

*FCC PART 15, SUBPART B and C
TEST REPORT**for***RF REMOTE CONTROL****MODEL: URC-1033BJ0**

Prepared for

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CYPRESS, CALIFORNIA 90630

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DATE: DECEMBER 16, 2002

	REPORT BODY	APPENDICES					TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
PAGES	17	2	2	2	12	17	52

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TABLE OF CONTENTS

Section / Title	PAGE
GENERAL REPORT SUMMARY	4
SUMMARY OF TEST RESULTS	4
1. PURPOSE	5
2. ADMINISTRATIVE DATA	6
2.1 Location of Testing	6
2.2 Traceability Statement	6
2.3 Cognizant Personnel	6
2.4 Date Test Sample was Received	6
2.5 Disposition of the Test Sample	6
2.6 Abbreviations and Acronyms	6
3. APPLICABLE DOCUMENTS	7
4. Description of Test Configuration	8
4.1 Description of Test Configuration - EMI	8
4.1.1 Cable Construction and Termination	9
5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT	10
5.1 EUT and Accessory List	10
5.2 EMI Test Equipment (Lab X)	11
5.3 EMI Test Equipment (Lab A)	12
6. TEST SITE DESCRIPTION	13
6.1 Test Facility Description	13
6.2 EUT Mounting, Bonding and Grounding	13
7. Test Procedures	14
7.1 Radiated Emissions (Spurious and Harmonics) Test	14
7.2 Bandwidth of the Fundamental	16
8. CONCLUSIONS	17



LIST OF APPENDICES

APPENDIX	TITLE
A	Laboratory Recognitions
B	Modifications to the EUT
C	Additional Models Covered Under This Report
D	Diagrams, Charts, and Photos • Test Setup Diagrams • Radiated Emissions Photos • Antenna and Effective Gain Factors
E	Data Sheets

LIST OF FIGURES

FIGURE	TITLE
1	Plot Map And Layout of Radiated 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: RF Remote Control
Model: URC-1033BJ0
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified during the testing.

Manufacturer: Universal Electronics, Inc.
6101 Gateway Drive
Cypress, California 90630

Test Dates: November 27; December 5 and 6, 2002

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205, 15.209, and 15.231

Test Procedure: ANSI C63.4: 1992

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

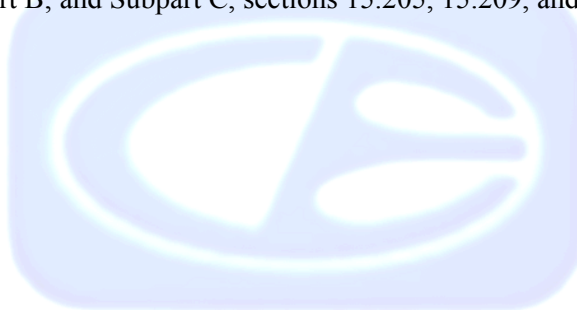
SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 450 kHz - 30 MHz	This test was not performed because the EUT operates on battery power only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz - 4500 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the RF Remote Control Model: URC-1033BJ0. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. 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 15.231.



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

Universal Electronics, Inc.

Jesse Mendez Electrical Engineer

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer

Michael Christensen Test Engineer

2.4 Date Test Sample was Received

The test sample was received on November 27, 2002.

2.5 Disposition of the Test Sample

The sample was returned to Universal Electronics, Inc. on December 10, 2002.

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 1992	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 RF Remote Control Model: URC-1033BJ0 (EUT) was tested a stand alone unit. The EUT was tested in three orthogonal axis. The EUT was continuously transmitting. The antenna is hard wired onto the main PCB inside the EUT.

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

There are no external cables connected to the EUT.



