WaveLynx Technologies Corporation

ADDENDUM TO EMC TEST REPORT 96495-13B

Ethos
Model: Ethos U7

Tested To The Following Standards:

FCC Part 15 Subpart C Section(s)
15.207, 15.209 & 15.225

Report No.: 96495-13C

Date of issue: October 8, 2015

ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

Testing the Future
CKC LABORATORIES, INC.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

WaveLynx Technologies Corporation
12303 Airport Way, Suite 200
Broomfield, CO 80021

Representative: Mike Conlin

REPORT PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 96495

DATE OF EQUIPMENT RECEIPT: January 15, 2015
DATE(S) OF TESTING: January 15 - 20, 2015 and September 8, 2015

Revision History

Original: Testing of Ethos, Models: Ethos U6 and Ethos U7 to FCC Part 15 Subpart C Section(s) 15.207, 15.209 & 15.225.
Addendum A: To correct a typo of the operating frequency on page 37 in the Radiated Spurious test conditions.
Addendum B: Replaced the OBW plots on pages 23 and 32.
Addendum C: Replaces all references of Ethos U6 with Ethos U7 and removed the equivalency reference to other models.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Mariposa A	US0103	SL2-IN-E-1147R	3082A-2	90477	A-0136

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C

Test Procedure	Description	Modifications*	Results
125kHz Transmitter			
15.207	Conducted Emissions	NA	Pass
15.209	Radiated Emissions	NA	Pass
15.209(a)	Fundamental Field Strength	NA	Pass
15.215(c)	20dB Occupied Bandwidth	NA	Pass
13.56MHz Transmitter			
15.207	Conducted Emissions	NA	Pass
15.215(c)	20dB Occupied Bandwidth	NA	Pass
15.225(a)	Fundamental Field Strength	NA	Pass
15.225(d)(b)	Radiated Spurious Emissions/Emissions Masks	NA	Pass
15.225(e)	Frequency Stability	NA	Pass

Modifications* During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions
No modifications were made during testing.

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Ethos
Manuf: Wavelynx Technologies Corporation
Model: Ethos U7
Serial: Eng002

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

AC-DC Adapter
Manuf: LG
Model: MCS-01WD
Serial: None

FCC PART 15 SUBPART C

125kHz Transmitter

15.207 AC Conducted Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.207 AC Mains - Average**
Work Order #: **96495** Date: 1/20/2015
Test Type: **Conducted Emissions** Time: 4:18:32 PM
Equipment: **Ethos** Sequence#: 5
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7 120V 60Hz
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP02229	Attenuator	PE7010-10	2/13/2013	2/13/2015
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	AN02608	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
T4	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 125kHz, configured to continuously transmit.

The EUT is powered with +5VDC via USB cable through support AC-DC converter.

Frequency Range of Interest: 0.15-30MHz
RBW = 9kHz; VBW > RBW

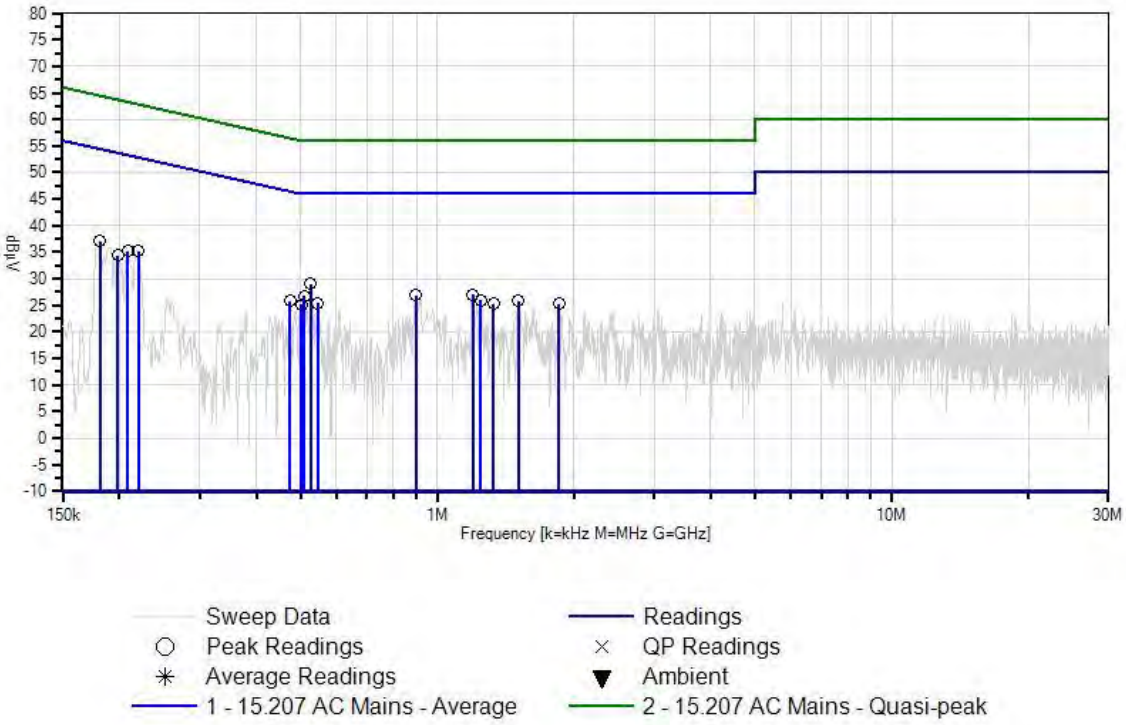
Environmental Conditions:
Temperature: 19°C
Relative Humidity: 43%
Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	527.420k	18.9	+9.7	+0.1	+0.2	+0.1	+0.0	29.0	46.0	-17.0	Black
2	181.270k	27.0	+9.7	+0.0	+0.3	+0.1	+0.0	37.1	54.4	-17.3	Black
3	219.812k	25.1	+9.7	+0.1	+0.2	+0.1	+0.0	35.2	52.8	-17.6	Black
4	208.904k	25.1	+9.7	+0.1	+0.2	+0.1	+0.0	35.2	53.2	-18.0	Black
5	1.196M	16.7	+9.8	+0.2	+0.2	+0.1	+0.0	27.0	46.0	-19.0	Black
6	898.469k	16.8	+9.7	+0.1	+0.2	+0.1	+0.0	26.9	46.0	-19.1	Black
7	509.967k	16.6	+9.7	+0.1	+0.2	+0.1	+0.0	26.7	46.0	-19.3	Black
8	197.996k	24.3	+9.7	+0.1	+0.2	+0.1	+0.0	34.4	53.7	-19.3	Black
9	1.247M	15.8	+9.8	+0.1	+0.2	+0.1	+0.0	26.0	46.0	-20.0	Black
10	1.507M	15.5	+9.8	+0.2	+0.2	+0.1	+0.0	25.8	46.0	-20.2	Black
11	475.061k	15.7	+9.7	+0.1	+0.2	+0.1	+0.0	25.8	46.4	-20.6	Black
12	545.600k	15.3	+9.7	+0.1	+0.2	+0.1	+0.0	25.4	46.0	-20.6	Black
13	1.332M	15.1	+9.8	+0.1	+0.2	+0.1	+0.0	25.3	46.0	-20.7	Black
14	1.855M	15.1	+9.8	+0.2	+0.1	+0.1	+0.0	25.3	46.0	-20.7	Black
15	501.968k	15.1	+9.7	+0.1	+0.2	+0.1	+0.0	25.2	46.0	-20.8	Black

CKC Laboratories, Inc. Date: 1/20/2015 Time: 4:18:32 PM WaveLynx Technologies Corporation WO#: 96495
15.207 AC Mains - Average Test Lead: Black 120V 60Hz Sequence#: 5 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer:	**WaveLynx Technologies Corporation**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**96495**	Date:	1/20/2015
Test Type:	**Conducted Emissions**	Time:	4:16:27 PM
Equipment:	**Ethos**	Sequence#:	4
Manufacturer:	Wavelynx Technologies Corporation	Tested By:	Eddie Mariscal
Model:	Ethos U7		120V 60Hz
S/N:	Eng002		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP02229	Attenuator	PE7010-10	2/13/2013	2/13/2015
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	AN02608	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
T4	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 125kHz, configured to continuously transmit.

The EUT is powered with +5VDC via USB cable through support AC-DC converter.

