FCC PART 15 SUBPART B and C
TEST REPORT

for

UEI PULSE RF4CE-GP 2012

Model: URC-2068BC2-XXXX-XXXX-R

Prepared for

UNIVERSAL ELECTRONICS, INC.
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DATE: MARCH 5, 2013

	REPORT BODY	APPENDICES					TOTAL
		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:	UEI Pulse RF4CE-GP 2012 Model: URC-2068BC2-XXXX-XXXX-R S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Universal Electronics, Inc. 201 East Sandpointe Avenue, 8th Floor Santa Ana, California 92707
Manufacturer:	Gemstar Technology Company, LTD. Gemstar Industrial Park, Shi Guang Road Number 45 Zhongcun Town, Panyu Guangdong Province, China 511495
Test Date(s):	February 25 and 26, and March 4, 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.
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 UEI Pulse RF4CE-GP 2012, Model: URC-2068BC2-XXXX-XXXX-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.

Alex Benitez	Test Technician
Kyle Fujimoto	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on the initial test date of February 25, 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

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 UEI Pulse RF4CE-GP 2012, Model: URC-2068BC2-XXXX-XXXX-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 continously transmitting from either its RF1 or RF2 port, respectively. The EUT was tested in three orthogonal axis.

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
UEI PULSE RF4CE-GP 2012 (EUT)	UNIVERSAL ELECTRONICS, INC.	URC-2068BC2-XXXX-XXXX-R	N/A	MG3-2068BC2

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION 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 Years
GENERAL TEST EQUIPMENT USED IN LAB D					
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
Monitor	Hewlett Packard	HPs2031a	3CQ046N3MG	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8568B	2517A01563	May 30, 2012	1 Year
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A15285	May 30, 2012	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	May 30, 2012	1 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com Power	AB-900	43028	May 24, 2012	1 Year
Log Periodic Antenna	Com Power	AL-100	16252	May 24, 2012	1 Year
Preamplifier	Com-Power	CPPA-102	1017	December 27, 2012	1 Year
Preamplifier	Com-Power	PA-118	181656	December 27, 2012	1 Year
Preamplifier	Com-Power	PA-840	711013	May 17, 2012	1 Year
Loop Antenna	Com-Power	AL-130	17089	January 29, 2013	2 Years
Horn Antenna	Com-Power	AH-118	071175	February 29, 2012	2 Years
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.

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: CPPA-102 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 (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 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
UEI Pulse RF4CE-GP 2012, Model: URC-2068BC2-XXXX-XXXX-R

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
High Channel 4950 (Average) (H)	**40.41 (X-Axis) (Antenna RF1)**	**54**	**-13.59**
High Channel 4950 (Average) (H)	**40.41 (X-Axis) (Antenna RF2)**	**54**	**-13.59**
High Channel 4950 (Average) (H)	**40.25 (Y-Axis) (Antenna RF1)**	**54**	**-13.75**
Low Channel 4850 (Average) (V)	**39.67 (Y-Axis) (Antenna RF1)**	**54**	**-14.33**
High Channel 4950 (Average) (H)	**38.99 (Y-Axis) (Antenna RF2)**	**54**	**-15.01**
Middle Channel 4900 (Average) (V)	**38.69 (Z-Axis) (Antenna RF1)**	**54**	**-15.31**

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

8. CONCLUSIONS

The UEI Pulse RF4CE-GP 2012, Model: URC-2068BC2-XXXX-XXXX-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

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

Industry Canada Industrie Canada 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 COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-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