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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
RF REMOTE CONTROL (EUT)	UNIVERSAL ELECTRONICS, INC.	URC-1033BJ0	N/A	MG3URC033



5.2 EMI Test Equipment (Lab X)

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiated Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	2634A02962	February 8, 2002	Feb. 8, 2003
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2517A09947	February 8, 2002	Feb. 8, 2003
Spectrum Analyzer – Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01362	February 8, 2002	Feb. 8, 2003
Preamplifier	Com Power	PA-103	1582	March 7, 2002	Mar. 7, 2003
Biconical Antenna	Com Power	AB-900	15075	September 19, 2002	Sept. 19, 2003
Log Periodic Antenna	Com Power	AL-100	16060	Nov. 12, 2002	Nov. 12, 2003
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A



5.3 EMI Test Equipment (Lab A)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiated Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Emissions Program	Compatible Electronics, Inc.	2.3 (SR19)	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	June 21, 2002	June 21, 2003
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22262	June 21, 2002	June 21, 2003
Spectrum Analyzer – Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	June 21, 2002	June 21, 2003
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Loop Antenna	Com-Power	AL-130	17070	June 19, 2002	June 19, 2003
Horn Antenna	Com-Power	AH-118	10073	Jan. 21, 2002	Jan. 21, 2003
Microwave Preamplifier	Com-Power	PA-122	25195	Jan. 7, 2002	Jan. 7, 2003



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. 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 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer 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 Model: PA-122 was used for frequencies above 1 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 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 9.3 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: 1992. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is RF 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.



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



7.2 Bandwidth of the Fundamental

The -20 dB bandwidth was checked to see that it was within 0.25% of the fundamental frequency for the EUT. Data sheets of the -20 dB bandwidth are located in Appendix E.



8. CONCLUSIONS

The RF Remote Control Model: URC-1033BJ0 meets all of the Class B specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.



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

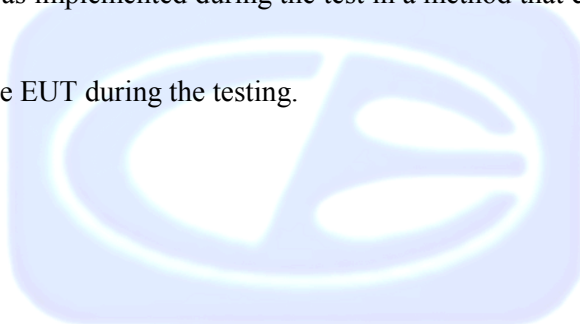


MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 or FCC Class B 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

RF Remote Control
Model: URC-1033BJ0
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS



COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15075

CALIBRATION DATE: SEPTEMBER 19, 2002

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	11.70	120	12.90
35	10.90	125	13.00
40	11.40	140	13.00
45	10.90	150	11.50
50	10.80	160	11.90
60	9.90	175	14.50
70	7.60	180	15.40
80	5.70	200	17.00
90	7.50	250	15.40
100	9.70	300	18.70



COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: NOVEMBER 12, 2002

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	14.20	700	19.50
350	14.40	750	21.40
400	13.70	800	20.60
450	14.80	850	20.70
500	16.80	900	20.50
550	16.70	950	22.70
600	18.60	1000	24.50
650	18.70		



COM-POWER PA-103**PREAMPLIFIER**

S/N: 1582

CALIBRATION DATE: MARCH 7, 2002

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	33.2	300	32.9
40	33.2	350	32.8
50	33.3	400	32.8
60	33.2	450	32.7
70	33.2	500	32.5
80	33.2	550	32.5
90	33.2	600	32.7
100	33.2	650	32.4
125	33.1	700	32.3
150	33.2	750	32.3
175	33.1	800	32.0
200	33.1	850	32.6
225	33.0	900	31.8
250	33.0	950	31.7
275	32.9	1000	32.6

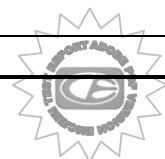


COM-POWER PA-122**MICROWAVE PREAMPLIFIER**

S/N: 25195

CALIBRATION DATE: JANUARY 7, 2002

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	33.7	9.5	31.8
1.1	33.4	10.0	32.2
1.2	33.1	11.0	31.4
1.3	33.1	12.0	30.2
1.4	33.2	13.0	32.9
1.5	32.5	14.0	33.9
1.6	32.7	15.0	32.4
1.7	32.3	16.0	32.2
1.8	32.3	17.0	31.5
1.9	31.4	18.0	32.2
2.0	32.8	19.0	31.2
2.5	33.3	20.0	31.3
3.0	31.7	21.0	31.7
3.5	31.6	22.0	29.7
4.0	31.2		
4.5	31.2		
5.0	31.0		
5.5	31.3		
6.0	32.1		
6.5	32.1		
7.0	31.8		
7.5	32.0		
8.0	33.1		
8.5	32.0		
9.0	30.8		