Frequency Range of Interest: 0.15-30MHz
RBW = 9kHz; VBW > RBW

Environmental Conditions:
Temperature: 19°C
Relative Humidity: 43%
Atmospheric Pressure: 97.8kPa

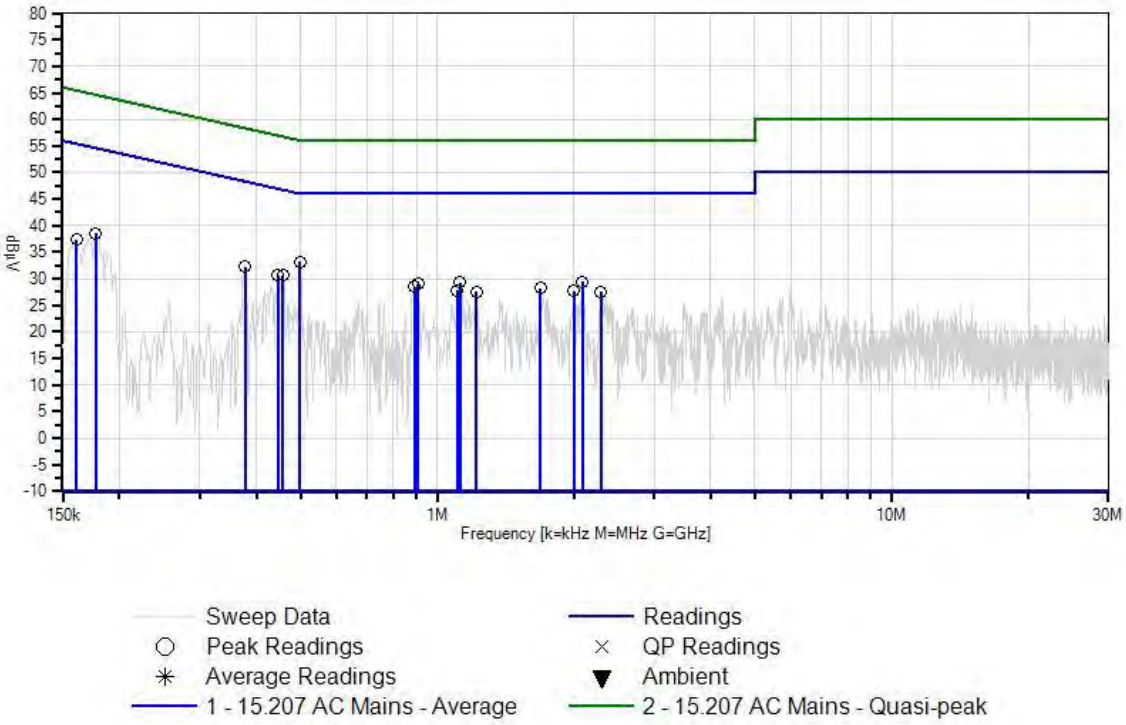
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	499.059k	23.1	+9.7	+0.1	+0.2	+0.1	+0.0	33.2	46.0	-12.8	White
2	177.634k	28.5	+9.7	+0.0	+0.3	+0.1	+0.0	38.6	54.6	-16.0	White

3	377.615k	22.2	+9.7	+0.1	+0.2	+0.1	+0.0	32.3	48.3	-16.0	White
4	458.335k	20.5	+9.7	+0.1	+0.2	+0.1	+0.0	30.6	46.7	-16.1	White
5	446.700k	20.6	+9.7	+0.1	+0.2	+0.1	+0.0	30.7	46.9	-16.2	White
6	2.085M	19.3	+9.8	+0.2	+0.1	+0.1	+0.0	29.5	46.0	-16.5	White
7	1.124M	19.1	+9.8	+0.1	+0.2	+0.1	+0.0	29.3	46.0	-16.7	White
8	906.974k	18.9	+9.7	+0.1	+0.2	+0.1	+0.0	29.0	46.0	-17.0	White
9	889.963k	18.4	+9.7	+0.1	+0.2	+0.1	+0.0	28.5	46.0	-17.5	White
10	1.685M	17.9	+9.8	+0.2	+0.2	+0.1	+0.0	28.2	46.0	-17.8	White
11	160.908k	27.0	+9.7	+0.0	+0.6	+0.1	+0.0	37.4	55.4	-18.0	White
12	1.107M	17.7	+9.8	+0.1	+0.2	+0.1	+0.0	27.9	46.0	-18.1	White
13	2.000M	17.5	+9.8	+0.2	+0.1	+0.1	+0.0	27.7	46.0	-18.3	White
14	1.222M	17.3	+9.8	+0.2	+0.2	+0.1	+0.0	27.6	46.0	-18.4	White
15	2.289M	17.2	+9.9	+0.2	+0.1	+0.1	+0.0	27.5	46.0	-18.5	White

CKC Laboratories, Inc. Date: 1/20/2015 Time: 4:16:27 PM WaveLynx Technologies Corporation WO#: 96495
15.207 AC Mains - Average Test Lead: White 120V 60Hz Sequence#: 4 Ext ATTN: 0 dB



Test Setup Photo(s)

Front View

Back View

15.209Radiated Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.209 Radiated Emissions**
Work Order #: **96495** Date: 1/20/2015
Test Type: **Maximized Emissions** Time: 14:57:30
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T5	AN00449	Preamp-Bottom Amp (dB)	8447F	4/7/2014	4/7/2016
T6	AN01991	Biconilog Antenna	CBL6111C	3/7/2014	3/7/2016
T7	ANMA10M	Cable		8/26/2014	8/26/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 125kHz, configured to continuously transmit. The EUT was investigated about three orthogonal axes. The data presented represents the worst-case orientation.

The EUT is powered with +5VDC via USB cable.

Frequency Range of Interest: 0.009-1000MHz

0.009-0.15MHz: RBW = 200Hz; VBW > RBW
0.15-30MHz: RBW = 9kHz; VBW > RBW
30-1000MHz: RBW = 120kHz; VBW > RBW

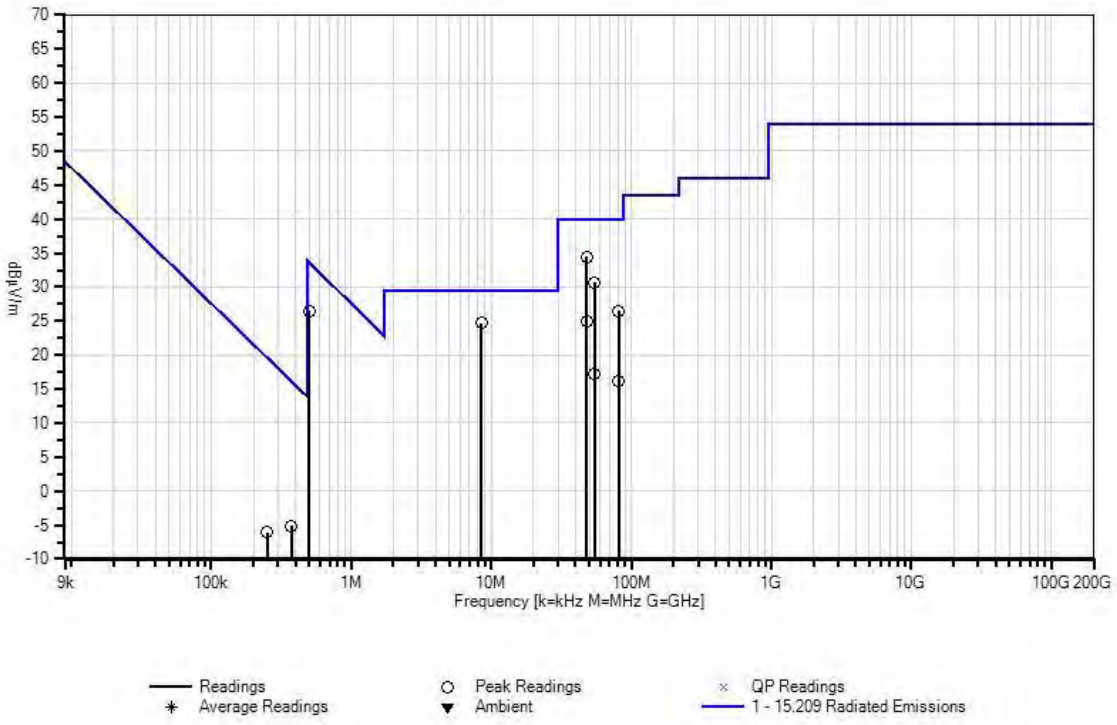
Environmental Conditions: Temperature: 19°C, Relative Humidity: 45%, Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

