



## **TEST REPORT FOR CERTIFICATION**

**Test Report:** 2005 050777-FCC  
**FCC ID:** SELTSM102

**Equipment Under Test:** Single Band Mobile Phone  
**Model:** CV111-VTL102

**Applicant:** VITELCOM MOBILE TECHNOLOGY U.S.A.  
2480 Irvine Boulevard #172  
Tustin, California 92782  
714.389.1169

**In Accordance With:** FCC Part 22, Subpart H

**Tested By:** Nemko USA Inc.  
11696 Sorrento Valley Road  
San Diego, CA 92121-1024

**Date:** September 21, 2005

**Total Number of Pages:** 32

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## Section 1. Summary of Test Results

### General:

**All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22.

### DOCUMENT HISTORY

| REVISION | DATE               | COMMENTS                   |
|----------|--------------------|----------------------------|
| -        | September 21, 2005 | Prepared By: A. Laudani    |
| -        | September 21, 2005 | Initial Release: C. Fleury |
|          | January 26, 2006   | Prepared By: A. Laudani    |

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4 (1992) "Methods and Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz":

- o The unit described in this report was received at Nemko USA, Inc.'s facilities on **March 7, 2005** . Testing was performed on the unit described in this report on **March 7, 2005** to March 7, 2005 .
- o Retest for Revision A occurred for conducted RF power and frequency stability May 3, 2005.
- o The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- o This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

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## **CERTIFICATION**

Nemko USA, Inc., an independent Electromagnetic Compatibility (EMC) Test Laboratory, produced this Test Report and performed the Radio Frequency Interference (RFI) testing and data evaluation contained herein.

Nemko USA, Inc.'s measurement facility is currently registered with the United States Federal Communications Commission (FCC) in accordance with the provisions of 47 United States Code (CFR) Part 2, Subpart I, Section 2.948(a). A current description of Nemko USA, Inc.'s measurement facility is on file with the FCC. Nemko USA Inc. has additionally satisfied the FCC that it complies with the requirements set forth in 47 CFR Part 2, Subpart I, Section 2.948(d) regarding the accreditation of EMC laboratories. As a result, the FCC has placed Nemko USA Inc. on its list of EMC laboratories approved to perform Declaration of Conformity (DOC) procedure testing.

The RFI testing, test data collection and test data evaluation were accomplished in accordance with the ANSI C63.4:2001 Standard, and in accordance with the applicable sections of the FCC rules (47 CFR Parts 2 and 18)." digital devices. The testing was also accomplished in accordance with Industry Canada's ICES-003 standard for unintentional radiating device per EMCAB-3, Issue 3 (May 1998). The administrative summary of this test report provides a description of the test sample

I hereby certify that the test data, test data evaluation, and equipment configurations used to compile this test report are a true and accurate representation of the test sample's radio frequency interference characteristics as of the test date(s), and, for the design of the test sample.

*Chip Fleury*

Chip Fleury, Frontline manager

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**Summary Of Test Data**

| <b>Name Of Test</b>                     | <b>Para. No.</b> | <b>Result</b>   |
|-----------------------------------------|------------------|-----------------|
| RF Power Output                         | 2.1046           | Complies        |
| Audio Frequency Response                | 2.1047           | NA <sup>1</sup> |
| Audio Low Pass Filter Response          | 2.1047           | NA <sup>1</sup> |
| Modulation Limiting                     | 2.1047           | NA <sup>1</sup> |
| Occupied Bandwidth (WB Data )           | 2.1049           | Complies        |
| Spurious Emissions at Antenna Terminals | 2.1051           | Complies        |
| Field Strength of Spurious Emissions    | 2.1053           | Complies        |
| Frequency Stability                     | 2.1055           | Complies        |

Footnotes For N/A's: <sup>1</sup> Digital Modulation

## **Section 2. General Equipment Specification**

|                              |                                          |
|------------------------------|------------------------------------------|
| Manufacturer:                | <b>VITELCOM MOBILE TECHNOLOGY U.S.A.</b> |
| Model No.:                   | <b>CV111-VTL102</b>                      |
| Serial No.:                  | N/A                                      |
| Antenna Model:               | FR01-B1-CK-0-036                         |
| Date Received In Laboratory: | <b>September 19, 2005</b>                |
| Nemko Identification No.:    | 25-777-VIT                               |
| Frequency Ranges:            | 824.7 – 848.31 MHz                       |
| RF Output (Limit):           | Part 22: 7 Watts                         |
| RF Output (Measured):        | Part 22: 0.17 Watts                      |
| Emission Designators:        | 1M28F9W                                  |
| FCC Identifier:              | SELTSM102                                |



### Section 3. RF Power Output

Para. No.: 2.1046

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Test Performed By:</b> A. Laudani | <b>Date of Test:</b> 9-19-05 |
|--------------------------------------|------------------------------|

**Minimum Standard:** Para. 22.913(a). The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

Radiated RF Power

**Test Results:** Complies, see tables below.

#### Measurement Data:

Radiated

| Modulation | Frequency (MHz) | Measured (dBm) | Substituted Result (dBm) | Substituted Result Watts |
|------------|-----------------|----------------|--------------------------|--------------------------|
| CDMA       | 824.70          | 28.9           | 23.6                     | 0.23                     |
|            | 836.49          | 30.2           | 22.1                     | 0.16                     |
|            | 848.31          | 31.6           | 23.9                     | 0.26                     |



NEMKO USA, Inc.

## Substitution Method For Radiated Emissions

Job # : 25-777-VIT Test # : 2  
 Page 1 of 1

Client Name : VITELCOM MOBILE TECHNOLOGY U.S.A.  
 EUT Name : CDMA 800 Cellular Phone  
 EUT Model # : CV111-VTL102  
 EUT Part # :  
 EUT Serial # :  
 EUT Config. :  
 CDMA TX  
 Specification : FCC Part 22  
 Rod. Ant. # : NA Temp. (deg. C) : 19  
 Bicon Ant. # : NA Humidity (%) : 73  
 Log Ant. # : 112 EUT Voltage : na  
 DRG Ant. # : 529 EUT Frequency : dc  
 Dipole Ant. # : NA Phase : na  
 Cable# : 60ft Location : RN#: 90579  
 Preamp# : 842 Distance : 3m  
 Spec An. # : 835  
 Reference :  
 Date : 9/19/2005  
 Time :  
 Staff : A. Laudani  
 Photo ID :  
 Peak Bandwidth: RBW-1MHz, VBW-1MHz

| Frequency<br>mHz | target<br>level<br>dBuV/m | Dipole<br>Gain<br>dBi | cable<br>loss<br>dB | Signal<br>Generator<br>dBm | Total<br>(EIRP)<br>dBm | Spec<br>dBm | Margin<br>dBm |
|------------------|---------------------------|-----------------------|---------------------|----------------------------|------------------------|-------------|---------------|
| 824.70           | 95.39                     | 0                     | 4.94                | 27.73                      | 23.6                   | 38.5        | -14.9         |
| 836.49           | 95.15                     | 0                     | 5.01                | 27.49                      | 22.1                   | 38.5        | -16.4         |
| 848.37           | 96.69                     | 0                     | 5.11                | 29.03                      | 23.9                   | 38.5        | -14.6         |

| Frequency<br>mHz | target<br>level<br>dBuV/m | Horn<br>Gain<br>dBi | cable<br>loss<br>dB | Signal<br>Generator<br>dBm | Total<br>(EIRP)<br>dBm | Spec<br>dBm | Margin<br>dBm |
|------------------|---------------------------|---------------------|---------------------|----------------------------|------------------------|-------------|---------------|
| 1649.4           | 71.74                     | 5.37                | 0.65                | -39.86                     | -35.1                  | -13.0       | -22.1         |
| 1672.98          | 72.59                     | 5.41                | 0.65                | -39.01                     | -34.3                  | -13.0       | -21.3         |
| 1695.62          | 72.93                     | 5.43                | 0.65                | -38.67                     | -33.9                  | -13.0       | -20.9         |
| 2544.93          | 62.57                     | 6.98                | 1.7                 | -42.83                     | -37.5                  | -13.0       | -24.5         |



## Radiated Emissions Data

Job #: 25-777-VIT      Test #: 1  
 Page 1      of 1

Client Name : VITELCOM MOBILE TECHNOLOGY U.S.A.  
 EUT Name : CDMA 800 Cellular Phone  
 EUT Model #: CV111-VTL102  
 EUT Part # :  
 EUT Serial # :  
 EUT Config. :  
 CDMA TX  
 Specification : FCC Part 22  
 Rod. Ant. #: na      Temp. (deg. C) : 19  
 Bicon Ant. #: NA      Humidity (%) : 73  
 Log Ant. #: 110      EUT Voltage : NA  
 DRG Ant. #: 529      EUT Frequency : NA  
 Dipole Ant. #: NA      Phase: NA  
 Cable#: 40Ft      Location: RN#: 90579  
 Preamp#: 842      Distance: 3m  
 Spec An. #: 835  
 QP #: NA  
 PreSelect#: NA