COM-POWER AH-118**HORN ANTENNA**

S/N: 10073

CALIBRATION DATE: JANUARY 21, 2002

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	26.6	9.5	41.4
1.5	29.2	10.0	41.8
2.0	32.4	10.5	40.4
2.5	32.3	11.0	37.5
3.0	31.4	11.5	42.2
3.5	31.8	12.0	40.4
4.0	31.1	12.5	43.6
4.5	32.0	13.0	44.2
5.0	33.9	13.5	41.8
5.5	32.0	14.0	43.3
6.0	37.8	14.5	47.0
6.5	36.8	15.0	49.4
7.0	42.4	15.5	49.9
7.5	39.5	16.0	49.9
8.0	41.3	16.5	48.2
8.5	40.3	17.0	44.0
9.0	39.5	17.5	44.8
		18.0	44.7



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

S/N: 17070

CALIBRATION DATE: JUNE 19, 2002

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.4	11.1
0.01	-40.3	11.2
0.02	-41.2	10.3
0.05	-41.6	9.9
0.07	-41.4	10.1
0.1	-41.7	9.8
0.2	-44.0	7.5
0.3	-41.6	9.9
0.5	-41.3	10.2
0.7	-41.4	10.1
1	-40.9	10.6
2	-40.6	10.9
3	-40.5	11.0
4	-40.8	10.7
5	-40.2	11.3
10	-40.7	10.8
15	-41.4	10.1
20	-41.6	9.9
25	-41.7	9.8
30	-42.9	8.6





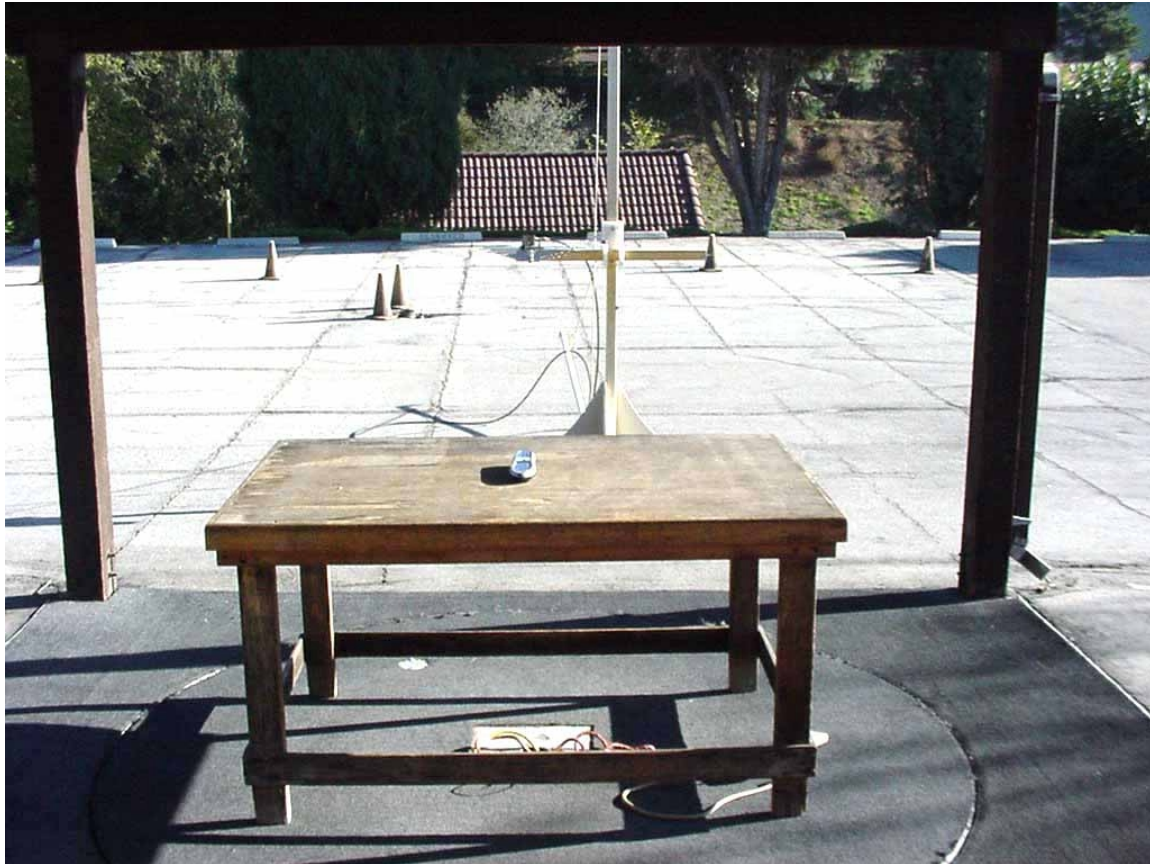
FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
RF REMOTE CONTROL
MODEL: URC-1033BJ0

