M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

*Submitted March 8, 2000

Date: January 25, 2000*

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Nokia Mobile Phones, Inc.
Equipment: 6185i, Type NSD-3AW
FCC ID: GMLNSD-3AW
FCC Rules: 22, 24, Confidentiality

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

Filing fees are attached.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

William H. Graff, Director
of Engineering

enclosure(s)
cc: Applicant
WHG/cvr

LIST OF EXHIBITS
(FCC CERTIFICATION (CELLULAR TRANSMITTERS) - REVISED 9/28/98)

APPLICANT: Nokia Mobile Phones, Inc.

FCC ID: GMLNSD-3AW

BY APPLICANT:

1. LETTER OF AUTHORIZATION

2. IDENTIFICATION DRAWINGS, 2.1033(c)(11)
   - LABEL
   - LOCATION OF LABEL
   - COMPLIANCE STATEMENT
   - LOCATION OF COMPLIANCE STATEMENT

3. PHOTOGRAPHS, 2.1033(c)(12)

4. CONFIDENTIALITY REQUEST: 0.457 and 0.459

5. DOCUMENTATION: 2.1033(c)
   - (3) USER MANUAL
   - (9) TUNE UP INFO
   - (10) SCHEMATIC DIAGRAM
   - (10) CIRCUIT DESCRIPTION
     - BLOCK DIAGRAM
     - PARTS LIST
     - ACTIVE DEVICES

6. ATTESTATION: ESN: Section 22.919

7. ATTESTATION: OET: Section 22.933

BY M.F.A. INC.

A. TESTIMONIAL & STATEMENT OF CERTIFICATION

B. STATEMENT OF QUALIFICATIONS

M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Sub-part
2.1033(c):

EQUIPMENT IDENTIFICATION

FCC ID: GMLNSD-3AW

NAMEPLATE DRAWING

ATTACHED, EXHIBIT 1.

LOCATION

AS PER LABEL DRAWING(S)

DATE OF REPORT

January 25, 2000

SUPERVISED BY:

William H. Graff, Director
of Engineering

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

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

a) TEST REPORT

b) Laboratory: M. Flom Associates, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0010056

d) Client: Nokia Mobile Phones
12278 Scripps Summit Dr.
San Diego, CA 92131

e) Identification: 6185i, Type NSD-3AW
FCC ID: GMLNSD-3AW
Description: Dual Band Tri Mode CDMA Phone

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

g) Report Date: January 25, 2000
EUT Received: January 17, 2000

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:

William H. Graff, Director
of Engineering

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.

LIST OF GENERAL INFORMATION REQUIRED FOR CERTIFICATION

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

22, 24, Confidentiality

Sub-part 2.1033
(c)(1): NAME AND ADDRESS OF APPLICANT:

Nokia Mobile Phones, Inc.
6200 Courtney Campbell Causeway, Suite 900
P.O. Box 30730
Tampa, Florida 33630-3730

MANUFACTURER:

Nokia Mobile Phones Manufacturing (USA) Inc.
3650 Alliance Gateway
Fort Worth, TX 76178

(c)(2): FCC ID: GMLNSD-3AW

MODEL NO: 6185i, Type NSD-3AW

(c)(3): INSTRUCTION MANUAL(S):

PLEASE SEE ATTACHED EXHIBITS

(c)(4): TYPE OF EMISSION: 40K0F1D, 40K0F8W, 1M25F9W

(c)(5): FREQUENCY RANGE, MHz: 824 to 849 Amps Band
1850 to 1910 PCS Band

(c)(6): POWER RATING, Watts: 0.398 Amps-FM
0.275 Amps-CDMA
0.178 PCS-CDMA

___ Switchable x Variable ___ N/A

(c)(7): MAXIMUM POWER RATING, Watts: 7 Watts

Subpart 2.1033 (continued)

(c)(8): 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, Vdc = 3.8

(c)(9): TUNE-UP PROCEDURE:

PLEASE SEE ATTACHED EXHIBITS

(c)(10): CIRCUIT DIAGRAM/CIRCUIT DESCRIPTION:
Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

PLEASE SEE ATTACHED EXHIBITS

(c)(11): LABEL INFORMATION:

PLEASE SEE ATTACHED EXHIBITS

(c)(12): PHOTOGRAPHS:

PLEASE SEE ATTACHED EXHIBITS

(c)(13): DIGITAL MODULATION DESCRIPTION:

___ ATTACHED EXHIBITS
_x_ N/A

(c)(14): TEST AND MEASUREMENT DATA:

FOLLOWS

M. Flom Associates, Inc. is accredited by the American Association for Laboratory Association (A2LA) as shown in the scope below.

THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

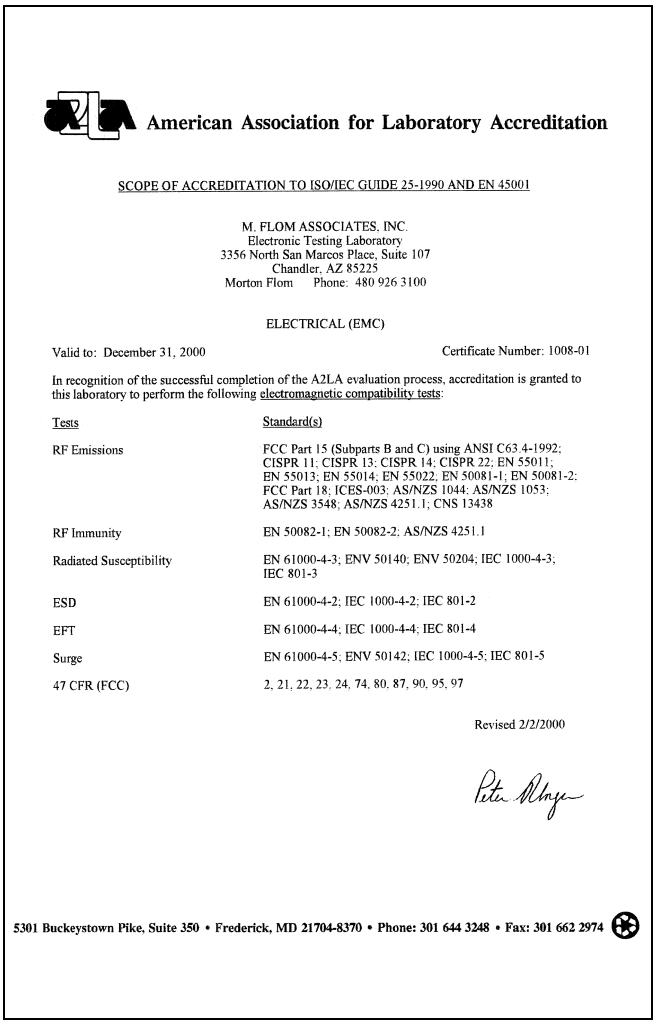
Electrical (EMC) Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC Guide 25-1990 "General Requirements for the Competence of Calibration and Testing Laboratories" (equivalent to relevant requirements of the ISO 9000 series of standards) and any additional program requirements in the identified field of testing.

Presented this 24th day of November, 1998.

President
For the Accreditation Council
Certificate Number 1008.01
Valid to December 31, 2000

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



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

M. FLOM ASSOCIATES, INC.
Electronic Testing Laboratory
3356 North San Marcos Place, Suite 107
Chandler, AZ 85225
Morton Flom Phone: 480 926 3100

ELECTRICAL (EMC)

Valid to: December 31, 2000 Certificate Number: 1008-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electromagnetic compatibility tests:

Tests	Standard(s)
RF Emissions	FCC Part 15 (Subparts B and C) using ANSI C63.4-1992; CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022; EN 50081-1; EN 50081-2; FCC Part 18; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438
RF Immunity	EN 50082-1; EN 50082-2; AS/NZS 4251.1
Radiated Susceptibility	EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3
ESD	EN 61000-4-2; IEC 1000-4-2; IEC 801-2
EFT	EN 61000-4-4; IEC 1000-4-4; IEC 801-4
Surge	EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5
47 CFR (FCC)	2, 21, 22, 23, 24, 74, 80, 87, 90, 95, 97

Revised 2/2/2000

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8370 • Phone: 301 644 3248 • Fax: 301 662 2974

"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report."

Should this report contain any data for tests for which we are not accredited, or which have been undertaken by a subcontractor that is not A2LA accredited, such data would not covered by this laboratory's A2LA accreditation.

PAGE NO. 5 of 73.

Sub-part
2.1033(c)(14): TEST AND MEASUREMENT DATA

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

____ 21 – Domestic Public Fixed Radio Services
_x_ 22 – Public Mobile Services
____ 22 Subpart H - Cellular Radiotelephone Service
____ 22.901(d) - Alternative technologies and auxiliary services
____ 23 – International Fixed Public Radiocommunication services
_x_ 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
____ 95 Subpart A - General Mobile Radio Service (GMRS)
____ 95 Subpart C - Radio Control (R/C) Radio Service
____ 95 Subpart D - Citizens Band (CB) Radio Service
____ 95 Subpart E - Family Radio Service
____ 95 Subpart F - Interactive Video and Data Service (IVDS)
____ 97 - Amateur Radio Service
____ 101 – Fixed Microwave Services

GENERAL INFORMATION

1. Prior to testing, the deviation for audio modulation and each of the respective SAT + ST tones were set as close as possible to the required limit.

2. Except for audio modulation, which was applied externally, Wideband Data SAT, ST and all other tones and operational modes were provided by a test control unit incorporating appropriate software. Worst case repetition rate for Wideband Data was 10 kb/s.

3. Spurious radiation was measured at three (3) meters.

4. The two cellular frequency bands are available to the user automatically. Please refer to the manual contained in the documentation.

5. The normal modes of modulation are:
   - [X] (a) VOICE
   - [X] (b) WIDEBAND DATA
   - [X] (c) SAT
   - [X] (d) ST
   - [X] (e) SAT + VOICE
   - [X] (f) SAT + DTMF
   - [X] (g) CDMA
   - [ ] (h) TDMA
   - [ ] (i) NAMPS VOICE
   - [ ] (j) NAMPS DSAT
   - [ ] (k) NAMPS ST
   - [ ] (l) NAMPS VOICE + DSAT

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.

GUIDES:

This device was tested using the following Guide(s):

TIA/EIA/IS-95A-1995

PAGE NO. 8 of 73.

NAME OF TEST: Carrier Output Power (Conducted)

SPECIFICATION: 47 CFR 2.1046(a)

GUIDE: As indicated on page 7

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

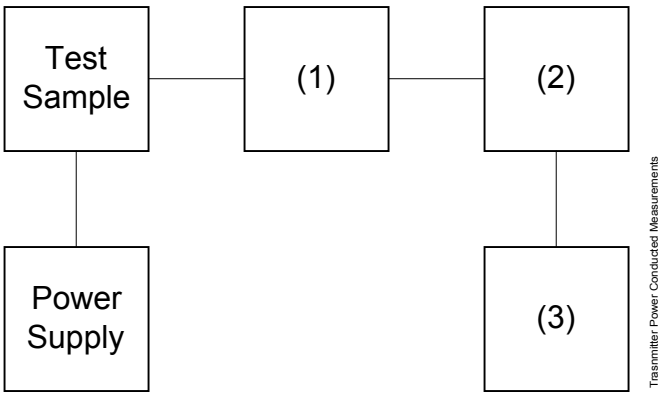
NOMINAL, MHz	CHANNEL	R. F. POWER, WATTS Lo	Hi
AMPS MODE:			
824.040	991	0.006	0.447
836.400	380	0.006	0.447
848.970	799	0.006	0.447
CDMA MODE:			
825.290	991	6 n	0.275
836.400	380	6 n	0.275
847.720	799	6 n	0.275
PCS MODE:			
1851.25	2	11 n	0.179
1880.00	600	11 n	0.179
1908.75	1175	11 n	0.179

SUPERVISED BY: William H. Graff, Director of Engineering

PAGE NO. 9 of 73.

TRANSMITTER POWER CONDUCTED MEASUREMENTS

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



Trasnmitter Power Conducted Measurements

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. 10 of 73.

NAME OF TEST: R. F. Power Output (Radiated)

SPECIFICATION: 47 CFR 2.1046(a)

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE (RADIATED)

1. The EUT 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 was calculated from the equation Pt=((E x R)2/49.2) watts, where R = 3m.

2. Measurement accuracy is ±1.5 dB.

MEASUREMENT RESULTS

g0010179: 2000-Jan-17 Mon 10:24:00
STATE: 2:High Power AMPS

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV/m	CF, dB	ERP, dBm	ERP, Watts
824.040000	824.030000	95.67	29.98	28.3	0.631
836.400000	836.393333	94.83	30.01	27.5	0.617
848.970000	848.966667	95.5	30.04	28.2	0.692

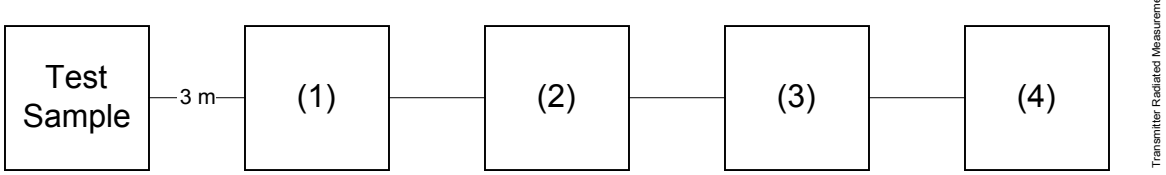
g0010180: 2000-Jan-17 Mon 13:13:00
STATE: 2:High Power CDMA

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV/m	CF, dB	ERP, dBm	ERP, Watts
824.730000	824.613333	93.5	29.97	26.1	0.407
836.400000	836.233333	93.33	30.01	26	0.398
848.190000	848.340000	93.83	30.04	26.5	0.316

g0010181: 2000-Jan-17 Mon 14:29:00
STATE: 2:High Power PCS

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV/m	CF, dB	EIRP, dBm	EIRP, Watts
1851.250000	1851.116667	77	40.71	22.5	0.178
1880.000000	1880.016667	76.5	40.99	22.3	0.170
1908.750000	1908.416667	76.17	41.26	22.2	0.166

TRANSMITTER RADIATED MEASUREMENTS



Transmitter Radiated Measurements

Asset	Description (as applicable)	s/n
(1) TRANSDUCER		
i00091	Emco 3115	001469
i00089	Aprel Log Periodic	001500
(2) HIGH PASS FILTER		
i00	Narda µPAD (In-Band Only)	
i00	Trilithic (Out-Of-Band Only)	
(3) PREAMP		
i00028	HP 8449 (+30 dB)	2749A00121
(4) SPECTRUM ANALYZER		
i00048	HP 8566B	2511A01467
i00043	HP 8558B	2004A02076
i00057	HP 8557A	1531A00191
i00029	HP 8563E	3213A00104

PAGE NO. 12 of 73.

NAME OF TEST: Audio Frequency Response

SPECIFICATION: 47 CFR 2.1047(a)

GUIDE: As indicated on page 7

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.

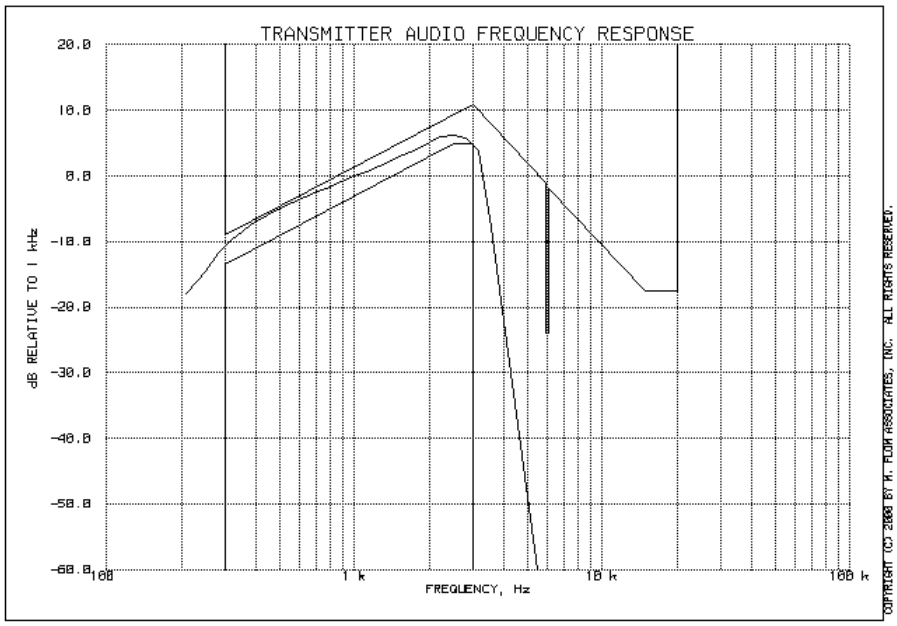
4. With input levels held constant and below limiting at all frequencies, the audio signal generator was varied from 100 Hz to 50 kHz.

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

6. MEASUREMENT RESULTS: ATTACHED

PAGE NO. 13 of 73.

NAME OF TEST: Audio Frequency Response
g0010147: 2000-Jan-19 Wed 13:55:00
STATE: 0:General



SUPERVISED BY: William H. Graff, Director of Engineering

PAGE NO. 14 of 73.

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

SPECIFICATION: 47 CFR 2.1047(a)

GUIDE: As indicated on page 7

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.

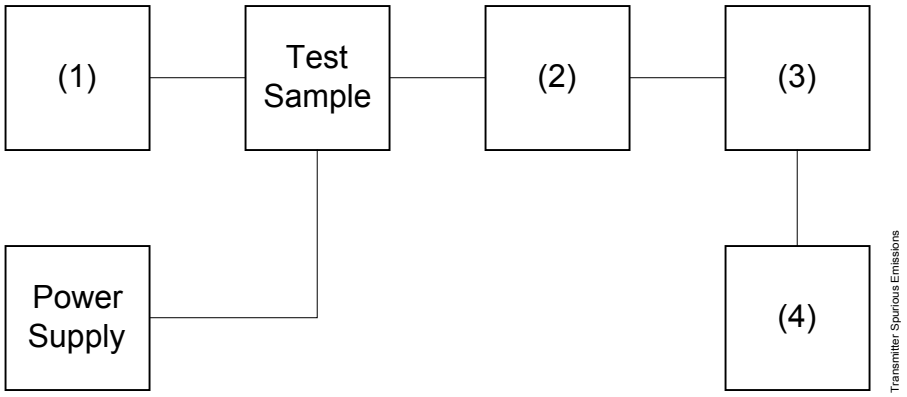
2. The audio output was connected at the output to the modulated stage.

3. MEASUREMENT RESULTS: ATTACHED

PAGE NO. 15 of 73.

TRANSMITTER SPURIOUS EMISSION

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

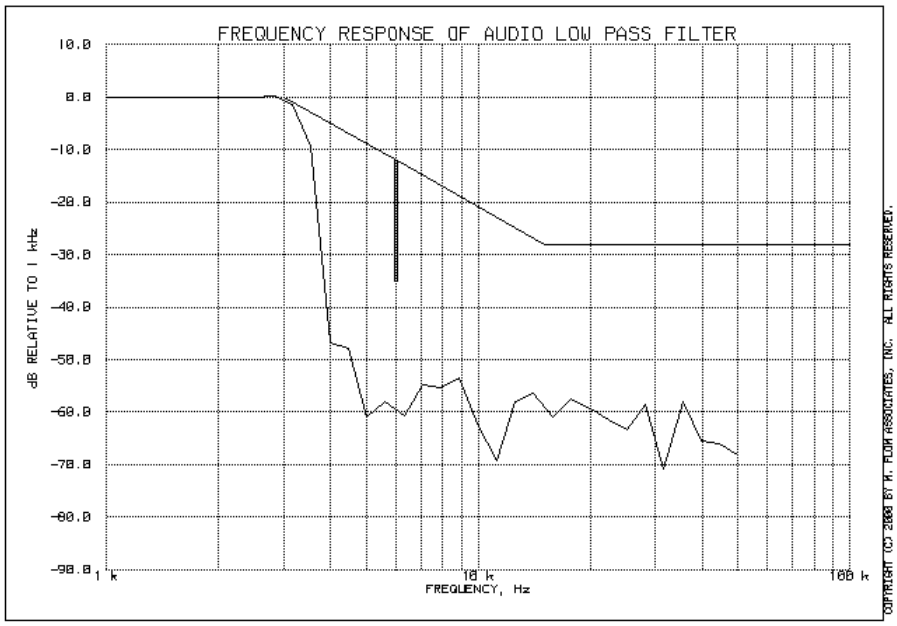


Transmitter Spurious Emissions

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. 16 of 73.

NAME OF TEST: Audio Low Pass Filter (Voice Input)
g0010150: 2000-Jan-19 Wed 14:07:00
STATE: 0:General



SUPERVISED BY: William H. Graff, Director of Engineering

PAGE NO. 17 of 73.

