2.911:

TECHNICAL REPORT

NAME OF VENDOR:

Standard Communications Corp.
P.O. Box 92151
Los Angeles, CA 90009-2151

TRADE NAME:

Sportalk

FCC ID:

APV0398 ™

MODEL NO:

HX625A

PHOTOGRAPHS:

SEE LIST OF EXHIBITS

LIST OF GENERAL INFORMATION REQUIRED

IN ACCORDANCE WITH FCC RULES AND REGULATIONS,
VOLUME II, PART 2 AND TO

95B

Sub-part 2.1033

(b)(1): NAME AND ADDRESS OF APPLICANT:

Standard Communications Corp.

VENDOR:

Standard Communications Corp.
P.O. Box 92151
Los Angeles, CA 90009-2151

(b)(2): FCC ID: APV0398

MODEL NO: HX625A

QUANTITY PRODUCTION PLANNED.

(b)(4): TECHNICAL DESCRIPTION: SEE ATTACHED EXHIBITS

TYPE OF EMISSION: 11K0F3E

FREQUENCY RANGE, MHz: 462 to 467

POWER RATING, Watts: 0.5
SWITCHABLE ___ ADJUSTABLE ___ N/A _x_

MAXIMUM POWER RATING, Watts: 300

95.647: ANTENNA REQUIREMENT

The antenna is permanently attached to the E.U.T.	x
The antenna uses a unique coupling	___
The E.U.T. must be professionally installed	___
The antenna requirement does not apply	___

Sub-part 2.983(e): 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 2.981, 2.983, 2.985, 2.987, 2.989, 2.991, 2.993, 2.995, 2.997, 2.999 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
___ 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 Radiobeacons (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
_x_ 95 - Family Radio Services
___ 101 - Fixed Microwave Services

STANDARD TEST CONDITIONS and ENGINEERING PRACTICES

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

ROOM TEMPERATURE	= 25±5°C
ROOM HUMIDITY	= 20-50%
D.C. SUPPLY VOLTAGE, Vdc	= 4.5
A.C. SUPPLY VOLTAGE, Vac	= N/A
A.C. SUPPLY FREQUENCY, Hz	= N/A

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. 7.

NAME OF TEST: Carrier Output Power

SPECIFICATION: FCC: 47 CFR 95.639(d)
IC: RSS-119, Section 6.2

GUIDE: TIA/EIA-603, Paragraph 2.2.1

TEST CONDITIONS: Standard Temperature and Humidity (S. T. & H.)

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE (RADIATED)

1. The E.U.T. 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 of a dipole was calculated from the equation $P_{ERP}=((E \times R)^2/49.2)$ watts, where R = 3m.

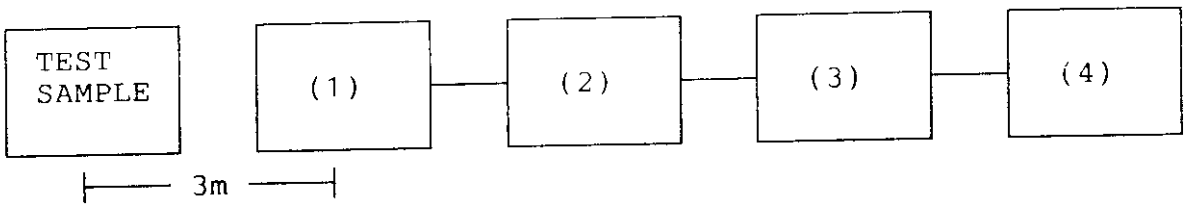
2. Measurement accuracy is ±1.5 dB.

MEASUREMENT RESULTS

NOMINAL, MHz	E-FIELD, mV/m	EIRP, Watts	ERP, Watts
467.712			0.5
462.562			0.5

SUPERVISED BY: MORTON FLOM, P. Eng.

TRANSMITTER RADIATED MEASUREMENTS



(1) TRANSDUCER

EMCO 3115	X
APELCO 2001 LOG PERIODIC	X
_____	___

(2) HIGH PASS FILTER

NARDA μPAD (IN-BAND ONLY)	X
TRILITHIC (OUT-OF-BAND ONLY)	X
_____	___

(3) PREAMP

HP 8449 (+30 dB) (OUT-OF-BAND ONLY)	X
_____	___

(4) SPECTRUM ANALYZER

HP 8566B	X
HP 8558B	___
HP 8557A	___
HP 8563E	X
_____	___

NAME OF TEST: Field Strength of Spurious Radiation

SPECIFICATION: FCC: 47 CFR 95.635(b)
IC: N/A

GUIDE: TIA/EIA-603, Section 2.2.12

TEST CONDITIONS: S. T. & H.

TEST EQUIPMENT: AS PER ATTACHED PAGE

MEASUREMENT PROCEDURE

1. A description of the measurement facilities was filed with the F.C.C. and was found to be in compliance with the requirements of Section 15.38, by letter from the F.C.C. dated March 3, 1997, FILE 31040/SIT. All pertinent changes will be reported to the Commission by up-date prior to March 2000.

2. At first, in order to locate all spurious frequencies and approximate amplitudes, and to determine proper equipment functioning, the test sample was set up at a distance of three meters from the test instrument. Valid spurious signals were determined by switching the power on and off.

3. In the field, the test sample was placed on a wooden turntable above ground at three (or thirty) meters away from the search antenna.

   In order to obtain the maximum response at each spurious frequency, the turntable was rotated. Also, the Search Antennas were raised and lowered vertically, and all cables were oriented. Excess power lead was coiled near the power supply.

4. Step 3 was repeated, using a horizontally polarized half-wave antenna. The higher of the two observations was noted.

5. The worst case for all channels is shown.

6. Measurement summary:

   FREQUENCY OF CARRIER, MHz = As indicated.

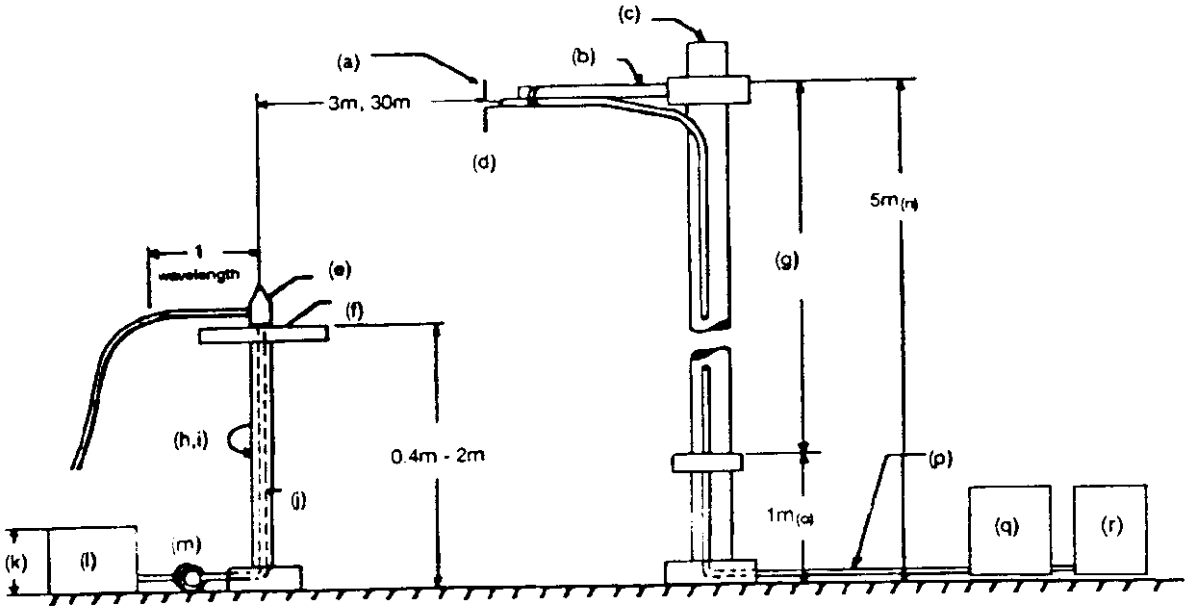
   SPECTRUM SEARCHED, GHz = 0 to 10 x F_C

   ALL OTHER EMISSIONS = ≥ 20 dB BELOW LIMIT

   LIMIT, dBc: -(50 + 10 LOG P_O) = ~~-47.0~~ -44

7. Measurement results: .25 not .5 ATTACHED FOR WORST CASE

RADIATED TEST SETUP



NOTES:

(a) Search Antenna - Rotatable on boom.
(b) Non-metallic boom.
(c) Non-metallic mast.
(d) Adjustable horizontally.
(e) Equipment Under Test.
(f) Turntable.
(g) Boom adjustable in height.
(h) External control cables routed horizontally at least one wavelength.
(i) Rotatable.
(j) Cables routed through hollow turntable center.
(k) 30 cm or less.
(l) External power source.
(m) 10 cm diameter coil of excess cable.
(n) 25 cm (V), 1 m-7 m (V, H).
(o) 25 cm from bottom end of 'V', 1 m normally.
(p) Calibrated Cable at least 10 m in length.
(q) Amplifier (optional).
(r) Spectrum Analyzer.

