

**Electromagnetic Compatibility Criteria  
Test Report  
For the  
Omega Engineering, Inc.  
CTXL Wireless Probe  
Model: CTXL-PT-W9**

**Tested Under**  
FCC Certification Rules  
Contained in  
CFR Title 47, Part 15 Subpart B,  
15.249 Subpart C  
And  
RSS-GEN Issue 2(June 2007) & RSS-210 Issue 7  
For Intentional Radiators and Class A Digital Devices  
**Wednesday, March 24, 2010**

Prepared For:

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Frank Welsh  
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Customer Review:





Analab Report # 1631F

630 Heron Drive, P.O. Box 336, Bridgeport, NJ 08014  
FRN 0007-8959-64 Test Site #793819  
IC Test Site # 8329A-1

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and the client this report was prepared for.

<b>Issue</b>	<b>Report Date</b>	<b>Reason for Revision</b>
<b>1</b>	<b>November 19, 2009</b>	<b>Initial Issue</b>
<b>2</b>	<b>March 24,2010</b>	<b>Revised to include TCB requirements</b>

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## 1.0 Administration

### 1.1 Purpose of Test:

The purpose of this test suite is to establish the compliance of Omega Engineering CTXL-PT-W9 with the requirements of CFR Part 15 §15.249. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accord with §2.1033, this document is provided with the test results of the CTXL-PT-W9 in support for the certification of the product. Omega Engineering has been advised that this document and the information contained herein must be kept on file for two (2) years after the permanent discontinuance of manufacture of the CTXL-PT-W9.

### 1.2 Summary of Test Results:

Table 1 contains a listing of the tests performed on the product sample of the CTXL-PT-W9 and the results of those tests. All tests were conducted using measurement procedures outlined in ANSI C63.4-2003.

FCC Reference	RSS-210 & RSS-GEN	Description	Results
§15.203	RSS-GEN	Antenna Requirement	Compliant
§15.207	RSS-GEN §7.2.2	AC Power Line Conducted Emissions	Compliant
§15.249(d), §15.209	RSS-GEN & RSS-210 §2.7	Spurious Radiation	Compliant
	RSS GEN §4.7	Band Edge Measurements	Compliant
§15.249 (a)	RSS-GEN §4.7 & RSS-210 §2.7	Radiated Fundamentals	Compliant
	RSS-GEN §4.4.1	Occupied Bandwidth	Compliant

**Figure 1. Executive Summary of EMC Part 15.249 Compliance Testing.**

**Test Period:**

**Start:** Wednesday, 28-Oct-2009

**Completion:** Thursday, 19-Nov-2009

**Location of Test Facility:**

Analab Llc.  
630 Heron Drive  
Bridgeport, NJ 08014

**Test Personnel:**

**Analab Llc.**  
Frank Welsh

## 2.0 Overview

This document is a report of the results of testing of the subject product to the requirements of FCC and Industry Canada RSS-210 & RSS-GEN. The equipment tested is designed to deliver process information to a target at a remote location over an RF energy channel. The EUT has endured the testing scrutiny of these requirements and has been found to be compliant with the parameters set forth therein.

Test setups and procedures are described in this report and test results are presented herein. The results contained in the present document relate only to the product tested.

<b>Model Tested:</b>	<b>CTXL-PT-W9</b>	
<b>EUT Specifications:</b>	<b>Primary Power: 3.6 VDC</b>	
	<b>FCC ID: WR3-CTXLPT</b>	
	<b>IC ID: 8205A-CTXLPT</b>	
	<b>Modulation Type:</b>	2GFSK
	<b>Emission Designators:</b>	478K8F1D
	<b>Equipment Code:</b>	DXX
	<b>EUT Frequency Range:</b>	<b>910-920 MHz</b>
<b>Environmental Test Conditions:</b>	<b>Temperature (22° C +/-5)</b>	
	<b>Relative Humidity (30-60%)</b>	
	<b>Barometric Pressure (860-1060 mbar)</b>	
<b>Evaluated By:</b>	<b>Frank Welsh</b>	
<b>Original Report Date:</b>	<b>19-Nov-09</b>	