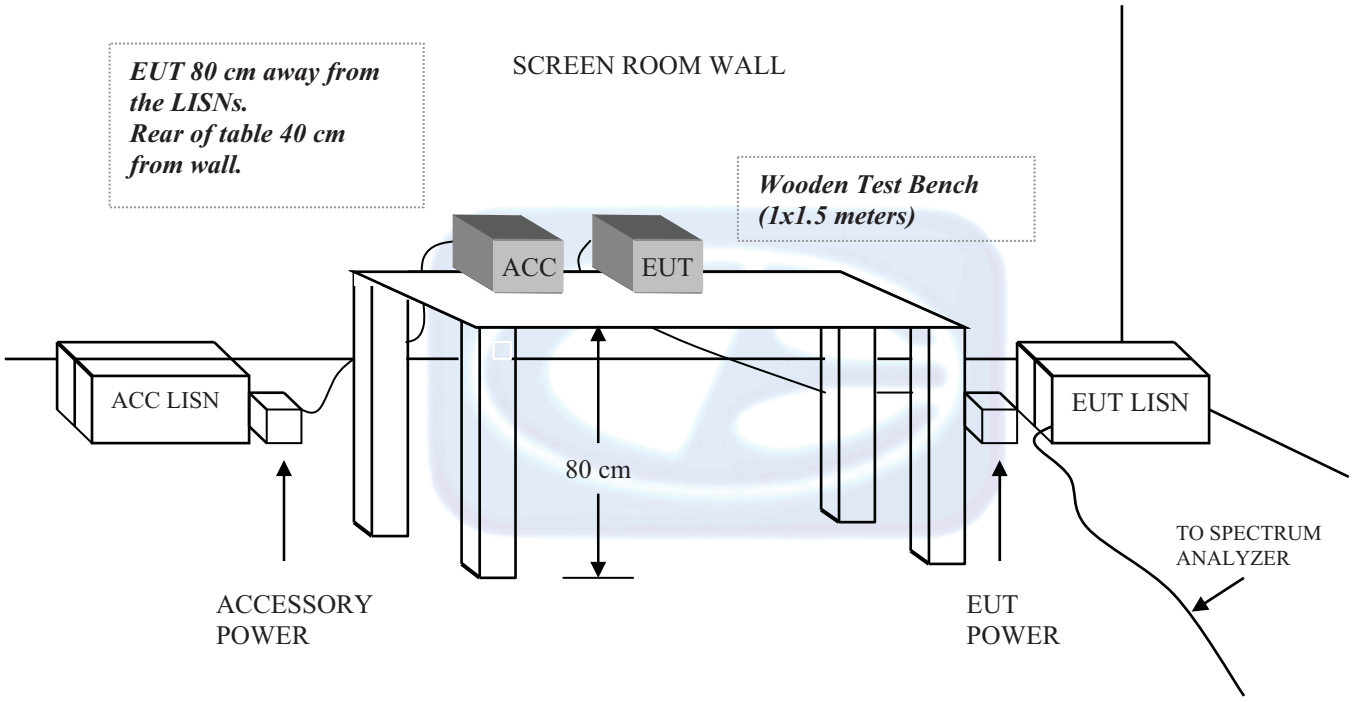
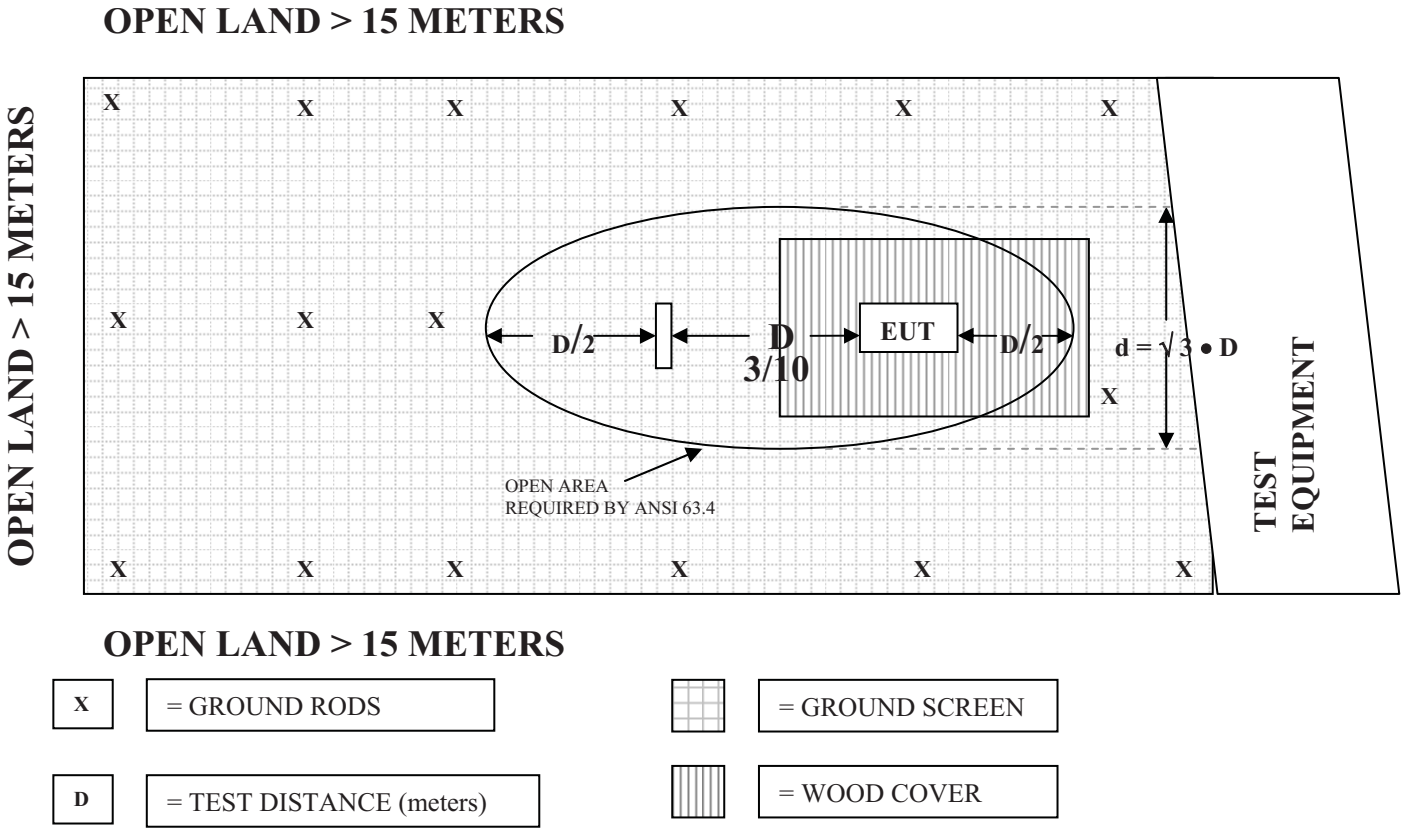


