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: December 29, 2006

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Telex Communications, Inc.
Equipment: REV-PH
FCC ID: B5DH222
FCC Rules: 74H

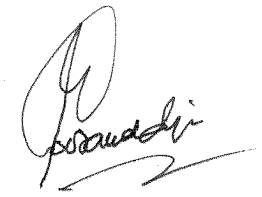
Gentlemen:

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/wb

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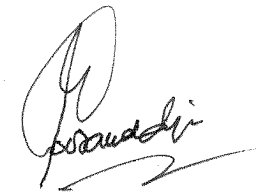
a) Application Form
b) Test Report (if applicable)
c) Filing Fees
d) Copy of Original Grant
e) Expository Statement and/or letter by Applicant
f) Photos (if applicable)
g) Label Drawing (if changes have been made)

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

Sincerely yours,



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Transmitter Certification

of

FCC ID: B5DH222
Model: REV-PH

to

Federal Communications Commission

Rule Part(s) 74H

Date of report: December 29, 2006

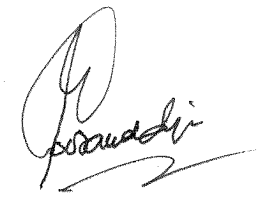
On the Behalf of the Applicant:

Telex Communications, Inc.

At the Request of:

Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Attention of: Charles E. Conner, Project Engineer
(402) 467-5321; FAX: -3279
E-mail: charlie.conner@us.telex.com
Jim Andersen
Email: jim.andersen@us.telex.com



Supervised by: Hoosamuddin S. Bandukwala, Lab Director

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FCC ID: B5DH222
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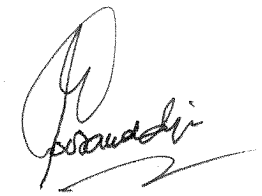
On the Behalf of the Applicant:

Telex Communications, Inc.

At the Request of:

Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Attention of: Charles E. Conner, Project Engineer
(402) 467-5321; FAX: -3279
E-mail: charlie.conner@us.telex.com
Jim Andersen
Email: jim.andersen@us.telex.com



Supervised by: Hoosamuddin S. Bandukwala, Lab Director

List of Exhibits

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

Applicant: Telex Communications, Inc.

FCC ID: B5DH222

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
   - (9) Tune Up Info
   - (10) Schematic Diagram
   - (10) Circuit Description
   - Block Diagram
   - Parts List
   - Active Devices

6. MPE/SAR Report

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.

Table of Contents

Required information per ISO 17025-2995, paragraph 13.2:

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: d06c0036

d) Client: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

e) Identification: REV-PH
FCC ID: B5DH222

EUT Description: Handheld Transmitter

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

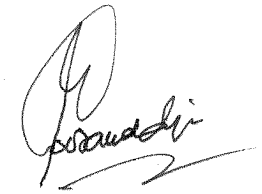
g) Report Date: December 29, 2006
EUT Received:

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:



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

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, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

____	15 – Radio Frequency Devices (unlicensed)
____	21 – Domestic Public Fixed Radio Services
____	22 – Public Mobile Services
____	22 Subpart H - Cellular Radiotelephone Service
____	22.901(d) - Alternative technologies and auxiliary services
____	23 – International Fixed Public Radiocommunication services
____	24 – Personal Communications Services
x	74 Subpart H - Low Power Auxiliary Stations
____	80 – Stations in the Maritime Services
____	80 Subpart E - General Technical Standards
____	80 Subpart F - Equipment Authorization for Compulsory Ships
____	80 Subpart K - Private Coast Stations and Marine Utility Stations
____	80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
____	80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
____	80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
____	80 Subpart V - Emergency Position Indicating Radio Beacons (EPIRB'S)
____	80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
____	80 Subpart X - Voluntary Radio Installations
____	87 – Aviation Services
____	90 – Private Land Mobile Radio Services
____	94 – Private Operational-Fixed Microwave Service
____	95 Subpart A - General Mobile Radio Service (GMRS)
____	95 Subpart C - Radio Control (R/C) Radio Service
____	95 Subpart D - Citizens Band (CB) Radio Service
____	95 Subpart E - Family Radio Service
____	95 Subpart F - Interactive Video and Data Service (IVDS)
____	97 - Amateur Radio Service
____	101 – Fixed Microwave Services

Standard Test Conditions
and
Engineering Practices

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

74H

Sub-part 2.1033

(c)(1): **Name and Address of Applicant**:

Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Manufacturer:

Telex Communications, Inc.

(c)(2): **FCC ID**: B5DH222

Model Number: REV-PH

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

Please see attached exhibits

(c)(4): **Type of Emission**: F3E

(c)(5): **Frequency Range, MHz**: 614.100 to 746.000

(c)(6): **Power Rating, Watts**: 50mW

____ Switchable ____ Variable X N/A

FCC Grant Note:

(c)(7): **Maximum Power Rating, Watts**: 0.250

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	=	.144
Collector Voltage, Vdc	=	9.0
Supply Voltage, Vdc	=	9.0

(c)(9): **Tune-Up Procedure**:

Please see attached exhibits

(c)(10): **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)(11): **Label Information**:

Please see attached exhibits

(c)(12): **Photographs**:

Please see attached exhibits

(c)(13): **Digital Modulation Description**:

___ Attached Exhibits
_x_ N/A

(c)(14): **Test and Measurement Data**:

Follows

Name of Test: Carrier Output Power (Conducted)

Specification: 47 CFR 2.1046(a)

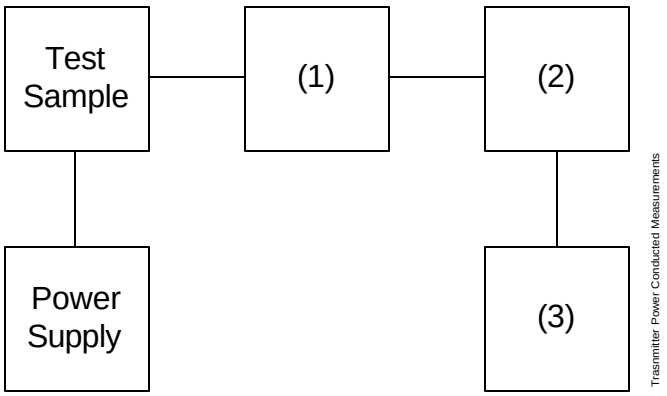
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.1

Measurement Procedure

A) The EUT was connected to a resistive coaxial attenuator of normal load impedance, and the unmodulated output power was measured by means of an RF Power Meter.

