

TCC

Company Confidential

FCC ID: GMLNPW-3

Test & Certification Center (TCC) - Dallas



Accredited Laboratory
Certificate Number: 1819-01

1 (1)

December 19, 2001

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Nokia Mobile Phones
Equipment: 8265
FCC ID: GMLNPW-3
FCC Rules: 22H, 24E, Confidentiality

To whom it may concern:

Enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, for approval of the referenced equipment as shown.

Filing fees are attached. Should you require any further information, please contact the appropriate agent listed.

Regards,

A handwritten signature in black ink, appearing to read 'Alan C. Ewing'.

Alan C. Ewing
Senior Engineering Manager – TCC-Dallas
Nokia Mobile Phones



Test & Certification Center (TCC) - Dallas

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Test Report #: 01-RF-0626
December 18, 2001

Accredited Laboratory
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CFR 47 Part 2, 22, and 24 Test Report

Test Report Number: 01-RF-0626

Terminal device:

FCC ID: GMLNPW-3, Model 8265, HW: 3.1, SW: 3.0
(Detailed information is listed in section 4).

Originator: Randy Leenerts
Function: TCC - Dallas - EMC
Version/Status: 1.0 Approved
Location: TCC Directories
Date: December 18, 2001

Change History:

Version	Date	Status	Handled By	Comments
0.1	December 7, 2001	Draft	Randy Leenerts	In Process
0.2	December 18, 2001	Draft	Elizabeth Parish	Updated
1.0	December 18, 2001	Approved	Alan C. Ewing	Approved

Testing laboratory:

Test & Certification Center (TCC) Dallas
Nokia Mobile Phones, Inc
6021 Connection Drive
Irving, Texas 75039
U.S.A.
Tel. 972-894-5000
Fax. 972-894-4988

Client:

Nokia Mobile Phones, Inc.
Model 8265, FCC ID: GMLNPW-3
6021 Connection Drive
Irving, Texas 75039
U.S.A.
Tel. 972-894-5000
Fax. 972-894-4988

Date and signatures:

December 18, 2001

For the contents:

A handwritten signature of Randy Leenerts in black ink.

Randy Leenerts, EMC Engineer
Technical Review

A handwritten signature of Alan C. Ewing in black ink.

Alan C. Ewing, General Manager
Manager Review

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1. GENERAL

1.1 Quality System

The quality system in place for TCC-Dallas conforms to ISO/IEC 17025 and has been audited to the standard by A2LA (American Association of Laboratory Accreditation). The appendix of this report contains the scope of accreditation for A2LA. TCC – Dallas has also been audited using the ISO 9000 Quality System, as part of Nokia Mobile Phones, Inc., by ABS (American Bureau of Shipping) Quality Evaluations Inc.

TCC-Dallas is a recognized laboratory with the Federal Communications Commission in filing applications for Certification under Parts 15 and 18, Registration Number 100060, and Industry Canada, Registration Number IC 661.

1.2 List of General Information Required for Certification

This list is in accordance with FCC Rules and Regulations, CFR 47, Part 2, and to 22H, 24E, Confidentiality.

1.2.1 Sub-part 2.1033(c)(1)

Name and Address of Applicant: Nokia Mobile Phones
6021 Connection Drive
Irving, Texas 75039 USA

Manufacturer: Nokia Mexico, S.A. DE C.V.
Ave. Industrial Rio Bravo s/n
Parque Ind. Del Nte. C.P. 88730

OR

Nokia Do Brasil Tecnologia Ltda.
Rod. Torquato Tapajos, 7200 KM 12 Taruma
69048-660 Manaus - AM

1.2.2 Sub-part 2.1033(c)(2)

FCC ID: GMLNPW-3

Model No: 8265

1.2.3 Sub-part 2.1033(c)(3)

Instruction Manual(s):
Refer to attached EXHIBITS

1.2.4 Sub-part 2.1033(c)(4)

Type of Emission: 40K0F1D, 40K0FXW, 30K0DXW

1.2.5 Sub-part 2.1033(c)(5)

Frequency Range, MHz: 824.04 to 848.97
1850.04 to 1909.92

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1.2.6 Sub-part 2.1033(c)(6)

Power Rating, Watts:
0.360 ERP AMPS
0.826 ERP TDMA-AMPS
1.679 PCS-TDMA

☐ Switchable ☒ Variable ☐ N/A

FCC Grant Note: BC- The output power is continuously variable from the value listed in this entry to 5%-10% of the value listed.

1.2.7 Sub-part 2.1033(c)(7)

Maximum Power Rating, Watts: 1.7

1.2.8 Sub-part 2.1033(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 = 3.6

1.2.9 Sub-part 2.1033(c)(9)

Tune-up Procedure:
Refer to attached EXHIBITS

1.2.10 Sub-part 2.1033(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.
Refer to attached EXHIBITS

1.2.11 Sub-part 2.1033(c)(11)

Label Information:
Refer to attached EXHIBITS

1.2.12 Sub-part 2.1033(c)(12)

Photographs:
Refer to attached EXHIBITS

1.2.13 Sub-part 2.1033(c)(13)

Digital Modulation Description:
N/A

1.2.14 Sub-part 2.1033(c)(14)

Test and Measurement Data:
FOLLOWS

1.3 Objective

All tests and measurement data shown was performed to determine whether the selected handset was in compliance as specified in FCC: CFR47 Parts 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, Part 22, and Part 24.

1.4 Test Summary

Test Results: *The test result relates only to those tested devices mentioned in Section 4 of this test report.*

Test Performed	Reference	Section of Report	Complies / Does not comply
RF Power Output (Conducted)	FCC Part 2.1046(a), 22.913(a), 24.232(b)(c)	6	Complies
RF Power Output (Radiated)	FCC Part 22.913(a) / 24.232(b)	7	Complies
Modulation Requirements: TX Audio Frequency Response	FCC Part 2.1047(a)	8	Complies
Modulation Requirements: Modulation Limiting	FCC Part 2.1047(b)	9	Complies
Modulation Requirements: Measurement of Maximum Deviation	FCC Part 22.915(a)(b)(c)(d)(1)	10	Complies
Occupied Bandwidth: RF Emissions Masks	FCC Part 2.1049(c)(1), 24.238(a)(b)	11	Complies
Occupied Bandwidth: Transmitter Conducted Measurements	FCC Part 2.1049(c)(1), 24.238(a)(b)	12	Complies
Emissions in Receiver Critical Band	FCC Part 22.917(f)	13	Complies
Spurious Emissions at Antenna Terminals	FCC Part 2.1051	14	Complies
Field Strength of Spurious Radiation	FCC Part 2.1053	15	Complies
Frequency Stability (Temperature Variation)	FCC Part 2.1055(a)(1)(b), 24.235	16	Complies
Frequency Stability (Voltage Variation)	FCC Part 2.1055(d)(1)(2), 24.235	17	Complies

2. STANDARDS BASIS

Testing has been carried out in accordance with:

REF.	Code of the standard	Name of the standard
1	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.
2	FCC: CFR 47 Part 2	Code of Federal Regulations (CFR) Title 47, Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations: Subpart J – Equipment Authorization Procedures
3	FCC: CFR 47 Part 22	Code of Federal Regulations (CFR) Title 47, Part 22 – Public Mobile Services: Subpart H – Cellular Radiotelephone Service
4	FCC: CFR 47 Part 24	Code of Federal Regulations (CFR) Title 47, Part 24 – Personal Communications Services: Subpart E – Broadband PCS
5	RSS-128	800 MHz Dual-Mode TDMA Cellular Telephones, Industry Canada
6	RSS-133	2 GHz Personal Communications Services, Industry Canada
7	RSS-212	Test Facilities and Test Methods for Radio Equipment, Industry Canada (Provisional)
8	RSP-100	Radio Equipment Certification Procedure

Note: Unless otherwise stated, (by reference to a version number and a publication date), the latest version of the above documents applies.

Deviations:

Not Applicable.

3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS

3.1 Abbreviations

dB - decibel

dBm - decibels per milliwatt (absolute measurement)

GHz - gigahertz or 1000000000 hertz

kHz - kilohertz or 1000 hertz

MHz - megahertz or 1000000 hertz

3.2 Acronyms

AMPS - Advanced Mobile Phone System

BSS - Base Station Simulator

CDMA - Code Division Multiple Access

EMC - Electromagnetic Compatibility

EUT - Equipment under Test

GSM - Global System for Mobile communications

PCS - Personal Communications Services

RF - Radio Frequency

TDMA - Time Division Multiple Access

3.3 Terms

Base Station Simulator (BSS) - simulates all the necessary signals that a phone would experience while on a live network. There are many types of base station simulators catering for all current protocols, i.e., GSM, AMPS, TDMA, and CDMA.

Cellular - refers to a frequency in the 800MHz band.

PCS - refers to a frequency in the 1900MHz band.

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4. EQUIPMENT-UNDER-TEST (EUT)

The results in this report relate only to the items listed below:

4.1 Description of Tested Device(s):

Test Performed	Mode of Operation	Date of Receipt	Condition of Sample	Item	Identifying Information
22.913(a), 24.232(b)(c), 2.1053, 2.1046(a), 22.913(a), 24.232(b)(c), 2.1047(a), 2.1047(b), 22.915(a)(b)(c)(d)(1), 2.1049(c)(1), 2.1051, 24.238(b), 22.917(f), 2.1055(a)(1)(b), 2.1055(d)(1)(2)	AMPS/TDMA 800/1900	11/27/01	Good	Phone	FCC ID: GMLNPW-3 Model 8265 Build: 3.1
2.1046(a), 22.913(a), 24.232(b)(c), 2.1047(a), 2.1047(b), 22.915(a)(b)(c)(d)(1), 2.1049(c)(1), 2.1055(a)(1)(b), 2.1055(d)(1)(2)	AMPS/TDMA 800/1900	11/27/01	Good	Service Battery	Type: No Regulator Other: 4.0vdc
22.913(a), 24.232(b)(c), 2.1051, 2.1049(c)(1), 24.238(b), 22.917(f), 2.1053	AMPS/TDMA 800/1900	11/27/01	Good	Battery	Type: BLB-3 Other: 3.6v Li-ion

4.2 Photograph of Tested Device(s):

Refer to attached EXHIBITS

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5. TEST EQUIPMENT LIST

The listing below indicates the test equipment utilized for the test (s). Calibration interval on all items listed can be obtained from the Engineering Services Group within NMP, Product Creation - Dallas. Where relevant, measuring equipment is subjected to in-service checks between testing. TCC - Dallas shall notify clients promptly, in writing, of identification of defective measuring equipment that casts doubt on the validity of results given in this report.

Test/ Section of Report	NMP#	Test Equipment	Mfr. #	Model #
6	00151	Base Station Simulator	Acterna	4300
7, 15	02874	Biconilog Antenna	EMCO	3142
7, 15	02846	Turntable and Tower Controller	Sunol	Turntable FM2022, Controller 2846
7, 15	00056	Horn Antenna	EMCO	3115
7, 11, 12, 13, 14, 15	02894	Base Station Simulator	Acterna	4305
7, 11, 12, 13, 14, 15	02661/02663	EMI Receiver	Agilent	8546A, E7405A
8, 9, 10	00510	Modulation analyzer	Agilent	8901B
8, 9, 10, 16, 17	00280/00525/00303	Function generator (from base station simulator)	Agilent	8920B
10	00816	Oscilloscope	Tektronix	TDS 220
11, 12, 13, 14	3155	Power Splitter (must have 6 dB insertion loss)	Agilent	33120A
11, 12, 13	N/A	6dB Attenuator	Weinshcel	Model 2
13, 14	N/A	Notch Filter	Wainwright	WRCA 800/960-6SSK
14, 15	N/A	3GHz High Pass Filter	Trilithic Inc.	4HC2900/18000-1.1-KK
14	N/A	2GHz High Pass Filter	Trilithic Inc.	3HC1900/18000-1-KK
15	N/A	1GHz High Pass Filter	Wainwright.	WHK949-9SS
15	00001	RF preamplifier	Agilent	HP8449B

6. RF POWER OUTPUT (CONDUCTED)

Specification: FCC Part 2.1046(a), 22.913(a), 24.232(b)(c)

6.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

6.2 Pass/Fail Criteria

Not Applicable

6.3 Detailed Test Results

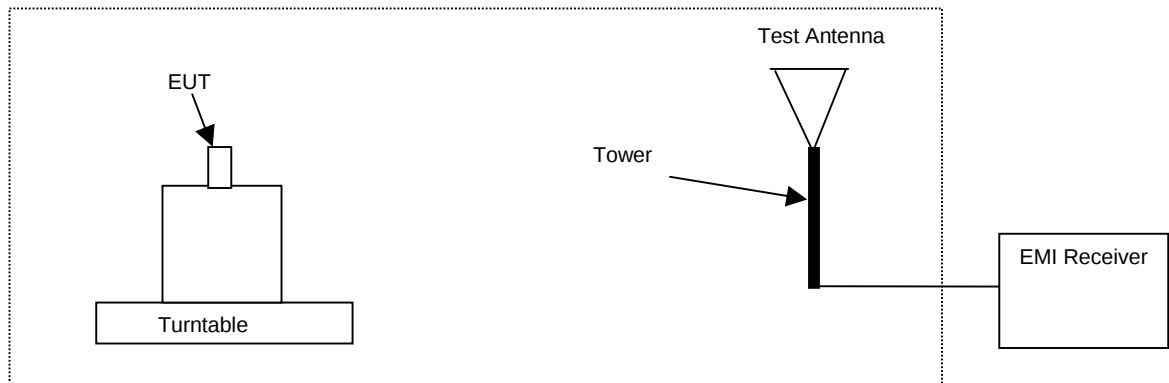
Test Technician / Engineer	Randy Leenerts	
Date of Measurement	December 11, 2001	
Temperature / Humidity	23°C	35%RH
Test Result	FCC ID: GMLNPW-3 was tested in accordance with FCC Part 2.1046(a), 22.913(a), 24.232(b)(c)	

RF Power					
AMPS Mode	Channel	Min (mW)	Min (dBm)	Max (mW)	Max (dBm)
824.04 MHz	991	8.30	9.2	295	24.7
836.52 MHz	384	7.80	8.9	302	24.8
848.97 MHz	799	7.20	8.6	302	24.8
TDMA Mode					
824.04 MHz	991	0.31	-5.1	490	26.9
836.52 MHz	384	0.45	-3.5	513	27.1
848.97 MHz	799	0.46	-3.4	501	27.0
PCS Mode					
1850.04 MHz	2	0.45	-3.5	407	26.1
1879.95 MHz	999	0.49	-3.1	407	26.1
1909.92 MHz	1998	0.30	-5.1	302	24.8

7. RF POWER OUTPUT (RADIATED)

Specification: FCC Part 22.913(a), 24.232(b)(c)

7.1 Setup



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7.2 Pass/Fail Criteria

Band	FCC Limit (dBm)
Cellular	38.5 (EDRP)
PCS	33.0 (EIRP)

7.3 Detailed Test Results

Test Technician / Engineer	Mark Severson / Michael Sundstrom	
Date of Measurement	December 11, 2001	
Temperature / Humidity	27°C	30%RH
Test Result	GMLNPW-3 complies with FCC Part 22.913(a) and FCC Part 24.232(b) when operated at max power	

Max Power

AMPS Channel 991, Phone Vertical, Antenna Vertical

Freq (Max) [MHz]	[EDRP] EMI [dBm]	Pol.	Ttbl Agl [deg]	Twr Ht [cm]
824.0	22.68	V	142.00	120.00

Max Power

AMPS Channel 384, Phone Vertical, Antenna Vertical

Freq (Max) [MHz]	[EDRP] EMI [dBm]	Pol.	Ttbl Agl [deg]	Twr Ht [cm]
836.5	24.38	V	155.00	118.00

Max Power

AMPS Channel 799, Phone Vertical, Antenna Vertical

Freq (Max) [MHz]	[EDRP] EMI [dBm]	Pol.	Ttbl Agl [deg]	Twr Ht [cm]
848.9	25.55	V	160.00	118.00

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Max Power**TDMA Cellular Channel 991, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EDRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
824.0	26.78	V	164.00	119.00

Max Power**TDMA Cellular Channel 384, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EDRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
836.5	28.93	V	123.00	121.00

Max Power**TDMA Cellular Channel 799, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EDRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
848.9	29.17	V	103.00	119.00

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Max Power**TDMA PCS Ch2, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EIRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1850.0	32.25	V	186.00	109.00

Max Power**TDMA PCS Ch999, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EIRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1879.9	31.63	V	176.00	109.00

Max Power**TDMA PCS Ch1998, Phone Vertical, Antenna Vertical**

Freq (Max) (MHz)	[EIRP] EMI (dBm)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1909.9	30.65	V	186.00	109.00

7.4 Measurement Uncertainty

The measurement uncertainty for this test is +/- 5.2dB for 300-1000MHz and +/- 5.6dB for 1-6GHz.

8. TX AUDIO FREQUENCY RESPONSE

Specification: FCC Part 2.1047(a)

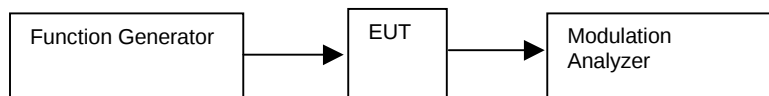
8.1 Setup

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

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

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

The response in dB relative to 1kHz was then measured, using the HP 8901B modulation analyzer.



8.2 Pass/Fail Criteria

Emissions mask.

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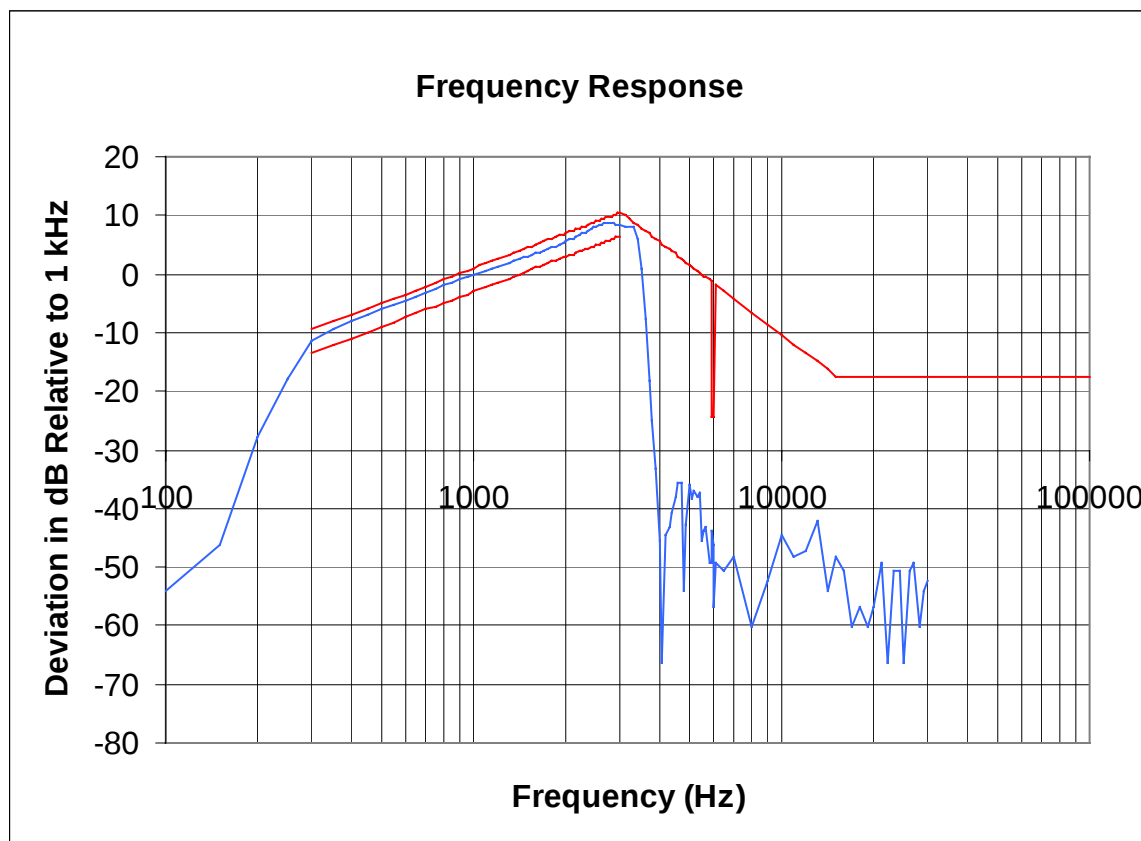
Test Report #: 01-RF-0626

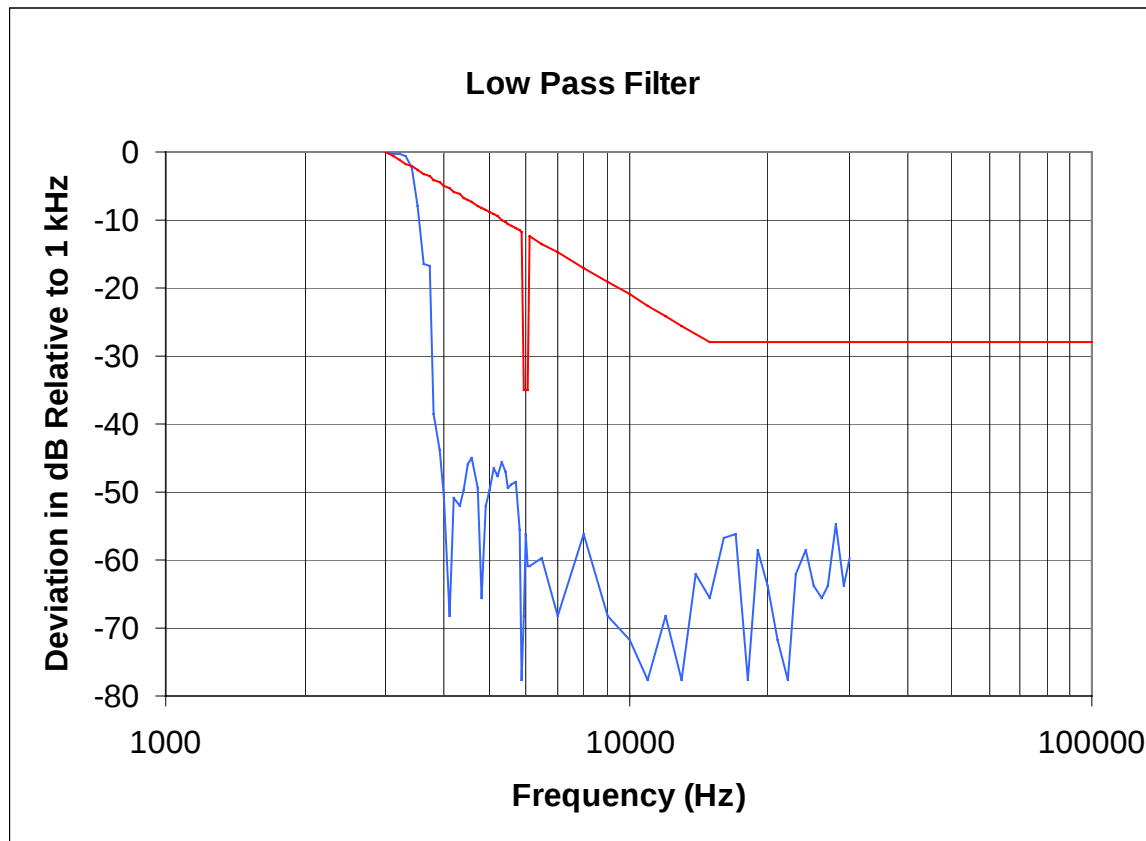
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8.3 Detailed Test Results

Test Technician / Engineer	Byron Holz/ Mark Severson	
Date of Measurement	December 05, 2001	
Temperature / Humidity	22°C	56%RH
Test Result	GMLNPW-3 complies with FCC Part 2.1047(a)	





9. MODULATION LIMITING

Specification: FCC Part 2.1047(b)

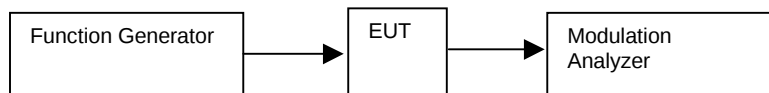
9.1 Setup

Testing was performed with the EUT connected to the audio input circuit/microphone of the EUT as for Frequency Response of the audio modulating circuit.