FCC SUBPART B AND C - RADIATED EMISSIONS (LAB A) – 11-27-02, 12-05-02, and 12-06-02

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





REAR VIEW

UNIVERSAL ELECTRONICS, INC.
RF REMOTE CONTROL
MODEL: URC-1033BJ0

FCC SUBPART B AND C - RADIATED EMISSIONS (LAB A) – 11-27-02, 12-05-02, and 12-06-02

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





FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
RF REMOTE CONTROL
MODEL: URC-1033BJ0
FCC SUBPART B AND C - RADIATED EMISSIONS (LAB X) – 12-06-02

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





REAR VIEW

UNIVERSAL ELECTRONICS, INC.
RF REMOTE CONTROL
MODEL: URC-1033BJ0
FCC SUBPART B AND C - RADIATED EMISSIONS (LAB X) – 12-06-02

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



APPENDIX E

DATA SHEETS



RADIATED EMISSIONS

DATA SHEETS



RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
433.9000	103.1	94.2 A	H			X	LOW	15.9	2.6	34.7	0.0	0.0	78.0	-2.8	80.8	
433.9000	84.5	A	H			Y	LOW	15.9	2.6	34.7	0.0	0.0	68.3	-12.5	80.8	
433.9000	101.8	92.9 A	H			Z	LOW	15.9	2.6	34.7	0.0	0.0	76.7	-4.1	80.8	
433.9000	82.3	A	V			X	LOW	15.9	2.6	34.7	0.0	0.0	66.1	-14.7	80.8	
433.9000	94.1	85.2 A	V			Y	LOW	15.9	2.6	34.7	0.0	0.0	69.0	-11.8	80.8	
433.9000	85.8	A	V			Z	LOW	15.9	2.6	34.7	0.0	0.0	69.6	-11.2	80.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
867.8000	69.3	60.4	A	H		X	LOW	22.1	4.5	33.8	0.0	0.0	53.3	-7.5	60.8	
867.8000	57.9		A	H		Y	LOW	22.1	4.5	33.8	0.0	0.0	50.8	-10.0	60.8	
867.8000	64.7	55.8	A	H		Z	LOW	22.1	4.5	33.8	0.0	0.0	48.7	-12.1	60.8	
867.8000	55.9		A	V		X	LOW	22.1	4.5	33.8	0.0	0.0	48.8	-12.0	60.8	
867.8000	68.5	59.6	A	V		Y	LOW	22.1	4.5	33.8	0.0	0.0	52.5	-8.3	60.8	
867.8000	63.1	54.2	A	V		Z	LOW	22.1	4.5	33.8	0.0	0.0	47.1	-13.7	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1301.7000	54.3	45.4 A	H			X	LOW	28.2	3.0	33.1	0.0	0.0	43.5	-10.5	54.0	
1301.7000	48.1	A	H			Y	LOW	28.2	3.0	33.1	0.0	0.0	46.2	-7.8	54.0	
1301.7000	51.4	42.5 A	H			Z	LOW	28.2	3.0	33.1	0.0	0.0	40.6	-13.4	54.0	
1301.7000	56.1	47.2 A	V			X	LOW	28.2	3.0	33.1	0.0	0.0	45.3	-8.7	54.0	
1301.7000	57.0	48.1 A	V			Y	LOW	28.2	3.0	33.1	0.0	0.0	46.2	-7.8	54.0	
1301.7000	56.2	47.3 A	V			Z	LOW	28.2	3.0	33.1	0.0	0.0	45.4	-8.6	54.0	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1735.6000	46.3	A	H	1.5	90	X	LOW	30.7	3.7	32.3	0.0	0.0	48.4	-12.4	60.8	
1735.6000	47.7	A	H	1.8	180	Y	LOW	30.7	3.7	32.3	0.0	0.0	49.8	-11.0	60.8	
1735.6000	42.2	A	H	2.0	270	Z	LOW	30.7	3.7	32.3	0.0	0.0	44.3	-16.5	60.8	
1735.6000	43.5	A	V	2.0	90	X	LOW	30.7	3.7	32.3	0.0	0.0	45.6	-15.2	60.8	
1735.6000	46.9	A	V	2.3	0	Y	LOW	30.7	3.7	32.3	0.0	0.0	49.0	-11.8	60.8	
