Universal Electronics

TEST REPORT FOR

Comcast DTA RF4CE 2 Device 2010, URC-4067

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.209 & 15.249

Report No.: 90293-5

Date of issue: January 6, 2010

ACCREDITED

TESTING
CERT #803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Universal Electronics
6101 Gateway Drive
Cypress, CA 90603

REPRESENTATIVE: Jessie Mendez
Contract Number: 44150

REPORT PREPARED BY:

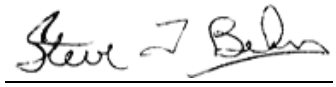
CKC Laboratories, Inc.
5046 Sierra Pines Dr.
Mariposa, CA 95338

Project Number: 90293

DATE OF EQUIPMENT RECEIPT: December 23, 2009
DATE(S) OF TESTING: December 23-31, 2009

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Site Registration & Accreditation Information

SITE FILE REGISTRATION NUMBERS

Location	JAPAN	CANADA	FCC
Brea A	R-301, C-314 & T-1572	3082D-1	90473

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C

Description	Test Procedure/Method	Results
RF Power Output	FCC Part 15 Subpart C Section 15.249(a)RF Power Output / ANSI C63.4 (2003),	Pass
Field Strength of Spurious Radiation	FCC Part 15 Subpart C Section 15.249(d)/15.209 / ANSI C63.4 (2003	Pass
Occupied Bandwidth	FCC Part 15 Subpart C Section 2.1049	Pass
FCC Bandedge	FCC Part 15 Subpart C Section 15.249 (b) ITU-R 55/1	Pass

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

Comcast DTA RF4CE 2 Device 2010
Manuf: Universal Electronics
Model: URC-4067
Serial: NA

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) requirements.

Temperature And Humidity During Testing
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

15.31(e) Voltage Variations
New batteries inserted for testing.

15.31(m) Number Of Channels
This device was tested on three channels.

15.33(a) Frequency Ranges Tested
Radiated Emissions: 9 kHz- 25 GHz.

15.203 Antenna Requirements
The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

EUT Operating Frequency
The EUT was operating at 2405 – 2480 MHz

15.249(a)RF Power Output

Test Notes: Radiated disturbances emanating from enclosure.
Test Procedure: ANSI C63.4

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **Universal Electronics**
Specification: **FCC 15.249(a) Field strength of Fundamental**
Work Order #: **90293** Date: 12/23/2009
Test Type: **Radiated Scan** Time: 14:11:14
Equipment: **Comcast DTA RF4CE 2 Device 2010** Sequence#: 3
Manufacturer: Universal Electronics Tested By: E. Wong
Model: URC-4067
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
18-26GHz Horn	942126-003	11/12/2008	11/12/2010	01413
Heliax Antenna Cable	P5565	09/04/2008	09/04/2010	P05565

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Comcast DTA RF4CE 2 Device 2010*	Universal Electronics	URC-4067	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The battery operated handheld EUT is placed on the wooden table lined with Styrofoam surface of 5 cm in thickness. The EUT is set in constant transmit mode.

Freq range = 2405 to 2480 MHz
Modulation: 802.15.4, modulated CW
Freq = 2405MHz, 2444.5 MHz, 2480MHz

Power setting = 4 clicks on "- Vol" upon powered up.

Emission profile of the EUT rotated along three orthogonal axis was investigated.

50mV/m = 93.9dBuV/m 3 m.

15.31(e) Fresh Batteries installed.

Frequency range of measurement = 2405-2480MHz
RBW=1 MHz, VBW=1 MHz
20°C, 22% Relative Humidity

Transducer Legend:

T1=Heliax Cable 54' ANP05565 090410	T2=HF_pre AMP-1-26GHz_AN00786-072810.TRN
T3=Hi Freq_40GHz_2ft-AN02948-092111	T4=Horn Ant AN00849 060610

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2404.490M Ave	97.3	+3.7	-37.9	+0.5	+28.1	+0.0	91.7	93.9 L_Y	-2.2	Horiz
^	2404.490M	103.4	+3.7	-37.9	+0.5	+28.1	+0.0	97.8	93.9 L_Y	+3.9	Horiz
^	2404.500M	102.1	+3.7	-37.9	+0.5	+28.1	+0.0	96.5	93.9 L_Z	+2.6	Horiz
4	2444.480M Ave	96.9	+3.7	-37.9	+0.5	+28.1	+0.0	91.3	93.9 M_Y	-2.6	Horiz
5	2444.490M Ave	96.7	+3.7	-37.9	+0.5	+28.1	+0.0	91.1	93.9 M_Z	-2.8	Horiz
^	2444.500M	103.0	+3.7	-37.9	+0.5	+28.1	+0.0	97.4	93.9 M_Y	+3.5	Horiz
^	2444.490M	102.8	+3.7	-37.9	+0.5	+28.1	+0.0	97.2	93.9 M_Z	+3.3	Horiz
8	2479.515M Ave	96.0	+3.8	-37.9	+0.5	+28.2	+0.0	90.6	93.9 H_Y	-3.3	Horiz
^	2479.520M	101.9	+3.8	-37.9	+0.5	+28.2	+0.0	96.5	93.9 H_Y	+2.6	Horiz
^	2479.520M	100.8	+3.8	-37.9	+0.5	+28.2	+0.0	95.4	93.9 H_Z	+1.5	Horiz

11	2404.500M Ave	95.7	+3.7	-37.9	+0.5	+28.1	+0.0	90.1	93.9 L_Z	-3.8	Horiz
12	2479.520M Ave	94.9	+3.8	-37.9	+0.5	+28.2	+0.0	89.5	93.9 H_Z	-4.4	Horiz
13	2405.500M Ave	94.1	+3.7	-37.9	+0.5	+28.1	+0.0	88.5	93.9 L_X	-5.4	Vert
^	2405.500M	100.1	+3.7	-37.9	+0.5	+28.1	+0.0	94.5	93.9 L_X	+0.6	Vert
15	2404.500M	93.1	+3.7	-37.9	+0.5	+28.1	+0.0	87.5	93.9 L_Z	-6.4	Vert
16	2480.533M Ave	92.7	+3.8	-37.9	+0.5	+28.2	+0.0	87.3	93.9 H_X	-6.6	Vert
^	2480.533M	98.9	+3.8	-37.9	+0.5	+28.2	+0.0	93.5	93.9 H_X	-0.4	Vert
18	2445.600M Ave	92.3	+3.7	-37.9	+0.5	+28.1	+0.0	86.7	93.9 M_X	-7.2	Vert
^	2445.600M	98.7	+3.7	-37.9	+0.5	+28.1	+0.0	93.1	93.9 M_X	-0.8	Vert
20	2479.520M	91.0	+3.8	-37.9	+0.5	+28.2	+0.0	85.6	93.9 H_Z	-8.3	Vert
21	2444.480M	90.7	+3.7	-37.9	+0.5	+28.1	+0.0	85.1	93.9 M_Z	-8.8	Vert
22	2444.480M	89.7	+3.7	-37.9	+0.5	+28.1	+0.0	84.1	93.9 M_Y	-9.8	Vert
23	2404.500M	86.7	+3.7	-37.9	+0.5	+28.1	+0.0	81.1	93.9 L_Y	-12.8	Vert
24	2445.660M	86.5	+3.7	-37.9	+0.5	+28.1	+0.0	80.9	93.9 M_X	-13.0	Horiz
25	2479.520M	86.0	+3.8	-37.9	+0.5	+28.2	+0.0	80.6	93.9 H_Y	-13.3	Vert
26	2480.500M	85.9	+3.8	-37.9	+0.5	+28.2	+0.0	80.5	93.9 H_X	-13.4	Horiz
27	2404.360M	85.0	+3.7	-37.9	+0.5	+28.1	+0.0	79.4	93.9 L_X	-14.5	Horiz

