

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

for

AT&T VRC81 DFW REMOTE 2016

Model: URC-5602BC0-X-R

Prepared for

UNIVERSAL ELECTRONICS, INC.
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DATE: JULY 24, 2017

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	17	2	2	2	14	38	75

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GENERAL REPORT SUMMARY

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

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

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

Device Tested: AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-R
S/N: N/A

Product Description: The EUT is an IR/RF remote control unit.

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

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

Test Dates: June 23 and 27; and July 11, 2017

Test Specifications covered by accreditation:

CFR Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209, and 15.249



Test Procedures: ANSI C63.4: 2014 and ANSI C63.10: 2013

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 9 kHz –25000 MHz (Transmitter and Digital portion)	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15 Subpart C, section 15.205, 15.209 and 15.249 Highest reading in relation to spec limit 43.24 dBuV/m @ 4884.00 MHz (*U = 3.70 dB)
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT does not connect to the AC mains

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the AT&T VRC81 DFW Remote 2016, Model: URC-5602BC0-X-R. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

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

2.2 Traceability Statement

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

2.3 Cognizant Personnel

Universal Electronics, Inc.

Jesse Mendez

Senior Core Electrical Engineer

Compatible Electronics Inc.

James Ross

Test Engineer

Kyle Haag

Test Technician

Kyle Fujimoto

Test Engineer

2.4 Date Test Sample was Received

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

2.5 Disposition of the Test Sample

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

2.6 Abbreviations and Acronyms

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

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ASK	Amplitude Shift Key
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receive
IR	Infrared
Inc.	Incorporated

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard of procedure for compliance testing of unlicensed wireless devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The AT&T VRC81 DFW Remote 2016, Model: URC-5602BC0-X-R (EUT) was setup in a stand-alone configuration. The EUT was investigated in all three orthogonal axis with X-axis being the worst case. The EUT was continuously transmitting a data stream respectively at 2402 MHz, 2442 MHz and 2480 MHz during the testing. A fresh set of batteries were used to operate the remote during testing.

The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The EUT was programmed to be able to transmit at the low, middle, or high channels via the Texas Instruments Test Software on the laptop.

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

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
AT&T VRC81 DFW REMOTE 2016 (EUT)	UNIVERSAL ELECTRONICS, INC.	URC-5602BC0-X-R	N/A	MG3-5601
LAPTOP*	HEWLETT PACKARD	HP PROBOOK 450 G2	CND50454JC	PD93160H
AC ADAPTER FOR LAPTOP*	HEWLETT PACKARD	HSTNN-DA40	WDWRT0AAR8Q66A	N/A
TEST PROGRAMMING SOFTWARE*	TEXAS INSTRUMENTS	SMARTRF STUDIO 7	2.2.1	N/A

*Used to program the EUT only and was removed prior to the testing

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Keysight	N9038A	MY51210150	December 29, 2015	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	2 Year
Loop Antenna	Com-Power	AL-130R	121090	February 9, 2017	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
Preamplifier	Com-Power	PA-840	711013	May 13, 2016	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

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

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

7. Test Procedures

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A transient limiter was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI 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 63:4. 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 computer software. The final qualification data is located in Appendix E.

Test Results:

This device is battery powered and does not connect to the AC public mains, thus this test was not performed.

7.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 9 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 25 GHz).

The frequencies above 1 GHz, except for the band edges were averaged using a duty cycle correction factor as explained in section 7.1.4 of this test report. The band edges were averaged using the RMS detector function on the EMI Receiver.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with 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. 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 EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 1.0.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT 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 for radiated emissions.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-R

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB)
4884.00 (H) (X-Axis)	43.24 (A)	53.97	-10.74
4804.00 (H) (X-Axis)	42.96 (A)	53.97	-11.01
2480.00 (H) (Z-Axis)	82.58 (A)	93.97	-11.39
4884.00 (V) (Y-Axis)	42.36 (A)	53.97	-11.61
2442.00 (H) (X-Axis)	82.16 (A)	93.97	-11.81
2480.00 (H) (X-Axis)	82.11 (A)	93.97	-11.86

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (BL) Black Lead
- (WL) White Lead
- (V) Vertical
- (H) Horizontal
- (A) Average
- (QP) Quasi-Peak

7.1.4 Duty Cycle Calculation

The fundamental and harmonics were measured at a 3-meter test distance. The EMI Receiver was used to obtain the final test data. The final qualification data sheets are located in Appendix E.

Where

$$\delta(\text{dB}) = 20 \log \left[\frac{\sum (nt_1 + mt_2 + \dots + \xi t_x)}{T} \right]$$

n is the number of pulses of duration t_1

m is the number of pulses of duration t_2

ξ is the number of pulses of duration t_x

T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

The worst case was advertising mode and is calculated as shown below:

Duty Cycle Correction Factor = -20.00dB

Pulse = 1 * 450 us

Total On Time = 450 us

Worst Case Between Pulses was 41.9 ms. 450 us / 41.9 ms = 0.0107

Duty Cycle = 1.07%. The maximum -20 dB peak to average ratio can be utilized.

8. CONCLUSIONS

The AT&T VRC81 DFW Remote 2016, Model: URC-5602BC0-X-R, as tested, meets all of the **Class B** specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.249.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
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(714) 579-0500

Newbury Park Division
1050 Lawrence Drive
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Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS



NVLAP LAB CODE 200528-0



For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025.

For the most up-to-date version of our scopes and certificates please visit <http://celectronics.com/quality/scope/>

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."



APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

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

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

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODEL COVERED
UNDER THIS REPORT***

ADDITIONAL MODEL COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

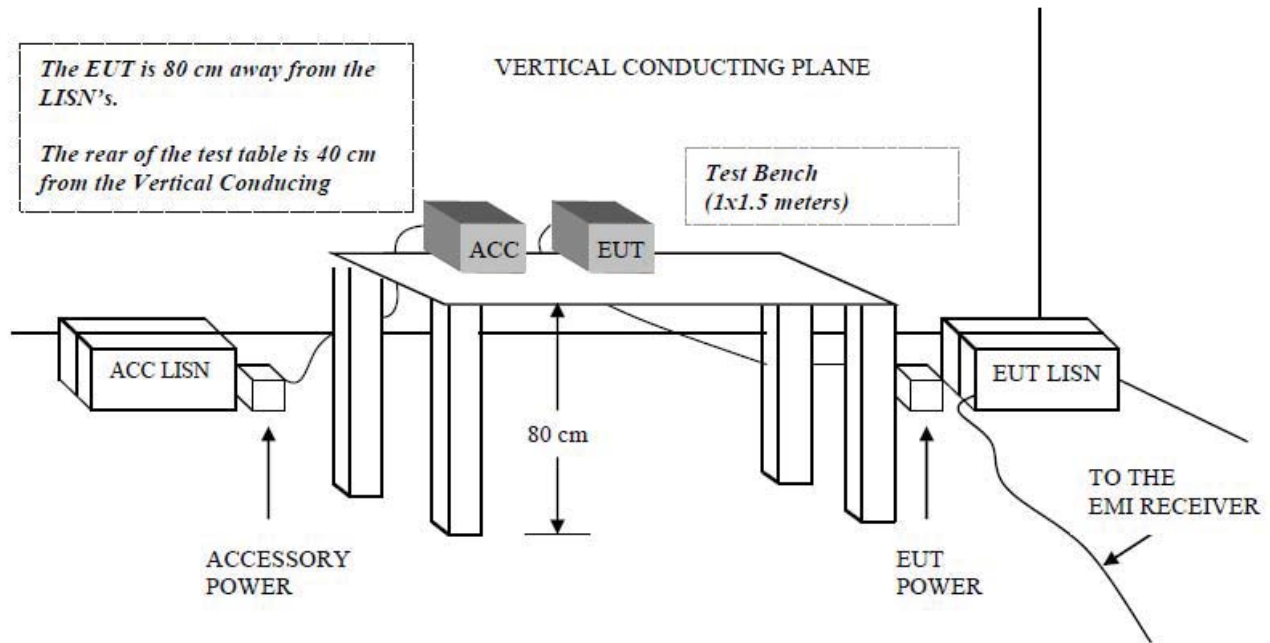
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-R
S/N: N/A

There are no additional Models covered under this report.