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 the HP 8901B modulation analyzer.

The audio input level was varied from 30% modulation (± 3.6 kHz deviation) to at least 20 dB higher than the saturation point.

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



9.2 Pass/Fail Criteria

Less than ± 12 kHz deviation.

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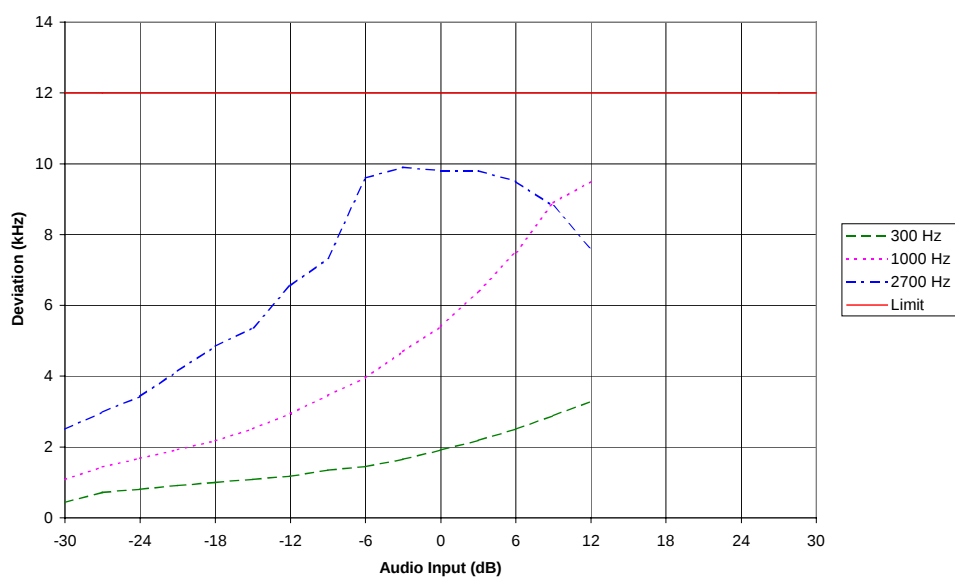
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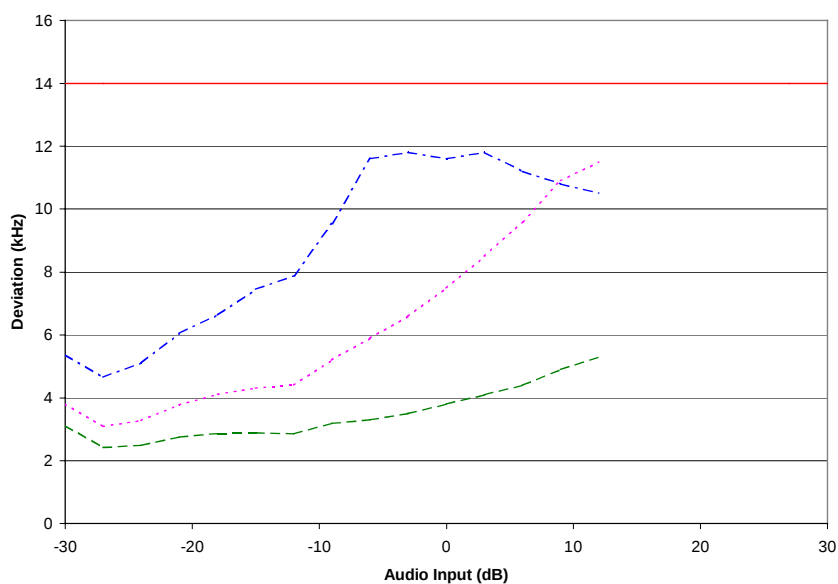
9.3 Detailed Test Results

Test Technician / Engineer	Byron Holz/ Mark Severson	
Date of Measurement	December 05, 2001	
Temperature / Humidity	22°C	56%RH
Test Result	GMLNPW-3 complies with FCC Part 2.1047(b)	

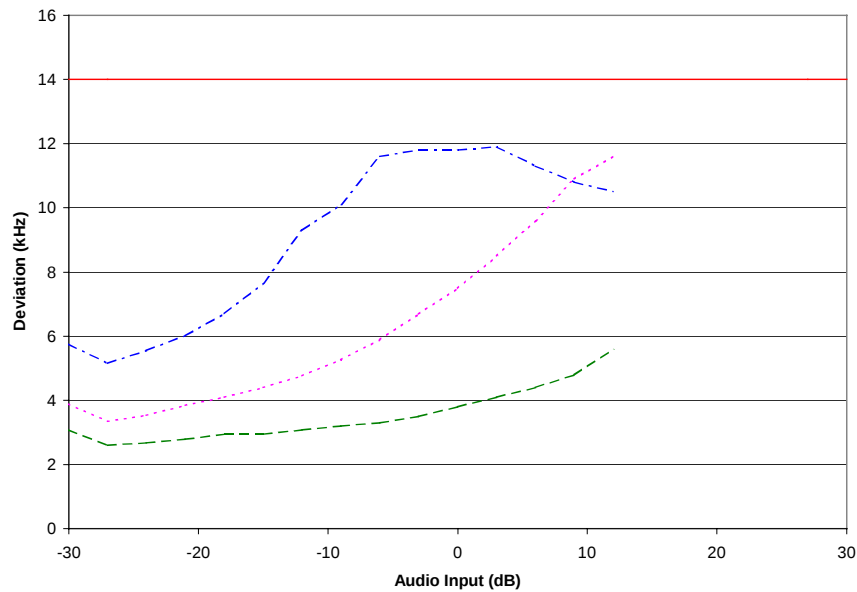
Modulation Limiting - Voice Only, Positive Peaks



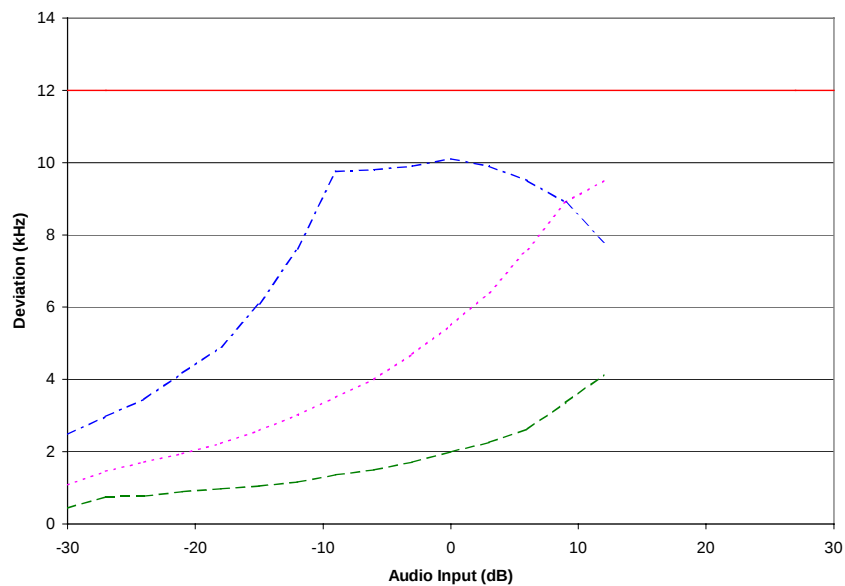
Modulation Limiting - Voice+SAT, Positive Peaks



Modulation Limiting - Voice+SAT, Positive Peaks



Modulation Limiting - Voice Only, Negative Peaks



10. MODULATION REQUIREMENTS (MEASUREMENT OF MAXIMUM DEVIATION)

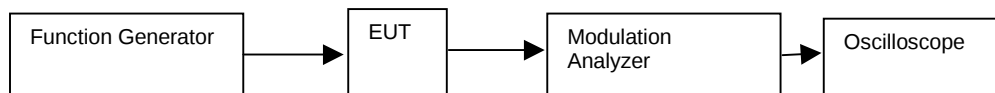
Specification: FCC Part 22.915(a)(b)(c)(d)(1)

10.1 Setup

The presentation of tones was obtained by attaching the oscilloscope to the modulation output of the modulation analyzer.

The function generator and/or internally generated signals modulated the EUT.

Maximum deviation measurements were recorded for the various configurations.



10.2 Pass/Fail Criteria

Modulation	Low Limit (kHz)	High Limit (kHz)
Voice	10.8	13.2
Wideband Data	7.2	8.8
SAT	1.8	2.2
ST	7.2	8.8

Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

December 12, 2001

Ver 1.0

10.3 Detailed Test Results

Test Technician / Engineer	Byron Holz/ Mark Severson	
Date of Measurement	December 05, 2001	
Temperature / Humidity	22°C	56%RH
Test Result	FCC ID: GMLNPW-3 complies with FCC Part 22.915(a)(b)(c)(d)(1)	

Modulation	Deviation (kHz)	Low Limit (kHz)	High Limit (kHz)
Voice	10.8	10.8	13.2
Wideband Data	8.1	7.2	8.8
SAT	2.1	1.8	2.2
ST	8.1	7.2	8.8
SAT + Voice	12.3	n/a	n/a
SAT + DTMF	8.44	n/a	n/a

Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

December 12, 2001

Ver 1.0

11. OCCUPIED BANDWIDTH (EMISSIONS MASKS)

Specification: FCC Part 2.1049(c)(1), 24.238(a)(b)

11.1 Setup

Testing was performed with the EUT connected to a 6dB splitter, 6dB attenuator, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call.

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

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



Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

11.2 Pass/Fail Criteria

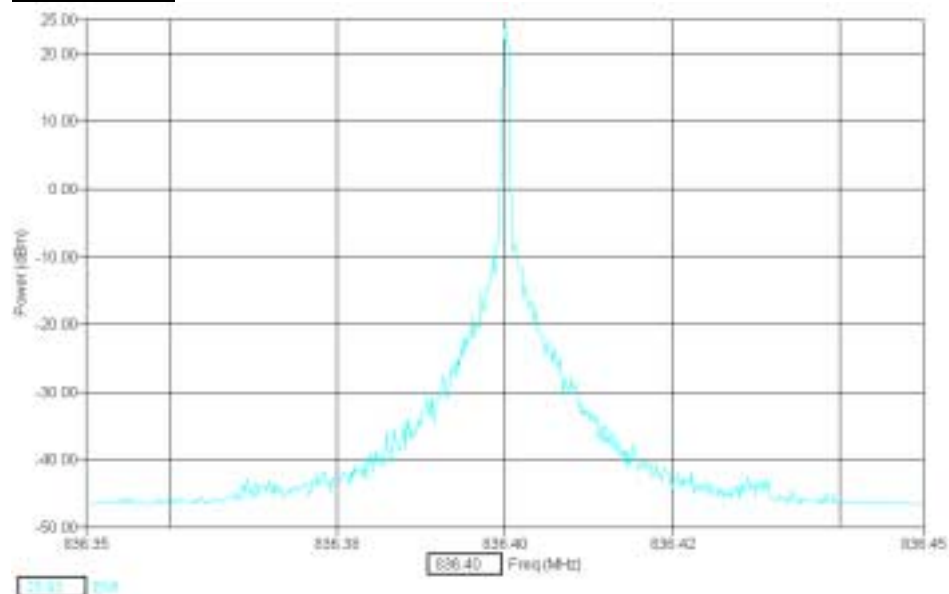
Modulation	Low Limit (kHz)	High Limit (kHz)
Voice	10.8	13.2
Wideband Data	7.2	8.8

11.3 Detailed Test Results

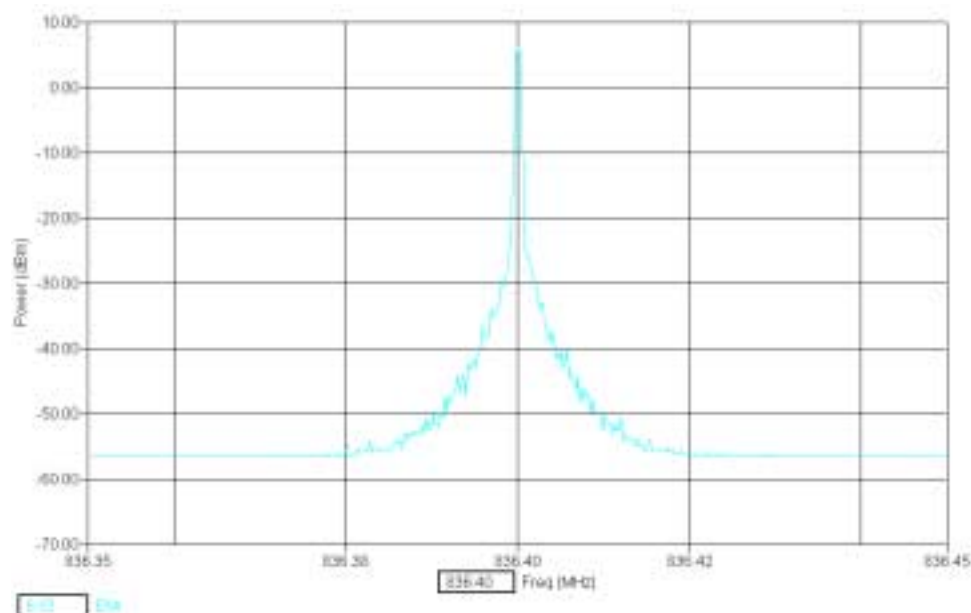
Test Technician / Engineer	Byron Holz/ Mark Severson	
Date of Measurement	December 05, 2001	
Temperature / Humidity	22°C	56%RH
Test Result	FCC ID: GMLNPW-3 complies with FCC Part 2.1049(c)(1), 24.238(a)(b)	

AMPS Low and Max Power Measurements – no modulation; 836.4 MHz

Max Power:



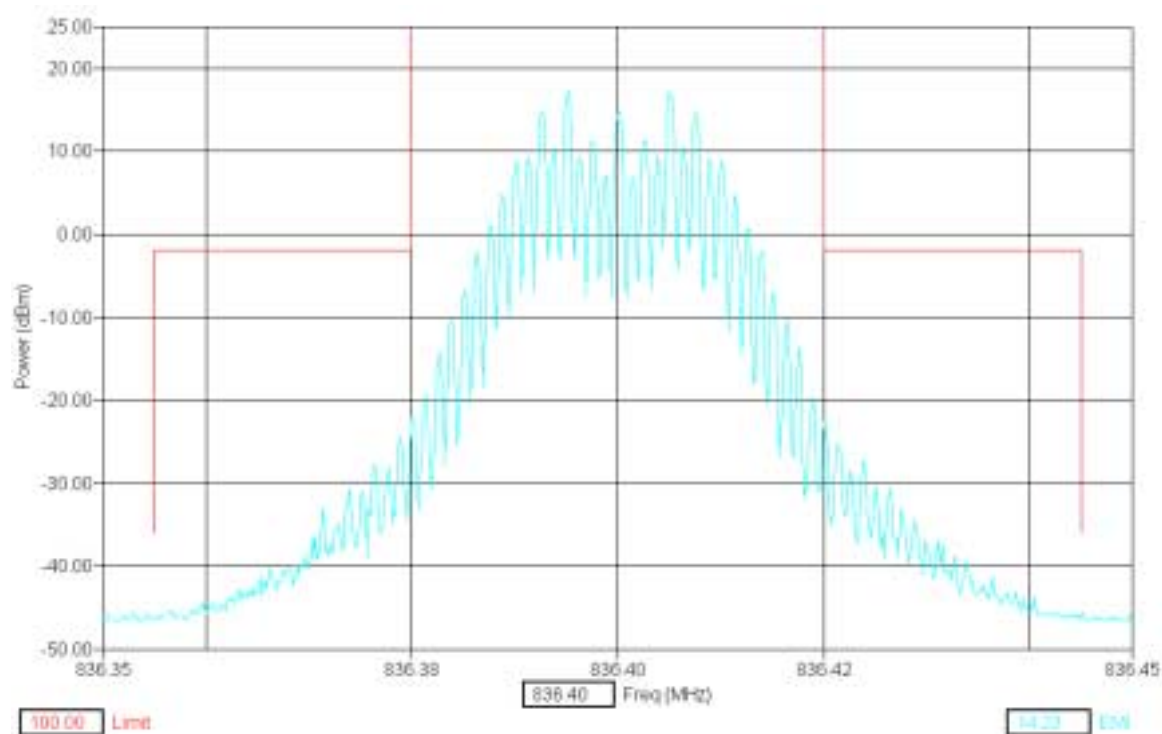
Min Power:



AMPS Min and Max Power – Voice (2500 Hz Sine Wave); F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

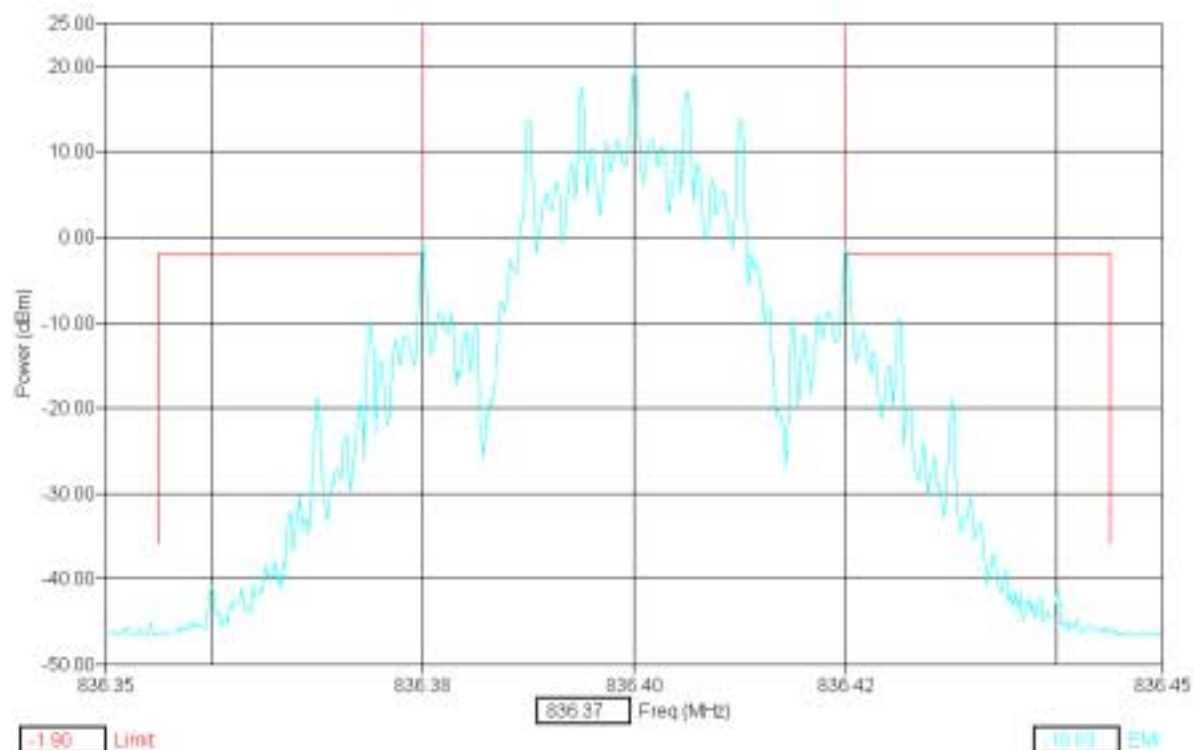
Max Power, Voice Only



AMPS Min and Max Power – Wideband Data; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

