



*Nemko USA, Inc.*  
*Phone (858) 755-5525 Fax (858) 452-1810*  
*11696 Sorrento Valley Rd., Suite F*  
*San Diego, CA 92121-1024*

---

**Test Report:**

**Certification Test Report**

**Applicant:**

**Technocom**  
**681 Encinitas Blvd, #406**  
**Encinitas, CA 92024**  
**760 943-6858**  
**760 943-6619- fax**

**Equipment Under Test:**

**EUT: Location Messaging Unit**  
**Model: TC990369**

**FCC ID:**

**TAS-TC990369**

**In Accordance With:**

**FCC Part 22, Subpart H**  
**Industry Canada RSS-129**

**FCC Part 24, Subpart E**  
**Industry Canada RSS-133**

**Tested By:**

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

**Date:**

**6-16-05**

**Total Number of Pages:**

**24**

## **Table of Contents**

|                    |                                                     |           |
|--------------------|-----------------------------------------------------|-----------|
| <b>Section 1.</b>  | <b>Summary of Test Results .....</b>                | <b>3</b>  |
| <b>Section 2.</b>  | <b>General Equipment Specification.....</b>         | <b>6</b>  |
| <b>Section 3.</b>  | <b>RF Power Output.....</b>                         | <b>8</b>  |
| <b>Section 4.</b>  | <b>Audio Frequency Response.....</b>                | <b>10</b> |
| <b>Section 5.</b>  | <b>Audio Low-Pass Filter Response .....</b>         | <b>11</b> |
| <b>Section 6.</b>  | <b>Modulation Limiting.....</b>                     | <b>12</b> |
| <b>Section 7.</b>  | <b>Occupied Bandwidth (Voice &amp; SAT).....</b>    | <b>13</b> |
| <b>Section 8.</b>  | <b>Occupied Bandwidth (WB Data &amp; SAT).....</b>  | <b>14</b> |
| <b>Section 9.</b>  | <b>Occupied Bandwidth (S/T).....</b>                | <b>15</b> |
| <b>Section 10.</b> | <b>Occupied Bandwidth (SAT).....</b>                | <b>16</b> |
| <b>Section 11.</b> | <b>Spurious Emissions At Antenna Terminals.....</b> | <b>17</b> |
| <b>Section 12.</b> | <b>Field Strength of Spurious .....</b>             | <b>18</b> |
| <b>Section 13.</b> | <b>Frequency Stability.....</b>                     | <b>23</b> |
| <b>Section 14.</b> | <b>Test Equipment List .....</b>                    | <b>24</b> |

## 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, Subpart H and FCC Part 24, Subpart E.

### DOCUMENT HISTORY

| REVISION | DATE    | COMMENTS                    |
|----------|---------|-----------------------------|
| -        | 6-16-05 | Prepared By: A. Laudani     |
| -        | 6-16-05 | Initial Release: R. L. Hill |

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":

- The unit described in this report was received at Nemko USA, Inc.'s facilities on June 13, 2005 . Testing was performed on the unit described in this report on June 13, 2005 to June 16, 2005 .
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

This Report is the property of Nemko USA, Inc., and shall not be reproduced, except in full, without prior written approval of Nemko USA, Inc. However, all ownership rights are hereby returned unconditionally to Technocom , and approval is hereby granted to Technocom and its employees and agents to reproduce all or part of this report for any legitimate business purpose without further reference to Nemko USA, Inc.

## **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 C63.4-1992 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.

---

Ricky L. Hill, EMC Supervisor

---

**Summary Of Test Data**

| Name Of Test                            | Para. No. | Result                  |
|-----------------------------------------|-----------|-------------------------|
| RF Power Output                         | 2.1046    | Complies                |
| Audio Frequency Response                | 2.1047    | Not Tested <sup>1</sup> |
| Audio Low Pass Filter Response          | 2.1047    | Not Tested <sup>1</sup> |
| Modulation Limiting                     | 2.1047    | Not Tested <sup>1</sup> |
| Occupied Bandwidth (Voice & SAT)        | 2.1049    | Not Tested <sup>1</sup> |
| Occupies Bandwidth (WB Data)            | 2.1049    | Not Tested <sup>2</sup> |
| Occupied Bandwidth (ST)                 | 2.1049    | Not Tested <sup>1</sup> |
| Occupied Bandwidth (SAT)                | 2.1049    | Not Tested <sup>1</sup> |
| Spurious Emissions at Antenna Terminals | 2.1051    | Not Tested <sup>2</sup> |
| Field Strength of Spurious Emissions    | 2.1053    | Complies                |
| Frequency Stability                     | 2.1055    | Not Tested <sup>2</sup> |

