**MET Laboratories, Inc.** *Safety Certification - EMI - Telecom Environmental Simulation*
914 WEST PATAPSCO AVENUE ! BALTIMORE, MARYLAND 21230-3432 ! PHONE (410) 354-3300 ! FAX (410) 354-3313

November 11, 2002

Celletra.
P.O. Box 106 Tavor Building
Yoque'am Ilit
ISRAEL

Reference: LPA Amplifier
FCC ID: PNQC-EP2-NW

Dear Mr. Gideon Argaman:

Enclosed is the EMC Test Report for the Celletra LPA Amplifier. The Celletra LPA Amplifier was tested to the requirements of the FCC Rules and Regulations, Part 24 Subpart E, of Title 47 of the CFR, for a Single Carrier PCS Amplifier.

Thank you for using the testing services of MET Laboratories. If you have any questions regarding these results or if MET can be of further assistance to you, please feel free to contact me. We appreciate your business and look forward to working with you again soon.

Kindest Regards,
MET LABORATORIES, INC.

Marianne Bosley

Marianne T. Bosley
EMC Administrator

Enclosures: (\Celletra\EMC12938A-FCC24.rpt)

# Electro-Magnetic Compatibility
# Test Report

for the

## Celletra
## LPA Amplifier

**Tested Under**

FCC Part 24, Subpart E
Title 47 of the CFR
for Broadband PCS Devices

MET REPORT: **EMC12938A-FCC24**

August 21, 2002

**PREPARED FOR:**

Celletra
P.O. Box 106 Tavor Building
Yoque'am Ilit
ISRAEL

**PREPARED BY:**

MET Laboratories, Inc.
914 West Patapsco Avenue
Baltimore, Maryland 21230-3432

**Electro-Magnetic Compatibility**
# Test Report
for the

## LPA Amplifier

**Tested Under**

FCC Part 24 Subpart E
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for Broadband PCS Devices
MET REPORT: **EMC12938A-FCC24**

**PREPARED FOR:**

Celletra
P.O. Box 106 Tavor Building
Yoque'am Ilit
ISRAEL

Christopher R. Harvey, Director
Electromagnetic Compatibility Testing

Marianne T. Bosley
EMC Administrator

**Engineering Statement:** The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 24, Subpart E, of the FCC Rules under normal use and maintenance.

Liming Xu
Project Engineer

  

# REPORT STATUS SHEET

| Revision | Report/ Revision Date | Reason for Revision |
|---|---|---|
| i | November 26, 2002 | Initial Report Issue. |

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# List of Tables



# List of Figures



  

# List of Terms and Abbreviations

| | |
|---|---|
| **AC** | **A**lternating **C**urrent |
| **Cal** | **Cal**ibration |
| ***d*** | **M**easurement **D**istance |
| **dB** | **D**eci**b**els |
| **dBμA** | **D**eci**b**els above one **micro**amp |
| **dBμV** | **D**eci**b**els above one **micro**volt |
| **dBμA/m** | **D**eci**b**els above one **micro**amp **per m**eter |
| **dBμV/m** | **D**eci**b**els above one **micro**volt **per m**eter |
| **DC** | **D**irect **C**urrent |
| **E** | **E**lectric Field |
| **DSL** | **D**igital **S**ubscriber **L**ine |
| **ESD** | **E**lectro**s**tatic **D**ischarge |
| **RF Repeater -** PCS Beamer® **Amplifier Unit (BAU)** | **E**quipment **U**nder **T**est |
| ***f*** | **F**requency |
| **FCC** | **F**ederal **C**ommunications **C**ommission |
| **CISPR** | **C**omite **I**nternational **S**pecial des **P**erturbations **R**adioelectriques (International Special Committee on Radio Interference) |
| **GRP** | **G**round **R**eference **P**lane |
| **H** | Magnetic Field |
| **HCP** | **H**orizontal **C**oupling **P**lane |
| **Hz** | **H**er**z** |
| **IEC** | **I**nternational **E**lectrotechnical **C**ommission |
| **kHz** | **k**ilo**h**er**z** |
| **kPa** | **k**ilo**pa**scal |
| **kV** | **k**ilo**v**olt |
| **LISN** | **L**ine **I**mpedance **S**tabilization **N**etwork |
| **MHz** | **M**ega**h**ertz |
| **μH** | **microh**enry |
| **μF** | **microf**arad |
| **μs** | **micros**econds |
| **NEBS** | **N**etwork **E**quipment-**B**uilding **S**ystem |
| **PRF** | **P**ulse **R**epetition **F**requency |
| **RF** | **R**adio **F**requency |
| **RMS** | **R**oot-**M**ean-**S**quare |
| **TWT** | **T**raveling **W**ave **T**ube |
| **V/m** | **V**olts **per m**eter |
| **VCP** | **V**ertical **C**oupling **P**lane |

