

**FCC PART 15 SUBPART B and C
TEST REPORT***for***ECHOSTAR XiP 40.0****MODEL: 40.0 UHF 2G**

Prepared for

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DATE: AUGUST 8, 2011

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	17	2	2	2	12	25	60

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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 XiP 40.0
Model: 40.0 UHF 2G
S/N: N/A

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)

Customer: Universal Electronics, Inc.
6101 Gateway Drive
Cypress, California 90630

Test Date(s): June 15 and July 18, 2011

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

Test Procedure: ANSI C63.4

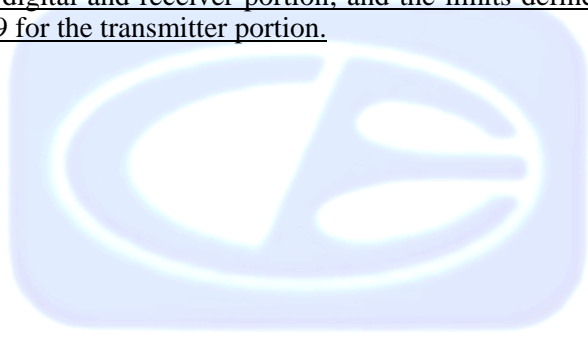
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power only.
2	Radiated RF Emissions 10 kHz – 25000 MHz (Transmitter, Receive, 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 EchoStar XiP 40.0, Model: 40.0 UHF 2G. 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 and receiver 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 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 – Emissions

The EchoStar XiP 40.0, Model: 40.0 UHF 2G (EUT) was tested as a stand alone unit in three orthogonal axis. The EUT was continuously transmitting and receiving.

The 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

The EUT had no external cables.



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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
ECHOSTAR XiP 40.0 (EUT)	GEMSTAR TECHNOLOGY (YANGZHOU) COMPANY LIMITED	40.0 UHF 2G	N/A	MG3-2015

5.2 Emissions 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
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	2637A03618	May 27, 2011	May 27, 2012
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A13404	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					
CombiLog Antenna	Com Power	AC-220	61027	June 9, 2011	June 9, 2012
Preamplifier	Com-Power	PA-103	1582	January 11, 2011	January 11, 2012
Horn Antenna	Com-Power	AH-118	071175	March 18, 2010	March 18, 2012
Loop Antenna	Com-Power	AL-130	17089	January 21, 2011	January 21, 2012
Microwave Preamplifier	Com-Power	PA-840	711013	March 11, 2010	March 11, 2012
Horn Antenna	Com-Power	AH826	71957	NCR	N/A
Microwave Preamplifier	Com-Power	PA-118	181656	December 22, 2010	December 22, 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 Emissions test location.

6.2 EUT Mounting, Bonding and Grounding

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

The EUT was not grounded.

6.3 Facility Environmental Characteristics

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

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

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

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

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

Test Results:

This test was not performed because the EUT operates on battery power only.

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-103 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 was 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 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 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 1 GHz	120 kHz	Combilog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

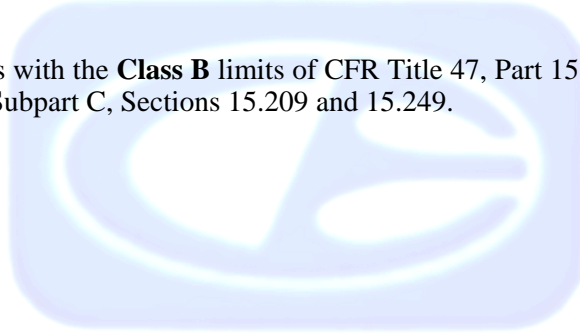
The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. 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. 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 15.249.



