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**Test Report:** 80825-1R1TRFWL


**Applicant:** Dataradio Inc.  
5500 Royalmount Avenue  
Suite 200, TMR, Montreal  
Quebec, Canada, H4P 1H7

**Apparatus:** P8-R1J1-C5-001

**FCC ID:** EOTBDP3-CRE700

**In Accordance With:** FCC Part 90  
Private Land Mobile Radio Services

**Tested By:** Nemko Canada Inc.  
303 River Road  
Ottawa, Ontario  
K1V 1H2

**Authorized By:**   
Jason Nixon, Wireless Specialist

**Date:** April 16, 2007

**Total Number of Pages:** 31

## Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 90. Conducted measurements were performed in accordance with ANSI TIA-603-B-2002. Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

<b>Apparatus Assessed:</b>	P8-R1J1-C5-001
<b>Specification:</b>	FCC Part 90 Private Land Mobile Radio Services
<b>Compliance Status:</b>	Complies
<b>Exclusions:</b>	None
<b>Non-compliances:</b>	None
<b>Report Release History:</b>	Original Release

Author: Roman Kuleba, EMC/Wireless Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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## **Section 1 : Equipment Under Test**

### **1.1 Product Identification**

The Equipment Under Test was identified as follows:

764-776 MHz Band DataRadio Power Amplifier P8-R1J1-C5-001

### **1.2 Samples Submitted for Assessment**

The following samples of the apparatus have been submitted for type assessment:

<b>Sample No.</b>	<b>Description</b>	<b>Serial No.</b>
1	Rack with power supply and speaker panel	–
2	BSC Module	–
3	Transmitter Module	–
4	BSC Module	–
5	Transmitter Module	–
7	764-776 MHz Band Power Amplifier MN # P8-R1J1-C5-001	120644694

The first samples were received on: February 6, 2007

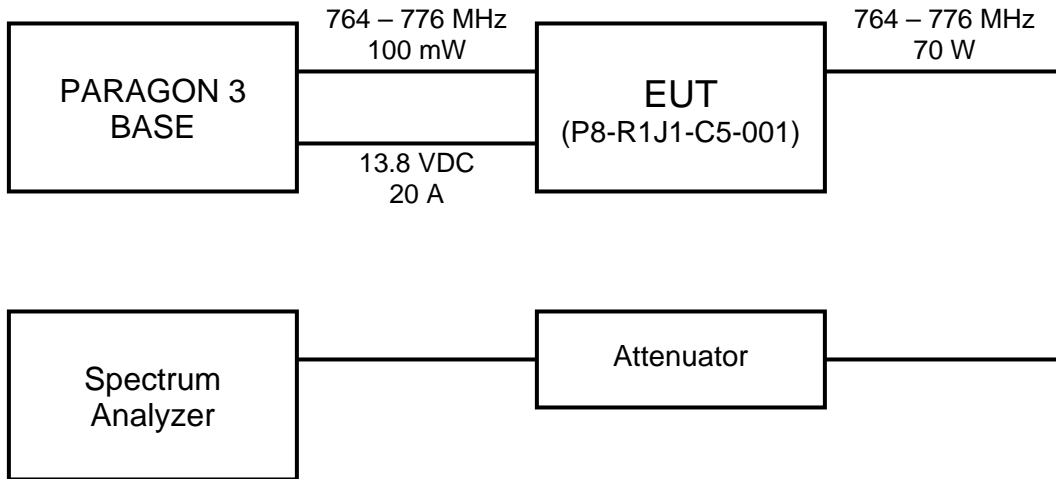
### **1.3 Theory of Operation**

The P8-R1J1-C5-001 is a 764-776 MHz Band 70W RF Power Amplifier that will be integrated into DataRadio PARAGON-3 UHF Base Station.

### 1.4 Technical Specifications of the EUT

<b>Manufacturer:</b>	DataRadio
<b>Operating Frequency:</b>	764 – 776 MHz
<b>Emission Designator:</b>	F1D
<b>Rated Power:</b>	70 W (48.45 dBm)
<b>Measured Power:</b>	70.5 W (48.48 dBm)
<b>Modulation:</b>	FSK
<b>Power Source:</b>	13.8 VDC

### 1.5 Block Diagram of the EUT



## Section 2 : Test Conditions

### 2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 2 Subpart J, Equipment Authorization Procedures  
FCC Part 90 Private Land Mobile Radio Services

### 2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

### 2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range : 15 – 30 °C  
Humidity range : 20 - 75 %  
Pressure range : 86 - 106 kPa  
Power supply range : +/- 5% of rated voltages

### 2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rhode & Schwarz	FSP 40 GHz	FA001920	March 17/06	March 17/07
EMI Test Rec./Spectr. Analyzer	Rhode & Schwarz	ESU 26.5 GHz	FA002043	Oct. 24/06	Oct. 24/07
Signal Generator	Rhode & Schwarz	SMR40	FA001879	July 27/06	July 27/07
Signal Generator	Rhode & Schwarz	SMIQ 06B	FA001878	June 28/06	June 28/07
RF Power Meter	HP	E4418B	FA001413	May 15/06	May 15/07
RF Power Sensor	HP	8487A	FA001908	Apr. 4/06	Apr. 4/07
Directional Coupler	Narda	CEL30470	S/N: 3761	COU	COU
Fixed Attenuator 20 dB	Narda	769-20	FA001394	COU	COU
Fixed Attenuator 20 dB	Narda	47-10-30	FA001739	COU	COU
RF Pre-amplifier	JCA	1-2 GHz	FA001498	Aug. 2, 06	Aug. 2, 07
RF Pre-amplifier	JCA	2-4 GHz	FA001496	Aug. 2, 06	Aug. 2, 07
RF Pre-amplifier	JCA	4-8 GHz	FA001497	Aug. 2, 06	Aug. 2, 07
RF Pre-amplifier	Narda	5 - 18GHz	FA001409	COU*	COU*
Bi-Conical Antenna #1	EMCO	3109	FA000805	May 03/06	May 03/07
Log Periodic Antenna #2	EMCO	3148	FA001355	May 16/06	May 16/07
Horn Antenna #2	EMCO	3115	FA000825	Jan. 30/07	Jan. 30/08
Horn Antenna (18 – 40 GHz)	EMCO	3116	FA001847	May 3/06	May 3/07
EMI Test Receiver	Rohde & Schwarz	ESVS-30	FA001445	July 14/06	July 14/07

COU – Calibrate on Use

## **Section 3 : Observations**

### **3.1 Modifications Performed During Assessment**

No modifications were performed during assessment.

### **3.2 Record Of Technical Judgements**

No technical judgements were made during the assessment.