PAGE NO. 11.
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

1.24

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	ERP dBm
462.562	462.566000	98.5	3	23.4	121.9	3	26.7
467.712	467.695000	96.3	3	23.6	119.8	3	24.6

.227 mW

SPURIOUS:

26.7 −

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, dBm
462.562	925.12	43.6	31.2	-20.4
467.712	935.42	43.5	31.4	-20.4
462.562	1387.69	35.7	35.9	-23.6
467.712	1403.12	32.1	36.0	-27.1
462.562	1850.26	38.8	40.4	-16.0
467.712	1870.84	37.6	40.6	-17.0
462.562	2312.79	31.3	44.1	-19.8
467.712	2338.57	29.8	44.4	-21.0
462.562	2775.38	17.3	47.7	-30.2
467.712	2806.26	18.7	48.0	-28.5
462.562	3237.95	9.6	51.2	-34.4
467.712	3273.99	10.5	51.3	-33.5
462.562	3700.49	10.8	52.4	-32.1
467.712	3741.70	10.8	52.5	-31.9
462.562	4163.01	5.9	52.8	-36.5
467.712	4209.42	8.5	52.7	-34.1
462.562	4625.64	6.8	52.6	-35.8
467.712	4677.13	8.8	52.8	-33.6

-173

43 + 10 LOG P
P = .25
43 - 6.02 = 36.979
37 dB

PAGE NO.	12.
NAME OF TEST:	Emission Masks (Occupied Bandwidth)
SPECIFICATION:	FCC: 47 CFR 95.635(b) IC: RSS-119, Section 6.4
GUIDE:	TIA/EIA-603, Paragraph 2.2.11
TEST CONDITIONS:	S. T. & H.
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 ±1.25 kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.

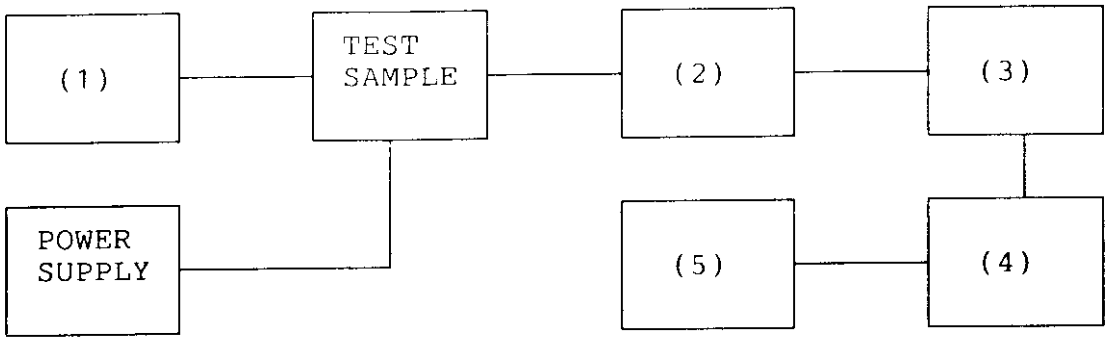
3. For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

