M. Flom Associates, Inc.
International Compliance Testing Laboratory
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85225
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.mflom.com
info@mflom.com

Date of Report: July 29, 2005
Date of Submission: September 7, 2005

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Danphone A/S
Equipment: DCM 9140 M Transceiver
FCC ID: NJ4DCB9140
FCC Rules: 80 and Confidentiality

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,

David E. Lee, Quality Assurance Manager

enclosure(s)
cc: Applicant
DEL/del

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Transmitter Certification

of

Model: DCM 9140 M Transceiver
FCC ID: NJ4DCB9140

to

Federal Communications Commission

Rule Part(s) 80, Confidentiality

Date of report: July 29, 2005

On the Behalf of the Applicant:

Danphone A/S

At the Request of:

Danphone A/S
Fabriksvej 4
DK-9490 Pandrup, Denmark

Attention of: Ove Jensen, Managing Director
and/or Olaf Karlsen, M.Sc.E.E.
+45 98 20 44 11; FAX: +45 98 24 64 85
E-MAIL: oj@danphone.com

Supervised by: David E. Lee, Quality Assurance Manager

List of Exhibits

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

Applicant: Danphone A/S

FCC ID: NJ4DCB9140

By Applicant:

1. Letter of Authorization

2. Confidentiality Request: 0.457 And 0.459

3. Part 90.203(e) & (g) Attestation

4. Identification Drawings, 2.1033(c)(11)
   - Label
   - Location of Label
   - Compliance Statement
   - Location of Compliance Statement

5. Photographs, 2.1033(c)(12)

6. Documentation: 2.1033(c)
   - (3) User Manual
   - (9) Tune Up Info
   - (10) Schematic Diagram
   - (10) Circuit Description
   - Block Diagram
   - Parts List
   - Active Devices

7. 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/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: d0570059

d) Client: Danphone A/S
Fabriksvej 4
DK-9490 Pandrup, Denmark

e) Identification: DCM 9140 M Transceiver
FCC ID: NJ4DCB9140
EUT Description: Marine Base Station

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

g) Report Date: July 29, 2005
EUT Received: July 6, 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:

David E. Lee, Quality Assurance 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 used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID
Interface	1	Danphone	TS-1	nsn	-

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:

_____	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
_____	74 Subpart H - Low Power Auxiliary Stations
_____	80 – Stations in the Maritime Services
X	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

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.

THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

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.

Presented this 16th day of June 2004.

President
For the Accreditation Council
Certificate Number 2152-01
Valid to August 31, 2006

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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**

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

September 15, 1999

Mr. Morton Flom
M. Flom Associates Inc.
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85224

Dear Mr. Flom:

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 Arrangement (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/laps under the "Asia" category.

As of August 1, 1999, you may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable EMC requirements. **Your assigned BSMI number is SL2-IN-E-041R; you must use this number when sending test reports to BSMI.** Your obligation will remain in force as long as your NVLAP and/or A2LA and/or BSMI accreditation remains valid for the CNS 13438.

Please note that BSMI requires that the entity making application for the approval of regulated equipment must make such application in person at their Taipei office. BSMI also requires the names of the authorized signatories who are authorized to sign the test reports. You can send this information via fax to C-Taipei CAB Response Manager at 301-975-5414. **I am also enclosing a copy of the cover sheet that, according to BSMI requirements, must accompany every test report.**

NIST

If you have any questions, please contact Robert Gladhill at 301-975-4273 or Joe Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

Belinda L. Collins, Ph.D.
Director, Office of Standards Services

Enclosure

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**

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2, 80 and Confidentiality

Sub-part 2.1033

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

Danphone A/S
Fabriksvej 4
DK-9490 Pandrup, Denmark

Manufacturer:

Danphone A/S
Fabriksvej 4
DK-9490 Pandrup, Denmark

(c)(2): **FCC ID**: NJ4DCB9140

Model Number: DCM 9140 M Transceiver

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

Please see attached exhibits

(c)(4): **Type of Emission**: 16K0F3E, 16K0F1D (DSC)

(c)(5): **Frequency Range, MHz**: All Marine Channels
156.050 – 157.425

(c)(6): **Power Rating, Watts**: 50, 25, 10, 2
X Switchable ____ Variable ____ N/A

(c)(7): **Maximum Power Rating, Watts**: 100

DUT Results: Passes X Fails ____

Information for Push-To-Talk Devices

Type and number of antenna to be used for this device:
One Transmit Whip (+One Receive)

Maximum antenna gain for antenna indicated above:
ProCom CXL 2-3LW/lm with gain of 5dBi (3dBd.)

Can this device sustain continuous operation with respect to its hardware capabilities and allowable operating functions?
Yes

Other hardware or operating restrictions that could limit a person's RF Exposure:
None

Source-based time-averaging (see 2.1093 of rules) applicable to reduce the average output power:
No

If device has headset and belt-clip accessories that would allow body-worn operations, what is the minimum separation distance between the antenna and the user's body in this operating configuration?
N/A

Can device access wire-line services to make phone calls, either directly or through an operator?
No

Can specific operating instructions be given to users to eliminate any potential RF Exposure concerns for both front-of-the-face and body-worn operating configurations?
Installation Manual

Other applicable information the applicant may provide that can serve as effective means for ensuring RF Exposure compliance:
Professional Installation

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	=	13.2

(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

VHF Radiotelephone Frequencies

CH	TX Freq.	Power Low	High
1	156.050	X	X
2			
3	156.150	X	X
4			
5	156.250	X	X
6	156.300	X	X
7	156.350	X	X
8	156.400	X	X
9	156.450	X	X
10	156.500	X	X
11	156.550	X	X
12	156.600	X	X
13	156.650		X
14	156.700	X	X
15			
16	156.800	X	X
17	156.850		X
18	156.900	X	X
19	156.950	X	X
20	157.000	X	X
21	157.050	X	X
22	157.100	X	X
23	157.150	X	X
24	157.200	X	X
25	157.250	X	X
26	157.300	X	X
27	157.350	X	X
28	157.400	X	X

CH	TX Freq.	Power Low	High
61	156.075	X	X
62			
63	156.175	X	X
64	156.225	X	X
65	156.275	X	X
66	156.325	X	X
67	156.375		X
68	156.425	X	X
69	156.475	X	X
70	156.525		
71	156.575	X	X
72	156.625	X	X
73	156.675	X	X
74	156.725	X	X
75			
76			
77	156.875		X
78	156.925	X	X
79	156.975	X	X
80	157.025	X	X
81	157.075	X	X
82	157.125	X	X
83	157.175	X	X
84	157.225	X	X
85	157.275	X	X
86	157.325	X	X
87	157.375	X	X
88	157.425	X	X

Name of Test: Carrier Output Power (Conducted)

Specification: 47 CFR 2.1046(a)

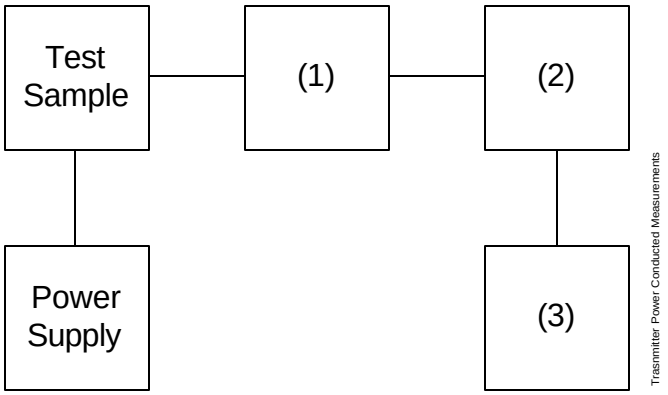
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.1

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	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(2)	**Power Meters**				
X	i00020	HP 8901A Power Mode	2105A01087	12 mo.	Apr-05
(3)	**Frequency Counter**				
X	i00020	HP 8901A Frequency Mode	2105A01087	12 mo.	Apr-05

Name of Test: Carrier Output Power (Conducted)

Measurement Results
(Worst case)

Frequency of Carrier, MHz	=	157.425
Ambient Temperature	=	23°C ± 3°C

Power Setting	RF Power, Watts
High	50.0
Medium High	25.0
Medium Low	10.0
Low	2.0

Performed by: Michael Findley, Laboratory Manager

Name of Test: Unwanted Emissions (Transmitter Conducted)

