

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

for

CHARTER SPECTRUM REMOTE 2015

MODEL: URC-1160BC0-R

Prepared for

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

Prepared by: _____

KYLE FUJIMOTO

Approved by: _____

JAMES ROSS

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: JULY 30, 2015

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

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

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

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

Device Tested: Charter Spectrum Remote 2015
Model: URC-1160BC0-R
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was modified in order to meet the specifications. Please see the modification list located in appendix B of this test report.

Customer: Universal Electronics, Inc.
201 East Sandpointe Ave., 8TH Floor
Santa Ana California, 92707

Test Dates: June 25 and 26, 2015

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249

Test Procedure: ANSI C63.4

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 10 kHz – 25,000 MHz (Transmitter and Digital portion)	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.249
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power and does not connect to the AC mains.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Charter Spectrum Remote 2015, Model: URC-1160BC0-R. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Universal Electronics, Inc.

Jesse Mendez Senior Electrical Core Engineer

Compatible Electronics Inc.

Kyle Fujimoto Test Engineer

James Ross Test Engineer

2.4 Date Test Sample was Received

The test sample was received on May 13, 2015.

2.5 Disposition of the Test Sample

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

2.6 Abbreviations and Acronyms

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

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

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2009	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
ANSI C63.10: 2009	American National Standard for Testing Unlicensed Wireless Devices
EN 50147-2: 1997	Anechoic chambers. Alternative test site suitability with respect to site attenuation

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - Emissions

The Charter Spectrum Remote 2015, Model: URC-1160BC0-R (EUT) is a remote control that is powered by two AA 1.5 VDC batteries.

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

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



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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
CHARTER SPECTRUM REMOTE 2015	UNIVERSAL ELECTRONICS, INC.	URC-1160BC0-R	N/A	MG3-1160

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB B					
Computer	Compaq	CQ5210F	CNX9360CF9	N/A	N/A
Monitor	Hewlett Packard	HPs2031a	3CQ046N3MD	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	December 4, 2014	1 Year
GENERAL TEST EQUIPMENT USED IN LAB D					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51100115	April 3, 2015	1 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	May 20, 2014	2 Year
Preamplifier	Com-Power	PA-118	551024	March 6, 2015	1 Year
Preamplifier	Com-Power	PA-840	711013	May 13, 2014	2 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2014	2 Year
Horn Antenna	Com-Power	AH-826	0071957	N/A	N/A
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A

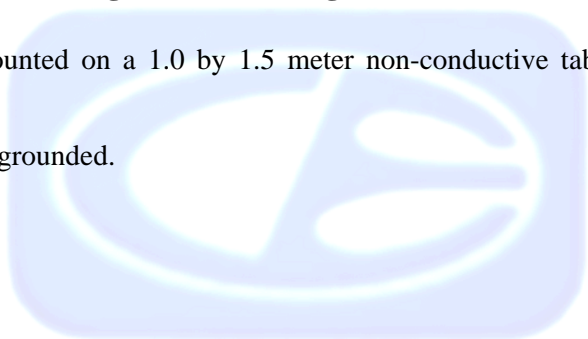
6. TEST SITE DESCRIPTION**6.1 Test Facility Description**

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Radiated Emissions (Spurious and Harmonics) Test – Lab B

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

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

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
1 GHz to 18 GHz	1 MHz	Horn Antenna
18 GHz to 25 GHz	1 MHz	Horn Antenna

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

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

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

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

Test Results:

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

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

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

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is set up according to ANSI C63.4, EN 50147-2 and CISPR 22. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT.

The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

The measurement bandwidths and transducers used for the radiated emissions test were:

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

Test Results:

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

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
 Charter Spectrum Remote 2015, Model: URC-1160BC0-R

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
7425 (H) (Z-Axis) (Antenna 0)	42.23 (Avg)	54.00	-11.77
2425 (V) (Z-Axis) (Antenna 0)	82.22 (Avg)	94.00	-11.78
7425 (H) (Z-Axis) (Antenna 1)	41.83 (Avg)	54.00	-12.17
7350 (V) (Y-Axis) (Antenna 0)	41.76 (Avg)	54.00	-12.24
2425 (H) (X-Axis) (Antenna 0)	80.93 (Avg)	54.00	-13.07
2450 (V) (Z-Axis) (Antenna 0)	80.84 (Avg)	94.00	-13.16

Notes:

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

8. CONCLUSIONS

The Charter Spectrum Remote 2015, Model: URC-1160BC0-R, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205, 15.209, and 15.249.





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



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) <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>

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



APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

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

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No Modifications 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

Charter Spectrum Remote 2015
Model: URC-1160BC0-R
S/N: N/A

There were no additional models covered under this report.