B) Measurement accuracy is ±3%.

Transmitter Test Set-Up: RF Power Output



	Asset	Description	s/n	Cycle	Last Cal
(1)	**Coaxial Attenuator**				
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	N/A	NCR
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	N/A	NCR
(2)	**Power Meters**				
X	i00321	HP 8901A Power Mode	2239A02170	12 mo.	Sep-06
(3)	**Frequency Counter**				
X	i00321	HP 8901A Frequency Mode	2239A02170	12 mo.	Sep-06

Name of Test: Carrier Output Power (Conducted)

Measurement Results
(Worst case)

The device has no antenna connector that can be used for conducted measurements

Frequency of Carrier, MHz	=	614.100, 686.000, 746.000
Ambient Temperature	=	23°C ± 3°C

Power Setting	RF Power, Watts
High	50mW

Performed by: Michael Boysel

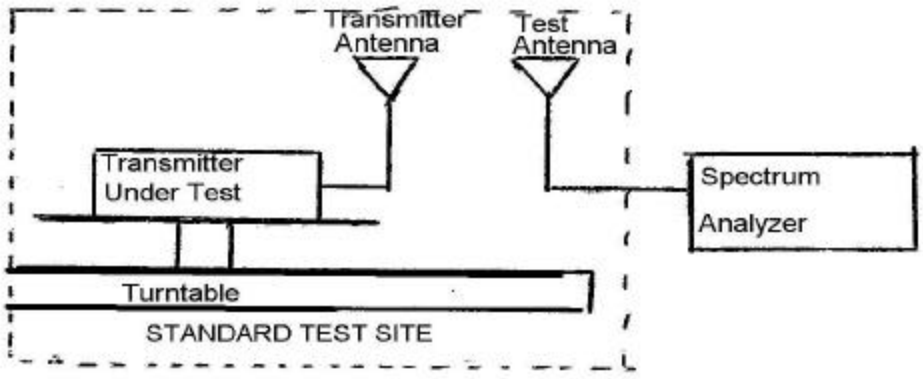
Name of Test: ERP Carrier Power (Radiated)

Specification: TIA/EIA 603A (Substitution Method)

Measurement Procedure

Definition
The average radiated power of a licensed device is the equivalent power required, when delivered to a half-wave dipole or horn antenna, to produce at a distant point the same average received power as produced by the licensed device.

Method of Measurement:
A) Connect the equipment as illustrated. Place the transmitter to be tested on the turntable in the standard test site.



B) Raise and lower the test antenna from 1m to 6 m with the transmitter facing the antenna and record the highest received signal in dB as LVL.

C) Repeat step B) for seven additional readings at 45° interval positions of the turntable.

D) Replace the transmitter under test with a half-wave or horn vertically polarized antenna. The center of the antenna should be at the same location as the transmitter under test. Connect the antenna to a signal generator with a known output power and record the path loss in dB or LOSS.

E) Calculate the average radiated output power from the readings in step C) and D) by the following:

average radiated power = 10 $\log_{10}$ Ó 10(LVL – LOSS)/10 (dBm)

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

g06c0097: 2006-Dec-18 Mon 15:05:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C
Amps Mode:

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm	ERP, Watts
614.100000	614.066667	86.5	25.5	14.6	0.0288
686.000000	686.000000	86.81	25.63	15.1	0.0324
746.000000	746.000000	88.01	26.47	17.1	0.0513

Name of Test: Field Strength of Spurious Radiation

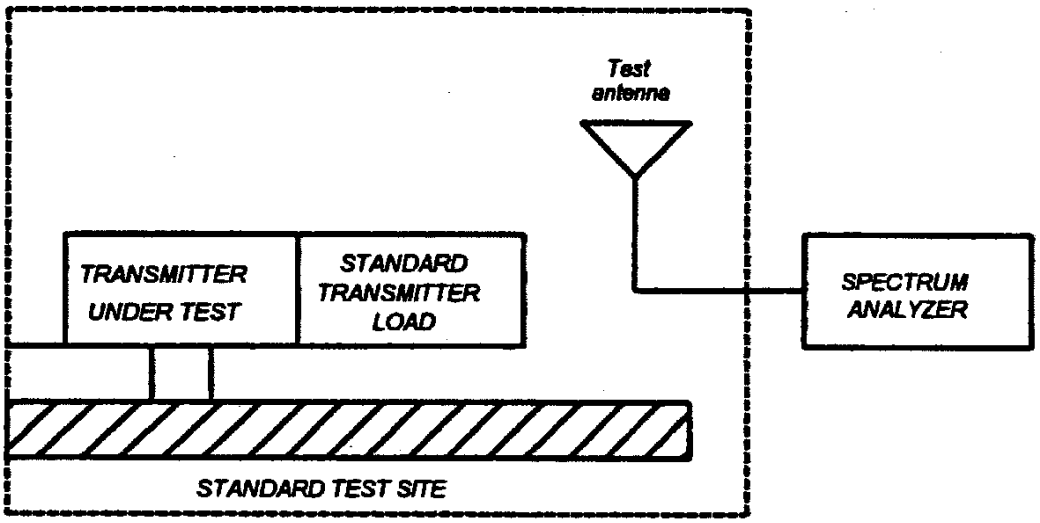
Specification: 47 CFR 2.1053(a)

Guide: ANSI/TIA/EIA-603-1992/2001, Paragraph 1.2.12 and Table 16, 47 CFR 22.917

Measurement Procedure

Definition:
Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

Method of Measurement:
A) Connect the equipment as illustrated
B) Adjust the spectrum analyzer for the following settings:
1) Resolution Bandwidth 100 kHz (<1 GHZ), 1 MHZ (> 1GHz).
2) Video Bandwidth = 3 times Resolution Bandwidth, or 30 kHz (22.917)
3) Sweep Speed ≤2000 Hz/second
4) Detector Mode = Mean or Average Power
C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.