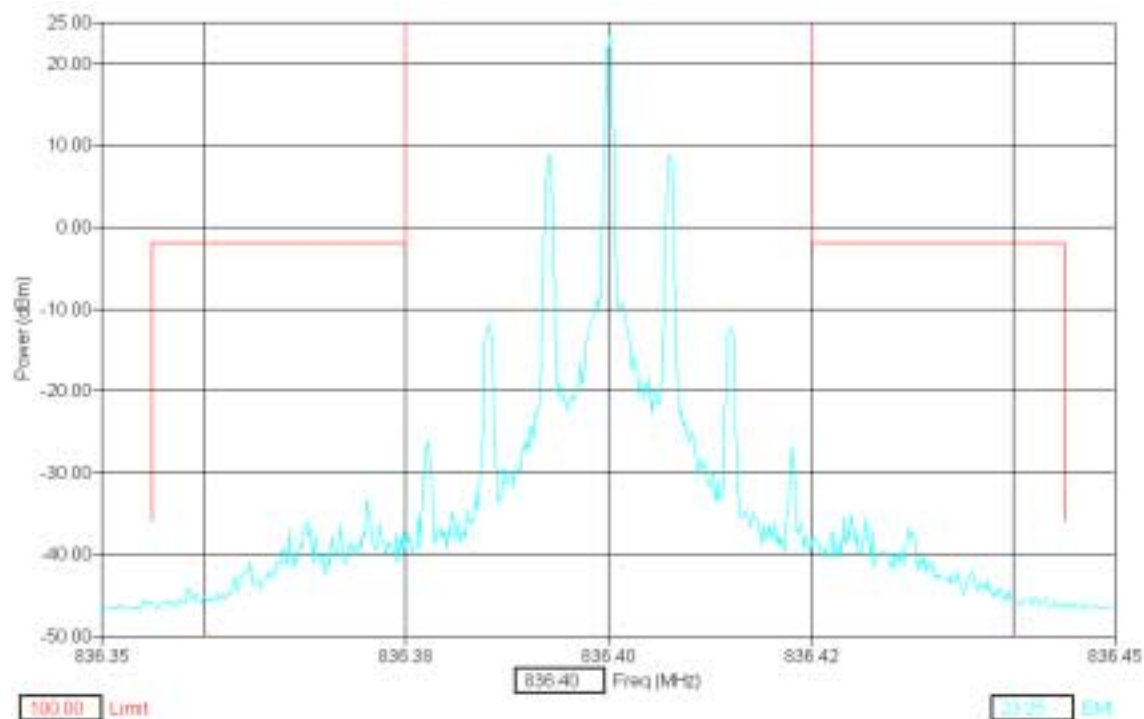
Max Power, WBD



AMPS Min and Max Power – SAT; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

Max Power, SAT Only



Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

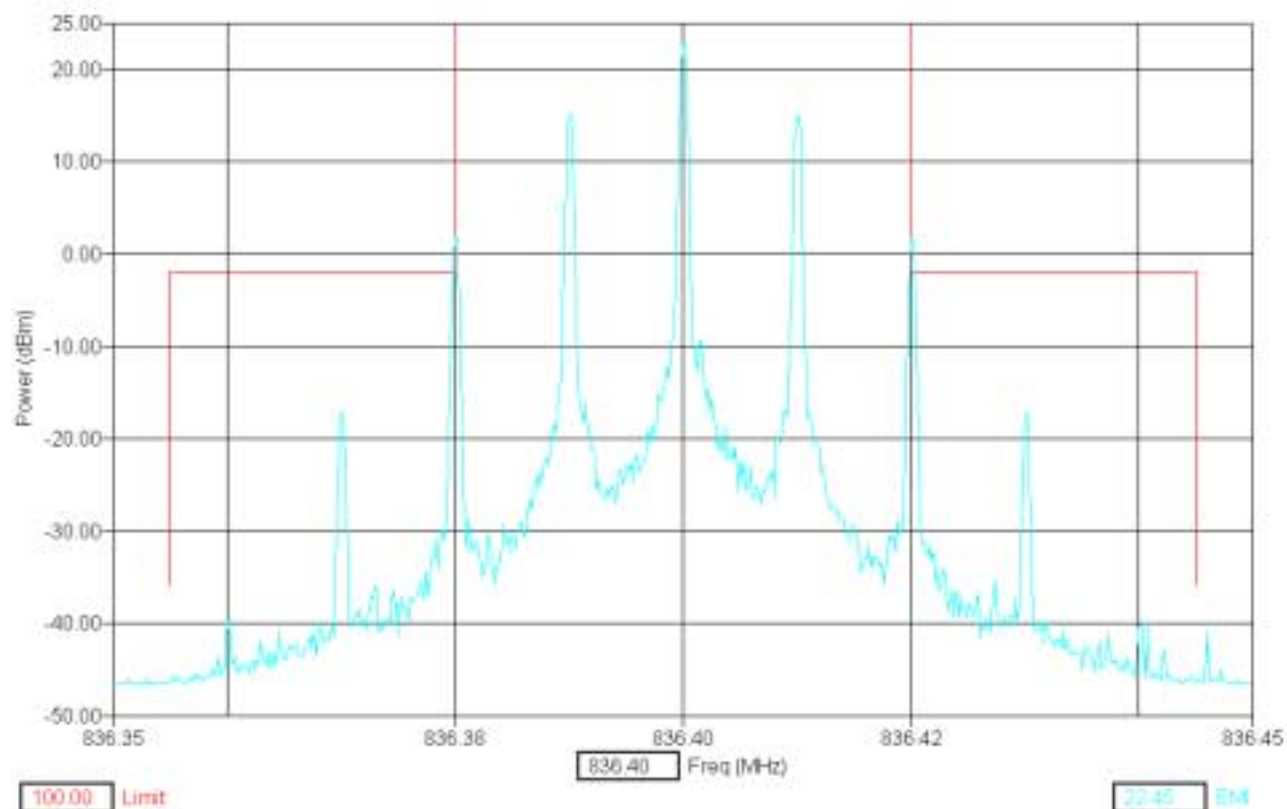
December 12, 2001

Ver 1.0

AMPS Min and Max Power – ST; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

Max Power, ST Only



Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

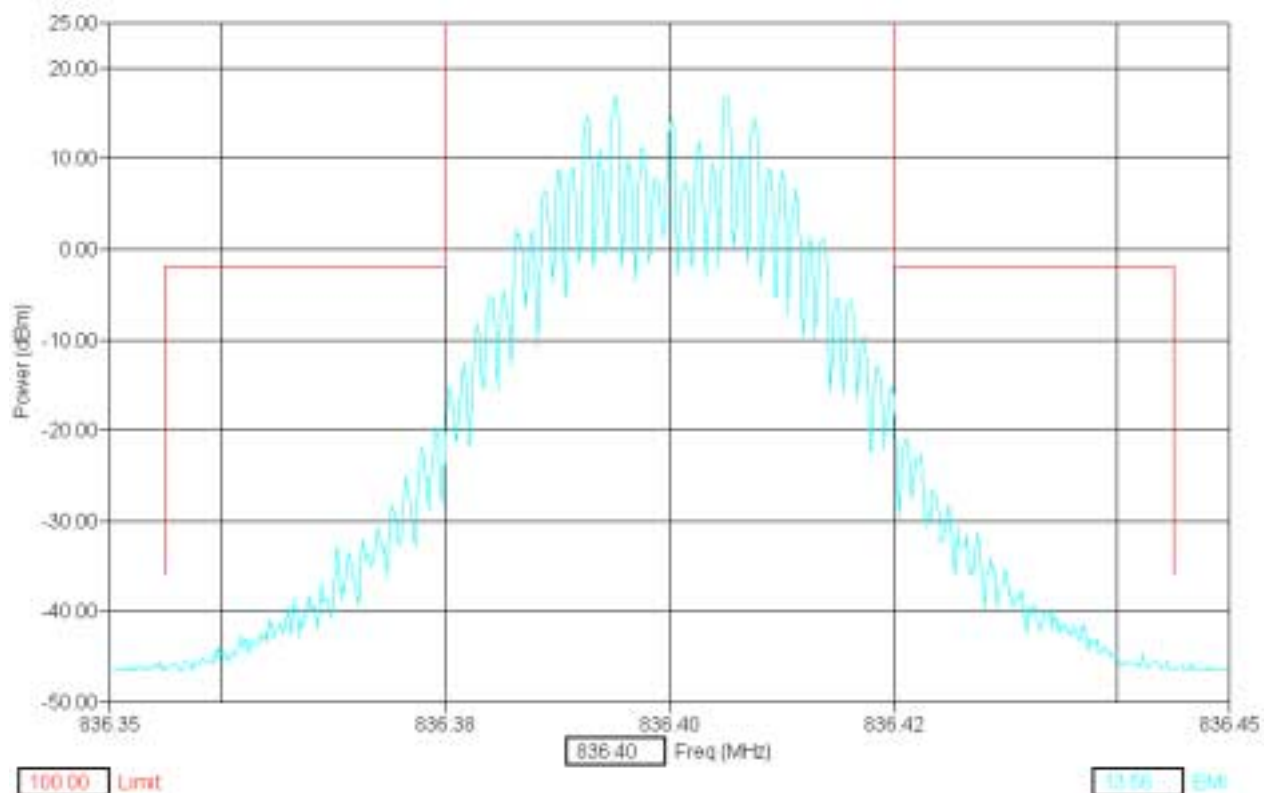
December 12, 2001

Ver 1.0

AMPS Min and Max Power – SAT + Voice; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

Max Power, SAT+ Voice



Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

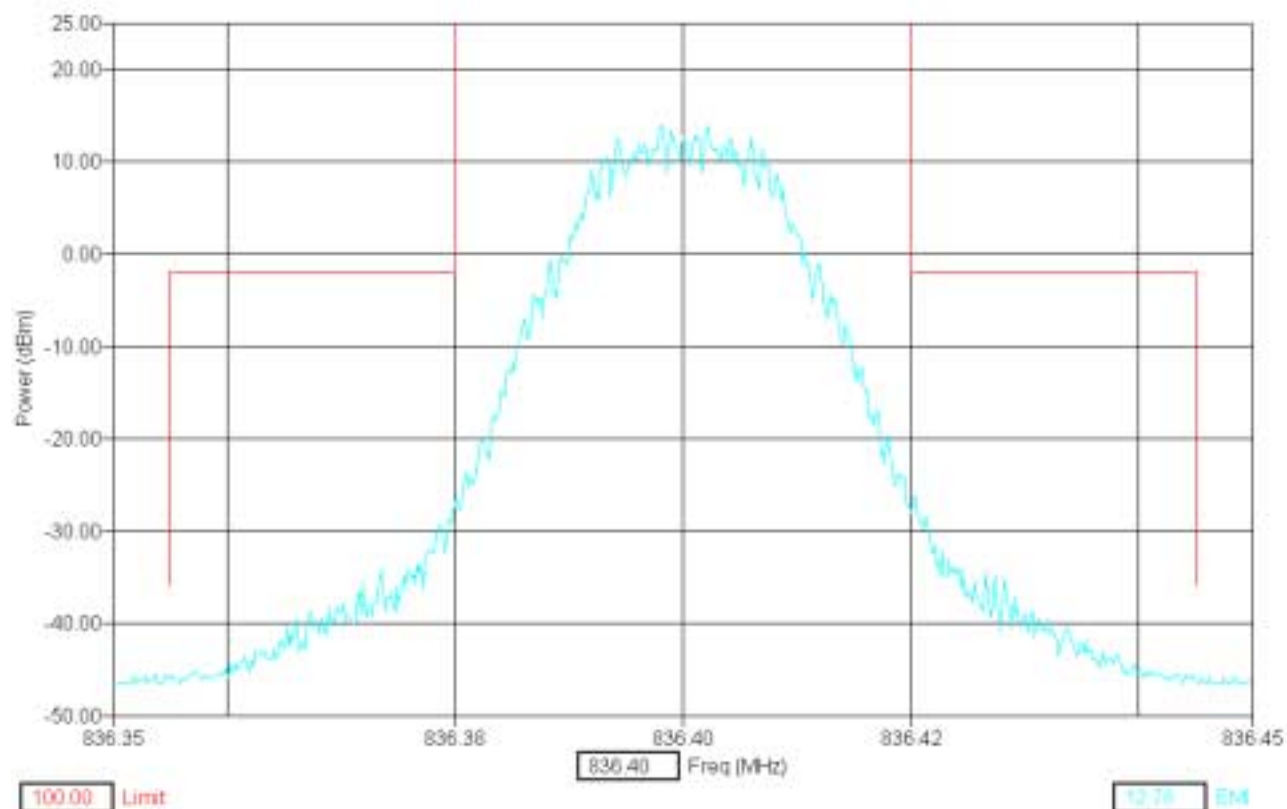
December 12, 2001

Ver 1.0

AMPS Min and Max Power – SAT + DTMF; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

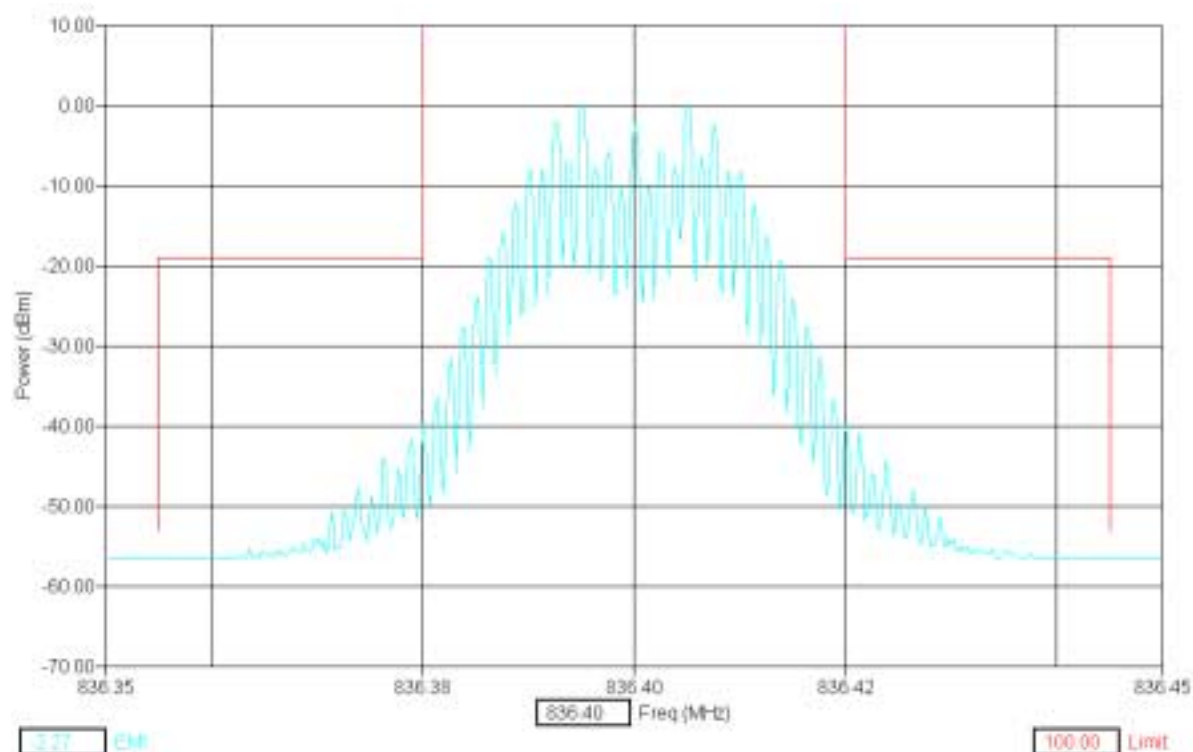
Max Power, SAT+DTMF



AMPS Min and Max Power – Voice (2500 Hz Sine Wave); F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

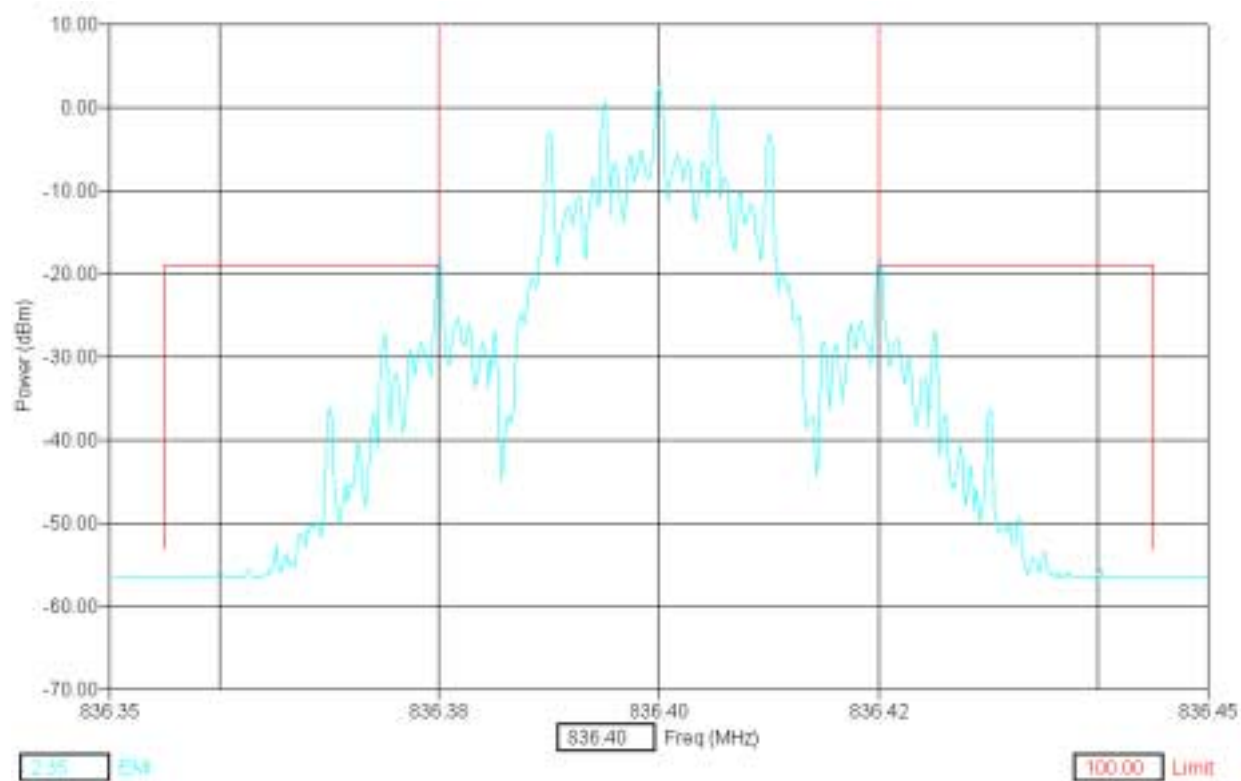
Min Power, Voice Only



AMPS Min and Max Power – Wideband Data; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

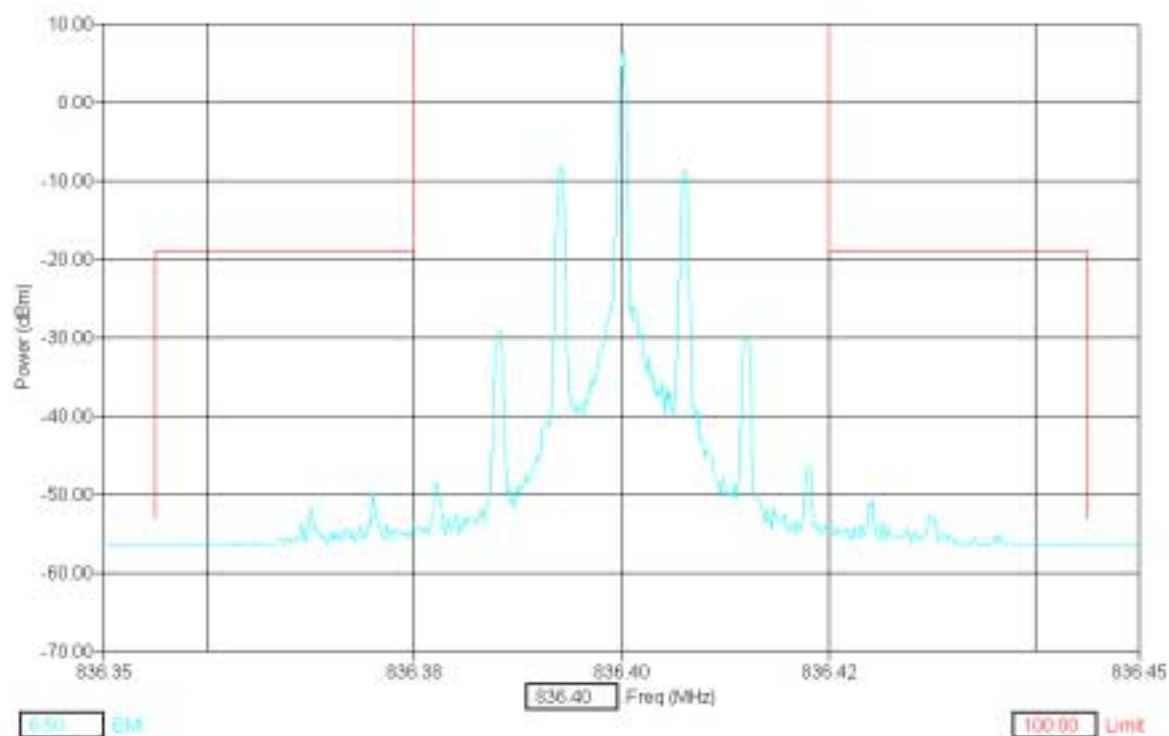
Min Power, WBD



AMPS Min and Max Power – SAT; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

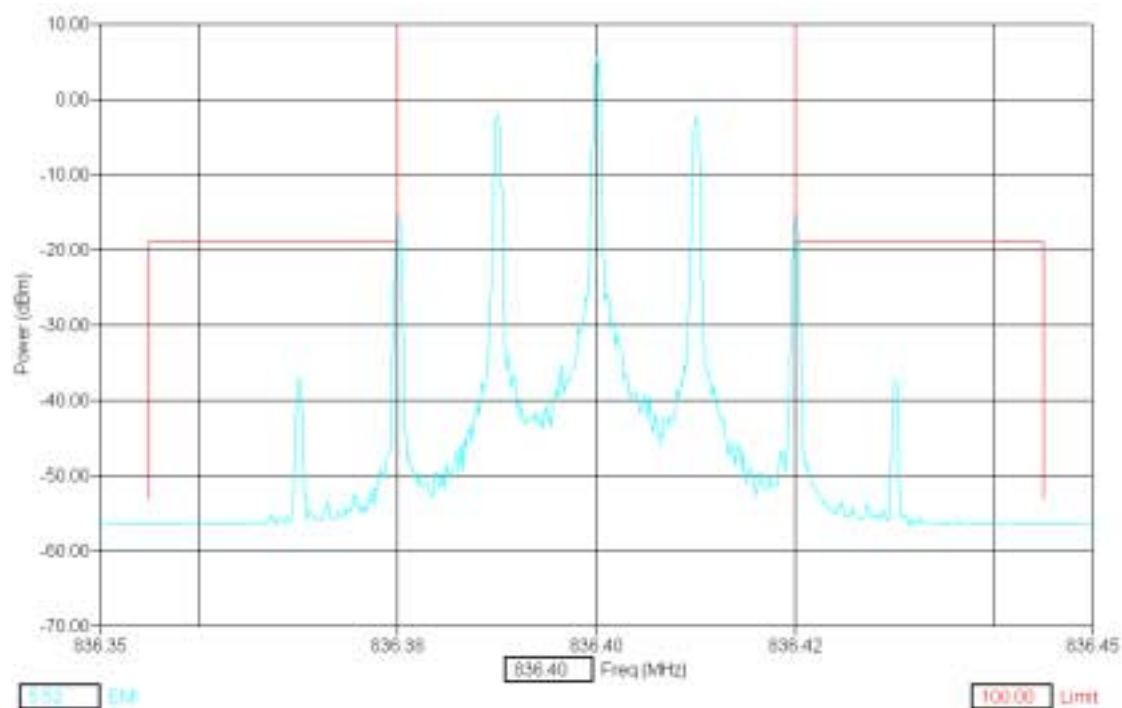
Min Power, SAT Only



AMPS Min and Max Power – ST; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