7.1.3 RF Emissions Test ResultsTable 1.0 RADIATED EMISSION RESULTS
EchoStar XiP 40.0, Model: 40.0 UHF 2G

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
4900.00	51.15	54.00	-2.85
2450.00	90.28	94.00	-3.72
4850.00	50.21	54.00	-3.79
7350.00	49.79	54.00	-4.21
4950.00	49.18	54.00	-4.82
2425.00	88.94	94.00	-5.06

Notes:

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

8. CONCLUSIONS

The Echostar XiP 40.0, Model: 40.0 UHF 2G, as tested, meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B for the digital and receiver 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 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 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 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 XiP 40.0
Model: 40.0 UHF 2G
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

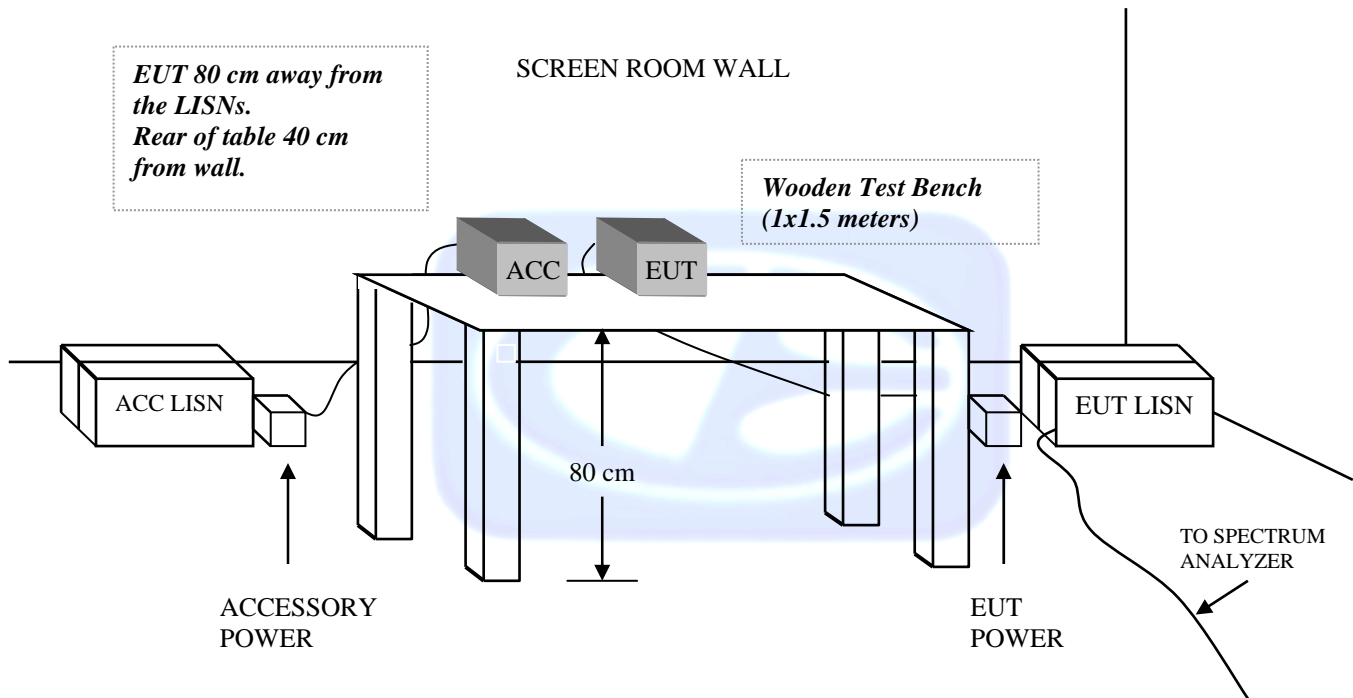
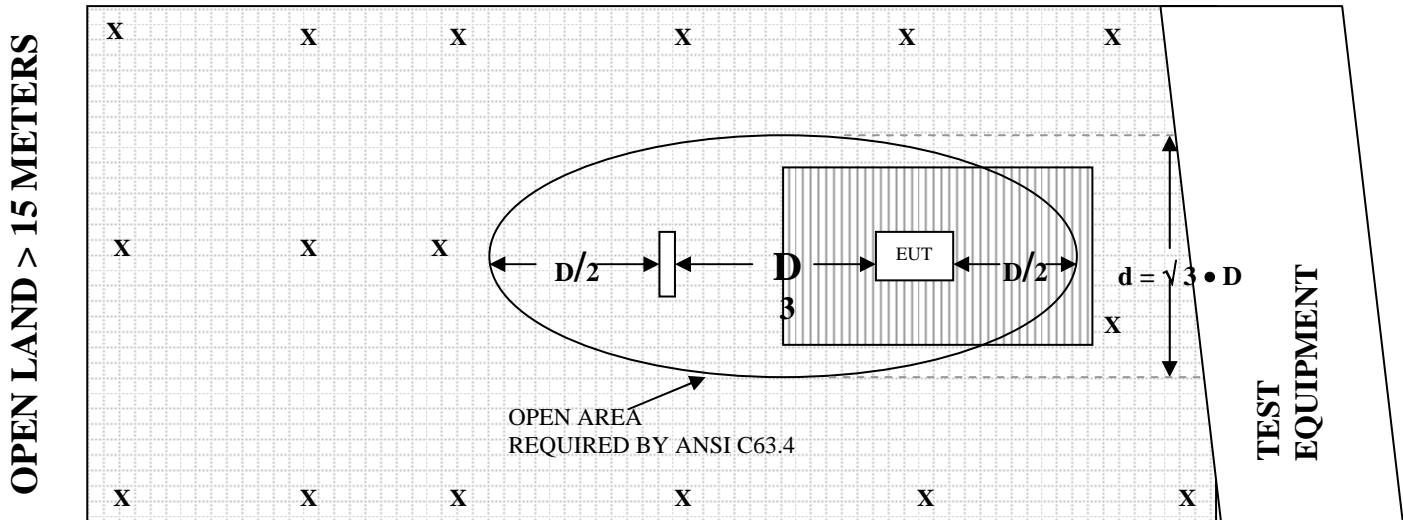


