

**FCC PART 15 SUBPART B and C
TEST REPORT***for***ECHOSTAR SEMTECH SX1241 REMOTE 2011****REMOTE MODEL: URC-2010BC0-R,
ECHOSTAR MODEL: 21.1 IR/UHF PRO**

Prepared for

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DATE: APRIL 26, 2011

	REPORT BODY	APPENDICES					TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
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LIST OF FIGURES

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

GENERAL REPORT SUMMARY

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

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

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

Device Tested: EchoStar Semtech SX1241 Remote 2011
Remote Model: URC-2010BC0-R
EchoStar Model: 21.1 IR/UHF PRO

Product Description: See Expository Statement

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

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

Applicant: Universal Electronics, Inc.
6101 Gateway Drive
Cypress, California 90630-4841

Test Date(s): November 15, 16, and 17, 2010

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

Test Procedure: ANSI C63.4

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz to 30 MHz	The EUT does not directly or indirectly connect to the AC mains, thus this test was not performed.
2	Radiated RF Emissions 10 kHz – 3950 MHz (Transmitter Portion)	Complies with the limits of CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.231. Highest Reading in Relation to Spec Limit: 53.14 dBuV/m @ 3883 MHz (*U= 5.34 dB)
3	Radiated RF Emissions 10 kHz – 3950 MHz (Digital Portion)	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B.

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

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the EchoStar Semtech SX1241 Remote 2011, Remote Model: URC-2010BC0-R, EchoStar Model: 21.1 IR/UHF PRO. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.231 for the transmitter portion.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

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

2.2 Traceability Statement

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

2.3 Cognizant Personnel

Universal Electronics, Inc.

Jesse Mendez Senior 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 prior to the date of testing.

2.5 Disposition of the Test Sample

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

2.6 Abbreviations and Acronyms

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

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
N/A	Not Applicable
Ltd.	Limited
Inc.	Incorporated
IR	Infrared

3. APPLICABLE DOCUMENTS

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

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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – EMI

The EchoStar Semtech SX1241 Remote 2011, Remote Model: URC-2010BC0-R, EchoStar Model: 21.1 IR/UHF PRO (EUT) was tested as a stand alone unit and tested in three orthogonal axis. The EUT was continuously transmitting.

The EUT's antenna is a PCB trace.

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

4.1.1 Cable Construction and Termination

There are no external cables connected to the EUT.



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

EQUIPMENT	MANUFACTURER	REMOTE MODEL	ECHOSTAR MODEL	FCC ID
ECHOSTAR SEMTECH SX1241 REMOTE 2011 (EUT)	GEMSTAR TECHNOLOGY (YANGZHOU) COMPANY LIMITED	URC-2010BC0-R	21.1 IR/UHF PRO	MG3-2010

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100218	April 9, 2009	April 9, 2011
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	June 10, 2010	June 10, 2011
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A14530	June 10, 2010	June 10, 2011
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 10, 2010	June 10, 2011
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com Power	AB-900	15250	February 16, 2010	February 16, 2011
Log Periodic Antenna	Com Power	AL-100	16060	June 9, 2010	June 9, 2011
Preamplifier	Com-Power	PA-102	1017	January 6, 2010	Jan. 6, 2011
Loop Antenna	Com-Power	AL-130	17089	September 29, 2008	Sept. 29, 2011
Horn Antenna	Com-Power	AH-118	071175	March 18, 2010	March 18, 2012
Microwave Preamplifier	Com-Power	PA-122	181921	March 10, 2010	March 10, 2011
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

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

6.2 EUT Mounting, Bonding and Grounding

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

The EUT was not grounded.

6.3 Facility Environmental Characteristics

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

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

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

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

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

Test Results:

The EUT does not directly or indirectly connect to the AC mains, thus this test was not performed.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer and EMI Receiver were used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz and the Com Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The spectrum analyzer and EMI Receiver were used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

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

The readings were averaged by a "duty cycle correction factor," derived from $20 \log$ (dwell time / one pulse train with blanking interval).

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 3.95 GHz	1 MHz	Horn Antenna

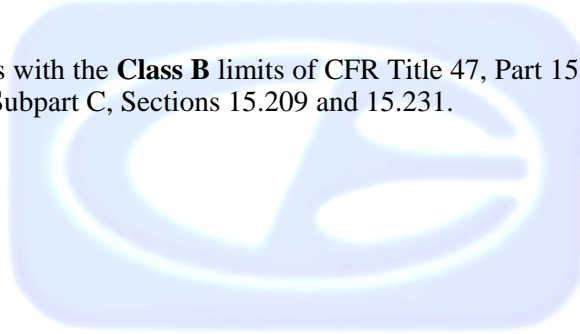
The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor.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

Radiated Emissions (Spurious and Harmonics) Test (continued)

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

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.231.



7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS – Battery Powered
EchoStar Semtech SX1241 Remote 2011, Remote Model: URC-2010BC0-R,
EchoStar Model: 21.1 IR/UHF PRO

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
3883 (Horiz)	53.14 (Avg)	54.00	-0.86
3943 (Horiz)	53.06 (Avg)	54.00	-0.94
369.5 (Horiz)	77.23 (Avg)	78.39	-1.16
2760.1 (Vertical)	52.82 (Avg)	54.00	-1.18
3695 (Horiz)	52.74 (Avg)	54.00	-1.26
2365.8 (Vertical)	52.69 (Avg)	54.00	-1.31

Notes:

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

7.2 Bandwidth of the Fundamental

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

Test Results:

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



8. CONCLUSIONS

The EchoStar Semtech SX1241 Remote 2011, Remote Model: URC-2010BC0-R, EchoStar Model: 21.1 IR/UHF PRO (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 15.231 for the transmitter portion.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS

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

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

NVLAP listing links

[Agoura Division](#) / [Brea Division](#) / [Silverado/Lake Forest Division](#)

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

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

ANSI listing [CETCB](#)

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

US/EU MRA list [NIST MRA site](#)

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

APEC MRA list [NIST MRA site](#)

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

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

FCC Listing, from FCC OET site

[FCC test lab search](https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>

Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 and/or FCC **Class B** specifications.

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

No modification were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

EchoStar Semtech SX1241 Remote 2011
Remote Model: URC-2010BC0-R
EchoStar Model: 21.1 IR/UHF PRO