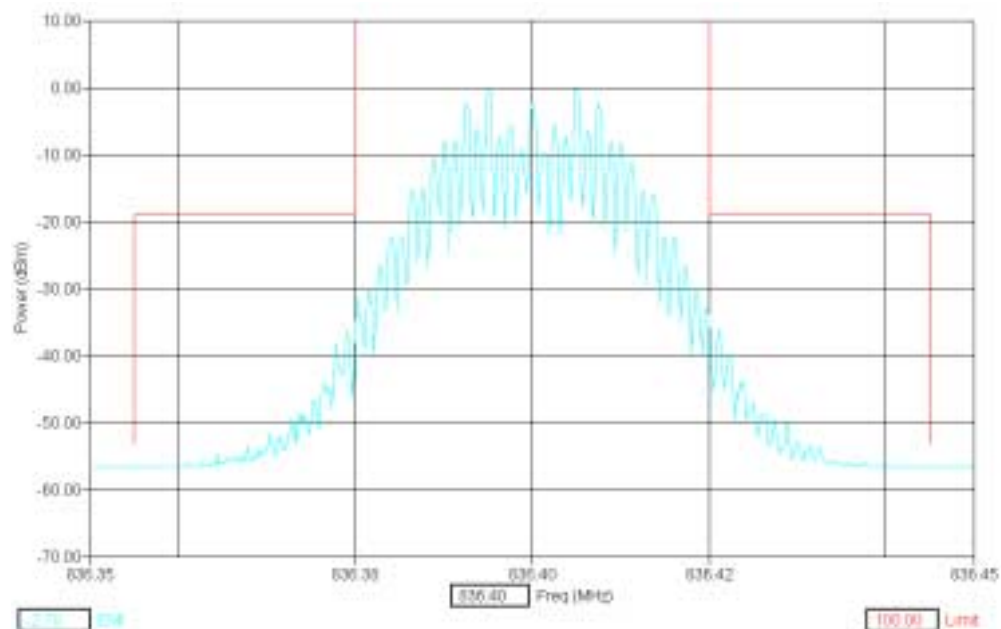
Min Power, ST Only



AMPS Min and Max Power – SAT + Voice; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

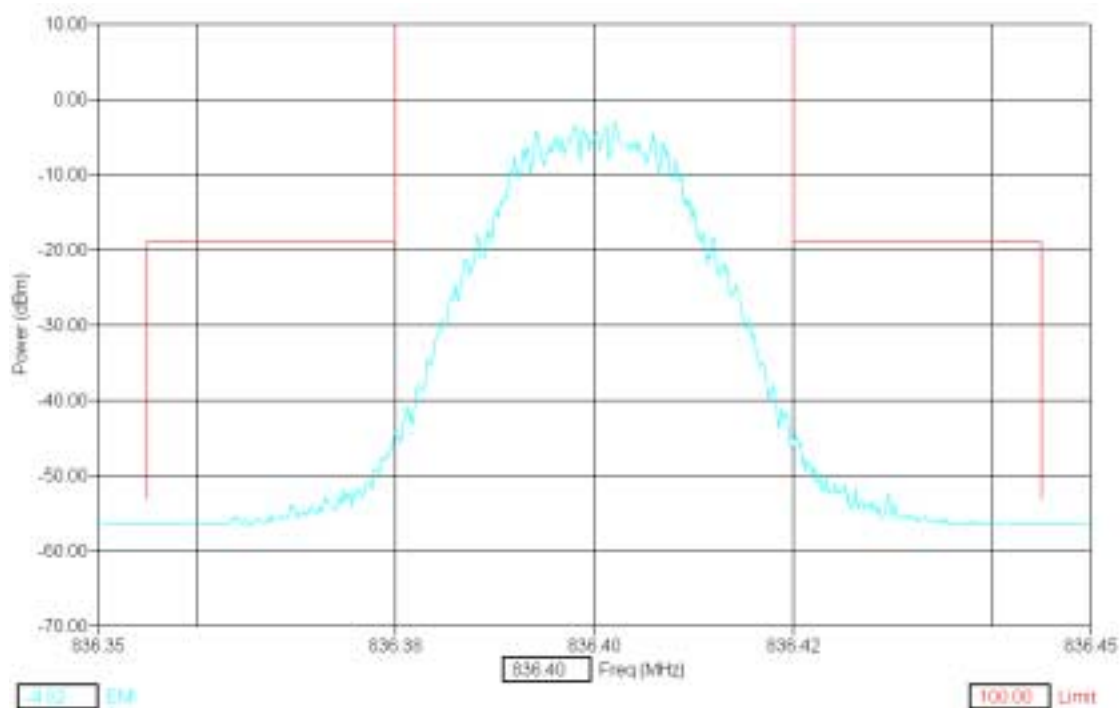
Max Power, SAT+ Voice



AMPS Min and Max Power – SAT + DTMF; F3E/F3D mask

100 kHz Span, 300 Hz RBW/VBW, ref to power level

Min Power, SAT+DTMF



Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

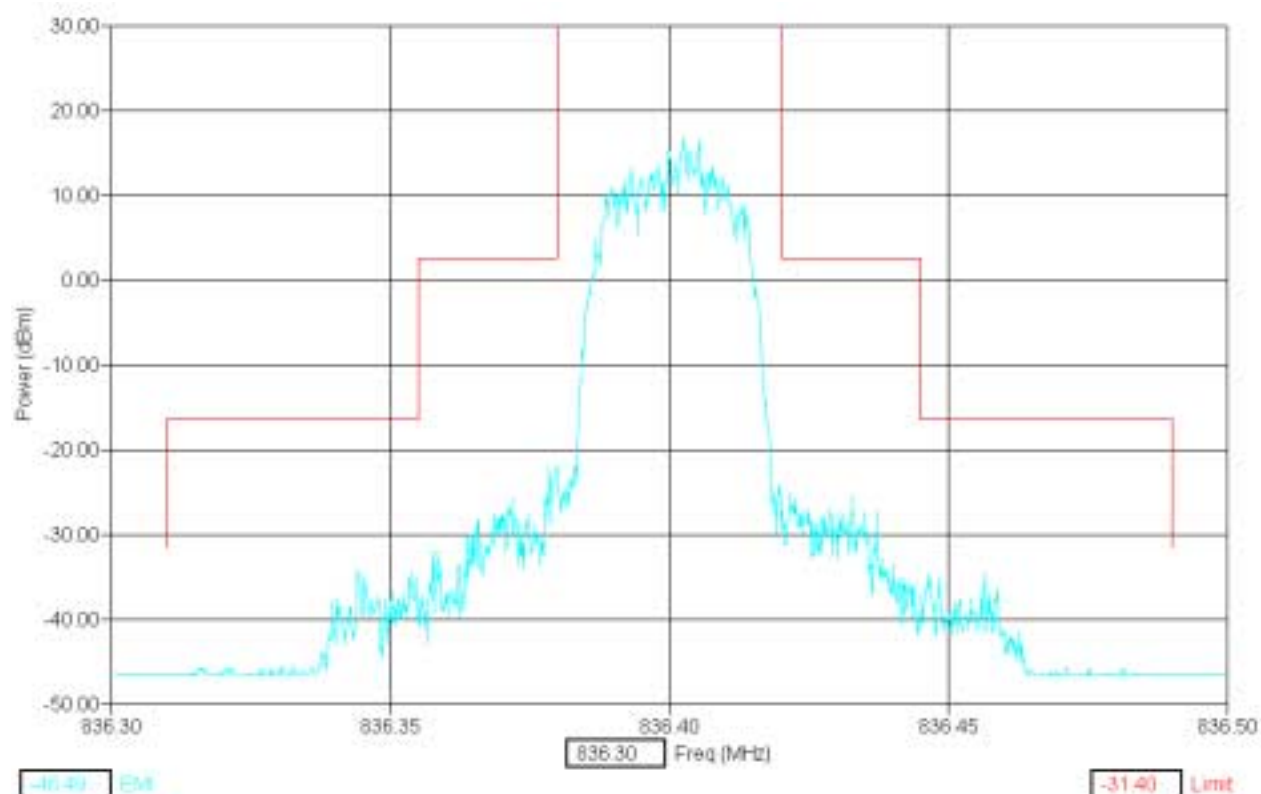
December 12, 2001

Ver 1.0

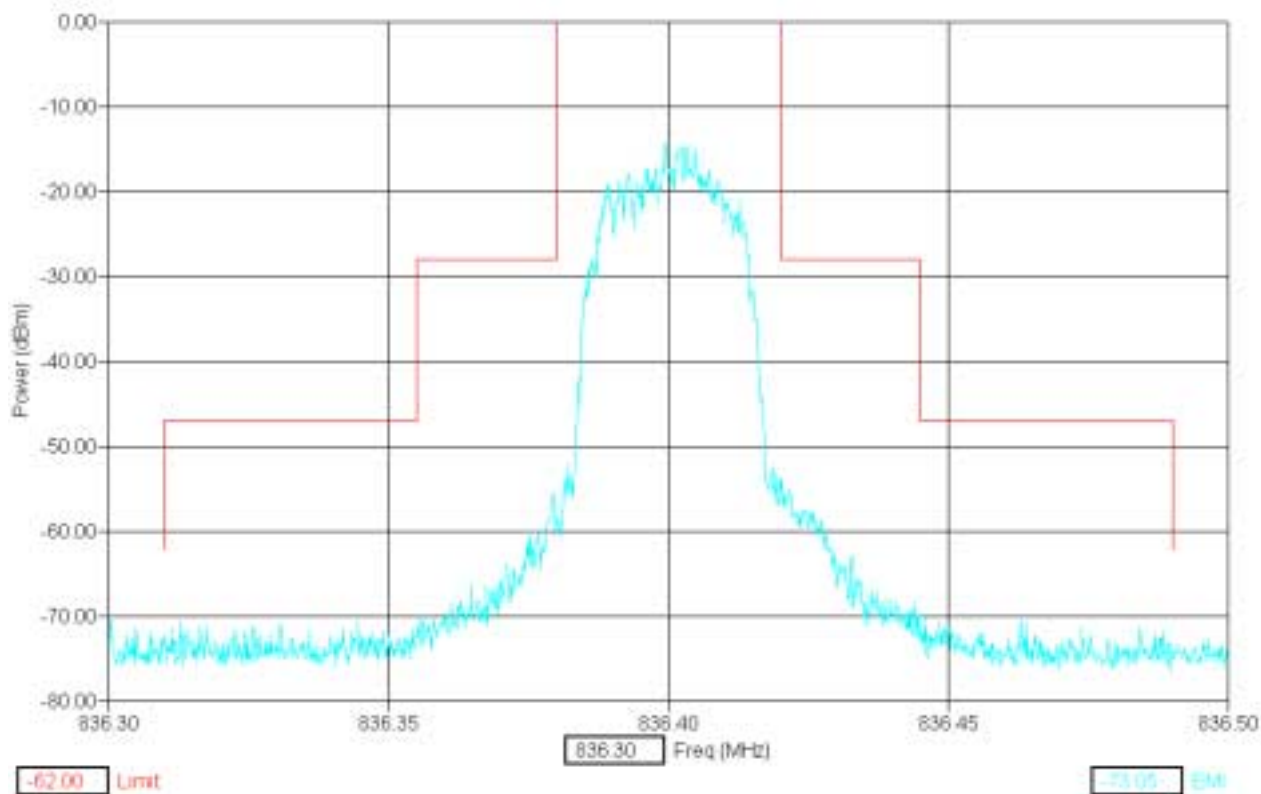
TDMA Min and Max Power – Modulation; F1D

200 kHz Span, 300 Hz RBW/VBW, ref to power level

Max Power, TDMA Random Data



Min Power, TDMA Random Data



11.4 Measurement Uncertainty

The measurement uncertainty for this test is +/- 3.7dB for 100kHz - 1000MHz and +/- 5.3dB for 1 - 20GHz.

Test & Certification Center (TCC) - Dallas
FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

12. OCCUPIED BANDWIDTH (TRANSMITTER CONDUCTED MEASUREMENTS)

Specification: FCC Part 2.1049(c)(1), 24.238(a)(b)

12.1 Setup

Testing was performed with the EUT connected to a 6dB splitter, 6dB attenuator, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call.



12.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular 800 Low Channel	< 824	-13
Cellular 800 High Channel	> 849	-13
PCS 1900 Low Channel	< 1850	-13
PCS 1900 High Channel	> 1910	-13

Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

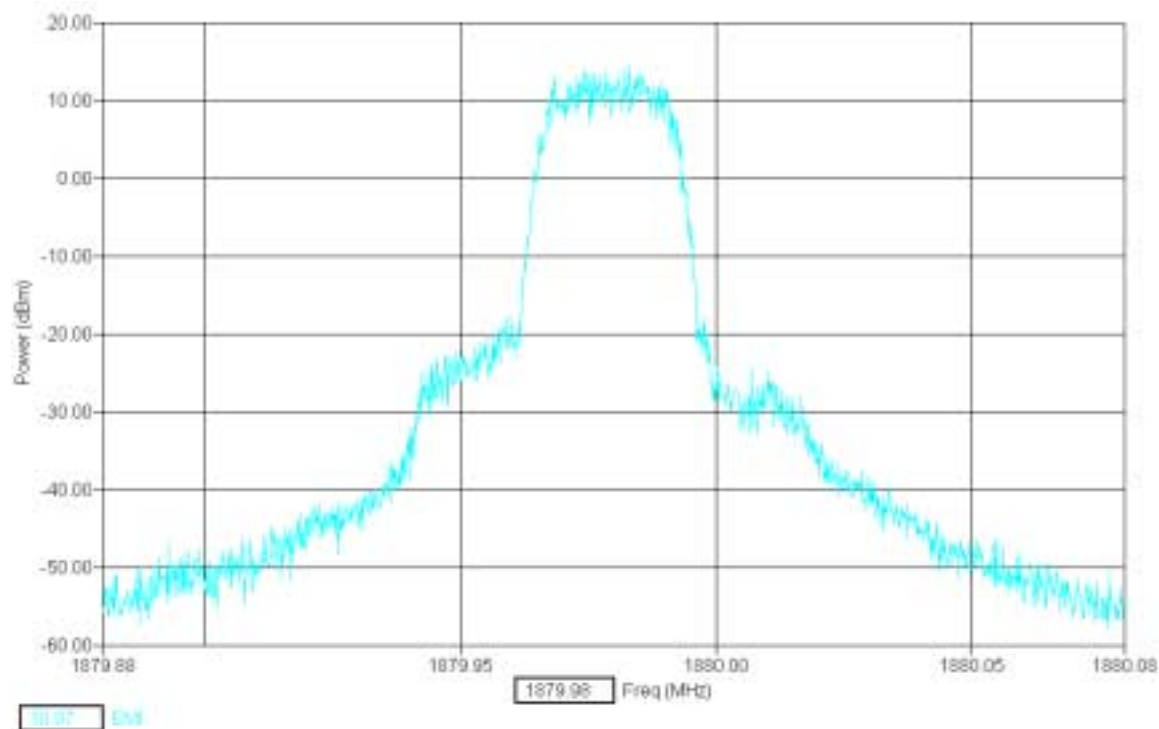
December 12, 2001

Ver 1.0

12.3 Detailed Test Results

Test Technician / Engineer	Mark Severson	
Date of Measurement	November 28, 2001	
Temperature / Humidity	23°C	29%RH
Test Result	FCC ID: GMLNPW-3 complies with FCC Part 2.1049(c)(1), 24.238(a)(b)	

PCS Band, Call mode, Max Power. Channel 999



Test & Certification Center (TCC) - Dallas

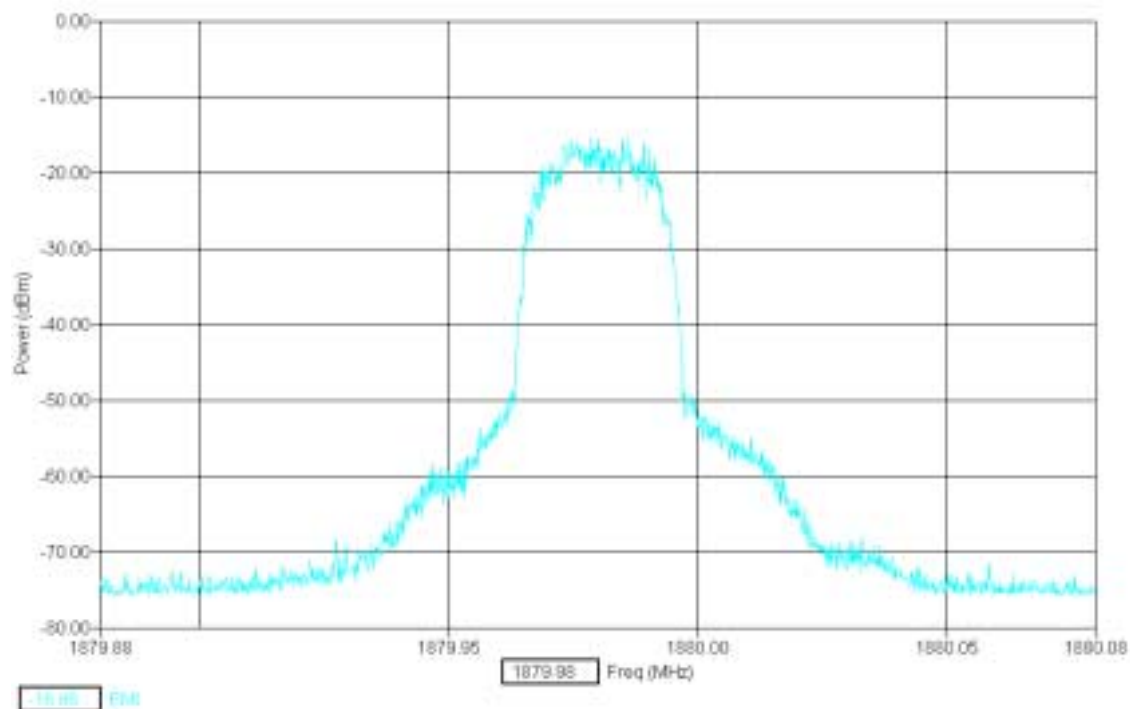
FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

December 12, 2001

Ver 1.0

PCS Band, Call mode, Min Power. Channel 999



Test & Certification Center (TCC) - Dallas

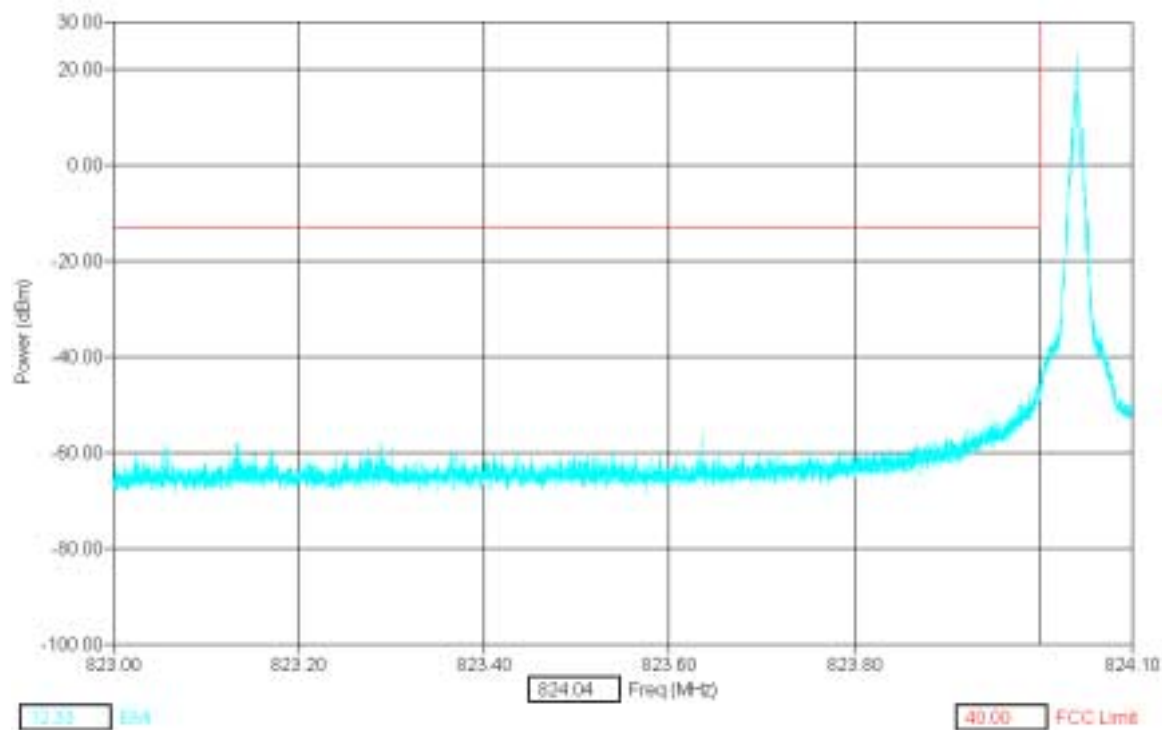
FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

