

**FCC PART 15 SUBPART B and C
TEST REPORT***for***RC70RXMP-19****MODEL: URC 3002BC0-X-R**

Prepared for

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DATE: OCTOBER 3, 2011

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	18	2	2	2	11	11	46

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1	Conducted Emissions Test Setup
2	Plot Map And Layout of Radiated Test Site – 3 Meters

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: RC70RXMP-19
Model: URC 3002BC0-X-R
S/N: N/A

Product Description: See Expository Statement

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

Manufacturer: Gemstar Technology (Yangzhou) Company Limited
#1 Junsheng Road, Fanshui Town, Industrial Zone, Baoying Yangzhou,
Jiansu Province, China (Post Code: 225819)

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

Test Date(s): September 9 and 29, 2011

Test Specifications: EMI requirements
CFR Title 47, Part 15, Subpart B

Test Procedure: ANSI C63.4

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

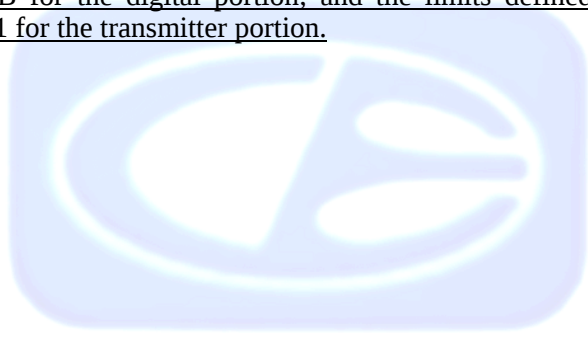
SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power only.
2	Radiated RF Emissions 10 kHz – 4400 MHz (Transmitter, Receive, 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 15.231.

*U = Expanded Uncertainty with a coverage factor of k=2

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the RC70RXMP-19, Model: URC 3002BC0-X-R. 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, 15.209, and 15.231 for the transmitter portion.



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.

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 Core Electrical Engineer

Compatible Electronics Inc.

Kyle Fujimoto Test Engineer
James Ross Test Engineer

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 yet been returned as of the date of this 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
IR	Infrared

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: 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 – EMI

The RC70RXMP-19, Model: URC 3002BC0-X-R (EUT) was tested as a stand alone unit in three orthogonal axis. The EUT was continuously transmitting.

The antenna is a PCB trace.

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

The EUT had no external cables.



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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
RC70RXMP-19 (EUT)	GEMSTAR TECHNOLOGY	URC 3002BC0-X-R	N/A	MG33002

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	100194	November 19, 2010	November 19, 2012
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	2637A03618	May 27, 2011	May 27, 2012
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A13404	May 27, 2011	May 27, 2012
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	May 27, 2011	May 27, 2012
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com-Power	AB-900	15250	June 8, 2011	June 8, 2012
Log Antenna	Com-Power	AL-100	16252	June 8, 2011	June 8, 2012
Preamplifier	Com-Power	PA-102	1017	January 11, 2011	January 11, 2012
Horn Antenna	Com-Power	AH-118	071175	March 18, 2010	March 18, 2012
Loop Antenna	Com-Power	AL-130	17089	January 21, 2011	January 21, 2012
Microwave Preamplifier	Com-Power	PA-118	181656	December 22, 2010	December 22, 2011
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 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.

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 only.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer and EMI Receiver were 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-118 was used for frequencies from 1 GHz to 4.4 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 records the highest measured reading over all the sweeps.

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

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
10 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

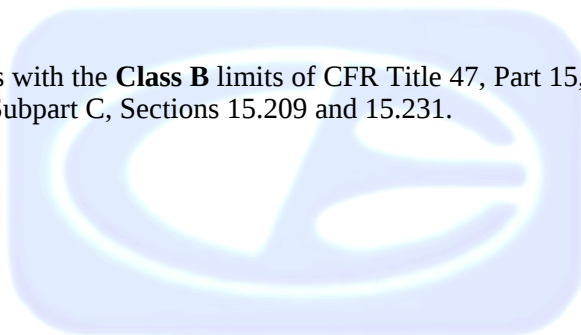
The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. 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 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. The loop antenna was also rotated in the horizontal and 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 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 15.231.