**Figure 2. EUT Specifications**

## 2.1 Test Specifications

CFR 47 Part 15 Subpart C	<i>Federal Communications Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Allocation, Assignment and Use of Radio Frequencies.</i>
CFR 47, Part 15, Subpart B	<i>Electromagnetic Compatibility: Criteria for Radio Frequency Devices.</i>
ANSI C63.4: 2003	<i>Methods of Measurement of Radio Noise Emissions from low voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.</i>
RSS-210 Issue 7	<i>Low-power License-Exempt Radiocommunication Devices (All Frequency Bands): Category 1 Equipment.</i>
RSS-Gen, Issue 2 June 2007	<i>General requirements and Information for the Certification of Radiocommunication Equipment.</i>

## 2.2 Test Site

All testing was performed at the facilities of Analab Llc. | 630 Heron Drive | Bridgeport, NJ 08014 (FRN 0007-8959-64 Test Site #793819 (IC Test Site #8329A-1)). All equipment used in measurements is in current calibration, accurate in performance and bears traceability to the National Institute of Standards and Technology (NIST).

## 2.3 Description of Test Sample

The sample was a production prototype that is representative of the final design. Due to the “intermittent” nature of the transmitter in normal operation, a special test code was embedded into the test sample to facilitate constant transmit mode for certain tests. The artificial message that was transmitted was an alternating string of 1’s and 0’s. The hardware’s design precludes transmitting an unmodulated carrier. Also, the product is user configurable to transmit in one of three frequencies; 910 MHz, 915 MHz and 920 MHz.

### **Figure 3. Block Diagram Removed to meet Confidentiality Requirements.**

#### **2.4 Equipment Configuration**

The EUT was set up as outlined in the previous section.

<b>Ref. ID</b>	<b>Name / Description</b>	<b>Model Number</b>	<b>Serial Number</b>	<b>Rev. #</b>
N/A	CTXL Wireless Probe	CTXL-PT-W9	09113994	N/A

#### **2.5 Supporting Equipment**

No supporting equipment was required for testing.

#### **2.6 Ports and Cabling Information**

The EUT, being designed as a stand alone product, cabling is neither required nor used during testing. There is an USB interface on the product for the purpose of product configuration, this port was interfaced with a computer, where indicated in this present report.

#### **2.7 Mode of Operation**

As indicated earlier, special firmware was installed in the EUT to allow continuous testing, and allow testing under a worst case scenario. The EUT is battery powered by a self contained 3.6 Volt lithium battery except where noted.

#### **2.8 Method of Monitoring EUT Operation**

Presence of the transmitted signal at the transmitted frequency indicates the EUT is operational. No other indication is required.

#### **2.9 Modifications**

##### **2.9.1 Modifications to EUT.**

No physical modifications were made to the EUT.



### 2.9.2 Modifications to Test Standard

No modifications were made to the EUT except for the inclusion of special firmware where required as cited earlier to facilitate testing.

### **2.10 Disposition of EUT.**

The test sample and all supporting equipment submitted to Analab were returned to Omega Engineering upon completion of testing.

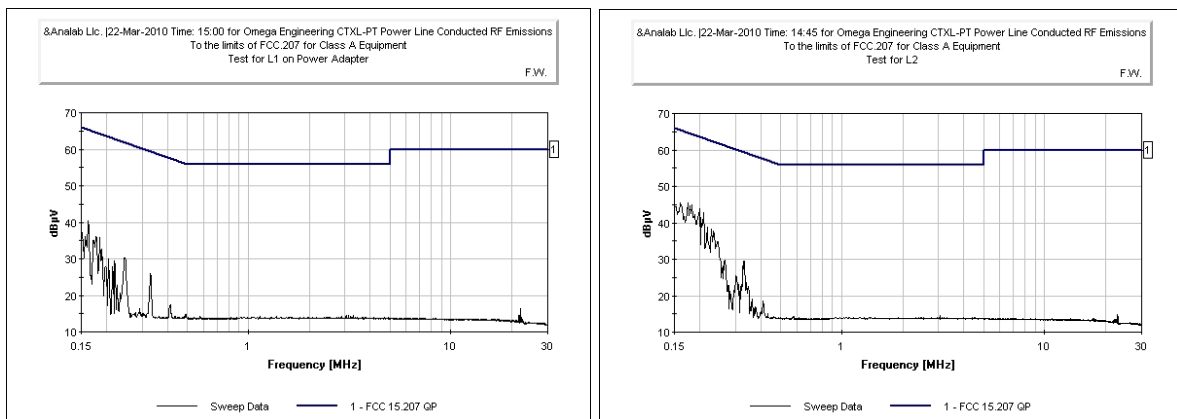
## 4.0 Electromagnetic Compliance Testing for Intentional Radiators

### 4.1 Conducted Emissions §15.207 (a)

**Test Requirement:** For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits specified in this section, as measured using a 50  $\mu$ H / 50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

**Test Procedure:** The EUT was placed on a wooden table situated 80cm above the shield room floor and 40 cm in front of the vertical ground plane (shield room bulkhead). The optional AC adapter was interfaced between the EUT and the specified LISN. The measurement port of the LISN was interfaced to an EMI receiver, Analab asset #200 (figure 14). Both L1 and L2 emissions levels were scanned from 0.15 to 30 MHz. The results of those scans are given in figure 4.