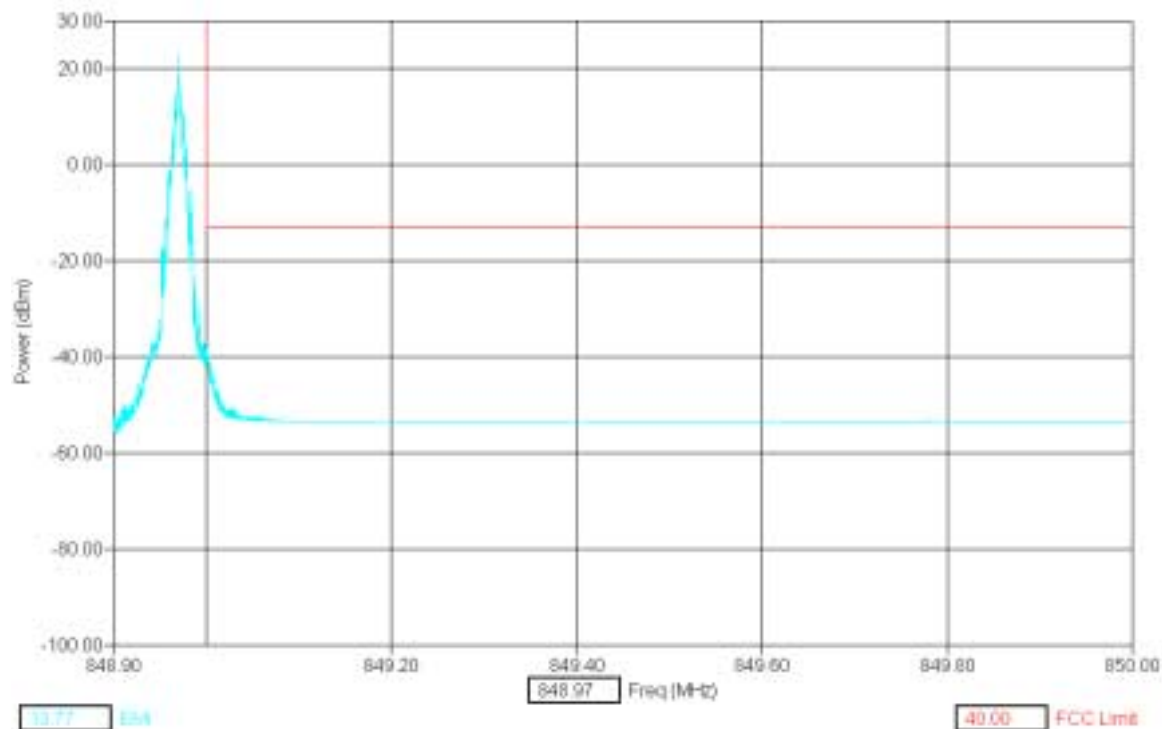
December 12, 2001

Ver 1.0

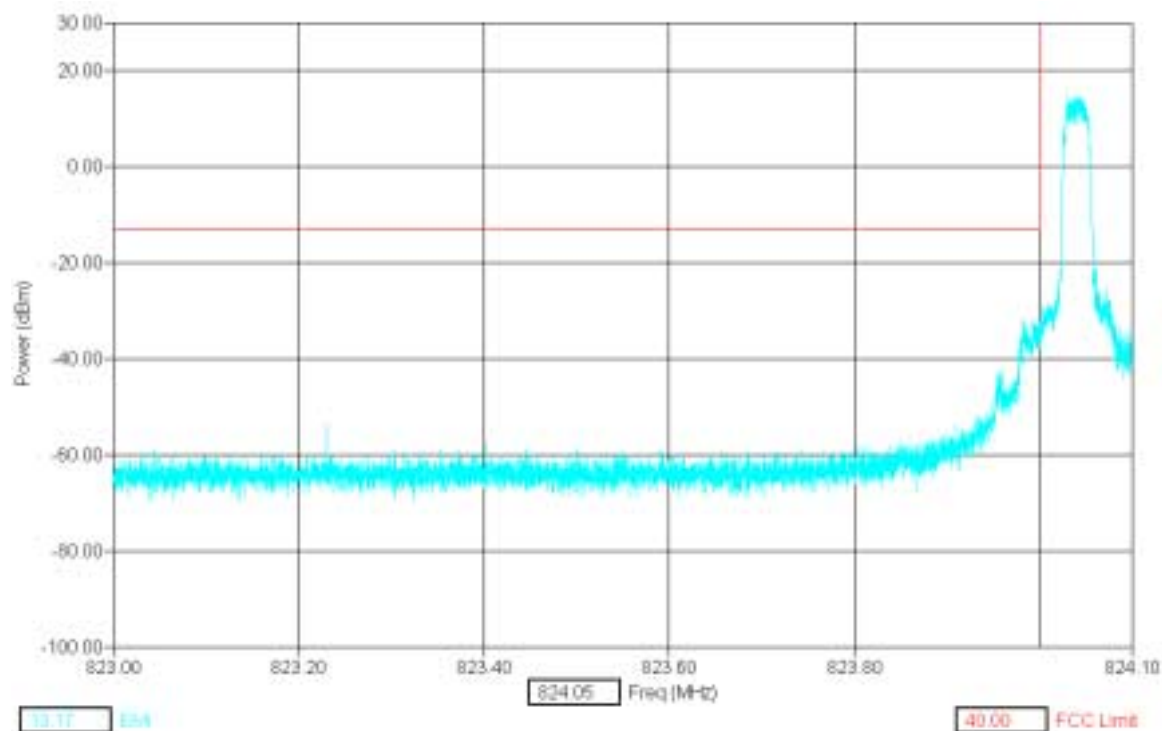
AMPS (Cellular Band), Call Mode, Max Power, Channel 991



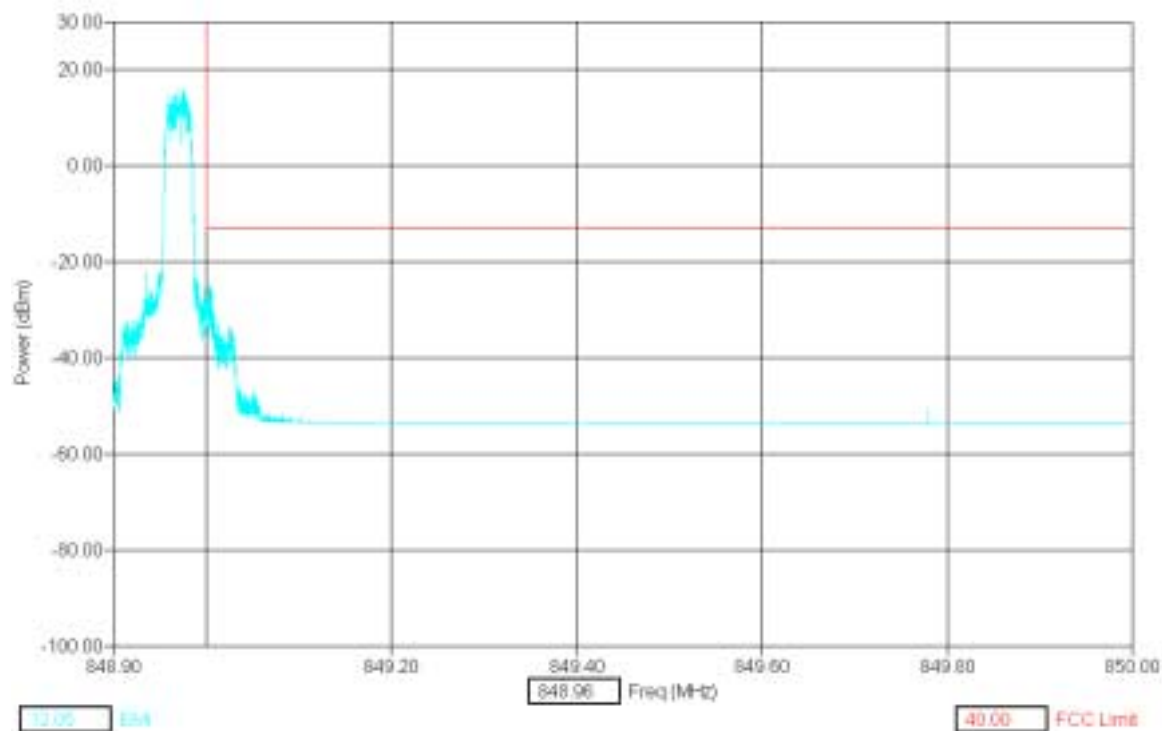
AMPS (Cellular Band), Call Mode, Max Power, Channel 799



TDMA (Cellular Band), Call Mode, Max Power, Channel 991



TDMA (Cellular Band), Call Mode, Max Power, Channel 799

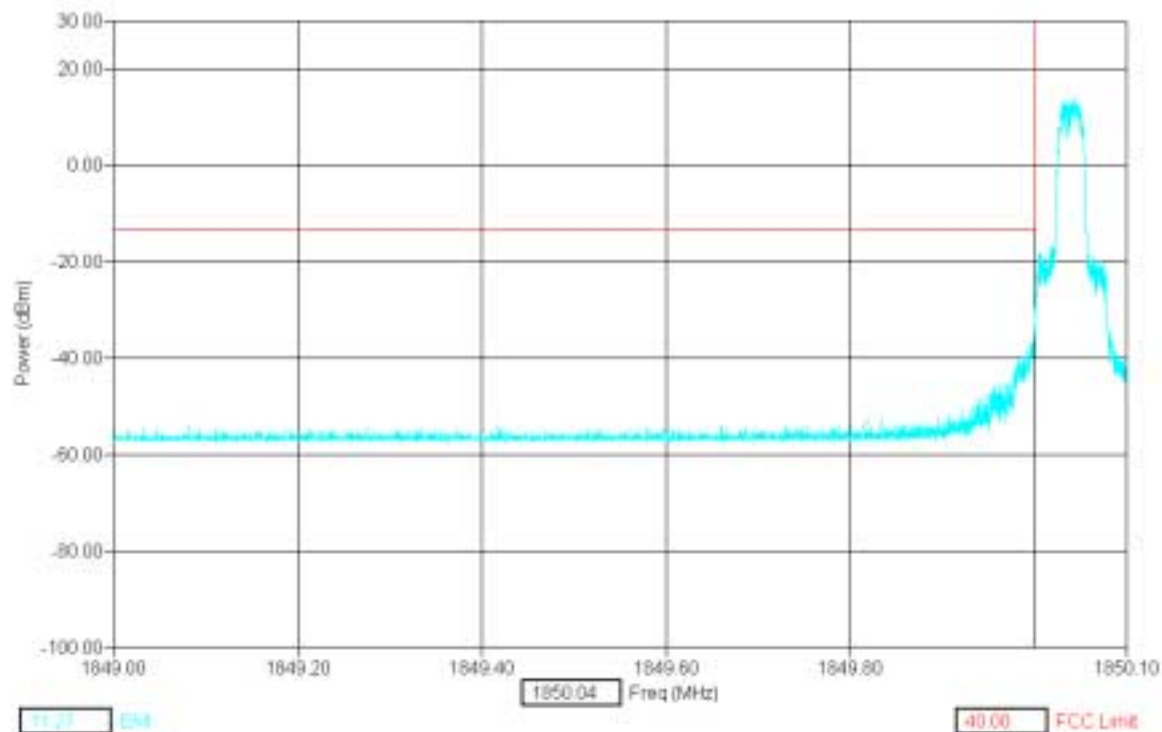


Test & Certification Center (TCC) - Dallas

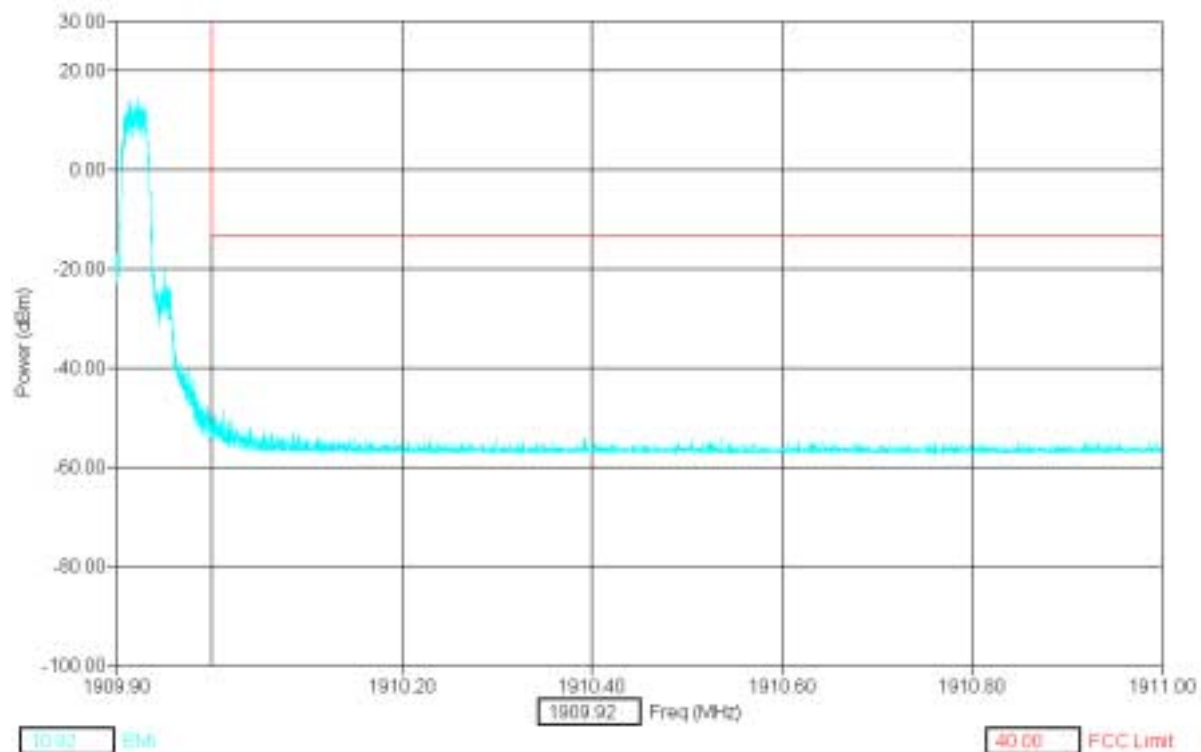
FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

TDMA (PCS Band), Call Mode, Max Power, Channel 2



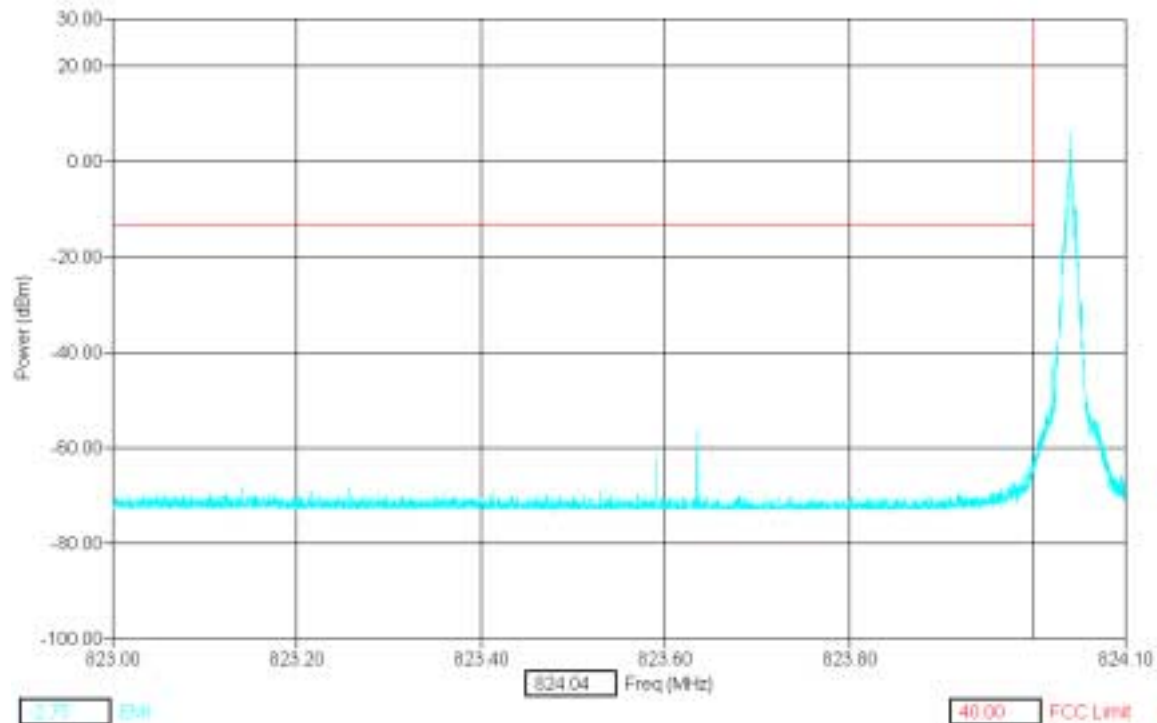
TDMA (PCS Band), Call Mode, Max Power, Channel 1998



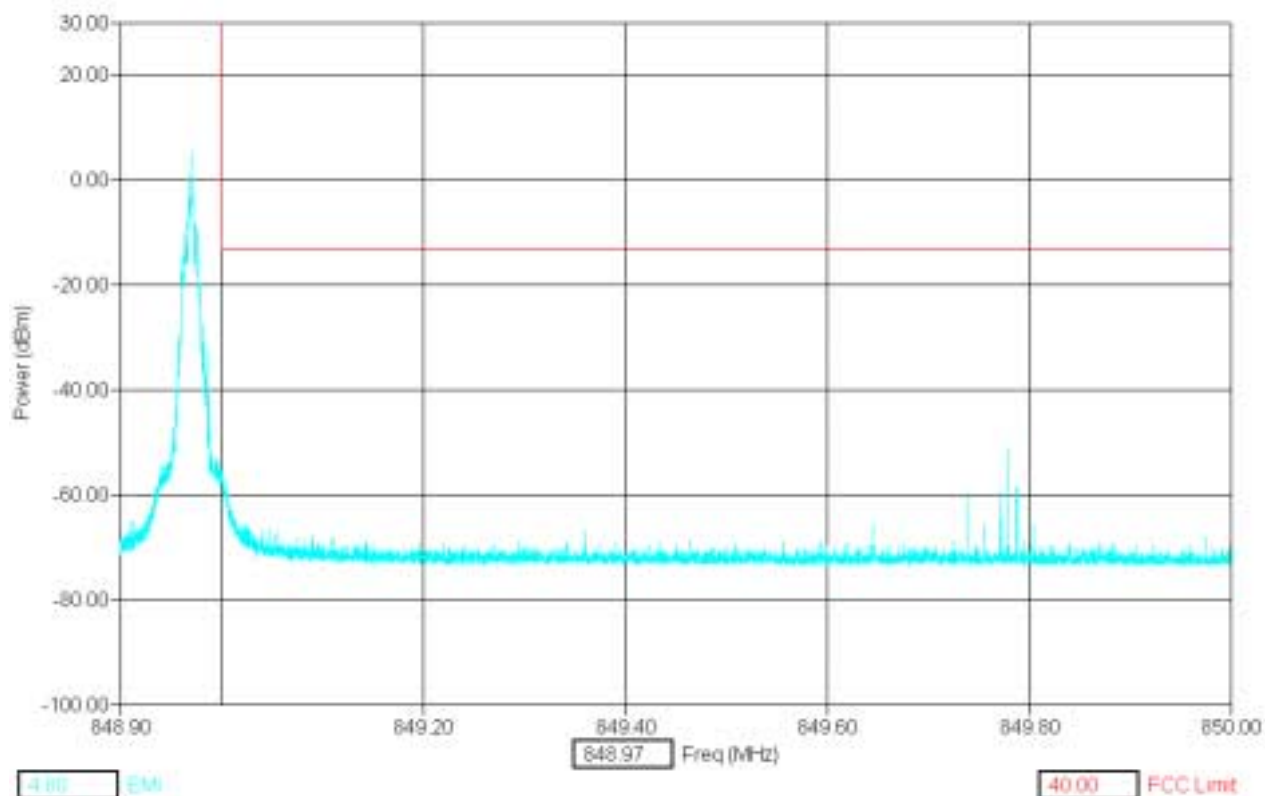
Test & Certification Center (TCC) - Dallas
 FCC ID: GMLNPW-3
 Test Report #: 01-RF-0626
 December 12, 2001

Ver 1.0

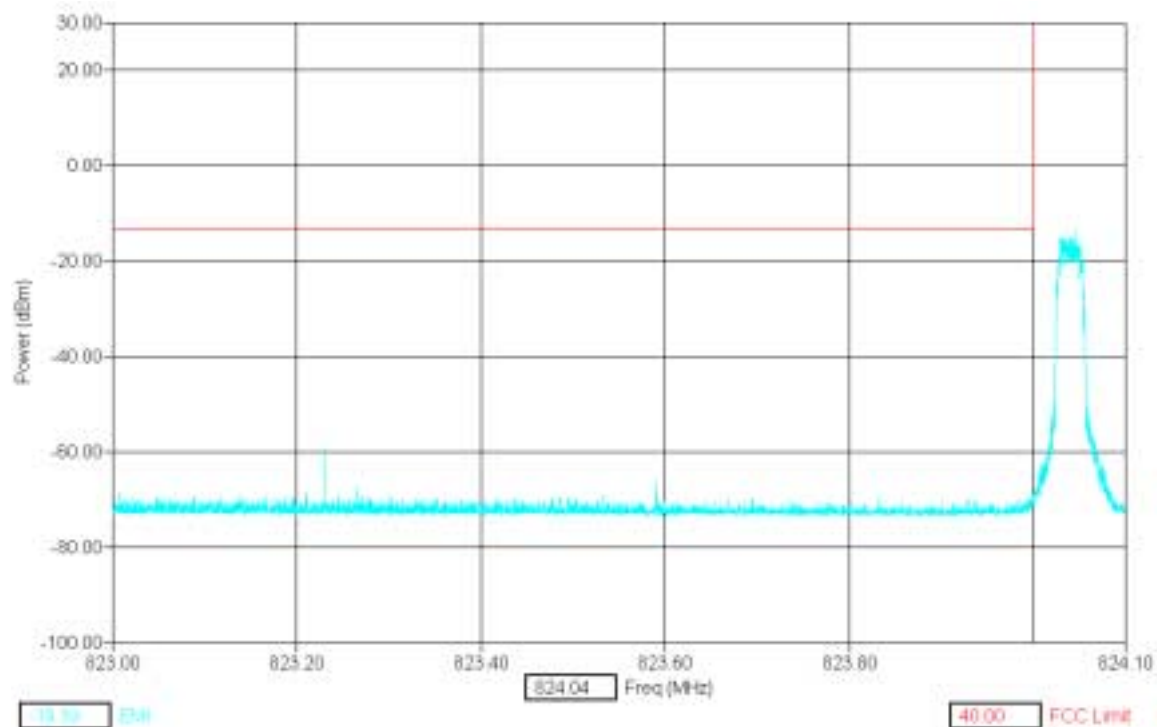
AMPS (Cellular Band), Min Power Call Mode, Channel 991