NAME OF TEST: Modulation Limiting

SPECIFICATION: 47 CFR 2.1047(b)

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

1. The audio signal generator was connected to the audio input circuit/microphone of the EUT as for Frequency Response of the Audio Modulating Circuit.

2. The modulation response was measured for each of three tones (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 audio input level was varied from 30% modulation (±3.6 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.

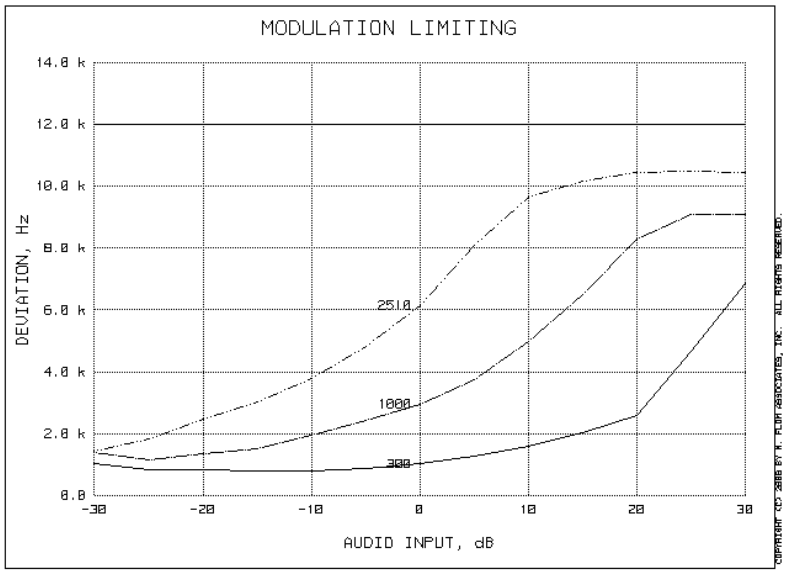
5. MEASUREMENT RESULTS ATTACHED FOR:

COMPANDER ON:
_X_ VOICE
_X_ VOICE + SAT

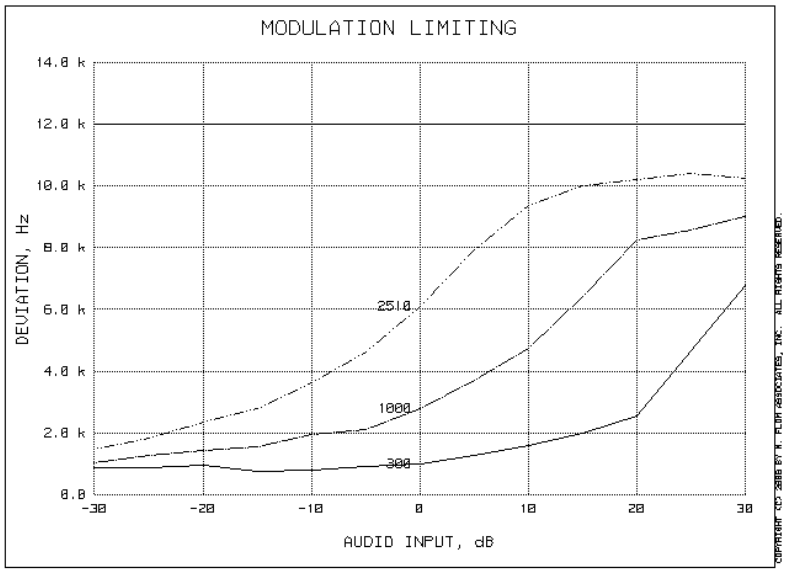
PAGE NO. 18 of 73.

NAME OF TEST: Modulation Limiting
g0010154: 2000-Jan-19 Wed 14:24:00
STATE: 0:General VOICE ONLY

Positive Peaks:



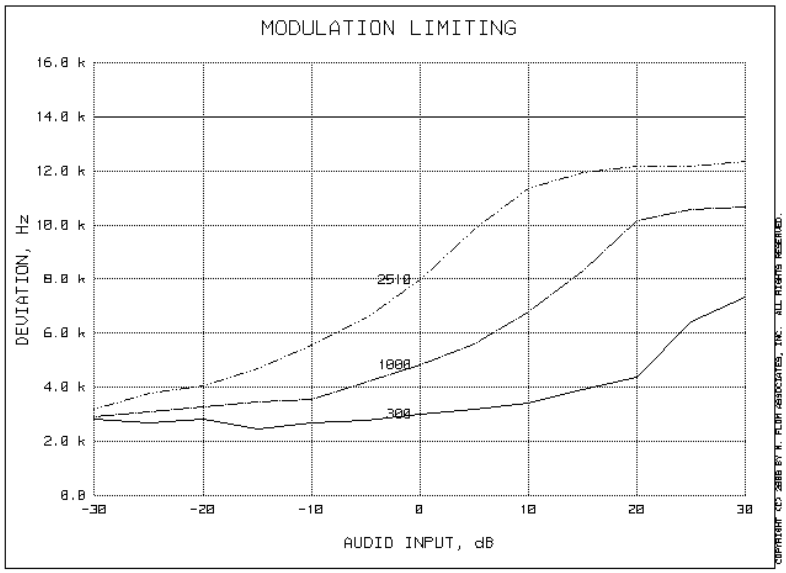
Negative Peaks:



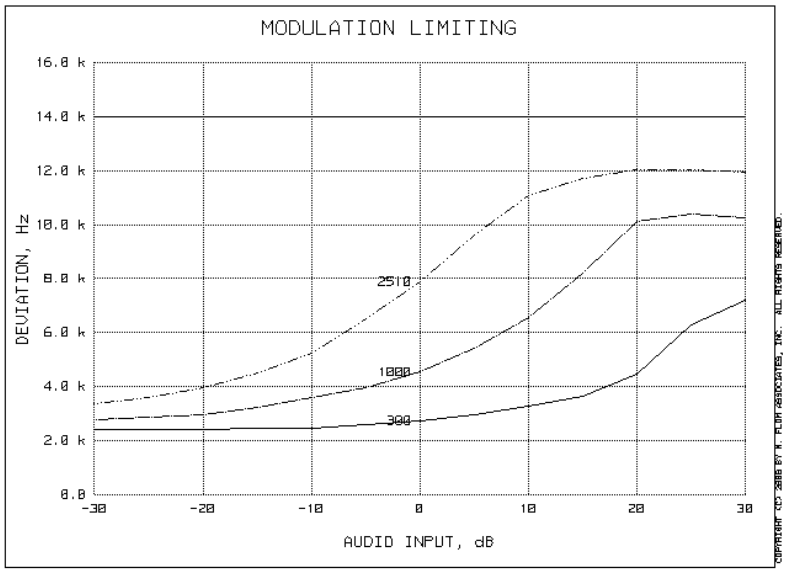
PAGE NO. 19 of 73.

NAME OF TEST: Modulation Limiting
g0010155: 2000-Jan-19 Wed 14:48:00
STATE: 0:General VOICE + SAT

Positive Peaks:



Negative Peaks:



PAGE NO. 20 of 73.

NAME OF TEST: Measurement Of Maximum Deviation

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

1. The presentation of tones was obtained by attaching the HP 8903A Oscilloscope to the Modulation Output of the HP 8901 Modulation Analyzer.

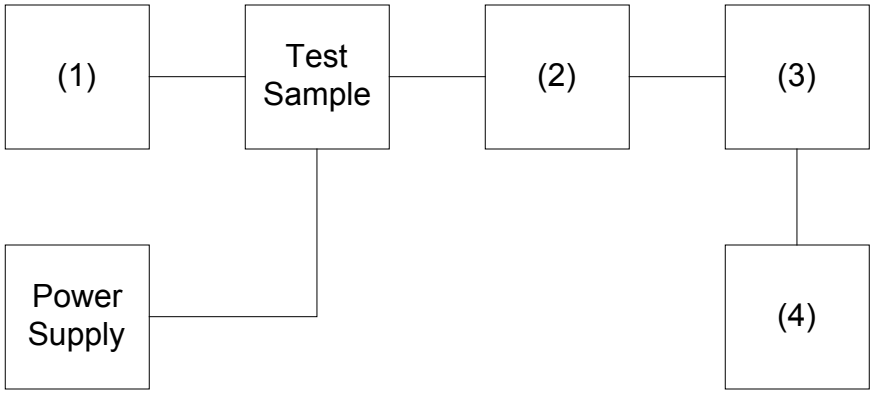
2. The EUT was modulated by an HP 8903 Audio Analyzer and/or internally generated signals.

3. Maximum deviation measurements were recorded for the various configurations.

4. MEASUREMENT RESULTS: ATTACHED SUMMARY FOR DEVIATION

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

MEASUREMENT SUMMARY: Measurement Of Maximum Deviation

	MODULATION	LIMIT, kHz	DEVIATION, MHz
(a)	Voice	≥ 10.8 & ≤ 13.2	11.2
(b)	Wideband Data	≥ 7.2 & ≤ 8.8	8.5
(c)	SAT	≥ 1.8 & ≤ 2.2	2.2
(d)	ST	≥ 7.2 & ≤ 8.8	8.6
(e)	SAT + VOICE	N/A	13.1
(f)	SAT + DTMF	N/A	12.6
(i)	NAMPS VOICE	N/A	N/A
(j)	NAMPS DSAT	N/A	N/A
(k)	NAMPS ST	N/A	N/A
(l)	NAMPS VOICE	N/A	N/A

SUPERVISED BY: William H. Graff, Director of Engineering

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NAME OF TEST: Emission Masks (Occupied Bandwidth)

SPECIFICATION: 47 CFR 2.1049(c)(1), 22

GUIDE: As indicated on page 7

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

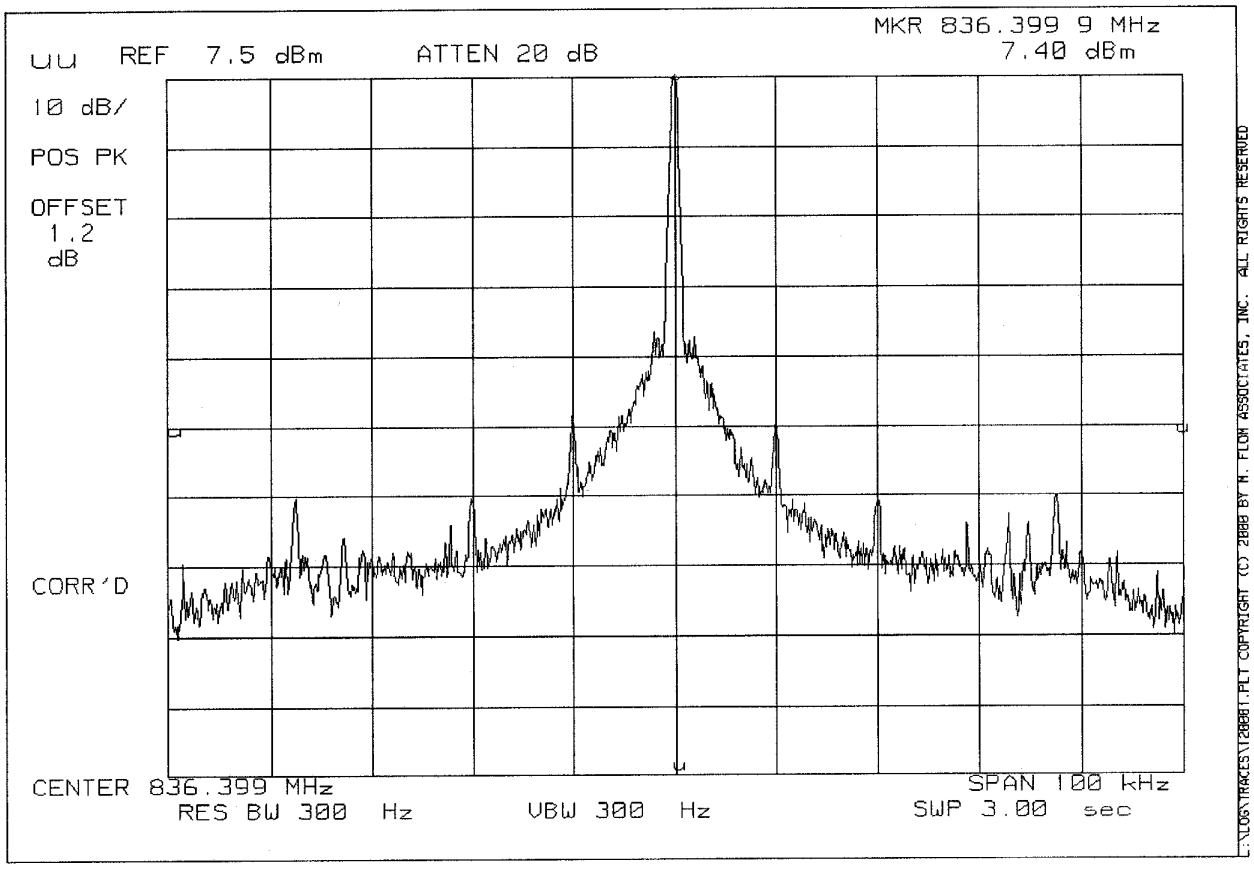
MEASUREMENT SUMMARY: Emission Masks (Occupied Bandwidth)

MODULATION	MEASURED DEVIATION ±kHz (HP 8901A)	LIMIT ±kHz	B/W @-26 dB PLOTS, kHz
NONE	0.0	0.0	0.0
VOICE	11.2	≥ 10.8 & ≤ 13.2	31
WIDEBAND DATA	8.5	≥ 7.2 & ≤ 8.8	23
SAT + VOICE	13.1	N/A	26
SAT + DTMF	12.6	N/A	24
CDMA	N/A	N/A	N/A
TDMA	N/A	N/A	N/A
NAMPS	N/A	N/A	N/A

SUPERVISED BY: William H. Graff, Director of Engineering

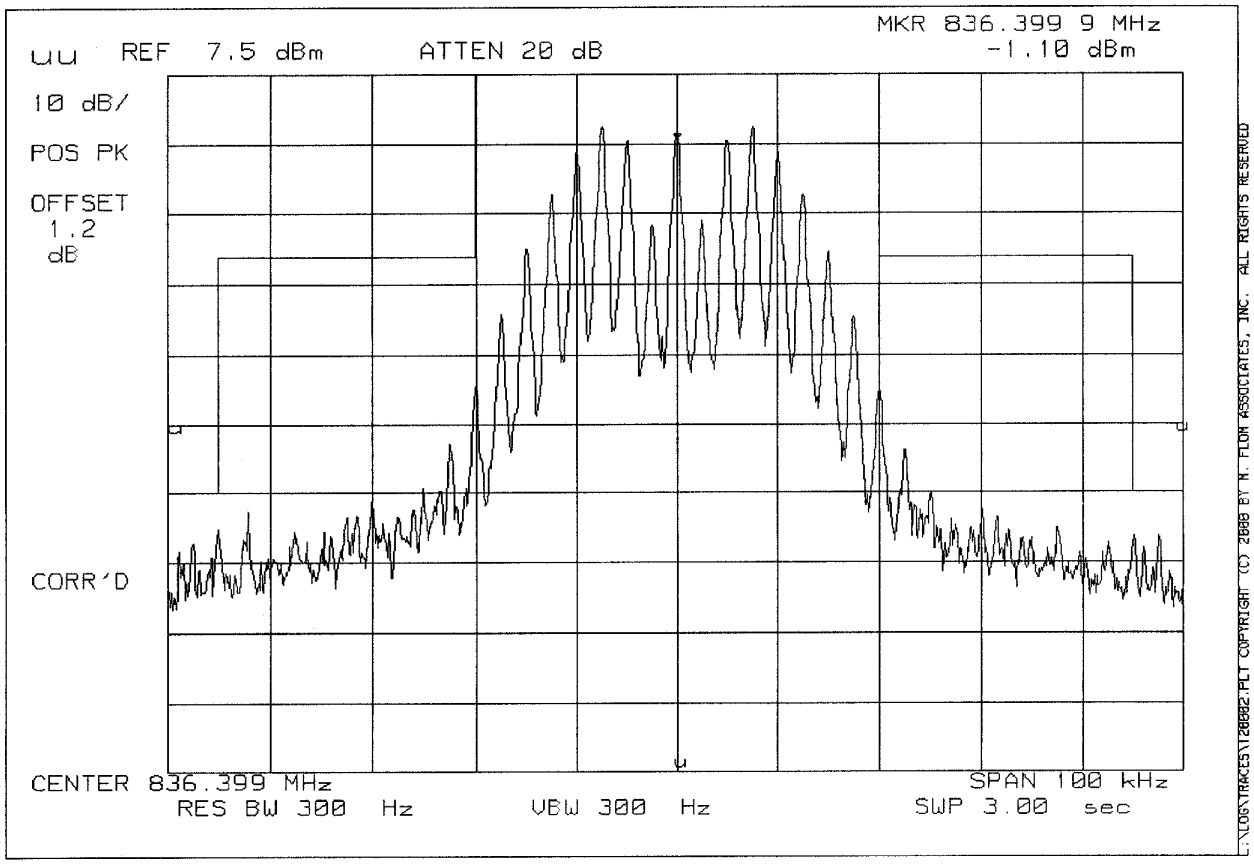
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:33, THR

POWER: LOW
MODULATION: NONE



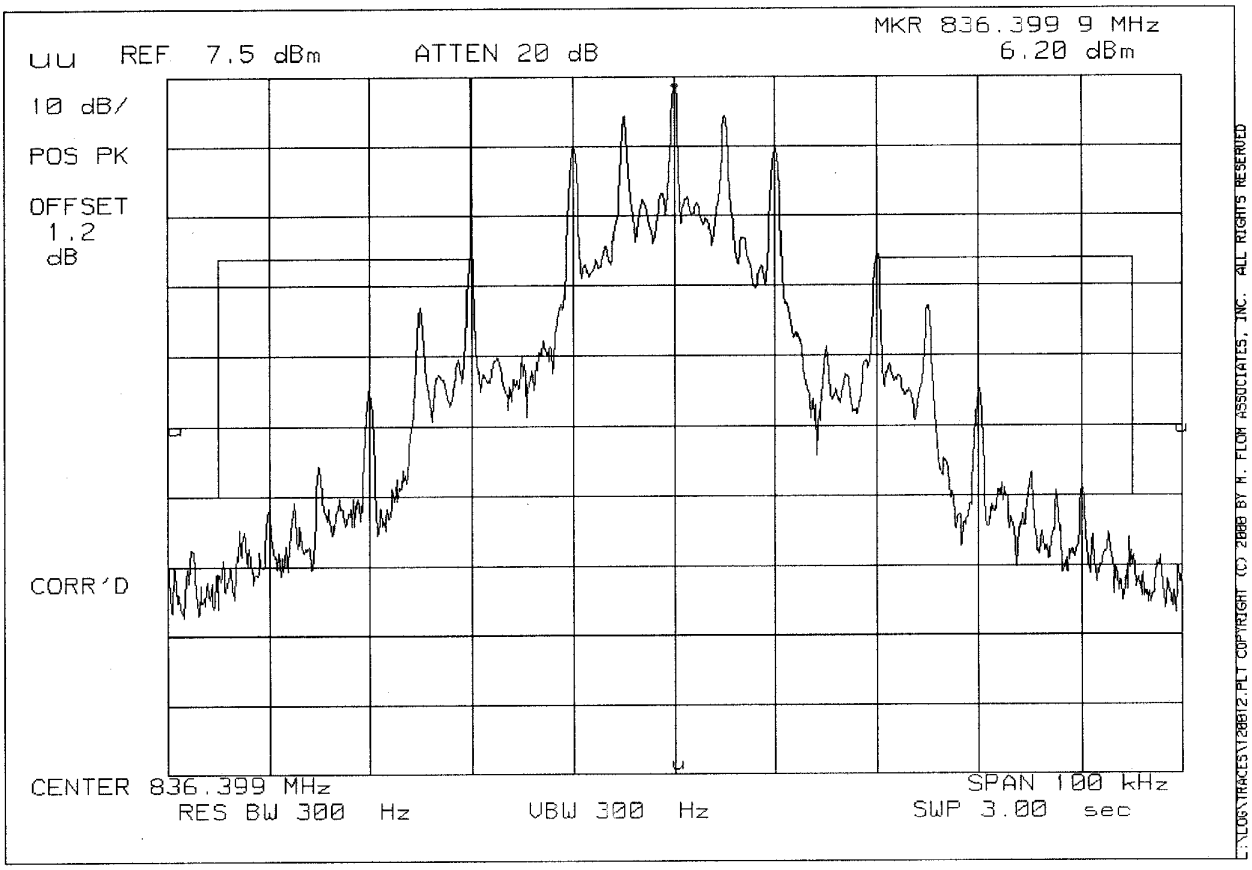
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:38, THR