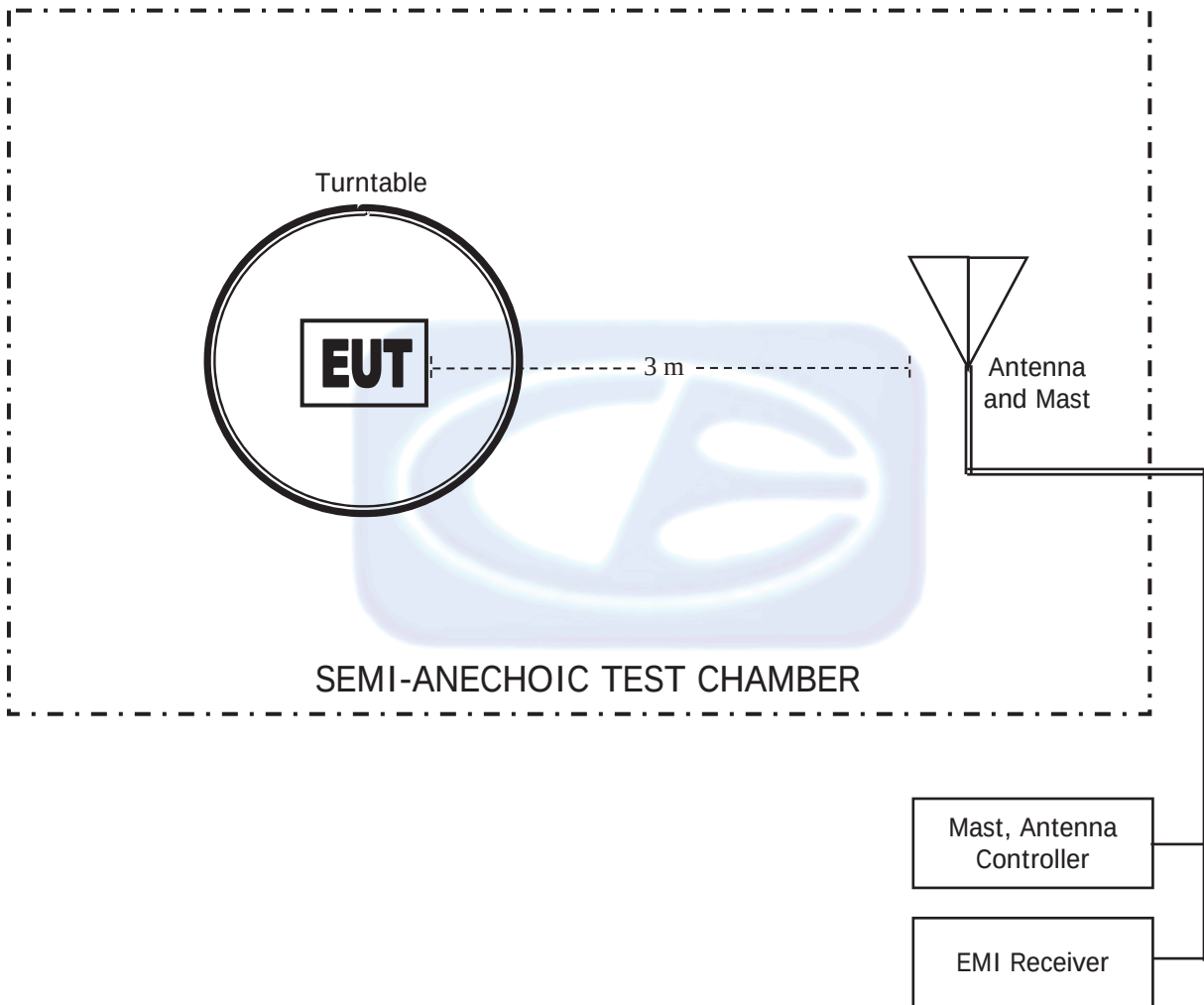


APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

**FIGURE 2: LAYOUT OF THE SEMI -ANECHOIC
TEST CHAMBER**



COM-POWER AL-130**LOOP ANTENNA****S/N: 121090****CALIBRATION DATE: FEBRUARY 9, 2017**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-36.17	15.33
0.01	-35.86	15.64
0.02	-37.30	14.20
0.03	-36.58	14.92
0.04	-36.99	14.51
0.05	-37.66	13.84
0.06	-37.53	13.97
0.07	-37.64	13.86
0.08	-37.52	13.98
0.09	-37.62	13.88
0.1	-37.59	13.91
0.2	-37.79	13.71
0.3	-37.80	13.70
0.4	-37.70	13.80
0.5	-37.79	13.71
0.6	-37.79	13.71
0.7	-37.69	13.81
0.8	-37.49	14.01
0.9	-37.39	14.11
1	-37.39	14.11
2	-37.09	14.41
3	-37.09	14.41
4	-37.19	14.31
5	-36.98	14.52
6	-37.17	14.33
7	-37.05	14.45
8	-36.85	14.65
9	-36.84	14.66
10	-36.75	14.75
15	-37.16	14.34
20	-36.44	15.06
25	-37.88	13.62
30	-39.14	12.36

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: SEPTEMBER 3, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	24.00	200	13.00
35	24.30	250	15.30
40	25.40	300	18.20
45	21.50	350	17.90
50	22.50	400	18.60
60	15.40	450	19.80
70	12.70	500	21.60
80	11.10	550	22.40
90	13.40	600	23.70
100	13.80	650	24.30
120	15.40	700	24.00
125	15.40	750	24.50
140	13.10	800	24.30
150	17.20	850	26.30
160	13.20	900	26.90
175	14.20	950	26.00
180	14.30	1000	25.60

COM POWER AH-118**HORN ANTENNA****S/N: 071175****CALIBRATION DATE: FEBRUARY 26, 2016**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	39.03
7.0	36.33	16.0	39.07
7.5	37.03	16.5	41.40
8.0	37.56	17.0	43.18
8.5	40.07	17.5	47.01
9.0	38.92	18.0	46.48
9.5	38.21		

COM-POWER PAM-118A**PREAMPLIFIER****S/N: 551024****CALIBRATION DATE: MAY 12, 2016**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.84	6.0	39.05
1.1	39.40	6.5	38.94
1.2	39.58	7.0	39.25
1.3	39.68	7.5	39.09
1.4	39.91	8.0	39.01
1.5	39.78	8.5	38.60
1.6	39.50	9.0	38.64
1.7	39.81	9.5	39.67
1.8	39.89	10.0	39.30
1.9	39.94	11.0	39.15
2.0	39.57	12.0	39.24
2.5	40.39	13.0	39.49
3.0	40.63	14.0	39.44
3.5	40.80	15.0	39.94
4.0	40.86	16.0	40.09
4.5	39.94	17.0	40.06
5.0	34.47	18.0	39.76
5.5	39.32		

