FCC PART 15, SUBPART B and C
TEST REPORT

for

COMCAST XR11v2 REMOTE 2014

MODEL: URC-4350BC0-X-R

Prepared for

UNIVERSAL ELECTRONICS, INC.
201 EAST SANDPOINTE AVE., 8TH FLOOR
SANTA ANA, CA 92707

Prepared by:___ 

KENNETH LEE

Approved by:___ 

JAMES ROSS

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BREA, CALIFORNIA 92823
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DATE: AUGUST 14, 2014

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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GENERAL REPORT SUMMARY

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

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

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested:	Comcast XR11v2 Remote 2014 Model: URC-4350BC0-X-R S/N: N/A
Product Description:	See Expository Statement.
Modifications:	The EUT was not modified during the testing.
Customer:	Universal Electronics, Inc. 201 East Sandpointe Ave., 8TH Floor Santa Ana California, 92707
Test Dates:	August 1, and 8, 2014
Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249
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	Spurious Radiated RF Emissions, 10 kHz – 25,000 MHz (Transmitter and Digital portion)	Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.249
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power and does not connect to the AC mains.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Comcast XR11v2 Remote 2014, Model: URC-4350BC0-X-R. The emissions 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; and Subpart C, sections 15.205, 15.209, and 15.249.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions 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	Senior Electrical Core Engineer

Compatible Electronics Inc.

Andrew Tiffany	Test Technician
Kyle Fujimoto	Test Engineer
James Ross	Test Engineer
Kenneth Lee	Test Technician

2.4 Date Test Sample was Received

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

2.5 Disposition of the Test Sample

The test sample has not been returned to Universal Electronics as of the date of this test report.

2.6 Abbreviations and Acronyms

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

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

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2009	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 - Emissions

The Comcast XR11v2 Remote 2014, Model: URC-4350BC0-X-R (EUT) is a remote control that is powered by two AA 1.5VDC batteries.

The EUT was tested for emissions at the low, middle, and high channels while in the X, Y and Z axis. The EUT was continuously transmitting.

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

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
COMCAST XR11v2 REMOTE 2014	UNIVERSAL ELECTRONICS, INC.	URC-4350BC0-X-R	N/A	MG3-4350

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB B					
Computer	Compaq	CQ5210F	CNX9360CF9	N/A	N/A
Monitor	Hewlett Packard	HPs2031a	3CQ046N3MD	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	November 19, 2012	2 Year
GENERAL TEST EQUIPMENT USED IN LAB D					
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51100115	March 6, 2014	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	May 20, 2014	1 Year
Preamplifier	Com-Power	PA-118	181656	January 13, 2014	1 Year
Preamplifier	Com-Power	PA-840	711013	May 13, 2014	2 Year
Loop Antenna	Com-Power	AL-130	17089	January 29, 2013	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2014	2 Year
Horn Antenna	Com-Power	AH-826	0071957	N/A	N/A
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	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 emissions 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 Radiated Emissions (Spurious and Harmonics) Test – Lab B

The EMI Receiver was used as a measuring meter. A preamplifier was used to increase the sensitivity of the instrument. The Com Power Microwave Preamplifier Model: PA-118 was used for frequencies above 1 GHz and the PA 840 for frequencies above 18 GHz. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

For frequencies above 1 GHz, the readings were averaged by a “duty cycle correction factor”, derived from 20 log (dwell time / 100 ms). This duty cycle correction factor was then subtracted from the peak reading.

The measurement bandwidth and transducer used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
1 GHz to 25 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2009. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test -- Lab B (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance from 1 GHz to 25 GHz to obtain the final test data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249 for radiated emissions. Please see Appendix E for the data sheets.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test – Lab D

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used in the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is set up according to ANSI C63.4: 2009. 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 measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna

The EUT was tested at a 3 meter test distance. The six highest emissions are listed in Table 1.0.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249 (d) for radiated emissions. Please see Appendix E for the data sheets.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Comcast XR11v2 Remote 2104, Model: URC-4350BC0-X-R

Frequency MHz	Average Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
4900 (H) (Z-axis) (Middle Channel)	42.42	54	-11.58
4950 (V) (Z-axis) (High Channel)	42.12	54	-11.88
4950 (H) (Y-axis) (High Channel)	41.61	54	-12.39
4900 (V) (Y-axis) (Middle Channel)	41.32	54	-12.68
4900 (V) (Z-axis) (Middle Channel)	41.31	54	-12.69
4850 (H) (Z-axis) (Low Channel)	40.67	54	-13.33

Notes:

(H) Horizontal
(V) Vertical
* The complete emissions data is given in Appendix E of this report.

8. CONCLUSIONS

The Comcast XR11v2 Remote 2014, Model: URC-4350BC0-X-R, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP LAB CODES 200063-0, 200528-0, 200527-0

For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links

Agoura Division / **Brea Division** / **Silverado/Lake Forest Division**

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."

ANSI listing CETCB

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).
US/EU MRA list NIST MRA site

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).
APEC MRA list NIST MRA site

We are also listed for IT products by the following country/agency:

VCCI Support member: Please visit http://www.vcci.jp/vcci_e/

FCC Listing, from FCC OET site
FCC test lab search https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm

Compatible Electronics IC listing can be found at:
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.249 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.

The EUT was not modified during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Comcast XR11v2 Remote 2014 Model: URC-4350BC0-X-R S/N: N/A

