

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

for

COMCAST XR2 VERSION 3 2013

MODEL: URC-4269BC0-X-R

Prepared for

UNIVERSAL ELECTRONICS, INC.
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DATE: JANUARY 7, 2014

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

Compatible Electronics Inc. generates this electromagnetic emission test report, 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: Comcast XR2 Version 3 2013
Model: URC-4269BC0-X-R
S/N: N/A

Product Description: See Expository Statement

Modifications: The EUT was not modified in order to meet the specifications.

Manufacturer: Universal Electronics, Inc.
201 East Sandpointe Avenue, 8th Floor
Santa Ana, California 92707

Test Date(s): December 10 and 13, 2013

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

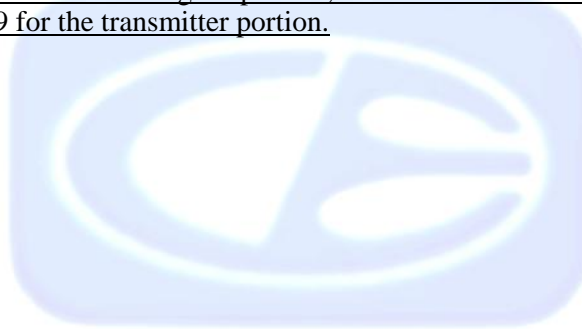
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	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.
2	Radiated RF Emissions 10 kHz to 25000 MHz (Transmitter and Digital Portion)	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Comcast XR2 Version 3 2013, Model: URC-4269BC0-X-R (EUT). 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 for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.249 for the transmitter portion.



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.

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.

James Ross Test Engineer

Kyle Fujimoto Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the initial test date of November 26, 2013.

2.5 Disposition of the Test Sample

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

2.6 Abbreviations and Acronyms

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

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
N/A	Not Applicable
Ltd.	Limited
Inc.	Incorporated
NCR	No Calibration Required
URC	Universal Remote Control

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4: 2009	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 – Emissions

The Comcast XR2 Version 3 2013, Model: URC-4269BC0-X-R (EUT) was tested as a stand alone unit. The EUT had a special test program that allowed the low, middle, or high channels, to be tested while continuously transmitting.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and any cables were maximized. All initial investigations were performed with the measurement receiver in manual mode scanning the frequency range continuously. Photographs of the test setup are in Appendix D of this report.

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
COMCAST XR2 VERSION 3 2013 (EUT)	UNIVERSAL ELECTRONICS, INC.	URC-4269BC0-X-R	N/A	MG3-4269-X-R

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	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 A					
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	2637A03618	May 30, 2013	1 Year
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A13404	May 30, 2013	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	May 30, 2013	1 Year
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	May 29, 2013	1 Year
Preamplifier	Com-Power	PA-103	1582	December 28, 2012	1 Year
Preamplifier	Com-Power	PA-118	181656	December 27, 2012	1 Year
Preamplifier	Com-Power	PA-840	711013	May 17, 2012	2 Year
Loop Antenna	Com-Power	AL-130	17089	January 29, 2013	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 29, 2012	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

6. TEST SITE DESCRIPTION**6.1 Test Facility Description**

Please refer to section 2.1 and 7.1.2 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.

6.3 Facility Environmental Characteristics

When applicable refer to the data sheets in Appendix E for the relative humidity, air temperature, and barometric pressure.

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The measurement receiver was used as a measuring meter. The data was collected with the measurement receiver 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 measurement receiver's input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the measurement receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

This test was not performed because the EUT operates on battery power and does not connect to the AC mains.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer, along with the quasi-peak adapter, and EMI Receiver were used as a measuring meter. Amplifiers were used to increase the sensitivity of the instrument. The Com-Power Preamplifier Model: PA-103 was used for frequencies from 30 MHz to 1 GHz, the Com-Power Microwave Preamplifier Model: PA-118 was used for frequencies from 1 GHz to 18 GHz, and the Com-Power Microwave Preamplifier Model: PA-840 were used for frequencies above 18 GHz. The spectrum analyzer and EMI Receiver were used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer and EMI receiver records the highest measured reading over the sweeps.