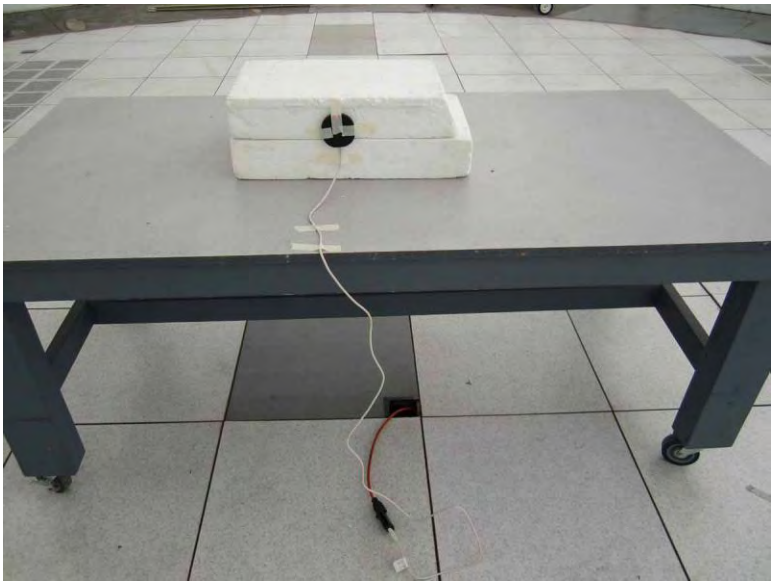
Measurement Data: Reading listed by margin. Test Distance: 10 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7						
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	8.491M	33.1	+10.1	+0.4	+0.0	+0.2	-19.1	24.7	29.5	-4.8	Vert
			+0.0	+0.0	+0.0						
2	48.005M	34.9	+0.0	+0.0	+0.0	+0.0	+10.5	34.5	40.0	-5.5	Vert
			-22.3	+9.8	+1.6						
3	500.050k	35.4	+10.1	+0.1	+0.0	+0.0	-19.1	26.5	33.6	-7.1	Vert
			+0.0	+0.0	+0.0						
4	54.247M	33.3	+0.0	+0.0	+0.0	+0.0	+10.5	30.7	40.0	-9.3	Vert
			-22.3	+7.5	+1.7						
5	81.373M	28.4	+0.0	+0.0	+0.0	+0.0	+10.5	26.5	40.0	-13.5	Vert
			-22.3	+7.6	+2.3						
6	48.000M	25.3	+0.0	+0.0	+0.0	+0.0	+10.5	24.9	40.0	-15.1	Horiz
			-22.3	+9.8	+1.6						
7	375.000k	43.7	+10.2	+0.1	+0.0	+0.0	-59.1	-5.1	16.1	-21.2	Vert
			+0.0	+0.0	+0.0						
8	54.250M	19.8	+0.0	+0.0	+0.0	+0.0	+10.5	17.3	40.0	-22.7	Horiz
			-22.3	+7.5	+1.8						
9	81.373M	18.0	+0.0	+0.0	+0.0	+0.0	+10.5	16.1	40.0	-23.9	Horiz
			-22.3	+7.6	+2.3						
10	250.000k	42.7	+10.2	+0.1	+0.0	+0.0	-59.1	-6.1	19.6	-25.7	Vert
			+0.0	+0.0	+0.0						

CKC Laboratories, Inc. Date: 1/20/2015 Time: 14:57:30 WaveLynx Technologies Corporation WO#: 96495
15.209 Radiated Emissions Test Distance: 10 Meters Sequence#: 1 Ext ATTN: 0 dB



Test Setup Photo(s)



Front View

15.209(a) Fundamental Field Strength

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.209 Radiated Emissions**
Work Order #: **96495** Date: 1/16/2015
Test Type: **Maximized Emissions** Time: 13:16:37
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 125kHz, configured to continuously transmit. The EUT was investigated about 3 orthogonal axes and the worst-case orientation is presented.

The voltage was varied in accordance with 15.31(e) and no variation in output power was detected.

Frequency of Interest: Fundamental (125kHz)
RBW = 200Hz; VBW > RBW

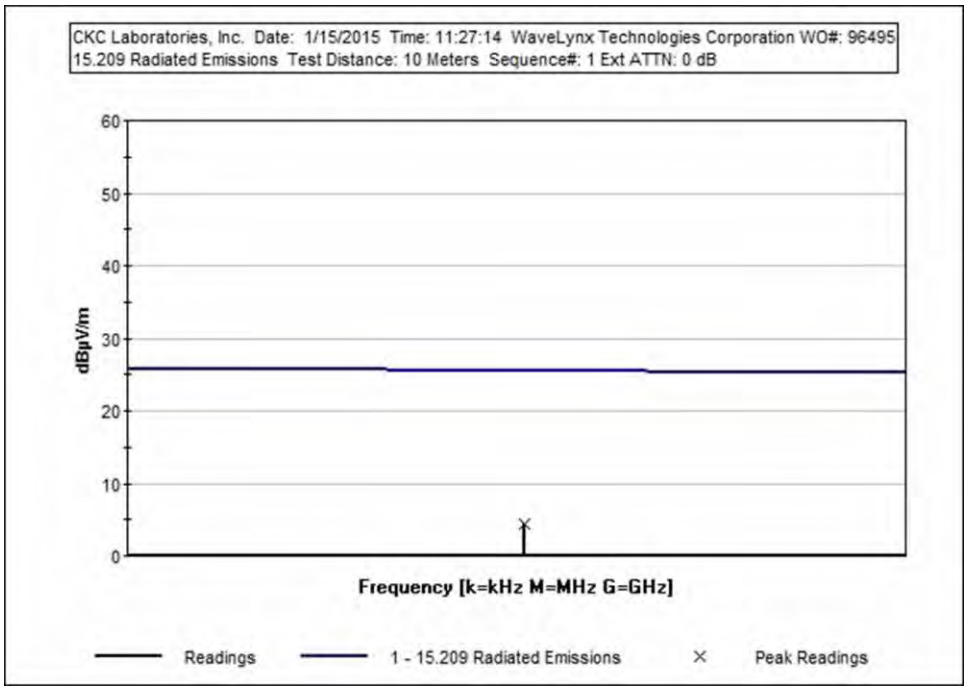
Environmental Conditions: Temperature: 19°C, Relative Humidity: 45%, Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

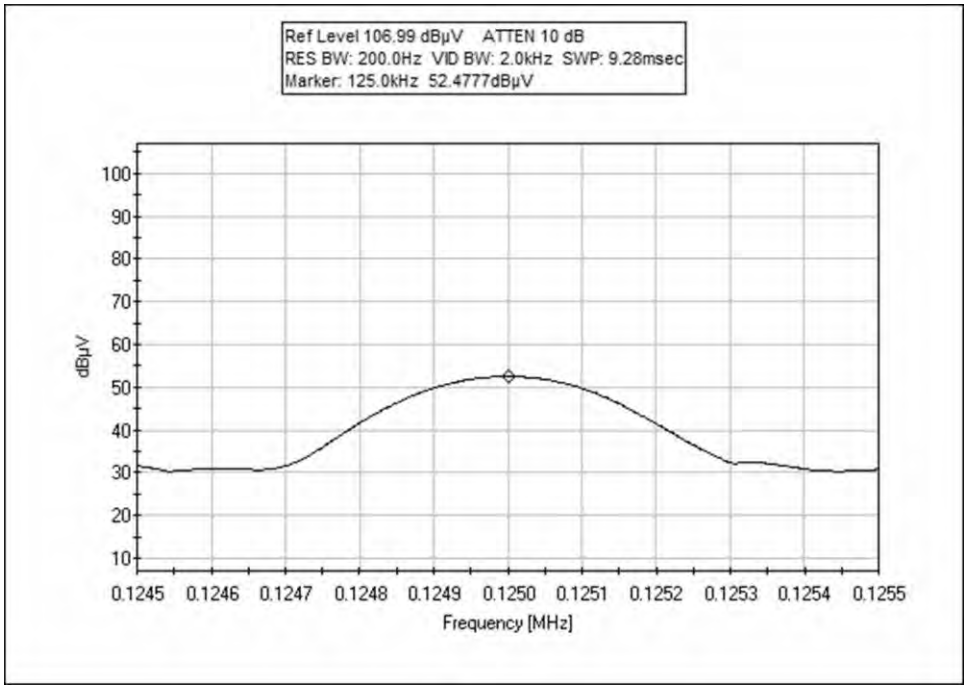
Measurement Data: Reading listed by margin. Test Distance: 10 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	125.000k	52.7	+10.8	+0.0	+0.0	+0.0	-59.1	4.4	25.7	-21.3	Vert