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

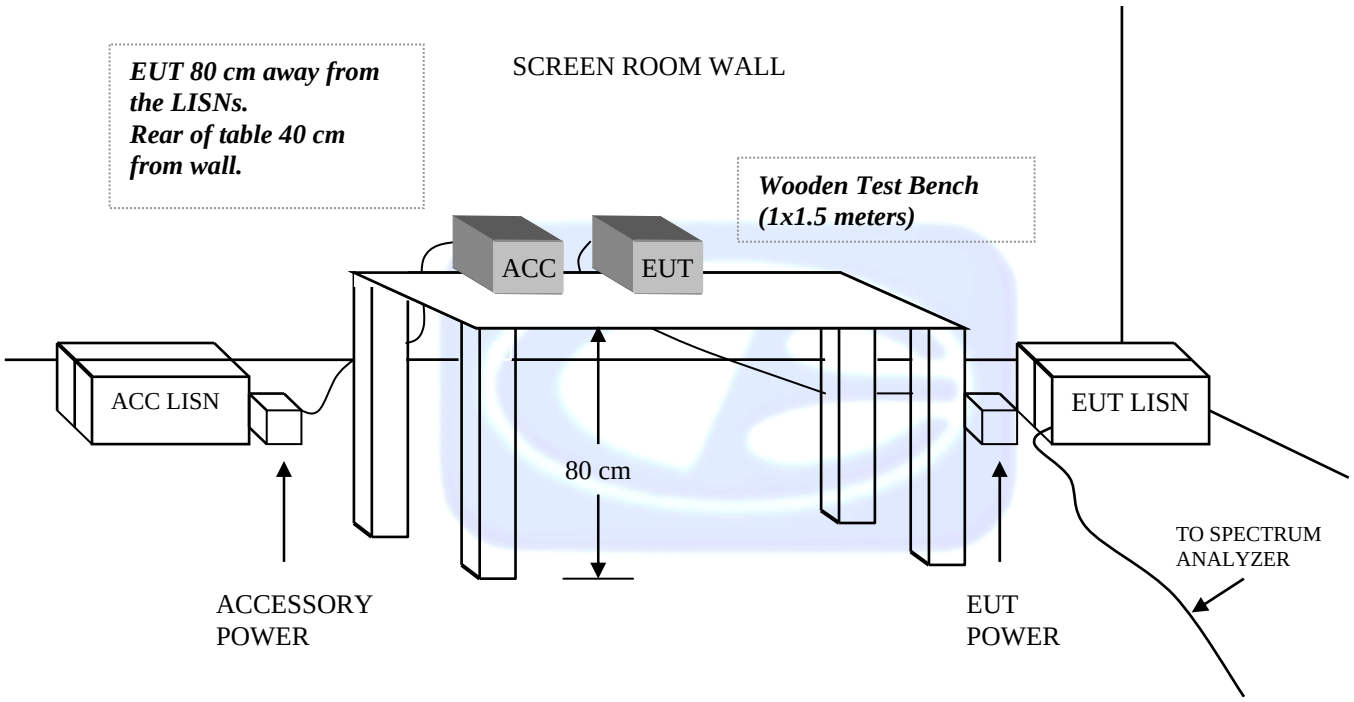


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE

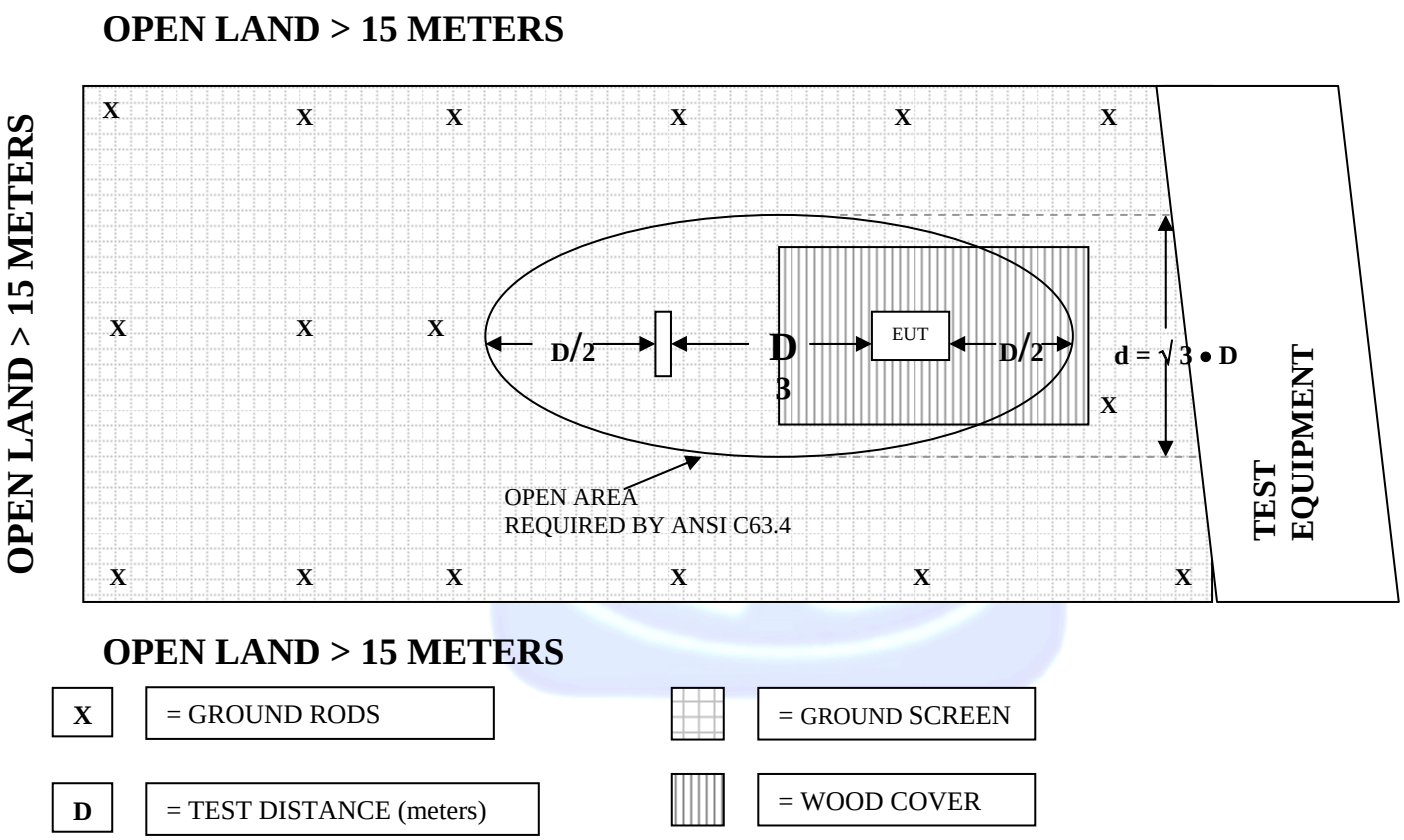
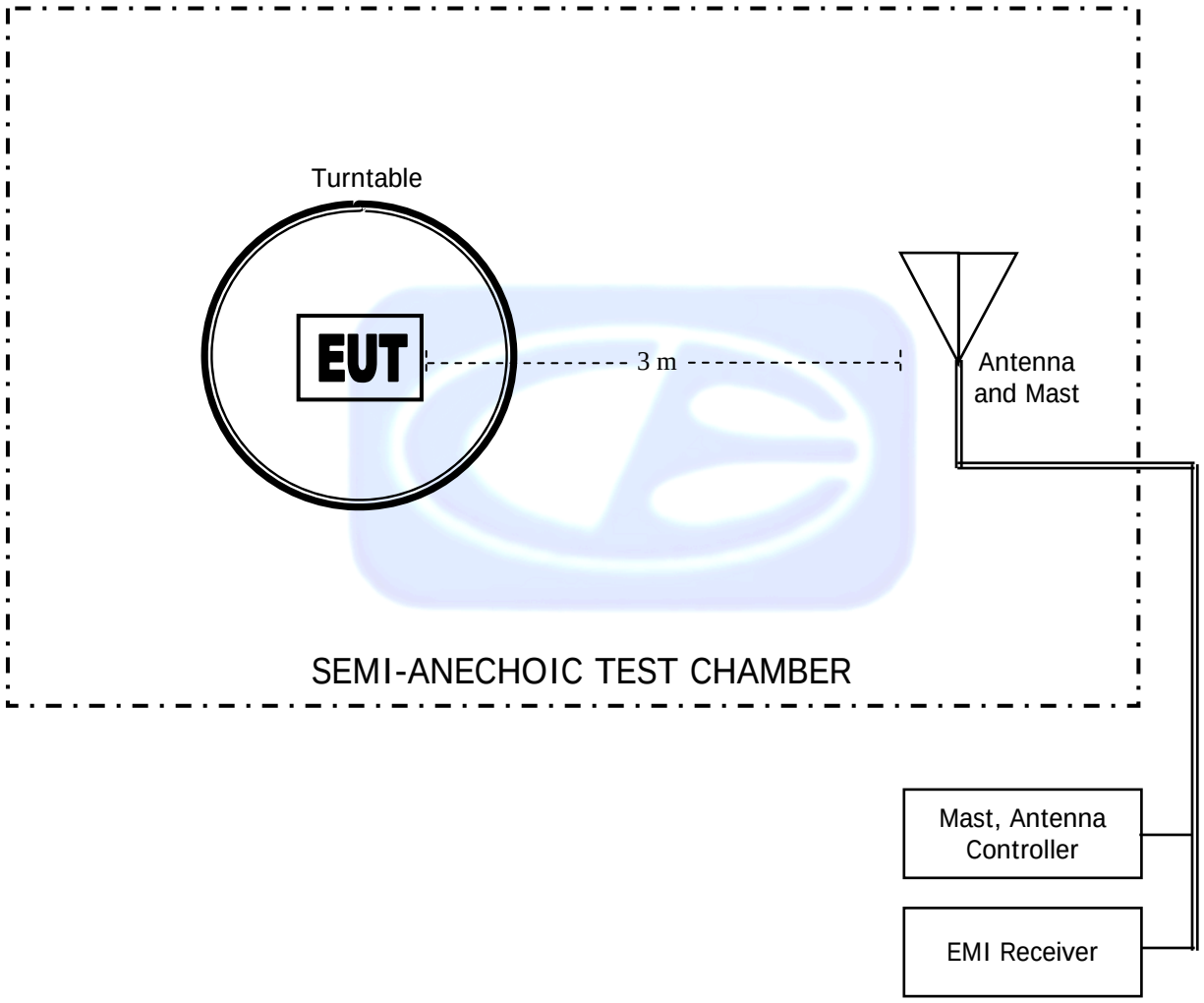


