MFA M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85224-1571
www.goodnet.com/~mflom, (602) 926-3100, FAX: 926-3598

Sub-part
1.1307:

SUPPLEMENTAL REPORT

ENVIRONMENTAL ASSESSMENT

General Population / Uncontrolled Exposure,
Maximum Permissible Exposure
and Specific Absorption Rate

EQUIPMENT IDENTIFICATION

Tecom Co., Ltd.
FCC ID: D6X-T8200

DATE OF REPORT

February 23, 1999

SUPERVISED BY:

Morton Flom, P. Eng.

TABLE OF CONTENTS

PAGE NO. 1 of 7.

Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) TEST REPORT (SUPPLEMENTAL)

b) Laboratory: (FCC: 31040/SIT) (Canada: IC 2044)
M. Flom Associates, Inc.
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85224

c) Report Number: d9920043

d) Client:
Mobicel Systems, Inc.
15455 N. Greenway - Hayden Loop Rd., Suite C2
Scottsdale, AZ 85260

e) Identification: T8200
FCC ID: D6X-T8200

Description: VHF/UHF FM/AM Handheld/Portable/Mobile Transceiver

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

g) Report Date: February 23, 1999
EUT Received:

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:

Morton Flom, P. Eng.

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.

PAGE NO. 2 of 7.

IDENTIFICATION OF THE EQUIPMENT UNDER TEST (EUT)

NAME AND ADDRESS OF APPLICANT:

Tecom Co., Ltd.
23, R & D Rd. 2
Science-Based Industrial Park
Hsin-Chu Taiwan R.O.C.

MANUFACTURER:

FCC ID:	D6X-T8200
MODEL NO:	T8200
DESCRIPTION:	Base unit Fixed ~~Base~~ Station
TYPE OF EMISSION:	26K0F8W, 11K4F1D
FREQUENCY RANGE, MHz:	806 to 821
POWER RATING, Watts: ___ Switchable x Variable ___ N/A	0.650, 3.0

MODULATION:

___ AMPS
___ TDMA
___ CDMA
x UNMODULATED CARRIER
___ OTHER

ANTENNA:

___ HELICAL
x MONOPOLE
___ OTHER

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, 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.	4 of 7.
Name of test:	Environmental Assessment
Specification:	FCC: 47 CFR 1.1310
Measurement Guide:	ANSI/IEEE C95.1 1992
Test Equipment:	Maximum Permissible Exposure (MPE) measurement system, consisting of: Narda 8717-1174R, Radiation meter Narda 8761D, E-field probe (300 kHz - 3 GHz) (Calibrated Nov-98)
Measurement Procedure:	1. The following measurements were performed with a Narda probe using ANSI/IEEE C95.1 as a guide. 2. Prior to making any measurements, the measurements system was calibrated in accordance with the manufacturer's procedures. 3. The EUT's radiating element (antenna) was placed on a 1 m. tall table for ease of testing. For equipment normally operated on a metal surface, a ground plane was used. 4. The remaining equipment necessary to operate the EUT was maintained at a distance from the measurement arrangement suitable to minimize interference with the measurements. 5. The minimum safe distance was calculated from the formula Power Density = EIRP / $4\pi R^2$ (Peak Watts/m^2). The calculation is shown with the measurement data. 6. With the EUT operating at maximum power, a search was initiated for worst case emissions with the probe raised and lowered over a range of 0.2 to 2 meters in height and over a horizontal plane of 0° to 360°. 7. Average values were calculated for the whole body (0.2-2.0m), lower body (0.2-0.8m) and upper body (1.0-2.0m).
Results:	Attached.

PAGE NO. 6 of 7.

Name of test: Environmental Assessment

Rated Probe Power Density: Narda 8761D Probe = 10 µW/cm^2 to 20 mW/cm^2

Error Margin: Narda 8717 Meter = 1%

EUT Description: See Page 2.

Power[W ERP] = 0.650

Test Frequency, MHz = 813.490

Ant. Gain[dBi] 2.15 dBi

Power[W EIRP] $P_{[W\ ERP]} \times 10^{(2.15/10)}$, Watts EIRP = 1.06

MPE Limit (at test frequency) 0.542

Theoretical safe distance:

$R_{[m]} = [(P[W\ EIRP]) / (4\pi \times Limit_{(W/m^2)})]^{1/2}$

$R_{[m]} = [1.06 / (4\pi \times 5.42)]^{1/2} = 0.089$

$R_{[inches]} = 3.5$

Results: at theoretical safe distance

Probe Height, m	Power Density, mW/cm^2
2.0	0.11
1.8	0.13
1.6	0.13
1.4	0.11
1.2	0.25
1.0	0.61
0.8	0.24
0.6	0.15
0.4	0.13
0.2	0.17

Calculations: The measured power density readings were summed and the results divided by the number of readings to calculate the average.

For whole body: Average of 0.2 to 2.0 m, mW/cm^2 = 0.203

For lower body: Average of 0.2 to 0.8 m, mW/cm^2 = 0.1725

For upper body: Average of 1.0 to 2.0 m, mW/cm^2 = 0.2233

SUPERVISED BY: Morton Flom, P. Eng.

PAGE NO. 7 of 7.

Name of test: Environmental Assessment

Rated Probe Power Density: Narda 8761D Probe = 10 µW/cm² to 20 mW/cm²

Error Margin: Narda 8717 Meter = 1%

EUT Description: See Page 2.

Power [W ERP] = 3.0

Test Frequency, MHz = 813.490

Ant. Gain [dBi] 2.15 dBi

Power [W EIRP] $P_{[W\ ERP]} \times 10^{(2.15/10)}$, Watts EIRP = 4.92

MPE Limit (at test frequency) 0.542

Theoretical safe distance:

$R_{[m]} = [(P[W\ EIRP]) / (4\pi \times Limit_{(W/m^2)})]^{1/2}$

$R_{[m]} = [4.9 / (4\pi \times 5.42)]^{1/2} = 0.269$

$R_{[inches]} = 10.6$

Results: at theoretical safe distance

Probe Height, m	Power Density, mW/cm²
2.0	0.12
1.8	0.13
1.6	0.17
1.4	0.38
1.2	0.50
1.0	0.93
0.8	0.50
0.6	0.16
0.4	0.26
0.2	0.11

Calculations: The measured power density readings were summed and the results divided by the number of readings to calculate the average.

For whole body: Average of 0.2 to 2.0 m, mW/cm² = 0.326

For lower body: Average of 0.2 to 0.8 m, mW/cm² = 0.258

For upper body: Average of 1.0 to 2.0 m, mW/cm² = 0.372

SUPERVISED BY: Morton Flom, P. Eng.

(THE FOLLOWING WILL BE PLACED IN INSTRUCTION MANUAL)

INSTRUCTIONS TO INSTALLERS & USERS

Minimum Safe Distance

0.2 m (10.6 inches)
27 cm

Antenna Mounting

Antenna as supplied by manufacturer must not be mounted at a location such that any person or persons can come closer than the above-indicated minimum safe distance to the antenna.

Antenna Substitution

Do not substitute any antenna for the one supplied by manufacturer. You may be exposing person(s) to harmful radiation. Contact supplier or manufacturer for further instructions.

TECOM

TECOM CO., LTD.
23, R&D ROAD 2, SBIP
HSIN-CHU, TAIWAN, ROC
PHONE: +886-3-577-5141
FAX: +886-3-577-6855

REVISIONS TO T8200 MANUAL

" THE ANTENNA IS NOT SUPPLIED WITH THE UNIT. A DIRECTIONAL ANTENNA WITH GAIN SUCH AS A YAGI OR CORNER REFLECTOR IS RECOMMENDED. THE ANTENNA SHOULD BE MOUNTED OUTDOORS ON A MAST AT LEAST 10 FEET (3 METERS) ABOVE ANY OBSTRUCTION AND POINTED AT THE REPEATER STATION."

"CAUTION: DO NOT LOCATE ANTENNAS NEAR POWER LINES OR NEAR PEOPLE TO AVOID HAZARDS."

" THE UNITED STATES DEPARTMENT OF LABOR THROUGH THE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACTOF 1970 (OSHA), HAS ESTABLISHED AN ELECTROMAGNETIC ENERGY SAFETY STANDARD WHICH APPLIES TO USE OF RADIO EQUIPMENT. THE FOLLOWING PRECAUTIONS ARE RECOMMENDED:

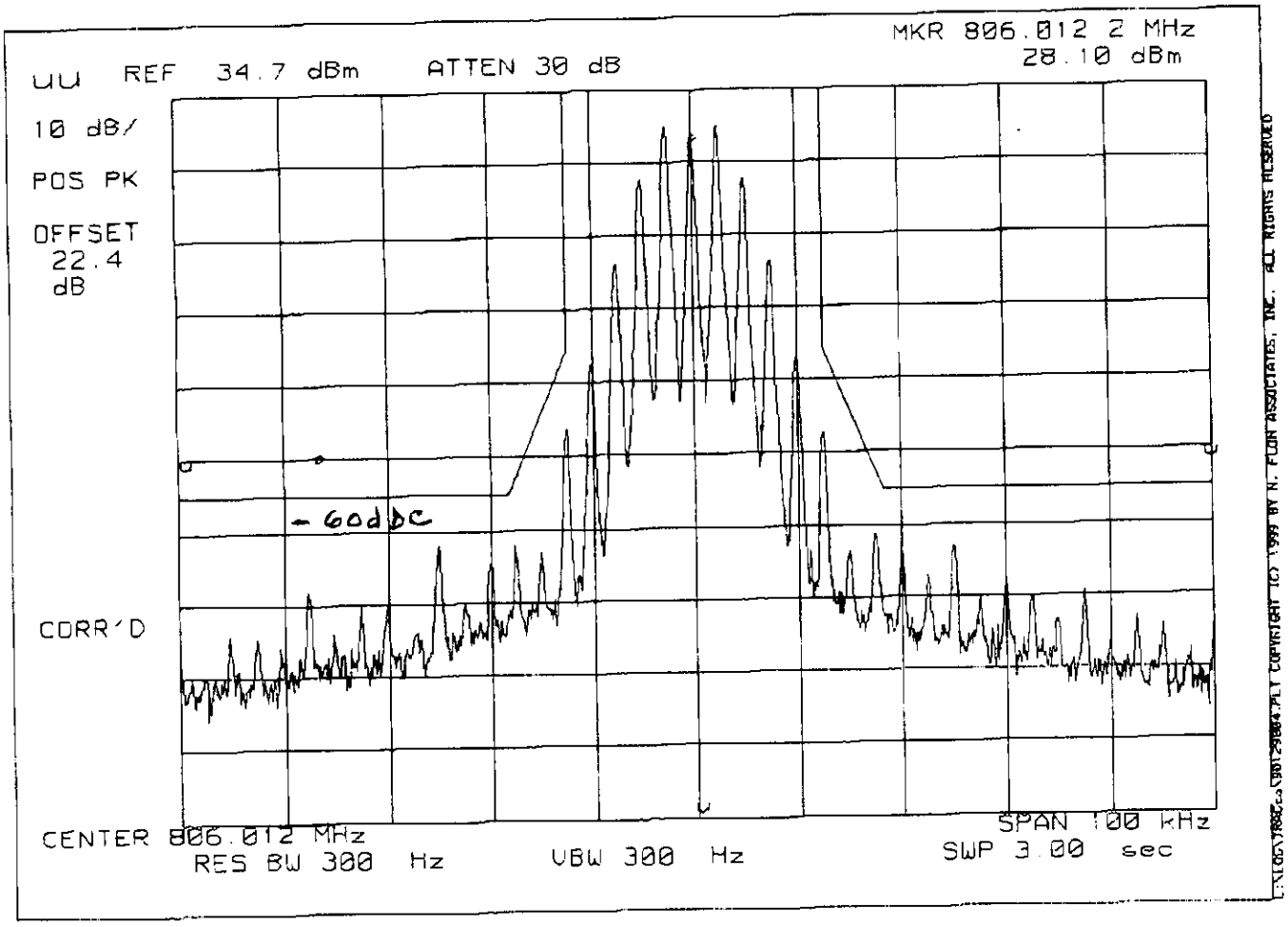
1. DO NOT OPERATE THE TRANSMITTER WHEN SOMEONE IS WITHIN TWO FEET (0.6 METER) OF THE ANTENNA.
2. DO NOT OPERATE THE TRANSMITTER UNLESS ALL RF CONNECTIONS ARE SECURE AND ANY OPEN CONNECTORS ARE TERMINATED.
3. ALL EQUIPMENT MUST BE PROPERLY GROUNDED FOR SAFE OPERATION.
4. THIS EQUIPMENT SHOULD BE SERVICED ONLY BY A QUALIFIED TECHNICIAN."