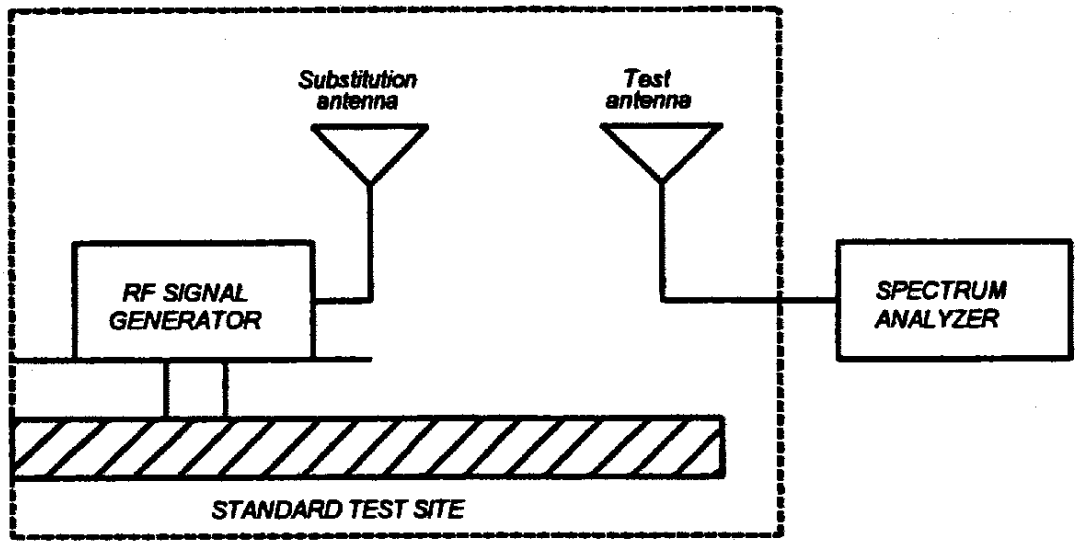


Name of Test: Field Strength of Spurious Radiation (Cont.)

D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to ± the test bandwidth (see section 1.3.4.4).

E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.

F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



G) Reconnect the equipment as illustrated.

H) Keep the spectrum analyzer adjusted as in step B).

I) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.

Name of Test: Field Strength of Spurious Radiation (Cont.)

J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

K) Repeat step J) with both antennas vertically polarized for each spurious frequency.

L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.

M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$10\log_{10}$(TX power in watts/0.001) – the levels in step l)

NOTE: It is permissible that other antennas provided can be referenced to a dipole.

Test Equipment

	Asset	Description	s/n	Cycle	Last Cal
Transducer					
	i00088	EMCO 3109-B 25MHz-300MHz	2336		
X	i00089	Aprel 2001 200MHz-1GHz	001500	12 mo.	Oct-06
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Sep-06
Amplifier					
X	i00028	HP 8449A	2749A00121	12 mo.	Jun-06
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	Jan-06
X	i00033	HP 85462A	3625A00357	12 mo.	Oct-05
Substitution Generator					
X	i00067	HP 8920A Communication TS	3345U01242	12 mo.	Jun-06
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	May-06

Microphone, Antenna Port, and Cabling

Microphone _____ Cable Length _____ Meters

Antenna Port Terminated _____ Load _____ Antenna Gain _____

All Ports Terminated by Load _____ Peripheral _____

Name of Test: Field Strength of Spurious Radiation

Radiated Test Set-up

Measurement Results

g06c0098: 2006-Dec-18 Mon 15:07:00
STATE: 2:High Power Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm
686.000000	1371.995000	-34.6
686.000000	2058.000000	-27.3
686.000000	2058.010000	-27.7
686.000000	2744.010000	-32.7
686.000000	3429.999994	-38.6
686.000000	4116.000000	-33.9
686.000000	4802.000000	-25.4
686.000000	5487.999999	-33.3
686.000000	6174.000000	-36

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm
746.000000	1492.013000	-34.2
746.000000	2237.993800	-38.8
746.000000	2984.005000	-41.2
746.000000	3730.000000	-42.7
746.000000	4476.006300	-39.7
746.000000	5221.991300	-33.6
746.000000	5968.005000	-31.1

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm
614.100000	1228.300000	-31.8
614.100000	1842.316667	-26
614.100000	2456.583333	-24.3
614.100000	3070.466667	-27.4
614.100000	3684.466667	-31.8
614.100000	4298.800000	-33.7
614.100000	4912.933333	-27.2
614.100000	5527.016667	-31.5
614.100000	6141.066667	-30.7

Performed by: Michael Boysel

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

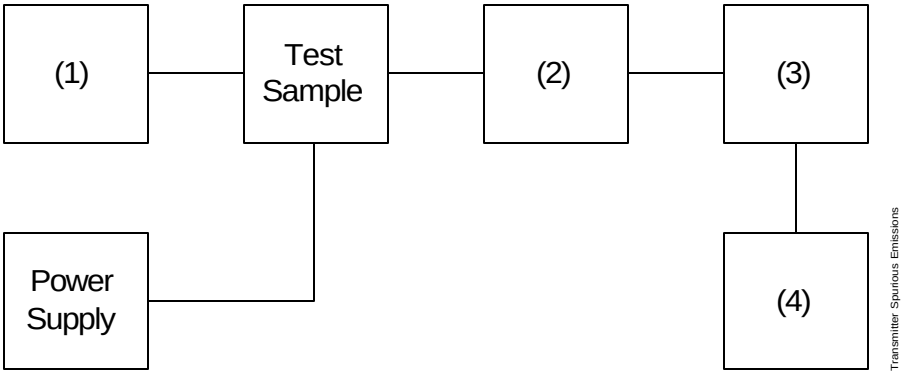
A) The EUT and test equipment were set up as shown below

B) For EUTs supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for ±2.5/±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



