



M. Flom Associates, Inc.

International Compliance Testing Laboratory

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Date of Report: May 14, 2005
Date of Submission: July 27, 2005

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: SkyeTek, Inc.
Equipment: DR1000
FCC ID: SAGH3
FCC Rules: 15.225

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,

Michael Schafer, President

enclosure(s)
cc: Applicant
MS/del



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Transmitter Certification

of

Model: DR1000
FCC ID: SAGH3

to

Federal Communications Commission

Rule Part(s) 15.225

Date of Report: May 14, 2005
Date of Submission: July 27, 2005

On the Behalf of the Applicant:

SkyeTek, Inc.

At the Request of:

P.O. 2005-N166

SkyeTek, Inc.
2845 Wilderness Place
Boulder, CO 80301

Attention of:

Tom DiGennero
(303)615-8090
E-mail: tom.digennaro@skyetek.com

Compiled by:

Michael Findley, Laboratory Manager

M. Flom Associates, Inc.
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(480) 926-3100 phone, fax (480) 926-3598

FCC ID: SAGH3
MFA p0540008, d0540030

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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Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) **Test Report**

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

c) Report Number: d0540030

d) Client: SkyeTek, Inc.
2845 Wilderness Place
Boulder, CO 80301

e) Identification: DR1000
FCC ID: SAGH3
EUT Description: Bar Code Scanner and RFID Reader

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

g) Report Date: May 16, 2005
EUT Received: April 21, 2005

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

i) Sampling method: No sampling procedure used.

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

m) Supervised by:



Michael Findley, Laboratory Manager

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:

Qty	Type	Make, Model	S/N	FCC ID
1	PSU	PS1-5 (Generic 5V, 500mA)	None	None

Cables:

Qty	Type	Length, m	Shield	Shielded Hood	Ferrite
1	USB	2.0	No	No	No
1	RS-232 (+Ext Power)	2.0	No	No	No
1	PS-2	2.0	No	No	No

Standard Test Conditions and Engineering Practices

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

In accordance with ANSI C63.4-1992/2000, 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 M. Flom Associates, 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/IEC 17025 – 1999 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Certificate Number: **2152-01**



NIST

I am pleased to inform you that your laboratory has been validated by the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Your laboratory is now formally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States, covering equipment subject to Electro-Magnetic Compatibility (EMC) requirements. The names of all validated and nominated laboratories will be posted on the NIST website at <http://ts.nist.gov/mra> under the 'Asia' category."

BSMI Number: **SL2-IN-E-041R**

Name of Test: RF Power Output (Radiated)

Specification: 47 CFR 2.1046(a)

Test Equipment: As per attached page

Measurement Procedure (Radiated)

1. The EUT was placed on an open-field site and its radiated field strength at a known distance was measured by means of a spectrum analyzer. Equivalent loading was calculated from the equation $P_t = ((E \times R)^2 / 49.2)$ watts, where $R = 3m$.
2. Measurement accuracy is ± 1.5 dB.

