

FCC CFR47 CERTIFICATION TEST REPORT PART 90

FOR

900MHz EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

MODEL: InterReach Unison Accel

FCC ID: NOOUNS-EGSM-2

REPORT NUMBER: 02U1586-3

ISSUE DATE: JANUARY 08, 2003

Prepared for LGC WIRELESS INC. 2540 JUNCTION AVENUE SAN JOSE, CA 95134

Prepared by COMPLIANCE CERTIFICATION SERVICES 561F MONTEREY ROAD, ROUTE 2 MORGAN HILL, CA 95037, USA TEL: (408) 463-0885 FAX: (408) 463-0888

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1. TEST RESULT CERTIFICATION

| COMPANY NAME: | LGC WIRELESS INC. 2540 JUNCTION AVENUE SAN JOSE, CA 95134-1902 |
|------------------|--|
| EUT DESCRIPTION: | 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM |
| MODEM NAME: | INTERREACH UNISON ACCEL |
| DATE TESTED: | DECEMBER 02, 2002 |

| TYPE OF EQUIPMENT | INTENTIONAL RADIATOR |
|-----------------------|-------------------------|
| EQUIPMENT TYPE | 925 – 960MHz (Downlink) |
| | 880 – 915MHz (Uplink) |
| MEASUREMENT PROCEDURE | ANSI 63.4 / 2001EIA 603 |
| PROCEDURE | CERTIFICATION |
| FCC RULE | CFR 47 PART 90 |

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirement set forth in CFR 47, PART 90. The equipment in the configuration described in this report, shows the measured emission levels emanating from the equipment do not exceed the specified limit.

Note : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

Test By:

Sa

VIEN TRAN EMC ENGINEER COMPLIANCE CERTIFICATION SERVICES

Released For CCS By:

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2. EUT DESCRIPTION

This product is designed for in-building venues (including multi-tenant office buildings, enterprise campuses, transportation hubs such as airports and subway stations, shopping malls and convention centers) to improve IDEN signal strength and availability by extending the coverage of either a macro cell site or dedicated base station.

The RF signal is fed into the system from either an outdoor cell site or dedicated base station, converted from RF to optical to electrical signals through the system, and ultimately converted back to RF and transmitted by the antenna unit. Conversely, RF signals from mobile handsets are converted by the system to electrical and then to optical signals, and ultimately back to RF and returned to the macro cell site or dedicated base station.

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures documented on chapter 13 of ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

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4. TEST FACILITY

The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5. ACCREDITATION AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200065-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (reference no: 31040/SIT (1300B3) and 31040/SIT (1300F2))

6. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

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7. APPLICABLE RULES AND BRIEF TEST RESULT

§2.1046, §90.205(i) & §90.635(d) - RF POWER OUTPUT

90.635(d): The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).

§2.1049(i) – OCCUPIED BANDWIDTH

Transmitters designed for other types of modulation _ when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

TYPE OF EMISSION

F8W, DXW, F1D, AND F9W

<u>§2.1055- FREQUENCY STABILITY</u>

Not applicable. EUT is a Repeater. No RF oscillator or frequency determining circuits in EUT.

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§2.1057 & §90.210- SPECTRUM RANGE TO BE INVESTIGATED

Lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the equipment operates at or above 10 GHz and below 30 GHz:

to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the equipment operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower.

(b) Particular attention should be paid to harmonics and sub-harmonics of the carrier frequency as well as to those frequencies removed from the carrier by multiples of the oscillator frequency.

Radiation at the frequencies of multiplier stages should also be checked.

(c) The amplitude of spurious emissions, which are attenuated more than 20 dB below the permissible value, need not be reported.

(d) Unless otherwise specified, measurements above 40 GHz shall be performed using a minimum resolution bandwidth of 1 MHz.

The power of emissions must be attenuated below the power of the unmodulated carrier (P) on any frequency removed from the assigned frequency by more than 250% of the authorized bandwidth at least $(43 + 10 \log P) dB$.

Spec limit: Frequency investigation range from 30M to tenth harmonic (i.e. 10 GHz.).

8. TEST SETUP, PROCEDURE AND RESULT

8.1. SECTION 2.1046: RF POWER OUTPUT

INSTRUMENTS LIST

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|------------------|-----------------|-----------|---------------|
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 8/12/03 |
| EMI Receiver | HP | 8593EM | 6/11/03 |

TEST SETUP



TEST PROCEDURE

The EUT was set to maximum output power (maximum gain). RF output power was measured with Spectrum Analyzer.

<u>RESULT</u>

Measured with Spectrum Analyzer. Set the power amplifier to the maximum output gain.

Test result:

RF Conduction Measurements

| | Modulation | Max Output Power (dBm) | Max Output Power (mW) |
|----------------|------------|------------------------|-----------------------|
| Downlink: | | | |
| | AMPS | 26.20 | 416.87 |
| | APCO CQPSK | 22.5 | 177.83 |
| | APCO C4FM | 10.40 | 10.96 |
| <u>Uplink:</u> | | | |
| | AMPS | -10.10 | .0977 |
| | APCO CQPSK | -9.60 | .1096 |
| | APCO C4FM | -10.10 | .0977 |

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<u>RF ERP Measurement:</u>

AMPS Modulation:

Downlink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|-----------------|-----------------|----------------|-----------|-------|-------|-------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| indamental Low, | Mid, & High Cha | annels (RBW=VI | 3W=1MHz): | | | | | | |
| 0.925 | 95.00 | 27.30 | 0.50 | 0.00 | 0.00 | 26.80 | | | V |
| 0.925 | 88.50 | 19.00 | 0.50 | 0.00 | 0.00 | 18.50 | | | Н |
| 0.943 | 95.50 | 27.80 | 0.50 | 0.00 | 0.00 | 27.30 | | | V |
| 0.943 | 88.70 | 19.30 | 0.50 | 0.00 | 0.00 | 18.80 | | | Н |
| 0.960 | 94.50 | 27.00 | 0.50 | 0.00 | 0.00 | 26.50 | | | V |
| 0.960 | 88.40 | 19.00 | 0.50 | 0.00 | 0.00 | 18.50 | | | Н |

Uplink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|------------------|----------------|---------------|-----------|-------|-------|--------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| Fundamental Low, | Mid, & High Ch | annels (RBW=V | BW=1MHz): | | | | | | |
| 0.880 | 59.80 | -12.50 | 0.50 | 0.00 | 0.00 | -13.00 | | | V |
| 0.880 | 53.30 | -17.50 | 0.50 | 0.00 | 0.00 | -18.00 | | | Н |
| 0.898 | 61.20 | -11.20 | 0.50 | 0.00 | 0.00 | -11.70 | | | V |
| 0.898 | 60.50 | -17.60 | 0.50 | 0.00 | 0.00 | -18.10 | | | Н |
| 0.915 | 62.00 | -11.00 | 0.50 | 0.00 | 0.00 | -11.50 | | | V |
| 0.915 | 53.30 | -16.90 | 0.50 | 0.00 | 0.00 | -17.40 | | | Н |

APCO CQPSK Modulation:

Downlink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|----------------|-----------------|----------------|-----------|-------|-------|-------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| ndamental Low, | Mid, & High Cha | annels (RBW=VI | 3W=1MHz): | | | | | | |
| 0.925 | 94.50 | 23.00 | 0.50 | 0.00 | 0.00 | 22.50 | | | V |
| 0.925 | 84.90 | 15.30 | 0.50 | 0.00 | 0.00 | 14.80 | | | Н |
| 0.943 | 95.20 | 23.60 | 0.50 | 0.00 | 0.00 | 23.10 | | | V |
| 0.943 | 85.80 | 16.30 | 0.50 | 0.00 | 0.00 | 15.80 | | | Н |
| 0.960 | 94.00 | 22.50 | 0.50 | 0.00 | 0.00 | 22.00 | | | V |
| | 84.10 | 14.50 | 0.50 | 0.00 | 0.00 | 14.00 | | | |

Uplink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|----------------|----------------|---------------|-----------|-------|-------|--------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| undamental Low | Mid, & High Ch | annels (RBW=V | BW=1MHz): | | | | | | |
| 0.880 | 55.50 | -14.00 | 0.50 | 0.00 | 0.00 | -14.50 | | | V |
| 0.880 | 49.30 | -19.20 | 0.50 | 0.00 | 0.00 | -19.70 | | | Н |
| 0.898 | 56.20 | -11.00 | 0.50 | 0.00 | 0.00 | -11.50 | | | V |
| 0.898 | 50.30 | -18.20 | 0.50 | 0.00 | 0.00 | -18.70 | | | Н |
| 0.915 | 47.10 | -13.20 | 0.50 | 0.00 | 0.00 | -13.70 | | | V |
| | 49.20 | -18.60 | 0.50 | 0.00 | 0.00 | -19.10 | | | Н |