FIGURE 2: PLOT MAP AND LAYOUT OF THE RADIATED TEST SITE



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 AB-900

BICONICAL ANTENNA

S/N: 43028

CALIBRATION DATE: MAY 24, 2012

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	11.80	120	13.20
35	11.20	125	13.30
40	11.90	140	11.60
45	10.70	150	11.80
50	11.40	160	12.70
60	10.30	175	14.80
70	7.60	180	15.70
80	5.70	200	15.80
90	7.90	250	14.80
100	10.70	300	19.80

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16252

CALIBRATION DATE: MAY 24, 2012

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	13.00	700	20.30
350	13.20	750	20.80
400	14.50	800	21.00
450	15.40	850	23.30
500	15.80	900	21.70
550	16.60	950	24.20
600	18.90	1000	24.30
650	19.10		

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 AH-826

HORN ANTENNA

S/N: 0071957

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 CPPA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: DECEMEBER 27, 2012

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1	36.9	225	38.14
3	38.1	250	38.15
5	38.1	275	38.14
8	38.2	300	38.18
10	38.3	350	38.22
20	38.2	400	38.26
30	38.3	450	37.53
40	38.2	500	38.24
50	38.5	550	38.53
60	38.5	600	38.69
70	38.4	650	38.66
80	38.4	700	38.58
90	38.5	750	38.37
100	38.4	800	38.23
125	38.6	850	37.68
150	38.4	900	37.38
175	38.5	950	36.82
200	38.5	1000	36.14

COM-POWER PA-118

PREAMPLIFIER

S/N: 181656

CALIBRATION DATE: DECEMBER 27, 2012

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.68	6.0	25.75
1.1	25.08	6.5	25.28
1.2	25.70	7.0	24.83
1.3	25.98	7.5	24.49
1.4	26.11	8.0	24.38
1.5	26.23	8.5	25.06
1.6	26.34	9.0	25.55
1.7	26.39	9.5	25.32
1.8	26.44	10.0	25.25
1.9	26.45	11.0	24.99
2.0	26.48	12.0	25.08
2.5	26.59	13.0	24.44
3.0	26.67	14.0	25.02
3.5	26.66	15.0	26.12
4.0	26.82	16.0	25.67
4.5	26.46	17.0	24.33
5.0	26.22	18.0	26.75
5.5	25.98		

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.
UEI PULSE RF4CE-GP 2012
MODEL: URC-2068BC2-XXXX-XXXX-R
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

UNIVERSAL ELECTRONICS, INC.
UEI PULSE RF4CE-GP 2012
MODEL: URC-2068BC2-XXXX-XXXX-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 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Antenna RF1