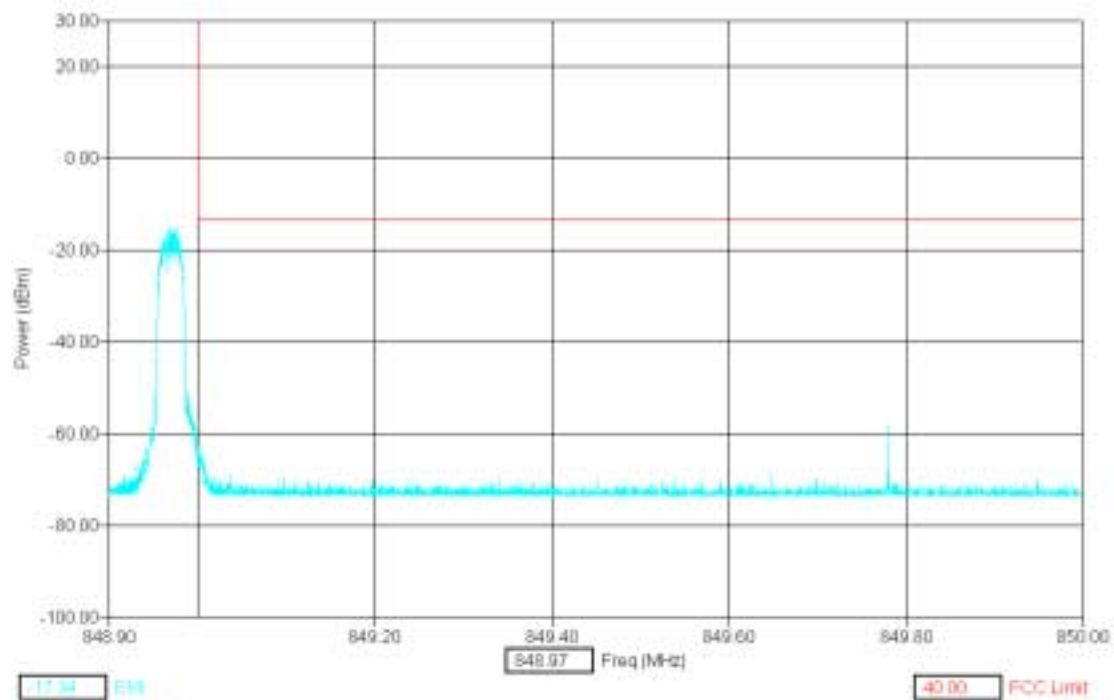
AMPS (Cellular Band), Min Power, Call Mode, Channel 799



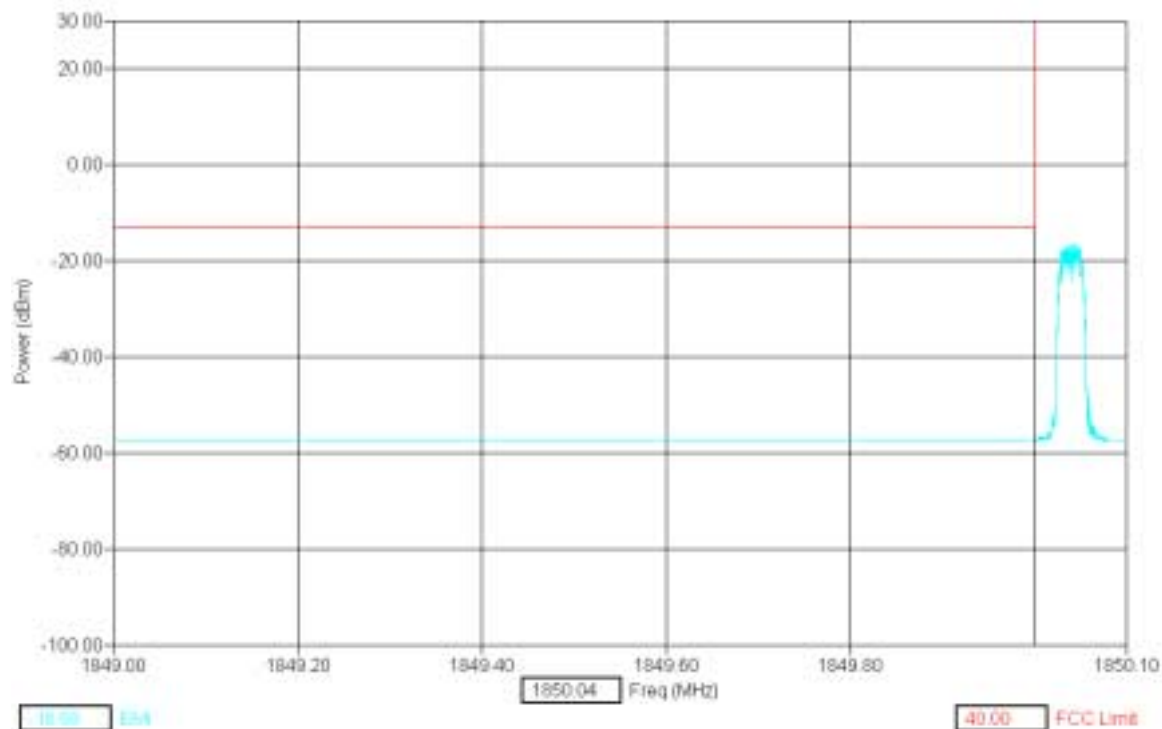
TDMA (Cellular Band), Min Power, Call Mode, Channel 991



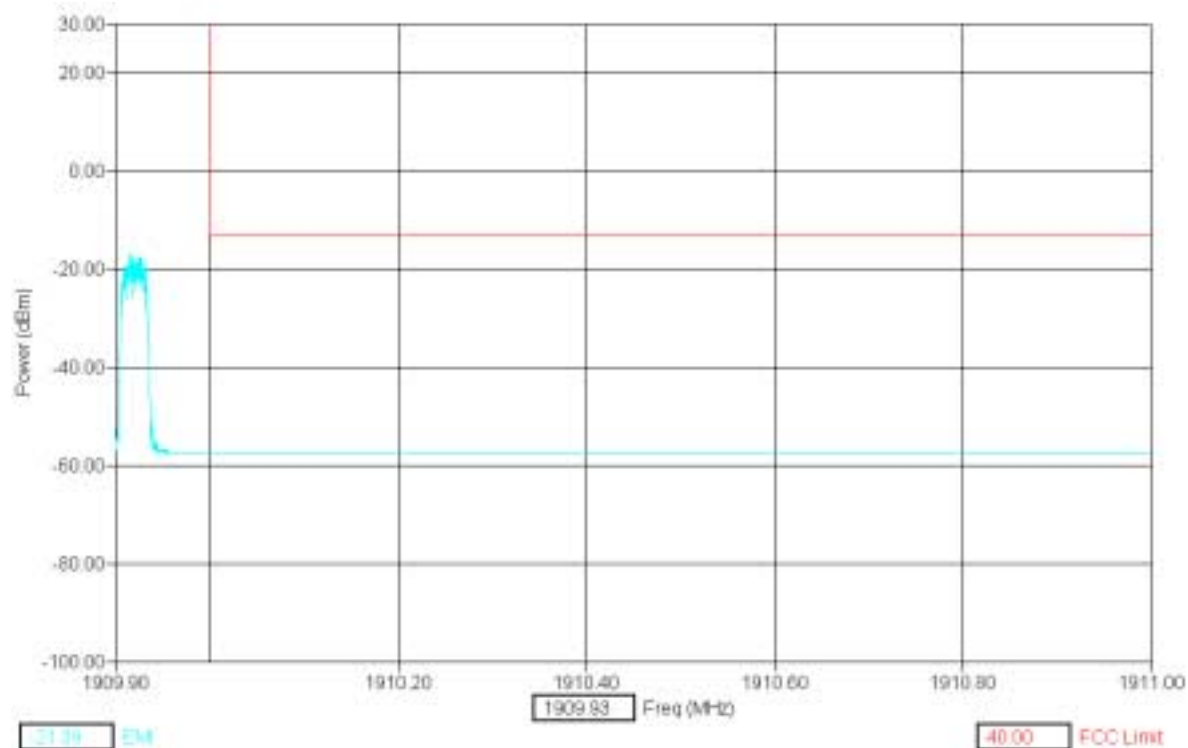
TDMA (Cellular Band), Min Power, Call Mode, Channel 799



TDMA (PCS Band), Min Power, Call Mode, Channel 2



TDMA (PCS Band), Min Power, Call Mode, Channel 1998



12.4 Measurement Uncertainty

The measurement uncertainty for this test is +/- 3.7dB for 100kHz - 1000MHz and +/- 5.3dB for 1 - 20GHz.

Test & Certification Center (TCC) - Dallas
FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

13. EMISSIONS IN RECEIVER CRITICAL BAND

Specification: FCC Part 22.917(f)

13.1 Setup

Testing was performed with the EUT connected to a 6dB splitter, 6dB attenuator, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call. Filters were introduced to reduce or eliminate spurious emission, which could be generated internally in the EMI receiver.



13.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular	869 - 894	-80

13.3 Detailed Test Results

Test Technician / Engineer	Mark Severson	
Date of Measurement	December 03, 2001	
Temperature / Humidity	22°C	49%RH
Test Result	FCC ID: GMLNPW-3 at max power setting, complies with FCC Part 22.917(f)	

Test & Certification Center (TCC) - Dallas

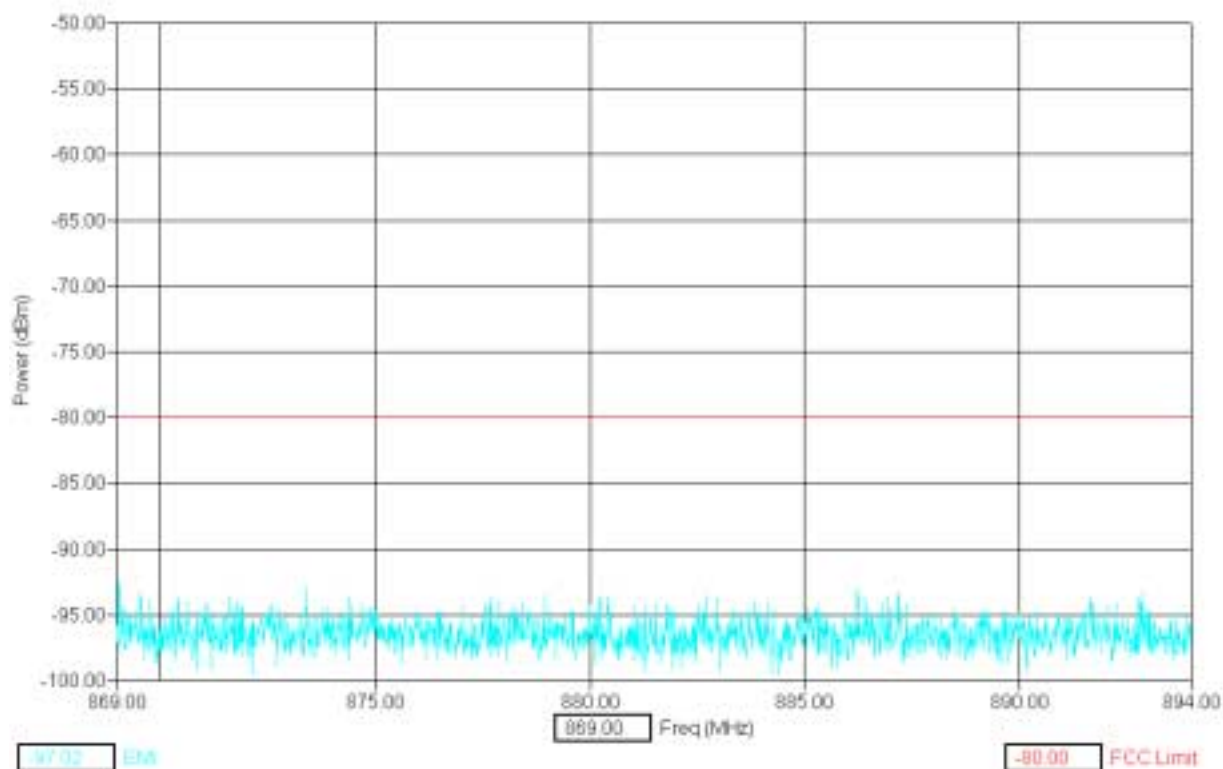
FCC ID: GMLNPW-3

Test Report #: 01-RF-0626

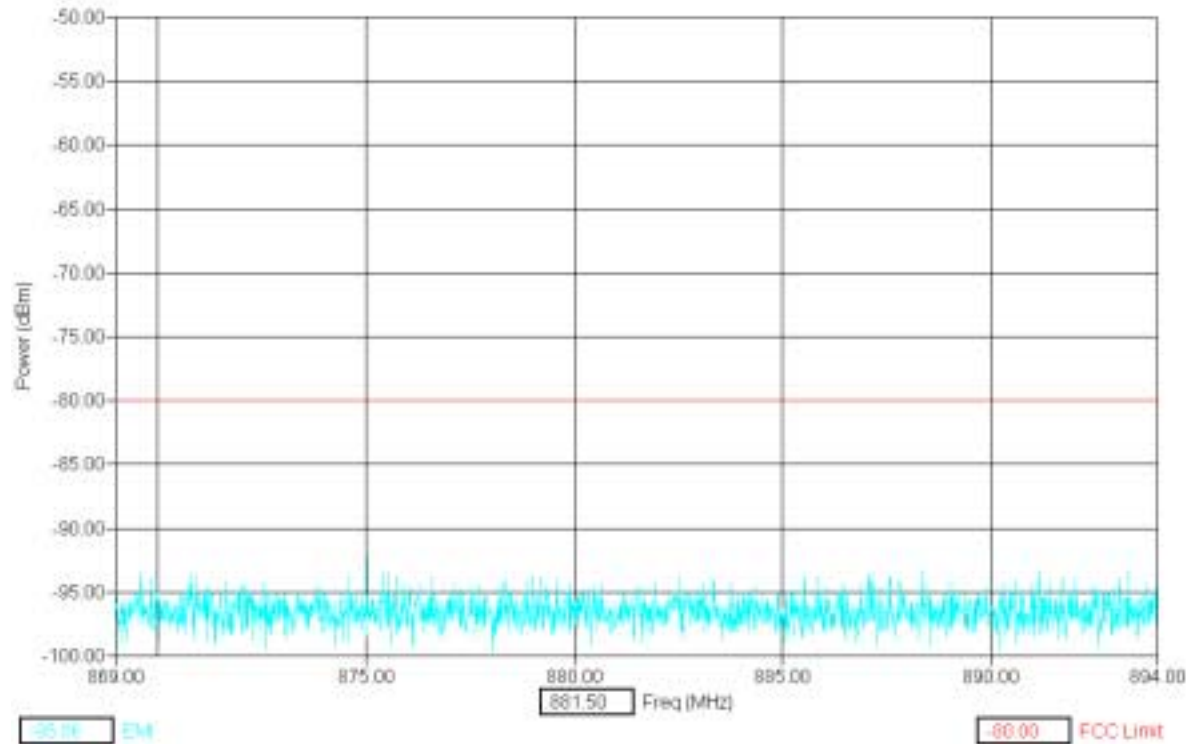
December 12, 2001

Ver 1.0

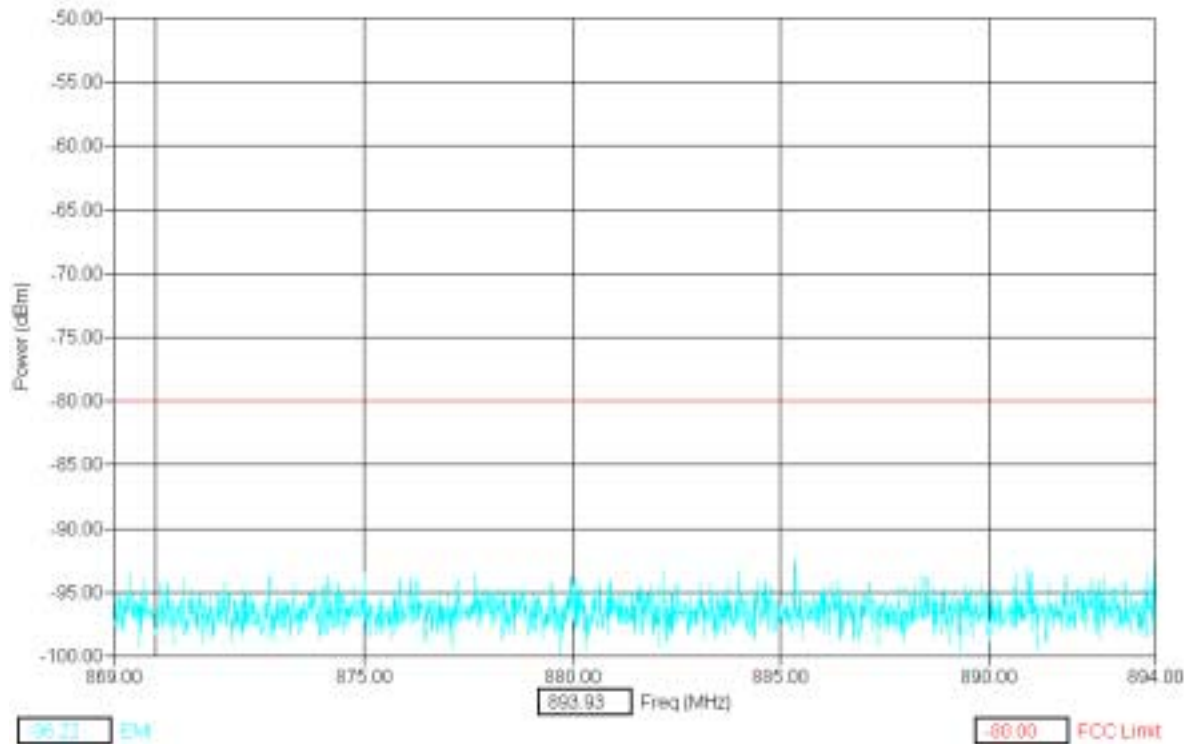
AMPS ch 991, 824.04MHz, Call Mode Max Power



AMPS ch 384, 836.52MHz, Call Mode Max Power



AMPS ch 799, 848.97MHz, Call Mode Max Power

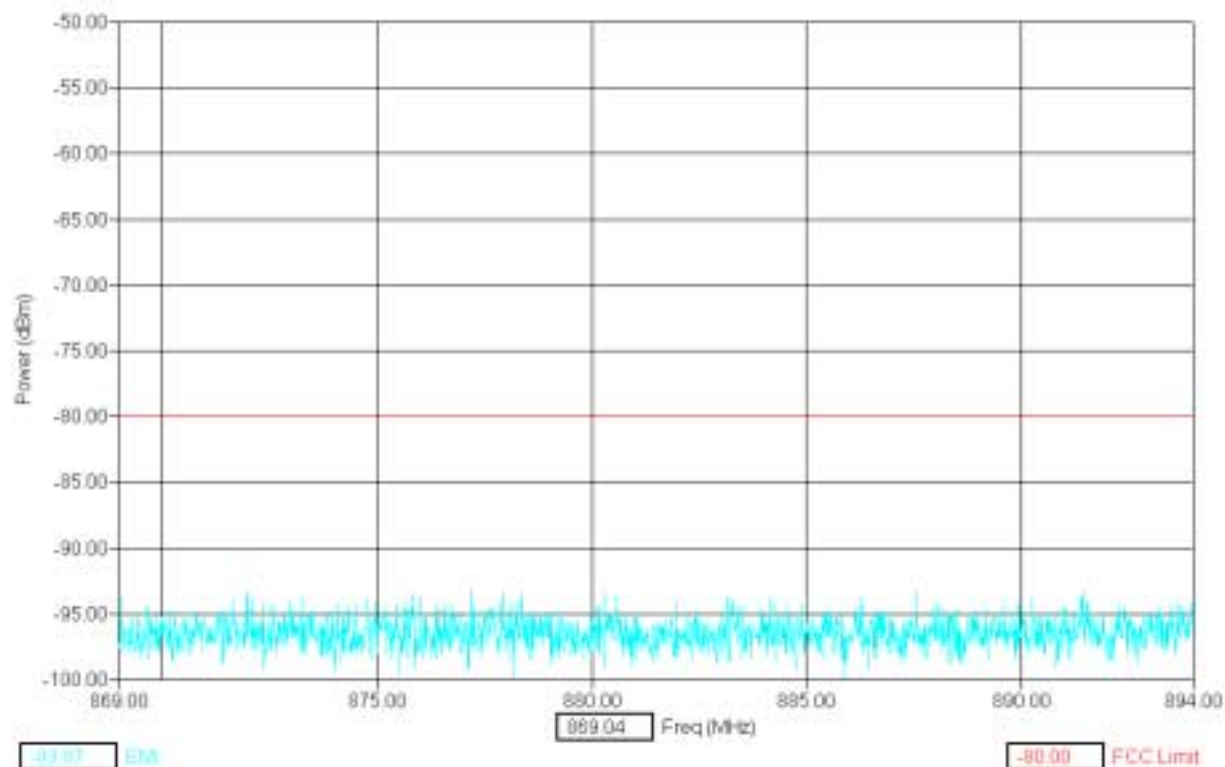


Test & Certification Center (TCC) - Dallas

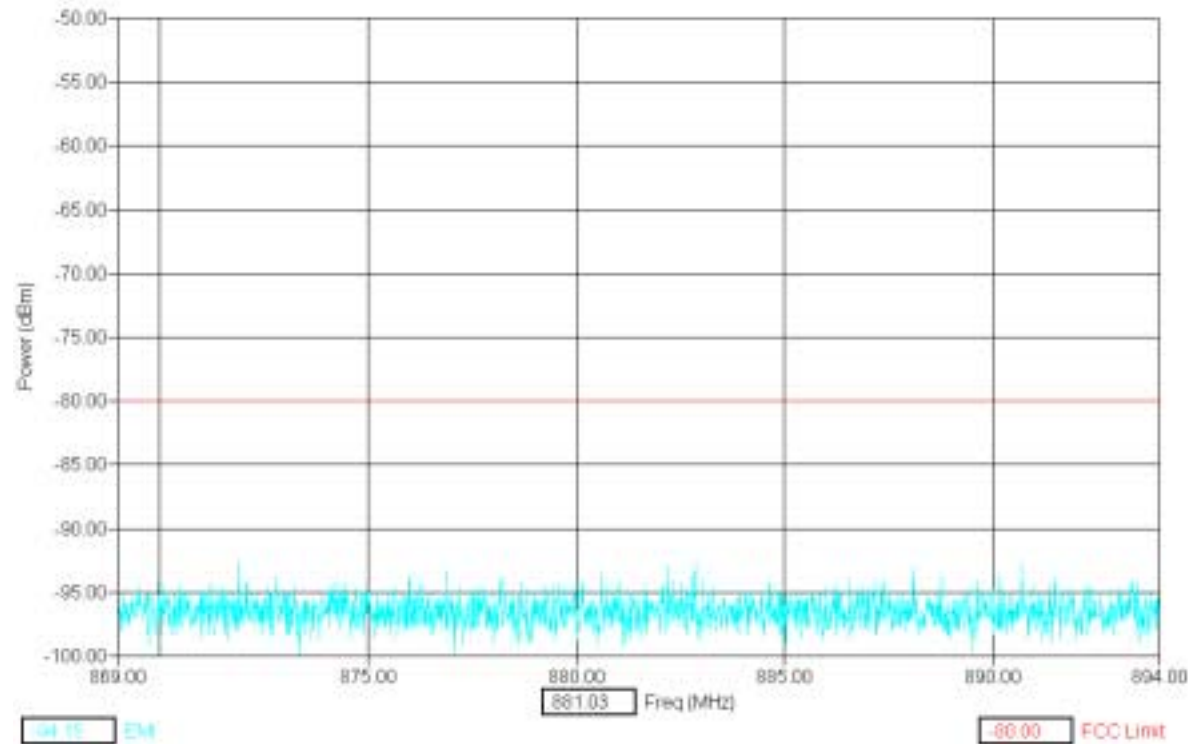
FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

