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
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TABLE OF CONTENT

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:

VIEN TRAN
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

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.

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.

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

§2.1055- FREQUENCY STABILITY

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

§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.

RESULT

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***
Uplink:			
	AMPS	***-10.10***	***.0977***
	APCO CQPSK	***-9.60***	***.1096***
	APCO C4FM	***-10.10***	***.0977***

RF ERP Measurement:

AMPS Modulation:

Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
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			H

Uplink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
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			H

APCO CQPSK Modulation:

Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
0.960	94.00	22.50	0.50	0.00	0.00	22.00			V
0.960	84.10	14.50	0.50	0.00	0.00	14.00			H

Uplink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
0.915	47.10	-13.20	0.50	0.00	0.00	-13.70			V
0.915	49.20	-18.60	0.50	0.00	0.00	-19.10			H

APCO C4FM Modulation:

Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
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			H

Uplink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental Low, Mid, & High Channels (RBW=VBW=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			H
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			H
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			H

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.)

8.3. SECTION 2.1049: OCCUPIED BANDWIDTH

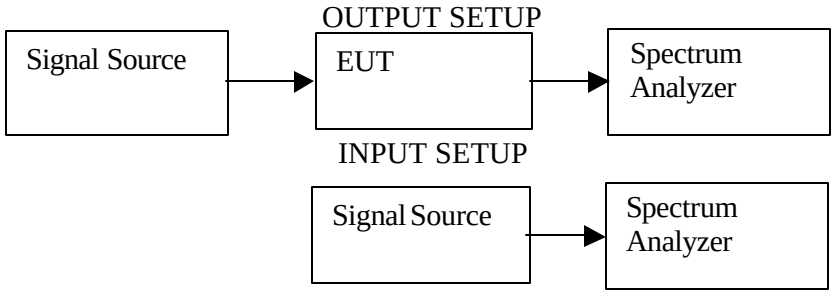
SECTION 2.1049(i)

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

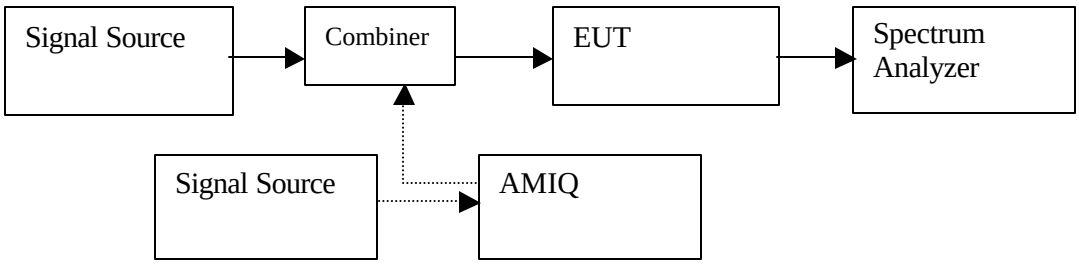
No non-compliance noted, see 8.6 measurement result plots and the attachment.

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

1) 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.

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 ☐ Average	☒ 1 MHz ☐ 1 MHz	☒ 1 MHz ☐ 10 Hz