Reference :  
 Date : 9/19/05  
 Time : 10:30 AM  
 Staff : A. Laudani  
 Photo ID:  
 Peak Bandwidth: 1 MHz  
 Video Bandwidth 1 MHz

| Meas. Freq. (MHz) | Vertical (dBuV) pk | Horizontal (dBuV) pk | CF (db) | Max Level (dBm) pk | Spec. Limit (ERP) (dBm) pk | Margin dB pk | EUT Rotation | Ant. Height | Pass Fail Unc. | Comment |
|-------------------|--------------------|----------------------|---------|--------------------|----------------------------|--------------|--------------|-------------|----------------|---------|
| 824.7             | 95.23              | 89.30                | 30.9    | 28.9               |                            |              | 70           | 1.4         |                |         |
| 1649.4            | 71.74              | 62.60                | -3.5    | -29.0              | -13.0                      | -16.0        |              | 1.4         | PASS           |         |
| 2474.1            | 60.98              | 61.77                | 1.1     | -34.4              | -13.0                      | -21.4        |              | 1.0         | PASS           |         |
| 3298.8            | 57.70              | 57.13                | -9.8    | -49.4              | -13.0                      | -36.4        |              | 1.0         | PASS           |         |
| 4123.5            | 49.82              | 50.45                | -5.0    | -51.8              | -13.0                      | -38.8        |              |             | PASS           | NS, NF  |
| 4948.2            | 50.76              | 50.60                | -5.4    | -51.9              | -13.0                      | -38.9        |              |             | PASS           | NS, NF  |
| 5772.9            | 49.03              | 48.64                | -0.8    | -49.0              | -13.0                      | -36.0        |              |             | PASS           | NS, NF  |
| 6597.6            | 48.39              | 48.95                | 0.7     | -47.6              | -13.0                      | -34.6        |              |             | PASS           | NS, NF  |
| 7422.3            | 48.34              | 47.37                | 3.3     | -45.6              | -13.0                      | -32.6        |              |             | PASS           | NS, NF  |
| 8247              | 47.22              | 47.69                | 5.6     | -44.0              | -13.0                      | -31.0        |              |             | PASS           | NS, NF  |
| 836.49            | 96.78              | 90.87                | 30.7    | 30.2               |                            |              | 70           | 1.4         |                |         |
| 1672.98           | 72.59              | 63.96                | -3.5    | -28.2              | -13.0                      | -15.2        |              | 1.4         | PASS           |         |
| 2509.47           | 61.26              | 56.35                | 2.0     | -34.0              | -13.0                      | -21.0        |              | 1.0         | PASS           |         |
| 3345.96           | 53.23              | 54.88                | -9.8    | -52.2              | -13.0                      | -39.2        |              | 1.0         | PASS           |         |
| 4182.45           | 48.22              | 48.12                | -5.0    | -54.0              | -13.0                      | -41.0        |              |             | PASS           | NS, NF  |
| 5018.94           | 49.36              | 49.46                | -1.6    | -49.4              | -13.0                      | -36.4        |              |             | PASS           | NS, NF  |
| 5855.43           | 48.94              | 47.47                | -0.8    | -49.1              | -13.0                      | -36.1        |              |             | PASS           | NS, NF  |
| 6691.92           | 47.99              | 47.07                | 0.7     | -48.6              | -13.0                      | -35.6        |              |             | PASS           | NS, NF  |
| 7528.41           | 47.10              | 47.92                | 4.5     | -44.8              | -13.0                      | -31.8        |              |             | PASS           | NS, NF  |
| 8364.90           | 47.49              | 47.66                | 5.6     | -44.0              | -13.0                      | -31.0        |              |             | PASS           | NS, NF  |
| 848.31            | 97.83              | 90.45                | 31.0    | 31.6               |                            |              | 70           |             | PASS           |         |
| 1696.62           | 72.93              | 64.32                | -3.5    | -27.8              | -13.0                      | -14.8        |              | 1.1         | PASS           |         |
| 2544.93           | 62.57              | 58.46                | 2.0     | -32.7              | -13.0                      | -19.7        |              | 1.0         | PASS           |         |
| 3393.24           | 55.49              | 56.69                | -9.8    | -50.4              | -13.0                      | -37.4        |              | 1.0         | PASS           |         |
| 4241.55           | 51.51              | 50.42                | -5.0    | -50.7              | -13.0                      | -37.7        |              | 1.0         | PASS           |         |
| 5089.86           | 50.48              | 50.69                | -1.6    | -48.1              | -13.0                      | -35.1        |              |             | PASS           | NS, NF  |
| 5938.17           | 48.30              | 47.40                | -0.8    | -49.7              | -13.0                      | -36.7        |              |             | PASS           | NS, NF  |
| 6786.48           | 47.81              | 47.40                | 0.7     | -48.8              | -13.0                      | -35.8        |              |             | PASS           | NS, NF  |
| 7634.79           | 47.05              | 47.15                | 4.5     | -45.6              | -13.0                      | -32.6        |              |             | PASS           | NS, NF  |
| 8483.10           | 46.74              | 46.74                | 5.6     | -45.0              | -13.0                      | -32.0        |              |             | PASS           | NS, NF  |

NS = Not seen, even at a lower RBW

NF = Noise Floor measurement.

---

Conducted ERP**Test Performed By:** A. Laudani**Date of Test:** 1-25-06

| <b>Modulation</b> | <b>Frequency<br/>(MHz)</b> | <b>Measured<br/>(dBm)</b> | <b>Gain<br/>(dB)</b> | <b>ERP<br/>(dBm)</b> | <b>Result<br/>Watts</b> |
|-------------------|----------------------------|---------------------------|----------------------|----------------------|-------------------------|
| CDMA              | 824.70                     | 24.5                      | -4.5                 | 20.0                 | 0.10                    |
|                   | 836.52                     | 24.4                      | -2.7                 | 21.7                 | 0.15                    |
|                   | 848.30                     | 24.4                      | -2.1                 | 22.3                 | 0.17                    |

ERP = Measured + Antenna Gain

Gain: see Antenna Specification FR01-B1-CK-0-036 Rev. A

Conducted measurements using Booton Power Meter #887, 888

## **Section 4.        Audio Frequency Response**

**Para. No.: 2.1047**

|                           |                      |
|---------------------------|----------------------|
| <b>Test Performed By:</b> | <b>Date of Test:</b> |
|---------------------------|----------------------|

**Minimum Standard:**        Para. No. 15-19-B.

**Test Results:**                Not Applicable, digital modulation

**Measurement Data:**

**Section 5.            Audio Low-Pass Filter Response****Para. No.: 2.1047**

|                           |                      |
|---------------------------|----------------------|
| <b>Test Performed By:</b> | <b>Date of Test:</b> |
|---------------------------|----------------------|

**Minimum Standard:**            Para. No. 22.915 (d).**Test Results:**                    Not Applicable, digital modulation**Measurement Data:**

d) Audio filter characteristics. Except as provided in Sec. 22.917, radiotelephony signals applied to the modulator from the modulation limiter must be attenuated as a function of frequency as specified in this paragraph.

(1) For mobile stations, these signals must be attenuated, relative to the level at 1 kHz, as follows:

- (i) In the frequency ranges of 3.0 to 5.9 kHz and 6.1 to 15.0 kHz, signals must be attenuated by at least  $40 \log(f/3)$  dB, where  $f$  is the frequency of the signal in kHz.
- (ii) In the frequency range of 5.9 to 6.1 kHz, signals must be attenuated at least 35 dB.
- (iii) In the frequency range above 15 kHz, signals must be attenuated at least 28 dB.

**Section 6. Modulation Limiting****Para. No.: 2.1047**

|                           |                      |
|---------------------------|----------------------|
| <b>Test Performed By:</b> | <b>Date of Test:</b> |
|---------------------------|----------------------|

**Minimum Standard:** 22.915(b)**Test Results:** Not Applicable, digital modulation**Measurement Data:**SAT Deviation:  
WB Data Deviation:  
ST Deviation:

**Section 7.                      Occupied Bandwidth****Para. No.: 2.1049**

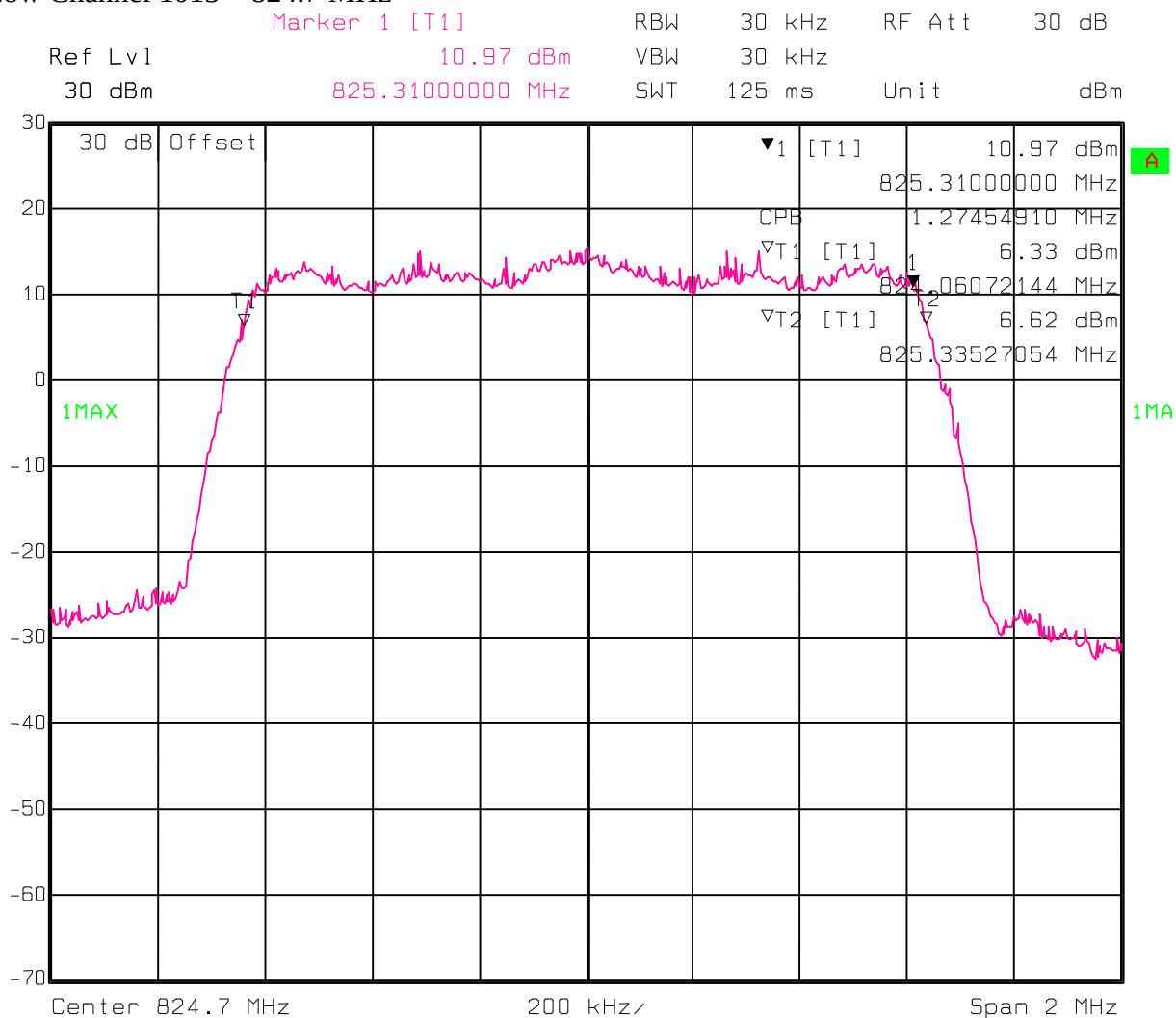
|                                      |                               |
|--------------------------------------|-------------------------------|
| <b>Test Performed By: A. Laudani</b> | <b>Date of Test: 10-17-05</b> |
|--------------------------------------|-------------------------------|

**Minimum Standard:** 22.917(d)

**Test Results:**            Low Channel – 1.27 MHz  
                                 Mid Channel – 1.28 MHz  
                                 High Channel – 1.28 MHz

**Test Data:**                      See plots below.

Low Channel 1013 – 824.7 MHz

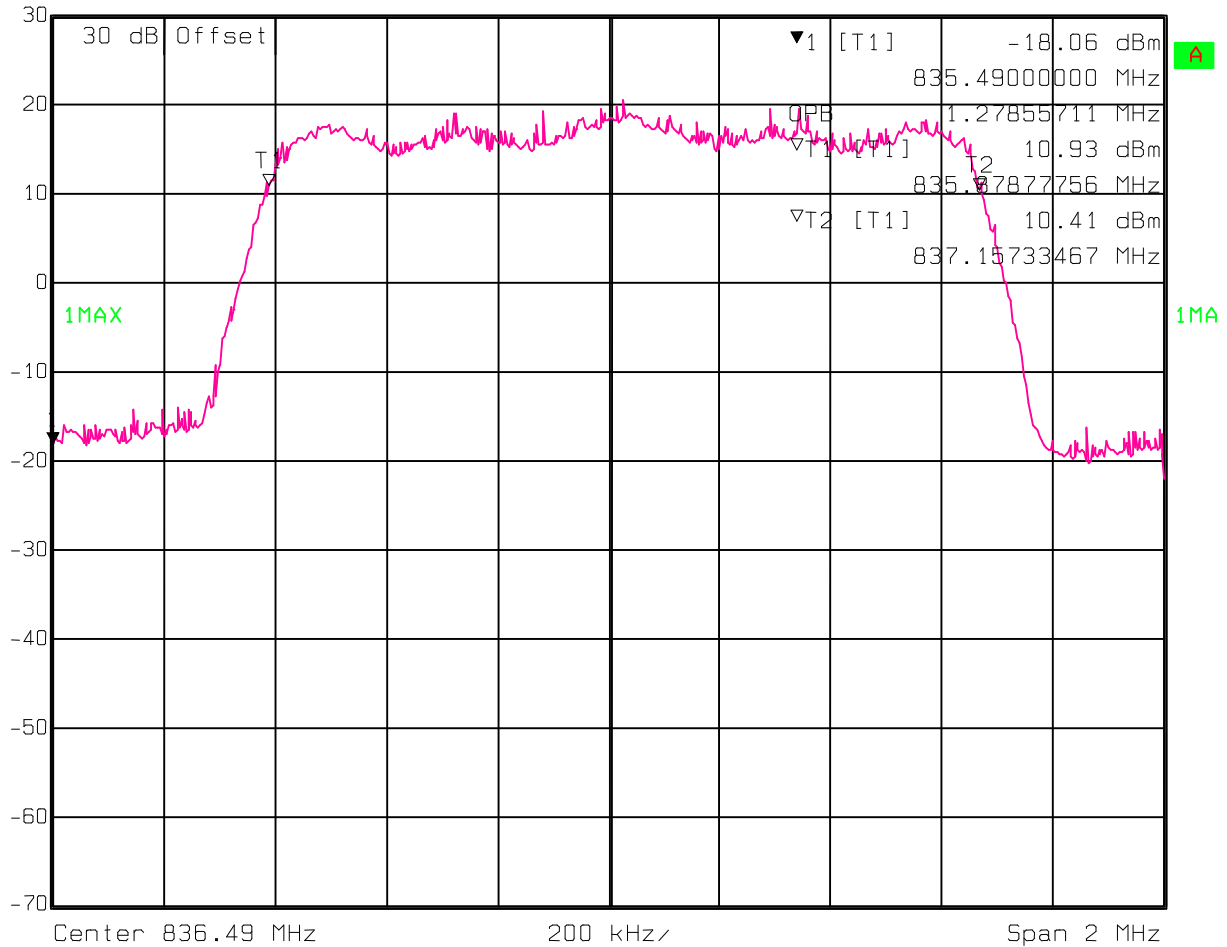


Date: 17.OCT.2005 14:47:47



Mid Channel 834 --- 836.49 MHz

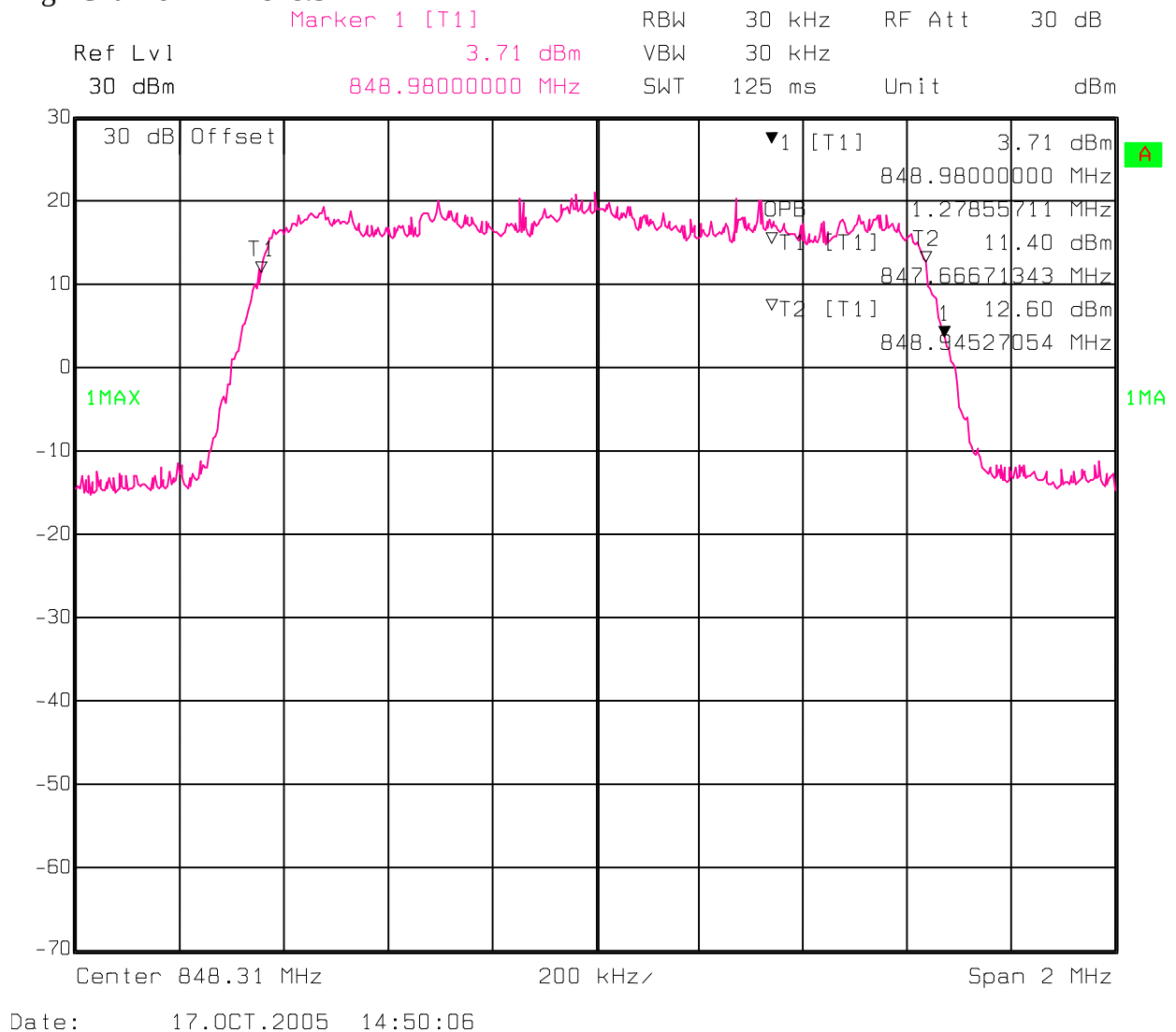
Marker 1 [T1] RBW 30 kHz RF Att 30 dB  
Ref Lvl -18.06 dBm VBW 30 kHz  
30 dBm 835.49000000 MHz SWT 125 ms Unit dBm