Test Plots

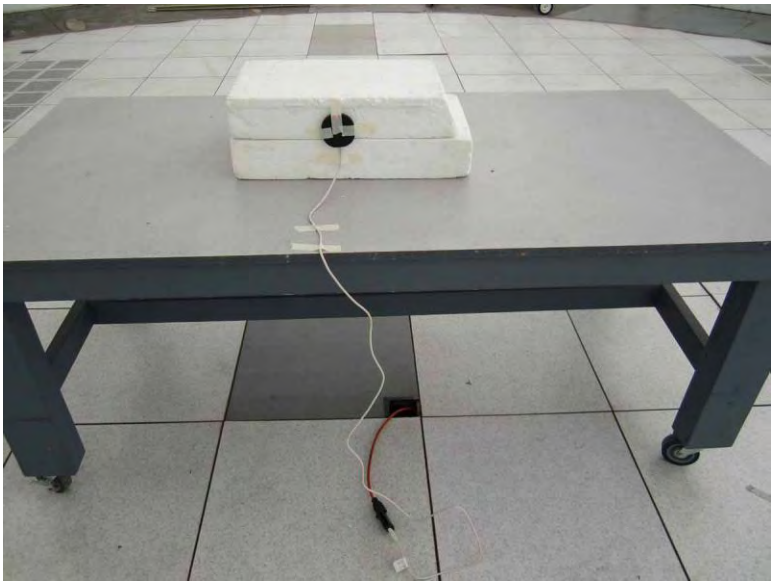


125kHz

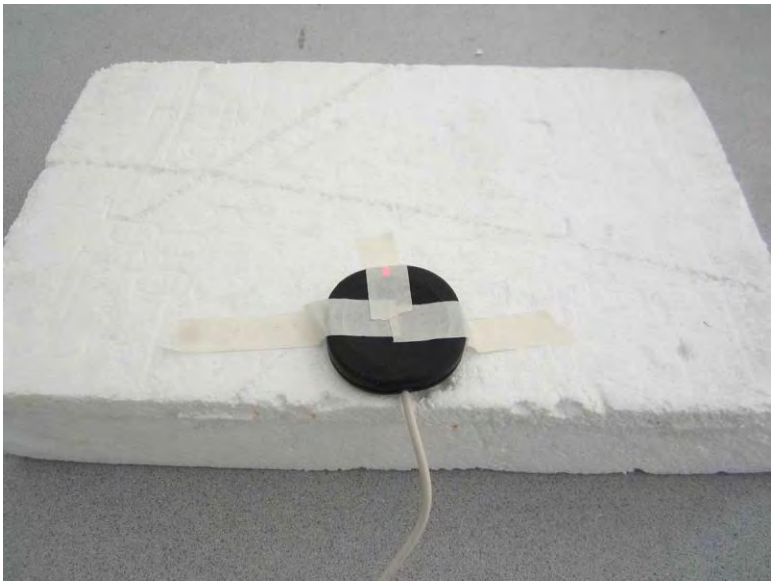


125kz Peak Capture

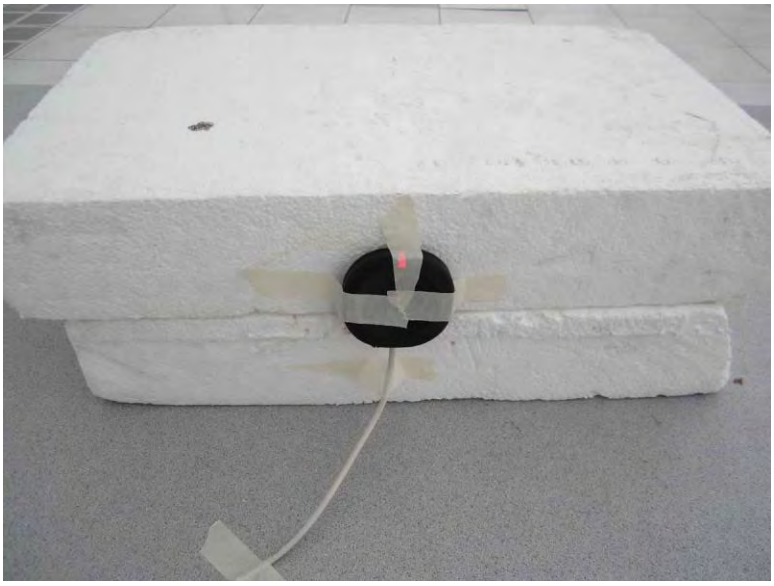
Test Setup Photo(s)



Front View



X-Axis



Y-Axis

Z-Axis

15.215 20dB Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.215 20dB Bandwidth**
Work Order #: **96495** Date: 1/15/2015
Test Type: **Maximized Emissions** Time: 10:24:01
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

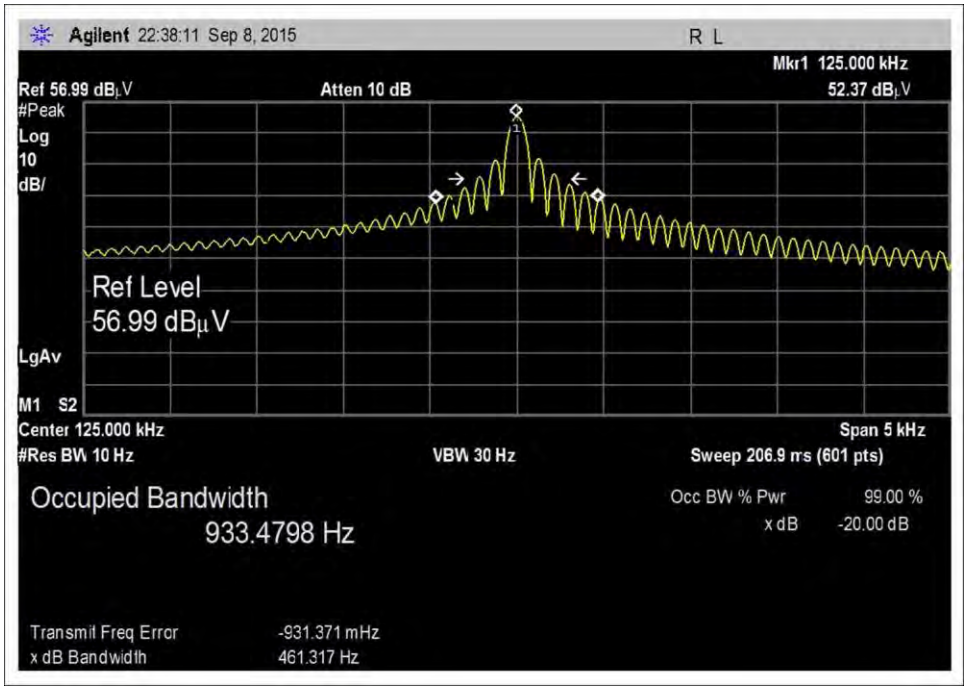
Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 125kHz, configured to continuously transmit. The EUT was investigated about three orthogonal axes. The data presented represents the worst-case orientation.

Frequency of Interest: Fundamental (125kHz)

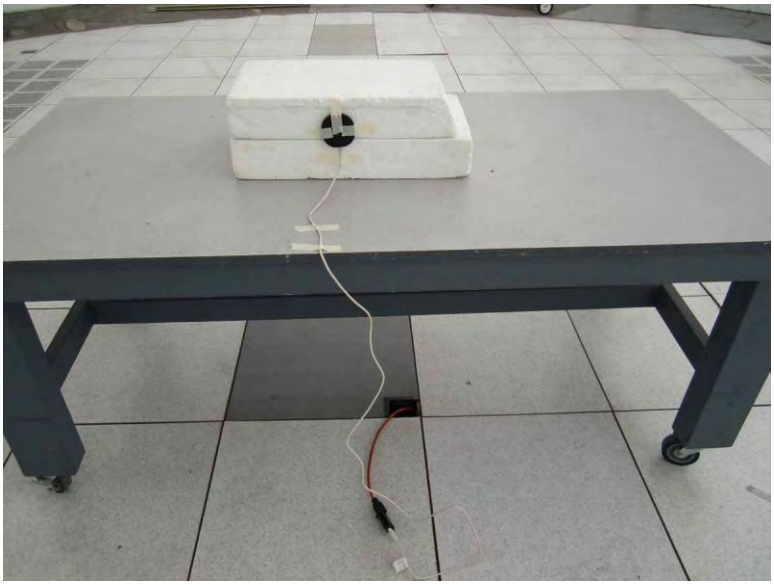
Environmental Conditions:
Temperature: 19°C
Relative Humidity: 45%
Atmospheric Pressure: 97.8kPa

Test Data



125kHz

Test Setup Photo



Front View

13.56MHz Transmitter

15.207 AC Conducted Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.207 AC Mains - Average**
Work Order #: **96495** Date: 3/4/2015
Test Type: **Conducted Emissions** Time: 10:24:45
Equipment: **Ethos** Sequence#: 2
Manufacturer: Wavelynx Technologies Tested By: Eddie Mariscal
Model: Ethos U7 120V 60Hz
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T2	ANP02229	Attenuator	PE7010-10	2/13/2013	2/13/2015
T3	ANMACOND	Cable		8/26/2014	8/26/2016
T4	AN02608	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
T5	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 13.56MHz, configured to continuously transmit.

The EUT is powered with +5VDC via USB cable through support AC-DC converter.

Frequency Range of Interest: 0.15-30MHz
RBW = 9kHz; VBW > RBW

Environmental Conditions:
Temperature: 19°C
Relative Humidity: 43%
Atmospheric Pressure: 97.8kPa