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

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

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61027

CALIBRATION DATE: JUNE 9, 2011

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	16.7	160	9.0
35	17.4	180	9.3
40	18.3	200	9.3
45	17.2	250	11.6
50	17.2	300	13.0
60	13.7	400	16.9
70	8.6	500	17.2
80	6.2	600	19.0
90	7.2	700	18.9
100	9.0	800	21.8
120	10.1	900	22.0
140	10.2	1000	21.8

COM-POWER PA-103**PREAMPLIFIER**

S/N: 1582

CALIBRATION DATE: JANUARY 11, 2011

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	33.0	300	32.4
40	33.0	350	32.4
50	32.9	400	32.3
60	32.9	450	32.3
70	32.9	500	32.2
80	32.9	550	32.2
90	32.9	600	32.2
100	32.9	650	32.0
125	32.9	700	32.3
150	32.8	750	31.9
175	32.8	800	32.2
200	32.7	850	32.0
225	32.7	900	32.0
250	32.7	950	32.0
275	32.7	1000	31.5

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-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 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 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-840**MICROWAVE PREAMPLIFIER**

S/N: 711013

CALIBRATION DATE: MARCH 11, 2010

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	24.36	29.5	23.52
18.5	24.54	30.0	21.73
19.0	24.06	30.5	22.34
19.5	23.71	31.0	20.06
20.0	23.42	31.5	20.02
20.5	22.87	32.0	18.11
21.0	22.60	32.5	19.35
21.5	21.08	33.0	17.50
22.0	22.13	33.5	17.49
22.5	22.42	34.0	17.48
23.0	22.85	34.5	18.57
23.5	22.85	35.0	18.64
24.0	23.82	35.5	18.82
24.5	22.33	36.0	19.14
25.0	24.09	36.5	18.58
25.5	23.20	37.0	15.07
26.0	23.18	37.5	17.29
26.5	23.50	38.0	20.82
27.0	24.25	38.5	19.96
27.5	23.58	39.0	20.66
28.0	23.81	39.5	21.41
28.5	23.76	40.0	18.89
29.0	24.83		



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
ECHOSTAR XiP 40.0
MODEL: 40.0 UHF 2G
FCC SUBPART B AND C – RADIATED EMISSIONS