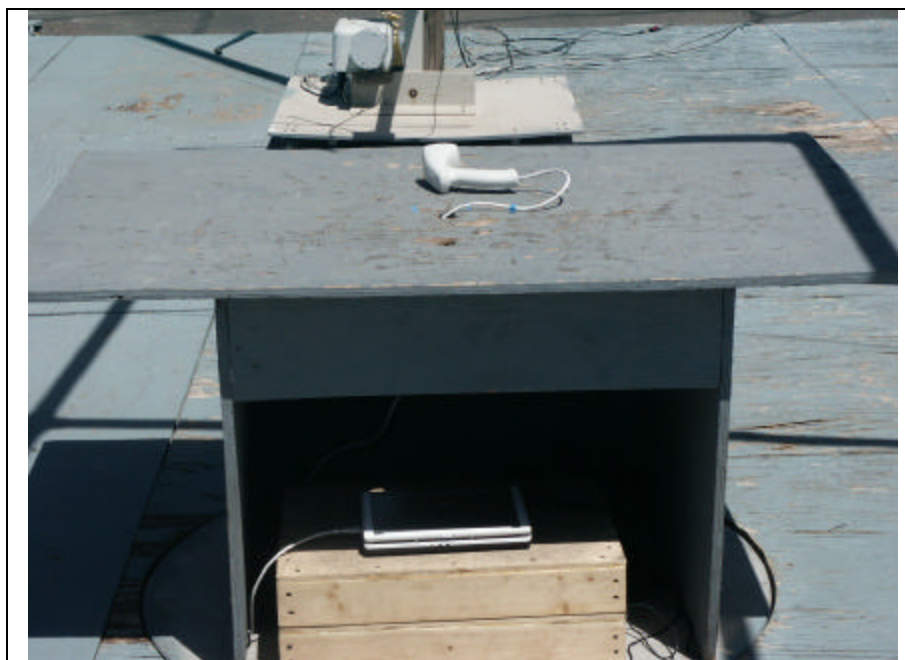
Measurement Results

Limit = 10,000 μ V/m @ 30m

g0540056: 2005-Apr-21 Thu 10:42:00

State: 0:General

Frequency Emission, MHz	Level, dB μ V @ m		C.F., dB	μ V/m @ m		Margin, dB
13.548100	25.34	3	30.21	599.1	3	-28.9





g0540054: 2005-Apr-21 Thu 09:10:00
STATE: 0:General

Frequency Emission, MHz	LEVEL, dBuV	@ m	C.F., dB	Pol	dBuV/m	@ m
135.000000	31.55	3	2.44	V	33.99	3
148.833333	29.80	3	2.63	V	32.43	3
148.833333	29.22	3	2.63	H	31.85	3
149.094307	30.47	3	2.64	V	33.11	3
162.166667	29.22	3	1.91	V	31.13	3
203.040000	29.72	3	0.10	V	29.82	3
243.666667	27.47	3	2.66	V	30.13	3
267.006667	29.47	3	4.12	V	33.59	3
297.666667	28.05	3	6.06	V	34.11	3
297.666667	24.97	3	6.06	H	31.03	3
352.166667	25.47	3	7.74	H	33.21	3
352.193333	27.30	3	7.74	V	35.04	3
381.988333	27.05	3	8.61	V	35.66	3
388.250000	30.05	3	8.78	V	38.83	3
406.460000	28.80	3	9.22	H	38.02	3
406.533333	27.47	3	9.23	V	36.70	3
432.993333	29.80	3	9.73	V	39.53	3
570.531667	29.38	3	11.81	V	41.19	3
648.816667	25.13	3	13.30	V	38.43	3
796.455000	25.47	3	14.67	V	40.14	3

All other emissions in the required measurement range were more that 20 dB below the required limits.



Performed by:

David E. Lee, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

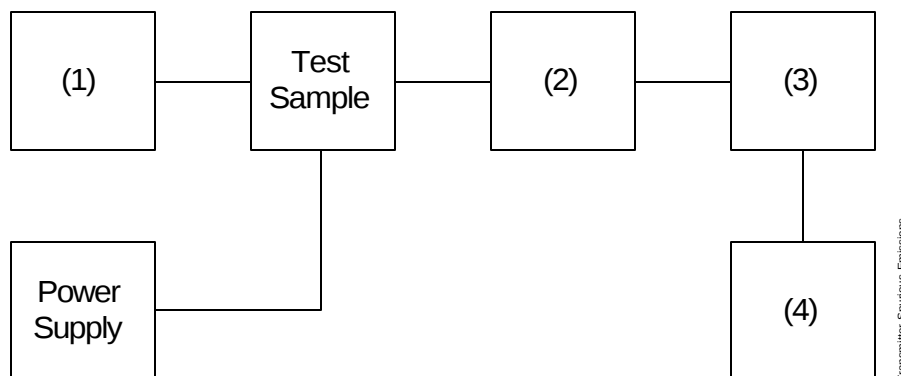
Specification: 47 CFR 2.1049(c)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.11

Measurement Procedure

- A) The EUT and test equipment were set up as shown below
- B) For EUTs supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for $\pm 2.5/\pm 1.25$ kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.
- C) For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.
- D) The Occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