FIGURE 3: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: JANUARY 29, 2013

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-42.5	9
0.01	-42.3	9.2
0.02	-42.1	9.4
0.03	-41.4	10.1
0.04	-41.8	9.7
0.05	-42.4	9.1
0.06	-42.3	9.2
0.07	-42.5	9
0.08	-42.4	9.1
0.09	-42.5	9
0.1	-42.5	9
0.2	-42.7	8.8
0.3	-42.6	8.9
0.4	-42.5	9
0.5	-42.7	8.8
0.6	-42.7	8.8
0.7	-42.5	9
0.8	-42.3	9.2
0.9	-42.2	9.3
1	-42.2	9.3
2	-41.8	9.7
3	-41.7	9.8
4	-41.7	9.8
5	-41.5	10
6	-41.6	9.9
7	-41.4	10.1
8	-41	10.5
9	-40.8	10.7
10	-41.3	10.2
15	-41.4	10.1
20	-41.2	10.3
25	-42.6	8.9
30	-41.7	9.8

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: MAY 20, 2014

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.40	200	14.40
35	23.70	250	16.40
40	24.20	300	17.90
45	22.60	350	15.60
50	22.10	400	19.90
60	17.90	450	20.40
70	12.70	500	21.60
80	11.60	550	21.50
90	12.20	600	22.30
100	13.20	650	23.50
120	15.70	700	23.70
125	15.80	750	25.90
140	13.60	800	25.90
150	16.90	850	26.40
160	14.20	900	27.00
175	14.90	950	27.70
180	15.00	1000	27.50

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2014

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.23	10.0	38.43
1.5	25.84	10.5	40.19
2.0	28.14	11.0	40.49
2.5	29.51	11.5	41.39
3.0	31.20	12.0	42.02
3.5	32.17	12.5	43.30
4.0	31.40	13.0	42.77
4.5	31.86	13.5	40.18
5.0	34.82	14.0	42.59
5.5	34.38	14.5	41.74
6.0	36.31	15.0	41.84
6.5	34.81	15.5	38.48
7.0	37.48	16.0	39.52
7.5	36.98	16.5	37.85
8.0	36.66	17.0	41.33
8.5	38.47	17.5	44.96
9.0	37.22	18.0	48.50
9.5	37.86		

COM-POWER PA-118

PREAMPLIFIER

S/N: 181656

CALIBRATION DATE: JANUARY 13, 2014

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.90	6.0	25.40
1.1	25.30	6.5	25.20
1.2	26.00	7.0	24.40
1.3	26.20	7.5	24.00
1.4	26.30	8.0	23.90
1.5	26.40	8.5	24.50
1.6	26.50	9.0	25.20
1.7	26.60	9.5	24.80
1.8	26.50	10.0	24.90
1.9	26.60	11.0	25.40
2.0	26.70	12.0	24.50
2.5	26.90	13.0	24.30
3.0	27.00	14.0	25.20
3.5	27.10	15.0	25.90
4.0	26.60	16.0	25.60
4.5	26.10	17.0	23.70
5.0	26.40	18.0	25.80
5.5	25.80		

COM-POWER AH-826

HORN ANTENNA

S/N: 71957

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

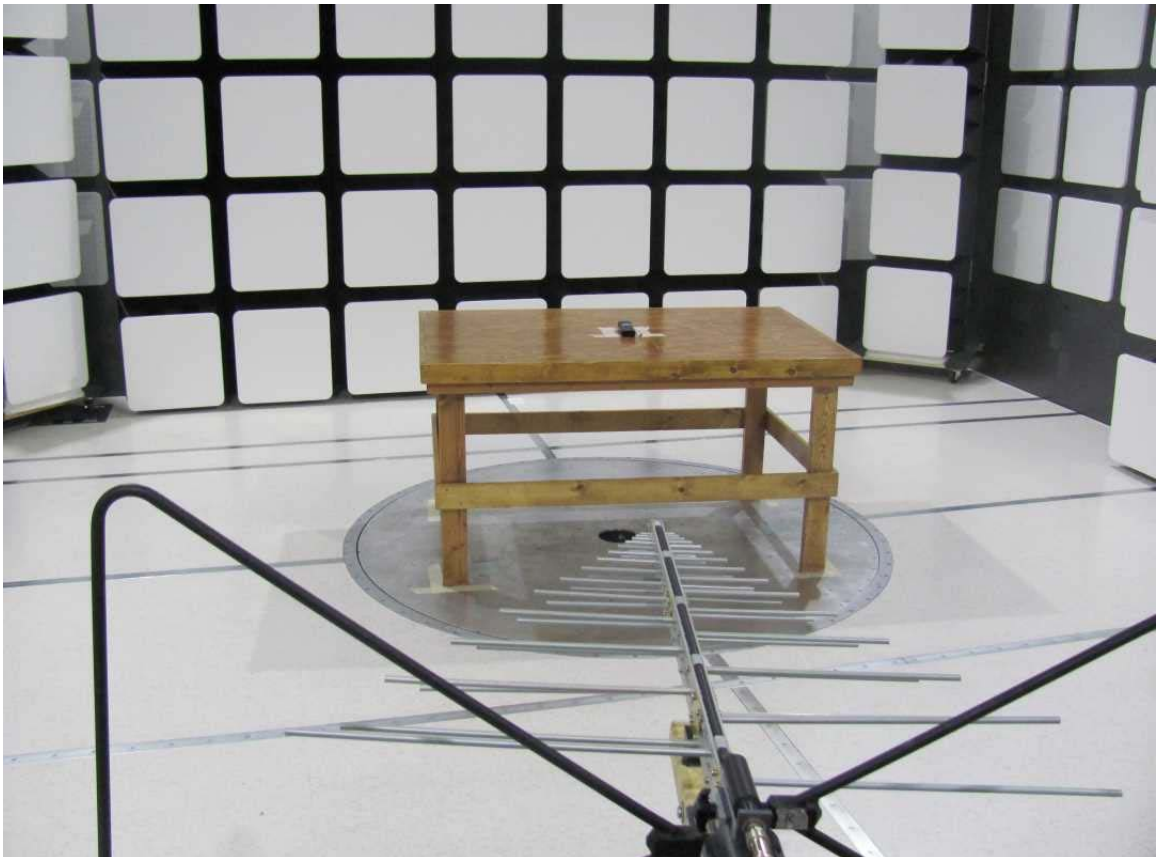
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: MAY 13, 2014