7.1.3 RF Emissions Test ResultsTable 1.0 RADIATED EMISSION RESULTS
RC70RXMP-19, Model: URC 3002BC0-X-R

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
3905.3 (Horizontal) (Y-Axis)	50.42(A)	54.00	-3.58
433.92 (Horizontal) (X-Axis)	76.69 (A)	80.80	-4.11
433.92 (Vertical) (Y-Axis)	76.69 (A)	80.80	-4.11
1301.76 (Horizontal) (Z-Axis)	48.78 (A)	54.00	-5.22
1301.76 (Vertical) (Z-Axis)	47.49 (A)	54.00	-6.51
433.92 (Vertical) (Z-Axis)	73.99 (A)	80.80	-6.81

Notes:

- * The complete emissions data is given in Appendix E of this report.
A Average Reading

7.2 Bandwidth of the Fundamental

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

Test Results:

The EUT complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.231(c).



8. CONCLUSIONS

The RC70RXMP-19, Model: URC 3002BC0-X-R, 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 15.231 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 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 15.231 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 modification were made to the EUT during the testing.



APPENDIX C***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

RC70RXMP-19
Model: URC 3002BC0-X-R
S/N: N/A

ALSO APPROVED UNDER THIS REPORT:

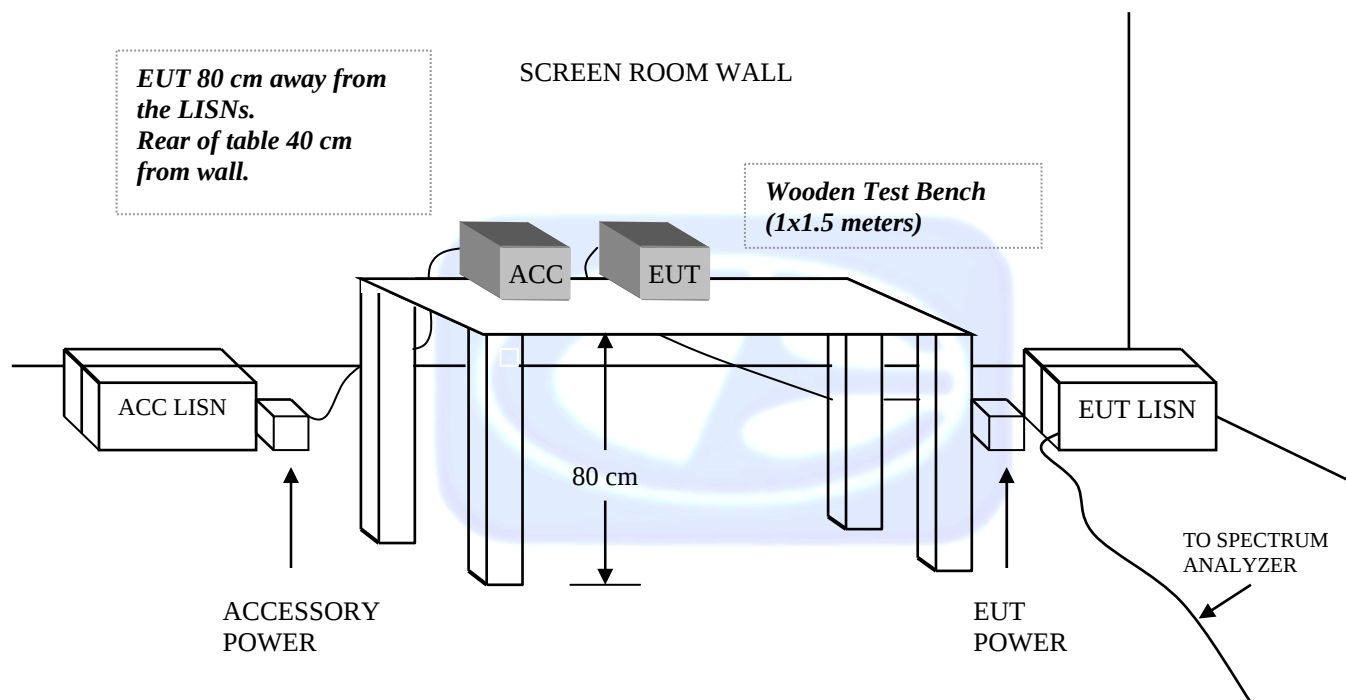
There were no additional models covered under this report.