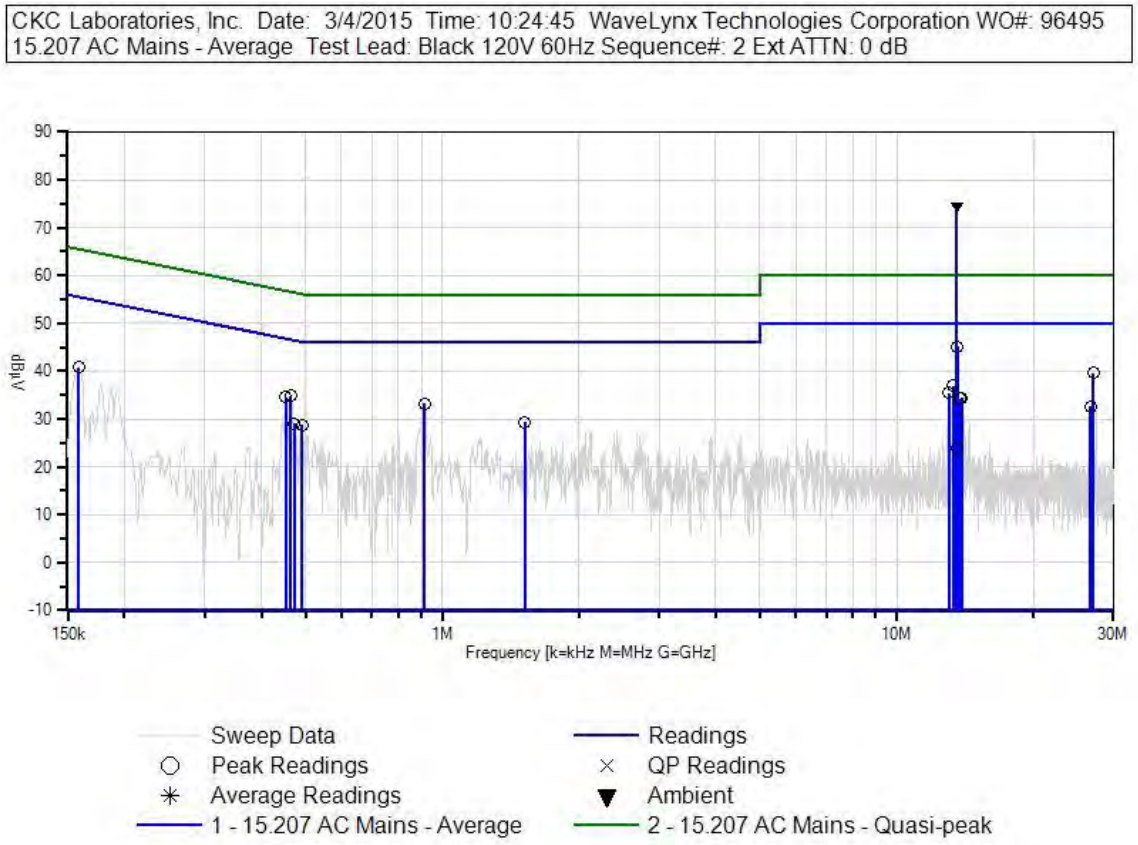
Fundamental measurements recorded with integral antenna attached. Measurements at the fundamental were repeated with antenna terminated into characteristic load.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	13.562M Ambient	63.9	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	74.6	50.0	+24.6	Black
2	13.616M	34.5	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	45.2	50.0	-4.8	Black
3	27.108M	28.7	+0.0 +0.1	+9.8	+0.8	+0.2	+0.0	39.6	50.0	-10.4	Black
4	464.153k	24.8	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	34.9	46.6	-11.7	Black
5	453.245k	24.5	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	34.6	46.8	-12.2	Black
6	915.480k	23.2	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	33.3	46.0	-12.7	Black
7	13.310M	26.2	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	36.9	50.0	-13.1	Black
8	13.004M	24.7	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	35.4	50.0	-14.6	Black
9	158.726k	30.1	+0.0 +0.1	+9.7	+0.0	+0.9	+0.0	40.8	55.5	-14.7	Black
10	13.914M	23.7	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	34.4	50.0	-15.6	Black
11	13.806M	23.6	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	34.3	50.0	-15.7	Black
12	1.519M	19.1	+0.0 +0.1	+9.8	+0.2	+0.2	+0.0	29.4	46.0	-16.6	Black
13	491.060k	18.7	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	28.8	46.1	-17.3	Black

14	26.656M	21.7	+0.0 +0.1	+9.8	+0.8	+0.2	+0.0	32.6	50.0	-17.4	Black
15	472.152k	18.9	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	29.0	46.5	-17.5	Black
16	13.560M	13.2	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	23.9	50.0 Fundmental with dummy load attached	-26.1	Black



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.207 AC Mains - Average**
Work Order #: **96495** Date: 3/4/2015
Test Type: **Conducted Emissions** Time: 10:25:52
Equipment: **Ethos** Sequence#: 3
Manufacturer: Wavelynx Technologies Tested By: Eddie Mariscal
Model: Ethos U7 120V 60Hz
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T2	ANP02229	Attenuator	PE7010-10	2/13/2013	2/13/2015
T3	ANMACOND	Cable		8/26/2014	8/26/2016
T4	AN02608	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
T5	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 13.56MHz, configured to continuously transmit.

The EUT is powered with +5VDC via USB cable through support AC-DC converter.

Frequency Range of Interest: 0.15-30MHz
RBW = 9kHz; VBW > RBW

Environmental Conditions:
Temperature: 19°C
Relative Humidity: 43%
Atmospheric Pressure: 97.8kPa

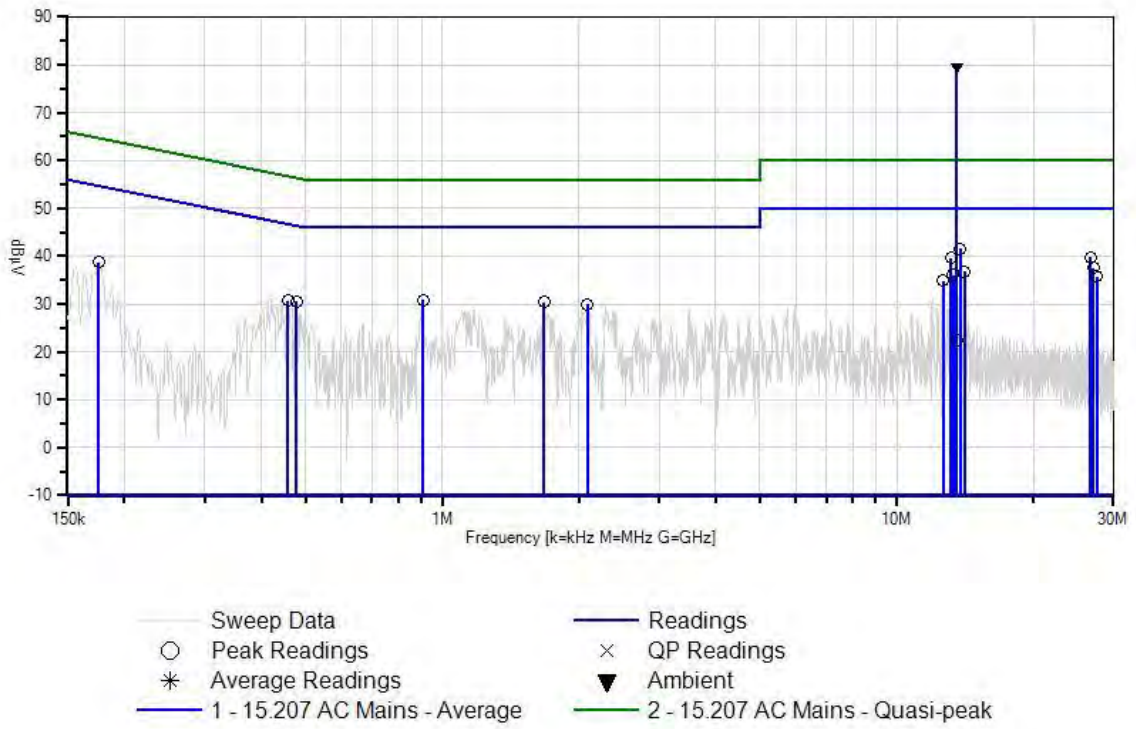
Fundamental measurements recorded with integral antenna attached. Measurements at the fundamental were repeated with antenna terminated into characteristic load.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	13.562M Ambient	69.1	+0.0 +0.1	+9.9	+0.5	+0.1	+0.0	79.7	50.0 Fundamental Frequency	+29.7	White
2	13.806M	30.9	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	41.6	50.0	-8.4	White
3	26.663M	28.9	+0.0 +0.1	+9.8	+0.8	+0.2	+0.0	39.8	50.0	-10.2	White
4	13.175M	29.0	+0.0 +0.1	+9.9	+0.5	+0.1	+0.0	39.6	50.0	-10.4	White
5	27.102M	26.7	+0.0 +0.1	+9.8	+0.8	+0.2	+0.0	37.6	50.0	-12.4	White
6	14.076M	26.1	+0.0 +0.2	+9.9	+0.5	+0.1	+0.0	36.8	50.0	-13.2	White
7	13.310M	25.5	+0.0 +0.1	+9.9	+0.5	+0.1	+0.0	36.1	50.0	-13.9	White
8	27.581M	24.8	+0.0 +0.1	+9.8	+0.8	+0.2	+0.0	35.7	50.0	-14.3	White
9	906.974k	20.7	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	30.8	46.0	-15.2	White
10	12.643M	24.2	+0.0 +0.1	+9.9	+0.5	+0.1	+0.0	34.8	50.0	-15.2	White
11	1.677M	20.1	+0.0 +0.1	+9.8	+0.2	+0.2	+0.0	30.4	46.0	-15.6	White
12	477.970k	20.4	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	30.5	46.4	-15.9	White
13	175.452k	28.6	+0.0 +0.1	+9.7	+0.0	+0.3	+0.0	38.7	54.7	-16.0	White
14	458.335k	20.6	+0.0 +0.1	+9.7	+0.1	+0.2	+0.0	30.7	46.7	-16.0	White
15	2.089M	19.7	+0.0 +0.1	+9.8	+0.2	+0.1	+0.0	29.9	46.0	-16.1	White
16	13.562M	11.9	+0.0 +0.1	+9.9	+0.5	+0.1	+0.0	22.5	50.0 Fundamental with Dummy load Attached	-27.5	White

CKC Laboratories, Inc. Date: 3/4/2015 Time: 10:25:52 WaveLynx Technologies Corporation WO#: 96495
15.207 AC Mains - Average Test Lead: White 120V 60Hz Sequence#: 3 Ext ATTN: 0 dB



Test Setup Photo(s)

