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

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

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

PAGE NO.

NAME OF TEST: Carrier Output Power (Conducted)

SPECIFICATION: 47 CFR 2.1046(a)

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

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

1. 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.

2. Measurement accuracy is ±3%.

MEASUREMENT RESULTS
(Worst case)

FREQUENCY OF CARRIER, MHz = 815.50, 806.05, 824.90

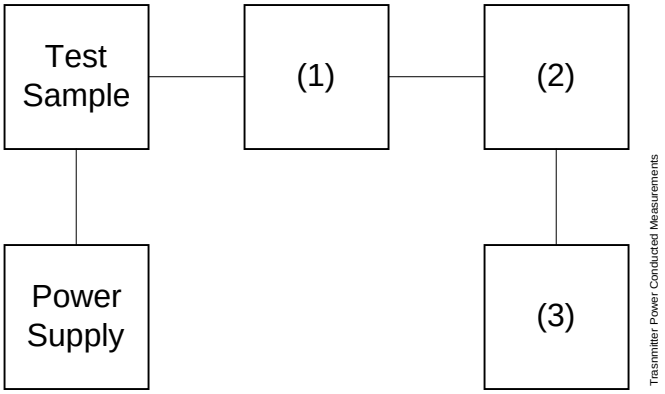
POWER SETTING	R. F. POWER, WATTS
Low	1
High	3.11

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

TRANSMITTER POWER CONDUCTED MEASUREMENTS

TEST 1: R. F. POWER OUTPUT
TEST 2: FREQUENCY STABILITY



Asset	Description (as applicable)	s/n
(1)	COAXIAL ATTENUATOR	
i00122	Narda 766-10	7802
i00123	Narda 766-10	7802A
i00069	Bird 8329 (30 dB)	1006
i00113	Sierra 661A-3D	1059
(2)	POWER METERS	
i00014	HP 435A	1733A05836
i00039	HP 436A	2709A26776
i00020	HP 8901A POWER MODE	2105A01087
(3)	FREQUENCY COUNTER	
i00042	HP 5383A	1628A00959
i00019	HP 5334B	2704A00347
i00020	HP 8901A FREQUENCY MODE	2105A01087

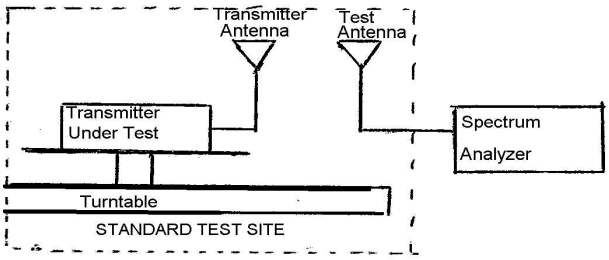
PAGE NO.

NAME OF TEST: ERP Carrier Power (Radiated)

SPECIFICATION: TIA/EIA 603A (Substitution Method)

2.2.17.1 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.

2.2.17.2 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 = $10 \log_{10} \Sigma\, 10(\text{LVL} - \text{LOSS})/10$ (dBm)

RESULTS

	806.55 MHZ LVL, dbm	815.5 MHz LVL, dbm	869.9 MHz LVL, dbm	Path Loss, db
0˚	34.7	32.5	35.3	0.4
45˚	33.2	34.6	34.1	0.4
90˚	33.4	35.2	34.6	0.4
135˚	33.0	35.0	35.2	0.4
180˚	32.4	34.6	34.6	0.4
225˚	33.8	35.9	34.2	0.4
270˚	32.5	35.0	34.1	0.4
315˚	32.9	34.8	35.1	0.4

	806.55 MHZ	815.5 MHz	869.9 MHz
Av. Radiated Power:	33.64 dbm	35.48 dbm	35.05 dbm

PAGE NO.

NAME OF TEST: Unwanted Emissions (Transmitter Conducted)

SPECIFICATION: 47 CFR 2.1051

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

TEST EQUIPMENT: As per attached page

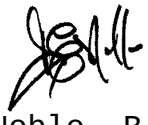
MEASUREMENT PROCEDURE

1. The emissions were measured for the worst case as follows:
   (a): within a band of frequencies defined by the carrier frequency plus and minus one channel.
   (b): 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.

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

3. MEASUREMENT RESULTS: ATTACHED FOR WORST CASE

FREQUENCY OF CARRIER, MHz	=	815.50, 806.05, 824.90
SPECTRUM SEARCHED, GHz	=	0 to 10 x F_C
MAXIMUM RESPONSE, Hz	=	1410
ALL OTHER EMISSIONS	=	≥ 20 dB BELOW LIMIT

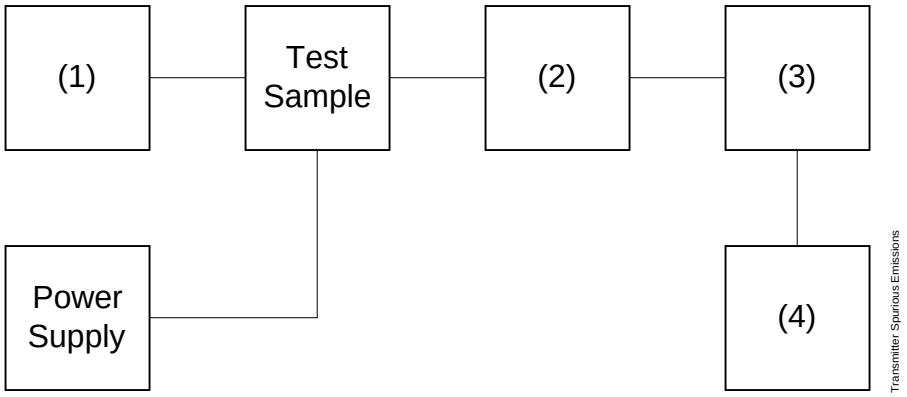


PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

TRANSMITTER SPURIOUS EMISSION

TEST A. OCCUPIED BANDWIDTH (IN-BAND SPURIOUS)
TEST B. OUT-OF-BAND SPURIOUS



Transmitter Spurious Emissions

Asset	Description (as applicable)	s/n
(1)	AUDIO OSCILLATOR/GENERATOR	
i00010	HP 204D	1105A04683
i00017	HP 8903A	2216A01753
i00012	HP 3312A	1432A11250
(2)	COAXIAL ATTENUATOR	
i00122	Narda 766-10	7802
i00123	Narda 766-10	7802A
i00069	Bird 8329 (30 dB)	1006
i00113	Sierra 661A-3D	1059
(3)	FILTERS; NOTCH, HP, LP, BP	
i00126	Eagle TNF-1	100-250
i00125	Eagle TNF-1	50-60
i00124	Eagle TNF-1	250-850
(4)	SPECTRUM ANALYZER	
i00048	HP 8566B	2511A01467
i00029	HP 8563E	3213A00104

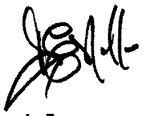
PAGE NO.