**Test Results:** The EUT conforms to the requirements of CFR47-15.207



**Figure 4. 15.207 Scan Results**

#### 4.2 Antenna Requirement §15.203

**Requirement:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

**Result:** The product is coupled into free space by an integral chip antenna permanently attached to the circuit board. The antenna has a -1dBi gain. Therefore, the EUT conforms to this requirement.

#### 4.3 Radiated Field Strength of Fundamental §15.249 (a)

**Requirement:** The three meter field strength of the fundamental emission from intentional radiators operated within 902 – 928 MHz frequency bands shall comply with the following requirement: 50mV / m (94 dB $\mu$ V / m), measured in the quasi-peak mode.

**Test Procedure:** The product transmitter was set to the mid channel and placed in the OATS with the test antenna and mast placed at the three meter position (Figure 6). Measurements were performed with the Product and table rotated 360° and varying the mast height from 1m to 4m in height to maximize the emissions for worst case. Once this point was found, the measurement was taken in quasi-peak mode with a bandwidth of 120 kHz. Procedure was then repeated for the upper and for the lower channels.

**Test Result:** The EUT is compliant with §15.249 for fundamental field strength (See figure 5 for readings).

Channel	Azimuth (Degrees)	Polarity	Antenna Height (cm)	Final Corrected Readings (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
Low	290	H	100	88.79	94	5.21
	280	V	104	89.90	94	4.10
Mid	300	H	100	88.32	94	5.68
	310	V	107	88.88	94	5.12
High	310	H	100	87.40	94	6.60
	280	V	100	87.59	94	6.41

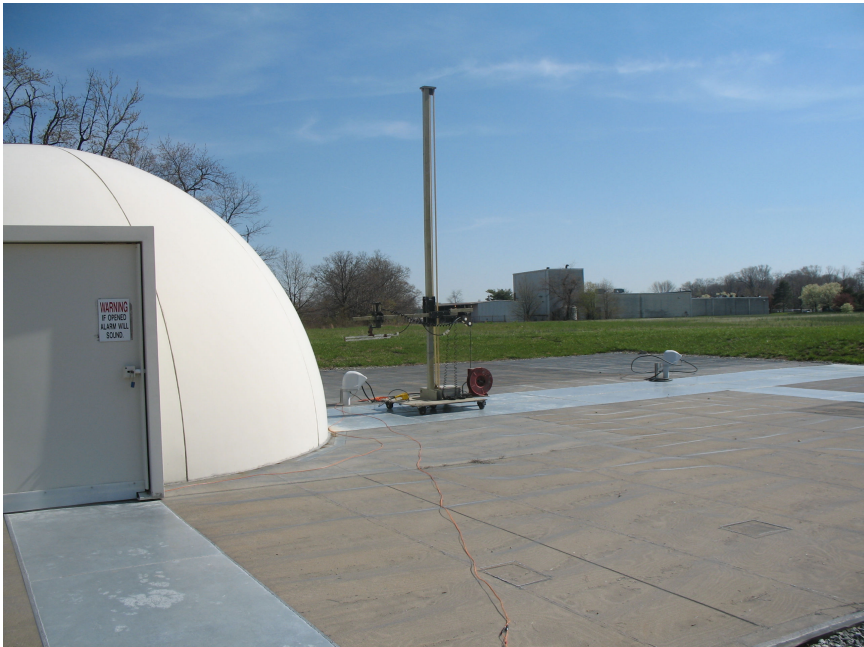
**Figure 5. Fundamental Field Strength Readings**

#### 4.4 Radiated Harmonic Emissions §15.249

**Requirement:** The three meter field strength of the harmonic emission from intentional radiators operated within 902 – 928 MHz frequency bands shall comply with the following requirement:  
500  $\mu$ V / m (54 dB $\mu$ V / m), measured in average mode. Additionally, no peak field strength shall exceed the maximum specified average by more than 20 dB under any modulation condition.