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

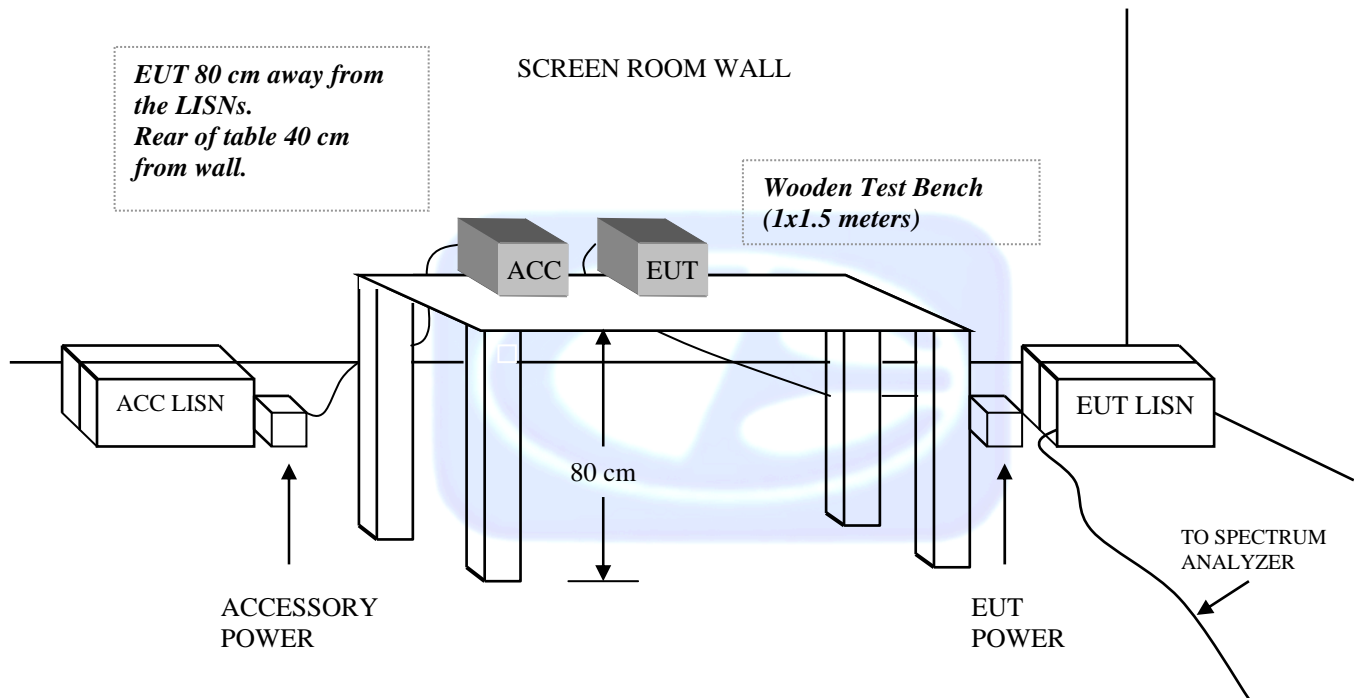
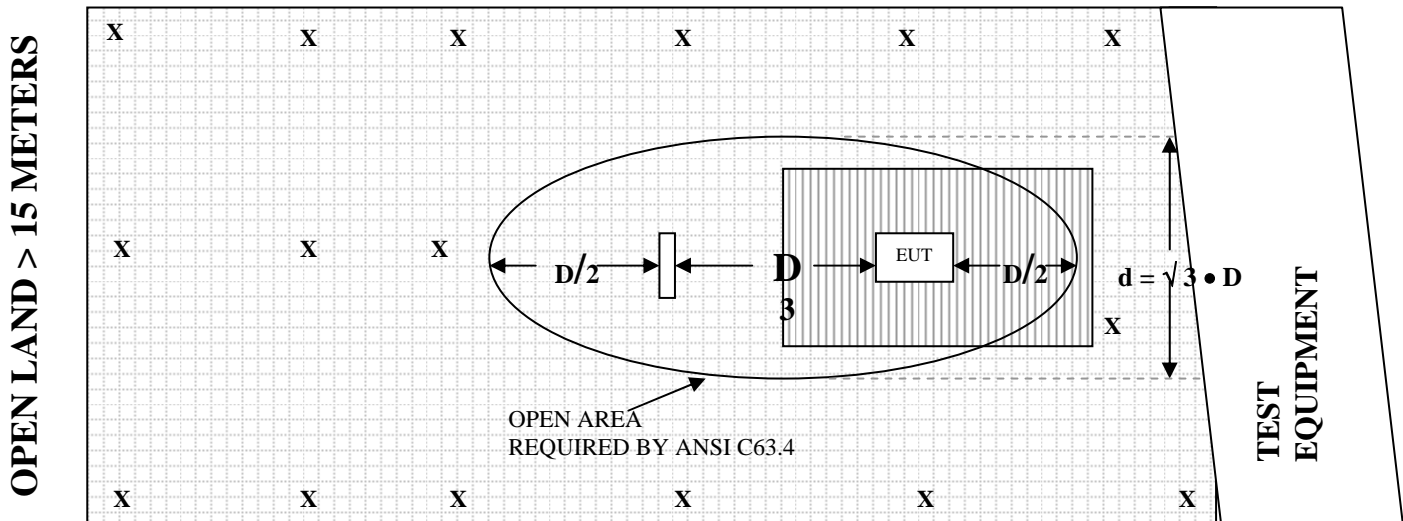


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

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

COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15250

CALIBRATION DATE: FEBRUARY 16, 2010

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	13.5	100	11.1
35	10.4	120	13.1
40	10.3	140	12.2
45	9.8	160	13.6
50	10.6	180	15.9
60	9.5	200	16.4
70	8.4	250	15.1
80	5.5	275	17.7
90	7.3	300	19.5

COM-POWER AL-100**LOG PERIODIC ANTENNA**

S/N: 16060

CALIBRATION DATE: JUNE 9, 2010

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	15.5	700	20.4
400	17.9	800	21.5
500	18.5	900	21.7
600	20.3	1000	23.0

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: MARCH 18, 2010

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

COM-POWER PA-102**PREAMPLIFIER**

S/N: 1017

CALIBRATION DATE: JANUARY 6, 2010

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
20	38.0	300	38.2
30	38.3	350	38.1
40	38.4	400	38.5
50	38.2	450	38.0
60	38.2	500	37.9
70	38.3	550	38.2
80	38.1	600	38.2
90	38.2	650	37.7
100	38.3	700	38.3
125	38.2	750	38.3
150	38.3	800	37.4
175	38.3	850	37.5
200	38.1	900	37.6
225	38.2	950	37.4
250	38.3	1000	37.3
275	38.2		

COM-POWER PA-122**PREAMPLIFIER****S/N: 181921****CALIBRATION DATE: MARCH 10, 2010**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	35.53	10.0	34.78
1.5	34.92	10.5	34.36
2.0	34.63	11.0	33.14
2.5	34.42	11.5	34.42
3.0	34.40	12.0	34.24
3.5	34.36	12.5	34.95
4.0	34.11	13.0	34.62
4.5	33.61	13.5	35.24
5.0	33.83	14.0	35.40
5.5	34.53	14.5	36.66
6.0	35.09	15.0	35.98
6.5	35.58	15.5	35.94
7.0	36.50	16.0	35.80
7.5	34.83	16.5	34.98
8.0	34.08	17.0	35.00
8.5	33.57	17.5	34.25
9.0	34.68	18.0	33.51
9.5	35.84	18.5	32.88

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

S/N: 17089

CALIBRATION DATE: SEPTEMBER 29, 2008

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.57	9.93
0.01	-42.06	9.44
0.02	-42.43	9.07
0.05	-42.50	9.00
0.07	-42.10	9.40
0.1	-42.03	9.47
0.2	-44.50	7.00
0.3	-41.93	9.57
0.5	-41.90	9.60
0.7	-41.73	9.77
1	-41.23	10.27
2	-40.90	10.60
3	-41.20	10.30
4	-41.30	10.20
5	-40.70	10.80
10	-41.10	10.40
15	-42.17	9.33
20	-42.00	9.50
25	-42.20	9.30
30	-43.10	8.40



FRONT VIEW

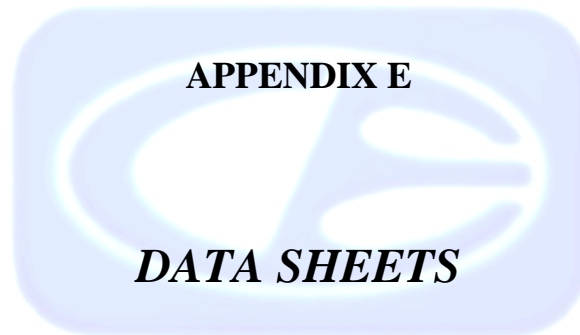
UNIVERSAL ELECTRONICS, INC.
ECHOSTAR SEMTECH SX1241 REMOTE 2011
REMOTE MODEL: URC-2010BC0-R
ECHOSTAR MODEL: 21.1 IR/UHF PRO
FCC SUBPART B AND C – RADIATED EMISSIONS

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

**REAR VIEW**

UNIVERSAL ELECTRONICS, INC.
ECHOSTAR SEMTECH SX1241 REMOTE 2011
REMOTE MODEL: URC-2010BC0-R
ECHOSTAR MODEL: 21.1 IR/UHF PRO
FCC SUBPART B AND C – RADIATED EMISSIONS

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



FCC 15.231

 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	77.61	V	98.39	-20.78	Peak	1.25	135	
369.5	68.76	V	78.39	-9.63	Peak	1.25	135	
739	50.19	V	78.39	-28.2	Peak	1.25	145	
739	41.34	V	58.39	-17.05	Avg	1.25	145	
1108.5	40.39	V	74	-33.61	Peak	1.25	135	
1108.5	31.54	V	54	-22.46	Avg	1.25	135	
1478	52.17	V	74	-21.83	Peak	1.25	155	
1478	43.32	V	54	-10.68	Avg	1.25	155	
1847.5	56.03	V	78.39	-22.36	Peak	1.15	125	
1847.5	47.18	V	58.39	-11.21	Avg	1.15	125	
2217	46.78	V	74	-27.22	Peak	1.25	135	
2217	37.93	V	54	-16.07	Avg	1.25	135	
2586.5	59.04	V	78.39	-19.35	Peak	1.25	125	
2586.5	50.19	V	58.39	-8.2	Avg	1.25	125	
2956	53.79	V	78.39	-24.6	Peak	1.35	155	
2956	44.94	V	58.39	-13.45	Avg	1.35	155	
3325.5	56.45	V	78.39	-21.94	Peak	1.25	165	
3325.5	47.6	V	58.39	-10.79	Avg	1.25	165	
3695	54.29	V	74	-19.71	Peak	1.35	175	
3695	45.44	V	54	-8.56	Avg	1.35	175	