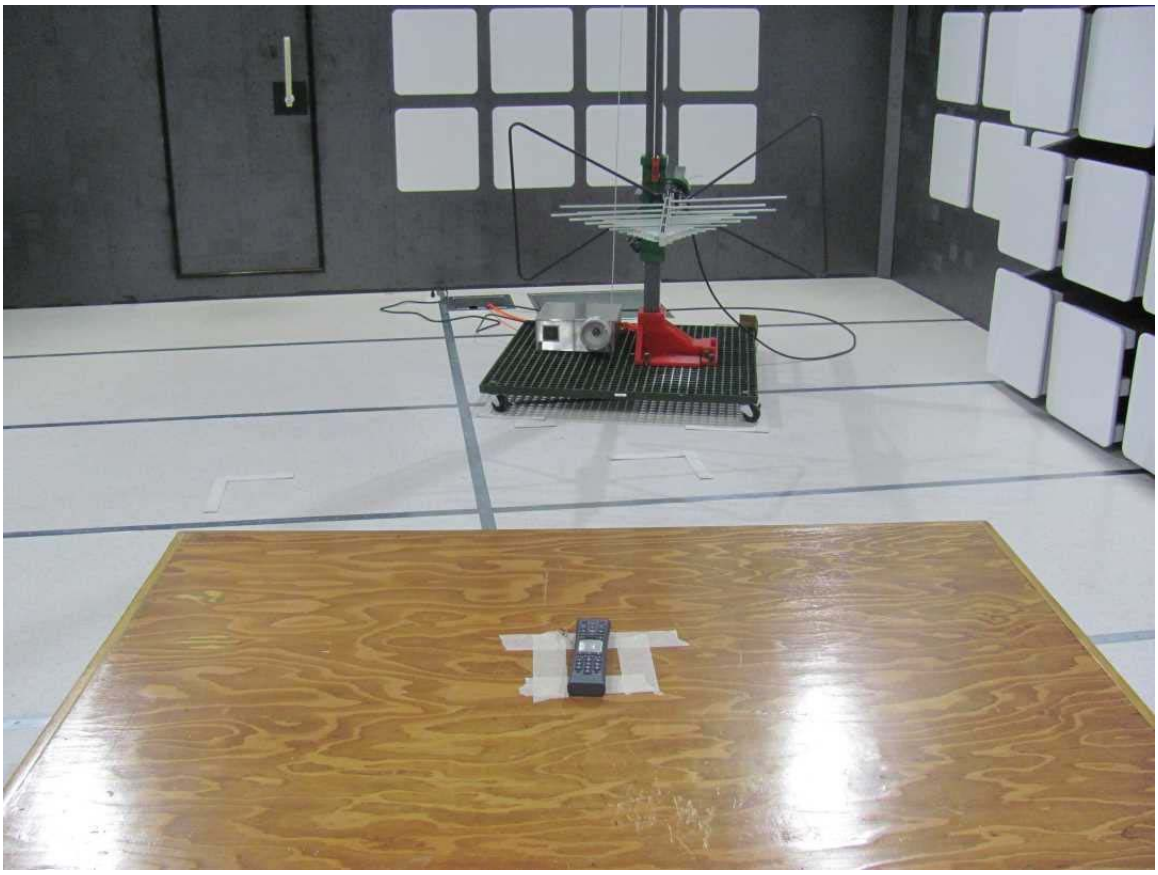
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.19	31.0	25.69
19.0	24.48	31.5	25.74
20.0	24.39	32.0	26.35
21.0	24.73	32.5	26.64
22.0	23.49	33.0	25.98
23.0	24.23	33.5	24.68
24.0	24.59	34.0	24.61
25.0	25.32	34.5	23.78
26.0	25.66	35.0	24.74
26.5	25.99	35.5	24.39
27.0	26.26	36.0	23.46
27.5	25.33	36.5	23.71
28.0	24.49	37.0	26.35
28.5	24.74	37.5	23.49
29.0	25.93	38.0	25.42
29.5	26.28	38.5	24.87
30.0	26.17	39.0	22.60
30.5	26.11	39.5	20.57
		40.0	19.15



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
COMCAST XR11v2 REMOTE 2014
MODEL: URC-4350BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

UNIVERSAL ELECTRONINCS, INC.
COMCAST XR11v2 REMOTE 2014
MODEL: URC-4350BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
COMCAST XR11v2 REMOTE 2014
MODEL: URC-4350BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

UNIVERSAL ELECTRONICS, INC.
COMCAST XR11v2 REMOTE 2014
MODEL: URC-4350BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