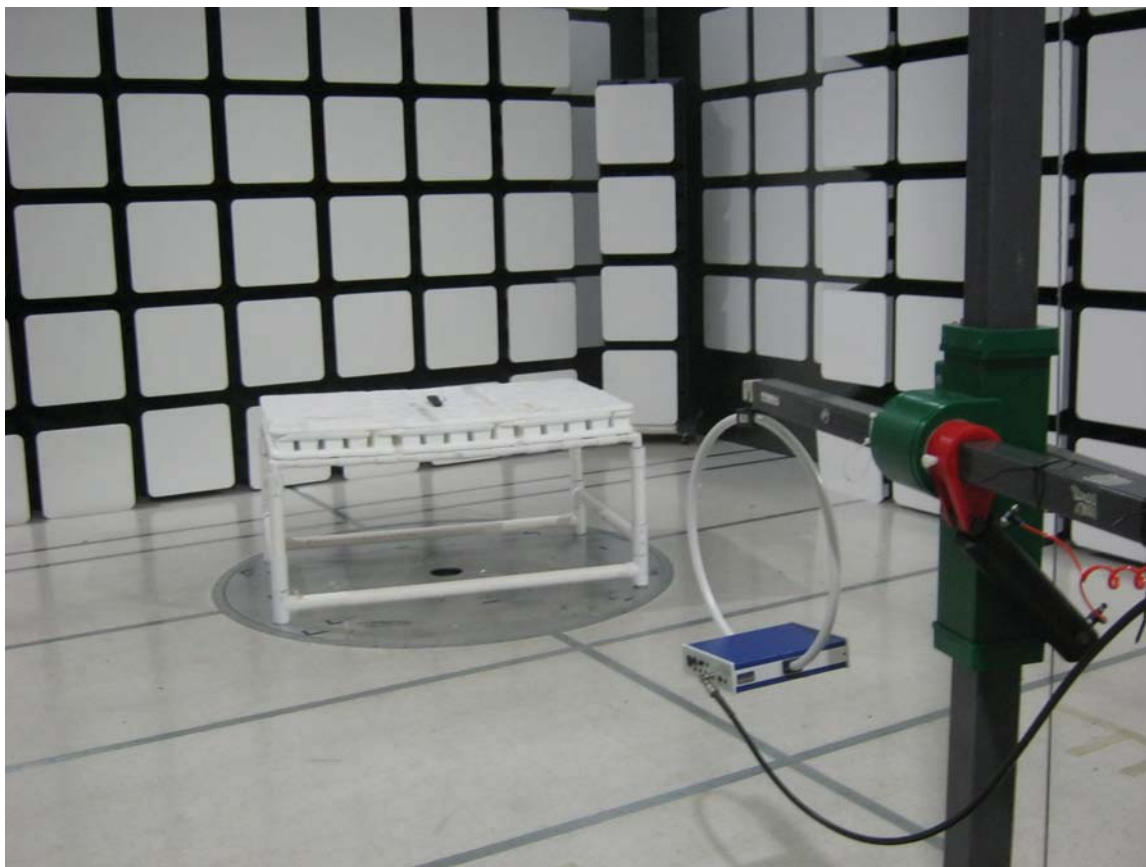
COM-POWER AH-826**HORN ANTENNA**

S/N: 71957

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

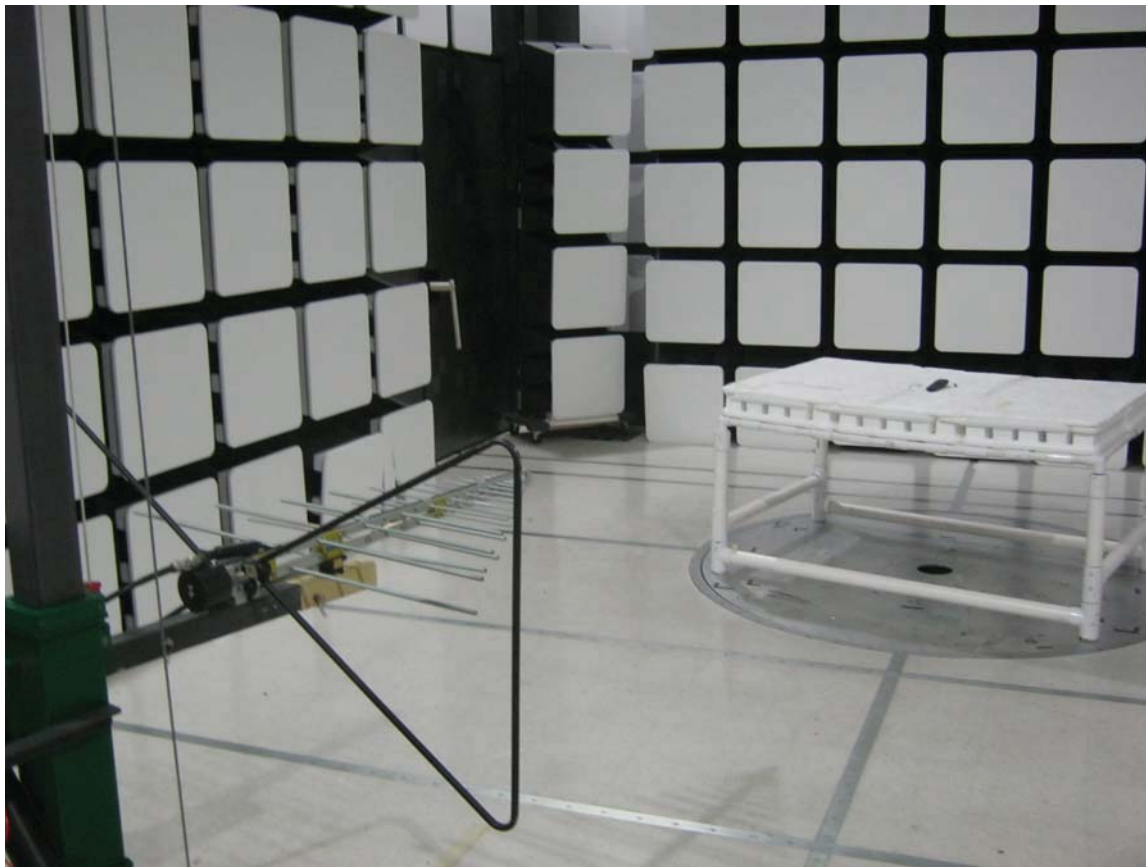
COM-POWER PA-840**MICROWAVE PREAMPLIFIER****S/N: 711013****CALIBRATION DATE: MAY 13, 2016**

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



UNIVERSAL ELECTRONICS, INC.
AT&T VRC81 DFW REMOTE 2016
MODEL: URC-5602BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 30 MHz

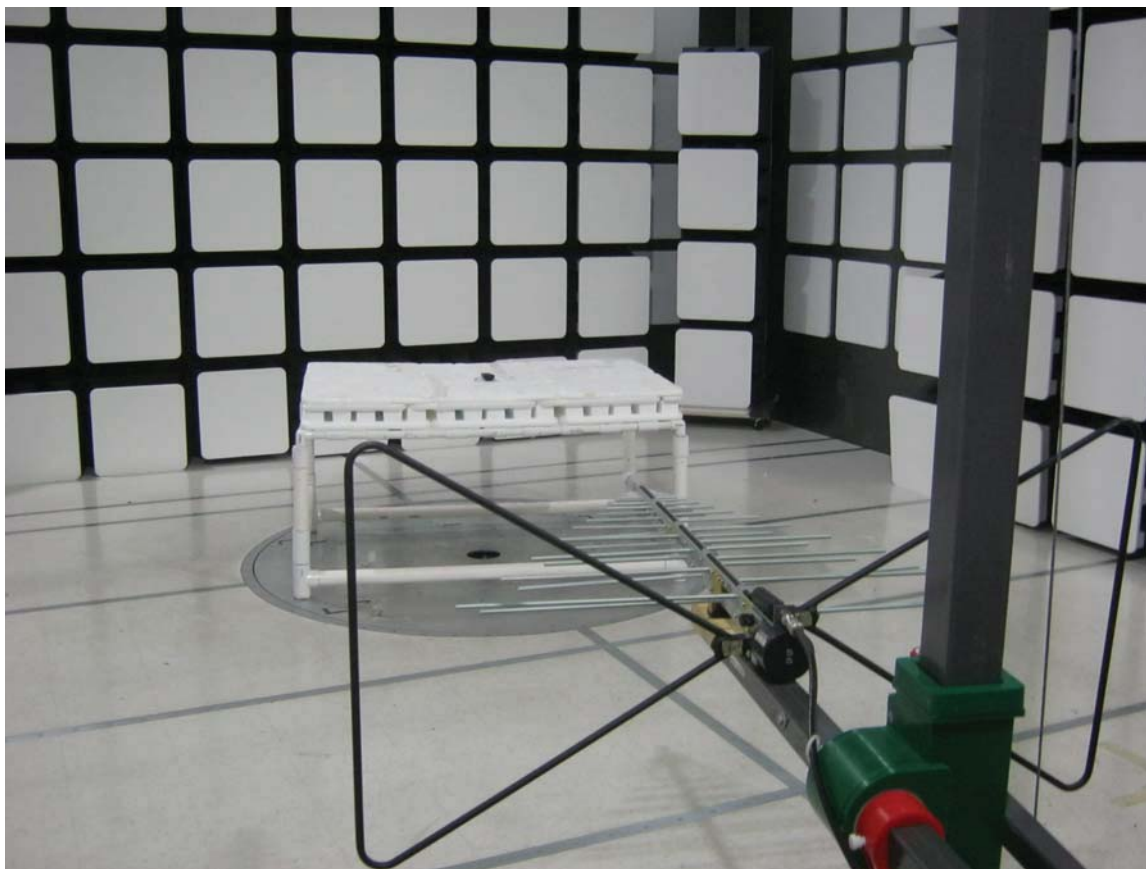
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
AT&T VRC81 DFW REMOTE 2016
MODEL: URC-5602BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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