The quasi-peak function was used only for those readings which are marked accordingly on the data sheets.

The frequencies above 1 GHz were adjusted by a "duty cycle correction factor", derived from $20 \log(\text{dwell time} / 100 \text{ ms})$.

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 1000 MHz	120 kHz	CombiLog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antennas

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 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 gun sight method was used when measuring with the horn antenna in order to ensure accurate results. The loop antenna was also rotated in the vertical axis in order to ensure accurate results.

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 from 30 MHz to 25 GHz and at a 10-meter distance from 10 kHz to 30 MHz 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.



7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Comcast XR2 Version 3 2013, Model: URC-4269BC0-X-R

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
7425 (V) - Y axis	51.64 (A)	54	-2.36
7425 (H) – X axis	51.54 (A)	54	-2.46
2425 (V) – Y axis	90.95 (A)	94	-3.05
7425 (V) – X axis	50.09 (A)	54	-3.91
7425 (H) – Z axis	49.24 (A)	54	-4.76
2475 (V) – Y axis	89.18 (A)	94	-4.82

Notes:

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

8. CONCLUSIONS

The Comcast XR2 Version 3 2013, Model: URC-4269BC0-X-R (EUT), as tested, meets all of the Class B specification limits defined in CFR Title 47, Part 15, Subpart B for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.249 for the transmitter portion.





APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

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 fulfillment 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) <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 15.249 and/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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Comcast XR2 Version 3 2013
Model: URC-4269BC0-X-R
S/N: N/A

ADDITIONAL MODELS COVERED:

The following models are considered by the manufacturer to be similar to the sample tested, however the test results contained in this report relate only to the sample tested.

There were no additional models covered under this test report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