1735.6000	44.9	A	V	1.5	90	Z	LOW	30.7	3.7	32.3	0.0	0.0	47.0	-13.8	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2169.5000	53.0	A	H	2.0	270	X	LOW	32.4	4.1	32.4	0.0	0.0	57.0	-3.8	60.8	
2169.5000	49.7	A	H	1.2	0	Y	LOW	32.4	4.1	32.4	0.0	0.0	53.7	-7.1	60.8	
2169.5000	55.3	46.4 A	H	2.5	270	Z	LOW	32.4	4.1	32.4	0.0	0.0	50.4	-10.4	60.8	
2169.5000	53.3	44.4 A	V	2.0	270	X	LOW	32.4	4.1	32.4	0.0	0.0	48.4	-12.4	60.8	
2169.5000	54.8	45.9 A	V	2.3	0	Y	LOW	32.4	4.1	32.4	0.0	0.0	49.9	-10.9	60.8	
2169.5000	53.7	44.8 A	V	2.0	90	Z	LOW	32.4	4.1	32.4	0.0	0.0	48.8	-12.0	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2603.4000	57.4	48.5 A	H	3.0	180	X	LOW	32.1	4.6	33.0	0.0	0.0	52.2	-8.6	60.8	
2603.4000	60.4	51.5 A	H	1.0	0	Y	LOW	32.1	4.6	33.0	0.0	0.0	55.2	-5.6	60.8	
2603.4000	54.1	45.2 A	H	2.2	45	Z	LOW	32.1	4.6	33.0	0.0	0.0	48.9	-11.9	60.8	
2603.4000	53.7	42.7 A	V	1.9	90	X	LOW	32.1	4.6	33.0	0.0	0.0	46.4	-14.4	60.8	
2603.4000	51.1	A	V	2.5	0	Y	LOW	32.1	4.6	33.0	0.0	0.0	54.8	-6.0	60.8	
2603.4000	58.9	50.0 A	V	2.6	90	Z	LOW	32.1	4.6	33.0	0.0	0.0	53.7	-7.1	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3037.3000	59.5	50.6 A	H	3.0	270	X	LOW	31.4	6.1	31.7	0.0	0.0	56.5	-4.3	60.8	
3037.3000	58.7	49.8 A	H	1.0	180	Y	LOW	31.4	6.1	31.7	0.0	0.0	55.7	-5.1	60.8	
3037.3000	60.5	51.6 A	H	2.0	270	Z	LOW	31.4	6.1	31.7	0.0	0.0	57.5	-3.3	60.8	
3037.3000	58.4	49.5 A	V	2.1	270	X	LOW	31.4	6.1	31.7	0.0	0.0	55.4	-5.4	60.8	
3037.3000	55.8	46.9 A	V	3.0	0	Y	LOW	31.4	6.1	31.7	0.0	0.0	52.8	-8.0	60.8	
3037.3000	56.1	47.2 A	V	2.7	275	Z	LOW	31.4	6.1	31.7	0.0	0.0	53.1	-7.7	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3471.2000	59.9	51.0 A	H	2.0	270	X	LOW	31.8	7.8	31.6	0.0	0.0	58.9	-1.9	60.8	
3471.2000	54.9	46.0 A	H	2.0	180	Y	LOW	31.8	7.8	31.6	0.0	0.0	53.9	-6.9	60.8	
3471.2000	57.8	48.9 A	H	2.0	270	Z	LOW	31.8	7.8	31.6	0.0	0.0	56.8	-4.0	60.8	
3471.2000	57.5	48.6 A	V	2.7	350	X	LOW	31.8	7.8	31.6	0.0	0.0	56.5	-4.3	60.8	
3471.2000	55.0	46.1 A	V	1.7	20	Y	LOW	31.8	7.8	31.6	0.0	0.0	54.0	-6.8	60.8	
3471.2000	57.6	48.7 A	V	2.7	165	Z	LOW	31.8	7.8	31.6	0.0	0.0	56.6	-4.2	60.8	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3905.1000		A	H			X	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND
3905.1000		A	H			Y	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND
3905.1000		A	H			Z	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND
3905.1000		A	V			X	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND
3905.1000		A	V			Y	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND
3905.1000		A	V			Z	LOW	31.2	6.5	31.3	0.0				54.0	NO EMISSION FOUND