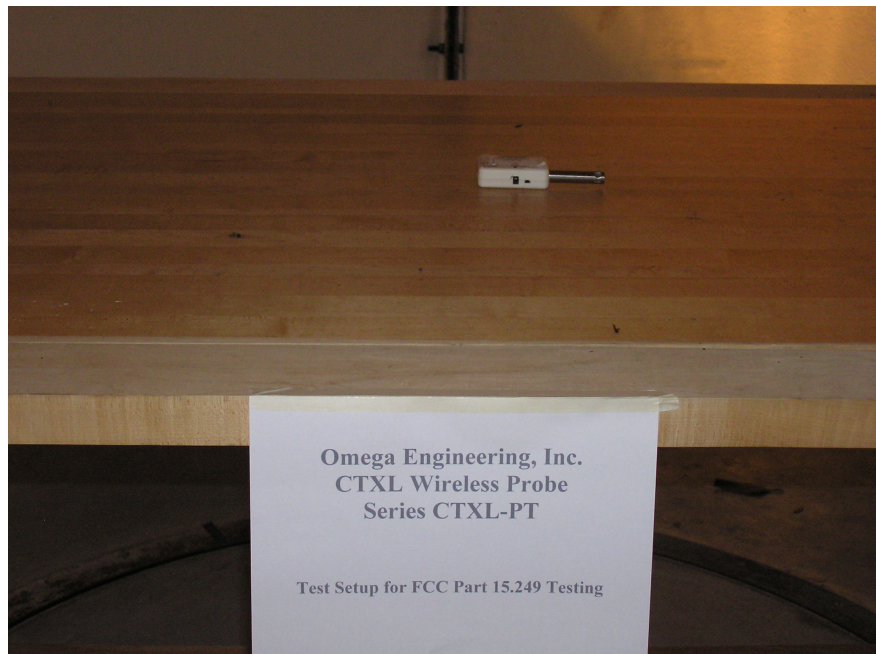
**Procedure:** The EUT transmitter was set to the aspect channel and placed in a semi-anechoic chamber. Measurements were performed with the EUT rotated 360° and varying the adjustable antenna mast to establish maximum emissions. The Horn Antenna (Asset #120) was placed at a distance of 23 cm from the EUT and the readings were made (see figure 8). An RF filter was used to suppress the fundamental prior to a pre-amplifier stage. The measured value was then augmented with the correction factors for Antenna, Amplifier/Filter, cable loss and distance (22.3 dB for distance alone). The values were then compared to the limit. The results are given in figure 12. The investigation considered all energies to 10GHz including those within the restricted bands cited in 15.205

**Test Results:** The EUT was found to be compliant with this section.



Open Area Test Site showing the radio lucent chamber with the antenna mast located at the three meter position.

CTXL-PT-W9 test unit situated on test table inside environmentally controlled OATS in preparation for emissions testing.

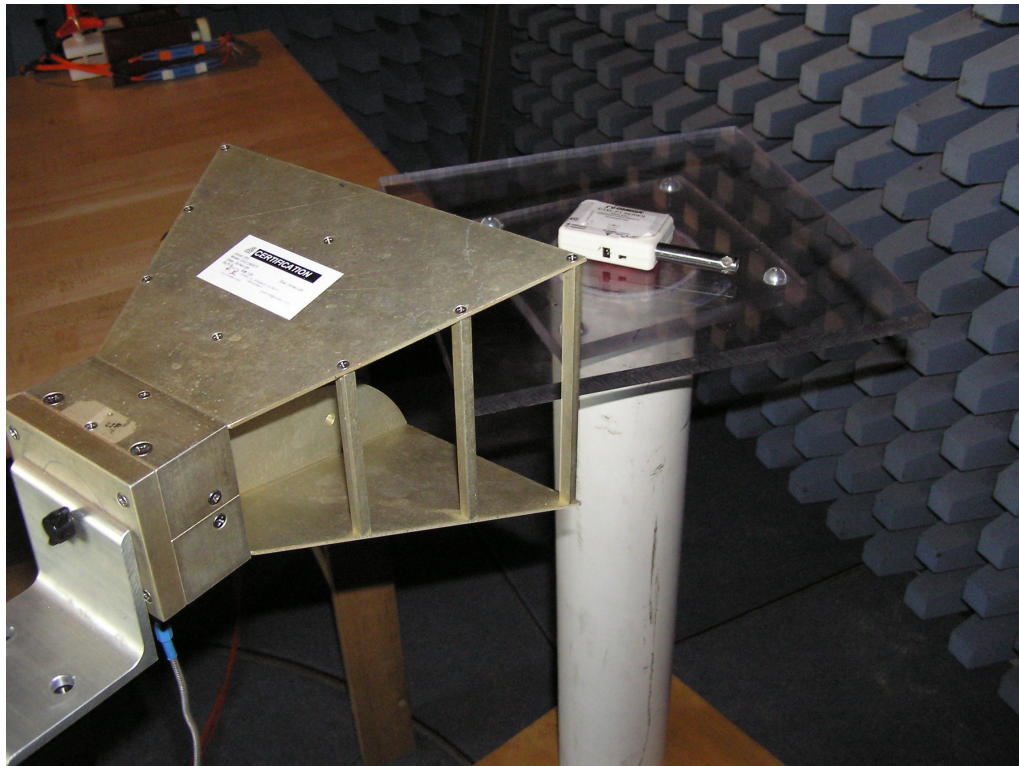


**Figure 6: Testing per 15.249 for Intentional Radiation Levels**

Fundamental	Harmonic Frequency (GHz)	Remarks	Final Measurement Corrected for Cable Loss, Preamp Gain, ACF and Distance (dB $\mu$ V / m)	Limit (dB $\mu$ V/m)	Margin
910 MHz	1.82	Peak	51.37	74	22.63
		Avg	50.26	54	3.74
	2.73015	Peak	49.18	74	24.82
		Avg	44.43	54	9.57
	3.64038	Peak	47.28	74	26.72
		Avg	37.66	54	16.34
4.55015	Peak	48.97	74	25.03	
	Avg	37.81	54	16.19	
915 MHz	1.8302	Peak	50.99	74	23.01
		Avg	49.30	54	4.70
	2.7451	Peak	49.29	74	24.71
		Avg	45.78	54	8.22
	3.6602	Peak	47.04	74	26.96
		Avg	35.43	54	18.57
4.57518	Peak	51.49	74	22.51	
	Avg	38.68	54	15.32	
920 MHz	1.8401	Peak	52.11	74	21.89
		Avg	50.72	54	3.28
	2.76028	Peak	51.68	74	22.32
		Avg	49.49	54	4.51
	3.6802	Peak	46.25	74	27.75
		Avg	34.93	54	19.07
4.6002	Peak	49.56	74	24.44	
	Avg	37.32	54	16.68	

Note: All other emissions were investigated and measured at the noise floor out to 10GHz.

**Figure 7. Test Results Radiated Harmonic Emissions Measurements.**



**Figure 8. Setup Radiated Harmonic Emissions Measurements**

**4.5 Spurious Emissions Requirements §15.249 (d) and Radiated Band Edge**

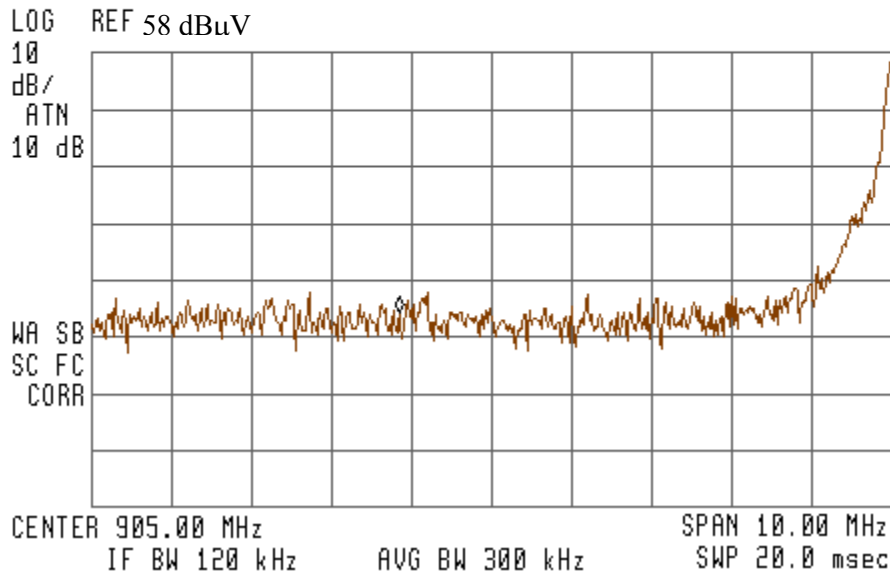
**Requirement:** Emissions radiated outside the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emissions limits in §15.209, whichever is the lesser attenuation.

**Procedure:** The EUT was placed in the environmentally controlled OATS with the test antenna and mast placed at the three meter position (See figure 6). The table with the EUT was rotated 360° and the mast with the antenna was moved through 1 to 4 meters in height to establish worst case emanation levels.

**Test Results:** The EUT is compliant with the requirements of §15.249 (d). Tests under §15.209 showed no spurs that are close to the limit from 1 to 1000MHz. A separate investigation (§ 4.4) showed no spurious energy from 1 to 10 GHz that are above the limit. Figures 9 and 10 shows band edge compliance plots.

12:54:04 NOV 19, 2009  
CTXL-PT-W9 BANDEDGE

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 903.85 MHz  
17.03 dBuV

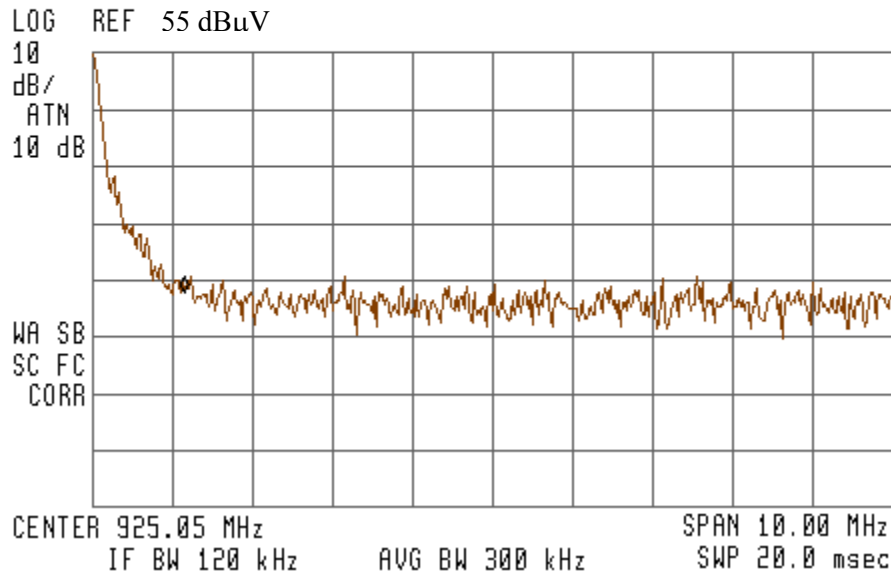


**Figure 9. Radiated Band Edge, Low Channel**



13:00:09 NOV 19, 2009  
CTXL-PT-W9 BANDEGE

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 921.20 MHz  
14.88 dBuV



**Figure 10. Radiated Band Edge, High Channel**

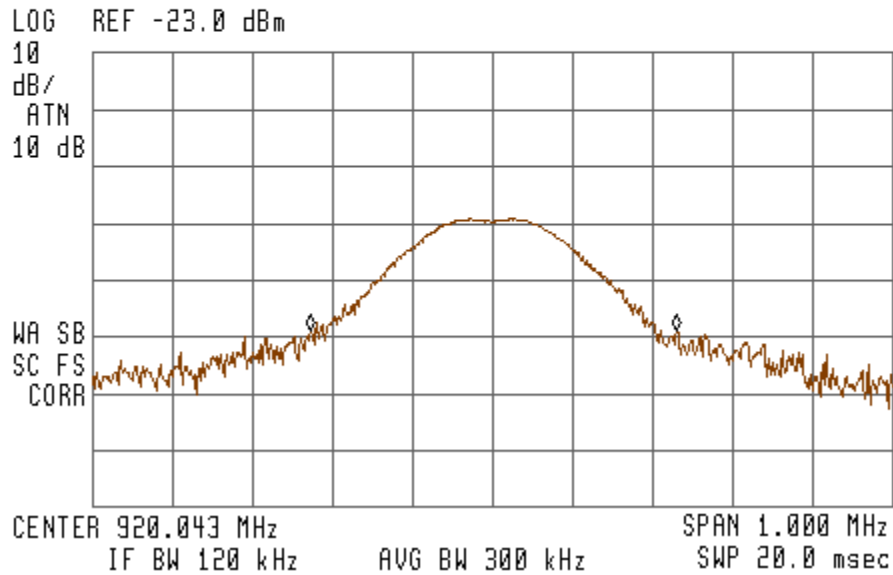
#### 4.6 99% Bandwidth

Test Procedure: The transmitter was set to the low, mid and high channels. The 99% bandwidth was measured and recorded.

Results Shown in the following plots.

**hp** 13:07:03 NOV 19, 2009  
CTXL-PT-W9 Occupied Bandwidth

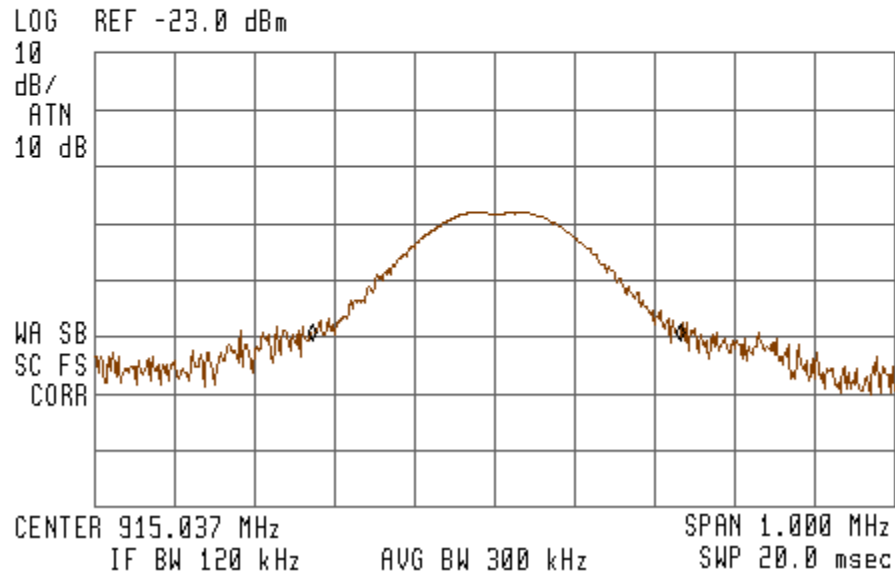
ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR $\Delta$  458 kHz  
-.14 dB



**Figure 11. Occupied Bandwidth High Channel**

13:17:02 NOV 19, 2009  
CTXL-PT-WP Occupied Bandwidth

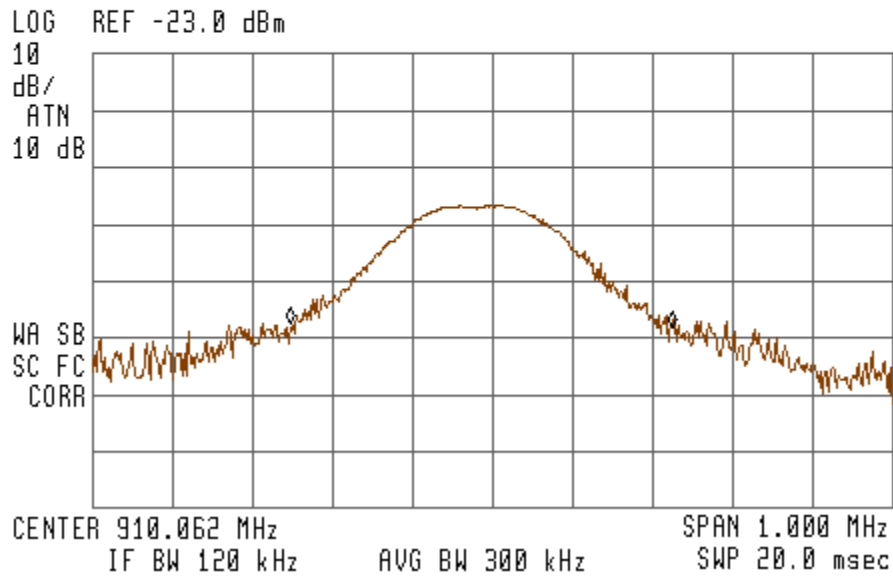
ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR $\Delta$  460 kHz  
.05 dB



**Figure 12. Occupied Bandwidth Mid Channel**

13:23:44 NOV 19, 2009  
CTXL-PT-WP Occupied Bandwidth

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR $\Delta$  478 kHz  
-.77 dB



**Figure 13. Occupied Bandwidth Low Channel**

## 5.0 Test Equipment

Analab #	Description	Manufacturer	Model #	Serial #	Calibration Due Date
034	Anechoic Chamber	Ray Proof	MK-101	11597	7-Jan-10
100	Biconilog Ant.	ETS	3142C	00083057	25-Mar-10
102	Biconical Ant.	EMCO	3110B	9603-2390	21-Nov-10
110	Log Periodic Ant.	EMCO	3146	9606-4565	26-Nov-10
120	Horn Antenna	A.H. Systems	SAS 200/571	253	20-Nov-10
200	EMI Receiver	H/P Agilent	85462A	3325A00116	9-Jan-10
201	RF Filter Section	H/P Agilent	85460A	3330A00124	9-Jan-10
202	Spectrum Analyzer	Agilent	8565EC	4103A00428	11-May-10
210	EMI Receiver	H/P Agilent	8546A	3325A00118	19-Jan-10
211	RF Filter Section	H/P Agilent	85460A	3330A00155	19-Jan-10
304	Signal Generator	Rohde & Schwarz	SMB 100A	100761	01-Jun-10
901	Position Controller	EMCO	2090	9607-1155	NA
902	Antenna Mast	EMCO	2070-5	9604-1964	NA
903	EUT turntable	EMCO	2081		NA

**Figure 14. Test Equipment Used in Test Sequence of the Present Report**

## **Certification & User's Manual Information**

### **A. Certification Information**

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I – Marketing of Radio Frequency Devices.

#### **§2.801 Radio frequency device defined.**

As used in this part, a radiofrequency device is any device which in its operation is capable of emitting radiofrequency energy by radiation, conduction, or other means. Radiofrequency devices include, but are not limited to:

- (a) The various types of radio communication transmitting devices described throughout this chapter.
- (b) The incidental, unintentional and intentional radiators defined in part 15 of this chapter.
- (c) The industrial, scientific, and medical equipment described in part 18 of this chapter.
- (d) Any part or component thereof which in use emits radiofrequency energy by radiation, conduction, or other means.

#### **§2.803 Marketing of radio frequency devices prior to equipment authorization**

- (a) Except as provided elsewhere in this section, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship, or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:
  - (1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by Sec. 2.925 and other relevant sections in this chapter; or
  - (2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

- (d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements provided that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.
  
- (e) (1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:
  - (i) Compliance testing;
  - (ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;
  - (iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific, or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;
  - (iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design, or pre-production states; or
  - (v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific, or medical user's site, but not at a residential site, during the development, design or pre-production stages.
  
- (e) (2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term manufacturer's facilities includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not marketing, of the equipment.

- (f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific, and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.



**The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J – Equipment Authorization Procedures:**

**§2.901 Basis and Purpose**

- (a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated. *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.*
- (b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

**§2.907 Certification**

- (a) Certification is an equipment authorization issued by the Commission, based on representations and test data submitted by the applicant.
- (b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Sec. 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Sec. 2.1043.

**§2.948 Description of Measurement Facilities**

(a) Each party making measurements of equipment that is subject to an equipment authorization under part 15 or part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

- (1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.
  - (i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.
  - (ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.
- (2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A – General:

### §15.19 Labeling Requirements

- (a) In addition to the requirements in part 2 of this chapter, a device subject to certification, or verification shall be labeled as follows:
- (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under part 73 of this chapter, land mobile operation under part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

- (2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with part 15 of the FCC Rules for use with cable television service.

- (3) All other devices shall bear the following statement in a conspicuous location on the device:

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

- (4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.
- (5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

### §15.21 Information to User

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B – Unintentional Radiators:

### **§15.105 Information to User**

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

**The following text is extracted directly from ICES-003 covering Procedural & Labeling Requirements.**

## **6. Procedural Requirements**

6.1 A record of the measurements and results, showing the date that the measurements were completed, shall be retained by the manufacturer or importer for a period of at least five years from the date shown in the record and made available for examination on the request of the Minister.

6.2 A written notice indicating compliance must accompany each unit of digital apparatus to the end user. The notice shall be in the form of a label that is affixed to the apparatus. Where because of insufficient space or other constraints it is not feasible to affix a label to the apparatus, the notice may be in the form of a statement included in the user's manual. A suggested text for the notice, in English and in French, is provided in the Annex.

### **Contents of the aforementioned Annex is as follows:**

“Suggested text for the notice indicating compliance with this Standard:

This Class [\*] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [\*] est conforme à la norme NMB-003 du Canada.”

**End of Report**