**Footnotes For N/A's:**<sup>1</sup>**Digital Modulation**<sup>2</sup>**Certified Module Demonstrates Compliance**

The Location Messaging Unit contains the certified module, Model GSM/GPRS Starter Kit Q2526B from Wavecom SA, rue du Gouveneur General Eboue, Issy-les-Moulineaux Cedex, 92442, France, FCC ID O9EQ2426-SK certified 7/16/2003. As such, the module test reports, internal and external photos, and other exhibits accompany this application. The product's schematics, BOM, block diagram, etc. reference the module as a component. The radiated power levels are demonstrated to be less than the granted output power and radiated spurious emissions are demonstrated to be within appropriate FCC limits. Since the module is used per the directions of Wavecom, no conducted emissions, bandwidth, frequency stability or voltage frequency stability tests are warranted. The intent of this product is vehicle use so Part 15.107 and Part 15.109 emission verifications do not apply.

**Section 2. General Equipment Specification**

|                                     |                                                              |
|-------------------------------------|--------------------------------------------------------------|
| <b>Manufacturer:</b>                | <b>Technocom</b>                                             |
| <b>Model No.:</b>                   | <b>Location Messaging Unit</b><br>TC990369                   |
| <b>Serial No.:</b>                  | 9                                                            |
| <b>Date Received In Laboratory:</b> | <b>June 13, 2005</b>                                         |
| <b>Nemko Identification No.:</b>    | <b>25-440-TEC</b>                                            |
| <b>Antenna Model:</b>               | GPS-GCxB<br>x = M for magnetic mount, x = R for thread mount |
| <b>Frequency Ranges:</b>            | 824.2 – 848.8 MHz<br>1850.2 to 1909.8 MHz                    |
| <b>RF Output (Limit):</b>           | Part 22: 7 W      Part 24: 2 W                               |
| <b>RF Output (Measured):</b>        | Part 22: 0.31 W      Part 24: 0.14 W                         |
| <b>Emission Designators:</b>        | 247KGXW      243KGXW                                         |
| <b>FCC Identifier:</b>              | TAS-TC990369                                                 |

## 2.1 SYSTEM CONFIGURATION

### System Components and Power Cables

The GPRS LMU-300 is a Location Messaging Unit. Its function is transmit data using a GSM module using Part 22 and Part 24 frequencies in a vehicle. The EUT was exercised by placing it into a call by the CMU test set and temporary use of a laptop in hyperterminal mode using a serial port.

#### Device Interconnection and I/O Cables

| DEVICE                        | MANUFACTURER<br>MODEL #<br>SERIAL #         | POWER CABLE   |
|-------------------------------|---------------------------------------------|---------------|
| EUT - Location Messaging Unit | Technocom<br>Model: TC990369<br>Serial #: 9 | 12 Vdc        |
| Regulated Power Supply        | Smlex<br>Model # RPS1204<br>Serial # na     | 110 Vac 60 Hz |
| CMU Test Set                  | R&S<br>Model CMU200<br>SN 837727/018        | 110 Vac 60 Hz |
| Test Set Antenna              | GPS/Cellular<br>Model GCT<br>SN 402647      | coax          |
| EUT Antenna                   | GPS/Cellular<br>Model GCT<br>SN 402621      | coax          |

| CONNECTION       | I/O CABLE    |
|------------------|--------------|
| GPS antenna      | Coax         |
| Cellular Antenna | Coax         |
| Serial Port      | Serial cable |
| DC power         | Twisted pair |

---

**Section 3. RF Power Output****Para. No.: 2.1046**

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Test Performed By: A. Laudani</b> | <b>Date of Test: 6-14-05</b> |
|--------------------------------------|------------------------------|

**Minimum Standard:** Para. No. 22.913(a). The ERP of mobile transmitters must not exceed 7 Watts.  
Para. No.: 24.232. The EIRP of mobile transmitters must not exceed 2 Watts.