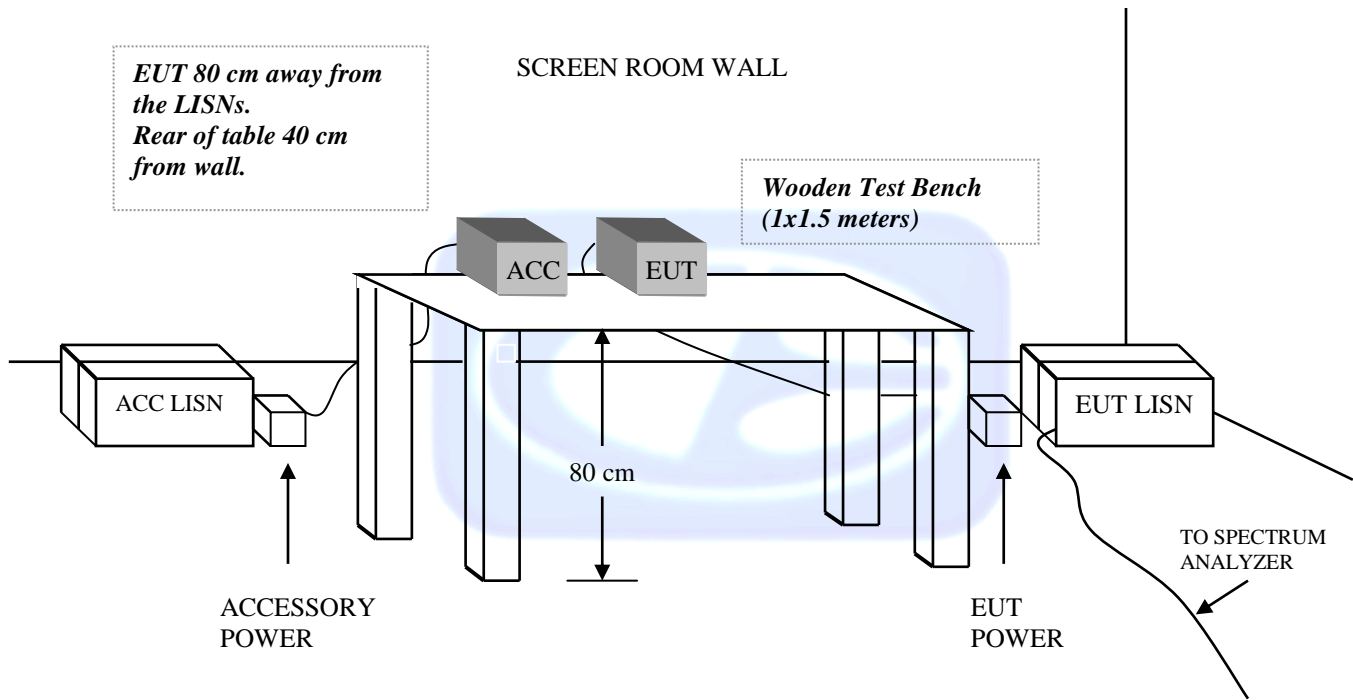
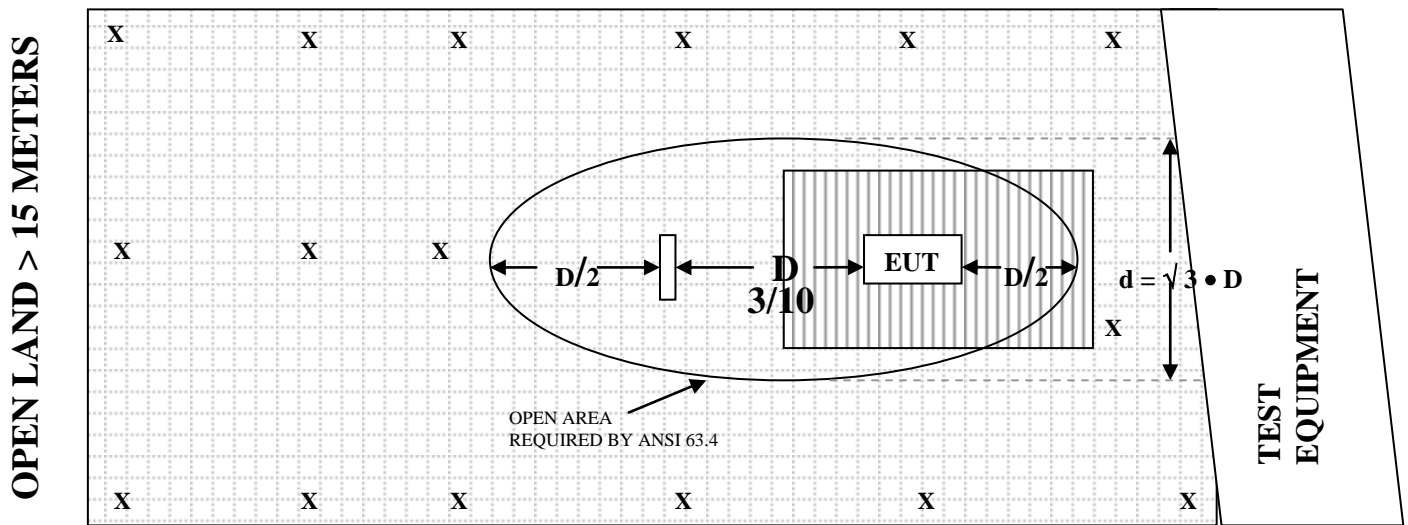


FIGURE 2: PLOT MAP AND LAYOUT OF THE RADIATED TEST SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

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

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 29, 2013**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	19.40	200	9.10
35	19.10	250	11.40
40	19.70	300	11.90
45	18.00	350	14.20
50	16.80	400	15.20
60	12.50	450	16.50
70	7.30	500	17.10
80	4.40	550	16.20
90	8.00	600	17.70
100	8.80	650	19.10
120	10.50	700	20.00
125	10.60	750	21.50
140	8.60	800	21.50
150	11.20	850	21.70
160	8.90	900	22.70
175	9.60	950	22.10
180	8.50	1000	22.90