FCC 15.231

 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	86.08	H	98.39	-12.31	Peak	1	90	
369.5	77.23	H	78.39	-1.16	Peak	1	90	
739	54.21	H	78.39	-24.18	Peak	1.25	135	
739	45.36	H	58.39	-13.03	Avg	1.25	135	
1108.5	51.61	H	74	-22.39	Peak	1.25	135	
1108.5	42.76	H	54	-11.24	Avg	1.25	135	
1478	51.43	H	74	-22.57	Peak	1.35	165	
1478	42.58	H	54	-11.42	Avg	1.35	165	
1847.5	63.44	H	78.39	-14.95	Peak	1.45	175	
1847.5	54.59	H	58.39	-3.8	Avg	1.45	175	
2217	47.01	H	74	-26.99	Peak	1.25	135	
2217	38.16	H	54	-15.84	Avg	1.25	135	
2586.5	60.65	H	78.39	-17.74	Peak	1.25	115	
2586.5	51.8	H	58.39	-6.59	Avg	1.25	115	
2956	50.77	H	78.39	-27.62	Peak	1.25	155	
2956	41.92	H	58.39	-16.47	Avg	1.25	155	
3325.5	58.31	H	78.39	-20.08	Peak	1.35	175	
3325.5	49.46	H	58.39	-8.93	Avg	1.35	175	
3695	54.61	H	74	-19.39	Peak	1.25	135	
3695	45.76	H	54	-8.24	Avg	1.25	135	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	80.91	V	98.39	-17.48	Peak	1.25	180	
369.5	72.06	V	78.39	-6.33	Peak	1.25	180	
739	51.01	V	78.39	-27.38	Peak	1.25	135	
739	42.16	V	58.39	-16.23	Avg	1.25	135	
1108.5	48.23	V	74	-25.77	Peak	1.35	145	
1108.5	39.38	V	54	-14.62	Avg	1.35	145	
1478	56.38	V	74	-17.62	Peak	1.25	135	
1478	47.53	V	54	-6.47	Avg	1.25	135	
1847.5	60.51	V	78.39	-17.88	Peak	1.25	155	
1847.5	51.66	V	58.39	-6.73	Avg	1.25	155	
2217	58.27	V	74	-15.73	Peak	1.25	135	
2217	49.42	V	54	-4.58	Avg	1.25	135	
2586.5	65.45	V	78.39	-12.94	Peak	1.25	135	
2586.5	56.6	V	58.39	-1.79	Avg	1.25	135	
2956	57.94	V	78.39	-20.45	Peak	1.25	225	
2956	49.09	V	58.39	-9.3	Avg	1.25	225	
3325.5	60.44	V	78.39	-17.95	Peak	1.25	135	
3325.5	51.59	V	58.39	-6.8	Avg	1.25	135	
3695	58.77	V	74	-15.23	Peak	1.25	135	
3695	49.92	V	54	-4.08	Avg	1.25	135	

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 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	80.03	H	98.39	-18.36	Peak	1.25	155	
369.5	71.18	H	78.39	-7.21	Peak	1.25	155	
739	49.31	H	78.39	-29.08	Peak	1.35	165	
739	40.46	H	58.39	-17.93	Avg	1.35	165	
1108.5	50.21	H	74	-23.79	Peak	1.25	175	
1108.5	41.36	H	54	-12.64	Avg	1.25	175	
1478	52.24	H	74	-21.76	Peak	1.35	185	
1478	43.39	H	54	-10.61	Avg	1.35	185	
1847.5	63.61	H	78.39	-14.78	Peak	1.25	175	
1847.5	54.76	H	58.39	-3.63	Avg	1.25	175	
2217	59.71	H	74	-14.29	Peak	1.25	185	
2217	50.86	H	54	-3.14	Avg	1.25	185	
2586.5	62.25	H	78.39	-16.14	Peak	1.25	180	
2586.5	53.4	H	58.39	-4.99	Avg	1.25	180	
2956	58.45	H	78.39	-19.94	Peak	1.35	185	
2956	49.6	H	58.39	-8.79	Avg	1.35	185	
3325.5	62.57	H	78.39	-15.82	Peak	1.25	195	
3325.5	53.72	H	58.39	-4.67	Avg	1.25	195	
3695	61.59	H	74	-12.41	Peak	1	180	
3695	52.74	H	54	-1.26	Avg	1	180	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	75.51	V	98.39	-22.88	Peak	1.25	125	
369.5	66.66	V	78.39	-11.73	Peak	1.25	125	
739	46.47	V	78.39	-31.92	Peak	1.25	135	
739	37.62	V	58.39	-20.77	Avg	1.25	135	
1108.5	44.87	V	74	-29.13	Peak	1.35	145	
1108.5	36.02	V	54	-17.98	Avg	1.35	145	
1478	49.59	V	74	-24.41	Peak	1.25	165	
1478	40.74	V	54	-13.26	Avg	1.25	165	
1847.5	49.51	V	78.39	-28.88	Peak	1.25	145	
1847.5	40.66	V	58.39	-17.73	Avg	1.25	145	
2217	45.23	V	74	-28.77	Peak	1.25	135	
2217	36.38	V	54	-17.62	Avg	1.25	135	
2586.5	58.35	V	78.39	-20.04	Peak	1.25	165	
2586.5	49.5	V	58.39	-8.89	Avg	1.25	165	
2956	48.91	V	78.39	-29.48	Peak	1.25	135	
2956	40.06	V	58.39	-18.33	Avg	1.25	135	
3325.5	56.74	V	78.39	-21.65	Peak	1.25	135	
3325.5	47.89	V	58.39	-10.5	Avg	1.25	135	
3695	54.29	V	74	-19.71	Peak	1.25	135	
3695	45.44	V	54	-8.56	Avg	1.25	135	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/16/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
369.5	82.69	H	98.39	-15.7	Peak	1.25	225	
369.5	73.84	H	78.39	-4.55	Peak	1.25	225	
739	57.12	H	78.39	-21.27	Peak	1.35	135	
739	48.27	H	58.39	-10.12	Avg	1.35	235	
1108.5	53.02	H	74	-20.98	Peak	1.25	135	
1108.5	44.17	H	54	-9.83	Avg	1.25	135	
1478	55.27	H	74	-18.73	Peak	1.35	165	
1478	46.42	H	54	-7.58	Avg	1.35	165	
1847.5	60.63	H	78.39	-17.76	Peak	1.25	135	
1847.5	51.78	H	58.39	-6.61	Avg	1.25	135	
2217	57.01	H	74	-16.99	Peak	2	135	
2217	48.16	H	54	-5.84	Avg	2	135	
2586.5	62.82	H	78.39	-15.57	Peak	1.25	135	
2586.5	53.97	H	58.39	-4.42	Avg	1.25	135	
2956	51.74	H	78.39	-26.65	Peak	1.25	145	
2956	42.89	H	58.39	-15.5	Avg	1.25	145	
3325.5	53.51	H	78.39	-24.88	Peak	1.35	155	
3325.5	44.66	H	58.39	-13.73	Avg	1.35	155	
3695	58.25	H	74	-15.75	Peak	1.25	175	
3695	49.4	H	54	-4.6	Avg	1.25	175	

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 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	75.27	V	98.64	-23.37	Peak	2	90	
375.28	66.37	V	78.64	-12.27	Peak	2	90	
750.56	49.73	V	78.64	-28.91	Peak	1.25	135	
750.56	40.83	V	58.64	-17.81	Avg	1.25	135	
1125.84	44.52	V	74	-29.48	Peak	1.25	135	
1125.84	35.62	V	54	-18.38	Avg	1.25	135	
1501.12	51.69	V	74	-22.31	Peak	1.35	145	
1501.12	42.79	V	54	-11.21	Avg	1.35	145	
1876.4	52.16	V	78.64	-26.48	Peak	2.25	225	
1876.4	43.26	V	58.64	-15.38	Avg	2.25	225	
2251.68	47.45	V	74	-26.55	Peak	1.25	135	
2251.68	38.55	V	54	-15.45	Avg	1.25	135	
2626.96	52.68	V	78.64	-25.96	Peak	1.35	155	
2626.96	43.78	V	58.64	-14.86	Avg	1.35	155	
3002.24	48.31	V	78.64	-30.33	Peak	1.25	165	
3002.24	39.41	V	58.64	-19.23	Avg	1.25	165	
3377.52	47.53	V	78.64	-31.11	Peak	1.35	175	
3377.52	38.63	V	58.64	-20.01	Avg	1.35	175	
3752.8	51.08	V	74	-22.92	Peak	1.25	185	
3752.8	42.18	V	54	-11.82	Avg	1.25	185	

