FCC PART 15 SUBPART B and C
TEST REPORT

for

UEI PULSE RF4CE HD DTA 2011

MODEL: URC-2068BC0-XXXX-XXXX-R

Prepared for

UNIVERSAL ELECTRONICS, INC.
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DATE: FEBRUARY 21, 2012

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

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

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

This report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested:	UEI Pulse RF4CE HD DTA 2011 Model: URC-2068BC0-XXXX-XXXX-R S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Universal Electronics, Inc. 6101 Gateway Drive Cypress, California 90630
Manufacturer:	Gemstar Technology China Shiguang Road Zhongcun Town Panyu Guangzhou, China 511495
Test Date(s):	December 20 - 22, 2011
Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B and Subpart C, Sections 15.205, 15.209, and 15.249
Test Procedure:	ANSI C63.4
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions 10 kHz to 25000 MHz (Transmitter and Digital Portion)	Complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the UEI Pulse RF4CE HD DTA 2011, Model: URC-2068BC0-XXXX-XXXX-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 for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.249 for the transmitter portion.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

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

2.2 Traceability Statement

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

2.3 Cognizant Personnel

Universal Electronics, Inc.

Jesse Mendez	Senior Core Electrical Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
David Tran	Test Technician

2.4 Date Test Sample was Received

The test sample was received prior to the date of testing.

2.5 Disposition of the Test Sample

The test sample has not yet been returned as of the date of this report.

2.6 Abbreviations and Acronyms

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

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
N/A	Not Applicable
Ltd.	Limited
Inc.	Incorporated
NCR	No Calibration Required
R&D	Research and Development
Rx	Receive / Receiver
Tx	Transmit / Transmitter

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4: 2009	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The UEI Pulse RF4CE HD DTA 2011, Model: URC-2068BC0-XXXX-XXXX-R (EUT) was tested as a stand alone unit. The EUT was continuously transmitting. The EUT had a special program that allowed the low, middle, or high channels to be tested by preselecting the channel and amplitude to be tested. The EUT was tested in three orthogonal axis.

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

4.1.1 Cable Construction and Termination

There were no external cables connected to the EUT.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
UEI PULSE RF4CE HD DTA 2011	UNIVERSAL ELECTRONICS	URC-2068BC0-XXXX-XXXX-R	N/A	MG3-2068

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	May 27, 2011	May 27, 2012
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A14530	May 27, 2011	May 27, 2012
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	May 27, 2011	May 27, 2012
EMI Receiver	Rohde & Schwarz	ESIB40	100194	November 19, 2010	November 19, 2012
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Loop Antenna	Com-Power	AL-130	17089	January 21, 2011	January 21, 2013
Biconical Antenna	Com Power	AB-900	15250	June 8, 2011	June 8, 2012
Log Periodic Antenna	Com Power	AL-100	16252	June 8, 2011	June 8, 2012
Horn Antenna	Com-Power	AH-118	071175	March 18, 2010	March 18, 2012
Horn Antenna	Com-Power	AH826	0071957	N/A	N/A
Preamplifier	Com-Power	PA-102	1017	January 11, 2011	January 11, 2012
Microwave Preamplifier	Com-Power	PA-118	181656	December 22, 2010	December 22, 2011
Microwave Preamplifier	Com-Power	PA-840	711919	March 11, 2010	March 11, 2012
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

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

The EUT not grounded.

6.3 Facility Environmental Characteristics

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

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The measurement receiver was used as a measuring meter. The data was collected with the measurement receiver in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the measurement receiver's input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the measurement receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

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

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

Test Results:

This test was not performed because the EUT operates on battery power only and cannot be plugged into the AC public mains.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer, along with the quasi-peak adapter, and EMI Receiver were used as a measuring meter. Amplifiers were used to increase the sensitivity of the instrument. The Com-Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz, the Com-Power Microwave Preamplifier Model: PA-118 was used for frequencies from 1 GHz to 18 GHz, and the Com-Power Microwave Preamplifier Model: PA-840 were used for frequencies above 18 GHz. The spectrum analyzer and EMI Receiver were used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer and EMI receiver records the highest measured reading over the sweeps.

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

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the spectrum analyzer to keep the amplitude reading calibrated.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 25 GHz	1 MHz	Horn Antennas

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

Radiated Emissions (Spurious and Harmonics) Test (continued)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3-meter test distance from 30 MHz to 25 GHz and at a 10-meter distance from 10 kHz to 30 MHz to obtain the final test data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
UEI Pulse RF4CE HD DTA 2011, Model: URC-2068BC0-XXXX-XXXX-R

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
2425 (H) (X-Axis)	93.21 (A)	94.00	-0.79
2475 (H) (X-Axis)	93.09 (A)	94.00	-0.91
2425 (V) (Y-Axis)	93.02 (A)	94.00	-0.98
2450 (V) (Z-Axis)	92.59 (A)	94.00	-1.41
2475 (V) (Y-Axis)	92.49 (A)	94.00	-1.51
2450 (V) (Y-Axis)	92.47 (A)	94.00	-1.53

Notes:

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

8. CONCLUSIONS

The UEI Pulse RF4CE HD DTA 2011, Model: URC-2068BC0-XXXX-XXXX-R (EUT), as tested, meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.249 for the transmitter portion.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP LAB CODES 200063-0, 200528-0, 200527-0

For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links

Agoura Division / **Brea Division** / **Silverado/Lake Forest Division**

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfillment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."

