



Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268
fax: (480) 926-3598
<http://www.flomlabs.com>
info@flomlabs.com

Date: May 21, 2007

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Driven Image Mobile Marketing
Equipment: Low power FM transmitter
FCC ID: U3K-AJ420
FCC Rules: 15.239

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

Filing fees are attached.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director

enclosure(s)
cc: Applicant
HSB/je

Flom Test Labs
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

MFA p0720001, p0750070



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- a) Application Form
- b) Test Report (if applicable)
- c) Filing Fees
- d) Copy of Original Grant
- e) Expository Statement and/or letter by Applicant
- f) Photos (if applicable)
- g) Label Drawing (if changes have been made)

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

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Transmitter Certification

of

Model: AJ-420

to

Federal Communications Commission

Rule Part(s) 15.239

Date of report: May 21, 2007

Date of Revised Report: July 19, 2007

**On the Behalf of the
Applicant:**

Driven Image Mobile Marketing

At the Request of:

Driven Image Mobile Marketing
2330 Cole
Birmingham, MI 48009

Attention of:

Alan Annetta
Ph: (248)561-6500
Fax: (248)258-6413
Email: Alanoro@yahoo.com

Supervised by:

Hoosamuddin S. Bandukwala, Lab Director



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List of Exhibits

(FCC **Certification** (Transmitters) - Revised 9/28/98)

Applicant: Driven Image Mobile Marketing

FCC ID: U3K-AJ420

By Applicant:

1. Letter of Authorization
2. Confidentiality Request: 0.457 And 0.459
3. Identification Drawings, 2.1033(c)(11)
 - Label
 - Location of Label
 - Compliance Statement
 - Location of Compliance Statement
4. Photographs, 2.1033(c)(12)
5. Documentation: 2.1033(c)
 - (3) User Manual
 - (10) Schematic Diagram
 - (10) Circuit Description
 - Block Diagram
 - Parts List
 - Active Devices

By M.F.A. Inc.:

- A. Testimonial & Statement of Certification

The Applicant has been cautioned as to the following:

15.21 Information to the User.

The users manual or instruction manual for an intentional 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.

15.27(a) Special Accessories.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

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15.207	A/C Powerline Conducted Emissions	12
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Required information per ISO 17025-2005, paragraph 5.0:

a) **Test Report**

b) Laboratory: Flom Test Lab.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0750070

d) Client: Driven Image Mobile
2330 Cole
Birmingham, MI 48009

e) Identification:

EUT Description: PC operated low power FM Transmitter

f) EUT Condition: Not required unless specified in individual tests.

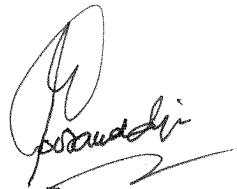
g) Report Date: May 21, 2007
EUT Received:

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with FTL internal quality manual.

m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID
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Sub-part

2.1033(c)(14):

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations,

47 CFR 15.239

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2003 Draft, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

A2LA

"A2LA has accredited Flom Test Labs, Inc. Chandler, AZ for technical competence in the field of Electrical Testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Please refer to www.a2la.org for current scope of accreditation.

Certificate Number: **2152.01**

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to

15.239

Sub-part 2.1033

(c)(1):

**Name and Address of
Applicant:**

Driven Image Mobile Marketing
2330 Cole
Birmingham, MI 48009

Manufacturer:

Driven Image Mobile Marketing
2330 Cole
Birmingham, MI 48009

(c)(2): **FCC ID:**

U3K-AJ420

Model Number:

AJ-420

(c)(3): **Instruction Manual(s):**

Please see attached exhibits

(c)(4): **Type of Emission:**

FM

(c)(5): **Frequency Range, MHz:**

92.1 to 107.9

(c)(6): **Power Rating, Watts:**

110 nW

____ Switchable

____ Variable

____ N/A

FCC Grant Note:

(c)(7): **Maximum Power Rating, Watts:**

115 nW

DUT Results:

Passes ____ x ____

Fails ____

Subpart 2.1033 (continued)

(c)(8): Voltages & currents in all elements in final RF stage, including final transistor or solid-state device:

Collector Current, A	=	per manual
Collector Voltage, Vdc	=	per manual
Supply Voltage, Vdc	=	120 VAC

(c)(9): **Circuit Diagram/Circuit Description:**

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please see attached exhibits