Specification: 47 CFR 2.1051

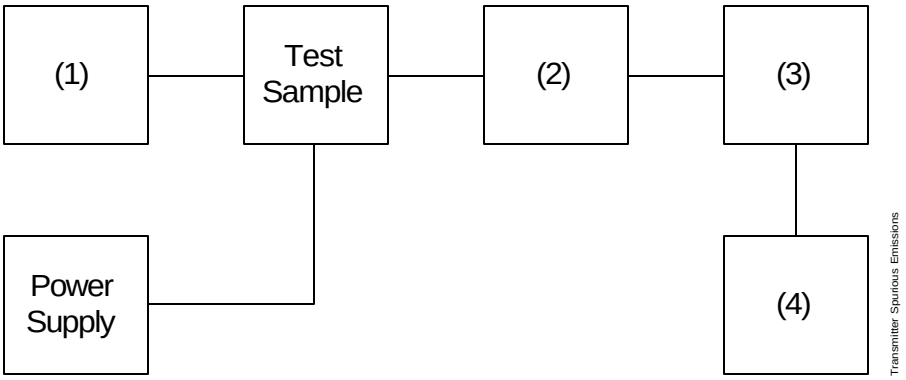
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.13

Measurement Procedure

A) The emissions were measured for the worst case as follows:
   1). within a band of frequencies defined by the carrier frequency plus and minus one channel.
   2). from the lowest frequency generated in the EUT and to at least the 10th harmonic of the carrier frequency, or 40 GHz, whichever is lower.

B) The magnitude of spurious emissions that are attenuated more than 20 dB below the permissible value need not be specified.

Transmitter Test Set-Up: Spurious Emission



	Asset	Description	s/n		
(1) **Audio Oscillator/Generator**					
X	i00017	HP 8903A Audio Analyzer	2216A01753	12 mo.	Apr-05
	i00002	HP 3336B Synthesizer / Level Gen.	1931A01465	12 mo.	Apr-05
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i0012/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **Filters; Notch, HP, LP, BP**					
		None required			
(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: Unwanted Emissions (Transmitter Conducted)

Measurement Results
(Worst Case)

Summary:

Frequency of carrier, MHz	=	156.300, 156.800, 157.425
Spectrum Searched, GHz	=	0 to 10 x F_C
Maximum Response, Hz	=	2820
All Other Emissions	=	= 20 dB Below Limit
Limit, dBc (dBm)		-46 (-13)

Tabulated Results follow:

Measurement Results

g0570095: 2005-Jul-28 Thr 09:57:00
State: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB

Emissions program run at 156.300MHz, 156.800MHz, and 157.425MHz. No emissions greater than 20dB under the limit (-33dBm)

Performed by: Michael Findley, Laboratory Manager

Name of Test: Field Strength of Spurious Radiation

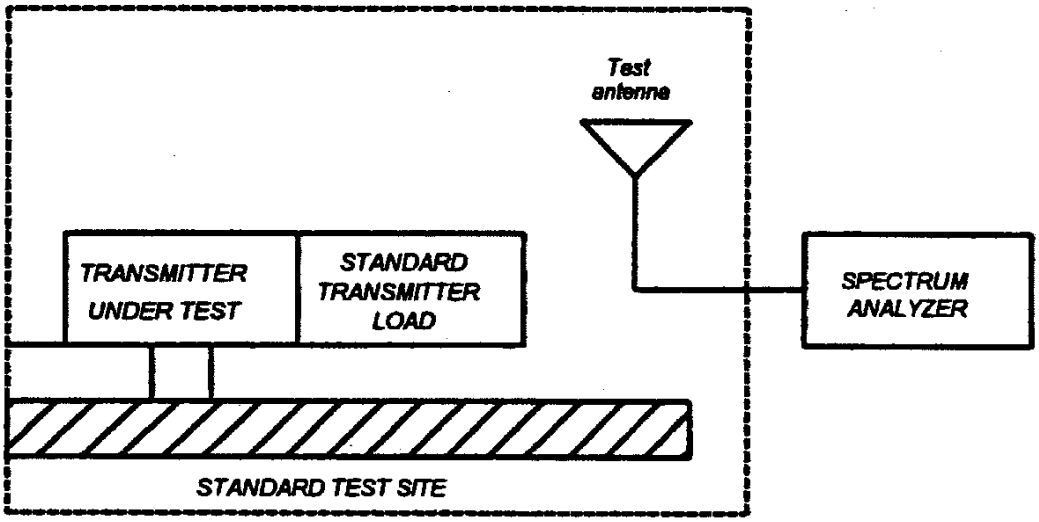
Specification: 47 CFR 2.1053(a)

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.

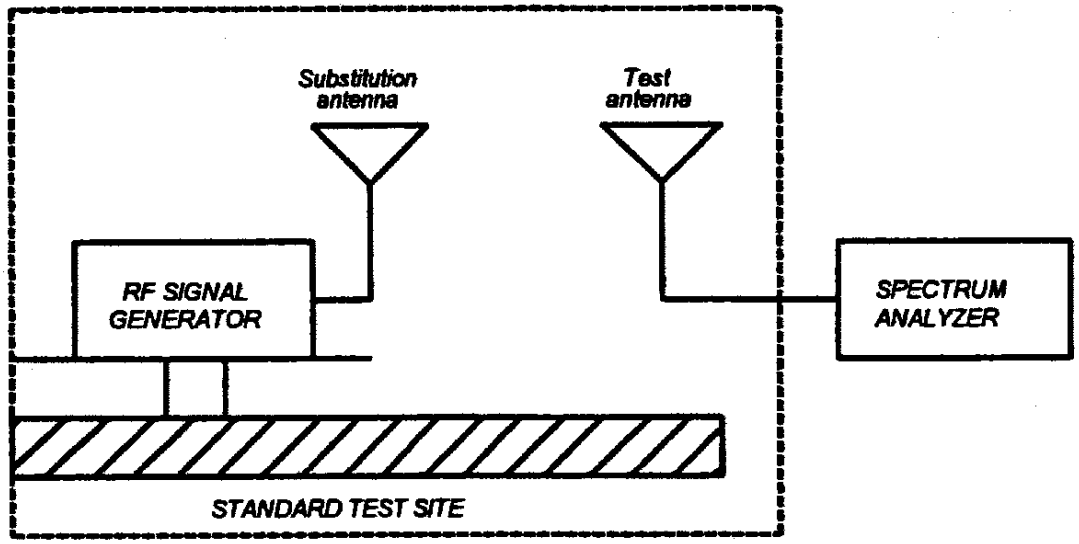


Name of Test: Field Strength of Spurious Radiation (Cont.)

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 I)

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	24 mo.	Sep-03
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-03
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Jan-04
Amplifier					
X	i00028	HP 8449A	2749A00121	12 mo.	May-05
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	May-05
X	i00033	HP 85462A	3625A00357	12 mo.	Oct-04
Substitution Generator					
X	i00067	HP 8920A Communication TS	3345U01242	12 mo.	May-05
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	May-05

Microphone, Antenna Port, and Cabling

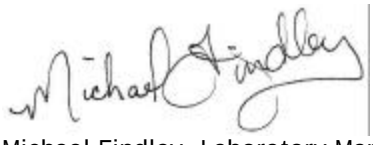
Microphone	No	Cable Length	-	Meters	
Antenna Port Terminated	Yes	Load	Yes	Antenna Gain	N/A
All Ports Terminated by Load	Yes	Peripheral	No		