## Summary of Test Results

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 24, Subpart E. All tests were conducted using measurement procedure ANSI C63.4-1992.

| | |
|---|---|
| Type of Submission/ Rule Part: | Original Filing/Part 24 |
| Single Carrier PCS Amplifier: | Celletra LPA Amplifier Pre-Production Unit |
| FCC ID: | PNQC-EP2-NW |
| Type of Emissions: | F9W ( CDMA ) |
| RF Power Output: | CDMA: 20Watts |
| Frequency Range (MHz): | 1930MHz-1990MHz |
| Frequency Stability: | N/A |

**Table 1.**

**Summary of Test Data**

| Name of Test | FCC Rule Part/Section | Results |
|---|---|---|
| RF Power Output | 2.1046; 24.232 (a), (c) | Complies |
| Occupied Bandwidth, Input vs. Output | 2.1049 | Complies |
| Spurious Emissions at Antenna Terminals | 2.1051; 24.238 (a) | Complies |
| Radiated Spurious Emissions | 2.1053; 24.238 (a) | Complies |

**Table 2.**

# I. Executive Summary

# Executive Summary

## A. Purpose of Test

An EMC evaluation to determine compliance of the LPA Amplifier with the requirements of Part 24, Subpart E, was conducted. (All references are to the most current version of Title 47 of the Code of Federal Regulations in effect). In accordance with §2.1033, the following data is presented in support of the Certification of the LPA Amplifier. Celletra should retain a copy of this document, and it should be kept on file for at least five years after the manufacturing of the LPA Amplifier has been **permanently** discontinued.

## B. Executive Summary

The LPA Amplifier, as supplied to MET Laboratories, complied with the requirements stated in this test report.

| References | Description |
|---|---|
| Purchase Order # 205253 | Celletra Purchase Order for the LPA Amplifier Testing |
| ANSI-C63.4:1992 | Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz |
| FCC 47CFR, Chapter 1, Part 2 | Title 47 Code of Federal Regulations Part 2 - Frequency Allocations and Radio Treaty Matters; General Rules and Regulations |
| FCC 47CFR, Chapter 1, Part 15 | Title 47 Code of Federal Regulations Part 15 - Radio Frequency Devices |
| FCC 47CFR, Chapter 1, Part 24 | Title 47 Code of Federal Regulations Part 24 |

**Table 3. References**

# II. General

## A. Test Site

All testing was conducted at MET Laboratories, Inc., 914 West Patapsco Avenue, Baltimore, Maryland 21230-3432. Radiated Emissions measurements were performed inside of a three-meter Semi Anechoic Chamber (equivalent to an Open Area Test Site, OATS). In accordance with §2.948(a)(2), a complete site description is filed with the Commission's Laboratory in Columbia, Maryland. MET Laboratories has been accredited by the National Voluntary Laboratory Accreditation Program (Lab Code: 100273-0).

## B. Description of Test Sample

The LPA Amplifier is a PCS band Linear power amplifier which resides inside the Cellular Base Station and amplifies the Down Link RF signal which is then connected to the Base Station Antenna.

## C. General Test Setup

The Celletra LPA Amplifier is powered by 48 VDC. The EUT is directly connected by a signal generator configured with TX/RX modes in order to simulate its normal mode of communications without the use of antennas.

## D. Mode of Operation

The Celletra LPA Amplifier was configured so as to provide continuous operations at or near their maximum operating limitation.