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: FEBRUARY 29, 2012

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.6	10.0	37.7
1.5	22.0	10.5	38.4
2.0	28.7	11.0	38.0
2.5	29.3	11.5	38.2
3.0	30.6	12.0	39.0
3.5	30.4	12.5	42.4
4.0	31.1	13.0	40.8
4.5	33.4	13.5	40.0
5.0	35.3	14.0	39.7
5.5	35.1	14.5	43.5
6.0	36.9	15.0	42.7
6.5	37.4	15.5	39.7
7.0	37.6	16.0	39.2
7.5	36.2	16.5	39.7
8.0	38.4	17.0	42.2
8.5	39.3	17.5	47.6
9.0	37.4	18.0	51.2
9.5	38.0		

COM-POWER AH826**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-103**PREAMPLIFIER**

S/N: 1582

CALIBRATION DATE: DECEMBER 28, 2012

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	32.80	300	32.26
40	33.10	350	32.23
50	33.10	400	32.17
60	33.10	450	32.16
70	33.00	500	32.11
80	33.00	550	32.07
90	33.10	600	32.02
100	33.00	650	31.97
125	33.00	700	31.87
150	33.00	750	31.81
175	32.90	800	31.73
200	32.80	850	31.57
225	32.34	900	31.43
250	32.32	950	31.29
275	32.28	1000	31.14

COM-POWER PA-118**PREAMPLIFIER**

S/N: 181656

CALIBRATION DATE: DECEMBER 27, 2012

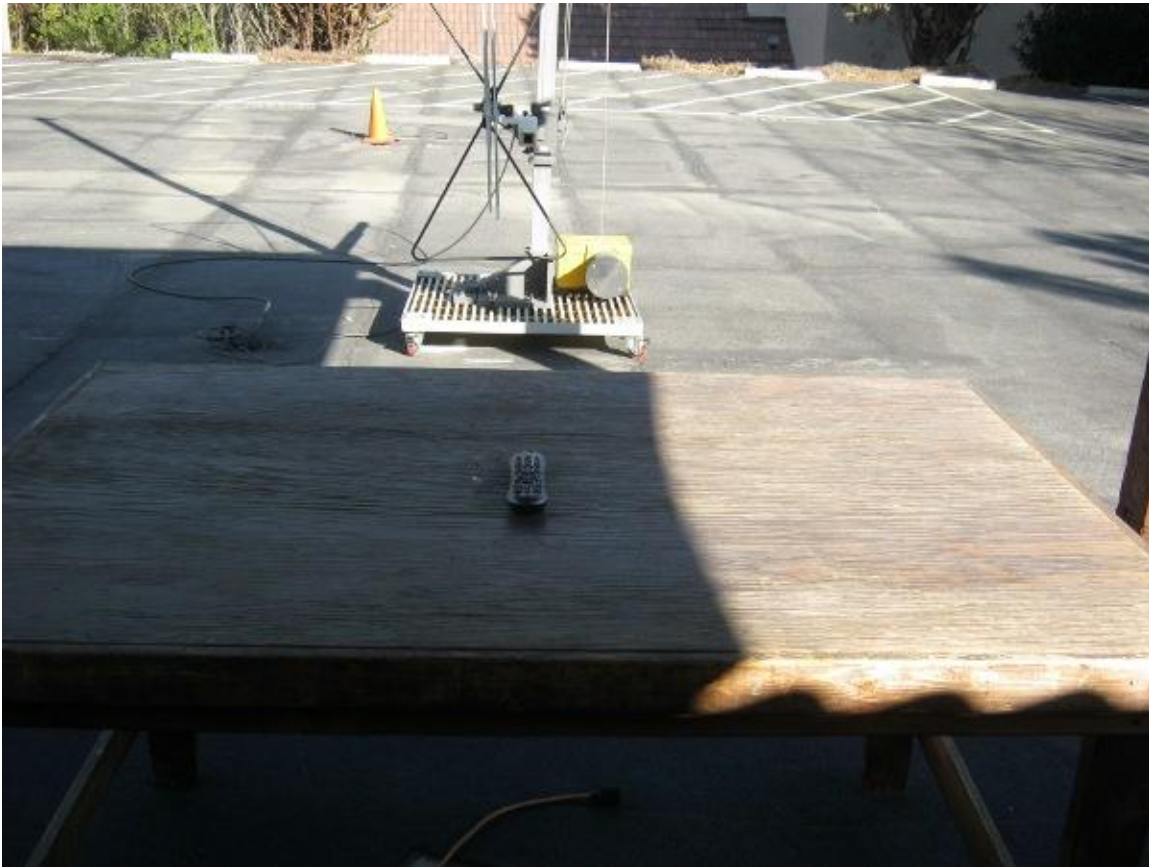
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
0.50	25.29	6.00	25.75
0.60	25.26	6.50	25.28
0.70	25.23	7.00	24.83
0.80	25.13	7.50	24.49
0.90	24.91	8.00	24.38
1.00	24.68	8.50	25.06
1.25	25.85	9.00	25.55
1.50	26.23	9.50	25.32
1.75	26.42	10.0	25.25
2.00	26.48	10.5	25.31
2.25	26.55	11.0	24.99
2.50	26.59	11.5	24.84
2.75	26.64	12.0	25.08
3.00	26.67	12.5	24.64
3.25	26.67	13.0	24.44
3.50	26.66	13.5	24.85
3.75	26.58	14.0	25.02
4.00	26.82	14.5	25.41
4.25	26.60	15.0	26.12
4.50	26.46	15.5	26.74
4.75	26.36	16.0	25.67
5.00	26.22	16.5	24.48
5.25	26.11	17.0	24.33
5.50	25.98	17.5	25.19
5.75	25.90	18.0	26.75