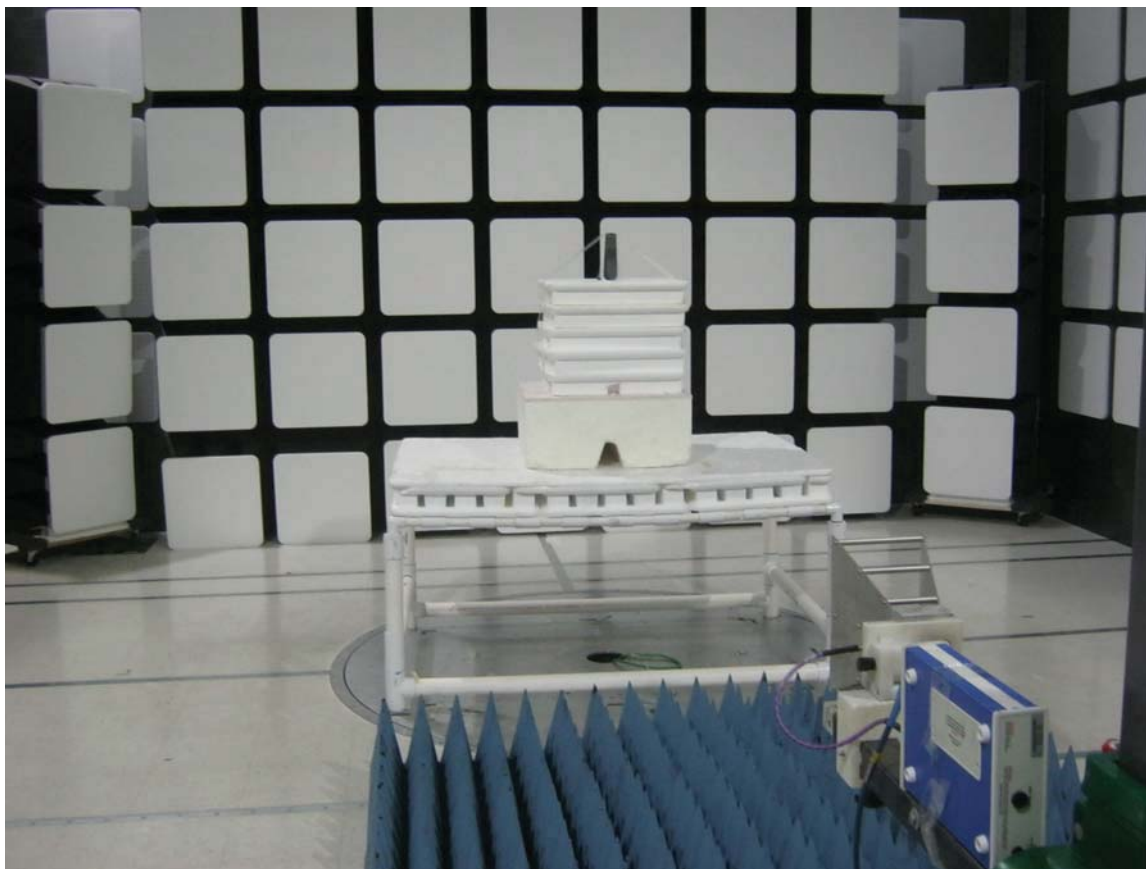


REAR VIEW

UNIVERSAL ELECTRONICS, INC.
AT&T VRC81 DFW REMOTE 2016
MODEL: URC-5602BC0-X-R

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

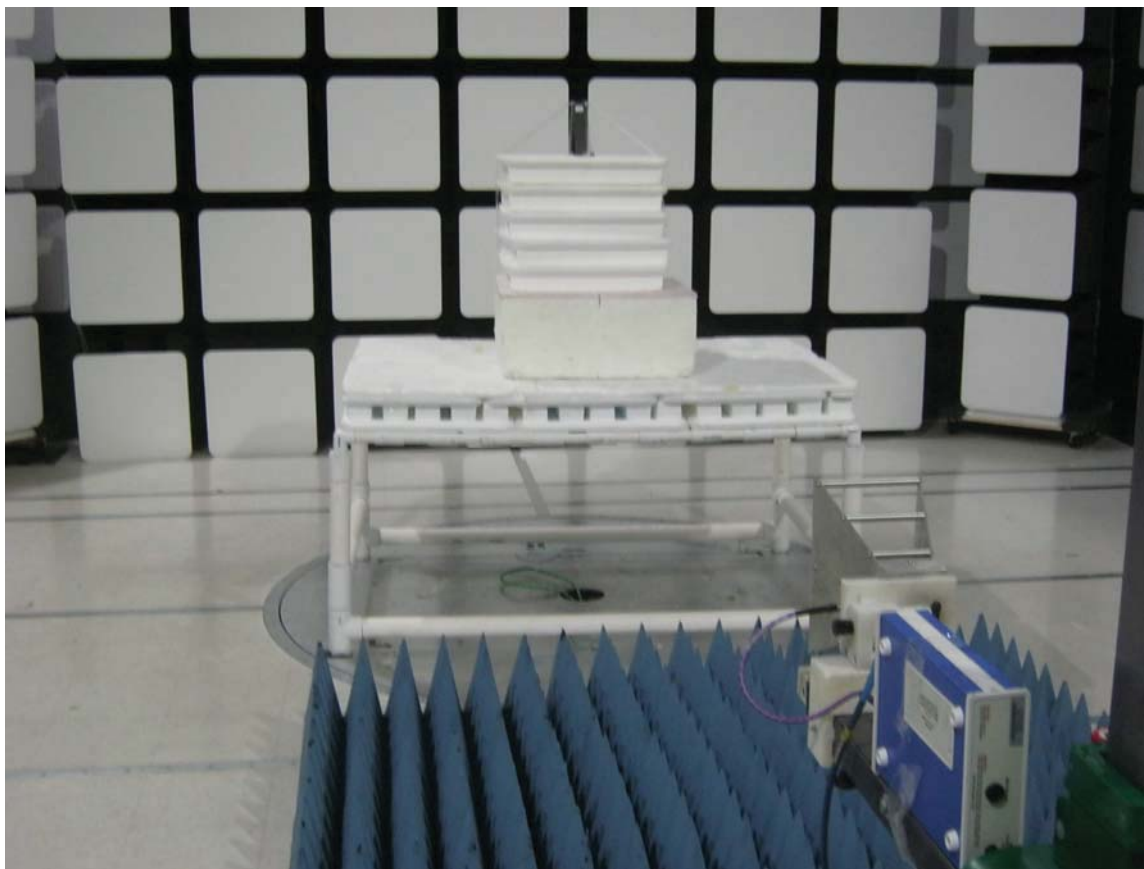
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

UNIVERSAL ELECTRONICS, INC.
AT&T VRC81 DFW REMOTE 2016
MODEL: URC-5602BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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



REAR VIEW

UNIVERSAL ELECTRONICS, INC.
AT&T VRC81 DFW REMOTE 2016
MODEL: URC-5602BC0-X-R
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

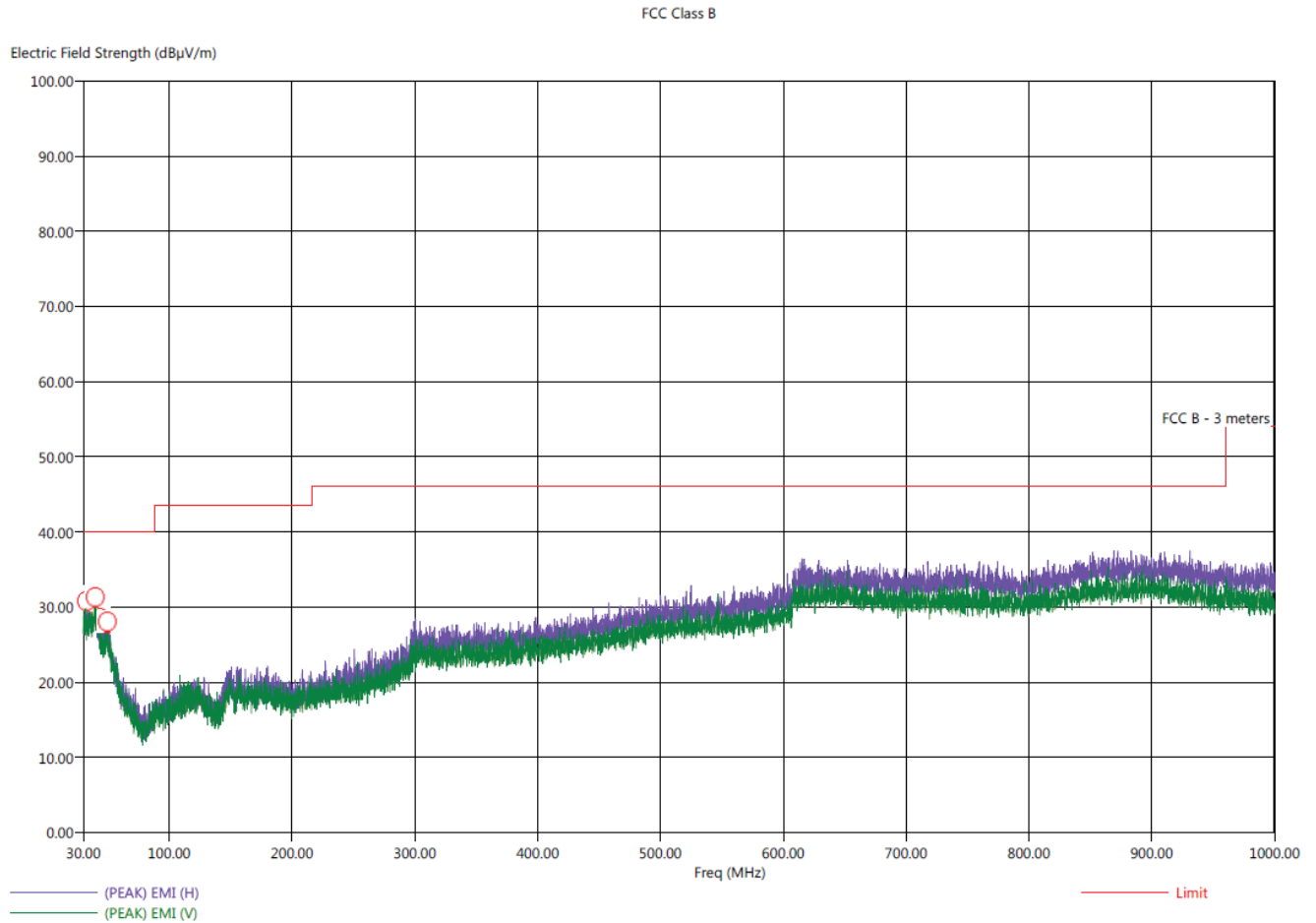
APPENDIX E

DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

Title: Pre-Scan - FCC Class B
File: 1 - Agilent - Pre-Scan - Middle Channel - FCC Class B - 30 MHz to 1000 MHz - 6-27-2017.set
Operator: Kyle Haag
EUT Type: AT&T VRC81 DFW Remote 2016
EUT Condition: The EUT is continuously transmitting at the Middle Channel (X-Axis worst case)
Comments: Company: Universal Electronics, Inc.
Model: URC-5602BC0-X-R