APPENDIX D

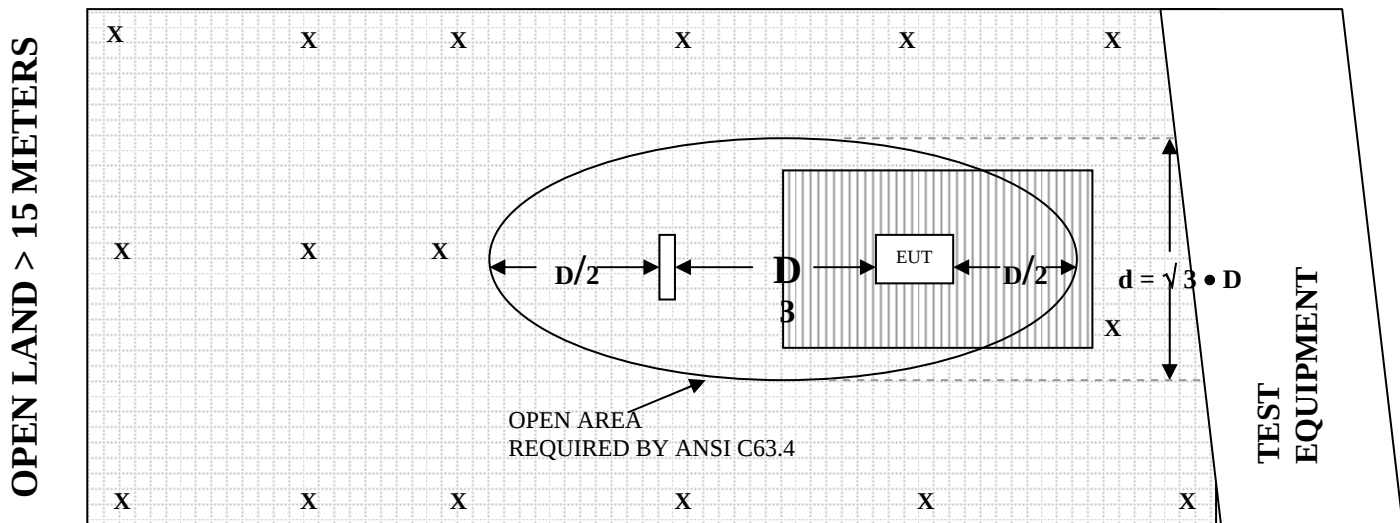
DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP



**FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE –
3 METERS**

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: 15250

CALIBRATION DATE: JUNE 8, 2011

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	10.90	100	9.50
35	11.00	120	12.10
40	11.80	140	11.40
45	11.60	160	12.40
50	11.40	180	15.70
60	9.80	200	16.20
70	7.00	250	16.10
80	5.70	300	19.00
90	7.00		

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16252

CALIBRATION DATE: JUNE 8, 2011

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	13.30	700	20.40
400	15.50	800	20.60
500	15.80	900	20.10
600	20.20	1000	22.80

COM-POWER PA-102**PREAMPLIFIER****S/N: 1017****CALIBRATION DATE: JANUARY 11, 2011**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
20	38.2	300	38.1
30	38.1	350	38.0
40	38.2	400	37.9
50	38.2	450	37.7
60	38.2	500	37.6
70	38.2	550	37.9
80	38.2	600	37.9
90	38.2	650	37.7
100	38.1	700	37.9
125	38.2	750	37.5
150	38.2	800	37.6
175	38.2	850	37.6
200	38.2	900	37.0
225	38.2	950	37.2
250	38.2	1000	36.8
275	38.2		