COM-POWER PA-840**MICROWAVE PREAMPLIFIER**

S/N: 711013

CALIBRATION DATE: MAY 17, 2012

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.81	31.0	25.77
19.0	24.57	31.5	25.36
20.0	23.46	32.0	25.15
21.0	22.51	32.5	25.13
22.0	23.85	33.0	25.52
23.0	23.31	33.5	25.24
24.0	24.44	34.0	25.08
25.0	25.42	34.5	25.27
26.0	25.71	35.0	23.99
26.5	25.66	35.5	24.67
27.0	25.84	36.5	24.80
27.5	25.29	37.0	26.27
28.0	25.46	37.5	24.86
28.5	25.58	38.0	24.64
29.0	26.16	38.5	23.46
29.5	26.14	39.0	21.29
30.0	26.01	39.5	20.83
30.5	25.67	40.0	19.96



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
COMCAST XR2 VERSION 3 2013
MODEL: URC-4269BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS

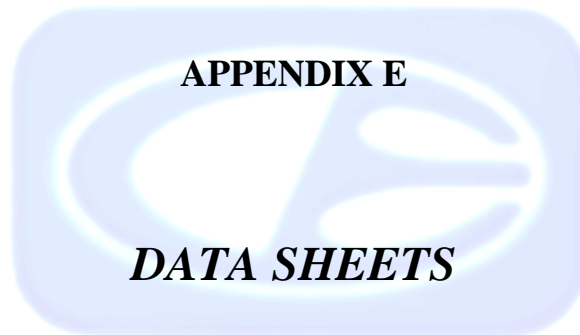
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
COMCAST XR2 VERSION 3 2013
MODEL: URC-4269BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS

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



RADIATED EMISSIONS

DATA SHEETS

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	94.42	V	114	-19.58	Peak	1.25	135	
2425	79.35	V	94	-14.65	Avg	1.25	135	
4850	52.01	V	74	-21.99	Peak	1.25	155	
4850	36.94	V	54	-17.06	Avg	1.25	155	
7275	56.46	V	74	-17.54	Peak	1.25	135	
7275	41.39	V	54	-12.61	Avg	1.25	135	
9700								No Emission Detected
9700								Detected
12125								No Emission Detected
12125								Detected
14550								No Emission Detected
14550								Detected
16975								No Emission Detected
16975								Detected
19400								No Emission Detected
19400								Detected
21825								No Emission Detected
21825								Detected
24250								No Emission Detected
24250								Detected

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	102.81	H	114	-11.19	Peak	1.25	155	
2425	87.74	H	94	-6.26	Avg	1.25	155	
4850	48.44	H	74	-25.56	Peak	1.25	165	
4850	33.37	H	54	-20.63	Avg	1.25	165	
7275	56.51	H	74	-17.49	Peak	1.25	0	
7275	41.44	H	54	-12.56	Avg	1.25	0	
9700								No Emission Detected
9700								Detected
12125								No Emission Detected
12125								Detected
14550								No Emission Detected
14550								Detected
16975								No Emission Detected
16975								Detected
19400								No Emission Detected
19400								Detected
21825								No Emission Detected
21825								Detected
24250								No Emission Detected
24250								Detected

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBUV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	106.02	V	114	-7.98	Peak	1.25	155	
2425	90.95	V	94	-3.05	Avg	1.25	155	
4850	51.05	V	74	-22.95	Peak	1.25	155	
4850	35.98	V	54	-18.02	Avg	1.25	155	
7275	55.18	V	74	-18.82	Peak	1.25	155	
7275	40.11	V	54	-13.89	Avg	1.25	155	
9700								No Emission Detected
9700								
12125								No Emission Detected
12125								
14550								No Emission Detected
14550								
16975								No Emission Detected
16975								
19400								No Emission Detected
19400								
21825								No Emission Detected
21825								
24250								No Emission Detected
24250								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	98.15	H	114	-15.85	Peak	1.25	135	
2425	83.08	H	94	-10.92	Avg	1.25	135	
4850	49.78	H	74	-24.22	Peak	1.25	0	
4850	34.71	H	54	-19.29	Avg	1.25	0	
7275	56.37	H	74	-17.63	Peak	1.25	155	
7275	41.3	H	54	-12.7	Avg	1.25	155	
9700								No Emission Detected
9700								
12125								No Emission Detected
12125								
14550								No Emission Detected
14550								
16975								No Emission Detected
16975								
19400								No Emission Detected
19400								
21825								No Emission Detected
21825								
24250								No Emission Detected
24250								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	98.72	V	114	-15.28	Peak	1.25	155	
2425	83.65	V	94	-10.35	Avg	1.25	155	
4850	50.42	V	74	-23.58	Peak	1.25	155	
4850	35.35	V	54	-18.65	Avg	1.25	155	
7275	53.88	V	74	-20.12	Peak	1.25	165	
7275	38.81	V	54	-15.19	Avg	1.25	165	
9700								No Emission Detected
9700								
12125								No Emission Detected
12125								
14550								No Emission Detected
14550								
16975								No Emission Detected
16975								
19400								No Emission Detected
19400								
21825								No Emission Detected
21825								
24250								No Emission Detected
24250								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	103.98	H	114	-10.02	Peak	1.25	155	
2425	88.91	H	94	-5.09	Avg	1.25	155	
4850	49.29	H	74	-24.71	Peak	1.25	165	
4850	34.22	H	54	-19.78	Avg	1.25	165	
7275	58.27	H	74	-15.73	Peak	1.25	155	
7275	43.2	H	54	-10.8	Avg	1.25	155	
9700								No Emission Detected
9700								
12125								No Emission Detected
12125								
14550								No Emission Detected
14550								
16975								No Emission Detected
16975								
19400								No Emission Detected
19400								
21825								No Emission Detected
21825								
24250								No Emission Detected
24250								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	98.74	V	114	-15.26	Peak	1.25	155	
2450	83.67	V	94	-10.33	Avg	1.25	155	
4900	49.57	V	74	-24.43	Peak	1.25	155	
4900	34.5	V	54	-19.5	Avg	1.25	155	
7350	55.12	V	74	-18.88	Peak	1.25	135	
7350	40.05	V	54	-13.95	Avg	1.25	135	
9800								No Emission Detected
9800								
12250								No Emission Detected
12250								
14700								No Emission Detected
14700								
17150								No Emission Detected
17150								
19600								No Emission Detected
19600								
22050								No Emission Detected
22050								
24500								No Emission Detected
24500								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	102.27	H	114	-11.73	Peak	1.25	155	
2450	87.2	H	94	-6.8	Avg	1.25	155	
4900	46.53	H	74	-27.47	Peak	1.25	155	
4900	31.46	H	54	-22.54	Avg	1.25	155	
7350	58.66	H	74	-15.34	Peak	1.25	165	
7350	43.59	H	54	-10.41	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 XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	102.85	V	114	-11.15	Peak	1.25	155	
2450	87.78	V	94	-6.22	Avg	1.25	155	
4900	48.01	V	74	-25.99	Peak	1.25	180	
4900	32.94	V	54	-21.06	Avg	1.25	180	
7350	54.19	V	74	-19.81	Peak	1.35	175	
7350	39.12	V	54	-14.88	Avg	1.35	175	
9800								No Emission Detected
9800								
12250								No Emission Detected
12250								
14700								No Emission Detected
14700								
17150								No Emission Detected
17150								
19600								No Emission Detected
19600								
22050								No Emission Detected
22050								
24500								No Emission Detected
24500								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBUV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	96.81	H	114	-17.19	Peak	1.25	155	
2450	81.74	H	94	-12.26	Avg	1.25	155	
4900	50.14	H	74	-23.86	Peak	1.25	155	
4900	35.07	H	54	-18.93	Avg	1.25	155	
7350	56.53	H	74	-17.47	Peak	1.25	165	
7350	41.46	H	54	-12.54	Avg	1.25	165	
9800								No Emission Detected
12250								No Emission Detected
14700								No Emission Detected
17150								No Emission Detected
19600								No Emission Detected
22050								No Emission Detected
24500								No Emission Detected

