APPLICANT: PRINCE ELECTRONICS CO.
FCC ID: NPXWM-205B

TABLE OF CONTENTS LIST

TEST REPORT CONTAINING:

EXHIBITS CONTAINING:

GENERAL INFORMATION REQUIRED FOR TYPE ACCEPTANCE

2.1033(c)(1) PRINCE ELECTRONICS CO. will manufacture the NPXWM-205B

2.1033(c)(2) in quantity, for use under FCC RULES PART 74.801, LOW POWER AUXILIARY STATIONS.

PRINCE ELECTRONICS CO.
200-1, MAESAN-RI, MOHYON-MYON
YONGIN-CITY, KYONGGI-DO 449-853
KOREA

2.1033 TECHNICAL DESCRIPTION

(c)(3) Instruction book. The instruction manual is included as Exhibit 6A-6H.

(c)(4) Type of Emission: 130K0F3E

Bn = 2M + 2DK
M = 20000
D = 45kHz(Peak Deviation)
K = 1
Bn = 2(20k) + 2(45k)(1) = 130k

ALLOWED AUTHORIZED BANDWIDTH = 200kHz.
74.861(e)(5)

(c)(5) Frequency Range: Part 74: 174-216MHz
TEST FREQ = 214.5MHz.

(c)(6) Power Range and Controls:UNIT has no controls.

(c)(7) Maximum Output Power Rating: 0.10mWatts into 50 ohms resistive load.

(c)(8) DC Voltages and Current into Final Amplifier:

FINAL AMPLIFIER ONLY
9.0V BATTERY
Vce = 9.0 Volts
Ice = 34 mA.

(c)(9) Tune-up procedure. The tune-up procedure is given in page 4A-4B.

(c)(10) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT # 3A-3C. The block diagram is included as EXHIBIT #2.

2.1033(c)11) Photo or Drawing of Label and sketch of location:
See EXHIBIT # 1.

2.1033(c)12) Photos of Equipment:
See EXHIBIT #'S 8A-10B.

(c)(13) Description of all circuitry and devices provided for determining and stabilizing frequency.

Description of any circuits or devices employed for suppression of spurious radiation, for limiting modulation, and for limiting power.

This circuitry is described on page 5.

Limiting Modulation:
The transmitter audio circuitry is contained in IC101, IC102 and IC103.

Limiting Power:
There is no provision for limiting power.

(13) Digital modulation. This unit does not use digital modulation.

2.1033(c)(14) The data required by 2.1046 through 2.1057 is submitted below.

2.1046 RF power output.

RF power measured is:
OUTPUT POWER: 0.10mWATTS

R.F. POWER OUTPUT TEST PROCEDURE

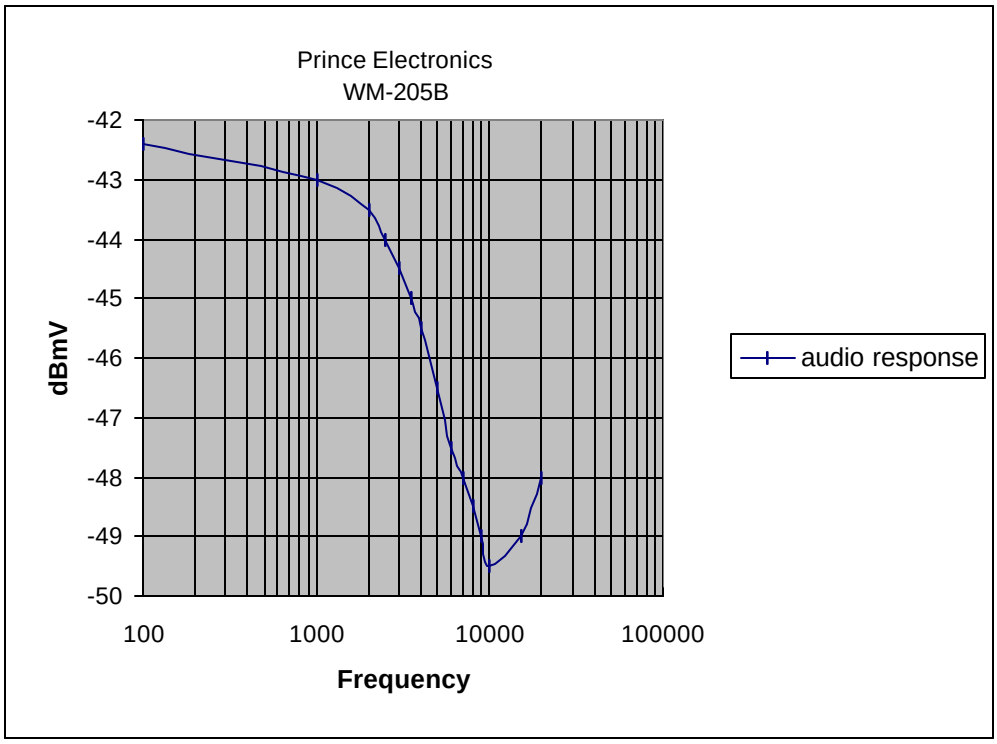
2.1047(a)(b) Modulation characteristics:

AUDIO FREQUENCY RESPONSE

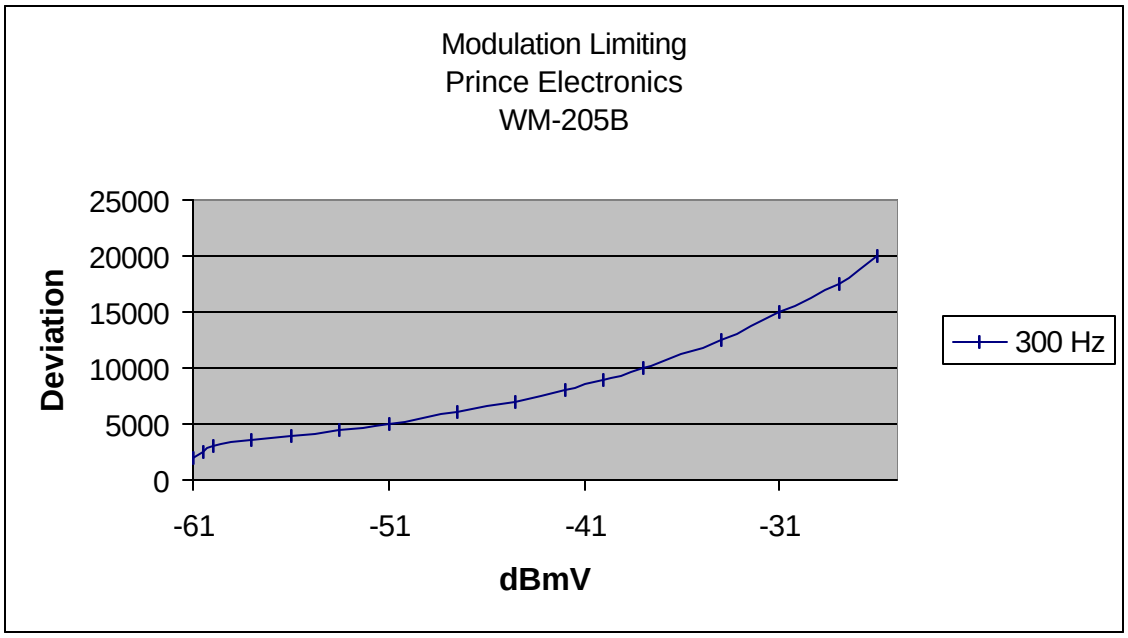
The audio frequency response was measured in accordance with TIA/EIA Specification 603. The audio frequency response curve is shown on the next page.

AUDIO LOW PASS FILTER

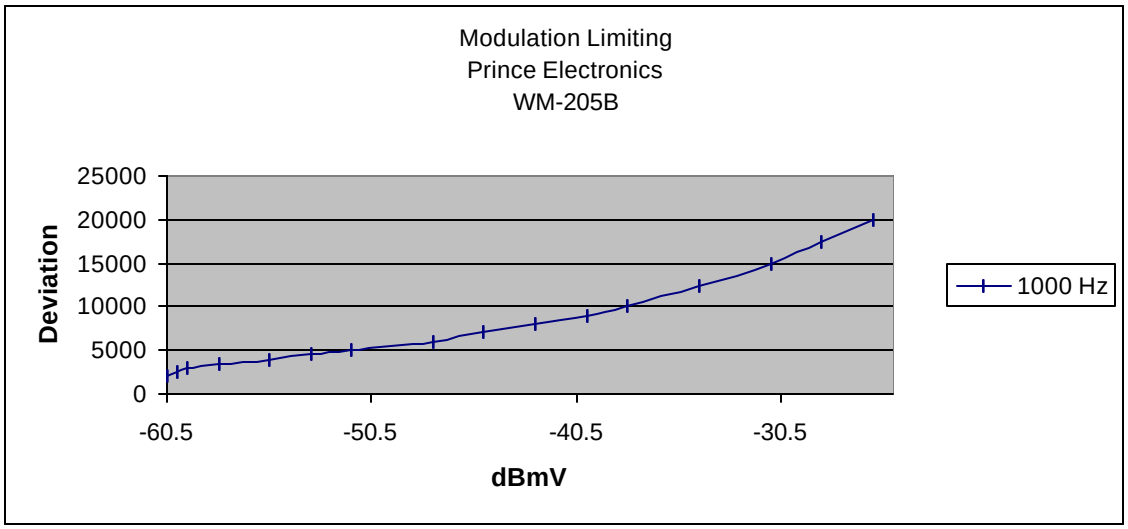
The audiolow pass filter is not required in this unit.