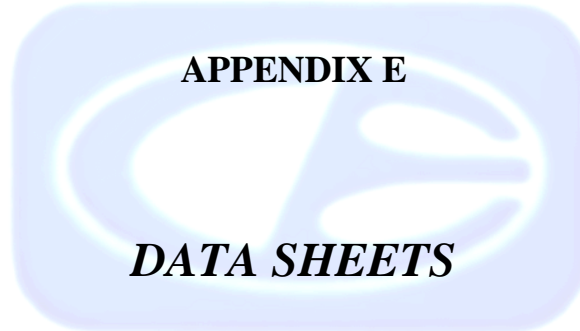
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
ECHOSTAR XiP 40.0
MODEL: 40.0 UHF 2G
FCC SUBPART B AND C – RADIATED EMISSIONS

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



RADIATED EMISSIONS

DATA SHEETS

FCC 15.249

Universal Electronics, Inc.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel

X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	92.25	V	94	-1.75	Peak	3	135	
2425	87.93	V	94	-6.07	Avg	3	135	
4850	57.96	V	74	-16.04	Peak	2.25	135	
4850	48.34	V	54	-5.66	Avg	2.25	135	
7275	52.69	V	74	-21.31	Peak	1.25	225	
7275	40.64	V	54	-13.36	Avg	1.25	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	82.69	H	94	-11.31	Peak	1.25	135	
2425	78.38	H	94	-15.62	Avg	1.25	135	
4850	58.62	H	74	-15.38	Peak	2.75	225	
4850	49.67	H	54	-4.33	Avg	2.75	225	
7275	55.18	H	74	-18.82	Peak	2.25	90	
7275	43.18	H	54	-10.82	Avg	2.25	90	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	89.49	V	94	-4.51	Peak	1.25	45	
2425	85.09	V	94	-8.91	Avg	1.25	45	
4850	59.26	V	74	-14.74	Peak	1.55	135	
4850	50.16	V	54	-3.84	Avg	1.55	135	
7275	55.97	V	74	-18.03	Peak	2.25	225	
7275	43.94	V	54	-10.06	Avg	2.25	225	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

Low Channel
Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	87.13	H	94	-6.87	Peak	1.25	0	
2425	82.71	H	94	-11.29	Avg	1.25	0	
4850	55.41	H	74	-18.59	Peak	1.25	135	
4850	45.91	H	54	-8.09	Avg	1.25	135	
7275	51.89	H	74	-22.11	Peak	1.35	155	
7275	39.06	H	54	-14.94	Avg	1.35	155	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	93.21	V	94	-0.79	Peak	1.25	90	
2425	88.94	V	94	-5.06	Avg	1.25	90	
4850	54.82	V	74	-19.18	Peak	2.25	135	
4850	46.26	V	54	-7.74	Avg	2.25	135	
7275	51.29	V	74	-22.71	Peak	1.25	135	
7275	36.96	V	54	-17.04	Avg	1.25	135	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Low Channel
 Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2425	84.45	H	94	-9.55	Peak	3	315	
2425	80.09	H	94	-13.91	Avg	3	315	
4850	59.18	H	74	-14.82	Peak	3	225	
4850	50.21	H	54	-3.79	Avg	3	225	
7275	52.58	H	74	-21.42	Peak	3	135	
7275	38.63	H	54	-15.37	Avg	3	135	
9700								No Emission
9700								Detected
12125								No Emission
12125								Detected
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	92.07	V	94	-1.93	Peak	2.25	135	
2450	87.48	V	94	-6.52	Avg	2.25	135	
4900	58.05	V	74	-15.95	Peak	1.25	135	
4900	48.34	V	54	-5.66	Avg	1.25	135	
7350	52.85	V	74	-21.15	Peak	1.55	145	
7350	39.81	V	54	-14.19	Avg	1.55	145	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel
X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	91.17	H	94	-2.83	Peak	2.25	225	
2450	86.71	H	94	-7.29	Avg	2.25	225	
4900	57.83	H	74	-16.17	Peak	2.25	0	
4900	48.82	H	54	-5.18	Avg	2.25	0	
7350	57.37	H	74	-16.63	Peak	1.25	135	
7350	47.03	H	54	-6.97	Avg	1.25	135	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	90.31	V	94	-3.69	Peak	1.25	135	
2450	85.74	V	94	-8.26	Avg	1.25	135	
4900	60.21	V	74	-13.79	Peak	1.25	155	
4900	51.15	V	54	-2.85	Avg	1.25	155	
7350	60.59	V	74	-13.41	Peak	1.35	155	
7350	49.79	V	54	-4.21	Avg	1.35	155	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