NAME OF TEST: Unwanted Emissions (Transmitter Conducted)

LIMIT(S), dBc: -(50+10xLOG P) = -50 (1 Watt)
-(50+10xLOG P) = -54.8 (3 Watts)

Low Power g01c0181: 2001-Dec-12 Wed 09:52:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, dBm	LEVEL, dBc	MARGIN, dB
806.050000	1612.100000	-50.5	-80.5	-30.5
815.500000	1630.926000	-50.7	-80.7	-30.7
824.900000	1649.797000	-51.2	-81.2	-31.2
806.050000	2418.134000	-49.9	-79.9	-29.9
815.500000	2446.962000	-50	-80	-30
824.900000	2474.544000	-49.6	-79.6	-29.6
806.050000	3223.751000	-52.9	-82.9	-32.9
815.500000	3261.581000	-52.6	-82.6	-32.6
824.900000	3299.921000	-53	-83	-33
806.050000	4030.151000	-52.5	-82.5	-32.5
815.500000	4077.652000	-53.7	-83.7	-33.7
824.900000	4124.239000	-53.8	-83.8	-33.8
806.050000	4836.041000	-53	-83	-33
815.500000	4893.040000	-52.4	-82.4	-32.4
824.900000	4949.613000	-52.5	-82.5	-32.5
806.050000	5642.475000	-52.4	-82.4	-32.4
815.500000	5708.223000	-53.1	-83.1	-33.1
824.900000	5774.413000	-53.2	-83.2	-33.2
806.050000	6448.599000	-46.7	-76.7	-26.7
815.500000	6523.867000	-47.3	-77.3	-27.3
824.900000	6598.766000	-46.7	-76.7	-26.7
806.050000	7254.200000	-48.3	-78.3	-28.3
815.500000	7339.899000	-47.4	-77.4	-27.4
824.900000	7424.109000	-46.6	-76.6	-26.6
806.050000	8060.517000	-47.1	-77.1	-27.1
815.500000	8155.474000	-47.2	-77.2	-27.2
824.900000	8248.876000	-47.8	-77.8	-27.8
806.050000	8866.245000	-47.4	-77.4	-27.4
815.500000	8970.379000	-48.1	-78.1	-28.1
824.900000	9073.950000	-47.2	-77.2	-27.2
806.050000	9672.876000	-47.5	-77.5	-27.5
815.500000	9785.797000	-47.6	-77.6	-27.6
824.900000	9898.629000	-47.3	-77.3	-27.3
806.050000	10478.952000	-47.1	-77.1	-27.1
815.500000	10601.891000	-46.8	-76.8	-26.8
824.900000	10723.345000	-47.4	-77.4	-27.4
806.050000	11284.602000	-47	-77	-27
815.500000	11416.868000	-47.4	-77.4	-27.4
824.900000	11548.626000	-46.2	-76.2	-26.2
806.050000	12091.107000	-45.9	-75.9	-25.9
815.500000	12232.315000	-47	-77	-27
824.900000	12373.578000	-46.6	-76.6	-26.6



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

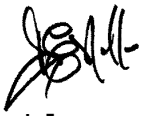
PAGE NO.

NAME OF TEST: Unwanted Emissions (Transmitter Conducted)

LIMIT(S), dBc: -(50+10xLOG P) = -50 (1 Watt)
-(50+10xLOG P) = -54.8 (3 Watts)

High Power g01c0180: 2001-Dec-12 Wed 09:47:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, dBm	LEVEL, dBc	MARGIN, dB
806.050000	1612.262000	-40.5	-75.2	-20.5
815.500000	1631.309000	-39.6	-74.3	-19.6
824.900000	1649.721000	-41.8	-76.5	-21.8
806.050000	2417.994000	-40.3	-75	-20.3
815.500000	2446.284000	-41	-75.7	-21
824.900000	2474.809000	-40	-74.7	-20
806.050000	3224.086000	-43.7	-78.4	-23.7
815.500000	3261.605000	-43.7	-78.4	-23.7
824.900000	3299.649000	-42.8	-77.5	-22.8
806.050000	4029.829000	-43.6	-78.3	-23.6
815.500000	4077.487000	-41.7	-76.4	-21.7
824.900000	4124.887000	-43.2	-77.9	-23.2
806.050000	4836.772000	-42.7	-77.4	-22.7
815.500000	4893.006000	-43.1	-77.8	-23.1
824.900000	4949.661000	-42.7	-77.4	-22.7
806.050000	5642.554000	-41.8	-76.5	-21.8
815.500000	5708.222000	-41.8	-76.5	-21.8
824.900000	5774.654000	-43	-77.7	-23
806.050000	6448.308000	-37.6	-72.3	-17.6
815.500000	6523.649000	-37.4	-72.1	-17.4
824.900000	6598.855000	-37.2	-71.9	-17.2
806.050000	7254.483000	-36.9	-71.6	-16.9
815.500000	7339.939000	-37.9	-72.6	-17.9
824.900000	7423.941000	-36	-70.7	-16
806.050000	8060.845000	-37.3	-72	-17.3
815.500000	8155.059000	-37.5	-72.2	-17.5
824.900000	8248.539000	-37.6	-72.3	-17.6
806.050000	8866.105000	-36.6	-71.3	-16.6
815.500000	8970.232000	-36.5	-71.2	-16.5
824.900000	9073.826000	-37.9	-72.6	-17.9
806.050000	9672.885000	-36.6	-71.3	-16.6
815.500000	9785.559000	-36.2	-70.9	-16.2
824.900000	9898.558000	-36.9	-71.6	-16.9
806.050000	10478.977000	-37.4	-72.1	-17.4
815.500000	10601.169000	-37.1	-71.8	-17.1
824.900000	10723.347000	-35.6	-70.3	-15.6
806.050000	11285.192000	-35.6	-70.3	-15.6
815.500000	11416.788000	-37.4	-72.1	-17.4
824.900000	11549.023000	-36.9	-71.6	-16.9
806.050000	12090.796000	-35.7	-70.4	-15.7
815.500000	12232.633000	-37.5	-72.2	-17.5
824.900000	12373.349000	-36.5	-71.2	-16.5



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Field Strength of Spurious Radiation

SPECIFICATION: 47 CFR 2.1053(a)

GUIDE: ANSI/TIA/EIA-603-1992, Paragraph 1.2.12

MEASUREMENT PROCEDURE

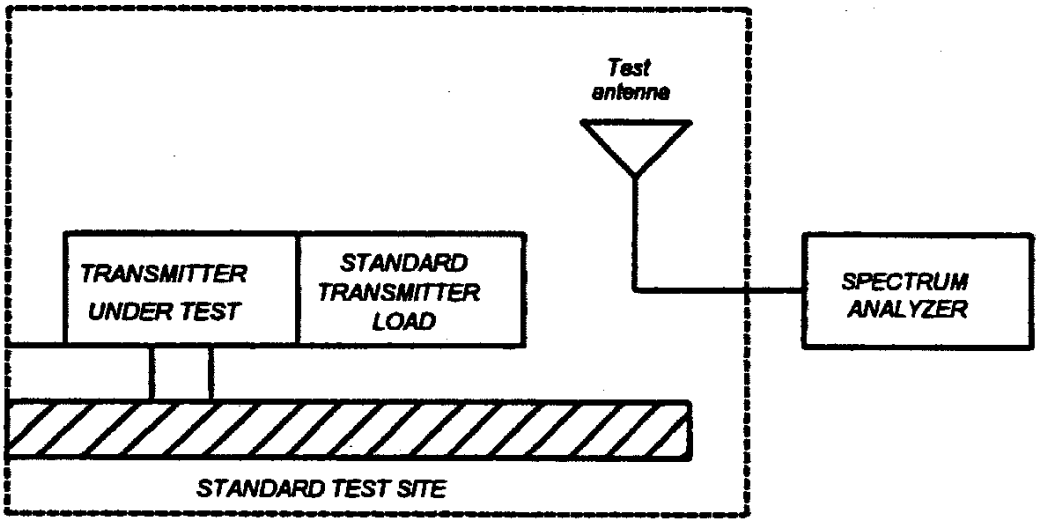
1.2.12.1 Definition: Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