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

5. MEASUREMENT RESULTS: ATTACHED

TRANSMITTER SPURIOUS EMISSION

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



(1) AUDIO OSCILLATOR/GENERATOR

HP 204D	___
HP 8903A	___
HP 3312A	x
_____	___

(2) COAXIAL ATTENUATOR

NARDA 766-10	___
SIERRA 661A-30	x
BIRD 8329 (30 dB)	x
_____	___

(3) FILTERS; NOTCH, HP, LP, BP

CIRQTEL FHT	___
EAGLE TNF-1	x
PHELPS DODGE PD-495-8	___
_____	___

(4) SPECTRUM ANALYZER

HP 8566B	x
HP 8563E	___
_____	___

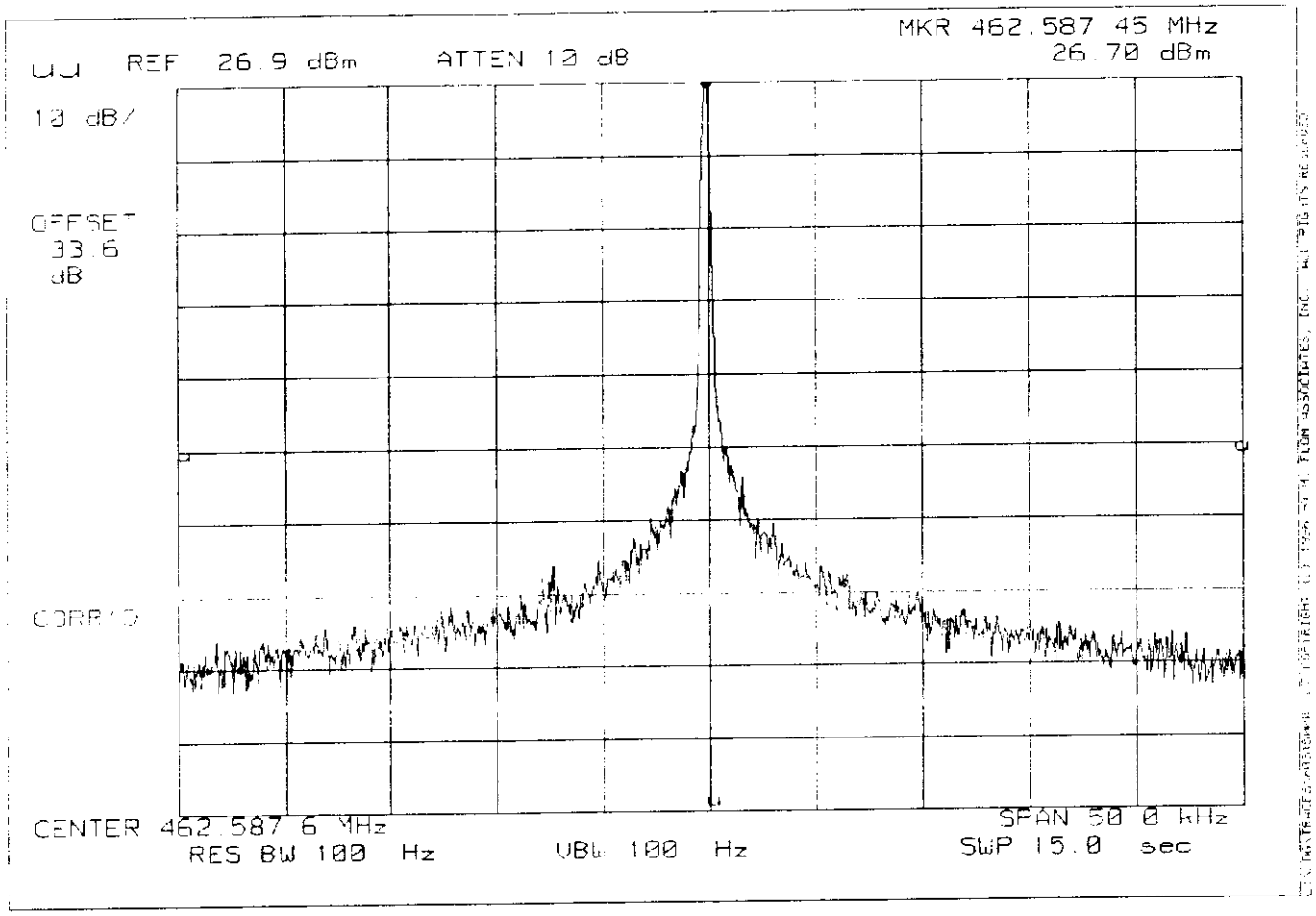
(5) SCOPE

HP 1741A	___
HP 181T	___
TEK 935	___
HP 54502A	___
_____	___

APV0398

PAGE 14.1.
SPECTRUM ANALYZER PRESENTATION
STANDARD, HX625A (FRS)
1998-MAY-15, 10:58, FRI

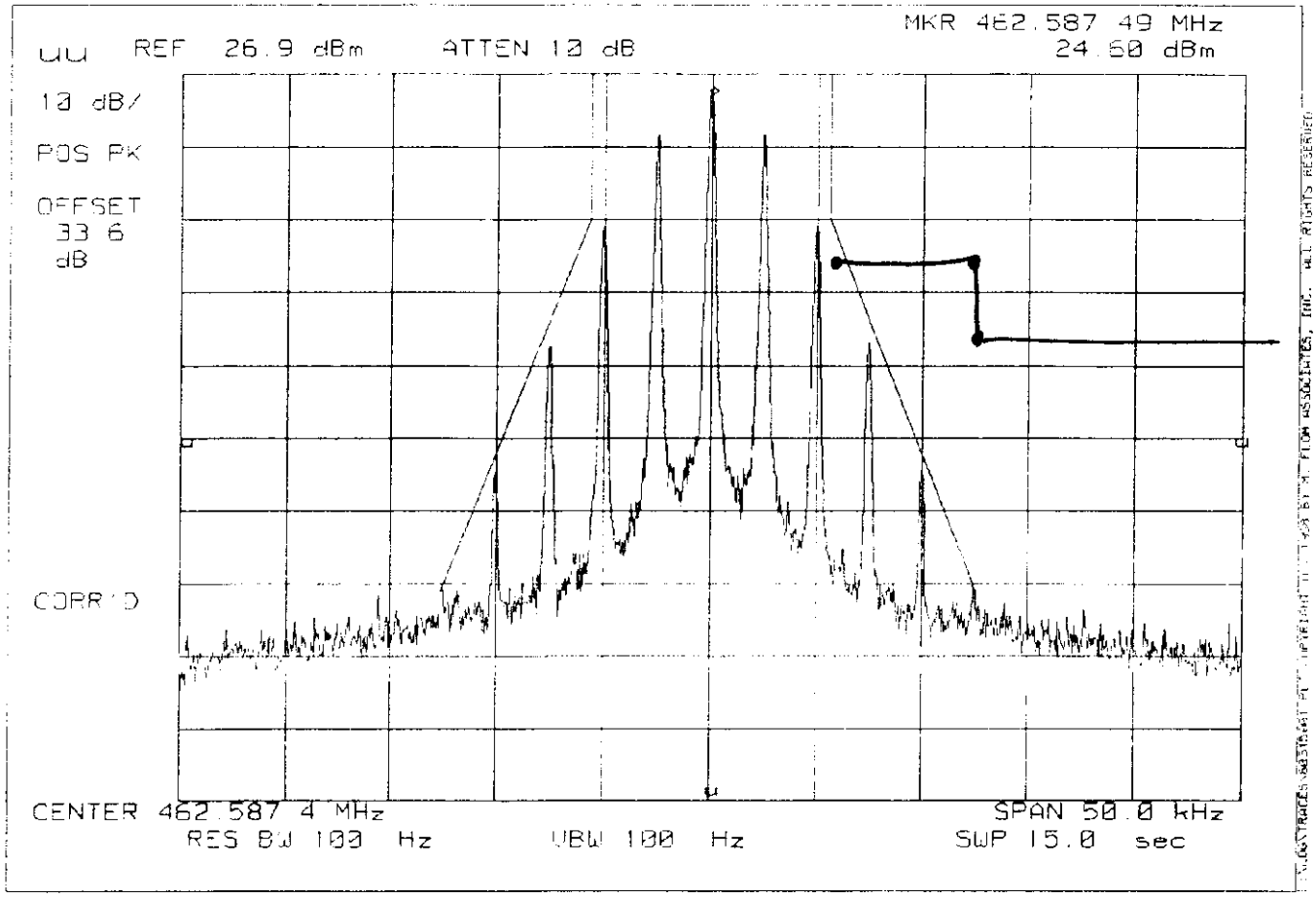
POWER: HIGH
MODULATION: NONE



APV0398

SPECTRUM ANALYZER PRESENTATION
STANDARD, HX625A (FRS)
1998-MAY-15, 11:06, FRI

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



NAME OF TEST: Audio Low Pass Filter (Voice Input)

SPECIFICATION: FCC: 47 CFR 95.637(b)
IC: RSS-119, Section 6.6

GUIDE: TIA/EIA-603, Paragraph 2.2.15

TEST CONDITIONS: S. T. & H.

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

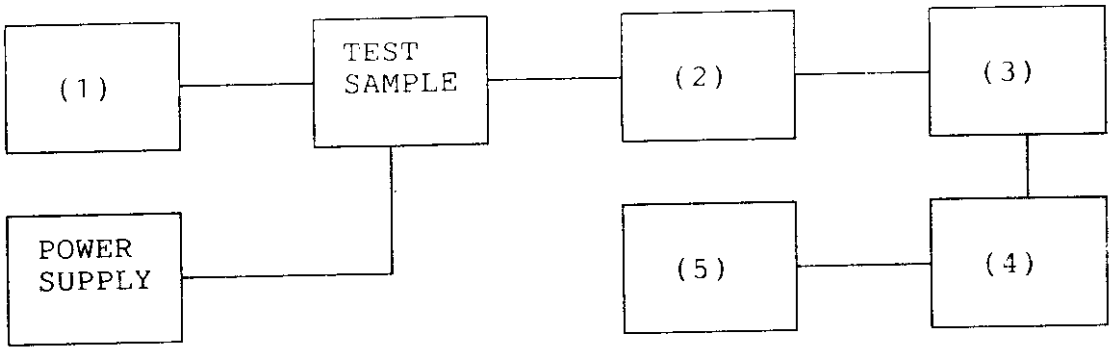
1. The EUT and test equipment were set up such that the audio input was connected at the input to the modulation limiter, and the modulated stage.