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APCO C4FM Modulation:

Downlink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|-----------------|-----------------|----------------|-----------|-------|-------|-------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| undamental Low, | Mid, & High Cha | annels (RBW=VE | 3W=1MHz): | | | | | | |
| 0.925 | 82.60 | 11.00 | 0.50 | 0.00 | 0.00 | 10.50 | | | V |
| 0.925 | 72.90 | 3.30 | 0.50 | 0.00 | 0.00 | 2.80 | | | Н |
| 0.943 | 83.50 | 11.90 | 0.50 | 0.00 | 0.00 | 11.40 | | | V |
| 0.943 | 73.80 | 4.30 | 0.50 | 0.00 | 0.00 | 3.80 | | | Н |
| 0.960 | 82.50 | 10.90 | 0.50 | 0.00 | 0.00 | 10.40 | | | V |
| 0.960 | 72.10 | 2.80 | 0.50 | 0.00 | 0.00 | 2.30 | | | Ц |

Uplink:

| Frequency | SA reading | SG reading | CL | Gain | Gain | ERP | Limit | Margin | Notes |
|-----------------|----------------|---------------|-----------|-------|-------|--------|-------|--------|-------|
| (GHz) | (dBuV) | (dBm) | (dB) | (dBi) | (dBd) | (dBm) | (dBm) | (dB) | |
| | | | | | | | | | |
| undamental Low, | Mid, & High Ch | annels (RBW=V | BW=1MHz): | | | | | | |
| 0.880 | 58.50 | -11.50 | 0.50 | 0.00 | 0.00 | -12.00 | | | V |
| 0.880 | 52.00 | -18.20 | 0.50 | 0.00 | 0.00 | -18.70 | | | Н |
| 0.898 | 60.20 | -10.00 | 0.50 | 0.00 | 0.00 | -10.50 | | | V |
| 0.898 | 54.30 | -17.50 | 0.50 | 0.00 | 0.00 | -18.00 | | | Н |
| 0.915 | 60.10 | -11.10 | 0.50 | 0.00 | 0.00 | -11.60 | | | V |
| 0.915 | 53.00 | -17.30 | 0.50 | 0.00 | 0.00 | -17.80 | | | Н |

8.2. SECTION 2.1047: MODULATION CHARACTERISTICS

(NOT APPLICABLE TO THIS REPEATER, THE EUT DOESN'T HAVE A FREQUENCY TRANSLATOR OR MODULATOR INSIDE OF EUT. THE EUT IS AN AMPLIFIER TYPE REPEATER.)

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8.3. SECTION 2.1049: OCCUPIED BANDWIDTH

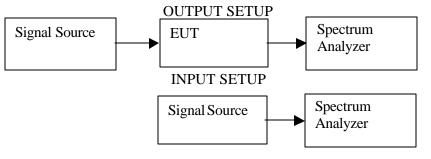
SECTION 2.1049(i)

Transmitters designed for other types of modulation – when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

INSTRUMENTS LIST

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|------------------|-----------------|-----------|---------------|
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 8/12/03 |
| EMI Receiver | HP | 8593EM | 6/11/03 |

TEST SETUP



TEST PROCEDURE

The EUT's occupied bandwidth output plot is compared with the input source plot to check that no distortion is created when the input signal is amplified by the EUT. Identical bandwidths, spans and center frequencies are used for both plots. Reference levels and attenuation are adjusted.

RES BW may be adjusted to a level at least as large as 1% of emission bandwidth. The emissions bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RESULT

No non-compliance noted, see 8.6 measurement result plots and the attachment.

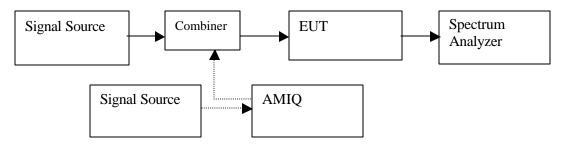
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8.4. SECTION 2.1051: SPURIOUS EMISSION AT ANTENNA TERMINAL

INSTRUMENTS LIST

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|------------------|-----------------|---------------|---------------|
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 8/12/03 |
| EMI Receiver | HP | 8593EM | 6/11/03 |
| AMIQ | HP | E4432B-1E5-H9 | 9/12/03 |

TEST SETUP



TEST PROCEDURE

- RF signal or three balanced signals (intermodulation measurement) were applied to the RF input. One set as close as possible to the bottom of the block edge and one set as close as possible to the top of the block edge. Set the RES BW to 1% of the emission bandwidth to show compliance with the -13dBm limit, in the 1 MHz bands immediately outside and adjacent to the top and bottom edges of the frequency block.
- 2) For the Out-of-Band measurements a 1 MHz RES BW was used to scan from 15 MHz to 10xfo of the fundamental carrier for all frequency block. A display line was placed at -13dBm to show compliance for spurious, harmonics, and intermodulation emissions.

RESULT

No non-compliance noted, see 8.6 measurement result plots and the attachment.

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8.5. SECTION 2.1053: FIELD STRENGTH OF SPURIOUS RADIATION

INSTRUMENTS LIST

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|-------------------|-------------------|------------|---------------|
| Spectrum Analyzer | HP | 8593EM | 6/11/03 |
| Amplifier | MITEQ | NSP2600-44 | 4/26/03 |
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 8/12/03 |
| Bicon Antenna | Eaton | 94455-1 | 3/30/03 |
| LP Antenna | EMCO | 3146 | 3/30/03 |
| Tune Dipole | Compliance Design | Robert | 5/5/03 |
| Tx Horn Antenna | EMCO | 3115 | 1/31/03 |
| Rx Horn Antenna | EMCO | 3115 | 1/31/03 |
| HPF | MICROLAB | FH-1800H | N/A |
| HPF | MICROLAB | FH-2400H | N/A |
| 50 ohm terminator | SHX | TF-5 | N/A |

Detector Function Setting of Test Receiver

| Frequency Range (MHz) | Detector Function | Resolution Bandwidth | Video Bandwidth |
|--------------------------|-------------------|-------------------------|-----------------|
| Above 1000 | Peak | 1 MHz 1 MHz | 1 MHz 10 Hz |

TEST SETUP

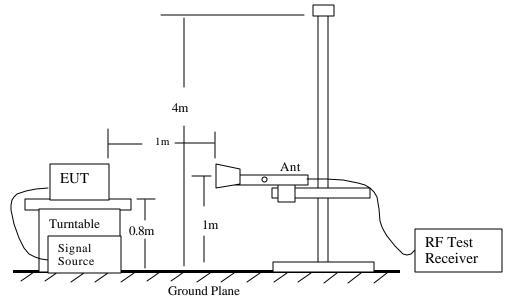


Fig 1: Radiated Emission Measurement

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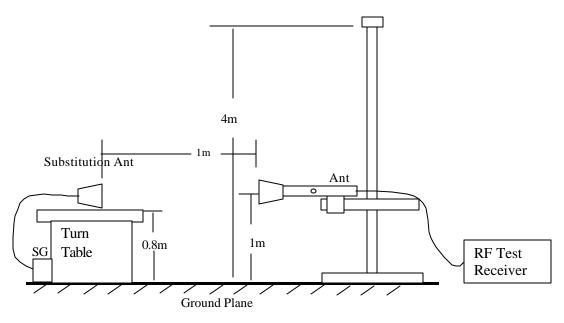


Fig 2: Radiated Emission - Substitution Method set-up

TEST PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.

2). The test antenna shall be oriented initially for vertical polarization located 1m from the EUT to correspond to the frequency of the transmitter.

3). The output of the test antenna shall be connected to the measuring receiver and either a peak or average detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.

4). The transmitter shall be switched on, if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.

5). The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.

6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

7). The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.

8). The maximum signal level detected by the measuring receiver shall be noted.

9). The transmitter shall be replaced by a substitution antenna.

10). The substitution antenna shall be oriented for vertical polarization.

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11). The substitution antenna shall be connected to a calibrated signal generator.