1.2.12.2 Method of Measurement

A) Connect the equipment as illustrated

B) Adjust the spectrum analyzer for the following settings:
1) Resolution Bandwidth ≤3 kHz.
2) Video Bandwidth ≥10 kHz
3) Sweep Speed ≤2000 Hz/second
4) Detector Mode = Positive Peak

C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load which is placed on the turntable. The RF cable to this load should be of minimum length.



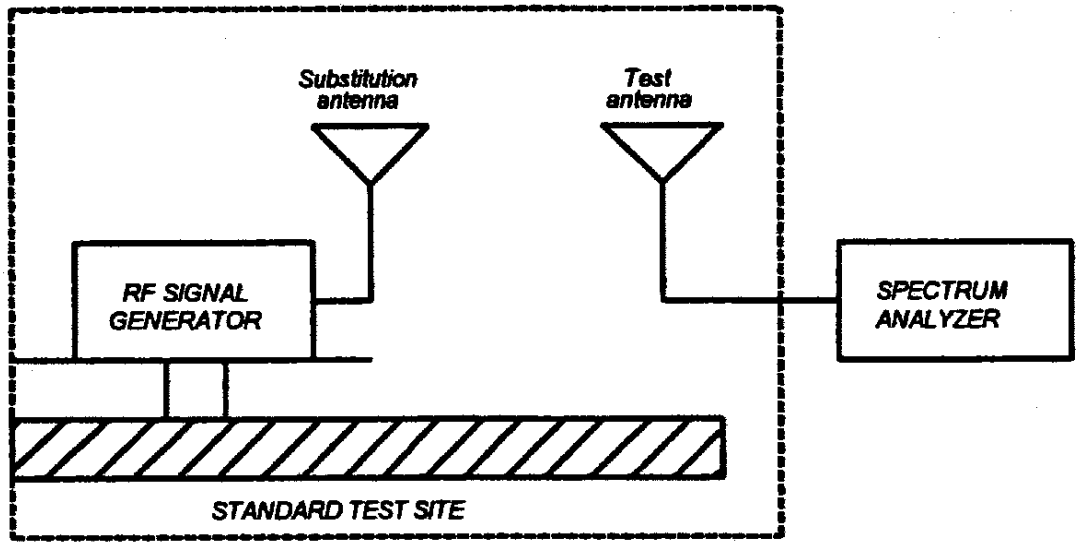
PAGE NO.

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.

PAGE NO.

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 (as applicable)	Description	s/n	Cycle (Per ANSI C63.4-1992/2000 Draft, 10.1.4)	Last Cal
TRANSDUCER				
i00088	EMCO 3109-B 25MHz-300MHz	2336	12 mo.	Sep-01
i00065	EMCO 3301-B Active Monopole	2635	12 mo.	Sep-01
i00089	Aprel 2001 200MHz-1GHz	001500	12 mo.	Sep-01
i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Sep-01
AMPLIFIER				
i00028	HP 8449A	2749A00121	12 mo.	Mar-01
SPECTRUM ANALYZER				
i00029	HP 8563E	3213A00104	12 mo.	Aug-01
i00033	HP 85462A	3625A00357	12 mo.	May-01
i00048	HP 8566B	2511AD1467	6 mo.	Nov-01

MICROPHONE, ANTENNA PORT, AND CABELING

Microphone Yes/No Y Cable Length 1.0 Meters
Antenna Port Terminated Yes/No Y Antenna Gain 0 dbd

PAGE NO.

NAME OF TEST: Field Strength of Spurious Radiation

g01c0191: 2001-Dec-18 Tue 08:56:00
STATE: 2:High Power

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	ERP, dBm	ERP, dbc
815.500000	1631.002500	-25.9	≤-59.22
815.500000	2446.508000	-29.4	≤-59.22
815.500000	3261.985000	-33.2	≤-59.22
815.500000	4077.491667	-32.8	≤-59.22
815.500000	4892.991667	-38.5	≤-59.22
815.500000	5708.497500	-31.8	≤-59.22
815.500000	6523.983334	-24.3	≤-59.22
815.500000	7339.500834	-41.8	≤-59.22
815.500000	8155.009167	-50.5	≤-59.22

SUPERVISED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)

SPECIFICATION: 47 CFR 2.1049(c)(1)

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

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

1. The EUT and test equipment were set up as shown on the following page, with the Spectrum Analyzer connected.

2. 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.

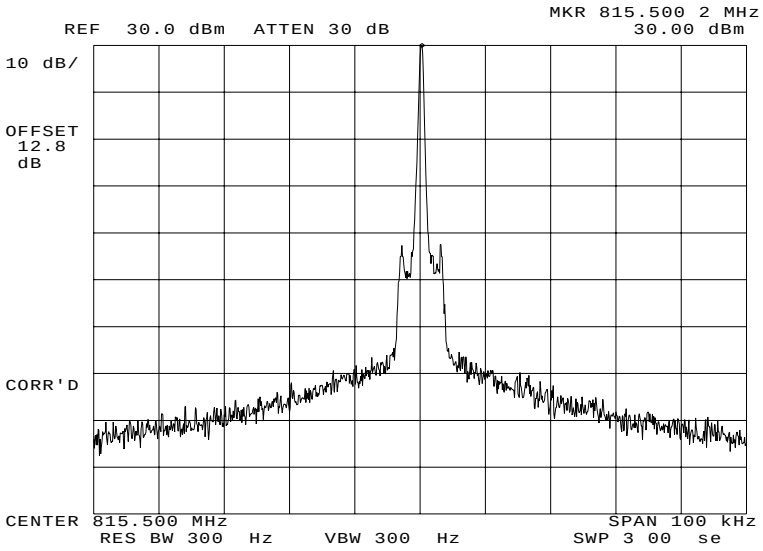
3. For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

4. The Occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

5. MEASUREMENT RESULTS: ATTACHED

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0173: 2001-Dec-11 Tue 16:12:00
STATE: 1:Low Power