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

3. MEASUREMENT RESULTS: ATTACHED

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



(1) AUDIO OSCILLATOR/GENERATOR

HP 204D	___
HP 8903A	X
_____	___

(2) COAXIAL ATTENUATOR

NARDA 766-10	X
SIERRA 661A-30	___
BIRD 8329 (30 dB)	___
_____	___

(3) MODULATION ANALYZER

HP 8901A	X
_____	___

(4) AUDIO ANALYZER

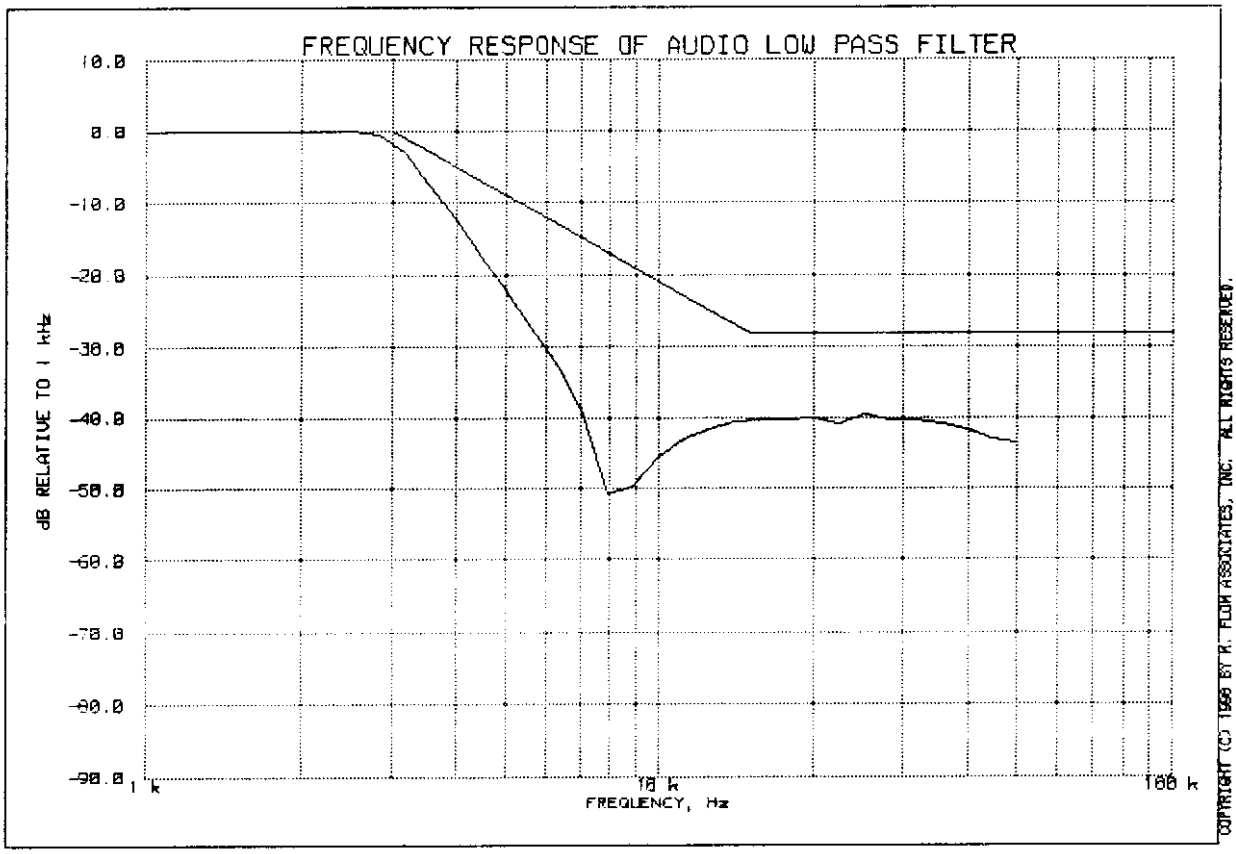
HP 8903A	X
_____	___

(5) SCOPE

HP 1741A	___
HP 181T	___
TEK 935	___
_____	___

APV0398

FREQUENCY RESPONSE OF AUDIO LOW PASS FILTER
STANDARD, HX625A (FRS)
16 APR 1998, 11:12



PEAK AUDIO FREQUENCY, Hz: 2510

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Audio Frequency Response

SPECIFICATION: FCC: 47 CFR 95.637(a)
IC: N/A

GUIDE: TIA/EIA-603, Section 2.2.6

TEST CONDITIONS: S. T. & H.

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 50% modulation at 1 kHz, and this point was taken as the 0 dB reference level.

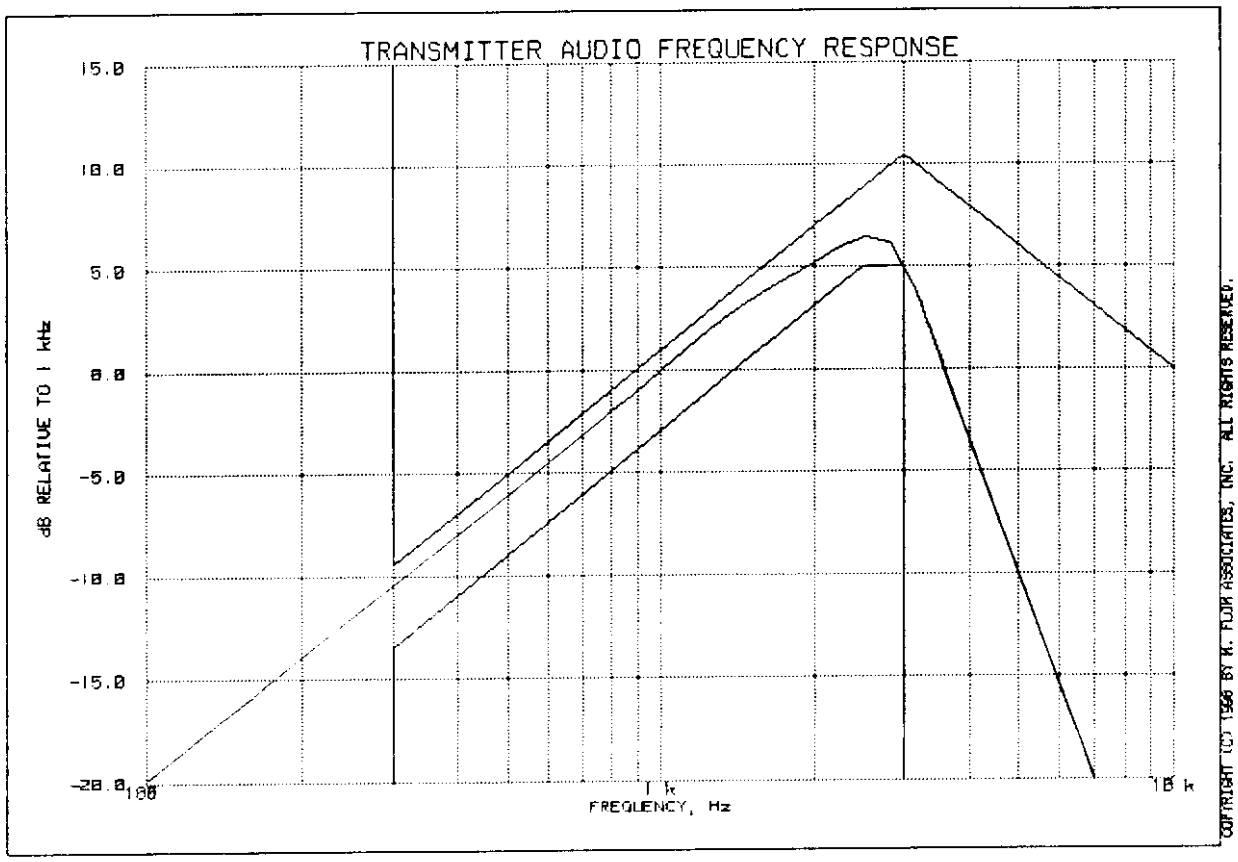
4. With input levels held constant and below limiting at all frequencies, the audio signal generator was varied from 100 Hz to 50 kHz.

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

6. MEASUREMENT RESULTS: ATTACHED

APV0398

TRANSMITTER AUDIO FREQUENCY RESPONSE
STANDARD, HX625A (FRS)
16 APR 1998, 11:08



PEAK AUDIO FREQUENCY, Hz: 2510

TABLE VALUES:

FREQUENCY, Hz	LEVEL, dB	FREQUENCY, Hz	LEVEL, dB	FREQUENCY, Hz	LEVEL, dB
300	-5.7	30000	-5.8		
20000	-5.7	50000	-5.8		

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Modulation Limiting

SPECIFICATION: FCC: 47 CFR 95.637(a)
IC: RSS-119, Section 6.6

GUIDE: TIA/EIA-603, Paragraph 2.2.3

TEST CONDITIONS: S. T. & H.

TEST EQUIPMENT: As per attached 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.