Front View

Back View

15.215 20dB Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.215 20dB Bandwidth**
Work Order #: **96495** Date: 1/15/2015
Test Type: **Maximized Emissions** Time: 10:24:01
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

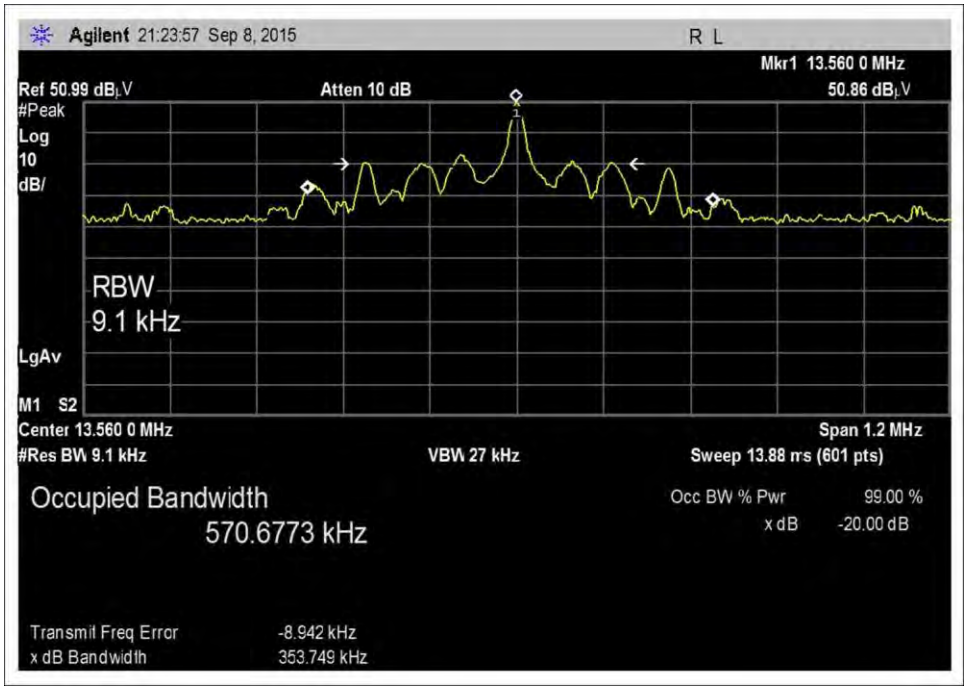
Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 13.56MHz, configured to continuously transmit. The EUT was investigated about three orthogonal axes. The data presented represents the worst-case orientation.

Frequency of Interest: Fundamental (13.56MHz)

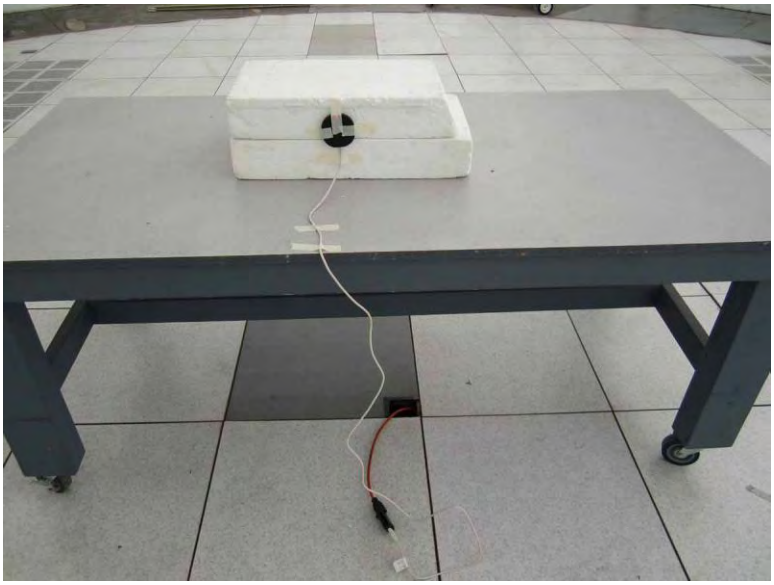
Environmental Conditions:
Temperature: 19°C
Relative Humidity: 45%
Atmospheric Pressure: 97.8kPa

Test Data



13.56MHz

Test Setup Photo



Front View

15.225(a) Fundamental Field Strength

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter)**
Work Order #: **96495** Date: 1/15/2015
Test Type: **Maximized Emissions** Time: 10:24:01
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 13.56MHz, configured to continuously transmit. The EUT was investigated about three orthogonal axes. The measurement antenna was rotated about its vertical axis to maximize EUT emissions measurements. The data presented represents the worst-case orientation.

The voltage was varied in accordance with 15.31(e) and no variation in output power was detected.

Frequency of Interest: Fundamental (13.56MHz)
RBW = 9kHz; VBW > RBW

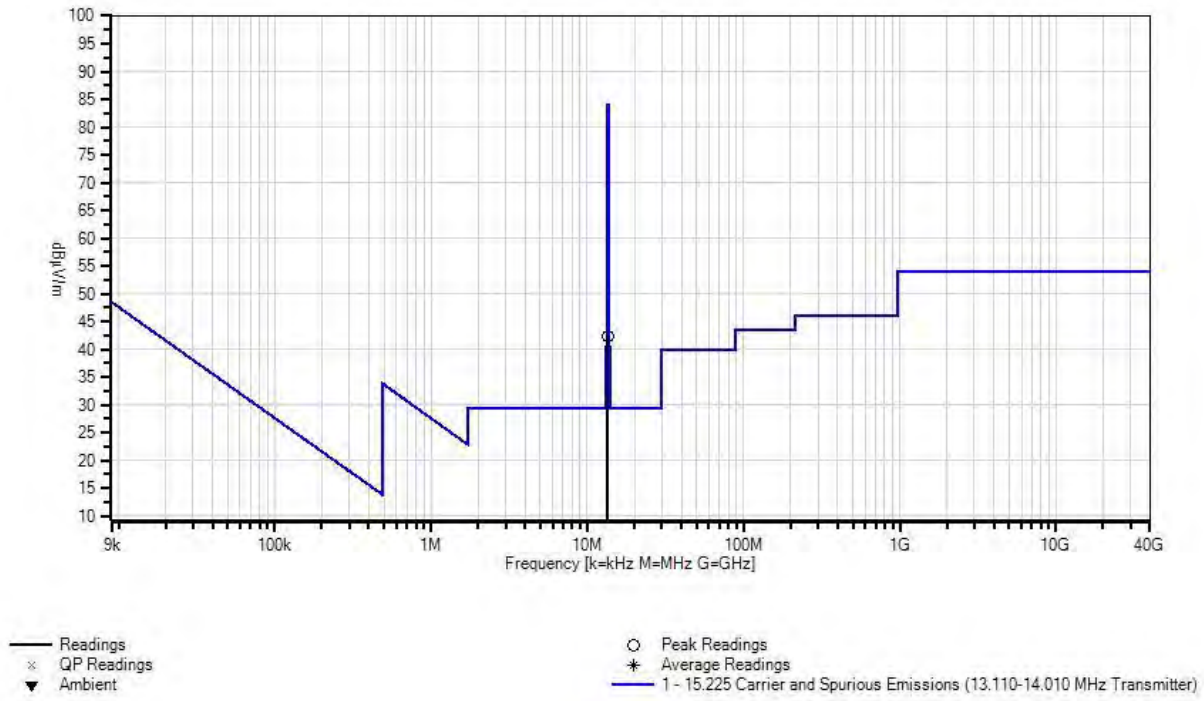
Environmental Conditions:
Temperature: 19°C
Relative Humidity: 45%
Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

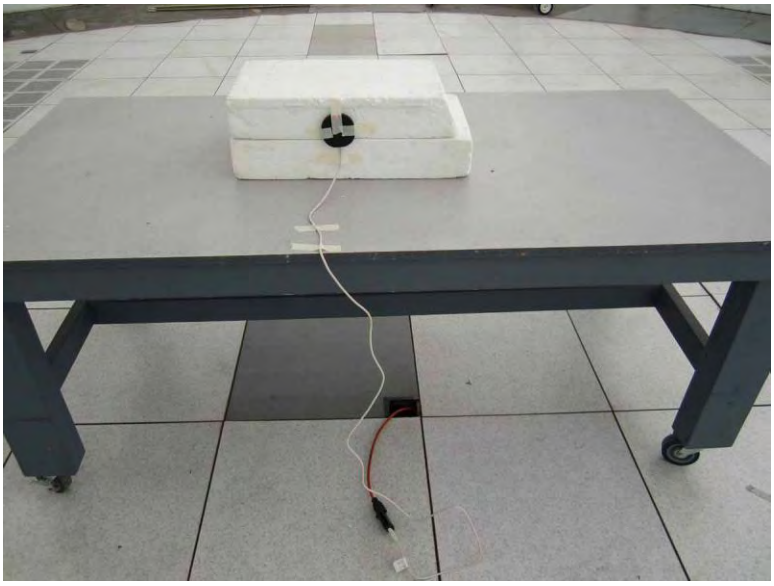
Measurement Data: Reading listed by margin. Test Distance: 10 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	13.560M	51.0	+9.7	+0.5	+0.0	+0.3	-19.1	42.4	84.0	-41.6	Vert