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer:	**Universal Electronics**		
Specification:	**FCC 15.249 (a) Field strength of Harmonics**		
Work Order #:	**90293**	Date:	12/24/2009
Test Type:	**Radiated Scan**	Time:	10:57:48
Equipment:	**Comcast DTA RF4CE 2 Device 2010**	Sequence#:	3
Manufacturer:	Universal Electronics	Tested By:	E. Wong
Model:	URC-4067		
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
18-26GHz Horn	942126-003	11/12/2008	11/12/2010	01413
3.0 GHz HPF	1	03/25/2008	03/25/2010	02744
Heliax Antenna Cable	P5565	09/04/2008	09/04/2010	P05565

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Comcast DTA RF4CE 2 Device 2010*	Universal Electronics	URC-4067	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The battery operated handheld EUT is placed on the wooden table lined with Styrofoam surface of 5 cm in thickness. The EUT is set in constant transmit mode.

Freq range = 2405 to 2480 MHz
Modulation: 802.15.4, modulated CW
Freq = 2405MHz, 2444.5 MHz, 2480MHz

Power setting = 4 clicks on "- Vol" upon powered up.

Emission profile of the EUT rotated along three orthogonal axis was investigated.
500uV/m = 53.979 =54dBuV/m @3m

15.31(e) Fresh Batteries installed.

Frequency range of measurement = 2.4 GHz- 25 GHz.
Frequency 2400 MHz-25000 MHz RBW=1 MHz, VBW=1 MHz
20°C, 22% Relative Humidity

Transducer Legend:

T1=Heliax Cable 54' ANP05565 090410	T2=HF_pre AMP-1-26GHz_AN00786-072810.TRN
T3=Hi Freq_40GHz_2ft-AN02948-092111	T4=Horn Ant AN00849 060610
T5=HPF_3GHz-AN02744-032510	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	7441.533M Ave	42.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	49.9	54.0 H_X_highest detected emission	-4.1	Vert
2	7438.473M Ave	42.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	49.9	54.0 H_X	-4.1	Vert
3	4889.130M	44.0	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	47.8	54.0 M_X	-6.2	Horiz
4	7438.533M Ave	39.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	46.9	54.0 H_X	-7.1	Horiz
5	7441.583M Ave	38.9	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	46.5	54.0 H_X	-7.5	Horiz
6	7438.400M Ave	38.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	46.4	54.0 H_Y	-7.6	Vert
7	7441.517M Ave	38.6	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	46.2	54.0 H_Y	-7.8	Vert
8	7438.467M Ave	38.6	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	46.2	54.0 H_Z	-7.8	Horiz
^	7438.533M	48.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	56.4	54.0 H_X	+2.4	Horiz
^	7438.467M	48.2	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.8	54.0 H_Z	+1.8	Horiz
^	7438.500M	47.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	54.9	54.0 H_Y	+0.9	Horiz
12	7441.567M Ave	38.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	45.9	54.0 H_Z	-8.1	Horiz
^	7441.583M	47.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.4	54.0 H_X	+1.4	Horiz
^	7441.567M	47.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.4	54.0 H_Z	+1.4	Horiz
^	7441.500M	46.6	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	54.2	54.0 H_Y	+0.2	Horiz
16	4809.070M Ave	42.4	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	45.9	54.0 L_X	-8.1	Vert
^	4809.070M	50.8	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	54.3	54.0 L_X	+0.3	Vert
^	4809.010M	49.3	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	52.8	54.0 L_Y	-1.2	Vert

19	4808.930M Ave	42.2	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	45.7	54.0 L_Z	-8.3	Horiz
20	4811.086M Ave	42.0	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	45.5	54.0 L_X	-8.5	Vert
^	4811.086M	51.7	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	55.2	54.0 L_X	+1.2	Vert
^	4811.060M	49.5	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	53.0	54.0 L_Y	-1.0	Vert
23	7216.480M Ave	38.4	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	45.2	54.0 L_Z	-8.8	Horiz
^	7216.480M	47.6	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	54.4	54.0 L_Z	+0.4	Horiz
^	7216.380M	44.0	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	50.8	54.0 L_Y	-3.2	Horiz
26	4811.180M Ave	41.7	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	45.2	54.0 L_Z	-8.8	Horiz
^	4811.180M	50.7	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	54.2	54.0 L_Z	+0.2	Horiz
28	7438.500M Ave	37.6	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	45.2	54.0 H_Y	-8.8	Horiz
29	4961.050M Ave	41.0	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	45.0	54.0 H_Z	-9.0	Horiz
^	4961.050M	49.6	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	53.6	54.0 H_Z	-0.4	Horiz
^	4960.983M	48.7	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	52.7	54.0 H_X	-1.3	Horiz
^	4961.017M	47.6	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	51.6	54.0 H_Y	-2.4	Horiz
33	7441.500M Ave	37.4	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	45.0	54.0 H_Y	-9.0	Horiz
34	7213.430M Ave	38.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	44.9	54.0 L_Z	-9.1	Horiz
^	7213.430M	47.4	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	54.2	54.0 L_Z	+0.2	Horiz
36	4959.000M Ave	40.9	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	44.9	54.0 H_Z	-9.1	Horiz
^	4959.000M	49.9	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	53.9	54.0 H_Z	-0.1	Horiz
^	4959.033M	49.8	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	53.8	54.0 H_X	-0.2	Horiz
^	4958.917M	47.4	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	51.4	54.0 H_Y	-2.6	Horiz
40	7438.433M Ave	37.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	44.9	54.0 H_Z	-9.1	Vert
^	7438.473M	50.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	58.4	54.0 H_X	+4.4	Vert
^	7438.400M	47.9	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.5	54.0 H_Y	+1.5	Vert
^	7438.430M	47.5	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.1	54.0 H_Z	+1.1	Vert