Name of Test: Field Strength of Spurious Radiation

Measurement Results

Name of Test: Field Strength of Spurious Radiation
g0570083: 2005-Jul-26 Tue 11:13:00
State: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	ERP, dBm	Margin, dB
156.300000	312.603800	20.04	29.57	-47.8	-27.8
156.800000	313.603800	20.71	29.59	-47.1	-27.1
157.425000	314.851300	24.16	15.62	-57.6	-37.6
156.300000	468.903800	13.32	32.58	-51.5	-31.5
156.800000	470.403800	14.06	32.60	-50.7	-30.7
157.425000	472.276300	19.09	18.63	-59.7	-39.7
156.300000	625.203800	28.11	39.19	-30.1	-10.1
156.800000	627.203800	27.38	39.22	-30.8	-10.8
157.425000	629.701300	16.53	25.26	-55.6	-35.6
156.300000	781.503800	23.10	39.40	-35.0	-15.0
156.800000	784.003800	18.80	39.30	-39.3	-19.3
157.425000	787.123800	15.70	25.30	-56.4	-36.4
156.300000	937.803800	16.00	41.50	-39.9	-19.9
156.800000	940.803800	16.00	41.60	-39.7	-19.7
157.425000	944.548800	16.60	27.80	-53.0	-33.0
156.300000	1094.103800	13.80	40.10	-43.5	-23.5
156.800000	1097.603800	13.00	40.20	-44.2	-24.3
157.425000	1101.973800	20.30	25.80	-51.2	-31.3
156.300000	1250.403800	12.50	41.00	-43.9	-23.9
156.800000	1254.403800	8.80	41.00	-47.5	-27.5
157.425000	1259.398800	12.70	26.40	-58.2	-38.2
156.300000	1406.703800	17.20	41.30	-38.8	-18.9
156.800000	1411.203800	10.80	41.30	-45.2	-25.2
157.425000	1416.823800	13.10	27.60	-56.7	-36.7
156.300000	1563.003800	16.30	41.60	-39.2	-19.5
156.800000	1568.003800	16.40	41.60	-39.4	-19.5
157.425000	1574.248800	10.50	29.10	-57.8	-37.8



Performed by: Michael Findley, Laboratory Manager

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

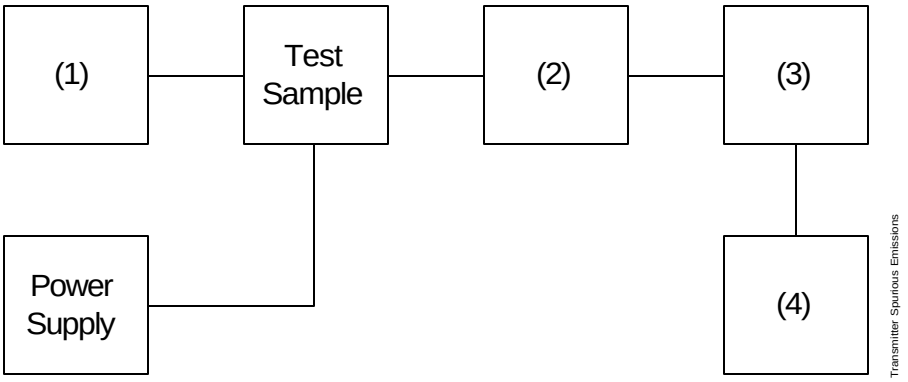
A) The EUT and test equipment were set up as shown below

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



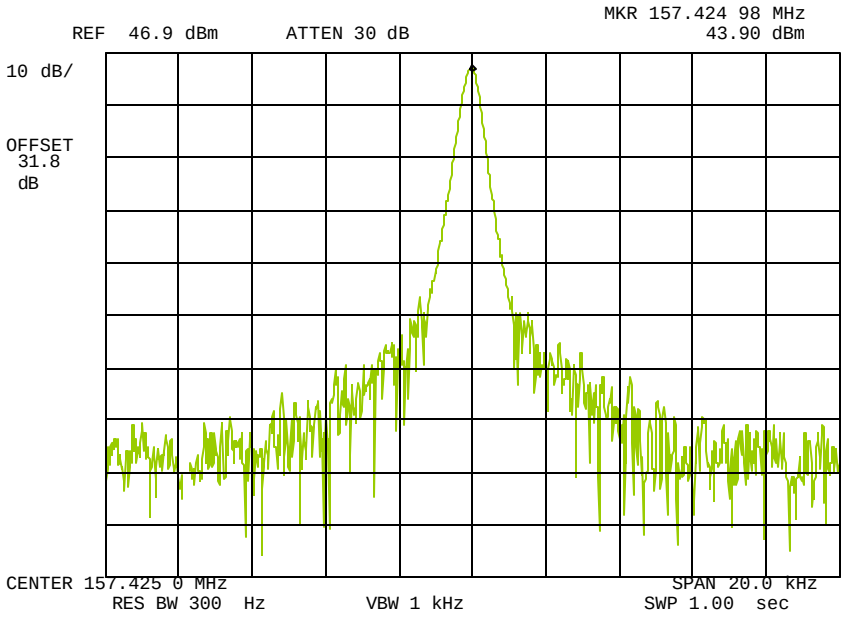
	Asset	Description	s/n	Cycle	Last Cal
(1) **Audio Oscillator/Generator**					
X	i00017	HP 8903A Modulation Meter	2216A01753	12 mo.	Apr-05
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00123	NARDA 766 (10 dB)	7802A	NCR	
(3) **Interface**					
X	i00021	HP 8954A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

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570106: 2005-Jul-28 Thu 14:04:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: MEDIUM HIGH (25W)
Modulation: NONE
157.425MHz

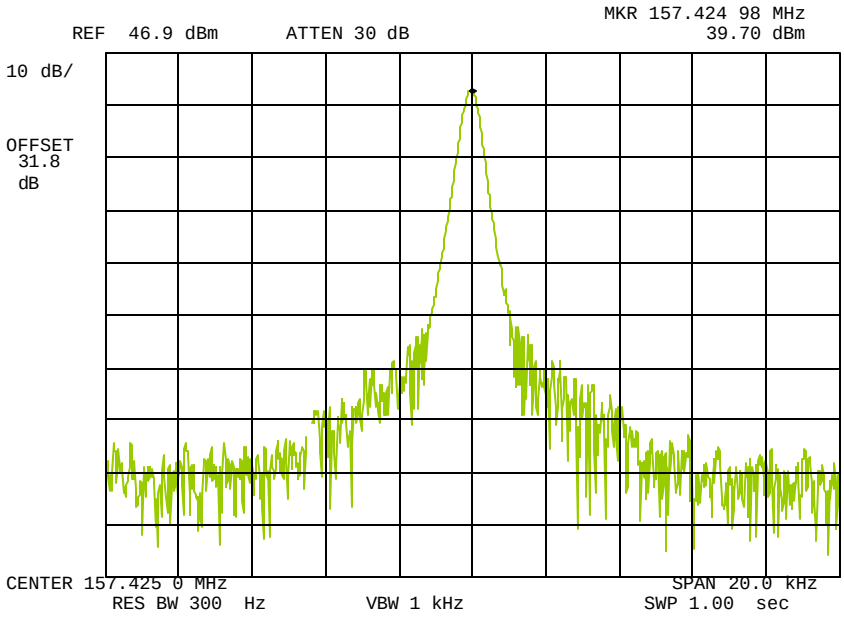
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570107: 2005-Jul-28 Thu 14:05:00
State: 1:Low Power

Ambient Temperature: 23°C ± 3°C



Power: MEDIUM LOW (10W)
Modulation: NONE
157.425MHz

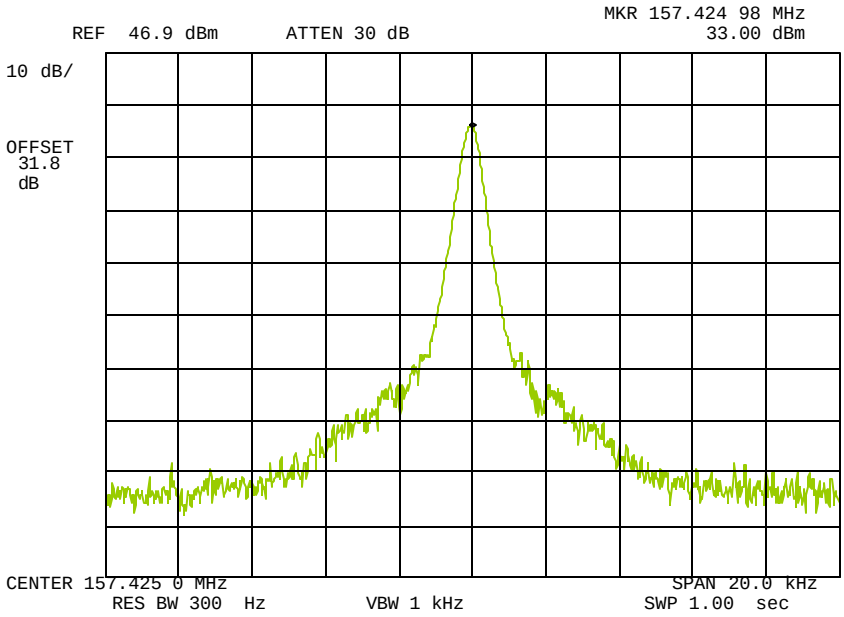
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570108: 2005-Jul-28 Thu 14:06:00
State: 1:Low Power