COM POWER AH-118**HORN ANTENNA****S/N: 071175****CALIBRATION DATE: MARCH 18, 2010**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	22.2	10.0	39.8
1.5	24.2	10.5	40.2
2.0	27.2	11.0	39.7
2.5	27.8	11.5	39.9
3.0	30.5	12.0	41.7
3.5	30.9	12.5	42.7
4.0	31.9	13.0	42.3
4.5	33.2	13.5	40.3
5.0	33.6	14.0	42.6
5.5	36.2	14.5	43.4
6.0	35.8	15.0	41.9
6.5	36.1	15.5	40.8
7.0	37.9	16.0	41.0
7.5	37.4	16.5	41.5
8.0	38.0	17.0	44.5
8.5	38.8	17.5	47.6
9.0	38.0	18.0	50.8
9.5	39.2		

COM-POWER PA-118**PREAMPLIFIER****S/N: 181656****CALIBRATION DATE: DECEMBER 22, 2010**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.90	10.0	26.07
1.5	26.50	10.5	24.97
2.0	26.79	11.0	24.79
2.5	26.90	11.5	24.33
3.0	27.03	12.0	24.24
3.5	26.94	12.5	24.92
4.0	27.18	13.0	24.52
4.5	26.79	13.5	24.33
5.0	26.25	14.0	24.56
5.5	26.16	14.5	24.99
6.0	25.52	15.0	26.06
6.5	25.29	15.5	26.87
7.0	24.45	16.0	25.95
7.5	24.18	16.5	24.69
8.0	24.02	17.0	24.20
8.5	24.54	17.5	25.12
9.0	24.91	18.0	26.03
9.5	25.42		

COM-POWER AL-130**LOOP ANTENNA****S/N: 17089****CALIBRATION DATE: JANUARY 21, 2011**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.9	9.6
0.01	-41.79	9.71
0.02	-41.43	10.07
0.05	-41.53	9.97
0.07	-41.47	10.03
0.1	-41.44	10.06
0.2	-41.61	9.89
0.3	-41.62	9.88
0.5	-41.66	9.84
0.7	-41.48	10.02
1	-41.13	10.37
2	-40.89	10.61
3	-41.00	10.50
4	-41.14	10.36
5	-41.02	10.48
10	-40.69	10.82
15	-40.41	11.09
20	-41.07	10.43
25	-42.10	9.40
30	-41.15	10.35



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
RC70RXMP-19
MODEL: URC 3002BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS

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



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
RC70RXMP-19
MODEL: URC 3002BC0-X-R
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.
RC70RXMP-19
Model: URC 3002BC0-X-R

Date: 9/9/2011
Labs: B and D
Tested By: James Ross

X-Axis

Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	71.29	V	100.8	-29.51	Peak	1	315	
433.92	62.19	V	80.8	-18.61	Avg	1	315	
867.84	52.08	V	80.8	-28.72	Peak	1	100	
867.84	42.98	V	60.8	-17.82	Avg	1	100	
1301.76	55.22	V	74	-18.78	Peak	1.6	115	
1301.76	46.12	V	54	-7.88	Avg	1.6	115	
1735.68	50.6	V	80.8	-30.2	Peak	1.5	275	
1735.68	41.5	V	60.8	-19.3	Avg	1.5	275	
2169.6	54.21	V	80.8	-26.59	Peak	3.3	185	
2169.6	45.11	V	60.8	-15.69	Avg	3.3	185	
2603.5	49.49	V	80.8	-31.31	Peak	3.2	195	
2603.5	40.39	V	60.8	-20.41	Avg	3.2	195	
3037.4	42.04	V	80.8	-38.76	Peak	3.2	170	
3037.4	32.94	V	60.8	-27.86	Avg	3.2	170	
3471.3	57.93	V	80.8	-22.87	Peak	1	265	
3471.3	48.83	V	60.8	-11.97	Avg	1	265	
3905.3	48.64	V	74	-25.36	Peak	3.2	45	
3905.3	39.54	V	54	-14.46	Avg	3.2	45	
4339.2	44.08	V	74	-29.92	Peak	2.1	280	
4339.2	34.98	V	54	-19.02	Avg	2.1	280	