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis

Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	84.91	H	98.64	-13.73	Peak	1.35	135	
375.28	76.01	H	78.64	-2.63	Peak	1.35	135	
750.56	54.15	H	78.64	-24.49	Peak	1.25	165	
750.56	45.25	H	58.64	-13.39	Avg	1.25	165	
1125.84	54.51	H	74	-19.49	Peak	1.25	175	
1125.84	45.61	H	54	-8.39	Avg	1.25	175	
1501.12	56.31	H	74	-17.69	Peak	1.35	185	
1501.12	47.41	H	54	-6.59	Avg	1.35	185	
1876.4	50.85	H	78.64	-27.79	Peak	1.25	195	
1876.4	41.95	H	58.64	-16.69	Avg	1.25	195	
2251.68	46.53	H	74	-27.47	Peak	1.35	205	
2251.68	37.63	H	54	-16.37	Avg	1.35	205	
2626.96	63.78	H	78.64	-14.86	Peak	1.25	135	
2626.96	54.88	H	58.64	-3.76	Avg	1.25	135	
3002.24	49.32	H	78.64	-29.32	Peak	1.25	165	
3002.24	40.42	H	58.64	-18.22	Avg	1.25	165	
3377.52	52.52	H	78.64	-26.12	Peak	1.35	175	
3377.52	43.62	H	58.64	-15.02	Avg	1.35	175	
3752.8	53.78	H	74	-20.22	Peak	1.45	185	
3752.8	44.88	H	54	-9.12	Avg	1.45	185	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis

Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	80.11	V	98.64	-18.53	Peak	1.25	135	
375.28	71.21	V	78.64	-7.43	Peak	1.25	135	
750.56	49.61	V	78.64	-29.03	Peak	1.35	155	
750.56	40.71	V	58.64	-17.93	Avg	1.35	155	
1125.84	44.99	V	74	-29.01	Peak	1.25	175	
1125.84	36.09	V	54	-17.91	Avg	1.25	175	
1501.12	54.52	V	74	-19.48	Peak	1.35	185	
1501.12	45.62	V	54	-8.38	Avg	1.35	185	
1876.4	56.04	V	78.64	-22.6	Peak	1.25	195	
1876.4	47.14	V	58.64	-11.5	Avg	1.25	195	
2251.68	48.24	V	74	-25.76	Peak	1.35	205	
2251.68	39.34	V	54	-14.66	Avg	1.35	205	
2626.96	60.63	V	78.64	-18.01	Peak	1.25	155	
2626.96	51.73	V	58.64	-6.91	Avg	1.25	155	
3002.24	49.39	V	78.64	-29.25	Peak	1.35	165	
3002.24	40.49	V	58.64	-18.15	Avg	1.35	165	
3377.52	56.46	V	78.64	-22.18	Peak	1.25	175	
3377.52	47.56	V	58.64	-11.08	Avg	1.25	175	
3752.8	52.09	V	74	-21.91	Peak	1.35	185	
3752.8	43.19	V	54	-10.81	Avg	1.35	185	

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 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	77.42	H	98.64	-21.22	Peak	1.25	165	
375.28	68.52	H	78.64	-10.12	Peak	1.25	165	
750.56	50.06	H	78.64	-28.58	Peak	1.25	135	
750.56	41.16	H	58.64	-17.48	Avg	1.25	135	
1125.84	43.84	H	74	-30.16	Peak	1.25	155	
1125.84	34.94	H	54	-19.06	Avg	1.25	155	
1501.12	50.45	H	74	-23.55	Peak	1.35	175	
1501.12	41.55	H	54	-12.45	Avg	1.35	175	
1876.4	57.42	H	78.64	-21.22	Peak	1.25	185	
1876.4	48.52	H	58.64	-10.12	Avg	1.25	185	
2251.68	52.18	H	74	-21.82	Peak	1.35	195	
2251.68	43.28	H	54	-10.72	Avg	1.35	195	
2626.96	62.49	H	78.64	-16.15	Peak	1.25	135	
2626.96	53.59	H	58.64	-5.05	Avg	1.25	135	
3002.24	61.36	H	78.64	-17.28	Peak	1.35	175	
3002.24	52.46	H	58.64	-6.18	Avg	1.35	175	
3377.52	58.71	H	78.64	-19.93	Peak	1.25	165	
3377.52	49.81	H	58.64	-8.83	Avg	1.25	165	
3752.8	60.31	H	74	-13.69	Peak	1.35	175	
3752.8	51.41	H	54	-2.59	Avg	1.35	175	

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 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	77.65	V	98.64	-20.99	Peak	1.35	145	
375.28	68.75	V	78.64	-9.89	Peak	1.35	145	
750.56	48.46	V	78.64	-30.18	Peak	1.25	135	
750.56	39.56	V	58.64	-19.08	Avg	1.25	135	
1125.84	46.25	V	74	-27.75	Peak	1.25	155	
1125.84	37.35	V	54	-16.65	Avg	1.25	155	
1501.12	55.26	V	74	-18.74	Peak	1.25	145	
1501.12	46.36	V	54	-7.64	Avg	1.25	145	
1876.4	57.14	V	78.64	-21.5	Peak	1.25	135	
1876.4	48.24	V	58.64	-10.4	Avg	1.25	135	
2251.68	52.76	V	74	-21.24	Peak	1.75	205	
2251.68	43.86	V	54	-10.14	Avg	1.75	205	
2626.96	57.02	V	78.64	-21.62	Peak	1.25	195	
2626.96	48.12	V	58.64	-10.52	Avg	1.25	195	
3002.24	47.83	V	78.64	-30.81	Peak	1.35	185	
3002.24	38.93	V	58.64	-19.71	Avg	1.35	185	
3377.52	56.72	V	78.64	-21.92	Peak	1.25	175	
3377.52	47.82	V	58.64	-10.82	Avg	1.25	175	
3752.8	53.55	V	74	-20.45	Peak	1.35	165	
3752.8	44.65	V	54	-9.35	Avg	1.35	165	

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/15/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 35.87%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
375.28	83.61	H	98.64	-15.03	Peak	1.25	155	
375.28	74.71	H	78.64	-3.93	Peak	1.25	155	
750.56	56.64	H	78.64	-22	Peak	1.35	175	
750.56	47.74	H	58.64	-10.9	Avg	1.35	175	
1125.84	48.58	H	74	-25.42	Peak	1.25	185	
1125.84	39.68	H	54	-14.32	Avg	1.25	185	
1501.12	51.58	H	74	-22.42	Peak	1.35	195	
1501.12	42.68	H	54	-11.32	Avg	1.35	195	
1876.4	52.21	H	78.64	-26.43	Peak	1.25	185	
1876.4	43.31	H	58.64	-15.33	Avg	1.25	185	
2251.68	49.59	H	74	-24.41	Peak	1.35	190	
2251.68	40.69	H	54	-13.31	Avg	1.35	190	
2626.96	61.49	H	78.64	-17.15	Peak	1.25	155	
2626.96	52.59	H	58.64	-6.05	Avg	1.25	155	
3002.24	56.18	H	78.64	-22.46	Peak	1.35	165	
3002.24	47.28	H	58.64	-11.36	Avg	1.35	165	
3377.52	56.57	H	78.64	-22.07	Peak	1.25	175	
3377.52	47.67	H	58.64	-10.97	Avg	1.25	175	
3752.8	48.26	H	74	-25.74	Peak	1.35	185	
3752.8	39.36	H	54	-14.64	Avg	1.35	185	

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Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	75.31	V	99.17	-23.86	Peak	1.25	165	
388.3	66.46	V	79.17	-12.71	Peak	1.25	165	
776.6	49.44	V	79.17	-29.73	Peak	1.35	175	
776.6	40.59	V	59.17	-18.58	Avg	1.35	175	
1164.9	53.08	V	74	-20.92	Peak	1.25	165	
1164.9	44.23	V	54	-9.77	Avg	1.25	165	
1553.2	49.71	V	74	-24.29	Peak	1.25	135	
1553.2	40.86	V	54	-13.14	Avg	1.25	135	
1941.5	57.06	V	79.17	-22.11	Peak	1.45	155	
1941.5	48.21	V	59.17	-10.96	Avg	1.45	155	
2329.8	61.225	V	74	-12.775	Peak	1.25	135	
2329.8	52.375	V	54	-1.625	Avg	1.25	135	
2718.1	54.95	V	74	-19.05	Peak	1.35	225	
2718.1	46.1	V	54	-7.9	Avg	1.35	225	
3106.4	53.78	V	79.17	-25.39	Peak	1.45	235	
3106.4	44.93	V	59.17	-14.24	Avg	1.45	235	
3494.7	55.51	V	79.17	-23.66	Peak	1.25	165	
3494.7	46.66	V	59.17	-12.51	Avg	1.25	165	
3883	57.18	V	74	-16.82	Peak	1.25	135	
3883	48.33	V	54	-5.67	Avg	1.25	135	