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	95.29	V	114	-18.71	Peak	1.25	155	
2450	80.22	V	94	-13.78	Avg	1.25	155	
4900	48.68	V	74	-25.32	Peak	1.25	155	
4900	33.61	V	54	-20.39	Avg	1.25	155	
7350	54.69	V	74	-19.31	Peak	1.25	185	
7350	39.62	V	54	-14.38	Avg	1.25	185	
9800								No Emission Detected
9800								
12250								No Emission Detected
12250								
14700								No Emission Detected
14700								
17150								No Emission Detected
17150								
19600								No Emission Detected
19600								
22050								No Emission Detected
22050								
24500								No Emission Detected
24500								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	103.32	H	114	-10.68	Peak	1.25	135	
2450	88.25	H	94	-5.75	Avg	1.25	135	
4900	49.91	H	74	-24.09	Peak	1.25	165	
4900	34.84	H	54	-19.16	Avg	1.25	165	
7350	55.82	H	74	-18.18	Peak	1.25	225	
7350	40.75	H	54	-13.25	Avg	1.25	225	
9800								No Emission Detected
9800								
12250								No Emission Detected
12250								
14700								No Emission Detected
14700								
17150								No Emission Detected
17150								
19600								No Emission Detected
19600								
22050								No Emission Detected
22050								
24500								No Emission Detected
24500								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	101.13	V	114	-12.87	Peak	1.25	155	
2475	86.06	V	94	-7.94	Avg	1.25	155	
4950	52.22	V	74	-21.78	Peak	1.25	165	
4950	37.15	V	54	-16.85	Avg	1.25	165	
7425	65.16	V	74	-8.84	Peak	1.25	135	
7425	50.09	V	54	-3.91	Avg	1.25	135	
9900								No Emission Detected
9900								
12375								No Emission Detected
12375								
14850								No Emission Detected
14850								
17325								No Emission Detected
17325								
19800								No Emission Detected
19800								
22275								No Emission Detected
22275								
24750								No Emission Detected
24750								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