Middle Channel

Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	83.48	H	94	-10.52	Peak	1.75	155	
2450	78.95	H	94	-15.05	Avg	1.75	155	
4900	52.42	H	74	-21.58	Peak	1.25	155	
4900	43.18	H	54	-10.82	Avg	1.25	155	
7350	52.51	H	74	-21.49	Peak	1.25	135	
7350	37.09	H	54	-16.91	Avg	1.25	135	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	94.59	V	94	0.59	Peak	1	90	
2450	90.28	V	94	-3.72	Avg	1	90	
4900	56.01	V	74	-17.99	Peak	1.25	135	
4900	45.14	V	54	-8.86	Avg	1.25	135	
7350	52.82	V	74	-21.18	Peak	1.35	155	
7350	41.17	V	54	-12.83	Avg	1.35	155	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**Middle Channel
 Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2450	84.91	H	94	-9.09	Peak	1.25	135	
2450	80.41	H	94	-13.59	Avg	1.25	135	
4900	57.12	H	74	-16.88	Peak	1.25	155	
4900	48.13	H	54	-5.87	Avg	1.25	155	
7350	53.44	H	74	-20.56	Peak	1.35	155	
7350	41.84	H	54	-12.16	Avg	1.35	155	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	91.91	V	94	-2.09	Peak	2	135	
2475	87.38	V	94	-6.62	Avg	2	135	
4950	56.48	V	74	-17.52	Peak	1.25	135	
4950	47.19	V	54	-6.81	Avg	1.25	135	
7425	52.51	V	74	-21.49	Peak	1.35	145	
7425	41.13	V	54	-12.87	Avg	1.35	145	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

 Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	90.23	H	94	-3.77	Peak	2.25	135	
2475	85.81	H	94	-8.19	Avg	2.25	135	
4950	58.33	H	74	-15.67	Peak	2.25	155	
4950	48.49	H	54	-5.51	Avg	2.25	155	
7425	57.97	H	74	-16.03	Peak	2.35	165	
7425	44.63	H	54	-9.37	Avg	2.35	165	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	89.96	V	94	-4.04	Peak	1.25	135	
2475	85.59	V	94	-8.41	Avg	1.25	135	
4950	58.81	V	74	-15.19	Peak	1.25	225	
4950	49.18	V	54	-4.82	Avg	1.25	225	
7425	59.98	V	74	-14.02	Peak	1.35	255	
7425	44.55	V	54	-9.45	Avg	1.35	255	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	86.47	H	94	-7.53	Peak	1	1.25	
2475	81.46	H	94	-12.54	Avg	1	1.25	
4950	54.35	H	74	-19.65	Peak	2.25	135	
4950	44.84	H	54	-9.16	Avg	2.25	135	
7425	48.59	H	74	-25.41	Peak	1.35	165	
7425	38.18	H	54	-15.82	Avg	1.35	165	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	93.75	V	94	-0.25	Peak	1	150	
2475	88.91	V	94	-5.09	Avg	1	150	
4950	56.17	V	74	-17.83	Peak	1.25	135	
4950	45.92	V	54	-8.08	Avg	1.25	135	
7425	52.97	V	74	-21.03	Peak	1.35	155	
7425	39.47	V	54	-14.53	Avg	1.35	155	
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.
 EchoStar XiP 40.0
 Model: 40.0 UHF 2G

Date: 06/15/2011
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
 Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2475	80.65	H	94	-13.35	Peak	1.25	155	
2475	75.71	H	94	-18.29	Avg	1.25	155	
4950	51.73	H	74	-22.27	Peak	1.25	135	
4950	41.43	H	54	-12.57	Avg	1.25	135	
7425	53.14	H	74	-20.86	Peak	1.25	155	
7425	41.82	H	54	-12.18	Avg	1.25	155	
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