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Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	85.37	H	99.17	-13.8	Peak	1	45	
388.3	76.52	H	79.17	-2.65	Peak	1	45	
776.6	54.42	H	79.17	-24.75	Peak	1.25	135	
776.6	45.57	H	59.17	-13.6	Avg	1.25	135	
1164.9	45.01	H	74	-28.99	Peak	1.25	145	
1164.9	36.16	H	54	-17.84	Avg	1.25	145	
1553.2	56.93	H	74	-17.07	Peak	1.25	155	
1553.2	48.08	H	54	-5.92	Avg	1.25	155	
1941.5	50.47	H	79.17	-28.7	Peak	1.35	135	
1941.5	41.62	H	59.17	-17.55	Avg	1.35	135	
2329.8	49.31	H	74	-24.69	Peak	1.25	165	
2329.8	40.46	H	54	-13.54	Avg	1.25	165	
2718.1	46.51	H	74	-27.49	Peak	1.35	175	
2718.1	37.66	H	54	-16.34	Avg	1.35	175	
3106.4	47.76	H	79.17	-31.41	Peak	1.25	185	
3106.4	38.91	H	59.17	-20.26	Avg	1.25	185	
3494.7	48.71	H	79.17	-30.46	Peak	1.35	195	
3494.7	39.86	H	59.17	-19.31	Avg	1.35	195	
3883	55.64	H	74	-18.36	Peak	1.25	205	
3883	46.79	H	54	-7.21	Avg	1.25	205	

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 Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	80.07	V	99.17	-19.1	Peak	1.25	135	
388.3	71.22	V	79.17	-7.95	Peak	1.25	135	
776.6	53.33	V	79.17	-25.84	Peak	1.35	145	
776.6	44.48	V	59.17	-14.69	Avg	1.35	145	
1164.9	50.78	V	74	-23.22	Peak	1.25	155	
1164.9	41.93	V	54	-12.07	Avg	1.25	155	
1553.2	56.63	V	74	-17.37	Peak	1.35	165	
1553.2	47.78	V	54	-6.22	Avg	1.35	165	
1941.5	57.05	V	79.17	-22.12	Peak	1.25	175	
1941.5	48.2	V	59.17	-10.97	Avg	1.25	175	
2329.8	60.91	V	74	-13.09	Peak	1.25	155	
2329.8	52.06	V	54	-1.94	Avg	1.25	155	
2718.1	55.73	V	74	-18.27	Peak	1.35	165	
2718.1	46.88	V	54	-7.12	Avg	1.35	165	
3106.4	56.65	V	79.17	-22.52	Peak	1.25	135	
3106.4	47.8	V	59.17	-11.37	Avg	1.25	135	
3494.7	56.31	V	79.17	-22.86	Peak	1.35	145	
3494.7	47.46	V	59.17	-11.71	Avg	1.35	145	
3883	53.08	V	74	-20.92	Peak	1.25	155	
3883	44.23	V	54	-9.77	Avg	1.25	155	

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Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	79.31	H	99.17	-19.86	Peak	1.35	225	
388.3	70.46	H	79.17	-8.71	Peak	1.35	225	
776.6	44.81	H	79.17	-34.36	Peak	1.25	165	
776.6	35.96	H	59.17	-23.21	Avg	1.25	165	
1164.9	44.07	H	74	-29.93	Peak	1.35	175	
1164.9	35.22	H	54	-18.78	Avg	1.35	175	
1553.2	56.78	H	74	-17.22	Peak	1.25	135	
1553.2	47.93	H	54	-6.07	Avg	1.25	135	
1941.5	52.97	H	79.17	-26.2	Peak	1.35	145	
1941.5	44.12	H	59.17	-15.05	Avg	1.35	145	
2329.8	59.71	H	74	-14.29	Peak	1.25	165	
2329.8	50.86	H	54	-3.14	Avg	1.25	165	
2718.1	49.87	H	74	-24.13	Peak	1.35	175	
2718.1	41.02	H	54	-12.98	Avg	1.35	175	
3106.4	55.59	H	79.17	-23.58	Peak	1.25	185	
3106.4	46.74	H	59.17	-12.43	Avg	1.25	185	
3494.7	55.88	H	79.17	-23.29	Peak	1.25	135	
3494.7	47.03	H	59.17	-12.14	Avg	1.25	135	
3883	61.99	H	74	-12.01	Peak	1.35	145	
3883	53.14	H	54	-0.86	Avg	1.35	145	

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Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	79.96	V	99.17	-19.21	Peak	1.25	135	
388.3	71.11	V	79.17	-8.06	Peak	1.25	135	
776.6	46.06	V	79.17	-33.11	Peak	1.35	145	
776.6	37.21	V	59.17	-21.96	Avg	1.35	145	
1164.9	52.88	V	74	-21.12	Peak	1.25	135	
1164.9	44.03	V	54	-9.97	Avg	1.25	135	
1553.2	61.01	V	74	-12.99	Peak	1.25	155	
1553.2	52.16	V	54	-1.84	Avg	1.25	155	
1941.5	56.37	V	79.17	-22.8	Peak	1.35	165	
1941.5	47.52	V	59.17	-11.65	Avg	1.35	165	
2329.8	60.44	V	74	-13.56	Peak	1.25	175	
2329.8	51.59	V	54	-2.41	Avg	1.25	175	
2718.1	46.51	V	74	-27.49	Peak	1.35	185	
2718.1	37.66	V	54	-16.34	Avg	1.35	185	
3106.4	55.29	V	79.17	-23.88	Peak	1.25	195	
3106.4	46.44	V	59.17	-12.73	Avg	1.25	195	
3494.7	58.01	V	79.17	-21.16	Peak	1.25	135	
3494.7	49.16	V	59.17	-10.01	Avg	1.25	135	
3883	59.88	V	74	-14.12	Peak	2.25	155	
3883	51.03	V	54	-2.97	Avg	2.25	155	

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 Universal Electronics, Inc.
 Echostar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
388.3	80.79	H	99.17	-18.38	Peak	1	225	
388.3	71.94	H	79.17	-7.23	Peak	1	225	
776.6	56.29	H	79.17	-22.88	Peak	1.25	135	
776.6	47.44	H	59.17	-11.73	Avg	1.25	135	
1164.9	47.76	H	74	-26.24	Peak	1.35	165	
1164.9	38.91	H	54	-15.09	Avg	1.35	165	
1553.2	48.63	H	74	-25.37	Peak	1.45	185	
1553.2	39.78	H	54	-14.22	Avg	1.45	185	
1941.5	50.71	H	79.17	-28.46	Peak	1.25	135	
1941.5	41.86	H	59.17	-17.31	Avg	1.25	135	
2329.8	58.25	H	74	-15.75	Peak	1.45	175	
2329.8	49.4	H	54	-4.6	Avg	1.45	175	
2718.1	51.34	H	74	-22.66	Peak	1.35	165	
2718.1	42.49	H	54	-11.51	Avg	1.35	165	
3106.4	58.94	H	79.17	-20.23	Peak	1.25	135	
3106.4	50.09	H	59.17	-9.08	Avg	1.25	135	
3494.7	60.25	H	79.17	-18.92	Peak	1.25	115	
3494.7	51.4	H	59.17	-7.77	Avg	1.25	115	
3883	61.68	H	74	-12.32	Peak	1.25	135	
3883	52.83	H	54	-1.17	Avg	1.25	135	

FCC Class B and FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis (Worst Case)

Duty Cycle: 36.07%

Vertical and Horizontal Polarizations

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 3890 MHz for the Digital Portion for both the Vertical and Horizontal Polarizations.
								No Emissions Detected from 10 kHz to 3890 MHz for the Non-Harmonic Emissions from the Tx for the EUT for both the Vertical and Horizontal Polarizations.

