FCC PART 15, SUBPART B and C
TEST REPORT

for

DIRECTV RC64R 2007

MODEL: URC-2983RG0-X

Prepared for

UNIVERSAL ELECTRONICS, INC.
6101 GATEWAY DRIVE
CYPRESS, CALIFORNIA 90630

Prepared by: Kyle Fujimoto

KYLE FUJIMOTO

Approved by: _____

MICHAEL CHRISTENSEN

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DATE: MAY 12, 2008

	REPORT BODY	APPENDICES					TOTAL
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1	Plot Map And Layout of 3 Meter 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, NIST or any other agency of the U.S. Government.

Device Tested:	DirectV RC64R 2007 Model: URC-2983RG0-X S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Universal Electronics, Inc. 6101 Gateway Drive Cypress, California 90630
Manufacturer:	Computime Limited 7/F., How Ming Fty. Bldg., 99 How Ming Street Kwun Tong, Kowloon, Hong Kong
Test Date:	April 11, 2008
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
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 battery power only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz – 4400 MHz (Transmitter Portion)	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, and 15.231.
3	Radiated RF Emissions, 10 kHz – 4400 MHz (Digital Portion)	Complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B.
4	-20 dB Bandwidth	This test was not performed because the changes made to the EUT for the class II permissive change does not affect the -20 dB bandwidth.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the DirectV RC64R 2007, Model: URC-2983RG0-X. 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 portion; and the limits defined in Subpart C, sections 15.205, 15.207, 15.209, and 15.231 for the transmitter portion.

This report is a class II permissive change due to the following changes in addition to the class II permissive change that was granted on August 18, 2006 under the Compatible Electronics, Inc. test report number **B60802B1**:

1. The transmitter IC was TDK5100F is now TDA7100. The parts are exactly from the same die, the only difference is that the IC vendor does not test over the complete temperature range (-40 degrees Celsius to 125 degrees Celsius) now. The vendor now only tests at 25 degrees Celsius thus providing a more economical solution.

2. The EUT name has been changed from DirecTV RC34RF to DirectV RC64R 2007.

3. The model number has been changed from URC-2481RG0-X to URC-2983RG0-X.

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 Staff Engineer

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer
Michael Christensen Lab Manager

2.4 Date Test Sample was Received

The test sample was received on April 11, 2008.

2.5 Disposition of the Test Sample

The sample has not been returned to Universal Electronics, Inc. as of May 12, 2008.

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

Stand Alone Mode: The DirectV RC64R 2007, Model: URC-2983RG0-X (EUT) was tested as a stand alone unit and tested in three orthogonal axis. The EUT was placed at the center of the non-conductive table. The EUT was transmitting on a continuous basis. The EUT's antenna is a PCB style antenna and is on the PCB itself.

After the EUT is activated by pressing the button, the transmission will cease operation once the button is released.

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 were 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
DIRECTV RC64R 2007 (EUT)	COMPUTIME LIMITED	URC-2983RG0-X	N/A	**MG32481**

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
EMI Receiver	Rohde & Schwarz	ESIB40	100172	November 27, 2006	Nov. 27, 2008
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Preamplifier	Com-Power	PA-102	1017	January 11, 2008	Jan. 11, 2009
Biconical Antenna	Com-Power	AB-900	15227	February 28, 2008	February 28, 2009
Log Periodic Antenna	Com-Power	AL-100	16060	July 9, 2007	July 9, 2008
Loop Antenna	Com-Power	AL-130	17089	September 24, 2007	Sept. 24, 2008
Double Ridge Horn Antenna	Com-Power	AH-118	10073	July 17, 2006	July 17, 2008
Microwave Preamplifier	Com-Power	PA-122	181921	March 3, 2008	March 3, 2009
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. 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 Conducted Emissions Test

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

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. 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 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 battery power only and cannot be plugged into the AC public mains.

7.2 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 Model: PA-122 was 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 spectrum analyzer or EMI Receiver records the highest measured reading over all the sweeps.

The readings were averaged by a “duty cycle correction factor”, derived from 20 log (dwell time / one pulse train with blanking interval).