Ambient Temperature: 23°C ± 3°C



Power: LOW (2W)
Modulation: NONE
157.425MHz

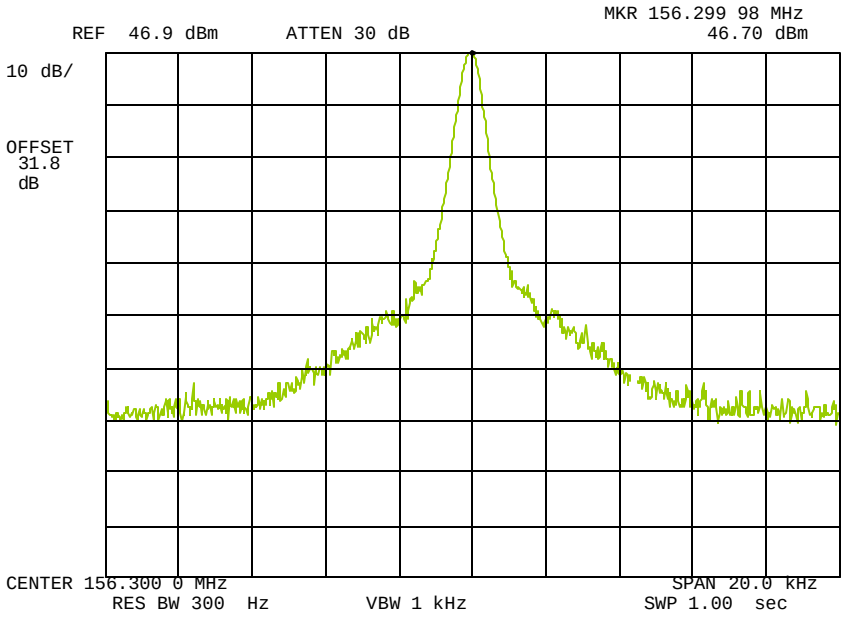
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570102: 2005-Jul-28 Thu 14:00:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH (50W)
Modulation: NONE
156.300MHz

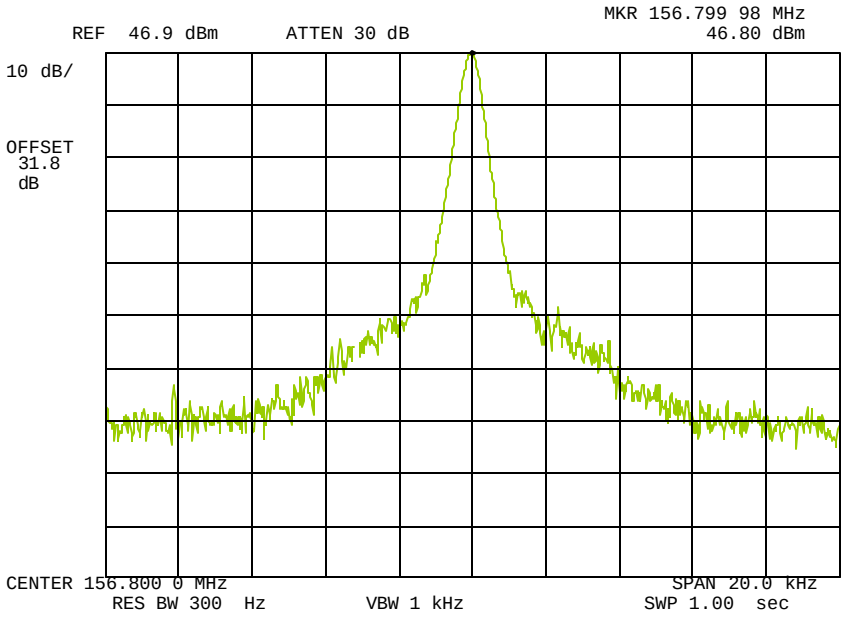
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570103: 2005-Jul-28 Thu 14:01:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:	HIGH (50W)
Modulation:	NONE
	156.800MHz

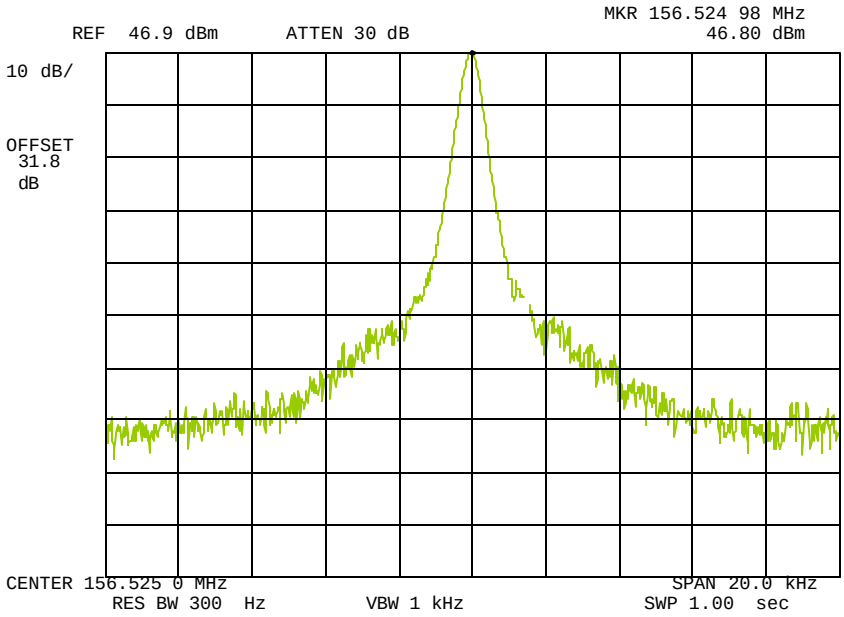
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570104: 2005-Jul-28 Thu 14:02:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:	HIGH (50W)
Modulation:	NONE
	156.525MHz

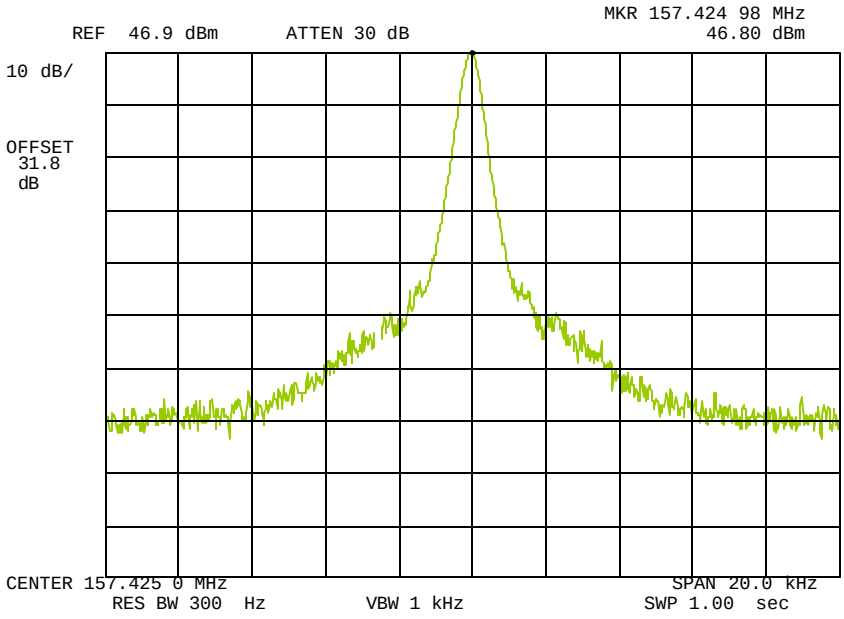
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570105: 2005-Jul-28 Thu 14:03:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:	HIGH (50W)
Modulation:	NONE
	157.425MHz