ANSI listing CETCB

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).
US/EU MRA list NIST MRA site

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).
APEC MRA list NIST MRA site

We are also listed for IT products by the following country/agency:

VCCI Support member: Please visit http://www.vcci.jp/vcci_e/

FCC Listing, from FCC OET site
FCC test lab search https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm

Industry Canada Industrie Canada Compatible Electronics IC listing can be found at:
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.249 and/or FCC **Class B** specifications.

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

No modifications were made to the EUT during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R
S/N: N/A

ALSO APPROVED UNDER THIS REPORT:

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

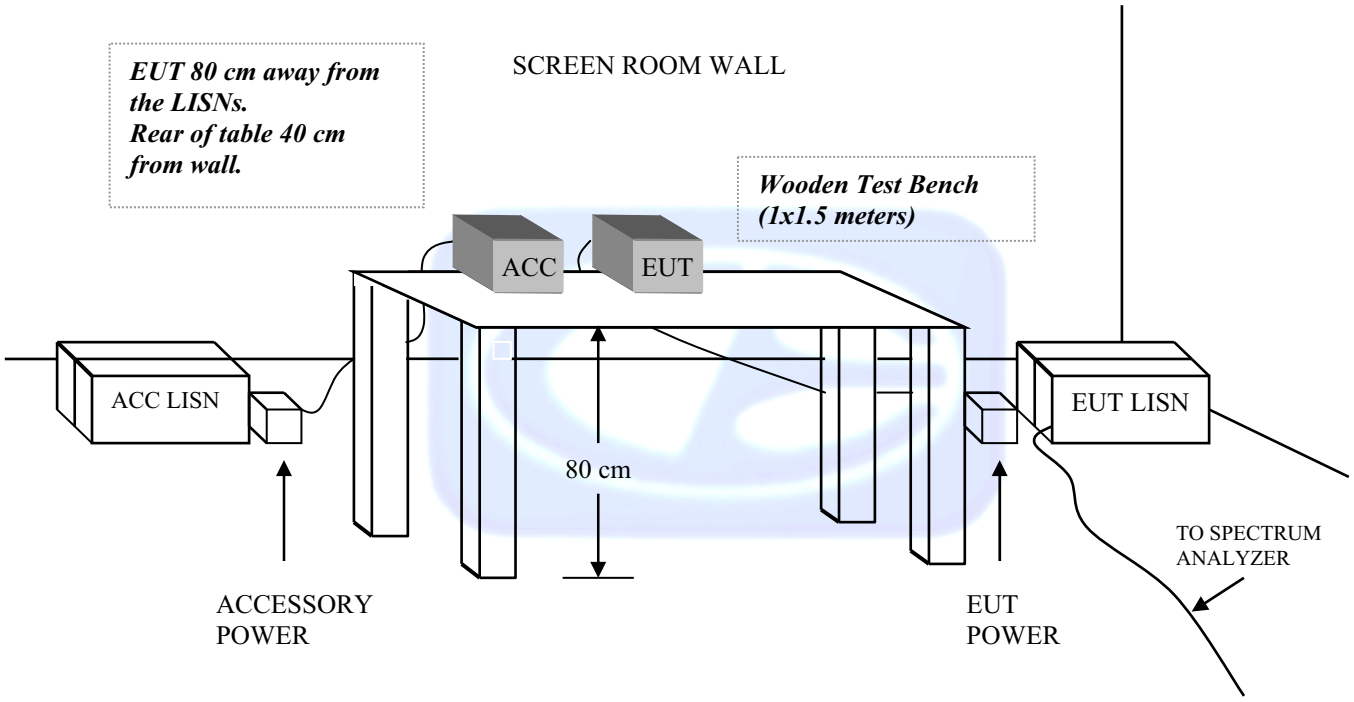
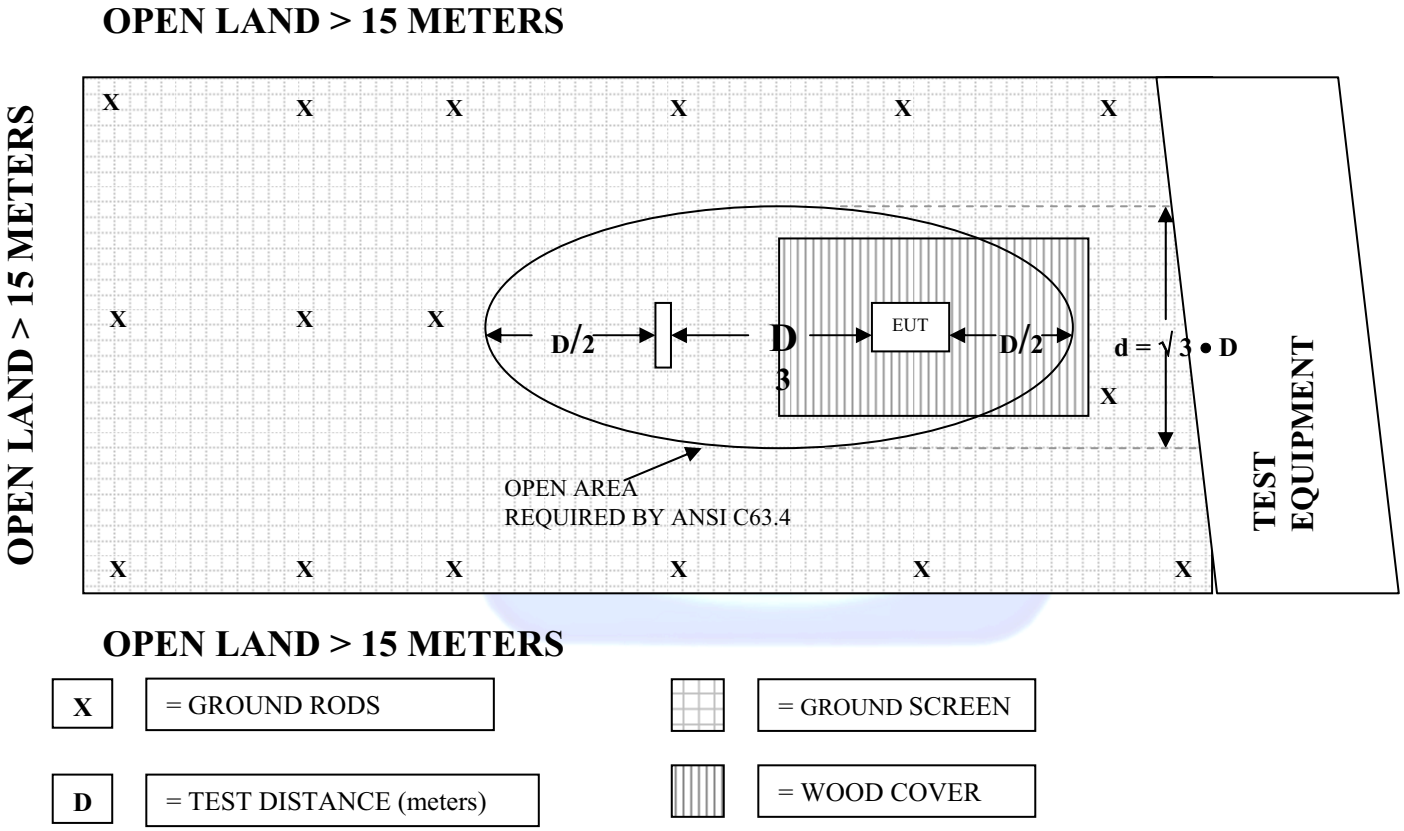