(c)(10): **Label Information:**

Please see attached exhibits

(c)(11): **Photographs:**

Please see attached exhibits

(c)(12): **Digital Modulation Description:**

☐ Attached Exhibits
☒ N/A

(c)(13): **Test and Measurement Data :**

Follows

Test Results Summary Table

Specification	Test Name	Pass, Fail, N/A	Comments
15.239(b)	RF Output Power	Pass	
15.239(c)	Radiated Spurious Emissions	Pass	
15.239(a)	Occupied bandwidth	Pass	
15.207	AC Conducted Emissions	Pass	

During testing the channel selection was performed by turning the three knobs on the back of the unit by the antenna port. The knobs were adjusted for the full operating range of the device. When the knobs were tuned to an invalid or out of range selection was made the unit defaulted to the highest or lowest channel based upon whichever was closer to the invalid selection. When a frequency less than 92.1 MHz was selected the unit defaulted to the lowest operable frequency of 92.1 MHz. When a frequency greater than 107.9 MHz was selected the unit defaulted to 107.9 MHz. At no time was it possible to tune the device outside of the specified operating frequency range.

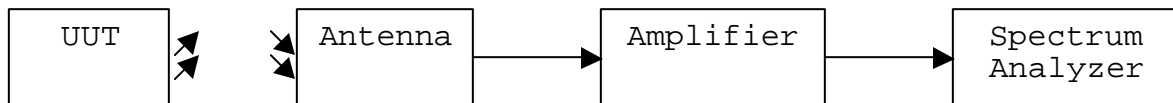
The transmitter was tested with a wideband audio source provided by an integrated CD player. The audio output was at the maximum level of 15 dBm.

Name of Test: RF Power Output (Radiated)
Specification: 47 CFR 15.239(b)
Test Equipment: i00029, i00055, i00267

Test Procedure

The unit was tested in a semi-anechoic chamber at a distance of 3m. The signals were maximized to ensure the absolute peak values were detected. A spectrum analyzer was utilized to measure the signals for peak values, which were then compared, to the limits. All correction factors were calculated and applied using the following formula.

Sample calculation – Recorder Level + Correction Factor = Corrected Level



Test Results Table

Tuned Frequency MHz	Recorded Peak Level dBμV/m	Cable Correction Factor dB	Antenna Correction Factor dB	Amplifier Correction Factor dB	Corrected Peak Level dBμV/m	Average Limit dBμV/m	Result
92.1	41.8	+1.2	+9.6	-22	30.6	48	Pass
99.1	47.7	+1.2	+10.1	-22	36.9	48	Pass
107.9	54.5	+1.2	+11.7	-22	45.4	48	Pass

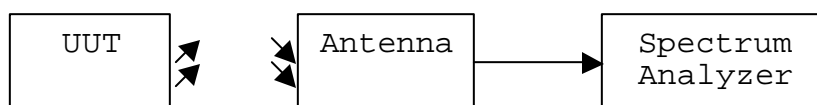
All peak values are below the average limit therefore average reading were not taken.

Name of Test: Radiated Spurious Emissions
Specification: 47 CFR 15.239(c)
Test Equipment: i00033, i00088, i00089

Test Procedure

The UUT was tested in an Open Area Test Site (OATS) set 3m from the receiving transducer. A spectrum analyzer was used to record the peak values. The correction factors were then added to derive the corrected value. These corrected values were then compared to the limits to ensure the UUT met the requirements for Radiated Spurious Emissions.

Sample calculation – Recorder Level + Correction Factor = Corrected Level



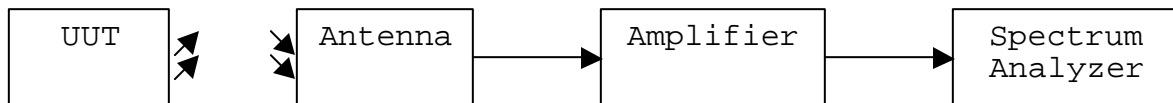
Test results

Emission Frequency MHz	Recorded Level dBμV/m	Cable Correction Factor dB	Antenna Correction Factor dB	Correction Factor total dB	Corrected Level dBμV/m	Limit dBμV/m	Result
33.400	11.8	0.1	14.9	15.0	26.8	50.5	Pass
150.590	11.6	0.1	17.5	17.6	29.2	50.5	Pass
298.616	12.0	0.2	18.6	18.8	30.7	57.5	Pass
742.256	11.6	0.3	26.1	26.4	38.1	57.5	Pass
932.856	11.8	0.4	29.7	30.1	41.9	57.5	Pass
954.130	11.8	0.4	30.5	30.9	42.7	57.5	Pass