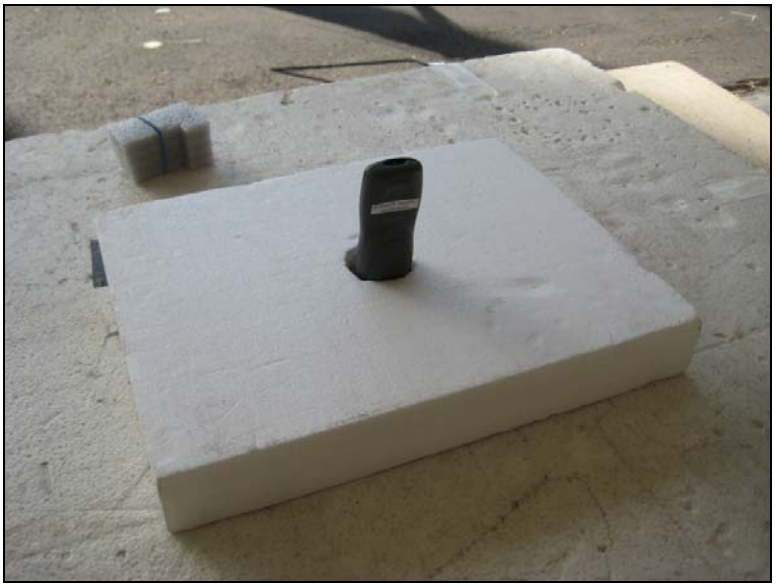
44	7336.617M Ave	37.5	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	44.7	54.0 M_Z	-9.3	Horiz
^	7336.617M	47.0	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	54.2	54.0 M_Z	+0.2	Horiz
^	7336.633M	46.9	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	54.1	54.0 M_Y	+0.1	Horiz
^	7336.633M	46.4	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	53.6	54.0 M_X	-0.4	Horiz
48	4811.060M Ave	41.1	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	44.6	54.0 L_Y	-9.4	Vert
49	7441.533M Ave	36.8	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	44.4	54.0 H_Z	-9.6	Vert
^	7441.533M	50.5	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	58.1	54.0 H_X	+4.1	Vert
^	7441.517M	47.6	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	55.2	54.0 H_Y	+1.2	Vert
^	7441.533M	46.3	+6.8 +0.3	-36.4	+0.8	+36.1	+0.0	53.9	54.0 H_Z	-0.1	Vert
53	7333.367M Ave	37.0	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	44.2	54.0 M_Z	-9.8	Horiz
^	7333.367M	46.2	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	53.4	54.0 M_Z	-0.6	Horiz
55	4891.033M Ave	40.2	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	44.0	54.0 M_Z	-10.0	Horiz
^	4891.065M	49.0	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	52.8	54.0 M_Y	-1.2	Horiz
^	4891.033M	48.4	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	52.2	54.0 M_Z	-1.8	Horiz
^	4891.070M	45.5	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	49.3	54.0 M_X	-4.7	Horiz
59	4959.033M Ave	40.0	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	44.0	54.0 H_X	-10.0	Horiz
60	4960.983M Ave	39.9	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	43.9	54.0 H_X	-10.1	Horiz
61	4888.933M Ave	39.8	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	43.6	54.0 M_Z	-10.4	Horiz
^	4888.933M	50.0	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	53.8	54.0 M_Z	-0.2	Horiz
^	4888.983M	48.6	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	52.4	54.0 M_Y	-1.6	Horiz
64	4811.080M Ave	39.9	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	43.4	54.0 L_Y	-10.6	Horiz
^	4811.080M	49.5	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	53.0	54.0 L_Y	-1.0	Horiz
66	4809.010M Ave	39.9	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	43.4	54.0 L_Y	-10.6	Vert
67	4888.983M Ave	39.4	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	43.2	54.0 M_Y	-10.8	Horiz

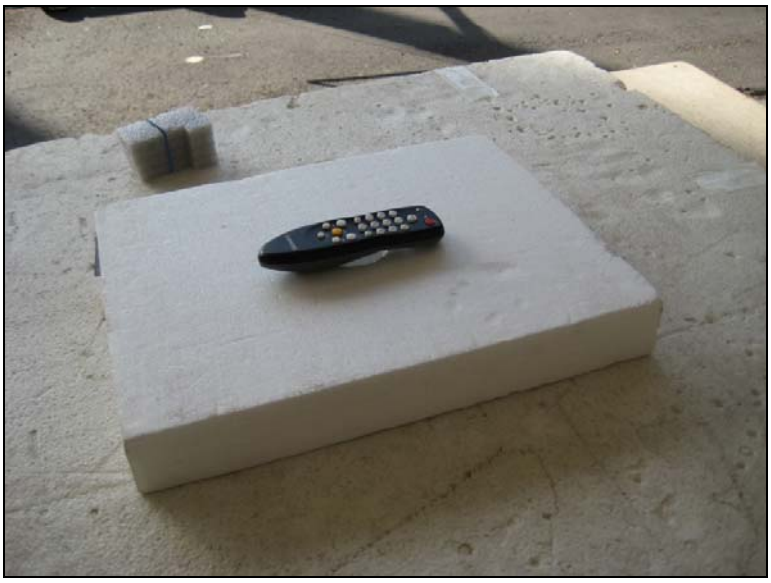
68	7333.483M Ave	35.7	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.9	54.0 M_Y	-11.1	Horiz
^	7333.483M	45.5	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	52.7	54.0 M_Y	-1.3	Horiz
^	7333.483M	45.1	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	52.3	54.0 M_X	-1.7	Horiz
71	7333.467M Ave	35.7	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.9	54.0 M_Z	-11.1	Vert
^	7333.467M	46.4	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	53.6	54.0 M_Z	-0.4	Vert
^	7333.500M	44.7	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	51.9	54.0 M_X	-2.1	Vert
74	7336.633M Ave	35.7	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.9	54.0 M_Y	-11.1	Horiz
75	4958.983M Ave	38.7	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	42.7	54.0 H_Y	-11.3	Vert
76	7216.486M Ave	35.8	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	42.6	54.0 L_X	-11.4	Vert
^	7216.486M	46.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	52.9	54.0 L_X	-1.1	Vert
78	4809.200M Ave	39.1	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	42.6	54.0 L_Y	-11.4	Horiz
^	4809.200M	48.0	+5.8 +0.0	-36.8	+0.7	+33.2	+0.0	50.9	54.0 L_Y	-3.1	Horiz
80	7336.667M Ave	35.3	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.5	54.0 M_Z	-11.5	Vert
^	7336.667M	45.9	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	53.1	54.0 M_Z	-0.9	Vert
82	7336.633M Ave	35.3	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.5	54.0 M_X	-11.5	Horiz
83	4891.065M Ave	38.6	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	42.4	54.0 M_Y	-11.6	Horiz
84	4891.033M Ave	38.6	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	42.4	54.0 M_Z	-11.6	Vert
^	4891.033M	49.1	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	52.9	54.0 M_Z	-1.1	Vert
^	4891.000M	47.9	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	51.7	54.0 M_Y	-2.3	Vert
^	4891.067M	47.9	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	51.7	54.0 M_X	-2.3	Vert
88	7336.530M Ave	35.2	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.4	54.0 M_Y	-11.6	Vert
89	4889.033M Ave	38.6	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	42.4	54.0 M_Z	-11.6	Vert
^	4888.997M	48.8	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	52.6	54.0 M_Y	-1.4	Vert
^	4889.033M	47.3	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	51.1	54.0 M_Z	-2.9	Vert