TEST SETUP

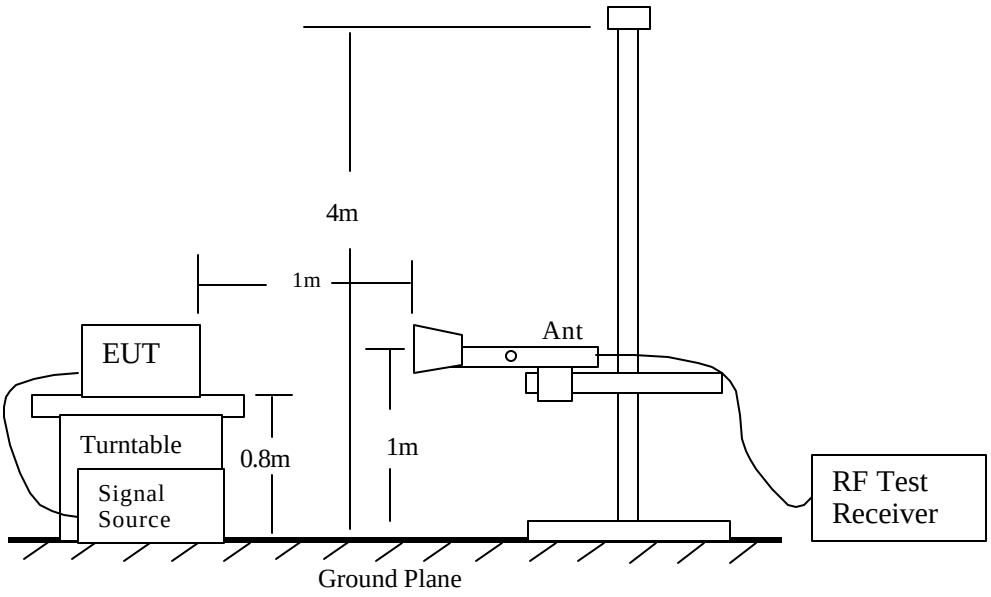


Fig 1: Radiated Emission Measurement

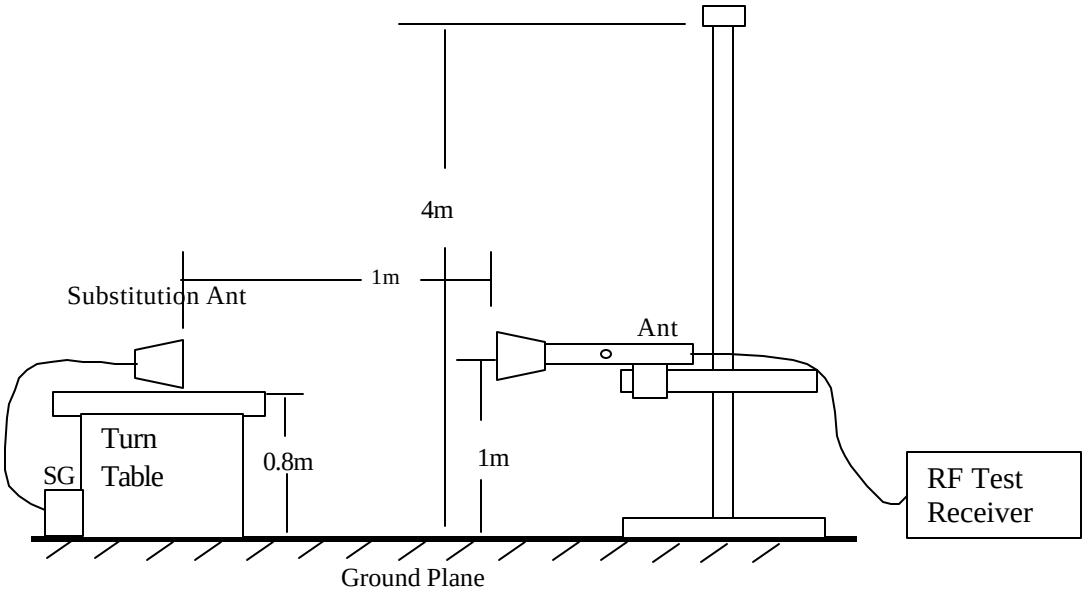


Fig 2: Radiated Emission – Substitution Method set-up

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.

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.