Name of Test: Occupied Bandwidth
Specification: 47 CFR 15.239(a)
Test Equipment: i00029, i00055, i00267

Test Procedure

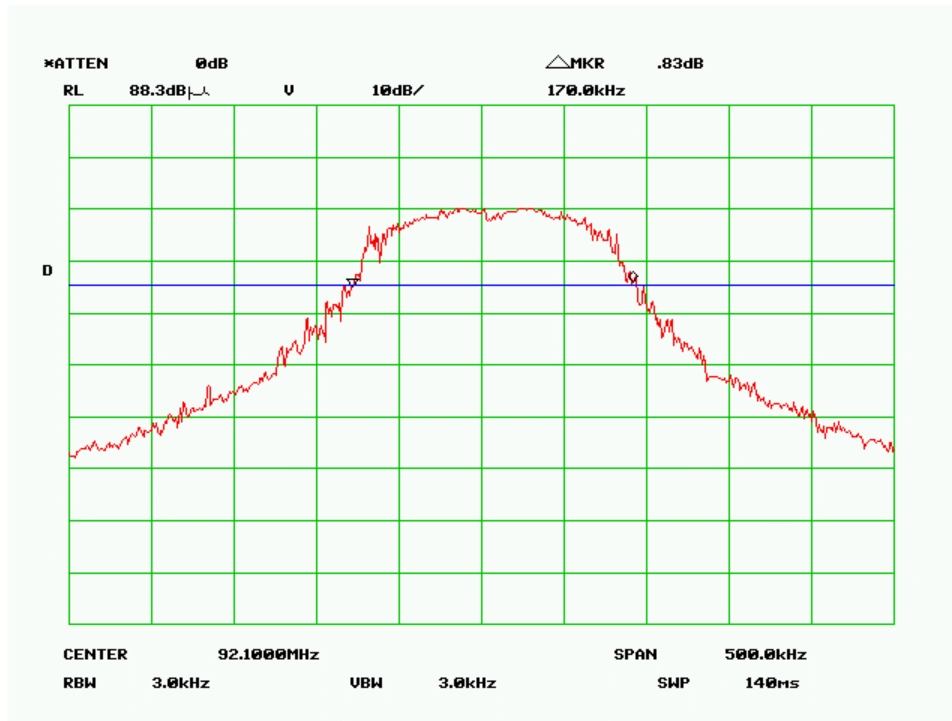
The unit was tested in a semi-anechoic chamber at a distance of 3m. An 8563E spectrum analyzer with occupied bandwidth measuring capability was utilized to verify the signals were within the specified limits. All tests were performed at maximum audio input levels.



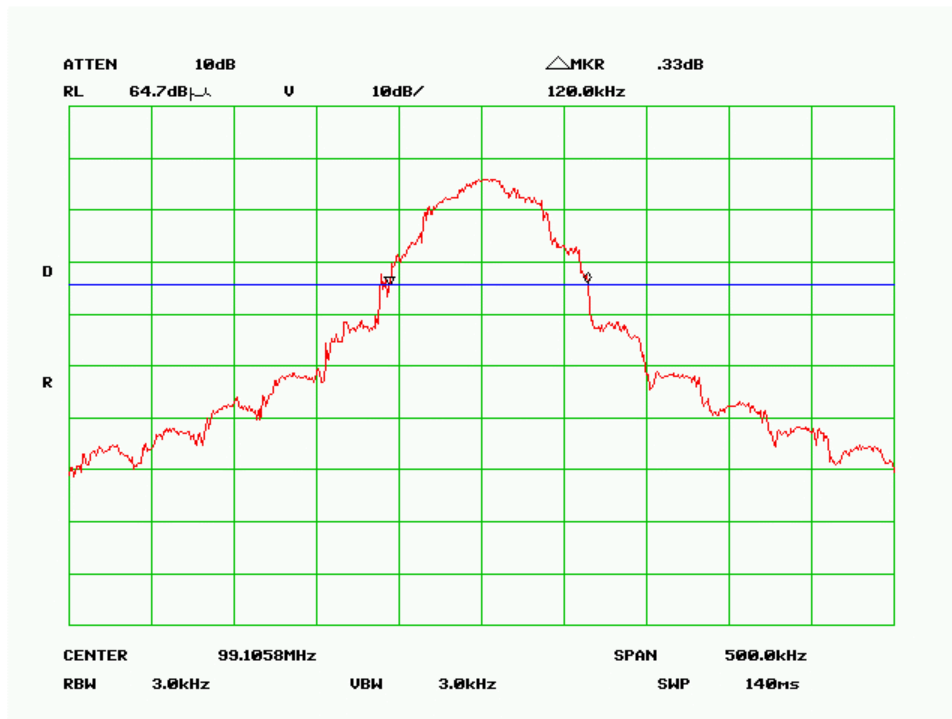
Test Results Table

Tuned Frequency MHz	Bandwidth kHz	Limit kHz	Detector	Result
92.1	170	200	Peak	Pass
99.1	120	200	Peak	Pass
107.9	61.5	200	Peak	Pass