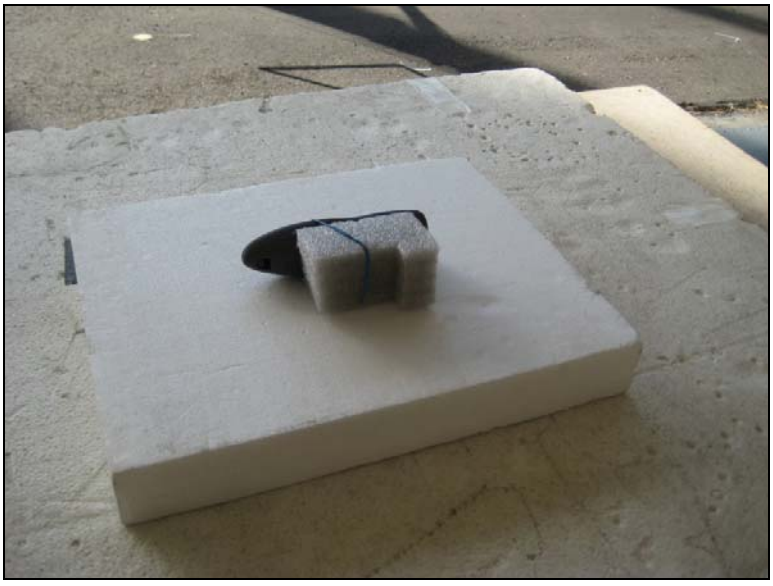
92	7333.580M Ave	35.2	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.4	54.0 M_Y	-11.6	Vert
93	4891.000M Ave	38.5	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	42.3	54.0 M_Y	-11.7	Vert
94	7213.466M Ave	35.5	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	42.3	54.0 L_X	-11.7	Vert
^	7213.466M	46.3	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	53.1	54.0 L_X	-0.9	Vert
^	7213.475M	44.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	50.9	54.0 L_Z	-3.1	Vert
97	4888.997M Ave	38.4	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	42.2	54.0 M_Y	-11.8	Vert
98	4961.233M Ave	38.1	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	42.1	54.0 H_Y	-11.9	Vert
^	4961.150M	49.5	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	53.5	54.0 H_X	-0.5	Vert
^	4961.233M	48.6	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	52.6	54.0 H_Y	-1.4	Vert
101	7333.500M Ave	34.8	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	42.0	54.0 M_X	-12.0	Vert
^	7333.580M	45.4	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	52.6	54.0 M_Y	-1.4	Vert
103	7336.450M Ave	34.6	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	41.8	54.0 M_X	-12.2	Vert
^	7336.530M	45.2	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	52.4	54.0 M_Y	-1.6	Vert
^	7336.450M	45.0	+6.7 +0.3	-36.4	+0.8	+35.8	+0.0	52.2	54.0 M_X	-1.8	Vert
106	4959.000M Ave	37.8	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	41.8	54.0 H_X	-12.2	Vert
107	4961.017M Ave	37.8	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	41.8	54.0 H_Y	-12.2	Horiz
108	4961.150M Ave	37.5	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	41.5	54.0 H_X	-12.5	Vert
109	4958.917M Ave	37.5	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	41.5	54.0 H_Y	-12.5	Horiz
110	7216.380M Ave	34.7	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	41.5	54.0 L_Y	-12.5	Horiz
111	9922.066M Ave	30.4	+8.5 +0.3	-36.6	+1.0	+37.8	+0.0	41.4	54.0 H_Y	-12.6	Horiz
^	9922.066M	41.5	+8.5 +0.3	-36.6	+1.0	+37.8	+0.0	52.5	54.0 H_Y	-1.5	Horiz
113	9917.866M Ave	30.0	+8.5 +0.3	-36.6	+1.0	+37.8	+0.0	41.0	54.0 H_Y	-13.0	Horiz
^	9917.866M	40.8	+8.5 +0.3	-36.6	+1.0	+37.8	+0.0	51.8	54.0 H_Y	-2.2	Horiz
115	9621.906M Ave	29.9	+8.4 +0.4	-36.6	+1.0	+37.5	+0.0	40.6	54.0 L_X	-13.4	Vert
^	9621.906M	43.0	+8.4 +0.4	-36.6	+1.0	+37.5	+0.0	53.7	54.0 L_X	-0.3	Vert

117	4808.920M Ave	37.0	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	40.5	54.0 L_Z	-13.5	Vert
^	4808.920M	46.9	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	50.4	54.0 L_Z	-3.6	Vert
119	4810.950M Ave	36.9	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	40.4	54.0 L_X	-13.6	Horiz
^	4810.950M	47.6	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	51.1	54.0 L_X	-2.9	Horiz
121	4888.917M Ave	36.6	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	40.4	54.0 M_X	-13.6	Vert
^	4888.917M	47.8	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	51.6	54.0 M_X	-2.4	Vert
123	9618.206M Ave	29.7	+8.4 +0.4	-36.6	+1.0	+37.5	+0.0	40.4	54.0 L_X	-13.6	Vert
^	9618.210M	40.1	+8.4 +0.4	-36.6	+1.0	+37.5	+0.0	50.8	54.0 L_X	-3.2	Vert
125	7213.475M Ave	33.4	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	40.2	54.0 L_Z	-13.8	Vert
126	4961.033M Ave	36.2	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	40.2	54.0 H_Z	-13.8	Vert
^	4961.033M	47.3	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	51.3	54.0 H_Z	-2.7	Vert
128	7216.155M Ave	33.3	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	40.1	54.0 L_Y	-13.9	Vert
^	7216.160M	43.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	49.9	54.0 L_Y	-4.1	Vert
130	4891.067M Ave	36.2	+5.9 +0.6	-36.8	+0.7	+33.4	+0.0	40.0	54.0 M_X	-14.0	Vert
131	4958.933M Ave	35.9	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	39.9	54.0 H_Z	-14.1	Vert
^	4958.983M	47.6	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	51.6	54.0 H_Y	-2.4	Vert
^	4959.000M	47.0	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	51.0	54.0 H_X	-3.0	Vert
^	4958.933M	45.7	+6.0 +0.5	-36.7	+0.7	+33.5	+0.0	49.7	54.0 H_Z	-4.3	Vert
135	7213.550M Ave	33.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	39.9	54.0 L_X	-14.1	Horiz
^	7213.550M	44.5	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	51.3	54.0 L_X	-2.7	Horiz
137	7216.200M Ave	32.7	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	39.5	54.0 L_X	-14.5	Horiz
^	7216.200M	44.1	+6.7 +0.3	-36.5	+0.8	+35.5	+0.0	50.9	54.0 L_X	-3.1	Horiz
139	4808.880M Ave	34.9	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	38.4	54.0 L_X	-15.6	Horiz
^	4808.930M	51.8	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	55.3	54.0 L_Z	+1.3	Horiz
^	4808.880M	46.1	+5.8 +0.6	-36.8	+0.7	+33.2	+0.0	49.6	54.0 L_X	-4.4	Horiz

Test Setup Photos







15.249(d)/15.209 - Field Strength of Spurious Radiation

Test Notes: Radiated disturbances emanating from enclosure.
Test Procedure: ANSI C63.4

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **Universal Electronics**
Specification: **FCC 15.249(d) / 15.209**
Work Order #: **90293** Date: 12/24/2009
Test Type: **Radiated Scan** Time: 14:26:06
Equipment: **Comcast DTA RF4CE 2 Device 2010** Sequence#: 3
Manufacturer: Universal Electronics Tested By: E. Wong
Model: URC-4067
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
18-26GHz Horn	942126-003	11/12/2008	11/12/2010	01413
2.0 GHz LPF	6	01/11/2008	01/11/2010	02746
3.0 GHz HPF	1	03/25/2008	03/25/2010	02744
Loop Antenna	2014	06/16/2008	06/16/2010	00314
Heliax Antenna Cable	P5565	09/04/2008	09/04/2010	P05565

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Comcast DTA RF4CE 2 Device 2010*	Universal Electronics	URC-4067	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The battery operated handheld EUT is placed on the wooden table lined with Styrofoam surface of 5 cm in thickness. The EUT is set in constant transmit mode.

Freq range = 2405 to 2480 MHz
Modulation: 802.15.4, modulated CW
Freq = 2405MHz, 2444.5 MHz, 2480MHz

Power setting = 4 clicks on " - Vol" upon powered up.

Emission profile of the EUT rotated along three orthogonal axis was investigated. Recorded data represent worse case emission.

15.31(e) Fresh Batteries installed.