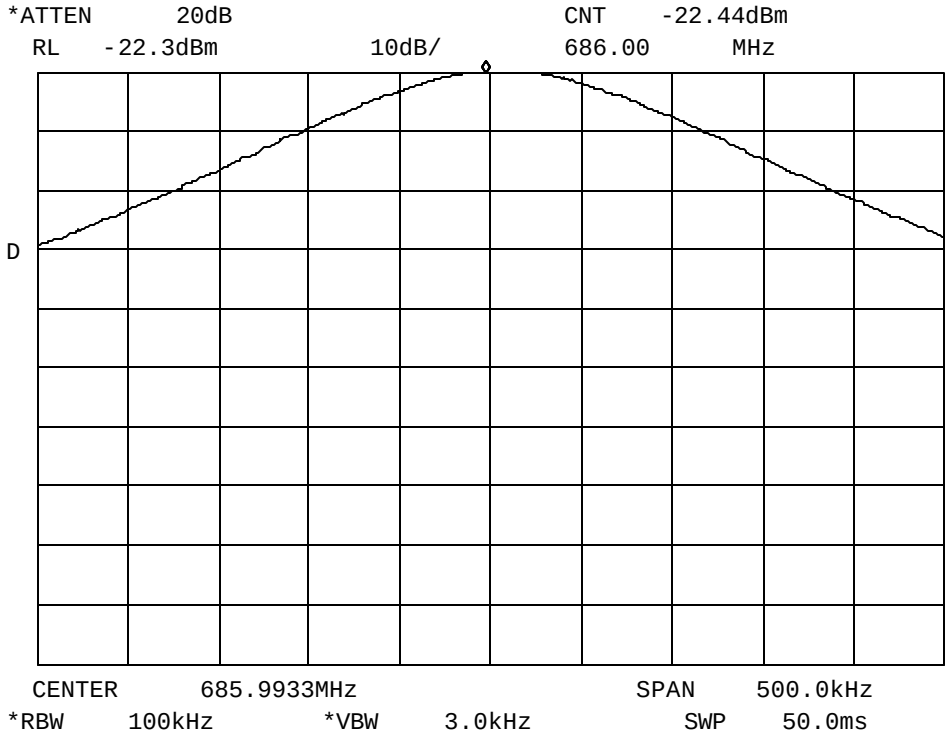
	Asset	Description	s/n	Cycle	Last Cal
(1) **Audio Oscillator/Generator**					
X	i00324	HP 8903B Modulation Meter	3011A09079	12 mo.	Oct-06
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	N/A	NCR
	i00123	NARDA 766 (10 dB)	7802A	N/A	NCR
(3) **Interface**					
X	i00021	HP 8954A Transceiver Interface	2146A00159	N/A	NCR
(4) **Spectrum Analyzer**					
X	i00048	HP 8566B Spectrum Analyzer	2511A01467	12 mo.	Aug-06
	i00029	HP 8563E Spectrum Analyzer	3213A00104	12 mo.	Jan-06

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0104: 2006-Dec-21 Thu 10:06:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NO MODULATION REFERENCE LEVEL

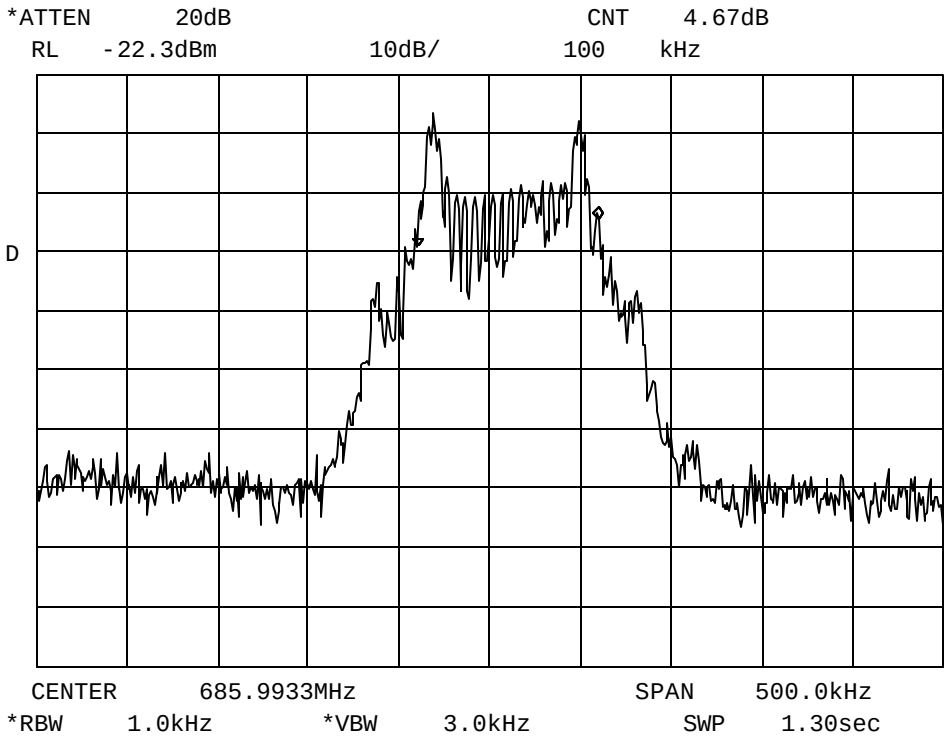
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0106: 2006-Dec-21 Thu 10:15:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: FM 2.5KHZ @ 350MV
99% BW PWR

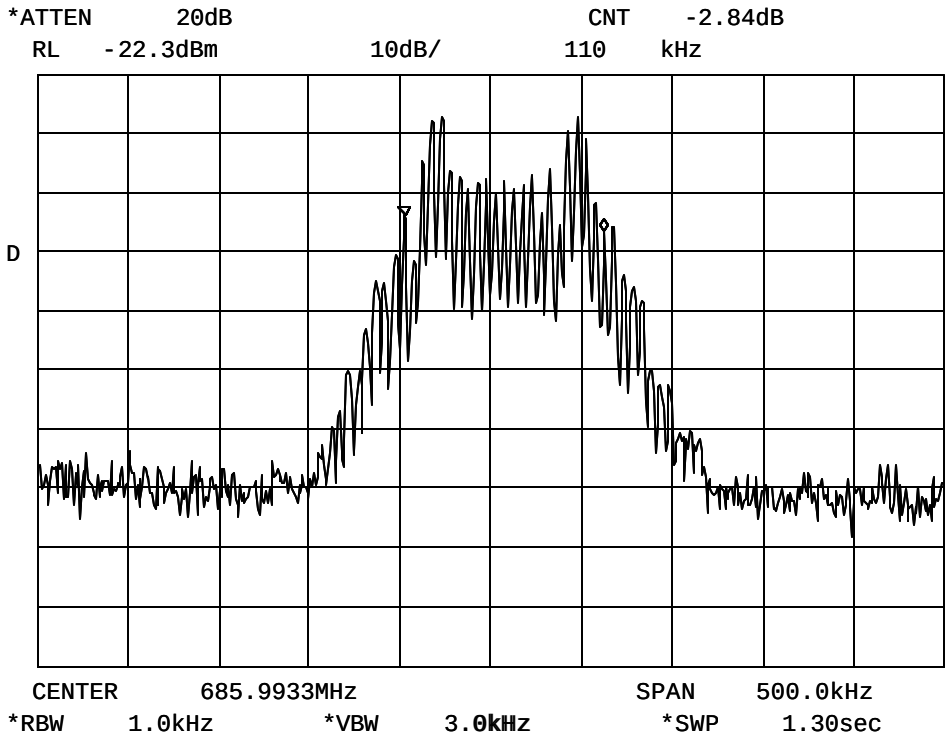
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0107: 2006-Dec-21 Thu 10:23:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: FM 5KHZ @ 350MV
99% BW PWR