### **3.3 EUT Parameters Affecting Compliance**

The user of the apparatus could not alter parameters that would affect compliance.

### **3.4 Test Deleted**

No Tests were deleted from this assessment.

### **3.5 Additional Observations**

There were no additional observations made during this assessment.

## **Section 4 : Results Summary**

This section contains the following:

FCC Part 90 : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

- N No : not applicable / not relevant.
- Y Yes : Mandatory i.e. the apparatus shall conform to these tests.
- N/T Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.



**4.1 FCC Part 90 : Test Results**

Clause	Test Method	Test Description	Required	Result
90.205	2.1046	Output power	Y	PASS
90.210	2.1051	Spurious Emissions at the antenna terminal (conducted)	Y	PASS
90.210	2.1053	Field strength of spurious radiation (radiated)	Y	PASS
90.213	2.1055	Frequency stability	N	N/A
90.214	—	Transient Frequency Behaviour	N	N/A
90.543 (a)	90.543 (b)	Emission limitations – Adjacent Channel Power	Y	PASS
2-11-04/EAB/RF	2.1049	Occupied bandwidth	Y	PASS
2-11-04/EAB/RF	—	Out of band rejection	Y	PASS

- Notes: (1) The EUT is not a band translator and does not contain any frequency translating/converting circuitry.  
 (2) The EUT will be integrated into a system that is only allowed to operate on a single channel.

## Appendix A : Test Results

### Clause §90.205 Output Power

Applicants for licenses must request and use no more power than the actual power necessary for satisfactory operation. Except where otherwise specifically provided for, the maximum power that will be authorized for new stations authorized after August 16, 1995 is as follows in FCC cfr47 Part 90, §90.205(a) through (r).

#### Test Conditions:

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	February 21, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:** Pass (see table).

**Additional Observations:** The output RF power was measured on the antenna port by means of a spectrum analyzer with RBW/VBW set to 100 kHz/300 kHz and detector function set to RMS mode.

#### Conducted TX Power:

Freq. (MHz)	P <sub>TX</sub> (W)	P <sub>TX</sub> (dBm)
764	70.5	48.48
770	70.1	48.46
776	69.6	48.43

**Clause §90.209 Occupied Bandwidth**

(b) (5) Unless specified elsewhere, channel spacings and bandwidths that will be authorized in the following frequency bands are given in the following Table.

Standard Channel Spacing/Bandwidth Frequency Band (MHz)	Channel Spacing (kHz)	Authorized Bandwidth (kHz)
Below 25	--	--
25-50	20	20
72-76	20	20
150-174	7.5	20/11.25/6
216-220	6.25	20/11.25/6
220-222	5	4
406-512	6.25	20/11.25/6
806-809/851-854	12.5	20
809-824/854-869	25	20
896-901/935-940	12.5	13.6
902-928	--	--
929-930	25	20
1427-1432	12.5	12.5
2450-2483.5	--	--
Above 2500	--	--

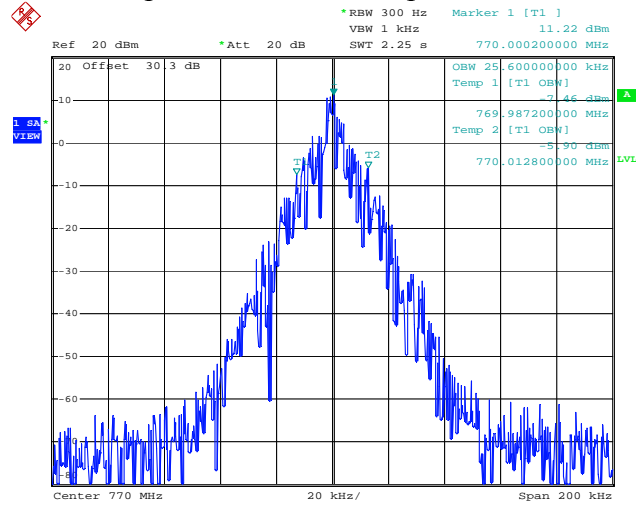
**Test Conditions:**

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	February 12, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:** See Attached Plots.

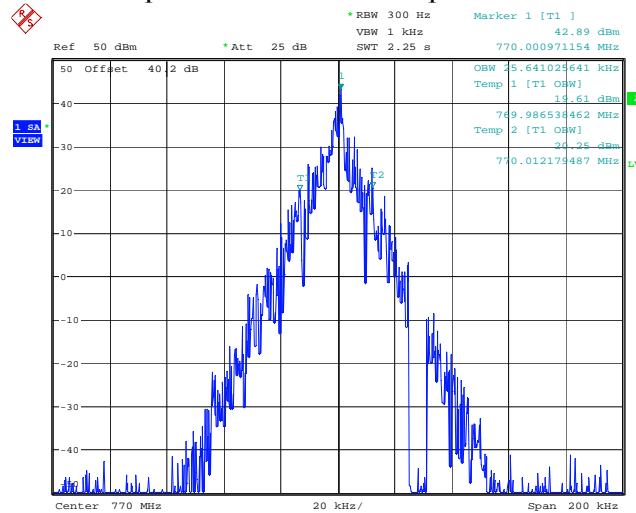
Occupied Bandwidth, continued

99% Occupied Bandwidth – Input:



Date: 11.FEB.2007 19:25:01

99% Occupied Bandwidth – Output:



Date: 11.FEB.2007 18:40:59

**Clause §90.210 Spurious emissions at the antenna terminal**

Except as indicated elsewhere in this part, transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section. Unless otherwise stated, per paragraphs (d)(4), (e)(4), and (m) of this section, measurements of emission power can be expressed in either peak or average values provided that emission powers are expressed with the same parameters used to specify the unmodulated transmitter carrier power. For transmitters that do not produce a full power unmodulated carrier, reference to the unmodulated transmitter carrier power refers to the total power contained in the channel bandwidth. Unless indicated elsewhere, the Table below specifies the emission masks for equipment operating in the frequency bands governed under this part.

**Test Conditions:**

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	February 11, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:** Pass (See Attached Plots).