Frequency range of measurement = 9 kHz- 25 GHz
Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz- 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz- 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz-25000 MHz RBW=1 MHz, VBW=1 MHz
20°C, 22% Relative Humidity

Transducer Legend:

T1=Bilog-AN01995 BILOG_012110	T2=Cable #10 ANP05050 041611
T3=Cable #15_05198_ Site A, 010511	T4=Pre_amp_HP8447D-AN00309-050210
T5=Heliax Cable 54' ANP05565 090410	T6=HF_pre AMP-1-26GHz_AN00786-072810.TRN
T7=Hi Freq_40GHz_2ft-AN02948-092111	T8=Horn Ant AN00849 060610
T9=HPF_3GHz-AN02744-032510	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	7441.533M Ave	42.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	49.9	54.0 H_X_highest detected emission	-4.1	Vert
2	7438.473M Ave	42.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	49.9	54.0 H_X	-4.1	Vert
3	4889.130M	44.0	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	47.8	54.0 M_X	-6.2	Horiz
4	7438.533M Ave	39.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	46.9	54.0 H_X	-7.1	Horiz
5	7441.583M Ave	38.9	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	46.5	54.0 H_X	-7.5	Horiz
6	7438.400M Ave	38.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	46.4	54.0 H_Y	-7.6	Vert
7	7441.517M Ave	38.6	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	46.2	54.0 H_Y	-7.8	Vert

8	7438.467M Ave	38.6	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	46.2	54.0 H_Z	-7.8	Horiz
^	7438.533M	48.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	56.4	54.0 H_X	+2.4	Horiz
^	7438.467M	48.2	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.8	54.0 H_Z	+1.8	Horiz
^	7438.500M	47.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	54.9	54.0 H_Y	+0.9	Horiz
12	7441.567M Ave	38.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	45.9	54.0 H_Z	-8.1	Horiz
^	7441.583M	47.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.4	54.0 H_X	+1.4	Horiz
^	7441.567M	47.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.4	54.0 H_Z	+1.4	Horiz
^	7441.500M	46.6	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	54.2	54.0 H_Y	+0.2	Horiz
16	4809.070M Ave	42.4	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	45.9	54.0 L_X	-8.1	Vert
^	4809.070M	50.8	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	54.3	54.0 L_X	+0.3	Vert
^	4809.010M	49.3	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	52.8	54.0 L_Y	-1.2	Vert
19	4808.930M Ave	42.2	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	45.7	54.0 L_Z	-8.3	Horiz
20	4811.086M Ave	42.0	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	45.5	54.0 L_X	-8.5	Vert
^	4811.086M	51.7	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	55.2	54.0 L_X	+1.2	Vert
^	4811.060M	49.5	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	53.0	54.0 L_Y	-1.0	Vert

23	7216.480M Ave	38.4	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	45.2	54.0 L_Z	-8.8	Horiz
^	7216.480M	47.6	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	54.4	54.0 L_Z	+0.4	Horiz
^	7216.380M	44.0	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	50.8	54.0 L_Y	-3.2	Horiz
26	4811.180M Ave	41.7	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	45.2	54.0 L_Z	-8.8	Horiz
^	4811.180M	50.7	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	54.2	54.0 L_Z	+0.2	Horiz
28	7438.500M Ave	37.6	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	45.2	54.0 H_Y	-8.8	Horiz
29	4961.050M Ave	41.0	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	45.0	54.0 H_Z	-9.0	Horiz
^	4961.050M	49.6	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	53.6	54.0 H_Z	-0.4	Horiz
^	4960.983M	48.7	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	52.7	54.0 H_X	-1.3	Horiz
^	4961.017M	47.6	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	51.6	54.0 H_Y	-2.4	Horiz
33	7441.500M Ave	37.4	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	45.0	54.0 H_Y	-9.0	Horiz
34	7213.430M Ave	38.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	44.9	54.0 L_Z	-9.1	Horiz
^	7213.430M	47.4	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	54.2	54.0 L_Z	+0.2	Horiz
36	4959.000M Ave	40.9	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	44.9	54.0 H_Z	-9.1	Horiz
^	4959.000M	49.9	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	53.9	54.0 H_Z	-0.1	Horiz
^	4959.033M	49.8	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	53.8	54.0 H_X	-0.2	Horiz
^	4958.917M	47.4	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	51.4	54.0 H_Y	-2.6	Horiz

40	7438.433M Ave	37.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	44.9	54.0 H_Z	-9.1	Vert
^	7438.473M	50.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	58.4	54.0 H_X	+4.4	Vert
^	7438.400M	47.9	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.5	54.0 H_Y	+1.5	Vert
^	7438.430M	47.5	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.1	54.0 H_Z	+1.1	Vert
44	7336.617M Ave	37.5	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	44.7	54.0 M_Z	-9.3	Horiz
^	7336.617M	47.0	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	54.2	54.0 M_Z	+0.2	Horiz
^	7336.633M	46.9	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	54.1	54.0 M_Y	+0.1	Horiz
^	7336.633M	46.4	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	53.6	54.0 M_X	-0.4	Horiz
48	4811.060M Ave	41.1	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	44.6	54.0 L_Y	-9.4	Vert
49	7441.533M Ave	36.8	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	44.4	54.0 H_Z	-9.6	Vert
^	7441.533M	50.5	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	58.1	54.0 H_X	+4.1	Vert
^	7441.517M	47.6	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	55.2	54.0 H_Y	+1.2	Vert
^	7441.533M	46.3	+0.0 +6.8 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +36.1	+0.0	53.9	54.0 H_Z	-0.1	Vert
53	7333.367M Ave	37.0	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	44.2	54.0 M_Z	-9.8	Horiz
^	7333.367M	46.2	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	53.4	54.0 M_Z	-0.6	Horiz

55	4891.033M Ave	40.2	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	44.0	54.0 M_Z	-10.0	Horiz
^	4891.065M	49.0	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	52.8	54.0 M_Y	-1.2	Horiz
^	4891.033M	48.4	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	52.2	54.0 M_Z	-1.8	Horiz
^	4891.070M	45.5	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	49.3	54.0 M_X	-4.7	Horiz
59	4959.033M Ave	40.0	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	44.0	54.0 H_X	-10.0	Horiz
60	4960.983M Ave	39.9	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	43.9	54.0 H_X	-10.1	Horiz
61	4888.933M Ave	39.8	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	43.6	54.0 M_Z	-10.4	Horiz
^	4888.933M	50.0	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	53.8	54.0 M_Z	-0.2	Horiz
^	4888.983M	48.6	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	52.4	54.0 M_Y	-1.6	Horiz
64	4811.080M Ave	39.9	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	43.4	54.0 L_Y	-10.6	Horiz
^	4811.080M	49.5	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	53.0	54.0 L_Y	-1.0	Horiz
66	4809.010M Ave	39.9	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	43.4	54.0 L_Y	-10.6	Vert
67	4888.983M Ave	39.4	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	43.2	54.0 M_Y	-10.8	Horiz
68	7333.483M Ave	35.7	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.9	54.0 M_Y	-11.1	Horiz
^	7333.483M	45.5	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	52.7	54.0 M_Y	-1.3	Horiz
^	7333.483M	45.1	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	52.3	54.0 M_X	-1.7	Horiz

71	7333.467M Ave	35.7	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.9	54.0 M_Z	-11.1	Vert
^	7333.467M	46.4	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	53.6	54.0 M_Z	-0.4	Vert
^	7333.500M	44.7	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	51.9	54.0 M_X	-2.1	Vert
74	7336.633M Ave	35.7	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.9	54.0 M_Y	-11.1	Horiz
75	4958.983M Ave	38.7	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	42.7	54.0 H_Y	-11.3	Vert
76	7216.486M Ave	35.8	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	42.6	54.0 L_X	-11.4	Vert
^	7216.486M	46.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	52.9	54.0 L_X	-1.1	Vert
78	4809.200M Ave	39.1	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	42.6	54.0 L_Y	-11.4	Horiz
^	4809.200M	48.0	+0.0 +5.8 +0.0	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	50.9	54.0 L_Y	-3.1	Horiz
80	7336.667M Ave	35.3	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.5	54.0 M_Z	-11.5	Vert
^	7336.667M	45.9	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	53.1	54.0 M_Z	-0.9	Vert
82	7336.633M Ave	35.3	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.5	54.0 M_X	-11.5	Horiz
83	4891.065M Ave	38.6	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	42.4	54.0 M_Y	-11.6	Horiz
84	4891.033M Ave	38.6	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	42.4	54.0 M_Z	-11.6	Vert
^	4891.033M	49.1	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	52.9	54.0 M_Z	-1.1	Vert
^	4891.000M	47.9	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	51.7	54.0 M_Y	-2.3	Vert
^	4891.067M	47.9	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	51.7	54.0 M_X	-2.3	Vert