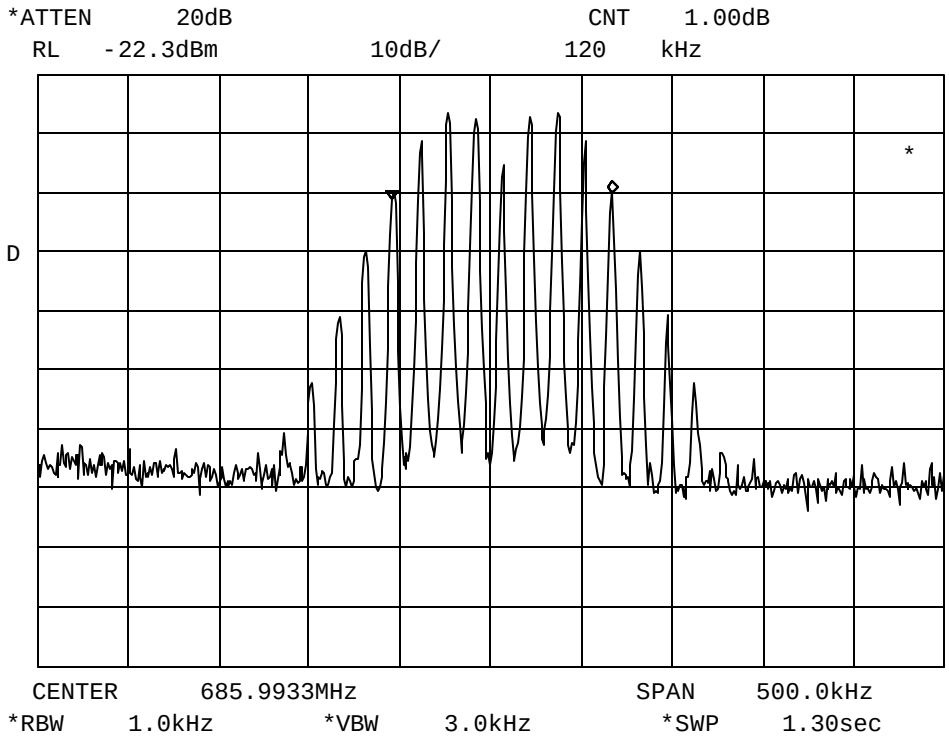
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0108: 2006-Dec-21 Thu 10:26:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: FM 15KHZ @ 350MV
99% BW PWR

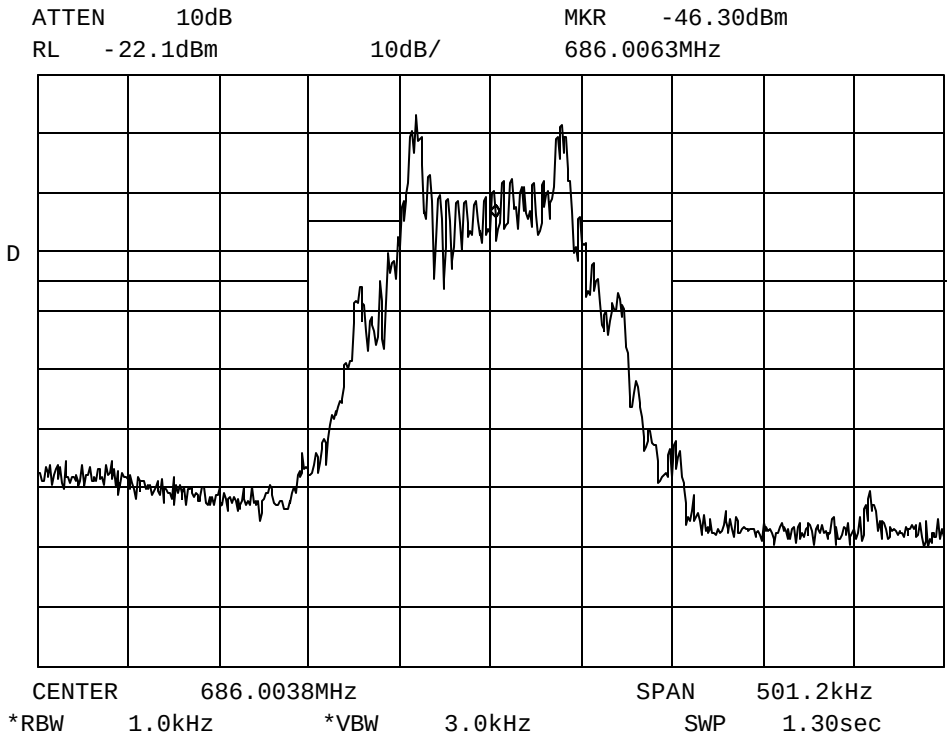
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0109: 2006-Dec-21 Thu 10:50:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: FM 2.5KHZ @ 350MV
MASK: Wireless Mic, 74.861