**Test Results:** Complies.

**Measurement Data:**

## Radiated Measurement

| Modulation | Frequency (MHz) | Measured (dBm) | Measured Watts | Substituted Result (dBm) | Substituted Result Watts |
|------------|-----------------|----------------|----------------|--------------------------|--------------------------|
| GSM        | 824.20          | 30.7           | 1.17           | 24.9                     | 0.31                     |
|            | 836.40          | 30.9           | 1.23           | 24.4                     | 0.28                     |
|            | 848.80          | 30.9           | 1.23           | 24.5                     | 0.28                     |
| PCS GSM    | 1850.02         | 29.7           | 0.93           | 21.2                     | 0.13                     |
|            | 1880.00         | 30.1           | 1.02           | 21.5                     | 0.14                     |
|            | 1909.80         | 30.0           | 1.00           | 21.4                     | 0.14                     |

## Substitution Method For Radiated Emissions

|                 |                               |                  |                   |                 |                           |
|-----------------|-------------------------------|------------------|-------------------|-----------------|---------------------------|
| Complete        | <u>Yes</u>                    | Job # :          | <u>25-440-TEC</u> | Test # :        | <u>1</u>                  |
| Preliminary     |                               |                  | Page <u>1</u>     | of              | <u>1</u>                  |
| Client Name :   | <u>Technocom Corp</u>         |                  |                   |                 |                           |
| EUT Name :      | <u>Locator Messaging Unit</u> |                  |                   |                 |                           |
| EUT Model # :   | <u>TC990369</u>               |                  |                   |                 |                           |
| EUT Part # :    | <u>9</u>                      |                  |                   |                 |                           |
| EUT Serial # :  | <u>Cellular and PCS Tx</u>    |                  |                   |                 |                           |
| EUT Config. :   |                               |                  |                   |                 |                           |
| Specification : | <u>Part 22/ 24</u>            |                  |                   |                 |                           |
| Rod. Ant. #:    | <u>NA</u>                     | Temp. (deg. C) : | <u>18</u>         | Reference :     |                           |
| Bicon Ant. #:   | <u>NA</u>                     | Humidity (%) :   | <u>83</u>         | Date :          | <u>6/14/2005</u>          |
| Log Ant. #:     | <u>NA</u>                     | EUT Voltage :    | <u>12 Vdc</u>     | Time :          |                           |
| DRG Ant. #      | <u>529</u>                    | EUT Frequency :  | <u>NA</u>         | Staff :         | <u>A. Laudani</u>         |
| Dipole Ant. #:  | <u>NA</u>                     | Phase:           | <u>NA</u>         | Photo ID:       |                           |
| Cable#:         | <u>20ft</u>                   | Location:        | <u>RN# 90579</u>  | Peak Bandwidth: | <u>RBW-1MHz, VBW-1MHz</u> |
| Preamp#:        | <u>40db</u>                   | Distance:        | <u>3m</u>         |                 |                           |
| Spec An. #:     | <u>NA</u>                     |                  |                   |                 |                           |
| QP #:           | <u>NA</u>                     |                  |                   |                 |                           |
| PreSelect#:     | <u>NA</u>                     |                  |                   |                 |                           |

| 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>dBm | Spec<br>dBm | Margin<br>dBm | ERP/EIRP<br>W |
|----------------------------|-----------------|---------------------|---------------------|----------------------------|--------------|-------------|---------------|---------------|
| GSM Part 22                |                 |                     |                     |                            |              |             |               |               |
| 824.2                      | 99.1            | 0                   | 2.8                 | 27.7                       | 24.9         |             |               | 0.31          |
| 827.88                     | 98.4            | 0                   | 2.8                 | 27.2                       | 24.4         |             |               | 0.28          |
| 848.82                     | 98.6            | 0                   | 2.8                 | 27.3                       | 24.5         |             |               | 0.28          |
| 1648.40                    | 32.9            | 5.37                | 0.91                | -38.70                     | -34.2        | -13.0       | -21.2         |               |
| 1655.76                    | 30.9            | 5.38                | 0.92                | -40.70                     | -36.2        | -13.0       | -23.2         |               |
| 1697.64                    | 31.1            | 5.45                | 0.93                | -40.50                     | -36.0        | -13.0       | -23.0         |               |
| GSM Part 24                |                 |                     |                     |                            |              |             |               |               |
| 1850.20                    | 89.3            | 5.73                | 4.3                 | 19.8                       | 21.2         |             |               | 0.13          |
| 1880.00                    | 89.7            | 5.78                | 4.4                 | 20.1                       | 21.5         |             |               | 0.14          |
| 1908.75                    | 89.6            | 5.84                | 4.4                 | 20.0                       | 21.4         |             |               | 0.14          |
| 3700.4                     | 35.0            | 9.87                | 2.02                | -38.1                      | -30.3        | -13.0       | -17.3         |               |
| 3760.0                     | 41.7            | 9.88                | 2.03                | -31.4                      | -23.6        | -13.0       | -10.6         |               |
| 3817.5                     | 36.1            | 9.88                | 2.05                | -37.0                      | -29.2        | -13.0       | -16.2         |               |