POWER: LOW
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: AMPS CELLULAR, F3E/F3D w/LPF



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:03, THR

POWER: LOW
MODULATION: WBD
MASK: AMPS CELLULAR, F3E/F3D w/LPF



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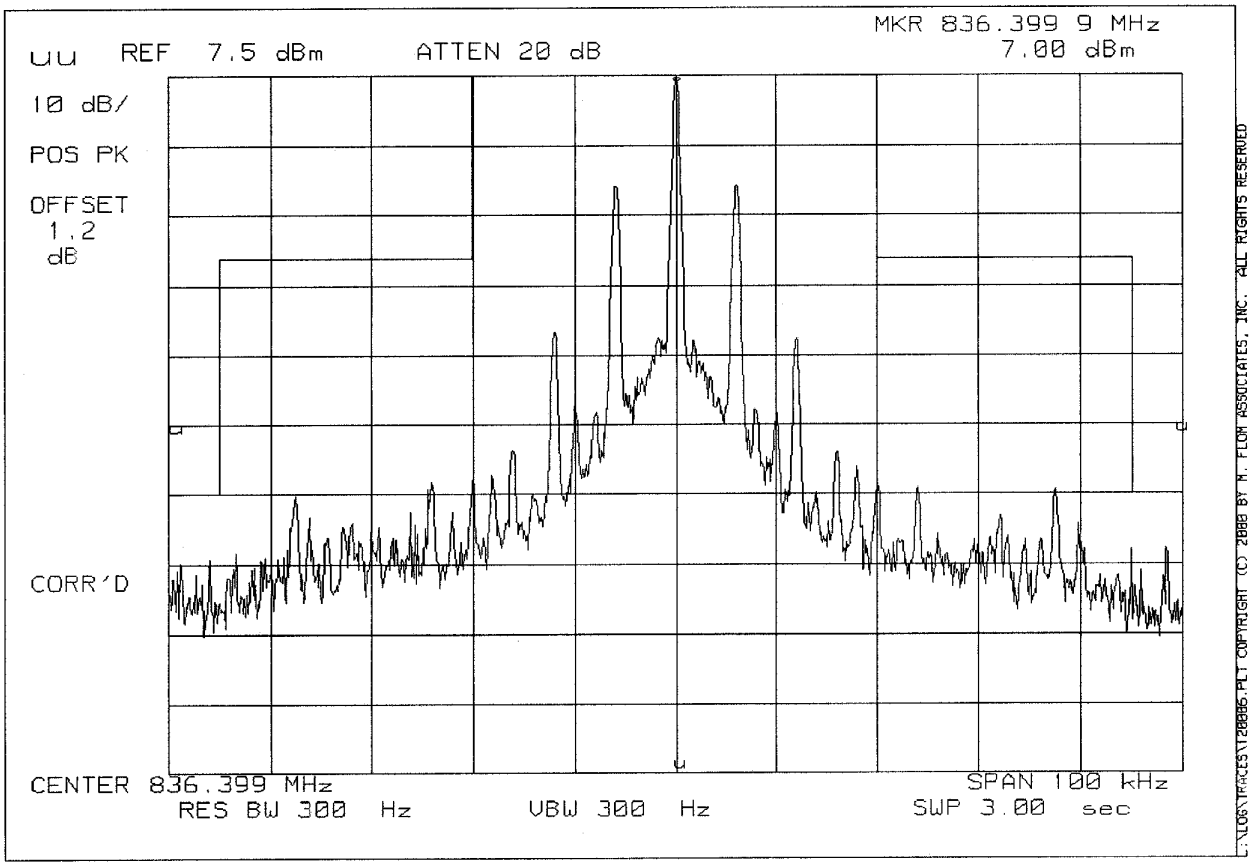
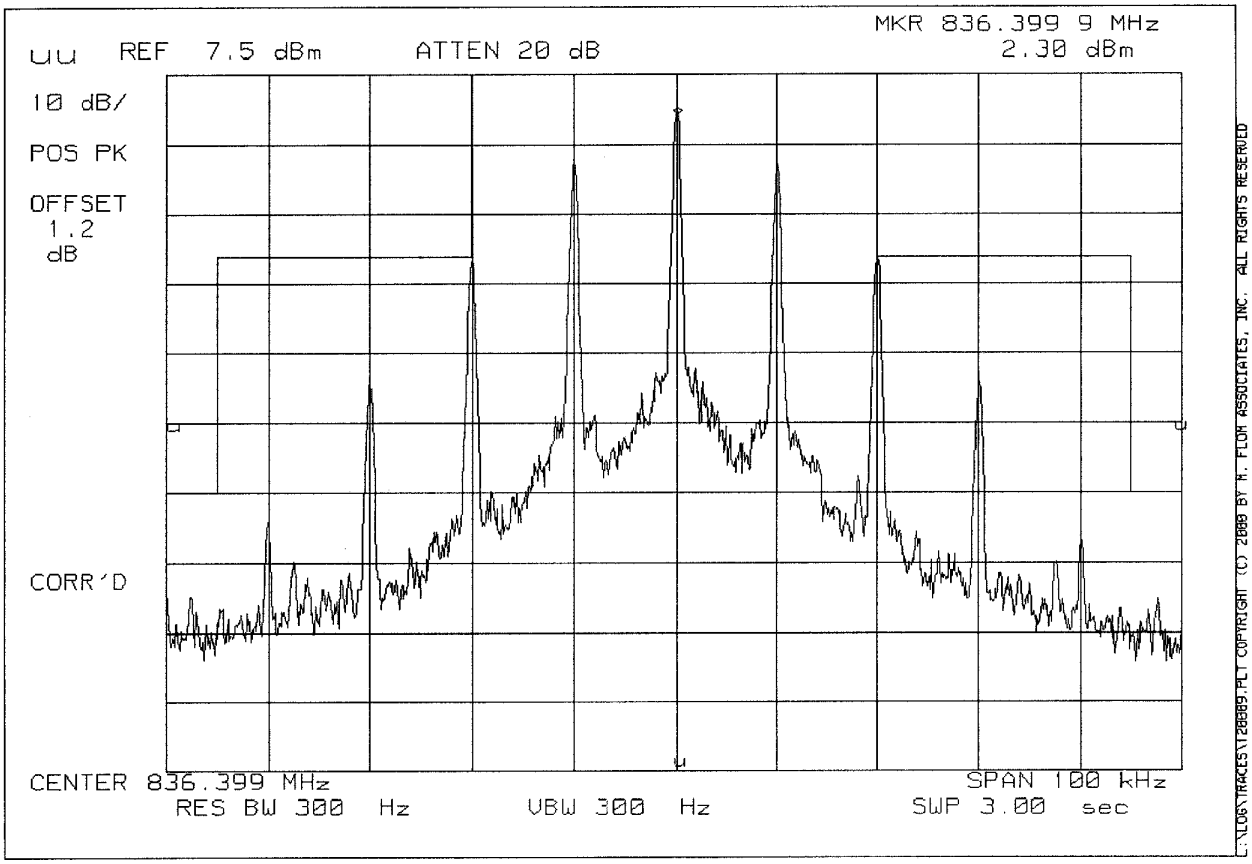
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:44, THR

POWER: LOW
MODULATION: SAT
MASK: AMPS CELLULAR, F3E/F3D w/LPF



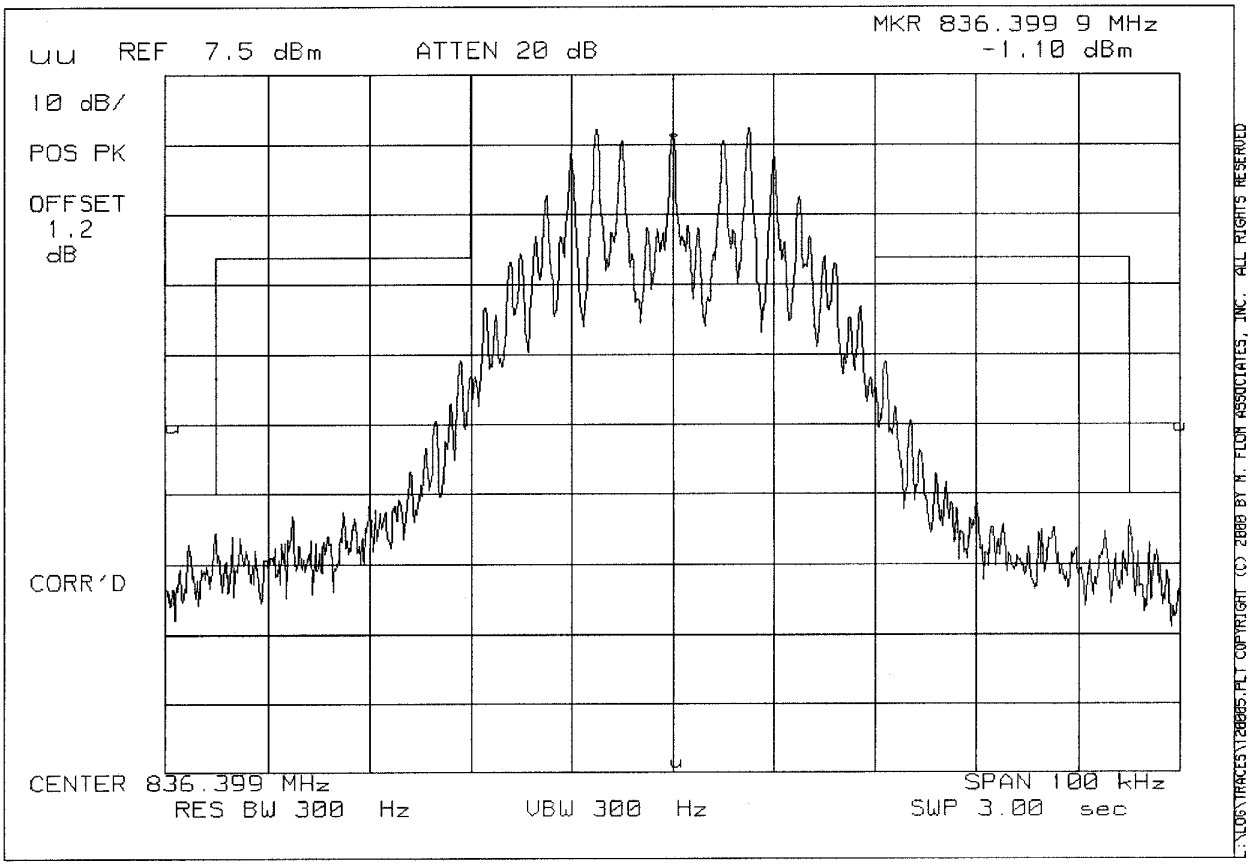
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:50, THR

POWER: LOW
MODULATION: ST
MASK: AMPS CELLULAR, F3E/F3D w/LPF



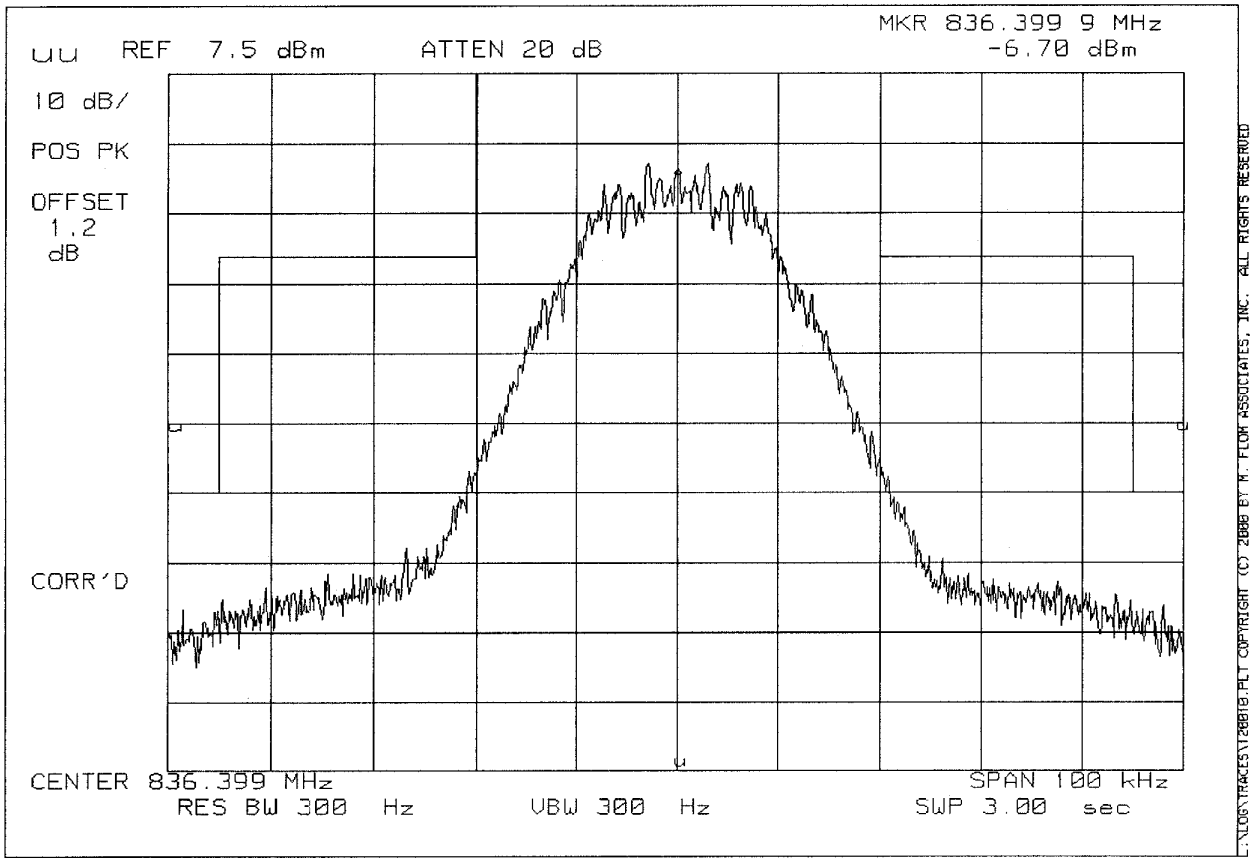
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:43, THR

POWER: LOW
MODULATION: SAT+VOICE
MASK: AMPS CELLULAR, F3E/F3D w/LPF



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 09:57, THR

POWER: LOW
MODULATION: SAT+DTMF
MASK: AMPS CELLULAR, F3E/F3D w/LPF



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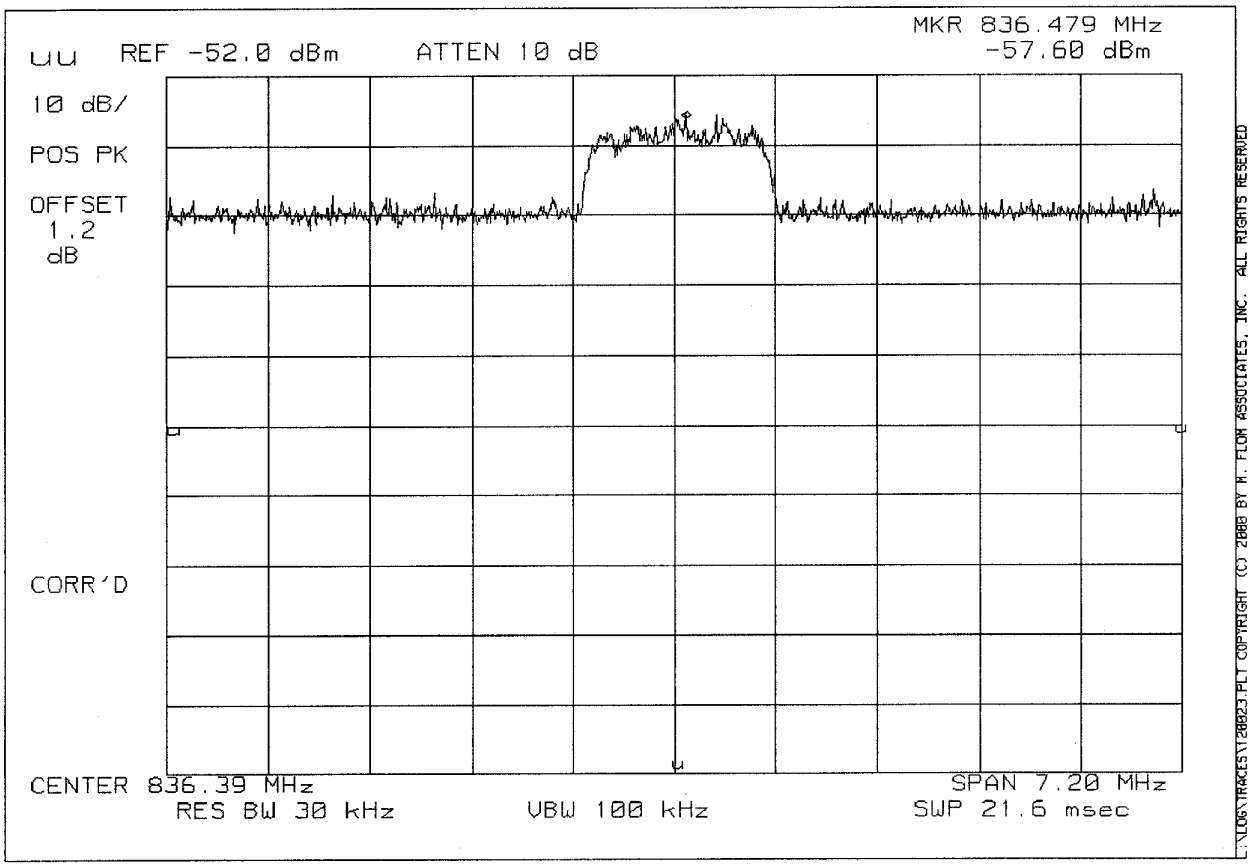
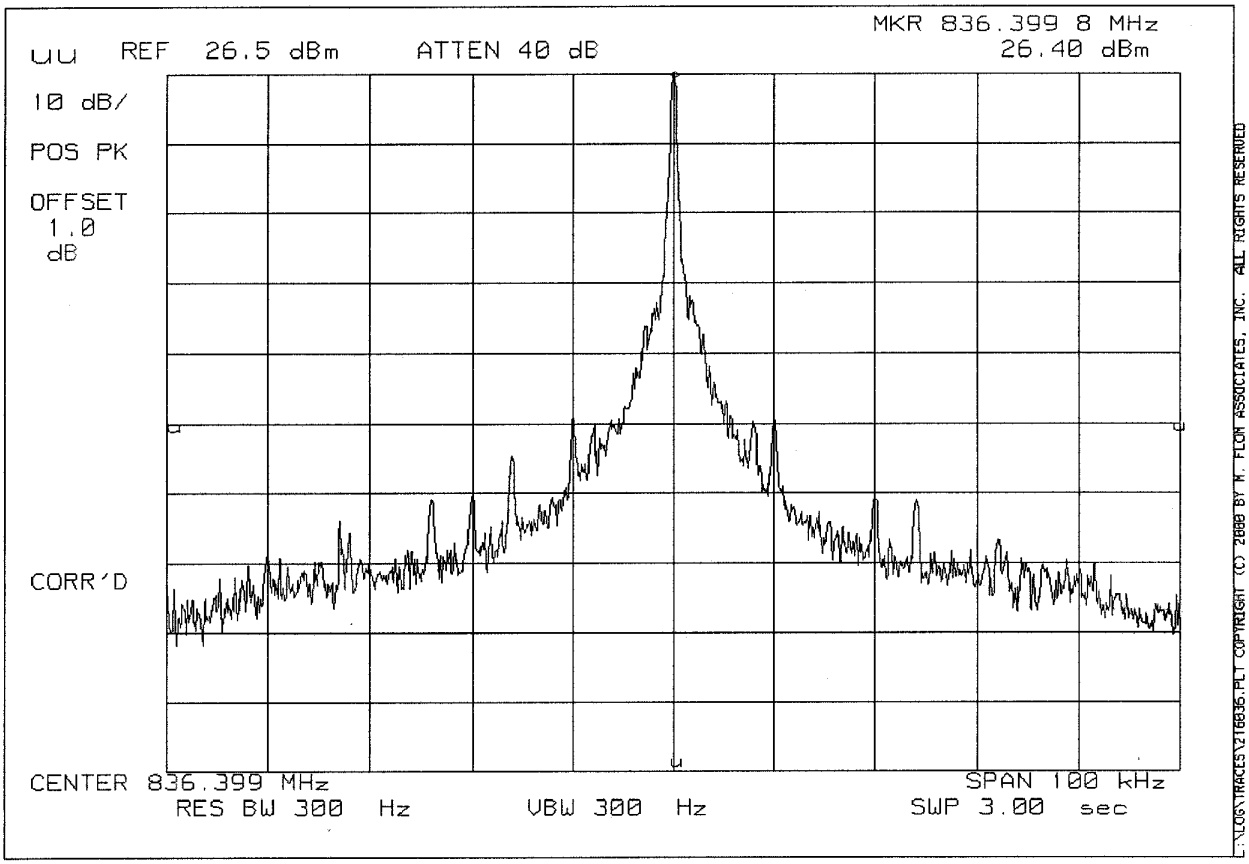
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:40, THR

