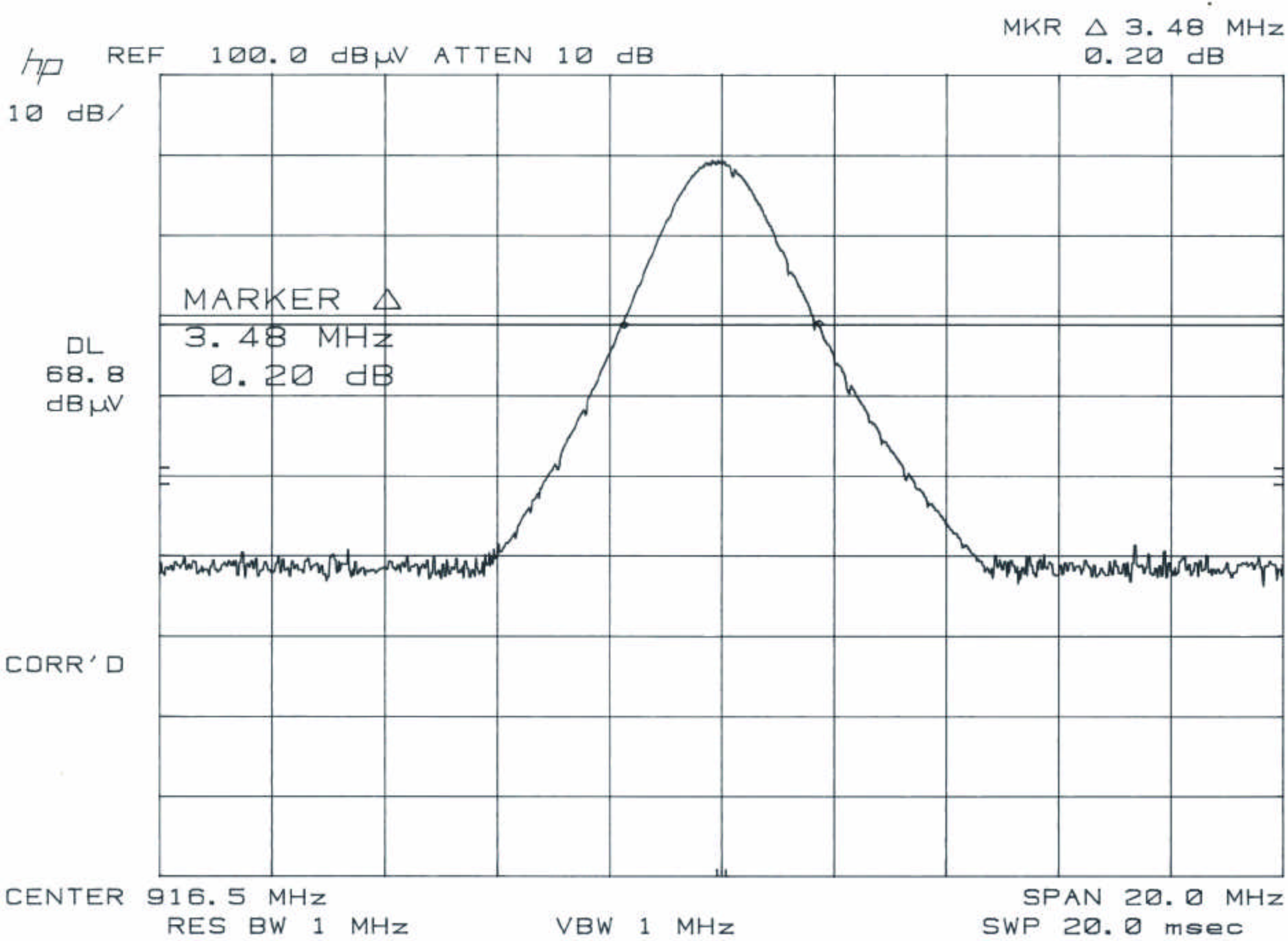
* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