**Additional Observations:**

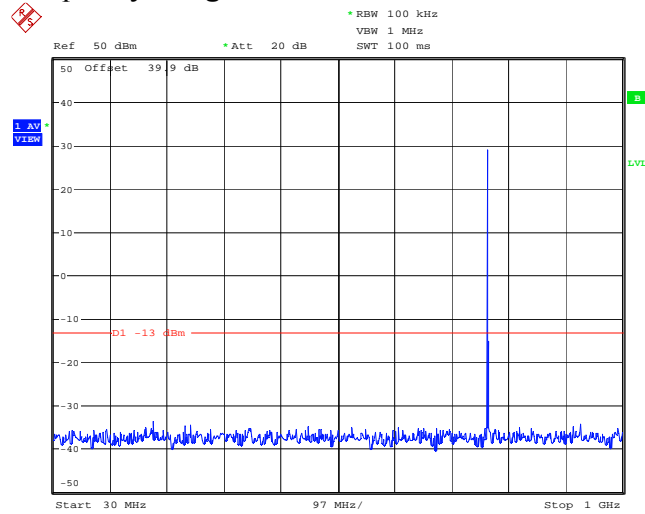
The Spectrum was searched from 30MHz to the 10<sup>th</sup> Harmonic.

All measurements were performed using an Average Detector with 100 kHz RBW on frequencies below 1 GHz and 1 MHz RBW on frequencies above 1 GHz with VBW > RBW.

Spurious emissions at the antenna terminal, continued

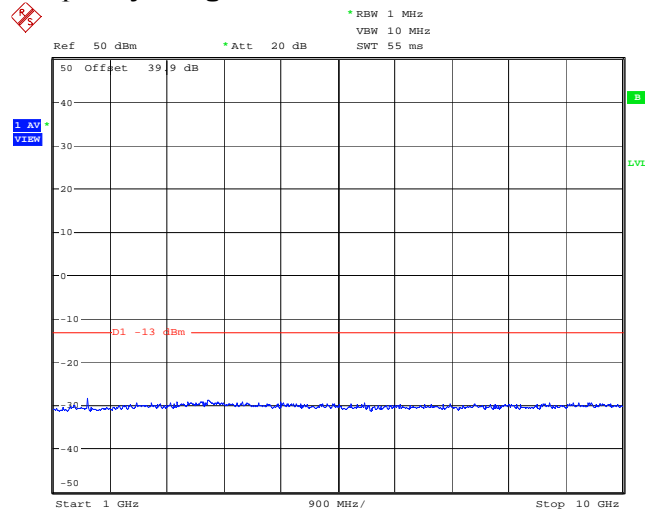
Conducted Emissions at the Antenna Port ( $f_{TX} = 770$  MHz)

Frequency Range: 0.03 – 1 GHz



Date: 11.FEB.2007 17:18:13

Frequency Range: 1 – 10 GHz



Date: 11.FEB.2007 17:19:14

**Clause §90.210 Field Strength of spurious radiation**

Except as indicated elsewhere in this part, transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section. Unless otherwise stated, per paragraphs (d)(4), (e)(4), and (m) of this section, measurements of emission power can be expressed in either peak or average values provided that emission powers are expressed with the same parameters used to specify the unmodulated transmitter carrier power. For transmitters that do not produce a full power unmodulated carrier, reference to the unmodulated transmitter carrier power refers to the total power contained in the channel bandwidth. Unless indicated elsewhere, the Table below specifies the emission masks for equipment operating in the frequency bands governed under this part.

**Test Conditions:**

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	February 23, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:**

Pass (see attached plots and tables).

**Additional Observations:**

The Spectrum was searched from 30MHz to the 10<sup>th</sup> Harmonic.

Radiated spurious emissions were measured by substitution method where EUT was being replaced with tuned dipoles for emissions below 1 GHz and calibrated horn antenna for emissions above 1GHz.

All radiated measurements were performed at a distance of 3 meters using a Peak Detector with 100 kHz RBW on frequencies below 1 GHz and 1 MHz RBW on frequencies above 1 GHz with VBW > RBW.

Field Strength of spurious radiation, continued

EIRP of Radiated Emissions

Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBµV)	Sig. Sub. Factor	Duty Cycle Corr. (dB)	Emission EIRP (dBm)	Limit (dBm)	Margin (dB)	Detector	Amp.	
1	764.0000	-	-	-	-	-	-	-	-	-	
2	1528.0000	Horn2	V	82.6	-118.6	N/A	-36.0	-13.0	23.0	Peak	1-2GHz
3	2292.0000	Horn2	V	102.6	-123.4	N/A	-20.8	-13.0	7.8	Peak	2-4GHz
4	3056.0000	Horn2	V	92.4	-120.3	N/A	-27.9	-13.0	14.9	Peak	2-4GHz
5	3820.0000	Horn2	V	86.6	-115.6	N/A	-29.1	-13.0	16.1	Peak	2-4GHz
6	4584.0000	Horn2	V	75.1	-112.8	N/A	-37.6	-13.0	24.6	Peak	4-8GHz
7	5348.0000	Horn2	V	74.7	-108.8	N/A	-34.1	-13.0	21.1	Peak	4-8GHz
8	6112.0000	Horn2	V	74.7	-108.4	N/A	-33.7	-13.0	20.7	Peak	4-8GHz
9	6876.0000	Horn2	V	68.1	-106.7	N/A	-38.7	-13.0	25.7	Peak	4-8GHz
10	7640.0000	Horn2	V	65.1	-105.0	N/A	-39.9	-13.0	26.9	Peak	4-8GHz
11	770.0000	-	-	-	-	-	-	-	-	-	-
12	1540.0000	Horn2	V	75.3	-118.8	N/A	-43.4	-13.0	30.4	Peak	1-2GHz
13	2310.0000	Horn2	V	96.5	-123.3	N/A	-26.9	-13.0	13.9	Peak	2-4GHz
14	3080.0000	Horn2	V	86.5	-120.1	N/A	-33.6	-13.0	20.6	Peak	2-4GHz
15	3850.0000	Horn2	V	81.2	-115.8	N/A	-34.6	-13.0	21.6	Peak	2-4GHz
16	4620.0000	Horn2	V	69.0	-112.6	N/A	-43.6	-13.0	30.6	Peak	4-8GHz
17	5390.0000	Horn2	V	68.7	-108.5	N/A	-39.8	-13.0	26.8	Peak	4-8GHz
18	6160.0000	Horn2	V	68.4	-108.1	N/A	-39.7	-13.0	26.7	Peak	4-8GHz
19	6930.0000	Horn2	V	61.4	-107.0	N/A	-45.6	-13.0	32.6	Peak	4-8GHz
20	7700.0000	Horn2	V	58.8	-104.8	N/A	-46.0	-13.0	33.0	Peak	4-8GHz
21	776.0000	-	-	-	-	-	-	-	-	-	-
22	1552.0000	Horn2	V	73.0	-118.9	N/A	-45.9	-13.0	32.9	Peak	1-2GHz
23	2328.0000	Horn2	V	95.9	-123.3	N/A	-27.4	-13.0	14.4	Peak	2-4GHz
24	3104.0000	Horn2	V	85.8	-119.9	N/A	-34.1	-13.0	21.1	Peak	2-4GHz
25	3880.0000	Horn2	V	81.3	-116.0	N/A	-34.8	-13.0	21.8	Peak	2-4GHz
26	4656.0000	Horn2	V	68.6	-112.4	N/A	-43.8	-13.0	30.8	Peak	4-8GHz
27	5432.0000	Horn2	V	67.8	-108.3	N/A	-40.5	-13.0	27.5	Peak	4-8GHz
28	6208.0000	Horn2	V	67.5	-107.8	N/A	-40.2	-13.0	27.2	Peak	4-8GHz
29	6984.0000	Horn2	V	61.2	-107.2	N/A	-46.1	-13.0	33.1	Peak	4-8GHz
30	7760.0000	Horn2	V	58.2	-104.6	N/A	-46.4	-13.0	33.4	Peak	4-8GHz

Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole



Field Strength of spurious radiation, continued

EIRP of Radiated Emissions

Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBµV)	Sig. Sub. Factor	Duty Cycle Corr. (dB)	Emission EIRP (dBm)	Limit (dBm)	Margin (dB)	Detector	Amp.	
31	764.0000	-	-	-	-	-	-	-	-	-	
32	1528.0000	Horn2	H	81.2	-118.9	N/A	-37.7	-13.0	24.7	Peak	1-2GHz
33	2292.0000	Horn2	H	94.5	-123.2	N/A	-28.7	-13.0	15.7	Peak	2-4GHz
34	3056.0000	Horn2	H	85.8	-121.0	N/A	-35.3	-13.0	22.3	Peak	2-4GHz
35	3820.0000	Horn2	H	80.1	-116.8	N/A	-36.7	-13.0	23.7	Peak	2-4GHz
36	4584.0000	Horn2	H	74.4	-111.5	N/A	-37.1	-13.0	24.1	Peak	4-8GHz
37	5348.0000	Horn2	H	73.7	-108.4	N/A	-34.7	-13.0	21.7	Peak	4-8GHz
38	6112.0000	Horn2	H	62.4	-106.9	N/A	-44.5	-13.0	31.5	Peak	4-8GHz
39	6876.0000	Horn2	H	66.0	-105.3	N/A	-39.3	-13.0	26.3	Peak	4-8GHz
40	7640.0000	Horn2	H	66.6	-106.4	N/A	-39.8	-13.0	26.8	Peak	4-8GHz
41	770.0000	-	-	-	-	-	-	-	-	-	-
42	1540.0000	Horn2	H	73.8	-119.0	N/A	-45.1	-13.0	32.1	Peak	1-2GHz
43	2310.0000	Horn2	H	88.4	-123.1	N/A	-34.7	-13.0	21.7	Peak	2-4GHz
44	3080.0000	Horn2	H	79.9	-120.9	N/A	-41.0	-13.0	28.0	Peak	2-4GHz
45	3850.0000	Horn2	H	74.7	-116.9	N/A	-42.2	-13.0	29.2	Peak	2-4GHz
46	4620.0000	Horn2	H	68.3	-111.4	N/A	-43.1	-13.0	30.1	Peak	4-8GHz
47	5390.0000	Horn2	H	67.8	-108.2	N/A	-40.4	-13.0	27.4	Peak	4-8GHz
48	6160.0000	Horn2	H	55.9	-106.3	N/A	-50.5	-13.0	37.5	Peak	4-8GHz
49	6930.0000	Horn2	H	59.6	-105.8	N/A	-46.2	-13.0	33.2	Peak	4-8GHz
50	7700.0000	Horn2	H	60.3	-106.3	N/A	-46.0	-13.0	33.0	Peak	4-8GHz
51	776.0000	-	-	-	-	-	-	-	-	-	-
52	1552.0000	Horn2	H	71.4	-119.1	N/A	-47.6	-13.0	34.6	Peak	1-2GHz
53	2328.0000	Horn2	H	87.8	-123.1	N/A	-35.2	-13.0	22.2	Peak	2-4GHz
54	3104.0000	Horn2	H	79.3	-120.8	N/A	-41.5	-13.0	28.5	Peak	2-4GHz
55	3880.0000	Horn2	H	74.7	-117.1	N/A	-42.4	-13.0	29.4	Peak	2-4GHz
56	4656.0000	Horn2	H	68.0	-111.3	N/A	-43.3	-13.0	30.3	Peak	4-8GHz
57	5432.0000	Horn2	H	67.0	-108.1	N/A	-41.1	-13.0	28.1	Peak	4-8GHz
58	6208.0000	Horn2	H	54.8	-105.8	N/A	-51.0	-13.0	38.0	Peak	4-8GHz
59	6984.0000	Horn2	H	59.7	-106.3	N/A	-46.7	-13.0	33.7	Peak	4-8GHz
60	7760.0000	Horn2	H	59.9	-106.3	N/A	-46.4	-13.0	33.4	Peak	4-8GHz

Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole

Field Strength of spurious radiation, continued
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**EIRP of Radiated Emissions**

Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBμV)	Sig. Sub. Factor	Duty Cycle Corr. (dB)	Emission ERP (dBm)	Emission EIRP (dBm)	Limit (dBm)	Margin (dB)	Detector
1 500.0000	LP1	V	18.2	-78.0	N/A	-59.8	-57.6	-13.0	44.6	Peak
2 500.0000	LP1	H	18.0	-79.8	N/A	-61.8	-59.6	-13.0	46.6	Peak

Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole
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**Clause §90.543 (a) Emission Limitations – Adjacent Channel Power (ACP)**

Transmitters designed to operate in 764 – 776 MHz and 794 – 806 MHz frequency bands must meet the emission limitations in this section.

(a) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the following tables. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the following tables, “(s)” indicates a swept measurement may be used.