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 4.4 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.

7.3 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 15.231.

7.4 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. Plots of the -20 dB bandwidth are located in Appendix E.

Test Results:

This test was not performed because the changes made to the EUT for the class II permissive change does not affect the 20 dB bandwidth.

8. CONCLUSIONS

The DirectV RC64R 2007, Model: URC-2983RG0-X 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, 15.207, 15.209, and 15.231 for the transmitter portion.

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.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

DirectV RC64R 2007
Model: URC-2983RG0-X
S/N: N/A

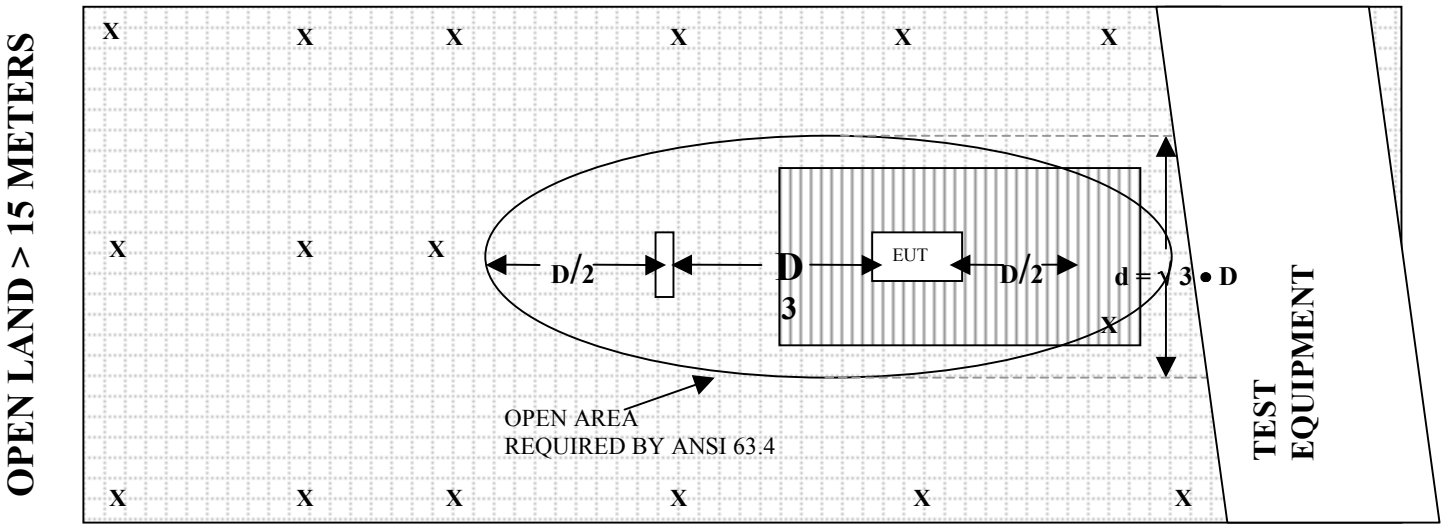
There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF 3 METER 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: FEBRUARY 28, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	12.3	100	10.6
35	9.4	120	13.6
40	9.0	140	11.8
45	9.9	160	12.3
50	11.3	180	15.7
60	9.4	200	16.8
70	7.4	250	14.5
80	6.2	275	18.7
90	6.8	300	21.4

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: JULY 9, 2007

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	13.5	700	20.5
400	15.8	800	21.6
500	17.0	900	21.3
600	19.2	1000	22.2

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.2	300	38.0
40	38.0	350	38.3
50	38.3	400	38.0
60	38.6	450	37.5
70	38.4	500	37.9
80	38.4	550	37.9
90	38.3	600	37.8
100	38.1	650	37.5
125	38.5	700	38.0
150	38.2	750	37.7
175	38.1	800	37.1
200	38.4	850	37.1
225	38.2	900	37.1
250	38.2	950	37.0
275	38.2	1000	36.5