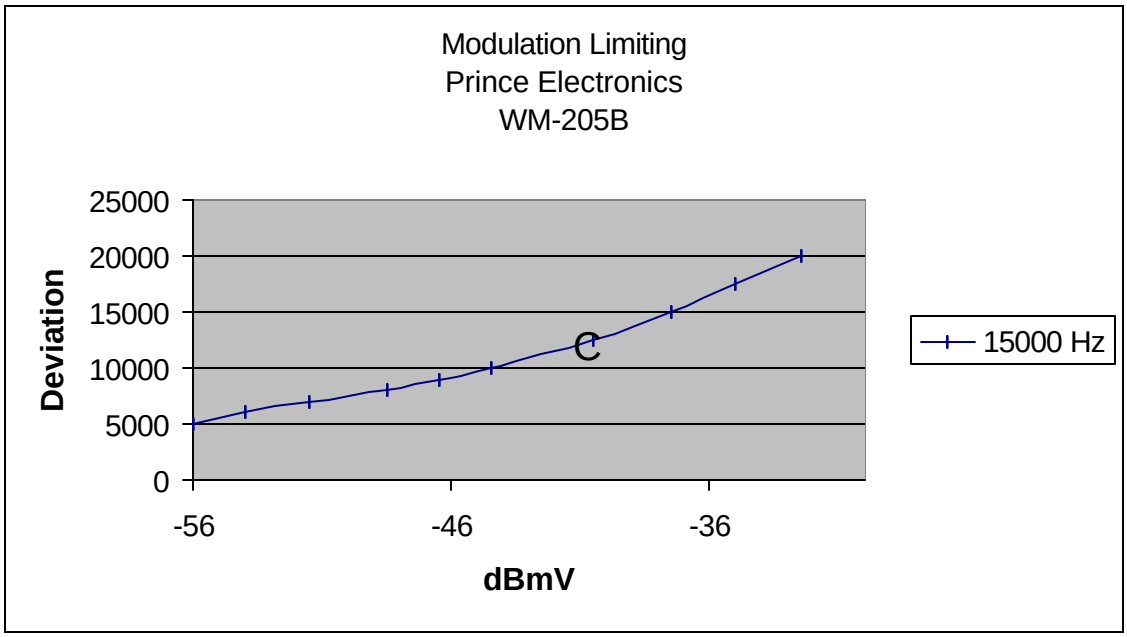
PRINCE ELECTRONICS CO.
FCC ID : NPXWM-205B
JOB : 1256K1
PAGE # : 4



PRINCE ELECTRONICS CO.
FCC ID : NPXWM-205B
JOB : 1256K1
PAGE # : 5



PRINCE ELECTRONICS CO.
FCC ID : NPXWM-205B
JOB : 1256K1
PAGE # : 6



PRINCE ELECTRONICS CO.
FCC ID : NPXWM-205B
JOB : 1256K1
PAGE # : 7

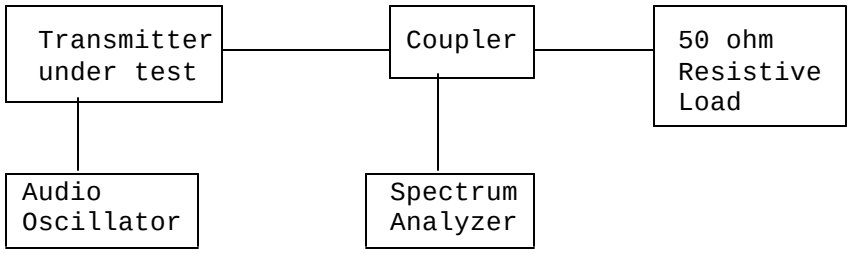
2.1049(c) Occupied Bandwidth:

Data in the plots show that all sidebands between 50 & 100% for the authorized bandwidth are attenuated by at least 25dB. From 100 to 250% of the authorize3d bandwidth they are attenuated by at least 35dB and beyond 250% 43 log(Po) dB. The plot shows the transmitter modulated with 15000 Hz(the highest modulation frequency), adjusted for 50% modulation plus 16 dB. The spectrum analyzer was set with the unmodulated carrier at the top of the screen. The test procedure diagram and occupied bandwidth plots follow.

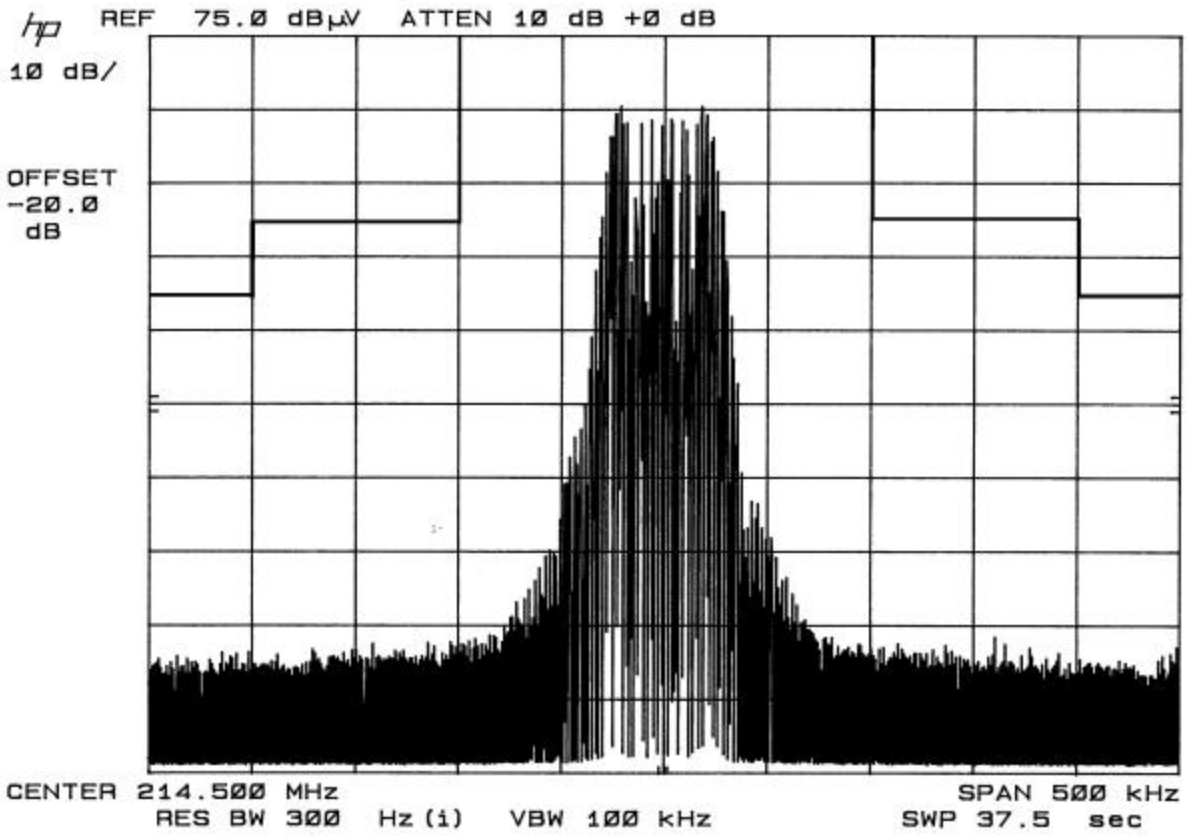
Wireless Microphone transmitter:

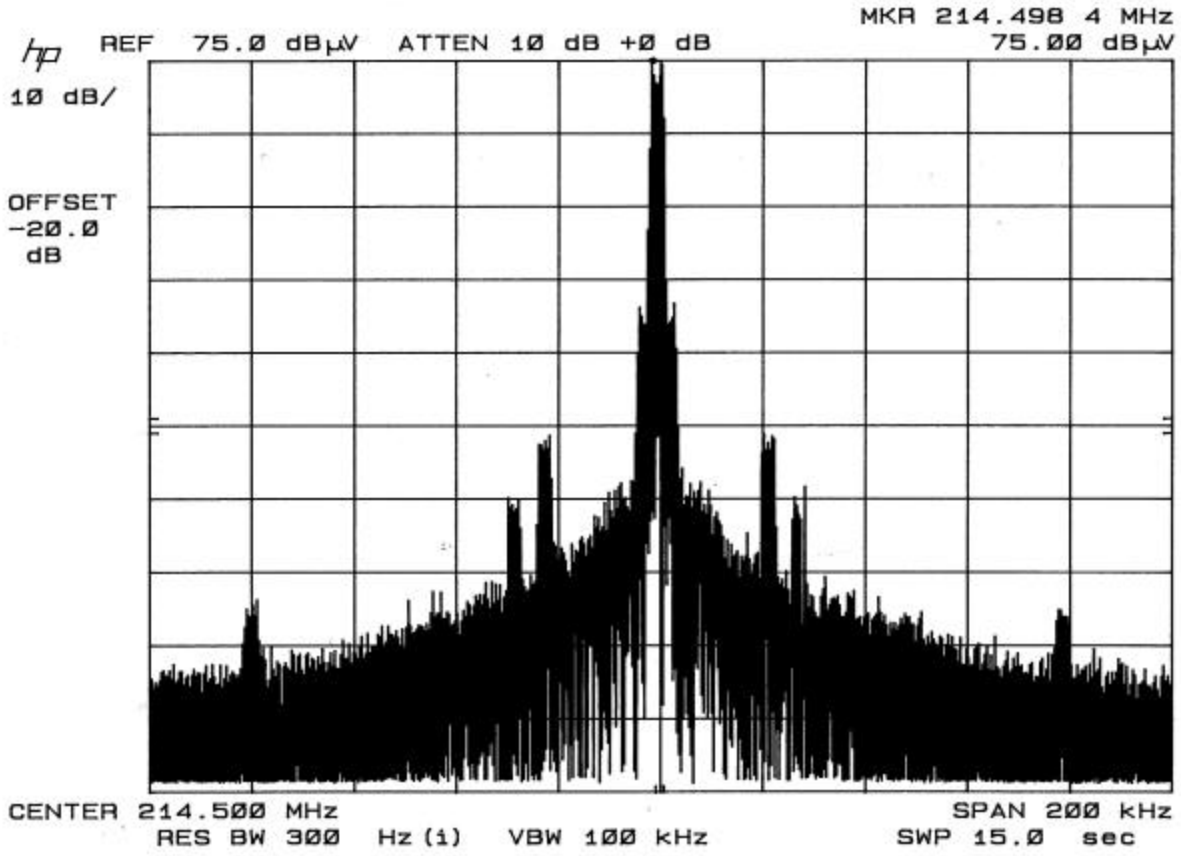
Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT



REQUIREMENT: PART 74: 200kHz EMISSION BANDWIDTH.


REF 75.0 dBμV ATTEN 10 dB +0 dB
10 dB/
OFFSET
-20.0
dB
CENTER 214.500 MHz
SPAN 500 kHz
RES BW 300 Hz (i) VBW 100 kHz
SWP 37.5 sec


MKR 214.498 4 MHz
75.00 dBµV
REF 75.0 dBµV ATTEN 10 dB +0 dB
10 dB/
OFFSET
-20.0
dB
CENTER 214.500 MHz
SPAN 200 kHz
RES BW 300 Hz (i) VBW 100 kHz
SWP 15.0 sec

2.1051 Spurious emissions at antenna terminals(conducted): Not Applicable no antenna connector.

2.1053(a)(b) Field strength of spurious emissions:

NAME OF TEST: RADIATED SPURIOUS EMISSIONS

REQUIREMENTS: Emissions must be 43 +10log(Po) dB below the mean power output of the transmitter.