RESULT

No non-compliance noted, as shown below

AMPS Modulation:

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (AMPS Output Power = 26dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Downlink Low / Mid / High

Spurious Emissions
Lo 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	43..2	-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	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	46.00	-60.00	1.10	8.10	5.95	-55.15	-13.00	-42.15	H
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	-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)

Mid 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	-48.20	0.30	0.00	0.00	-48.50	-13.00	-35.50	H
1.885	46.00	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.828	44.00	-73.50	1.32	9.00	6.85	-67.97	-13.00	-54.97	H (Noise Floor)
3.770	43.00	-71.00	1.53	8.90	6.75	-65.78	-13.00	-52.78	H (Noise Floor)

High Channel

0.118	82.90	-48.90	0.30	0.00	0.00	-49.20	-13.00	-36.20	V
1.920	46.00	-61.50	1.10	8.20	6.05	-56.55	-13.00	-43.55	V
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	V (Noise Floor)
3.840	45.00	-69.00	1.54	8.90	6.75	-63.79	-13.00	-50.79	V (Noise Floor)
0.118	80.20	-49.50	0.30	0.00	0.00	-49.80	-13.00	-36.80	H
1.920	46.00	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	H (Noise Floor)
3.840	45.00	-68.60	1.54	8.90	6.75	-63.39	-13.00	-50.39	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11(
Horn, EMCO 3115, S/N: 6717
CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (AMPS Output Power = -10dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Uplink, Low / Mid / High

Spurious Emissions

Lo Channel:									
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	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	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	H
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	-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)
Mid Channel									
1.795	49.50	-59.20	1.11	8.20	6.05	-54.26	-13.00	-41.26	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	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)
1.830	64.50	-56.50	1.11	8.20	6.05	-51.56	-13.00	-38.56	H
3.660	43.00	-75.00	1.34	9.00	6.85	-69.49	-13.00	-56.49	H (Noise Floor)
5.490	43.00	-73.50	1.57	8.90	6.75	-68.32	-13.00	-55.32	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11(
Horn, EMCO 3115, S/N: 6717

CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

APCO CQPSK Modulation:

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (CQPSK Output Power = 22dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Downlink Low / Mid / High

Spurious Emissions

Lo Channel:									
0.118	81.20	-48.60	0.30	0.00	0.00	-48.90	-13.00	-35.90	V
1.850	46.10	-58.20	1.08	8.10	5.95	-53.33	-13.00	-40.33	V
2.775	48.60	-65.30	1.31	9.00	6.85	-59.76	-13.00	-46.76	V (Noise Floor)
3.700	43..2	-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	2.64	10.50	8.35	-54.29	-13.00	-41.29	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	H
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	-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)
Mid 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	H
1.885	46.00	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.828	44.00	-73.50	1.32	9.00	6.85	-67.97	-13.00	-54.97	H (Noise Floor)
3.770	43.00	-71.00	1.53	8.90	6.75	-65.78	-13.00	-52.78	H (Noise Floor)
High Channel									
0.118	78.80	-52.10	0.30	0.00	0.00	-52.40	-13.00	-39.40	V
1.920	48.60	-63.00	1.10	8.20	6.05	-58.05	-13.00	-45.05	V
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	V (Noise Floor)
3.840	45.00	-69.00	1.54	8.90	6.75	-63.79	-13.00	-50.79	V (Noise Floor)
0.118	77.90	-52.30	0.30	0.00	0.00	-52.60	-13.00	-39.60	H
1.920	46.00	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	H (Noise Floor)
3.840	45.00	-68.60	1.54	8.90	6.75	-63.39	-13.00	-50.39	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 116
Horn, EMCO 3115, S/N: 6717
CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (CQPSK Output Power =-10dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Uplink, Low / Mid / High

Spurious Emissions

Lo Channel:									
1.760	47.50	-59.00	1.04	8.10	5.95	-54.09	-13.00	-41.09	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	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	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	H
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	-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)
Mid 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	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)
1.830	64.50	-56.50	1.11	8.20	6.05	-51.56	-13.00	-38.56	H
3.660	43.00	-75.00	1.34	9.00	6.85	-69.49	-13.00	-56.49	H (Noise Floor)
5.490	43.00	-73.50	1.57	8.90	6.75	-68.32	-13.00	-55.32	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11(
Horn, EMCO 3115, S/N: 6717

CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

APCO C4FM Modulation:

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (C4FM Output Power = 10dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Downlink Low / Mid / High

Spurious Emissions

Lo Channel:									
0.118	83.00	-47.00	0.30	0.00	0.00	-47.30	-13.00	-34.30	V
1.850	48.30	-62.00	1.08	8.10	5.95	-57.13	-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	43..2	-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	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	46.00	-60.00	1.10	8.10	5.95	-55.15	-13.00	-42.15	H
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	-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)
Mid Channel									
0.118	84.50	-46.20	0.30	0.00	0.00	-46.50	-13.00	-33.50	V
1.885	50.20	-53.00	1.10	8.20	6.05	-48.05	-13.00	-35.05	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	-48.20	0.30	0.00	0.00	-48.50	-13.00	-35.50	H
1.885	46.50	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.828	44.00	-73.50	1.32	9.00	6.85	-67.97	-13.00	-54.97	H (Noise Floor)
3.770	43.00	-71.00	1.53	8.90	6.75	-65.78	-13.00	-52.78	H (Noise Floor)
High Channel									
0.118	81.90	-47.80	0.30	0.00	0.00	-48.10	-13.00	-35.10	V
1.920	46.50	-61.50	1.10	8.20	6.05	-56.55	-13.00	-43.55	V
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	V (Noise Floor)
3.840	45.00	-69.00	1.54	8.90	6.75	-63.79	-13.00	-50.79	V (Noise Floor)
0.118	81.60	-48.20	0.30	0.00	0.00	-48.50	-13.00	-35.50	H
1.920	46.00	-60.00	1.10	8.20	6.05	-55.05	-13.00	-42.05	H
2.880	44.10	-72.50	1.32	9.00	6.85	-66.97	-13.00	-53.97	H (Noise Floor)
3.840	45.00	-68.60	1.54	8.90	6.75	-63.39	-13.00	-50.39	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 116
Horn, EMCO 3115, S/N: 6717
CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

12/17/02 **FCC Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Vien Tran
Project #: 02U1586-3
Company: LGC Wireless Inc
EUT Descrip.: 900MHz EGSM (C4FM Output Power = -10dBm)
EUT M/N: InterReach Umison Accel
Test Target: FCC 90
Mode Oper: Uplink, Low / Mid / High

Spurious Emissions

Lo Channel:									
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	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	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	H
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	-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)
Mid Channel									
1.795	49.50	-59.20	1.11	8.20	6.05	-54.26	-13.00	-41.26	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	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)
1.830	64.50	-56.50	1.11	8.20	6.05	-51.56	-13.00	-38.56	H
3.660	43.00	-75.00	1.34	9.00	6.85	-69.49	-13.00	-56.49	H (Noise Floor)
5.490	43.00	-73.50	1.57	8.90	6.75	-68.32	-13.00	-55.32	H (Noise Floor)

Note: Completed scan from 30MHz to 10 GHz.

EPR = SG reading - CL + Gain (dBd)
Gain (dBd) = Gain (dBi) - 2.15
Margin = EPR - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
SG: Signal Generator, HP 83732B, S/N: US34490599
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11(
Horn, EMCO 3115, S/N: 6717
CL: cable loss (5ft), FLEXCO
Pre-Amp: Miteq NSP2600 -44, S/N: 646456
RX Antenna: Bicon, Eston 94455-1, S/N: 1214
LP, EMCO 3146, S/N: 3163
Horn, EMCO 3115, S/N: 6739

8.6. MEASUREMENT RESULT PLOTS

RESULT

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 (AMPS) - 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	917.66
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

900 MHz EGSM (AMPS) - 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	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