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	89.62	V	114	-24.38	Peak	2.25	270	X-Axis
2425	69.62	V	94	-24.38	Avg	2.25	270	Vertical Polarization
2425	94.06	H	114	-19.94	Peak	1.5	220	X-Axis
2425	74.06	H	94	-19.94	Avg	1.5	220	Horizontal Polarization
2425	96.58	V	114	-17.42	Peak	1.75	180	Y-Axis
2425	76.58	V	94	-17.42	Avg	1.75	180	Vertical Polarization
2425	94.01	H	114	-19.99	Peak	1.5	130	Y-Axis
2425	74.01	H	94	-19.99	Avg	1.5	130	Horizontal Polarization
2425	94.58	V	114	-19.42	Peak	2.15	100	Z-Axis
2425	74.58	V	94	-19.42	Avg	2.15	100	Vertical Polarization
2425	96.03	H	114	-17.97	Peak	1.5	220	Z-Axis
2425	76.03	H	94	-17.97	Avg	1.5	220	Horizontal Polarization

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Antenna RF1

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	85.21	V	114	-28.79	Peak	2.25	270	X-Axis
2450	65.21	V	94	-28.79	Avg	2.25	270	Vertical Polarization
2450	91.24	H	114	-22.76	Peak	1.5	220	X-Axis
2450	71.24	H	94	-22.76	Avg	1.5	220	Horizontal Polarization
2450	94.07	V	114	-19.93	Peak	1.75	180	Y-Axis
2450	74.07	V	94	-19.93	Avg	1.75	180	Vertical Polarization
2450	91.24	H	114	-22.76	Peak	1.5	130	Y-Axis
2450	71.24	H	94	-22.76	Avg	1.5	130	Horizontal Polarization
2450	89.67	V	114	-24.33	Peak	1.75	100	Z-Axis
2450	69.67	V	94	-24.33	Avg	1.75	100	Vertical Polarization
2450	95.69	H	114	-18.31	Peak	1.5	220	Z-Axis
2450	75.69	H	94	-18.31	Avg	1.5	220	Horizontal Polarization

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel
Antenna RF1

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	88.45	V	114	-25.55	Peak	2.25	270	X-Axis
2475	68.45	V	94	-25.55	Avg	2.25	270	Vertical Polarization
2475	90.17	H	114	-23.83	Peak	1.5	220	X-Axis
2475	70.17	H	94	-23.83	Avg	1.5	220	Horizontal Polarization
2475	86.21	V	114	-27.79	Peak	1.75	180	Y-Axis
2475	66.21	V	94	-27.79	Avg	1.75	180	Vertical Polarization
2475	87.09	H	114	-26.91	Peak	1.5	130	Y-Axis
2475	67.09	H	94	-26.91	Avg	1.5	130	Horizontal Polarization
2475	93.01	V	114	-20.99	Peak	1.75	100	Z-Axis
2475	73.01	V	94	-20.99	Avg	1.75	100	Vertical Polarization
2475	78.69	H	114	-35.31	Peak	1.5	220	Z-Axis
2475	58.69	H	94	-35.31	Avg	1.5	220	Horizontal Polarization