12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

14). The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

<u>RESULT</u>

No non-compliance noted, as shown below

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AMPS Modulation:

| roject #: ompany: UT Descrip.: UT M/N: est Target: lode Oper: | 02U1586-3 LGC Wireless Ir | | | | | | | | |
|--|---|--------------------------------------|------------------------------|------------------------------|------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|
| UT Descrip.: UT M/N: est Target: | | | | | | | | | |
| JT M/N: st Target: | | | | | | | | | |
| st Target: | | (AMPS Output l | Power = 26dBm) | | | | | | |
| 0 | InterReach Umis | on Accel | | | | | | | |
| ode Oper: | FCC 90 | | | | | | | | |
| | Downlink Low / | Mid / High | | | | | | | |
| urious Emission | IS | | | | | | | | |
| Channel: | | | | | | | | | |
| 0.118 | 84.20 | -46.00 | 0.30 | 0.00 | 0.00 | -46.30 | -13.00 | -33.30 | V |
| 1.850 | 49.90 | -61.20 | 1.08 | 8.10 | 5.95 | -56.33 | -13.00 | -43.33 | V |
| 2.775 | 48.60 | -65.30 | 1.31 | 9.00 | 6.85 | -59.76 | -13.00 | -46.76 | V (Noise Floor) |
| 3.700 4.625 | 432 43.00 | -73.50 -71.00 | 1.52 1.76 | 8.90 9.50 | 6.75 7.35 | -68.27 -65.41 | -13.00 -13.00 | -55.27 -52.41 | V (Noise Floor) V (Noise Floor) |
| 5.550 | 43.00 | -71.00 | 1.98 | 9.90 | 7.75 | -65.23 | -13.00 | -52.23 | V (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | V (Noise Floor) |
| 7.400 | 45.00 | -65.00 | 2.34 | 10.60 | 8.45 | -58.89 | -13.00 | -45.89 | V (Noise Floor) |
| 8.325 | 45.00 | -62.50 | 2.49 | 10.30 | 8.15 | -56.84 | -13.00 | -43.84 | V (Noise Floor) |
| 9.250 | 46.00 | -60.00 | 2.64 | 10.50 | 8.35 | -54.29 | -13.00 | -41.29 | V (Noise Floor) |
| 0.118 | 83.80 | -47.20 | 0.30 | 0.00 | 0.00 | -47.50 | -13.00 | -34.50 | H |
| 1.850 2.775 | 46.00 43.00 | -60.00 -71.00 | 1.10 1.31 | 8.10 9.00 | 5.95 6.85 | -55.15 -65.46 | -13.00 -13.00 | -42.15 -52.46 | H H (Noise Floor) |
| 3.700 | 43.00 | -72.00 | 1.51 | 8.90 | 6.75 | -66.77 | -13.00 | -53.77 | H (Noise Floor) |
| 4.625 | 43.00 | -71.00 | 1.76 | 9.50 | 7.35 | -65.41 | -13.00 | -52.41 | H (Noise Floor) |
| 5.550 | 43.00 | -71.00 | 1.98 | 9.90 | 7.75 | -65.23 | -13.00 | -52.23 | H (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | H (Noise Floor) |
| 7.400 | 45.00 | -65.00 | 2.34 | 10.60 | 8.45 | -58.89 | -13.00 | -45.89 | H (Noise Floor) |
| 8.325 | 45.00 | -62.50 | 2.49 | 10.30 | 8.15 | -56.84 | -13.00 | -43.84 | H (Noise Floor) |
| 9.250 | 46.00 | -60.60 | 2.64 | 10.50 | 8.35 | -54.89 | -13.00 | -41.89 | H (Noise Floor) |
| d Channel | | | | | | | | | |
| 0.118 | 85.10 | -45.50 | 0.30 | 0.00 | 0.00 | -45.80 | -13.00 | -32.80 | V |
| 1.885 | 46.00 | -60.00 | 1.10 | 8.20 | 6.05 | -55.05 | -13.00 | -42.05 | V |
| 2.828 | 44.00 | -70.00 | 1.32 | 9.00 | 6.85 | -64.47 | -13.00 | -51.47 | V (Noise Floor) |
| 3.770 | 43.00 | -71.00 | 1.53 | 8.90 | 6.75 | -65.78 | -13.00 | -52.78 | V (Noise Floor) |
| 0.118 | 84.10 46.00 | -48.20 -60.00 | 0.30 | 0.00 8.20 | 0.00 6.05 | -48.50 | -13.00 -13.00 | -35.50 -42.05 | H H |
| | 46.00 | -73.50 | 1.10 | 9.00 | 6.85 | -55.05 -67.97 | -13.00 | -54.97 | H (Noise Floor) |
| 1.885 | | -71.00 | 1.53 | 8.90 | 6.75 | -65.78 | -13.00 | -52.78 | H (Noise Floor) |
| 1.885 2.828 3.770 | 43.00 | | | | | | | | |
| 2.828 | 43.00 | | | | | | | | |
| 2.828 3.770 h Channel | | | | 0.00 | | | -13.00 | -36.20 | V |
| 2.828 3.770 h Channel 0.118 | 82.90 | -48.90 | 0.30 | | 0.00 | -49.20 | | | |
| 2.828 3.770 h Channel 0.118 1.920 | 82.90 46.00 | -61.50 | 1.10 | 8.20 | 6.05 | -56.55 | -13.00 | -43.55 | V |
| 2.828 3.770 h Channel 0.118 1.920 2.880 | 82.90 46.00 44.10 | -61.50 -72.50 | 1.10 1.32 | 8.20 9.00 | 6.05 6.85 | -56.55 -66.97 | -13.00 -13.00 | -43.55 -53.97 | V V (Noise Floor) |
| 2.828 3.770 h Channel 0.118 1.920 2.880 3.840 | 82.90 46.00 44.10 45.00 | -61.50 -72.50 -69.00 | 1.10 1.32 1.54 | 8.20 9.00 8.90 | 6.05 6.85 6.75 | -56.55 -66.97 -63.79 | -13.00 -13.00 -13.00 | -43.55 -53.97 -50.79 | V V (Noise Floor) V (Noise Floor) |
| 2.828 3.770 h Channel 0.118 1.920 2.880 | 82.90 46.00 44.10 | -61.50 -72.50 | 1.10 1.32 | 8.20 9.00 | 6.05 6.85 | -56.55 -66.97 | -13.00 -13.00 | -43.55 -53.97 | V V (Noise Floor) |
| 2.828 3.770 th Channel 0.118 1.920 2.880 3.840 0.118 | 82.90 46.00 44.10 45.00 80.20 | -61.50 -72.50 -69.00 -49.50 | 1.10 1.32 1.54 0.30 | 8.20 9.00 8.90 0.00 | 6.05 6.85 6.75 0.00 | -56.55 -66.97 -63.79 -49.80 | -13.00 -13.00 -13.00 -13.00 | -43.55 -53.97 -50.79 -36.80 | V V (Noise Floor) V (Noise Floor) H |

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COMPLIANCE CERTIFICATION SERVICES

REPORT NO: 02U1586-3 DATE: JANUARY 8, 2002 FCC ID: NOOUNS-EGSM-2 EUT: 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