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS



COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: JANUARY 21, 2011

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

COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15250

CALIBRATION DATE: JUNE 8, 2011

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

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16252

CALIBRATION DATE: JUNE 8, 2011

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

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: MARCH 18, 2010

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

COM-POWER AH826

HORN ANTENNA

S/N: 71957

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

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2011

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

COM-POWER PA-118

PREAMPLIFIER

S/N: 181656

CALIBRATION DATE: DECEMBER 22, 2010

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

COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711919

CALIBRATION DATE: MARCH 11, 2010

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	28.05	29.5	23.78
18.5	28.35	30.0	21.88
19.0	28.27	30.5	23.42
19.5	28.62	31.0	21.24
20.0	28.67	31.5	22.69
20.5	27.96	32.0	21.59
21.0	27.76	32.5	21.09
21.5	26.91	33.0	21.22
22.0	27.19	33.5	21.38
22.5	26.90	34.0	20.21
23.0	26.90	34.5	20.89
23.5	26.43	35.0	20.18
24.0	26.75	35.5	21.23
24.5	24.96	36.0	20.99
25.0	26.56	36.5	21.09
25.5	24.75	37.0	14.63
26.0	25.13	37.5	16.74
26.5	24.79	38.0	22.62
27.0	24.54	38.5	24.14
27.5	23.72	39.0	25.97
28.0	24.34	39.5	27.40
28.5	24.01	40.0	22.69
29.0	24.96		

FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
UEI PULSE RF4CE HD DTA 2011
MODEL: URC-2068BC0-XXXX-XXXX-R
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