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

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

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

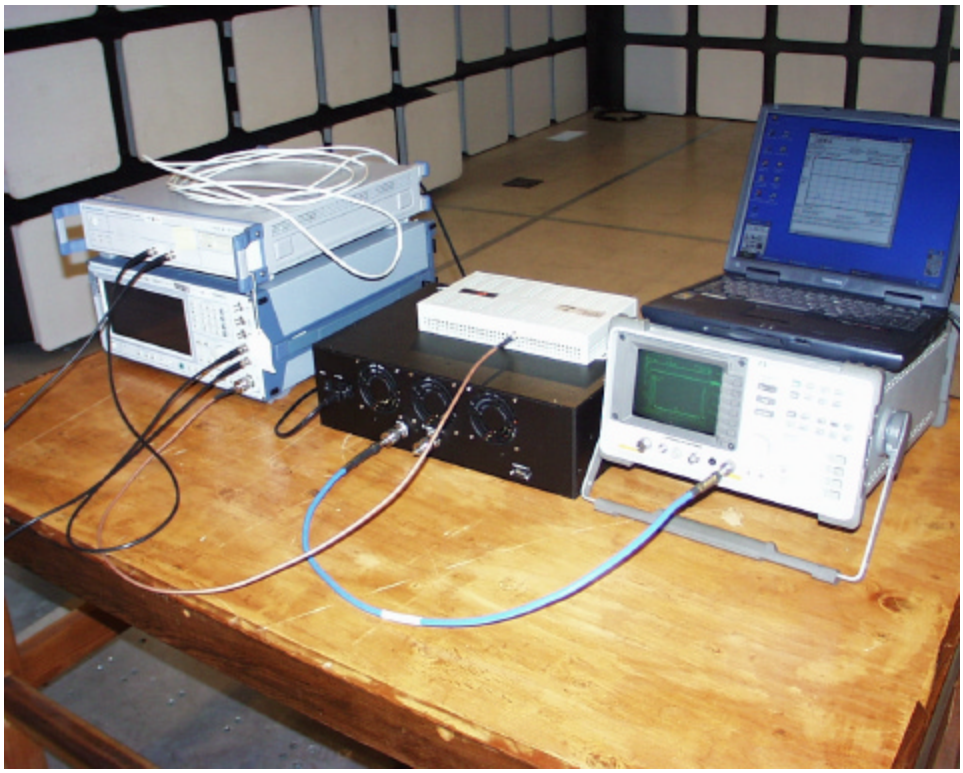
900 MHz EGSM (APCO C4FM) - DOWNLINK INTER-MODULATION BASE CHANNEL (925 – 960 MHz)		
Plot #	**Description**	**Frequency Range (MHz)**
21	Inter-modulation, Zoom-In	Zoom - In
22	Inter-modulation, Zoom-Out	Zoom - Out
23	Inter-modulation, Out-Of-Band #1	15 to 1000
24	Inter-modulation, Out-Of-Band #2	1000 to 2500
25	Inter-modulation, Out-Of-Band #3	2500 to 10000