| Fest Engr: | Vien Tran | | | | | | | | |
|--------------------------------|-----------------|------------------|----------------|---------------|--------------|------------------|------------------|------------------|------------------------------------|
| Project #: | 02U1586-3 | | | | | | | | |
| Company: | LGC Wireless In | nc | | | | | | | |
| EUT Descrip.: | 900MHz EGSM | I (AMPS Output I | Power = -10dBm | 1) | | | | | |
| EUT M/N: | InterReach Umis | son Accel | | | | | | | |
| Fest Target: | FCC 90 | | | | | | | | |
| Aode Oper: | Uplink, Low / M | lid / High | | | | | | | |
| purious Emissior o Channel: | 18 | | | | | | | | |
| 1.760 | 48.00 | -58.00 | 1.04 | 8.10 | 5.95 | -53.09 | -13.00 | -40.09 | V |
| 2.640 | 43.00 | -75.00 | 1.28 | 9.00 | 6.85 | -69.43 | -13.00 | -56.43 | V (Noise Floor) |
| 3.520 | 43.00 | -73.50 | 1.47 | 8.90 | 6.75 | -68.22 | -13.00 | -55.22 | V (Noise Floor) |
| 4.400 | 43.00 | -71.00 | 1.71 | 9.50 | 7.35 | -65.36 | -13.00 | -52.36 | V (Noise Floor) |
| 5.280 6.160 | 43.00 43.00 | -71.00 -70.00 | 1.91 2.11 | 9.90 10.40 | 7.75 8.25 | -65.16 | -13.00 -13.00 | -52.16 -50.86 | V (Noise Floor) V (Noise Floor) |
| 7.040 | 43.00 | -70.00 | 2.11 | 10.40 | 8.25 | -63.86 -60.83 | -13.00 | -50.86 | V (Noise Floor) V (Noise Floor) |
| 7.920 | 44.50 | -63.00 | 2.42 | 10.30 | 8.15 | -57.27 | -13.00 | -44.27 | V (Noise Floor) |
| 8.800 | 45.00 | -61.00 | 2.56 | 10.50 | 8.35 | -55.21 | -13.00 | -42.21 | V (Noise Floor) |
| 1.760 | 46.00 | -60.00 | 1.04 | 8.10 | 5.95 | -55.09 | -13.00 | -42.09 | Н |
| 2.640 | 43.00 | -75.00 | 1.28 | 9.00 | 6.85 | -69.43 | -13.00 | -56.43 | H (Noise Floor) |
| 3.520 | 43.00 | -73.50 | 1.47 | 8.90 | 6.75 | -68.22 | -13.00 | -55.22 | H (Noise Floor) |
| 4.400 | 43.00 43.00 | -71.00 | 1.71 | 9.50 9.90 | 7.35 7.75 | -65.36 -65.16 | -13.00 -13.00 | -52.36 -52.16 | H (Noise Floor) H (Noise Floor) |
| 6.160 | 43.00 | -70.00 | 2.11 | 10.40 | 8.25 | -63.86 | -13.00 | -50.86 | H (Noise Floor) |
| 7.040 | 43.00 | -67.00 | 2.28 | 10.60 | 8.45 | -60.83 | -13.00 | -47.83 | H (Noise Floor) |
| 7.920 | 44.00 | -63.00 | 2.42 | 10.30 | 8.15 | -57.27 | -13.00 | -44.27 | H (Noise Floor) |
| 8.800 | 45.00 | -61.00 | 2.56 | 10.50 | 8.35 | -55.21 | -13.00 | -42.21 | H (Noise Floor) |
| | | | | | | | | | |
| Mid Channel 1.795 | 49.50 | -59.20 | 1.11 | 8.20 | 6.05 | -54.26 | -13.00 | -41.26 | V |
| 3.590 | 49.50 | -75.00 | 1.33 | 9.00 | 6.85 | -69.48 | -13.00 | -41.20 | V (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | V (Noise Floor) |
| 1.795 | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | Н |
| 3.590 | 43.00 | -75.00 | 1.33 | 9.00 | 6.85 | -69.48 | -13.00 | -56.48 | H (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | H (Noise Floor) |
| ligh Channel | | | | | | | | | |
| 1.830 | 48.10 | -59.00 | 1.11 | 8.20 | 6.05 | -54.06 | -13.00 | -41.06 | V |
| | | | | | | | | | V (Noise Floor) |
| 5.490 | 43.00 | -73.50 | 1.57 | 8.90 | 6.75 | -68.32 | -13.00 | -55.32 | V (Noise Floor) |
| 1.830 | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | Н |
| 3.660 | | | | | | -69.49 | | | H (Noise Floor) |
| 1.830 | | | | | | -51.56 | | | V (Nois |

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REPORT NO: 02U1586-3 DATE: JANUARY 8, 2002 FCC ID: NOOUNS-EGSM-2 EUT: 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

APCO CQPSK Modulation:

| oject #: | Vien Tran | | | | | | | | |
|---|--|--------------------------------------|------------------------------|------------------------------|------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|
| | 02U1586-3 | | | | | | | | |
| mpany: | LGC Wireless Ir | | | | | | | | |
| T Descrip.: | | (CQPSK Output | Power = 22dBn | 1) | | | | | |
| JT M/N: | InterReach Umis FCC 90 | on Accel | | | | | | | |
| st Target: | Downlink Low / | Mid / High | | | | | | | |
| ode Oper: | DOWININK LOW / | Mid / High | | | | | | | |
| urious Emissio | ns | | | | | | | | |
| Channel: | | | | | | | | | |
| 0.118 | 81.20 | -48.60 | 0.30 | 0.00 | 0.00 | -48.90 | -13.00 | -35.90 | V |
| 1.850 | 46.10 48.60 | -58.20 | 1.08 | 8.10 9.00 | 5.95 6.85 | -53.33 -59.76 | -13.00 -13.00 | -40.33 -46.76 | V V (Noise Floor) |
| 3.700 | 432 | -73.50 | 1.52 | 8.90 | 6.75 | -68.27 | -13.00 | -55.27 | V (Noise Floor) |
| 4.625 | 43.00 | -71.00 | 1.76 | 9.50 | 7.35 | -65.41 | -13.00 | -52.41 | V (Noise Floor) |
| 5.550 | 43.00 | -71.00 | 1.98 | 9.90 | 7.75 | -65.23 | -13.00 | -52.23 | V (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | V (Noise Floor) |
| 7.400 8.325 | 45.00 45.00 | -65.00 -62.50 | 2.34 2.49 | 10.60 10.30 | <u>8.45</u> 8.15 | -58.89 -56.84 | -13.00 -13.00 | -45.89 -43.84 | V (Noise Floor) V (Noise Floor) |
| 9.250 | 45.00 | -62.50 | 2.49 | 10.50 | 8.35 | -56.84 -54.29 | -13.00 | -43.84 -41.29 | V (Noise Floor) V (Noise Floor) |
| 0.118 | 78.90 | -49.80 | 0.30 | 0.00 | 0.00 | -50.10 | -13.00 | -37.10 | H |
| 1.850 | 45.00 | -61.00 | 1.10 | 8.10 | 5.95 | -56.15 | -13.00 | -43.15 | Н |
| 2.775 | 43.00 | -71.00 | 1.31 | 9.00 | 6.85 | -65.46 | -13.00 | -52.46 | H (Noise Floor) |
| 3.700 | 43.00 | -72.00 | 1.52 | 8.90 | 6.75 | -66.77 | -13.00 | -53.77 | H (Noise Floor) |
| 4.625 | 43.00 43.00 | -71.00 | 1.76 1.98 | 9.50 9.90 | 7.35 7.75 | -65.41 -65.23 | -13.00 -13.00 | -52.41 -52.23 | H (Noise Floor) H (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 9.90 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | H (Noise Floor) |
| 7.400 | 45.00 | -65.00 | 2.34 | 10.60 | 8.45 | -58.89 | -13.00 | -45.89 | H (Noise Floor) |
| 8.325 | 45.00 | -62.50 | 2.49 | 10.30 | 8.15 | -56.84 | -13.00 | -43.84 | H (Noise Floor) |
| 9.250 | 46.00 | -60.60 | 2.64 | 10.50 | 8.35 | -54.89 | -13.00 | -41.89 | H (Noise Floor) |
| lid Channel | | | | | | | | | |
| 0.118 | 82.10 | -47.60 | 0.30 | 0.00 | 0.00 | -47.90 | -13.00 | -34.90 | V |
| 1.885 | 48.30 | -62.00 | 1.10 | 8.20 | 6.05 | -57.05 | -13.00 | -44.05 | v |
| 2.828 | 44.00 | -70.00 | 1.32 | 9.00 | 6.85 | -64.47 | -13.00 | -51.47 | V (Noise Floor) |
| 3.770 | 43.00 | -71.00 | 1.53 | 8.90 | 6.75 | -65.78 | -13.00 | -52.78 | V (Noise Floor) |
| 0.118 | 81.00 | -52.20 | 0.30 | 0.00 | 0.00 | -52.50 | -13.00 | -39.50 | Н |
| | 46.00 | -60.00 | 1.10 | 8.20 | 6.05 | -55.05 | -13.00 | -42.05 | H |
| 1.885 | 44.00 | -73.50 -71.00 | <u>1.32</u> 1.53 | 9.00 8.90 | 6.85 6.75 | -67.97 -65.78 | -13.00 -13.00 | -54.97 -52.78 | H (Noise Floor) H (Noise Floor) |
| 2.828 | | /1.00 | 1.00 | 0.00 | 0.10 | 00110 | 10.00 | 02.10 | 11 (110150 11001) |
| | 43.00 | | | | | | | | |
| 2.828 | | | | | | | | | |
| 2.828 3.770 | | -52.10 | 0.30 | 0.00 | 0.00 | -52.40 | -13.00 | -39.40 | v |
| 2.828 3.770 igh Channel 0.118 1.920 | 43.00 78.80 48.60 | -63.00 | 1.10 | 8.20 | 6.05 | -58.05 | -13.00 | -45.05 | V |
| 2.828 3.770 <u>qh Channel</u> 0.118 1.920 2.880 | 43.00 78.80 48.60 44.10 | -63.00 -72.50 | 1.10 1.32 | 8.20 9.00 | 6.05 6.85 | -58.05 -66.97 | -13.00 -13.00 | -45.05 -53.97 | V V (Noise Floor) |
| 2.828 3.770 igh Channel 0.118 1.920 2.880 3.840 | 43.00 78.80 48.60 44.10 45.00 | -63.00 -72.50 -69.00 | 1.10 1.32 1.54 | 8.20 9.00 8.90 | 6.05 6.85 6.75 | -58.05 -66.97 -63.79 | -13.00 -13.00 -13.00 | -45.05 -53.97 -50.79 | V V (Noise Floor) V (Noise Floor) |
| 2.828 3.770 0.118 1.920 2.880 3.840 0.118 | 43.00 78.80 48.60 44.10 45.00 77.90 | -63.00 -72.50 -69.00 -52.30 | 1.10 1.32 1.54 0.30 | 8.20 9.00 8.90 0.00 | 6.05 6.85 6.75 0.00 | -58.05 -66.97 -63.79 -52.60 | -13.00 -13.00 -13.00 -13.00 | -45.05 -53.97 -50.79 -39.60 | V V (Noise Floor) V (Noise Floor) H |
| 2.828 3.770 dh Channel 0.118 1.920 2.880 3.840 | 43.00 78.80 48.60 44.10 45.00 | -63.00 -72.50 -69.00 | 1.10 1.32 1.54 | 8.20 9.00 8.90 | 6.05 6.85 6.75 | -58.05 -66.97 -63.79 | -13.00 -13.00 -13.00 | -45.05 -53.97 -50.79 | V V (Noise Floor) V (Noise Floor) |