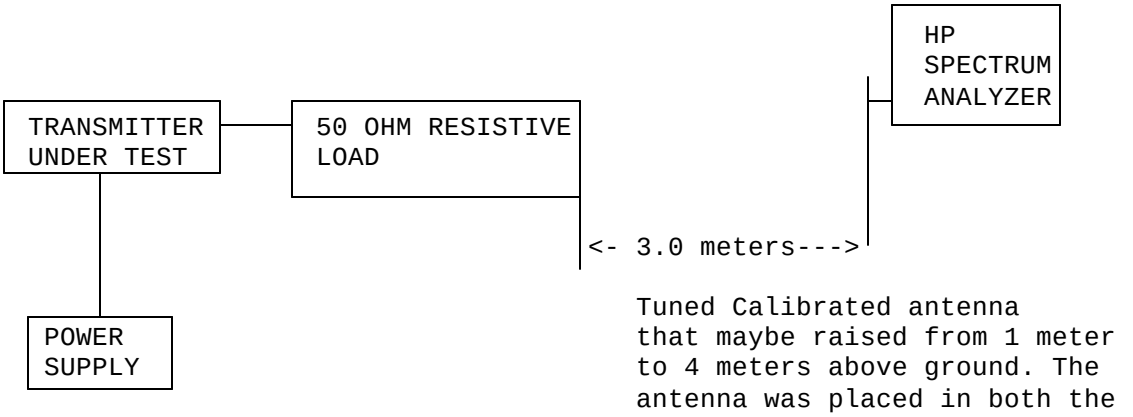
43 + 10 log(0.01) = 23.00dB

TEST DATA:

Emission Frequency MHz	ATTN dBC	Margin dB
214.50	00.00	00.00
429.00	44.88	21.88
1,072.50	47.70	24.70
1,501.50	44.85	21.85
1,716.00	44.18	21.18

METHOD OF MEASUREMENT: The procedure used was TIA/EIA STANDARD 603. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer and an appropriate antenna. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 NW SR 45 Newberry, Florida 32669.

Method of Measuring Radiated Spurious Emissions



Tuned Calibrated antenna that maybe raised from 1 meter to 4 meters above ground. The antenna was placed in both the horizontal and vertical planes.

Equipment placed on rotating platform, 80 cm above ground.

2.1055 Frequency stability:
S74.861(e)(4)

Temperature and voltage tests were performed to verify that the frequency remains within the .0050%,(50 ppm)(74.861 e.4) specification limit.

The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15-second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency.The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15-second intervals.The worst-case number was recorded for temperature plotting. This procedure was repeated in 10-degree increments up to + 50 degrees C.

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 214.500 018

TEMPERATURE °C	FREQUENCY MHz	PPM
-30	214.501 399	6.44
-20	214.502 082	9.62
-10	214.502 489	11.52
0	214.502 293	10.61
10	214.501 630	7.52
20	214.500 575	2.60
30	214.499 354	-3.10
40	214.498 022	-9.31
50	214.496 735	-15.31

-15% END BATT. Volt(7.65) =	7.65VDC	214.499 929	–0.41
+15% END BATT. Volt(10.35)=	10.35VDC	214.500 047	0.14

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was –15.31 to 11.52 ppm. The maximum frequency variation over the voltage range was -0.41ppm.

TEST EQUIPMENT LIST

1. X Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 8/31/01 Due 8/31/02
2. Biconnical Antenna: Eaton Model 94455-1, S/N 1057, Cal. 10/1/01 Due 10/1/02
3. Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171 Cal. 4/26/01 Due 4/26/03
4. Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632 Char. 3/15/00 Due 3/15/01
5. X Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409 Char. 3/15/00 Due 3/15/01
6. X Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319 Cal. 4/27/99 Due 4/27/00
7. 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20 No Cal Required
8. Horn 40-60GHz: ATM Part #19-443-6R No Cal Required
9. Line Impedance Stabilization Network: Electro-Metrics Model EM-7820, w/NEMA Adapter S/N 2682 Cal. 3/16/01 Due 3/16/02
10 X Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7 Char. 1/27/01 Due 1/27/02
11. Frequency Counter: HP Model 5385A, S/N 3242A07460 Char. 11/20/00 Due 11/20/01
12. Peak Power Meter: HP Model 8900C, S/N 2131A00545 Char. 1/26/01 Due 1/26/02
13. Open Area Test Site #1-3meters Cal. 12/22/99
14. Signal Generator: HP 8640B, S/N 2308A21464 Cal. 11/15/01 Due 11/15/02
15. Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Char. 6/10/00 Due 6/10/01
16. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153 Char. 11/24/00 Due 11/24/01
17. AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 10/9/01 Due 10/09/02
18. X Digital Multimeter: Fluke Model 77, S/N 43850817 Cal. 11/16/00 Due 11/16/01
18. Oscilloscope: Tektronix Model 2230, S/N 300572 Char. 2/1/01 Due 2/1/02