UNIVERSAL ELECTRONICS, INC.
UEI PULSE RF4CE HD DTA 2011
MODEL: URC-2068BC0-XXXX-XXXX-R
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	90.94	V	114	-23.06	Peak	1.5	180	
2425	86.42	V	94	-7.58	Avg	1.5	180	
4850	52.33	V	74	-21.67	Peak	1.8	190	
4850	48.96	V	54	-5.04	Avg	1.8	190	
7275	53.6	V	74	-20.4	Peak	1.3	190	
7275	41.67	V	54	-12.33	Avg	1.3	190	
9700								**No Emission**
9700								**Detected**
12125	59.52	V	74	-14.48	Peak	1.3	250	
12125	46.45	V	54	-7.55	Avg	1.3	250	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	97.61	H	114	-16.39	Peak	1.2	0	
2425	93.21	H	94	-0.79	Avg	1.2	0	
4850	54.59	H	74	-19.41	Peak	1.2	180	
4850	51.08	H	54	-2.92	Avg	1.2	180	
7275	57.99	H	74	-16.01	Peak	1.8	0	
7275	45.72	H	54	-8.28	Avg	1.8	0	
9700								**No Emission**
9700								**Detected**
12125	61.9	H	74	-12.1	Peak	1.3	270	
12125	48.74	H	54	-5.26	Avg	1.3	270	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	97.43	V	114	-16.57	Peak	1	130	
2425	93.02	V	94	-0.98	Avg	1	130	
4850	54.72	V	74	-19.28	Peak	1.6	320	
4850	50.75	V	54	-3.25	Avg	1.6	320	
7275	56.19	V	74	-17.81	Peak	2	10	
7275	44.25	V	54	-9.75	Avg	2	10	
9700								**No Emission**
9700								**Detected**
12125	59.91	V	74	-14.09	Peak	1.8	75	
12125	46.98	V	54	-7.02	Avg	1.8	75	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	96.67	H	114	-17.33	Peak	1.3	180	
2425	92.23	H	94	-1.77	Avg	1.3	180	
4850	52.54	H	74	-21.46	Peak	1.5	40	
4850	46.7	H	54	-7.3	Avg	1.5	40	
7275	56.73	H	74	-17.27	Peak	1.8	40	
7275	45.09	H	54	-8.91	Avg	1.8	40	
9700								**No Emission**
9700								**Detected**
12125	59.3	H	74	-14.7	Peak	1.8	130	
12125	46.21	H	54	-7.79	Avg	1.8	130	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	95.71	V	114	-18.29	Peak	1.2	30	
2425	91.39	V	94	-2.61	Avg	1.2	30	
4850	53.42	V	74	-20.58	Peak	1.2	140	
4850	50.57	V	54	-3.43	Avg	1.2	140	
7275	57.03	V	74	-16.97	Peak	1.5	0	
7275	44.83	V	54	-9.17	Avg	1.5	0	
9700								**No Emission**
9700								**Detected**
12125	60.12	V	74	-13.88	Peak	1.3	260	
12125	46.16	V	54	-7.84	Avg	1.3	260	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	89.31	H	114	-24.69	Peak	1.2	160	
2425	84.8	H	94	-9.2	Avg	1.2	160	
4850	54.36	H	74	-19.64	Peak	1.5	310	
4850	49.95	H	54	-4.05	Avg	1.5	310	
7275	55.73	H	74	-18.27	Peak	1.2	60	
7275	42.96	H	54	-11.04	Avg	1.2	60	
9700								**No Emission**
9700								**Detected**
12125	59.58	H	74	-14.42	Peak	1.2	90	
12125	46.8	H	54	-7.2	Avg	1.2	90	
14550								**No Emission**
14550								**Detected**
16975								**No Emission**
16975								**Detected**
19400								**No Emission**
19400								**Detected**
21825								**No Emission**
21825								**Detected**
24250								**No Emission**
24250								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	91.29	V	114	-22.71	Peak	2	180	
2450	86.74	V	94	-7.26	Avg	2	180	
4900	52.22	V	74	-21.78	Peak	1.7	180	
4900	49.05	V	54	-4.95	Avg	1.7	180	
7350	54.38	V	74	-19.62	Peak	1.3	190	
7350	42.1	V	54	-11.9	Avg	1.3	190	
9800								**No Emission**
9800								**Detected**
12250								**No Emission**
12250								**Detected**
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	96.64	H	114	-17.36	Peak	2	375	
2450	91.98	H	94	-2.02	Avg	2	375	
4900	53.79	H	74	-20.21	Peak	1.8	100	
4900	49.17	H	54	-4.83	Avg	1.8	100	
7350	56.88	H	74	-17.12	Peak	2	0	
7350	45.56	H	54	-8.44	Avg	2	0	
9800								**No Emission**
9800								**Detected**
12250	61.24	H	74	-12.76	Peak	1.2	290	
12250	47.4	H	54	-6.6	Avg	1.2	290	
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	96.98	V	114	-17.02	Peak	1.5	140	
2450	92.47	V	94	-1.53	Avg	1.5	140	
4900	54.05	V	74	-19.95	Peak	1.8	50	
4900	47.75	V	54	-6.25	Avg	1.8	50	
7350	56.81	V	74	-17.19	Peak	2	50	
7350	43.48	V	54	-10.52	Avg	2	50	
9800	58.22	V	74	-15.78	Peak	1.8	70	
9800	44.71	V	54	-9.29	Avg	1.8	70	
12250	61.07	V	74	-12.93	Peak	1.8	70	
12250	47.75	V	54	-6.25	Avg	1.8	70	
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	95.98	H	114	-18.02	Peak	1.3	180	
2450	91.63	H	94	-2.37	Avg	1.3	180	
4900	52.21	H	74	-21.79	Peak	2	340	
4900	47.16	H	54	-6.84	Avg	2	340	
7350	55.24	H	74	-18.76	Peak	1.5	180	
7350	43.63	H	54	-10.37	Avg	1.5	180	
9800								**No Emission**
9800								**Detected**
12250	60.8	H	74	-13.2	Peak	1.7	40	
12250	46.03	H	54	-7.97	Avg	1.7	40	
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	97.03	V	114	-16.97	Peak	1.2	350	
2450	92.59	V	94	-1.41	Avg	1.2	350	
4900	53.65	V	74	-20.35	Peak	1.2	140	
4900	50.53	V	54	-3.47	Avg	1.2	140	
7350	56.63	V	74	-17.37	Peak	1.3	350	
7350	44.36	V	54	-9.64	Avg	1.3	350	
9800								
9800								
12250								**No Emission**
12250								**Detected**
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	91.66	H	114	-22.34	Peak	1.2	200	
2450	87.19	H	94	-6.81	Avg	1.2	200	
4900	52.72	H	74	-21.28	Peak	1.8	90	
4900	46.07	H	54	-7.93	Avg	1.8	90	
7350	55.69	H	74	-18.31	Peak	1.3	220	
7350	43.72	H	54	-10.28	Avg	1.3	220	
9800								**No Emission**
9800								**Detected**
12250	59.65	H	74	-14.35	Peak	1.2	90	
12250	46.44	H	54	-7.56	Avg	1.2	90	
14700								**No Emission**
14700								**Detected**
17150								**No Emission**
17150								**Detected**
19600								**No Emission**
19600								**Detected**
22050								**No Emission**
22050								**Detected**
24500								**No Emission**
24500								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	91.97	V	114	-22.03	Peak	1.5	190	
2475	87.45	V	94	-6.55	Avg	1.5	190	
4950	53.42	V	74	-20.58	Peak	1.5	180	
4950	50.05	V	54	-3.95	Avg	1.5	180	
7425	53.91	V	74	-20.09	Peak	1.3	260	
7425	41.88	V	54	-12.12	Avg	1.3	260	
9900								**No Emission**
9900								**Detected**
12375								**No Emission**
12375								**Detected**
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	97.62	H	114	-16.38	Peak	1.3	330	
2475	93.09	H	94	-0.91	Avg	1.3	330	
4950	54	H	74	-20	Peak	2.1	110	
4950	48.59	H	54	-5.41	Avg	2.1	110	
7425	56.46	H	74	-17.54	Peak	2	0	
7425	45.04	H	54	-8.96	Avg	2	0	
9900								**No Emission**
9900								**Detected**
12375	59.71	H	74	-14.29	Peak	1.5	290	
12375	46.85	H	54	-7.15	Avg	1.5	290	
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	96.85	V	114	-17.15	Peak	1.2	130	
2475	92.49	V	94	-1.51	Avg	1.2	130	
4950	55.26	V	74	-18.74	Peak	1.8	330	
4950	52.06	V	54	-1.94	Avg	1.8	330	
7425	53.46	V	74	-20.54	Peak	1.5	13	
7425	41	V	54	-13	Avg	1.5	130	
9900								**No Emission**
9900								**Detected**
12375								**No Emission**
12375								**Detected**
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	96.02	H	114	-17.98	Peak	1.5	180	
2475	91.72	H	94	-2.28	Avg	1.5	180	
4950	53.68	H	74	-20.32	Peak	2.5	30	
4950	47.48	H	54	-6.52	Avg	2.5	30	
7425	57.3	H	74	-16.7	Peak	1.4	30	
7425	44.97	H	54	-9.03	Avg	1.4	30	
9900								**No Emission**
9900								**Detected**
12375								**No Emission**
12375								**Detected**
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	95.28	V	114	-18.72	Peak	1.5	180	
2475	90.81	V	94	-3.19	Avg	1.5	180	
4950	54.12	V	74	-19.88	Peak	1.2	180	
4950	50.41	V	54	-3.59	Avg	1.2	180	
7425	55.91	V	74	-18.09	Peak	1.3	40	
7425	44.21	V	54	-9.79	Avg	1.3	40	
9900								
9900								
12375								**No Emission**
12375								**Detected**
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Dates: 12/20/2011 - 12/21/2011
Lab: B
Tested By: David Tran