POWER: LOW
MODULATION: CDMA AMPS



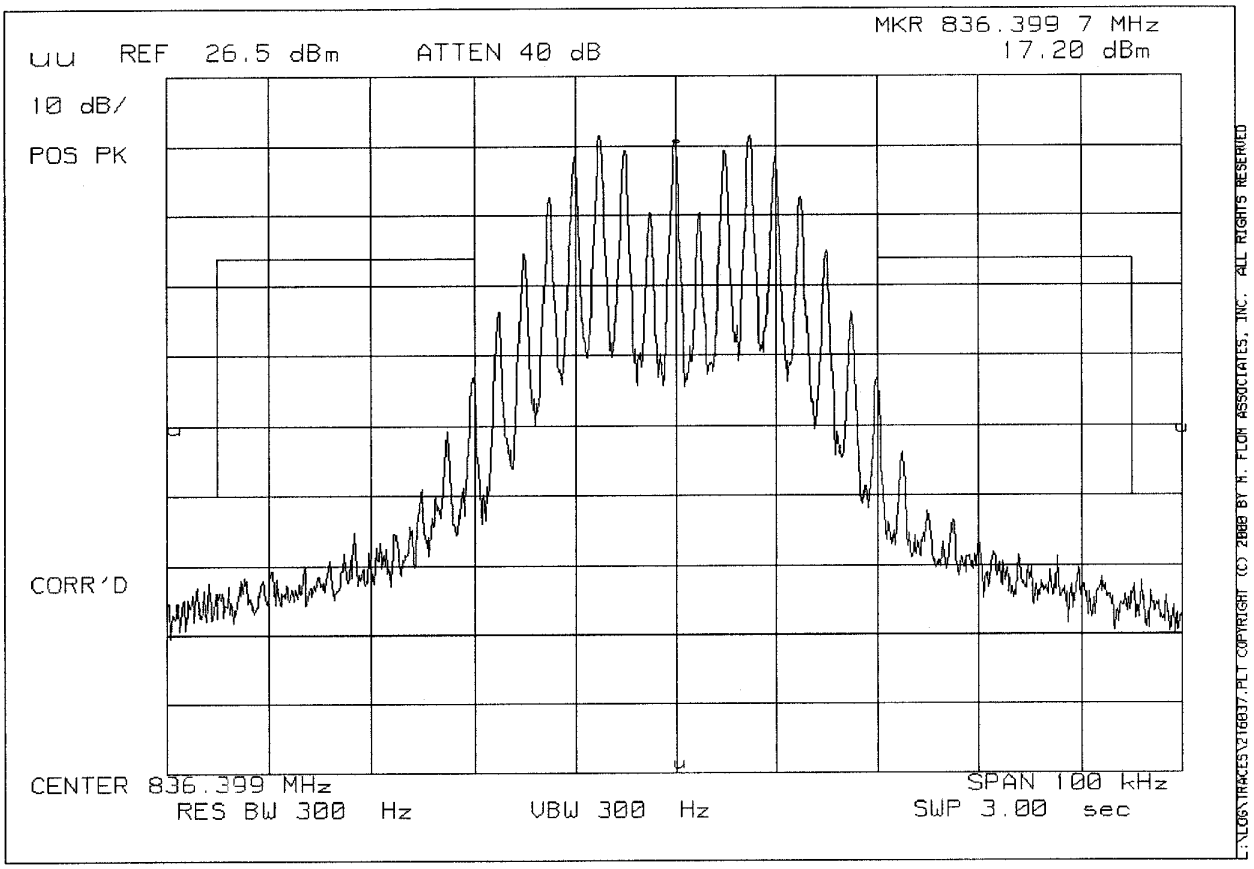
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 14:48, WED

POWER: HIGH
MODULATION: NONE



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 14:54, WED

POWER: HIGH
MODULATION: VOICE: 2500 Hz SINE WAVE
MASK: AMPS CELLULAR, F3E/F3D w/LPF



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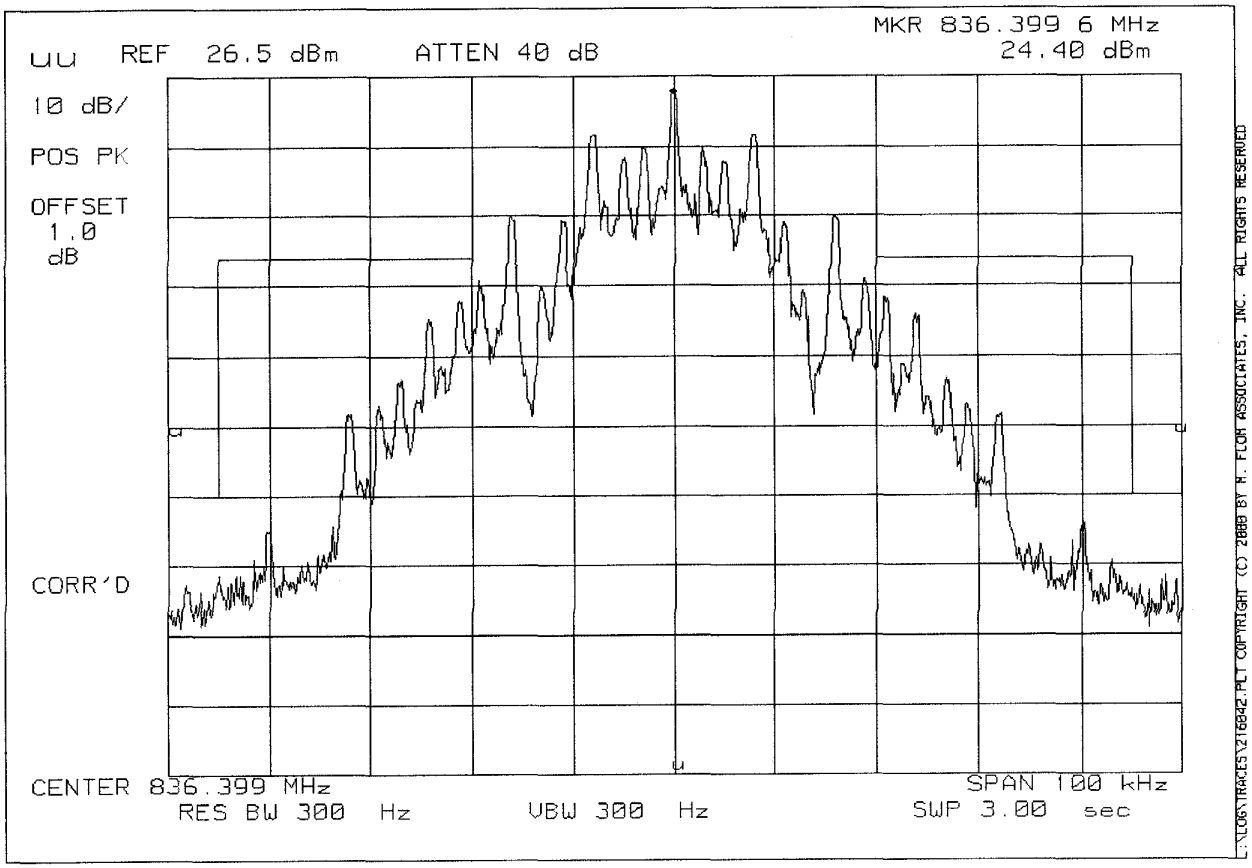
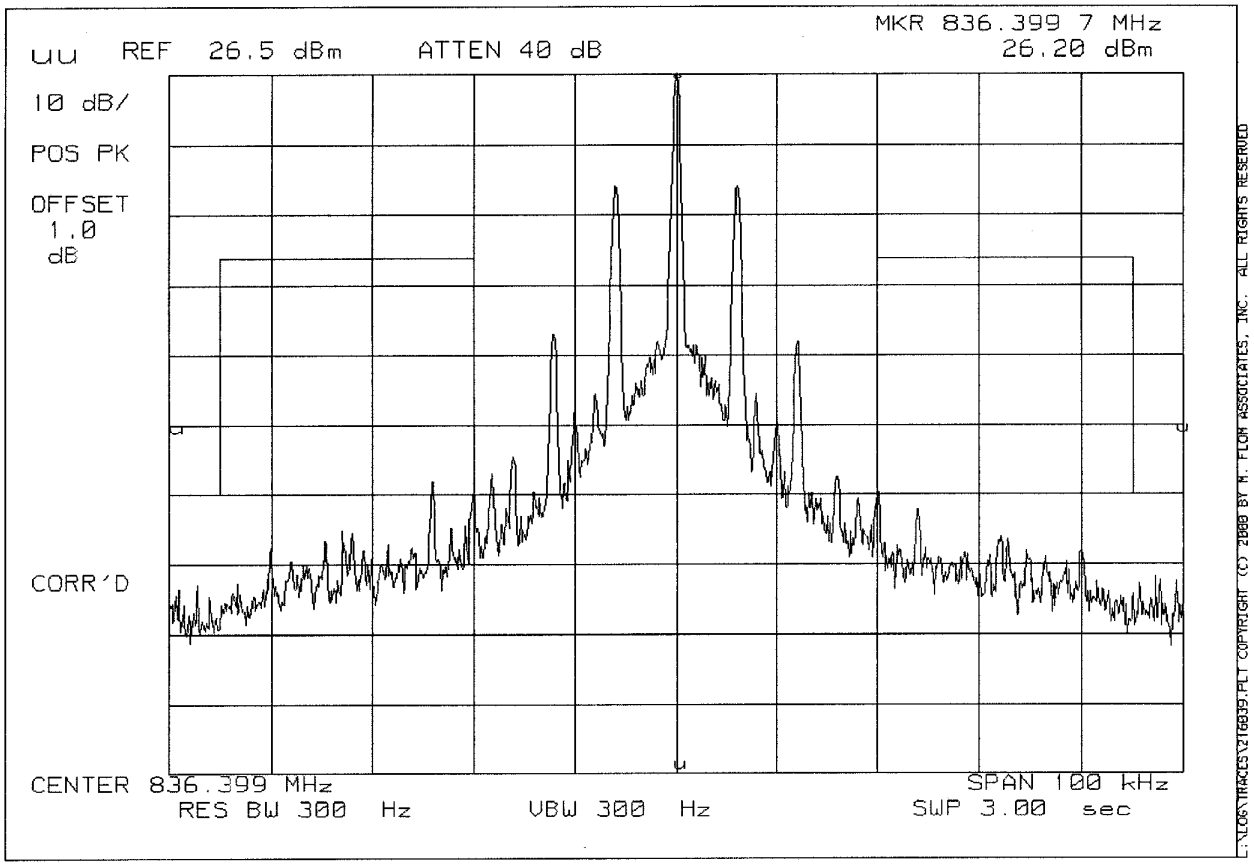
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:19, WED

POWER: *HIGH*
MODULATION: WBD
MASK: AMPS CELLULAR, F3E/F3D w/LPF



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:00, WED

POWER: HIGH
MODULATION: SAT
MASK: AMPS CELLULAR, F3E/F3D w/LPF



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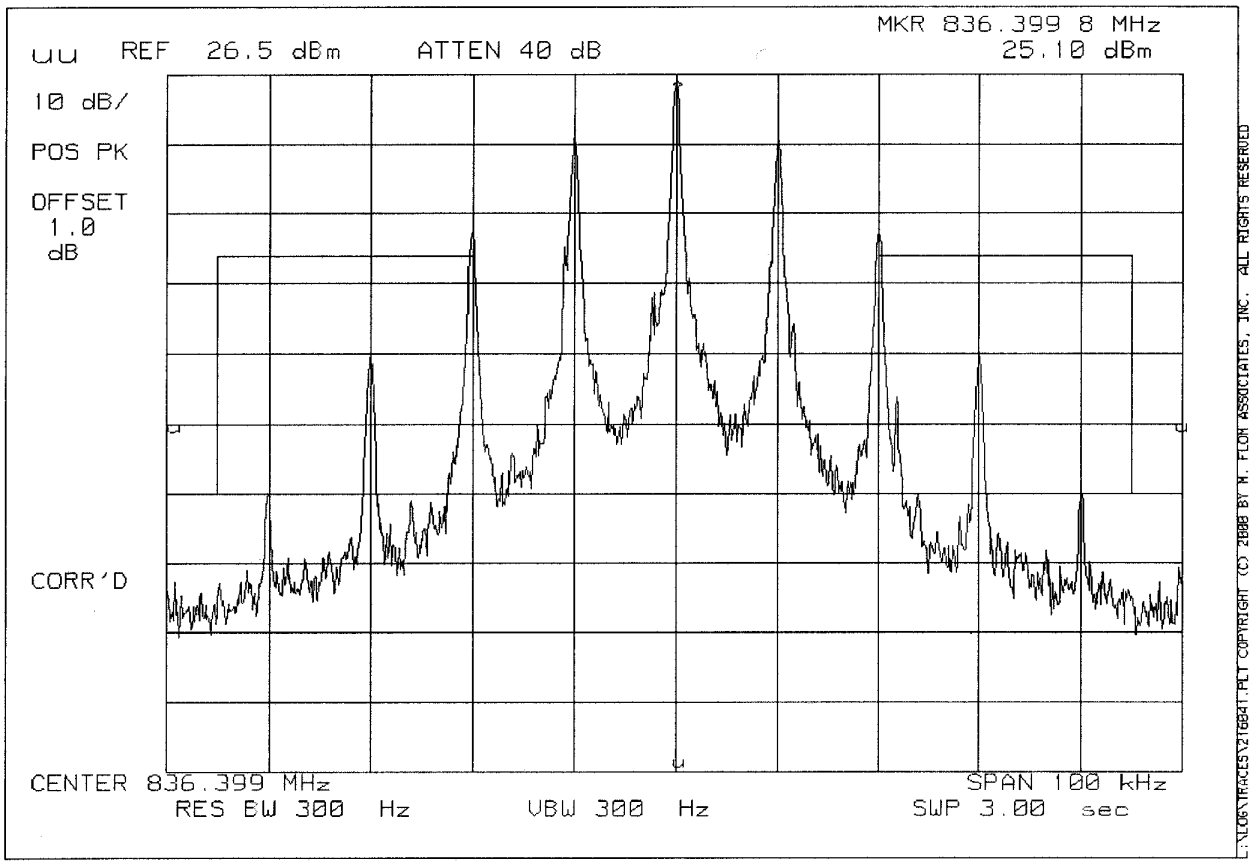
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:12, WED

POWER: HIGH
MODULATION: ST
MASK: AMPS CELLULAR, F3E/F3D w/LPF



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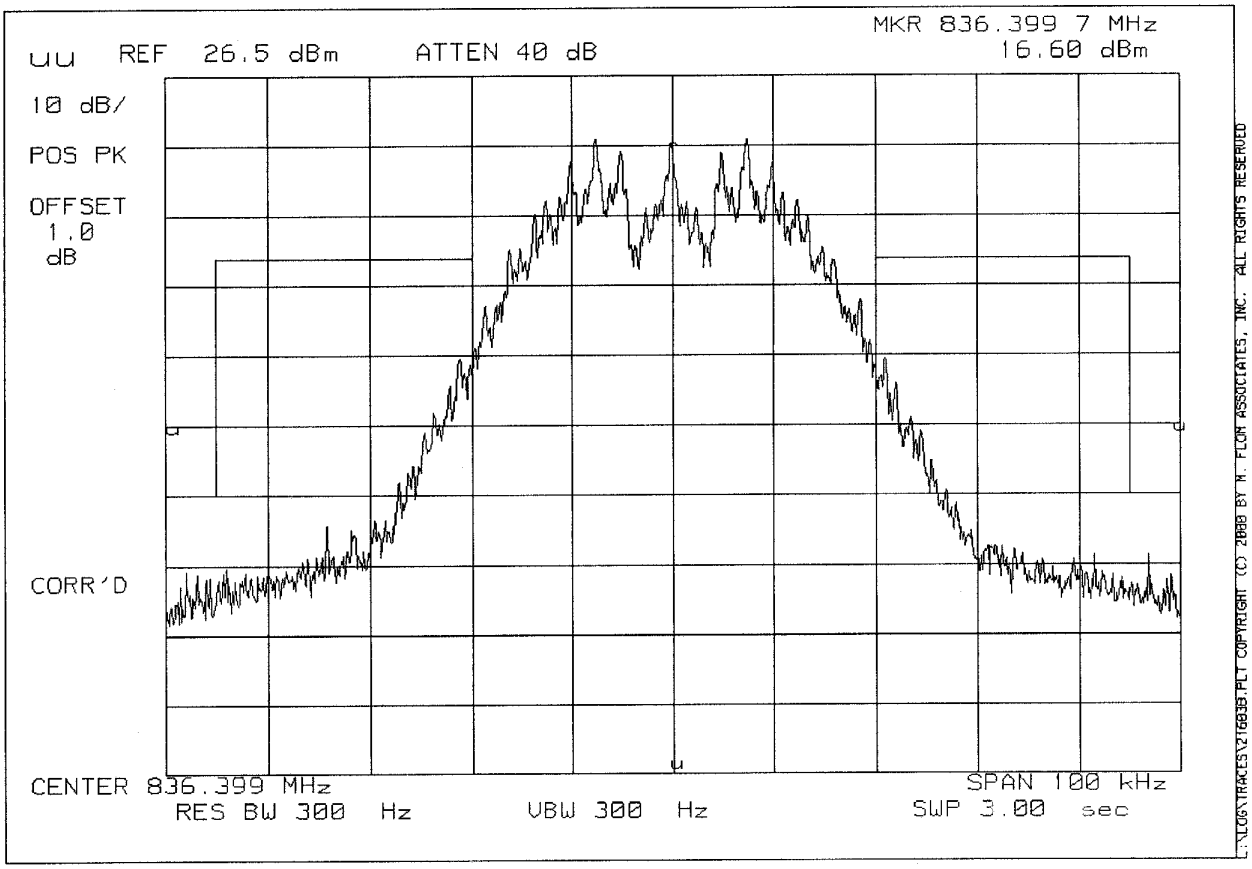
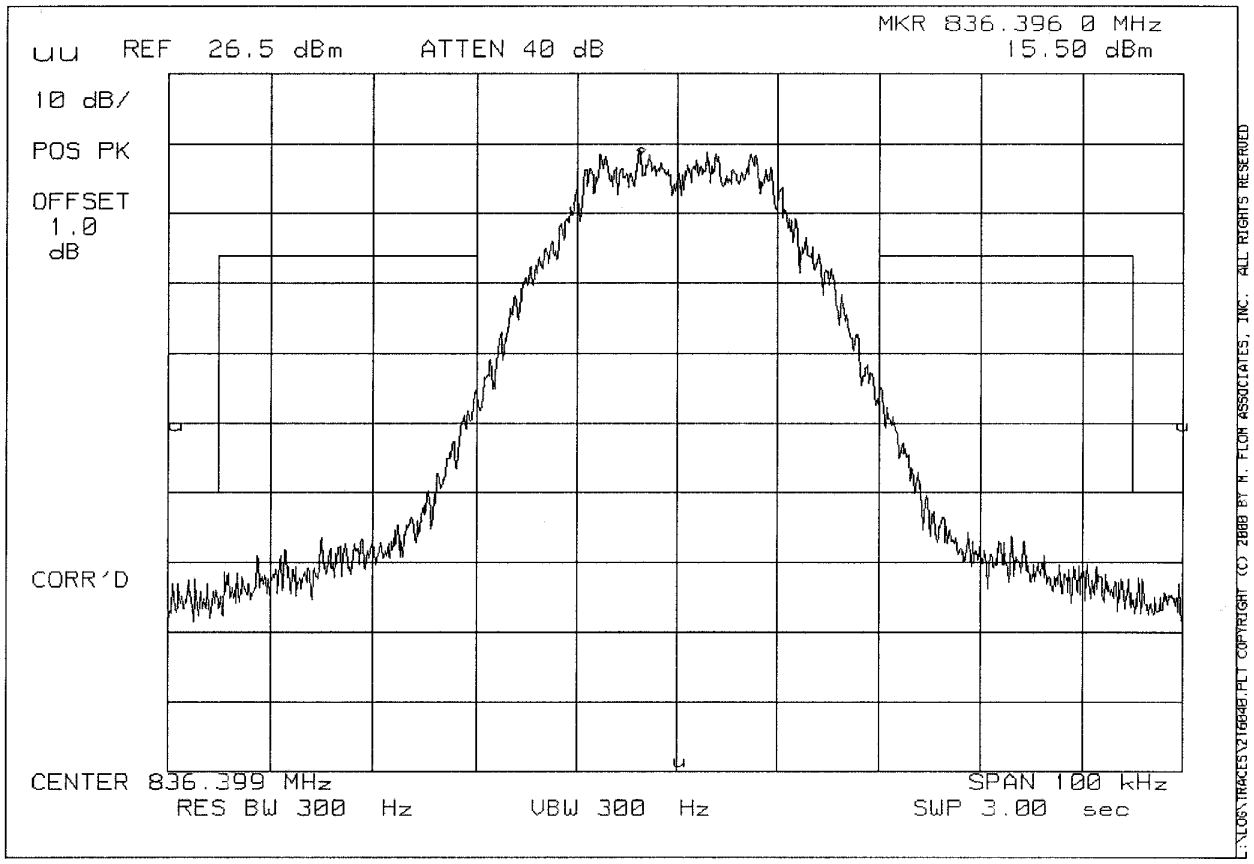
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 14:56, WED