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	UNIVERSAL ELECTRONICS, INC.	DATE	11/27 & 12/5 2002
EUT	RF REMOTE CONTROL	DUTY CYCLE	35.5 %
MODEL	URC-1033BJ0	PEAK TO AVG	-8.99543294 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	JAMES ROSS & MICHAEL CHRISTENSEN	LAB	A

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)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
4339.0000	48.6	39.7 A	H	2.0	0	X	LOW	31.7	7.3	31.2	0.0	0.0	47.5	-6.5	54.0	
4339.0000	46.9	38.0 A	H	3.0	0	Y	LOW	31.7	7.3	31.2	0.0	0.0	45.8	-8.2	54.0	
4339.0000	48.7	39.8 A	H	2.0	270	Z	LOW	31.7	7.3	31.2	0.0	0.0	47.6	-6.4	54.0	
4339.0000	48.4	39.5 A	V	3.0	0	X	LOW	31.7	7.3	31.2	0.0	0.0	47.3	-6.7	54.0	
4339.0000	46.1	37.2 A	V	2.0	300	Y	LOW	31.7	7.3	31.2	0.0	0.0	45.0	-9.0	54.0	
4339.0000	47.3	38.4 A	V	2.1	45	Z	LOW	31.7	7.3	31.2	0.0	0.0	46.2	-7.8	54.0	

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

Test Location	: Compatible Electronics	Page	: 1/1
Customer	: Universal Electronics, Inc.	Date	: 12/06/2002
Manufacturer	: Universal Electronics, Inc.	Time	: 9:39:16
Eut name	: RF Remote Control	Lab	: X
Model	: URC-1033BJ0	Test Distance	: 3.0 Meters
Serial #	: N/A		
Specification	: FCC Class B		
Distance correction factor (20 * log(test/spec))			: 0.00
Test Mode	: Radiated Spurious Emissions 10 kHz to 1000 MHz Vertical and Horizontal Polarization Temperature 65 Degrees F., Relative Humidity 45% Tested By: Kyle Fujimoto		

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
V	30.032	38.60	0.70	11.69	33.20	17.79	40.00	-22.21
V	36.216	37.60	0.70	11.03	33.20	16.13	40.00	-23.87
V	109.106	33.40	1.28	11.23	33.16	12.75	43.50	-30.75
V	201.197	33.60	1.71	16.96	33.09	19.17	43.50	-24.33
V	452.228	37.10	2.71	14.89	32.69	22.01	46.00	-23.99
V	472.253	33.70	2.79	15.72	32.61	19.60	46.00	-26.40
V	940.838	37.00	4.95	22.31	31.72	32.53	46.00	-13.47
Switch to Horizontal Polarization								
H	30.058	45.00	0.70	11.69	33.20	24.19	40.00	-15.81
H	36.242	29.90	0.70	11.03	33.20	8.43	40.00	-31.57
H	109.132	30.30	1.28	11.23	33.16	9.65	43.50	-33.85
H	201.223	33.90	1.71	16.96	33.09	19.47	43.50	-24.03
H	452.254	36.60	2.71	14.89	32.69	21.51	46.00	-24.49
H	472.279	33.20	2.79	15.72	32.61	19.10	46.00	-26.90
H	940.864	35.90	4.95	22.31	31.72	31.44	46.00	-14.56