150 kHz Base Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
100	50	-40
200	50	-50
300	50	-55
400	50	-60
600–1000	30 (s)	-65
1000 to RX-band	30 (s)	-75 (continues at 6dB/oct)
In the RX-band	30 (s)	-100

(e) For operations in the 764 to 776 MHz and 794 to 806 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

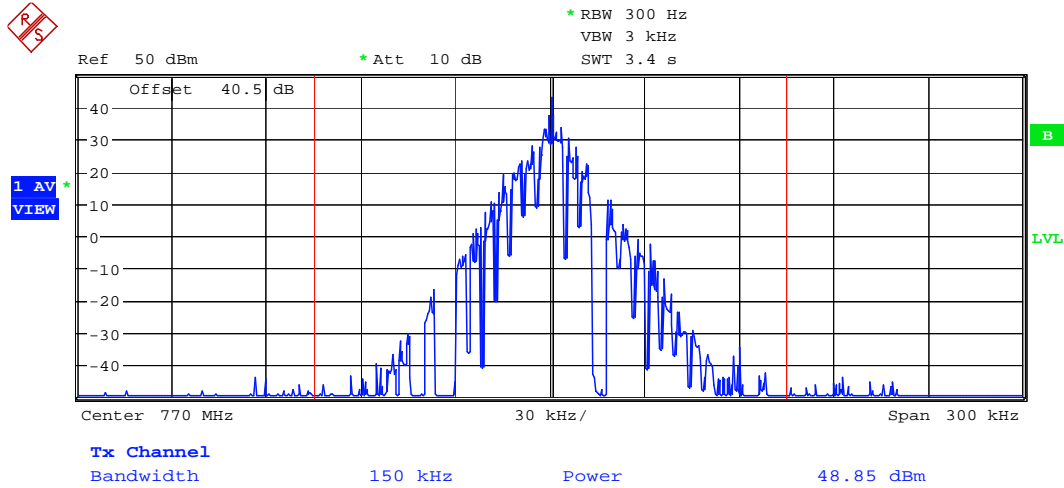
**Test Conditions:**

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	February 22, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

**Test Results:** Pass (See Attached Plots for Results).

Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(1) Setting Reference Level:

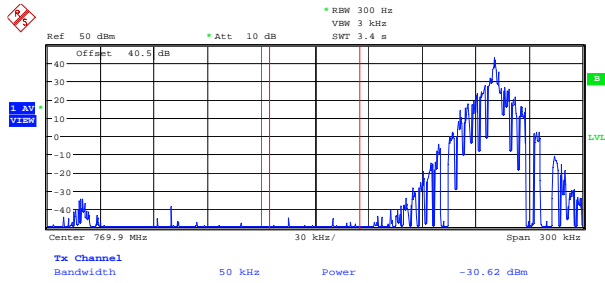


Date: 22.FEB.2007 16:45:52

Centre TX Frequency: 770 MHz  
Measurement Bandwidth: 150 kHz  
Reference Power Level: 48.85 dBm

Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(2) Non-swept Power Measurement:



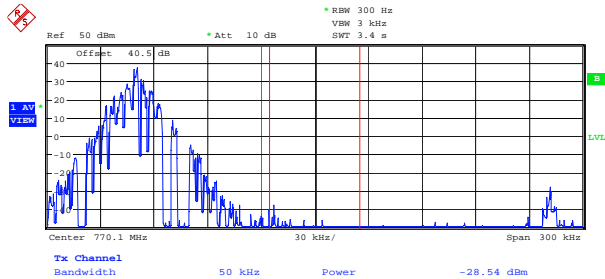
Offset from Center Frequency ( $\Delta f$ ):  
 -100 kHz

Measurement Bandwidth: 50 kHz  
 Power at -100 kHz ( $P_{\Delta f}$ ): -30.62 dBm

$ACP = P_{\Delta f} - \text{Ref. Power Level}$   
 $ACP = -30.62 \text{ dBm} - 48.85 \text{ dBm}$   
 $ACP = -79.47 \text{ dBc}$

ACP Limit = - 40 dBc

Intermodulation Harmonic Distortion  
 Date: 22.FEB.2007 16:49:11



Offset from Center Frequency ( $\Delta f$ ):  
 +100 kHz

Measurement Bandwidth: 50 kHz  
 Power at +100 kHz ( $P_{\Delta f}$ ): -28.54 dBm

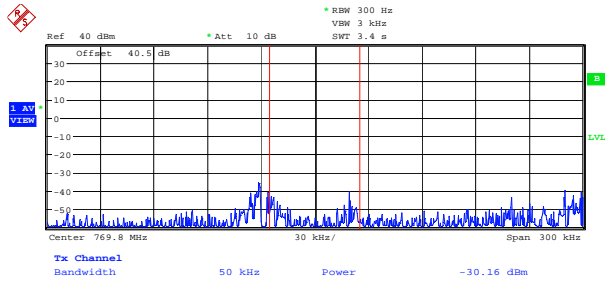
$ACP = P_{\Delta f} - \text{Ref. Power Level}$   
 $ACP = -28.54 \text{ dBm} - 48.85 \text{ dBm}$   
 $ACP = -77.39 \text{ dBc}$

ACP Limit = - 40 dBc

Intermodulation Harmonic Distortion  
 Date: 22.FEB.2007 16:54:16

Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(2) Non-swept Power Measurement:



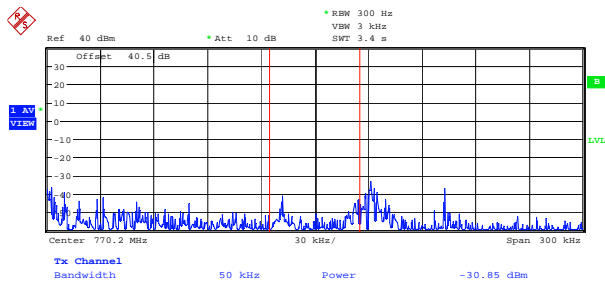
Offset from Center Frequency ( $\Delta f$ ):  
-200 kHz

Measurement Bandwidth: 50 kHz  
Power at -200 kHz ( $P_{\Delta f}$ ): -30.16 dBm

$ACP = P_{\Delta f} - \text{Ref. Power Level}$   
 $ACP = -30.16 \text{ dBm} - 48.85 \text{ dBm}$   
 $ACP = -79.01 \text{ dBc}$

ACP Limit = - 50 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:50:29



Offset from Center Frequency ( $\Delta f$ ):  
+200 kHz

Measurement Bandwidth: 50 kHz  
Power at +200 kHz ( $P_{\Delta f}$ ): -30.85 dBm

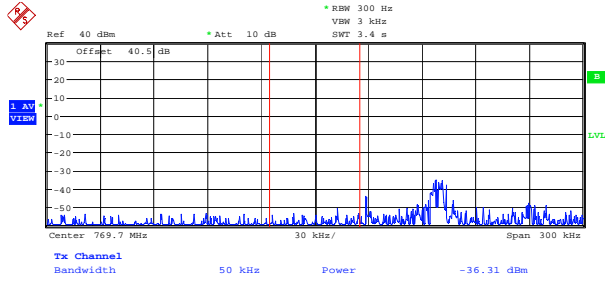
$ACP = P_{\Delta f} - \text{Ref. Power Level}$   
 $ACP = -30.85 \text{ dBm} - 48.85 \text{ dBm}$   
 $ACP = -79.7 \text{ dBc}$