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	75.44	V	99.41	-23.97	Peak	1.25	135	
394.3	66.59	V	79.41	-12.82	Peak	1.25	135	
788.6	46.54	V	79.41	-32.87	Peak	1.25	145	
788.6	37.69	V	59.41	-21.72	Avg	1.25	145	
1182.9	51.03	V	74	-22.97	Peak	1.25	175	
1182.9	42.18	V	54	-11.82	Avg	1.25	175	
1577.2	55.13	V	74	-18.87	Peak	1.35	185	
1577.2	46.28	V	54	-7.72	Avg	1.35	185	
1971.5	53.58	V	79.41	-25.83	Peak	1.25	135	
1971.5	44.73	V	59.41	-14.68	Avg	1.25	135	
2365.8	59.15	V	74	-14.85	Peak	1.25	135	
2365.8	50.3	V	54	-3.7	Avg	1.25	135	
2760.1	54.09	V	74	-19.91	Peak	1.35	195	
2760.1	45.24	V	54	-8.76	Avg	1.35	195	
3154.4	55.09	V	79.41	-24.32	Peak	1.35	145	
3154.4	46.24	V	59.41	-13.17	Avg	1.35	145	
3548.7	53.48	V	79.41	-25.93	Peak	1.25	175	
3548.7	44.63	V	59.41	-14.78	Avg	1.25	175	
3943	53.41	V	74	-20.59	Peak	1.25	175	
3943	44.56	V	54	-9.44	Avg	1.25	175	

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 Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

 Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	83.48	H	99.41	-15.93	Peak	1.25	165	
394.3	74.63	H	79.41	-4.78	Peak	1.25	165	
788.6	49.63	H	79.41	-29.78	Peak	1.35	175	
788.6	40.78	H	59.41	-18.63	Avg	1.35	175	
1182.9	44.61	H	74	-29.39	Peak	1.25	185	
1182.9	35.76	H	54	-18.24	Avg	1.25	185	
1577.2	55.61	H	74	-18.39	Peak	1.25	135	
1577.2	46.76	H	54	-7.24	Avg	1.25	135	
1971.5	53.55	H	79.41	-25.86	Peak	1.25	165	
1971.5	44.7	H	59.41	-14.71	Avg	1.25	165	
2365.8	53.15	H	74	-20.85	Peak	1.35	175	
2365.8	44.3	H	54	-9.7	Avg	1.35	175	
2760.1	48.43	H	74	-25.57	Peak	1.25	155	
2760.1	39.58	H	54	-14.42	Avg	1.25	155	
3154.4	50.46	H	79.41	-28.95	Peak	1.35	185	
3154.4	41.61	H	59.41	-17.8	Avg	1.35	185	
3548.7	52.09	H	79.41	-27.32	Peak	1.25	175	
3548.7	43.24	H	59.41	-16.17	Avg	1.25	175	
3943	58.59	H	74	-15.41	Peak	1.25	165	
3943	49.74	H	54	-4.26	Avg	1.25	165	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Y-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	78.82	V	99.41	-20.59	Peak	1.25	135	
394.3	69.97	V	79.41	-9.44	Peak	1.25	135	
788.6	50.51	V	79.41	-28.9	Peak	1.35	145	
788.6	41.66	V	59.41	-17.75	Avg	1.35	145	
1182.9	44.87	V	74	-29.13	Peak	1.25	165	
1182.9	36.02	V	54	-17.98	Avg	1.25	165	
1577.2	59.48	V	74	-14.52	Peak	1.25	135	
1577.2	50.63	V	54	-3.37	Avg	1.25	135	
1971.5	55.25	V	79.41	-24.16	Peak	1.35	165	
1971.5	46.4	V	59.41	-13.01	Avg	1.35	165	
2365.8	61.54	V	74	-12.46	Peak	2.25	135	
2365.8	52.69	V	54	-1.31	Avg	2.25	135	
2760.1	61.67	V	74	-12.33	Peak	1.25	180	
2760.1	52.82	V	54	-1.18	Avg	1.25	180	
3154.4	57.94	V	79.41	-21.47	Peak	1.35	135	
3154.4	49.09	V	59.41	-10.32	Avg	1.35	135	
3548.7	52.81	V	79.41	-26.6	Peak	1.45	145	
3548.7	43.96	V	59.41	-15.45	Avg	1.45	145	
3943	59.76	V	74	-14.24	Peak	1.25	135	
3943	50.91	V	54	-3.09	Avg	1.25	135	

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Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
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Date: 11/17/2010
 Labs: B and D
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Y-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	76.58	H	99.41	-22.83	Peak	1.25	135	
394.3	67.73	H	79.41	-11.68	Peak	1.25	135	
788.6	42.47	H	79.41	-36.94	Peak	1.35	145	
788.6	33.62	H	59.41	-25.79	Avg	1.35	145	
1182.9	45.66	H	74	-28.34	Peak	1.25	165	
1182.9	36.81	H	54	-17.19	Avg	1.25	165	
1577.2	59.44	H	74	-14.56	Peak	1.55	175	
1577.2	50.59	H	54	-3.41	Avg	1.55	175	
1971.5	52.25	H	79.41	-27.16	Peak	1.25	165	
1971.5	43.4	H	59.41	-16.01	Avg	1.25	165	
2365.8	60.66	H	74	-13.34	Peak	1.55	175	
2365.8	51.81	H	54	-2.19	Avg	1.55	175	
2760.1	52.18	H	74	-21.82	Peak	1.25	185	
2760.1	43.33	H	54	-10.67	Avg	1.25	185	
3154.4	58.05	H	79.41	-21.36	Peak	1.35	175	
3154.4	49.2	H	59.41	-10.21	Avg	1.35	175	
3548.7	54.56	H	79.41	-24.85	Peak	1.35	185	
3548.7	45.71	H	59.41	-13.7	Avg	1.35	185	
3943	61.91	H	74	-12.09	Peak	1.25	175	
3943	53.06	H	54	-0.94	Avg	1.25	175	

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	77.21	V	99.41	-22.2	Peak	1.25	135	
394.3	68.36	V	79.41	-11.05	Peak	1.25	135	
788.6	46.54	V	79.41	-32.87	Peak	1.25	135	
788.6	37.69	V	59.41	-21.72	Avg	1.25	135	
1182.9	31.01	V	74	-42.99	Peak	1.25	135	
1182.9	22.16	V	54	-31.84	Avg	1.25	135	
1577.2	55.33	V	74	-18.67	Peak	1.35	165	
1577.2	46.48	V	54	-7.52	Avg	1.35	165	
1971.5	48.99	V	79.41	-30.42	Peak	1.25	175	
1971.5	40.14	V	59.41	-19.27	Avg	1.25	175	
2365.8	54.51	V	74	-19.49	Peak	1.25	205	
2365.8	45.66	V	54	-8.34	Avg	1.25	205	
2760.1	50.82	V	74	-23.18	Peak	1.25	175	
2760.1	41.97	V	54	-12.03	Avg	1.25	175	
3154.4	55.64	V	79.41	-23.77	Peak	1.25	185	
3154.4	46.79	V	59.41	-12.62	Avg	1.25	185	
3548.7	54.18	V	79.41	-25.23	Peak	1.35	205	
3548.7	45.33	V	59.41	-14.08	Avg	1.35	205	
3943	61.57	V	74	-12.43	Peak	2.25	225	
3943	52.72	V	54	-1.28	Avg	2.25	225	

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

Z-Axis

Duty Cycle: 36.07%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
394.3	79.54	H	99.41	-19.87	Peak	1.25	135	
394.3	70.69	H	79.41	-8.72	Peak	1.25	135	
788.6	53.68	H	79.41	-25.73	Peak	1.35	145	
788.6	44.83	H	59.41	-14.58	Avg	1.35	145	
1182.9	40.77	H	74	-33.23	Peak	1.25	153	
1182.9	31.92	H	54	-22.08	Avg	1.25	135	
1577.2	54.71	H	74	-19.29	Peak	1.25	165	
1577.2	45.86	H	54	-8.14	Avg	1.25	165	
1971.5	55.25	H	79.41	-24.16	Peak	1.25	165	
1971.5	46.4	H	59.41	-13.01	Avg	1.25	165	
2365.8	59.51	H	74	-14.49	Peak	1.25	135	
2365.8	50.66	H	54	-3.34	Avg	1.25	135	
2760.1	58.31	H	74	-15.69	Peak	1.25	155	
2760.1	49.46	H	54	-4.54	Avg	1.25	155	
3154.4	54.28	H	79.41	-25.13	Peak	1.35	165	
3154.4	45.43	H	59.41	-13.98	Avg	1.35	165	
3548.7	56.37	H	79.41	-23.04	Peak	1.25	155	
3548.7	47.52	H	59.41	-11.89	Avg	1.25	155	
3943	61.71	H	74	-12.29	Peak	1.25	135	
3943	52.86	H	54	-1.14	Avg	1.25	135	