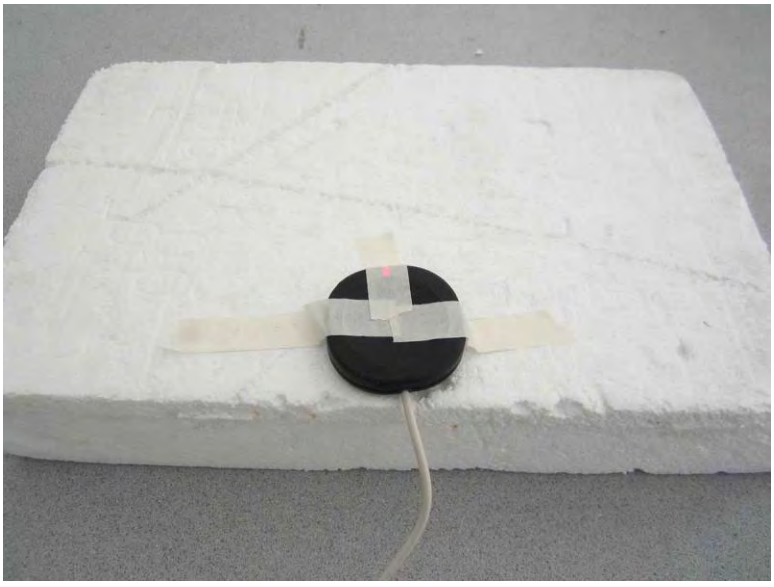
CKC Laboratories, Inc. Date: 1/15/2015 Time: 10:24:01 WaveLynx Technologies Corporation WO#: 96495
15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter) Test Distance: 10 Meters Sequence#: 1
Ext ATTN: 0 dB



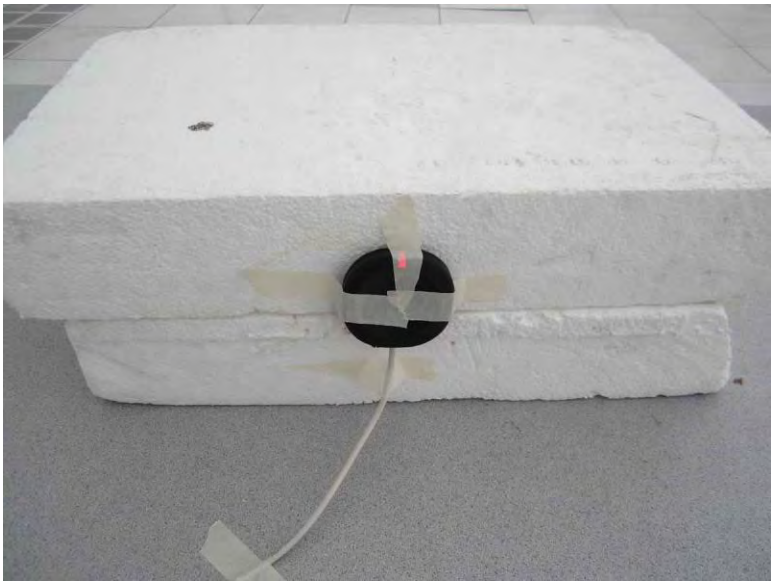
Test Setup Photo(s)



Front View



X-Axis



Y-Axis

Z-Axis

15.225(b-d) Radiated Spurious Emissions/Emissions Mask

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **WaveLynx Technologies Corporation**
Specification: **15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter)**
Work Order #: **96495** Date: 1/20/2015
Test Type: **Maximized Emissions** Time: 15:22:46
Equipment: **Ethos** Sequence#: 1
Manufacturer: Wavelynx Technologies Corporation Tested By: Eddie Mariscal
Model: Ethos U7
S/N: Eng002

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T2	ANMACOND	Cable		8/26/2014	8/26/2016
T3	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T4	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
T5	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T6	AN00449	Preamp-Bottom Amp (dB)	8447F	4/7/2014	4/7/2016
T7	AN01991	Biconilog Antenna	CBL6111C	3/7/2014	3/7/2016
T8	ANMA10M	Cable		8/26/2014	8/26/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ethos*	Wavelynx Technologies Corporation	Ethos U7	Eng002

Support Devices:

Function	Manufacturer	Model #	S/N
AC-DC Adapter	LG	MCS-01WD	None

Test Conditions / Notes:

The EUT is placed at the center of a 40' diameter turntable operating at 13.56MHz configured to continuously transmit. The EUT was investigated about three orthogonal axes. The data presented represents the worst-case orientation.

The EUT is powered with +5VDC via USB cable.

Frequency Range of Interest: 0.009-1000MHz

0.009-0.15MHz: RBW = 200Hz; VBW > RBW
0.15-30MHz: RBW = 9kHz; VBW > RBW
30-1000MHz: RBW = 120kHz; VBW > RBW

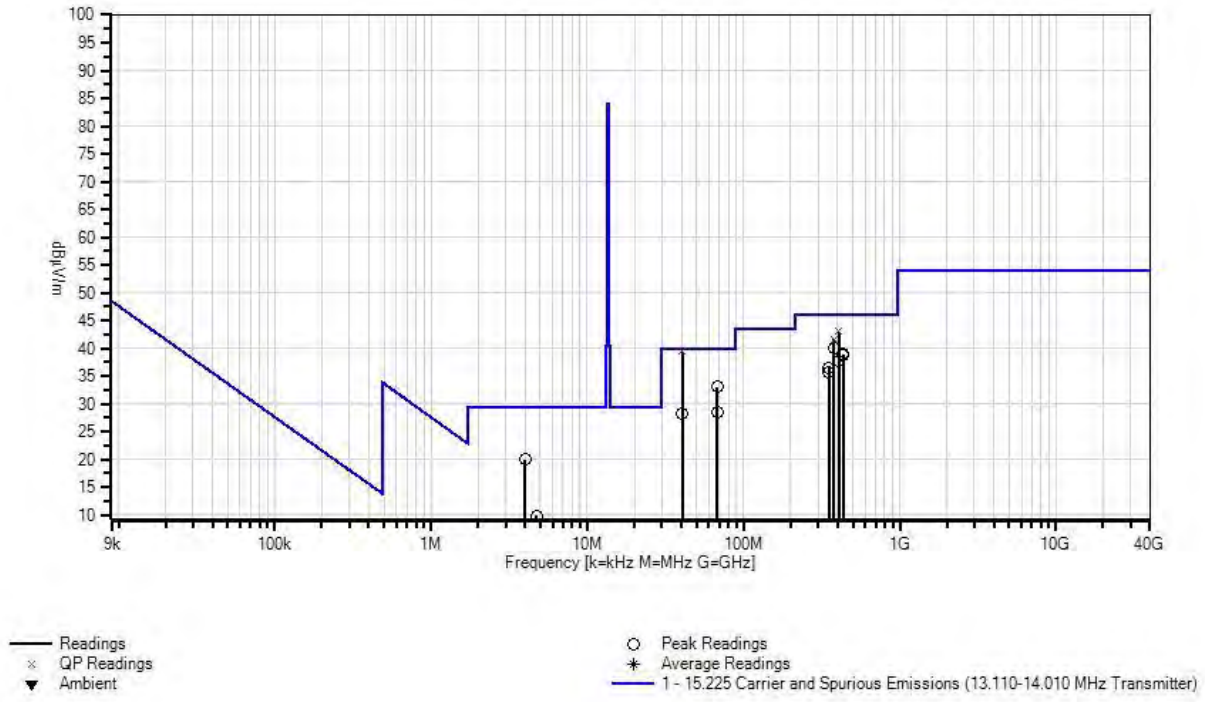
Environmental Conditions: Temperature: 19°C, Relative Humidity: 45%, Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

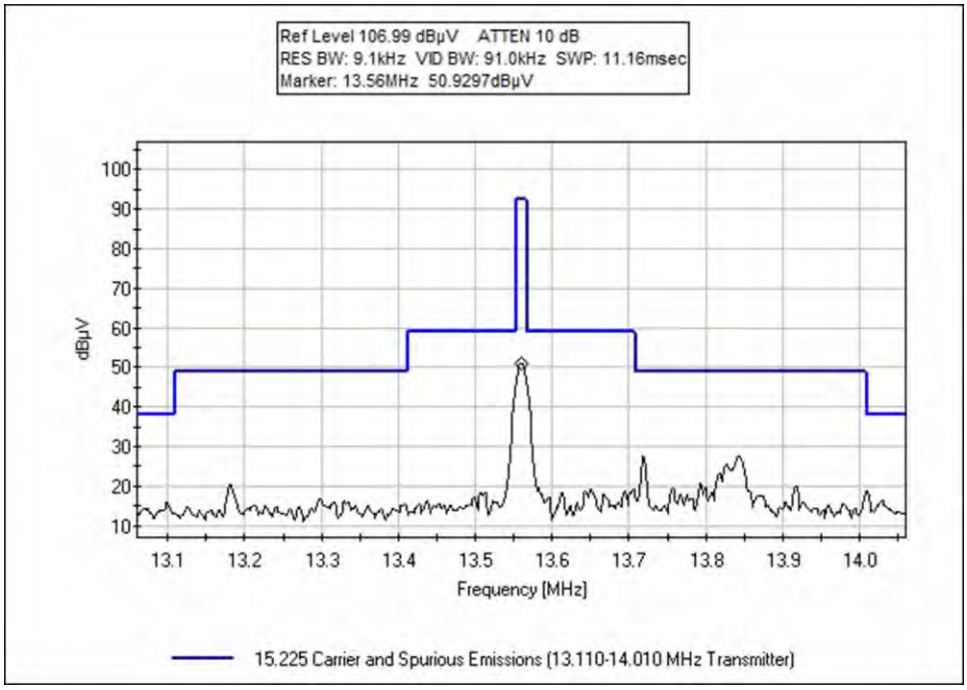
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	40.678M	36.0	+0.0	+0.0	+0.0	+0.0	+10.5	39.4	40.0	-0.6	Vert
	QP		+0.0	-22.3	+13.7	+1.5					
^	40.678M	38.6	+0.0	+0.0	+0.0	+0.0	+10.5	42.0	40.0	+2.0	Vert
			+0.0	-22.3	+13.7	+1.5					
3	406.815M	33.4	+0.0	+0.0	+0.0	+0.0	+10.5	43.0	46.0	-3.0	Horiz
	QP		+0.0	-23.0	+16.3	+5.8					
^	406.815M	35.2	+0.0	+0.0	+0.0	+0.0	+10.5	44.8	46.0	-1.2	Horiz
			+0.0	-23.0	+16.3	+5.8					
5	379.680M	32.8	+0.0	+0.0	+0.0	+0.0	+10.5	41.6	46.0	-4.4	Horiz
	QP		+0.0	-22.9	+15.7	+5.5					
^	379.680M	34.1	+0.0	+0.0	+0.0	+0.0	+10.5	42.9	46.0	-3.1	Horiz
			+0.0	-22.9	+15.7	+5.5					
7	379.692M	31.3	+0.0	+0.0	+0.0	+0.0	+10.5	40.1	46.0	-5.9	Vert
			+0.0	-22.9	+15.7	+5.5					
8	67.806M	36.6	+0.0	+0.0	+0.0	+0.0	+10.5	33.0	40.0	-7.0	Vert
			+0.0	-22.3	+6.2	+2.0					
9	433.900M	28.6	+0.0	+0.0	+0.0	+0.0	+10.5	38.9	46.0	-7.1	Horiz
			+0.0	-23.1	+16.9	+6.0					
10	433.908M	28.4	+0.0	+0.0	+0.0	+0.0	+10.5	38.7	46.0	-7.3	Vert
			+0.0	-23.1	+16.9	+6.0					
11	406.801M	28.2	+0.0	+0.0	+0.0	+0.0	+10.5	37.8	46.0	-8.2	Vert
			+0.0	-23.0	+16.3	+5.8					
12	352.550M	28.7	+0.0	+0.0	+0.0	+0.0	+10.5	36.6	46.0	-9.4	Horiz
			+0.0	-22.8	+14.9	+5.3					
13	4.000M	28.7	+10.0	+0.3	+0.0	+0.1	-19.1	20.0	29.5	-9.5	Vert
			+0.0	+0.0	+0.0	+0.0					
14	352.552M	27.7	+0.0	+0.0	+0.0	+0.0	+10.5	35.6	46.0	-10.4	Vert
			+0.0	-22.8	+14.9	+5.3					
15	67.805M	32.2	+0.0	+0.0	+0.0	+0.0	+10.5	28.6	40.0	-11.4	Horiz
			+0.0	-22.3	+6.2	+2.0					
16	40.676M	24.8	+0.0	+0.0	+0.0	+0.0	+10.5	28.2	40.0	-11.8	Horiz
			+0.0	-22.3	+13.7	+1.5					
17	4.710M	18.4	+10.0	+0.3	+0.0	+0.2	-19.1	9.8	29.5	-19.7	Vert
			+0.0	+0.0	+0.0	+0.0					
18	19.843M	16.3	+8.2	+0.6	+0.0	+0.3	-19.1	6.3	29.5	-23.2	Vert
			+0.0	+0.0	+0.0	+0.0					
19	27.120M	16.2	+7.2	+0.8	+0.0	+0.4	-19.1	5.5	29.5	-24.0	Vert
			+0.0	+0.0	+0.0	+0.0					

CKC Laboratories, Inc. Date: 1/20/2015 Time: 15:22:46 WaveLynx Technologies Corporation WO#: 96495
15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter) Test Distance: 10 Meters Sequence#: 1
Ext ATTN: 0 dB

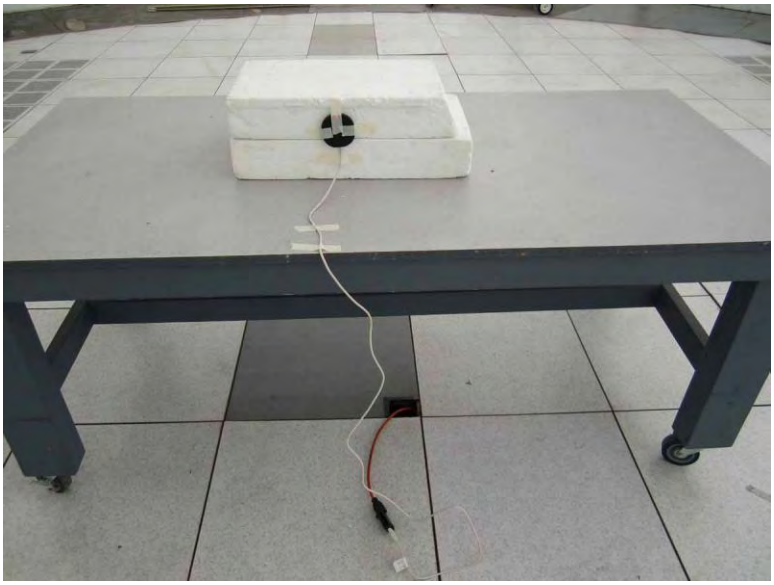


Emissions Mask

Test Data



Test Setup Photo



Front View

15.225(e) Frequency Stability

Test Equipment

Asset #	Description	Model	Manufacturer	Cal Date	Cal Due
2138	Attenuator	54-10	Weinschel	02/13/2013	02/13/2015
1879	Temperature Chamber	S-1.2 Min.	Thermotron	12/05/2014	12/05/2016
2242	Thermometer	HH-26K	Omega	05/02/2014	05/02/2016
2668	Spectrum Analyzer	E4446A	Agilent	08/04/2014	08/04/2015
170	Loop Antenna	7334-1	Solar	02/01/2013	02/01/2015

Test Data

Frequency Stability

Customer:	Wavelynx
WO#:	96495
Date:	20-Jan-15
Test Engineer:	Eddie Mariscal
Test Specification	FCC 15.225
Device Model #:	Ethos U7
Operating Voltage:	+5 VDC
Frequency Limit:	0.01 %

Temperature Variations

		Channel 1 (MHz)	Dev. (%)
Channel Frequency:		13.559833	
Temp (C)	Voltage		
-20	+5	13.55989	0.00044
-10	+5	13.55989	0.00044
0	+5	13.55989	0.00041
10	+5	13.55985	0.00013
20	+5	13.55983	0.00000
30	+5	13.55979	0.00034
40	+5	13.55979	0.00032
50	+5	13.55979	0.00032

Voltage Variations (±15%)

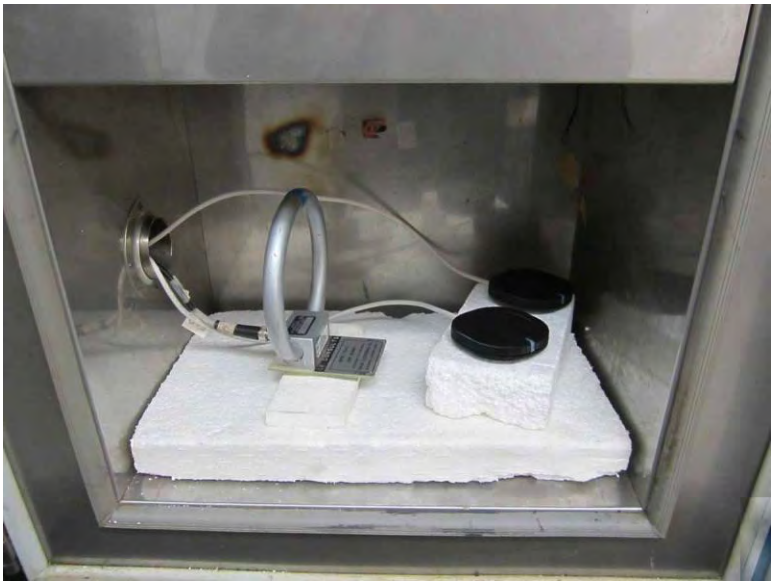
20	4.25	13.55983	0.00000
20	+5	13.55983	0.00000
20	5.75	13.55983	0.00002

Max Deviation (%)	**0.00044**
	PASS

Test Conditions:

Tested in accordance with ANSI C63.10 (2009). The EUT is placed inside the temperature chamber continuously transmitting at 13.56MHz. The EUT is supplied with 5VDC via AC-DC adapter. RBW = 200Hz; VBW > RBW

Test Setup Photo



Temperature Chamber

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.