FCC 15.231

Universal Electronics, Inc.
 RC70RXMP-19
 Model: URC 3002BC0-X-R

Date: 9/9/2011
 Labs: B and D
 Tested By: James Ross

X-Axis

Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	85.79	H	100.8	-15.01	Peak	1	90	
433.92	76.69	H	80.8	-4.11	Avg	1	90	
867.84	46.78	H	80.8	-34.02	Peak	2	50	
867.84	37.68	H	60.8	-23.12	Avg	2	50	
1301.76	53.6	H	74	-20.4	Peak	1.2	85	
1301.76	44.5	H	54	-9.5	Avg	1.2	85	
1735.68	53.43	H	80.8	-27.37	Peak	2.8	0	
1735.68	44.33	H	60.8	-16.47	Avg	2.8	0	
2169.6	54.97	H	80.8	-25.83	Peak	1	135	
2169.6	45.87	H	60.8	-14.93	Avg	1	135	
2603.5	53.55	H	80.8	-27.25	Peak	1	190	
2603.5	44.45	H	60.8	-16.35	Avg	1	190	
3037.4	45.54	H	80.8	-35.26	Peak	1.6	185	
3037.4	36.44	H	60.8	-24.36	Avg	1.6	185	
3471.3	59.314	H	80.8	-21.486	Peak	1.3	190	
3471.3	50.214	H	60.8	-10.586	Avg	1.3	190	
3905.3	54.56	H	74	-19.44	Peak	1	195	
3905.3	45.46	H	54	-8.54	Avg	1	195	
4339.2	45.56	H	74	-28.44	Peak	1.6	10	
4339.2	36.46	H	54	-17.54	Avg	1.6	10	

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Universal Electronics, Inc.
 RC70RXMP-19
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Date: 9/9/2011
 Labs: B and D
 Tested By: James Ross

Y-Axis

Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	85.79	V	100.8	-15.01	Peak	1	275	
433.92	76.69	V	80.8	-4.11	Avg	1	275	
867.84	56.08	V	80.8	-24.72	Peak	1	180	
867.84	46.98	V	60.8	-13.82	Avg	1	180	
1301.76	53.25	V	74	-20.75	Peak	2.5	185	
1301.76	44.15	V	54	-9.85	Avg	205	185	
1735.68	53.08	V	80.8	-27.72	Peak	1.7	180	
1735.68	43.98	V	60.8	-16.82	Avg	1.7	180	
2169.6	53.29	V	80.8	-27.51	Peak	1.5	250	
2169.6	44.19	V	60.8	-16.61	Avg	1.5	250	
2603.5	55.24	V	80.8	-25.56	Peak	1	180	
2603.5	46.14	V	60.8	-14.66	Avg	1	180	
3037.4	44.23	V	80.8	-36.57	Peak	1	180	
3037.4	35.13	V	60.8	-25.67	Avg	1	180	
3471.3	60.82	V	80.8	-19.98	Peak	1.8	180	
3471.3	51.72	V	60.8	-9.08	Avg	1.8	180	
3905.3	51.82	V	74	-22.18	Peak	3.3	180	
3905.3	42.72	V	54	-11.28	Avg	3.3	180	
4339.2	45.84	V	74	-28.16	Peak	2	180	
4339.2	36.74	V	54	-17.26	Avg	2	180	

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Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	79.09	H	100.8	-21.71	Peak	3.1	190	
433.92	69.99	H	80.8	-10.81	Avg	3.1	190	
867.84	52.18	H	80.8	-28.62	Peak	2.2	135	
867.84	43.08	H	60.8	-17.72	Avg	2.2	135	
1301.76	56.16	H	74	-17.84	Peak	1.2	165	
1301.76	47.06	H	54	-6.94	Avg	1.2	165	
1735.68	55.6	H	80.8	-25.2	Peak	1.2	175	
1735.68	46.5	H	60.8	-14.3	Avg	1.2	175	
2169.6	54.83	H	80.8	-25.97	Peak	2	175	
2169.6	45.73	H	60.8	-15.07	Avg	2	175	
2603.5	52.16	H	80.8	-28.64	Peak	1.7	15	
2603.5	43.06	H	60.8	-17.74	Avg	1.7	15	
3037.4	44.05	H	80.8	-36.75	Peak	1.5	125	
3037.4	34.95	H	60.8	-25.85	Avg	1.5	125	
3471.3	57.49	H	80.8	-23.31	Peak	1.7	185	
3471.3	48.39	H	60.8	-12.41	Avg	1.7	185	
3905.3	59.52	H	74	-14.48	Peak	1	180	
3905.3	50.42	H	54	-3.58	Avg	1	180	
4339.2	49.08	H	74	-24.92	Peak	2	180	
4339.2	39.98	H	54	-14.02	Avg	2	180	