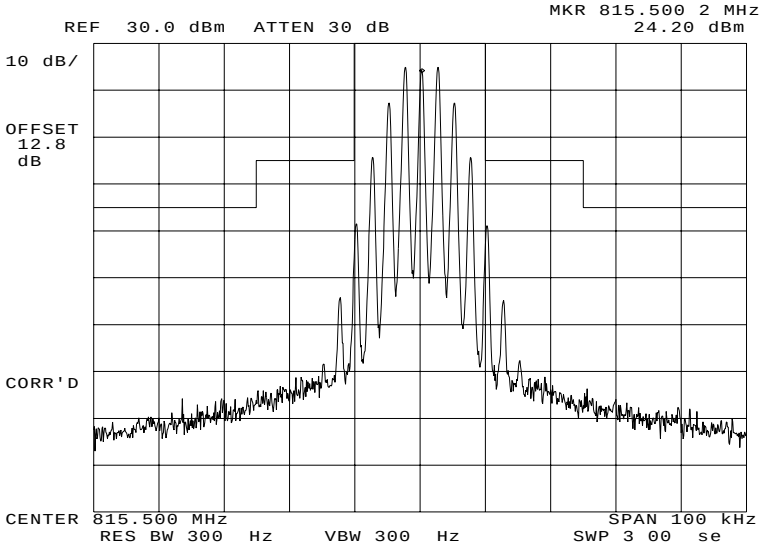


POWER: LOW
MODULATION: NONE

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0174: 2001-Dec-11 Tue 16:13:00
STATE: 1:Low Power

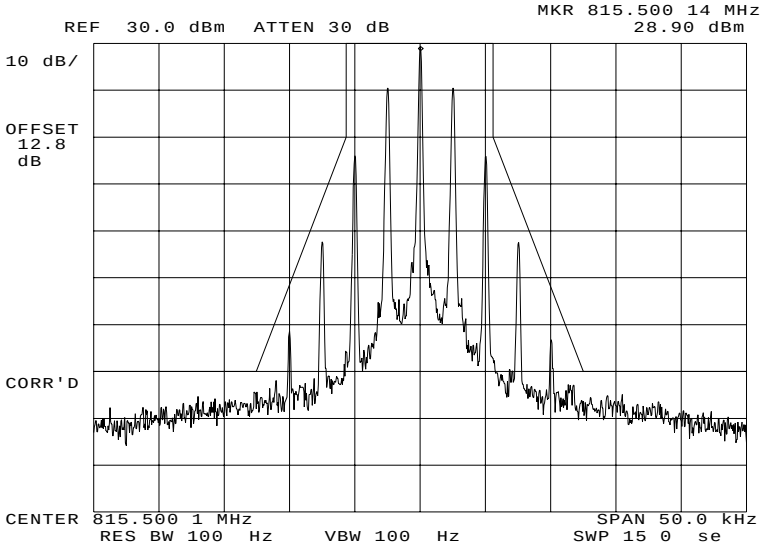


POWER: LOW
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0177: 2001-Dec-11 Tue 16:19:00
STATE: 1:Low Power

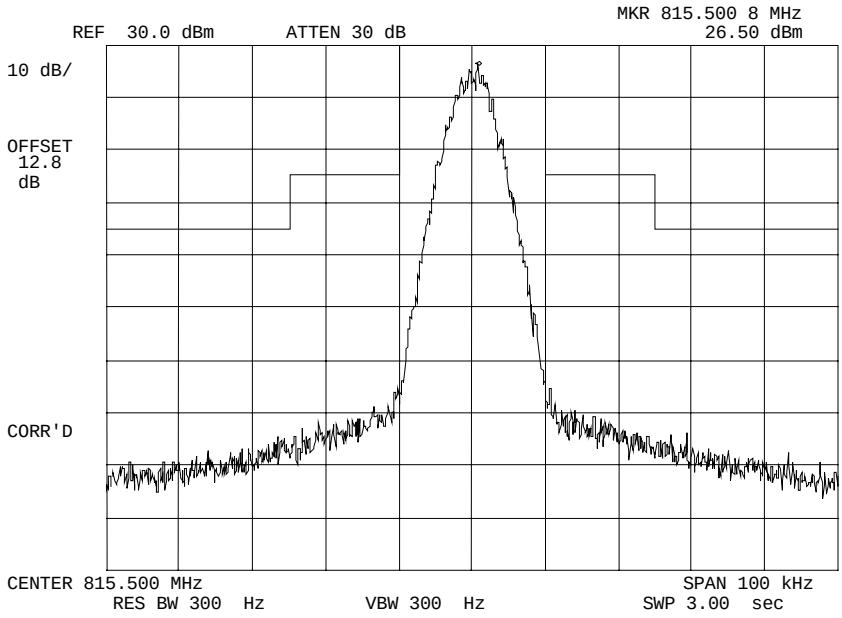


POWER: LOW
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: D, VHF/UHF 12.5kHz BW

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g0210006: 2002-Jan-02 Wed 13:37:00
STATE: 1:Low Power

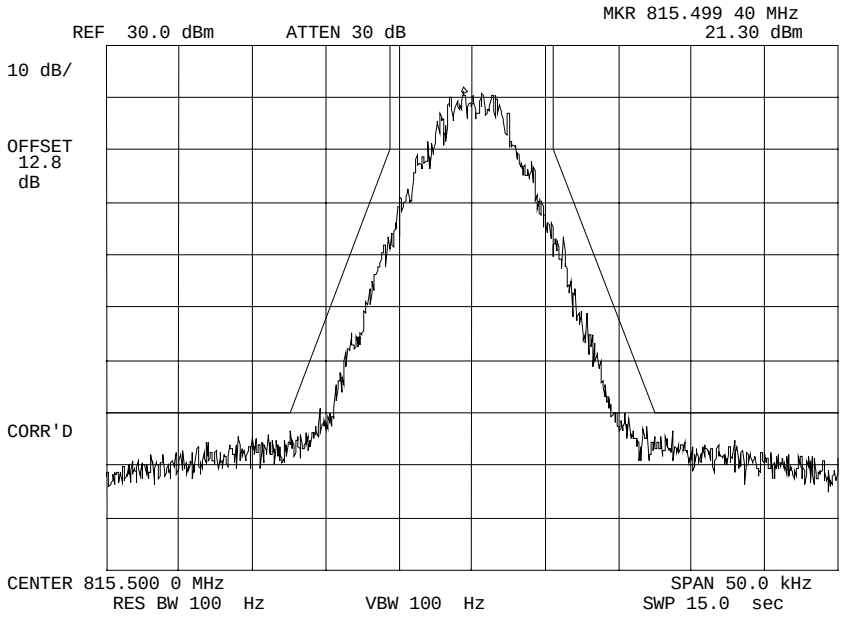


POWER: LOW
MODULATION: APCO PROJECT 25
MASK: B, VHF/UHF 25kHz, w/LPF

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g0210004: 2002-Jan-02 Wed 13:32:00
STATE: 1:Low Power