6/27/2017 8:49:55 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - Agilent - Final Scan - Middle Channel - FCC Class B - 30 MHz to 1000 MHz - 6-27-2017.set
Operator: Kyle Haag
EUT Type: AT&T VRC81 DFW Remote 2016
EUT Condition: The EUT is continuously transmitting at the Middle Channel (X-Axis worst case)
Comments: Company: Universal Electronics, Inc.
Model: URC-5602BC0-X-R

6/27/2017 9:04:45 AM
Sequence: Final Measurements

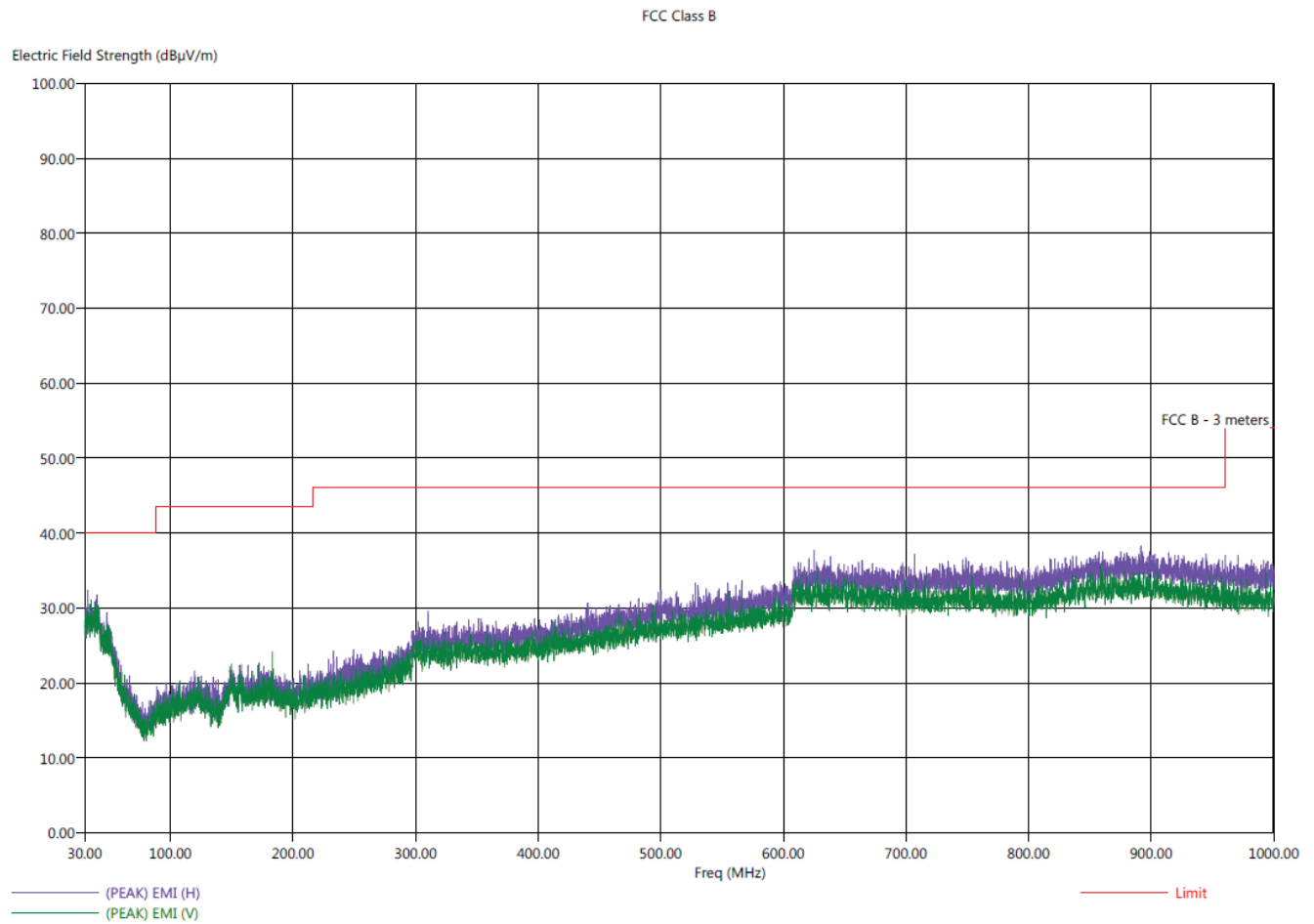
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (dea)	Twr Ht (cm)
32.60	H	32.28	26.10	-7.72	-13.90	40.00	24.15	0.33	283.00	255.53
35.30	H	31.54	26.13	-8.46	-13.87	40.00	24.32	0.35	150.50	255.89
38.30	H	32.42	26.82	-7.58	-13.18	40.00	25.06	0.39	281.25	399.95
39.90	V	32.76	27.16	-7.24	-12.84	40.00	25.36	0.40	292.00	159.35
43.20	H	30.12	24.35	-9.88	-15.65	40.00	22.78	0.40	96.50	271.65
49.70	V	30.24	23.76	-9.76	-16.24	40.00	22.41	0.40	6.00	159.47



Title: Pre-Scan - FCC Class B
File: 1 - Agilent - Pre-Scan - IR Mode - FCC Class B - 30 MHz to 1000 MHz - 07-11-2017 - X-Axis.set
Operator: Kyle Haag
EUT Type: AT&T VRC81 DFW Remote 2016
EUT Condition: The EUT is continuously transmitting IR (X-Axis)
Comments: Company: Universal Electronics, Inc.
Model: URC-5602BC0-X-R

7/11/2017 1:54:31 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - Agilent - Final Scan - IR Mode - FCC Class B - 30 MHz to 1000 MHz - 07-11-2017 - X-Axis.set
Operator: Kyle Haag
EUT Type: AT&T VRC81 DFW Remote 2016
EUT Condition: The EUT is continuously transmitting IR (X-Axis Worst Case)
Comments: Company: Universal Electronics, Inc.
Model: URC-5602BC0-X-R

7/11/2017 3:56:32 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
32.80	V	31.10	26.44	-8.90	-13.56	40.00	24.16	0.33	128.25	270.83
34.70	V	31.84	26.46	-8.16	-13.54	40.00	24.27	0.35	348.75	127.37
37.40	H	31.82	26.96	-8.18	-13.04	40.00	24.86	0.38	156.75	286.77
37.70	H	32.73	27.01	-7.27	-12.99	40.00	24.89	0.38	128.75	398.65
38.90	H	32.74	27.28	-7.26	-12.72	40.00	25.15	0.39	311.50	254.89
40.20	V	33.61	27.35	-6.39	-12.65	40.00	25.22	0.40	150.75	175.25



FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

**Fundamental
 Low Channel**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	92.46	V	113.97	-21.51	Peak	209.00	248.61	X-Axis
2402.00	72.46	V	93.97	-21.51	Avg	209.00	248.61	Vertical Polarization
2402.00	100.39	V	113.97	-13.58	Peak	112.25	120.19	Y-Axis
2402.00	80.39	V	93.97	-13.58	Avg	112.25	120.19	Vertical Polarization
2402.00	97.06	V	113.97	-16.91	Peak	338.50	162.64	Z-Axis
2402.00	77.06	V	93.97	-16.91	Avg	338.50	162.64	Vertical Polarization
2402.00	100.99	H	113.97	-12.98	Peak	149.75	200.07	X-Axis
2402.00	80.99	H	93.97	-12.98	Avg	149.75	200.07	Horizontal Polarization
2402.00	89.76	H	113.97	-24.21	Peak	173.50	231.41	Y-Axis
2402.00	69.76	H	93.97	-24.21	Avg	173.50	231.41	Horizontal Polarization
2402.00	98.10	H	113.97	-15.88	Peak	306.75	162.94	Z-Axis
2402.00	78.10	H	93.97	-15.88	Avg	306.75	162.94	Horizontal Polarization