Date: 17.OCT.2005 14:48:41



High Channel 777 – 848.37 MHz



## **Section 8.           Spurious Emissions At Antenna Terminals**

**Para. No.: 2.1051**

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| <b>Test Performed By:</b> A. Laudani | <b>Date of Test:</b> 9-19-05/10-1-05 |
|--------------------------------------|--------------------------------------|

**Minimum Standard:**           Para. No. 22.917(b).

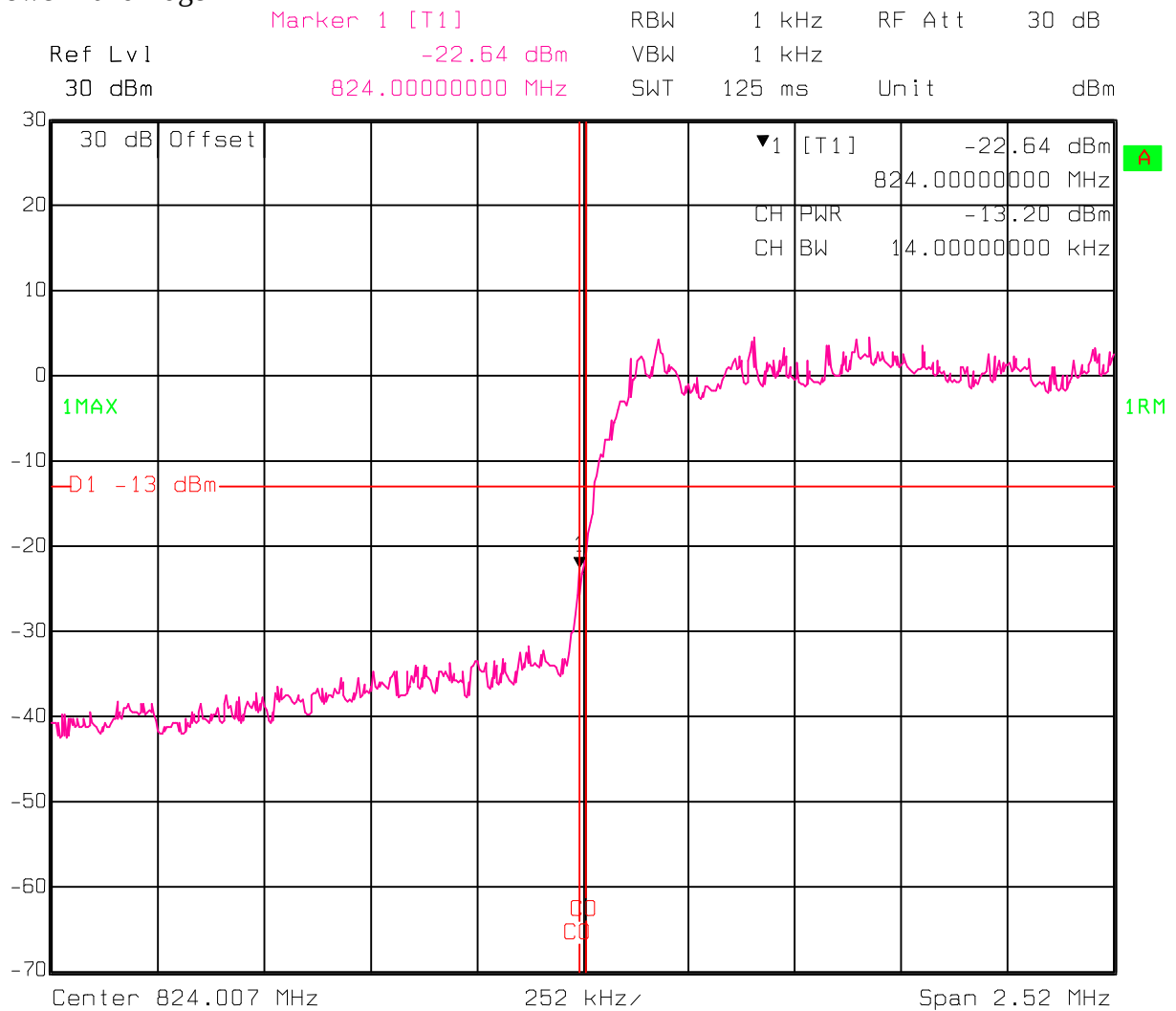
**Test Results:**                   From 30 MHz to 10 times the transmit frequency or 9000 MHz,

Bandedge measurements (pages 22-25) show compliance.  
Out of band Spurious (pages 26-28) show compliance.  
No Emissions within 20 dB of the Limit were found.

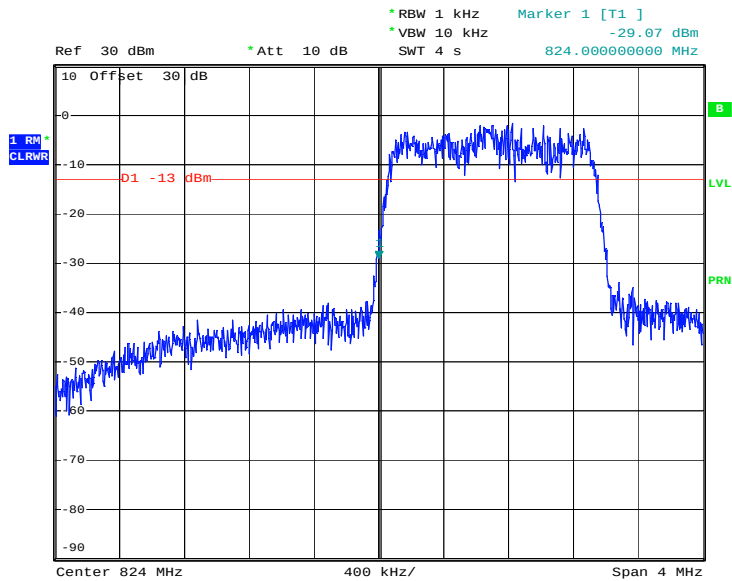
**Test Data:**                    See plots below.