FCC 15.231

Universal Electronics, Inc.
 EchoStar Semtech SX1241 Remote 2011
 Model: URC-2010BC0-R

Date: 11/17/2010
 Labs: B and D
 Tested By: Kyle Fujimoto

X-Axis (Worst Case)
 Duty Cycle: 36.07%
 Vertical and Horizontal Polarizations

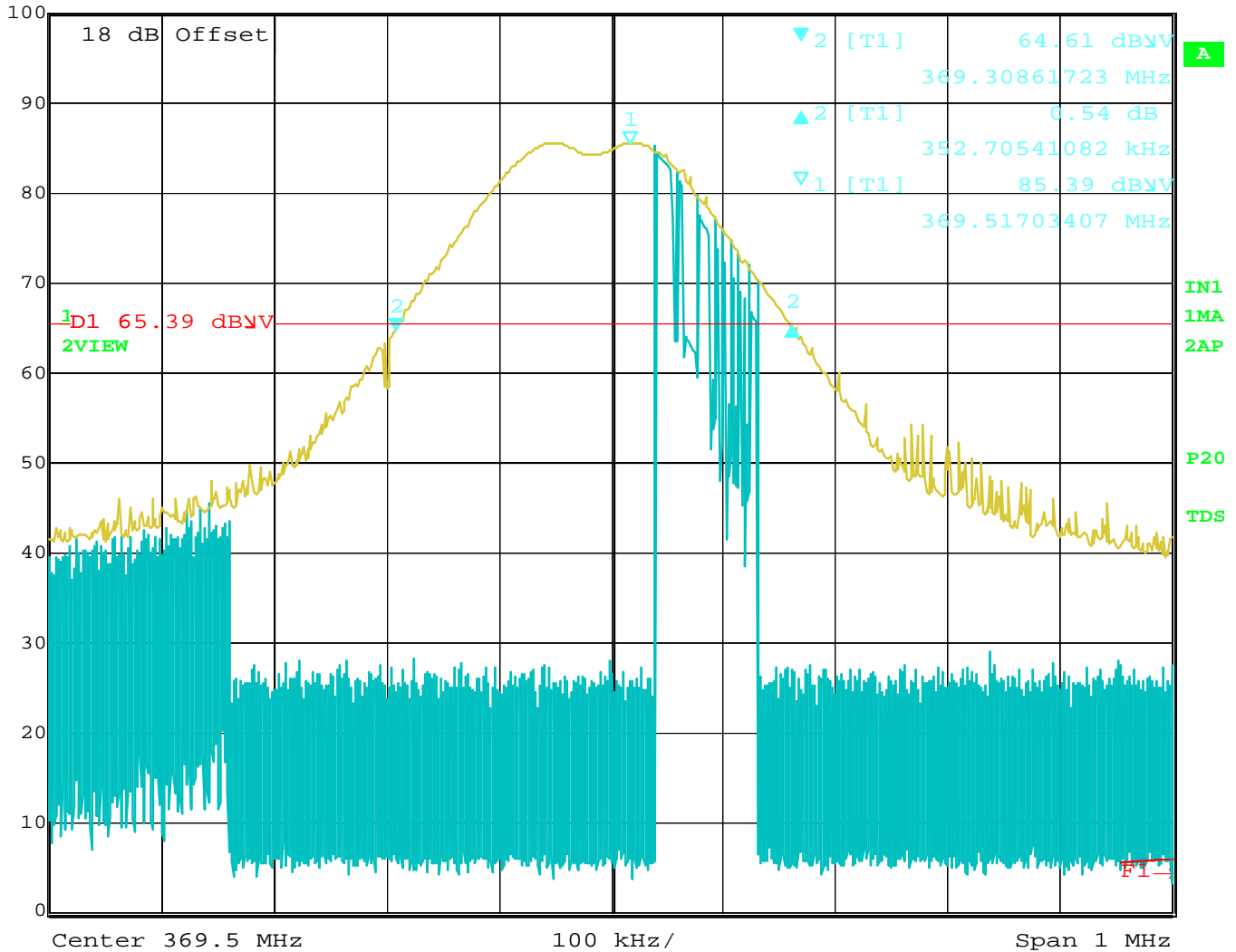
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected from 10 kHz to 3950 MHz for the Digital Portion for both the Vertical and Horizontal Polarizations.
								No Emissions Detected from 10 kHz to 3950 MHz for the Non-Harmonic Emissions from the Tx for the EUT for both the Vertical and Horizontal Polarizations.

-20 dB BANDWIDTH

DATA SHEETS



Delta 2 [T1] RBW 100 kHz RF Att 10 dB
 Ref Lvl 0.54 dB VBW 300 kHz
 100 dBmV 352.70541082 kHz SWT 150 ms Unit dBmV

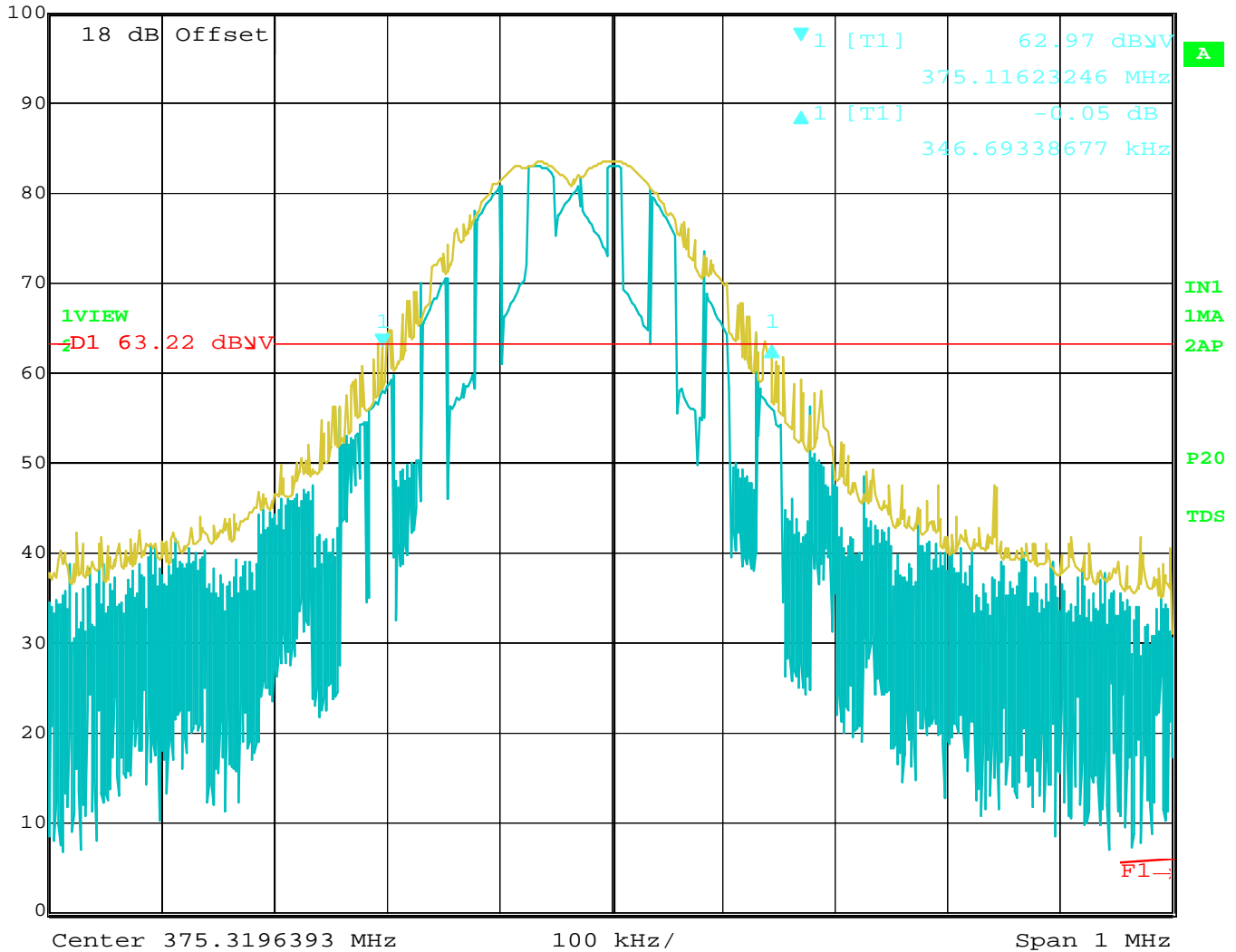


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-20 dB Bandwidth of the Fundamental - 369.5 MHz