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	51.69	V	74	-22.31	Peak	1	180	
4850	31.69	V	54	-22.31	Avg	1	180	
7275	48.57	V	74	-25.43	Peak	1.75	290	
7275	28.57	V	54	-25.43	Avg	1.75	290	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	59.67	V	74	-14.33	Peak	1.75	200	
4850	39.67	V	54	-14.33	Avg	1.75	200	
7275	58.11	V	74	-15.89	Peak	2	160	
7275	38.11	V	54	-15.89	Avg	2	160	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	56.89	V	74	-17.11	Peak	2	140	
4850	36.89	V	54	-17.11	Avg	2	140	
7275	57.84	V	74	-16.16	Peak	2	180	
7275	37.84	V	54	-16.16	Avg	2	180	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	56.67	H	74	-17.33	Peak	2.25	240	
4850	36.67	H	54	-17.33	Avg	2.25	240	
7275	57.28	H	74	-16.72	Peak	1	220	
7275	37.28	H	54	-16.72	Avg	1	220	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	55.69	H	74	-18.31	Peak	1.25	180	
4850	35.69	H	54	-18.31	Avg	1.25	180	
7275	54.12	H	74	-19.88	Peak	1.25	140	
7275	34.12	H	54	-19.88	Avg	1.25	140	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Low Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4850	54.97	H	74	-19.03	Peak	1.5	140	
4850	34.97	H	54	-19.03	Avg	1.5	140	
7275	58.26	H	74	-15.74	Peak	2	210	
7275	38.26	H	54	-15.74	Avg	2	210	
9700								No Emissions
9700								Detected
12125								No Emissions
12125								Detected
14550								No Emissions
14550								Detected
16975								No Emissions
16975								Detected
19400								No Emissions
19400								Detected
21825								No Emissions
21825								Detected
24250								No Emissions
24250								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	51.26	V	74	-22.74	Peak	1.25	150	
4900	31.26	V	54	-22.74	Avg	1.25	150	
7350	51.78	V	74	-22.22	Peak	1	290	
7350	31.78	V	54	-22.22	Avg	1	290	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	58.51	V	74	-15.49	Peak	1.5	220	
4900	38.51	V	54	-15.49	Avg	1.5	220	
7350	55.89	V	74	-18.11	Peak	1.25	170	
7350	35.89	V	54	-18.11	Avg	1.25	170	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	58.69	V	74	-15.31	Peak	1.5	220	
4900	38.69	V	54	-15.31	Avg	1.5	220	
7350	56.28	V	74	-17.72	Peak	1.25	170	
7350	36.28	V	54	-17.72	Avg	1.25	170	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	55.06	H	74	-18.94	Peak	1.25	165	
4900	35.06	H	54	-18.94	Avg	1.25	165	
7350	54.58	H	74	-19.42	Peak	1.25	165	
7350	34.58	H	54	-19.42	Avg	1.25	165	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	51.12	H	74	-22.88	Peak	1.5	180	
4900	31.12	H	54	-22.88	Avg	1.5	180	
7350	51.28	H	74	-22.72	Peak	1.5	120	
7350	31.28	H	54	-22.72	Avg	1.5	120	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Middle Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4900	55.06	H	74	-18.94	Peak	1.2	100	
4900	35.06	H	54	-18.94	Avg	1.2	100	
7350	54.58	H	74	-19.42	Peak	1.75	220	
7350	34.58	H	54	-19.42	Avg	1.75	220	
9800								No Emissions
9800								Detected
12250								No Emissions
12250								Detected
14700								No Emissions
14700								Detected
17150								No Emissions
17150								Detected
19600								No Emissions
19600								Detected
22050								No Emissions
22050								Detected
24500								No Emissions
24500								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	55.09	V	74	-18.91	Peak	1	170	
4950	35.09	V	54	-18.91	Avg	1	170	
7425	53.29	V	74	-20.71	Peak	1	40	
7425	33.29	V	54	-20.71	Avg	1	40	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	54.28	V	74	-19.72	Peak	1.75	180	
4950	34.28	V	54	-19.72	Avg	1.75	180	
7425	54.69	V	74	-19.31	Peak	1.75	170	
7425	34.69	V	54	-19.31	Avg	1.75	170	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	58.47	V	74	-15.53	Peak	1.5	130	
4950	38.47	V	54	-15.53	Avg	1.5	130	
7425	56.54	V	74	-17.46	Peak	2	180	
7425	36.54	V	54	-17.46	Avg	2	180	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	60.41	H	74	-13.59	Peak	1.5	180	
4950	40.41	H	54	-13.59	Avg	1.5	180	
7425	52.85	H	74	-21.15	Peak	1	20	
7425	32.85	H	54	-21.15	Avg	1	20	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	60.25	H	74	-13.75	Peak	1.5	40	
4950	40.25	H	54	-13.75	Avg	1.5	40	
7425	51.28	H	74	-22.72	Peak	1.75	170	
7425	31.28	H	54	-22.72	Avg	1.75	170	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

High Channel - Antenna RF1
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4950	48.26	H	74	-25.74	Peak	1.75	140	
4950	28.26	H	54	-25.74	Avg	1.75	140	
7425	50.22	H	74	-23.78	Peak	1.5	260	
7425	30.22	H	54	-23.78	Avg	1.5	260	
9900								No Emissions
9900								Detected
12375								No Emissions
12375								Detected
14850								No Emissions
14850								Detected
17325								No Emissions
17325								Detected
19800								No Emissions
19800								Detected
22275								No Emissions
22275								Detected
24750								No Emissions
24750								Detected

FCC 15.249 and FCC Class B
Universal Electronics, Inc.
UEI Pulse RF4CE-GP 2012
Model: URC-2068BC2-XXXX-XXXX-R

Date: 02/25/2013
Lab: B
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion -- 1 GHz to 25000 MHz
Antenna RF1

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Found for the
								Digital Portion
								from 1 GHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 1 GHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								No Emissions at the Band Edge of
								2400 MHz when the EUT is on
								the Low Channel
								No Emissions at the Band Edge of
								2483.5 MHz when the EUT is on
								the High Channel
								Tested in the X-Axis, Y-Axis,
								and Z-Axis