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	91.29	H	114	-22.71	Peak	1.1	110	
2475	86.92	H	94	-7.08	Avg	1.1	110	
4950	54.86	H	74	-19.14	Peak	1.8	160	
4950	50	H	54	-4	Avg	1.8	160	
7425	54.93	H	74	-19.07	Peak	1.8	300	
7425	43.3	H	54	-10.7	Avg	1.8	300	
9900								**No Emission**
9900								**Detected**
12375	60	H	74	-14	Peak	1.5	190	
12375	46.39	H	54	-7.61	Avg	1.5	190	
14850								**No Emission**
14850								**Detected**
17325								**No Emission**
17325								**Detected**
19800								**No Emission**
19800								**Detected**
22275								**No Emission**
22275								**Detected**
24750								**No Emission**
24750								**Detected**

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Date: 12/22/2011
Lab: B & D
Tested By: David Tran

Radiated Emissions 10 kHz to 25 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Comments
						No Emissions Detected
						from 10 kHz to 25 GHz
						for the Non-Harmonic
						Emissions from the
						EUT for both the Vertical and
						Horizontal Polarizations.

BAND EDGES

DATA SHEETS

FCC 15.249
Universal Electronics, Inc.
UEI Pulse RF4CE HD DTA 2011
Model: URC-2068BC0-XXXX-XXXX-R

Date: 12/21/2011
Lab: B
Tested By: David Tran

Band Edge – Vertical Polarization

Axis of EUT	Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
Y-AXIS	2425	97.43	V	114	-16.57	Peak	1	130	**Fundamental of**
Y-AXIS	2425	93.02	V	94	-0.98	Avg	1	130	**Low Channel @ 3 Meters**
	2400	48.9	V	74	-25.1	Peak	1	130	**Band Edge of**
	2400	38.07	V	54	-15.93	Avg	1	130	**Low Channel @ 3 Meters**
Y-AXIS	2475	96.85	V	114	-17.15	Peak	1.2	130	**Fundamental of**
Y-AXIS	2475	92.49	V	94	-1.51	Avg	1.2	130	**High Channel @ 3 Meters**
	2483.5	49.75	V	74	-24.25	Peak	1.2	130	**Band Edge of**
	2483.5	37.56	V	54	-16.44	Avg	1.2	130	**High Channel @ 3 Meters**