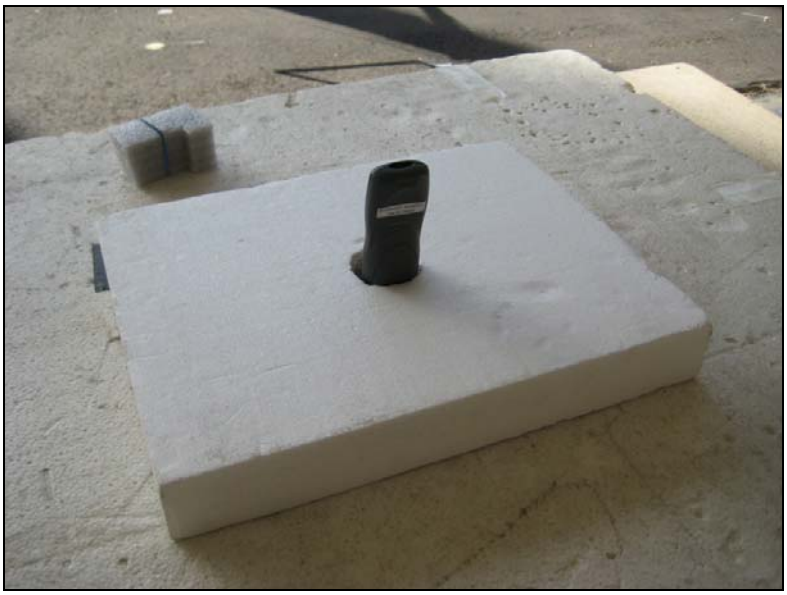
88	7336.530M Ave	35.2	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.4	54.0 M_Y	-11.6	Vert
89	4889.033M Ave	38.6	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	42.4	54.0 M_Z	-11.6	Vert
^	4888.997M	48.8	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	52.6	54.0 M_Y	-1.4	Vert
^	4889.033M	47.3	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	51.1	54.0 M_Z	-2.9	Vert
92	7333.580M Ave	35.2	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.4	54.0 M_Y	-11.6	Vert
93	4891.000M Ave	38.5	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	42.3	54.0 M_Y	-11.7	Vert
94	7213.466M Ave	35.5	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	42.3	54.0 L_X	-11.7	Vert
^	7213.466M	46.3	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	53.1	54.0 L_X	-0.9	Vert
^	7213.475M	44.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	50.9	54.0 L_Z	-3.1	Vert
97	4888.997M Ave	38.4	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	42.2	54.0 M_Y	-11.8	Vert
98	4961.233M Ave	38.1	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	42.1	54.0 H_Y	-11.9	Vert
^	4961.150M	49.5	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	53.5	54.0 H_X	-0.5	Vert
^	4961.233M	48.6	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	52.6	54.0 H_Y	-1.4	Vert
101	7333.500M Ave	34.8	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	42.0	54.0 M_X	-12.0	Vert
^	7333.580M	45.4	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	52.6	54.0 M_Y	-1.4	Vert

103	7336.450M Ave	34.6	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	41.8	54.0 M_X	-12.2	Vert
^	7336.530M	45.2	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	52.4	54.0 M_Y	-1.6	Vert
^	7336.450M	45.0	+0.0 +6.7 +0.3	+0.0 -36.4	+0.0 +0.8	+0.0 +35.8	+0.0	52.2	54.0 M_X	-1.8	Vert
106	4959.000M Ave	37.8	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	41.8	54.0 H_X	-12.2	Vert
107	4961.017M Ave	37.8	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	41.8	54.0 H_Y	-12.2	Horiz
108	4961.150M Ave	37.5	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	41.5	54.0 H_X	-12.5	Vert
109	4958.917M Ave	37.5	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	41.5	54.0 H_Y	-12.5	Horiz
110	7216.380M Ave	34.7	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	41.5	54.0 L_Y	-12.5	Horiz
111	9922.066M Ave	30.4	+0.0 +8.5 +0.3	+0.0 -36.6	+0.0 +1.0	+0.0 +37.8	+0.0	41.4	54.0 H_Y	-12.6	Horiz
^	9922.066M	41.5	+0.0 +8.5 +0.3	+0.0 -36.6	+0.0 +1.0	+0.0 +37.8	+0.0	52.5	54.0 H_Y	-1.5	Horiz
113	9917.866M Ave	30.0	+0.0 +8.5 +0.3	+0.0 -36.6	+0.0 +1.0	+0.0 +37.8	+0.0	41.0	54.0 H_Y	-13.0	Horiz
^	9917.866M	40.8	+0.0 +8.5 +0.3	+0.0 -36.6	+0.0 +1.0	+0.0 +37.8	+0.0	51.8	54.0 H_Y	-2.2	Horiz
115	9621.906M Ave	29.9	+0.0 +8.4 +0.4	+0.0 -36.6	+0.0 +1.0	+0.0 +37.5	+0.0	40.6	54.0 L_X	-13.4	Vert
^	9621.906M	43.0	+0.0 +8.4 +0.4	+0.0 -36.6	+0.0 +1.0	+0.0 +37.5	+0.0	53.7	54.0 L_X	-0.3	Vert
117	4808.920M Ave	37.0	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	40.5	54.0 L_Z	-13.5	Vert
^	4808.920M	46.9	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	50.4	54.0 L_Z	-3.6	Vert

119	4810.950M Ave	36.9	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	40.4	54.0 L_X	-13.6	Horiz
^	4810.950M	47.6	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	51.1	54.0 L_X	-2.9	Horiz
121	4888.917M Ave	36.6	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	40.4	54.0 M_X	-13.6	Vert
^	4888.917M	47.8	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	51.6	54.0 M_X	-2.4	Vert
123	9618.206M Ave	29.7	+0.0 +8.4 +0.4	+0.0 -36.6	+0.0 +1.0	+0.0 +37.5	+0.0	40.4	54.0 L_X	-13.6	Vert
^	9618.210M	40.1	+0.0 +8.4 +0.4	+0.0 -36.6	+0.0 +1.0	+0.0 +37.5	+0.0	50.8	54.0 L_X	-3.2	Vert
125	7213.475M Ave	33.4	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	40.2	54.0 L_Z	-13.8	Vert
126	4961.033M Ave	36.2	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	40.2	54.0 H_Z	-13.8	Vert
^	4961.033M	47.3	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	51.3	54.0 H_Z	-2.7	Vert
128	7216.155M Ave	33.3	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	40.1	54.0 L_Y	-13.9	Vert
^	7216.160M	43.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	49.9	54.0 L_Y	-4.1	Vert
130	4891.067M Ave	36.2	+0.0 +5.9 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.4	+0.0	40.0	54.0 M_X	-14.0	Vert
131	4958.933M Ave	35.9	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	39.9	54.0 H_Z	-14.1	Vert
^	4958.983M	47.6	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	51.6	54.0 H_Y	-2.4	Vert
^	4959.000M	47.0	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	51.0	54.0 H_X	-3.0	Vert
^	4958.933M	45.7	+0.0 +6.0 +0.5	+0.0 -36.7	+0.0 +0.7	+0.0 +33.5	+0.0	49.7	54.0 H_Z	-4.3	Vert