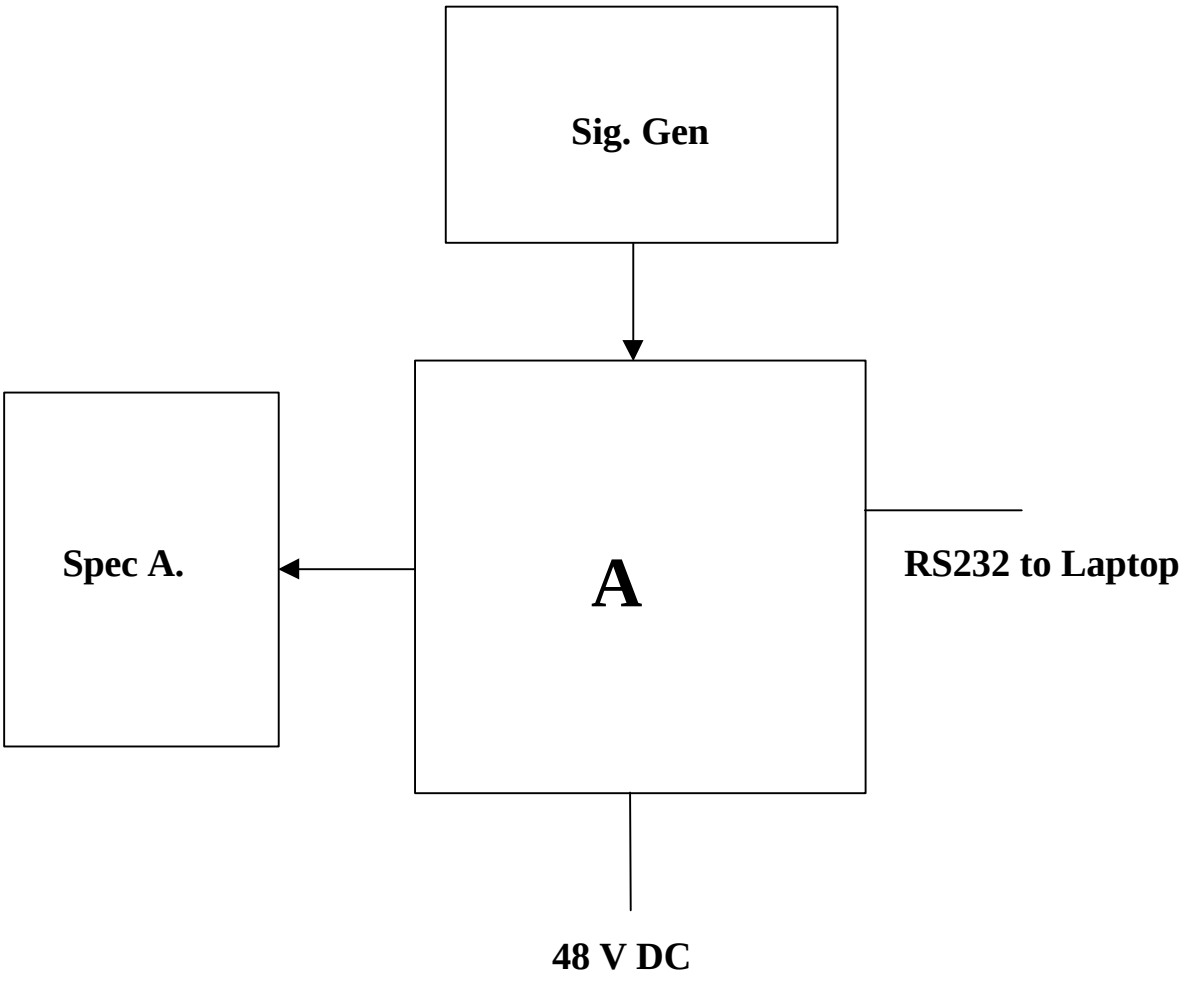


**Figure 1. Configuration**

**EUT**

| Reference to Test Configuration | Description/ Nomenclature | Model # | Serial # | Revision |
|---|---|---|---|---|
| A | LPA Amplifier | PNQC-EP2-NW | 11342 | |

**Support Equipment**

| Reference to Test Configuration | Description/ Nomenclature | Model # | Serial # | Revision |
|---|---|---|---|---|
| | No External Support | | | |

**Ports and Cabling Information**

| Ref ID | Port name on EUT | Type of Cable or reason for no cable | How many by default? | Length (m) | Shielded? |
|---|---|---|---|---|---|
| 1 | RS-232 | No Cable used for firmware updates | 0 | 0 | – |
| 2 | Ground | 18 AWG, 1c. | 1 | 2 | N |
| 3 | Rf In | RGS 400 Coaxial | 1 | 2 | Y |
| 4 | Rf Out | RGS 400 Coaxial | 1 | 2 | Y |
| 5 | DC(A) | 18 AWG, 3c. | 1 | 1.5 | Y |

**Card/Module Information**

| Ref. ID | Card Name | Model # | Serial # | Revision |
|---|---|---|---|---|
| | No Removable Modules | | | |

**E. Antenna Specifications:**

For this application, the antenna was not connected.