PAGE NO. 11.2. AMENDED D6X-T8200
TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)
POWER: HIGH

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, dBm	LEVEL, dBc	LEVEL, µW
813.494	1626.932	-32.4	-67.1	1
813.494	2440.672	-31.3	-66.0	1
813.494	3253.514	-35.2	-69.9	0
813.494	4067.044	-34.0	-68.7	0
813.494	4881.348	-35.1	-69.8	0
813.494	5694.355	-34.8	-69.5	0
813.494	6507.946	-29.0	-63.7	1
813.494	7321.299	-28.9	-63.6	1
813.494	8135.239	-27.7	-62.4	2
813.494	8948.523	-29.9	-64.6	1
813.494	9762.352	-29.2	-63.9	1
813.494	10575.683	-29.1	-63.8	1
813.494	11388.419	-28.5	-63.2	1
813.494	12202.314	-28.7	-63.4	1

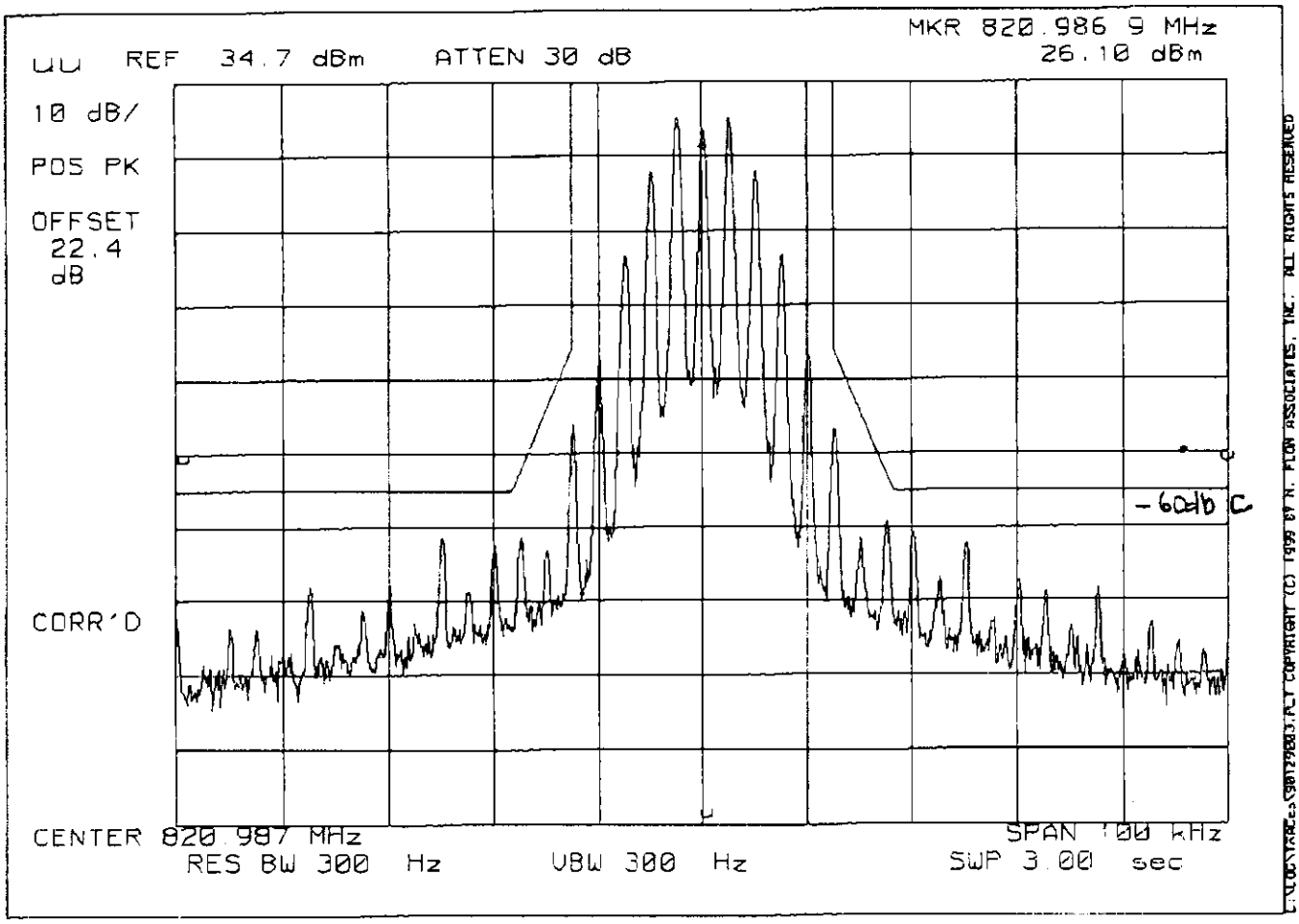
SPECTRUM ANALYZER PRESENTATION
TECOM, T-8200
1999-JAN-29, 11:43, FRI

POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
REMARK: LOWER CHANNEL



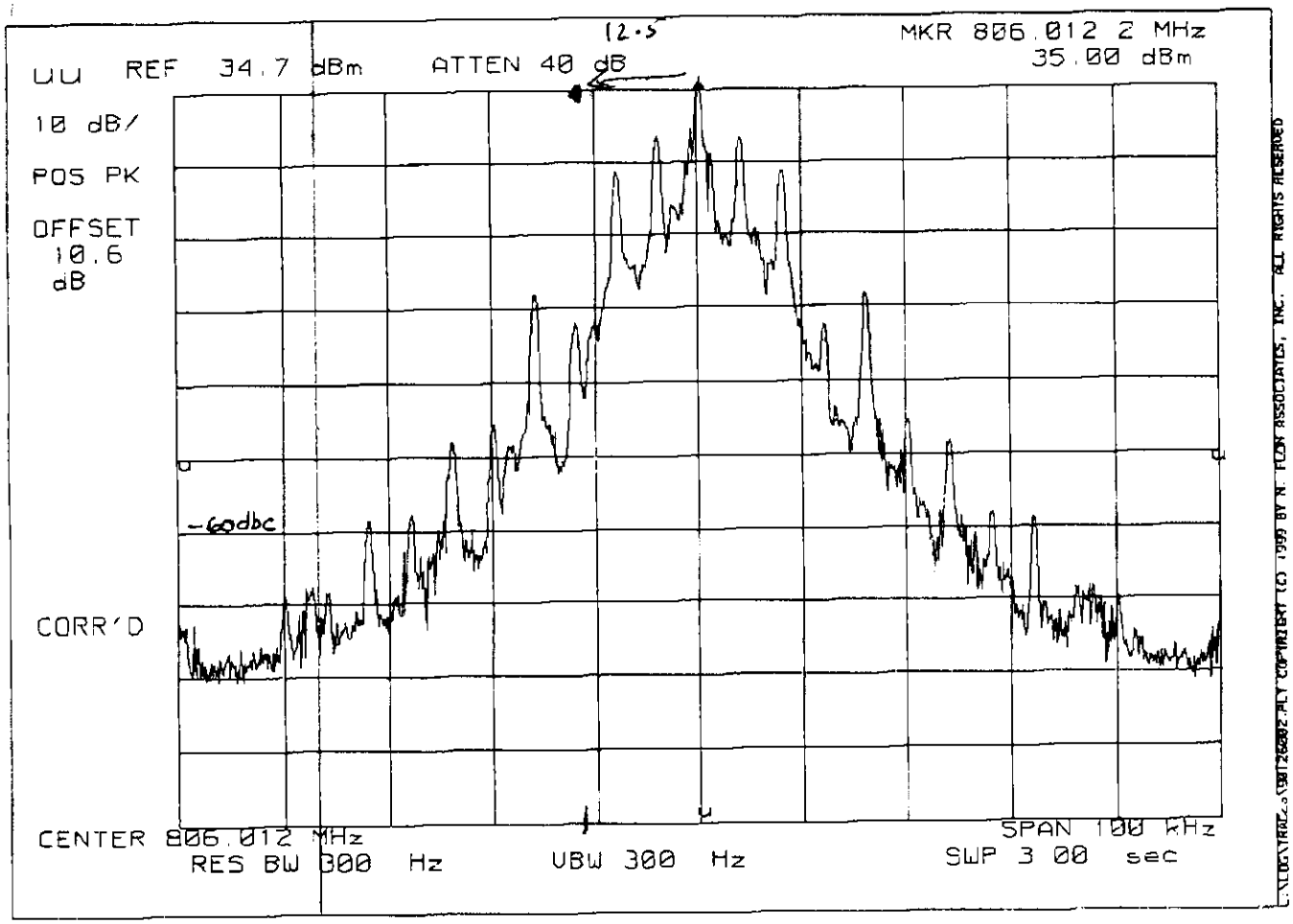
SPECTRUM ANALYZER PRESENTATION
TECOM, T-8200
1999-JAN-29, 11:40, FRI

POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
REMARK: UPPER CHANNEL



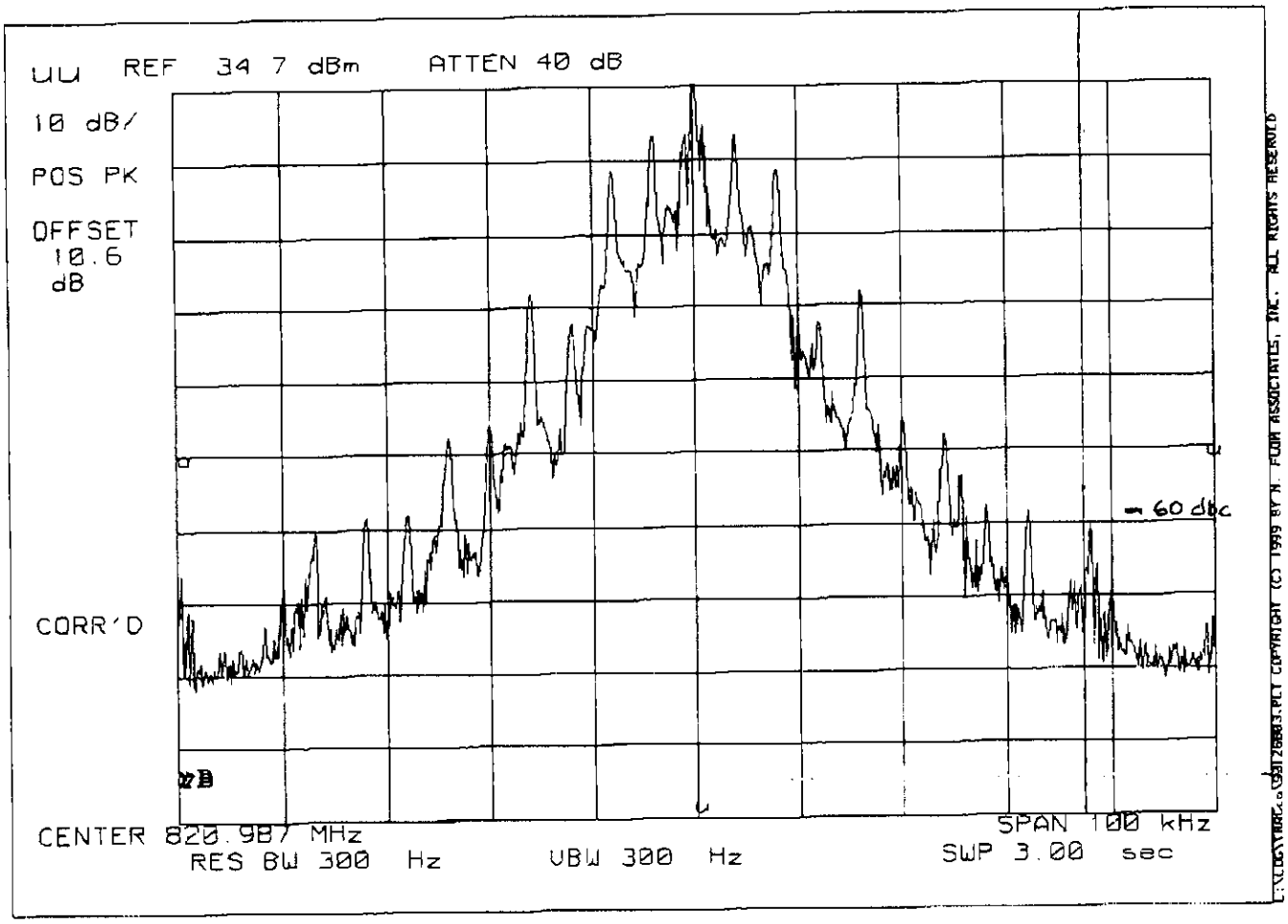
SPECTRUM ANALYZER PRESENTATION
TECOM, T-8200
1999-JAN-26, 13:52, TUE

POWER: HIGH
MODULATION: DATA LOWER CHANNEL



SPECTRUM ANALYZER PRESENTATION
TECOM, T-8200
1999-JAN-26, 13:56, TUE

POWER: HIGH
MODULATION: DATA UPPER CHANNEL



D6X-T8200

PAGE NO.	6. AMENDED
NAME OF TEST:	Carrier Output Power (Conducted)
SPECIFICATION:	FCC: 47 CFR 2.985(a) 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

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

NOMINAL, MHz	R.F. POWER OUTPUT, WATTS
806.0125	3
813.4875	2.95
820.9875	2.9

SUPERVISED BY:

MORTON FLOM, P. Eng.