POWER: HIGH
MODULATION: SAT+VOICE
MASK: AMPS CELLULAR, F3E/F3D w/LPF



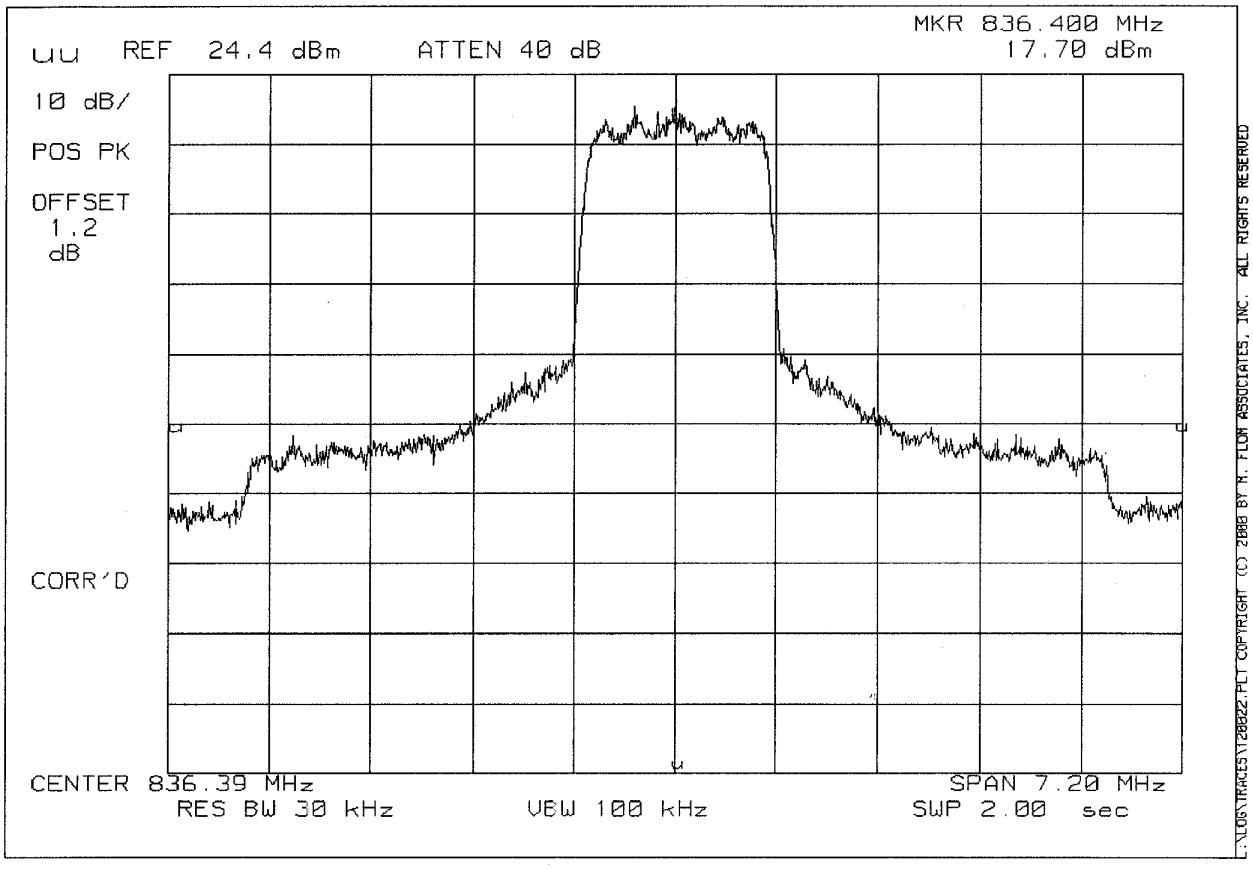
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:06, WED

POWER: HIGH
MODULATION: SAT+DTMF
MASK: AMPS CELLULAR, F3E/F3D w/LPF



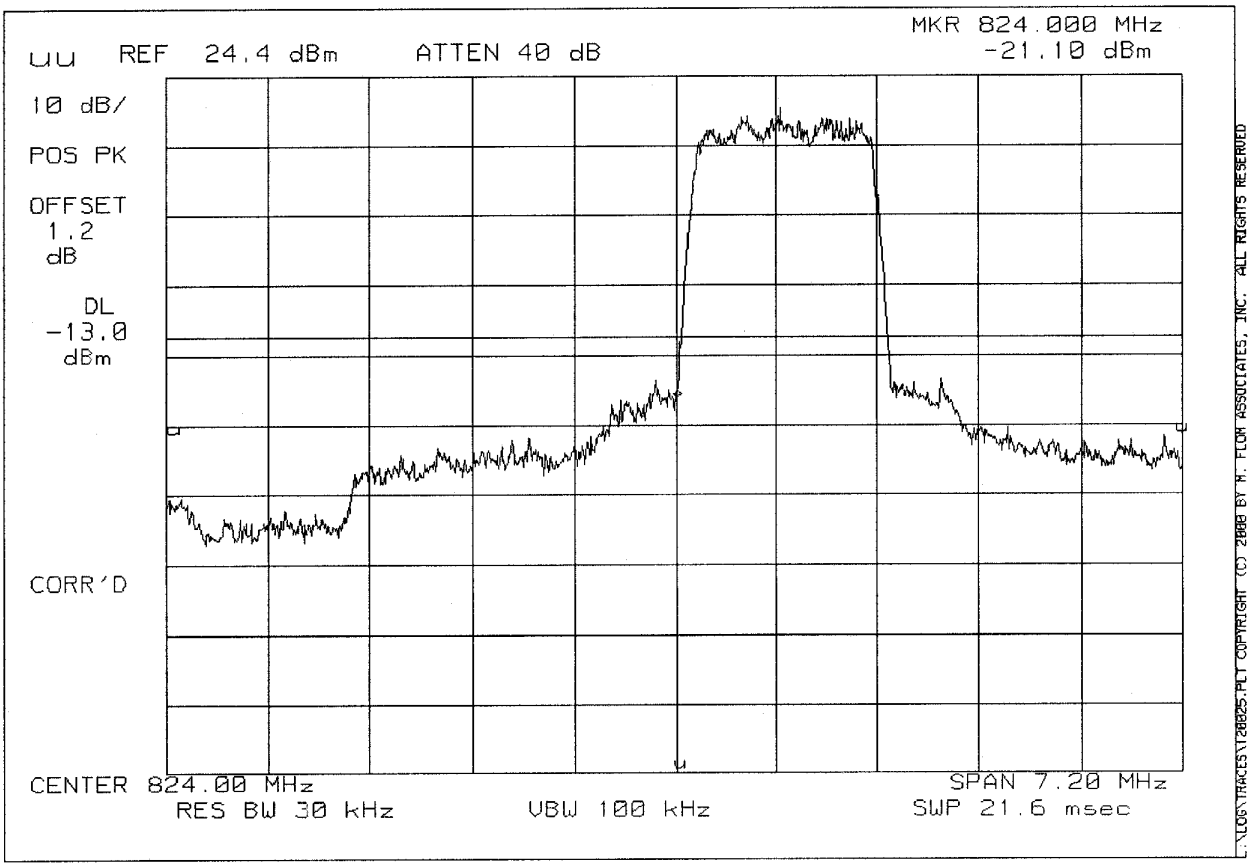
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:34, THR

POWER: HIGH
MODULATION: CDMA AMPS



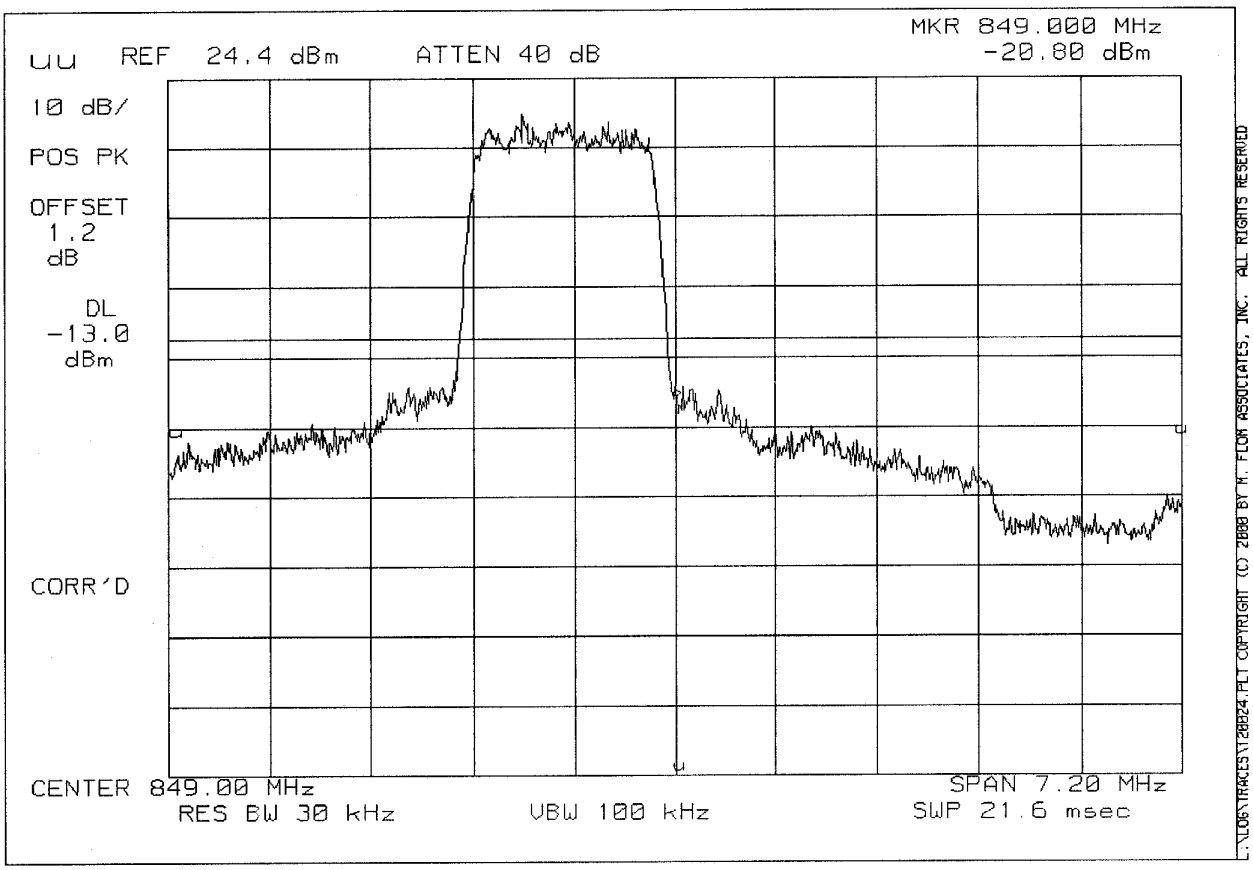
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:50, THR

POWER: HIGH
MODULATION: CDMA AMPS
REMARK: LOWER BANDEDGE CHANNEL 1014



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:48, THR

POWER: HIGH
MODULATION: CDMA AMPS
REMARK: UPPER BANDEDGE CHANNEL 773



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NAME OF TEST: Transmitter Conducted Measurements

SPECIFICATION: 47 CFR 2.1051: Unwanted (spurious) Emissions
2.1049(c), 24.238(b): Occupied Bandwidth
24: Emissions at Band Edges

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

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

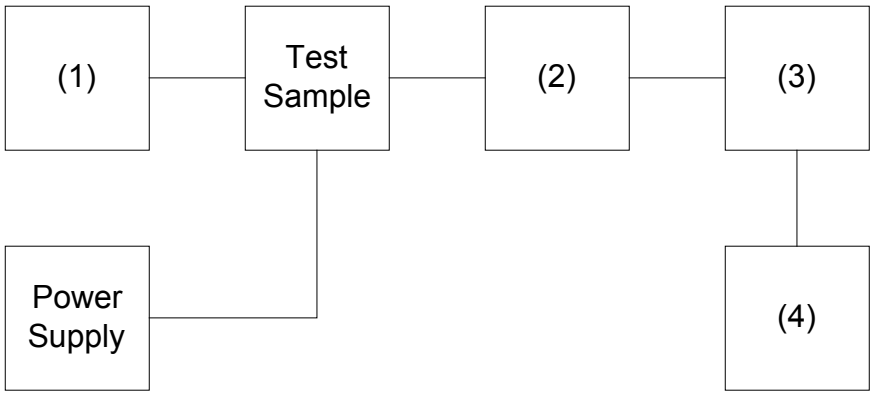
2. The low and high channels for all RF powers within the designated frequency block(s) were measured.

3. MEASUREMENT RESULTS: ATTACHED

SUPERVISED BY: William H. Graff, Director of Engineering

TRANSMITTER SPURIOUS EMISSION

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

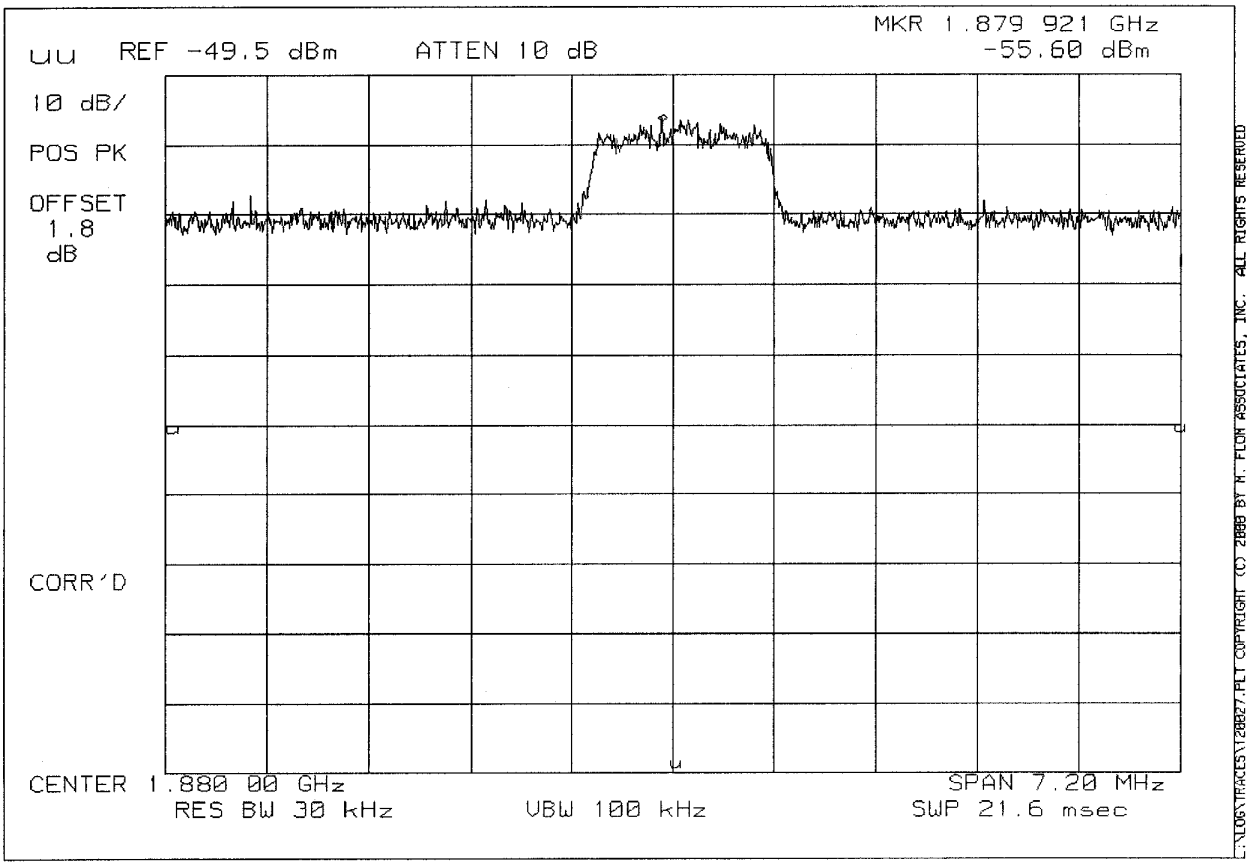


Transmitter Test Set Up

Asset	Description	s/n
(as applicable)		
(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

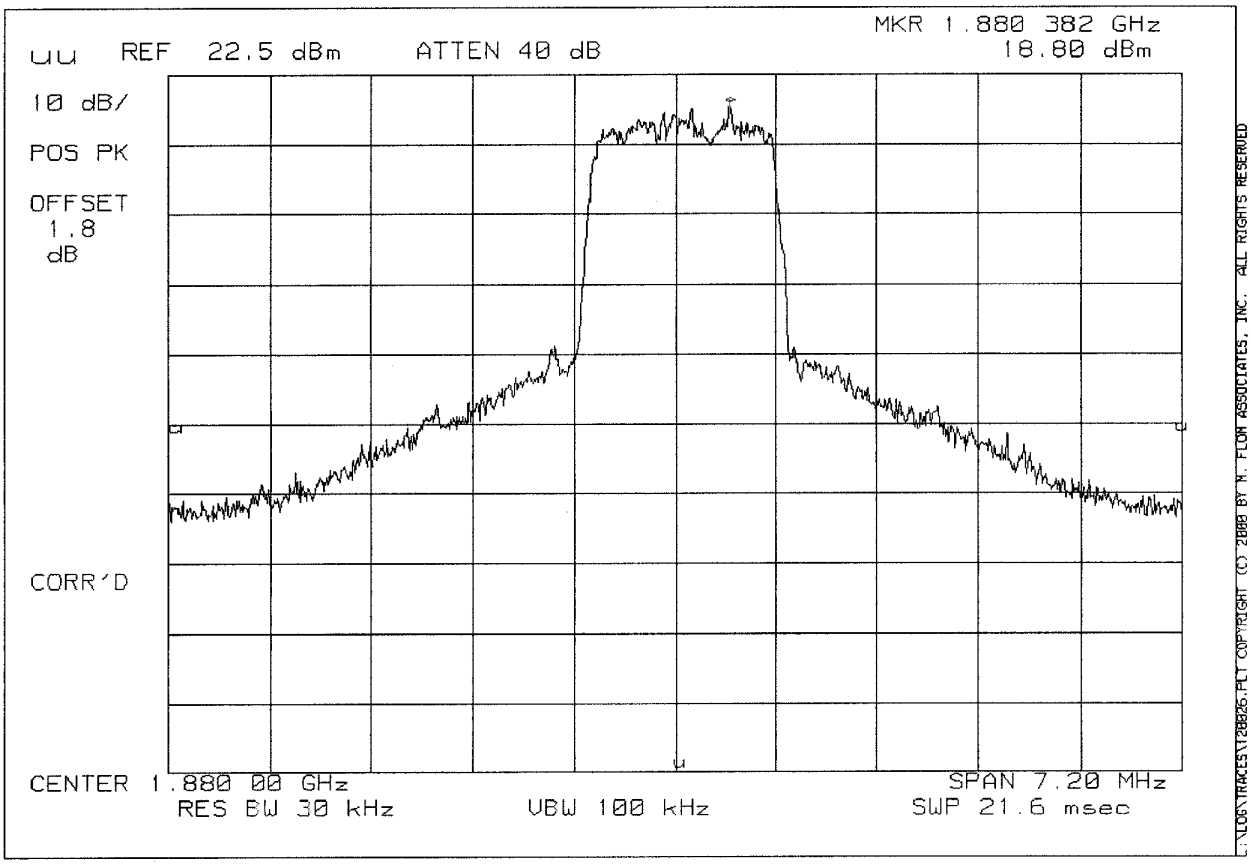
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:57, THR