Test Location : Compatible Electronics
Customer : Universal Electronics, Inc.
Manufacturer : Universal Electronics, Inc.
Eut name : RF Remote Control
Model : URC-1033BJ0
Serial # : N/A
Specification : FCC Class B
Distance correction factor (20 * log(test/spec)) : 0.00
Test Mode : Radiated Spurious Emissions 1000 MHz to 4500 MHz
Horizontal and Vertical Polarizations
No Spurious Emissions Found Above 1000 MHz in Either Polarization
Temp. 62 Degrees F., Rel. Humidity 62% - Tested By: Kyle Fujimoto

Page : 1/1
Date : 12/06/2002
Time : 15:27:44
Lab : A
Test Distance : 3.0 Meters

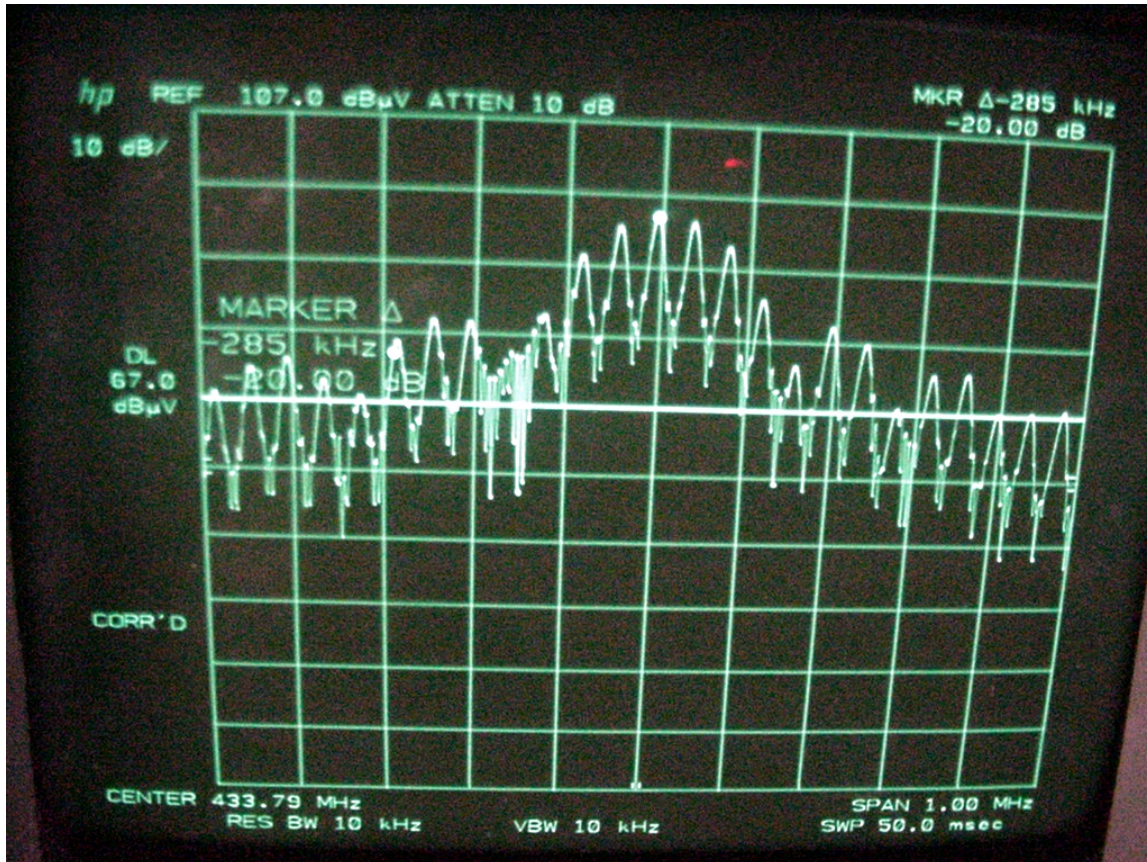
Pol	Freq	Rdng	Cable	Ant	Amp	Cor'd	Limit	Delta
	MHz	dBuV	loss	factor	gain	rdg = R	= L	R-L
			dB	dB	dB	dBuV	dBuV/m	dB