**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:**                <sup>1</sup>**Digital Modulation**

**Measurement Data:**

## Section 5. Audio Low-Pass Filter Response

Para. No.: 2.1047

|                    |               |
|--------------------|---------------|
| Test Performed By: | Date of Test: |
|--------------------|---------------|

Minimum Standard: Para. No. 22.915 (d).

Test Results: <sup>1</sup>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:** <sup>1</sup>**Digital Modulation**

**Measurement Data:**

SAT Deviation:  
WB Data Deviation:  
ST Deviation:

**Section 7.        Occupied Bandwidth (Voice & SAT)**

**Para. No.: 2.1049**

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

**Minimum Standard:**        Para. No.: 22.917(b), 24.238.

**Test Results:**                <sup>2</sup>**Certified Module Demonstrates Compliance**

**Test Data:**

**Section 8.          Occupied Bandwidth (WB Data & SAT)**

**Para. No.: 2.1049**

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

**Minimum Standard:**          22.917(d)

**Test Results:**                  <sup>2</sup>**Certified Module Demonstrates Compliance**

**Test Data:**

**Section 9.        Occupied Bandwidth (S/T)**

**Para. No.: 2.1049**

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

**Minimum Standard:**        22.917(d)

**Test Results:**                <sup>2</sup>**Certified Module Demonstrates Compliance**

**Test Data:**

**Section 10.      Occupied Bandwidth (SAT)**

**Para. No.: 2.1049**

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

**Minimum Standard:**      22.917(d)

**Test Results:**      <sup>2</sup>**Certified Module Demonstrates Compliance**

**Test Data:**

**Section 11. Spurious Emissions At Antenna Terminals**

**Para. No.: 2.1051**

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

**Minimum Standard:** Para. No. 22.917(b), 24.238.

**Test Results:** <sup>2</sup>**Certified Module Demonstrates Compliance**

**Test Data:**

## **Section 12. Field Strength of Spurious**

**Para. No.: 2.1053**

|                                      |                             |
|--------------------------------------|-----------------------------|
| <b>Test Performed By: A. Laudani</b> | <b>Date of Test:6/10/05</b> |
|--------------------------------------|-----------------------------|

**Minimum Standard:** Para. No. 22.917(b), 24.238.

**Test Results:** Frequency range searched. 1000 MHz to 10x TX frequency:  
Part 22: 1000 MHz to 8490 MHz.  
Part 24: 1000 MHz to 19900 MHz.

The substituted result of the highest field strength for Part 22 is 21.6 dB below the limit at 1658.4 MHz.

The substituted result of the highest field strength for Part 24 is 10.6 dB below the limit at 3760.0 MHz.

**Test Data:** See attached tables.

## Radiated Emissions Data

Job #: 25-123-FCC Test #: 1  
Page 1 of 1

Client Name : Technocom Corp  
 EUT Name : Locator Messaging Unit  
 EUT Model #: TC990369  
 EUT Serial # :  
 EUT Config. : GSM Tx Harmonics

Specification : FCC Part 22 Reference :  
 Rod. Ant. #: Temp. (°C) : 20 Date : 06/10/05  
 Bicon Ant. #: Humidity (%) : 81 Staff : A. Laudani  
 Log Ant. #: 112 EUT Voltage : 12 Vdc Peak Bandwidth: 1 MHz  
 DRG Ant. #: 529 EUT Frequency : NA Video Bandwidth 1 MHz  
 Dipole Ant. #: 758 Phase: NA  
 Cable#: SOATS Location: RN# 90579  
 Preamp#: 842 Distance: 3m  
 Spec An. #: 835 ERP conversion factor 7