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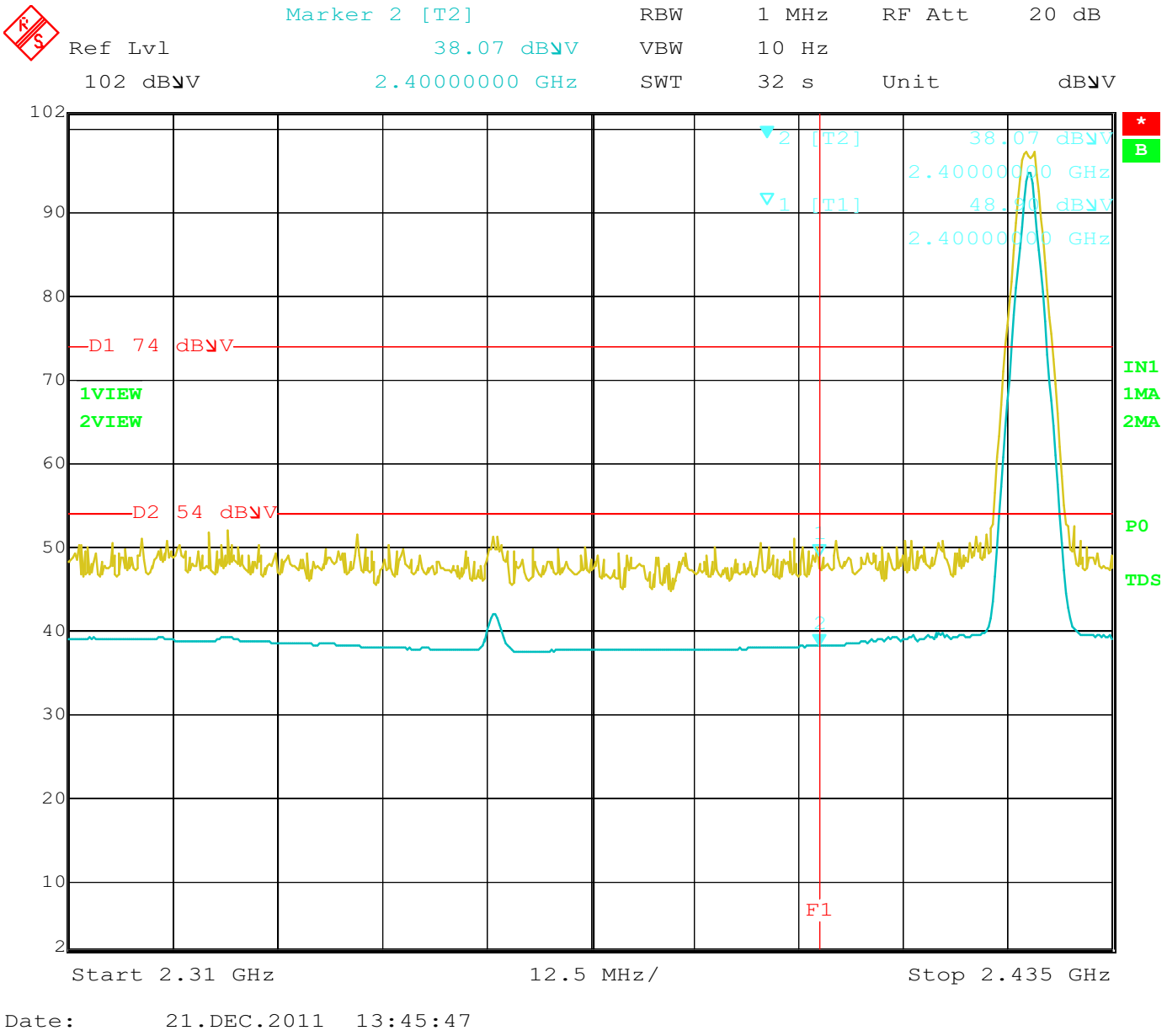
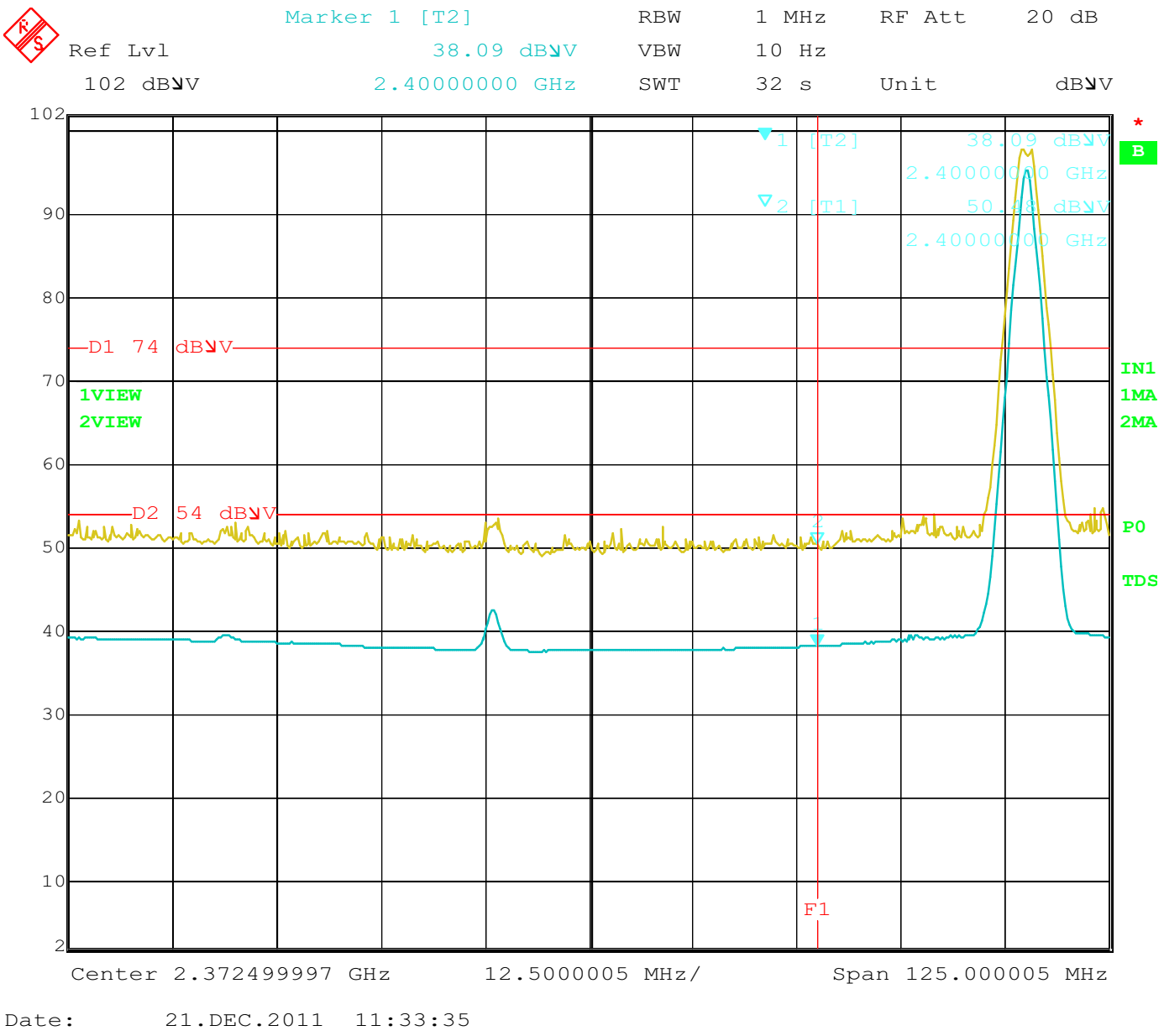
Band Edge – Horizontal Polarization