POWER: LOW
MODULATION: CDMA PCS



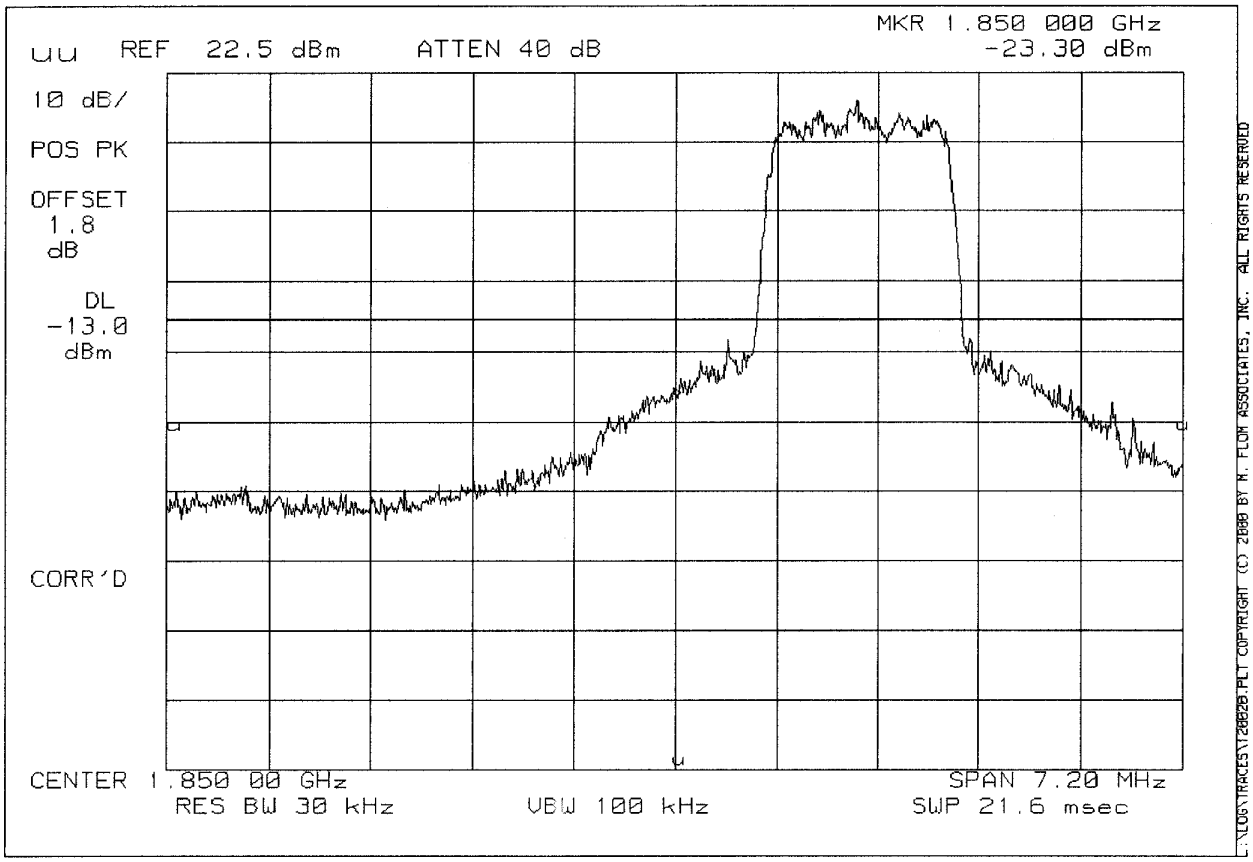
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:55, THR

POWER: HIGH
MODULATION: CDMA PCS



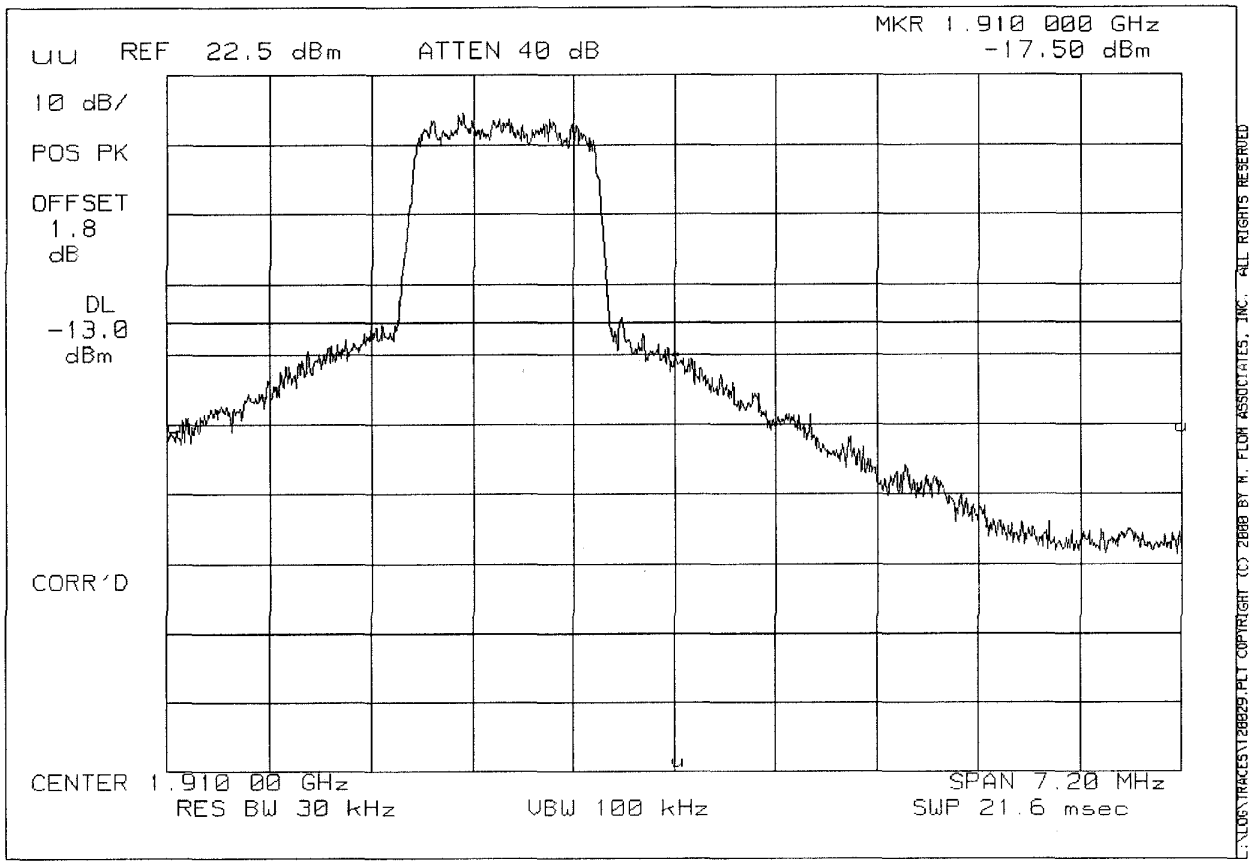
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 11:00, THR

POWER: HIGH
MODULATION: CDMA PCS
REMARK: LOWER BANDEDGE CHANNEL 025



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 11:02, THR

POWER: HIGH
MODULATION: CDMA PCS
REMARK: UPPER BANDEDGE CHANNEL 1175



PAGE NO. 49 of 73.

NAME OF TEST: Emission Requirements –
Worst Case Modulation & Wideband Data

SPECIFICATION: 47 CFR 22.917

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per previous page

MEASUREMENT PROCEDURE

1. The EUT was connected to a coaxial attenuator and then to a spectrum analyzer. The unmodulated carrier was set for 0 dB reference level.

2. A notch filter was introduced to reduce or eliminate any spectrum analyzer internally generated spurious for measurements of the harmonics and the carrier level.

3. Spectrum analyzer bandwidth was set to section 22.917(h) as applicable.

4. Measurements were made on channels 380, 799 and 991. The equipment was first modulated for the Worst Case Modulation, then for Wideband Data (F8W, F1D).

5. All other spurious emissions over the range of 0 the beyond the 10th harmonic (10 GHz) were 20 dB or more below the limit

6. The data presented here is for the Worst Case.

7. MEASUREMENT RESULTS: ATTACHED

MEASUREMENT SUMMARY: Emission Requirements – Worst Case Modulation

WORST CASE MODULATION = VOICE +_SAT

EMISSION, MHz/HARM.	LIMIT, dBc	SPURIOUS EMISSIONS, dBc Lo	Hi
F0 + 20 kHz to F0 + 45 kHz	≤-26	≤-55	≤-55
F0 + 45 kHz to 2nd Harmonic	≤-60 or 43 + 10 log P	≤-64	≤-66
2nd to 10th	(≤-13 dBm)	≤-72.3	≤-70.6

MEASUREMENT RESULTS = ATTACHED OFFSET PLOTS

EMISSION IN THE RECEIVER CRITICAL BAND

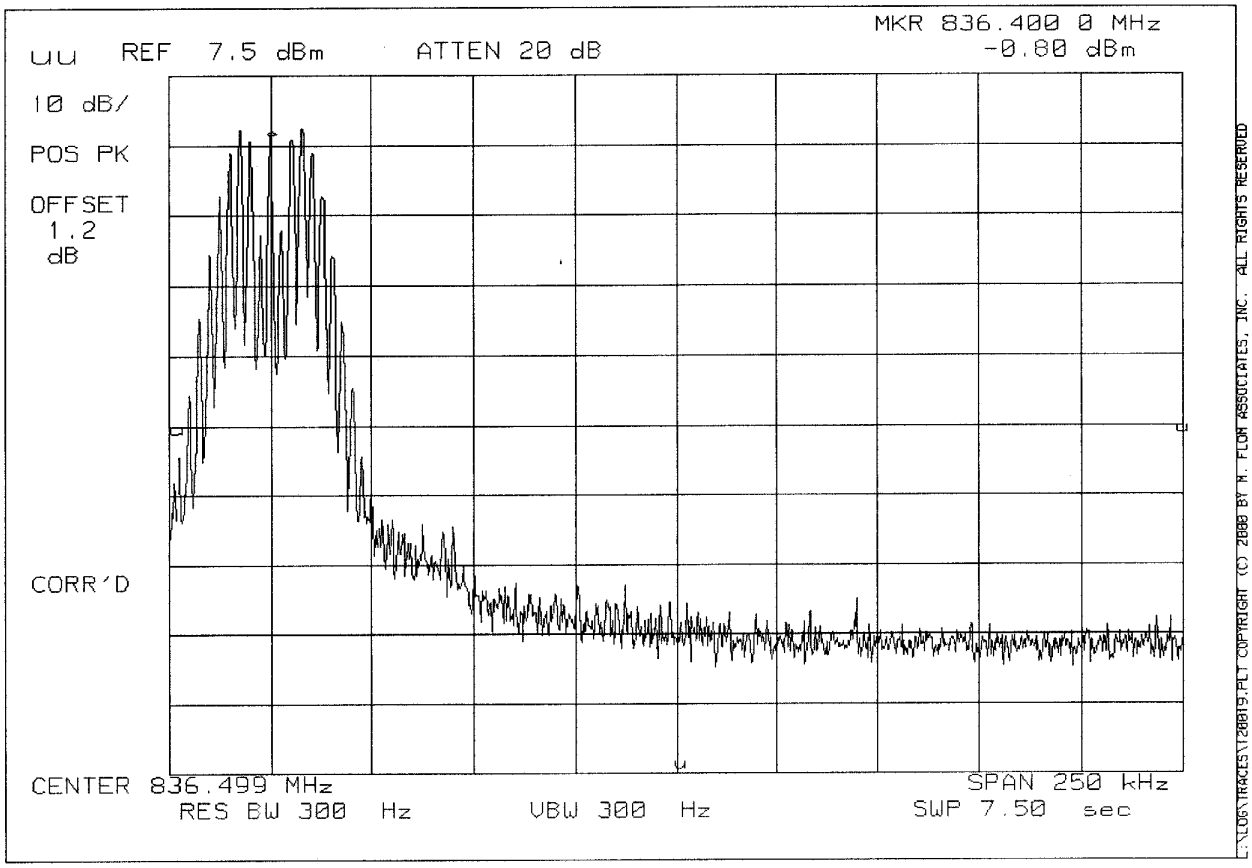
EMISSION, MHz/HARM.	LIMIT, dBm	SPURIOUS EMISSIONS, dBm Lo	Hi
869 to 894	≤-80	≤-87.4	≤-86.9

MEASUREMENT RESULTS = ATTACHED PLOTS

SUPERVISED BY: William H. Graff, Director of Engineering

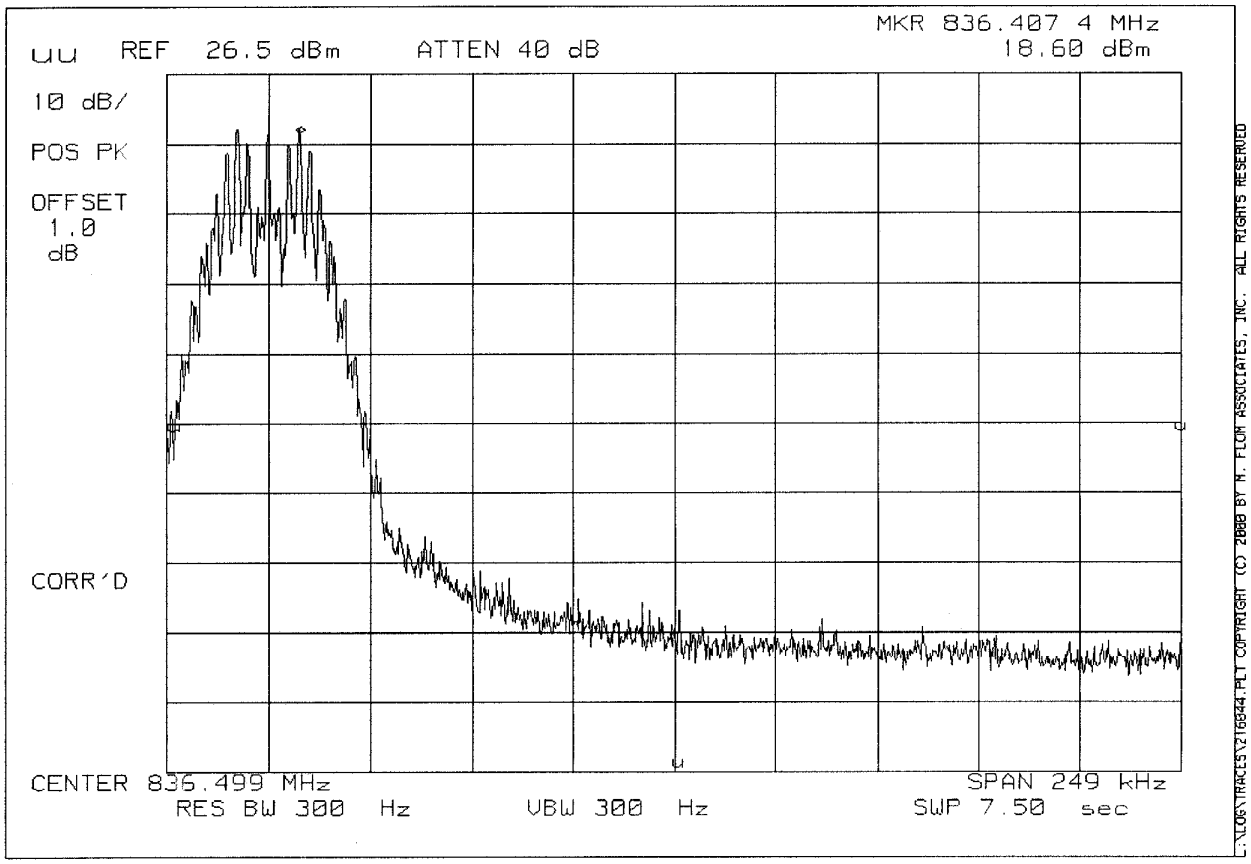
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:20, THR

POWER: LOW
MODULATION: SAT+VOICE
REMARK: OFFSET OCCUPIED BANDWIDTH



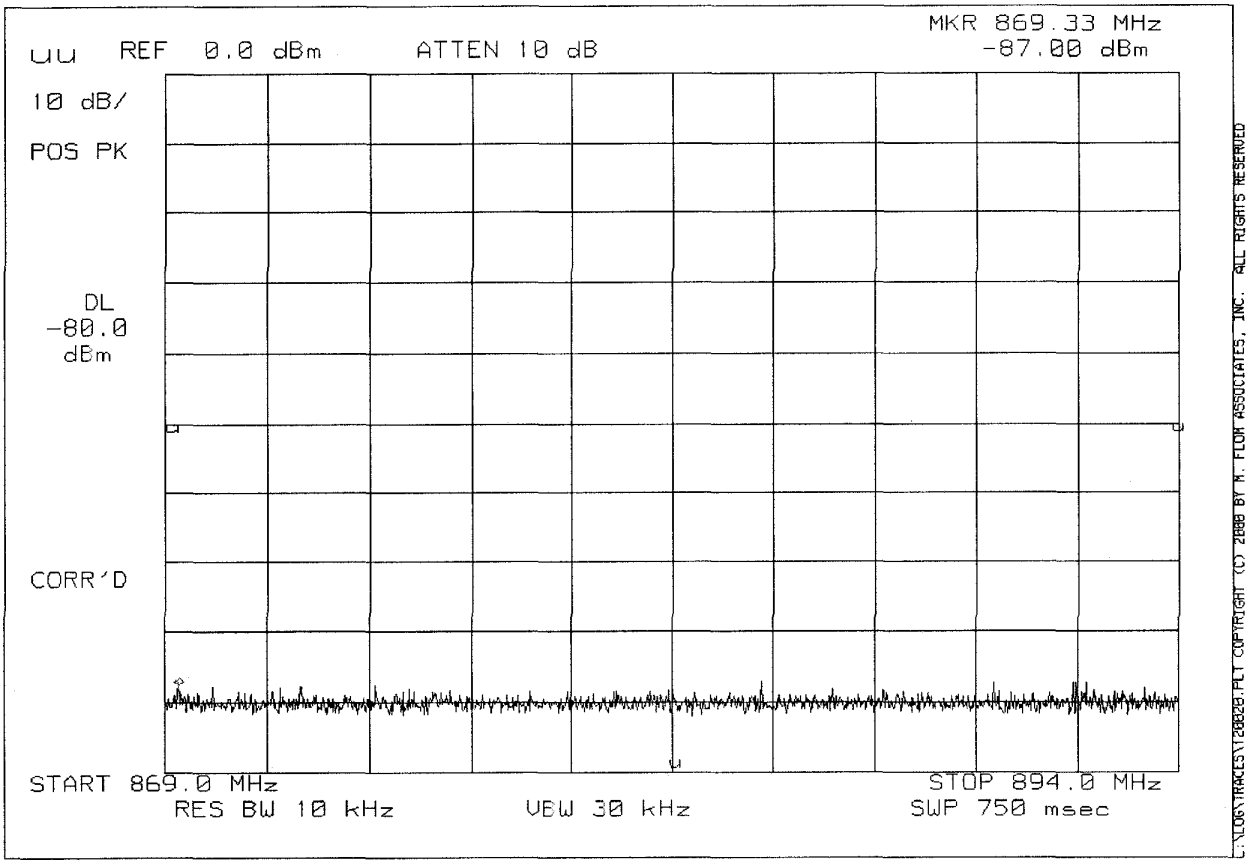
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:31, WED