Test Location : Compatible Electronics Page : 1/3
 Customer : Universal Electronic, Inc. Date : 7/18/2011
 Manufacturer : Universal Electronic, Inc. Time : 8:47:03
 Eut name : EchoStar XiP 40.0 Lab : A
 Model : 40.0 UHF 2G Test Distance : 3
 Serial # : N/A
 Specification : FCC B
 Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
 Test Mode : Test Type: Radiated Emissions Qualification
 Test Range: 10 kHz to 1 GHz
 Clock(s): 8 MHz and 16 MHz
 Test Engineer: James Ross

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	472.069	44.00	3.75	17.12	32.25	32.61	46.00	-13.39
2V	488.071	45.50	3.78	17.17	32.22	34.22	46.00	-11.78
3V	504.069	42.10	3.84	17.28	32.20	31.02	46.00	-14.98
4V	520.065	42.50	4.01	17.59	32.20	31.89	46.00	-14.11
5V	536.068	41.60	4.17	17.89	32.20	31.45	46.00	-14.55
6V	552.069	41.60	4.31	18.18	32.20	31.89	46.00	-14.11
7V	568.072	41.00	4.37	18.46	32.20	31.63	46.00	-14.37
8V	584.072	40.00	4.44	18.73	32.20	30.97	46.00	-15.03
9V	632.072	36.40	4.63	18.97	32.07	27.93	46.00	-18.07
10V	512.067	38.70	3.93	17.44	32.20	27.86	46.00	-18.14
11V	544.079	38.00	4.24	18.03	32.20	28.08	46.00	-17.92
12H	440.067	44.50	3.64	17.03	32.30	32.87	46.00	-13.13
13H	448.067	40.40	3.69	17.05	32.30	28.84	46.00	-17.16
14H	456.059	45.20	3.71	17.08	32.29	33.70	46.00	-12.30
15H	464.078	42.20	3.73	17.10	32.27	30.76	46.00	-15.24
16H	472.068	47.20	3.75	17.12	32.25	35.81	46.00	-10.19
17H	480.085	44.20	3.76	17.15	32.24	32.87	46.00	-13.13
18H	488.064	46.70	3.78	17.17	32.22	35.42	46.00	-10.58
19H	504.069	44.70	3.84	17.28	32.20	33.62	46.00	-12.38
20H	520.079	41.30	4.01	17.59	32.20	30.70	46.00	-15.30
21H	584.076	38.80	4.44	18.73	32.20	29.77	46.00	-16.23
22H	632.076	38.60	4.63	18.97	32.07	30.13	46.00	-15.87

The above readings are with the EUT in the "X" axis

The below readings are with the EUT in the "Z" axis

23V	504.076	41.40	3.84	17.28	32.20	30.32	46.00	-15.68
24V	512.076	38.00	3.93	17.44	32.20	27.16	46.00	-18.84
25V	520.076	42.10	4.01	17.59	32.20	31.50	46.00	-14.50
26V	528.058	40.00	4.09	17.74	32.20	29.63	46.00	-16.37
27V	536.082	41.20	4.17	17.89	32.20	31.05	46.00	-14.95
28V	544.056	37.60	4.24	18.03	32.20	27.68	46.00	-18.32
29V	552.080	39.90	4.31	18.18	32.20	30.19	46.00	-15.81
30V	568.080	38.70	4.37	18.46	32.20	29.33	46.00	-16.67

Test Location : Compatible Electronics Page : 2/3
 Customer : Universal Electronic, Inc. Date : 7/18/2011
 Manufacturer : Universal Electronic, Inc. Time : 8:47:03
 Eut name : EchoStar XiP 40.0 Lab : A
 Model : 40.0 UHF 2G Test Distance : 3
 Serial # : N/A
 Specification : FCC B
 Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
 Test Mode : Test Type: Radiated Emissions Qualification
 Test Range: 10 kHz to 1 GHz
 Clock(s): 8 MHz and 16 MHz
 Test Engineer: James Ross