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COMPLIANCE CERTIFICATION SERVICES

REPORT NO: 02U1586-3 DATE: JANUARY 8, 2002 FCC ID: NOOUNS-EGSM-2 EUT: 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

| | Vien Tran | | | | | | | | |
|------------------|-----------------|------------------|---------------|---------------|--------------|------------------|------------------|------------------|------------------------------------|
| Project #: | 02U1586-3 | | | | | | | | |
| Company: | LGC Wireless Ir | | | | | | | | |
| EUT Descrip.: | | I (CQPSK Output | Power =-10dBr | n) | | | | | |
| EUT M/N: | InterReach Umis | son Accel | | | | | | | |
| Fest Target: | FCC 90 | | | | | | | | |
| Mode Oper: | Uplink, Low / M | lid / High | | | | | | | |
| Spurious Emissio | ons | | | | | | | | |
| o Channel: | | | | • | | 1 | | | |
| 1.760 2.640 | 47.50 43.00 | -59.00 -75.00 | 1.04 | 8.10 9.00 | 5.95 6.85 | -54.09 -69.43 | -13.00 -13.00 | -41.09 -56.43 | V |
| 3.520 | 43.00 | -73.50 | 1.28 | 9.00 | 6.85 | -69.43 | -13.00 | -56.43 | V (Noise Floor) V (Noise Floor) |
| 4.400 | 43.00 | -71.00 | 1.71 | 9.50 | 7.35 | -65.36 | -13.00 | -52.36 | V (Noise Floor) |
| 5.280 | 43.00 | -71.00 | 1.91 | 9.90 | 7.75 | -65.16 | -13.00 | -52.16 | V (Noise Floor) |
| 6.160 | 43.00 | -70.00 | 2.11 | 10.40 | 8.25 | -63.86 | -13.00 | -50.86 | V (Noise Floor) |
| 7.040 | 43.00 | -67.00 | 2.28 | 10.60 | 8.45 | -60.83 | -13.00 | -47.83 | V (Noise Floor) |
| 7.920 | 44.50 | -63.00 | 2.42 | 10.30 | 8.15 | -57.27 | -13.00 | -44.27 | V (Noise Floor) |
| 8.800 1.760 | 45.00 46.00 | -61.00 -60.00 | 2.56 | 10.50 8.10 | 8.35 5.95 | -55.21 -55.09 | -13.00 -13.00 | -42.21 -42.09 | V (Noise Floor) H |
| 2.640 | 46.00 | -60.00 | 1.04 | 9.00 | 5.95 6.85 | -55.09 -69.43 | -13.00 | -42.09 -56.43 | H (Noise Floor) |
| 3.520 | 43.00 | -73.50 | 1.47 | 8.90 | 6.75 | -68.22 | -13.00 | -55.22 | H (Noise Floor) |
| 4.400 | 43.00 | -71.00 | 1.71 | 9.50 | 7.35 | -65.36 | -13.00 | -52.36 | H (Noise Floor) |
| 5.280 | 43.00 | -71.00 | 1.91 | 9.90 | 7.75 | -65.16 | -13.00 | -52.16 | H (Noise Floor) |
| 6.160 | 43.00 | -70.00 | 2.11 | 10.40 | 8.25 | -63.86 | -13.00 | -50.86 | H (Noise Floor) |
| 7.040 | 43.00 | -67.00 | 2.28 | 10.60 | 8.45 | -60.83 | -13.00 | -47.83 | H (Noise Floor) |
| 7.920 | 44.00 | -63.00 | 2.42 | 10.30 | 8.15 | -57.27 | -13.00 | -44.27 | H (Noise Floor) |
| 8.800 | 45.00 | -61.00 | 2.56 | 10.50 | 8.35 | -55.21 | -13.00 | -42.21 | H (Noise Floor) |
| /lid Channel | | | | | | | | | |
| 1.795 | 49.50 | -57.00 | 1.11 | 8.20 | 6.05 | -52.06 | -13.00 | -39.06 | V |
| 3.590 | 43.00 | -75.00 | 1.33 | 9.00 | 6.85 | -69.48 | -13.00 | -56.48 | V (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | V (Noise Floor) |
| 1.795 | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | Н |
| 3.590 | 43.00 | -75.00 | 1.33 | 9.00 | 6.85 | -69.48 | -13.00 | -56.48 | H (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | H (Noise Floor) |
| ligh Channel | | | | | | | | | |
| 1.830 | 48.10 | -59.00 | 1.11 | 8.20 | 6.05 | -54.06 | -13.00 | -41.06 | V |
| 3.660 | 43.00 | -75.00 | 1.34 | 9.00 | 6.85 | -69.49 | -13.00 | -56.49 | V (Noise Floor) |
| 5.490 | 43.00 | -73.50 | 1.57 | 8.90 | 6.75 | -68.32 | -13.00 | -55.32 | V (Noise Floor) |
| 1.830 | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | Н |
| | 43.00 | -75.00 | 1.34 | 9.00 | 6.85 | -69.49 | -13.00 | -56.49 | H (Noise Floor) |
| 3.660 5.490 | 43.00 | -73.50 | 1.57 | 8.90 | 6.75 | -68.32 | -13.00 | -55.32 | H (Noise Floor) |

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APCO C4FM Modulation:

| Project #: Company: CUT Descrip.: CUT M/N: Fest Target: Mode Oper: Epurious Emission | 02U1586-3 LGC Wireless In 900MHz EGSN InterReach Umi FCC 90 Downlink Low / | I (C4FM Output I | | | | | | | |
|---|--|--|---|--|--|--|--|--|--|
| CUT Descrip.: CUT M/N: Yest Target: Aode Oper: | 900MHz EGSM InterReach Umi FCC 90 | I (C4FM Output I | | | | | | | |
| CUT M/N: Sest Target: Aode Oper: | InterReach Umi FCC 90 | | | | | | | | |
| est Target: Iode Oper: | FCC 90 | son Accel | Power = 10dBm) | | | | | | |
| Iode Oper: | | | | | | | | | |
| - | Downlink Low / | | | | | | | | |
| purious Emission | | Mid / High | | | | | | | |
| purious Emission | | | | | | | | | |
| | 15 | | | | | | | | |
| o Channel: 0.118 | 83.00 | -47.00 | 0.30 | 0.00 | 0.00 | -47.30 | -13.00 | -34.30 | V |
| 1.850 | 48.30 | -47.00 | 1.08 | 8.10 | 5.95 | -47.30 | -13.00 | -44.13 | V |
| 2.775 | 47.90 | -63.30 | 1.31 | 9.00 | 6.85 | -57.76 | -13.00 | -44.76 | V (Noise Floor) |
| 3.700 | 432 | -73.50 | 1.52 | 8.90 | 6.75 | -68.27 | -13.00 | -55.27 | V (Noise Floor) |
| 4.625 | 43.00 | -71.00 | 1.76 | 9.50 | 7.35 | -65.41 | -13.00 | -52.41 | V (Noise Floor) |
| 5.550 | 43.00 | -71.00 | 1.98 | 9.90 | 7.75 | -65.23 | -13.00 | -52.23 | V (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | V (Noise Floor) |
| 7.400 | 45.00 | -65.00 | 2.34 | 10.60 | 8.45 | -58.89 | -13.00 | -45.89 | V (Noise Floor) |
| 8.325 | 45.00 | -62.50 | 2.49 | 10.30 | 8.15 | -56.84 | -13.00 | -43.84 | V (Noise Floor) |
| 9.250 | 46.00 | -60.00 -47.20 | 2.64 | 10.50 | 8.35 | -54.29 | -13.00 | -41.29 | V (Noise Floor) |
| 0.118 | 83.80 46.00 | -47.20 | 1.10 | 0.00 8.10 | 0.00 | -47.50 -55.15 | -13.00 -13.00 | -34.50 -42.15 | H H |
| 2.775 | 43.00 | -71.00 | 1.10 | 9.00 | 6.85 | -65.46 | -13.00 | -52.46 | H (Noise Floor) |
| 3.700 | 43.00 | -72.00 | 1.52 | 8.90 | 6.75 | -66.77 | -13.00 | -53.77 | H (Noise Floor) |
| 4.625 | 43.00 | -71.00 | 1.76 | 9.50 | 7.35 | -65.41 | -13.00 | -52.41 | H (Noise Floor) |
| 5.550 | 43.00 | -71.00 | 1.98 | 9.90 | 7.75 | -65.23 | -13.00 | -52.23 | H (Noise Floor) |
| 6.475 | 43.00 | -70.00 | 2.19 | 10.40 | 8.25 | -63.94 | -13.00 | -50.94 | H (Noise Floor) |
| 7.400 | 45.00 | -65.00 | 2.34 | 10.60 | 8.45 | -58.89 | -13.00 | -45.89 | H (Noise Floor) |
| 8.325 | 45.00 | -62.50 | 2.49 | 10.30 | 8.15 | -56.84 | -13.00 | -43.84 | H (Noise Floor) |
| 9.250 | 46.00 | -60.60 | 2.64 | 10.50 | 8.35 | -54.89 | -13.00 | -41.89 | H (Noise Floor) |
| lid Channel | | | | | | | | | |
| liu Charlinei | | | | | | | | | |
| 0.118 | 84.50 | -46.20 | 0.30 | 0.00 | 0.00 | -46 50 | -13.00 | -33.50 | V |
| 0.118 | 84.50 50.20 | -46.20 | 0.30 | 0.00 | 0.00 | -46.50 | -13.00 | -33.50 | V |
| 0.118 1.885 2.828 | 84.50 50.20 44.00 | -46.20 -53.00 -70.00 | 0.30 1.10 1.32 | 0.00 8.20 9.00 | 0.00 6.05 6.85 | -46.50 -48.05 -64.47 | -13.00 -13.00 -13.00 | -33.50 -35.05 -51.47 | V V V (Noise Floor) |
| 1.885 | 50.20 | -53.00 | 1.10 | 8.20 | 6.05 | -48.05 | -13.00 | -35.05 | V |
| 1.885 2.828 | 50.20 44.00 | -53.00 -70.00 | 1.10 1.32 | 8.20 9.00 | 6.05 6.85 | -48.05 -64.47 | -13.00 -13.00 | -35.05 -51.47 | V V (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 | 50.20 44.00 43.00 | -53.00 -70.00 -71.00 -48.20 -60.00 | 1.10 1.32 1.53 0.30 1.10 | 8.20 9.00 8.90 | 6.05 6.85 6.75 | -48.05 -64.47 -65.78 | -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 | V V (Noise Floor) V (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 2.828 | 50.20 44.00 43.00 84.10 46.50 44.00 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 | 1.10 1.32 1.53 0.30 1.10 1.32 | 8.20 9.00 8.90 0.00 8.20 9.00 | 6.05 6.85 6.75 0.00 6.05 6.85 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 | V V (Noise Floor) V (Noise Floor) H H H |
| 1.885 2.828 3.770 0.118 1.885 | 50.20 44.00 43.00 84.10 46.50 | -53.00 -70.00 -71.00 -48.20 -60.00 | 1.10 1.32 1.53 0.30 1.10 | 8.20 9.00 8.90 0.00 8.20 | 6.05 6.85 6.75 0.00 6.05 | -48.05 -64.47 -65.78 -48.50 -55.05 | -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 | V V (Noise Floor) V (Noise Floor) H H |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 | 50.20 44.00 43.00 84.10 46.50 44.00 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 | 1.10 1.32 1.53 0.30 1.10 1.32 | 8.20 9.00 8.90 0.00 8.20 9.00 | 6.05 6.85 6.75 0.00 6.05 6.85 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 | V V (Noise Floor) V (Noise Floor) H H H |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 igh Channel | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 | 8.20 9.00 8.90 0.00 8.20 9.00 8.90 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 | V V (Noise Floor) V (Noise Floor) H H H (Noise Floor) H (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 igh Channel 0.118 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 0.30 | 8.20 9.00 8.90 0.00 8.20 9.00 8.90 0.00 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 | V V (Noise Floor) V (Noise Floor) H H H (Noise Floor) H (Noise Floor) V |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 igh Channel 0.118 1.920 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 46.50 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 -61.50 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 0.30 1.10 | 8.20 9.00 8.90 0.00 8.20 9.00 8.90 0.00 8.20 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 6.05 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 -56.55 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 -43.55 | V V (Noise Floor) V (Noise Floor) H H H (Noise Floor) H (Noise Floor) V V |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 igh Channel 0.118 1.920 2.880 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 81.90 46.50 44.10 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 -61.50 -72.50 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 0.30 1.10 1.32 | 8.20 9.00 8.90 9.00 8.20 9.00 8.90 0.00 8.20 9.00 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 6.05 6.85 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 -56.55 -66.97 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 -43.55 -53.97 | V V (Noise Floor) V (Noise Floor) H H (Noise Floor) H (Noise Floor) V V V V (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 0.118 0.118 0.118 1.920 2.880 3.840 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 46.50 44.10 44.10 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 -61.50 -72.50 -69.00 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 0.30 1.10 1.32 1.54 | 8.20 9.00 8.90 9.00 8.20 9.00 8.90 8.90 8.90 8.20 9.00 8.20 9.00 8.90 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 6.05 6.85 6.75 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 -56.55 -66.97 -63.79 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 -35.10 -43.55 -53.97 -50.79 | V V (Noise Floor) V (Noise Floor) H H (Noise Floor) H (Noise Floor) V V V V V (Noise Floor) V (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 iigh Channel 0.118 1.920 2.880 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 81.90 46.50 44.10 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 -61.50 -72.50 | 1.10 1.32 1.53 0.30 1.10 1.32 1.53 0.30 1.10 1.32 | 8.20 9.00 8.90 9.00 8.20 9.00 8.90 0.00 8.20 9.00 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 6.05 6.85 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 -56.55 -66.97 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 -43.55 -53.97 | V V (Noise Floor) V (Noise Floor) H H (Noise Floor) H (Noise Floor) V V V V (Noise Floor) |
| 1.885 2.828 3.770 0.118 1.885 2.828 3.770 igh Channel 0.118 1.920 2.880 3.840 0.118 | 50.20 44.00 43.00 84.10 46.50 44.00 43.00 81.90 46.50 44.10 45.00 81.60 | -53.00 -70.00 -71.00 -48.20 -60.00 -73.50 -71.00 -47.80 -47.80 -61.50 -72.50 -69.00 -48.20 | $\begin{array}{c} 1.10\\ 1.32\\ 1.53\\ 0.30\\ 1.10\\ 1.32\\ 1.53\\ \hline \\ 0.30\\ 1.10\\ 1.32\\ 1.54\\ \hline \\ 0.30\\ \hline \end{array}$ | 8.20 9.00 8.90 9.00 8.20 9.00 8.90 0.00 8.20 9.00 8.90 9.00 8.90 0.00 | 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 6.05 6.85 6.75 0.00 | -48.05 -64.47 -65.78 -48.50 -55.05 -67.97 -65.78 -48.10 -56.55 -66.97 -63.79 -48.50 | -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 -13.00 | -35.05 -51.47 -52.78 -35.50 -42.05 -54.97 -52.78 -35.10 -43.55 -53.97 -50.79 -35.50 | V V (Noise Floor) V (Noise Floor) H H (Noise Floor) H (Noise Floor) V V V (Noise Floor) V (Noise Floor) V (Noise Floor) H |