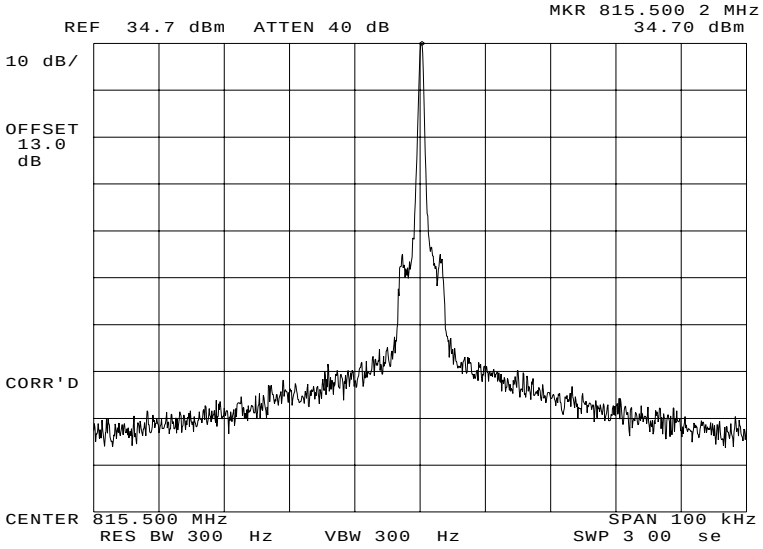


POWER: LOW
MODULATION: APCO PROJECT 25
MASK: D, VHF/UHF 12.5kHz BW

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0172: 2001-Dec-11 Tue 16:10:00
STATE: 2:High Power

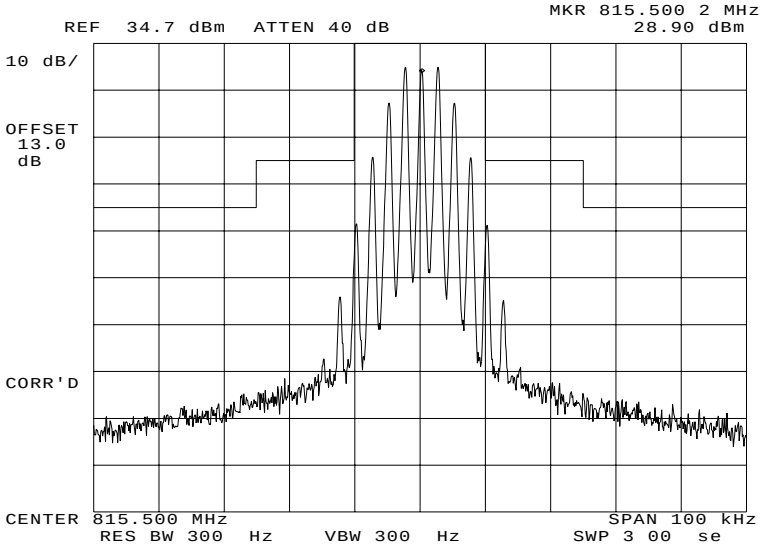


POWER: HIGH
MODULATION: NONE

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0175: 2001-Dec-11 Tue 16:14:00
STATE: 2:High Power

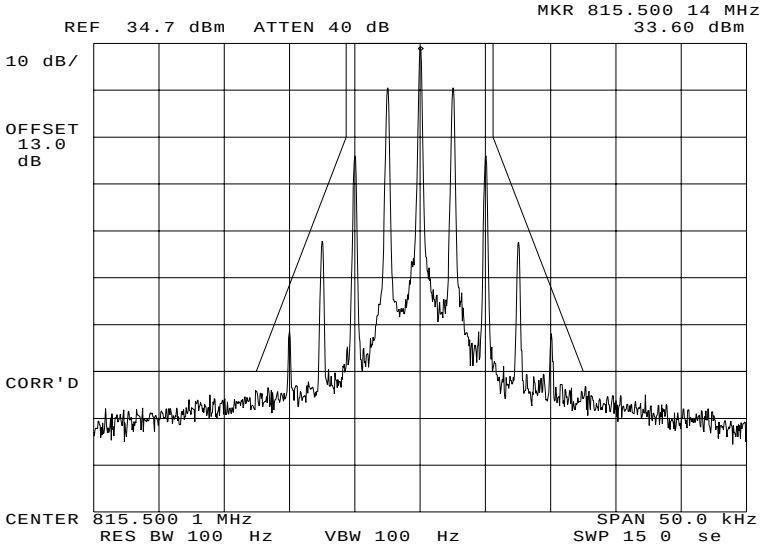


POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: B, VHF/UHF 25kHz, w/LPF

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g01c0176: 2001-Dec-11 Tue 16:18:00
STATE: 2:High Power

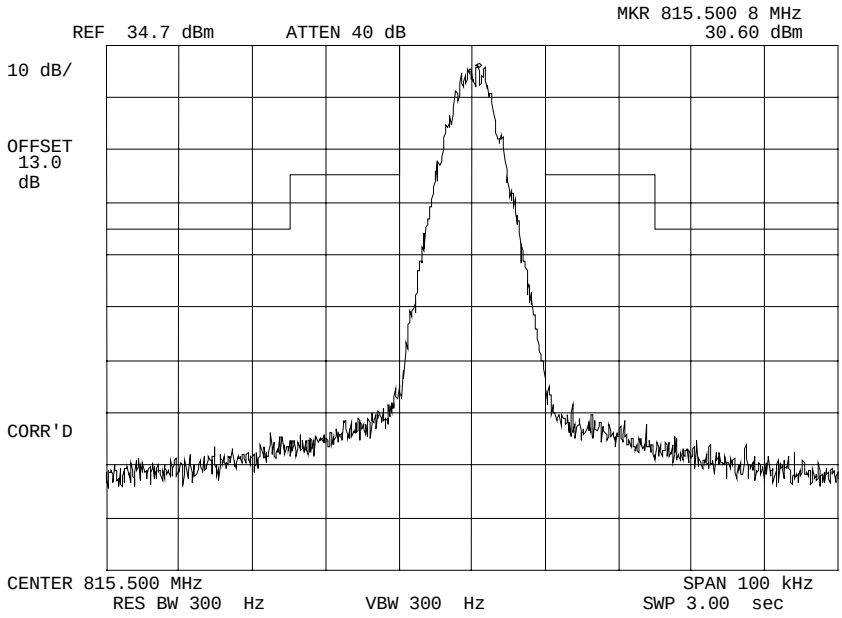


POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: D, VHF/UHF 12.5kHz BW

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g0210002: 2002-Jan-02 Wed 13:24:00
STATE: 2:High Power