D6X-T8200

PAGE NO. 11.2. AMENDED
TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)
POWER: HIGH

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, dBm	LEVEL, dBc	LEVEL, µW
813.494	1626.932	-32.4	-67.1	1
813.494	2440.672	-31.3	-66.0	1
813.494	3253.514	-35.2	-69.9	0
813.494	4067.044	-34.0	-68.7	0
813.494	4881.348	-35.1	-69.8	0
813.494	5694.355	-34.8	-69.5	0
813.494	6507.946	-29.0	-63.7	1
813.494	7321.299	-28.9	-63.6	1
813.494	8135.239	-27.7	-62.4	2
813.494	8948.523	-29.9	-64.6	1
813.494	9762.352	-29.2	-63.9	1
813.494	10575.683	-29.1	-63.8	1
813.494	11388.419	-28.5	-63.2	1
813.494	12202.314	-28.7	-63.4	1

MFA M. Flom Associates, Inc.
Global Compliance Center

3356 North San Marcos Place, Suite 107
Chandler, Arizona 85224-1571
(602) 926-3100, FAX: 926-3598
www.goodnet.com/~mflom

September 14, 1998.

Federal Communications Commission,
Equipment Approval Services,
P. O. Box 358315,
Pittsburgh, PA. 15251-5315.

Attention: Authorization and Evaluation Division,
Applicant: TECOM CO. LTD.
Equipment: FCC ID: D6X-T8200
FCC Rules: Part 90.691 and CONFIDENTIALITY and 2.1091

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Test Data Report and all pertinent documentation, the whole for certification of the referenced equipment.

CONFIDENTIALITY ITEMS ARE CONTAINED IN SEALED ENVELOPE, as per instructions.

Filing fees (new rate) and CONFIDENTIALITY fees (new rate) are via VISA, authorization attached.

Please note that this equipment is meant to comply with FCC Rule Part 2.1091. It will be used as a Base Station at fixed locations - thus **not** requiring MPE evaluation. This equipment uses AMPS Signaling protocol.

We trust you find the same in order. Should you require any further information, kindly contact the writer who is authorized to act as Agent for the Applicant.

Sincerely yours,

MORTON FLOM, P. Eng.

mf;mgf
encs.
CERTIFIED MAIL, R.R.R.

cc: APPLICANT c-o Mobicel Systems, Inc., Att: Robert Gordon
and A-COMMUNICATIONS L.L.C. Attention: J. Treatch

LIST OF EXHIBITS
(TYPE ACCEPTANCE - REVISED 3/24/97)

APPLICANT: Tecom Co., Ltd.

EQUIPMENT: D6X-T8200

CONFIDENTIAL

BY APPLICANT:

1. LETTER OF AUTHORIZATION **& CONFIDENTIALITY**

2. IDENTIFICATION DRAWINGS
   - X LABEL
   - X LOCATION OF LABEL
   - X COMPLIANCE STATEMENT
   - X LOCATION OF COMPLIANCE STATEMENT

3. PHOTOGRAPHS (2.983(g))

4. PART 90.203(e) & (g) ATTESTATION

5. DOCUMENTATION: 2.983(d)

(6)	BLOCK DIAGRAM	(1 sheet)
(6)	LIST OF ACTIVE DEVICES	(1 sheet)
(7)	SCHEMATIC DIAGRAM	(1 sheet)
(8)	MANUAL	(2 sheets)
(9)	TUNE-UP/ALIGNMENT PROCEDURE	(2 sheets)
(10)	CIRCUIT DESCRIPTION	(2 sheets)
	BLOCK DIAGRAM DESCRIPTION	(2 sheets)

6. **MPE REPORT: not required**

BY M.F.A. INC.

A. TESTIMONIAL & STATEMENT OF CERTIFICATION

B. STATEMENT OF QUALIFICATIONS

C. LIST OF TEST INSTRUMENTATION

FCC ID No.:D6X-T8200 Model No.:T-8200

Federal Communications Commission
Authorization & Evaluation Division
7435 Oakland Mills Road
Columbia, Maryland 21046

Gentlemen:

This letter will authorize the appointment of MORTON FLOM, P. Eng.,and/or Mr. Flom Associates, Inc. to act as our agent in FCC matters radio related to application for Mobile Phone (Model No.:T-8200 , FCC ID No.:D6X-T8200) authorization.

This appointment is effective until otherwise notified by us.

This is to advise that we are in full compliance with the Anti-Drug Abuse Act. The Applicant is not subject to a denial of federal benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1988, 21 USC 862, and no party to the application is subject to a denial of federal benefits pursuant to that section.

Sincerely

Applicant: TECOM CO.,LTD.

By: Wesley Huang Wesley Huang
Signature Printed

Title: Vice President

Tel: 886-35-775141 Fax: 886-35-776855

Date: 05/30/96

SAMPLE ATTESTATION
FCC Rules, § 90.203(e)and(g)

Federal Communications Commission
Authorization & Evaluation Division
7435 Oakland Mills Road
Columbia, Maryland 21046

Gentlemen:

Reference: FCC ID No.: D6X-T8200 , Model No.: T-8200

This equipment meets the requirements of the FCC Rules, Parts 90.203(e) and (g), as applicable.

Programming of this product's transmit frequencies can be performed ONLY by the manufacturer or by service or maintenance personnel.The operator cannot program transmit frequencies using the equipment's external operation controls.

Sincerely

Applicant: TECOM CO.,LTD.

By: Wesley Huang (Signature) Wesley Huang (Printed)

Title: Vice President

Tel: 886-35-775141 Fax: 886-35-776855

Date: 05/30/97

FCC ID No.:D6X-T8200 Model No.:T-8200

CONFIDENTIAL

Federal Communications Commission
EQUIPMENT APPROVAL SERVICES
P.O. Box 358315
Pittsburgh, PA 15251-5315

Attention: Authorization and Evaluation Division

Reference: FCC ID No.: D6X-T8200 , Model No.: T-8200

Pursuant to Sections 0.457 (d)(1)(Ⅱ) and 0.459 of the Commission's Rules, the applicant hereby requests confidential treatment of some of the information accompanying this application, as listed below:

- Block diagram
- Block diagram description
- Schematic diagram

These materials contain trade secrets and proprietary information not customarily released to the public. The public disclosure of these matters might be harmful to the Applicant and provide unjustified benefits to its competitors.

The Applicant understands that pursuant to Rule 0.457 (d)(1)(Ⅱ),disclosure of the application and all accompanying documentation will not be made before the date of grant for this application.

Sincerely

Applicant: TECOM CO.,LTD.

By: Wesley Huang (Signature) Wesley Huang (Printed)

Title: Vice President

Tel: 886-35-775141 Fax: 886-35-776855

Date: 05/30/96

M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85224-1571
www.goodnet.com/~mflom, (602) 926-3100, FAX: 926-3598

Sub-part
2.983 (f):

EQUIPMENT IDENTIFICATION

FCC ID: D6X-T8200

NAMEPLATE DRAWING

ATTACHED, EXHIBIT 1.

LOCATION

AS PER LABEL DRAWING(S)

DATE OF REPORT

September 19, 1997
RE-SUBMITTED: SEPTEMBER 14, 1998

MORTON FLOM, P. Eng.

SUPERVISED BY:
MF:glk

THE APPLICANT HAS BEEN CAUTIONED AS TO THE FOLLOWING:

15.21 INFORMATION TO 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 D6X-T8200

LIST OF GENERAL INFORMATION REQUIRED FOR TYPE ACCEPTANCE

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

2.1091, 90, CONFIDENTIALITY

Sub-part
2.983(a): NAME AND ADDRESS OF APPLICANT:

Tecom Co., Ltd.
23, R & D Rd. 2
Science-Based Industrial Park
Hsin-Chu Taiwan R.O.C.

VENDOR:

Digital Assurance Labs, Inc.
15455 N. Greenway - Hayden Loop Rd., Suite C2
Scottsdale, AZ 85260

2.983(b): FCC ID: D6X-T8200

MODEL NO: T8200

2.983(c): QUANTITY PRODUCTION PLANNED.

2.983(d): TECHNICAL DESCRIPTION: SEE ATTACHED EXHIBITS

(1): TYPE OF EMISSION: 26K0F8W, 11K4F1D

(2): FREQUENCY RANGE, MHz: 806 to 821

(3): POWER RATING, Watts: 3
SWITCHABLE x ADJUSTABLE ___ N/A ___.

(4): MAXIMUM POWER RATING, Watts: 100

2.983(d)
(5): VOLTAGES & CURRENTS IN ALL ELEMENTS IN FINAL R. F. STAGE, INCLUDING FINAL TRANSISTOR OR SOLID STATE DEVICE:

COLLECTOR CURRENT, A = per manual
COLLECTOR VOLTAGE, Vdc = per manual
SUPPLY VOLTAGE, AC = 110

(6): FUNCTION OF ACTIVE CIRCUIT DEVICES:

PLEASE SEE ATTACHED EXHIBITS

(7): CIRCUIT DIAGRAM:

PLEASE SEE ATTACHED EXHIBITS

(8): MANUAL:

PLEASE SEE ATTACHED EXHIBITS

(9): TUNE-UP PROCEDURE:

PLEASE SEE ATTACHED EXHIBITS

(10): DESCRIPTION OF CIRCUITRY & DEVICES PROVIDED FOR DETERMINING AND STABILIZING FREQUENCY:

PLEASE SEE ATTACHED EXHIBITS

(11): DESCRIPTION OF CIRCUITS OR DEVICES EMPLOYED FOR
(a) SUPPRESSION OF SPURIOUS RADIATION,
(b) LIMITING MODULATION,
(c) LIMITING POWER:

PLEASE SEE ATTACHED EXHIBITS

(12): DIGITAL MODULATION DESCRIPTION:

ATTACHED EXHIBITS ___
N/A x

2.983(e): TEST AND MEASUREMENT DATA:

FOLLOWS

2.983(f): LABEL INFORMATION:

PLEASE SEE ATTACHED EXHIBITS

2.983(g): PHOTOGRAPHS:

PLEASE SEE ATTACHED EXHIBITS

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
_x_ 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 F - Interactive Video and Data Service (IVDS)
___ 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	=
A.C. SUPPLY VOLTAGE, Vac	= 110
A.C. SUPPLY FREQUENCY, Hz	= 60

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.

NAME OF TEST: Carrier Output Power (Radiated)

SPECIFICATION: FCC: 47 CFR 2.985(a)
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 $P_t=((E \times R)^2/49.2)$ watts, where R = 3m.

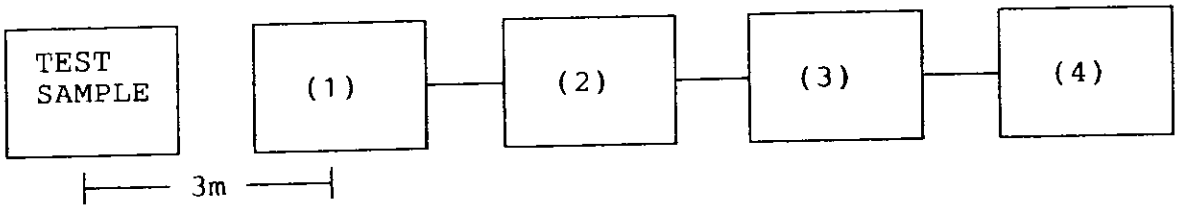
2. Measurement accuracy is ±1.5 dB.

MEASUREMENT RESULTS

NOMINAL, MHz	R.F. POWER, WATTS
806.0125	3
813.4875	3
820.9875	3

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 2.993(a)
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 FCC and was found to be in compliance with the requirements of Section 15.38, by letter from the FCC 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. The test sample was connected to an R.F. Wattmeter and a 50 ohm dummy load, and adjusted to its rated output.

   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. A signal generator, connected with a non-radiating cable to a vertically polarized half-wave antenna (for each frequency involved) was substituted for the transmitter. The Search Antenna was raised and lowered to obtain maximum indicated.

5. The signal generator output was adjusted until a signal level indication equal to that from the transmitter was obtained.

6. Steps 4 and 5 were repeated, using a horizontally polarized half-wave antenna. The higher of the two observations was noted.