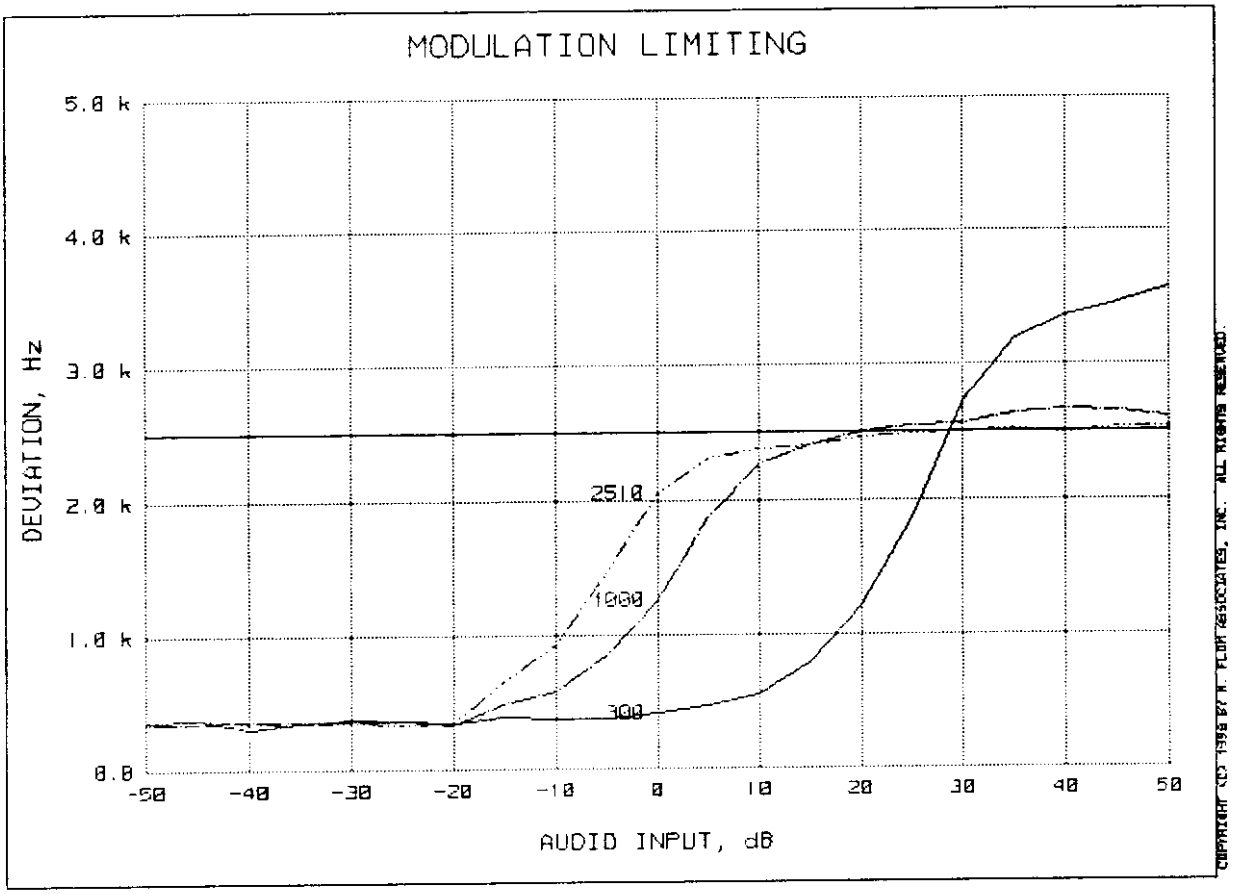
3. The input level was varied from 30% modulation (±1.5 kHz deviation) to at least 20 dB higher than the saturation point.

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

5. MEASUREMENT RESULTS: ATTACHED

APV0398

PAGE 21.1.
MODULATION LIMITING
STANDARD, HX625A (FRS)
1998-APR-16, 11:16

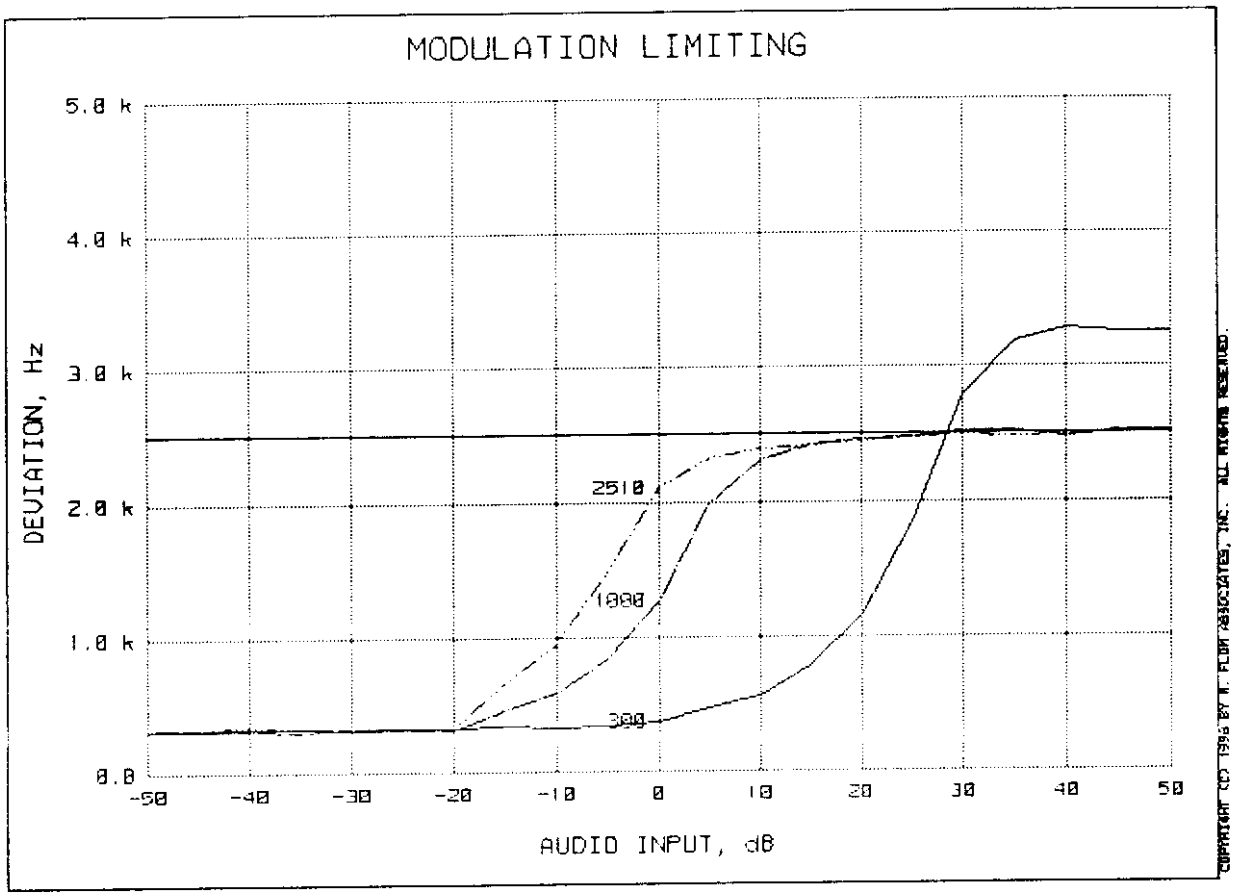


REFERENCE DEVIATION, kHz	= 1.25
REFERENCE MODULATION, Hz	= 1000
PEAKS	= POSITIVE
AUDIO AMPLITUDE, mV	= 3.42

SUPERVISED BY:

MORTON FLOM, P. Eng.

PAGE 21.2.
MODULATION LIMITING
STANDARD, HX625A (FRS)
1998-APR-16, 11:16



REFERENCE DEVIATION, kHz	= 1.25
REFERENCE MODULATION, Hz	= 1000
PEAKS	= NEGATIVE
AUDIO AMPLITUDE, mV	= 3.67

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Frequency Stability (Temperature Variation)

SPECIFICATION: FCC: 47 CFR 95.627
IC: RSS-119, Section 7.0

GUIDE: TIA/EIA-602, Section 2.2.2

TEST CONDITIONS: As indicated

TEST EQUIPMENT: As per attached 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.