COM-POWER PA-122

PREAMPLIFIER

S/N: 181921

CALIBRATION DATE: MARCH 3, 2008

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.32	10.0	35.47
1.5	35.40	10.5	35.05
2.0	34.77	11.0	34.16
2.5	35.07	11.5	33.75
3.0	34.86	12.0	34.65
3.5	34.48	12.5	34.41
4.0	34.30	13.0	35.36
4.5	33.96	13.5	35.30
5.0	34.06	14.0	35.87
5.5	34.54	14.5	36.44
6.0	35.90	15.0	36.24
6.5	36.85	15.5	35.92
7.0	36.55	16.0	35.53
7.5	35.31	16.5	35.29
8.0	33.57	17.0	34.96
8.5	33.36	17.5	34.02
9.0	35.01	18.0	33.39
9.5	35.97	18.5	32.70

COM-POWER AH-118

DOUBLE RIDGE HORN ANTENNA

S/N: 10073

CALIBRATION DATE: JULY 17, 2006

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	25.331	10.0	42.391
1.5	27.507	10.5	39.194
2.0	31.581	11.0	38.504
2.5	30.906	11.5	40.724
3.0	30.276	12.0	41.079
3.5	30.396	12.5	41.014
4.0	30.881	13.0	41.201
4.5	32.77	13.5	42.335
5.0	34.067	14.0	43.248
5.5	33.914	14.5	45.639
6.0	34.028	15.0	43.197
6.5	35.779	15.5	41.751
7.0	38.347	16.0	42.462
7.5	39.096	16.5	41.908
8.0	39.377	17.0	40.277
8.5	38.646	17.5	48.117
9.0	37.438	18.0	54.113
9.5	38.403		

COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: SEPTEMBER 24, 2007

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.27	10.23
0.01	-41.96	9.54
0.02	-41.73	9.77
0.05	-42.0	9.5
0.07	-41.5	10.0
0.1	-41.43	10.07
0.2	-43.9	7.9
0.3	-41.43	10.07
0.5	-41.40	10.1
0.7	-41.13	10.37
1	-40.83	10.67
2	-40.30	11.20
3	-40.60	10.90
4	-41.00	10.50
5	-40.20	11.30
10	-40.40	11.10
15	-41.67	9.83
20	-41.10	10.40
25	-42.80	8.70
30	-42.80	8.70

FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
DIRECTV RC64R 2007 – STAND ALONE MODE
MODEL: URC-2983RG0-X
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

UNIVERSAL ELECTRONICS, INC.
DIRECTV RC64R 2007 – STAND ALONE MODE
MODEL: URC-2983RG0-X
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	72.61	V	100.8	-28.19	Peak	1.25	135	
433.92	64.105	V	80.8	-16.695	Avg	1.25	135	
867.84	59.13	V	80.8	-21.67	Peak	1.08	125	
867.84	50.625	V	60.8	-10.175	Avg	1.08	125	
1301.76	58.35	V	74	-15.65	Peak	1.38	135	
1301.76	49.845	V	54	-4.155	Avg	1.38	135	
1735.68	65.09	V	80.8	-15.71	Peak	2.2	315	
1735.68	56.585	V	60.8	-4.215	Avg	2.24	315	
2169.6	48.39	V	80.8	-32.41	Peak	1.38	135	
2169.6	39.885	V	60.8	-20.915	Avg	1.38	135	
2603.5	46.12	V	80.8	-34.68	Peak	2.21	270	
2603.5	37.615	V	60.8	-23.185	Avg	2.21	270	
3037.4	49.09	V	80.8	-31.71	Peak	1.13	150	
3037.4	40.585	V	60.8	-20.215	Avg	1.13	150	
3471.3	52.52	V	80.8	-28.28	Peak	2.41	180	
3471.3	44.015	V	60.8	-16.785	Avg	2.41	1180	
3905.3	55.56	V	74	-18.44	Peak	1.59	45	
3905.3	47.055	V	54	-6.945	Avg	1.59	45	
4339.2	50.78	V	74	-23.22	Peak	1.98	45	
4339.2	42.275	V	54	-11.725	Avg	1.98	45	