| 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   |
|-------------------|--------------------|----------------------|---------|--------------------|----------------------------|--------------|--------------|-------------|----------------|-----------|
| 824.20            | 99.1               | 96.4                 | 30.7    | 32.5               |                            |              | 60           | 1.2         |                |           |
| 1648.40           | 32.9               | 26.7                 | 35.7    | -28.7              | -13.0                      | -15.7        | 60           | 1.2         | Pass           |           |
| 2472.60           |                    |                      | -10.0   |                    | -13.0                      |              | 60           | 1.2         |                | no signal |
| 3296.80           |                    |                      | -5.0    |                    | -13.0                      |              | 60           | 1.2         |                | no signal |
| 4121.00           |                    |                      | -0.8    |                    | -13.0                      |              | 60           | 1.1         |                | no signal |
| 4945.20           |                    |                      | -1.2    |                    | -13.0                      |              | 60           | 1.1         |                | no signal |
| 5769.40           |                    |                      | 2.0     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 6593.60           |                    |                      | 2.7     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 7417.80           |                    |                      | 3.9     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 8242.00           |                    |                      | 5.8     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 827.88            | 98.4               | 83.8                 | 30.9    | 32.0               |                            |              | 90           | 1.2         |                |           |
| 1655.76           | 30.9               | 27.7                 | 35.7    | -30.7              | -13.0                      | -17.7        | 90           | 1.2         | Pass           |           |
| 2483.64           |                    |                      | -10.0   |                    | -13.0                      |              | 90           | 1.2         |                | no signal |
| 3311.52           |                    |                      | -5.0    |                    | -13.0                      |              | 90           | 1.2         |                | no signal |
| 4139.40           |                    |                      | -0.8    |                    | -13.0                      |              | 90           | 1.1         |                | no signal |
| 4967.28           |                    |                      | -1.2    |                    | -13.0                      |              | 90           | 1.1         |                | no signal |
| 5795.16           |                    |                      | 2.0     |                    | -13.0                      |              | 90           | 1.0         |                | no signal |
| 6623.04           |                    |                      | 2.7     |                    | -13.0                      |              | 90           | 1.0         |                | no signal |
| 7450.92           |                    |                      | 3.9     |                    | -13.0                      |              | 90           | 1.0         |                | no signal |
| 8278.80           |                    |                      | 5.8     |                    | -13.0                      |              | 90           | 1.0         |                | no signal |
| 848.82            | 98.6               | 96.7                 | 30.9    | 32.2               |                            |              | 60           | 1.2         |                |           |
| 1697.64           | 31.1               | 27.8                 | 35.7    | -30.5              | -13.0                      | -17.5        | 60           | 1.2         | Pass           |           |
| 2546.46           |                    |                      | -9.1    |                    | -13.0                      |              | 60           | 1.2         |                | no signal |
| 3395.28           |                    |                      | -5.0    |                    | -13.0                      |              | 60           | 1.2         |                | no signal |
| 4244.10           |                    |                      | -0.8    |                    | -13.0                      |              | 60           | 1.1         |                | no signal |
| 5092.92           |                    |                      | 1.2     |                    | -13.0                      |              | 60           | 1.1         |                | no signal |
| 5941.74           |                    |                      | 2.0     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 6790.56           |                    |                      | 2.7     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 7639.38           |                    |                      | 5.1     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |
| 8488.20           |                    |                      | 5.8     |                    | -13.0                      |              | 60           | 1.0         |                | no signal |