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Universal Electronics, Inc.
 RC70RXMP-19
 Model: URC 3002BC0-X-R

Date: 9/9/2011
 Labs: B and D
 Tested By: James Ross

Z-Axis

Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Heigh t (m)	Table Angle (deg)	Comments
433.92	83.09	V	100.8	-17.71	Peak	1	90	
433.92	73.99	V	80.8	-6.81	Avg	1	90	
867.84	53.98	V	80.8	-26.82	Peak	1.05	90	
867.84	44.88	V	60.8	-15.92	Avg	1.05	90	
1301.76	56.59	V	74	-17.41	Peak	1.8	130	
1301.76	47.49	V	54	-6.51	Avg	1.8	130	
1735.68	55.81	V	80.8	-24.99	Peak	1	100	
1735.68	46.71	V	60.8	-14.09	Avg	1	100	
2169.6	54.49	V	80.8	-26.31	Peak	2.4	105	
2169.6	45.39	V	60.8	-15.41	Avg	2.4	105	
2603.5	51.12	V	80.8	-29.68	Peak	1.1	270	
2603.5	42.02	V	60.8	-18.78	Avg	1.1	270	
3037.4	42.05	V	80.8	-38.75	Peak	1.2	270	
3037.4	32.95	V	60.8	-27.85	Avg	1.2	270	
3471.3	60.12	V	80.8	-20.68	Peak	2.2	45	
3471.3	51.02	V	60.8	-9.78	Avg	2.2	45	
3905.3	54.7	V	74	-19.3	Peak	3.2	45	
3905.3	45.6	V	54	-8.4	Avg	3.2	45	
4339.2	47.85	V	74	-26.15	Peak	1.1	45	
4339.2	38.75	V	54	-15.25	Avg	1.1	45	

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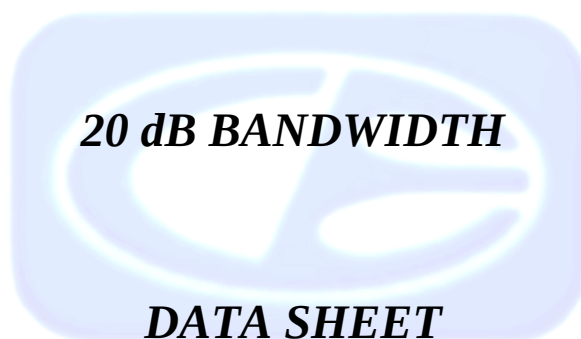
Universal Electronics, Inc.
 RC70RXMP-19
 Model: URC 3002BC0-X-R