**F. Modifications:**

No modifications were made during testing.

**G. Disposition of Test Sample:**

Celletra
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Yoque'am Ilit
ISRAEL

# III. RF Power Output Requirements

**Test Type:** RF Power Output

**Technical Specifications:** §2.1046 and §24.232(a), (c)

**Measurement Procedures:**

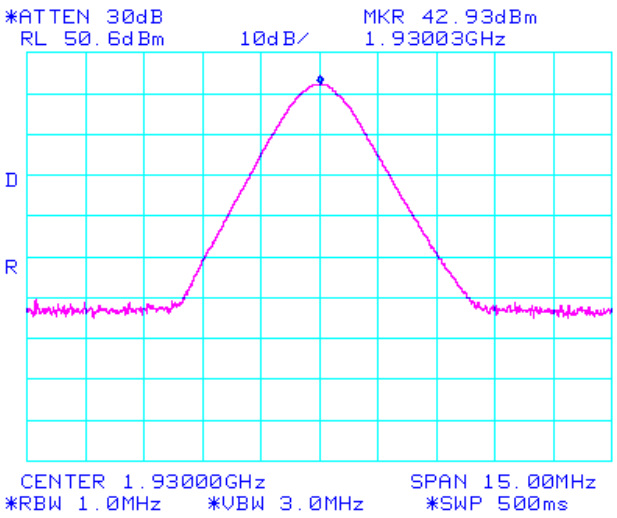
As required by 47 CFR 2.1046, *RF power output measurements* were made at the RF output terminals using an attenuator and spectrum analyzer. Plots of the RF output power level, as measured at the RF output terminals of the PCS LPA Amplifier, appear on the following pages.

**Results:**

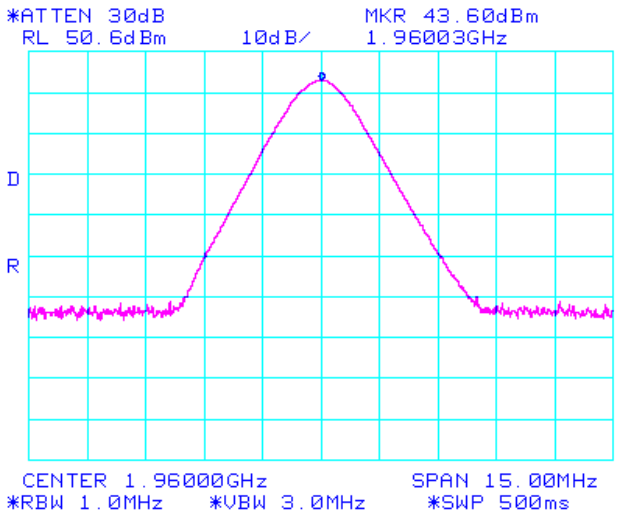
Equipment complies with 47CFR 2.1046 and 24.232(a), (c). The PCS LPA Amplifier conducted power does not exceed limit (100W/57dBm) at the carrier frequency.

All RF Power output measurements were conducted peak envelope power with instrument set RBW=1 or 2 MHz.