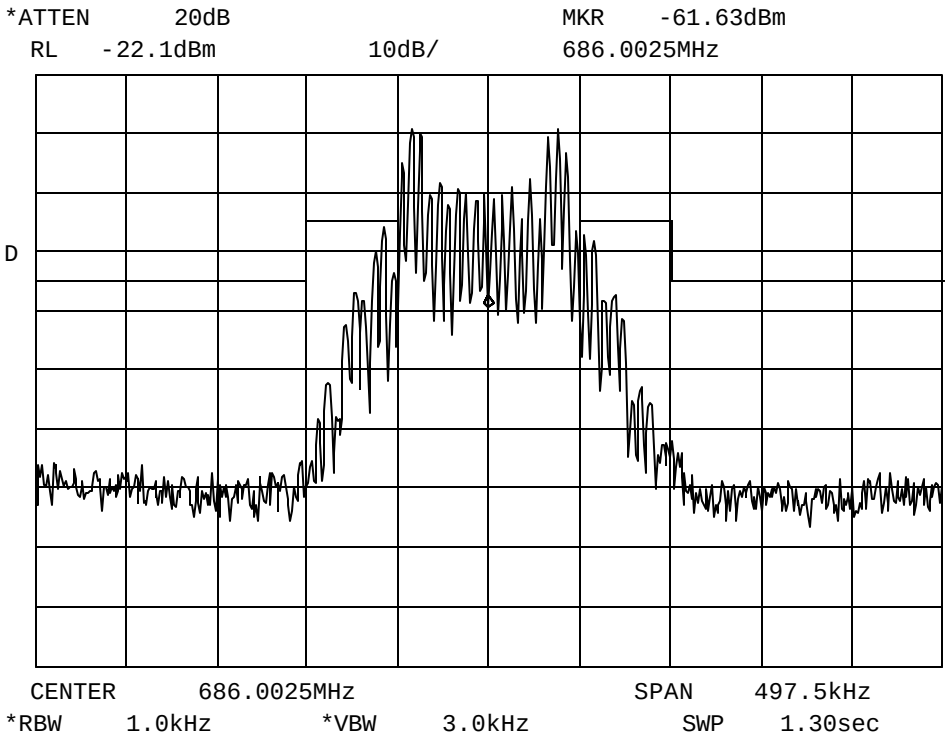
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0110: 2006-Dec-21 Thu 11:14:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: FM 5KHZ @ 350MV
MASK: Wireless Mic, 74.861

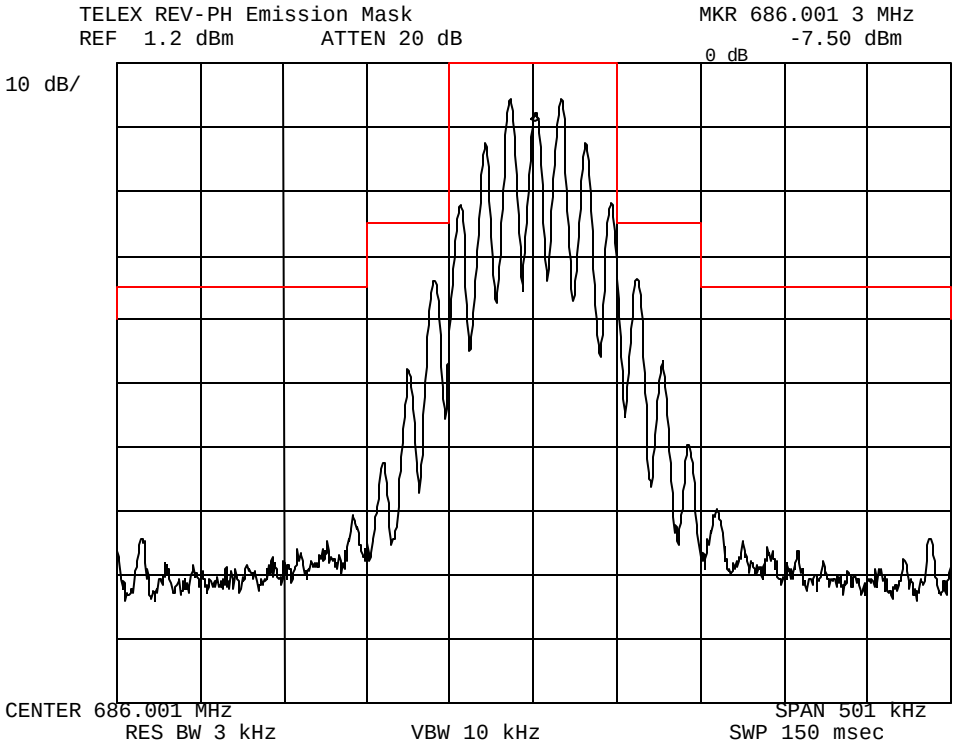
Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0111: 2006-Dec-21 Thu 18:42:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



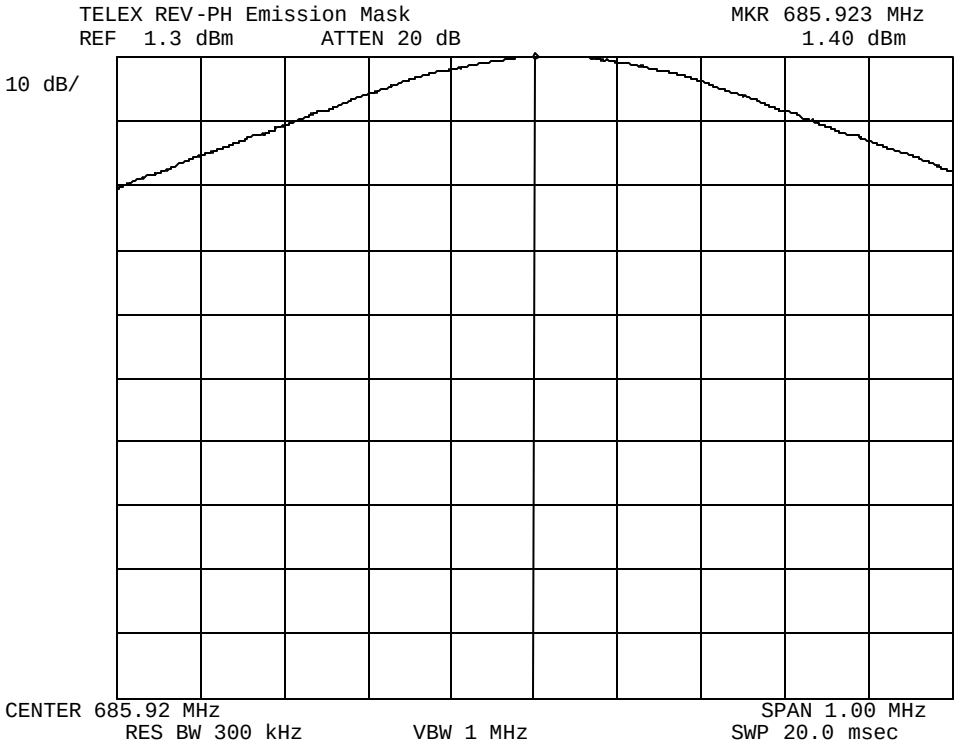
Power: HIGH
Modulation: FM 15KHZ PWR BW
MASK: Wireless Mic, 74.861