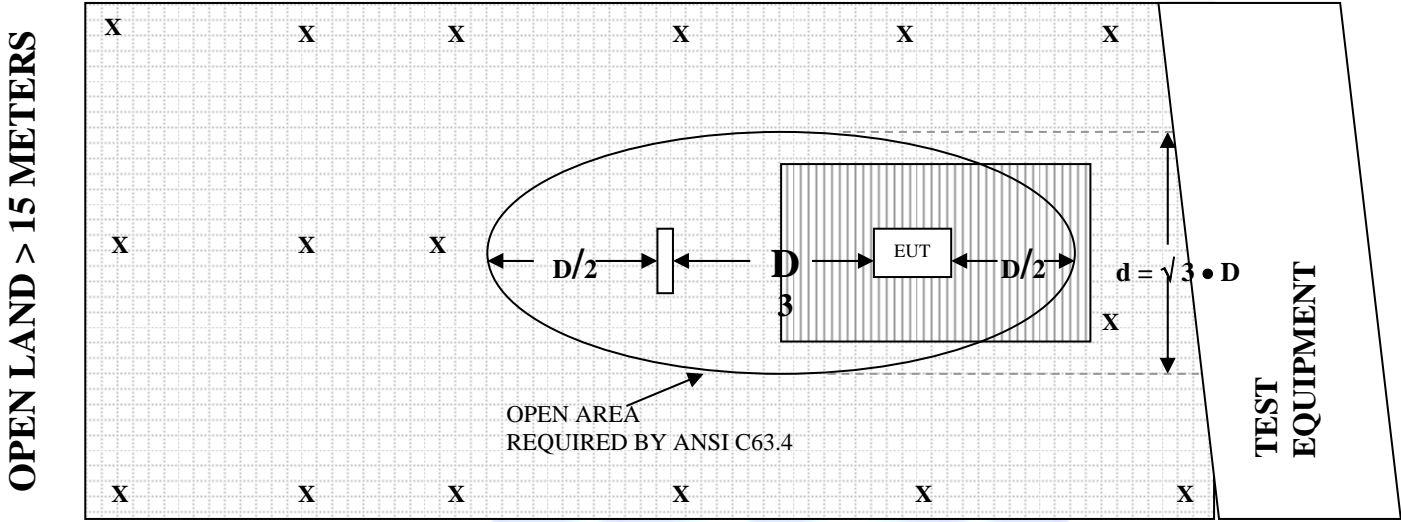


APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE

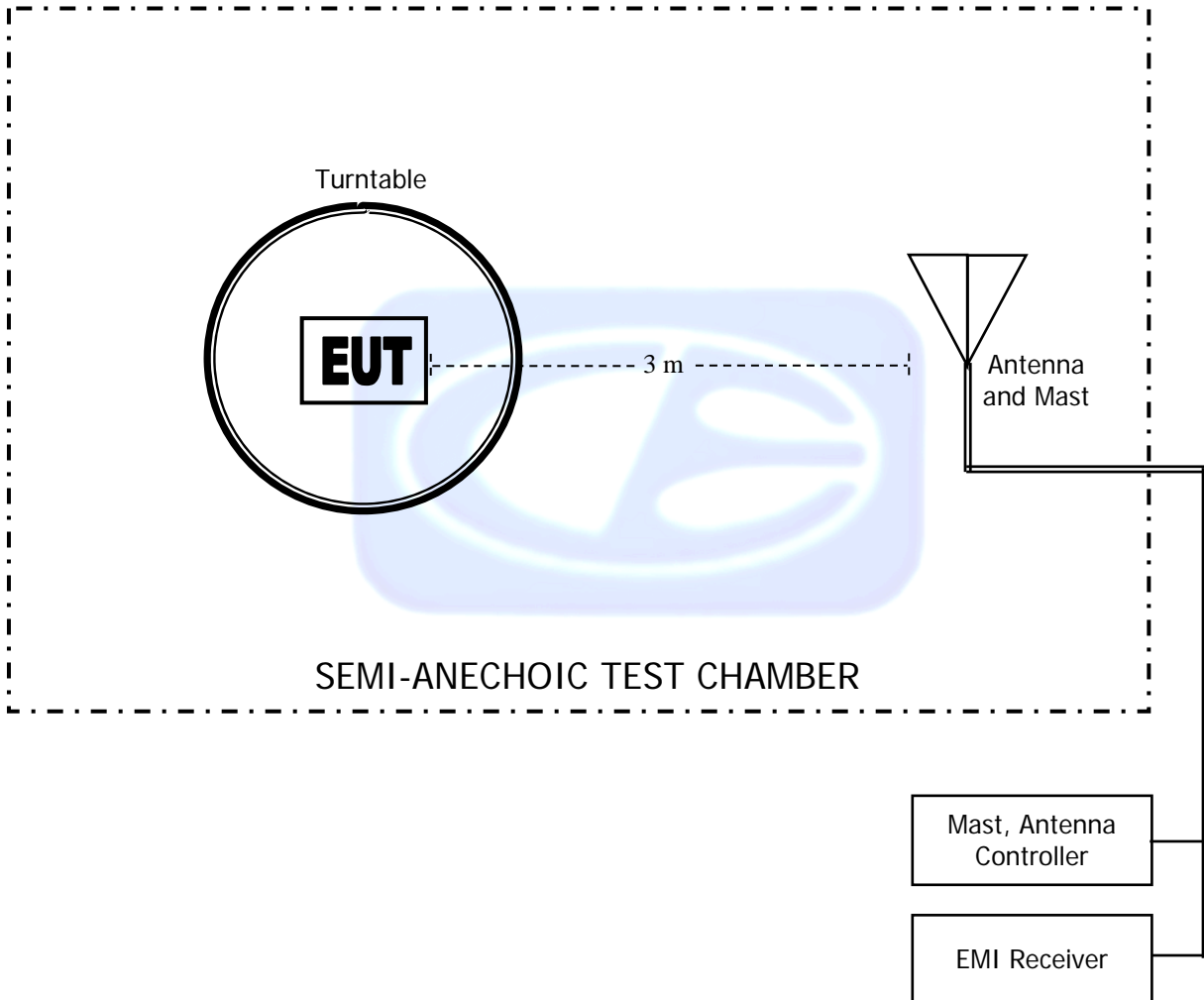
OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

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

FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130**LOOP ANTENNA**

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: MAY 20, 2014

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

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2014

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

COM-POWER PA-118**PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MARCH 6, 2015

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.76	6.0	38.77
1.1	40.46	6.5	38.46
1.2	40.05	7.0	38.27
1.3	40.58	7.5	38.77
1.4	39.50	8.0	39.25
1.5	39.92	8.5	38.63
1.6	40.40	9.0	39.58
1.7	40.10	9.5	42.12
1.8	40.49	10.0	38.53
1.9	38.86	11.0	40.21
2.0	41.53	12.0	41.15
2.5	41.05	13.0	40.51
3.0	40.29	14.0	40.32
3.5	40.82	15.0	39.47
4.0	40.88	16.0	39.88
4.5	41.37	17.0	39.79
5.0	40.73	18.0	40.61
5.5	39.05		

COM-POWER AH-826**HORN ANTENNA**

S/N: 71957

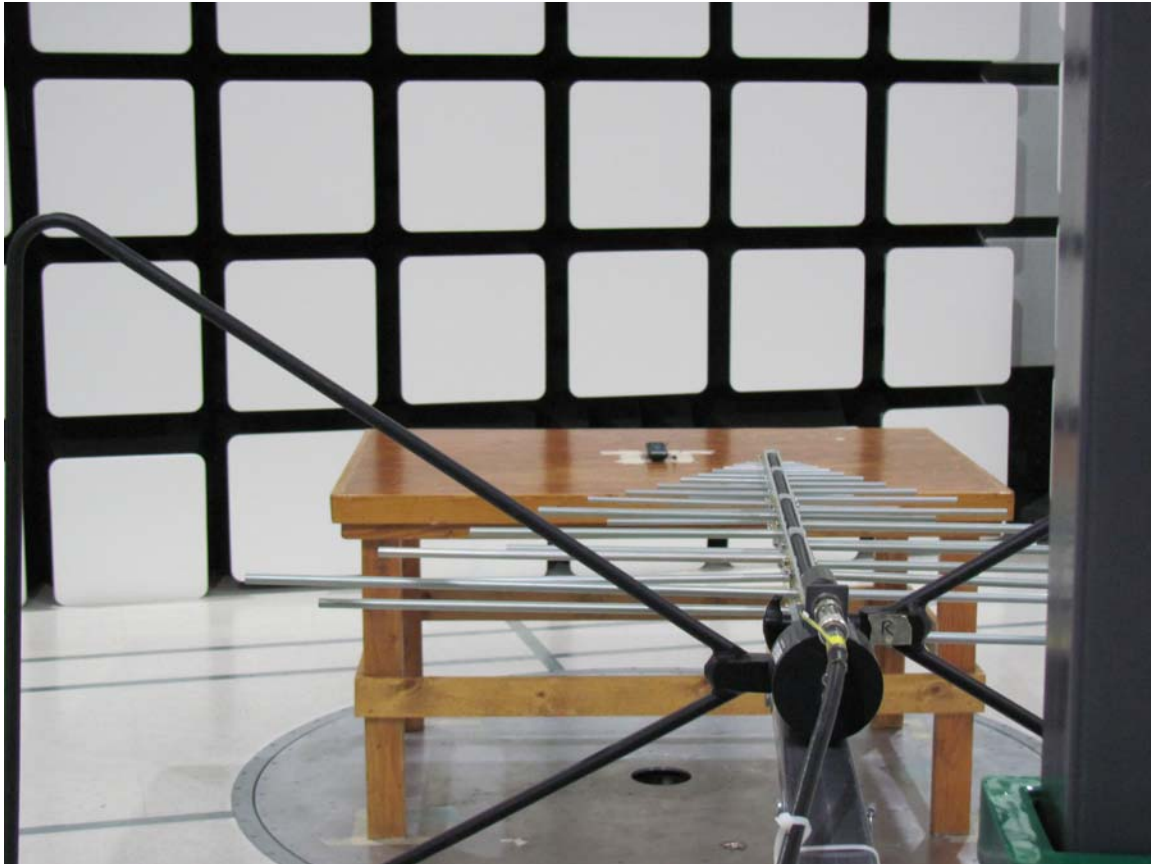
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

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

S/N: 711013

CALIBRATION DATE: MAY 13, 2014

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



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
CHARTER SPECTRUM REMOTE 2015
MODEL: URC-1160BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
CHARTER SPECTRUM REMOTE 2015
MODEL: URC-1160BC0-R

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
CHARTER SPECTRUM REMOTE 2015
MODEL: URC-1160BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

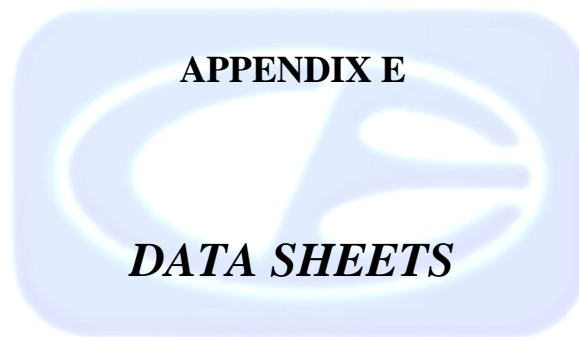
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
CHARTER SPECTRUM REMOTE 2015
MODEL: URC-1160BC0-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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