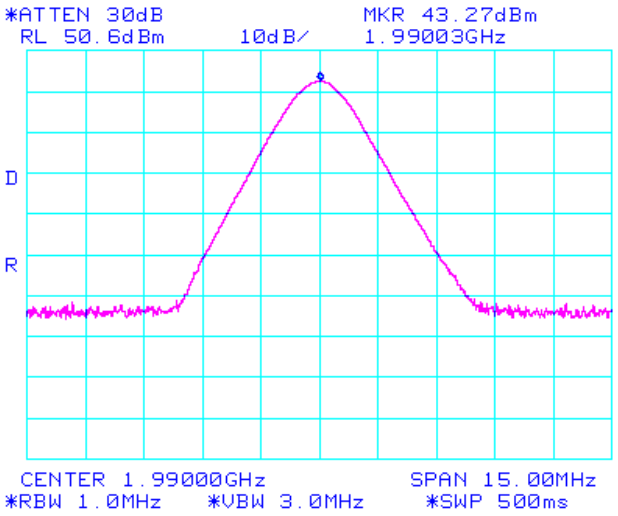
RF Power output at low channel Met12938



RF Power output at mid channel Met12938



RF Power output at high channel Met12938



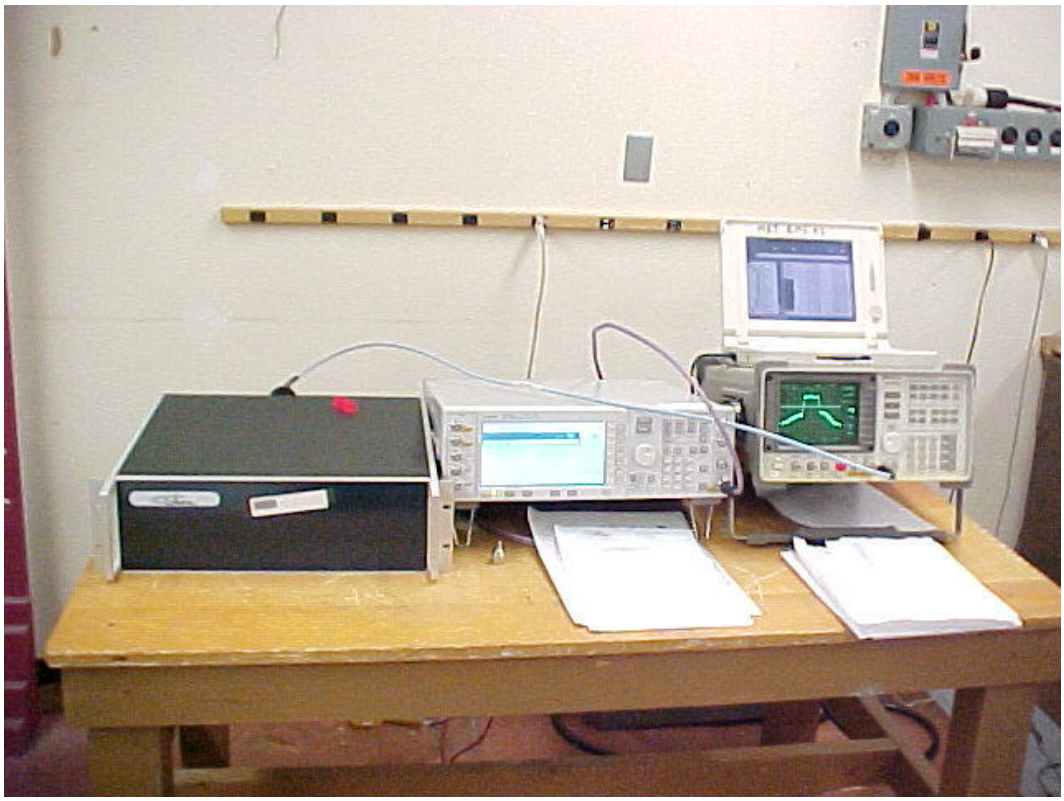


Figure 2. Photograph of Test Setup for Part 24 Tests

**Test Engineer:** Liming Xu

**Test Dates:** October 29, 2002

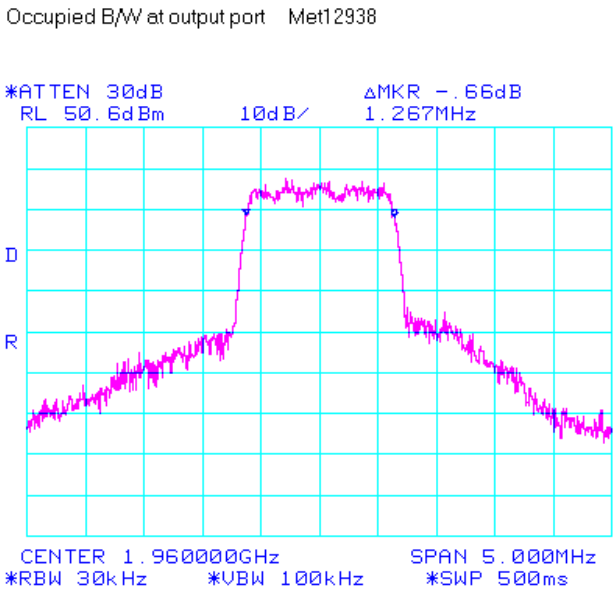
# IV. Occupied Bandwidth Requirements

**Test Type:** Occupied Bandwidth (Input vs. Output)

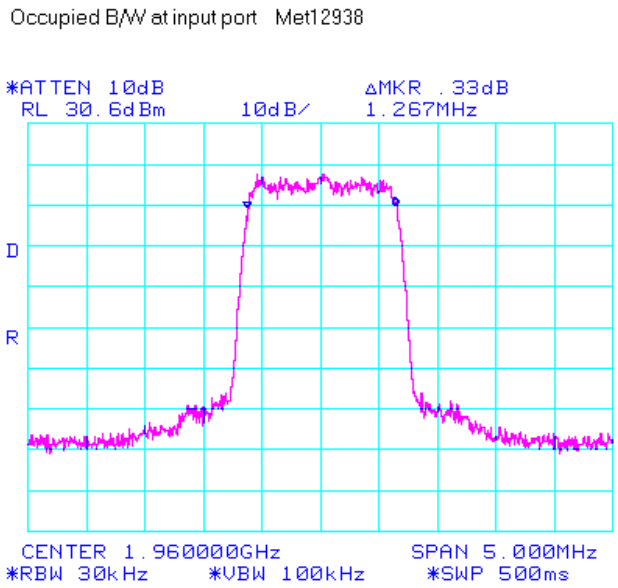
**Technical Specifications:** §2.1049

**Measurement Procedures:** As required by §2.1049 of CFR 47, *occupied bandwidth measurements* were made on the PCS LPA Amplifier. A digital signal generator was configured to transmit a PCS CDMA modulated carrier signal. Using a bandwidth of 30k Hz for CDMA (digital), we determined the occupied bandwidth of the emission at the center of the selectable channel range, or Input and Output side.

**Results:** Equipment complies with Section 2.1049. Plots of the occupied bandwidth, as measured at the PCS LPA Amplifier RF input port and at the antenna RF output port (post amplification) follow:






**Test Engineer:** Liming Xu

**Test Date:** October 29, 2002

# V. Emissions Requirements

## A. Spurious Emissions at Antenna Terminals (uplink)

**Technical Specifications:** §2.1051 and §24.238(a)

**Measurement Procedures:** As required by 47 CFR 