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.82	V	73.97	-20.15	Peak	165.25	139.23	
4804.00	33.82	V	53.97	-20.15	Avg	165.25	139.23	
7206.00	46.82	V	73.97	-27.15	Peak	137.75	153.50	
7206.00	26.82	V	53.97	-27.15	Avg	137.75	153.50	
9608.00	47.62	V	73.97	-26.35	Peak	219.00	198.40	
9608.00	27.62	V	53.97	-26.35	Avg	219.00	198.40	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249Universal Electronics, Inc.
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-RDate: 06/23/2017
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	51.80	V	73.97	-22.17	Peak	18.25	116.55	
4804.00	31.80	V	53.97	-22.17	Avg	18.25	116.55	
7206.00	50.63	V	73.97	-23.34	Peak	340.25	125.08	
7206.00	30.63	V	53.97	-23.34	Avg	340.25	125.08	
9608.00	50.38	V	73.97	-23.59	Peak	193.25	119.00	
9608.00	30.38	V	53.97	-23.59	Avg	193.25	119.00	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.36	V	73.97	-20.61	Peak	292.75	189.80	
4804.00	33.36	V	53.97	-20.61	Avg	292.75	189.80	
7206.00	50.15	V	73.97	-23.82	Peak	265.00	223.11	
7206.00	30.15	V	53.97	-23.82	Avg	265.00	223.11	
9608.00	50.24	V	73.97	-23.73	Peak	245.25	139.11	
9608.00	30.24	V	53.97	-23.73	Avg	245.25	139.11	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	62.96	H	73.97	-11.01	Peak	113.00	141.50	
4804.00	42.96	H	53.97	-11.01	Avg	113.00	141.50	
7206.00	52.36	H	73.97	-21.61	Peak	65.50	128.31	
7206.00	32.36	H	53.97	-21.61	Avg	65.50	128.31	
9608.00	51.67	H	73.97	-22.30	Peak	305.50	111.29	
9608.00	31.67	H	53.97	-22.30	Avg	305.50	111.29	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	61.49	H	73.97	-12.48	Peak	254.25	186.04	
4804.00	41.49	H	53.97	-12.48	Avg	254.25	186.04	
7206.00	50.97	H	73.97	-23.00	Peak	221.75	211.35	
7206.00	30.97	H	53.97	-23.00	Avg	221.75	211.35	
9608.00	49.67	H	73.97	-24.30	Peak	182.25	245.38	
9608.00	29.67	H	53.97	-24.30	Avg	182.25	245.38	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	58.28	H	73.97	-15.69	Peak	245.25	172.97	
4804.00	38.28	H	53.97	-15.69	Avg	245.25	172.97	
7206.00	50.49	H	73.97	-23.48	Peak	123.50	224.91	
7206.00	30.49	H	53.97	-23.48	Avg	123.50	224.91	
9608.00	50.59	H	73.97	-23.38	Peak	302.00	104.19	
9608.00	30.59	H	53.97	-23.38	Avg	302.00	104.19	
12010.00								No Emission
12010.00								Detected
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	52.48	V	73.97	-21.49	Peak	154.00	118.40	
4884.00	32.48	V	53.97	-21.49	Avg	154.00	118.40	
7326.00	45.60	V	73.97	-28.37	Peak	212.00	96.43	
7326.00	25.60	V	53.97	-28.37	Avg	212.00	96.43	
9768.00	48.83	V	73.97	-25.14	Peak	325.25	227.89	
9768.00	28.83	V	53.97	-25.14	Avg	325.25	227.89	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	62.36	V	73.97	-11.61	Peak	283.25	147.00	
4884.00	42.36	V	53.97	-11.61	Avg	283.25	147.00	
7326.00	49.23	V	73.97	-24.74	Peak	248.50	76.31	
7326.00	29.23	V	53.97	-24.74	Avg	248.50	76.31	
9768.00	50.13	V	73.97	-23.84	Peak	353.50	122.22	
9768.00	30.13	V	53.97	-23.84	Avg	353.50	122.22	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	57.23	V	73.97	-16.74	Peak	179.50	186.34	
4884.00	37.23	V	53.97	-16.74	Avg	179.50	186.34	
7326.00	49.84	V	73.97	-24.13	Peak	242.75	223.89	
7326.00	29.84	V	53.97	-24.13	Avg	242.75	223.89	
9768.00	51.81	V	73.97	-22.16	Peak	242.00	124.97	
9768.00	31.81	V	53.97	-22.16	Avg	242.00	124.97	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	63.24	H	73.97	-10.74	Peak	114.00	132.49	
4884.00	43.24	H	53.97	-10.74	Avg	114.00	132.49	
7326.00	50.85	H	73.97	-23.12	Peak	94.75	138.46	
7326.00	30.85	H	53.97	-23.12	Avg	94.75	138.46	
9768.00	49.30	H	73.97	-24.67	Peak	307.75	154.76	
9768.00	29.30	H	53.97	-24.67	Avg	307.75	154.76	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	51.83	H	73.97	-22.14	Peak	346.75	114.82	
4884.00	31.83	H	53.97	-22.14	Avg	346.75	114.82	
7326.00	50.37	H	73.97	-23.60	Peak	341.75	128.73	
7326.00	30.37	H	53.97	-23.60	Avg	345.75	128.73	
9768.00	50.71	H	73.97	-23.26	Peak	195.00	116.61	
9768.00	30.71	H	53.97	-23.26	Avg	195.00	116.61	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4884.00	58.78	H	73.97	-15.19	Peak	242.25	194.88	
4884.00	38.78	H	53.97	-15.19	Avg	242.25	194.88	
7326.00	48.38	H	73.97	-25.59	Peak	143.00	220.55	
7326.00	28.38	H	53.97	-25.59	Avg	143.00	220.55	
9768.00	51.64	H	73.97	-22.33	Peak	324.00	106.82	
9768.00	31.64	H	53.97	-22.33	Avg	324.00	106.82	
12210.00								No Emission
12210.00								Detected
14652.00								No Emission
14652.00								Detected
17094.00								No Emission
17094.00								Detected
19536.00								No Emission
19536.00								Detected
21978.00								No Emission
21978.00								Detected
24420.00								No Emission
24420.00								Detected

FCC 15.249Universal Electronics, Inc.
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-RDate: 06/23/2017
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	52.21	V	73.97	-21.76	Peak	273.25	163.29	
4960.00	32.21	V	53.97	-21.76	Avg	273.25	163.29	
7440.00	46.92	V	73.97	-27.05	Peak	132.50	203.65	
7440.00	26.92	V	53.97	-27.05	Avg	132.50	203.65	
9920.00								No Emission
9920.00								Detected
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	61.41	V	73.97	-12.56	Peak	277.25	170.16	
4960.00	41.41	V	53.97	-12.56	Avg	277.25	170.16	
7440.00	50.03	V	73.97	-23.94	Peak	194.25	162.82	
7440.00	30.03	V	53.97	-23.94	Avg	194.25	162.82	
9920.00	48.50	V	73.97	-25.48	Peak	160.25	122.58	
9920.00	28.50	V	53.97	-25.48	Avg	160.25	122.58	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249Universal Electronics, Inc.
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-RDate: 06/23/2017
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.71	V	73.97	-16.26	Peak	182.25	183.05	
4960.00	37.71	V	53.97	-16.26	Avg	182.25	183.05	
7440.00	52.70	V	73.97	-21.28	Peak	101.50	158.34	
7440.00	32.70	V	53.97	-21.28	Avg	101.50	158.34	
9920.00	50.88	V	73.97	-23.09	Peak	126.75	141.32	
9920.00	30.88	V	53.97	-23.09	Avg	126.75	141.32	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249Universal Electronics, Inc.
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-RDate: 06/23/2017
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	61.05	H	73.97	-12.92	Peak	89.75	188.49	
4960.00	41.05	H	53.97	-12.92	Avg	89.75	188.49	
7440.00	52.08	H	73.97	-21.89	Peak	120.00	168.01	
7440.00	32.08	H	53.97	-21.89	Avg	120.00	168.01	
9920.00	48.36	H	73.97	-25.61	Peak	316.50	169.20	
9920.00	28.36	H	53.97	-25.61	Avg	316.50	169.20	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	49.89	H	73.97	-24.08	Peak	169.25	100.19	
4960.00	29.89	H	53.97	-24.08	Avg	169.25	100.19	
7440.00	50.73	H	73.97	-23.24	Peak	317.00	115.47	
7440.00	30.73	H	53.97	-23.24	Avg	317.00	115.47	
9920.00	50.68	H	73.97	-23.29	Peak	194.00	112.25	
9920.00	30.68	H	53.97	-23.29	Avg	194.00	112.25	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.249Universal Electronics, Inc.
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-RDate: 06/23/2017
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	58.52	H	73.97	-15.45	Peak	96.00	161.08	
4960.00	38.52	H	53.97	-15.45	Avg	96.00	161.08	
7440.00	52.68	H	73.97	-21.29	Peak	239.25	103.23	
7440.00	32.68	H	53.97	-21.29	Avg	239.25	103.23	
9920.00	51.55	H	73.97	-22.43	Peak	112.00	114.94	
9920.00	31.55	H	53.97	-22.43	Avg	112.00	114.94	
12400.00								No Emission
12400.00								Detected
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC Class B and FCC 15.249