## Radiated Emissions Data

Job #: 25-123-FCC      Test #: 3  
Page 1      of 1Client Name : Technocom Corp  
EUT Name : Locator Messaging Unit  
EUT Model #: TC990369  
EUT Serial #:   
EUT Config.: PCS TxSpecification : FCC Part 24  
Rod. Ant. #:      Temp. (°C) : 18  
Bicon Ant. #:      Humidity (%) : 83  
Log Ant. #: 112      EUT Voltage : 12 Vdc  
DRG Ant. #: 529      EUT Frequency : NA  
Dipole Ant. #: 758      Phase: NA  
Cable#: SOATS      Location: RN# 90579  
Preamp#: 842      Distance: 3m  
Spec An. #: 835      EIRP conversion factor 5.5Reference :  
Date : 06/10/05  
Staff : A. Laudani  
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 (ERIP) (dBm) pk | Margin dB pk | EUT Rotation | Ant. Height | Pass Fail Unc. | Comment   |
|-------------------|--------------------|----------------------|---------|--------------------|-----------------------------|--------------|--------------|-------------|----------------|-----------|
| 1850.20           | 89.3               | 72.1                 | 35.7    | 29.7               |                             |              | 180          | 1.0         |                |           |
| 3700.40           | 35.0               | 31.3                 | 42.2    | -18.1              | -13.0                       | -5.1         | 180          | 1.0         | Pass           |           |
| 5550.60           |                    |                      | 2.0     |                    | -13.0                       |              |              |             |                | no signal |
| 7400.80           |                    |                      | 3.9     |                    | -13.0                       |              |              |             |                | no signal |
| 9251.00           |                    |                      | 9.5     |                    | -13.0                       |              |              |             |                | no signal |
| 11101.20          |                    |                      | 13.0    |                    | -13.0                       |              |              |             |                | no signal |
| 12951.40          |                    |                      | 13.6    |                    | -13.0                       |              |              |             |                | no signal |
| 14801.60          |                    |                      | 17.0    |                    | -13.0                       |              |              |             |                | no signal |
| 16651.80          |                    |                      | 17.4    |                    | -13.0                       |              |              |             |                | no signal |
| 18502.00          |                    |                      | 35.1    |                    | -13.0                       |              |              |             |                | no signal |
| 1880.00           | 89.7               | 71.9                 | 35.7    | 30.1               |                             |              | 180          | 1.0         |                |           |
| 3760.00           | 41.7               | 39.1                 | 42.2    | -11.4              | -13.0                       | 1.6          | 180          | 1.0         | Fail           |           |
| 5640.00           |                    |                      | 2.0     |                    | -13.0                       |              |              |             |                | no signal |
| 7520.00           |                    |                      | 5.1     |                    | -13.0                       |              |              |             |                | no signal |
| 9400.00           |                    |                      | 9.5     |                    | -13.0                       |              |              |             |                | no signal |
| 11280.00          |                    |                      | 13.0    |                    | -13.0                       |              |              |             |                | no signal |
| 13160.00          |                    |                      | 15.1    |                    | -13.0                       |              |              |             |                | no signal |
| 15040.00          |                    |                      | 15.8    |                    | -13.0                       |              |              |             |                | no signal |
| 16920.00          |                    |                      | 17.4    |                    | -13.0                       |              |              |             |                | no signal |
| 18800.00          |                    |                      | 35.1    |                    | -13.0                       |              |              |             |                | no signal |
| 1908.75           | 89.6               | 81.8                 | 35.7    | 30.0               |                             |              | 180          | 1.0         |                |           |
| 3817.50           | 36.1               | 31.8                 | 42.2    | -17.0              | -13.0                       | -4.0         | 180          | 1.0         | Pass           |           |
| 5726.25           |                    |                      | 2.0     |                    | -13.0                       |              |              |             |                | no signal |
| 7635.00           |                    |                      | 5.1     |                    | -13.0                       |              |              |             |                | no signal |
| 9543.75           |                    |                      | 9.2     |                    | -13.0                       |              |              |             |                | no signal |
| 11452.50          |                    |                      | 13.0    |                    | -13.0                       |              |              |             |                | no signal |
| 13361.25          |                    |                      | 15.1    |                    | -13.0                       |              |              |             |                | no signal |
| 15270.00          |                    |                      | 15.8    |                    | -13.0                       |              |              |             |                | no signal |
| 17178.75          |                    |                      | 24.5    |                    | -13.0                       |              |              |             |                | no signal |
| 19087.50          |                    |                      | 35.1    |                    | -13.0                       |              |              |             |                | no signal |