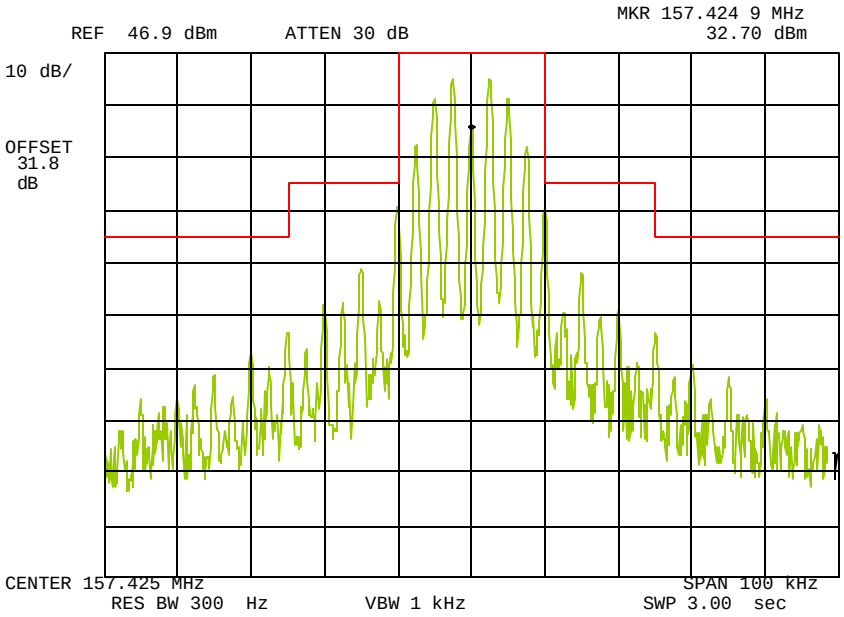
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570109: 2005-Jul-28 Thu 14:18:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

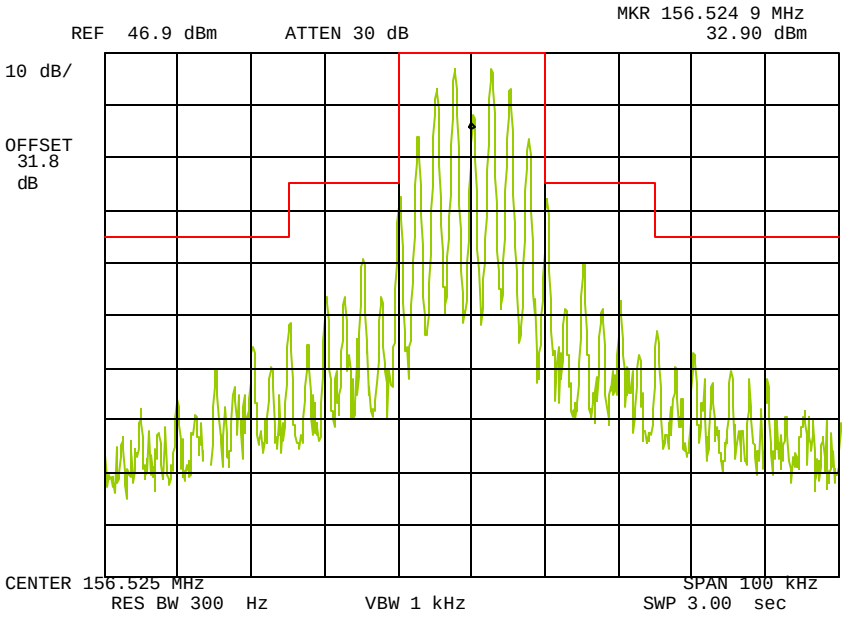
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570110: 2005-Jul-28 Thu 14:19:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

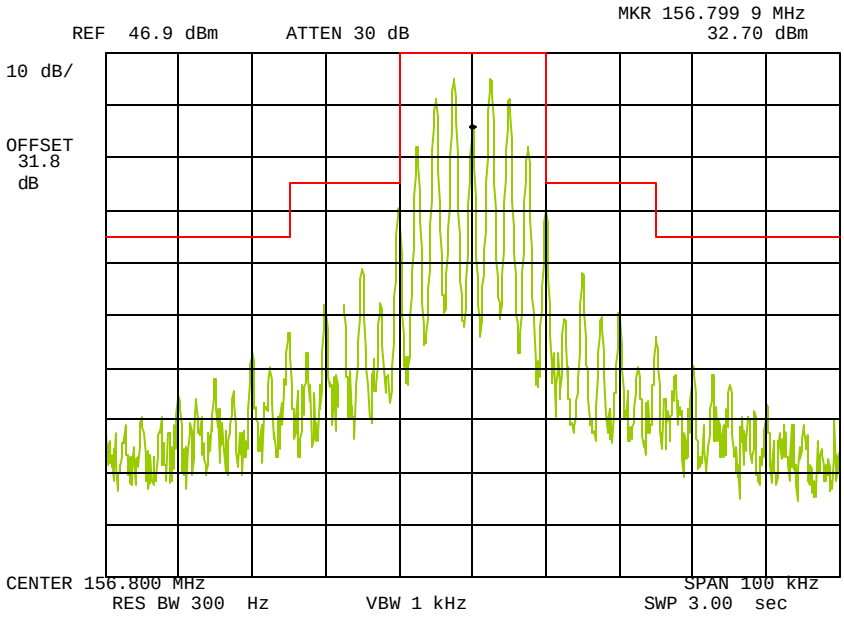
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570111: 2005-Jul-28 Thu 14:20:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

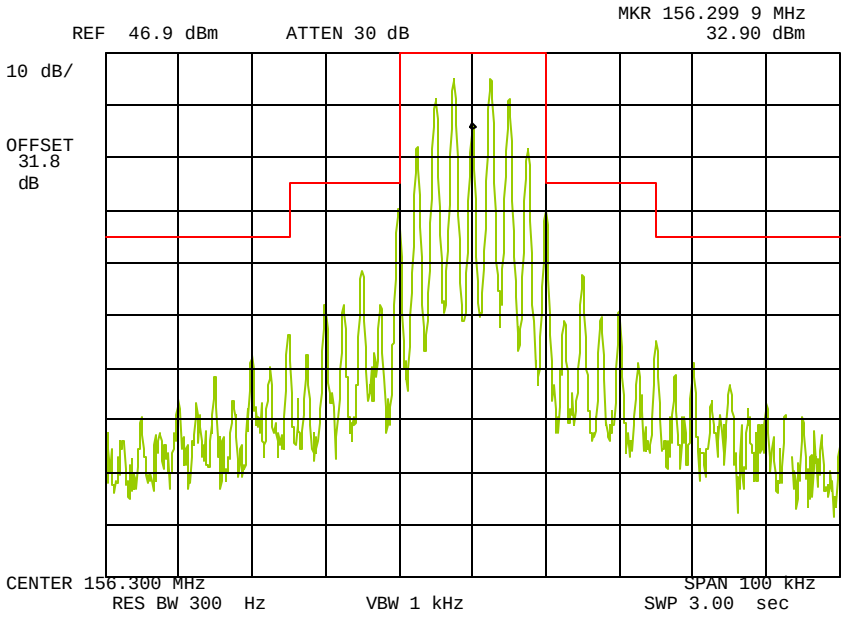
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570112: 2005-Jul-28 Thu 14:21:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