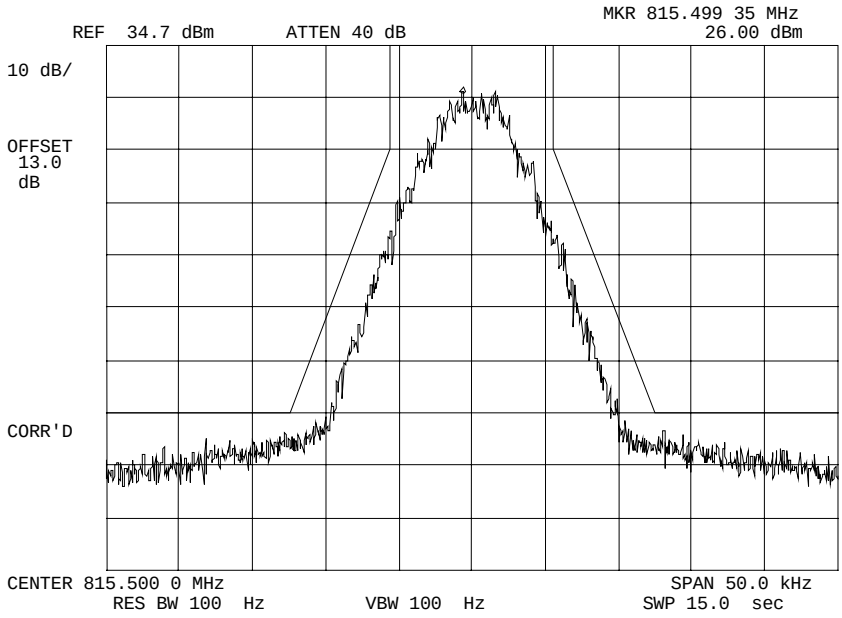


POWER: HIGH
MODULATION: APCO PROJECT 25
MASK: B, VHF/UHF 25kHz, w/LPF

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Emission Masks (Occupied Bandwidth)
g0210005: 2002-Jan-02 Wed 13:35:00
STATE: 2:High Power



POWER: HIGH
MODULATION: APCO PROJECT 25
MASK: D, VHF/UHF 12.5kHz BW

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

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

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

1. 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.

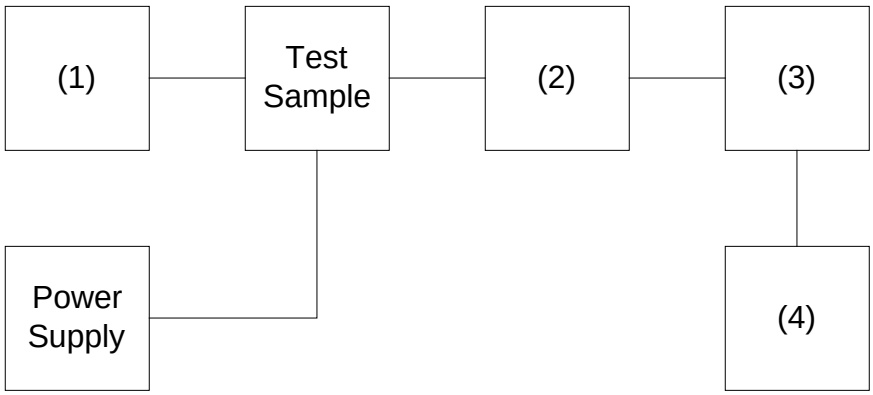
2. The audio output was connected at the output to the modulated stage.

3. MEASUREMENT RESULTS: ATTACHED

PAGE NO.

TRANSMITTER TEST SET-UP

TEST A. MODULATION CAPABILITY/DISTORTION
TEST B. AUDIO FREQUENCY RESPONSE
TEST C. HUM AND NOISE LEVEL
TEST D. RESPONSE OF LOW PASS FILTER
TEST E. MODULATION LIMITING

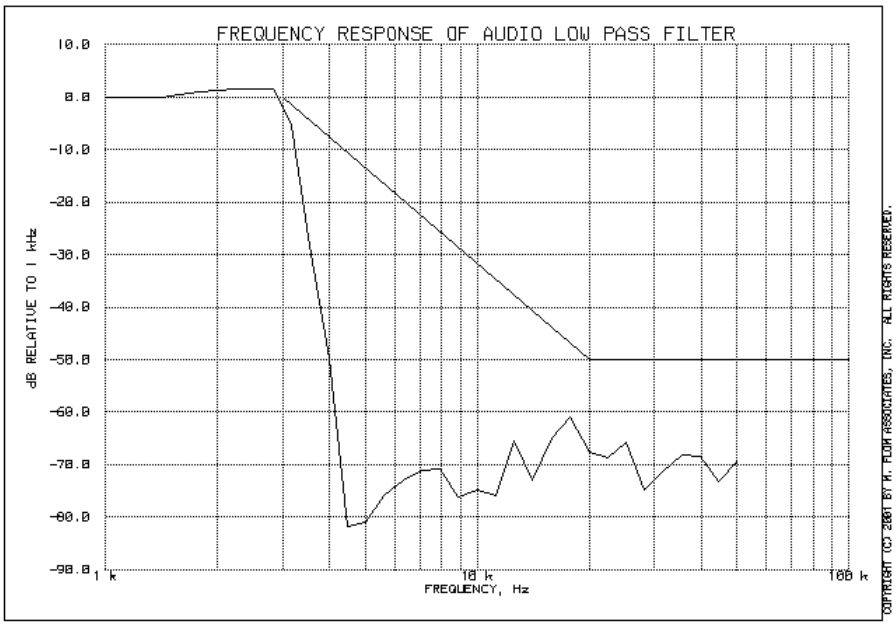


Transmitter Test Set Up

Asset	Description (as applicable)	s/n
(1)	Audio Oscillator	
i00010	HP 204D	1105A04683
i00017	HP 8903A	2216A01753
i00118	HP 33120A	US36002064
(2)	COAXIAL ATTENUATOR	
i00122	NARDA 766-10	7802
i00123	NARDA 766-10	7802A
i00113	SIERRA 661A-3D	1059
i00069	BIRD 8329 (30 dB)	10066
(3)	MODULATION ANALYZER	
i00020	HP 8901A	2105A01087
(4)	AUDIO ANALYZER	
i00017	HP 8903A	2216A01753

PAGE NO.

NAME OF TEST: Audio Low Pass Filter (Voice Input)
g01c0116: 2001-Dec-11 Tue 15:32:00
STATE: 0:General



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Audio Frequency Response

SPECIFICATION: 47 CFR 2.1047(a)

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

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

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

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

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

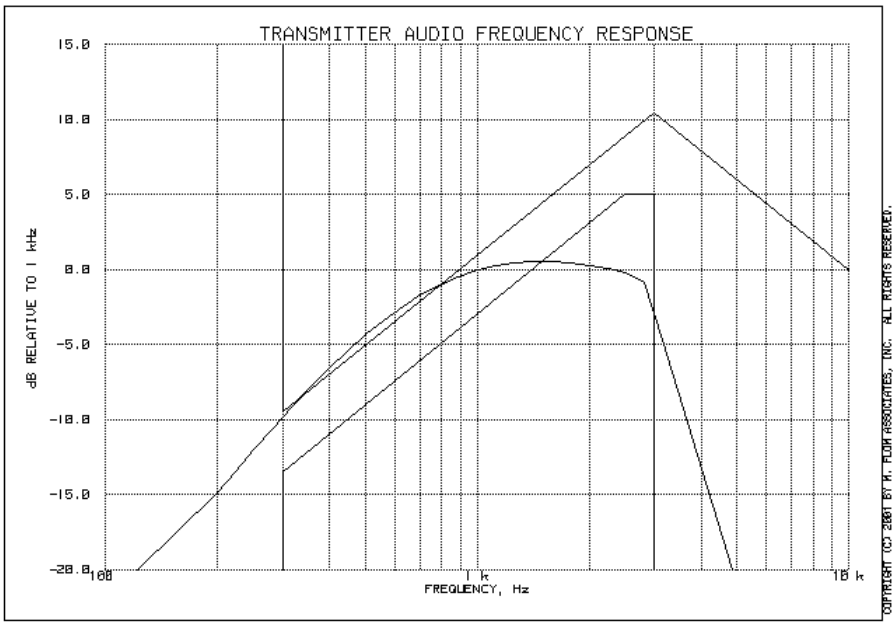
4. With input levels held constant and below limiting at all frequencies, the audio signal generator was varied from 100 Hz to 50 kHz.