Transmitter Test Set-Up: Occupied Bandwidth



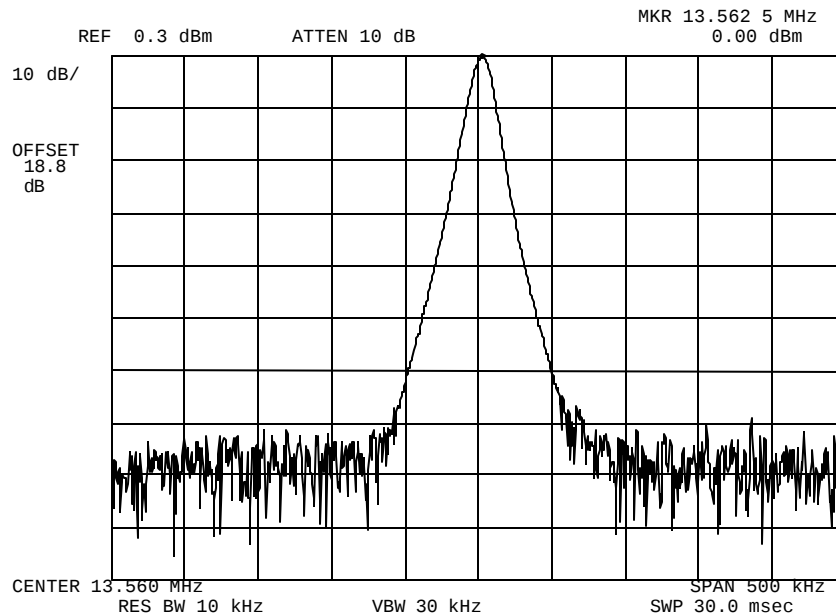
Asset	Description	s/n	Cycle	Last Cal
(1) Audio Oscillator/Generator				
X i00017	HP 8903A Modulation Meter	2216A01753	12 mo.	Jun-05
(2) Coaxial Attenuator				
X i00231/2	PASTERNAK PE7021-30 (30 dB)	231 or 232	NCR	
i00123	NARDA 766 (10 dB)	7802A	NCR	
(3) Interface				
X i00021	HP 8954A Transceiver Interface	2146A00159	NCR	
(4) Spectrum Analyzer				
X i00048	HP 8566B Spectrum Analyzer	2511A01467	12 mo.	Oct-04
i00029	HP 8563E Spectrum Analyzer	3213A00104	12 mo.	May-05

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0540057: 2005-Apr-21 Thu 11:50:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:
Modulation:

HIGH
NONE

Performed by:

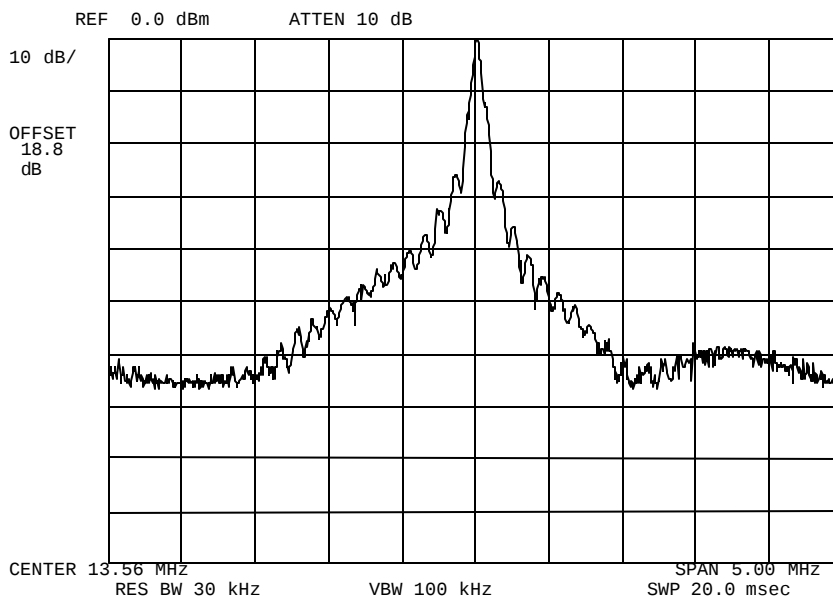
David E. Lee, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0540059: 2005-Apr-21 Thu 11:58:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:
Ext. Modulation:

HIGH
FID



Performed by:

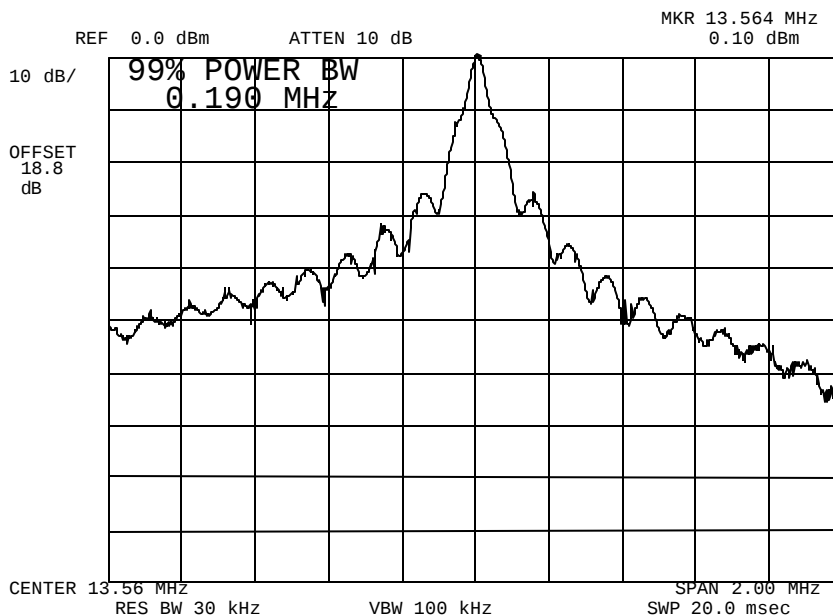
David E. Lee, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0540060: 2005-Apr-21 Thu 12:00:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Ext. Modulation: F1D (99% Power Bandwidth)

Performed by:

David E. Lee, Test Engineer

Name of Test: Frequency Stability (Temperature Variation)

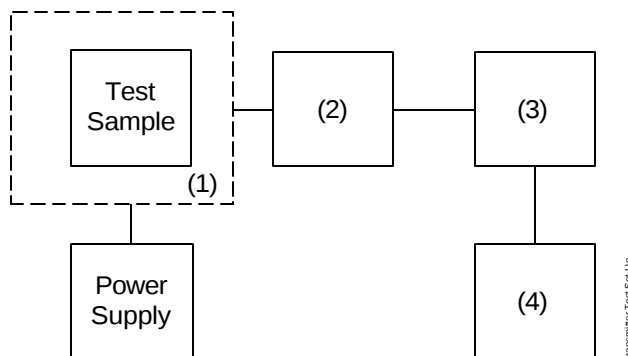
Specification: 47 CFR 2.1055(a)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.2

Measurement Procedure

- A) The EUT and test equipment were set up as shown on the following page.
- B) With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.
- C) With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
- D) The temperature tests were performed for the worst case.