2.1051, *spurious emissions at antenna terminal measurements* were made at the RF output terminals using a 50 dB attenuation and spectrum analyzer set for a 100 kHz bandwidth. The RBW of 100 kHz was used to investigate and search for spurious emissions; any spurs found with this technique are to be remeasured with the appropriate 1MHz RBW. This test was performed with Digitally modulated carrier signals, and the PCS LPA Amplifier/Digital signal generator was adjusted for continuous transmission on frequencies across the operating band/in both the uplink and downlink frequency bands. The frequency spectrum was investigated from 9.0 KHz to 9.0 GHz. For measuring emissions above 2 GHz, a high-pass filter was used to eliminate the fundamental transmit frequency to prevent possible saturation effects on the front end of the spectrum analyzer.

**Results:** **Spur limit = Po - (43 + 10logP) = -13.1 dBm**

Equipment complies with Section 2.1051 and 24.238(a). There were no detectable spurious emissions for this PCS LPA Amplifier.

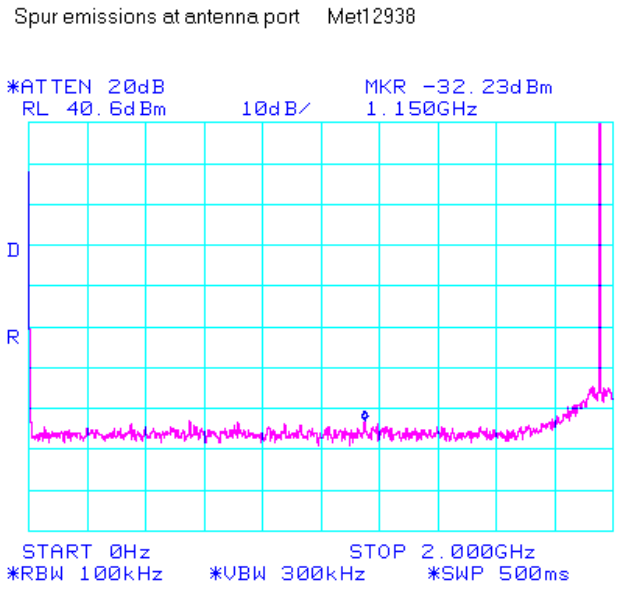
As recommended in 47 CFR 24.238(a), a 100 kHz bandwidth was chosen to measure the peak of any spurious emissions. The unit was exercised using signal types required by 47CFR 2.1051. Note, the signal at approximately 1945 MHz is the carrier signal and not a spurious emission. Spurious emissions for CDMA modulation type were measured.