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	87.97	H	100.8	-12.83	Peak	1.5	90	
433.92	79.465	H	80.8	-1.335	Avg	1.5	90	
867.84	63.74	H	80.8	-17.06	Peak	1	45	
867.84	55.235	H	60.8	-5.565	Avg	1	45	
1301.76	45.72	H	74	-28.28	Peak	1.45	150	
1301.76	37.215	H	54	-16.785	Avg	1.45	150	
1735.68	68.64	H	80.8	-12.16	Peak	2.2	315	
1735.68	60.135	H	60.8	-0.665	Avg	2.24	315	
2169.6	49.55	H	80.8	-31.25	Peak	1.52	135	
2169.6	41.045	H	60.8	-19.755	Avg	1.52	135	
2603.5	47.51	H	80.8	-33.29	Peak	1.52	225	
2603.5	39.005	H	60.8	-21.795	Avg	1.52	225	
3037.4	47.48	H	80.8	-33.32	Peak	1.86	135	
3037.4	38.975	H	60.8	-21.825	Avg	1.86	135	
3471.3	48.04	H	80.8	-32.76	Peak	1.32	150	
3471.3	39.535	H	60.8	-21.265	Avg	1.32	150	
3905.3	54.41	H	74	-19.59	Peak	1.31	135	
3905.3	45.905	H	54	-8.095	Avg	1.31	135	
4339.2	48.01	H	74	-25.99	Peak	1.66	315	
4339.2	39.505	H	54	-14.495	Avg	1.66	315	

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	88.56	V	100.8	-12.24	Peak	1.25	180	
433.92	80.055	V	80.8	-0.745	Avg	1.25	180	
867.84	63.42	V	80.8	-17.38	Peak	1.25	180	
867.84	54.915	V	60.8	-5.885	Avg	1.5	180	
1301.76	52.71	V	74	-21.29	Peak	1.55	180	
1301.76	44.205	V	54	-9.795	Avg	1.55	180	
1735.68	69.02	V	80.8	-11.78	Peak	2.2	315	
1735.68	60.515	V	60.8	-0.285	Avg	2.24	315	
2169.6	44.29	V	80.8	-36.51	Peak	1.54	125	
2169.6	35.785	V	60.8	-25.015	Avg	1.54	125	
2603.5	55.87	V	80.8	-24.93	Peak	1.36	125	
2603.5	47.365	V	60.8	-13.435	Avg	1.36	125	
3037.4	47.19	V	80.8	-33.61	Peak	1.05	135	
3037.4	38.685	V	60.8	-22.115	Avg	1.05	135	
3471.3	57.01	V	80.8	-23.79	Peak	2.41	1.31	
3471.3	48.505	V	60.8	-12.295	Avg	2.41	1.31	
3905.3	56.45	V	74	-17.55	Peak	1.96	135	
3905.3	47.945	V	54	-6.055	Avg	1.96	135	
4339.2	47.48	V	74	-26.52	Peak	2.19	135	
4339.2	38.975	V	54	-15.025	Avg	2.19	135	

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	79.95	H	100.8	-20.85	Peak	1	180	
433.92	71.445	H	80.8	-9.355	Avg	1	180	
867.84	61.33	H	80.8	-19.47	Peak	1	180	
867.84	52.825	H	60.8	-7.975	Avg	1	180	
1301.76	48.36	H	74	-25.64	Peak	1	180	
1301.76	39.855	H	54	-14.145	Avg	1	180	
1735.68	60.93	H	80.8	-19.87	Peak	2.2	315	
1735.68	52.425	H	60.8	-8.375	Avg	2.24	315	
2169.6	55.56	H	80.8	-25.24	Peak	1.71	125	
2169.6	47.055	H	60.8	-13.745	Avg	1.71	125	
2603.5	52.72	H	80.8	-28.08	Peak	1.28	135	
2603.5	44.215	H	60.8	-16.585	Avg	1.28	135	
3037.4	48.74	H	80.8	-32.06	Peak	1.67	150	
3037.4	40.235	H	60.8	-20.565	Avg	1.67	150	
3471.3	50.57	H	80.8	-30.23	Peak	1.67	225	
3471.3	42.065	H	60.8	-18.735	Avg	1.67	225	
3905.3	51.86	H	74	-22.14	Peak	1.13	150	
3905.3	43.355	H	54	-10.645	Avg	1.13	150	
4339.2	46.28	H	74	-27.72	Peak	1.13	150	
4339.2	37.775	H	54	-16.225	Avg	1.13	150	