135	7213.550M Ave	33.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	39.9	54.0 L_X	-14.1	Horiz
	^ 7213.550M	44.5	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	51.3	54.0 L_X	-2.7	Horiz
137	7216.200M Ave	32.7	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	39.5	54.0 L_X	-14.5	Horiz
	^ 7216.200M	44.1	+0.0 +6.7 +0.3	+0.0 -36.5	+0.0 +0.8	+0.0 +35.5	+0.0	50.9	54.0 L_X	-3.1	Horiz
139	4808.880M Ave	34.9	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	38.4	54.0 L_X	-15.6	Horiz
	^ 4808.930M	51.8	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	55.3	54.0 L_Z	+1.3	Horiz
	^ 4808.880M	46.1	+0.0 +5.8 +0.6	+0.0 -36.8	+0.0 +0.7	+0.0 +33.2	+0.0	49.6	54.0 L_X	-4.4	Horiz
142	307.500M	29.2	+13.4 +0.0 +0.0	+0.3 +0.0	+3.0 +0.0	-27.8 +0.0	+0.0	18.1	46.0	-27.9	Horiz
143	348.855M	18.5	+14.7 +0.0 +0.0	+0.3 +0.0	+3.3 +0.0	-27.8 +0.0	+0.0	9.0	46.0	-37.0	Vert

Test Setup Photos



2.1049 - Occupied Bandwidth

Test Setup

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **Universal Electronics**
Specification: **Occupied Bandwidth**
Work Order #: **90293** Date: 12/24/2009
Test Type: **Radiated Scan** Time: 10:57:48
Equipment: **Comcast DTA RF4CE 2 Device 2010** Sequence#: 3
Manufacturer: Universal Electronics Tested By: E. Wong
Model: URC-4067
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
18-26GHz Horn	942126-003	11/12/2008	11/12/2010	01413

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Comcast DTA RF4CE 2 Device 2010*	Universal Electronics	URC-4067	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The battery operated handheld EUT is placed on the wooden table lined with Styrofoam surface of 5 cm in thickness. The EUT is set in constant transmit mode.

Freq range = 2405 to 2480 MHz
Modulation: 802.15.4, modulated CW
Freq = 2405MHz, 2444.5 MHz, 2480MHz

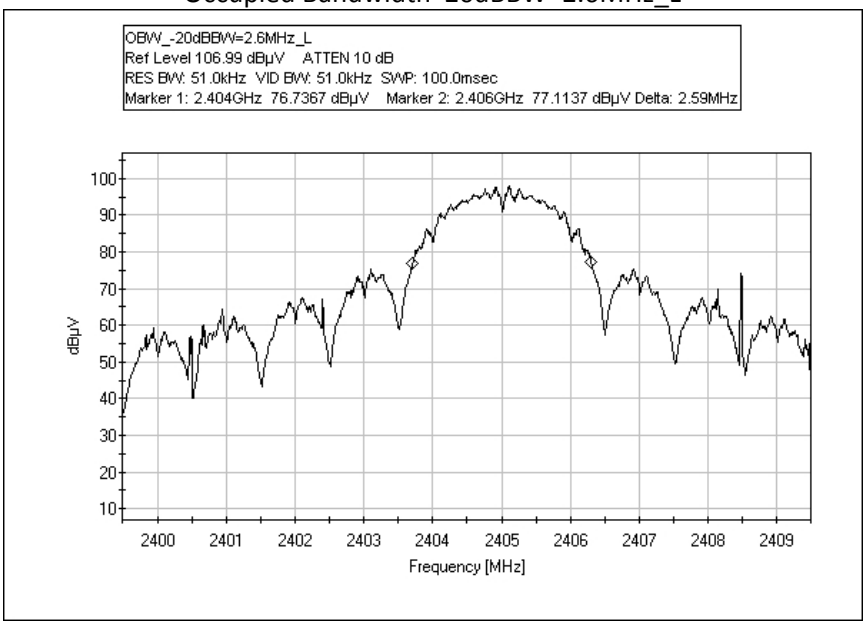
Power setting = 4 clicks on "- Vol" upon powered up.

Emission profile of the EUT rotated along three orthogonal axis was investigated, recorded data represents worse case emission.

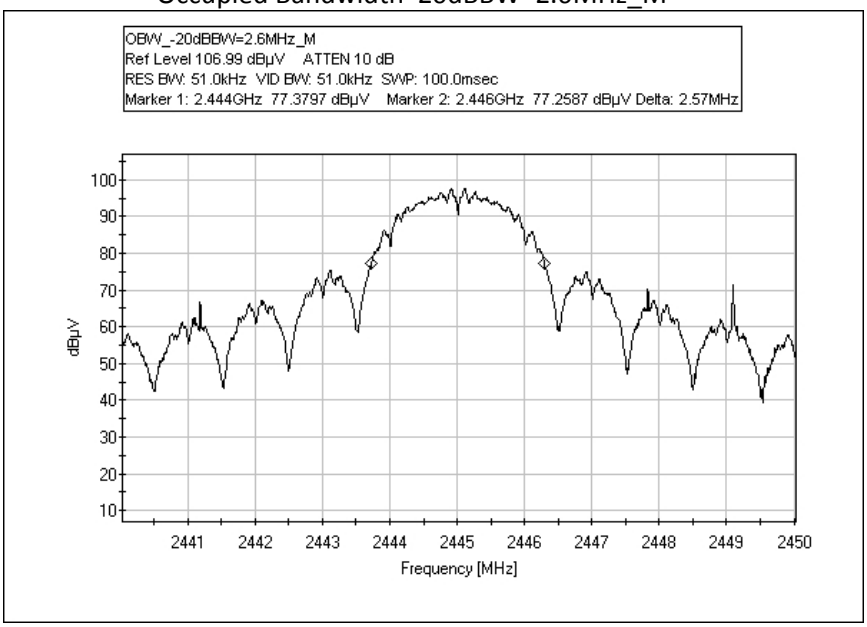
15.31(e) Fresh Batteries installed.
20°C, 22% Relative Humidity