ACP Limit = - 50 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:55:46

Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(2) Non-swept Power Measurement:



Offset from Center Frequency ( $\Delta f$ ):  
-300 kHz

Measurement Bandwidth: 50 kHz  
Power at -300 kHz ( $P_{\Delta f}$ ): -36.31 dBm

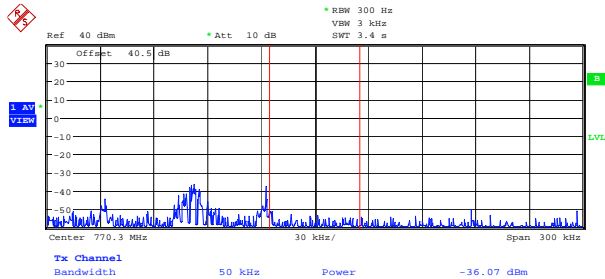
$$ACP = P_{\Delta f} - \text{Ref. Power Level}$$

$$ACP = -36.31 \text{ dBm} - 48.85 \text{ dBm}$$

$$ACP = -85.16 \text{ dBc}$$

ACP Limit = - 55 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:51:44



Offset from Center Frequency ( $\Delta f$ ):  
+300 kHz

Measurement Bandwidth: 50 kHz  
Power at +300 kHz ( $P_{\Delta f}$ ): -36.07 dBm

$$ACP = P_{\Delta f} - \text{Ref. Power Level}$$

$$ACP = -36.07 \text{ dBm} - 48.85 \text{ dBm}$$

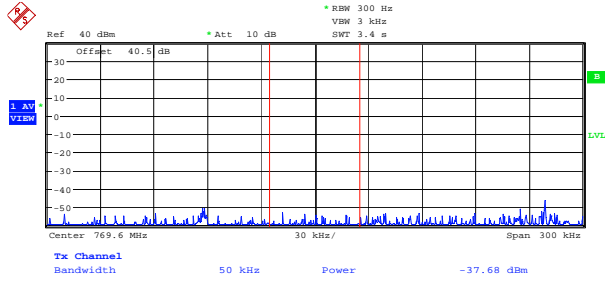
$$ACP = -84.92 \text{ dBc}$$

ACP Limit = - 55 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:56:30

Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(2) Non-swept Power Measurement:



Offset from Center Frequency ( $\Delta f$ ):  
-400 kHz

Measurement Bandwidth: 50 kHz  
Power at -400 kHz ( $P_{\Delta f}$ ): -37.68 dBm

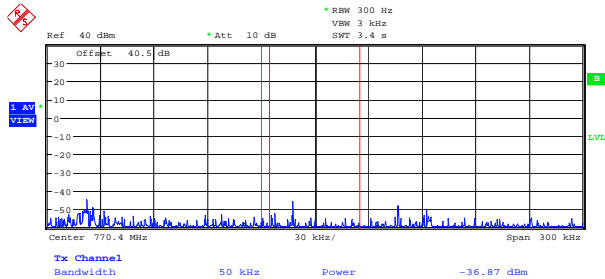
$$ACP = P_{\Delta f} - \text{Ref. Power Level}$$

$$ACP = -37.68 \text{ dBm} - 48.85 \text{ dBm}$$

$$ACP = -86.53 \text{ dBc}$$

ACP Limit = - 60 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:52:36



Offset from Center Frequency ( $\Delta f$ ):  
+400 kHz

Measurement Bandwidth: 50 kHz  
Power at +400 kHz ( $P_{\Delta f}$ ): -36.87 dBm

$$ACP = P_{\Delta f} - \text{Ref. Power Level}$$

$$ACP = -36.87 \text{ dBm} - 48.85 \text{ dBm}$$

$$ACP = -85.72 \text{ dBc}$$

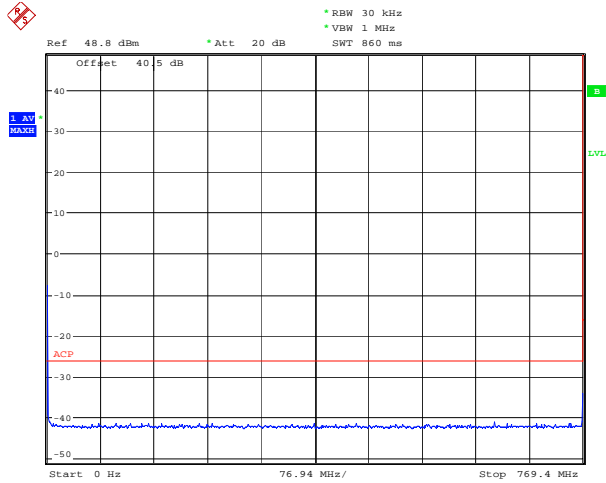
ACP Limit = - 60 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 16:59:03



Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(3) Swept Power Measurement:

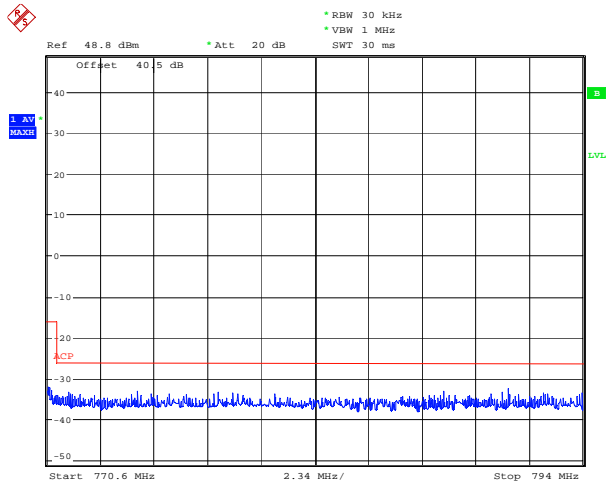


Measurement Bandwidth: 30 kHz

Offset from Center Frequency ( $\Delta f$ ):  
 -(600 – 1000) kHz  
 ACP Limit = - 65 dBc

Offset from Center Frequency ( $\Delta f$ ):  
 More than -1000 kHz  
 ACP Limit = - 75 dBc