-20 dB BANDWIDTH

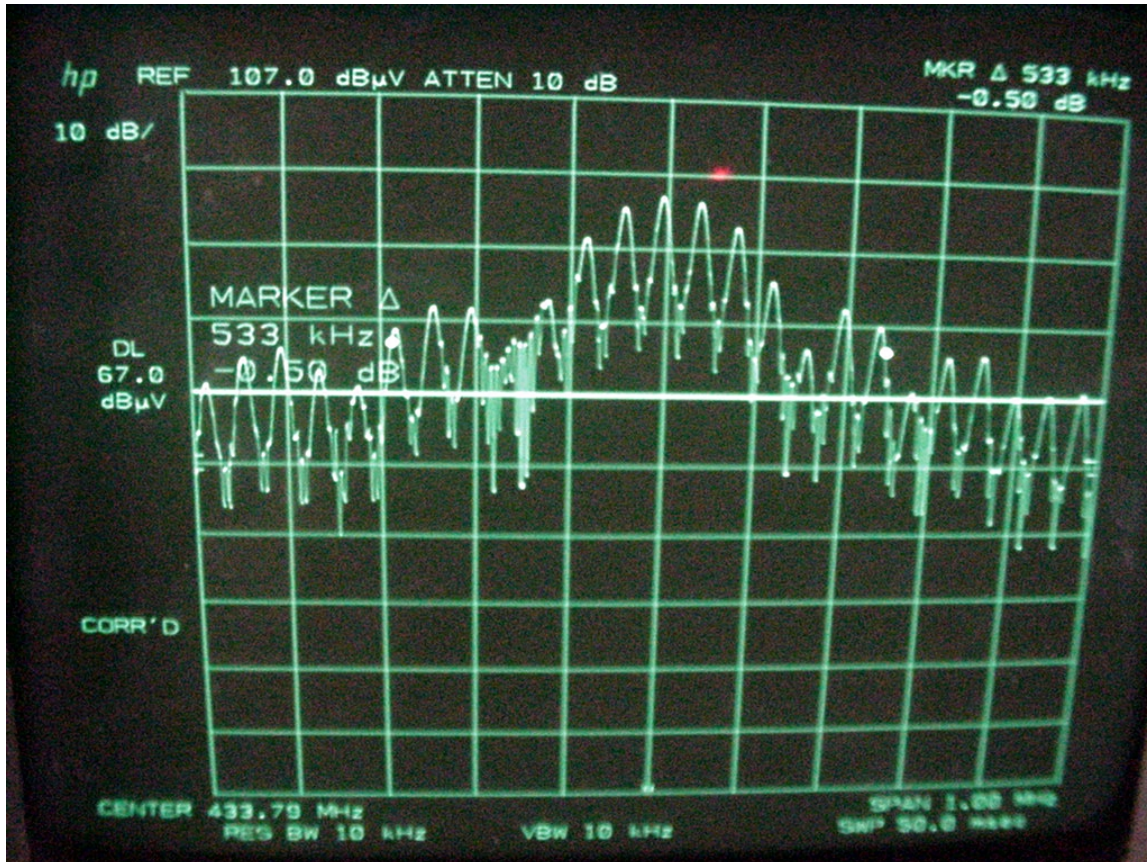
DATA SHEETS





**PHOTOGRAPH SHOWING WHERE THE -20 dB POINT ON THE
FUNDAMENTAL IS**





PHOTOGRAPH SHOWING THE -20 dB BANDWIDTH OF THE FUNDAMENTAL