RADIATED EMISSIONS

DATA SHEETS

FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	89.98	V	114	-24.02	Peak	1	135	
2425	69.98	V	94	-24.02	Avg	1	135	
4850	50.47	V	74	-23.53	Peak	1.75	135	
4850	30.47	V	54	-23.53	Avg	1.75	135	
7275	58.43	V	74	-15.57	Peak	1.25	125	
7275	38.43	V	54	-15.57	Avg	1.25	125	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	100.93	H	114	-13.07	Peak	1.25	0	
2425	80.93	H	94	-13.07	Avg	1.25	0	
4850	48.85	H	74	-25.15	Peak	1.25	155	
4850	28.85	H	54	-25.15	Avg	1.25	155	
7275	59.91	H	74	-14.09	Peak	1.25	135	
7275	39.91	H	54	-14.09	Avg	1.25	135	
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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	96.69	V	114	-17.31	Peak	2	225	
2425	76.69	V	94	-17.31	Avg	2	225	
4850	55.81	V	74	-18.19	Peak	1.25	225	
4850	35.81	V	54	-18.19	Avg	1.25	225	
7275	58.61	V	74	-15.39	Peak	1.25	235	
7275	38.61	V	54	-15.39	Avg	1.25	235	
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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	100.49	H	114	-13.51	Peak	1.25	180	
2425	80.49	H	94	-13.51	Avg	1.25	180	
4850	50.48	H	74	-23.52	Peak	1.25	175	
4850	30.48	H	54	-23.52	Avg	1.25	175	
7275	58.21	H	74	-15.79	Peak	1.35	180	
7275	38.21	H	54	-15.79	Avg	1.35	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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	102.22	V	114	-11.78	Peak	1.25	180	
2425	82.22	V	94	-11.78	Avg	1.25	180	
4850	51.54	V	74	-22.46	Peak	1.25	90	
4850	31.54	V	54	-22.46	Avg	1.25	90	
7275	59.89	V	74	-14.11	Peak	1.25	225	
7275	39.89	V	54	-14.11	Avg	1.25	225	
9700								No Emissions Detected
12125								No Emissions Detected
14550								No Emissions Detected
16975								No Emissions Detected
19400								No Emissions Detected
21825								No Emissions Detected
24250								No Emissions Detected

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Z-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	90.49	H	114	-23.51	Peak	1.25	155	
2425	70.49	H	94	-23.51	Avg	1.25	155	
4850	47.76	H	74	-26.24	Peak	1.25	155	
4850	27.76	H	54	-26.24	Avg	1.25	155	
7275	60.66	H	74	-13.34	Peak	1.25	155	
7275	40.66	H	54	-13.34	Avg	1.25	155	
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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 X-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	85.41	V	114	-28.59	Peak	1.25	135	
2450	65.41	V	94	-28.59	Avg	1.25	135	
4900	47.25	V	74	-26.75	Peak	1.35	145	
4900	27.25	V	54	-26.75	Avg	1.35	145	
7350	56.71	V	74	-17.29	Peak	1.25	165	
7350	36.71	V	54	-17.29	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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	99.73	H	114	-14.27	Peak	1.25	180	
2450	79.73	H	94	-14.27	Avg	1.25	180	
4900	50.61	H	74	-23.39	Peak	1.35	225	
4900	30.61	H	54	-23.39	Avg	1.35	225	
7350	57.75	H	74	-16.25	Peak	1.25	235	
7350	37.75	H	54	-16.25	Avg	1.25	235	
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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Y-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	92.73	V	114	-21.27	Peak	1.25	155	
2450	72.73	V	94	-21.27	Avg	1.25	155	
4900	51.01	V	74	-22.99	Peak	1.25	135	
4900	31.01	V	54	-22.99	Avg	12.5	135	
7350	61.76	V	74	-12.24	Peak	1.25	135	
7350	41.76	V	54	-12.24	Avg	1.25	135	
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

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Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Y-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	98.51	H	114	-15.49	Peak	1.25	180	
2450	78.51	H	94	-15.49	Avg	1.25	180	
4900	56.83	H	74	-17.17	Peak	1.25	155	
4900	36.83	H	54	-17.17	Avg	1.25	155	
7350	59.78	H	74	-14.22	Peak	1.25	180	
7350	39.78	H	54	-14.22	Avg	1.25	180	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	100.84	V	114	-13.16	Peak	1.25	125	
2450	80.84	V	94	-13.16	Avg	1.25	125	
4900	59.78	V	74	-14.22	Peak	1.25	125	
4900	39.78	V	54	-14.22	Avg	1.25	125	
7350	59.83	V	74	-14.17	Peak	1.25	165	
7350	39.83	V	54	-14.17	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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Z-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	90.53	H	114	-23.47	Peak	1.25	155	
2450	70.53	H	94	-23.47	Avg	1.25	155	
4900	50.89	H	74	-23.11	Peak	1.25	180	
4900	30.89	H	54	-23.11	Avg	1.25	180	
7350	58.09	H	74	-15.91	Peak	1.25	135	
7350	38.09	H	54	-15.91	Avg	1.25	135	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	86.03	V	114	-27.97	Peak	1.25	155	
2475	66.03	V	94	-27.97	Avg	1.25	155	
4950	48.26	V	74	-25.74	Peak	1.25	165	
4950	28.26	V	54	-25.74	Avg	1.25	165	
7425	50.21	V	74	-23.79	Peak	1.15	155	
7425	30.21	V	54	-23.79	Avg	1.15	155	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	100.12	H	114	-13.88	Peak	1.25	180	
2475	80.12	H	94	-13.88	Avg	1.25	180	
4950	57.71	H	74	-16.29	Peak	1.35	175	
4950	37.71	H	54	-16.29	Avg	1.35	175	
7425	60.35	H	74	-13.65	Peak	1.25	315	
7425	40.35	H	54	-13.65	Avg	1.25	315	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	91.92	V	114	-22.08	Peak	1.25	135	
2475	71.92	V	94	-22.08	Avg	1.25	135	
4950	52.67	V	74	-21.33	Peak	1.25	155	
4950	32.67	V	54	-21.33	Avg	1.25	155	
7425	55.79	V	74	-18.21	Peak	1.35	155	
7425	35.79	V	54	-18.21	Avg	1.35	155	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	99.05	H	114	-14.95	Peak	1.25	155	
2475	79.05	H	94	-14.95	Avg	1.25	155	
4950	58.64	H	74	-15.36	Peak	1.35	165	
4950	38.64	H	54	-15.36	Avg	1.35	165	
7425	58.41	H	74	-15.59	Peak	1.25	180	
7425	38.41	H	54	-15.59	Avg	1.25	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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	99.35	V	114	-14.65	Peak	1.25	180	
2475	79.35	V	94	-14.65	Avg	1.25	180	
4950	56.03	V	74	-17.97	Peak	1.35	175	
4950	36.03	V	54	-17.97	Avg	1.35	175	
7425	58.85	V	74	-15.15	Peak	1.25	185	
7425	38.85	V	54	-15.15	Avg	1.25	185	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Z-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	88.58	H	114	-25.42	Peak	1.25	0	
2475	68.58	H	94	-25.42	Avg	1.25	0	
4950	51.03	H	74	-22.97	Peak	1.25	270	
4950	31.03	H	54	-22.97	Avg	1.25	270	
7425	62.23	H	74	-11.77	Peak	1.25	155	
7425	42.23	H	54	-11.77	Avg	1.25	155	
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 Class B and FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06-26-2015
 Lab: D
 Tested By: Kyle Fujimoto

Digital Portion and Non-Harmonic Emissions from the Transmitter
10 kHz to 1 GHz and 1 GHz to 25 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected from 10 kHz to 1 GHz for the Digital Portion for both the Vertical and Horizontal Polarizations.
								No Emissions Detected from 10 kHz to 1 GHz for the Non-Harmonic Emissions from the Tx for the EUT for both the Vertical and Horizontal Polarizations.
								Investigated in the X, Y, and Z-Axis
								No Emissions Detected from 1 GHz to 25 GHz for the Digital Portion for both the Vertical and Horizontal Polarizations.
								No Emissions Detected from 1 GHz to 25 GHz for the Non-Harmonic Emissions from the Tx for the EUT for both the Vertical and Horizontal Polarizations.
								Investigated in the X, Y, and Z-Axis

FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	96.79	V	114	-17.21	Peak	2	185	
2425	76.79	V	94	-17.21	Avg	2	185	
4850	55.36	V	74	-18.64	Peak	2	0	
4850	35.36	V	54	-18.64	Avg	2	0	
7275	51.93	V	74	-22.07	Peak	1.75	160	
7275	31.93	V	54	-22.07	Avg	1.75	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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	100.82	H	114	-13.18	Peak	1.25	150	
2425	80.82	H	94	-13.18	Avg	1.25	150	
4850	56.47	H	74	-17.53	Peak	1	180	
4850	36.47	H	54	-17.53	Avg	1	180	
7275	52.36	H	74	-21.64	Peak	1	35	
7275	32.36	H	54	-21.64	Avg	1	35	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 Y-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	100.06	V	114	-13.94	Peak	1.35	165	
2425	80.06	V	94	-13.94	Avg	1.35	165	
4850	51.62	V	74	-22.38	Peak	1	135	
4850	31.62	V	54	-22.38	Avg	1	135	
7275	53.14	V	74	-20.86	Peak	1	170	
7275	33.14	V	54	-20.86	Avg	1	170	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	88.58	H	114	-25.42	Peak	1.25	180	
2425	68.58	H	94	-25.42	Avg	1.25	180	
4850	55.79	H	74	-18.21	Peak	1.25	225	
4850	35.79	H	54	-18.21	Avg	1.25	225	
7275	51.67	H	74	-22.33	Peak	1.25	155	
7275	31.67	H	54	-22.33	Avg	1.25	155	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	99.26	V	114	-14.74	Peak	1.1	190	
2425	79.26	V	94	-14.74	Avg	1.1	190	
4850	53.51	V	74	-20.49	Peak	1	180	
4850	33.51	V	54	-20.49	Avg	1	180	
7275	52.46	V	74	-21.54	Peak	1.25	135	
7275	32.46	V	54	-21.54	Avg	1.25	135	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 Z-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	97.95	H	114	-16.05	Peak	1.5	80	
2425	77.95	H	94	-16.05	Avg	1.5	80	
4850	50.01	H	74	-23.99	Peak	1	125	
4850	34.71	H	54	-19.29	Avg	1	125	
7275	51.39	H	74	-22.61	Peak	1.25	135	
7275	31.39	H	54	-22.61	Avg	1.25	135	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 X-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	93.77	V	114	-20.23	Peak	1.75	190	
2450	73.77	V	94	-20.23	Avg	1.75	190	
4900	49.76	V	74	-24.24	Peak	1.85	355	
4900	29.76	V	54	-24.24	Avg	1.85	355	
7350	51.88	V	74	-22.12	Peak	1.35	160	
7350	31.88	V	54	-22.12	Avg	1.35	160	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 X-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	99.5	H	114	-14.5	Peak	1	165	
2450	79.5	H	94	-14.5	Avg	1	165	
4900	59.31	H	74	-14.69	Peak	1	0	
4900	39.31	H	54	-14.69	Avg	1	0	
7350	53.76	H	74	-20.24	Peak	1	45	
7350	33.76	H	54	-20.24	Avg	1	45	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Y-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	100.25	V	114	-13.75	Peak	1.5	180	
2450	80.25	V	94	-13.75	Avg	1.5	180	
4900	51.77	V	74	-22.23	Peak	1	80	
4900	31.77	V	54	-22.23	Avg	1	80	
7350	52.16	V	74	-21.84	Peak	1	170	
7350	32.16	V	54	-21.84	Avg	1	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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Y-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	94.21	H	114	-19.79	Peak	2.75	170	
2450	74.21	H	94	-19.79	Avg	2.75	170	
4900	58.14	H	74	-15.86	Peak	1	335	
4900	38.14	H	54	-15.86	Avg	1	335	
7350	53.85	H	74	-20.15	Peak	1	170	
7350	33.85	H	54	-20.15	Avg	1	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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	98.52	V	114	-15.48	Peak	1	170	
2450	78.52	V	94	-15.48	Avg	1	170	
4900	48.77	V	74	-25.23	Peak	1	180	
4900	28.77	V	54	-25.23	Avg	1	180	
7350	52.83	V	74	-21.17	Peak	1	0	
7350	32.83	V	54	-21.17	Avg	1	0	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Z-Axis - Horizontal**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	97.23	H	114	-16.77	Peak	1.25	90	
2450	77.23	H	94	-16.77	Avg	1.25	90	
4900	52.36	H	74	-21.64	Peak	1.5	190	
4900	32.36	H	54	-21.64	Avg	1.5	190	
7350	47.83	H	74	-26.17	Peak	1.65	235	
7350	27.83	H	54	-26.17	Avg	1.65	235	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
X-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	93.71	V	114	-20.29	Peak	1.75	190	
2475	73.71	V	94	-20.29	Avg	1.75	190	
4950	50.34	V	74	-23.66	Peak	1.75	355	
4950	30.34	V	54	-23.66	Avg	1.75	355	
7425	52.16	V	74	-21.84	Peak	1	355	
7425	32.16	V	54	-21.84	Avg	1	355	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
X-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	99.68	H	114	-14.32	Peak	1	135	
2475	79.68	H	94	-14.32	Avg	1	135	
4950	52.03	H	74	-21.97	Peak	1	160	
4950	32.03	H	54	-21.97	Avg	1	160	
7425	50.96	H	74	-23.04	Peak	1	45	
7425	30.96	H	54	-23.04	Avg	1	45	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Y-Axis - Vertical

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	98.64	V	114	-15.36	Peak	1	180	
2475	78.64	V	94	-15.36	Avg	1	180	
4950	54.66	V	74	-19.34	Peak	1	100	
4950	34.66	V	54	-19.34	Avg	1	100	
7425	51.55	V	74	-22.45	Peak	2.5	65	
7425	31.55	V	54	-22.45	Avg	2.5	65	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Y-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	88.55	H	114	-25.45	Peak	2.1	185	
2475	68.55	H	94	-25.45	Avg	2.1	185	
4950	57.11	H	74	-16.89	Peak	1	335	
4950	37.11	H	54	-16.89	Avg	1	335	
7425	49.44	H	74	-24.56	Peak	1.8	160	
7425	29.44	H	54	-24.56	Avg	1.8	160	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Z-Axis - Vertical**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	98.78	V	114	-15.22	Peak	1	190	
2475	78.78	V	94	-15.22	Avg	1	190	
4950	52.74	V	74	-21.26	Peak	1	180	
4950	32.74	V	54	-21.26	Avg	1	180	
7425	51.26	V	74	-22.74	Peak	1	340	
7425	31.26	V	54	-22.74	Avg	1	340	
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.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Dates: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

High Channel
Z-Axis - Horizontal

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	99.02	H	114	-14.98	Peak	1	280	
2475	79.02	H	94	-14.98	Avg	1	280	
4950	57.78	H	74	-16.22	Peak	1.75	45	
4950	37.78	H	54	-16.22	Avg	1.75	45	
7425	61.83	H	74	-12.17	Peak	1.1	135	
7425	41.83	H	54	-12.17	Avg	1.1	135	
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

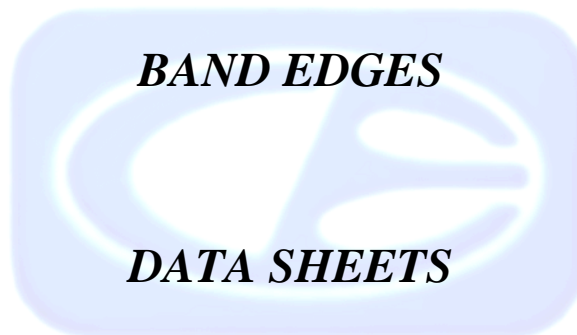
FCC Class B and FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

Date: 06-26-2015
 Lab: D
 Tested By: Kyle Fujimoto

Digital Portion and Non-Harmonic Emissions from the Transmitter
10 kHz to 1 GHz and 1 GHz to 25 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 10 kHz to 1 GHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 10 kHz to 1 GHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis



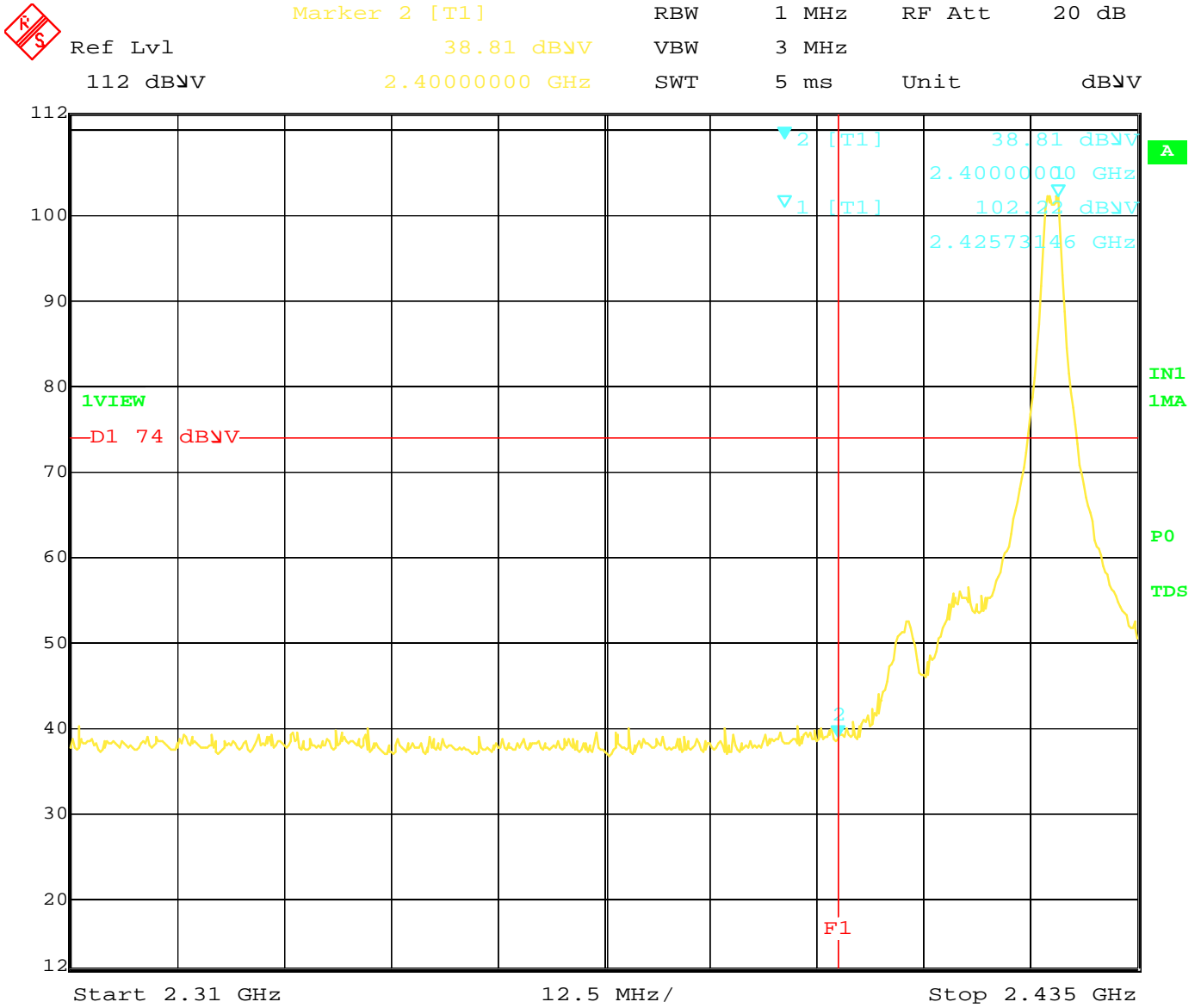
FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 0

Date: 06/25/2015
 Lab: B
 Tested By: Kyle Fujimoto

Band Edges

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	102.22	V	114	-11.78	Peak	1.25	180	Fundamental
2425	82.22	V	94	-11.78	Avg	1.25	180	of Low Channel
2400	38.81	V	74	-35.19	Peak	1.25	180	Band Edge of Low Channel
2400	18.81	V	54	-35.19	Avg	1.25	180	Z-Axis Worst Case
2425	100.93	H	114	-13.07	Peak	1.25	0	Fundamental of
2425	80.93	H	94	-13.07	Avg	1.25	0	Low Channel
2400	45.41	H	74	-28.59	Peak	1.25	0	Band Edge of Low Channel
2400	25.41	H	54	-28.59	Avg	1.25	0	X-Axis Worst Case
2475	100.12	H	114	-13.88	Peak	1.25	180	Fundamental of
2475	80.12	H	94	-13.88	Avg	1.25	180	High Channel
2483.5	51.05	H	74	-22.95	Peak	1.25	180	Band Edge of High Channel
2483.5	31.05	H	54	-22.95	Avg	1.25	180	X-Axis Worst Case
2475	99.35	V	114	-14.65	Peak	1.25	180	Fundamental of
2475	79.35	V	94	-14.65	Avg	1.25	180	High Channel
2483.5	50.22	V	74	-23.78	Peak	1.25	180	Band Edge of High Channel
2483.5	30.22	V	54	-23.78	Avg	1.25	180	Z-Axis Worst Case

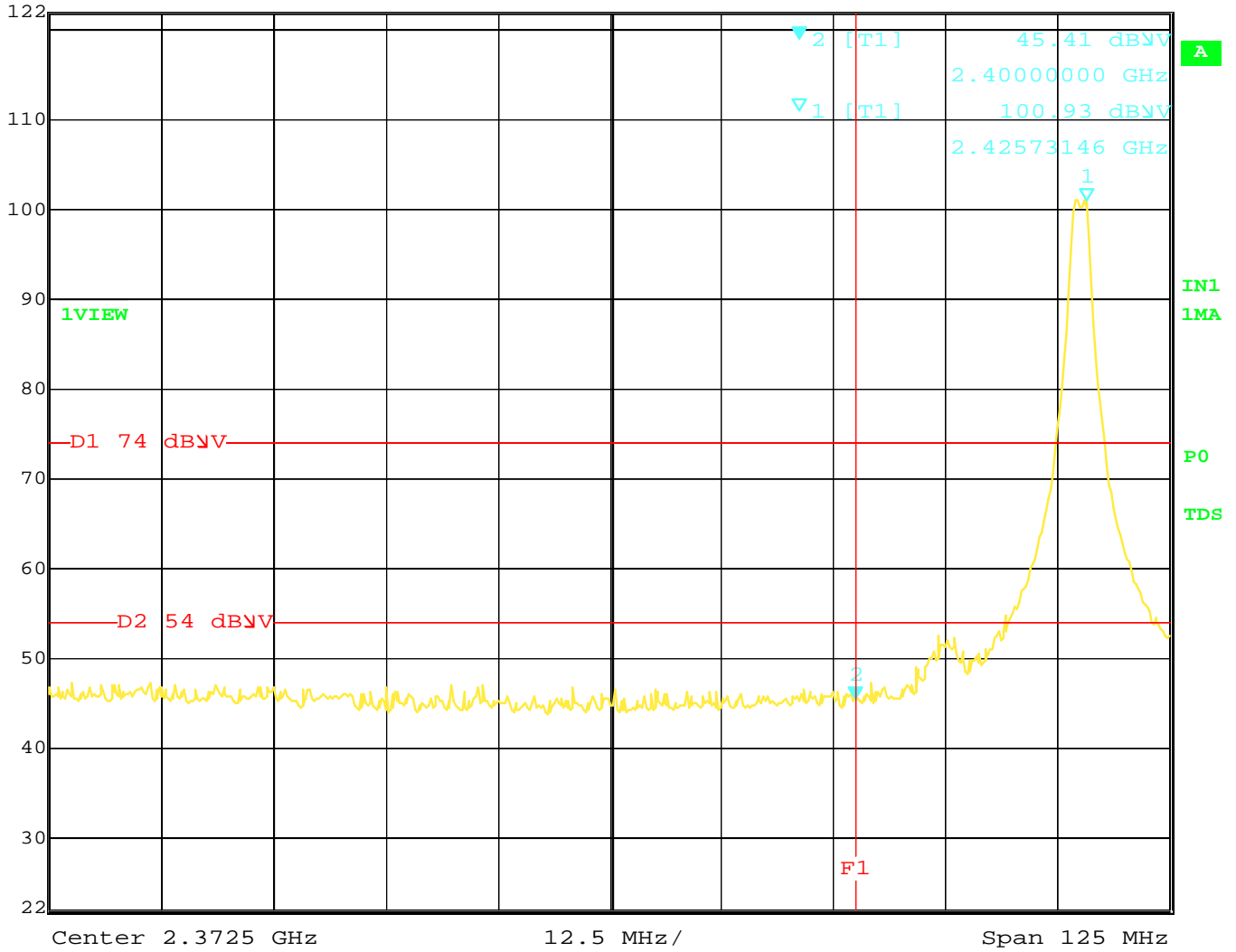


Date: 25.JUN.2015 07:53:04

Band Edge – Low Channel – Vertical Polarization – Antenna 0 – Z-Axis Worst Case



Marker 2 [T1] RBW 1 MHz RF Att 30 dB
 Ref Lvl 45.41 dBV VBW 3 MHz
 122 dBV 2.40000000 GHz SWT 5 ms Unit dBV