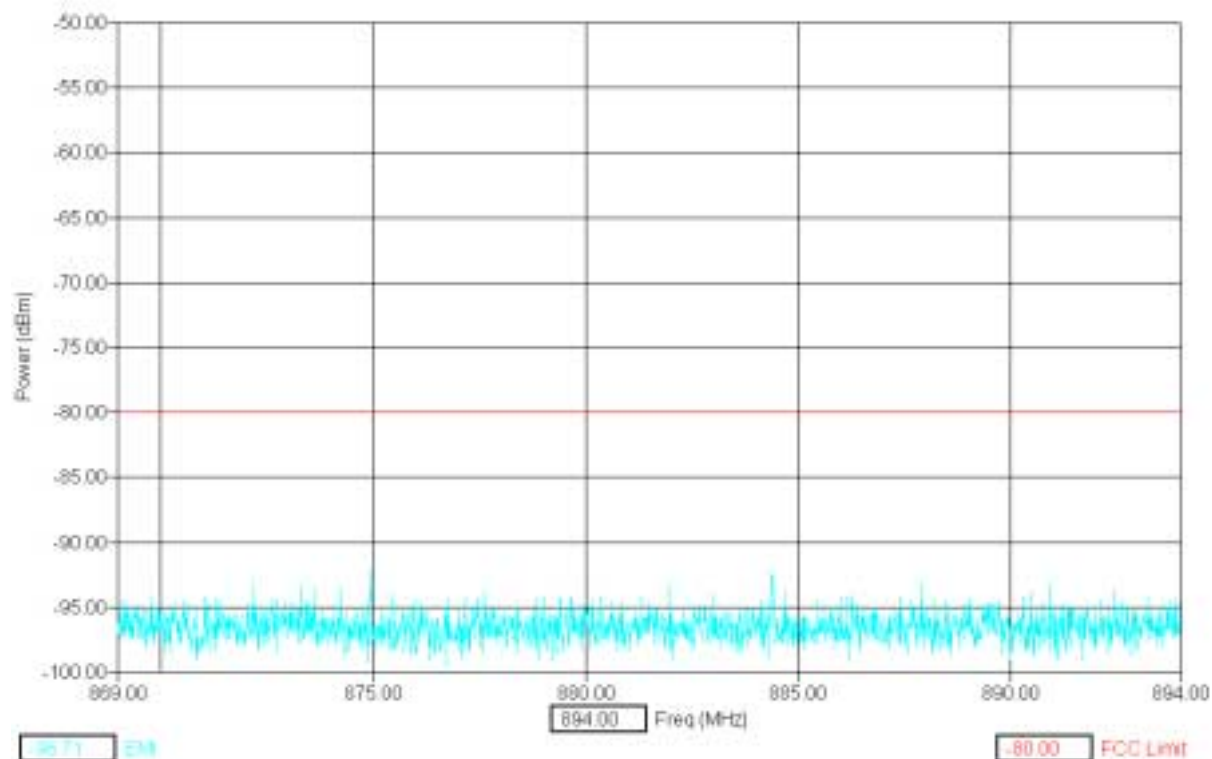
TDMA ch 991, 824.04MHz, Call Mode Max Power



TDMA ch 384, 836.52MHz, Call Mode Max Power



TDMA ch 799, 848.97MHz, Call Mode Max Power



13.4 Measurement Uncertainty

The measurement uncertainty for this test is +/- 3.7dB for 100kHz - 1000MHz.

14. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Specification: FCC Part 2.1051

14.1 Setup

Testing was performed with the EUT connected to a 6dB splitter, 6dB attenuator, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call. Filters were introduced to reduce or eliminate spurious emission, which could be generated internally in the EMI receiver.



14.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular / PCS	30MHz - 20000 *	-13

* Frequency to be investigated up to the 10th harmonic of the highest clock or frequency used.

14.3 Detailed Test Results

Test Technician / Engineer	Mark Severson	
Date of Measurement	November 30, 2001	
Temperature / Humidity	23°C	31%RH
Test Result	FCC ID: GMLNPW-3 at min power setting, complies with FCC part 2.1051	

EMI (dBm) = trace (dBuV) + cable loss (dB) + filter loss (dB).

Test & Certification Center (TCC) - Dallas
 FCC ID: GMLNPW-3
 Test Report #: 01-RF-0626
 December 12, 2001

Ver 1.0

AMPS ch 991, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1649.18	-35.97	0.78	7.77	-27.42	-13.00
2473.05	-57.57	1.03	8.95	-47.58	-13.00
3296.09	-60.10	1.24	9.03	-49.82	-13.00
4119.98	-59.02	1.57	9.11	-48.34	-13.00
4943.73	-59.26	1.78	9.50	-47.99	-13.00
5769.09	-59.94	1.96	9.67	-48.32	-13.00
6593.21	-58.44	2.03	9.93	-46.48	-13.00
7416.40	-57.01	2.07	10.15	-44.78	-13.00
8240.40	-55.67	2.23	10.32	-43.11	-13.00

AMPS ch 384, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1673.04	-37.86	0.79	7.89	-29.18	-13.00
2510.18	-57.83	1.06	8.91	-47.86	-13.00
3345.46	-59.13	1.27	8.92	-48.94	-13.00
4182.22	-58.70	1.59	9.11	-48.00	-13.00
5018.22	-59.52	1.80	9.44	-48.28	-13.00
5854.67	-59.59	1.97	9.65	-47.97	-13.00
6691.84	-60.63	2.04	9.90	-48.70	-13.00
7529.63	-55.74	2.08	10.33	-43.33	-13.00
8365.25	-57.51	2.30	10.50	-44.70	-13.00

AMPS ch 799, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1697.32	-38.30	0.76	7.82	-29.72	-13.00
2546.50	-57.97	1.03	8.87	-48.07	-13.00
3395.96	-58.75	1.38	8.88	-48.49	-13.00
4245.05	-59.07	1.61	9.20	-48.26	-13.00
5093.05	-59.32	1.81	9.51	-47.99	-13.00
5943.41	-60.68	1.99	9.80	-48.89	-13.00
6791.89	-57.21	2.04	10.05	-45.12	-13.00
7640.36	-57.03	2.08	10.21	-44.74	-13.00
8489.68	-55.86	2.37	10.27	-43.22	-13.00

Test & Certification Center (TCC) - Dallas
 FCC ID: GMLNPW-3
 Test Report #: 01-RF-0626
 December 12, 2001

Ver 1.0

TDMA Cellular ch 991, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1647.65	-38.49	0.78	7.77	-29.94	-13.00
2472.03	-57.29	1.03	8.95	-47.30	-13.00
3295.36	-58.74	1.24	9.03	-48.47	-13.00
4120.64	-59.69	1.57	9.11	-49.00	-13.00
4943.61	-59.28	1.78	9.50	-48.00	-13.00
5767.88	-59.27	1.96	9.67	-47.65	-13.00
6591.56	-60.15	2.03	9.93	-48.19	-13.00
7416.28	-56.57	2.07	10.15	-44.34	-13.00
8240.81	-56.30	2.23	10.32	-43.75	-13.00

TDMA Cellular ch 384, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1672.18	-38.76	0.79	7.89	-30.09	-13.00
2509.15	-58.79	1.06	8.91	-48.83	-13.00
3345.17	-57.47	1.27	8.92	-47.28	-13.00
4182.22	-60.29	1.59	9.11	-49.59	-13.00
5018.73	-59.23	1.80	9.44	-47.99	-13.00
5855.47	-57.41	1.97	9.65	-45.79	-13.00
6691.85	-56.52	2.04	9.90	-44.59	-13.00
7528.01	-55.62	2.08	10.33	-43.22	-13.00
8366.03	-58.42	2.30	10.50	-45.62	-13.00

Test & Certification Center (TCC) - Dallas
 FCC ID: GMLNPW-3
 Test Report #: 01-RF-0626
 December 12, 2001

Ver 1.0

TDMA Cellular ch 799, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1698.20	-36.34	0.76	7.82	-27.76	-13.00
2545.96	-58.17	1.03	8.87	-48.26	-13.00
3395.61	-58.73	1.38	8.88	-48.46	-13.00
4245.51	-59.43	1.61	9.20	-48.62	-13.00
5092.89	-60.92	1.81	9.51	-49.60	-13.00
5942.65	-60.97	1.99	9.80	-49.18	-13.00
6790.82	-54.90	2.04	10.05	-42.81	-13.00
7641.01	-56.76	2.08	10.21	-44.47	-13.00
8489.57	-56.06	2.37	10.27	-43.42	-13.00

TDMA PCS ch 2, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3699.80	-57.25	1.50	9.05	-46.70	-13.00
5550.18	-58.57	1.91	9.60	-47.06	-13.00
7399.21	-55.23	2.07	10.17	-42.99	-13.00
9250.16	-57.02	2.75	10.56	-43.71	-13.00
11099.75	-56.92	3.19	11.40	-42.33	-13.00
12951.06	-57.06	3.25	12.54	-41.26	-13.00
14800.78	-53.44	3.25	12.45	-37.74	-13.00
16650.15	-54.97	3.42	13.42	-38.13	-13.00
18500.47	-55.96	4.01	14.25	-37.69	-13.00

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TDMA PCS ch 999, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3759.54	-59.21	1.57	9.04	-48.60	-13.00
5639.01	-59.06	1.93	9.48	-47.65	-13.00
7519.95	-55.43	2.08	10.33	-43.02	-13.00
9399.17	-56.52	2.82	10.46	-43.24	-13.00
11280.63	-57.53	3.20	11.46	-42.88	-13.00
13160.53	-55.71	3.25	12.19	-40.27	-13.00
15039.87	-55.30	3.25	12.53	-39.52	-13.00
16918.90	-54.20	3.49	13.48	-37.24	-13.00
18799.02	-55.53	4.16	14.40	-36.96	-13.00

TDMA PCS ch 1998, Call Mode Min Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3819.94	-59.19	1.39	9.21	-48.59	-13.00
5730.22	-59.09	1.95	9.63	-47.52	-13.00
7640.57	-54.76	2.08	10.21	-42.47	-13.00
9549.87	-55.74	2.89	10.81	-42.04	-13.00
11459.80	-56.95	3.21	11.45	-42.28	-13.00
13369.01	-53.77	3.25	12.11	-38.41	-13.00
15279.02	-54.11	3.25	12.57	-38.29	-13.00
17188.86	-54.96	3.55	13.60	-37.81	-13.00
19099.65	-55.09	4.31	14.55	-36.23	-13.00

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AMPS ch 991, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1648.16	-28.32	0.78	7.77	-19.77	-13.00
2472.09	-44.98	1.03	8.95	-34.99	-13.00
3296.23	-58.02	1.24	9.03	-47.74	-13.00
4120.33	-56.50	1.57	9.11	-45.81	-13.00
4944.22	-56.53	1.78	9.50	-45.25	-13.00
5768.30	-57.81	1.96	9.67	-46.19	-13.00
6591.95	-59.23	2.03	9.93	-47.27	-13.00
7416.57	-56.62	2.07	10.15	-44.39	-13.00
8239.75	-57.82	2.23	10.32	-45.27	-13.00

AMPS ch 384, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1673.00	-30.87	0.79	7.89	-22.20	-13.00
2509.56	-45.35	1.06	8.91	-35.39	-13.00
3346.77	-57.55	1.27	8.92	-47.37	-13.00
4182.78	-52.74	1.59	9.11	-42.03	-13.00
5019.10	-54.28	1.80	9.44	-43.05	-13.00
5855.27	-60.13	1.97	9.65	-48.52	-13.00
6692.10	-59.85	2.04	9.90	-47.91	-13.00
7528.27	-55.36	2.08	10.33	-42.95	-13.00
8364.93	-56.94	2.30	10.50	-44.13	-13.00

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AMPS ch 799, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1697.82	-32.90	0.76	7.82	-24.32	-13.00
2547.01	-43.62	1.03	8.87	-33.71	-13.00
3395.53	-58.26	1.38	8.88	-47.99	-13.00
4244.97	-55.07	1.61	9.20	-44.26	-13.00
5094.12	-56.67	1.81	9.51	-45.35	-13.00
5943.74	-58.93	1.99	9.80	-47.14	-13.00
6791.63	-56.83	2.04	10.05	-44.74	-13.00
7640.27	-55.73	2.08	10.21	-43.44	-13.00
8489.47	-56.49	2.37	10.27	-43.85	-13.00

TDMA Cellular ch 991, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1648.12	-31.15	0.78	7.77	-22.60	-13.00
2472.24	-39.66	1.03	8.95	-29.67	-13.00
3296.52	-57.73	1.24	9.03	-47.45	-13.00
4120.35	-57.95	1.57	9.11	-47.27	-13.00
4944.38	-59.10	1.78	9.50	-47.82	-13.00
5768.51	-55.75	1.96	9.67	-44.13	-13.00
6591.85	-58.23	2.03	9.93	-46.27	-13.00
7415.46	-56.70	2.07	10.15	-44.47	-13.00
8240.20	-57.19	2.23	10.32	-44.63	-13.00

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TDMA Cellular ch 384, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1672.94	-33.99	0.79	7.89	-25.31	-13.00
2509.71	-44.61	1.06	8.91	-34.65	-13.00
3346.85	-58.43	1.27	8.92	-48.24	-13.00
4182.57	-54.91	1.59	9.11	-44.21	-13.00
5020.01	-57.05	1.80	9.44	-45.81	-13.00
5856.08	-59.88	1.97	9.65	-48.26	-13.00
6692.09	-60.10	2.04	9.90	-48.17	-13.00
7528.07	-56.54	2.08	10.33	-44.14	-13.00
8364.97	-57.40	2.30	10.50	-44.60	-13.00

TDMA Cellular ch 799, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
1697.92	-34.69	0.76	7.82	-26.10	-13.00
2546.93	-38.43	1.03	8.87	-28.53	-13.00
3396.35	-57.68	1.38	8.88	-47.41	-13.00
4244.97	-56.59	1.61	9.20	-45.78	-13.00
5093.81	-58.27	1.81	9.51	-46.94	-13.00
5942.65	-61.25	1.99	9.80	-49.46	-13.00
6791.03	-56.91	2.04	10.05	-44.82	-13.00
7640.45	-54.57	2.08	10.21	-42.27	-13.00
8490.69	-55.61	2.37	10.27	-42.97	-13.00

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TDMA PCS ch 2, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3700.07	-45.72	1.50	9.05	-35.17	-13.00
5550.24	-55.05	1.91	9.60	-43.54	-13.00
7400.93	-55.39	2.07	10.17	-43.15	-13.00
9249.65	-57.13	2.75	10.56	-43.82	-13.00
11099.83	-56.42	3.19	11.40	-41.84	-13.00
12951.28	-57.67	3.25	12.54	-41.88	-13.00
14799.89	-53.95	3.25	12.45	-38.25	-13.00
16651.01	-54.20	3.42	13.42	-37.36	-13.00
18500.24	-55.27	4.01	14.25	-37.00	-13.00

TDMA PCS ch 999, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3759.84	-46.11	1.57	9.04	-35.50	-13.00
5639.97	-50.78	1.93	9.48	-39.37	-13.00
7519.62	-55.70	2.08	10.33	-43.29	-13.00
9398.90	-57.26	2.82	10.46	-43.98	-13.00
11280.39	-55.96	3.20	11.46	-41.30	-13.00
13160.06	-56.32	3.25	12.19	-40.88	-13.00
15039.99	-54.35	3.25	12.53	-38.57	-13.00
16919.31	-53.50	3.49	13.48	-36.53	-13.00
18798.57	-53.05	4.16	14.40	-34.48	-13.00

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TDMA PCS ch 1998, Call Mode Max Power

Freq (Max) (MHz)	(PK) Trace (dBm)	Cable (dB)	Filter (dB)	(PK) EMI (dBm)	Limit (dBm)
3819.80	-43.86	1.39	9.21	-33.26	-13.00
5729.74	-53.62	1.95	9.63	-42.05	-13.00
7639.11	-54.30	2.08	10.21	-42.00	-13.00
9549.72	-55.33	2.89	10.81	-41.62	-13.00
11459.54	-55.35	3.21	11.45	-40.68	-13.00
13368.92	-52.74	3.25	12.11	-37.38	-13.00
15278.72	-53.37	3.25	12.57	-37.55	-13.00
17188.86	-53.36	3.55	13.60	-36.21	-13.00
19100.12	-55.46	4.31	14.55	-36.59	-13.00

14.4 Measurement Uncertainty

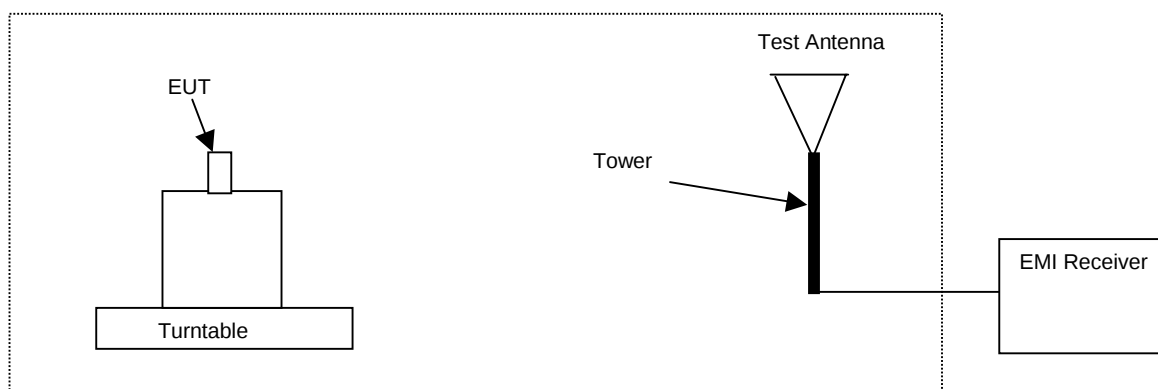
The measurement uncertainty for this test is +/- 3.7dB for 100kHz - 1000MHz and +/- 5.3dB for 1 - 20GHz.

15. FIELD STRENGTH OF SPURIOUS RADIATION

Specification: FCC Part 2.1053

15.1 Setup

Test equipment set-up.



15.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limit (dBm)
Cellular / PCS	30 – 20000*	-13

* Frequency to be investigated up to the 10th harmonic of the highest clock or frequency used.

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15.3 Detailed Test Results

Test Technician / Engineer	Michael Sundstrom	
Date of Measurement	November 28, 2001	
Temperature / Humidity	23°C	29%RH
Test Result	FCC ID: GMLNPW-3 complies with FCC part 2.1053	

No emissions were detected above the 5th harmonic of the carrier frequency.

EMI (dBm) = trace (dBuV) + cable loss (dB) + antenna factor (dB) + filter loss (dB) (if used)+ dipole power factor (dB) – preamplifier gain (dB) (if used).