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

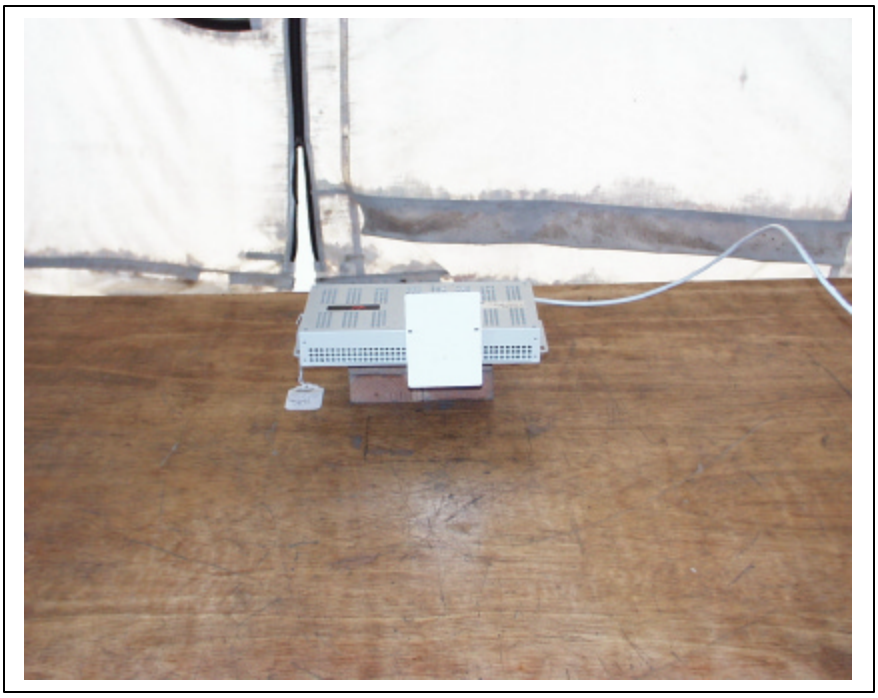
900 MHz EGSM (APCO C4FM) - UPLINK INTER-MODULATION BASE CHANNEL (880 – 915 MHz)		
Plot #	**Description**	**Frequency Range (MHz)**
21	Inter-modulation, Zoom-In	Zoom - In
22	Inter-modulation, Zoom-Out	Zoom - Out
23	Inter-modulation, Out-Of-Band #1	30 to 1000
24	Inter-modulation, Out-Of-Band #2	1000 to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

9. ATTACHMENT

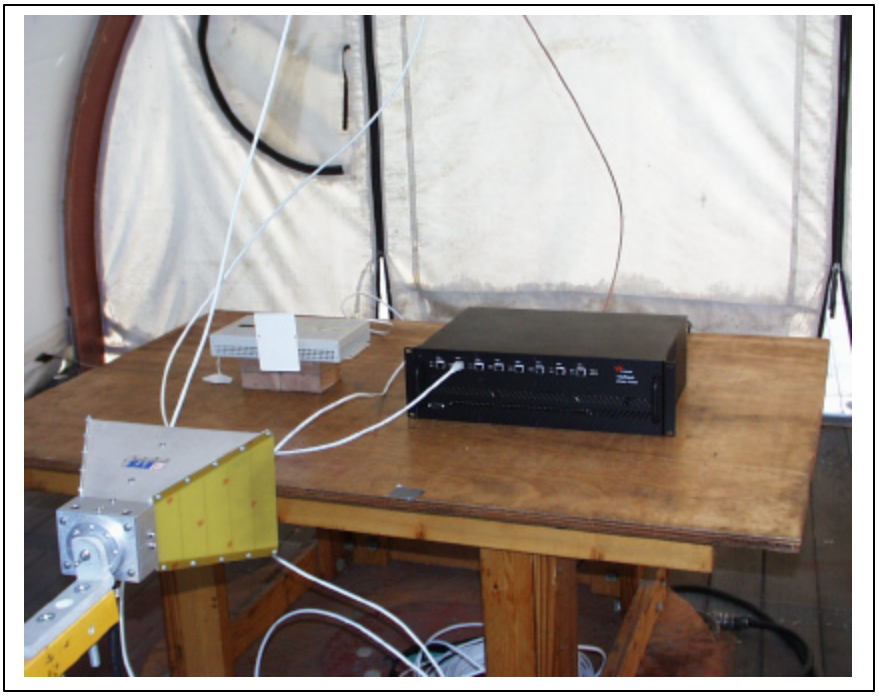
9.1. EUT SETUP PHOTOS



CONDUCTED MEASUREMENT



FUNDAMENTAL MEASUREMENT



HARMONIC & SPURIOUS MEASUREMENTS

SUBSTITUTION MEASUREMENTS

9.2. EUT PHOTOGRAPHS

END OF REPORT