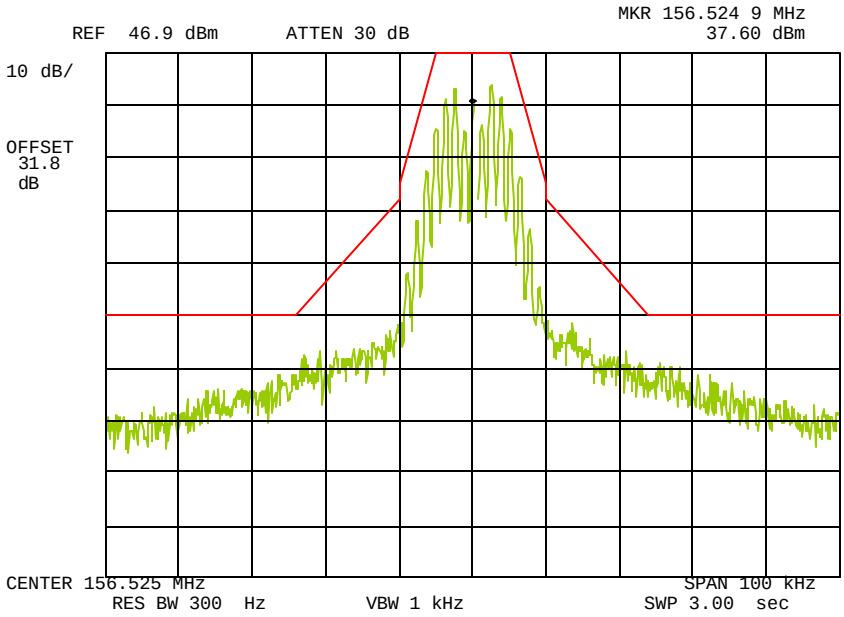
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570113: 2005-Jul-28 Thu 14:47:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: DSC 1300HZ
MASK: C, VHF/UHF 25kHz, no LPF

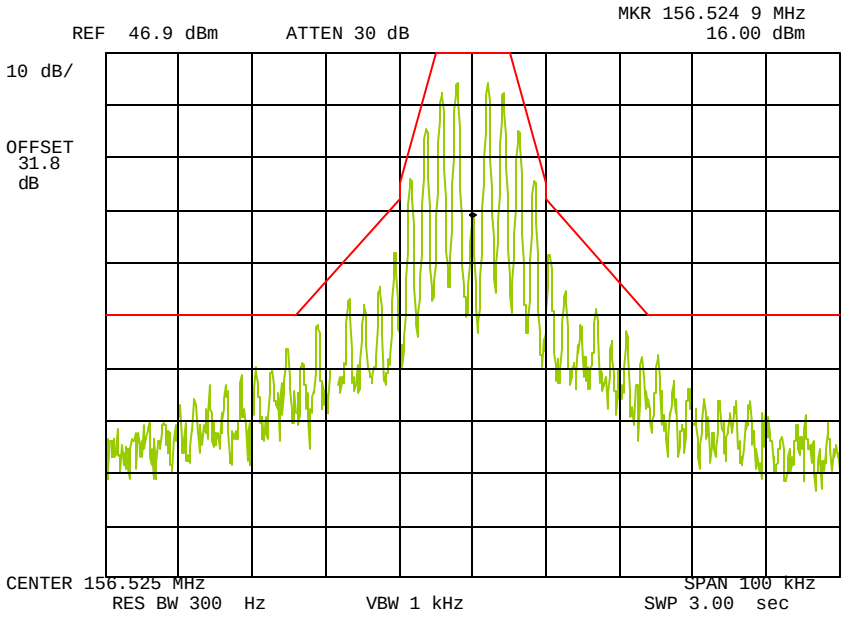
Performed by: Michael Findley, Laboratory Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0570114: 2005-Jul-28 Thu 14:48:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: DSC 2100HZ
MASK: C, VHF/UHF 25kHz, no LPF

Performed by: Michael Findley, Laboratory Manager

Name of Test: Audio Low Pass Filter (Voice Input)

Specification: 47 CFR 2.1047(a)

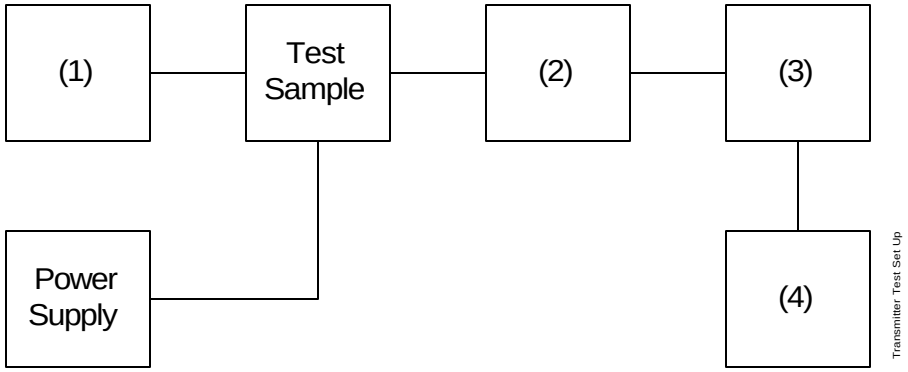
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.15

Measurement Procedure

A) The EUT and test equipment were set up such that the audio input was connected at the input to the modulation limiter, and the modulated stage.

B) The audio output was connected at the output to the modulated stage.

Transmitter Test Set-Up: Response of Low Pass Filter



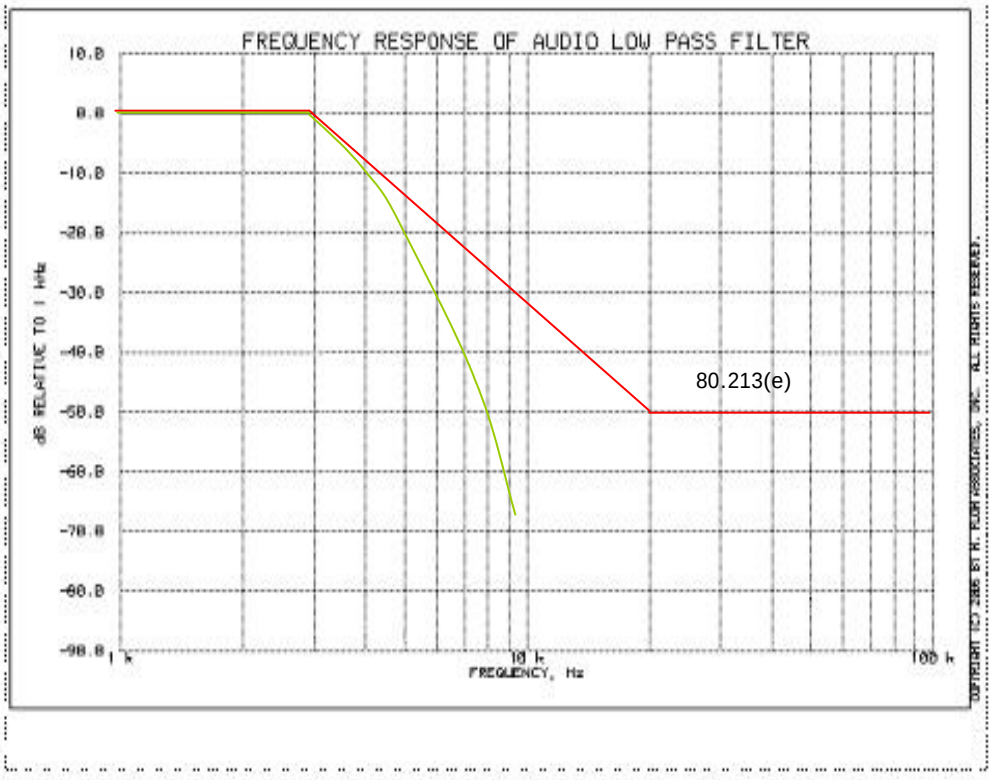
	Asset	Description	s/n	Cycle	Last Cal
(1) **Audio Oscillator**					
X	i00002	HP 3336B Synthesizer / Level Gen.	1931A01465	12 mo	Apr-05
(2) **Coaxial Attenuator**					
	i00122/3	NARDA 766 (10dB)10	7802 or 7802A	NCR	
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
(3) **Modulation Analyzer**					
X	i00020	HP 8901A Modulation Meter	2105A01087	12 mo.	Apr-05
(4) **Audio Analyzer**					
X	i00001	HP 3586B Selective Level Meter	1928A01360	12 mo.	Apr-05

Name of Test: Audio Low Pass Filter (Voice Input)

Measurement Results

g0570089: 2005-Jul-29 Fri 09:49:00
State: 0:General

Ambient Temperature: 23°C ± 3°C



Performed by: Michael Findley, Laboratory Manager

Name of Test: Audio Frequency Response

Specification: 47 CFR 2.1047(a)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.6