Where dipole factor equals:

+9.5 = +20log3 (3 meter distance)
 -2.1 (dipole gain)
 -14.8 = -10log30 (constant, watts to dBm)
 +30.0 = +10log(1x 10x-3) (to dBm)
 -120 = -20log(1x 10x-6) (to dBuV)
 -97.4-dipole power factor conversion constant for a 3-meter distance

Amps Channel 991; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
824.04	1648.3	-28.7	-13.0	34.3	4.8	28.2	1.5	-97.4	H	215	115
824.04	1648.3	-27.8	-13.0	35.1	4.8	28.2	1.5	-97.4	V	283	124
824.04	2472.3	-32.3	-13.0	26.9	5.8	30.4	2.0	-97.4	H	74	120
824.04	2472.5	-34.6	-13.0	24.6	5.8	30.4	2.0	-97.4	V	212	147
824.04	3296.1	-35.6	-13.0	19.9	6.7	32.7	2.4	-97.4	H	183	135
824.04	3296.0	-35.1	-13.0	20.5	6.7	32.7	2.4	-97.4	V	106	329
824.04	4120.3	-34.1	-13.0	19.1	7.6	34.0	2.5	-97.4	H	177	112
824.04	4120.2	-33.6	-13.0	19.6	7.6	34.0	2.5	-97.4	V	347	156
824.04	4944.1	-27.8	-13.0	22.3	8.4	35.8	3.1	-97.4	H	39	140
824.04	4944.2	-28.3	-13.0	21.8	8.4	35.8	3.1	-97.4	V	215	100
824.04	5768.3	-28.3	-13.0	19.9	9.1	36.6	3.5	-97.4	H	244	181
824.04	5768.1	-27.3	-13.0	20.9	9.1	36.6	3.5	-97.4	V	205	183

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Amps Channel 991; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
824.04	6592.4	-39.5	-13.0	41.3	9.8	37.1	30.4	-97.4	H	184.0	118.0
824.04	6592.5	-40.2	-13.0	40.7	9.8	37.1	30.4	-97.4	V	211.0	107.0
824.04	7415.9	-41.8	-13.0	36.9	10.3	38.5	30.1	-97.4	H	228.0	399.0
824.04	7416.5	-42.0	-13.0	36.6	10.3	38.5	30.1	-97.4	V	46.0	285.0
824.04	8240.9	-40.0	-13.0	36.9	11.2	39.3	30.1	-97.4	H	69.0	244.0
824.04	8240.3	-39.9	-13.0	37.0	11.2	39.3	30.1	-97.4	V	104.0	380.0

Amps Channel 384; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
836.52	1673.3	-33.8	-13.0	29.1	4.8	28.3	1.5	-97.4	H	221	112
836.52	1673.3	-31.7	-13.0	31.2	4.8	28.3	1.5	-97.4	V	239	126
836.52	2509.5	-34.7	-13.0	24.4	5.9	30.4	2.0	-97.4	H	33	145
836.52	2509.6	-35.0	-13.0	24.1	5.9	30.4	2.0	-97.4	V	161	124
836.52	3345.9	-34.8	-13.0	20.5	6.8	32.8	2.4	-97.4	H	335	258
836.52	3346.0	-35.8	-13.0	19.5	6.8	32.8	2.4	-97.4	V	350	372
836.52	4182.6	-32.9	-13.0	20.0	7.7	34.1	2.6	-97.4	H	60	394
836.52	4182.5	-33.4	-13.0	19.6	7.7	34.1	2.6	-97.4	V	253	294
836.52	5019.2	-25.2	-13.0	24.6	8.4	35.9	3.2	-97.4	H	221	126
836.52	5019.1	-30.0	-13.0	19.8	8.4	35.9	3.2	-97.4	V	123	167
836.52	5855.7	-26.5	-13.0	21.5	9.2	36.6	3.6	-97.4	H	126	163
836.52	5855.7	-26.4	-13.0	21.6	9.2	36.6	3.6	-97.4	V	324	326

Amps Channel 384; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
836.52	6692.2	-38.2	-13.0	42.5	9.8	37.3	30.5	-97.4	H	301.0	100.0
836.52	6691.3	-39.9	-13.0	40.8	9.8	37.3	30.5	-97.4	V	199.0	122.0
836.52	7528.5	-41.8	-13.0	36.6	10.5	38.7	30.2	-97.4	H	1.0	218.0
836.52	7527.9	-39.6	-13.0	38.8	10.5	38.7	30.2	-97.4	V	132.0	202.0
836.52	8365.3	-41.1	-13.0	35.7	11.4	39.3	30.1	-97.4	H	341.0	277.0
836.52	8365.1	-40.5	-13.0	36.3	11.4	39.3	30.1	-97.4	V	85.0	230.0

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Amps Channel 799; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
848.97	1698.4	-35.8	-13.0	26.9	4.8	28.4	1.5	-97.4	H	195.0	112.0
848.97	1698.3	-35.0	-13.0	27.7	4.8	28.4	1.5	-97.4	V	256.0	121.0
848.97	2547.3	-32.2	-13.0	26.6	5.9	30.6	2.0	-97.4	H	70.0	115.0
848.97	2547.4	-31.8	-13.0	27.1	5.9	30.6	2.0	-97.4	V	183.0	123.0
848.97	3395.9	-34.1	-13.0	21.0	6.8	33.0	2.4	-97.4	H	177.0	114.0
848.97	3396.0	-35.2	-13.0	19.9	6.8	33.0	2.4	-97.4	V	212.0	367.0
848.97	4244.8	-32.3	-13.0	20.5	7.8	34.2	2.6	-97.4	H	335.0	382.0
848.97	4244.8	-32.6	-13.0	20.2	7.8	34.2	2.6	-97.4	V	224.0	248.0
848.97	5093.8	-25.4	-13.0	24.2	8.5	36.0	3.2	-97.4	H	218.0	134.0
848.97	5093.8	-27.9	-13.0	21.8	8.5	36.0	3.2	-97.4	V	353.0	139.0
848.97	5942.8	-26.7	-13.0	21.1	9.2	36.7	3.6	-97.4	H	276.0	158.0
848.97	5942.6	-25.6	-13.0	22.3	9.2	36.7	3.6	-97.4	V	261.0	100.0

Amps Channel 799; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
848.97	6792.3	-38.6	-13.0	42.0	9.9	37.4	30.5	-97.4	H	300.0	143.0
848.97	6791.7	-38.5	-13.0	42.0	9.9	37.4	30.5	-97.4	V	109.0	111.0
848.97	7641.2	-40.0	-13.0	38.2	10.6	38.8	30.3	-97.4	H	335.0	117.0
848.97	7640.6	-41.3	-13.0	37.0	10.6	38.8	30.3	-97.4	V	353.0	171.0
848.97	8489.9	-38.5	-13.0	38.2	11.4	39.4	30.2	-97.4	H	55.0	141.0
848.97	8489.2	-39.6	-13.0	37.2	11.4	39.4	30.2	-97.4	V	204.0	241.0

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TDMA Cellular Channel 991; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
824.04	1648.3	-30.5	-13.0	32.5	4.8	28.2	1.5	-97.4	H	215.0	115.0
824.04	1648.3	-29.2	-13.0	33.7	4.8	28.2	1.5	-97.4	V	262.0	127.0
824.04	2472.6	-37.4	-13.0	21.9	5.8	30.4	2.0	-97.4	H	301.0	100.0
824.04	2472.6	-36.5	-13.0	22.7	5.8	30.4	2.0	-97.4	V	227.0	141.0
824.04	3296.2	-35.3	-13.0	20.3	6.7	32.7	2.4	-97.4	H	156.0	135.0
824.04	3296.2	-35.1	-13.0	20.5	6.7	32.7	2.4	-97.4	V	123.0	141.0
824.04	4120.2	-33.2	-13.0	20.0	7.6	34.0	2.5	-97.4	H	206.0	195.0
824.04	4120.3	-31.8	-13.0	21.4	7.6	34.0	2.5	-97.4	V	188.0	146.0
824.04	4944.2	-26.3	-13.0	23.8	8.4	35.8	3.1	-97.4	H	241.0	123.0
824.04	4944.4	-29.2	-13.0	20.9	8.4	35.8	3.1	-97.4	V	194.0	138.0
824.04	5768.4	-26.7	-13.0	21.5	9.1	36.6	3.5	-97.4	H	235.0	112.0
824.04	5768.4	-26.6	-13.0	21.6	9.1	36.6	3.5	-97.4	V	212.0	173.0

TDMA Cellular Channel 991; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
824.04	6593.1	-45.1	-13.0	35.7	9.8	37.1	30.4	-97.4	H	336.0	108.0
824.04	6592.1	-44.1	-13.0	36.7	9.8	37.1	30.4	-97.4	V	302.0	154.0
824.04	7415.4	-42.8	-13.0	35.8	10.3	38.5	30.1	-97.4	H	359.0	236.0
824.04	7417.1	-42.4	-13.0	36.2	10.3	38.5	30.1	-97.4	V	83.0	399.0
824.04	8239.5	-40.3	-13.0	36.7	11.2	39.3	30.1	-97.4	H	34.0	145.0
824.04	8239.9	-38.8	-13.0	38.2	11.2	39.3	30.1	-97.4	V	192.0	378.0

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TDMA Cellular Channel 384; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
836.52	1673.3	-36.7	-13.0	26.1	4.8	28.3	1.5	-97.4	H	186.0	115.0
836.52	1673.3	-35.2	-13.0	27.6	4.8	28.3	1.5	-97.4	V	236.0	118.0
836.52	2509.8	-33.6	-13.0	25.5	5.9	30.4	2.0	-97.4	H	83.0	175.0
836.52	2509.9	-34.8	-13.0	24.3	5.9	30.4	2.0	-97.4	V	200.0	173.0
836.52	3346.1	-34.8	-13.0	20.6	6.8	32.8	2.4	-97.4	H	1.0	138.0
836.52	3346.0	-34.9	-13.0	20.5	6.8	32.8	2.4	-97.4	V	113.0	194.0
836.52	4182.5	-32.7	-13.0	20.3	7.7	34.1	2.6	-97.4	H	274.0	119.0
836.52	4182.6	-33.1	-13.0	19.9	7.7	34.1	2.6	-97.4	V	303.0	192.0
836.52	5019.2	-23.8	-13.0	26.1	8.4	35.9	3.2	-97.4	H	217.0	100.0
836.52	5019.1	-27.7	-13.0	22.1	8.4	35.9	3.2	-97.4	V	158.0	140.0
836.52	5855.7	-26.8	-13.0	21.1	9.2	36.6	3.6	-97.4	H	339.0	352.0
836.52	5855.5	-26.9	-13.0	21.1	9.2	36.6	3.6	-97.4	V	12.0	220.0

TDMA Cellular Channel 384; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
836.52	6692.2	-41.0	-13.0	39.7	9.8	37.3	30.5	-97.4	H	217.0	159.0
836.52	6692.1	-37.0	-13.0	43.7	9.8	37.3	30.5	-97.4	V	217.0	114.0
836.52	7527.8	-42.0	-13.0	36.4	10.5	38.7	30.2	-97.4	H	283.0	99.0
836.52	7529.5	-42.7	-13.0	35.7	10.5	38.7	30.2	-97.4	V	309.0	326.0
836.52	8366.1	-39.9	-13.0	36.9	11.4	39.3	30.1	-97.4	H	161.0	347.0
836.52	8365.7	-39.7	-13.0	37.1	11.4	39.3	30.1	-97.4	V	357.0	101.0

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TDMA Cellular Channel 799; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
848.97	1698.3	-37.9	-13.0	24.8	4.8	28.4	1.5	-97.4	H	173.0	115.0
848.97	1698.3	-37.6	-13.0	25.1	4.8	28.4	1.5	-97.4	V	242.0	121.0
848.97	2546.8	-26.1	-13.0	32.8	5.9	30.6	2.0	-97.4	H	65.0	117.0
848.97	2546.9	-27.3	-13.0	31.6	5.9	30.6	2.0	-97.4	V	221.0	144.0
848.97	3359.9	-34.4	-13.0	20.9	6.8	32.9	2.4	-97.4	H	237.0	356.0
848.97	3359.9	-35.0	-13.0	20.3	6.8	32.9	2.4	-97.4	V	44.0	114.0
848.97	4245.0	-32.1	-13.0	20.7	7.8	34.2	2.6	-97.4	H	194.0	106.0
848.97	4244.9	-33.7	-13.0	19.1	7.8	34.2	2.6	-97.4	V	283.0	197.0
848.97	5093.9	-25.6	-13.0	24.1	8.5	36.0	3.2	-97.4	H	229.0	123.0
848.97	5093.8	-27.9	-13.0	21.8	8.5	36.0	3.2	-97.4	V	155.0	109.0
848.97	5942.8	-26.5	-13.0	21.3	9.2	36.7	3.6	-97.4	H	229.0	319.0
848.97	5942.8	-26.4	-13.0	21.4	9.2	36.7	3.6	-97.4	V	83.0	219.0

TDMA Cellular Channel 799; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
848.97	6791.8	-41.3	-13.0	39.3	9.9	37.4	30.5	-97.4	H	264.0	100.0
848.97	6791.5	-43.3	-13.0	37.3	9.9	37.4	30.5	-97.4	V	12.0	396.0
848.97	7641.1	-40.8	-13.0	37.5	10.6	38.8	30.3	-97.4	H	353.0	264.0
848.97	7641.5	-39.2	-13.0	39.0	10.6	38.8	30.3	-97.4	V	170.0	290.0
848.97	8489.7	-40.3	-13.0	36.4	11.4	39.4	30.2	-97.4	H	259.0	218.0
848.97	8490.2	-38.8	-13.0	37.9	11.4	39.4	30.2	-97.4	V	52.0	367.0

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TDMA PCS Channel 02; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1850.04	3700.1	-28.7	-13.0	25.6	7.2	33.4	2.4	-97.4	0.0	191.0	155.0
1850.04	3699.9	-28.4	-13.0	25.9	7.2	33.4	2.4	-97.4	1.0	6.0	106.0
1850.04	5550.0	-22.5	-13.0	26.7	8.9	36.5	2.7	-97.4	0.0	228.0	112.0
1850.04	5550.1	-22.6	-13.0	26.6	8.9	36.5	2.7	-97.4	1.0	238.0	109.0

TDMA PCS Channel 02; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1850.04	7400.1	-35.3	-13.0	43.3	10.3	38.5	30.1	-97.4	H	249.0	140.0
1850.04	7400.2	-38.0	-13.0	40.7	10.3	38.5	30.1	-97.4	V	86.0	195.0
1850.04	9250.0	-29.5	-13.0	46.3	11.9	40.3	30.5	-97.4	H	120.0	147.0
1850.04	9250.0	-28.3	-13.0	47.5	11.9	40.3	30.5	-97.4	V	226.0	108.0
1850.04	11100.0	-31.5	-13.0	41.7	12.8	40.8	29.4	-97.4	H	103.0	104.0
1850.04	11100.8	-36.3	-13.0	36.9	12.8	40.8	29.4	-97.4	V	156.0	103.0
1850.04	12950.3	-33.2	-13.0	36.3	14.2	41.8	28.1	-97.4	H	58.0	180.0
1850.04	12951.0	-33.6	-13.0	35.9	14.2	41.8	28.1	-97.4	V	86.0	392.0
1850.04	14801.0	-30.2	-13.0	38.1	15.0	42.5	28.4	-97.4	H	142.0	115.0
1850.04	14800.9	-31.0	-13.0	37.3	15.0	42.5	28.4	-97.4	V	182.0	188.0
1850.04	16649.6	-31.5	-13.0	36.5	16.0	41.6	28.3	-97.4	H	85.0	158.0
1850.04	16650.3	-30.1	-13.0	37.9	16.0	41.6	28.3	-97.4	V	157.0	176.0

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TDMA PCS Channel 1001; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1880.01	3760.4	-30.8	-13.0	23.4	7.2	33.5	2.4	-97.4	H	184.0	136.0
1880.01	3760.4	-29.7	-13.0	24.4	7.2	33.5	2.4	-97.4	V	165.0	126.0
1880.01	5840.0	-28.5	-13.0	20.3	9.2	36.6	2.8	-97.4	H	1.0	245.0
1880.01	5840.0	-27.2	-13.0	21.5	9.2	36.6	2.8	-97.4	V	64.0	388.0

TDMA PCS Channel 1001; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1880.01	7520.2	-31.7	-13.0	46.7	10.4	38.7	30.2	-97.4	H	256.0	108.0
1880.01	7520.1	-29.4	-13.0	49.0	10.4	38.7	30.2	-97.4	V	129.0	151.0
1880.01	9400.0	-27.2	-13.0	48.5	12.0	40.3	30.6	-97.4	H	118.0	148.0
1880.01	9400.7	-31.1	-13.0	44.6	12.0	40.3	30.6	-97.4	V	251.0	99.0
1880.01	11280.1	-34.4	-13.0	39.1	12.9	40.7	29.7	-97.4	H	263.0	155.0
1880.01	11280.1	-36.0	-13.0	37.5	12.9	40.7	29.7	-97.4	V	231.0	287.0
1880.01	13159.9	-35.2	-13.0	33.7	14.2	42.0	27.8	-97.4	H	282.0	157.0
1880.01	13161.4	-32.9	-13.0	36.1	14.2	42.0	27.8	-97.4	V	247.0	99.0
1880.01	15041.1	-30.6	-13.0	37.4	15.2	42.5	28.4	-97.4	H	202.0	250.0
1880.01	15041.5	-31.6	-13.0	36.4	15.2	42.5	28.4	-97.4	V	278.0	244.0
1880.01	16921.0	-28.4	-13.0	37.4	16.4	42.8	27.6	-97.4	H	271.0	245.0
1880.01	16920.5	-28.7	-13.0	37.1	16.4	42.8	27.6	-97.4	V	218.0	386.0

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TDMA PCS Channel 1998; 1GHz to 6GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1909.92	3819.9	-29.8	-13.0	24.3	7.3	33.6	2.4	-97.4	H	185.0	220.0
1909.92	3819.8	-26.6	-13.0	27.5	7.3	33.6	2.4	-97.4	V	180.0	138.0
1909.92	5729.6	-25.3	-13.0	23.6	9.1	36.6	2.8	-97.4	H	232.0	118.0
1909.92	5729.8	-27.4	-13.0	21.5	9.1	36.6	2.8	-97.4	V	215.0	103.0

TDMA PCS Channel 1998; 6GHz to 18GHz:

Tuned Freq (MHz)	Freq (Max) (MHz)	(PK) EMI (dBm)	FCC Limit (dBm)	(PK) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	DiPwrFctr (dB)	Pol.	Ttbl Agl (deg)	Twr Ht (cm)
1909.92	7639.6	-18.4	-13.0	59.9	10.6	38.8	30.3	-97.4	H	246.0	117.0
1909.92	7639.8	-22.8	-13.0	55.4	10.6	38.8	30.3	-97.4	V	118.0	138.0
1909.92	9549.6	-26.6	-13.0	48.6	12.1	40.3	30.3	-97.4	H	117.0	138.0
1909.92	9549.0	-28.7	-13.0	46.5	12.1	40.3	30.3	-97.4	V	220.0	111.0
1909.92	11460.5	-35.6	-13.0	37.9	13.0	40.5	29.7	-97.4	H	92.0	128.0
1909.92	11458.6	-36.0	-13.0	37.5	13.0	40.5	29.7	-97.4	V	85.0	224.0
1909.92	13369.0	-31.3	-13.0	37.3	14.2	42.1	27.5	-97.4	H	263.0	267.0
1909.92	13369.5	-31.2	-13.0	37.4	14.2	42.1	27.5	-97.4	V	141.0	207.0
1909.92	15279.3	-32.9	-13.0	36.5	15.4	41.5	28.9	-97.4	H	208.0	197.0
1909.92	15280.1	-32.3	-13.0	37.1	15.4	41.5	28.9	-97.4	V	314.0	259.0
1909.92	17189.4	-28.9	-13.0	34.7	16.5	43.7	26.4	-97.4	H	28.0	304.0
1909.92	17189.2	-27.4	-13.0	36.2	16.5	43.7	26.4	-97.4	V	291.0	287.0

15.4 Measurement Uncertainty

The measurement uncertainty for this test is +/- 5.2dB for 30-300MHz; +/- 5.2dB for 300-1000MHz and +/- 5.6dB for 1-6GHz.

16. FREQUENCY STABILITY (TEMPERATURE VARIATION)

Specification: FCC Part 2.1055(a)(1)(b), 24.235

16.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

16.2 Pass/Fail Criteria

Not Applicable

16.3 Detailed Test Results

Test Technician / Engineer	Viet Do		
Date of Measurement	December 11, 2001		
Temperature / Humidity	23°C	50%RH	
Test Result	FCC ID: GMLNPW-3 was tested in accordance with 2.1055(a)(1)(b), 24.235		

AMPS MODE:

Channel # 380 (836.4 MHz)

Temp. (°C)	Frequency (MHz)	Change (Hz)	Change (ppm*)
-30	836.39991636	-83.64	-0.10
-20	836.39998327	-16.73	-0.02
-10	836.39973235	-267.65	-0.32
0	836.39984108	-158.92	-0.19
10	836.39982436	-175.64	-0.21
20	836.39980763	-192.37	-0.23
30	836.39968217	-317.83	-0.38
40	836.39965708	-342.92	-0.41
50	836.39964871	-351.29	-0.42
60	836.39969890	-301.10	-0.36

TDMA MODE:

Channel # 380 (836.4 MHz)

Temp. (°C)	Frequency (MHz)	Change (Hz)	Change (ppm*)
-30	836.39999525	-4.75	-0.01
-20	836.40000409	4.09	0.00
-10	836.40000640	6.4	0.01
0	836.40000927	9.27	0.01
10	836.40001173	11.73	0.01
20	836.39999496	-5.04	0.00
30	836.39995082	-49.18	0.06
40	836.40000089	0.89	0.00
50	836.40000536	5.36	0.01
60	836.40001229	12.29	0.01

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PCS-TDMA MODE:

Channel # 1000 (1879.89 MHz)

Temp. (°C)	Frequency (MHz)	Change (Hz)	Change (ppm*)
-30	1879.98003311	33.11	-0.02
-20	1879.98002645	26.45	0.01
-10	1879.98003491	34.91	0.02
0	1879.97999933	-0.67	0.00
10	1879.98000391	3.91	0.00
20	1879.97999969	-0.31	0.00
30	1879.98000643	6.43	0.00
40	1879.98001145	11.45	0.01
50	1879.98000153	1.53	0.00
60	1879.98000380	3.80	0.00

* (ppm/10⁶) = (Change in Hz/Frequency in MHz)

17. FREQUENCY STABILITY (VOLTAGE VARIATION)

Specification: FCC Part 2.1055(d)(1)(2), 24.235

17.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

17.2 Pass/Fail Criteria

Not Applicable

17.3 Detailed Test Results

Test Technician / Engineer	Viet Do	
Date of Measurement	December 11, 2001	
Temperature / Humidity	23°C	50%RH
Test Result	FCC ID: GMLNPW-3 was tested in accordance with 2.1055(d)(1)(2), 24.235	

AMPS MODE:

Channel # 380 (836.4 MHz)

Battery End Point (Voltage) = 3.1

% of STV	Voltage	Frequency (MHz)	Change (Hz)	Change (ppm)
85	3.2	836.39970726	-292.74	-0.35
100	3.8	836.39984108	-158.92	-0.19
115	4.4	836.39983272	-167.28	-0.20
B.E.P.	3.1	836.39993309	-66.91	-0.08

TDMA MODE:

Channel # 380 (836.4 MHz)

Battery End Point (Voltage) = 3.1

% of STV	Voltage	Frequency (MHz)	Change (Hz)	Change (ppm)
85	3.2	836.39992172	-78.28	-0.09
100	3.8	836.40000197	1.97	0.00
115	4.4	836.39999255	-7.45	-0.01
B.E.P.	3.1	836.39998678	-13.22	-0.02

PCS-TDMA MODE:

Channel # 1000 (1879.89 MHz)

Battery End Point (Voltage) = 3.1

% of STV	Voltage	Frequency (MHz)	Change (Hz)	Change (ppm)
85	3.2	1879.97999759	-2.41	-0.00
100	3.8	1879.97998995	-10.05	-0.01
115	4.4	1879.98000950	9.5	0.01
B.E.P.	3.1	1879.98003151	31.51	0.02

Test & Certification Center (TCC) - Dallas

FCC ID: GMLNPW-3
Test Report #: 01-RF-0626
December 12, 2001

Ver 1.0

APPENDIX

TCC-Dallas is accredited by the American Association for Laboratory Accreditation (A2LA) as shown in the scope below:



"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined to be 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, such data would not be covered by this laboratory's A2LA accreditation.