POWER: HIGH
MODULATION: SAT+VOICE
REMARK: OFFSET OCCUPIED BANDWIDTH



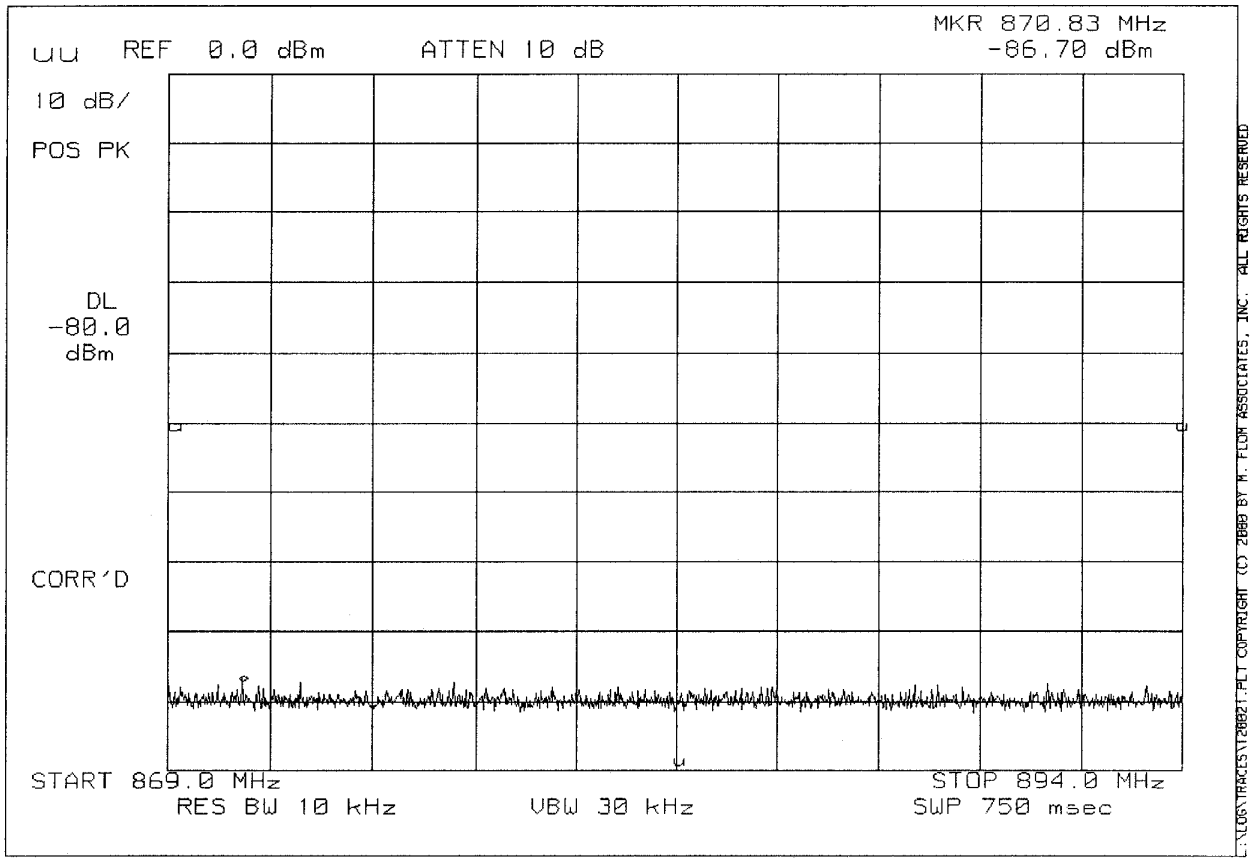
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:21, THR

POWER: LOW
MODULATION: ANY
REMARK: TX SPURS IN RX CRITICAL BAND



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:21, THR

POWER: HIGH
MODULATION: ANY
REMARK: TX SPURS IN RX CRITICAL BAND



MEASUREMENT SUMMARY: Emission Requirements – Wideband Data (F1D, 10 kb/s)

EMISSION, MHz/HARM.	LIMIT, dBc	SPURIOUS EMISSIONS, dBc Lo	Hi
F0 + 20 kHz to F0 + 45 kHz	≤-26	≤-34	≤-34
F0 + 45 kHz to F0 + 90 kHz	≤-45	≤-69	≤-70
F0 + 90 kHz to 2nd Harmonic	≤-60 (≤-13 dBm)	≤-72.9	≤-57.7
2nd to 10th	(≤-13 dBm)	≤-72.3	≤-70.6

MEASUREMENT RESULTS = ATTACHED OFFSET PLOTS

EMISSION IN THE RECEIVER CRITICAL BAND

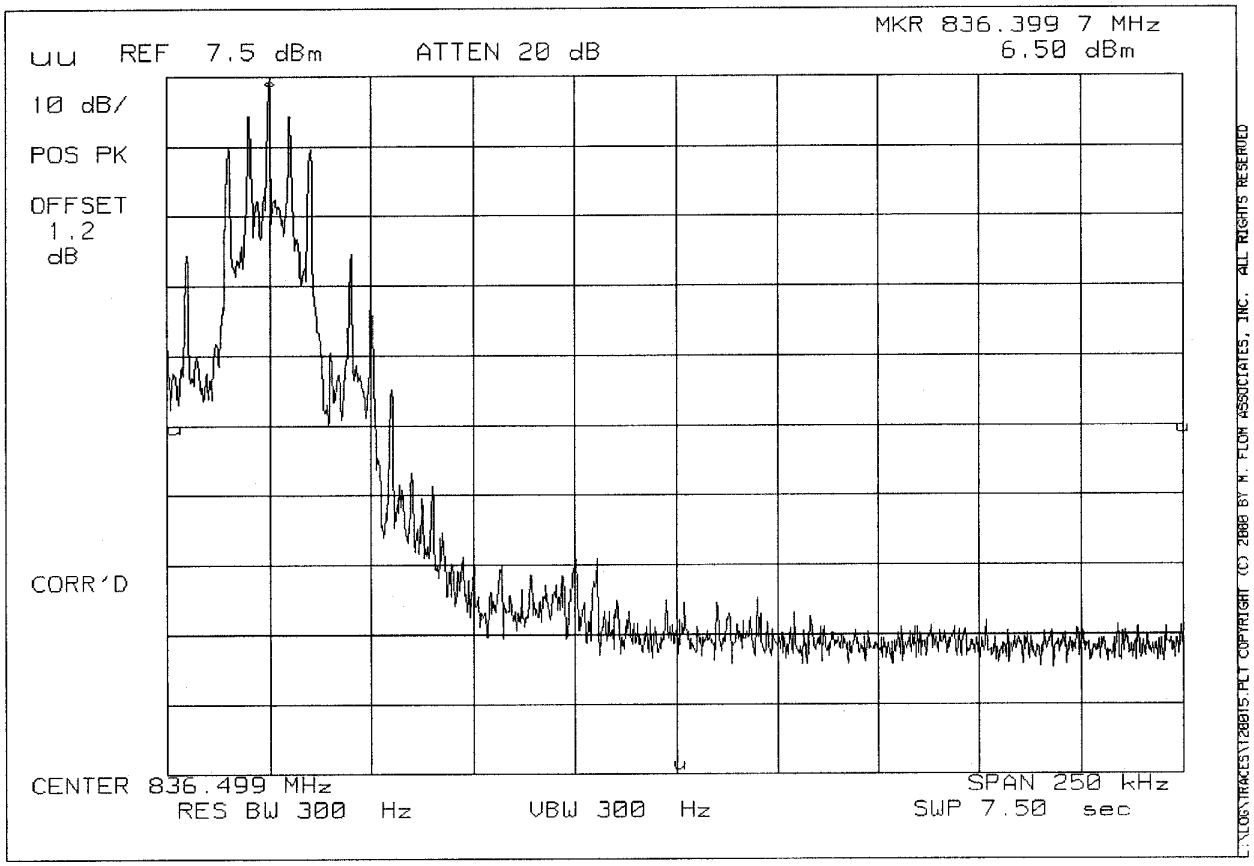
EMISSION, MHz/HARM.	LIMIT, dBm	SPURIOUS EMISSIONS, dBm Lo	Hi
869 to 894	≤-80	≤-87.4	≤-86.9

MEASUREMENT RESULTS = ATTACHED PLOTS

SUPERVISED BY: William H. Graff, Director of Engineering

SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:11, THR

POWER: LOW
MODULATION: WBD
REMARK: OFFSET OCCUPIED BANDWIDTH



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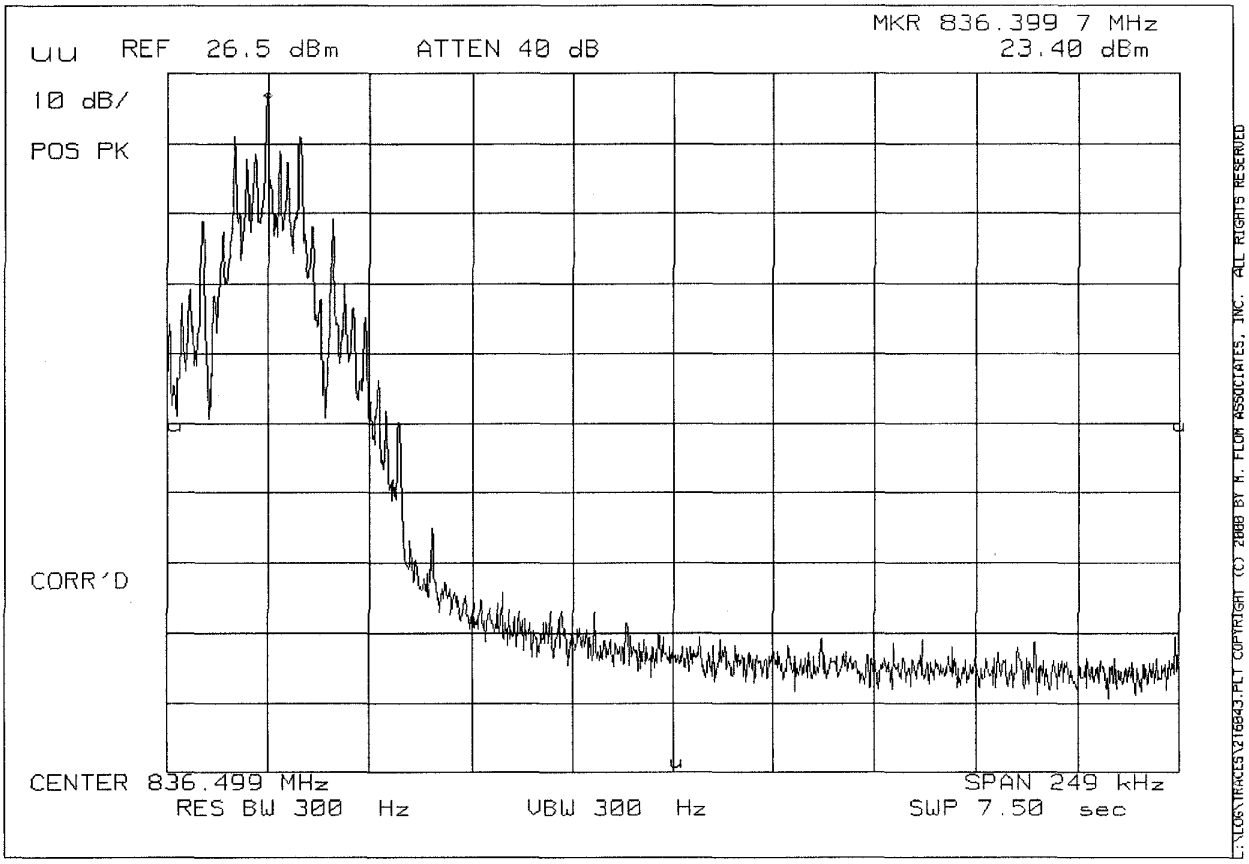
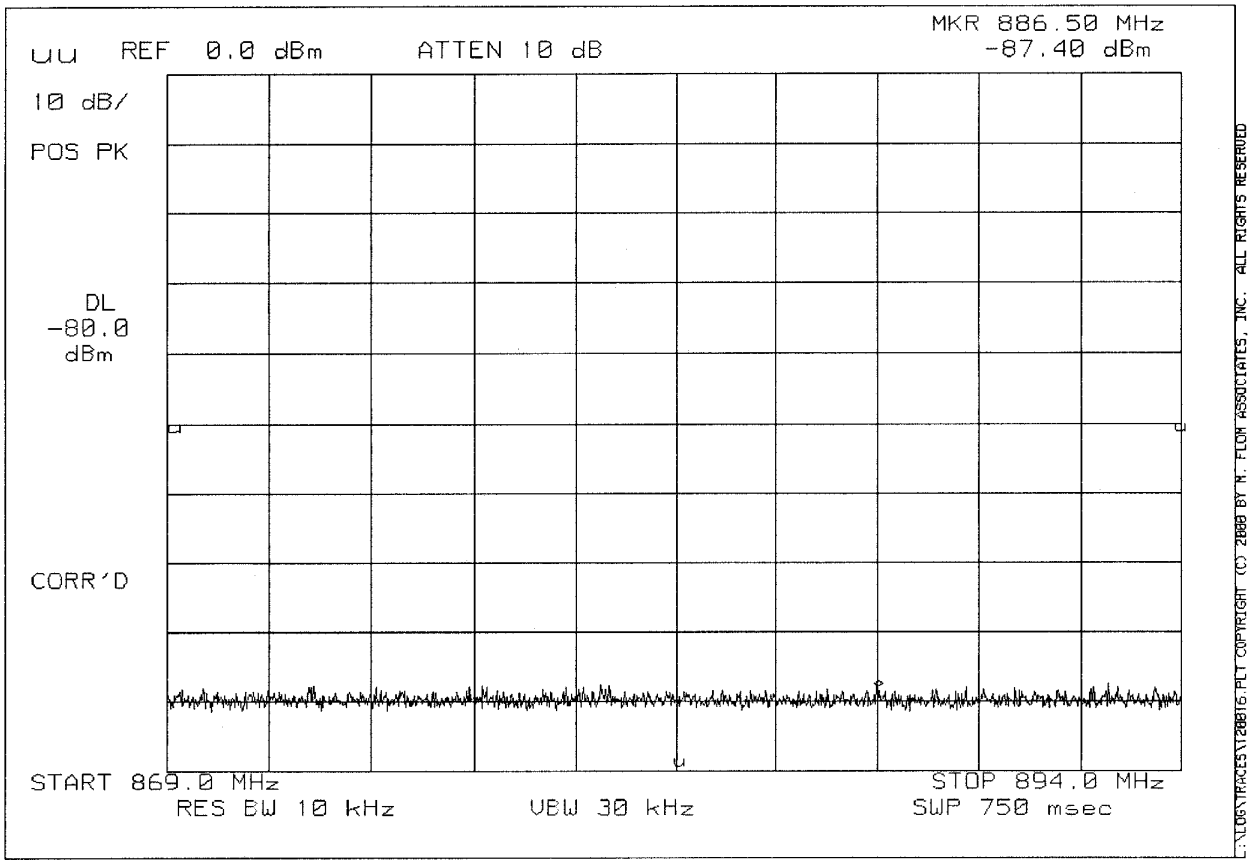
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-FEB-16, 15:25, WED

POWER: HIGH
MODULATION: WBD
REMARK: OFFSET OCCUPIED BANDWIDTH



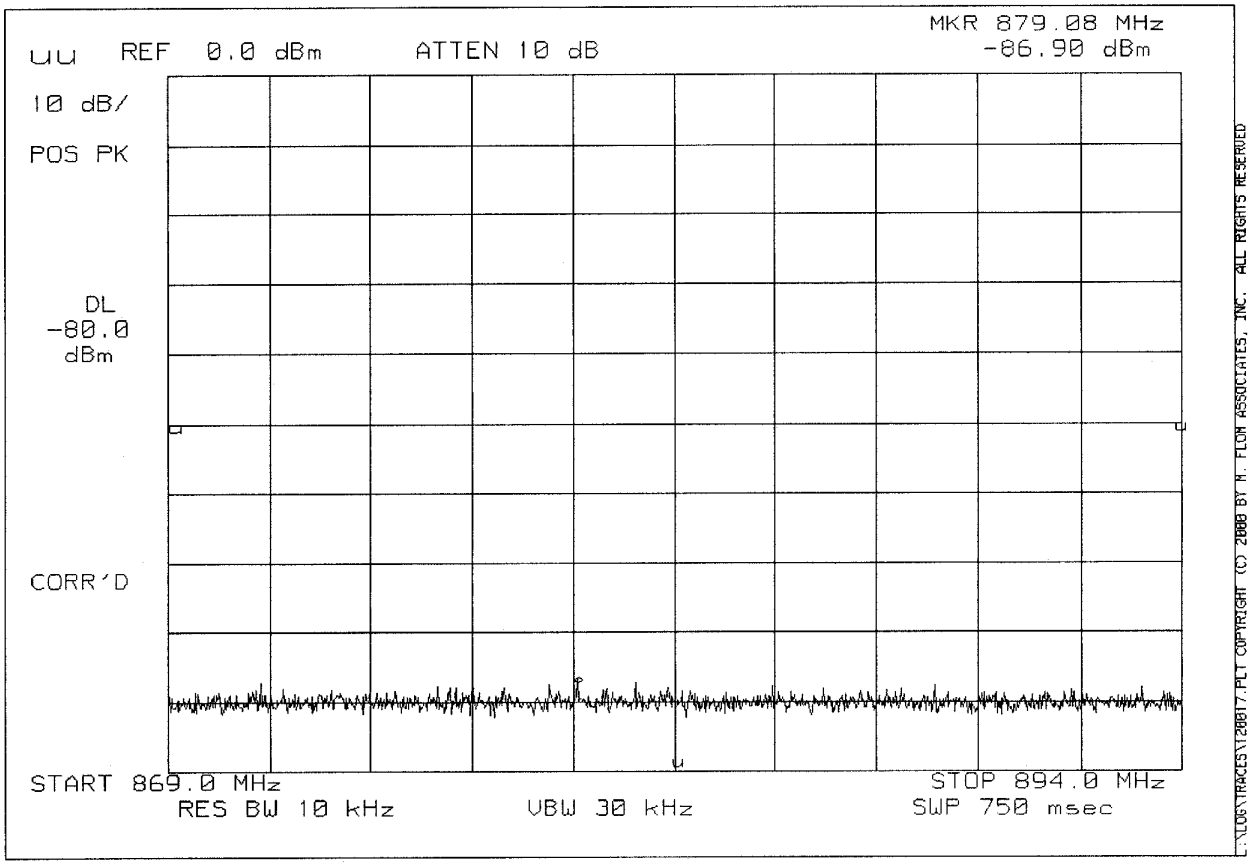
SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:14, THR

POWER: LOW
MODULATION: ANY
REMARK: TX SPURS IN RX CRITICAL BAND



SPECTRUM ANALYZER PRESENTATION
NOKIA, 6185i, Type NSD-3AW
2000-JAN-20, 10:14, THR

POWER: HIGH
MODULATION: ANY
REMARK: TX SPURS IN RX CRITICAL BAND



PAGE NO. 60 of 73.

NAME OF TEST: Spurious Emissions at Antenna Terminals

SPECIFICATION: 47 CFR 2.1051, 22.917

GUIDE: As indicated on page 7

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

1. The EUT was connected to a coaxial attenuator and then to a Spectrum Analyzer.

2. A notch filter was introduced to reduce or eliminate spurious emission which could be generated internally in the spectrum analyzer.

3. Measurements were made over the range from 45 kHz to 10 GHz for the worst case modulation so both the highest and lowest R.F. power settings.

4. All other emissions were 20 dB or more below the limit.

5. Spectrum analyzer bandwidth was set to section 22.917(h) as applicable.

6. MEASUREMENT RESULTS: ATTACHED

PAGE NO. 61 of 73.