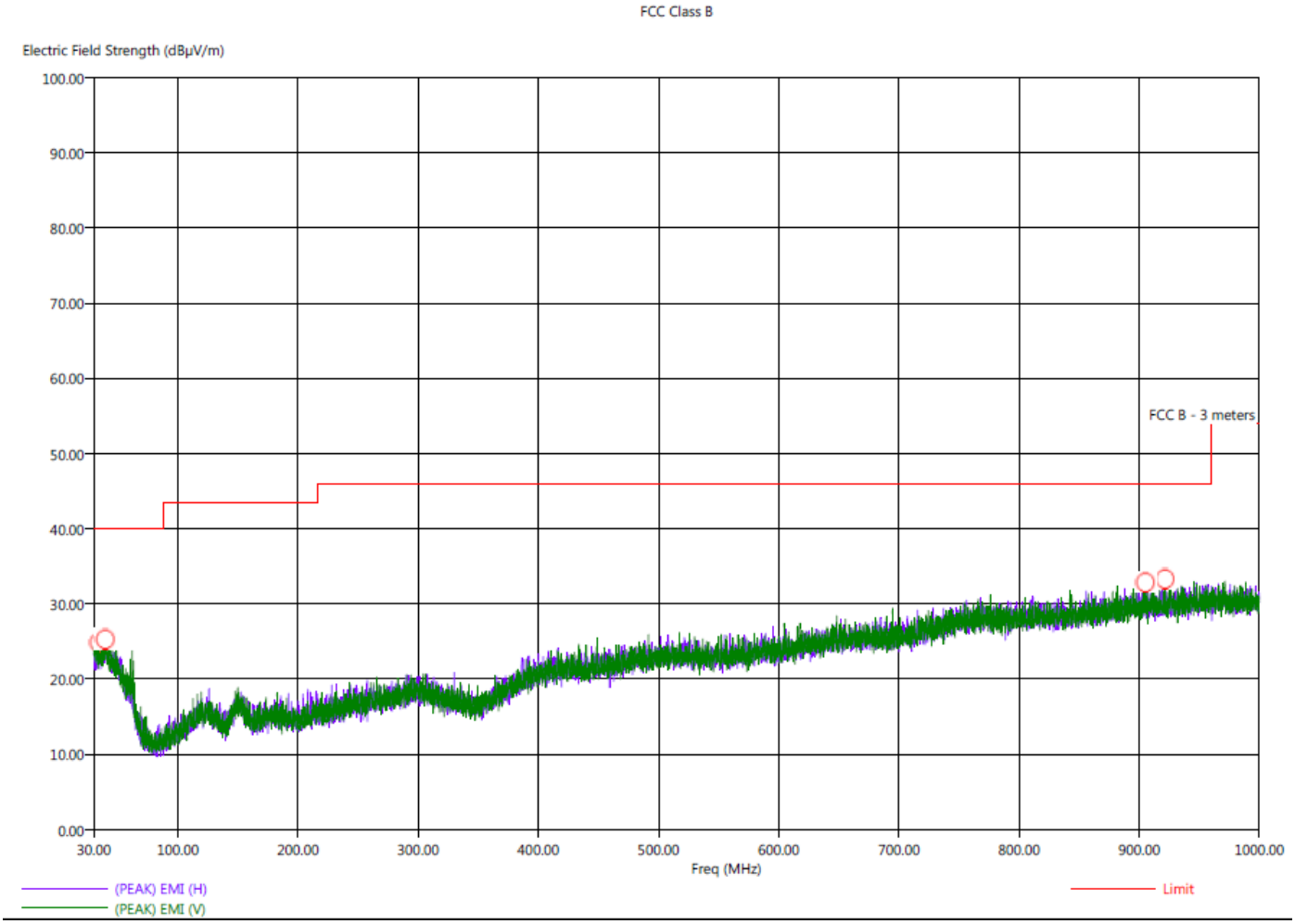
APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

```
Title: Pre-Scan - FCC Class B                                   8/8/2014 10:50:03 AM
File: Agilent - Radiated Pre-Scan 30-1000Mhz_Z-Axis - FCC Class B - 08-08-2014.set
Operator: Kenneth Lee
EUT Type: Comcast XR11v2 Remote 2014
EUT Condition: Continuously Tranmitting - Z-Axis - Worst Case
Comments: Customer: Universal Electronics, Inc.
M/N: URC-4350BC0-X-R
```



Title: Radiated Final - 30-1000 MHz - FCC Class B 8/8/2014 11:10:30 AM
File: Agilent - Radiated Final Scan 30-1000Mhz_Z-Axis - FCC Class B - 08-08-2014.set Sequence: Final Measurements
Operator: Kenneth Lee
EUT Type: Comcast XR11v2 Remote 2014
EUT Condition: Continuously Transmitting - Z-Axis - Worst Case
Comments: Customer: Universal Electronics, Inc.
M/N: URC-4350BC0-X-R

Radiated Final - 30-1000 MHz - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
34.30	H	25.29	21.45	-14.71	-18.55	40.00	23.66	0.39	167.25	393.61
38.30	H	26.37	21.95	-13.63	-18.05	40.00	24.04	0.42	85.50	163.88
39.70	V	26.67	22.03	-13.33	-17.97	40.00	24.16	0.43	14.25	110.86
40.80	H	25.74	21.74	-14.26	-18.26	40.00	23.90	0.44	359.50	337.67
905.30	V	32.49	28.01	-13.51	-17.99	46.00	27.07	2.65	112.75	289.61
921.50	V	32.72	28.22	-13.28	-17.78	46.00	27.30	2.67	52.00	278.08

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	94.26	V	114	-19.74	Peak	1.5	125	
2425	74.26	V	94	-19.74	Avg	1.5	125	
4850	59.89	V	74	-14.11	Peak	1.5	180	
4850	39.89	V	54	-14.11	Avg	1.5	180	
7275	55.56	V	74	-18.44	Peak	1.5	225	
7275	35.56	V	54	-18.44	Avg	1.5	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	99.13	H	114	-14.87	Peak	1.25	270	
2425	79.13	H	94	-14.87	Avg	1.25	270	
4850	59.25	H	74	-14.75	Peak	1.25	155	
4850	39.25	H	54	-14.75	Avg	1.25	155	
7275	59.49	H	74	-14.51	Peak	1.25	225	
7275	39.49	H	54	-14.51	Avg	1.25	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	99.6	V	114	-14.4	Peak	1.25	135	
2425	79.6	V	94	-14.4	Avg	1.25	135	
4850	58.35	V	74	-15.65	Peak	2	135	
4850	38.35	V	54	-15.65	Avg	2	135	
7275	56.26	V	74	-17.74	Peak	2	135	
7275	36.26	V	54	-17.74	Avg	2	135	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	89.65	H	114	-24.35	Peak	1.25	45	
2425	69.65	H	94	-24.35	Avg	1.25	45	
4850	59.03	H	74	-14.97	Peak	1.5	0	
4850	39.03	H	54	-14.97	Avg	1.5	0	
7275	56.78	H	74	-17.22	Peak	1.5	225	
7275	36.78	H	54	-17.22	Avg	1.5	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Z-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	96.23	V	114	-17.77	Peak	1.5	180	
2425	76.23	V	94	-17.77	Avg	1.5	180	
4850	60.31	V	74	-13.69	Peak	1.5	45	
4850	40.31	V	54	-13.69	Avg	1.5	45	
7275	55.76	V	74	-18.24	Peak	2.5	225	
7275	35.76	V	54	-18.24	Avg	2.5	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Z-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	97.26	H	114	-16.74	Peak	1.25	90	
2425	77.26	H	94	-16.74	Avg	1.25	90	
4850	60.67	H	74	-13.33	Peak	1.25	45	
4850	40.67	H	54	-13.33	Avg	1.25	45	
7275	56.48	H	74	-17.52	Peak	1.5	135	
7275	36.48	H	54	-17.52	Avg	1.5	135	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
14550								No Emission
14550								Detected
16975								No Emission
16975								Detected
19400								No Emission
19400								Detected
21825								No Emission
21825								Detected
24250								No Emission
24250								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	95.53	V	114	-18.47	Peak	1.25	180	
2450	75.53	V	94	-18.47	Avg	1.25	180	
4900	57.66	V	74	-16.34	Peak	1.25	155	
4900	37.66	V	54	-16.34	Avg	1.25	155	
7350	54.95	V	74	-19.05	Peak	1.25	165	
7350	34.95	V	54	-19.05	Avg	1.25	165	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	99.53	H	114	-14.47	Peak	1.25	155	
2450	79.53	H	94	-14.47	Avg	1.25	155	
4900	60.05	H	74	-13.95	Peak	1.25	165	
4900	40.05	H	54	-13.95	Avg	1.25	165	
7350	57.64	H	74	-16.36	Peak	1.25	90	
7350	37.64	H	54	-16.36	Avg	1.25	90	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	99.01	V	114	-14.99	Peak	1.25	155	
2450	79.01	V	94	-14.99	Avg	1.25	155	
4900	61.32	V	74	-12.68	Peak	1.25	90	
4900	41.32	V	54	-12.68	Avg	1.25	90	
7350	54.65	V	74	-19.35	Peak	1.35	225	
7350	34.65	V	54	-19.35	Avg	1.35	225	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	92.32	H	114	-21.68	Peak	1.25	155	
2450	72.32	H	94	-21.68	Avg	1.25	155	
4900	60.37	H	74	-13.63	Peak	1.25	155	
4900	40.37	H	54	-13.63	Avg	1.25	155	
7350	55.93	H	74	-18.07	Peak	1.35	165	
7350	35.93	H	54	-18.07	Avg	1.35	165	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Z-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	98.67	V	114	-15.33	Peak	1.25	90	
2450	78.67	V	94	-15.33	Avg	1.25	90	
4900	61.31	V	74	-12.69	Peak	1.55	125	
4900	41.31	V	54	-12.69	Avg	1.55	125	
7350	57.32	V	74	-16.68	Peak	1.25	135	
7350	37.32	V	54	-16.68	Avg	1.25	135	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Z-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	97.35	H	114	-16.65	Peak	1.25	135	
2450	77.35	H	94	-16.65	Avg	1.25	135	
4900	62.42	H	74	-11.58	Peak	1.35	145	
4900	42.42	H	54	-11.58	Avg	1.35	145	
7350	57.63	H	74	-16.37	Peak	1.25	155	
7350	37.63	H	54	-16.37	Avg	1.25	155	
9800								No Emission
9800								Detected
12250								No Emission
12250								Detected
14700								No Emission
14700								Detected
17150								No Emission
17150								Detected
19600								No Emission
19600								Detected
22050								No Emission
22050								Detected
24500								No Emission
24500								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
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Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

High Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	94.88	V	114	-19.12	Peak	1.25	155	
2475	74.88	V	94	-19.12	Avg	1.25	155	
4950	60.17	V	74	-13.83	Peak	1.25	155	
4950	40.17	V	54	-13.83	Avg	1.25	155	
7425	54.05	V	74	-19.95	Peak	1.35	165	
7425	34.05	V	54	-19.95	Avg	1.35	165	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
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Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

High Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	98.62	H	114	-15.38	Peak	1.25	90	
2475	78.62	H	94	-15.38	Avg	1.25	90	
4950	59.89	H	74	-14.11	Peak	1.35	225	
4950	39.89	H	54	-14.11	Avg	1.35	225	
7425	49.11	H	74	-24.89	Peak	1.25	155	
7425	29.11	H	54	-24.89	Avg	1.25	155	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
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Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

High Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	98.61	V	114	-15.39	Peak	1.25	90	
2475	78.61	V	94	-15.39	Avg	1.25	90	
4950	60.28	V	74	-13.72	Peak	1.35	155	
4950	40.28	V	54	-13.72	Avg	1.35	155	
7425	57.26	V	74	-16.74	Peak	1.25	155	
7425	37.26	V	54	-16.74	Avg	1.25	155	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
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Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

High Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	91.64	H	114	-22.36	Peak	1.25	155	
2475	71.64	H	94	-22.36	Avg	1.25	155	
4950	61.61	H	74	-12.39	Peak	1.35	165	
4950	41.61	H	54	-12.39	Avg	1.35	165	
7425	57.15	H	74	-16.85	Peak	1.25	165	
7425	37.15	H	54	-16.85	Avg	1.25	165	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
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Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

High Channel
Z-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	94.7	V	114	-19.3	Peak	1.25	155	
2475	74.7	V	94	-19.3	Avg	1.25	155	
4950	62.12	V	74	-11.88	Peak	1.55	165	
4950	42.12	V	54	-11.88	Avg	1.55	165	
7425	57.01	V	74	-16.99	Peak	1.25	155	
7425	37.01	V	54	-16.99	Avg	1.25	155	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
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Date: 08/01/2014
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High Channel
Z-Axis - Horizontal

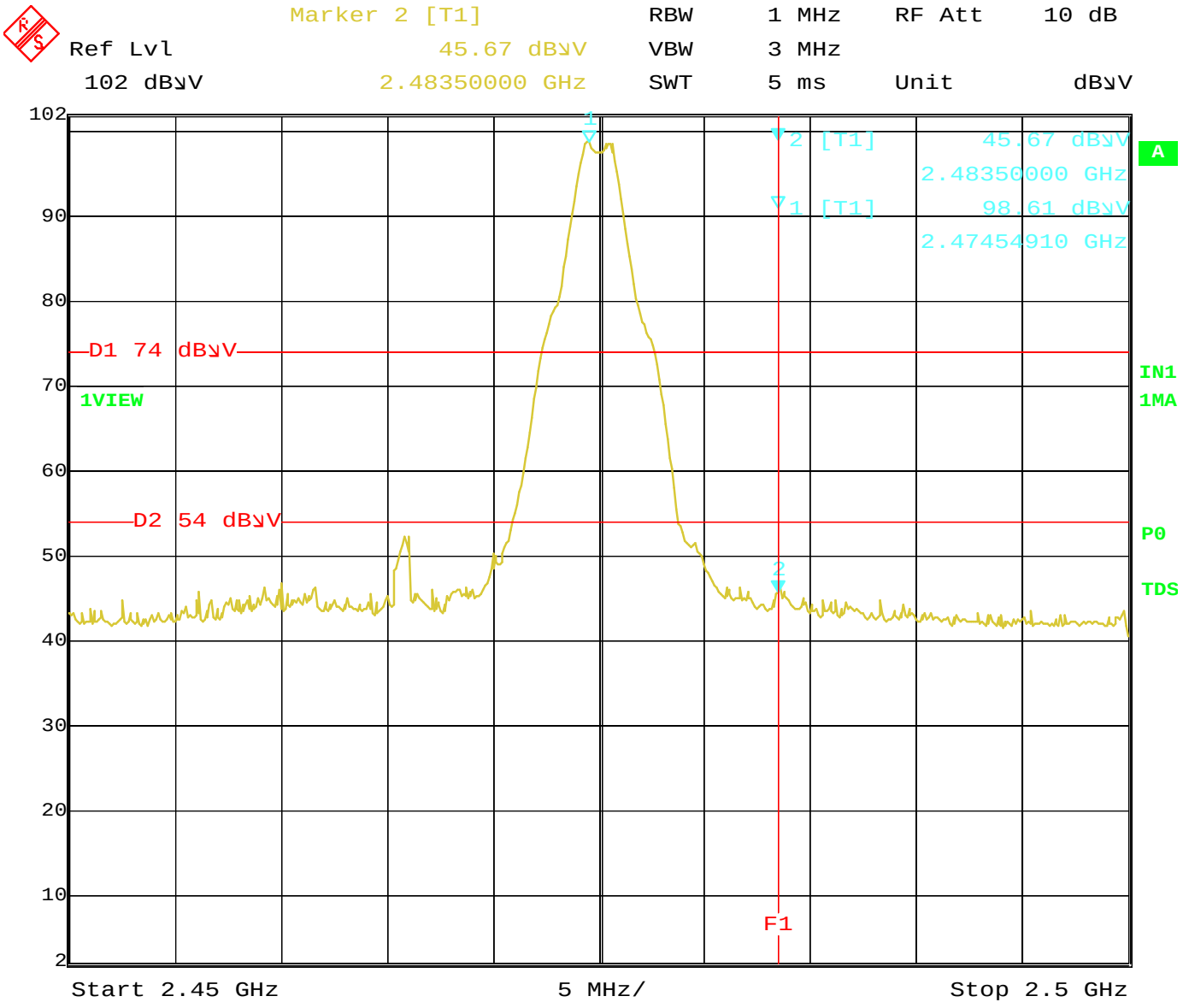
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	97.22	H	114	-16.78	Peak	1.25	155	
2475	77.22	H	94	-16.78	Avg	1.25	155	
4950	59.49	H	74	-14.51	Peak	1.35	315	
4950	39.49	H	54	-14.51	Avg	1.35	315	
7425	57.89	H	74	-16.11	Peak	1.25	125	
7425	37.89	H	54	-16.11	Avg	1.25	125	
9900								No Emission
9900								Detected
12375								No Emission
12375								Detected
14850								No Emission
14850								Detected
17325								No Emission
17325								Detected
19800								No Emission
19800								Detected
22275								No Emission
22275								Detected
24750								No Emission
24750								Detected