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COMPLIANCE CERTIFICATION SERVICES

REPORT NO: 02U1586-3 DATE: JANUARY 8, 2002 FCC ID: NOOUNS-EGSM-2 EUT: 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

| Fest Engr: | Certification Se | , | open | | | | | | |
|----------------------|------------------|------------------|---------------------|---------------|--------------|------------------|------------------|------------------|------------------------------------|
| | Vien Tran | | | | | | | | |
| Project #: | 02U1586-3 | | | | | | | | |
| Company: | LGC Wireless In | nc | | | | | | | |
| EUT Descrip.: | 900MHz EGSN | I (C4FM Output I | Power = -10dBm |) | | | | | |
| EUT M/N: | InterReach Umis | son Accel | | | | | | | |
| Fest Target: | FCC 90 | | | | | | | | |
| Mode Oper: | Uplink, Low / M | lid / High | | | | | | | |
| Spurious Emission | ns | | | | | | | | |
| 1.760 | 48.00 | -58.00 | 1.04 | 8.10 | 5.95 | -53.09 | -13.00 | -40.09 | V |
| 2.640 | 43.00 | -75.00 | 1.28 | 9.00 | 6.85 | -69.43 | -13.00 | -56.43 | V (Noise Floor) |
| 3.520 | 43.00 43.00 | -73.50 | 1.47 | 8.90 9.50 | 6.75 7.35 | -68.22 -65.36 | -13.00 -13.00 | -55.22 -52.36 | V (Noise Floor) |
| 4.400 5.280 | 43.00 43.00 | -71.00 | 1.71 | 9.50 | 7.35 | -65.36 -65.16 | -13.00 | -52.36 -52.16 | V (Noise Floor) V (Noise Floor) |
| 5.280 6.160 | 43.00 | -70.00 | 2.11 | 9.90 | 8.25 | -63.86 | -13.00 | -50.86 | V (Noise Floor) V (Noise Floor) |
| 7.040 | 43.00 | -67.00 | 2.28 | 10.40 | 8.45 | -60.83 | -13.00 | -47.83 | V (Noise Floor) |
| 7.920 | 44.50 | -63.00 | 2.42 | 10.30 | 8.15 | -57.27 | -13.00 | -44.27 | V (Noise Floor) |
| 8.800 | 45.00 | -61.00 | 2.56 | 10.50 | 8.35 | -55.21 | -13.00 | -42.21 | V (Noise Floor) |
| 1.760 | 46.00 | -60.00 | 1.04 | 8.10 | 5.95 | -55.09 | -13.00 | -42.09 | Н |
| 2.640 | 43.00 | -75.00 | 1.28 | 9.00 | 6.85 | -69.43 | -13.00 | -56.43 | H (Noise Floor) |
| 3.520 | 43.00 | -73.50 | 1.47 | 8.90 | 6.75 | -68.22 | -13.00 | -55.22 | H (Noise Floor) |
| 4.400 | 43.00 | -71.00 | 1.71 | 9.50 | 7.35 | -65.36 | -13.00 | -52.36 | H (Noise Floor) |
| 5.280 | 43.00 43.00 | -71.00 | 2.11 | 9.90 10.40 | 7.75 | -65.16 -63.86 | -13.00 -13.00 | -52.16 -50.86 | H (Noise Floor) H (Noise Floor) |
| 7.040 | 43.00 | -70.00 | 2.11 | 10.40 | 8.25 | -63.86 -60.83 | -13.00 | -50.86 | H (Noise Floor) H (Noise Floor) |
| 7.920 | 43.00 | -63.00 | 2.28 | 10.80 | 8.15 | -57.27 | -13.00 | -44.27 | H (Noise Floor) |
| 8.800 | 45.00 | -61.00 | 2.56 | 10.50 | 8.35 | -55.21 | -13.00 | -44.21 | H (Noise Floor) |
| | | 01.00 | 2.00 | .0.00 | | | | 1 | 11 (1.0150 1.1001) |
| Mid Channel 1.795 | 49.50 | -59.20 | 1.11 | 8.20 | 6.05 | -54.26 | -13.00 | -41.26 | V |
| 3.590 | 49.50 | -59.20 | 1.33 | 9.00 | 6.85 | -54.26 | -13.00 | -41.26 | V (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | V (Noise Floor) |
| 1.795 | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | H |
| 3.590 | 43.00 | -75.00 | 1.33 | 9.00 | 6.85 | -69.48 | -13.00 | -56.48 | H (Noise Floor) |
| 5.385 | 43.00 | -73.50 | 1.56 | 8.90 | 6.75 | -68.31 | -13.00 | -55.31 | H (Noise Floor) |
| High Channel | - | | | | | | | | |
| 1.830 | 48.10 | -59.00 | 1.11 | 8.20 | 6.05 | -54.06 | -13.00 | -41.06 | V |
| 3.660 | 43.00 | -75.00 | 1.34 | 9.00 | 6.85 | -69.49 | -13.00 | -56.49 | V (Noise Floor) |
| 5.490 | 43.00 | -73.50 | 1.57 | 8.90 | 6.75 | -68.32 | -13.00 | -55.32 | V (Noise Floor) |
| | 64.50 | -56.50 | 1.11 | 8.20 | 6.05 | -51.56 | -13.00 | -38.56 | H |
| 1.830 3.660 | 43.00 43.00 | -75.00 -73.50 | <u>1.34</u> 1.57 | 9.00 8.90 | 6.85 6.75 | -69.49 -68.32 | -13.00 -13.00 | -56.49 -55.32 | H (Noise Floor) H (Noise Floor) |

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8.6. MEASUREMENT RESULT PLOTS

<u>RESULT</u>

The following table indicates the plot number associated with the Low, Mid, High Power Outputs emission, Input Bandwidth, Output Bandwidth, Block Edges, Out of Band, and Intermodulation.

| | 900 MHz EGSM (AM BASE CHANNEL (| |
|--------|------------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 1 | Low Channel, Output Power | 925.1 |
| 2 | Mid Channel, Output Power | 942.5 |
| 3 | High Channel, Output Power | 959.9 |
| 4 | Low Channel, Input Bandwidth | 925.1 |
| 5 | Mid Channel, Input Bandwidth | 942.5 |
| 6 | High Channel, Input Bandwidth | 959.9 |
| 7 | Low Channel, Output Bandwidth | 925.1 |
| 8 | Mid Channel, Output Bandwidth | 942.5 |
| 9 | High Channel, Output Bandwidth | 959.9 |
| 10 | Low Channel, Bottom Band Edge | 917.66 |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 |
| 17 | High channel, Upper Band Edge | 967.7 |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 |

| | 900 MHz EGSM (AMPS) - DOWNLINK INTER-MODULATION BASE CHANNEL (925 – 960 MHz) | | | | | | | |
|--------|---|-----------------------|--|--|--|--|--|--|
| Plot # | Description | Frequency Range (MHz) | | | | | | |
| 21 | Inter-modulation, Zoom-In | Zoom - In | | | | | | |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out | | | | | | |
| 23 | Inter-modulation, Out-Of-Band #1 | 15 to 1000 | | | | | | |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 | | | | | | |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 | | | | | | |

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| | 900 MHz EGSM (A BASE CHANNEL | |
|--------|---------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 1 | Low Channel, Output Power | 880.1 |
| 2 | Mid Channel, Output Power | 897.5 |
| 3 | High Channel, Output Power | 914.9 |
| 4 | Low Channel, Input Bandwidth | 880.1 |
| 5 | Mid Channel, Input Bandwidth | 897.5 |
| 6 | High Channel, Input Bandwidth | 914.9 |
| 7 | Low Channel, Output Bandwidth | 880.1 |
| 8 | Mid Channel, Output Bandwidth | 897.5 |
| 9 | High Channel, Output Bandwidth | 914.9 |
| 10 | Low Channel, Bottom Band Edge | 872.18 |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 |
| 17 | High channel, Upper Band Edge | 923.14 |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 |

| 900 MHz EGSM (AMPS) - UPLINK INTER-MODULATION BASE CHANNEL (880 – 915 MHz) | | |
|---|----------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 21 | Inter-modulation, Zoom-In | Zoom - In |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out |
| 23 | Inter-modulation, Out-Of-Band #1 | 30 to 1000 |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 |