Transmitter Test Set-Up: Temperature Variation



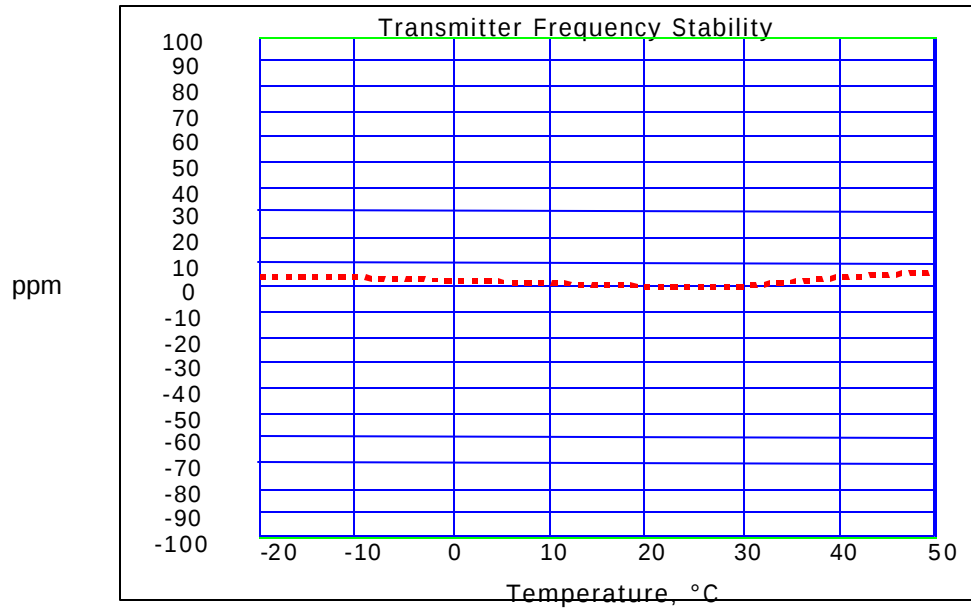
Asset	Description	s/n	Cycle	Last Cal
(1) Temperature, Humidity, Vibration				
X i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) Coaxial Attenuator				
X i00231/2	PASTERNAK PE7021-30 (30 dB)	231 or 232	NCR	
i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) RF Power				
X i00067	HP 8920A Communications TS	3345U01242	12 mo.	Jun-05
(4) Frequency Counter				
X i00067	HP 8920A Communications TS	3345U01242	12 mo.	Jun-05

Name of Test: Frequency Stability (Temperature Variation)

Measurement Results

g0540049: 2005-Apr-21 Thu 09:36:39
State: 0:General

Ambient Temperature: 23°C ± 3°C



Performed by:

David E. Lee, Test Engineer

Name of Test: Frequency Stability (Voltage Variation)

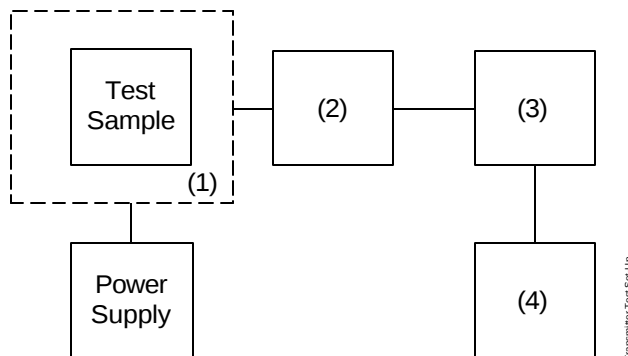
Specification: 47 CFR 2.1055(d)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.2

Measurement Procedure

- A) The EUT was placed in a temperature chamber (if required) at $25 \pm 5^\circ\text{C}$ and connected as shown below.
- B) The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
- C) The variation in frequency was measured for the worst case.

Transmitter Test Set-Up: Voltage Variation



Asset	Description	s/n	Cycle	Last Cal
(1) Temperature, Humidity, Vibration				
i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) Coaxial Attenuator				
X i00231/2	PASTERNAK PE7021-30 (30 dB)	231 or 232	NCR	
i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) RF Power				
X i00020	HP 8901A Power Mode	2105A01087	12 mo.	Jun-05
(4) Frequency Counter				
X i00020	HP 8901A Frequency Mode	2105A01087	12 mo.	Jun-05

Results: Frequency Stability (Voltage Variation)

g0540079: 2005-Apr-21 Thu 15:47:09

State: 0:General

Ambient Temperature: 23°C ± 3°C

Limit, ppm = 100
Limit, Hz = 1356
Battery End Point (Voltage) = 4.3

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
85	4.25	13.560010	10	0.74
100	5.00	13.560000	0	0.00
115	5.75	13.560140	140	10.32
86	4.30	13.560000	0	0.00



Performed by:

David E. Lee, Test Engineer

Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation =F1D

Necessary Bandwidth Measured, kHz: 190.0

= 190KF1D



Performed by:

David E. Lee, Test Engineer

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:

Michael Findley, Laboratory Manager