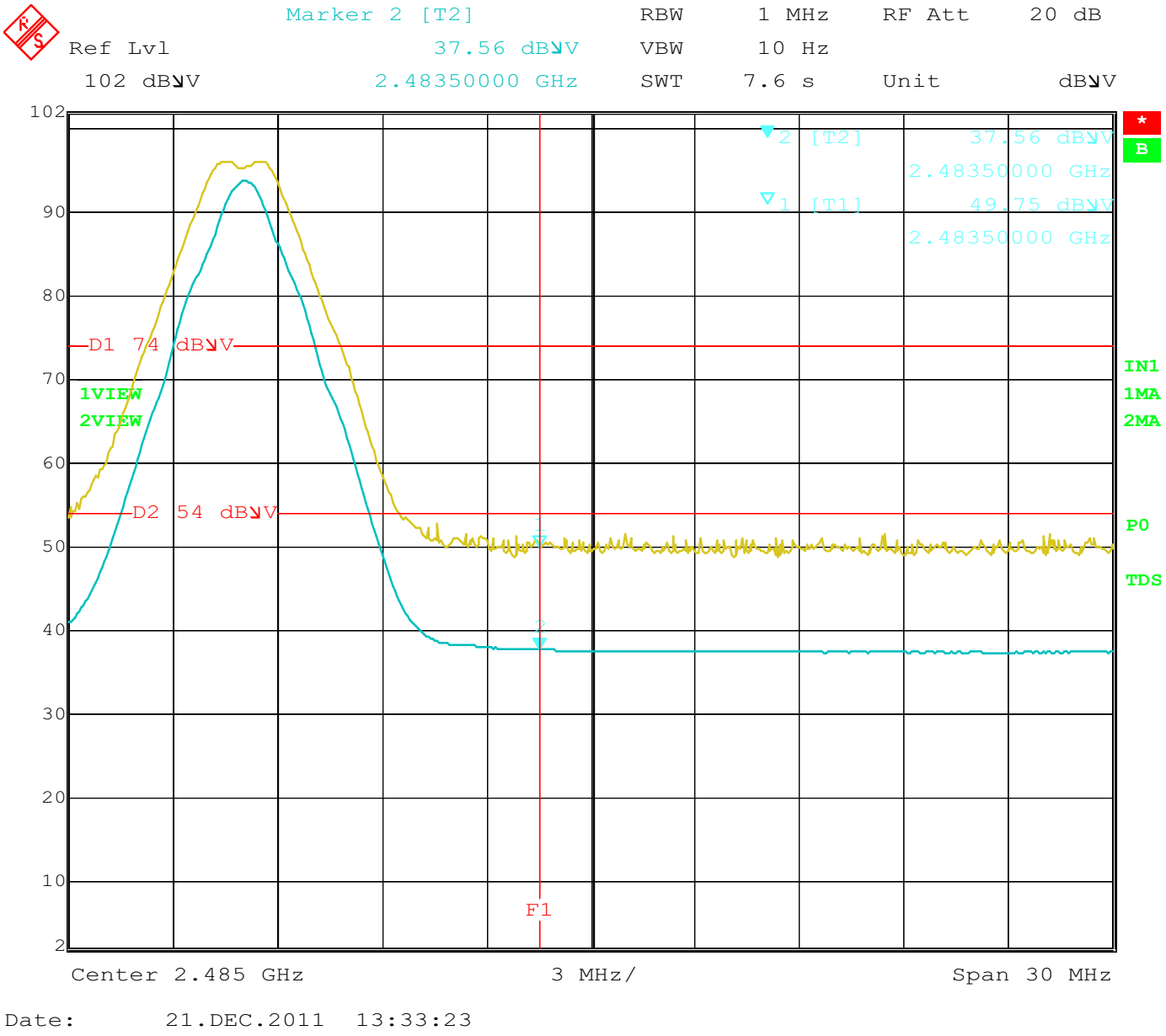
Axis of EUT	Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
X-AXIS	2425	97.61	H	114	-16.39	Peak	1.2	0	**Fundamental of**
X-AXIS	2425	93.21	H	94	-0.79	Avg	1.2	0	**Low Channel @ 3 Meters**
	2400	50.48	H	74	-23.52	Peak	1.2	0	**Band Edge of**
	2400	38.09	H	54	-15.91	Avg	1.2	0	**Low Channel @ 3 Meters**
X-AXIS	2475	97.62	H	114	-16.38	Peak	1.3	330	**Fundamental of**
X-AXIS	2475	93.09	H	94	-0.91	Avg	1.3	330	**High Channel @ 3 Meters**
	2483.5	49.61	H	74	-24.39	Peak	1.2	330	**Band Edge of**
	2483.5	37.7	H	54	-16.3	Avg	1.2	330	**High Channel @ 3 Meters**