Performed by: Michael Boysel

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g06c0112: 2006-Dec-21 Thu 18:46:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
REF LEVEL

Performed by: Michael Boysel

Name of Test: Modulation Limiting

Specification: 47 CFR 2.1047(b)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.3

Measurement Procedure

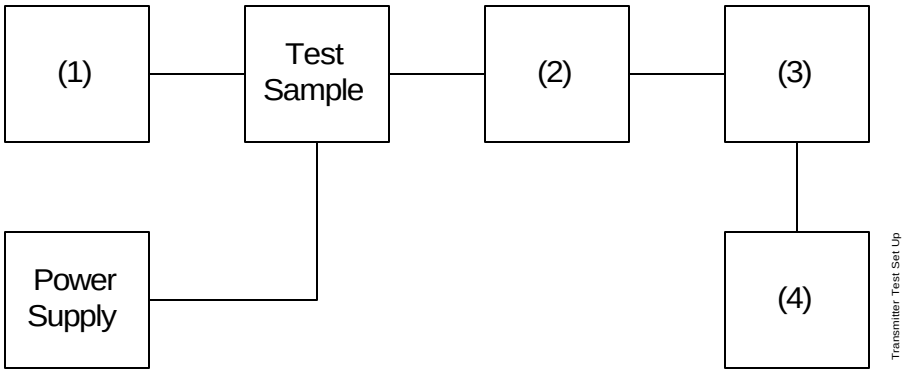
A) The signal generator was connected to the input of the EUT as shown below.

B) The modulation response was measured for each of three frequencies (one of which was the frequency of maximum response), and the input voltage was varied and was observed on an HP 8901A Modulation Analyzer.

C) The input level was varied from 30% modulation (±1.5 kHz deviation) to at least 20 dB higher than the saturation point.

D) Measurements were performed for both negative and positive modulation and the respective results were recorded.

Transmitter Test Set-Up: Modulation Limiting



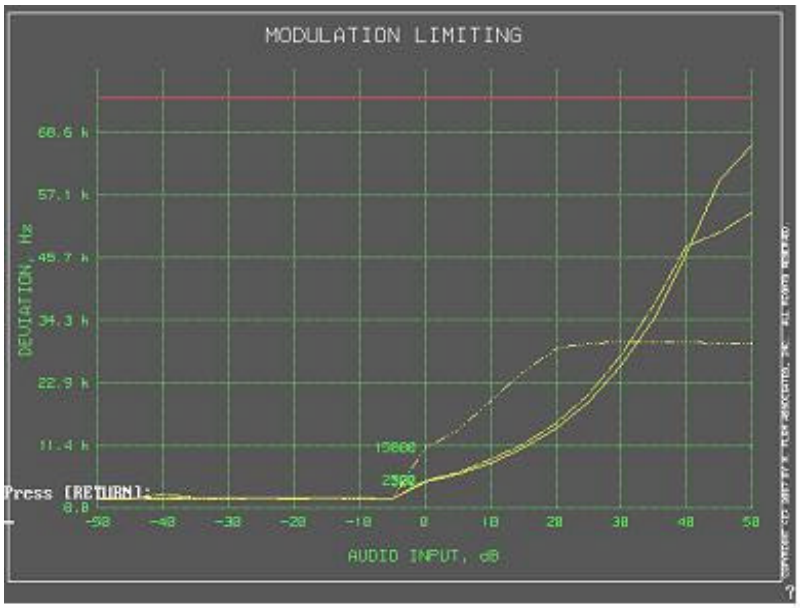
	Asset	Description	s/n		
(1) **Audio Oscillator**					
X	i00324	HP 8903B Audio Analyzer	3011A09079	12 mo.	Oct-06
(2) **Coaxial Attenuator**					
	i0012/23	NARDA 766-(10 dB)	7802 or 7802A	N/A	NCR
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	N/A	NCR
(3) **Modulation Analyzer**					
X	i00321	HP 8901A Modulation Meter	2239A02170	12 mo.	Sep-06
(4) **Audio Analyzer**					
X	i00324	HP 8903B Audio Analyzer	3011A09079	12 mo.	Oct-06

Name of Test: Modulation Limiting

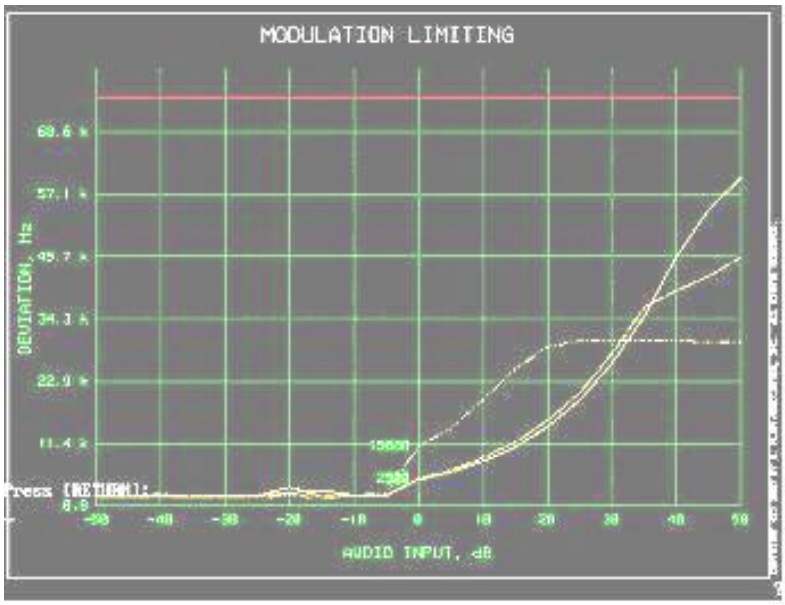
Measurement Results

State: Ambient Temperature: 23°C ± 3°C

Positive Peaks:



Negative Peaks:



Performed by: Michael Boysel

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

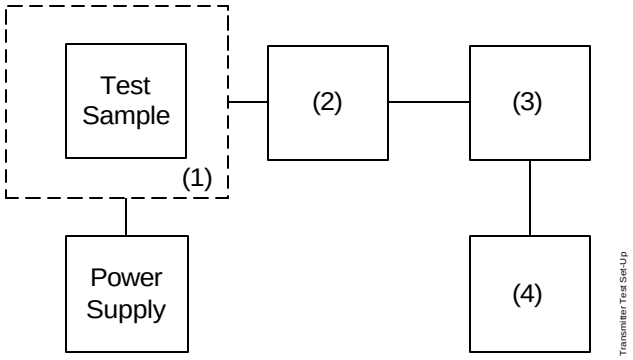
A) The EUT and test equipment were set up as shown on the following page.

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	12 mo.	Sep-06
(2) **Coaxial Attenuator**					
	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	N/A	NCR
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	N/A	NCR
(3) **RF Power**					
	i00067	HP 8920A Communications TS	3345U01242	12 mo.	Jun-06
(4) **Frequency Counter**					
X	i00019	HP 5334B Frequency Counter	2704A00347	12 mo.	July-06

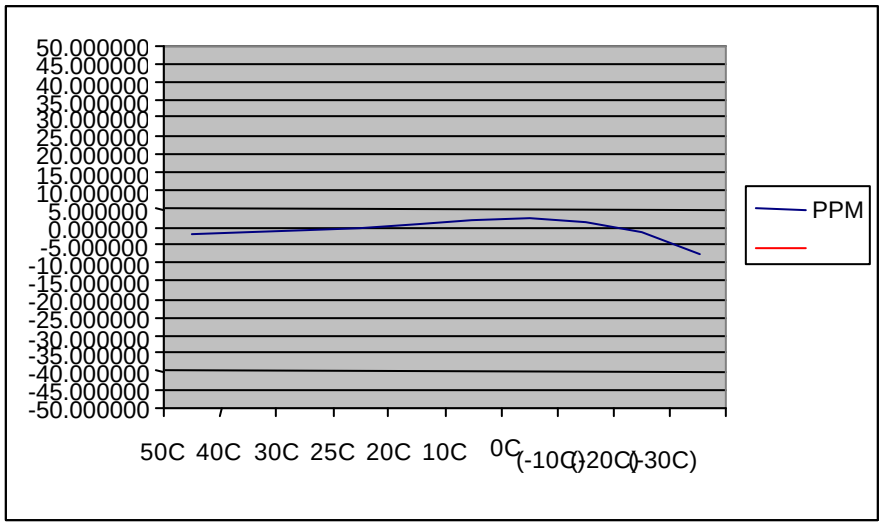
Name of Test: Frequency Stability (Temperature Variation)

Measurement Results

g06c0079: 2006-Dec-26 Tue 09:24:13
State: 0:General

Ambient Temperature: -30°C - +50C ± 3°C

	Temperature	Frequency	PPM
Hot	50C	614.098950	-2.279758
	40C	614.099180	-1.905226
	30C	614.099810	-0.879335
Ambient	25C	614.100350	0.000000
	20C	614.100850	0.814199
	10C	614.101580	2.002930
	0C	614.101820	2.393746
	(-10C)	614.101230	1.432991
	(-20C)	614.099240	-1.807522
Cold	(-30C)	614.095820	-7.376645



Performed by: Michael Boysel

Name of Test: Frequency Stability (Voltage Variation)

Specification: 47 CFR 2.1055(d)(1)

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

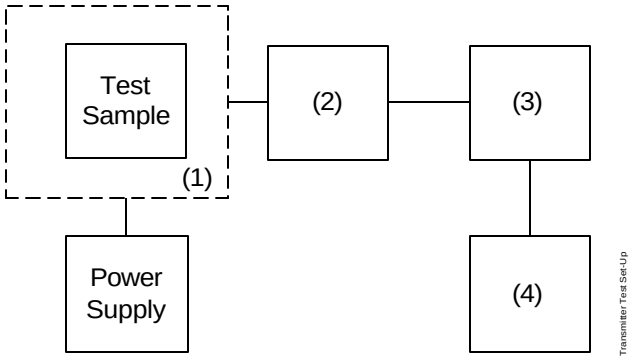
Measurement Procedure

A) The EUT was placed in a temperature chamber (if required) at 25±5°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**					
X	i00027	Tenney Temp. Chamber	9083-765-234	N/A	NCR
(2) **Coaxial Attenuator**					
	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	N/A	NCR
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	N/A	NCR
(3) **RF Power**					
	i00321	HP 8901A Power Mode	2239A02170	12 mo.	Sep-06
(4) **Frequency Counter**					
X	i00019	HP 5334B Frequency Counter	2704A00347	12 mo.	July-06

Results: Frequency Stability (Voltage Variation)

State: Ambient Temperature: 23°C ± 3°C

Limit, ppm = 50
Limit, Hz = 34300
Battery End Point (Voltage) = 4.8V

Percent of Nominal Voltage	Supplied Voltage (VDC)	Measured Frequency (MHz)	Nominal Frequency (MHz)	Deviation (%)	Limit (%)	Deviation (Hz)	Limit (Hz)
85%	7.65	686.000230	686.00000	0.00000	0.005	230	34300
100%	9.00	686.000250	686.00000	0.00000	0.005	250	34300
115%	10.35	686.000250	686.00000	0.00000	0.005	250	34300

Performed by: Michael Boysel

Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation = F3E

Necessary Bandwidth Calculation:

Maximum Modulation (M), kHz	= 15.0
Maximum Deviation (D), kHz	= 58.0
Constant Factor (K)	= 1
Necessary Bandwidth (B_N), kHz	= (2xM) + ((2xDxK)
	= 146.0 KHz Measured

Performed by: Michael Boysel

END OF TEST REPORT

Testimonial
and
Statement of Certification

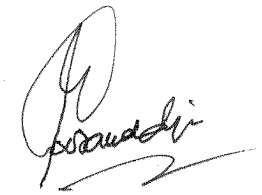
This is to Certify:

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