NAME OF TEST: Field Strength of Spurious Radiation

SPECIFICATION: FCC: 47 CFR 2.993(a)
IC: N/A

MEASUREMENT PROCEDURE (CONT.)

7. Power into the half-wave antenna was calculated from the characteristic impedance of the line, and the voltage output from the signal generator.

8. The level of each spurious radiation with reference to the transmitter power in dB, was calculated from:

$$\text{SPURIOUS LEVEL, dB} = 10 \text{ LOG } \frac{\text{(Calculated Spurious Power) [from para. 7].}}{\text{Tx Power (Wattmeter)}}$$

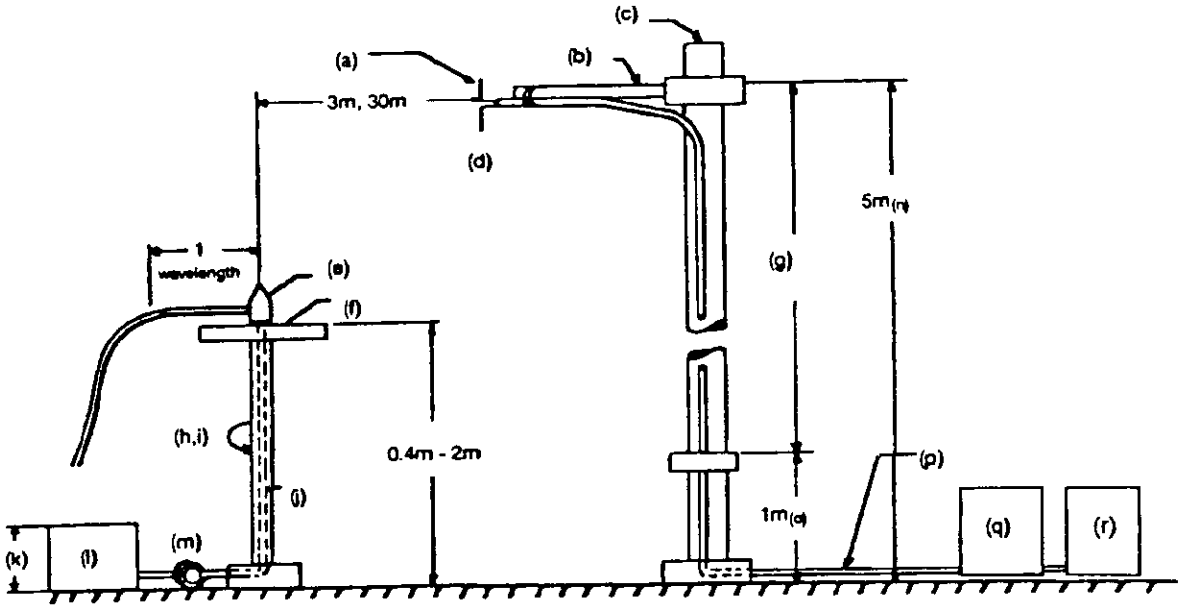
9. The worst case for all channels is shown.

10. Measurement summary:

FREQUENCY OF CARRIER, MHz	= 813.4875
SPECTRUM SEARCHED, GHz	= 0 to 10 x F_C
ALL OTHER EMISSIONS	= ≥ 20 dB BELOW LIMIT
LIMIT, dBc	= −48

11. Measurement results: 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.

RADIATED EMISSIONS (TX1), HIGH POWER
1997-JUN-26, 08:53, THR

TUNED, MHz	EMISSION, MHz	METER, dBuV	C.F., dB	ERP, -dBc
813.488	1627.00	29.3	30.8	-35.1
813.488	2440.47	43.3	4.6	-47.3
813.488	3253.93	37.3	7.7	-50.2
813.488	4067.43	49.0	10.0	-36.2
813.488	4880.92	42.5	11.1	-41.6
813.488	5694.41	38.0	13.3	-43.9
813.488	6507.88	35.0	14.1	-46.2
813.488	7321.36	38.2	16.1	-40.9
813.488	8134.85	30.5	17.2	-47.5

NAME OF TEST: Emission Masks (Occupied Bandwidth)

SPECIFICATION: FCC: 47 CFR 2.989(c)(1)
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.

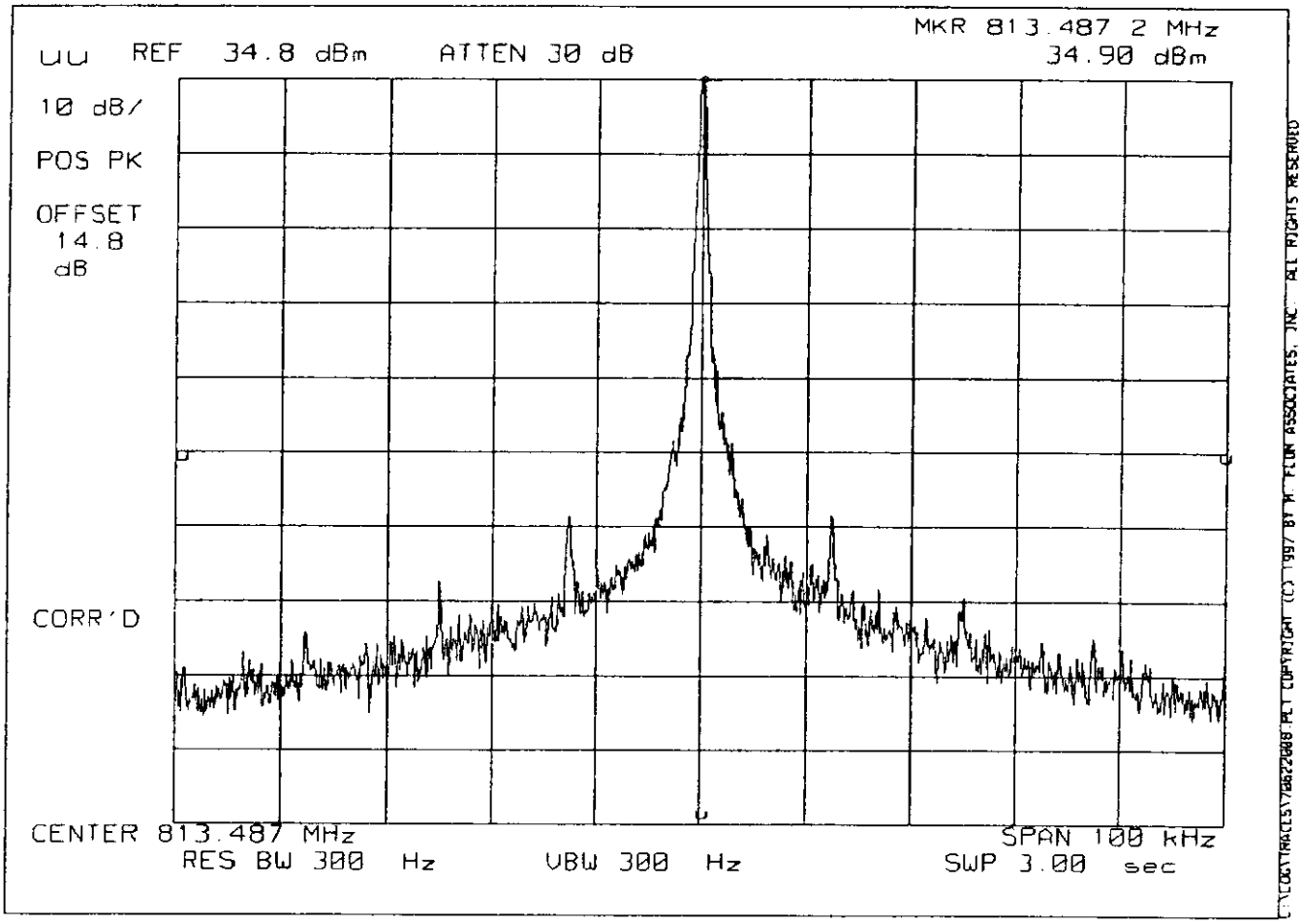
2. For EUTs supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for ±2.5 kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.

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

SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-JUL-22, 15:04, TUE

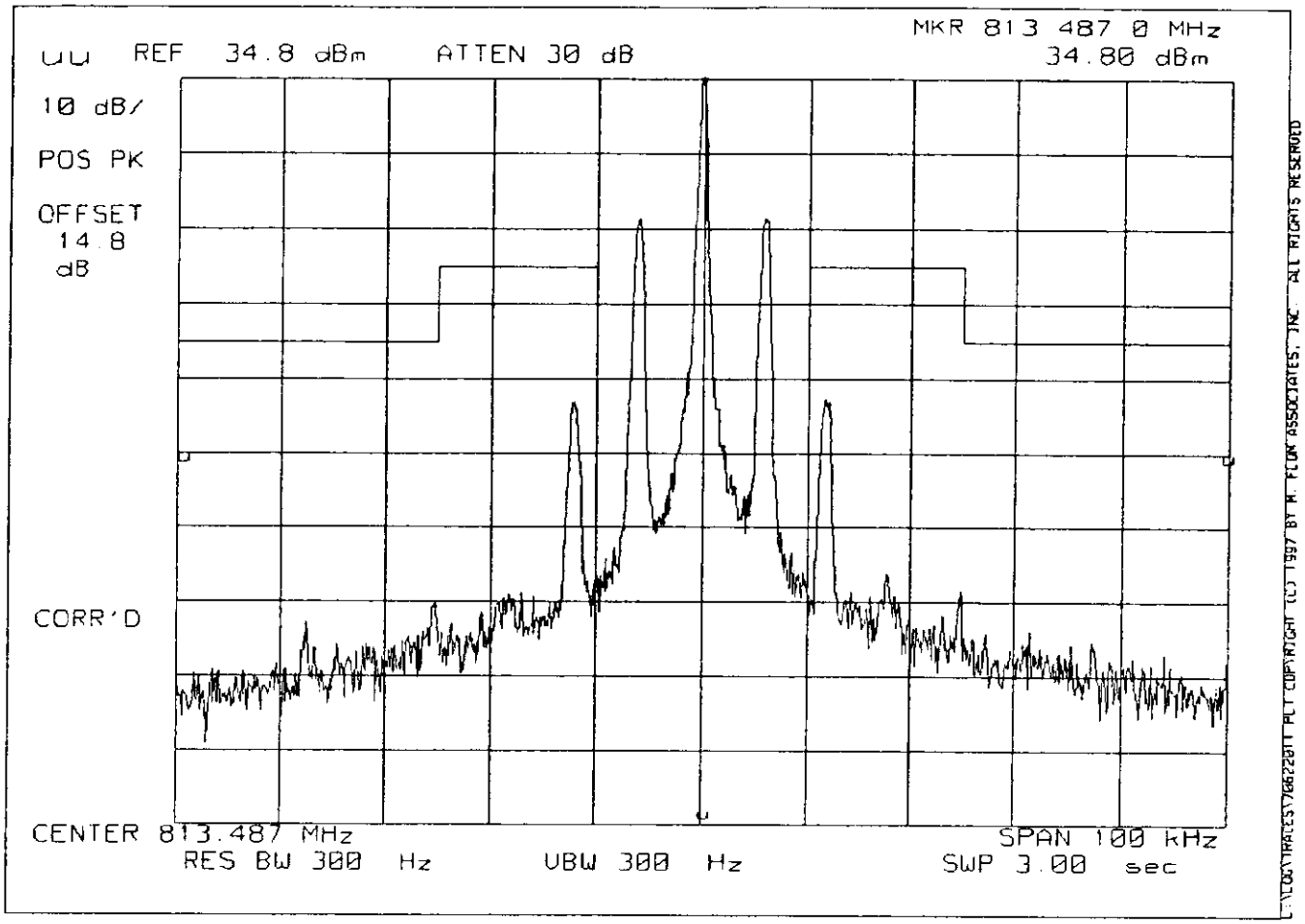


POWER: HIGH
MODULATION: NONE

SUPERVISED BY:

MORTON FLOM, P.Eng

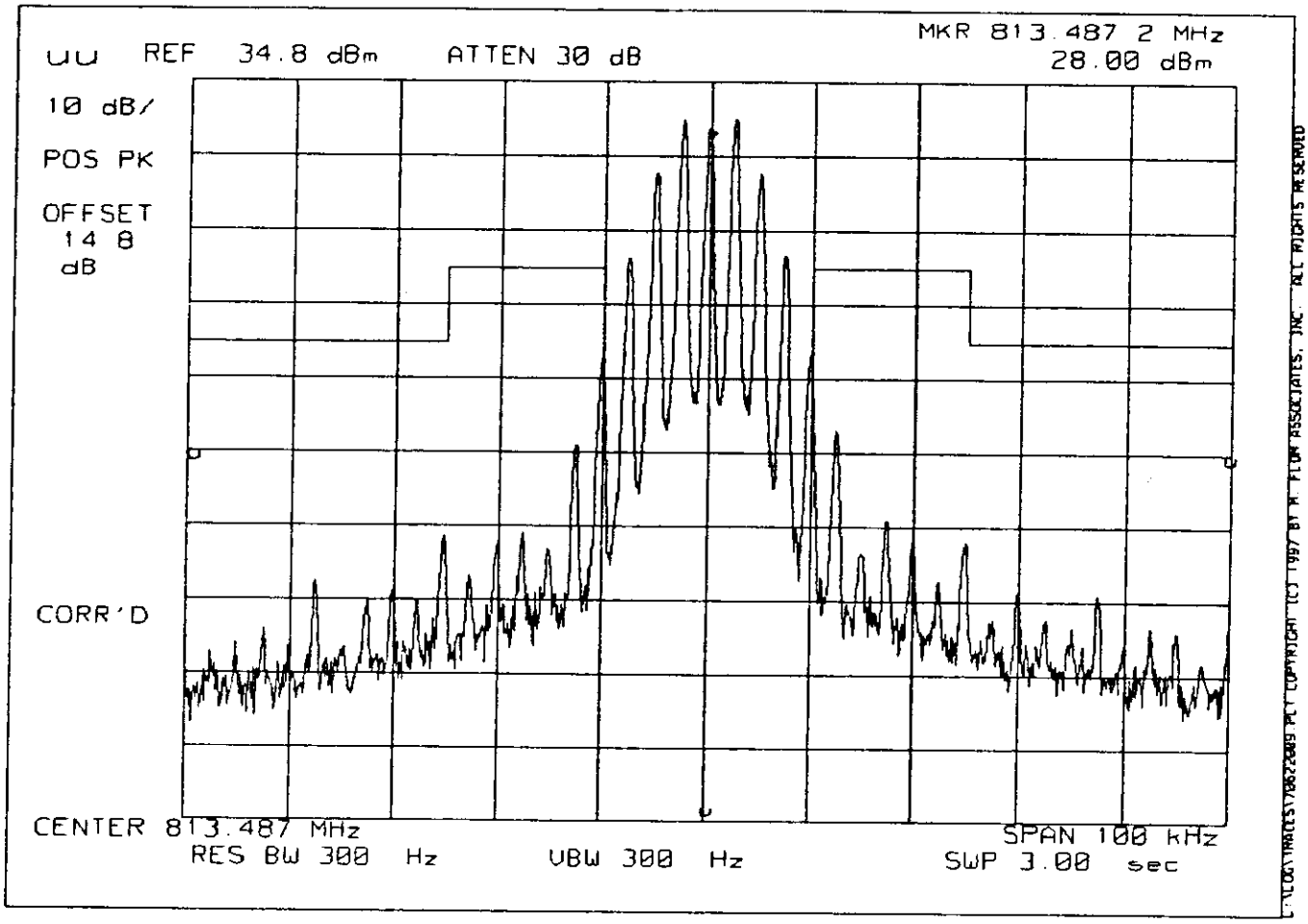
SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-JUL-22, 15:11, TUE



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

SUPERVISED BY: MORTON FLOM, P.Eng

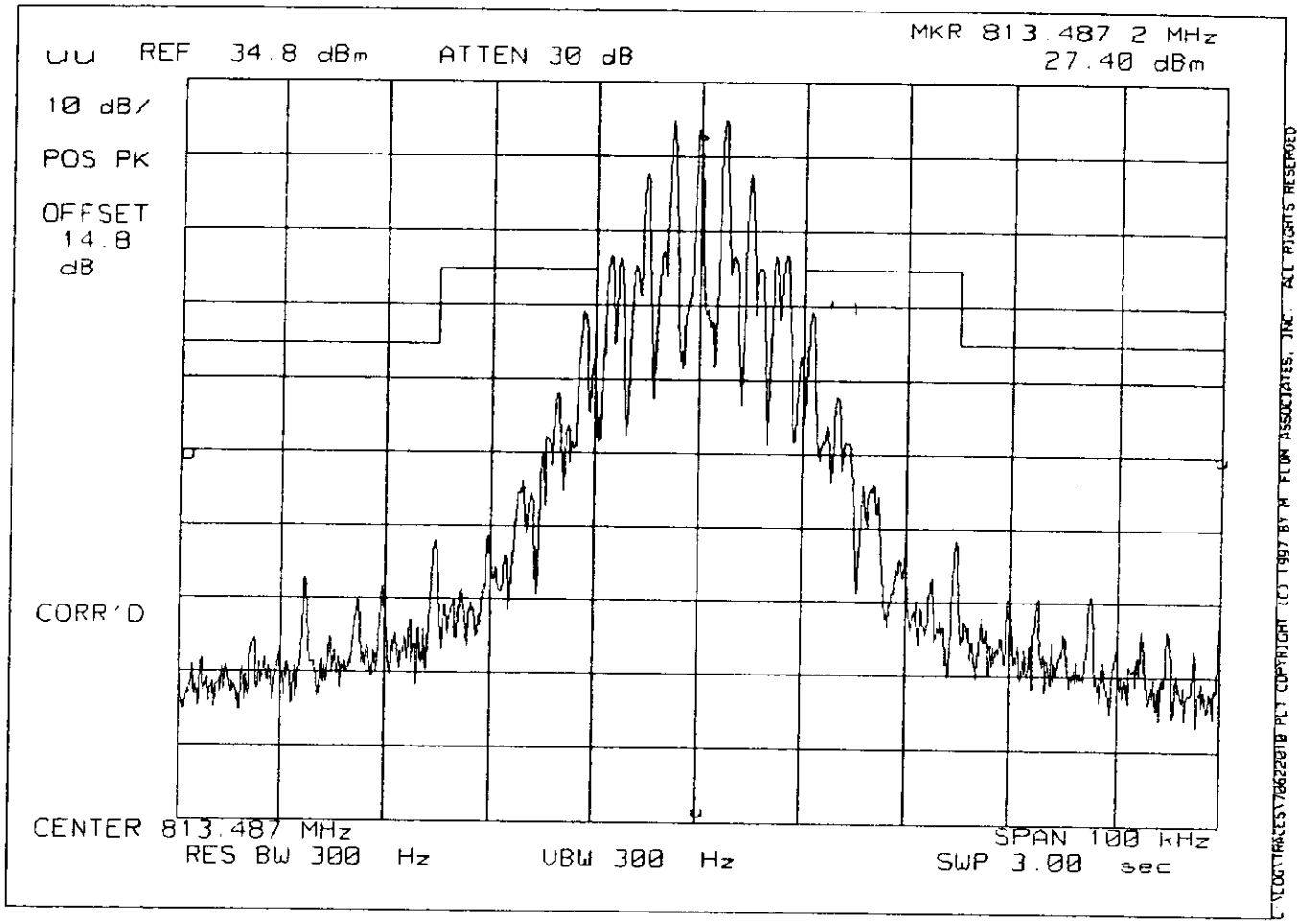
SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-JUL-22, 15:08, TUE



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

SUPERVISED BY: MORTON FLOM, P.Eng

SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-JUL-22, 15:09, TUE



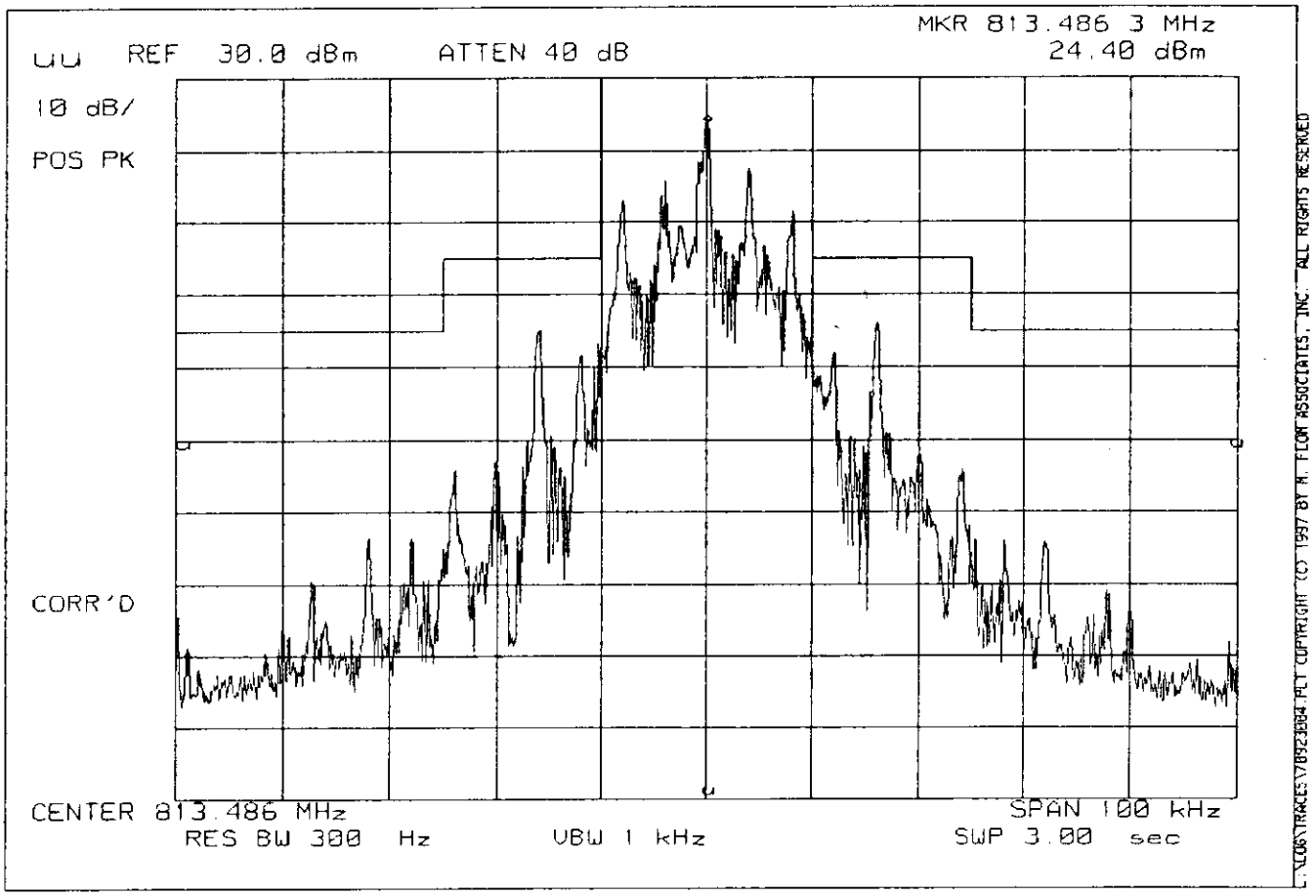
POWER: HIGH
MODULATION: SAT+VOICE
MASK: B, VHF/UHF 25kHz, w/LPF

SUPERVISED BY:

MORTON FLOM, P.Eng

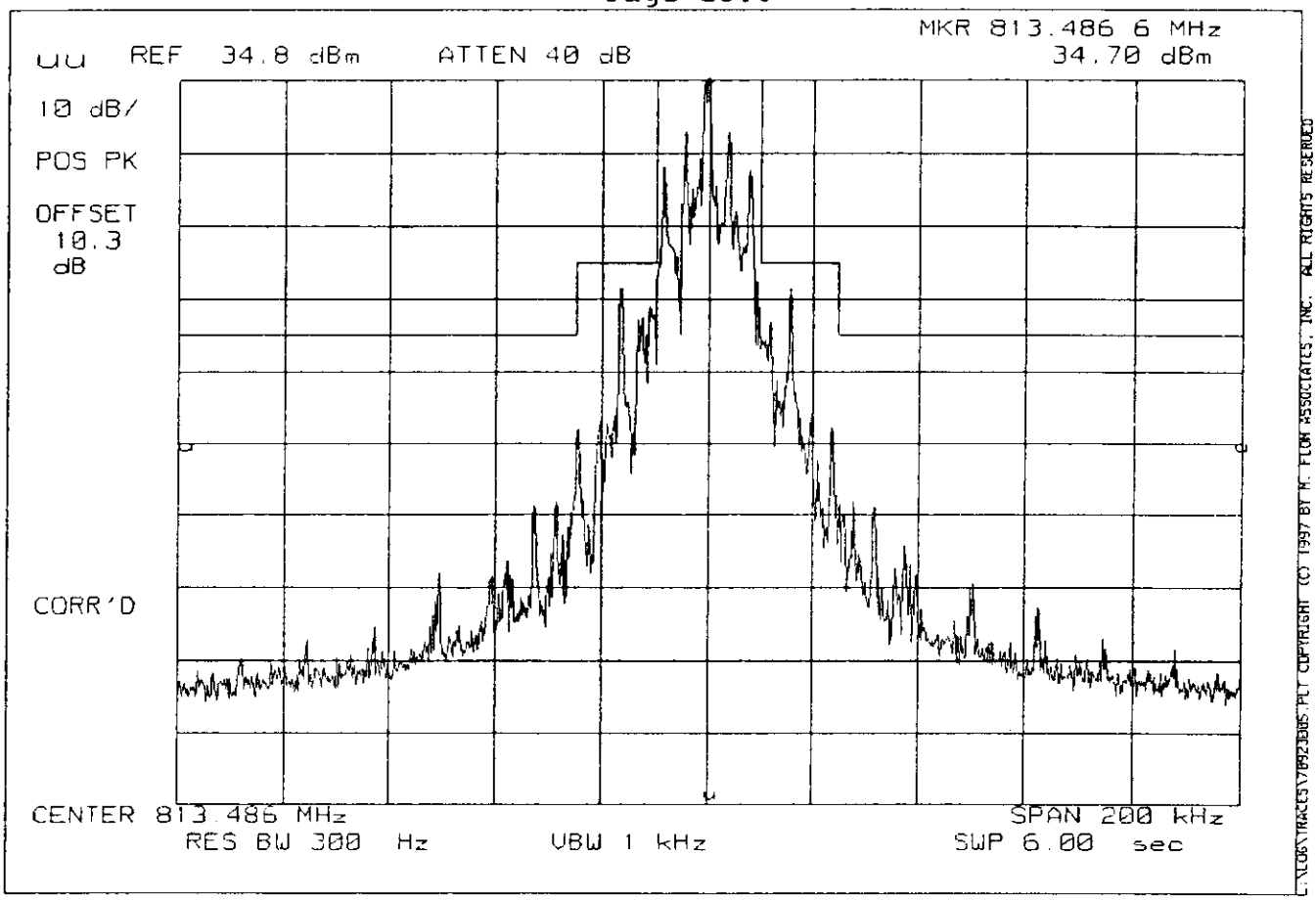
SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-SEP-23, 14:47, TUE

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



SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-SEP-23, 14:55, TUE

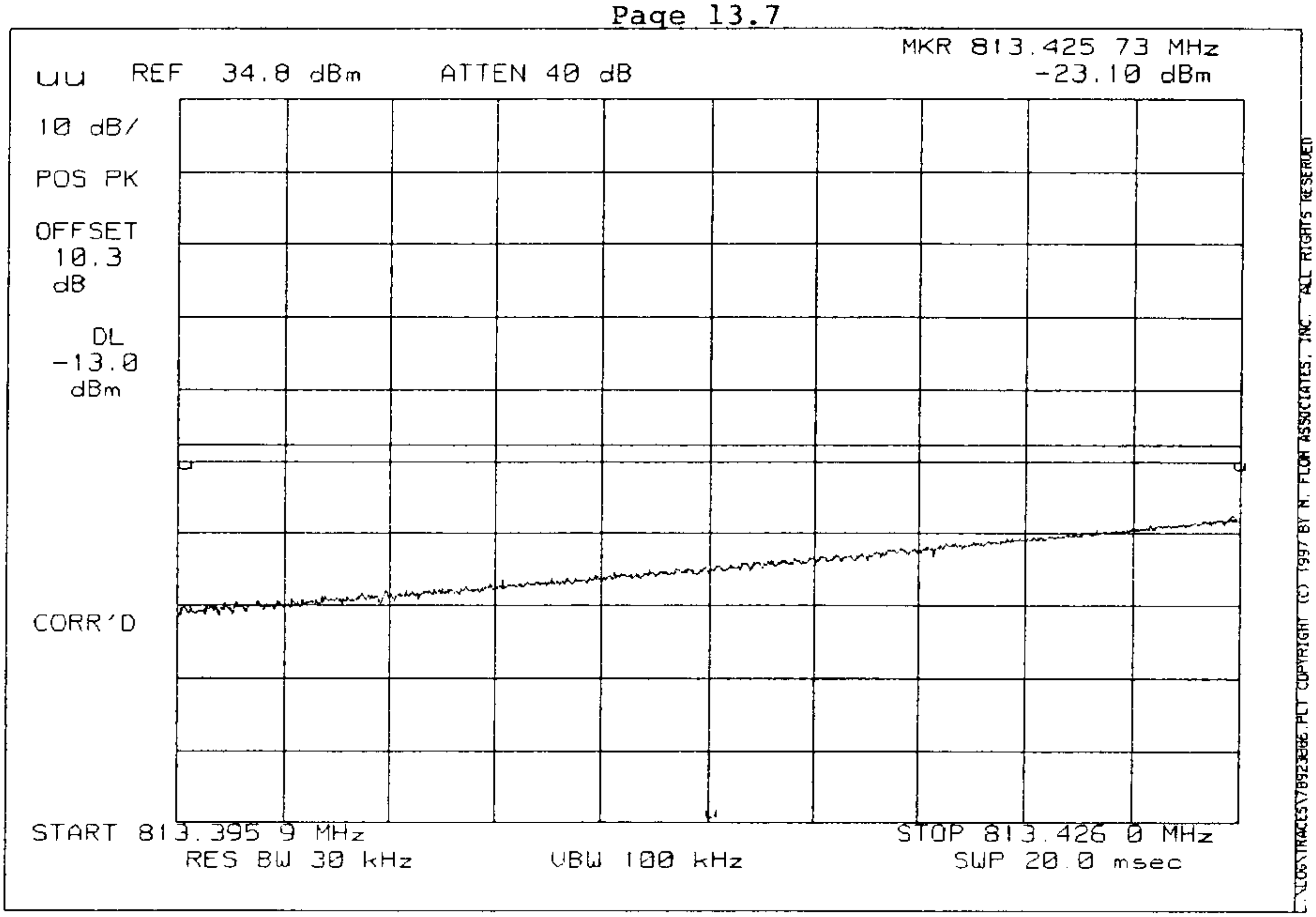
POWER: HIGH
MODULATION: DATA
MASK: B, VHF/UHF 25kHz, w/LPF



SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-SEP-23, 15:20, TUE

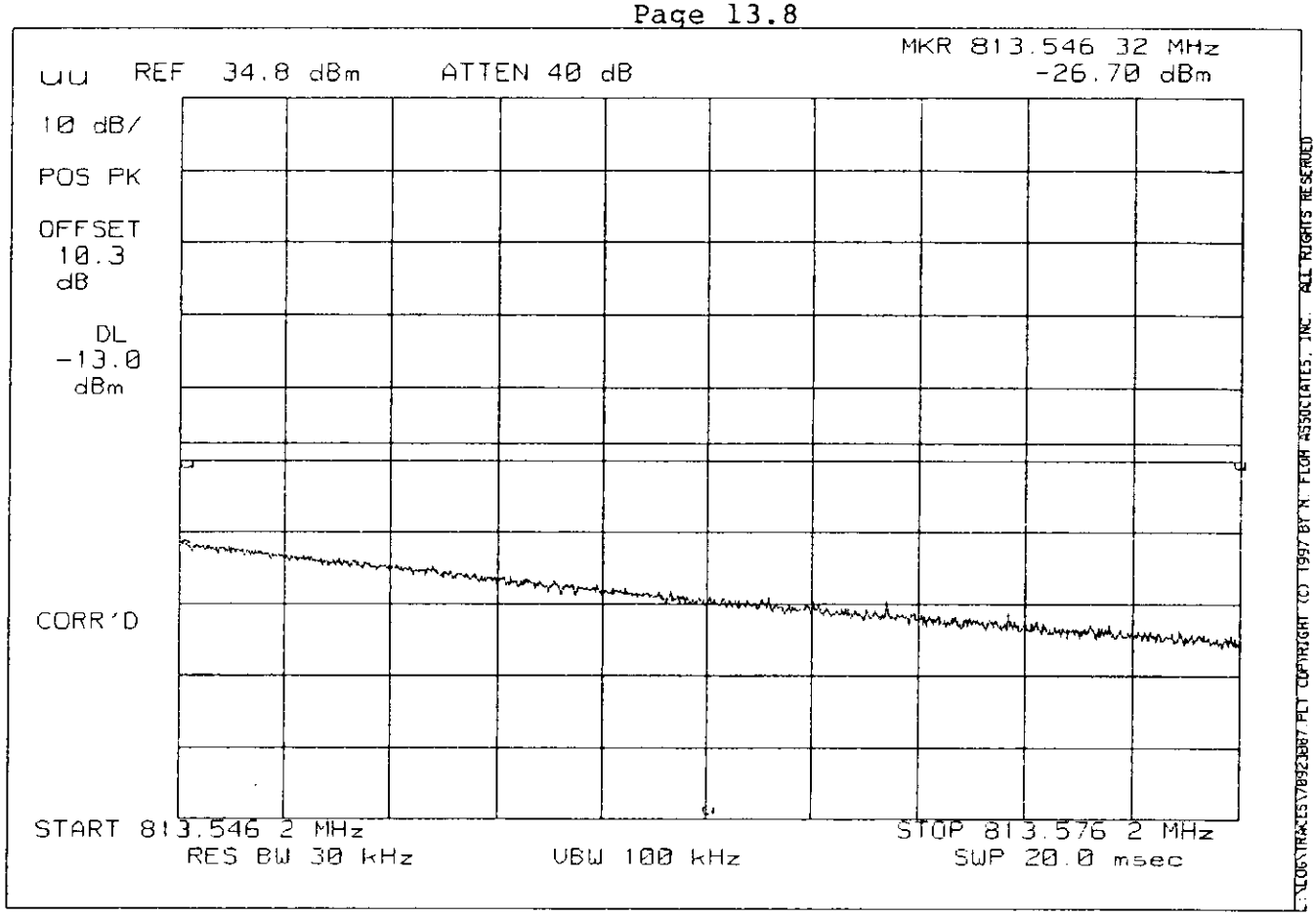
POWER: HIGH
MODULATION: DATA
REMARK: FC-90 KHZ TO FC-60 KHZ, RBW=30 KHZ

Page 13.7



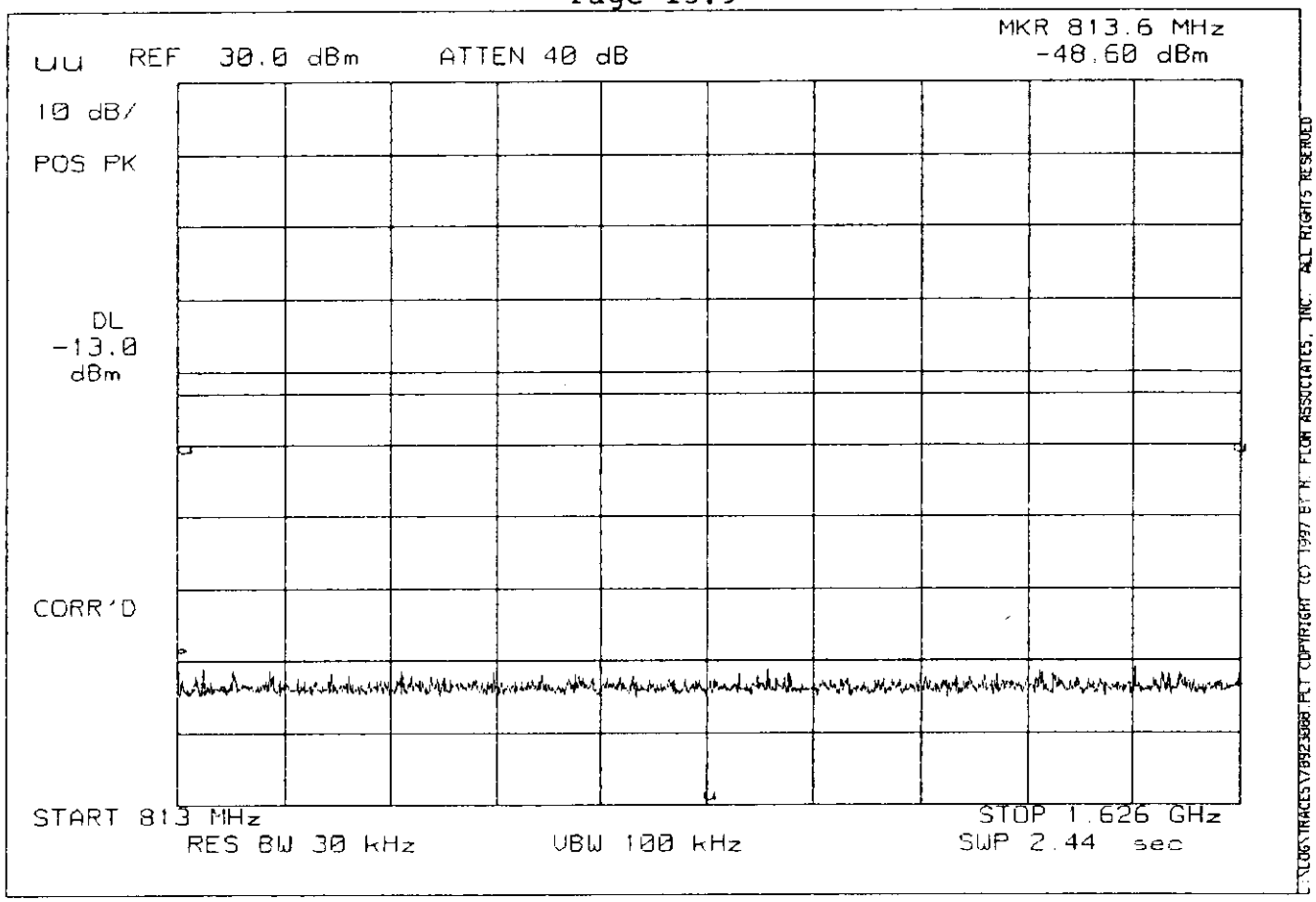
SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-SEP-23, 15:24, TUE