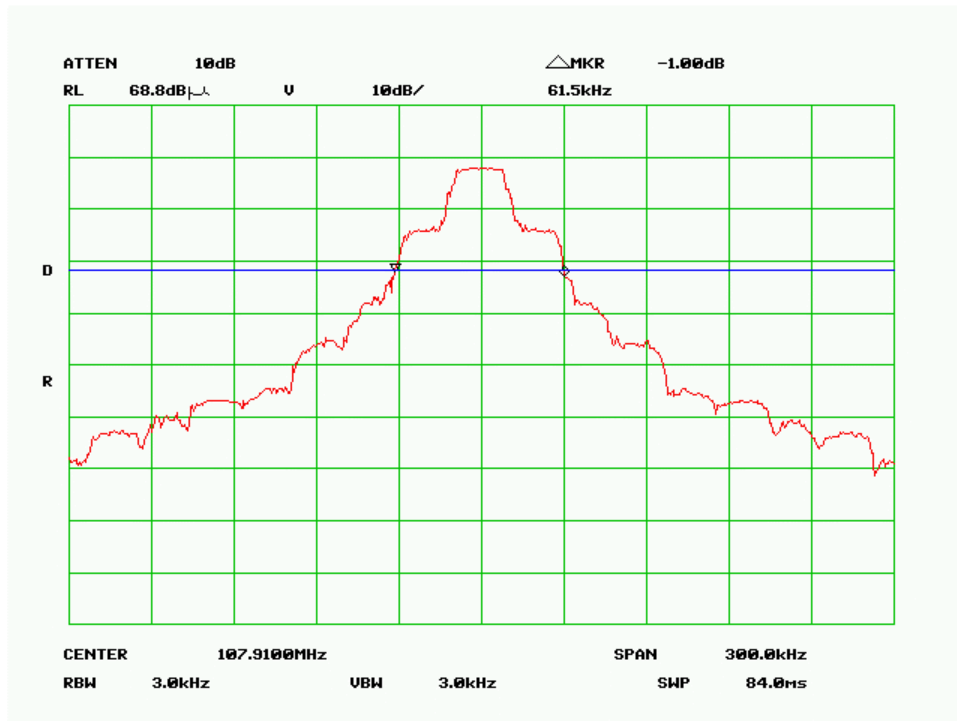
92.1 MHz Bandwidth



99.1 MHz Bandwidth



107.9 MHz Bandwidth



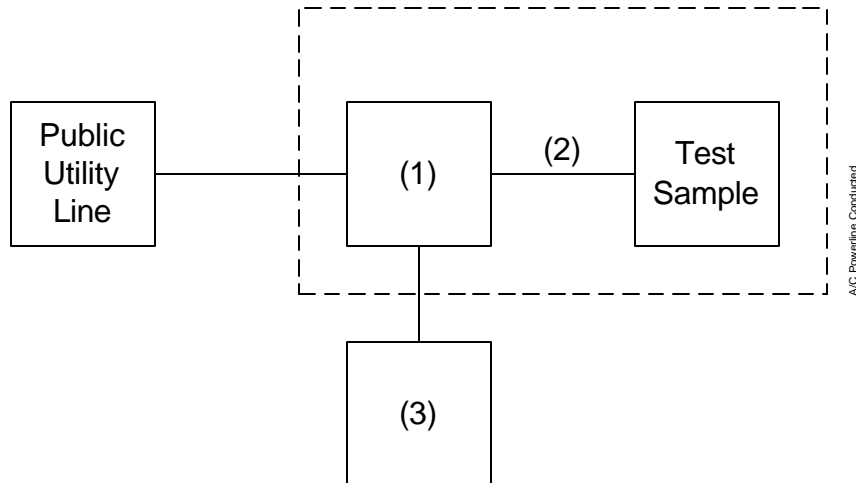
Name of Test: A/C Powerline Conducted Emissions
Specification: CFR 15.207
Test Equipment: i00048, i00049, i00050, i00051, i00244

Measurement Procedure

1. A test sample was connected to the Public Utility lines through a LISN.
2. A reference level of 250 μ V was set on the Spectrum Analyzer. The spectrum was searched over the range of 150 kHz to 30 MHz.
3. All other emissions were 20 dB or more below limit.
4. The test sample used a charger.
4. X The test sample does not use a charger.
5. Measurement Results: Attached.