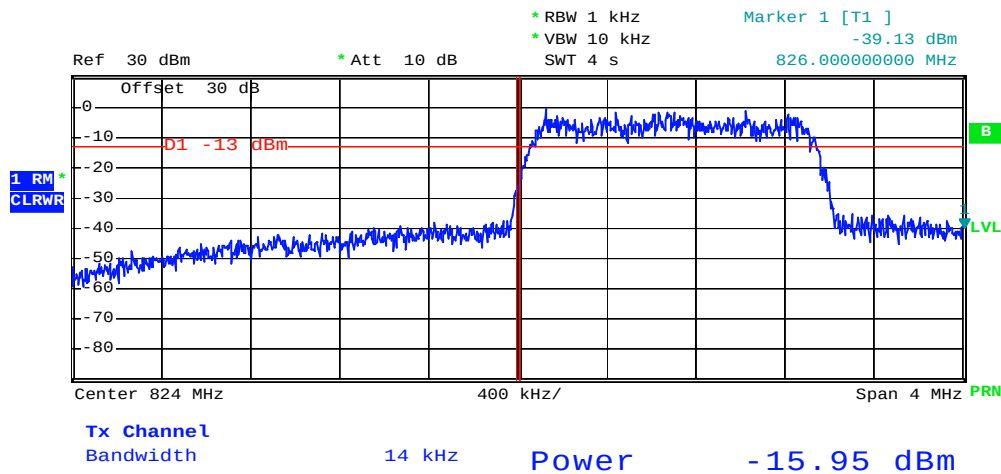
Lower Band Edge



Date: 17.OCT.2005 14:55:17



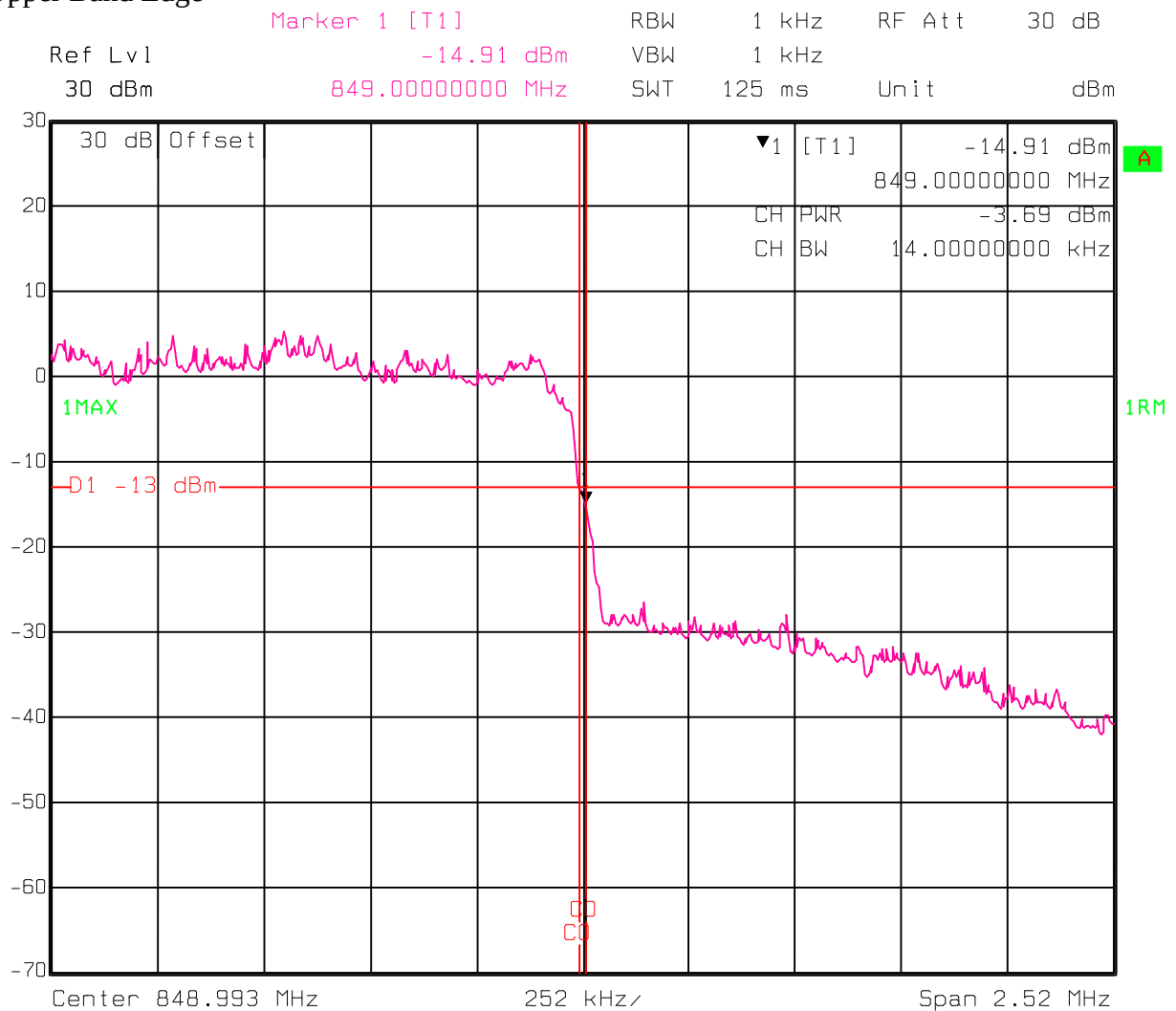
Date: 3.OCT.2005 16:05:16



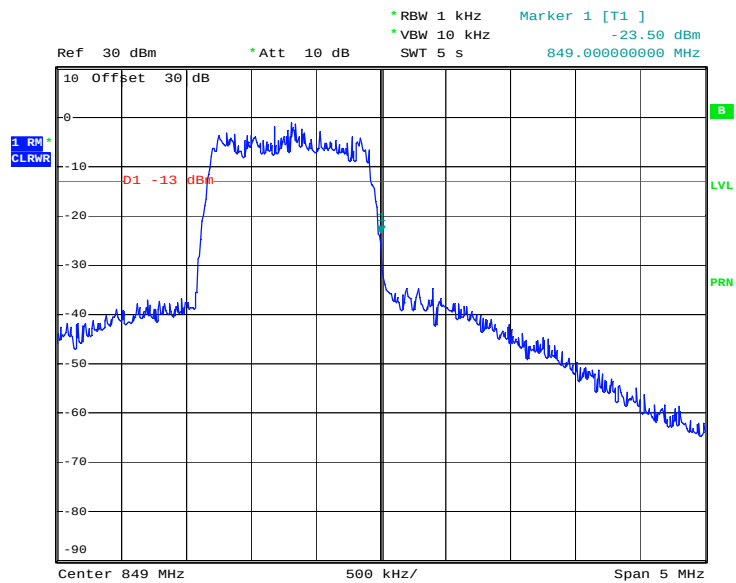
Date: 3.OCT.2005 16:04:25



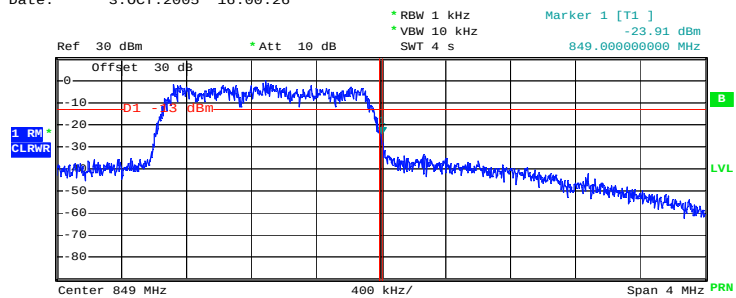
### Upper Band Edge



Date: 17.OCT.2005 14:54:08



Date: 3.OCT.2005 16:00:26

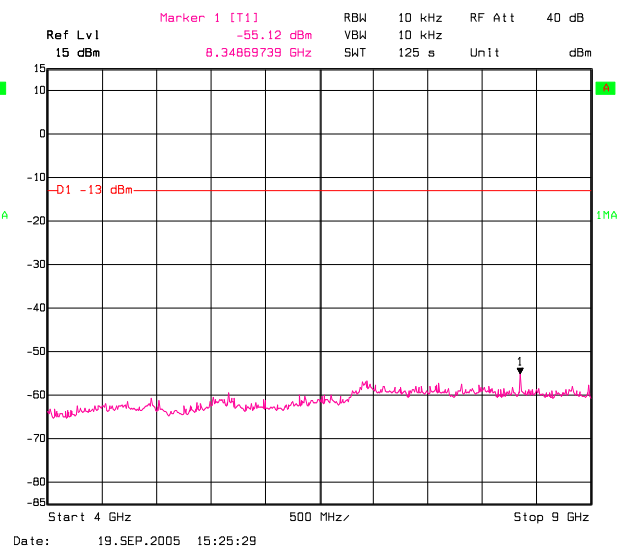
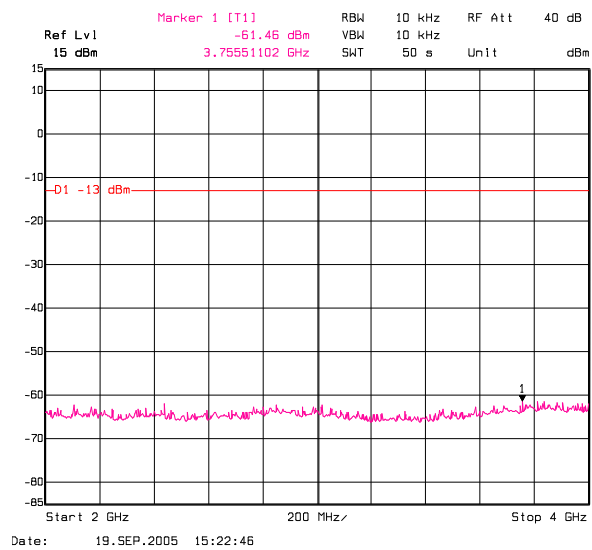
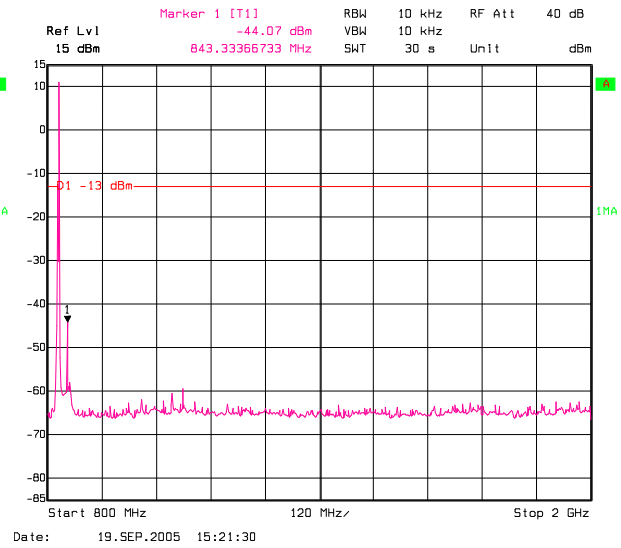
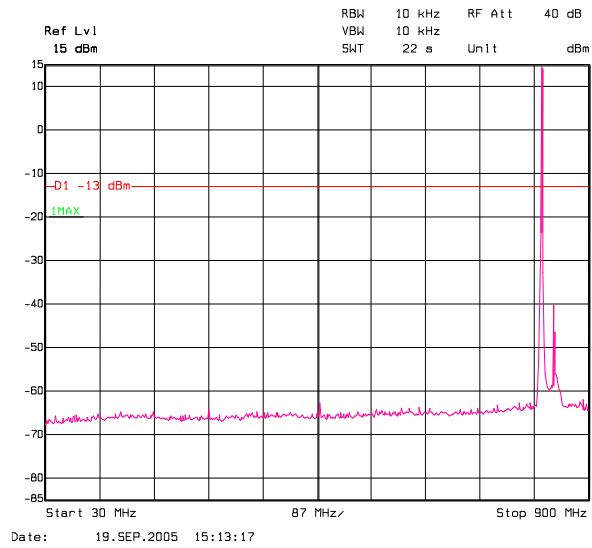