5. The response in dB relative to 1 kHz was then measured, using the HP 8901A Modulation Analyzer.

6. MEASUREMENT RESULTS: ATTACHED

PAGE NO.

NAME OF TEST: Audio Frequency Response
g01c0115: 2001-Dec-11 Tue 15:27:00
STATE: 0:General



Frequency of Maximum Audio Response, Hz = 1410

Additional points:

FREQUENCY, Hz	LEVEL, dB
300	-9.80
20000	-26.67
30000	-26.98
50000	-27.21

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO.

NAME OF TEST: Modulation Limiting

SPECIFICATION: 47 CFR 2.1047(b)

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

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

1. The signal generator was connected to the input of the EUT as for "Frequency Response of the Modulating Circuit."

2. 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.

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

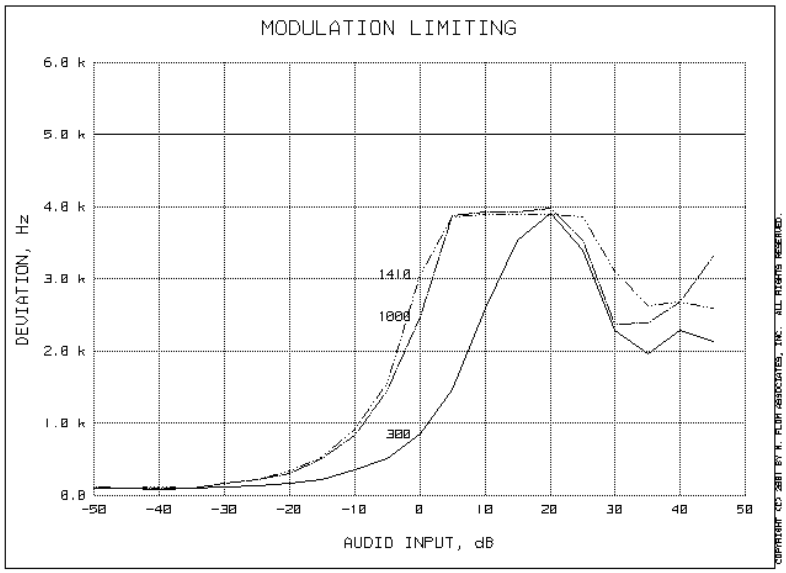
4. Measurements were performed for both negative and positive modulation and the respective results were recorded.

5. MEASUREMENT RESULTS: ATTACHED

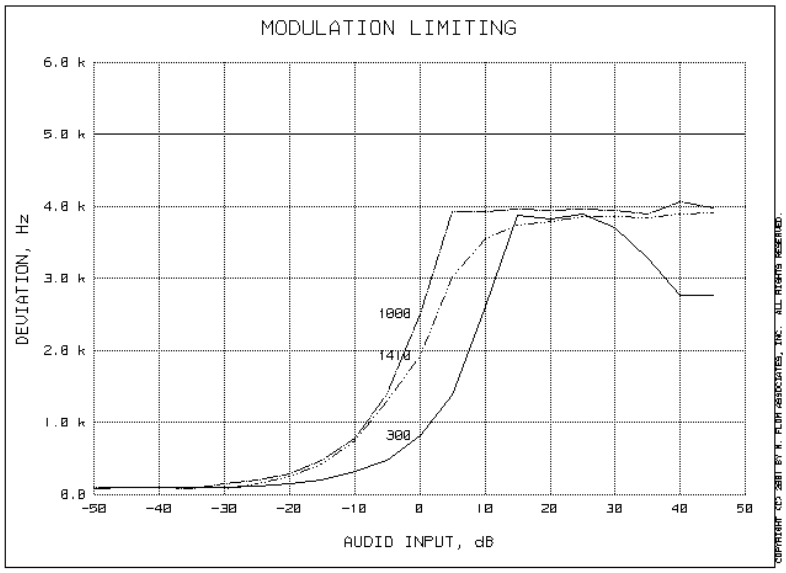
PAGE NO..

NAME OF TEST: Modulation Limiting
g01c0119: 2001-Dec-11 Tue 15:39:00
STATE: 0:General

Positive Peaks:



Negative Peaks:

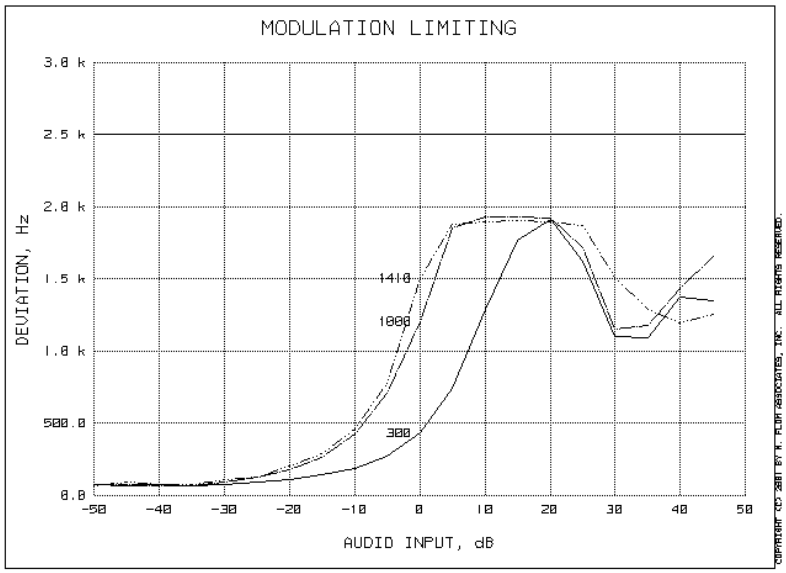


PERFORMED BY: Doug Noble, B.A.S. E.E.T.