Sample calculation – Recorder Level + Correction Factor = Corrected Level

Test Set Up: A/C Powerline Conducted Measurements



Line 1 Average

Emission Frequency	Recorded Level dBμV	LISN Correction Factor dB	Cable Correction Factor dB	Corrected Level dBμV	Limit dBμV	Result
688.26 KHz	24.55	0.06	0.09	24.70	46	Pass
262.98 KHz	32.58	0.17	0.07	32.82	52.77	Pass
239.24 KHz	34.94	0.18	0.06	35.19	53.45	Pass
195.06 KHz	34.44	0.20	0.04	34.68	54.71	Pass
194.18 KHz	34.97	0.20	0.04	35.21	54.74	Pass
192.84 KHz	35.49	0.20	0.04	35.73	54.78	Pass

Line 2 Average

Emission Frequency	Recorded Level dBμV	LISN Correction Factor dB	Cable Correction Factor dB	Corrected Level dBμV	Limit dBμV	Result
247.3 KHz	34.13	0.18	0.07	34.37	53.22	Pass
246.25 KHz	34.84	0.18	0.07	35.08	53.25	Pass
232.12 KHz	31.64	0.18	0.06	31.88	53.65	Pass
227.54 KHz	31.80	0.19	0.04	32.04	53.78	Pass
224.06 KHz	32.74	0.19	0.04	32.99	53.88	Pass
161.86 KHz	37.69	0.20	0.04	37.92	55.66	Pass

Line 1 Quasi-peak

Emission Frequency	Recorded Level dBμV	LISN Correction Factor dB	Cable Correction Factor dB	Corrected Level dBμV	Limit dBμV	Result
688.26 KHz	35.90	0.06	0.09	36.05	56	Pass
262.98 KHz	42.14	0.17	0.07	42.38	62.77	Pass
195.06 KHz	44.46	0.20	0.04	44.70	64.71	Pass
194.18 KHz	44.67	0.20	0.04	44.91	64.74	Pass
192.84 KHz	45.60	0.20	0.04	45.84	64.78	Pass
175.63 KHz	45.37	0.20	0.03	45.6	65.27	Pass

Line 2 Quasi-peak

Emission Frequency	Recorded Level dBμV	LISN Correction Factor dB	Cable Correction Factor dB	Corrected Level dBμV	Limit dBμV	Result
247.3 KHz	43.40	0.18	0.07	43.64	63.22	Pass
232.12 KHz	43.76	0.18	0.06	44.00	63.65	Pass
230.64 KHz	43.32	0.18	0.06	43.56	63.70	Pass
228.74 KHz	43.36	0.19	0.06	43.60	63.75	Pass
224.06 KHz	44.30	0.19	0.05	44.54	63.88	Pass
161.86 KHz	46.60	0.20	0.02	46.82	65.66	Pass

Test Equipment Utilized

Asset#	Manufacturer	Model	Serial Number	Calibration Cycle	Calibration Due
i00029	HP	8563E	3213A00104	12 mo.	3/9/2008
i00033	HP	85462A	3625A00357	12 mo.	11/03/2007
i00048	HP	85662A	2511AD1467	12 mo.	8/30/2007
i00049	HP	8566B	2511AD1467	12 mo.	8/30/2007
i00050	HP	85685A	2510A00185	12 mo.	7/25/2007
i00051	HP	85650A	2521A00647	12 mo.	7/25/2007
i00055	HP	8447D	1726A01101	when used	N/A
i00088	EMCO Biconical	3109B	2336	12 mo.	10/14/2007
i00089	Apriel Log Periodic	2001	001500	12 mo.	10/25/2007
i00244	FCC	50-25-2-01	2047	12 mo.	10/25/2007
i00267	Schaffner	CBL6111C	2610	24 mo.	9/26/2007

In addition to the above listed equipment standard RF connectors and cables were utilized in testing the equipment. The proper operation of these items was verified prior to use.

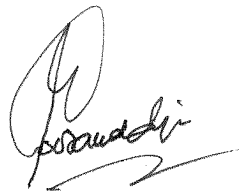
END OF TEST REPORT

**Testimonial
and
Statement of Certification**

This is to Certify:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer:



Hoosamuddin S. Bandukwala, Lab Director