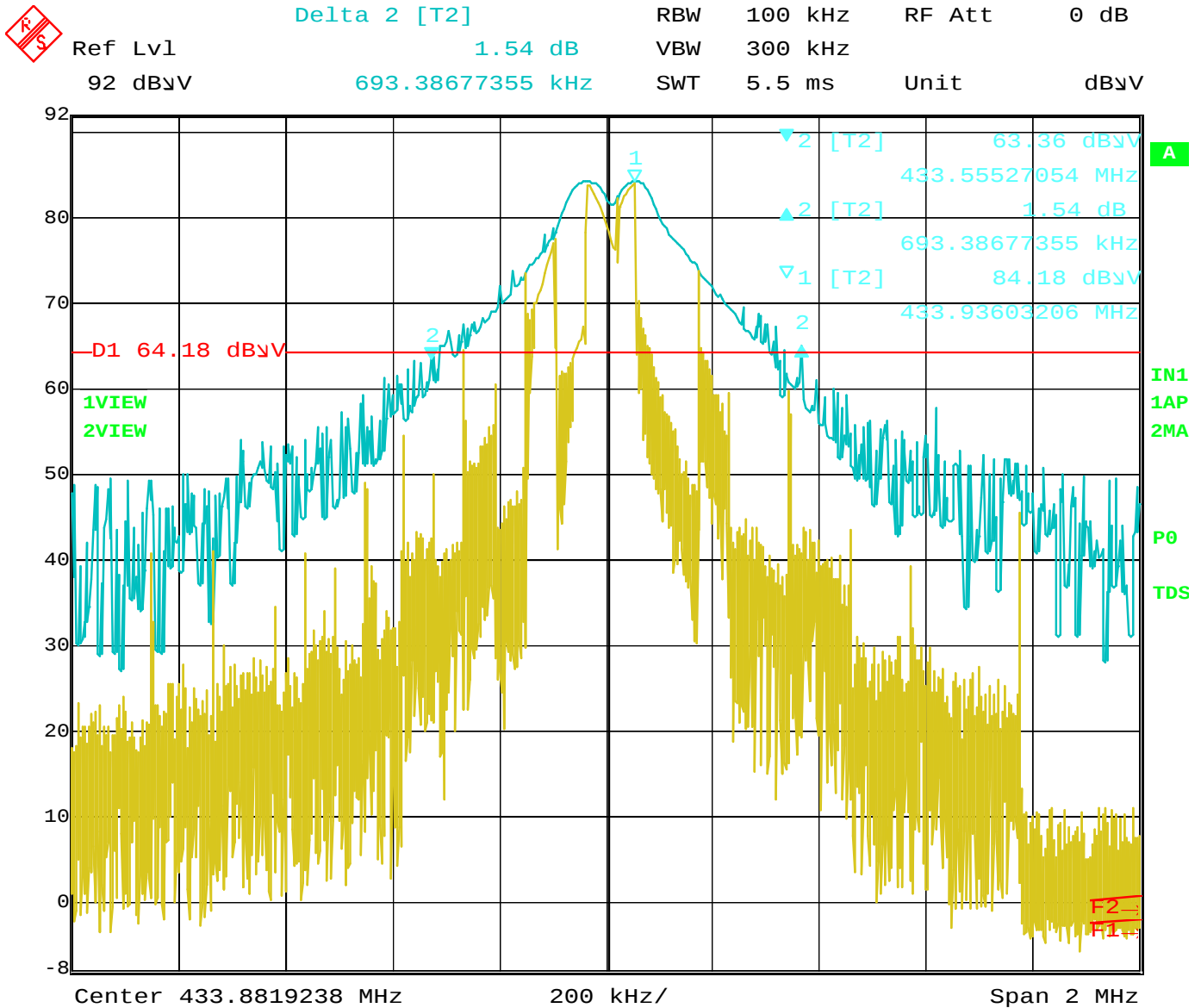
Date: 9/9/2011
 Labs: B and D
 Tested By: James Ross

Z-Axis

Duty Cycle: 35.05%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	81.19	H	100.8	-19.61	Peak	1	180	
433.92	72.09	H	80.8	-8.71	Avg	1	180	
867.84	54.78	H	80.8	-26.02	Peak	1	100	
867.84	45.68	H	60.8	-15.12	Avg	1	100	
1301.76	57.88	H	74	-16.12	Peak	1.2	170	
1301.76	48.78	H	54	-5.22	Avg	1.2	170	
1735.68	53.15	H	80.8	-27.65	Peak	1.5	135	
1735.68	44.05	H	60.8	-16.75	Avg	1.5	135	
2169.6	55.46	H	80.8	-25.34	Peak	1	140	
2169.6	46.36	H	60.8	-14.44	Avg	1	140	
2603.5	53.87	H	80.8	-26.93	Peak	1	90	
2603.5	44.77	H	60.8	-16.03	Avg	1	90	
3037.4	42.84	H	80.8	-37.96	Peak	1	45	
3037.4	33.74	H	60.8	-27.06	Avg	1	45	
3471.3	57.29	H	80.8	-23.51	Peak	3.4	85	
3471.3	48.19	H	60.8	-12.61	Avg	3.4	85	
3905.3	53.45	H	74	-20.55	Peak	1.5	45	
3905.3	44.35	H	54	-9.65	Avg	1.5	45	
4339.2	47.12	H	74	-26.88	Peak	3.5	120	
4339.2	38.02	H	54	-15.98	Avg	3.5	120	





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-20 dB Bandwidth of the Fundamental