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	84.56	V	100.8	-16.24	Peak	1	135	
433.92	76.055	V	80.8	-4.745	Avg	1	135	
867.84	59.84	V	80.8	-20.96	Peak	1.25	90	
867.84	51.335	V	60.8	-9.465	Avg	1.25	90	
1301.76	48.51	V	74	-25.49	Peak	1.56	135	
1301.76	40.005	V	54	-13.995	Avg	1.56	135	
1735.68	65.92	V	80.8	-14.88	Peak	2.43	90	
1735.68	57.415	V	60.8	-3.385	Avg	2.43	90	
2169.6	52.01	V	80.8	-28.79	Peak	1.29	0	
2169.6	43.505	V	60.8	-17.295	Avg	1.29	0	
2603.5	44.56	V	80.8	-36.24	Peak	2.21	270	
2603.5	36.055	V	60.8	-24.745	Avg	2.21	270	
3037.4	44.38	V	80.8	-36.42	Peak	2.26	135	
3037.4	35.875	V	60.8	-24.925	Avg	2.26	135	
3471.3	49.57	V	80.8	-31.23	Peak	1.88	180	
3471.3	41.065	V	60.8	-19.735	Avg	1.88	180	
3905.3	54.12	V	74	-19.88	Peak	1.15	135	
3905.3	45.615	V	54	-8.385	Avg	1.15	135	
4339.2	47.09	V	74	-26.91	Peak	1.74	225	
4339.2	38.585	V	54	-15.415	Avg	1.74	225	

FCC 15.231
Universal Electronics, Inc.
DirectV RC64R 2007
Model: URC-2983RG0-X

Date: 04/11/08
Labs: B and D
Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 37.5611894%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	84.24	H	100.8	-16.56	Peak	2	135	
433.92	75.735	H	80.8	-5.065	Avg	2	135	
867.84	64.06	H	80.8	-16.74	Peak	1.25	45	
867.84	55.555	H	60.8	-5.245	Avg	1.25	45	
1301.76	48.36	H	74	-25.64	Peak	1.79	150	
1301.76	39.855	H	54	-14.145	Avg	1.79	150	
1735.68	63.52	H	80.8	-17.28	Peak	1.21	225	
1735.68	55.015	H	60.8	-5.785	Avg	1.21	225	
2169.6	46.36	H	80.8	-34.44	Peak	1.37	90	
2169.6	37.855	H	60.8	-22.945	Avg	1.37	90	
2603.5	49.71	H	80.8	-31.09	Peak	2.05	135	
2603.5	41.205	H	60.8	-19.595	Avg	2.05	135	
3037.4	46.91	H	80.8	-33.89	Peak	1.67	150	
3037.4	38.405	H	60.8	-22.395	Avg	1.67	150	
3471.3	50.41	H	80.8	-30.39	Peak	2.53	135	
3471.3	41.905	H	60.8	-18.895	Avg	2.53	135	
3905.3	56.76	H	74	-17.24	Peak	1.87	150	
3905.3	48.255	H	54	-5.745	Avg	1.87	150	
4339.2	49.61	H	74	-24.39	Peak	1.38	150	
4339.2	41.105	H	54	-12.895	Avg	1.38	150	

FCC Class B and FCC 15.231

Universal Electronics, Inc. Date: 04/11/08
DirectV RC64R 2007 Labs: B and D
Model: URC-2983RG0-X Tested By: Kyle Fujimoto

X-Axis (Worst Case)
Digital Portion and Non-Harmonic Emissions from the Transmitter
Vertical and Horizontal Polarizations

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 10 kHz to 4400 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 4400 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.