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
31H	440.067	44.80	3.64	17.03	32.30	33.17	46.00	-12.83
32H	448.067	38.90	3.69	17.05	32.30	27.34	46.00	-18.66
33H	456.082	46.20	3.71	17.08	32.29	34.70	46.00	-11.30
34H	464.085	40.80	3.73	17.10	32.27	29.36	46.00	-16.64
35H	472.088	47.40	3.75	17.12	32.25	36.01	46.00	-9.99
36H	480.075	43.40	3.76	17.15	32.24	32.07	46.00	-13.93
37H	488.081	46.80	3.78	17.17	32.22	35.52	46.00	-10.48
38H	504.078	45.80	3.84	17.28	32.20	34.72	46.00	-11.28
39H	512.072	41.20	3.93	17.44	32.20	30.36	46.00	-15.64
40H	520.068	42.80	4.01	17.59	32.20	32.19	46.00	-13.81
41H	528.091	39.70	4.09	17.74	32.20	29.33	46.00	-16.67
42H	536.067	39.30	4.17	17.89	32.20	29.15	46.00	-16.85
43H	552.079	39.90	4.31	18.18	32.20	30.19	46.00	-15.81

The below readings are with the EUT in the "Y" axis

44V	440.079	44.50	3.64	17.03	32.30	32.87	46.00	-13.13
45V	456.059	47.50	3.71	17.08	32.29	36.00	46.00	-10.00
46V	464.088	42.40	3.73	17.10	32.27	30.96	46.00	-15.04
47V	472.064	50.20	3.75	17.12	32.25	38.81	46.00	-7.19
48V	480.084	45.10	3.76	17.15	32.24	33.77	46.00	-12.23
49V	488.053	48.30	3.78	17.17	32.22	37.02	46.00	-8.98
50V	504.071	49.00	3.84	17.28	32.20	37.92	46.00	-8.08
51V	512.068	44.70	3.93	17.44	32.20	33.86	46.00	-12.14
52V	520.069	47.20	4.01	17.59	32.20	36.59	46.00	-9.41
53V	528.062	43.10	4.09	17.74	32.20	32.73	46.00	-13.27
54V	536.050	45.60	4.17	17.89	32.20	35.45	46.00	-10.55
55V	544.061	42.70	4.24	18.03	32.20	32.78	46.00	-13.22
56V	552.073	44.60	4.31	18.18	32.20	34.89	46.00	-11.11
57V	560.069	40.60	4.34	18.32	32.20	31.06	46.00	-14.94
58V	568.069	43.10	4.37	18.46	32.20	33.73	46.00	-12.27
59V	608.069	38.60	4.53	18.99	32.17	29.96	46.00	-16.04
60V	632.069	37.50	4.63	18.97	32.07	29.03	46.00	-16.97
61V	424.099	44.30	3.55	16.98	32.30	32.53	46.00	-13.47
62V	392.057	41.30	3.35	16.63	32.32	28.97	46.00	-17.03

Test Location	: Compatible Electronics	Page	: 3/3
Customer	: Universal Electronic, Inc.	Date	: 7/18/2011
Manufacturer	: Universal Electronic, Inc.	Time	: 8:47:03
Eut name	: EchoStar XiP 40.0	Lab	: A
Model	: 40.0 UHF 2G	Test Distance	: 3
Serial #	: N/A		
Specification	: FCC B		
Distance correction factor (20 * log(test/spec))			: 0.00
Test Mode	: Test Type: Radiated Emissions Qualification		
	: Test Range: 10 kHz to 1 GHz		
	: Clock(s): 8 MHz and 16 MHz		
	: Test Engineer: James Ross		

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
63V	376.057	42.80	3.26	16.06	32.35	29.78	46.00	-16.22
64V	360.087	43.60	3.16	15.47	32.38	29.86	46.00	-16.14
65V	320.090	44.50	2.87	13.88	32.40	28.85	46.00	-17.15
66V	312.077	42.30	2.80	13.54	32.40	26.24	46.00	-19.76
67H	312.109	41.00	2.80	13.54	32.40	24.94	46.00	-21.06
68H	320.085	45.30	2.87	13.88	32.40	29.65	46.00	-16.35
69H	400.046	44.50	3.40	16.90	32.30	32.50	46.00	-13.50