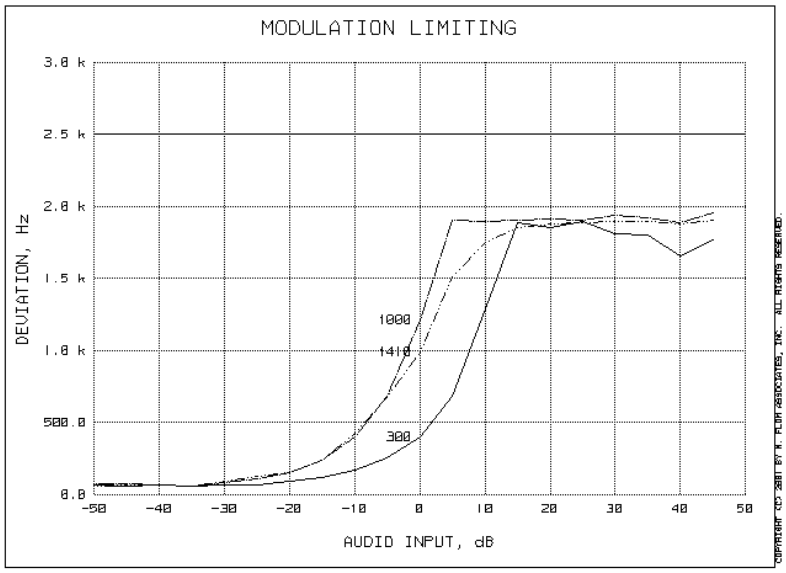
PAGE NO.

NAME OF TEST: Modulation Limiting
g01c0121: 2001-Dec-11 Tue 15:50:00
STATE: 0:General

Positive Peaks:



Negative Peaks:



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO..

NAME OF TEST: Frequency Stability (Temperature Variation)

SPECIFICATION: 47 CFR 2.1055(a)(1)

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

TEST CONDITIONS: As Indicated

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

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

2. 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.

3. 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.

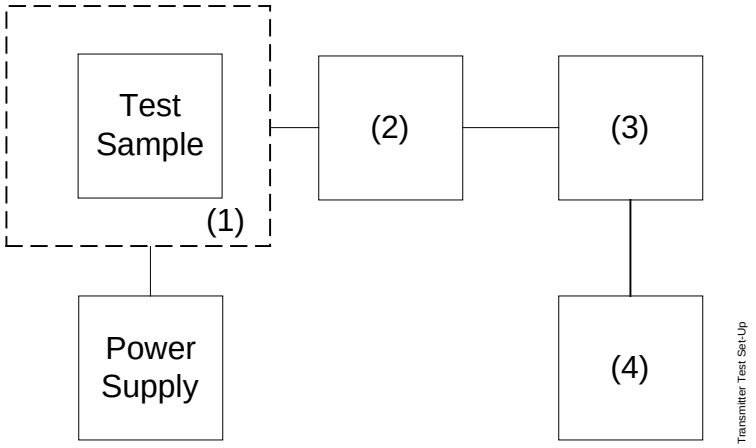
4. The temperature tests were performed for the worst case.

5. MEASUREMENT RESULTS: ATTACHED

PAGE NO.

TRANSMITTER TEST SET-UP

TEST A. OPERATIONAL STABILITY
TEST B. CARRIER FREQUENCY STABILITY
TEST C. OPERATIONAL PERFORMANCE STABILITY
TEST D. HUMIDITY
TEST E. VIBRATION
TEST F. ENVIRONMENTAL TEMPERATURE
TEST G. FREQUENCY STABILITY: TEMPERATURE VARIATION
TEST H. FREQUENCY STABILITY: VOLTAGE VARIATION

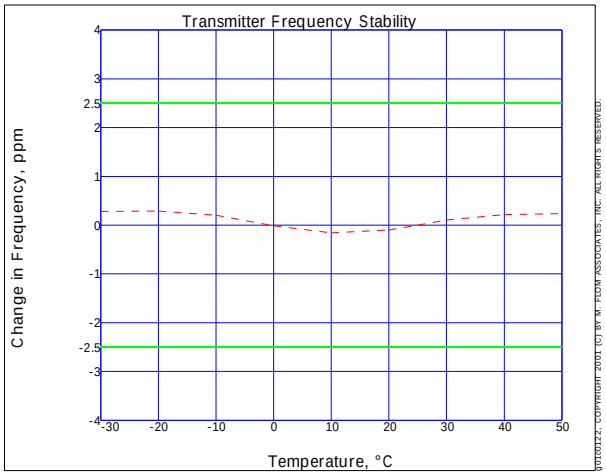


Transmitter Test Set-Up

Asset	Description	s/n
(as applicable)		
(1)	TEMPERATURE, HUMIDITY, VIBRATION	
i00027	Tenney Temp. Chamber	9083-765-234
i00	Weber Humidity Chamber	
i00	L.A.B. RVH 18-100	
(2)	COAXIAL ATTENUATOR	
i00122	NARDA 766-10	7802
i00123	NARDA 766-10	7802A
i00113	SIERRA 661A-3D	1059
i00069	BIRD 8329 (30 dB)	10066
(3)	R.F. POWER	
i00014	HP 435A POWER METER	1733A05839
i00039	HP 436A POWER METER	2709A26776
i00020	HP 8901A POWER MODE	2105A01087
(4)	FREQUENCY COUNTER	
i00042	HP 5383A	1628A00959
i00019	HP 5334B	2704A00347
i00020	HP 8901A	2105A01087

PAGE NO..

NAME OF TEST: Frequency Stability (Temperature Variation)
g01c0122: 2001-Dec-12 Wed 10:30:39
STATE: 0:General



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO..

NAME OF TEST: Frequency Stability (Voltage Variation)

SPECIFICATION: 47 CFR 2.1055(d)(1)

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

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

1. The EUT was placed in a temperature chamber at 25±5°C and connected as for "Frequency Stability - Temperature Variation" test.

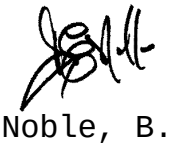
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

3. The variation in frequency was measured for the worst case.

RESULTS: Frequency Stability (Voltage Variation)
g01c0171: 2001-Dec-11 Tue 15:58:53
STATE: 0:General

LIMIT, ppm = 2.5
LIMIT, Hz = 2039
BATTERY END POINT (Voltage) = 6

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
85	6.37	815.500000	0	0.00
100	7.5	815.500000	0	0.00
115	8.62	815.500010	10	0.01
80	6	815.499990	-10	-0.01



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

NAME OF TEST: Necessary Bandwidth and Emission Bandwidth

SPECIFICATION: 47 CFR 2.202(g)

MODULATION = 16K0F3E

NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	= 3
MAXIMUM DEVIATION (D), kHz	= 5
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2xM)+(2xDxK)
	= 16.0

MODULATION = 11K0F3E

NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	= 3
MAXIMUM DEVIATION (D), kHz	= 2.5
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2xM)+(2xDxK)
	= 11.0

MODULATION = 8K1F1D

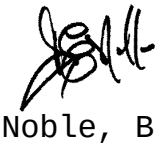
NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	= 1.41
MAXIMUM DEVIATION (D), kHz	= 2.5
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2xM)+(2xDxK)
	= 7.82

MODULATION = 8K1F1E

NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	= 1.41
MAXIMUM DEVIATION (D), kHz	= 2.5
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2xM)+(2xDxK)
	= 7.82



PERFORMED BY: Doug Noble, B.A.S. E.E.T.

END OF TEST REPORT

TESTIMONIAL AND STATEMENT OF CERTIFICATION

THIS IS TO CERTIFY THAT:

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: Morton Flom, P. Eng.