Test Plots

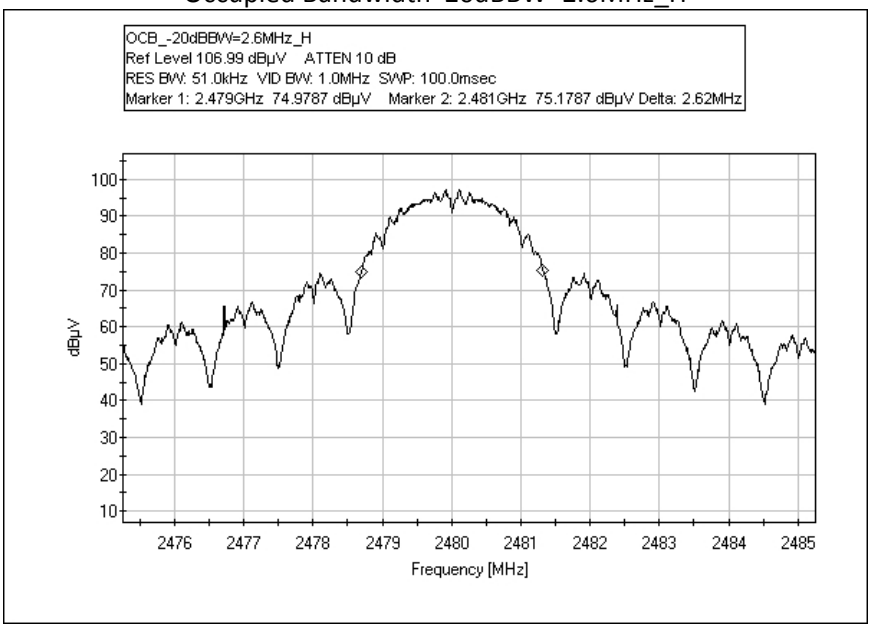
Occupied Bandwidth 20dBBW=2.6MHz_L



Occupied Bandwidth 20dBBW=2.6MHz_M



Occupied Bandwidth 20dBBW=2.6MHz_H



Test Setup Photos

15.249 (b) FCC Bandedge

Test Setup

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **Universal Electronics**
Specification: **FCC 15.249 (b) Bandedge plot**
Work Order #: **90293** Date: 12/24/2009
Test Type: **Radiated Scan** Time: 10:57:48
Equipment: **Comcast DTA RF4CE 2 Device 2010** Sequence#: 3
Manufacturer: Universal Electronics Tested By: E. Wong
Model: URC-4067
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
18-26GHz Horn	942126-003	11/12/2008	11/12/2010	01413

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Comcast DTA RF4CE 2 Device 2010*	Universal Electronics	URC-4067	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The battery operated handheld EUT is placed on the wooden table lined with Styrofoam surface of 5 cm in thickness. The EUT is set in constant transmit mode.

Freq range = 2405 to 2480 MHz
Modulation: 802.15.4, modulated CW
Freq = 2405MHz, 2444.5 MHz, 2480MHz

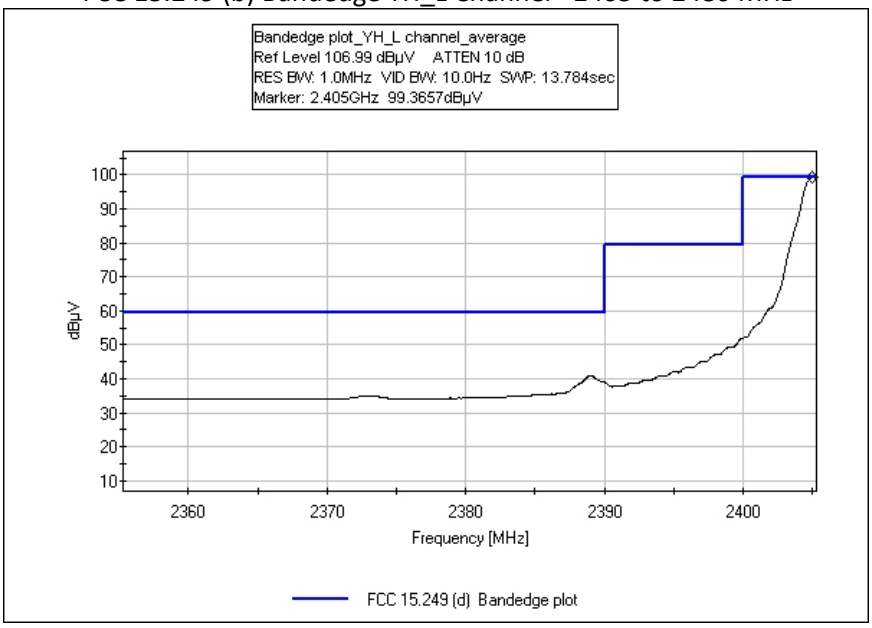
Power setting = 4 clicks on "- Vol" upon powered up.

Emission profile of the EUT rotated along three orthogonal axis was investigated, recorded data represents worse case emission.
500uV/m = 53.979 =54dBuV/m @3m

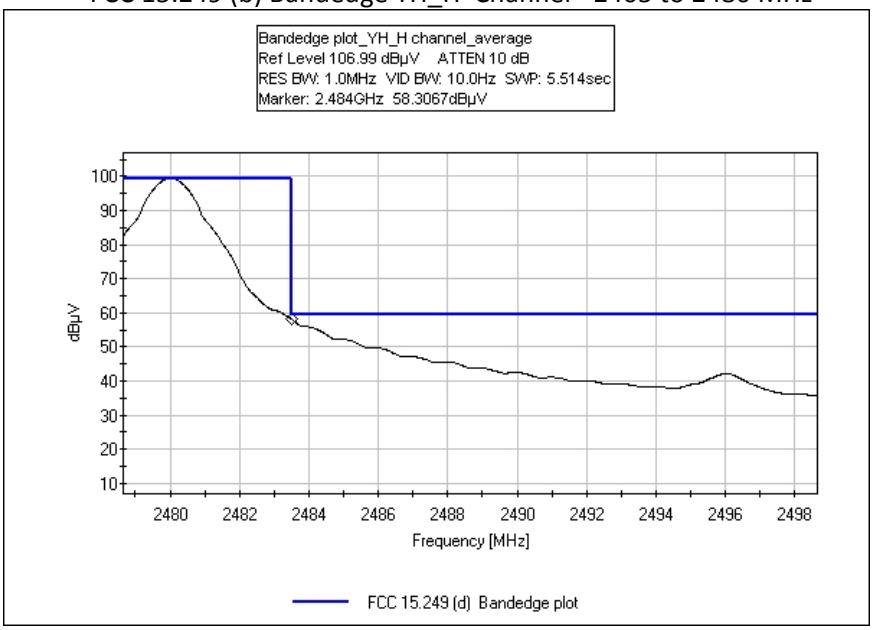
15.31(e) Fresh Batteries installed.
20°C, 22% Relative Humidity

Test Plots

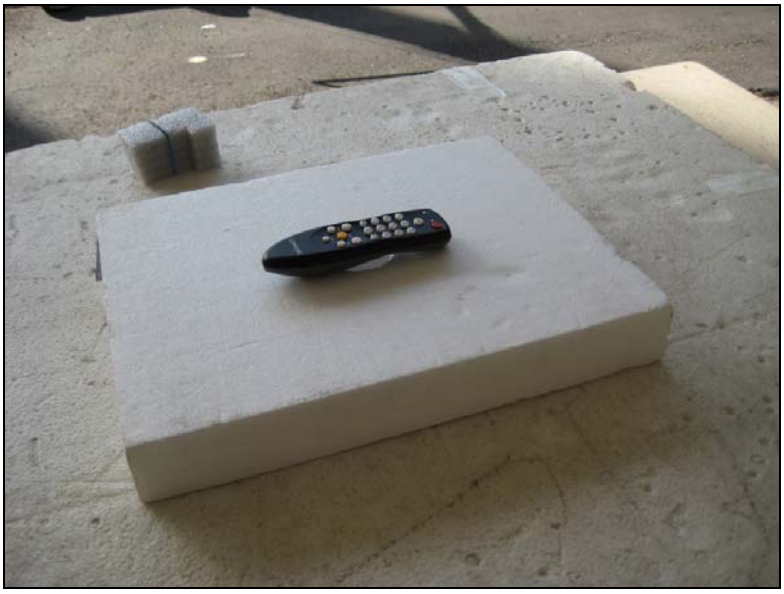
FCC 15.249 (b) Bandedge YH_L Channel - 2405 to 2480 MHz



FCC 15.249 (b) Bandedge YH_H Channel - 2405 to 2480 MHz



Test Setup Photos



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.