Universal Electronics, Inc.
 AT&T VRC81 DFW Remote 2016
 Model: URC-5602BC0-X-R

Date: 06/23/2017
 Lab: D
 Tested By: Kyle Fujimoto

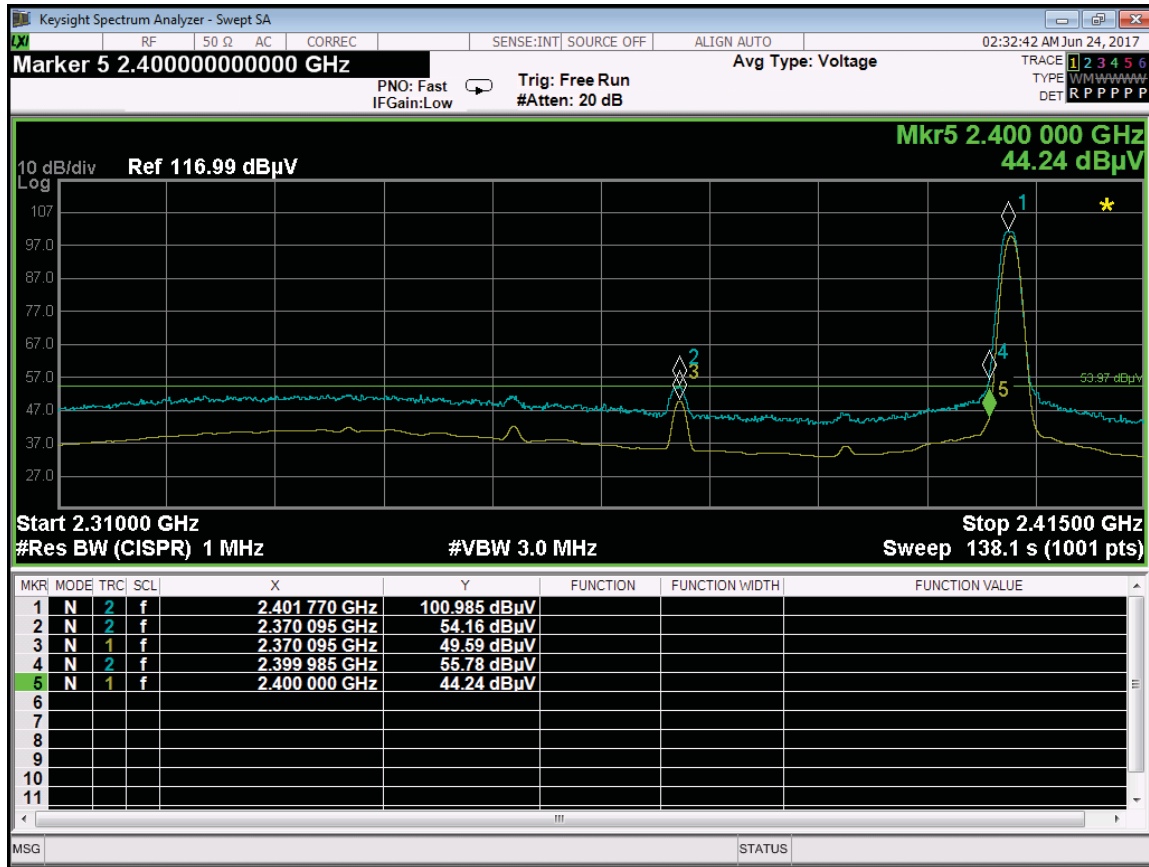
Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz

Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz

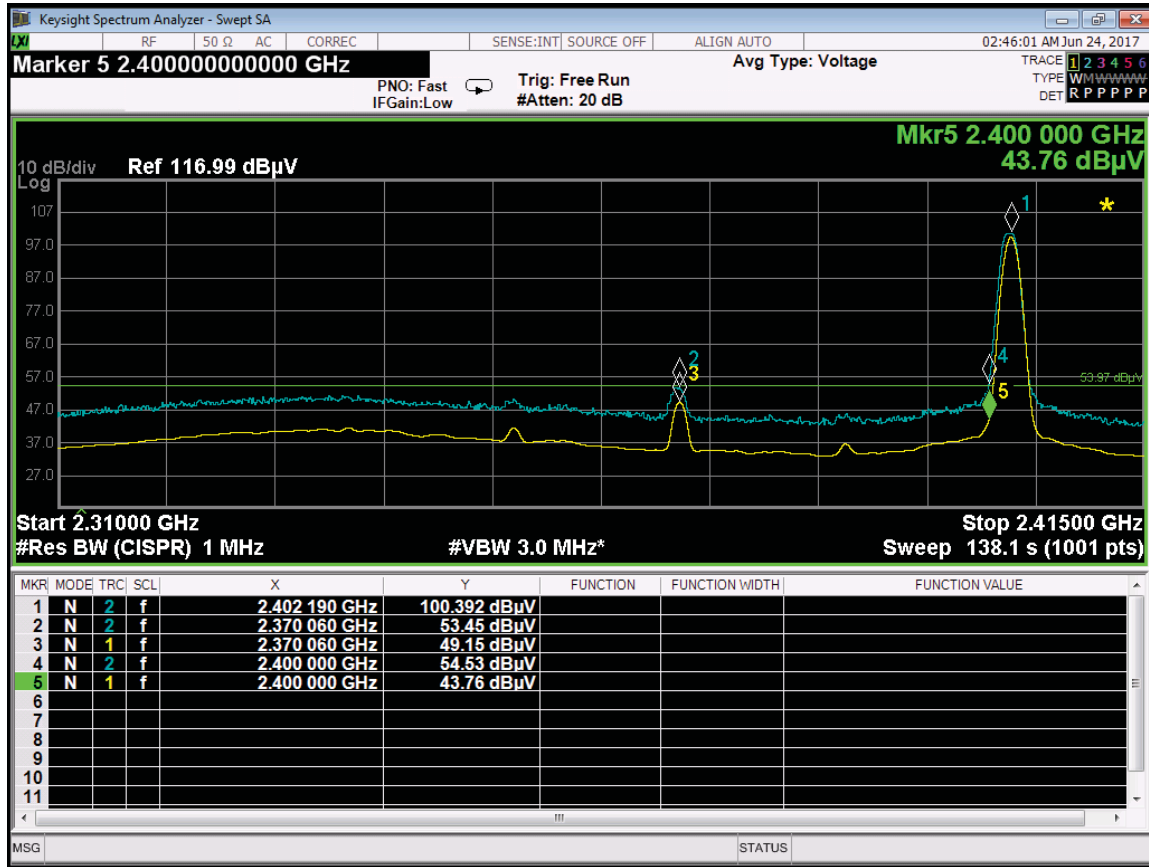
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

***BAND EDGES
DATA SHEETS***

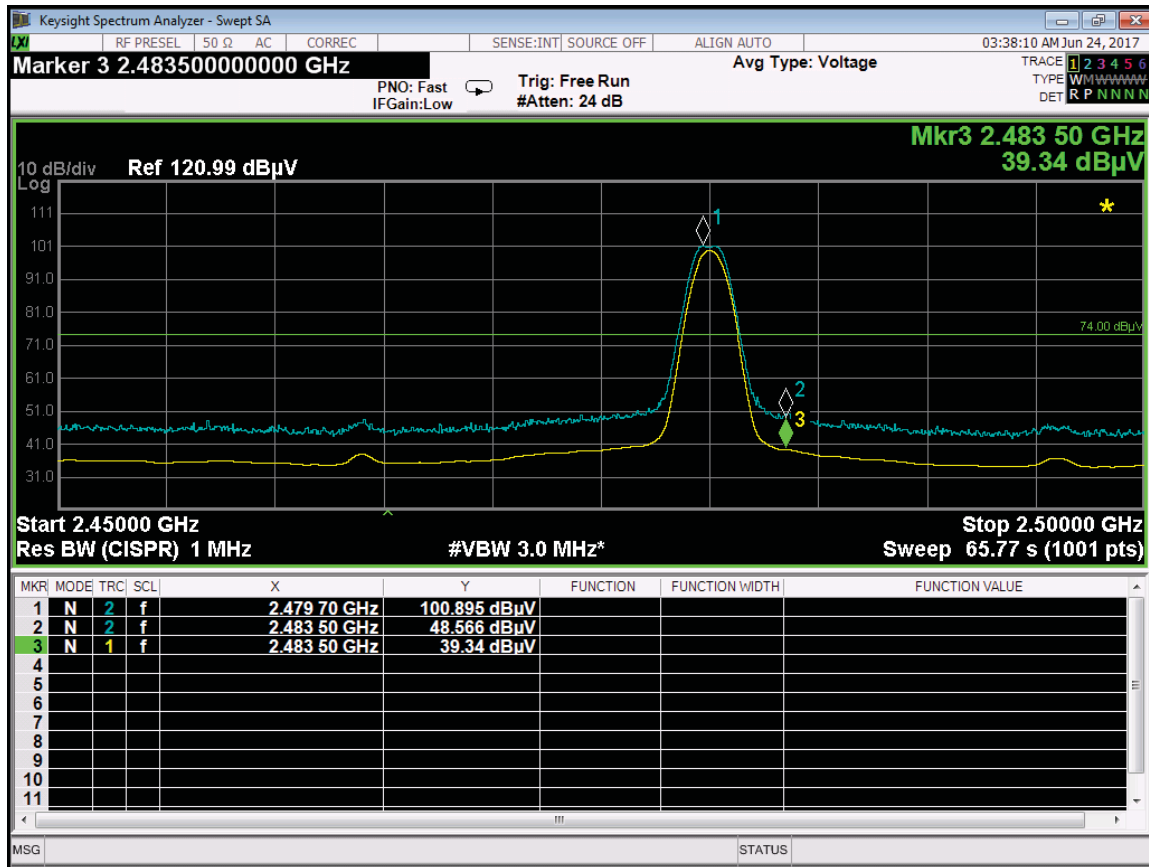
Report Number: **B70627D1**
FCC Part 15 Subpart B and **FCC Section 15.249** Test Report
AT&T VRC81 DFW Remote 2016
Model: URC-5602BC0-X-R