**SUMMARY OF SPURIOUS EMISSIONS AT ANTENNA TERMINALS -Uplink**

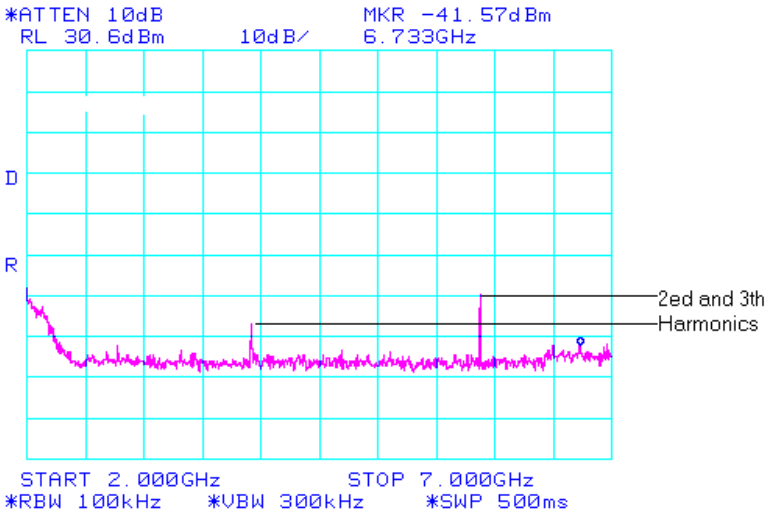
The following table and plots are included to illustrate compliance with the requirements of 47 CFR Part 24.238(a):

| Frequency Range | Emission Frequency | Emission Level (dBm) | Limit (dBm) |
|---|---|---|---|
| 0 Hz - 2.0 GHz | 1.15 GHz | -32.23 (noise floor) | -13.1 |
| 2.0 GHz - 7.0 GHz | 6.733 GHz | -41.57 (noise floor) | -13.1 |
| 7.0 GHz - 13.0 GHz | 9.80 GHz | -50.07 (noise floor) | -13.1 |
| 13.0 GHz - 20.0 GHz | 14.225 GHz | -48.07 (noise floor) | -13.1 |

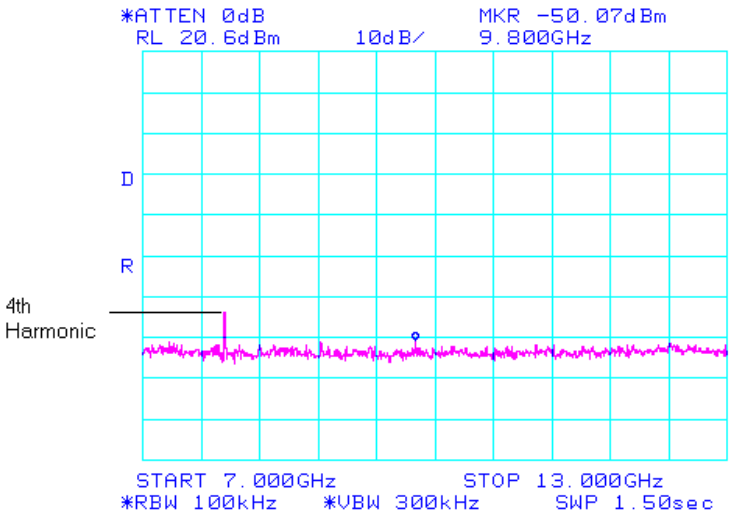
**Table 4. Spurious Emissions Measurements (antenna terminals-Uplink)**