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

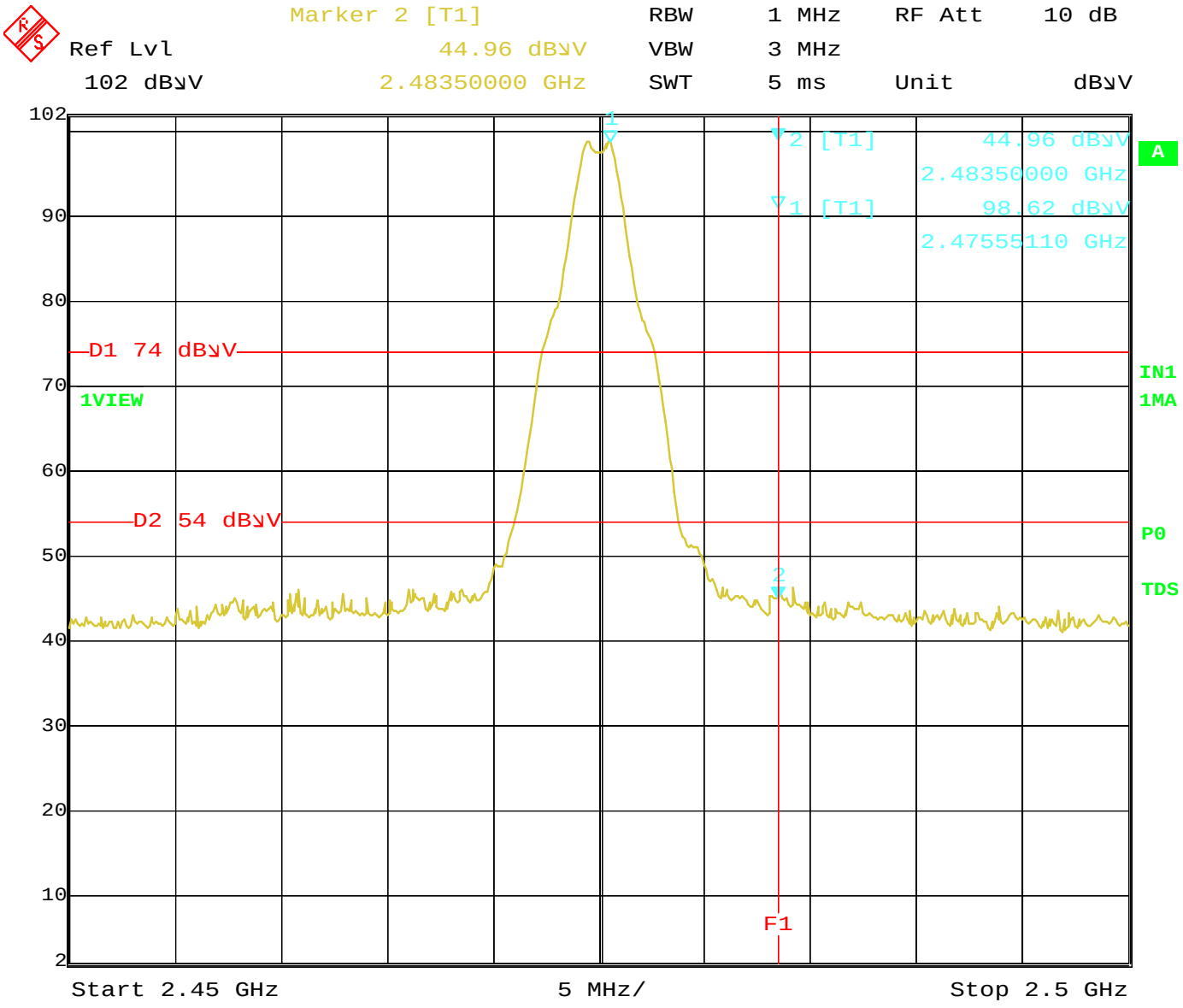
Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Band Edges