Intermodulation Harmonic Distortion  
 Date: 22.FEB.2007 17:35:27



Measurement Bandwidth: 30 kHz

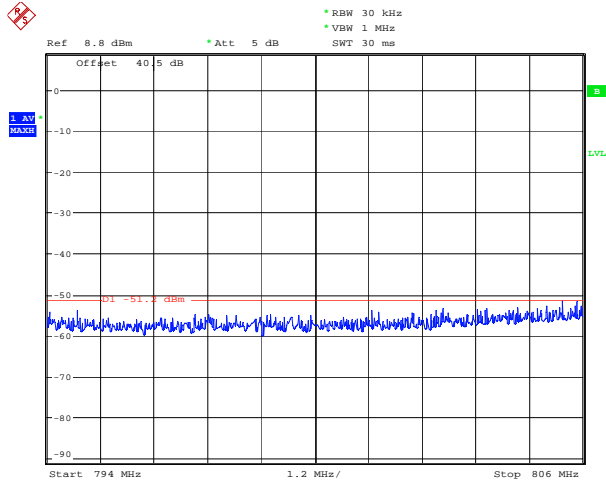
Offset from Center Frequency ( $\Delta f$ ):  
 600 – 1000 kHz  
 ACP Limit = - 65 dBc

Offset from Center Frequency ( $\Delta f$ ):  
 More than 1000 kHz  
 ACP Limit = - 75 dBc

Intermodulation Harmonic Distortion  
 Date: 22.FEB.2007 17:30:50

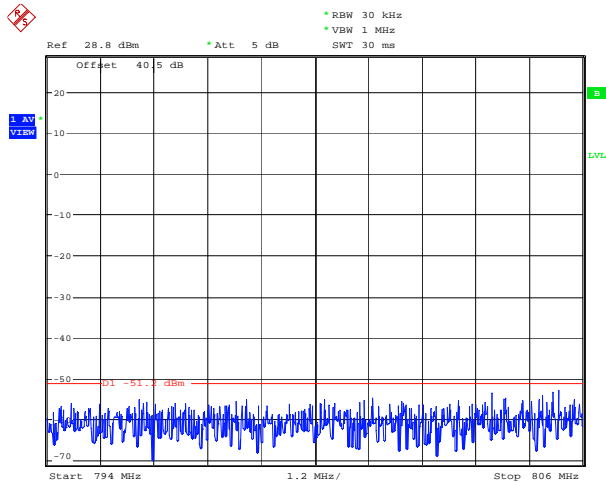
Emission limitations – Adjacent Channel Power, continued

§90.543 (b)(3) Swept Power Measurement:



Sweep: Receive Band (794 – 806 MHz)  
ACP Limit = - 100 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 18:16:30

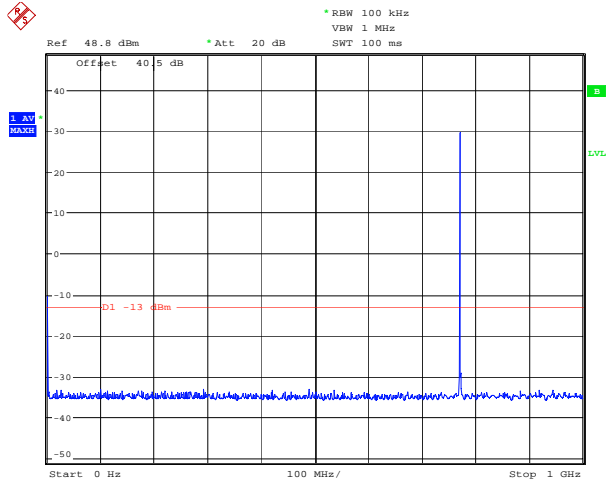


Sweep: Receive Band (794 – 806 MHz)  
ACP Limit = - 100 dBc

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 18:14:54

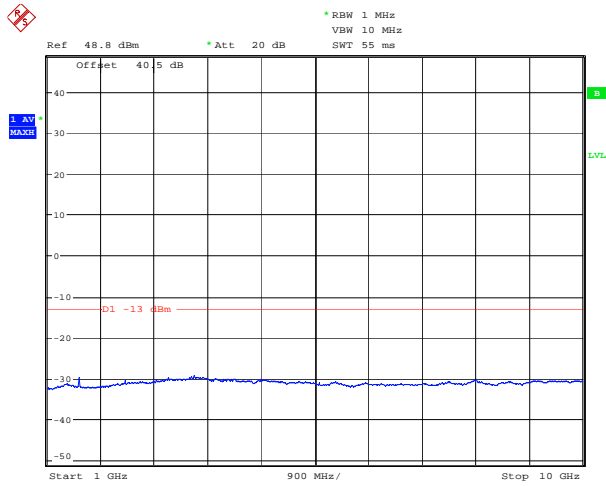
Emission limitations – Adjacent Channel Power, continued

§90.543 (c) Out-of-band Emissions:



Sweep: 0 – 1 GHz

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 18:22:37

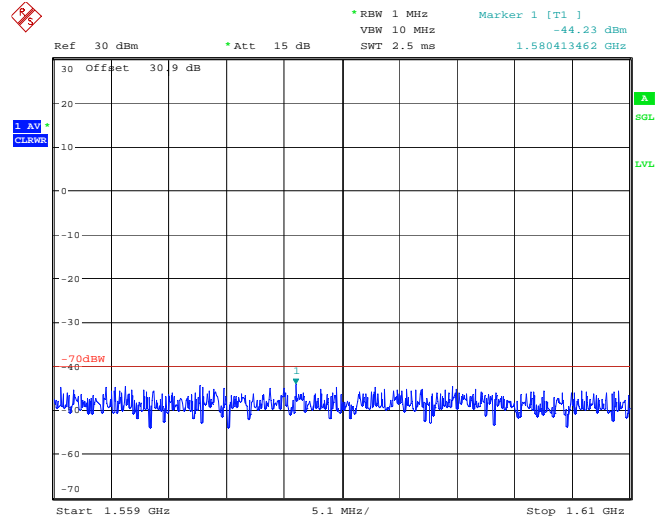


Sweep: 1 – 10 GHz

Intermodulation Harmonic Distortion  
Date: 22.FEB.2007 18:24:31

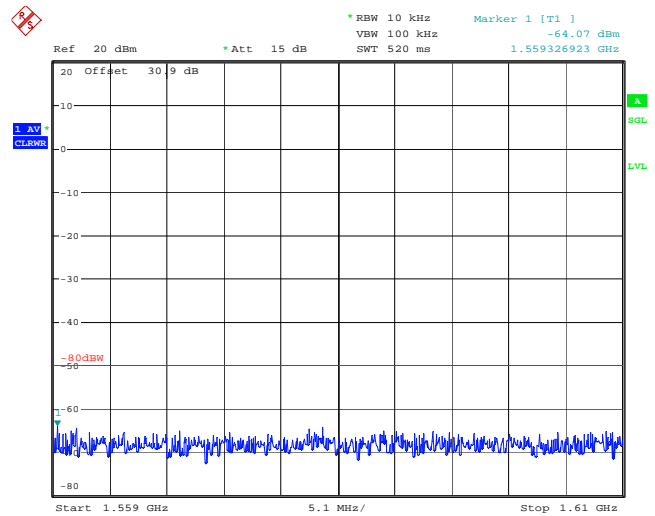
Emission limitations – Adjacent Channel Power, continued

§90.543 (e) Emission limitations:



Wide Band Emissions

Date: 1.APR.2007 16:53:45



Discrete Emissions

Date: 1.APR.2007 16:59:00

Note: Emissions in the band 1559–1610 MHz were measured on the antenna port and compared to EIRP limits.