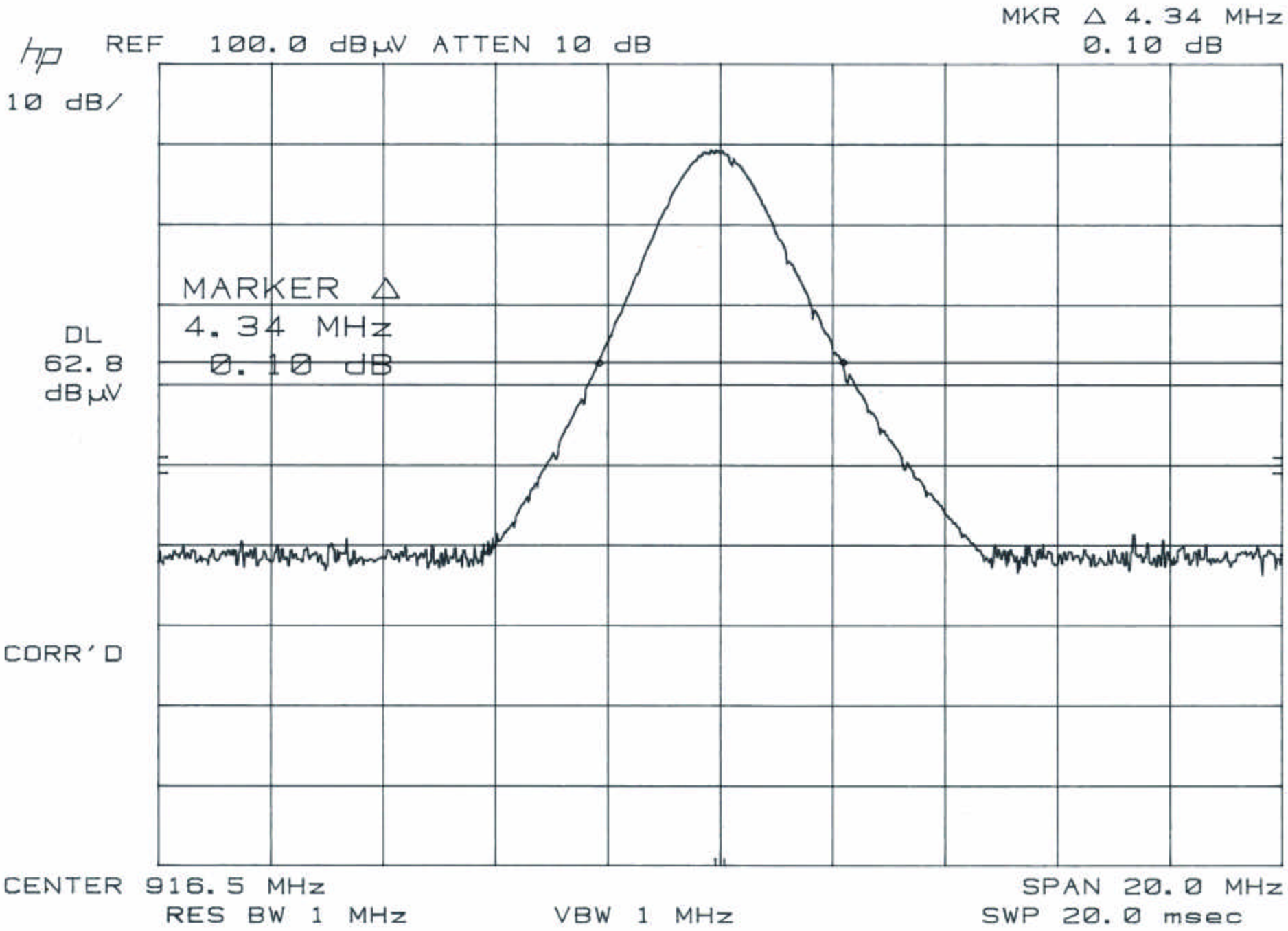
RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)

COMPANY	**Interlink Electronics**	**DATE**	**6/6/03**
EUT	**Remote Control**	**DUTY CYCLE**	**0.00 %**
MODEL	**RP Presenter**	**PEAK TO AVG**	**0 dB**
S/N	**S/N: 1 P/N:VP4300**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**Andre D. Khan**	**LAB**	**F**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
9165.0000		A	H			X	LOW	39.6	13.3	27.9			**54.0**	**NO READINGS FOUND**
9165.0000		A	H			Y	LOW	39.6	13.3	27.9			**54.0**	
9165.0000		A	H			Z	LOW	39.6	13.3	27.9			**54.0**	**NO READINGS FOUND**
9165.0000		A	V			X	LOW	39.6	13.3	27.9			**54.0**	
9165.0000		A	V			Y	LOW	39.6	13.3	27.9			**54.0**	
9165.0000		A	V			Z	LOW	39.6	13.3	27.9			**54.0**	**NO READINGS FOUND**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING


MKR Δ 3.48 MHz
0.20 dB
REF 100.0 dBμV ATTEN 10 dB
10 dB/
MARKER Δ
3.48 MHz
0.20 dB
DL
68.8
dBμV
CORR'D
CENTER 916.5 MHz
SPAN 20.0 MHz
RES BW 1 MHz
VBW 1 MHz
SWP 20.0 msec


MKR Δ 4.34 MHz
0.10 dB
hp REF 100.0 dBμV ATTEN 10 dB
10 dB/
MARKER Δ
4.34 MHz
0.10 dB
DL
62.8
dBμV
CORR'D
CENTER 916.5 MHz
SPAN 20.0 MHz
RES BW 1 MHz
VBW 1 MHz
SWP 20.0 msec

RADIATED EMISSIONS

COMPANY NAME: Interlink Electronics **DATE:** 6-6-03

EUT: Remote Control **EUT S/N:** 1

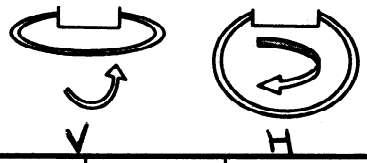
EUT MODEL: RP Presenter **LOCATION:** ☐ BREA ☐ SILVERADO ☑ AGOURA

SPECIFICATION: Fcc **CLASS:** B **TEST DISTANCE:** 3m **LAB:** F

ANTENNA: ☑ LOOP ☐ BICONICAL ☐ LOG ☐ HORN **POLARIZATION:** ☑ VERT ☑ HORIZ

☑ QUALIFICATION ☐ ENGINEERING ☐ MFG. AUDIT **ENGINEER:** A. Khan

NOTES: EuT was tested from 10KHz to 30MHz (Spurious Emissions)



Frequency (MHz)	Peak Reading (dBuV/m)	Quasi-Peak (dBuV/m)	Antenna Height (meters)	Azimuth (degrees)	Delta * (dB)	Corrected Limit (dBuV/m)	Comments
No Readings Found							

* DELTA = METER READING - CORRECTED LIMIT

COMPATIBLE ELECTRONICS

Test Location	: Compatible Electronics	**Page**	: 1/1
Customer	: Daniel Greeder	**Date**	: 06/06/2003
Manufacturer	: Interlink Electronics	**Time**	: 02:51:43 PM
Eut name	: Remote Control	**Lab**	: F
Model	: RP Presenter	**Test Distance**	: 3.00 Meters
Serial #	: #1 P/N: VP4300		
Specification	: FCC Pt. 15 - Class B		
Distance correction factor (20 * log(test/spec))			: 0.00
Test Mode	: CLocks: 1MHz, 14.1818 MHz Test Engineer: A. KHAN		

Pol	Freq	Reading	Cable loss	Antenna factor	Amplifier gain	Corr'd rdg = R	Limit = L	Delta R-L
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB
1V	43.017	45.00	2.47	11.62	35.47	23.62	40.00	-16.38
2V	57.270	49.30	2.90	10.57	35.38	27.40	40.00	-12.60
3V	85.906	49.00	3.02	8.64	35.28	25.38	40.00	-14.62
4V	128.860	37.70	3.58	10.51	35.35	16.44	43.50	-27.06
5V	143.178	40.80	3.87	11.97	35.18	21.46	43.50	-22.04
6H	43.024	42.50	2.47	11.62	35.47	21.12	40.00	-18.88
7H	57.323	43.30	2.90	10.57	35.38	21.39	40.00	-18.61
8H	85.858	48.90	3.02	8.64	35.28	25.28	40.00	-14.72
9H	129.054	43.50	3.59	10.54	35.35	22.28	43.50	-21.22
10H	143.060	46.90	3.87	11.96	35.18	27.55	43.50	-15.95

NO READINGS FOUND ABOVE 143 MHz