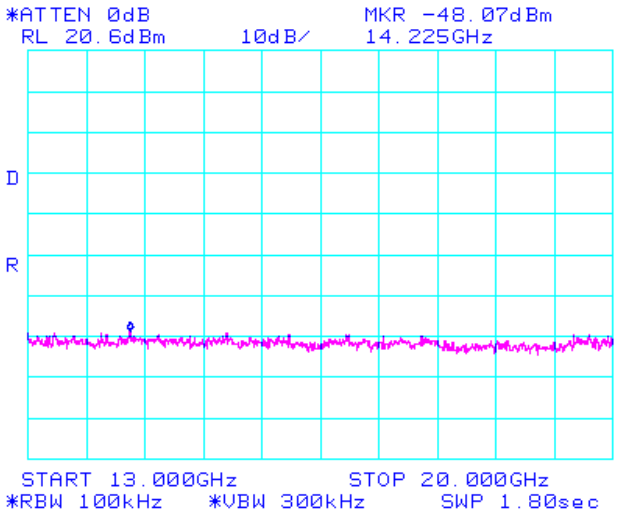
Spur emissions at antenna port Met12938



Spur emissions at antenna port Met12938



Spur emissions at antenna port Met12938




**Test Engineer:** Liming Xu

**Test Date:** October 29, 2002

**B. Intermodulation Spurious Emissions at Antenna Terminals (Uplink & Downlink)**

**Technical Specifications:** §2.1051 and §24.238(b)

**Measurement Procedures:** N/A

**Results:** This test procedure is not applicable to this device due to single channel operation.

**Test Engineer:** Liming Xu

**Test Date:** October 29, 2002

## C. Radiated Emissions

**Technical Specifications:** **§2.1053 and §24.238(a)**

**Measurement Procedures:** As required by §2.1053, *field strength of spurious radiation measurements* were made in accordance with the general procedures of ANSI C63.4-1992 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". Preliminary radiated emission measurements were performed inside a shielded chamber with all digital signal generators on and terminated. The frequency list from the preliminary measurements was used as a guide for making final measurements in a 3 meter semi-anechoic chamber (equivalent to an Open Area Test Site). The unit was scanned over the frequency range of the lowest system oscillator value to 20 GHz.

The Radiated Spurious Emissions *Limit* is obtained by the following:

Based on an output power (as measured at the output of the Amplifier) of 20 watts:

$$P_o = 20W$$

the radiated power level of all spurious emissions must be attenuated by at least 43 + 10log(Po) below Po, yielding:

$$Po-[43 + 10Log(Po) = -13dBm$$

**Results:**

All of the measurable radiated emissions are related to the digital device portion of the PCS LPA Amplifier , and thus are compared to the 47CFR 15 Class B field strength limit. Mathematical calculations indicate that these field strengths yield radiated power levels greater than 30 dB below the -13 dBm limit for spurious emissions from the transmitter portion of the PCS LPA Amplifier calculated above. There were no observable radiated emissions from the transmitter portion of the PCS LPA Amplifier.

The Spurious Radiated Emissions were measured from 1GHz to 20 Ghz for the PCS LPA Amplifier. There were no detectable spurious emissions in that frequency range. The device complies with 47 CFR 2.1053; 24.238(a).

# VI. Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ANSI/NCSL Z540-1-1994 and ANSI/ISO/IEC 17025:2000.

| MET # | Equipment | Manufacturer | Model | Cal Date | Cal Due |
|---|---|---|---|---|---|
| 1T4300 | SEMI-ANECHOIC CHAMBER # 1 | EMC TEST SYSTEMS | NONE | 08/21/2002 | 08/21/2003 |
| 1T4303 | ANTENNA; BILOG | SCHAFNER - CHASE EMC | CBL6140A | 03/27/2002 | 03/27/2003 |
| 1T4302 | EMI RECEVER | HEWLETT PACKARD | 85462A | 09/17/2002 | 09/17/2003 |
| 1T4299 | GENERATOR; SIGNAL | HEWLETT PACKARD | E4431B | 05/13/2002 | 05/13/2003 |

**Table 5. Test Equipment List**

# VII. Certification Label & User's Manual Information

# A. Certification Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

## § 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

(a) The various types of radio communication transmitting devices described throughout this chapter.

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

(c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.

(d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

## § 2.803 Marketing of radio frequency devices prior to equipment authorization.

(a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:

(1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or

(2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

(d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

(e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:

(i) Compliance testing;

(ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or

(v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.

(e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.

(f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

**The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — Equipment Authorization Procedures:**

**§ 2.901 Basis and Purpose**

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service

wherein the equipment is to be operated.[1] In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, or the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant, whichever is applicable.

[1]In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart C (of Part 15), which deals with intentional radiators.

**§ 2.907 Certification.**

A. Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

**§ 2.948 Description of measurement facilities.**

(a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

**B. Label and User's Manual Information**

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

**§ 15.19 Labeling requirements.**

(a) In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:

(ii Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this

device does not cause harmful interference.

(ii A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

(ii All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

(5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

**§ 15.21 Information to user.**

The users manual or instruction manual for an intentional or unintentional 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. The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — Unintentional Radiators:

**§ 15.105 Information to the user.**

(a) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

# End of Report