Band Edge – 2402 MHz - Horizontal - X-Axis - Worst Case

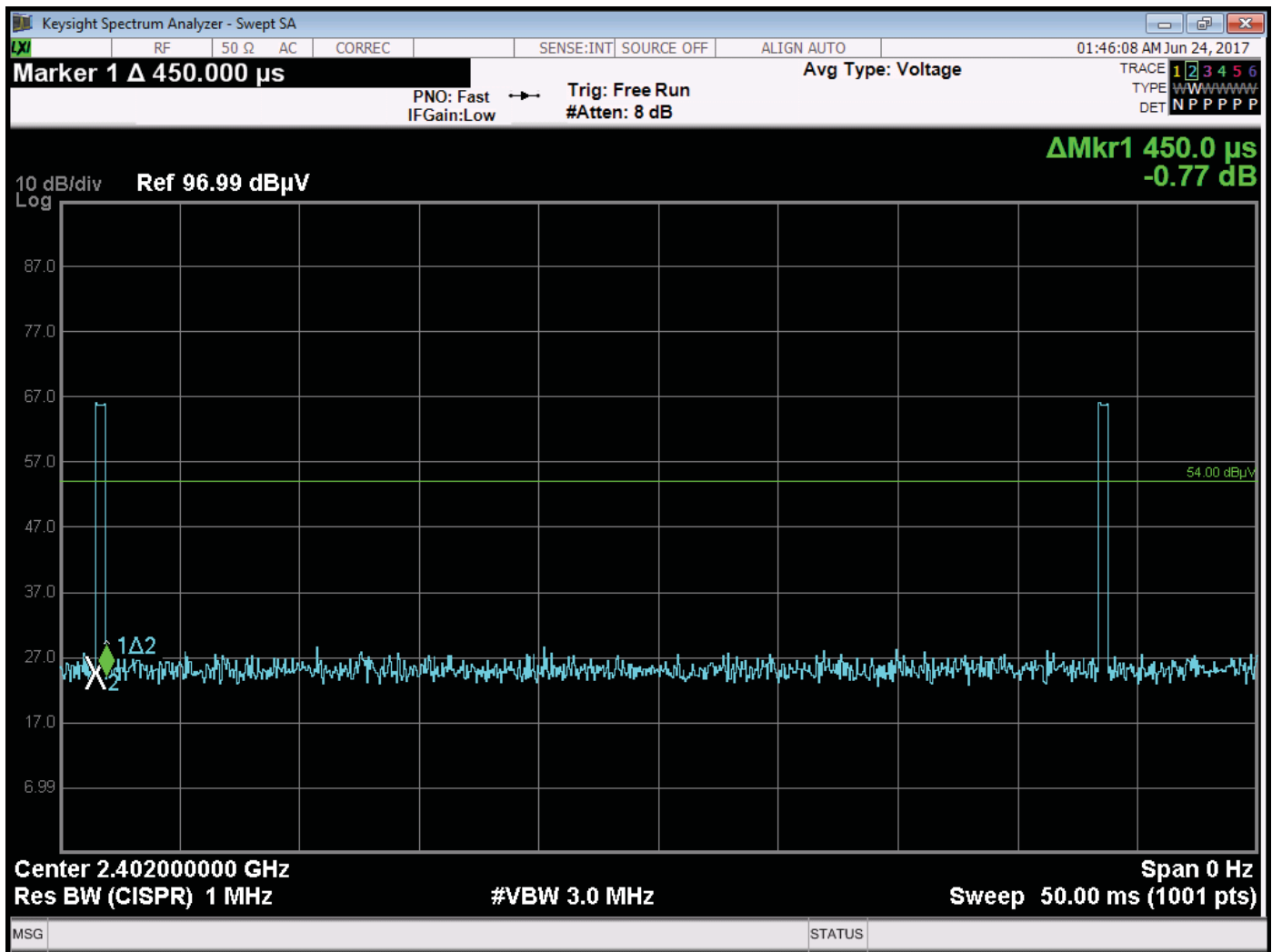


Band Edge – 2402 MHz - Vertical - Y-Axis - Worst Case

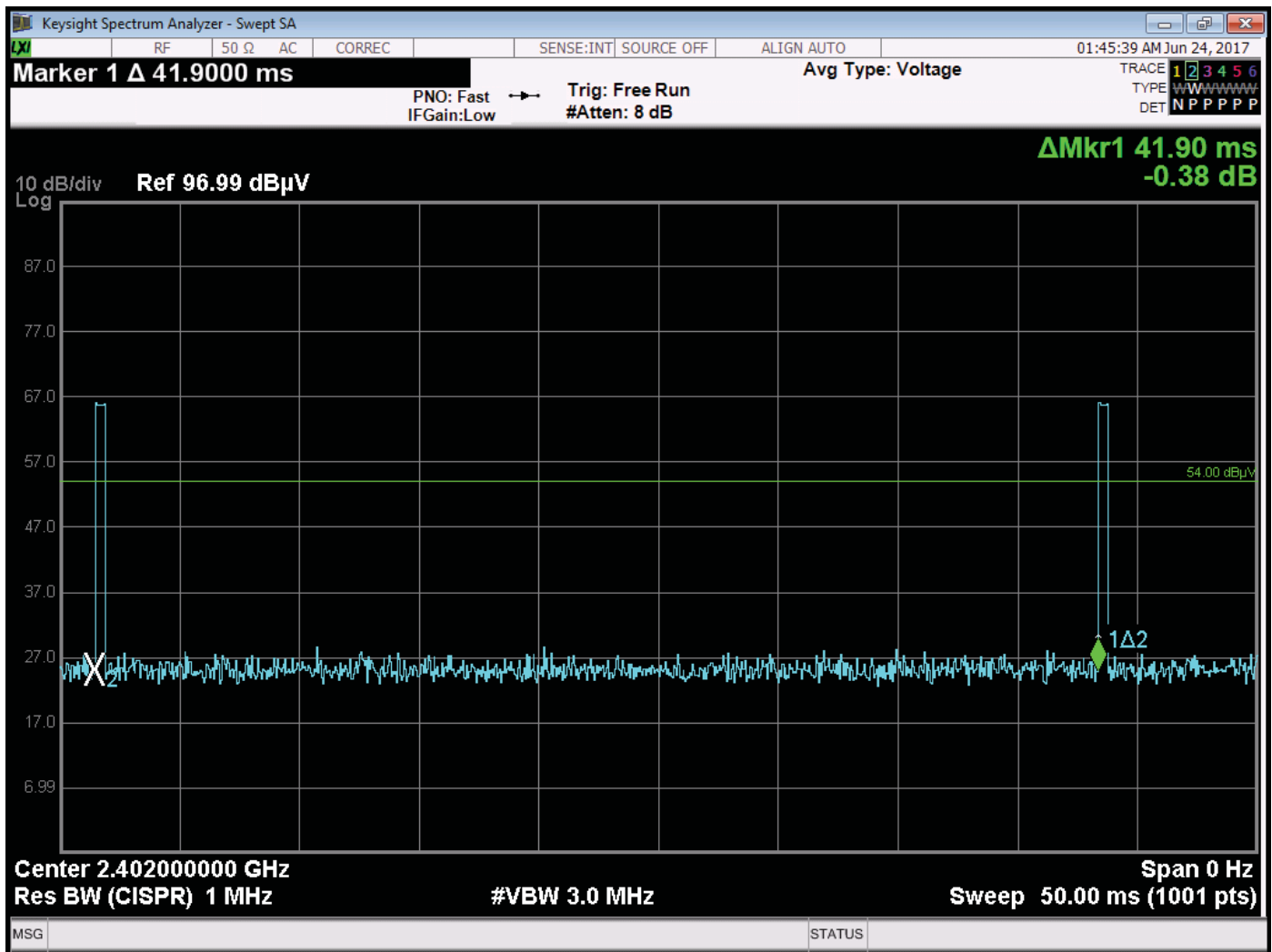


Band Edge – 2480 MHz - Vertical - Y-Axis - Worst Case

***DUTY CYCLE
DATA SHEETS***



450 us On Time – Advertising Mode (Worst Case)



41.9 ms Between Pulses – Advertising Mode (Worst Case)

Total Duty Cycle = $450 \text{ us} / 41.9 \text{ ms} = 1.07\%$ Duty Cycle

The 20 dB Peak to Average Ratio can be utilized.