POWER: HIGH
MODULATION: DATA
REMARK: FC+90 KHZ TO FC+60 KHZ, RBW=30 KHZ



SPECTRUM ANALYZER PRESENTATION
TECOM, T8200
1997-SEP-23, 15:28, TUE

POWER: HIGH
MODULATION: DATA
REMARK: FC+90 KHZ TO 2ND HAR, RBW=30 KHZ



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

SPECIFICATION: FCC: 47 CFR 2.987(a)
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

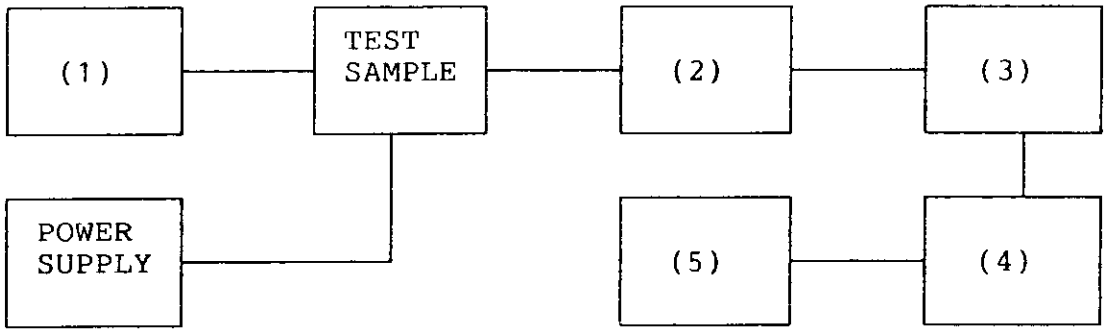
1. The EUT and test equipment were set up such that the audio input was connected at the input to the modulation limiter, and the modulated stage.

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	___
HP 3312A	x
_____	x

(2) COAXIAL ATTENUATOR

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

(3) MODULATION ANALYZER

HP 8901A	x
_____	___

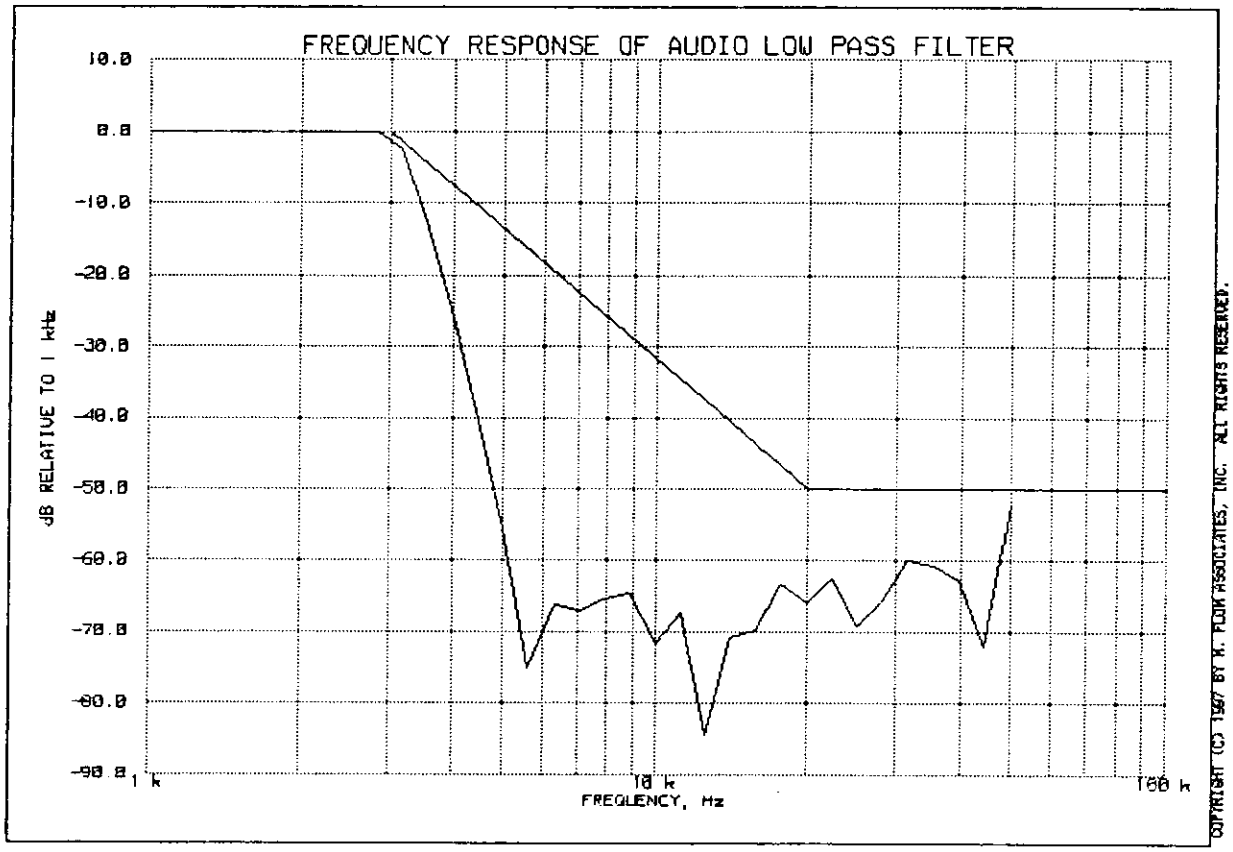
(4) AUDIO ANALYZER

HP 8903A	x
_____	___

(5) SCOPE

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

FREQUENCY RESPONSE OF AUDIO LOW PASS FILTER
TECOM, T8200
22 JUL 1997, 15:49



PEAK AUDIO FREQUENCY, Hz: 2820

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Audio Frequency Response

SPECIFICATION: FCC: 47 CFR 2.987(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.

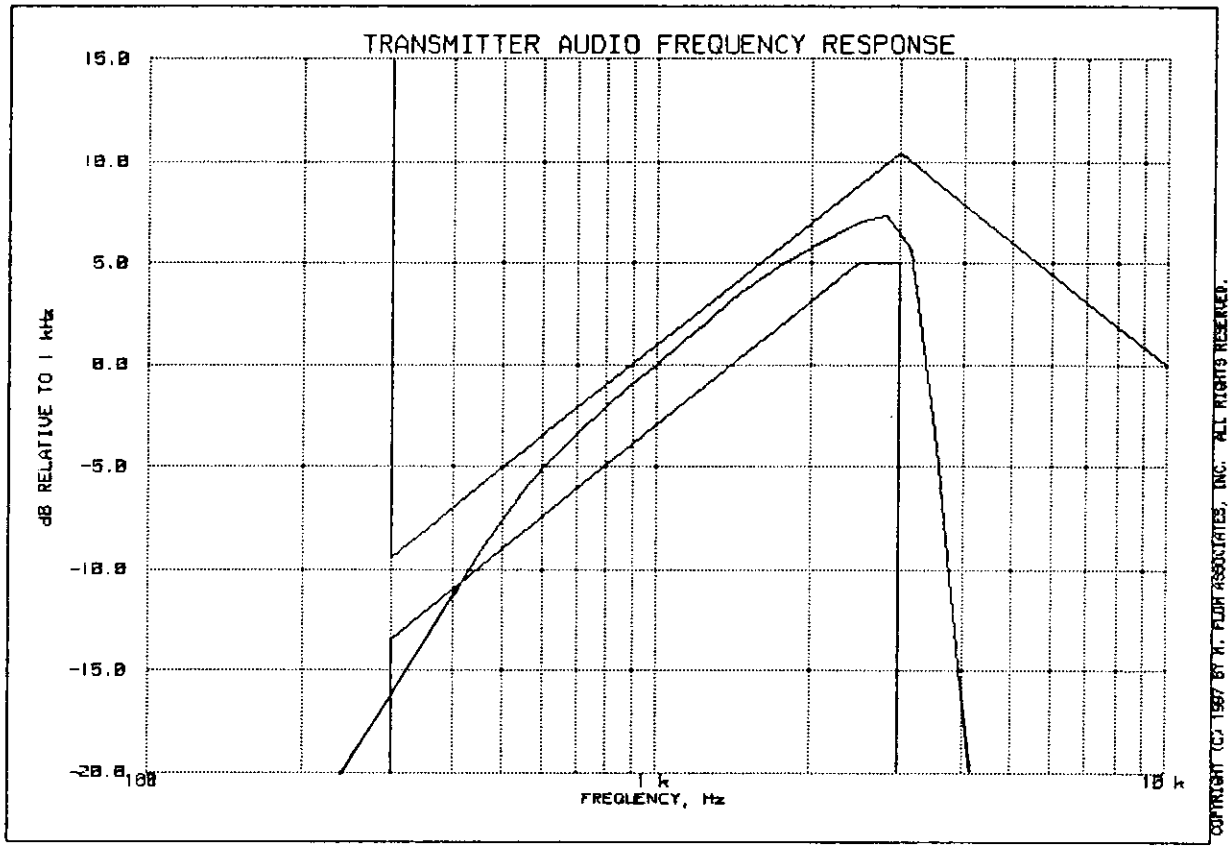
3. The audio signal input was adjusted to obtain 20% modulation at 1 kHz, and this point was taken as the 0 dB reference level.

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

TRANSMITTER AUDIO FREQUENCY RESPONSE
TECOM, T8200
22 JUL 1997, 15:45



PEAK AUDIO FREQUENCY, Hz: 2820

TABLE VALUES:

FREQUENCY, Hz	LEVEL, dB	FREQUENCY, Hz	LEVEL, dB	FREQUENCY, Hz	LEVEL, dB
300	-16.8	30000	-20.8		
20000	-20.7	50000	-20.6		

SUPERVISED BY: MORTON FLOM, P. Eng.

NAME OF TEST: Modulation Limiting

SPECIFICATION: IC: RSS-119, Section 6.6
FCC: 47 CFR 2.987(b)

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."