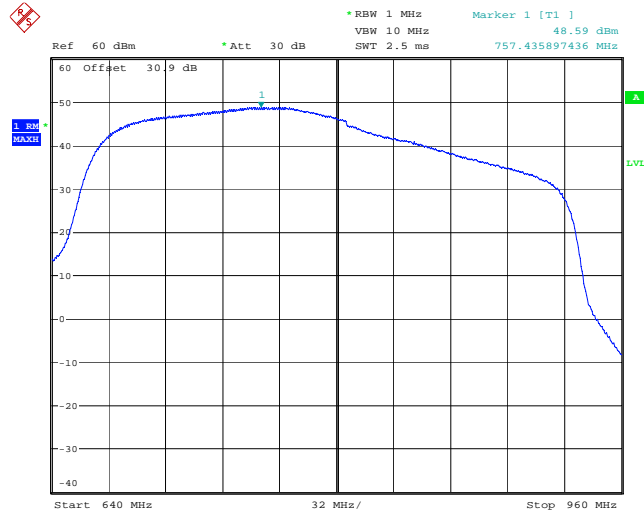
**Clause 2-11-04/EAB/RF Out of Band Rejection**

Plots showing the filter frequency response.

**Test Conditions:**

<b>Sample Number:</b>	7	<b>Temperature:</b>	23 °C
<b>Date:</b>	April 1, 2007	<b>Humidity:</b>	36 %
<b>Modification State:</b>	0	<b>Tester:</b>	Roman Kuleba
		<b>Laboratory:</b>	Ottawa

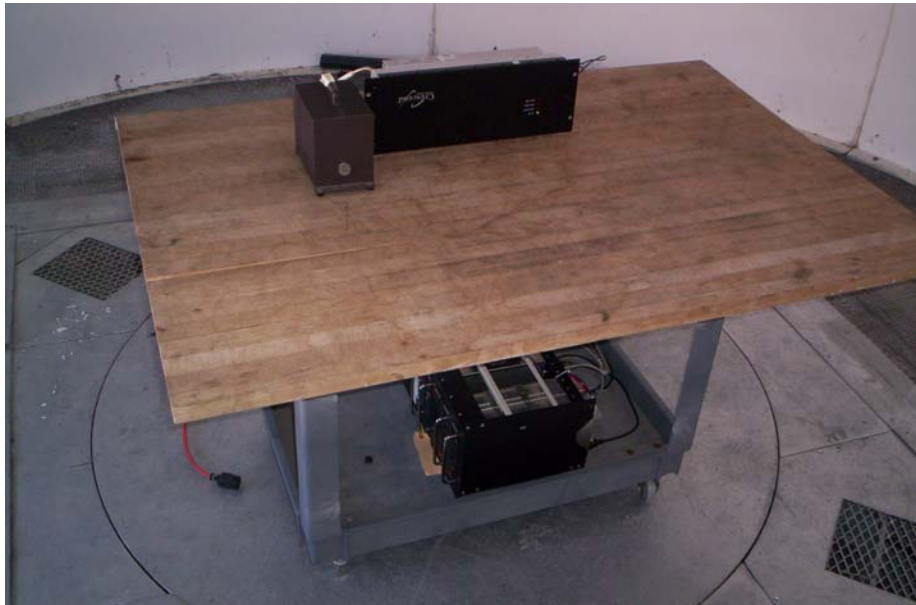
**Test Results:** See Attached Plot.



Date: 1.APR.2007 15:46:00

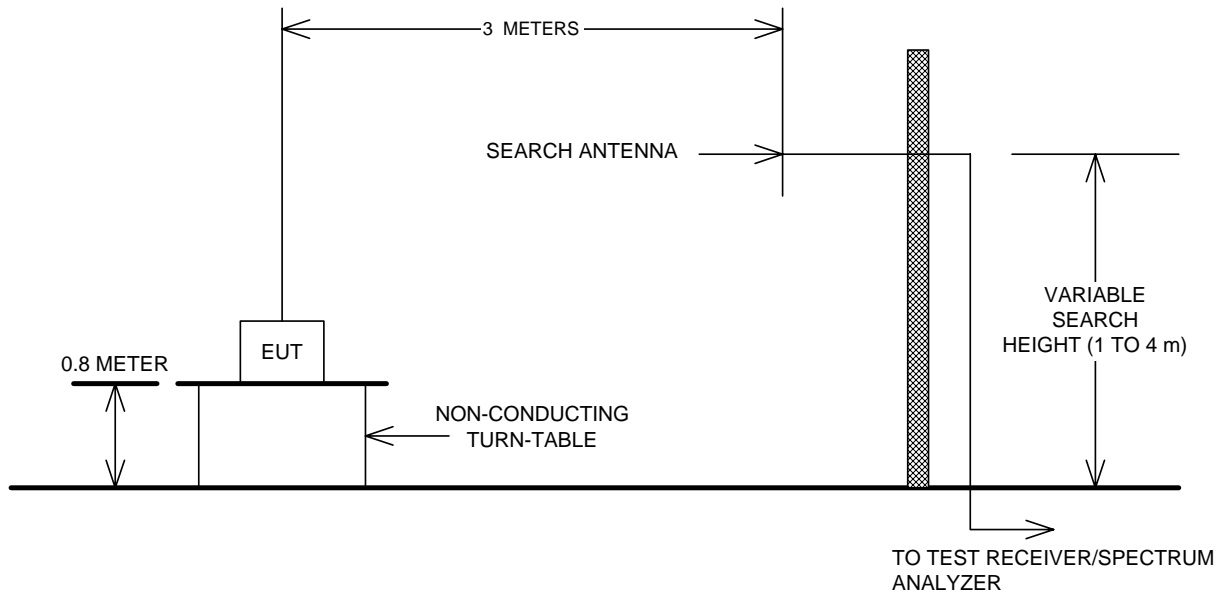
## Appendix B : Setup Photographs

### Radiated Spurious Emissions Setup:



### Appendix C : Block Diagram of Test Setups

#### Test Site For Radiated Emissions



#### Conducted Emissions, Output power, Occupied Bandwidth