Tx Channel  
Bandwidth 14 kHz Power -12.54 dBm

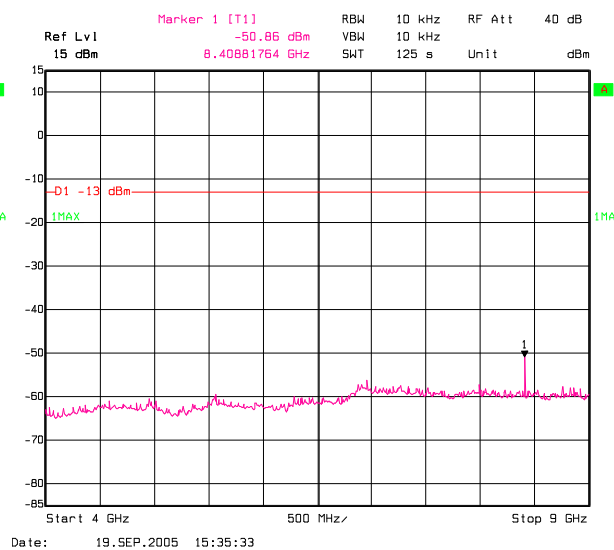
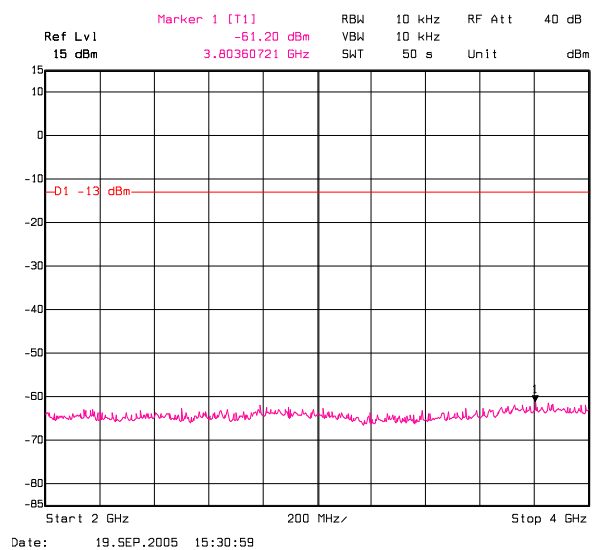
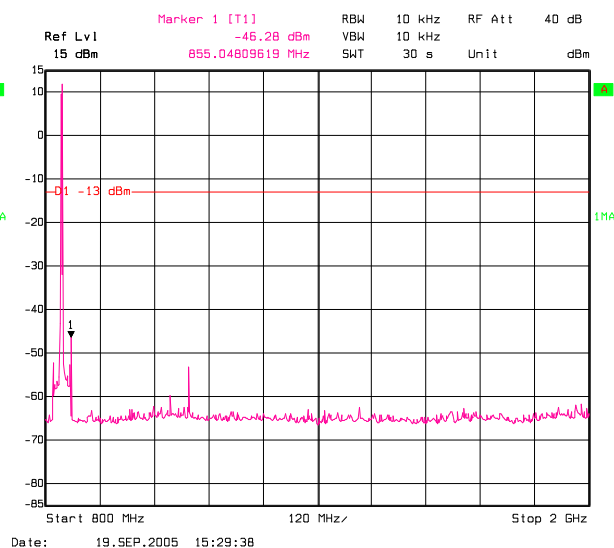
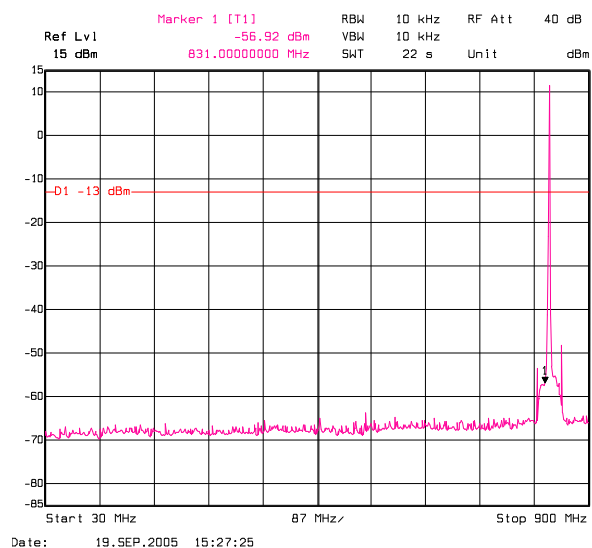
Date: 3.OCT.2005 16:03:12



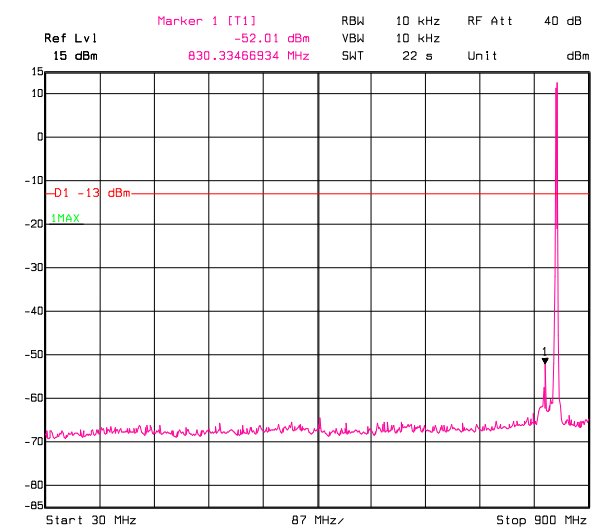
Low Channel: 824.7 MHz -- No emissions within 20 dB of the Limit



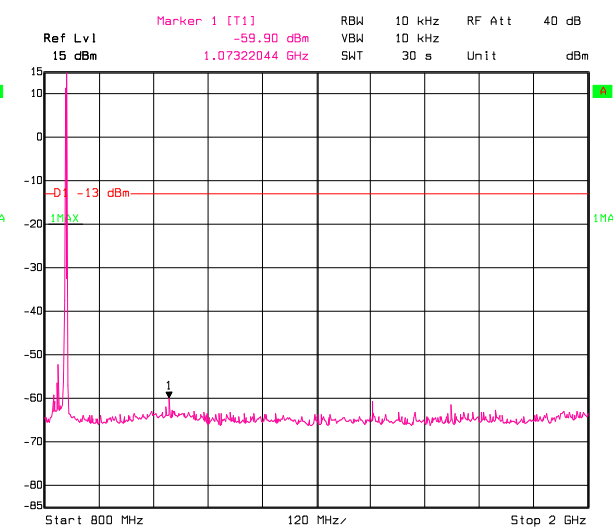
MID Channel: 836.49 MHz -- No emissions within 20 dB of the Limit



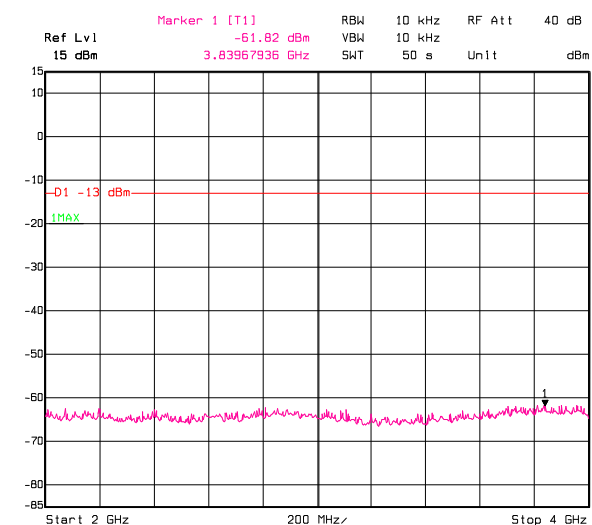
## High Channel: 848.3 MHz -- No emissions within 20 dB of the Limit