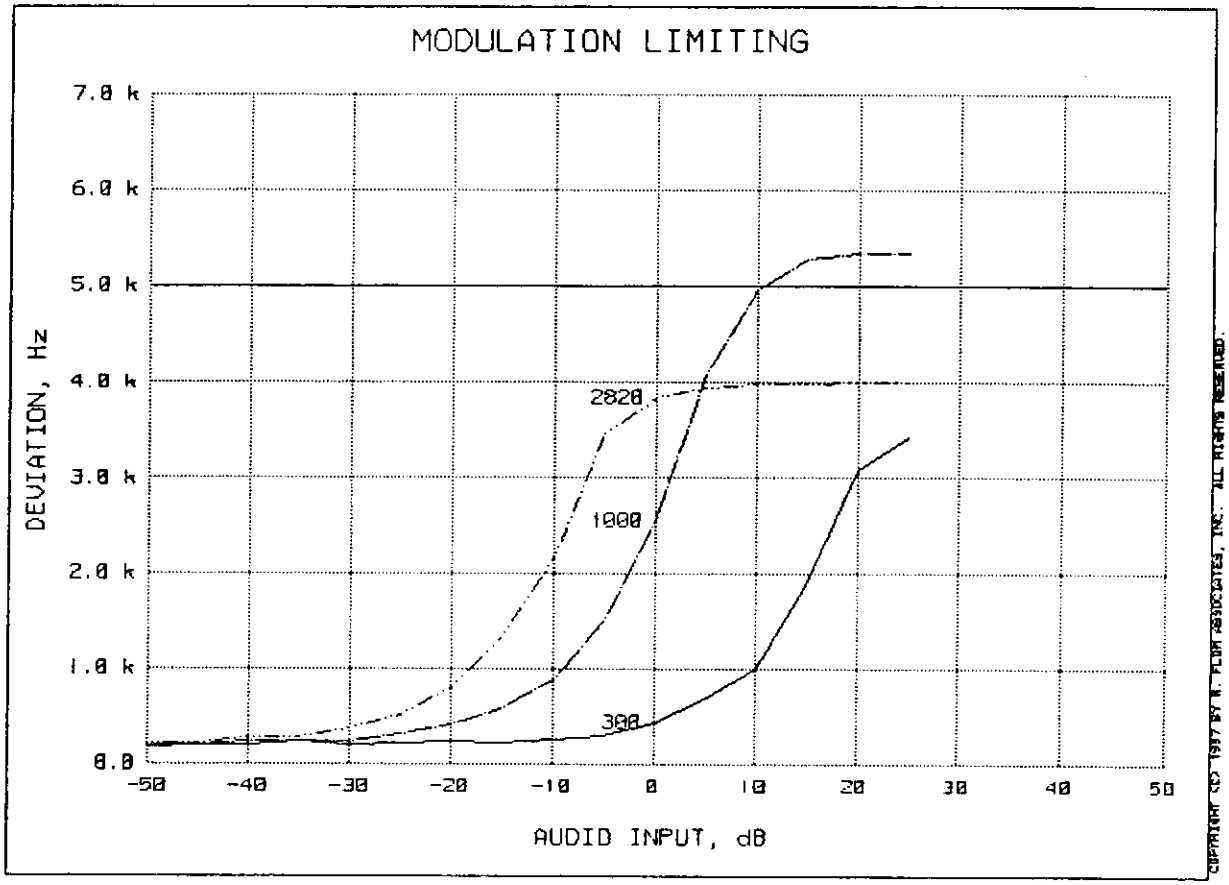
2. The modulation response was measured for each of three frequencies (one of which was the frequency of maximum response), and the input voltage was varied and was observed on an HP 8901A Modulation Analyzer.

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

MODULATION LIMITING
TECOM, T8200
1997-JUL-22, 15:54

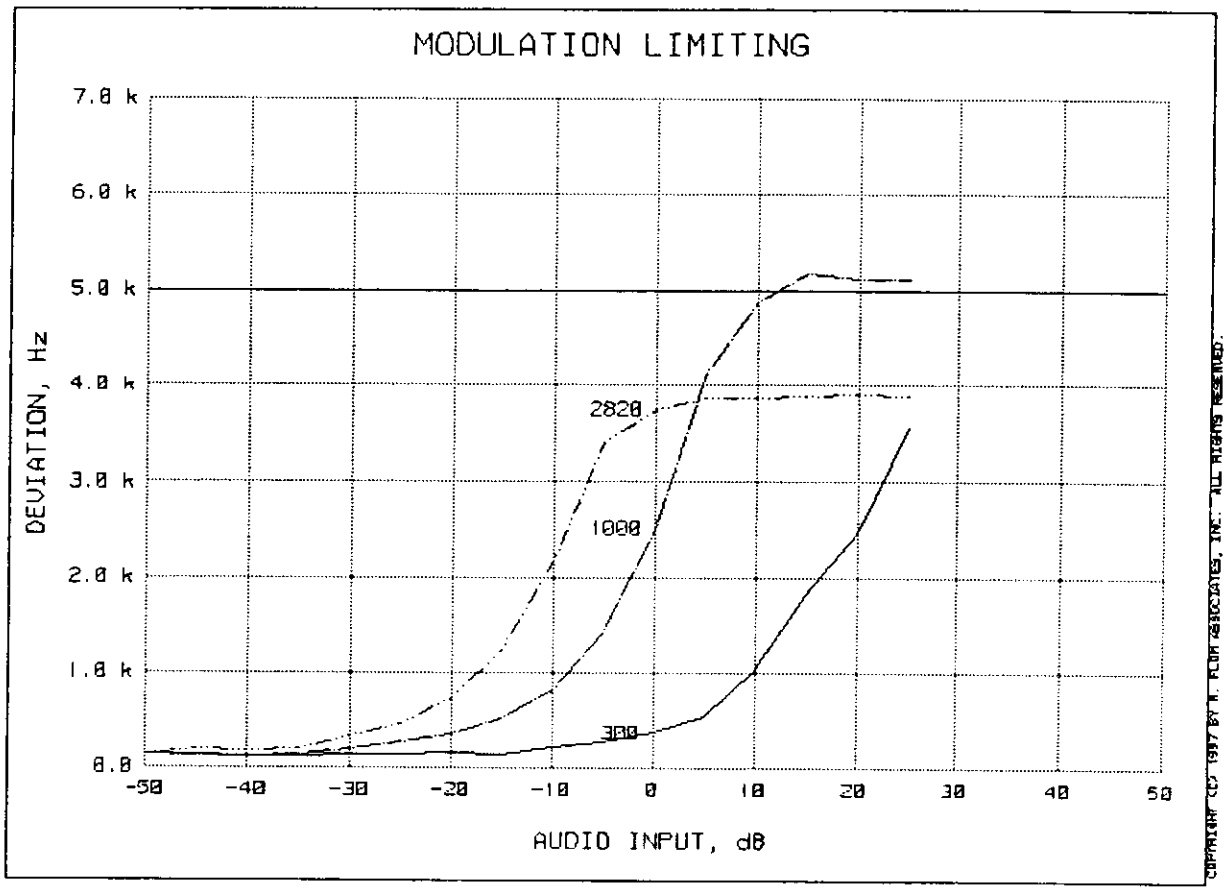


REFERENCE DEVIATION, kHz	= 2.5
REFERENCE MODULATION, Hz	= 1000
PEAKS	= POSITIVE
AUDIO AMPLITUDE, mV	= 210.9

SUPERVISED BY:

MORTON FLOM, P. Eng.

MODULATION LIMITING
TECOM, T8200
1997-JUL-22, 15:54



REFERENCE DEVIATION, kHz	= 2.5
REFERENCE MODULATION, Hz	= 1000
PEAKS	= NEGATIVE
AUDIO AMPLITUDE, mV	= 220.84

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Frequency Stability (Temperature Variation)

SPECIFICATION: FCC: 47 CFR 2.995(a)(1)
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.

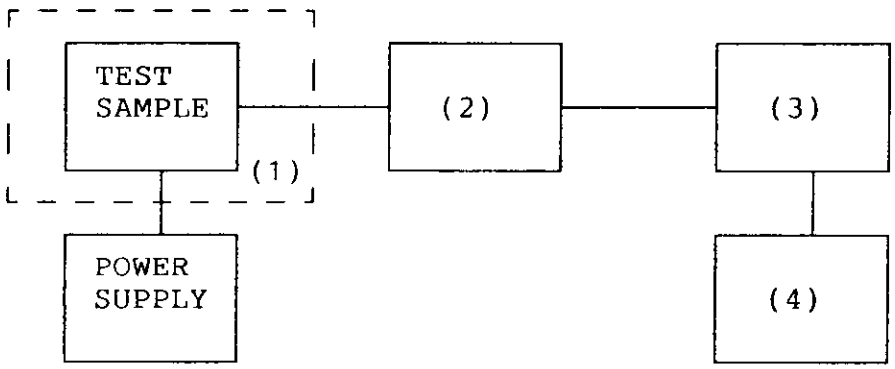
3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.

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	
SIERRA 661A-30	x
BIRD 8329 (30 dB)	x
_____	

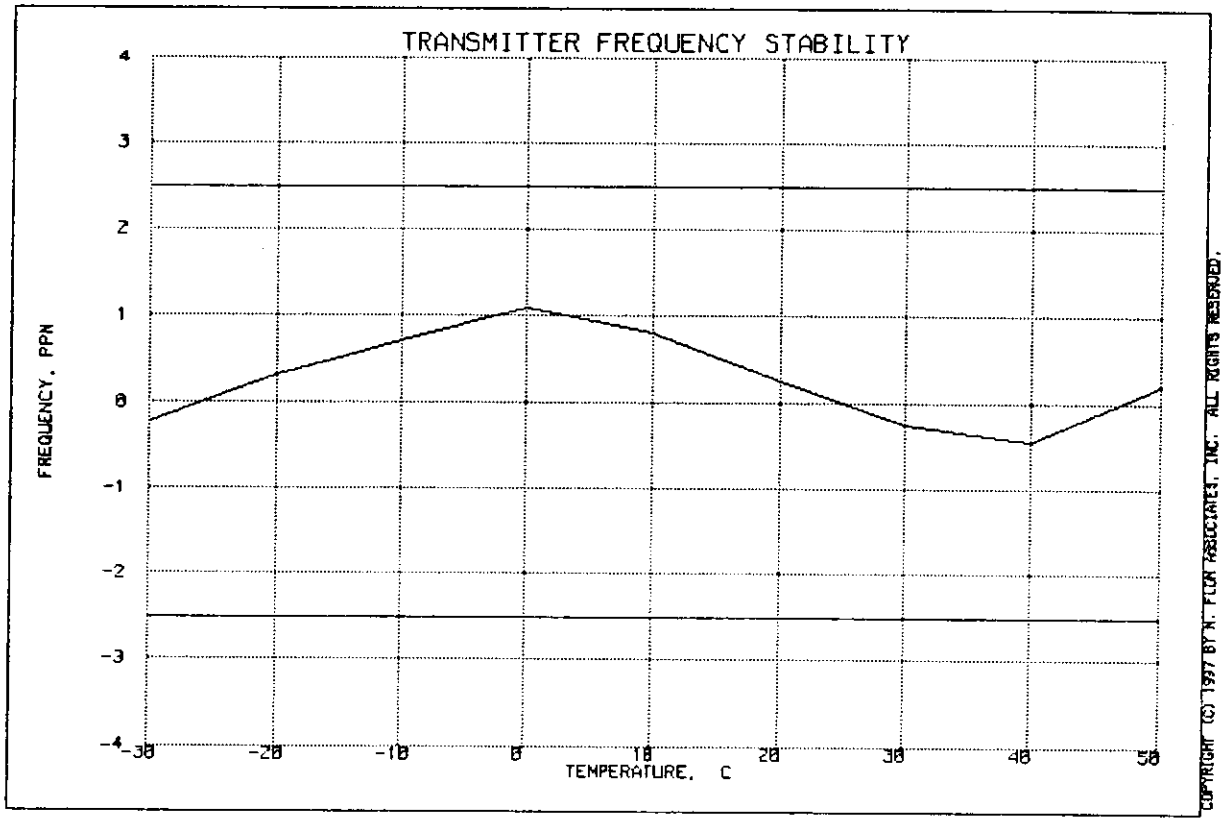
(3) R.F. POWER

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
_____	

TRANSMITTER FREQUENCY STABILITY
TECOM, T8200
23 JUL 1997, 15:05



FREQUENCY OF CARRIER, MHz = 813.48716

LIMIT, ppm = 1.5

LIMIT, Hz = 2034

SUPERVISED BY:

MORTON FLOM, P. Eng.

NAME OF TEST: Frequency Stability (Voltage Variation)

SPECIFICATION: FCC: 47 CFR 2.995 (b)(1)
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 = 2034

STV, %	Vdc	CHANGE IN FREQUENCY, Hz	
85	12.8	813487530	30
100	15.0	813487500	0
115	17.3	813487520	20
BATTERY END POINT:	12.0	813487480	-20

SUPERVISED BY: MORTON FLOM, P. Eng.

NAME OF TEST: Necessary Bandwidth and Emission Bandwidth

PARAGRAPH: 47 CFR 2.202(g)

MODULATION = VOICE WITH SAT (F8W)

NECESSARY BANDWIDTH CALCULATION:

MODULATION (M), kHz	= 6
DEVIATION (D), kHz	= 5 + 2
	= 11
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2 x M) + (2 x D x K)
	= 26
COMPOSITE DESIGNATOR	= 26K0F8W

MODULATION = WIDEBAND DATA (F1D)

NECESSARY BANDWIDTH CALCULATION:

J. R. CARSON'S RULE (2M + 2DK):

MAXIMUM MODULATION (M), kHz	= 4 (Note 1)
MAXIMUM DEVIATION (D), kHz	= 1.7
CONSTANT FACTOR (K)	= 1
NECESSARY BANDWIDTH (B_N), kHz	= (2 x M) + (2 x D x K)
	= 11.4
EMISSION DESIGNATOR	= 11K4F1D

Note 1: Based on bit rate of 8,000 bps.

SUPERVISED BY: MORTON FLOM, P. Eng.

TESTIMONIAL
AND
STATEMENTOF CERTIFICATION

D6X-T8200

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: 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 3208 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 31078, 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