Delta 1 [T1] RBW 100 kHz RF Att 10 dB
 Ref Lvl -0.05 dB VBW 300 kHz
 100 dBmV 346.69338677 kHz SWT 5.5 ms Unit dBmV

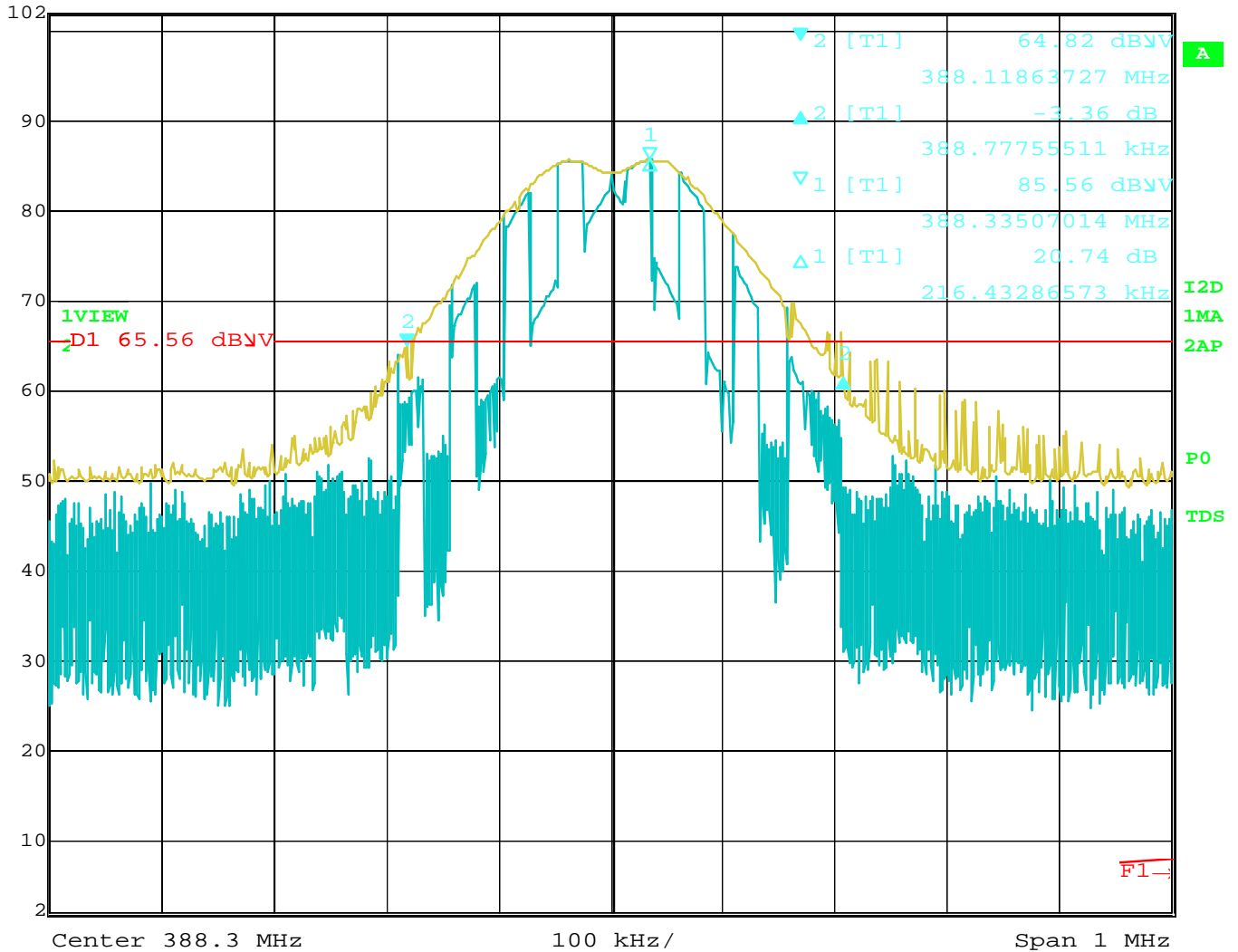


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-20 dB Bandwidth of the Fundamental - 375.3 MHz



Delta 2 [T1] RBW 100 kHz RF Att 20 dB
 Ref Lvl -3.36 dB VBW 300 kHz
 102 dBμV 388.7775511 kHz SWT 5.5 ms Unit dBμV

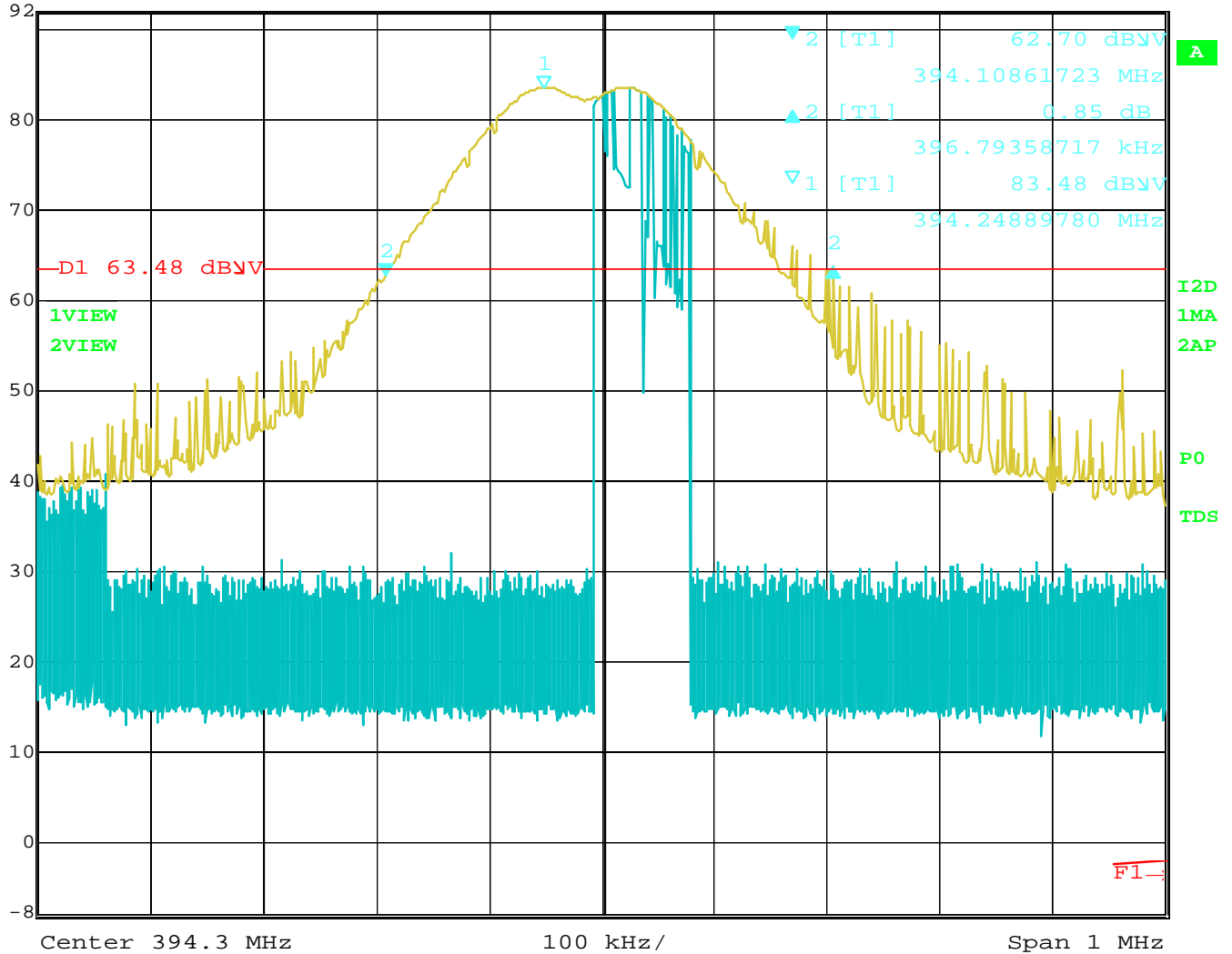


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-20 dB Bandwidth of the Fundamental - 388.3 MHz



Delta 2 [T1] RBW 100 kHz RF Att 0 dB
 Ref Lvl 0.85 dB VBW 300 kHz
 92 dB μ V 396.79358717 kHz SWT 150 ms Unit dB μ V



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-20 dB Bandwidth of the Fundamental - 394.3 MHz