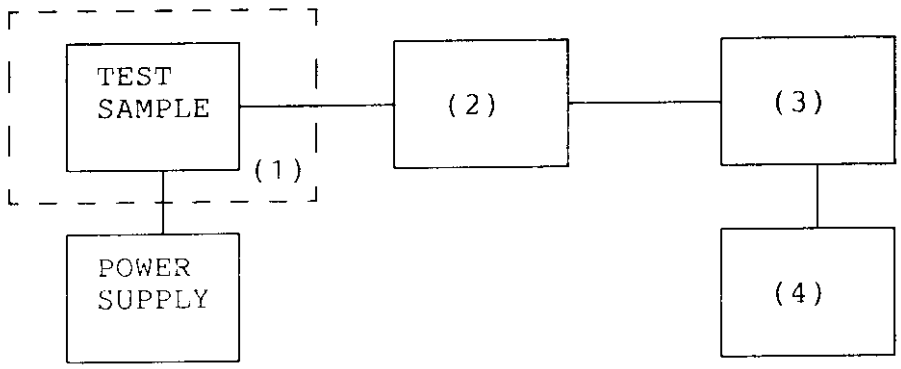
3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.

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

5. MEASUREMENT RESULTS: ATTACHED

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



(1) TEMPERATURE, HUMIDITY, VIBRATION

TENNEY TEMPERATURE CHAMBER	x
WEBER HUMIDITY CHAMBER	
L.A.B. RVH 18-100	

(2) COAXIAL ATTENUATOR

NARDA 766-10	x
SIERRA 661A-30	
BIRD 8329 (30 dB)	

(3) R.F. POWER

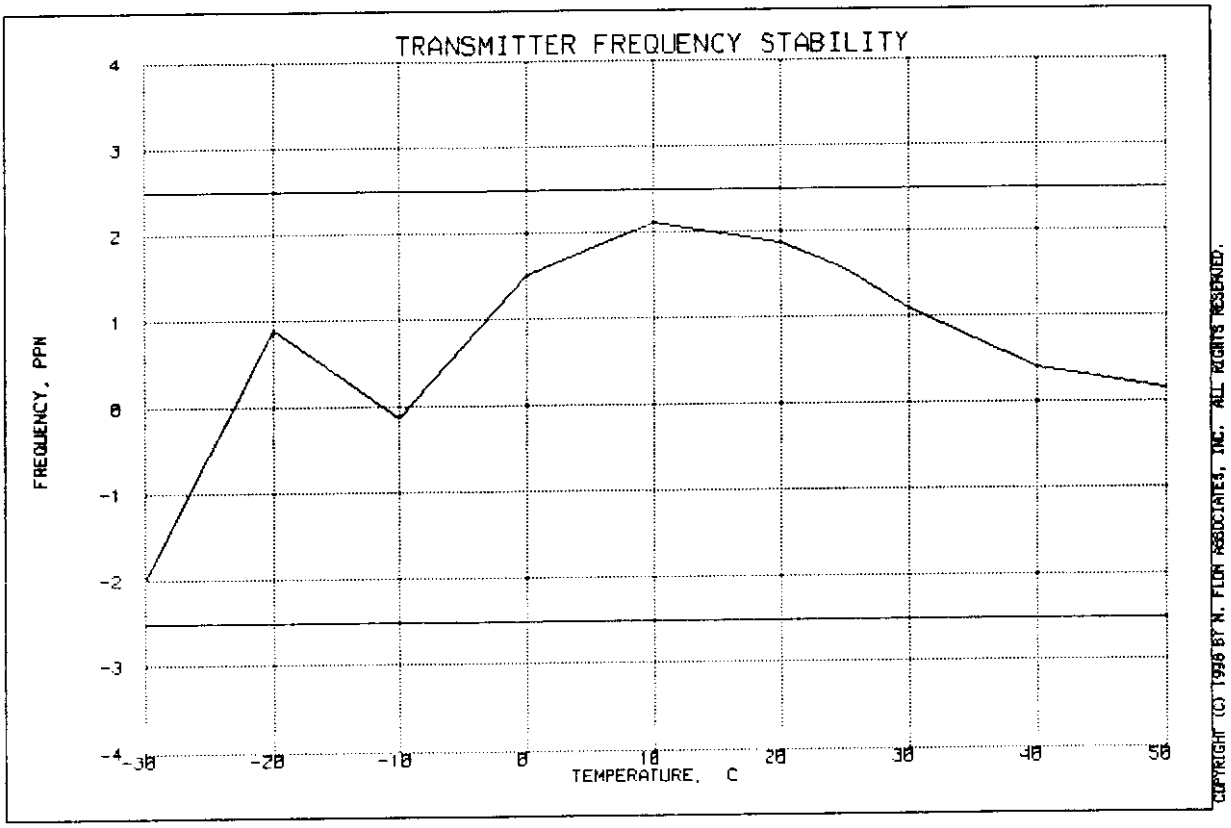
HP 435A POWER METER	
HP 436A POWER METER	x
HP 8901A POWER MODE	x

(4) FREQUENCY COUNTER

HP 5383A	
HP 5334B	x
HP 8901A	x

PAGE 24.

TRANSMITTER FREQUENCY STABILITY
STANDARD, HX625A (FRS)
18 MAY 1998, 08:26



FREQUENCY OF CARRIER, MHz = 462.58695

LIMIT, ppm = 2.5

LIMIT, Hz = 1156

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Frequency Stability (Voltage Variation)

SPECIFICATION: FCC: 47 CFR 95.627
IC: RSS-119, Section 7.0

GUIDE: TIA/EIA-602, Section 2.2.2

TEST CONDITIONS: As indicated

TEST EQUIPMENT: As per attached 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.

MEASUREMENT RESULTS

LIMIT, ppm = 2.5
LIMIT, Hz = 1157

STV, %	Vdc	CHANGE IN FREQUENCY, Hz	
85	3.2	462686990	-10
100	3.8	462687000	0
115	4.4	462686990	-10
BATTERY END POINT:	1.0	462687000	0

SUPERVISED BY: MORTON FLOM, P. Eng.

NAME OF TEST: Necessary Bandwidth and Emission Bandwidth

PARAGRAPH: 47 CFR 2.202(g)

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	= (2 x M) + (2 x D x K)
	= 11.0

SUPERVISED BY:

MORTON FLOM, P. Eng.

PAGE NO. 27.

NAME OF TEST: Summary of Applicant Supplied Attestations

SPECIFICATION: FCC: 47 CFR 95
IC: N/A

GUIDE:

TEST CONDITIONS:

TEST EQUIPMENT:

95.647

Antenna has no gain (as compared to a half-wave dipole) and is vertically polarized.

95.649

There are no provisions for increasing transmitter power.

95.653

Users manual includes instructions and warnings.

TESTIMONIAL
AND
STATEMENTOF CERTIFICATION

APV0398

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:

M.Flom P.Eng

MORTON FLOM, P. Eng.

STATEMENT OF QUALIFICATIONS

EDUCATION:

1. B. ENG. in ENGINEERING PHYSICS, 1949, McGill University, Montreal, Canada.

2. Post Graduate Studies, McGill University & Sir George Williams University, Montreal.

PROFESSIONAL AFFILIATIONS:

1. ARIZONA SOCIETY OF PROFESSIONAL ENGINEERS (NSPE), #026 031 821.

2. ORDER OF ENGINEERS (QUEBEC) 1949. #4534.

3. ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOPHYSICISTS & GEOLOGISTS OF ALBERTA #5916.

4. REGISTERED ENGINEERING CONSULTANT - GOVERNMENT OF CANADA, DEPARTMENT OF COMMUNICATIONS. Radio Equipment Approvals.

5. IEEE, Lifetime Member No. 0417204 (member since 1947).

EXPERIENCE:

1. Research/Development/Senior Project Engineer, R.C.A. LIMITED (4 years).

2. Owner/Chief Engineer of Electronics. Design/Manufacturing & Cable TV Companies (10 years).

3. CONSULTING ENGINEER (over 25 years).

M. Flom P. Eng.

MORTON FLOM, P. Eng.