X-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBUV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	102.82	H	114	-11.18	Peak	1.25	45	
2475	87.75	H	94	-6.25	Avg	1.25	45	
4950	53.23	H	74	-20.77	Peak	1.25	165	
4950	38.16	H	54	-15.84	Avg	1.25	165	
7425	66.61	H	74	-7.39	Peak	1.25	45	
7425	51.54	H	54	-2.46	Avg	1.25	45	
9900								No Emission Detected
9900								
12375								No Emission Detected
12375								
14850								No Emission Detected
14850								
17325								No Emission Detected
17325								
19800								No Emission Detected
19800								
22275								No Emission Detected
22275								
24750								No Emission Detected
24750								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	104.25	V	114	-9.75	Peak	1.25	135	
2475	89.18	V	94	-4.82	Avg	1.25	135	
4950	50.78	V	74	-23.22	Peak	1.25	225	
4950	35.71	V	54	-18.29	Avg	1.25	225	
7425	66.71	V	74	-7.29	Peak	1.25	135	
7425	51.64	V	54	-2.36	Avg	1.25	135	
9900								No Emission Detected
9900								
12375								No Emission Detected
12375								
14850								No Emission Detected
14850								
17325								No Emission Detected
17325								
19800								No Emission Detected
19800								
22275								No Emission Detected
22275								
24750								No Emission Detected
24750								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

Y-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	100.75	H	114	-13.25	Peak	1.25	135	
2475	85.68	H	94	-8.32	Avg	1.25	135	
4950	50.37	H	74	-23.63	Peak	1.25	155	
4950	35.3	H	54	-18.7	Avg	1.25	155	
7425	49.75	H	74	-24.25	Peak	1.25	155	
7425	34.68	H	54	-19.32	Avg	1.25	155	
9900								No Emission Detected
12375								No Emission Detected
14850								No Emission Detected
17325								No Emission Detected
19800								No Emission Detected
22275								No Emission Detected
24750								No Emission Detected

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	99.48	V	114	-14.52	Peak	1.25	155	
2475	84.41	V	94	-9.59	Avg	1.25	155	
4950	53.94	V	74	-20.06	Peak	1.35	155	
4950	38.87	V	54	-15.13	Avg	1.35	155	
7425	64.07	V	74	-9.93	Peak	1.25	185	
7425	49	V	54	-5	Avg	1.25	185	
9900								No Emission Detected
9900								
12375								No Emission Detected
12375								
14850								No Emission Detected
14850								
17325								No Emission Detected
17325								
19800								No Emission Detected
19800								
22275								No Emission Detected
22275								
24750								No Emission Detected
24750								

FCC 15.249

Universal Electronics, Inc.
 Comcast XR2 Version 3 2013
 Model: URC-4269BC0-X-R

Date: 12/10/2013
 Lab: B
 Tested By: Kyle Fujimoto

High Channel

Z-Axis - 7 dBm - Duty Cycle 17.63%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	104.04	H	114	-9.96	Peak	1.25	90	
2475	88.97	H	94	-5.03	Avg	1.25	90	
4950	53.39	H	74	-20.61	Peak	1.55	165	
4950	38.32	H	54	-15.68	Avg	1.55	165	
7425	64.31	H	74	-9.69	Peak	1.25	45	
7425	49.24	H	54	-4.76	Avg	1.25	45	
9900								No Emission Detected
9900								
12375								No Emission Detected
12375								
14850								No Emission Detected
14850								
17325								No Emission Detected
17325								
19800								No Emission Detected
19800								
22275								No Emission Detected
22275								
24750								No Emission Detected
24750								