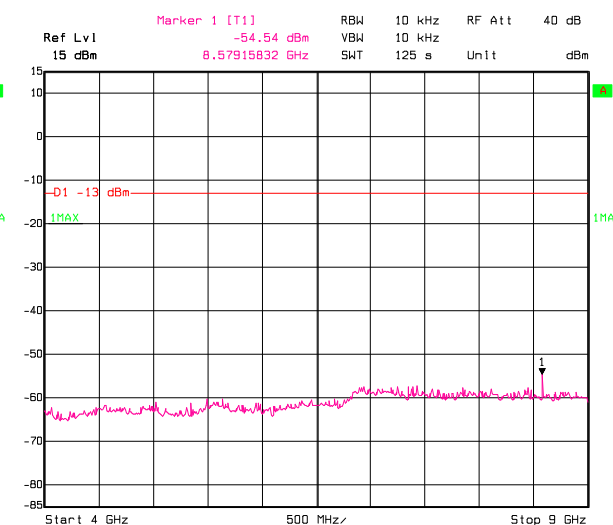
Date: 19.SEP.2005 15:43:46



Date: 19.SEP.2005 15:45:01



Date: 19.SEP.2005 15:46:19



Date: 19.SEP.2005 15:48:53

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**Section 9. Field Strength of Spurious****Para. No.: 2.1053**

|                                        |                                |
|----------------------------------------|--------------------------------|
| <b>Test Performed By:</b> Alan Laudani | <b>Date of Test:</b> 9-19-2005 |
|----------------------------------------|--------------------------------|

**Minimum Standard:** Para. No. 22.917(b).**Test Results:**

The maximum spurious field strength in CDMA mode is 14.8 dB below the limit @ 1696.32 MHz  
Signal Substitution was performed which resulted in a margin below the limit of 20.9 dB.

**Test Data:** See attached tables.



## Radiated Emissions

Job # : 25-777-VIT      Test # : 1  
Page 1      of 1

Client Name : VITELCOM MOBILE TECHNOLOGY U.S.A.  
EUT Name : CDMA 800 Cellular Phone  
EUT Model # : CV111-VTL102  
EUT Part # :  
EUT Serial # :  
EUT Config. :

CDMA TX

Specification : FCC Part 22

Rod. Ant. # : na      Temp. (deg. C) : 19  
Bicon Ant. # : NA      Humidity (%) : 73  
Log Ant. # : 110      EUT Voltage : NA  
DRG Ant. # : 529      EUT Frequency : NA  
Dipole Ant. # : NA      Phase : NA  
Cable # : 40Ft      Location : RN#: 90579  
Preamp # : 842      Distance : 3m  
Spec An. # : 835  
QP # : NA  
PreSelect # : NA

Reference :

Date : 9/19/05  
Time : 10:30 AM  
Staff : A. Laudani  
Photo ID :  
Peak Bandwidth : 1 MHz  
Video Bandwidth : 1 MHz

| Meas. Freq. (MHz) | Vertical (dBuV) pk | Horizontal (dBuV) pk | CF (db) | Max Level (dBm) pk | Spec. Limit (ERP) (dBm) pk | Margin dB pk | EUT Rotation | Ant. Height | Pass Fail Unc. | Comment |
|-------------------|--------------------|----------------------|---------|--------------------|----------------------------|--------------|--------------|-------------|----------------|---------|
| 824.7             | 95.23              | 89.30                | 30.9    | 28.9               |                            |              | 70           | 1.4         |                |         |
| 1649.4            | 71.74              | 62.60                | -3.5    | -29.0              | -13.0                      | -16.0        |              | 1.4         | PASS           |         |
| 2474.1            | 60.98              | 61.77                | 1.1     | -34.4              | -13.0                      | -21.4        |              | 1.0         | PASS           |         |
| 3298.8            | 57.70              | 57.13                | -9.8    | -49.4              | -13.0                      | -36.4        |              | 1.0         | PASS           |         |
| 4123.5            | 49.82              | 50.45                | -5.0    | -51.8              | -13.0                      | -38.8        |              |             | PASS           | NS, NF  |
| 4948.2            | 50.76              | 50.60                | -5.4    | -51.9              | -13.0                      | -38.9        |              |             | PASS           | NS, NF  |
| 5772.9            | 49.03              | 48.64                | -0.8    | -49.0              | -13.0                      | -36.0        |              |             | PASS           | NS, NF  |
| 6597.6            | 48.39              | 48.95                | 0.7     | -47.6              | -13.0                      | -34.6        |              |             | PASS           | NS, NF  |
| 7422.3            | 48.34              | 47.37                | 3.3     | -45.6              | -13.0                      | -32.6        |              |             | PASS           | NS, NF  |
| 8247              | 47.22              | 47.69                | 5.6     | -44.0              | -13.0                      | -31.0        |              |             | PASS           | NS, NF  |
| 836.49            | 96.78              | 90.87                | 30.7    | 30.2               |                            |              | 70           | 1.4         |                |         |
| 1672.98           | 72.59              | 63.96                | -3.5    | -28.2              | -13.0                      | -15.2        |              | 1.4         | PASS           |         |
| 2509.47           | 61.26              | 56.35                | 2.0     | -34.0              | -13.0                      | -21.0        |              | 1.0         | PASS           |         |
| 3345.96           | 53.23              | 54.88                | -9.8    | -52.2              | -13.0                      | -39.2        |              | 1.0         | PASS           |         |
| 4182.45           | 48.22              | 48.12                | -5.0    | -54.0              | -13.0                      | -41.0        |              |             | PASS           | NS, NF  |
| 5018.94           | 49.36              | 49.46                | -1.6    | -49.4              | -13.0                      | -36.4        |              |             | PASS           | NS, NF  |
| 5855.43           | 48.94              | 47.47                | -0.8    | -49.1              | -13.0                      | -36.1        |              |             | PASS           | NS, NF  |
| 6691.92           | 47.99              | 47.07                | 0.7     | -48.6              | -13.0                      | -35.6        |              |             | PASS           | NS, NF  |
| 7528.41           | 47.10              | 47.92                | 4.5     | -44.8              | -13.0                      | -31.8        |              |             | PASS           | NS, NF  |
| 8364.90           | 47.49              | 47.66                | 5.6     | -44.0              | -13.0                      | -31.0        |              |             | PASS           | NS, NF  |
| 848.31            | 97.83              | 90.45                | 31.0    | 31.6               |                            |              | 70           |             | PASS           |         |
| 1696.62           | 72.93              | 64.32                | -3.5    | -27.8              | -13.0                      | -14.8        |              | 1.1         | PASS           |         |
| 2544.93           | 62.57              | 58.46                | 2.0     | -32.7              | -13.0                      | -19.7        |              | 1.0         | PASS           |         |
| 3393.24           | 55.49              | 56.69                | -9.8    | -50.4              | -13.0                      | -37.4        |              | 1.0         | PASS           |         |
| 4241.55           | 51.51              | 50.42                | -5.0    | -50.7              | -13.0                      | -37.7        |              | 1.0         | PASS           |         |
| 5089.86           | 50.48              | 50.69                | -1.6    | -48.1              | -13.0                      | -35.1        |              |             | PASS           | NS, NF  |
| 5938.17           | 48.30              | 47.40                | -0.8    | -49.7              | -13.0                      | -36.7        |              |             | PASS           | NS, NF  |
| 6786.48           | 47.81              | 47.40                | 0.7     | -48.8              | -13.0                      | -35.8        |              |             | PASS           | NS, NF  |
| 7634.79           | 47.05              | 47.15                | 4.5     | -45.6              | -13.0                      | -32.6        |              |             | PASS           | NS, NF  |
| 8483.10           | 46.74              | 46.74                | 5.6     | -45.0              | -13.0                      | -32.0        |              |             | PASS           | NS, NF  |

NS = Not seen, even at a lower RBW

NF = Noise Floor measurement.



NEMKO USA, Inc.