Measurement Procedure

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

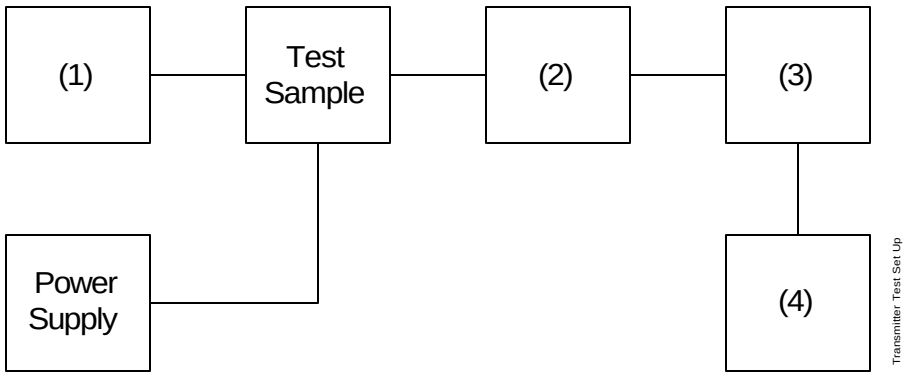
B) The audio signal generator was connected to the audio input circuit/microphone of the EUT.

C) The audio signal input was adjusted to obtain 20% modulation at 1 kHz, and this point was taken as the 0 dB reference level.

D) With input levels held constant and below limiting at all frequencies, the audio signal generator was varied from 100 Hz to 50 kHz.

E) The response in dB relative to 1 kHz was measured, using the HP 8901A Modulation Meter.

Transmitter Test Set-Up: Audio Frequency Response



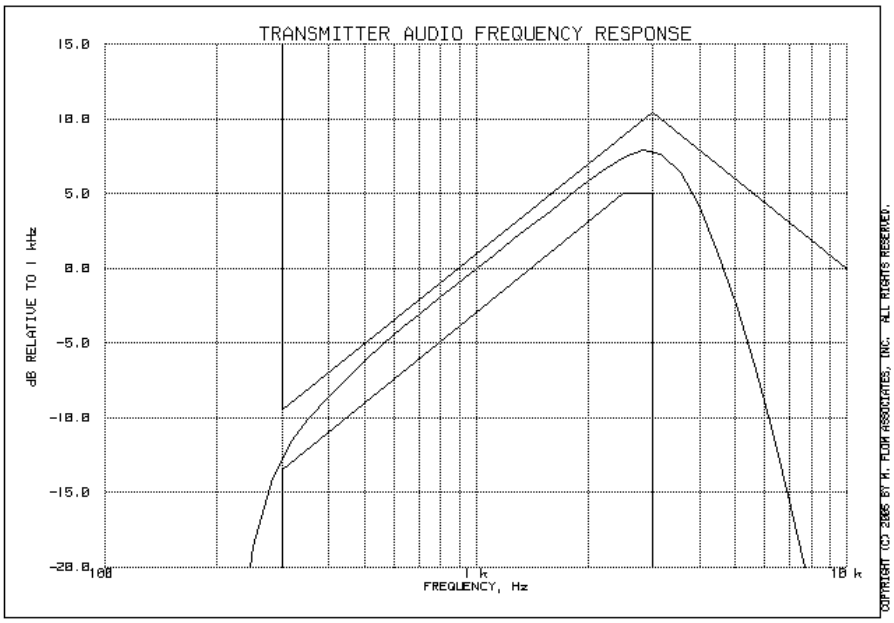
	Asset	Description	s/n	Cycle	Last Cal
(1) **Audio Oscillator**					
X	i00017	HP 8903A Audio Analyzer	2216A01753	12 mo.	Apr-04
(2) **Coaxial Attenuator**					
	i00122/3	NARDA 766-(10 dB)	7802 or 7802A	NCR	
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
(3) **Modulation Analyzer**					
X	i00020	HP 8901A Modulation Meter	2105A01087	12 mo.	Apr-04
(4) **Audio Analyzer**					
X	i00017	HP 8903A Audio Analyzer	2216A01753	12 mo.	Apr-04

Name of Test: Audio Frequency Response

Measurement Results

g0570088: 2005-Jul-29 Fri 09:45:00
State: 0:General

Ambient Temperature: 23°C ± 3°C



Frequency of Maximum Audio Response, Hz **=** 2820

Additional points:

Frequency, Hz	Level, dB
300	-12.51
20000	-65.82
30000	-70.20
50000	-71.12

Performed by: Michael Findley, Laboratory Manager

Name of Test: Modulation Limiting

Specification: 47 CFR 2.1047(b)

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

Measurement Procedure

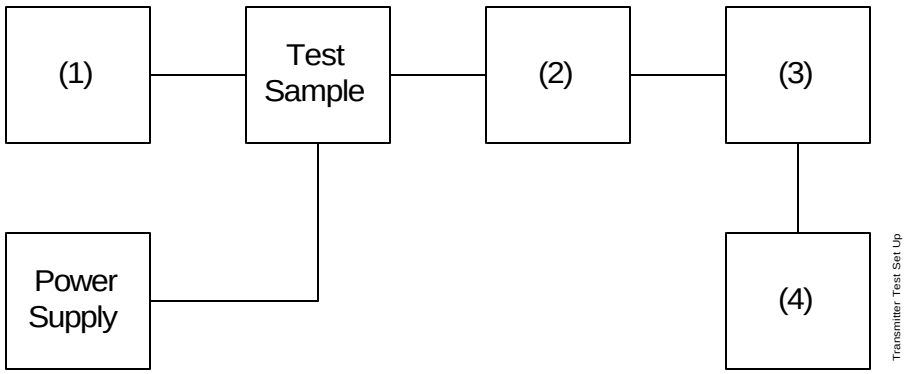
A) The signal generator was connected to the input of the EUT as shown below.

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	i00017	HP 8903A Audio Analyzer	2216A01753	12 mo.	Apr-05
(2) **Coaxial Attenuator**					
	i0012/23	NARDA 766-(10 dB)	7802 or 7802A	NCR	
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
(3) **Modulation Analyzer**					
X	i00020	HP 8901A Modulation Meter	2105A01087	12 mo.	Apr-05
(4) **Audio Analyzer**					
X	i00017	HP 8903A Audio Analyzer	2216A01753	12 mo.	Apr-05