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| | 900 MHz EGSM (APCO CQPSK) - DOWNLINK BASE CHANNEL (925 – 960 MHz) | | |
|--------|--|-----------------------|--|
| Plot # | Description | Frequency Range (MHz) | |
| 1 | Low Channel, Output Power | 925.1 | |
| 2 | Mid Channel, Output Power | 942.5 | |
| 3 | High Channel, Output Power | 959.9 | |
| 4 | Low Channel, Input Bandwidth | 925.1 | |
| 5 | Mid Channel, Input Bandwidth | 942.5 | |
| 6 | High Channel, Input Bandwidth | 959.9 | |
| 7 | Low Channel, Output Bandwidth | 925.1 | |
| 8 | Mid Channel, Output Bandwidth | 942.5 | |
| 9 | High Channel, Output Bandwidth | 959.9 | |
| 10 | Low Channel, Bottom Band Edge | 917.9 | |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 | |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 | |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 | |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 | |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 | |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 | |
| 17 | High channel, Upper Band Edge | 968.54 | |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 | |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 | |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 | |

900 MHz EGSM (APCO CQPSK) - DOWNLINK INTER-MODULATION BASE CHANNEL (925 – 960 MHz)

| Plot # | Description | Frequency Range (MHz) |
|--------|----------------------------------|-----------------------|
| 21 | Inter-modulation, Zoom-In | Zoom - In |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out |
| 23 | Inter-modulation, Out-Of-Band #1 | 15 to 1000 |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 |

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| 900 MHz EGSM (APCO CQPSK) - UPLINK BASE CHANNEL (880 – 915 MHz) | | |
|--|--------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 1 | Low Channel, Output Power | 880.1 |
| 2 | Mid Channel, Output Power | 897.5 |
| 3 | High Channel, Output Power | 914.9 |
| 4 | Low Channel, Input Bandwidth | 880.1 |
| 5 | Mid Channel, Input Bandwidth | 897.5 |
| 6 | High Channel, Input Bandwidth | 914.9 |
| 7 | Low Channel, Output Bandwidth | 880.1 |
| 8 | Mid Channel, Output Bandwidth | 897.5 |
| 9 | High Channel, Output Bandwidth | 914.9 |
| 10 | Low Channel, Bottom Band Edge | 872.18 |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 |
| 17 | High channel, Upper Band Edge | 922.66 |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 |

| 900 MHz EGSM (APCO CQPSK) - UPLINK INTER-MODULATION BASE CHANNEL (880 – 915 MHz) | | |
|---|----------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 21 | Inter-modulation, Zoom-In | Zoom - In |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out |
| 23 | Inter-modulation, Out-Of-Band #1 | 30 to 1000 |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 |

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| 900 MHz EGSM (APCO C4FM) - DOWNLINK BASE CHANNEL (925 – 960 MHz) | | |
|---|--------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 1 | Low Channel, Output Power | 925.1 |
| 2 | Mid Channel, Output Power | 942.5 |
| 3 | High Channel, Output Power | 959.9 |
| 4 | Low Channel, Input Bandwidth | 925.1 |
| 5 | Mid Channel, Input Bandwidth | 942.5 |
| 6 | High Channel, Input Bandwidth | 959.9 |
| 7 | Low Channel, Output Bandwidth | 925.1 |
| 8 | Mid Channel, Output Bandwidth | 942.5 |
| 9 | High Channel, Output Bandwidth | 959.9 |
| 10 | Low Channel, Bottom Band Edge | 917.06 |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 |
| 17 | High channel, Upper Band Edge | 968.78 |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 |

900 MHz EGSM (APCO C4FM) - DOWNLINK INTER-MODULATION BASE CHANNEL (925 – 960 MHz)

| Plot # | Description | Frequency Range (MHz) |
|--------|----------------------------------|-----------------------|
| 21 | Inter-modulation, Zoom-In | Zoom - In |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out |
| 23 | Inter-modulation, Out-Of-Band #1 | 15 to 1000 |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 |

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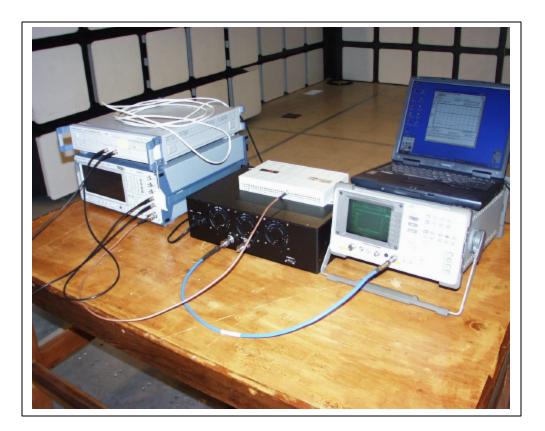
| 900 MHz EGSM (APCO C4FM) - UPLINK BASE CHANNEL (880 – 915 MHz) | | |
|---|--------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 1 | Low Channel, Output Power | 880.1 |
| 2 | Mid Channel, Output Power | 897.5 |
| 3 | High Channel, Output Power | 914.9 |
| 4 | Low Channel, Input Bandwidth | 880.1 |
| 5 | Mid Channel, Input Bandwidth | 897.5 |
| 6 | High Channel, Input Bandwidth | 914.9 |
| 7 | Low Channel, Output Bandwidth | 880.1 |
| 8 | Mid Channel, Output Bandwidth | 897.5 |
| 9 | High Channel, Output Bandwidth | 914.9 |
| 10 | Low Channel, Bottom Band Edge | 872.54 |
| 11 | Low Channel, Out-Of-Band #1 | 15 to 1000 |
| 12 | Low Channel, Out-Of-Band #2 | 1000 to 2500 |
| 13 | Low Channel, Out-Of-Band #3 | 2500 to 10000 |
| 14 | Mid Channel, Out-Of-Band #1 | 15 to 1000 |
| 15 | Mid Channel, Out-Of-Band #2 | 1000 to 2500 |
| 16 | Mid Channel, Out-Of-Band #3 | 2500 to 10000 |
| 17 | High channel, Upper Band Edge | 922.34 |
| 18 | High Channel, Out-Of-Band #1 | 15 to 1000 |
| 19 | High Channel, Out-Of-Band #2 | 1000 to 2500 |
| 20 | High Channel, Out-Of-Band #3 | 2500 to 10000 |

| 900 MHz EGSM (APCO C4FM) - UPLINK INTER-MODULATION BASE CHANNEL (880 – 915 MHz) | | |
|--|----------------------------------|-----------------------|
| Plot # | Description | Frequency Range (MHz) |
| 21 | Inter-modulation, Zoom-In | Zoom - In |
| 22 | Inter-modulation, Zoom-Out | Zoom - Out |
| 23 | Inter-modulation, Out-Of-Band #1 | 30 to 1000 |
| 24 | Inter-modulation, Out-Of-Band #2 | 1000 to 2500 |
| 25 | Inter-modulation, Out-Of-Band #3 | 2500 to 10000 |

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9. ATTACHMENT

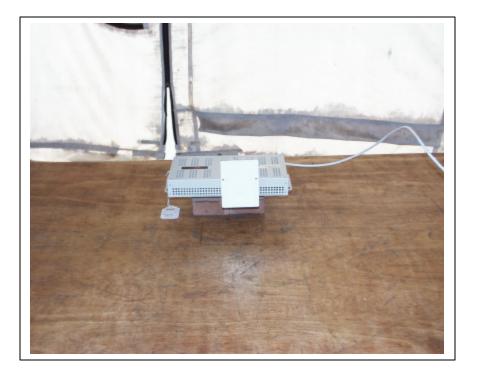
9.1. EUT SETUP PHOTOS



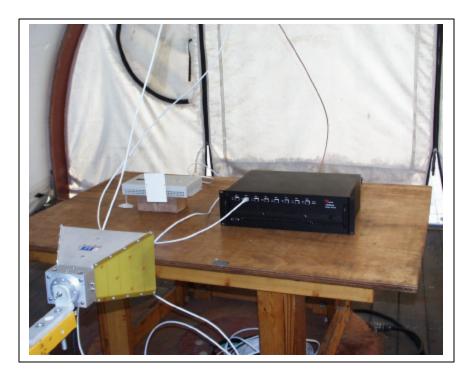
CONDUCTED MEASUREMENT

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REPORT NO: 02U1586-3 DATE: JANUARY 8, 2002 FCC ID: NOOUNS-EGSM-2 EUT: 900MHZ EGSM IN-BUILDING DISTRIBUTED ANTENNA SYSTEM



FUNDAMENTAL MEASUREMENT



HARMONIC & SPURIOUS MEASUREMENTS

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SUBSTITUTION MEASUREMENTS

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9.2. EUT PHOTOGRAPHS

END OF REPORT

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