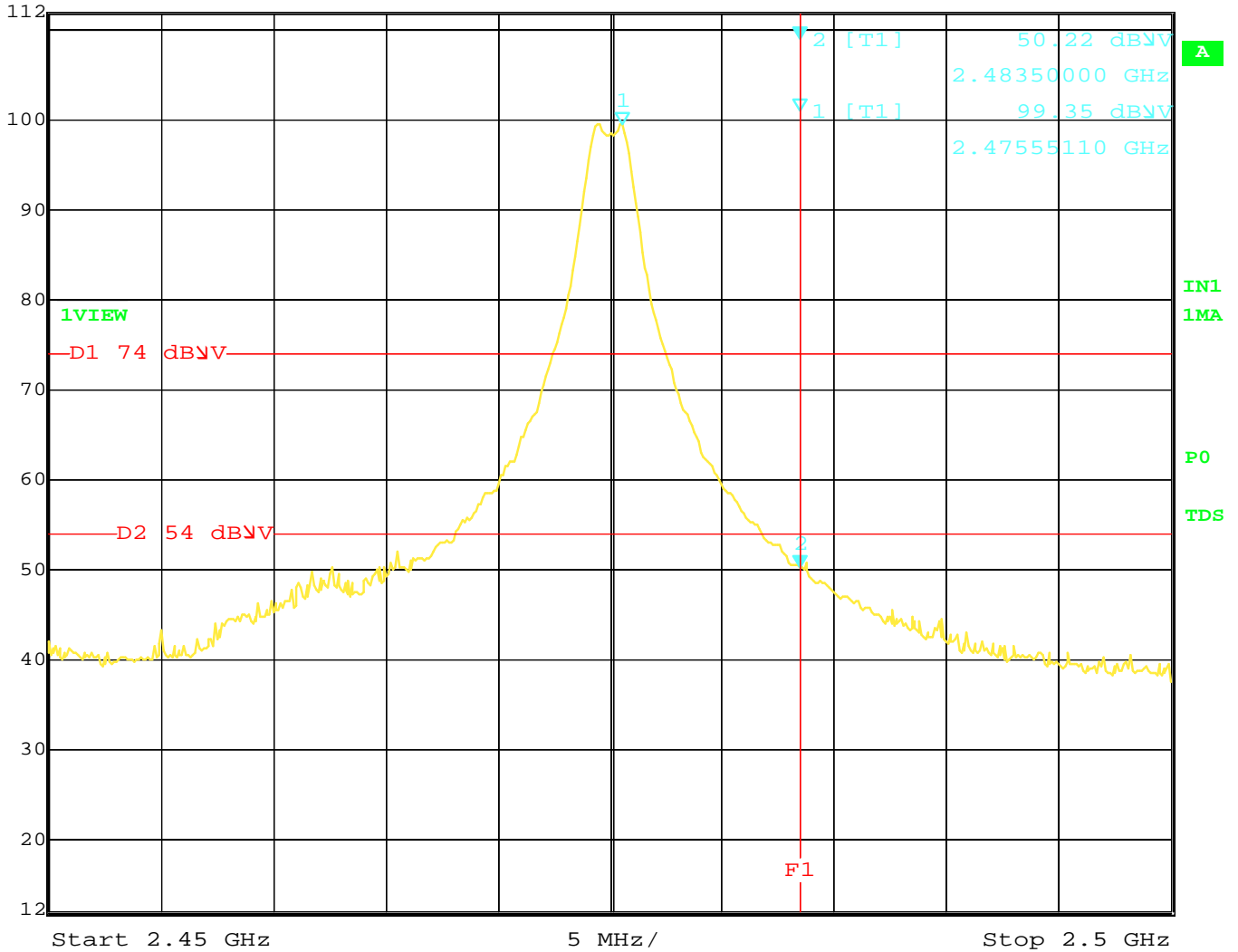


Date: 25.JUN.2015 08:35:25

Band Edge – Low Channel – Horizontal Polarization – Antenna 0 – X-Axis Worst Case



Ref Lvl	112 dBμV	Marker 2 [T1]	50.22 dBμV	RBW	1 MHz	RF Att	20 dB
			2.48350000 GHz	VBW	3 MHz		
				SWT	5 ms	Unit	dBμV

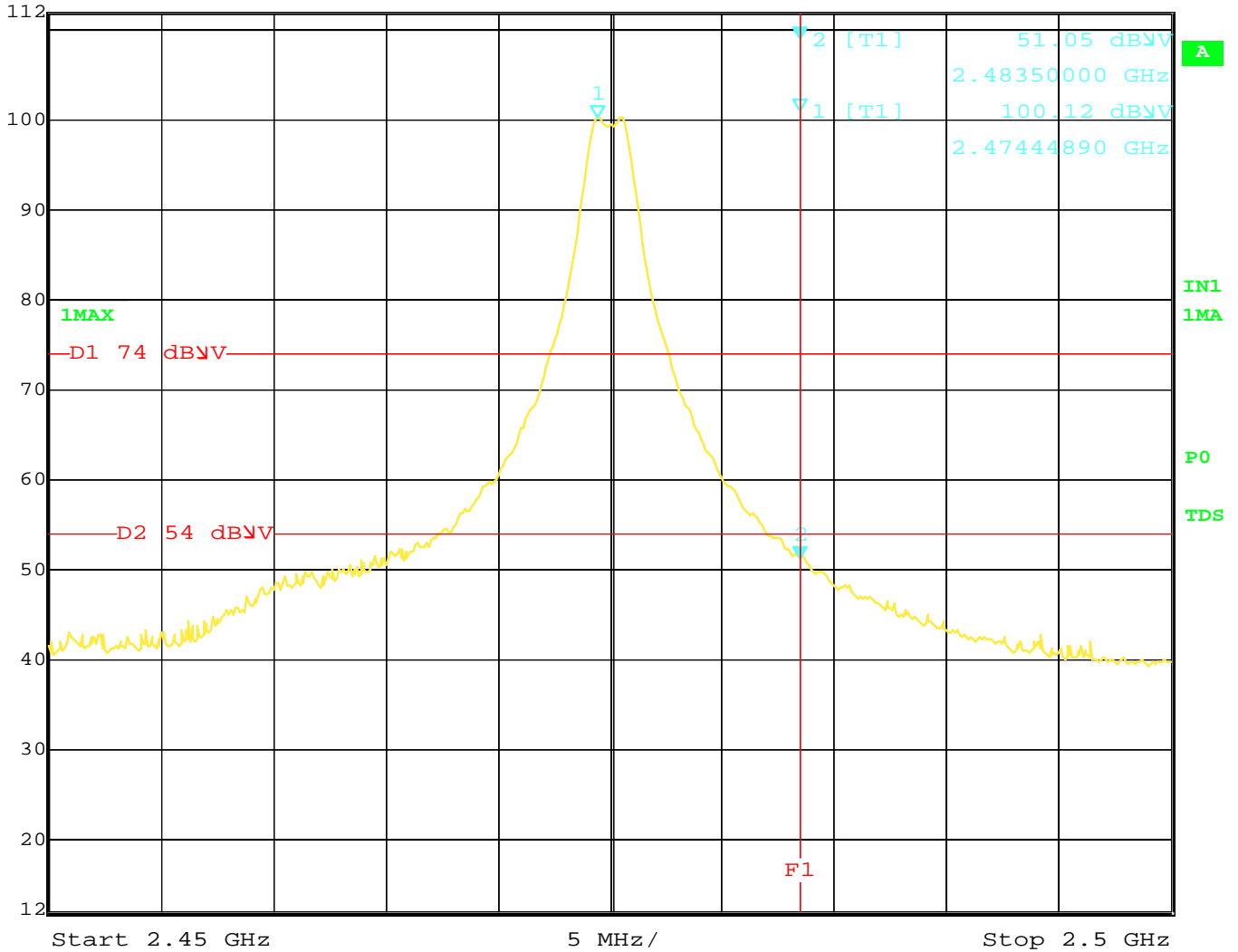


Date: 25.JUN.2015 10:05:51

Band Edge – High Channel – Vertical Polarization – Antenna 0 – Z-Axis Worst Case



Ref Lvl	112 dB μ V	Marker 2 [T1]	51.05 dB μ V	RBW	1 MHz	RF Att	20 dB
			2.48350000 GHz	VBW	3 MHz		
			2.47444890 GHz	SWT	5 ms	Unit	dB μ V



Date: 25.JUN.2015 10:32:22

Band Edge – High Channel – Horizontal Polarization – Antenna 0 – X-Axis Worst Case

FCC 15.249

Universal Electronics, Inc.
 Charter Spectrum Remote 2015
 Model: URC-1160BC0-R
 Note: Antenna 1

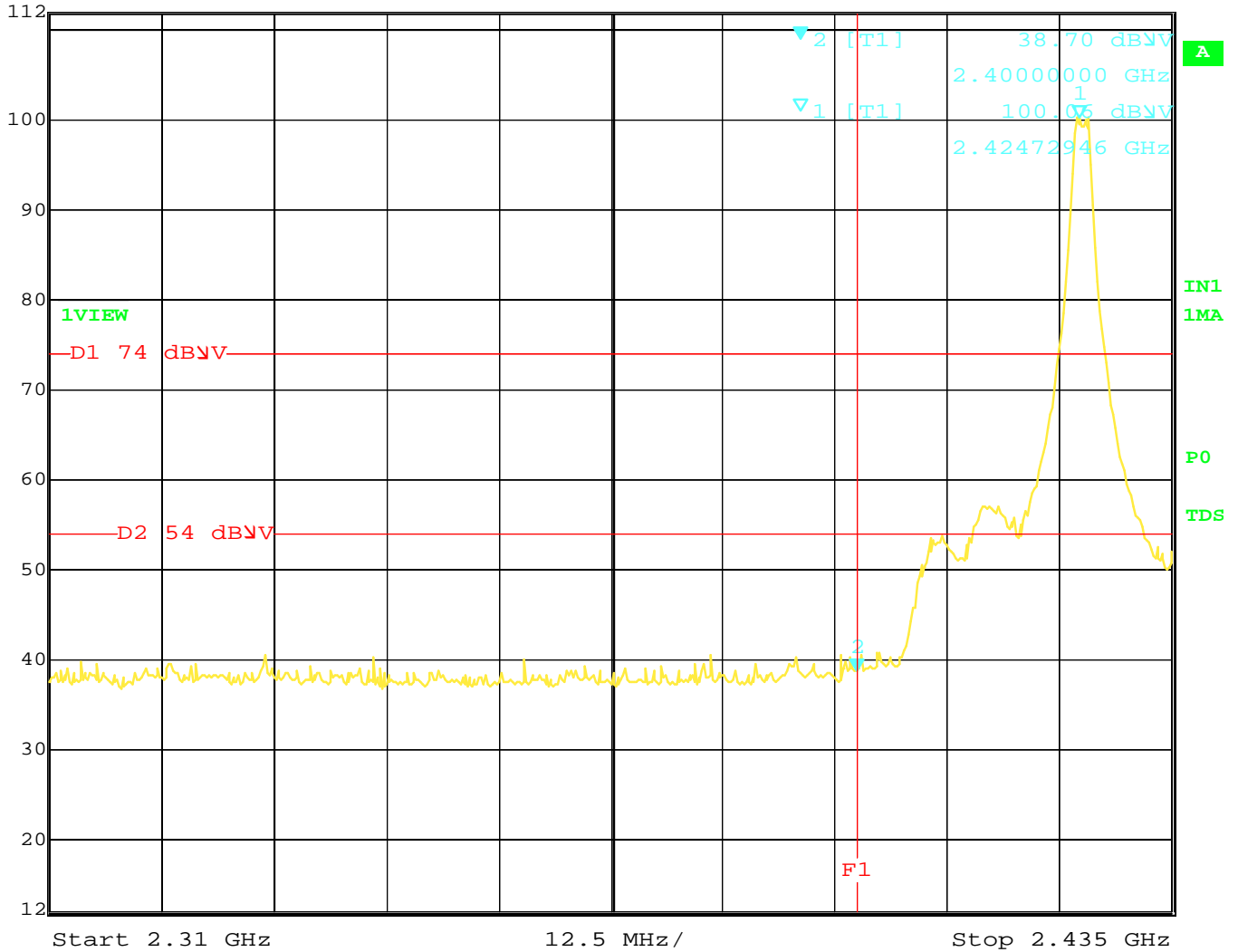
Date: 05/13/2015
 Lab: B
 Tested By: Kyle Fujimoto

Band Edges

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	100.06	V	114	-13.94	Peak	1.35	165	Fundamental
2425	80.06	V	94	-13.94	Avg	1.35	165	of Low Channel
2400	38.7	V	74	-35.3	Peak	1.35	165	Band Edge of Low Channel
2400	18.7	V	54	-35.3	Avg	1.35	165	Y-Axis Worst Case
2425	100.82	H	114	-13.18	Peak	1.25	150	Fundamental of
2425	80.82	H	94	-13.18	Avg	1.25	150	Low Channel
2400	39.98	H	74	-34.02	Peak	1.25	150	Band Edge of Low Channel
2400	19.98	H	54	-34.02	Avg	1.25	150	X-Axis Worst Case
2475	99.68	H	114	-14.32	Peak	1	135	Fundamental of
2475	79.68	H	94	-14.32	Avg	1	135	High Channel
2483.5	50.73	H	74	-23.27	Peak	1	135	Band Edge of High Channel
2483.5	30.73	H	54	-23.27	Avg	1	135	X-Axis Worst Case
2475	98.78	V	114	-15.22	Peak	1	190	Fundamental of
2475	78.78	V	94	-15.22	Avg	1	190	High Channel
2483.5	51.8	V	74	-22.2	Peak	1	190	Band Edge of High Channel
2483.5	31.8	V	54	-22.2	Avg	1	190	Z-Axis Worst Case

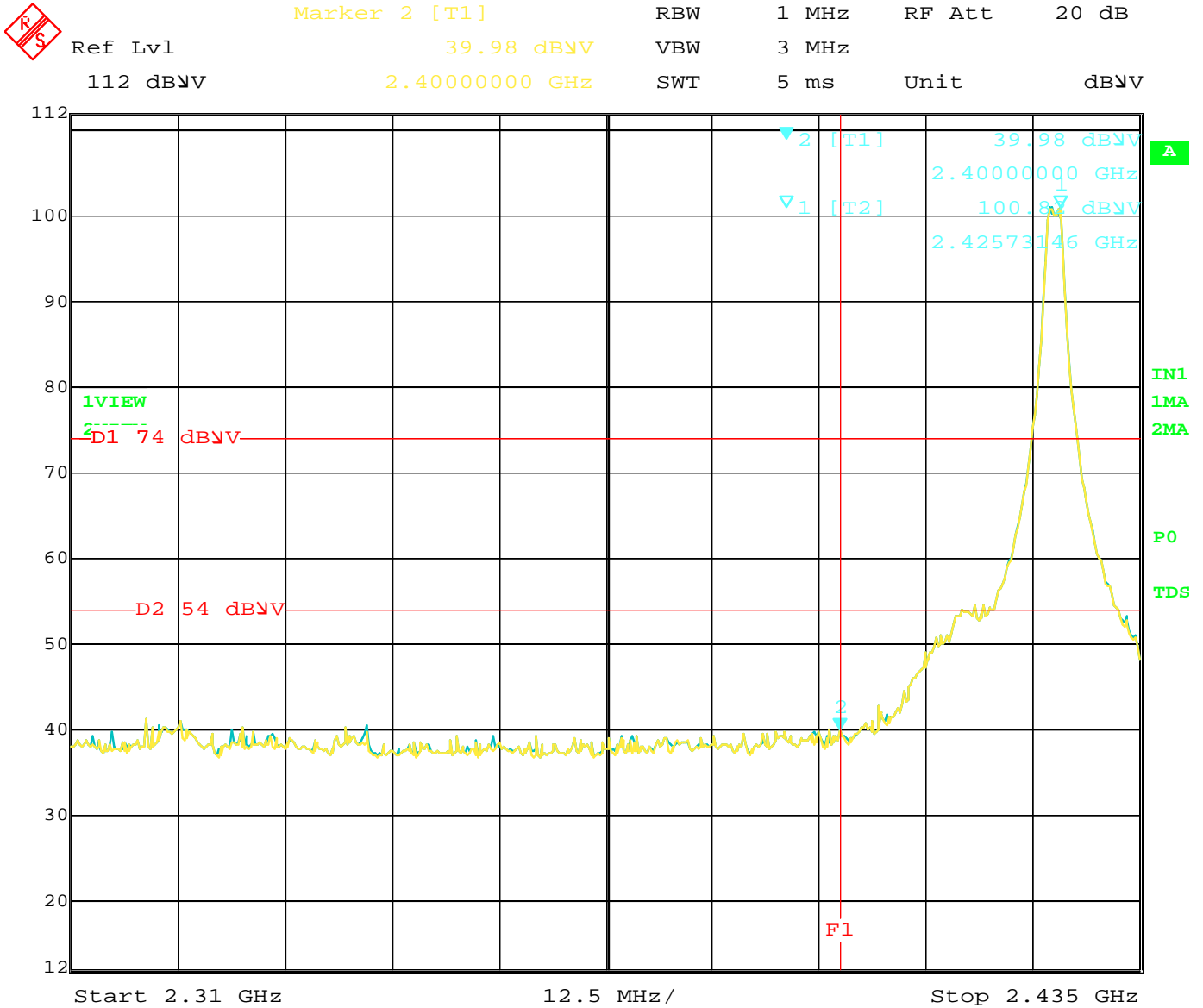


Marker 2 [T1] RBW 1 MHz RF Att 20 dB
 Ref Lvl 38.70 dBμV VBW 3 MHz
 112 dBμV 2.40000000 GHz SWT 5 ms Unit dBμV



Date: 25.JUN.2015 12:31:01

Band Edge – Low Channel – Vertical Polarization – Antenna 1 – Y-Axis Worst Case

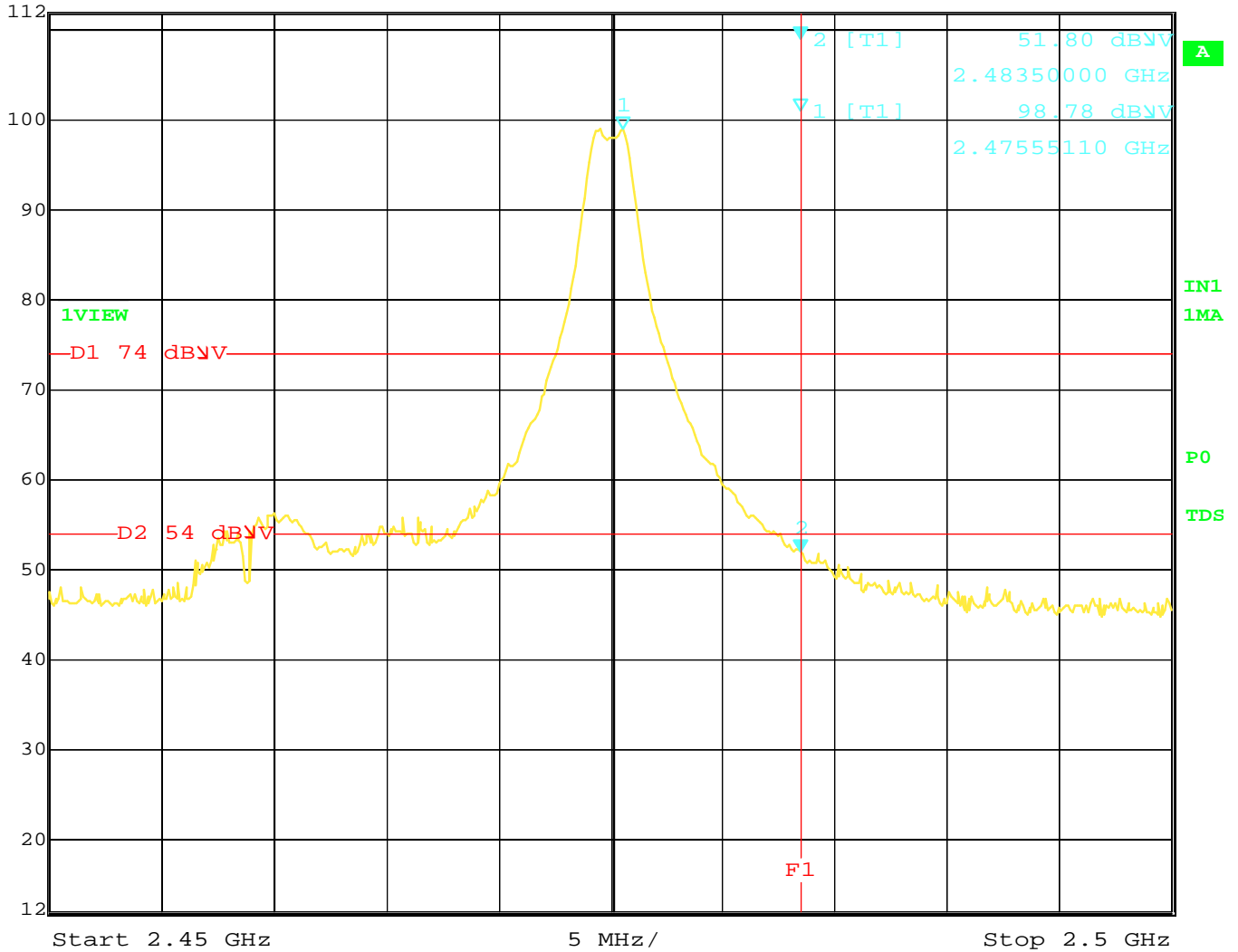


Date: 25.JUN.2015 12:19:36

Band Edge – Low Channel – Horizontal Polarization – Antenna 1 – X-Axis Worst Case

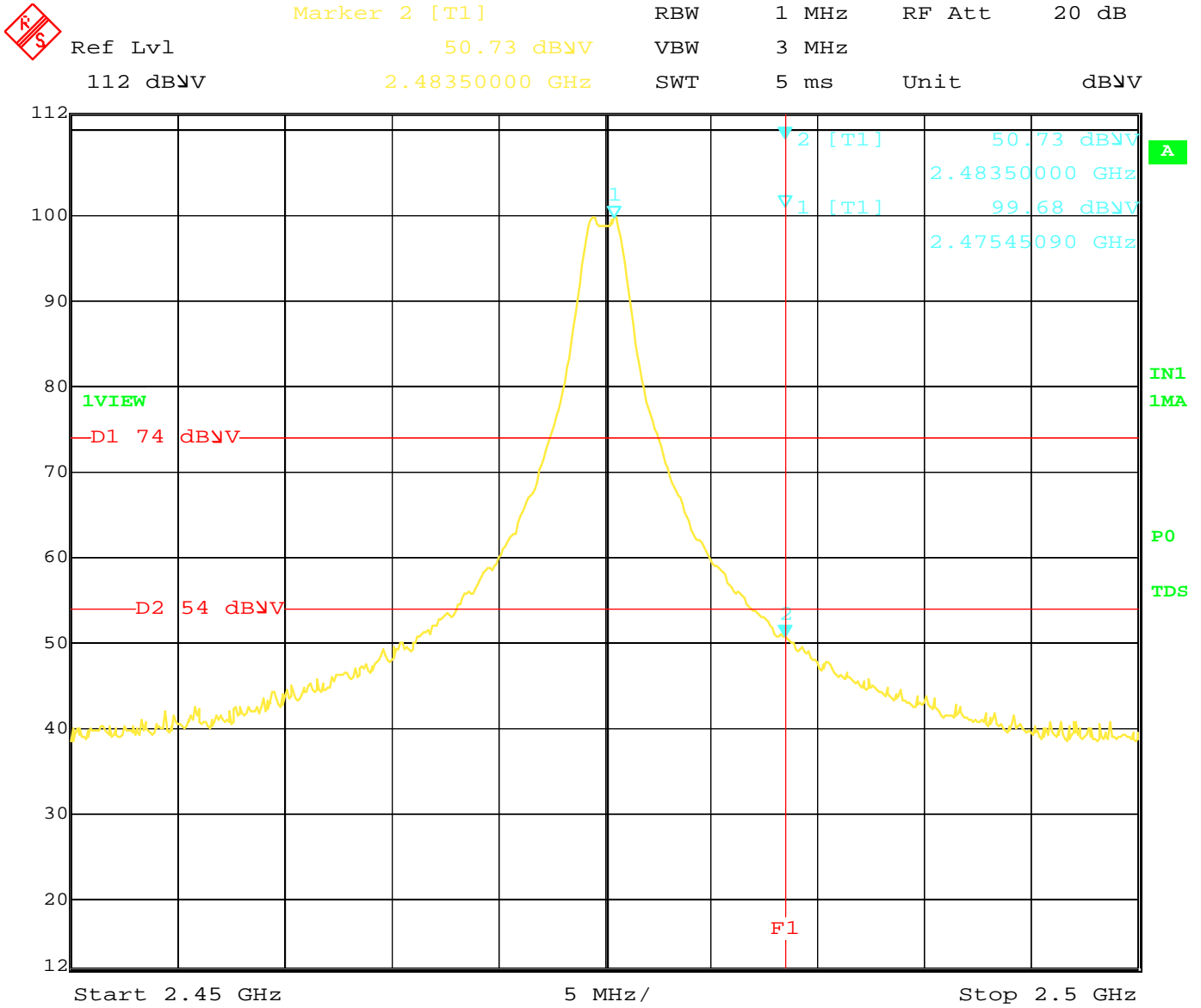


Marker 2 [T1] RBW 1 MHz RF Att 30 dB
 Ref Lvl 51.80 dBV VBW 3 MHz
 112 dBV 2.48350000 GHz SWT 5 ms Unit dBV



Date: 25.JUN.2015 15:14:00

Band Edge – High Channel – Vertical Polarization – Antenna 1 – Z-Axis Worst Case



Date: 25.JUN.2015 14:49:51

Band Edge – High Channel – Horizontal Polarization – Antenna 1 – X-Axis Worst Case