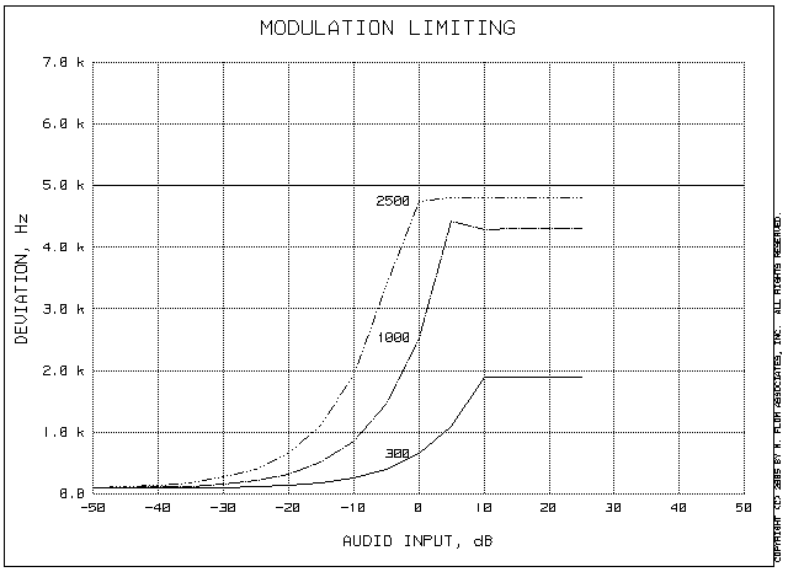
Name of Test: Modulation Limiting

Measurement Results

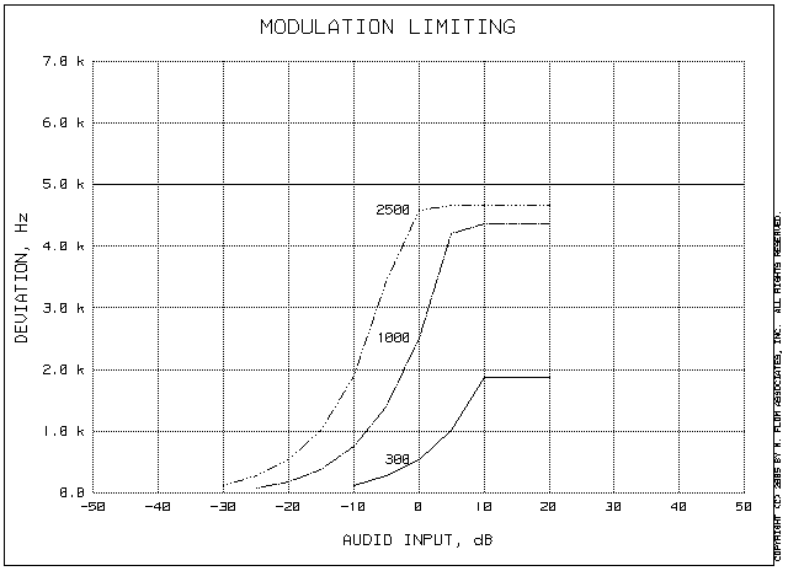
g0570085: 2005-Jul-28 Thu 15:36:00
State: 0:General

Ambient Temperature: 23°C ± 3°C

Positive Peaks:



Negative Peaks:



Performed by: Michael Findley, Laboratory Manager

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

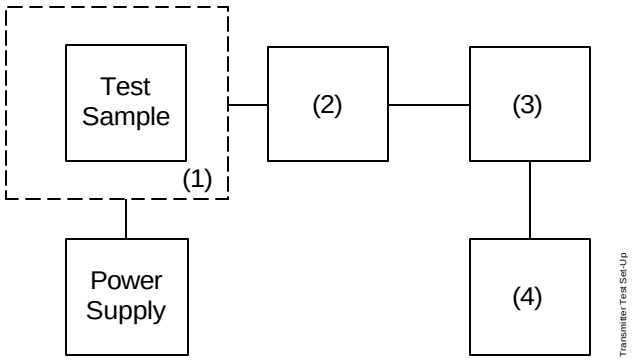
A) The EUT and test equipment were set up as shown on the following page.

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

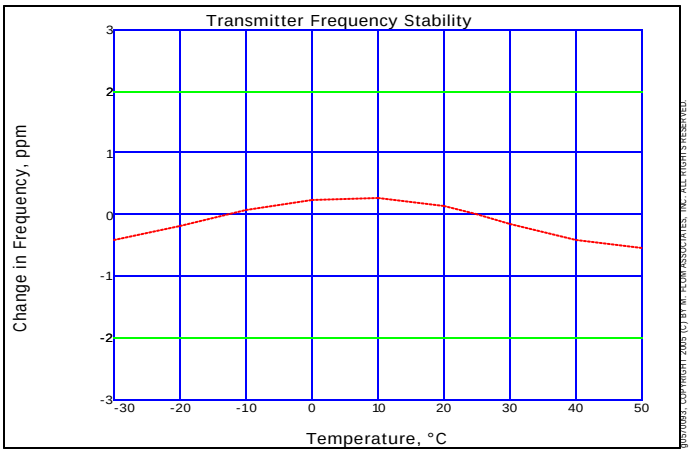


	Asset	Description	s/n	Cycle	Last Cal
(1) **Temperature, Humidity, Vibration**					
X	i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **RF Power**					
X	i00067	HP 8920A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

Name of Test: Frequency Stability (Temperature Variation)

Measurement Results

g0570093: 2005-Jul-29 Fri 11:14:34
State: 0:General Ambient Temperature: 23°C ± 3°C



Tuned Frequency: 157.425MHz

Performed by: Michael Findley, Laboratory Manager

Name of Test: Frequency Stability (Voltage Variation)

Specification: 47 CFR 2.1055(d)(1)

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

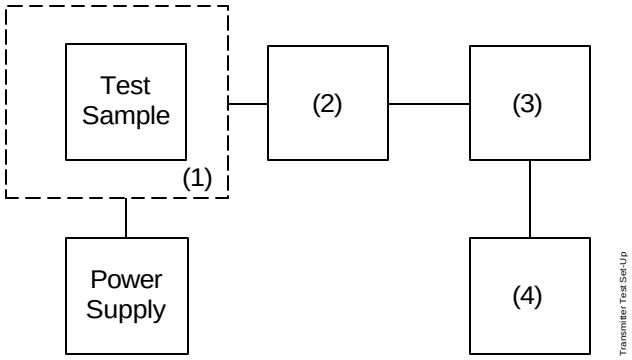
Measurement Procedure

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



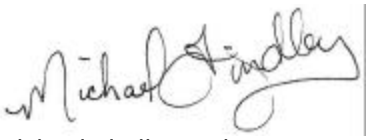
	Asset	Description	s/n	Cycle	Last Cal
(1) **Temperature, Humidity, Vibration**					
	i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **RF Power**					
X	i00020	HP 8901A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

Results: Frequency Stability (Voltage Variation)

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

Limit, ppm	=	5
Limit, Hz	=	787
Battery End Point (Voltage)	=	10.7

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
115	15.2	157.425045	+45	
100	13.2	157.425050	+50	Less than 1
85	11.2	157.425062	+62	
BEP	10.7	157.455062	+62	



Performed by: Michael Findley, Laboratory Manager

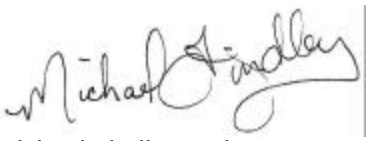
Name of Test: User Controls

Specification: 47 CFR 80.203(b)

Statement

The external controls of the maritime station transmitter capable of operation in the 156-162 MHz band only provides for selection of maritime channels for which the maritime station is authorized. This transmitter is not capable of being programmed by station operators using external controls to transmit on channels other than those programmed by the manufacturer, service or maintenance personal.

The EUT fully complies with the requirements of 47 CFR 80.203 (b).



Performed by: Michael Findley, Laboratory Manager

Name of Test: Power Output Over Time

Specification: 47 CFR 80.959(c)(1)(2)&(3)

Measurement Procedure

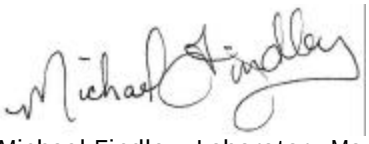
The EUT was connected to a resistive coaxial attenuator of normal load impedance, and the unmodulated output power was measured by means of an R. F. Power meter.

Measurement accuracy is ±3%.

The transmitter was operated continuously.

Measurements summary:

Time, Min.	Supply Voltage, vdc	RF Power Output, Watts
0	13.8	50
10	13.8	50



Performed by: Michael Findley, Laboratory Manager

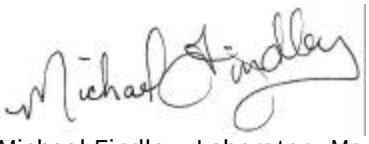
Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation = 16K0F3E / F1D

Necessary Bandwidth Calculation:

Maximum Modulation (M), kHz		3
Maximum Deviation (D), kHz	=	5
Constant Factor (K)	=	1
Necessary Bandwidth (B_N), kHz	=	(2 x M) + (2 x K x D)
	=	16



Performed by: Michael Findley, Laboratory Manager

Name of Test: Requirements for DSC

Specification: 47 CFR 80.225

This section specifies the requirements for voluntary digital selective calling (DSC) equipment and selective calling equipment installed in ship and coast stations. Reference to any CCIR Recommendation in this section is to the most recent CCIR approved Recommendation that does not prevent the use of existing equipment.

DSC equipment voluntarily installed in coast or ship stations must meet either the requirements of CCIR Recommendation 493 (including only equipment classes A, B, D, and E) or RTCM Paper 56-5/SC101-STD. DSC equipment must not be used with the sensors referred to in Sec. 80.179(e)(2). DSC equipment used on compulsorily fitted ships must meet the requirements contained in subpart W for GMDSS.

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: David E. Lee, Quality Assurance Manager

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Chandler, Arizona 85225-7176
(480) 926-3100 phone, fax (480) 926-3598