|                 |                        |                  |             |                |                    |
|-----------------|------------------------|------------------|-------------|----------------|--------------------|
| Complete        | Yes                    | Job # :          | 25-440-TEC  | Test # :       | 1                  |
| Preliminary     |                        |                  | Page 1      | of             | 1                  |
| Client Name :   | Technocom Corp         |                  |             |                |                    |
| EUT Name :      | Locator Messaging Unit |                  |             |                |                    |
| EUT Model # :   | TC990369               |                  |             |                |                    |
| EUT Part # :    | 9                      |                  |             |                |                    |
| EUT Serial # :  | Cellular and PCS Tx    |                  |             |                |                    |
| EUT Config. :   |                        |                  |             |                |                    |
| Specification : | Part 22/ 24            |                  | Reference : |                |                    |
| Rod. Ant. #:    | NA                     | Temp. (deg. C) : | 18          | Date :         | 6/14/2005          |
| Bicon Ant.#:    | NA                     | Humidity (%) :   | 83          | Time :         |                    |
| Log Ant.#:      | NA                     | EUT Voltage :    | 12 Vdc      | Staff :        | A. Laudani         |
| DRG Ant. #      | 529                    | EUT Frequency :  | NA          | Photo ID:      |                    |
| Dipole Ant.#:   | NA                     | Phase:           | NA          | Peak Bandwidth | RBW-1MHz, VBW-1MHz |
| Cable#:         | 20ft                   | Location:        | RN# 90579   |                |                    |
| Preamp#:        | 40db                   | Distance:        | 3m          |                |                    |
| Spec An.#:      | NA                     |                  |             |                |                    |
| QP #:           | NA                     |                  |             |                |                    |
| PreSelect#:     | NA                     |                  |             |                |                    |

Page 21 of 24



NEMKO USA, Inc.

San Diego, CA 92121  
Tel: (858) 755-5525  
Fax: (858) 452-1810

Job # : 25-123-FCC  
Date : 6/10/2005  
Staff : A. Laudani

Client Name : Technocom Corp  
EUT Name : Locator Messaging Unit  
EUT Model # : TC990369  
EUT Serial # : 9  
EUT Config : CMU 200 in a call

EUT Voltage : 12 Vdc  
EUT Frequency : NA  
Phase: NA  
Location: RN # 90579  
Distance: 3m

|                 | Asset Number | Description                         | Model Number | Serial Number | Last Cal | Cal Due  |
|-----------------|--------------|-------------------------------------|--------------|---------------|----------|----------|
| Rod. Ant. #:    |              |                                     |              |               |          |          |
| Bicon Ant.#:    |              |                                     |              |               |          |          |
| Log Ant.#:      | 112          | Antenna, LPA, EMCO                  | 3146         | 9101-2988     | 10/28/04 | 10/28/05 |
| DRG Ant. #      | 529          | Antenna, DRWG, EMCO                 | 3115         | 2505          | 4/13/05  | 4/13/06  |
| Dipole Ant.#:   | 758          | Antenna Dipole, Part of Set 760     | 3121C-DB3    | 9609-1214     | CU       | CU       |
| Cable#:         | SOATS        | South Oats System Cable             | NA           | NA            | 5/14/05  | verified |
| Preamp#:        | 842          | Preamp                              | Nemko        | na            | 5/19/05  | verified |
| Spec An.#:      | 835          | Spectrum Analyzer, Rhode & Schwartz | RHDFSEK      | 829058/005    | 12/30/04 | 12/30/05 |
| Other           |              |                                     |              |               |          |          |
| subst. Tx. Ant. | 752          | Antenna, DRWG, EMCO                 | 3115         | 4943          | 12/29/04 | 12/29/05 |
| subst sig. Gen  | 836          | Signal Generator, Agilent           | E8254A       | US41140229    | 12/30/04 | 12/30/05 |

**Section 13.      Frequency Stability**

**Para. No.: 2.1055**

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

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

**Test Results:**      <sup>2</sup>**Certified Module Demonstrates Compliance**

---

**Section 14. Test Equipment List**

| Asset Number | Description                         | Model Number | Serial Number | Last Cal | Cal Due  |
|--------------|-------------------------------------|--------------|---------------|----------|----------|
| 836          | Signal Generator, Agilent           | E8254A       | US41140229    | 12/30/04 | 12/30/05 |
| 835          | Spectrum Analyzer, Rhode & Schwartz | RHDFSEK      | 829058/005    | 12/30/04 | 12/30/05 |
| 317          | Preamp                              | Nemko        | na            | verified | 5/9/05   |
| 752          | Antenna, DRWG, EMCO                 | 3115         | 4943          | 12/29/04 | 12/29/05 |
| 529          | Antenna, DRWG, EMCO                 | 3115         | 2505          | 4/13/05  | 4/13/06  |
| 112          | Antenna, LPA, EMCO                  | 3146         | 9101-2988     | 10/28/04 | 10/28/05 |
| 759          | Antenna Set, Dipole, EMCO           | 3121C        | 1214          | 1/28/05  | 1/28/06  |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |
|              |                                     |              |               |          |          |