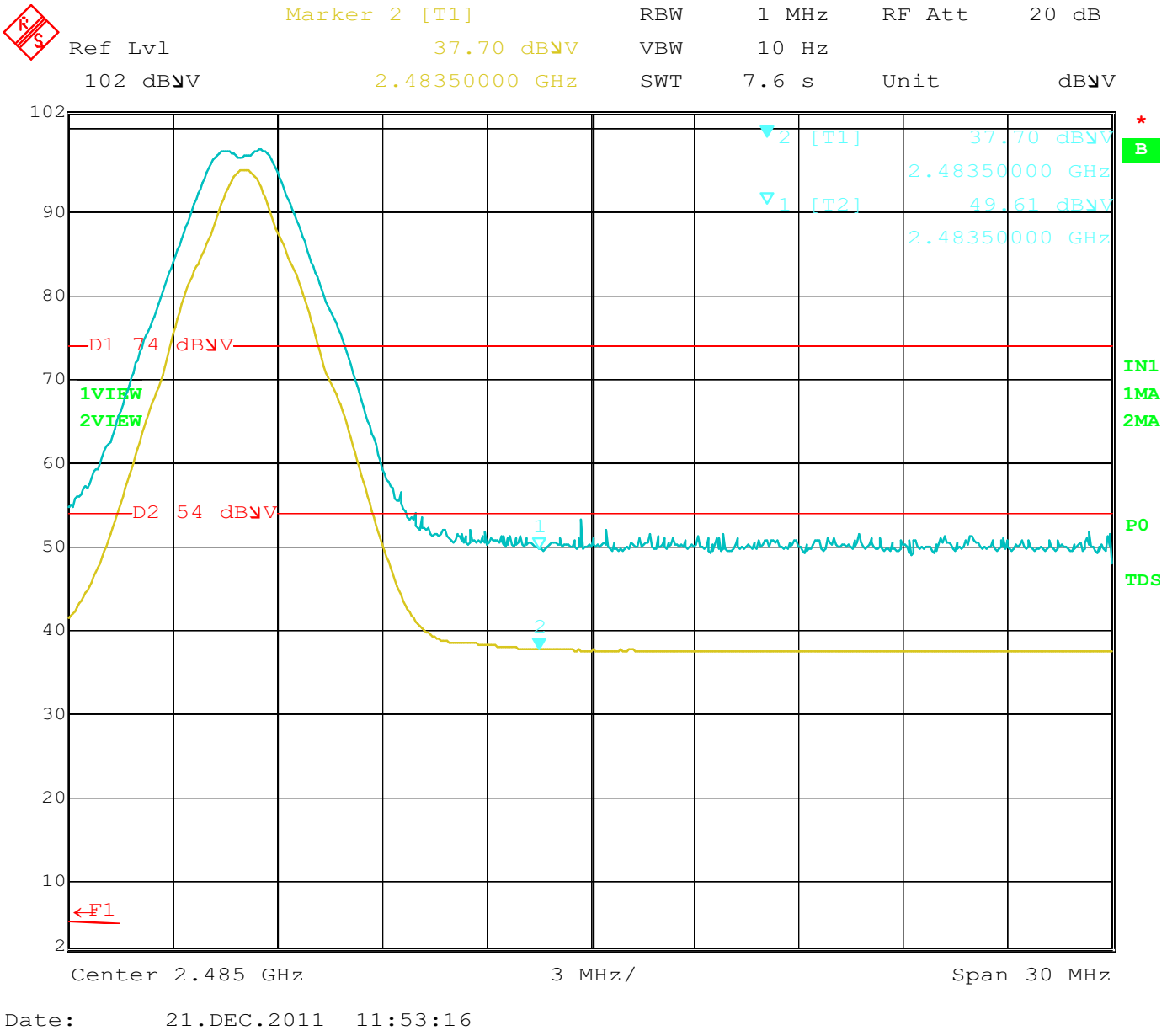
Band Edge – Low Channel – Vertical Polarization – Y-Axis Worst Case



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



Band Edge – High Channel – Vertical Polarization – Y-Axis Worst Case



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