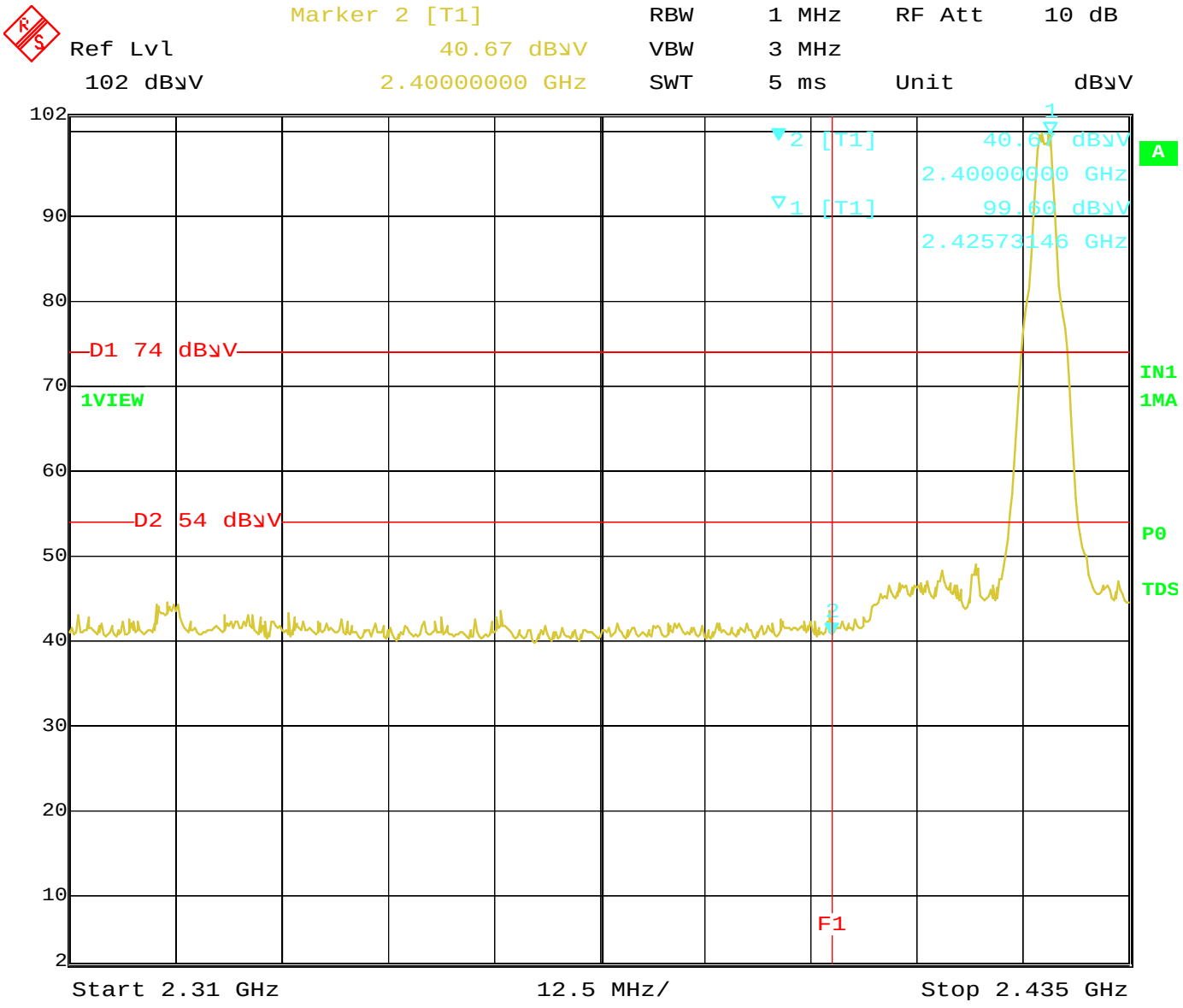
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	99.6	V	114	-14.4	Peak	1.25	135	Fundamental
2425	79.6	V	94	-14.4	Avg	1.25	135	of Low Channel
2400	40.67	V	74	-33.33	Peak	1.25	135	Band Edge of Low Channel
2400	20.67	V	54	-33.33	Avg	1.25	135	Y-Axis Worst Case
2425	99.13	H	114	-14.87	Peak	1.25	270	Fundamental of
2425	79.13	H	94	-14.87	Avg	1.25	270	Low Channel
2400	41.43	H	74	-32.57	Peak	1.25	270	Band Edge of Low Channel
2400	21.43	H	54	-32.57	Avg	1.25	270	X-Axis Worst Case
2475	98.62	H	114	-15.38	Peak	1.25	90	Fundamental of
2475	78.62	H	94	-15.38	Avg	1.25	90	High Channel
2483.5	44.96	H	74	-29.04	Peak	1.25	90	Band Edge of High Channel
2483.5	24.96	H	54	-29.04	Avg	1.25	90	X-Axis Worst Case
2475	98.61	V	114	-15.39	Peak	1.25	90	Fundamental of
2475	78.61	V	94	-15.39	Avg	1.25	90	High Channel
2483.5	45.67	V	74	-28.33	Peak	1.25	90	Band Edge of High Channel
2483.5	25.67	V	54	-28.33	Avg	1.25	90	Y-Axis Worst Case



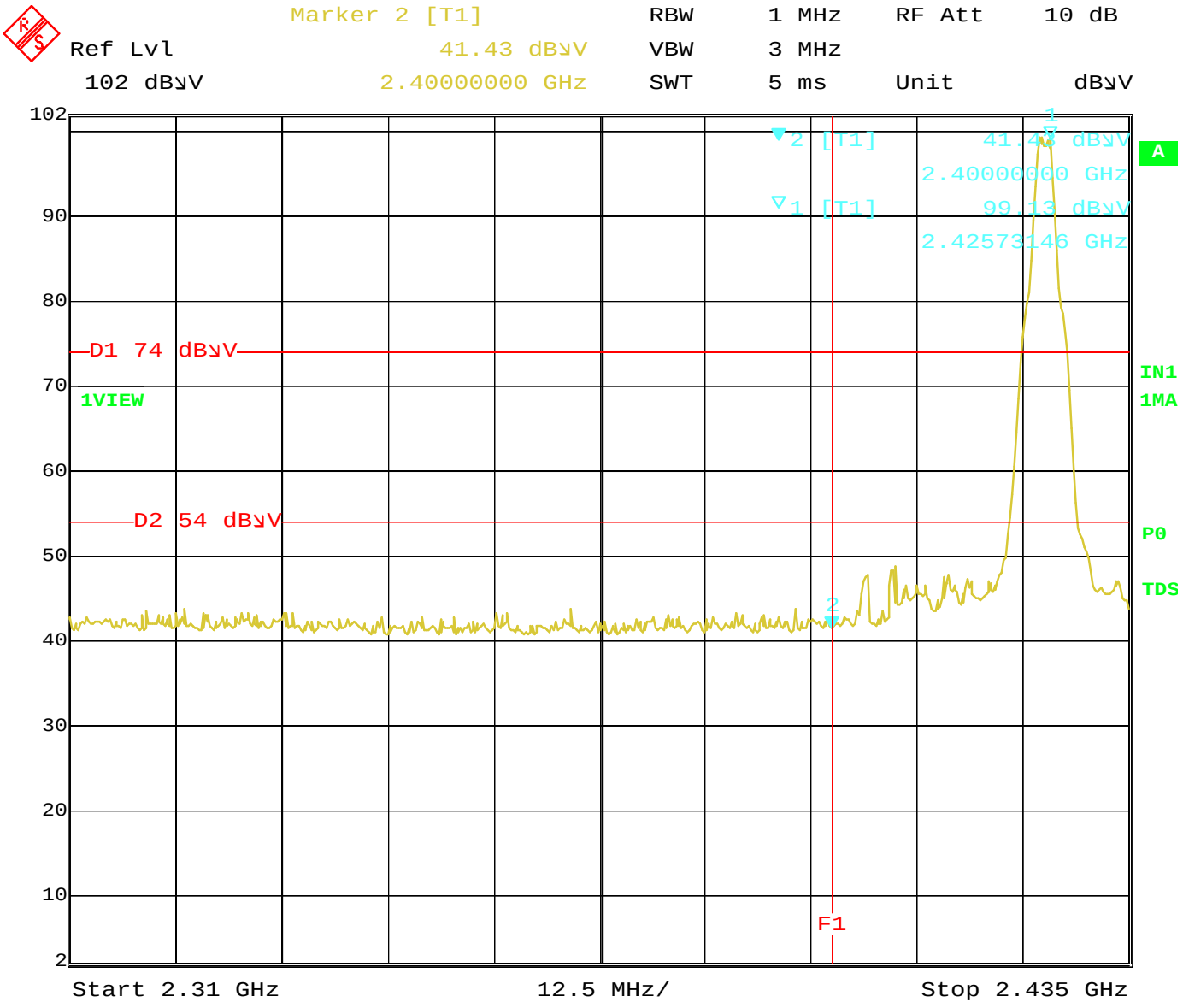
Band Edge – Vertical Polarization – High Ch – Y-Axis – Worst Case



Band Edge – Horizontal Polarization – High Ch – X-Axis – Worst Case



Band Edge – Vertical Polarization – Low Ch – Y-Axis – Worst Case



Band Edge – Horizontal Polarization – Low Ch – X-Axis – Worst Case

FCC 15.249
Universal Electronics, Inc.
Comcast XR11v2 Remote 2014
Model: URC-4350BC0-X-R

Date: 08/01/2014
Lab: B
Tested By: Kyle Fujimoto

Diital Portion and Non-Harmonic Emissions from the Transmitter
10 kHz to 30 MHz and 1 GHz to 25 GHz

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 30 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 30 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis