Testing Tomorrow's Technology

Application for

US Code Title 47, Part 2, Subpart J, Section 2.947, Certification
Per
Part 15, Subpart C, for Intentional Radiators, Section 15.247, Intentional Radiator Operating within the Band 902 MHz to 928 MHz.

And

US Code Title 47, Part 2, Subpart J, Section 2.902, Verification
Per
Part 15, Subpart B, for Unintentional Radiators, section 15.101, 15.107 and 15.109

For the

Wireless Mic. 1/05-000005

Manufactured by

Innovative Broadband, Inc.

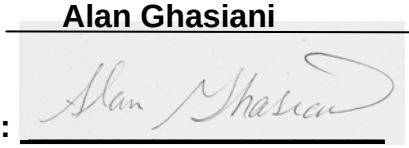
UST Project: 09-0075
Issue Date: June 22, 2009

3505 Francis Circle Alpharetta, GA 30004
PH: 770-740-0717 Fax: 770-740-1508
www.ustech-lab.com

I certify that I am authorized to sign for the test facility and that all of the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US TECH (Agent Responsible For Test):

By: **Alan Ghasiani**

Name: 

Title: **Consulting Engineer - President**

Date: **June 22, 2009**

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MEASUREMENT/TECHNICAL REPORT

COMPANY NAME: Innovative Broadband Inc.

MODEL: Wireless Mic. 1/05-000005

FCC ID: XFH-05000005

DATE: June 22, 2009

This report concerns (check one): Original grant X
Class II change_____

Equipment type: **Intentional Radiator Operating within the bands 902-928 MHz**

Deferred grant requested per 47 CFR 0.457(d) (1) (ii)? yes_____ No X

If yes, defer until:_____
date

N.A. agrees to notify the Commission by N.A.
date
of the intended date of announcement of the product so that the grant can be issued on that date.

Report prepared by:

US Tech
3505 Francis Circle
Alpharetta, GA 30004

Phone Number: (770) 740-0717
Fax Number: (770) 740-1508

SUMMARY OF TEST REQUIREMENTS

FCC Requirement	Title	Disposition
15.205	Restricted Bands	Pass
15.207	Intentional Radiator Power Line Conducted Emissions	Pass
15.247(a)(2)	6 dB Bandwidth	Pass
15.247(b)	Fundamental Output Power	Pass
15.209	Intentional Radiator Radiated Emissions	Pass
15.247(l)	Power Spectral density	Pass
15.107	Unintentional Radiator Power Line Conducted Emissions	Pass
15.109	Unintentional Radiator Radiated Emission	Pass

N/A = Not applicable for this unit.

Table of Contents

List of Tables

List of Figures

List of Appendices

Appendix	Title
A	Agency Agreement
B	Application Forms
C	Letter of Confidentiality
D	Equipment Label
E	Block Diagram(s)
F	Schematic(s)
G	Test Configuration Photographs
H	Internal Photographs
I	Theory of Operation
J	User's Manual
K	Maximum Public Exposure

1 General Information

1.1 Purpose of this Report

This report is prepared as a means of presenting test data to be used by a Telecom Certification Body in determination of whether this product is permitted for unlicensed dissemination to the general public according to the FCC Rules and Regulations for RF Devices Intentional Radiators.

1.2 Product Description

The wireless microphone has a button and a switch. The switch powers the unit on and off. When switching the unit on, it will emit an audible beep. When switching it off it will not. The button tells the wireless microphone to try and communicate with a wireless base station, instructing the wireless base station to start accepting audio data from the wireless microphone. The wireless microphone can also be placed on the wireless base station to recharge its battery. When in this docked configuration, the wireless microphone will not try to communicate with the wireless base station via its radio and will stay inactive until it is removed from the wireless base station.

1.3 Related Submittal(s)/Grant(s)

1.3.1 The EUT is subject to the following FCC authorizations:

a) Certification under section 15.247 as a transmitter.
b) Verification under 15.101 as a digital device and receiver.

1.3.2 Certification of the Transmitter

Though the Base Station is a Digital Transmission System transceiver, it is certified under CFR 15.247.

1.3.3 Verification of the Digital apparatus

The Verification requirement shares many common report elements with the Certification report. Therefore, though this report is mostly intended to provide data for the Certification process, the Verification authorization report (part 15.107 and 109) for the Base Station is included herewith.

2 Tests and Measurements

2.1 Configuration of Tested System

The sample was setup and tested per ANSI C63.4, *Methods of Measurement from Low-Voltage Electrical and Electronic Equipment in the Frequency Range of 9 kHz to 40 GHz (2003).* Conducted and radiated emissions data were taken with the EMC test receiver (or spectrum analyzer's) resolution bandwidth adjusted to 9 kHz and 120 kHz, respectively. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer was off throughout the evaluation process. A Block diagram of the tested system is shown in Figure 1. A listing of the EUT and its test peripherals is found in Table 1 below. Test configuration photographs are found in the attached appendices.

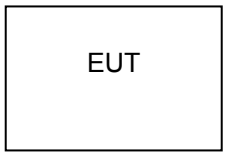


Figure 1- Test Configuration

Table 1- EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID:	CABLES P/D
Innovative Broadband Inc.	Wireless Mic 1/05-000005	None	None	--

2.2 EUT Characterization

The sample used for testing was received by US Tech on May 26, 2009 in good operating condition.

2.3 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. This site has been fully described and registered with the FCC under designation number US5117. Additionally this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number 2982A-1.

2.4 Test Equipment

Table 2 describes test equipment used to evaluate this product.

Table 2 - Test Instruments used for Evaluation.

TEST INSTRUMENT	MODEL NUMBER	MANUFACTURER	SERIAL NUMBER	DATE OF LAST CALIBRATION
SPECTRUM ANALYZER	8566B	HEWLETT-PACKARD	2332A10055	10/10/08
SPECTRUM ANALYZER	8593E	HEWLETT-PACKARD	3205A00124	9/9/08
SPECTRUM ANALYZER	8566B	HEWLETT-PACKARD	2747A05665	06/22/09
RF PREAMP 100 kHz to 1.3 GHz	8447D	HEWLETT-PACKARD	2944A06291	9/12/08
BICONICAL ANTENNA 25 MHz to 200 MHz	3110B	EMCO	9307-1431	1/22/09
LOG PERIODIC 100 MHz to 1000 MHz	3146	EMCO	3110-3236	11/21/07 2 Year
HORN ANTENNA 1 GHz to 18 GHz	3115	EMCO	9107-3723	11/4/08 2 Year
PREAMP 1 GHz to 26.5 GHz	8449B	HEWLETT-PACKARD	3008A00480	9/2/08
CALCULATION PROGRAM	N/A	N/A	Ver. 6.0	N/A

Note: The calibration interval of the above test instruments is 12 months unless stated otherwise, and all calibrations are traceable to NIST/USA.

2.5 Modifications to EUT

To meet 6 dB bandwidth compliance with FCC Part 15.247, the firmware on the EUT has modified by Innovative Broadband Inc.,

2.6 Measurement Standards (CFR 15.31)

Intentional and unintentional radiators are to use the methods of ANSI C63.4 – 2003. Measurements were made on an Open Area Test Site (OATS) wherever possible. For battery powered equipment, new (or fully charged) batteries are used.

Section 15.31(m) indicates that because the EUT System operates over the 902 MHz to 928 MHz ISM band, measurements must be made near the bottom of the band (around 902 MHz for example) and in the middle of the band (915 MHz) as well as near the top of the band (928 MHz).

2.7 Frequency Range of Radiated Measurements (CFR 15.33)

The frequency range is detailed in Tables 4 and 5 for intentional and unintentional radiators.

2.7.1 Frequency Range for Intentional Radiators

The spectrum was investigated from the lowest RF signal generated without going below 9 kHz to the 10^{th} harmonic of the highest fundamental transmitter frequency (9280 MHz maximum).

2.7.2 Frequency Range for Unintentional Radiators

The spectrum was investigated from the lowest RF signal generated without going below the lowest frequency for which an emissions limit is specified (30 MHz) to the 5^{th} harmonic of the highest fundamental frequency of the digital device (5 GHz maximum). See Table 6.

2.8 Measurement Detector Function and Bandwidth (CFR 15.35)

On any frequency below 1000 MHz, the limits shown are based upon measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths. On frequencies above 1000 MHz, the radiation limits are based upon the use of measuring instrumentation employing an average detector function.

When average detector measurements are specified for use, including emission measurements below 1000 MHz, there is also a corresponding limit for Peak detector measurements having a limit of 20 dB above the corresponding average limit unless a different peak emission limit is specified. Measurements above 1000 MHz utilize a minimum resolution bandwidth of 1 MHz.

When radiated emissions limits are expressed in terms of the average value of the emission and pulsed operation is employed, the measurement field strength is determined by averaging over one complete pulse train (Duty Cycle) including blanking intervals for pulse trains up to 0.1 second in duration. The exact method of calculating the average field strength is included in paragraph 2.11 of this report. Refer to Figures 1 and 2 for duty cycle measurement data.

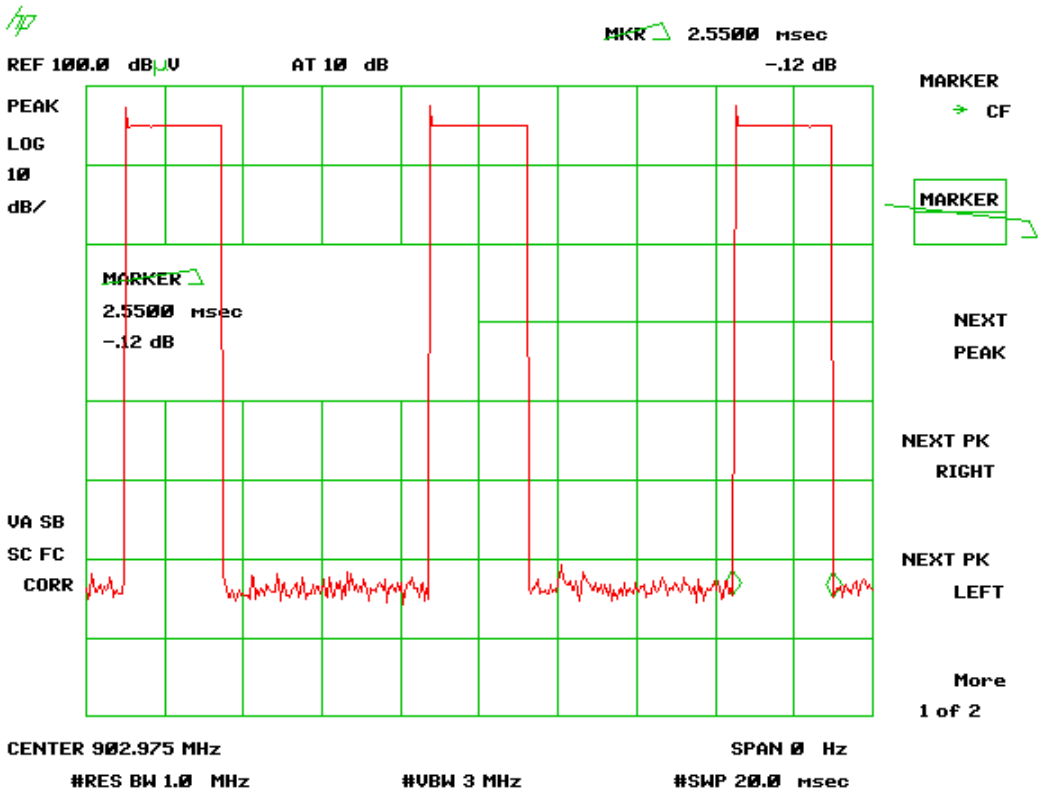
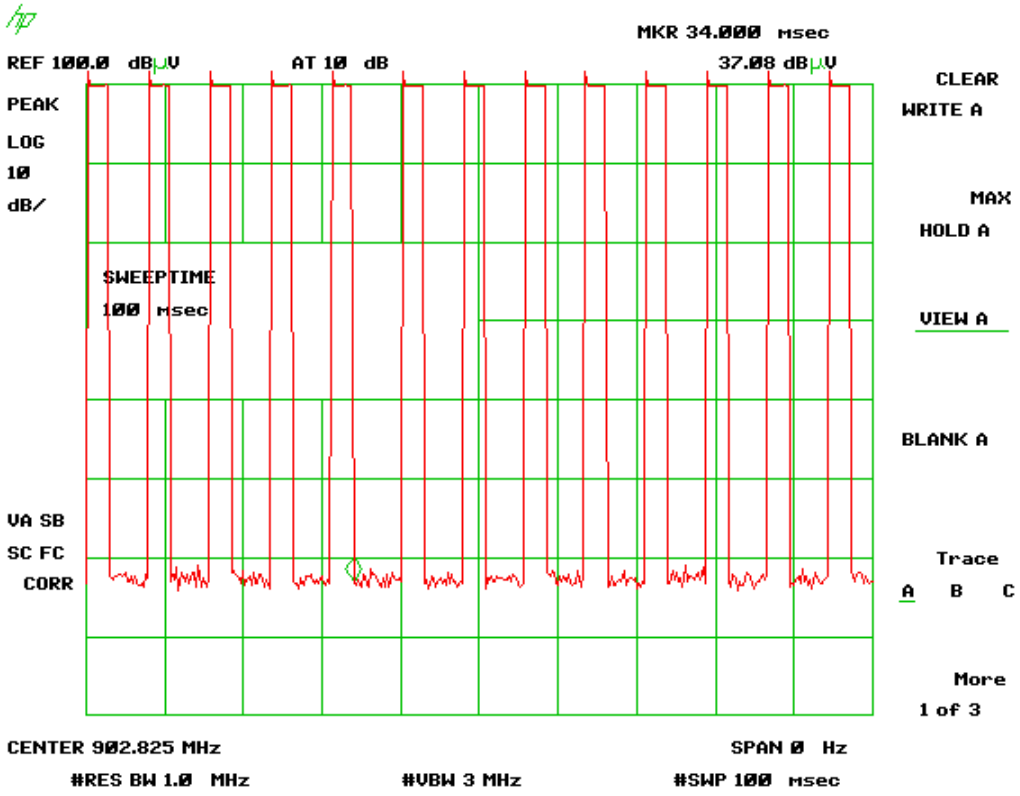


Figure 2 - Transmitter Pulse Width.



2.55mS x 13 = .3315 = 33.15 percent

DC = 20 Log 0.3315 = -9.59 dB

Figure 3– Pulses in a 100 mSec Period.

2.9 Antenna Requirement (CFR 15.203)

The intentional radiator is designed to assure that no antenna other than that furnished by the manufacturer is used with the device. The use of a permanently attached antenna is considered sufficient to comply with this requirement. Below is a table of the permanently attached antenna used with this system and its characteristics. If, in the future, additional antennas are contemplated for use, they must be formally evaluated and approved for suitability to these requirements.

Table 3 - Wireless Mic 1/05-000005 Antenna.

Manufacturer	Model Number	Antenna Type	Frequency	Peak Gain dBi	Impedance Ohms
Heilical	ANT-916-JJB-RA	**permanant Mount**	916	0.94	50

2.10 Intentional Radiator, Power Line Conducted Emissions (CFR 15.207)

When the EUT is connected to the power lines through its battery charger, it is inhibited from transmitting or receiving, it can only charge the battery. Therefore, this test data is not available.

2.11 Intentional Radiator, Radiated Emissions (CFR 15.247 (a), (e))

The EUT frequency hopping was stopped and it was placed into a continuous transmit mode of operation. A preliminary scan was performed on the EUT to find signal frequencies that were caused by the transmitter part of the product and to obtain the worse case result the EUT tested in all X, Y and Z axis. Radiated measurements below 1 GHz were tested with a RBW = 120 kHz. Radiated measurements above 1 GHz were measured using a RBW = VBW = 1 MHz. Test data are found in Tables 4 and 5.

The average values are determined by adding a duty Cycle correction factor onto the peak values. The duty cycle correction factor calculation was explained in 2.9.

2.11.1 Restricted Bands of Operation (CFR 15.205)

Only radiated harmonics and other spurious signals can be permitted to fall into the restricted bands of 15.205. All signals found in paragraph 2.7 above shall be examined for this requirement. Limits are based upon the limits of paragraph 15.209. Above 1 GHz, the limits are for Average value. See Tables 4 and 5 below for peak and Average measurements. According to CFR 15.35, the peak limits can exceed the average limits by 20 dB.

Table 4 - Peak Fundamental and Harmonics, (CFR15.247 (a))

Radiated Fundamental and Harmonics Emissions								
Test By: K.M&G.Y.	**Test:** Fundamental and Harmonics CFR 15.247 (a)				**Client:** Innovative Broad Band Inc.			
	Project: 09-0075		**Class: N/A**		**Model:** Wireless Mic 1/05-000005			
Frequency (MHz)	**Test Data (dBuV)**	***DS+FL Factor**	**AF+CL-PA (dB/m)**	**Corrected Results (dBuV/m)**	**Peak Limits (dBuV/m)**	**Distance / Polarity (Meters)**	**Margin (dB)**	**Det PK / QP**
LOW BAND								
902.80	75.70	--	25.68	101.38	--	3m./HORZ	--	**PK**
1806.30	49.90	1.00	-8.13	42.77	74.0	3m./VERT	31.2	**PK**
2708.75	47.20	-8.54	-4.07	34.59	74.0	1m./VERT	39.4	**PK**
3612.38	56.20	-8.54	-0.18	47.48	74.0	1m./HORZ	26.5	**PK**
4515.64	50.70	-8.54	2.03	44.19	74.0	1m./HORZ	29.8	**PK**
5417.18	61.10	-8.54	4.42	56.98	74.0	1m./VERT	17.0	**PK**
6321.90	54.90	-8.54	5.73	52.09	74.0	1m./VERT	21.9	**PK**
7222.89	54.90	-8.54	8.37	54.73	74.0	1m./VERT	19.3	**PK**
MID BAND								
914.56	75.70	--	25.75	101.45	--	3m./HORZ	--	**PK**
1828.87	49.40	1.00	-7.96	42.44	74.0	3m./VERT	31.6	**PK**
2743.54	47.10	-8.54	-3.93	34.63	74.0	1m./VERT	39.4	**PK**
3657.43	52.81	-8.54	-0.05	44.22	74.0	1m./HORZ	29.8	**PK**
4569.83	49.60	-8.54	2.30	43.36	74.0	1m./VERT	30.6	**PK**
5485.93	60.10	-8.54	4.54	56.10	74.0	1m./VERT	17.9	**PK**
6400.49	55.00	-8.54	5.86	52.32	74.0	1m./VERT	21.7	**PK**
7312.44	55.50	-8.54	8.64	55.60	74.0	1m./VERT	18.4	**PK**
8228.84	50.40	-8.54	9.73	51.59	74.0	1m./VERT	22.4	**PK**
HIGH BAND								
926.82	73.20	--	25.09	98.29	--	3m./VERT	--	**PK**
1853.53	49.00	1.00	-7.77	42.23	74.0	3m./VERT	31.8	**PK**
2780.67	47.40	-8.54	-3.78	35.08	74.0	1m./VERT	38.9	**PK**
3707.50	55.00	-8.54	0.04	46.50	74.0	1m./VERT	27.5	**PK**
4634.16	50.80	-8.54	2.50	44.76	74.0	1m./VERT	29.2	**PK**
5560.90	58.80	-8.54	4.64	54.90	74.0	1m./VERT	19.1	**PK**
6487.84	55.30	-8.54	6.01	52.77	74.0	1m./VERT	21.2	**PK**
7416.76	55.30	-8.54	8.89	55.65	74.0	1m./HORZ	18.3	**PK**
8342.04	50.40	-8.54	9.82	51.68	74.0	1m./HORZ	22.3	**PK**

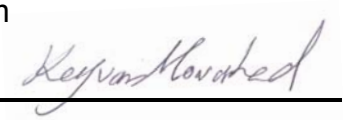
All other emissions were at least 20 db below the limit.
Correction factor for distance (DS) = -9.54 dB. And data corrected by 1.0 dB for loss of high pass filter (FL), except for fundamental
SAMPLE CALCULATION: at 902.80 MHz, = 75.7 dBuV+ 25.68 dB/m = 101.38 dBuV/m @ 3m

Tester Signature:  **Name: Keyvan Muvahhid**

Table 5 - Fund. and Harmonics, Average limits (CFR 15.35(b), 15.247(a))

Radiated Fundamental and Harmonics Emissions								
Test By: K.M&G.Y.	**Test:** Fundamental and Harmonics CFR 15.247 (a)			**Client:** Innovative Broad Band Inc.				
	Project: 09-0075	**Class: N/A**		**Model:** Wireless Mic 1/05-000005				
Frequency (MHz)	**Test Data (dBuV)**	***DS+FL Factor**	**AF+CL-PA+DC (dB/m)**	**Corrected Results (dBuV/m)**	**Limits (dBuV/m)**	**Distance / Polarity (Meters)**	**Margin (dB)**	**Det PK / QP**
LOW BAND								
902.82	75.70		16.08	--	--	3m./HORZ	--	PK
1805.83	49.90	1.00	-17.73	33.17	54.0	3m./VERT	20.8	PK
2710.83	47.20	-8.54	-13.67	24.99	54.0	1m./VERT	29.0	PK
3611.30	56.20	-8.54	-9.78	37.88	54.0	1m./HORZ	16.1	PK
4511.90	50.70	-8.54	-7.57	34.59	54.0	1m./HORZ	19.4	PK
5418.55	61.10	-8.54	-5.18	47.38	54.0	1m./VERT	6.6	PK
6321.65	54.90	-8.54	-3.87	42.49	54.0	1m./VERT	11.5	PK
7224.93	54.90	-8.54	-1.23	45.13	54.0	1m./VERT	8.9	PK
8125.45	50.20	-8.54	0.08	41.74	54.0	1m./VERT	12.3	PK
MID BAND								
914.82	75.70		16.15	--	--	3m./HORZ	--	PK
1830.08	49.40	1.00	-17.56	32.84	54.0	3m./VERT	21.2	PK
2742.93	47.10	-8.54	-13.53	25.03	54.0	1m./VERT	29.0	PK
3660.33	52.81	-8.54	-9.65	34.62	54.0	1m./HORZ	19.4	PK
4574.45	49.60	-8.54	-7.30	33.76	54.0	1m./VERT	20.2	PK
5418.55	60.10	-8.54	-5.06	46.50	54.0	1m./VERT	7.5	PK
6405.80	55.00	-8.54	-3.74	42.72	54.0	1m./VERT	11.3	PK
7320.83	55.50	-8.54	-0.96	46.00	54.0	1m./VERT	8.0	PK
8237.22	50.40	-8.54	0.13	41.99	54.0	1m./VERT	12.0	PK
HIGH BAND								
926.82	73.20		15.49	--	--	3m./VERT	--	PK
1854.00	49.00	1.00	-17.37	32.63	54.0	3m./VERT	21.4	PK
2781.68	47.40	-8.54	-13.38	25.48	54.0	1m./VERT	28.5	PK
3708.38	55.00	-8.54	-9.56	36.90	54.0	1m./VERT	17.1	PK
4635.50	50.80	-8.54	-7.10	35.16	54.0	1m./VERT	18.8	PK
5561.10	58.80	-8.54	-4.96	45.30	54.0	1m./VERT	8.7	PK
6488.08	55.30	-8.54	-3.59	43.17	54.0	1m./VERT	10.8	PK
7416.78	55.30	-8.54	-0.71	46.05	54.0	1m./HORZ	7.9	PK
8347.40	50.40	-8.54	0.22	42.08	54.0	1m./HORZ	11.9	PK

*DS: Distance factor, FL: Filter Loss, DC: Duty Cycle
Correction factor for distance = -9.54 dB and data corrected by 1.0 dB for loss of high pass filter, except for fundamental
SAMPLE CALCULATION: at 902.82 MHz, = 75.70 dBuV+ 16.08 dB/m = 91.78 dBuV/m @ 3m

Tester Signature:  **Name: Keyvan Muvahhed**

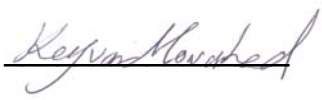
2.12 Six (6) dB Bandwidth per CFR 15.247(a) (2), (IC RSS 210, A8.2 (a))

The EUT Measurements were performed similar to the method of FCC DA 00-705 for a bandwidth of 6 dB. The RBW was set to approximately 1/100 of the manufacturers claimed RBW and with the VBW ≥ RBW. The results of this test are given in Table 6 and Figures 4 through 6.

Table 6 – Six (6) dB Bandwidth

Frequency (MHz)	6 dB Bandwidth (KHz)	Minimum FCC Bandwidth (KHz)
902	532	500
915	530	500
927	526	500

Test Date: August 18, 2009

Tested By
Signature:  Name: Keyvan Muvahhid

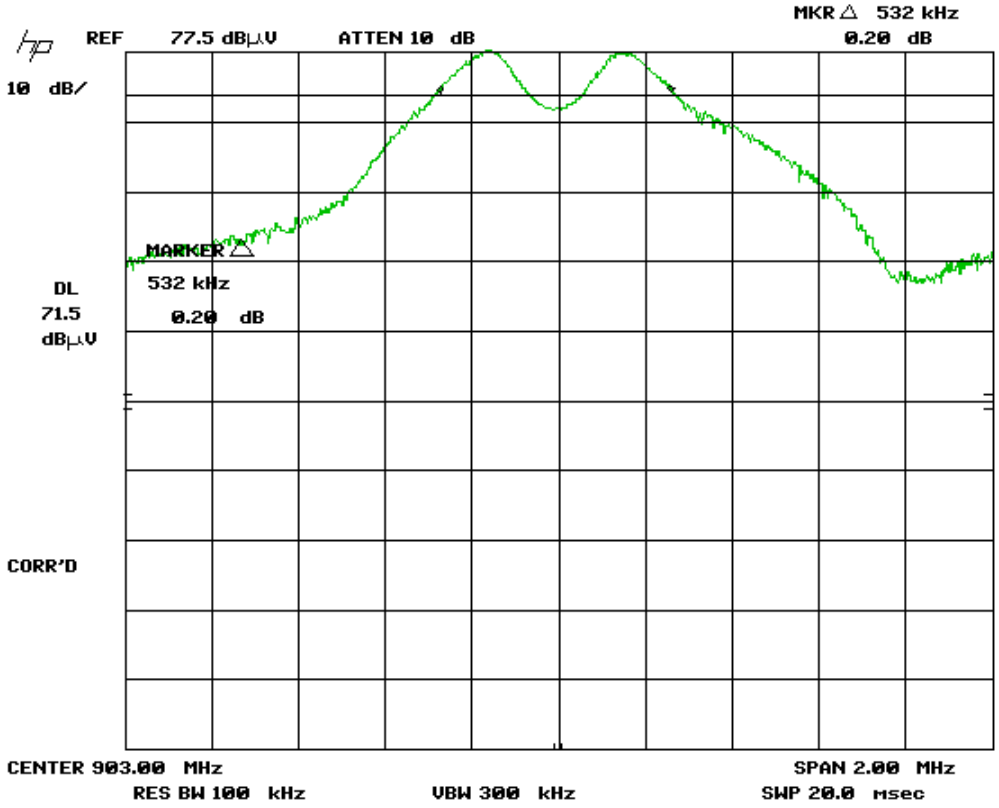


Figure 4- Six (6) dB Bandwidth - 15.247 (a) (2) - Low Channel

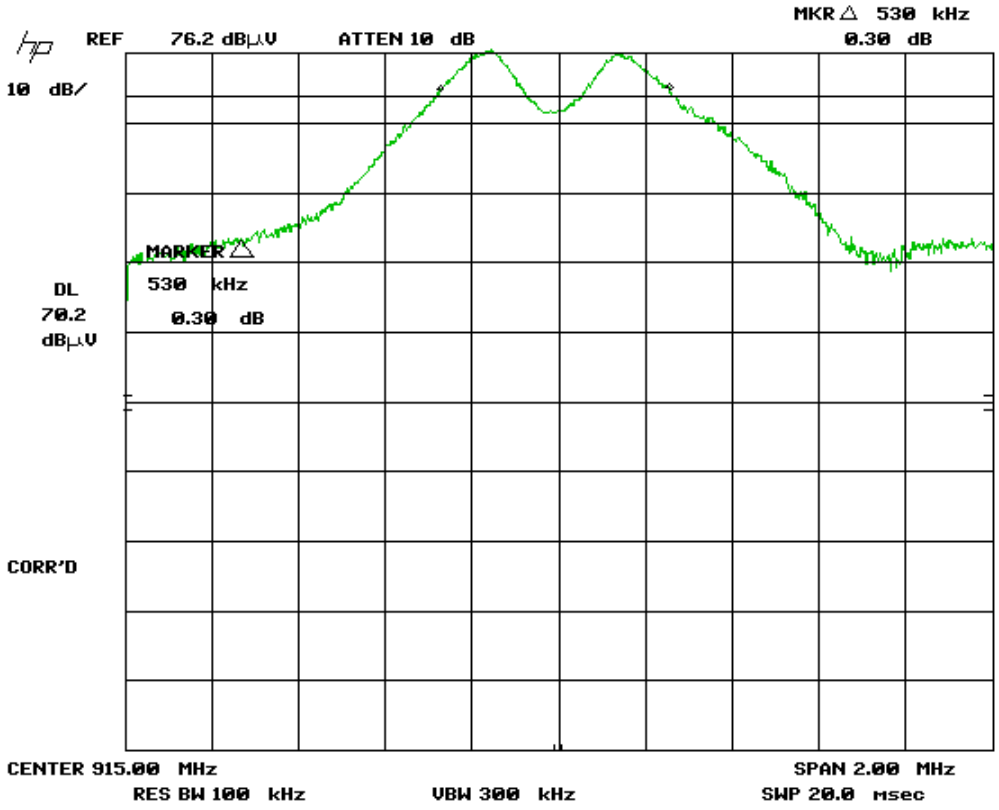


Figure 5 – Six dB Bandwidth - 15.247 (a) (2) - Mid Channel

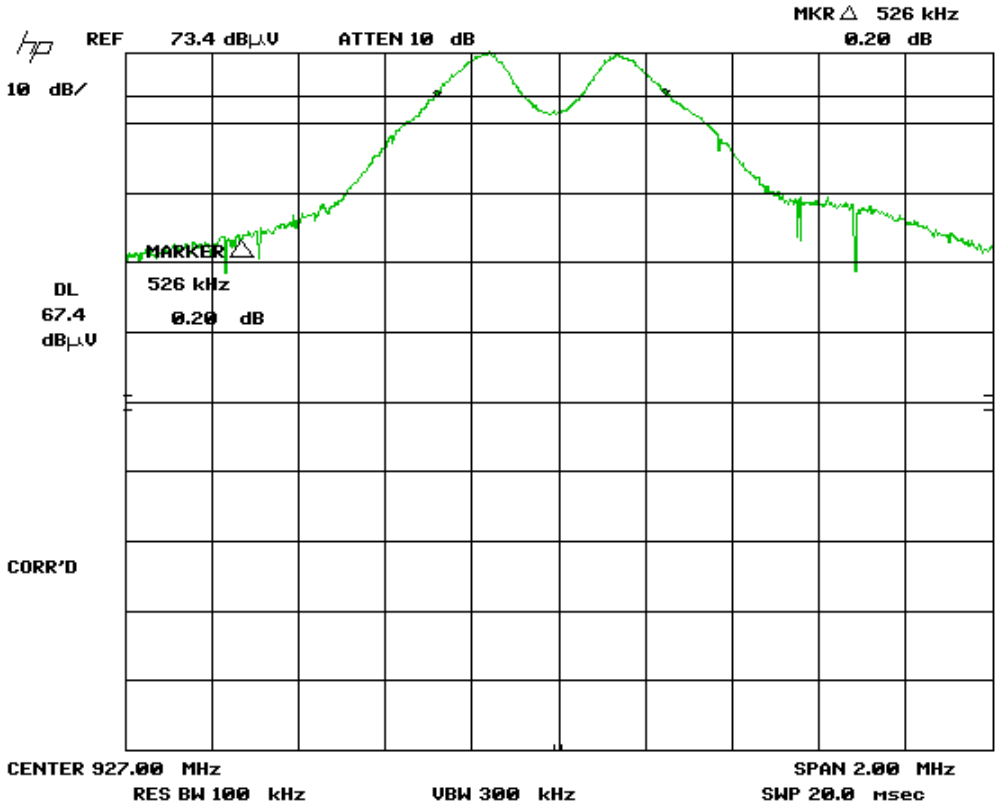


Figure 6 - Six dB Bandwidth - 15.247 (a) (2) - High Channel

2.13 Maximum Peak Output Power (CFR 15.247 (b) (3))

The transmitter was programmed to operate at a maximum of +10 dBm across the bandwidth.

Peak power within the band 902 MHz to 928 MHz was measured per FCC KDB Publication 558074. Since antenna conducted tests cannot be performed on this device, Radiated tests applied to show compliance with the various conducted requirement of Section 15.247.

Output power is calculated using the following equation:
P = (E x d) ^2 / (30 x G)

E= the measured maximum field strength in V/m.

V/m=10^ (dBuV/m/20)*10^-6

G = the numeric gain of the transmitting antenna over an isotropic radiator which is 0.94 dB_i = 1.24

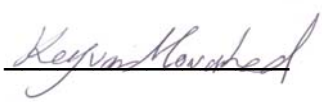
d = the distance in meters from which the field strength was measured.

Antenna Conducted Output Power was measured at Low Channel, Mid Channel and High Channel frequencies. See Figures 7 through 9 below. These screen shots were taken when the EUT was on a maxima position at 3 meter distance from the antenna. The cable loss, Preamp factor and antenna factor for are taken into consideration here (Corrected Measurement column).

Table 7 - Peak Antenna Conducted Output Power per Part 15.247 (b) (3)

Frequency (MHz)	Test Data (dBuV)	AF+CL-PA Factor (dB/m)	Corrected Results@ 3meter (dBuV/m)	Calculated Output Power (mW)	FCC Limit (mW)
902.80	76.20	25.68	101.88	**3.73**	**1000**
914.56	74.70	25.75	100.45	**2.68**	**1000**
926.82	71.80	25.09	96.89	**1.18**	**1000**

Test Date: August 18, 2009

Tested By
Signature:  Name: Keyvan Muvahhid

2.13.1 Peak Power Output (CFR 15.247 (b) (3))-low channel

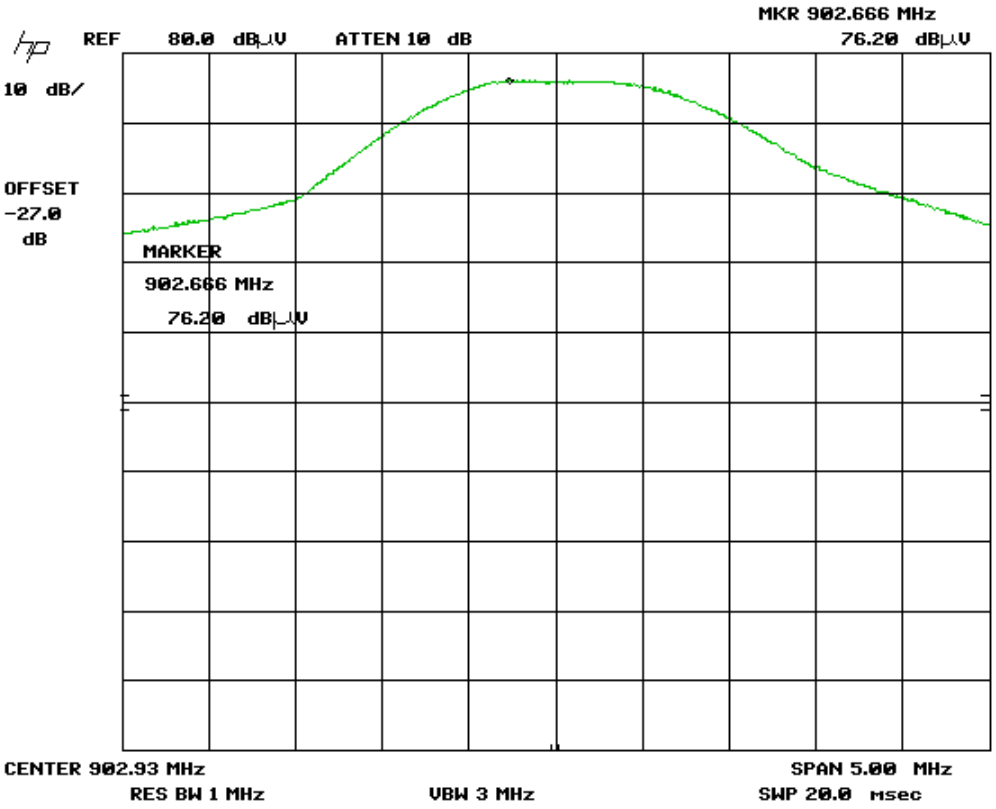


Figure 7 - Peak Antenna Output Power, Low Channel (Radiated)

2.13.2 Peak Power Output (CFR 15.247 (b) (3))-Mid Channel

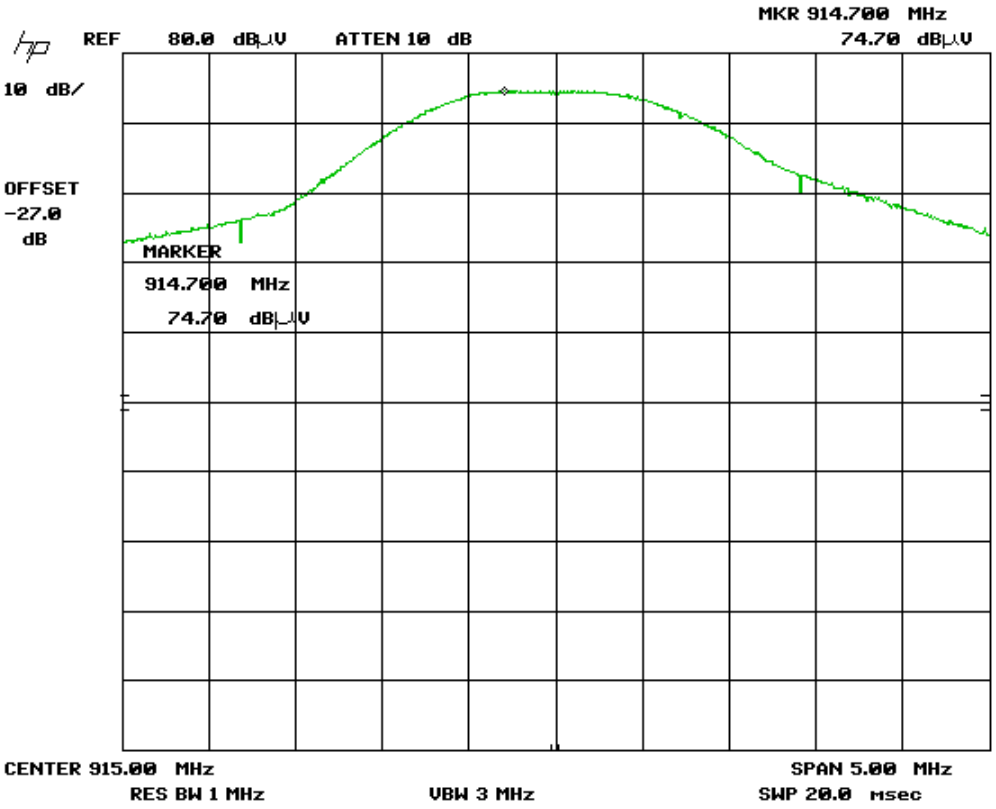


Figure 8 - Peak Antenna Output Power, Mid Channel (Radiated)

2.13.3 Peak Power Output (CFR 15.247 (b) (3))-high Channel

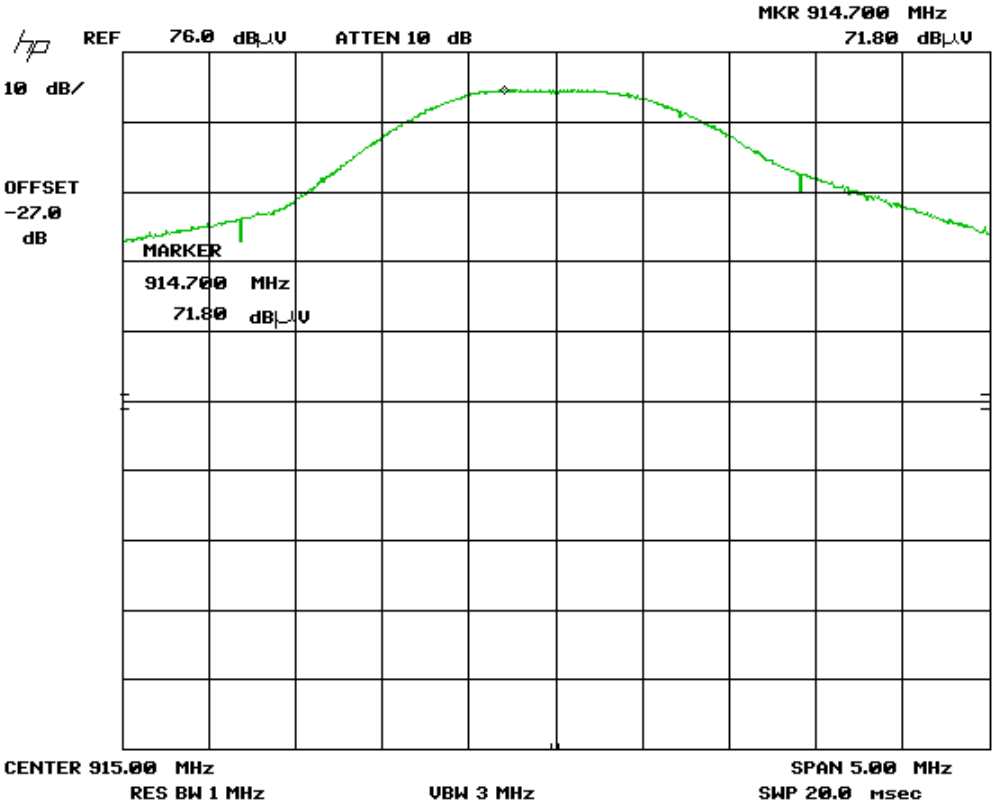


Figure 9 - Peak Antenna Output Power, High Channel (Radiated)

2.14 Power Spectral Density (CFR 15.247(e)) (IC RSS 210 A8.5)

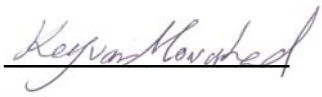
The transmitter was placed into a continuous mode of operation at all applicable frequencies. The measurements were performed per the procedures of FCC KDB Procedure 558074. The RBW was set to 3 kHz and the Video Bandwidth was set to ≥ RBW. The trace capture time was set to (Span/3 kHz).

In accordance with 15.247 (e), the power spectral density shall be no greater than +8 dBm per any 3 kHz band.

Results are shown in table 8 and figures 10 through 12 below. Results are corrected adding cable loss and antenna factor to the measured value. All values are less than +8 dBm per 3 kHz band.

Table 8 - Power Spectral Density for Low, Mid and High Bands

Frequency (MHz)	Test Data (dBm/3 KHz)	Corrected Results (dBm/3 kHz)	FCC Limit (dBm/3 kHz)
Low-903	-32.79	-7.29	+8.0
Mid-915	-33.73	-8.18	+8.0
High- 927	-36.10	-10.5	+8.0

Test Date: August 18, 2009
Tested By
Signature: 

Name: Keyvan Muvahhid

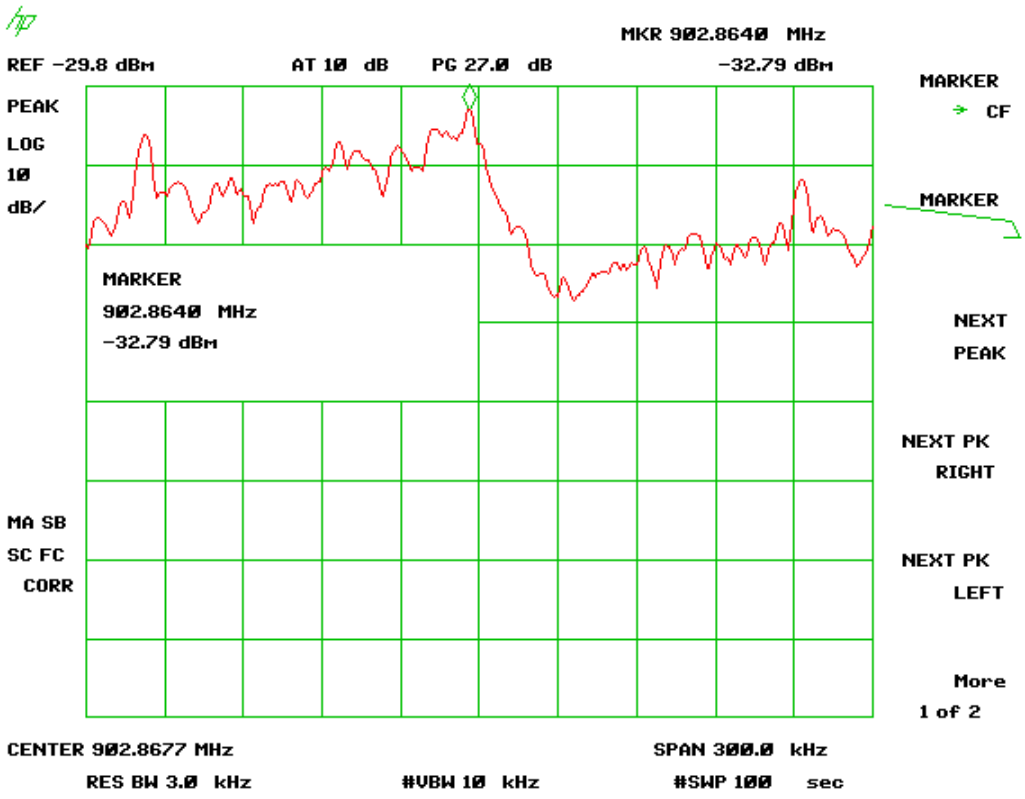


Figure 10 - Peak Power Spectral Density - Part 15.247 (e) - Low Channel

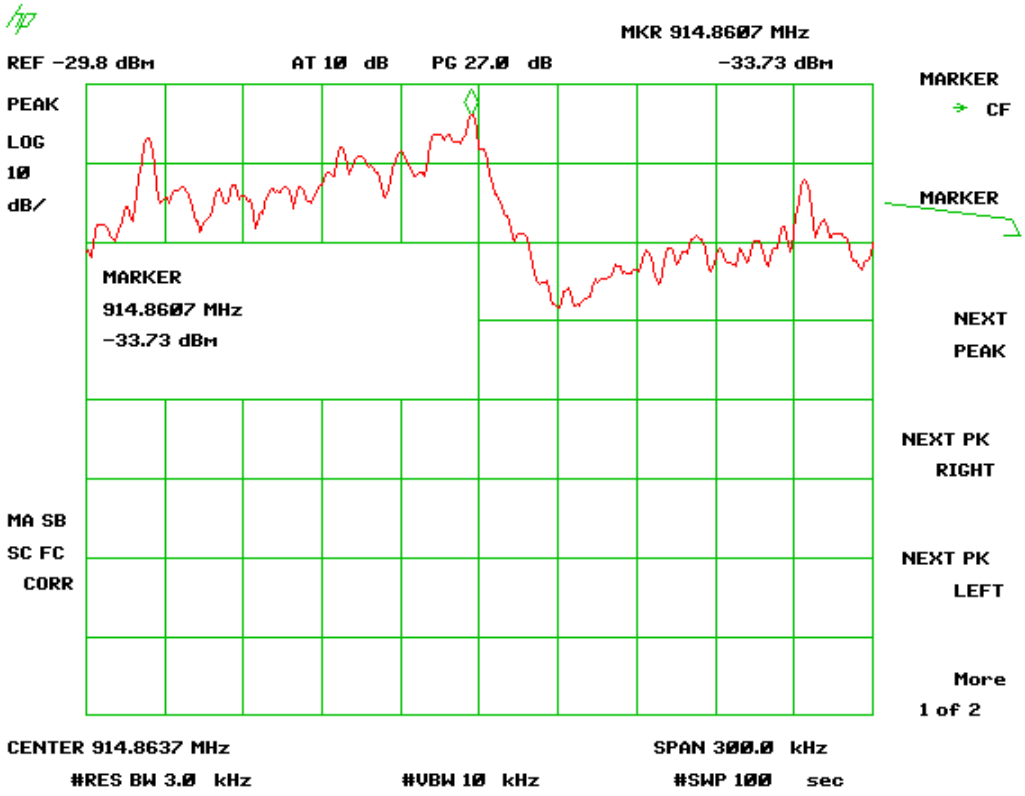


Figure 11 - Power Spectral Density - Part 15.247 (e) - Mid Channel

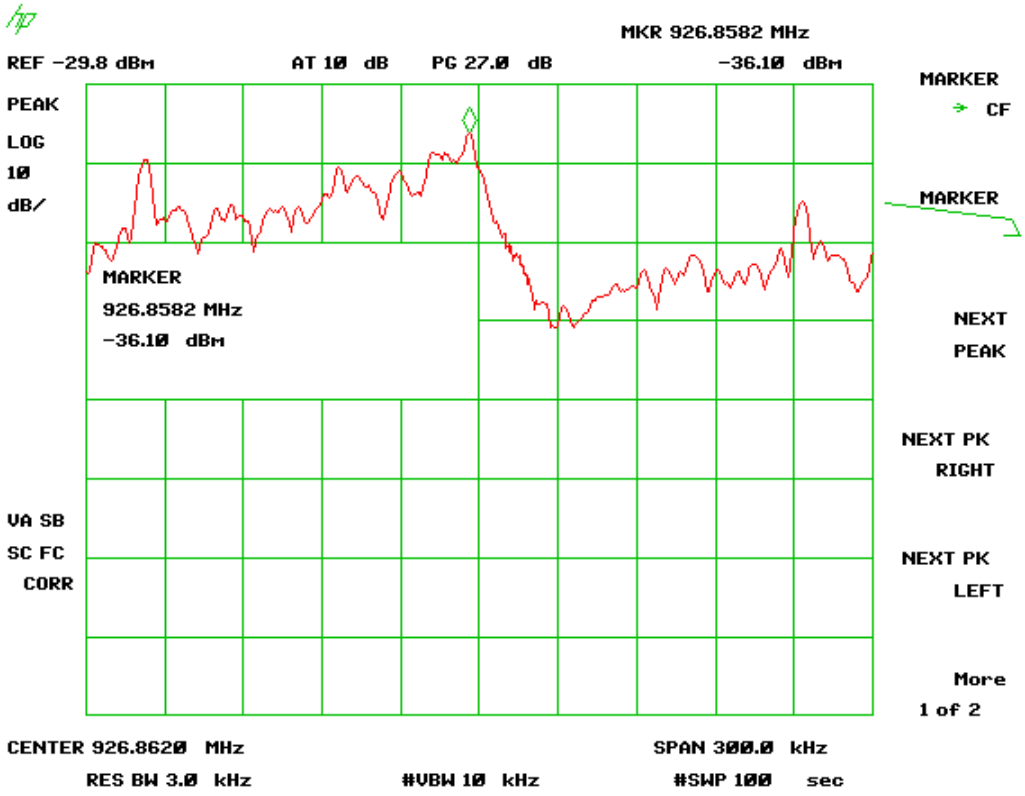


Figure 12 - Peak Power Spectral Density - Part 15.247 (e) - High Channel

2.15 Band Edge Measurements (CFR15.247 (d))

Band Edge measurements were made at a Low Channel and High Channel peak at highest EUT related emission outside the upper and lower occupied bandwidth. A measurement was made of the fundamental and the emission was measured using Max Peak setting. A Resolution Bandwidth of > 1% of the emission bandwidth was used. This procedure was repeated for the high channel. The limits were derived as follows:

The limit per section 15.247(d) in any 100 kHz bandwidth outside the frequency band is 20 dB below the fundamental frequency.

Results are shown in figures 13 through 14 below.

2.15.1 High Band Edge

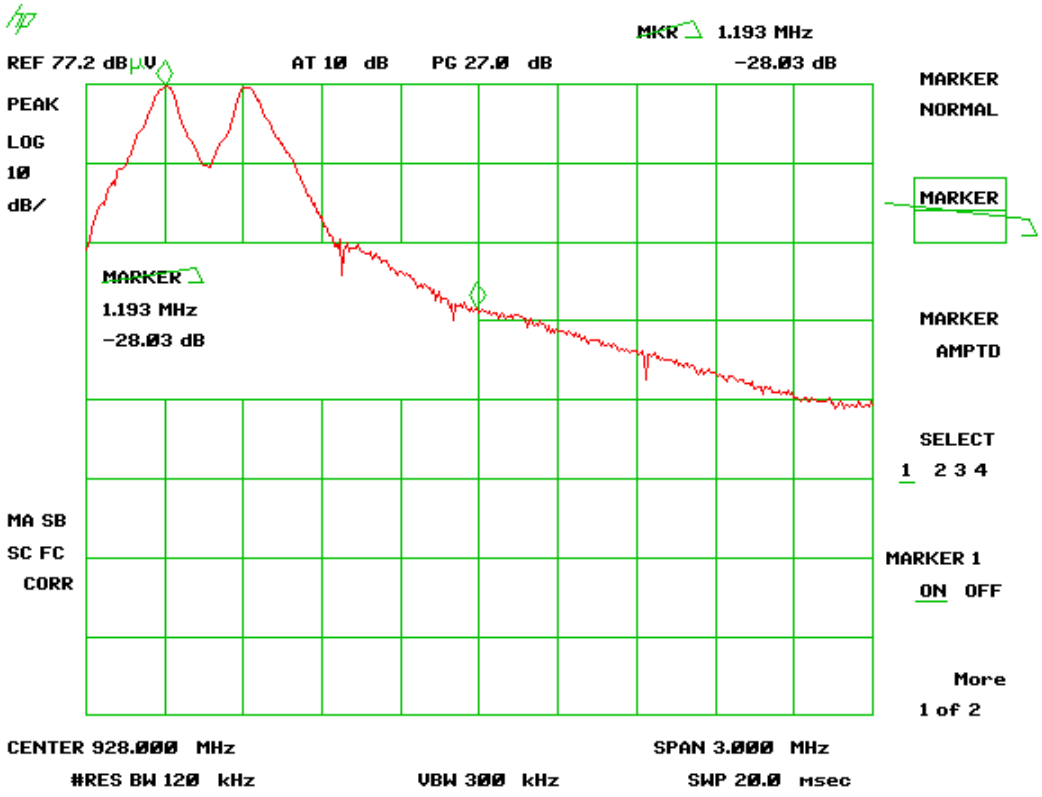


Figure 13 - Radiated Band Edge Compliance – High Channel Delta - PK

2.15.2 Low Band Edge

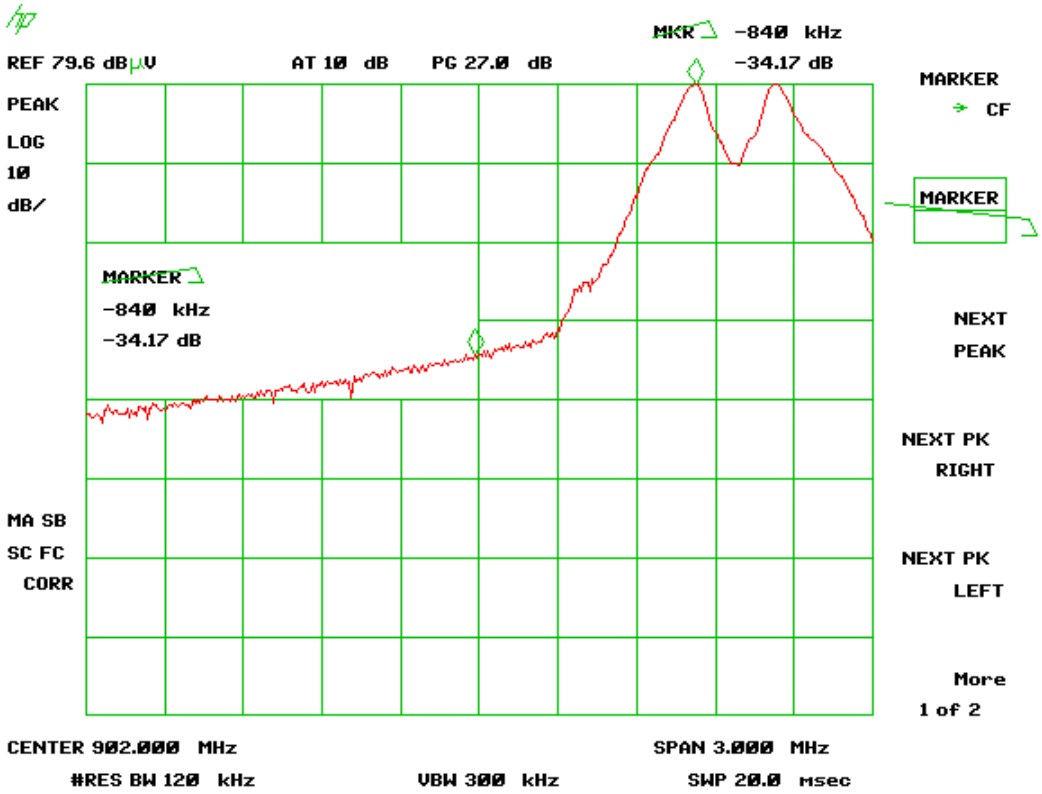


Figure 14 - Radiated Band Edge Compliance – Low Channel Delta - PK

2.16 Unintentional Radiator, Power Conducted Emissions (CFR 15.107)

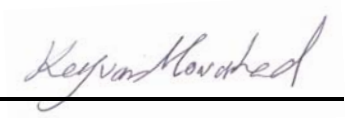
The unit was set-up and measured for conducted power line emissions. The measurement setup and test procedures were in accordance with ANSI C63.4, paragraph 7. The unit was connected to its power adapter (Motorola model FMP5202A AC power Supply) for measurement. By design, the EUT operating state is such that it is restricted to the battery charge mode only and does not transmit (or receive) while connected to AC power.

Measurements were made over the 150 kHz to 30 MHz frequency range for the unit. The measurement receiver was connected to the RF (receiver) Port on the LISN and each power lead was individually measured. Test results are shown on Table 6 for the unit.

Table 9 – Power line Conducted Emissions Data, Class B.

Power Line Conducted Emissions							
Test By: K.M.	**Test:** FCC Power Line Conducted Emissions 150 KHz – 30 MHz , Hot Phase			**Client:** Innovative Broadband Inc.			
	Project: 09-0075	Sect. 15.107 Class: B		**Model:** Wireless Mic 1/05-000005			
Frequency (MHz)	**Test Data (dBuV)**	**IL+CL -PA (dB)**	**Results (dBuV)**	**AVG Limits (dBuV)**	**Phase /Neutral**	**Margin (dB)**	**PK / QP**
Hot Line							
0.1696	47.90	-1.25	46.65	55.0	Phase	8.3	**PK**
0.6235	42.00	-0.21	41.79	46.0	Phase	4.2	**PK**
1.5600	40.70	-0.08	40.62	46.0	Phase	5.4	**PK**
7.0850	30.90	0.16	31.06	50.0	Phase	18.9	**PK**
10.7700	22.20	0.19	22.39	50.0	Phase	27.6	**PK**
23.6900	21.30	0.37	21.67	50.0	Phase	28.3	**PK**
Neutral Line							
0.1535	53.00	-1.44	51.56	55.8	Neutral	4.3	**PK**
0.6280	40.90	-0.28	40.62	46.0	Neutral	5.4	**PK**
1.5560	36.70	-0.09	36.61	46.0	Neutral	9.4	**PK**
7.1550	31.00	0.15	31.15	50.0	Neutral	18.8	**PK**
10.1600	21.60	0.20	21.80	50.0	Neutral	28.2	**PK**
29.1800	21.80	0.52	22.32	50.0	Neutral	27.7	**PK**

Tested from 150 kHz to 30 MHz.
SAMPLE CALCULATIONS: NA

Tester Signature:  **Name: Keyvan Muvahhid**

2.17 Unintentional Radiator, Radiated Emissions (CFR 15.109)

Radiated emissions within the band 30 MHz to 25 GHz were measured with a spectrum analyzer via a pre-amplifier by connecting the spectrum analyzer to a receiving antenna spaced three (3) meters from the EUT. The spectrum analyzer was set for a 50 Ω input impedance with the VBW set to ≥ the RBW bandwidth. The antenna was raised and lowered over a span of 4 meters in order to maximize the signal coming from the EUT. Similarly, the turntable was rotated through 360 degrees in the same maximizing effort. Also the EUT was scanned for a maxima when placed in each of the three mutually exclusive orthogonal planes. The results of the measurements are given in Table 9.

Table 10 - Unintentional Radiator, Peak Radiated Emissions (CFR 15.109).

Peak Radiated Emissions, Digital Device and Receiver							
Test By: K.M	**Test:** Radiated Emissions- 30 MHz to 10 GHz			**Client:** Innovative Broad Band Inc.			
	Project: 09-0075	**Requirement** 15.109, Class: B		**Model:** Wireless Mic 1/05-000005			
Frequency (MHz)	**Test Data (dBuV)**	**AF+CL-PA (dB)**	**Results (dBuV/m)**	**Peak Limits (dBuV/m)**	**Distance / Polarity (meters)**	**Margin (dB)**	**Detector PK / QP**
No emissions seen within 20 dB of the FCC Part 15 Limits.							

Tested from 30 MHz to 10 GHz.

SAMPLE CALCULATION: NA

Tester Signature: Keyvan Muvahhid **Name: Keyvan Muvahhid**

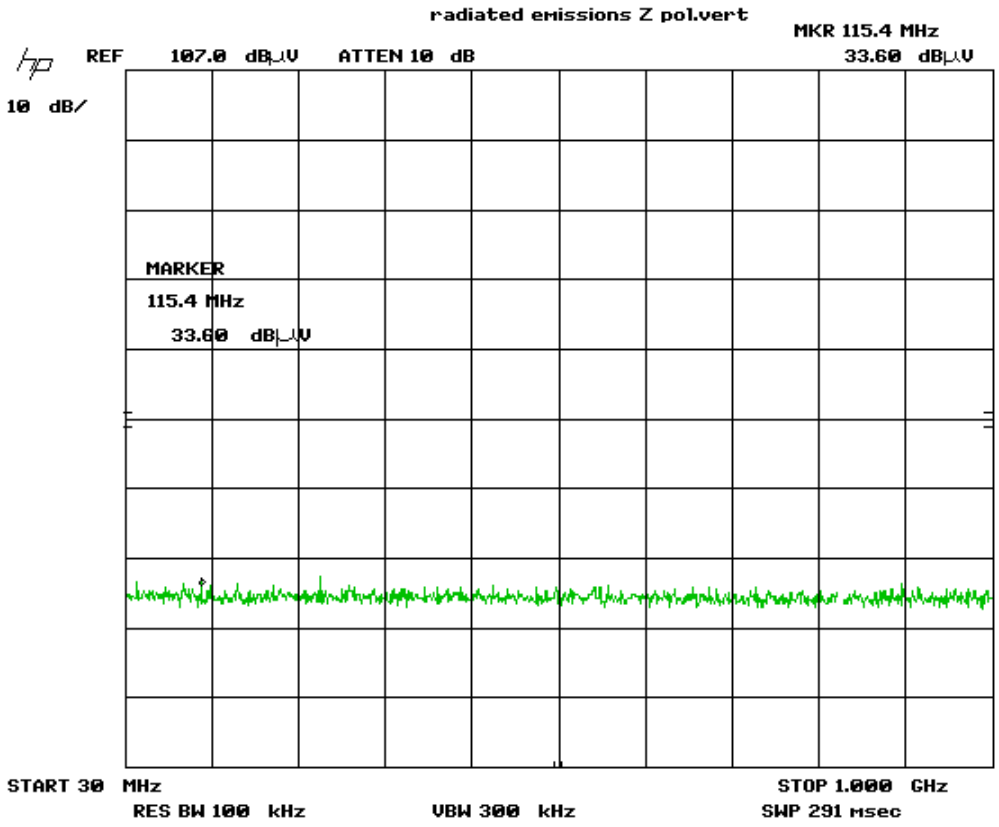


Figure 15 - Radiated emissions-30 MHz – 1 GHz-Vertical polarity

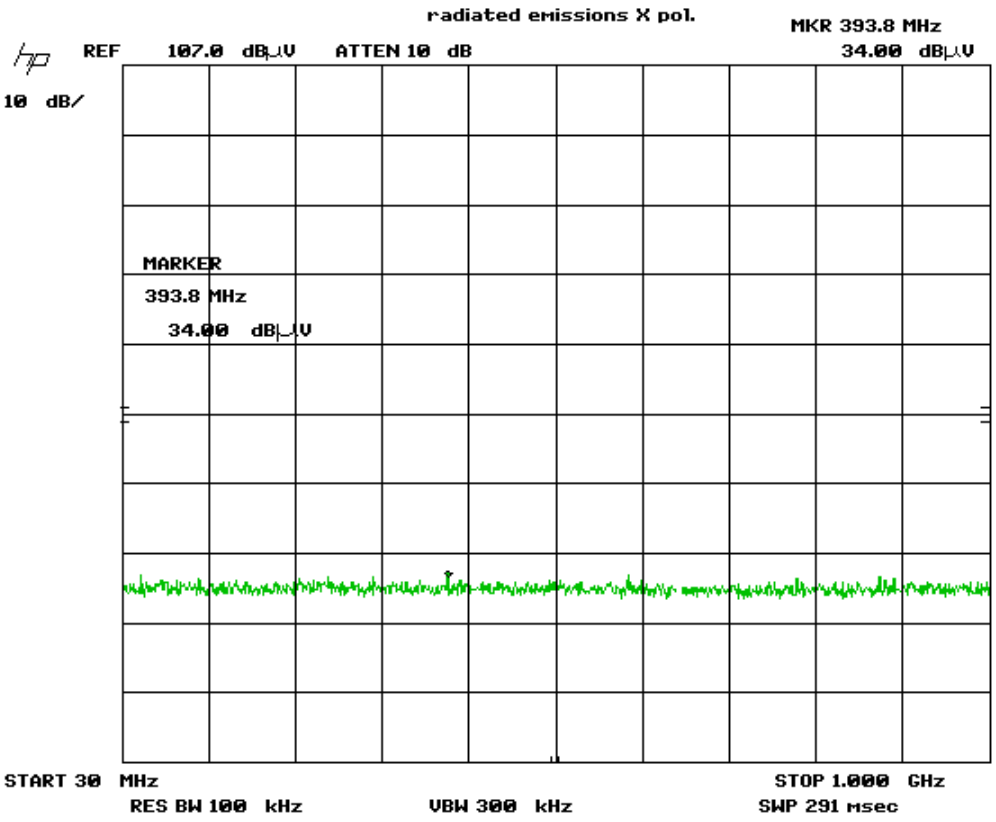


Figure 16 - Radiated emissions-30 MHz – 1 GHz-Horizontal polarity

2.18 Measurement Uncertainty

2.18.1 Conducted Emissions Measurement Uncertainty:

Measurement Uncertainty (within a 95% confidence level) for this test is ±2.8 dB.

The data listed in this test report has sufficient margin to negate the effects of uncertainty. This measurement unconditionally passes.

2.18.2 Radiated Emissions Measurement Uncertainty:

For a measurement distance of 3 m the measurement uncertainty (with a 95% confidence level) for this test using a Biconical Antenna (30 MHz to 200 MHz) is ±5.3 dB. This value includes all elements of measurement.

The measurement uncertainty (with a 95% confidence level) for this test using a Log Periodic Antenna (200 MHz to 1000 MHz) is ±5.1 dB.

The measurement uncertainty (with a 95% confidence level) for this test using a Horn Antenna is ±5.1 dB.

The data listed in this test report does not have sufficient margin to negate the effects of uncertainty, (more than the measurement uncertainty value at 902.82 and 914.82 MHz). Therefore, this test is conditionally acceptable.