LOW POWER, AMPS MODE

TRANSMITTER CONDUCTED EMISSIONS (TX2)
NOKIA, 6185i, Type NSD-3AW
GA1K006: 2000-JAN-20, 12:17, THR

TUNED MHz	EMISSION MHz	LEVEL dBm	LEVEL dBc	LEVEL uW	MARGIN dB
848.970	830.340000	-36.5	-44.0	0	-23.5
824.040	1648.086000	-65.4	-72.9	0	-52.4
836.400	1672.813000	-68.4	-75.9	0	-55.4
848.970	1697.930000	-68.0	-75.5	0	-55.0
824.040	2472.585000	-72.7	-80.2	0	-59.7
836.400	2509.187000	-73.7	-81.2	0	-60.7
848.970	2546.934000	-68.7	-76.2	0	-55.7
824.040	3295.801000	-75.0	-82.5	0	-62.0
836.400	3345.624000	-67.3	-74.8	0	-54.3
848.970	3395.890000	-68.1	-75.6	0	-55.1
824.040	4120.086000	-74.9	-82.4	0	-61.9
836.400	4181.769000	-73.5	-81.0	0	-60.5
848.970	4245.276000	-75.4	-82.9	0	-62.4
824.040	4944.199000	-75.2	-82.7	0	-62.2
836.400	5018.717000	-74.6	-82.1	0	-61.6
848.970	5093.387000	-73.9	-81.4	0	-60.9
824.040	5768.407000	-75.2	-82.7	0	-62.2
836.400	5854.824000	-67.1	-74.6	0	-54.1
848.970	5942.835000	-68.8	-76.3	0	-55.8
824.040	6592.115000	-69.3	-76.8	0	-56.3
836.400	6691.205000	-69.2	-76.7	0	-56.2
848.970	6792.158000	-69.3	-76.8	0	-56.3
824.040	7416.056000	-69.9	-77.4	0	-56.9
836.400	7528.007000	-70.0	-77.5	0	-57.0
848.970	7640.630000	-69.2	-76.7	0	-56.2
824.040	8240.894000	-69.9	-77.4	0	-56.9
836.400	8364.121000	-69.8	-77.3	0	-56.8
848.970	8489.445000	-70.1	-77.6	0	-57.1
824.040	9064.302000	-69.0	-76.5	0	-56.0
836.400	9200.723000	-69.0	-76.5	0	-56.0
848.970	9338.960000	-69.1	-76.6	0	-56.1
824.040	9888.369000	-68.1	-75.6	0	-55.1
836.400	10037.073000	-69.7	-77.2	0	-56.7
848.970	10187.648000	-68.8	-76.3	0	-55.8
824.040	10712.171000	-69.1	-76.6	0	-56.1
836.400	10872.757000	-68.3	-75.8	0	-55.3
848.970	11036.734000	-69.2	-76.7	0	-56.2
824.040	11536.551000	-67.7	-75.2	0	-54.7
836.400	11709.937000	-68.8	-76.3	0	-55.8
848.970	11885.936000	-69.3	-76.8	0	-56.3
824.040	12361.037000	-68.6	-76.1	0	-55.6
836.400	12545.608000	-63.7	-71.2	0	-50.7
848.970	12734.467000	-64.8	-72.3	0	-51.8

HIGH POWER, AMPS MODE

TRANSMITTER CONDUCTED EMISSIONS (TX1)
NOKIA, 6185i, Type NSD-3AW
GA2G004: 2000-FEB-16, 15:37, WED

TUNED MHz	EMISSION MHz	LEVEL dBm	LEVEL dBc	LEVEL uW	MARGIN dB
824.040	1648.070000	-48.4	-74.9	0	-35.4
836.400	1672.778000	-51.5	-78.0	0	-38.5
848.970	1697.952000	-50.9	-77.4	0	-37.9
824.040	2471.674000	-53.2	-79.7	0	-40.2
836.400	2509.227000	-56.0	-82.5	0	-43.0
848.970	2547.116000	-54.5	-81.0	0	-41.5
824.040	3296.314000	-54.5	-81.0	0	-41.5
836.400	3345.316000	-56.1	-82.6	0	-43.1
848.970	3395.881000	-54.8	-81.3	0	-41.8
824.040	4120.415000	-55.6	-82.1	0	-42.6
836.400	4182.003000	-55.3	-81.8	0	-42.3
848.970	4244.806000	-55.2	-81.7	0	-42.2
824.040	4944.105000	-55.4	-81.9	0	-42.4
836.400	5018.626000	-55.2	-81.7	0	-42.2
848.970	5094.313000	-54.1	-80.6	0	-41.1
824.040	5768.687000	-54.6	-81.1	0	-41.6
836.400	5854.334000	-49.2	-75.7	0	-36.2
848.970	5943.088000	-48.8	-75.3	0	-35.8
824.040	6592.385000	-49.9	-76.4	0	-36.9
836.400	6691.576000	-49.3	-75.8	0	-36.3
848.970	6792.088000	-50.1	-76.6	0	-37.1
824.040	7416.179000	-50.5	-77.0	0	-37.5
836.400	7527.169000	-49.7	-76.2	0	-36.7
848.970	7640.653000	-48.7	-75.2	0	-35.7
824.040	8240.445000	-49.1	-75.6	0	-36.1
836.400	8364.329000	-49.3	-75.8	0	-36.3
848.970	8489.589000	-50.4	-76.9	0	-37.4
824.040	9064.076000	-49.8	-76.3	0	-36.8
836.400	9200.692000	-49.3	-75.8	0	-36.3
848.970	9338.677000	-49.2	-75.7	0	-36.2
824.040	9888.861000	-49.1	-75.6	0	-36.1
836.400	10037.246000	-49.4	-75.9	0	-36.4
848.970	10187.168000	-49.4	-75.9	0	-36.4
824.040	10712.204000	-49.7	-76.2	0	-36.7
836.400	10872.817000	-49.7	-76.2	0	-36.7
848.970	11036.862000	-49.6	-76.1	0	-36.6
824.040	11537.037000	-48.9	-75.4	0	-35.9
836.400	11709.888000	-49.5	-76.0	0	-36.5
848.970	11885.230000	-48.9	-75.4	0	-35.9
824.040	12360.140000	-47.5	-74.0	0	-34.5
836.400	12545.715000	-44.7	-71.2	0	-31.7
848.970	12734.554000	-44.7	-71.2	0	-31.7

HIGH POWER, CDMA MODE

TRANSMITTER CONDUCTED EMISSIONS (TX3)

NOKIA, 6185i, Type NSD-3AW

GA1K003: 2000-JAN-20, 11:53, THR

TUNED MHz	EMISSION MHz	LEVEL dBm	LEVEL dBc	LEVEL uW	MARGIN dB
824.730	1649.665000	-52.1	-76.5	0	-39.1
836.400	1673.289000	-52.6	-77.0	0	-39.6
848.190	1696.694000	-53.3	-77.7	0	-40.3
824.730	2474.469000	-52.4	-76.8	0	-39.4
836.400	2508.782000	-53.3	-77.7	0	-40.3
848.190	2544.842000	-53.7	-78.1	0	-40.7
824.730	3298.485000	-55.4	-79.8	0	-42.4
836.400	3345.448000	-53.9	-78.3	0	-40.9
848.190	3392.386000	-54.8	-79.2	0	-41.8
824.730	4123.645000	-54.5	-78.9	0	-41.5
836.400	4182.312000	-54.9	-79.3	0	-41.9
848.190	4240.910000	-54.0	-78.4	0	-41.0
824.730	4948.596000	-54.7	-79.1	0	-41.7
836.400	5017.905000	-54.0	-78.4	0	-41.0
848.190	5089.365000	-54.4	-78.8	0	-41.4
824.730	5773.306000	-55.1	-79.5	0	-42.1
836.400	5855.004000	-48.3	-72.7	0	-35.3
848.190	5937.449000	-48.6	-73.0	0	-35.6
824.730	6598.083000	-49.0	-73.4	0	-36.0
836.400	6690.813000	-48.2	-72.6	0	-35.2
848.190	6785.855000	-48.0	-72.4	0	-35.0
824.730	7422.224000	-48.9	-73.3	0	-35.9
836.400	7527.715000	-49.9	-74.3	0	-36.9
848.190	7633.685000	-50.1	-74.5	0	-37.1
824.730	8246.910000	-49.9	-74.3	0	-36.9
836.400	8363.749000	-48.8	-73.2	0	-35.8
848.190	8481.735000	-48.6	-73.0	0	-35.6
824.730	9071.664000	-49.4	-73.8	0	-36.4
836.400	9200.439000	-49.4	-73.8	0	-36.4
848.190	9330.018000	-49.6	-74.0	0	-36.6
824.730	9896.772000	-46.7	-71.1	0	-33.7
836.400	10036.574000	-49.3	-73.7	0	-36.3
848.190	10178.691000	-48.6	-73.0	0	-35.6
824.730	10721.294000	-48.7	-73.1	0	-35.7
836.400	10873.357000	-48.6	-73.0	0	-35.6
848.190	11026.162000	-49.1	-73.5	0	-36.1
824.730	11546.406000	-48.9	-73.3	0	-35.9
836.400	11709.822000	-49.7	-74.1	0	-36.7
848.190	11874.342000	-49.2	-73.6	0	-36.2
824.730	12371.264000	-49.1	-73.5	0	-36.1
836.400	12545.765000	-44.9	-69.3	0	-31.9
848.190	12722.610000	-45.2	-69.6	0	-32.2

HIGH POWER, PCS MODE

TRANSMITTER CONDUCTED EMISSIONS (TX4)
NOKIA, 6185i, Type NSD-3AW
GA1K002: 2000-JAN-20, 11:38, THR

TUNED MHz	EMISSION MHz	LEVEL dBm	LEVEL dBc	LEVEL uW	MARGIN dB
1908.750	1900.080000	-35.2	-57.7	0	-22.2
1908.750	1901.300000	-35.6	-58.1	0	-22.6
1851.250	3702.546000	-36.5	-59.0	0	-23.5
1880.000	3759.533000	-49.0	-71.5	0	-36.0
1908.750	3817.049000	-53.4	-75.9	0	-40.4
1851.250	5553.634000	-54.2	-76.7	0	-41.2
1880.000	5639.964000	-54.3	-76.8	0	-41.3
1908.750	5726.039000	-54.9	-77.4	0	-41.9
1851.250	7404.902000	-49.2	-71.7	0	-36.2
1880.000	7519.992000	-48.9	-71.4	0	-35.9
1908.750	7634.697000	-49.6	-72.1	0	-36.6
1851.250	9256.596000	-48.5	-71.0	0	-35.5
1880.000	9399.531000	-48.1	-70.6	0	-35.1
1908.750	9543.492000	-47.2	-69.7	0	-34.2
1851.250	11107.425000	-48.2	-70.7	0	-35.2
1880.000	11280.248000	-48.5	-71.0	0	-35.5
1908.750	11452.810000	-48.5	-71.0	0	-35.5
1851.250	12958.533000	-42.1	-64.6	0	-29.1
1880.000	13160.387000	-44.0	-66.5	0	-31.0
1908.750	13361.337000	-43.9	-66.4	0	-30.9
1851.250	14810.369000	-43.1	-65.6	0	-30.1
1880.000	15040.281000	-42.3	-64.8	0	-29.3
1908.750	15270.040000	-42.2	-64.7	0	-29.2
1851.250	16661.365000	-43.4	-65.9	0	-30.4
1880.000	16920.482000	-42.5	-65.0	0	-29.5
1908.750	17178.842000	-42.3	-64.8	0	-29.3
1851.250	18512.559000	-41.6	-64.1	0	-28.6
1880.000	18800.045000	-36.4	-58.9	0	-23.4
1908.750	19087.340000	-36.5	-59.0	0	-23.5
1851.250	20363.514000	-35.5	-58.0	0	-22.5
1880.000	20680.079000	-35.9	-58.4	0	-22.9
1908.750	20995.889800	-35.9	-58.4	0	-22.9

PAGE NO. 65 of 73.

NAME OF TEST: Field Strength of Spurious Radiation

SPECIFICATION: 47 CFR 2.1053(a)

GUIDE: As indicated on page 7

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. Excess power leads were coiled near the power supply.

   The cables were oriented in order to obtain the maximum response. At each emission frequency, the turntable was rotated and the search antennas were raised and lowered vertically.

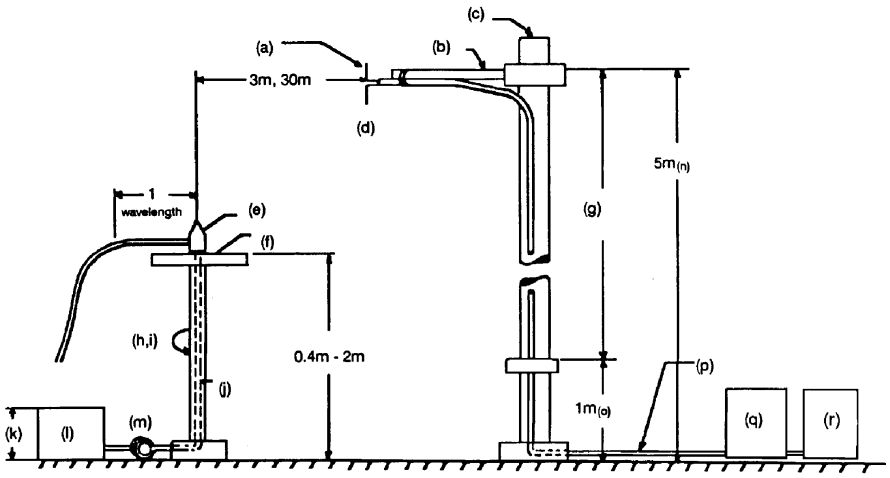
4. The emission was observed with both a vertically polarized and a horizontally polarized search antenna and the worst case was used.

6. The field strength of each emission within 20 dB of the limit was recorded and corrected with the appropriate cable and transducer factors.

7. The worst case for all channels is shown.

8. 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', 1m normally
(p) Calibrated Cable at least 10m in length
(q) Amplifier (optional)
(r) Spectrum Analyzer

Asset	Description (as applicable)	s/n	Cycle Per ANSI C63.4-1992, 10.1.4	Last Cal
TRANSDUCER				
i00088	EMCO 3109-B 25MHz-300MHz	2336	12 mo.	Sep-99
i00089	Aprel 2001 200MHz-1GHz	001500	12 mo.	Sep-99
i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Sep-99
i00065	EMCO 3301-B Active Monopole	2635	12 mo.	Sep-99
AMPLIFIER				
i00028	HP 8449A	2749A00121	12 mo.	Mar-99
SPECTRUM ANALYZER				
i00029	HP 8563E	3213A00104	12 mo.	Aug-99
i00033	HP 85462A	3625A00357	12 mo.	May-99
i00048	HP 8566B	2511AD1467	6 mo.	May-99

MEASUREMENT RESULTS: FIELD STRENGTH OF SPURIOUS RADIATION

Measurement Distance, m = 3

Spectrum Searched, GHz = 0 to 10

AMPS BAND

TUNED, MHz	CHANNEL NUMBER	EMISSION MHz/HARM.	LEVEL, dBc Hi
824.040	991	2nd – 10th	<60
836.400	380	2nd – 10th	<60
848.970	799	2nd – 10th	<60

CDMA BAND

TUNED, MHz	CHANNEL NUMBER	EMISSION MHz/HARM.	LEVEL, dBc Hi
824.040	991	2nd – 10th	<60
836.400	380	2nd – 10th	<60
848.970	799	2nd – 10th	<60

PCS BAND

TUNED, MHz	CHANNEL NUMBER	EMISSION MHz/HARM.	LEVEL, dBc Hi
824.040	991	2nd – 10th	<60
836.400	380	2nd – 10th	<60
848.970	799	2nd – 10th	<60

NOTE:
For channels 380, 799 and 991, the field strength of spurious radiation over the above noted range measured 20 dB or more below the limit.

SUPERVISED BY: William H. Graff, Director of Engineering

NAME OF TEST: Field Strength of Spurious Radiation
g0010182: 2000-Jan-18 Tue 09:00:00
STATE: 2:High Power AMPS

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	ERP, dBm	MARGIN, dB
836.400000	1672.799467	34	28.38	-35	-22
836.400000	2509.199667	53.33	1.64	-42.4	-29.4
836.400000	3345.599867	33.17	4.16	-60	-47.1
836.400000	4182.000167	29.33	6.26	-61.8	-48.8
836.400000	5018.399467	31.17	7.74	-58.5	-45.5
836.400000	5854.799734	20.67	9.35	-67.4	-54.4
836.400000	6691.200384	31.67	11.79	-53.9	-40.9
836.400000	7527.599417	25.5	12.52	-59.4	-46.4
836.400000	8363.999950	7.5	12.42	-77.5	-64.5

NAME OF TEST: Field Strength of Spurious Radiation
g0010183: 2000-Jan-18 Tue 09:22:00
STATE: 2:High Power CDMA

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	ERP, dBm	MARGIN, dB
836.400000	1672.800000	33.67	28.38	-35.3	-22.4
836.400000	2509.199667	49.83	1.64	-45.9	-32.9
836.400000	3345.533333	37.83	4.16	-55.4	-42.4
836.400000	4182.000167	36	6.26	-55.1	-42.1
836.400000	5018.399467	35.5	7.74	-54.1	-41.2
836.400000	5854.799734	32.5	9.35	-55.5	-42.6
836.400000	6691.200384	32.33	11.79	-53.3	-40.3
836.400000	7527.600384	31.33	12.52	-53.5	-40.6
836.400000	8364.000384	33	12.42	-52	-39

NAME OF TEST: Field Strength of Spurious Radiation
g0010184: 2000-Jan-18 Tue 13:24:00
STATE: 2:High Power PCS

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	EIRP, dBm	MARGIN, dB
1880.000000	3760.000000	64	5.3	-25.9	-12.9
1880.000000	5640.000000	32.67	8.95	-53.6	-40.6
1880.000000	7520.000000	31.67	12.52	-51	-38
1880.000000	9400.000000	33	14.74	-47.5	-34.5
1880.000000	11280.000000	33.33	14.67	-47.2	-34.2
1880.000000	13160.000000	32.83	17.85	-44.5	-31.5
1880.000000	15040.000000	33.5	15.07	-46.7	-33.6
1880.000000	16920.000000	32.83	20.43	-42	-28.9

PAGE NO. 69 of 73.

NAME OF TEST: Frequency Stability (Temperature Variation)

SPECIFICATION: 47 CFR 2.1055(a)(1)

GUIDE: As indicated on page 7

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.

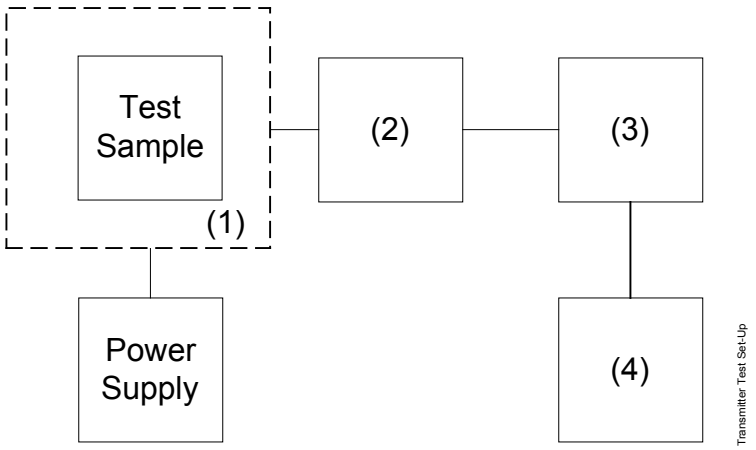
3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.

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

5. MEASUREMENT RESULTS: ATTACHED

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 (as applicable)	Description	s/n
(1) TEMPERATURE, HUMIDITY, VIBRATION		
i00027	Tenny 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

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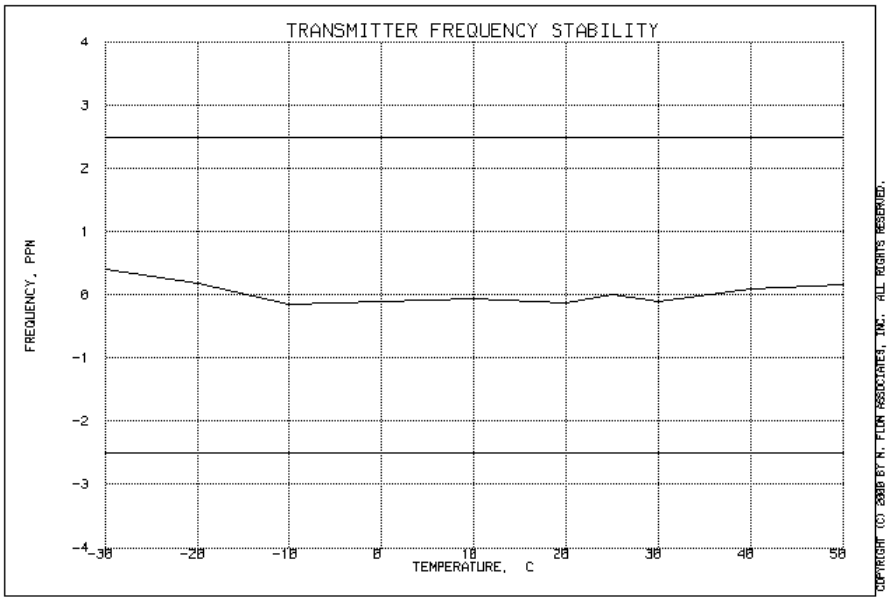
NAME OF TEST: Frequency Stability (Temperature Variation)
g0010138: 2000-Jan-18 Tue 16:57:00
STATE: 0:General



SUPERVISED BY: William H. Graff, Director of Engineering

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NAME OF TEST: Frequency Stability (Voltage Variation)

SPECIFICATION: 47 CFR 2.1055 (b)(1)

GUIDE: As indicated on page 7

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)
g0010190: 2000-Jan-19 Wed 15:13:19
STATE: 0:General

LIMIT, ppm = 2.5
LIMIT, Hz = 2091
BATTERY END POINT (Voltage) = 3.2

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
85	3.4	836.399990	-10	-0.01
100	4	836.400000	0	0.00
115	4.6	836.400010	10	0.01
80	3.2	836.399970	-30	-0.04

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NAME OF TEST: Necessary Bandwidth and Emission Bandwidth

SPECIFICATION: 47 CFR 2.202(g)

MODULATION = 40K0F1D

NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	=	10
MAXIMUM DEVIATION (D), kHz	=	10
CONSTANT FACTOR (K)	=	1
NECESSARY BANDWIDTH (B_N), kHz	=	(2 x M) + (2 x D x K)
	=	40.0

MODULATION = 40K0F8W

NECESSARY BANDWIDTH CALCULATION:

MAXIMUM MODULATION (M), kHz	=	6
MAXIMUM DEVIATION (D), kHz	=	12
CONSTANT FACTOR (K)	=	1
NECESSARY BANDWIDTH (B_N), kHz	=	(2 x M) + (2 x D x K)
	=	40.0

MODULATION = 1M25F9W

NECESSARY BANDWIDTH:

NECESSARY BANDWIDTH (BN), kHz = 125

(measured at the 99.75% power bandwidth)

SUPERVISED BY: William H. Graff, Director of Engineering

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: William H. Graff, Director of Engineering