TEST INSTRUMENTATION LIST

All equipment calibrated within last 90 days

ADAPTER
HP X281 (Coaxial waveguide); HP S281; HP 85659 (Quasi peak)

AMPLIFIER
Pre-amp. HP 10885A (2-1300 MHz); HP 8447D, HP 8447E, HP 8449A

ANTENNA *See end*

ATTENUATOR
Kay 432D; Power, Sierra 661A-30; Narda 76610; Narda 4779-3, -6, -10 dB

AUDIO OSCILLATOR
HP 204D; AIEC DTC-1; Motorola S-1333B; HP 3312A; HP 8903A

BATTERY
Sears Diehard, Stock #4341

CAMERA
Oscilloscope, Tektronix C5A; Polaroid Impulse AF; Kodak DC-50

CAPACITOR
Feed-Thru, 10 µF, Solar 6512-106R; Solar 7525-1

CLOSE FIELD PROBE
HP 11940A, 11941A, HP 11945A

COMPUTER
HP 332; HP Vectra 486/25VL; Various PC COmpatables

CONVERTOR, Down
HP 117 10B

COUPLER
Narda 1080, Waveguide; HP S750E (Cross guide); Waveline 274/40; Solar 7415-3; Solar 7835-891 & -896

CURRENT PROBE
Solar 6741-1

DETECTOR
HP 8470B

DIGITAL MULTIMETER
HP 3476A w/H.F. Probe; Fluke 8030A-01; HP 3478A

DISTORTION ANALYZER
HP 334A; HP 8903A

ELECTRONIC COUNTER
HP 5383A; HP 5334B

FILTER
Cirqtel FHT/7-50-57/ 50-1A/1B (HP); Jerrold TLB-1; THB-1, Piezo 5064; Eagle TNF-I Series, Krohn-Hite 3202; Phelps-Dodge #PD-495-8; Newtone #PD6000 Line Protector; 870-890 MHz (Lab Design); 900 MHz (Lab Design); Solar High-Pass s/n 882029

FREQ. DEV. METER
HP 8901A

FREQ. DOUBLER
HP 11721A

FREQUENCY METER
HP 537A; HP 536A

GENERATOR
Solar 6550-1 (power sweep); HP 8640B, GAW 1012, HP 8656A (signal); Solar 8282-1 (spike)

HUMIDITY CHAMBER
Embem Co FW30; Bowser 0

LIMITER, R.F
HP 11867A; HP 11693A; HP 10509A

LISN
Singer 91221-1; Ailtech 94641-1 (50µH)

LOAD, POWER
Telewave TLW-25; Bird 8329

MILLIAMETER
HP 428B

MIXER
HP 10514A; Mini-Circuits TAK-1H

OPEN FIELD SITE
As filed with FCC & IC and kept up-dated.
TURNTABLES:
Up to 2000# capacity
GROUND SCREEN:
Complies with docket 80-284
ANTENNA MAST:
Complies as above

OSCILLOSCOPE
HP 1741A; HP 181T; Tektronix T935; HP 54502A

PHANTOM
M.F.A. Labs Left and Right human head

PLOTTER
HP 7470; HP7475A

POWER METER
AF GR 1840A; HP 435A with 8481A & 8482H Power Sensors; HP 436A; HP 8901A

POWER SUPPLY
HP 6286A; Heathkit 1P 2711; 1P 5220; Honda EM400 (portable gas gen.); HP 6012

PRINTER
Brother HL-8; Brother HL-10V; HP DeskJet 640C

R. F. PRESELECTOR
HP 85685A

RADIATION METER
Narda 8717 w/8010 Amp, 8021B and 8760 probes

RESISTOR, PRECISION
Solar 7144-1.0, 7144-10.0; Solar 8525-1

SCALE
Weigh-Tronix 3632T-50

SCANNER
HP 9190A Scanjet

SCREEN ROOM
Lindgren 22-2/2-0

SIGNAL LEVEL METER
Jerrold 704B

SIGNAL SAMPLER
R. F. Bird 4273-030, 4275-030

SINAD/VOLTMETER
Helper Sinadder

SPECTRUM ANALYZER
HP 8558B, 8557; HP 8563E; HP 853A; HP 8566B/8568B

TEMPERATURE CHAMBER
Tenney, Jr

TEMPERATURE PROBE
Fluke 80T-150C

TERMINATION
Narda 320B Waveguide. Waveline #281

TEST SET
Semi-Automatic: HP 8953A; HP 8954A Interface: Computer / Controller; P.S. Programmer; HP 59501A; RF Communications: HP 8920A

TRANSFORMERS
Audio Isolation: Solar 6220-1A; Impedance: HP 11694A; Isolation: Solar 7032-1; Matching: Solar 7033-1

TRANSMISSION & NOISE MEASURING SET
HP 3555B

VIBRATION CHAMBER
Unholtz-Dickie T 500; Unholtz-Dickie T 4000

VOLTMETER
HP 410C; HP 3478A

WATTMETER
Bird 43, Sierra 174A-2

ANTENNAS

30 - 50 Hz
Emco 7603 M-Field; Emco 7604 M-Field

20 - 200 MHz
Aprel Biconical Model AAB20200

20 - 300 MHz
Emco Biconical H-Field

25 - 1000 MHz
Singer DM-105A; EMCO 3121C

200 - 1000 MHz
Aprel Log Periodic, Model AALP 2001

10 kHz - 30 MHz
Emco 3107B, E-Field; Emco 3101B/1, Rod E-Field

10 kHz - 32 MHz
Singer 94593-1 (Loop)

150 kHz - 32 MHz
Singer 92197-1 (41")

150 kHz - 32 MHz
Singer 93049-1 (9')

1 - 10 GHz
Singer 90794-A Discone

1 - 18 GHz
Horn: Aprel Model AAH-118

18 - 40 GHz
Emco 3116, Horn

40 - 60 GHz
Horn: HP 11970U, HP 11971U, HP 11975A (Lo Drive Amplifier)

50 - 75 GHz
Mixer, HP 11970V, HP 11971V

75 - 110 GHz
Mixer, HP 11970W

APV0398

PAGE NO. 11.
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	ERP dBm	WATTS
462.562	462.572000	100.5	3	23.4	123.9	3	26.5	0.45
467.712	467.722000	99.3	3	23.6	122.8	3	25.4	0.35

SPURIOUS:

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	EIRP, dBm	ERP dBm
462.562	925.12	43.6	31.2	-20.4	-22.6
467.712	935.42	43.5	31.4	-20.4	-22.6
462.562	1387.69	35.7	35.9	-23.6	-25.8
467.712	1403.12	32.1	36.0	-27.1	-29.3
462.562	1850.26	38.8	40.4	-16.0	-18.2
467.712	1870.84	37.6	40.6	-17.0	-19.2
462.562	2312.79	31.3	44.1	-19.8	-22.0
467.712	2338.57	29.8	44.4	-21.0	-23.2
462.562	2775.38	17.3	47.7	-30.2	-32.4
467.712	2806.26	18.7	48.0	-28.5	-30.7
462.562	3237.95	9.6	51.2	-34.4	-36.6
467.712	3273.99	10.5	51.3	-33.5	-35.7
462.562	3700.49	10.8	52.4	-32.1	-34.3
467.712	3741.70	10.8	52.5	-31.9	-34.1
462.562	4163.01	5.9	52.8	-36.5	-38.7
467.712	4209.42	8.5	52.7	-34.1	-36.3
462.562	4625.64	6.8	52.6	-35.8	-38.0
467.712	4677.13	8.8	52.8	-33.6	-35.8

PAGE NO. 11.AMENDED APV0398
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

EIRP

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	~~ERP~~ dBm
462.562	462.566000	98.5	3	23.4	121.9	3	26.5
467.712	467.695000	96.3	3	23.6	119.8	3	25.4

SPURIOUS:

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, dBm
462.562	925.12	43.6	31.2	-20.4
467.712	935.42	43.5	31.4	-20.4
462.562	1387.69	35.7	35.9	-23.6
467.712	1403.12	32.1	36.0	-27.1
462.562	1850.26	38.8	40.4	-16.0
467.712	1870.84	37.6	40.6	-17.0
462.562	2312.79	31.3	44.1	-19.8
467.712	2338.57	29.8	44.4	-21.0
462.562	2775.38	17.3	47.7	-30.2
467.712	2806.26	18.7	48.0	-28.5
462.562	3237.95	9.6	51.2	-34.4
467.712	3273.99	10.5	51.3	-33.5
462.562	3700.49	10.8	52.4	-32.1
467.712	3741.70	10.8	52.5	-31.9
462.562	4163.01	5.9	52.8	-36.5
467.712	4209.42	8.5	52.7	-34.1
462.562	4625.64	6.8	52.6	-35.8
467.712	4677.13	8.8	52.8	-33.6

24.34

PAGE NO. 11. AMENDED 8/26/98. APV0398
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	ERP dBm
462.562	462.572000	100.5	3	23.4	123.9	3	26.5
467.712	467.722000	99.3	3	23.6	122.8	3	25.4

SPURIOUS:

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, dBm
462.562	925.12	43.6	31.2	-20.4
467.712	935.42	43.5	31.4	-20.4
462.562	1387.69	35.7	35.9	-23.6
467.712	1403.12	32.1	36.0	-27.1
462.562	1850.26	38.8	40.4	-16.0
467.712	1870.84	37.6	40.6	-17.0
462.562	2312.79	31.3	44.1	-19.8
467.712	2338.57	29.8	44.4	-21.0
462.562	2775.38	17.3	47.7	-30.2
467.712	2806.26	18.7	48.0	-28.5
462.562	3237.95	9.6	51.2	-34.4
467.712	3273.99	10.5	51.3	-33.5
462.562	3700.49	10.8	52.4	-32.1
467.712	3741.70	10.8	52.5	-31.9
462.562	4163.01	5.9	52.8	-36.5
467.712	4209.42	8.5	52.7	-34.1
462.562	4625.64	6.8	52.6	-35.8
467.712	4677.13	8.8	52.8	-33.6

PAGE NO. 11. AMENDED 8/26/98. APV0398
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	ERP dBm
462.562	462.572000	100.5	3	23.4	123.9	3	26.5
467.712	467.722000	99.3	3	23.6	122.8	3	25.4

SPURIOUS:

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, dBm
462.562	925.12	43.6	31.2	-20.4
467.712	935.42	43.5	31.4	-20.4
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467.712	1403.12	32.1	36.0	-27.1
462.562	1850.26	38.8	40.4	-16.0
467.712	1870.84	37.6	40.6	-17.0
462.562	2312.79	31.3	44.1	-19.8
467.712	2338.57	29.8	44.4	-21.0
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462.562	4163.01	5.9	52.8	-36.5
467.712	4209.42	8.5	52.7	-34.1
462.562	4625.64	6.8	52.6	-35.8
467.712	4677.13	8.8	52.8	-33.6

PAGE NO. 11.AMENDED APV0398
RADIATED EMISSIONS (TX1), HIGH POWER
1998-MAY-19, 15:11, TUE

FUNDAMENTAL:

EIRP

TUNED, MHz	EMISSION, MHz	LEVEL dBuV/m	@m	C.F. dB	CALC. dBuV/m	@m	~~ERP~~ dBm
462.562	462.566000	98.5	3	23.4	121.9	3	26.5
467.712	467.695000	96.3	3	23.6	119.8	3	25.4

SPURIOUS:

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, dBm
462.562	925.12	43.6	31.2	-20.4
467.712	935.42	43.5	31.4	-20.4
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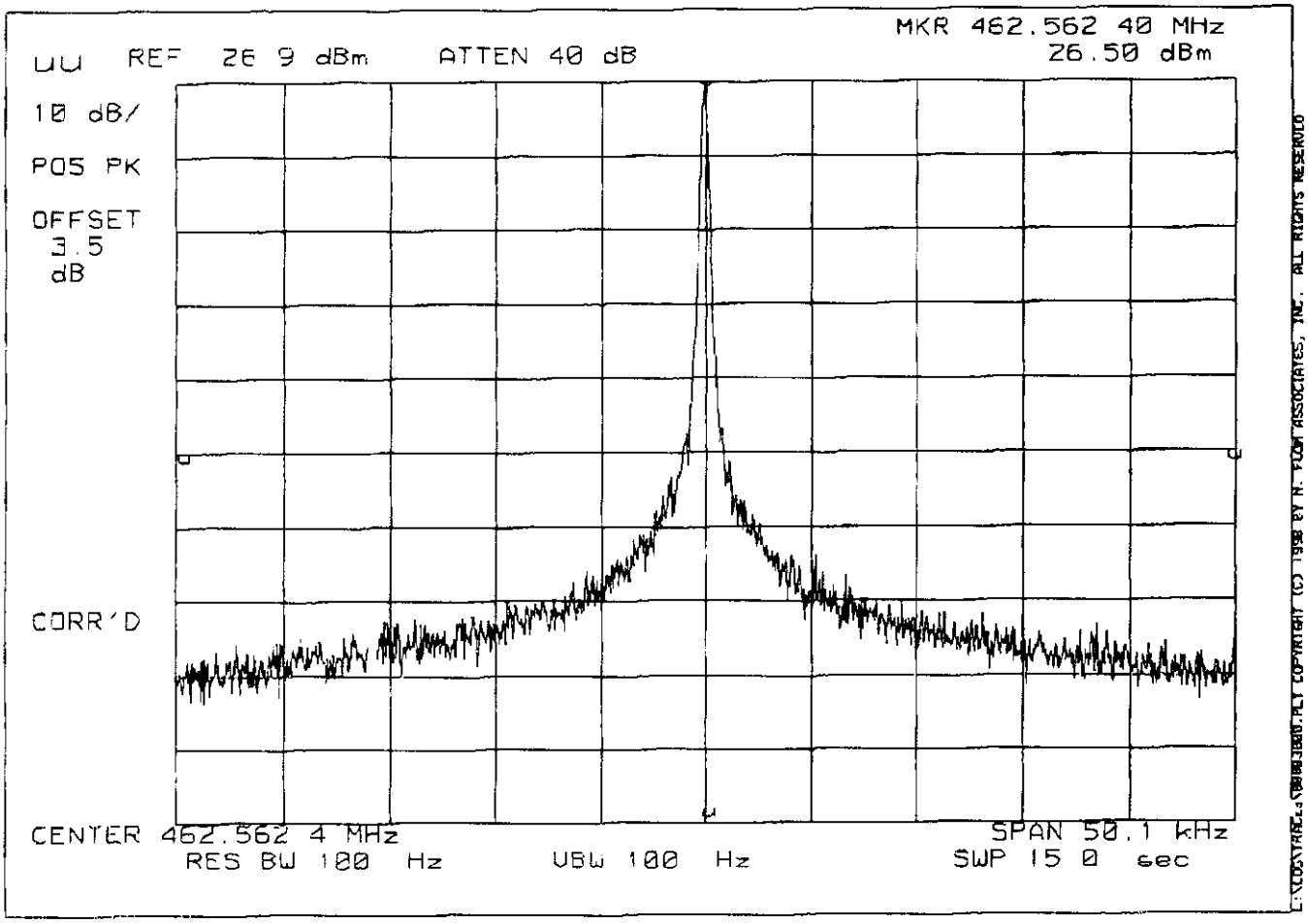
467.712	3741.70	10.8	52.5	-31.9
462.562	4163.01	5.9	52.8	-36.5
467.712	4209.42	8.5	52.7	-34.1
462.562	4625.64	6.8	52.6	-35.8
467.712	4677.13	8.8	52.8	-33.6

24.36

PAGE 14.1. AMENDED APV0398
SPECTRUM ANALYZER PRESENTATION
STANDARD, Sportalk TM HX625A
1998-AUG-03, 16:07, MON

POWER: HIGH
MODULATION: NONE



APV0398

PAGE 14.2. AMENDED
SPECTRUM ANALYZER PRESENTATION
STANDARD, Sportalk TM HX625A
1998-AUG-03, 16:11, MON

POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: FRS, 95.633(c)