## Substitution Method For Radiated

Job # : 25-777-VIT Test # : 2  
 Page 1 of 1

Client Name : VITELCOM MOBILE TECHNOLOGY U.S.A.  
 EUT Name : CDMA 800 Cellular Phone  
 EUT Model # : CV111-VTL102  
 EUT Part # :  
 EUT Serial # :  
 EUT Config :  
 CDMA TX  
 Specification : FCC Part 22  
 Rod. Ant. # : NA Temp. (deg. C) : 19  
 Bicon Ant.#: NA Humidity (%) : 73  
 Log Ant.#: 110 EUT Voltage : na  
 DRG Ant. # : 529 EUT Frequency : dc  
 Dipole Ant.#: NA Phase: na  
 Cable#: 60ft Location: RN#: 90579  
 Preamp#: 842 Distance: 3m  
 Spec An.#: 835  
 Reference :  
 Date : 9/19/2005  
 Time :  
 Staff : A. Laudani  
 Photo ID:  
 Peak Bandwidth: RBW-1MHz, VBW-1MHz

| target<br>Frequency<br>mHz | level<br>dBuV/m | Horn<br>Gain<br>dBi | cable<br>loss<br>dB | Signal<br>Generator<br>dBm | Total<br>(EIRP)<br>dBm | Spec<br>dBm | Margin<br>dBm |
|----------------------------|-----------------|---------------------|---------------------|----------------------------|------------------------|-------------|---------------|
| 1649.4                     | 71.74           | 5.37                | 0.65                | -39.86                     | -35.1                  | -13.0       | -22.1         |
| 1672.98                    | 72.59           | 5.41                | 0.65                | -39.01                     | -34.3                  | -13.0       | -21.3         |
| 1696.62                    | 72.93           | 5.43                | 0.65                | -38.67                     | -33.9                  | -13.0       | -20.9         |
| 2544.93                    | 62.57           | 6.98                | 1.7                 | -42.83                     | -37.5                  | -13.0       | -24.5         |

| Asset Number | Description                         | Model Number | Serial Number | Last Cal | Cal Due  |
|--------------|-------------------------------------|--------------|---------------|----------|----------|
| 759          | Antenna Dipole, Part of Set 760     | 3121C-DB4    | 9609-1214     | CU       | CU       |
| 440          | Signal Gen., Gigatronics            | 1018         | 314104        | 9/22/04  | 9/22/05  |
| 835          | Spectrum Analyzer, Rhode & Schwartz | RHDFSEK      | 829058/005    | 12/30/04 | 12/30/05 |
| 110          | Antenna, LPA, Electrometrics        | LPA-25       | 1217          | 10/4/04  | 10/4/05  |
| 529          | Antenna, DRWG, EMCO                 | 3115         | 2505          | 4/13/05  | 4/13/06  |
| 752          | Antenna, DRWG, EMCO                 | 3115         | 4943          | 12/29/04 | 12/29/05 |
| 842          | Preamp                              | Nemko        | na            | 5/19/05  | 5/19/06  |

## Section 10. Frequency Stability

Para. No.: 2.1055

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Test Performed By:</b> A. Laudani | <b>Date of Test:</b> 8-20-05 |
|--------------------------------------|------------------------------|

**Minimum Standard:** Para. No. 22.355

### Test Results:

Limit = 2.5 ppm of Frequency

EUT Complies, see tables below.

### Measurement Data:

**EUT complies**

**Frequency Stability over Battery Voltage Range**

**20°C**

| Volts | Frequency low | Frequency high | Frequency center  | Freq.difference | Output power<br>dBm |
|-------|---------------|----------------|-------------------|-----------------|---------------------|
| 4.2   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.8</b>         |
| 4.0   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.8</b>         |
| 3.8   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.8</b>         |
| 3.6   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.7</b>         |
| 3.4   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.5</b>         |
| 3.2   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>24.5</b>         |
| 3.0   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>23.8</b>         |
| 2.9   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>-1</b>       | <b>23.5</b>         |
| 2.83  | off           | off            | <b>off</b>        |                 | <b>off</b>          |
|       |               |                |                   |                 |                     |

## Frequency Stability vs. Temperature.

EUT complies.

Frequency stability measurements were made over the temperature range of -30°C to +50°C.

Climatic control was accomplished using a temperature chamber. The temperature was first increased from 20C to 50C in 10C increments and then lowered to -50C and incremented back to 20C.

The unit remained in the chamber during temperature transitions and during the measurement process.

Measurements were taken at nominal voltage and  $\pm 15\%$  of nominal voltage, digital modulation on. The EUT was turned off during temperature transitions and then turned on at nominal voltage, placed on max hold for one minute then recorded. Upon recording the voltage was then turned down 15% then turned up to 115% of nominal voltage.

### Limits

Ch384

+/-300 Hz

| Voltage Nominal 4.2 V |               |                |                   |                 |
|-----------------------|---------------|----------------|-------------------|-----------------|
|                       | Frequency low | Frequency high | Frequency center  | Freq.difference |
| Temperature(°C)       |               |                |                   |                 |
| 20                    | 835.870760    | 837.169358     | <b>836.520059</b> | <b>0</b>        |
| 30                    | 835.870761    | 837.169350     | <b>836.520056</b> | <b>-3</b>       |
| 40                    | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 50                    | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -30                   | 835.870761    | 837.169350     | <b>836.520056</b> | <b>-3</b>       |
| -20                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -10                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 0                     | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 10                    | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |

| Voltage 85% 3.57 V |               |                |                   |                 |
|--------------------|---------------|----------------|-------------------|-----------------|
|                    | Frequency low | Frequency high | Frequency center  | Freq.difference |
| Temperature(°C)    |               |                |                   |                 |
| 20                 | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 30                 | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 40                 | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 50                 | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -30                | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -20                | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -10                | 835.870761    | 837.169350     | <b>836.520056</b> | <b>-3</b>       |
| 0                  | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 10                 | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |



| Voltage 1.15% 4.83 V |               |                |                   |                 |
|----------------------|---------------|----------------|-------------------|-----------------|
|                      | Frequency low | Frequency high | Frequency center  | Freq.difference |
| Temperature(°C)      |               |                |                   |                 |
| 20                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 30                   | 835.870761    | 837.169350     | <b>836.520056</b> | <b>-3</b>       |
| 40                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 50                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -30                  | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -20                  | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| -10                  | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 0                    | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
| 10                   | 835.870761    | 837.169358     | <b>836.520060</b> | <b>1</b>        |
|                      |               |                |                   |                 |

|                 |          |  |
|-----------------|----------|--|
|                 |          |  |
| <b>Mode:</b>    | CDMA 800 |  |
| <b>Channel:</b> | 384      |  |

| Voltage  | Frequency Error | Frequency Error |
|----------|-----------------|-----------------|
| Volt     | HZ              | (PPM)           |
|          |                 |                 |
| 3.4 volt | <b>13.40</b>    | <b>0.007</b>    |
| 3.5 volt | <b>11.80</b>    | <b>0.006</b>    |
| 3.6 volt | <b>9.10</b>     | <b>0.005</b>    |
| 3.7 volt | <b>14.90</b>    | <b>0.008</b>    |
| 3.8 volt | <b>10.50</b>    | <b>0.006</b>    |
| 3.9 volt | <b>9.40</b>     | <b>0.005</b>    |
| 4.0 volt | <b>-10.40</b>   | <b>-0.006</b>   |
| 4.1 volt | <b>8.70</b>     | <b>0.005</b>    |
| 4.2 volt | <b>-7.30</b>    | <b>-0.004</b>   |

## Equipment List:

| Asset Number | Description                         | Model Number | Serial Number | Last Cal | Cal Due  |
|--------------|-------------------------------------|--------------|---------------|----------|----------|
|              |                                     |              |               |          |          |
| n149         | Cinncinnati Sub Zero Chamber        | NA           | ZP0552665     | 5/13/05  | 5/13/06  |
| 835          | Spectrum Analyzer, Rhode & Schwartz | RHDFSEK      | 829058/005    | 12/30/04 | 12/30/05 |
| 810          | Multimeter, Fluke                   | 111          | 77820242      | 1/6/05   | 1/6/06   |
| 772          | DC Power Supply, Micronta           | 22-121       | None          | NCR      | NCR      |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |



## Section 11. Test Equipment List

| Emissions Test Equipment Used by Nemko |                                      |              |                  |                          |            |            |
|----------------------------------------|--------------------------------------|--------------|------------------|--------------------------|------------|------------|
| <b>Client</b>                          | VITELCOM MOBILE TECHNOLOGY<br>U.S.A. |              | <b>EUT Name</b>  | Single Band Mobile Phone |            |            |
| <b>PAN #</b>                           | 24-611-KYO                           |              | <b>EUT Model</b> | CV111-VTL102             |            |            |
| Device Type                            |                                      | Model #      | MFG              | Asset #                  | SN         | Cal Due    |
| OATS #1 (South)                        |                                      |              |                  |                          |            |            |
| Spectrum Analyzer                      |                                      | 1088.3494.30 | R & S            | 835                      | 830320/002 | 12-30-05   |
| Antenna, Ridged Guide                  |                                      | 3115         | EMCO             | 529                      | 2505       | 11-19-05   |
| Antenna, Ridged Guide                  |                                      | 3115         | EMCO             | 752                      | 9609-4943  | 12-19-05   |
| Signal Generator                       |                                      | 1018         | Gigatronics      | 440                      | 314104     | 12/22/2005 |
| Dipole Set                             |                                      | 3121C        | EMCO             | 756                      | 1215       | 8-27-06    |
| Antenna, LPA                           |                                      | 3146         | EMCO             | 112                      | 9101-2988  | 9-19-06    |
| Attenuator, 30 dB                      |                                      | 8491B        | HP               | 332                      | X0475      | 4-21-06    |
| Environmental Chamber                  |                                      | NA           | Thermotron       | 048                      | NA         | 1-12-06    |
| Multimeter                             |                                      | 111          | Fluke            | 810                      | NA         | 1-6-06     |
| Power Supply                           |                                      | Adj. Dual DC | Micronta         | 772                      | NA         | NCR        |
| RF Power Meter                         |                                      | 4232A        | Boonton          | 887                      | 64001      | 7-27-06    |
| Power Meter Sensor                     |                                      | 51011-EMC    | Boonton          | 888                      | 32160      | 7-27-06    |

NA: Not Applicable  
NCR: No Cal Required  
COU: CAL On Use