



**FCC CFR47 CERTIFICATION
PART 24**

TEST REPORT

FOR

**1900MHZ PCS (CDMA/TDMA/GSM)
IN-BUILDING DISTRIBUTED ANTENNA SYSTEM**

MODEL: InterReach Unison Accel

FCC ID: NOOUNS-PCS-2

REPORT NUMBER: 02U1586-4

ISSUE DATE: JANUARY 08, 2003

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

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1. TEST RESULT CERTIFICATION

COMPANY NAME: LGC WIRELESS INC.
2540 JUNCTION AVENUE
SAN JOSE, CA 95134-1902

EUT DESCRIPTION: 1900MHZ PCS (CDMA/TDMA/GSM) IN-BUILDING
DISTRIBUTED ANTENNA SYSTEM

MODEM NAME: INTERREACH UNISON ACCEL

DATE TESTED: JANUARY 08, 2003

TYPE OF EQUIPMENT	INTENTIONAL RADIATOR
EQUIPMENT TYPE	1930 – 1990MHz paired with 1850 – 1910MHz (24) Repeater.
MEASUREMENT PROCEDURE	ANSI 63.4 / 2001, TIA/EIA 603
PROCEDURE	CERTIFICATION
FCC RULE	CFR 47 PART 24 Subpart E

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirement set forth in CFR 47, PART 24 Subpart E-Broadband PCS. 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 offices, hotel rooms, small parking lots, garages or small buildings, helping to improve CDMA/PCS communications signal and coverage by extending the coverage of a base station.

Outdoor antenna receives from a PCS base station, then remote repeater amplifies the signal. After amplification, the signal is passed through to the indoor antennas. Conversely, signals from handsets are amplified and retransmitted to the 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

§24.232 POWER LIMIT

24.232(a): Maximum Peak output power for base station transmitters should not exceed 100 Watts conducted and 1640W EIRP if antenna height up to 300 meters for Base Station, 2W EIRP for Mobile / Portable.

§24.238 EMISSION LIMITS

24.238(a): The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under conditions specified in the instruction manual and/or alignment procedure, shall not be less than $43+10 \log$ (mean output power in watts) dBc below the mean power output outside a licensee's frequency block (-13dBm).

24.238(b) & (c);

- (1) Compliance with the out-of-band emissions requirement is based on test being performed with 1MHz analyzer RES BW.
- (2) At block edges, 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. For the EUT this is at least:

§2.1057- 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.

Spec limit: Frequency investigation range from 15M to tenth harmonic (i.e. 20 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 Measuremen

Down Link:

<i>Modulation</i>	<i>Max Output Powe (dBm)</i>	<i>Max Output Power(mW)</i>
<i>CDMA 1900MHz</i>	<i>16.5</i>	<i>44.67</i>
<i>TDMA 1900MHz</i>	<i>23.3</i>	<i>213.80</i>
<i>GSM 1900MHz</i>	<i>26.7</i>	<i>467.74</i>

RF EIRP Measurement:CDMA Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental (Low, Mid, & High Channels):									
1.930	92.90	9.90	1.20	8.20	0.00	16.90	33.00	-16.10	V
1.930	88.00	4.20	1.20	8.20	0.00	11.20	33.00	-21.80	H
1.960	93.50	10.50	1.20	8.20	0.00	17.50	33.00	-15.50	V
1.960	88.50	4.50	1.20	8.20	0.00	11.50	33.00	-21.50	H
1.990	93.00	10.00	1.20	8.20	0.00	17.00	33.00	-16.00	V
1.990	88.30	4.30	1.20	8.20	0.00	11.30	33.00	-21.70	H

TDMA Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental (Low, Mid, & High Channels):									
1.930	99.20	16.50	1.20	8.20	0.00	23.50	33.00	-9.50	V
1.930	97.50	11.00	1.20	8.20	0.00	18.00	33.00	-15.00	H
1.960	100.50	17.50	1.20	8.20	0.00	24.50	33.00	-8.50	V
1.960	95.50	14.60	1.20	8.20	0.00	21.60	33.00	-11.40	H
1.990	99.80	16.70	1.20	8.20	0.00	23.70	33.00	-9.30	V
1.990	98.00	11.20	1.20	8.20	0.00	18.20	33.00	-14.80	H

GSM Downlink:

Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Fundamental (Low, Mid, & High Channels):									
1.930	102.80	19.90	1.20	8.20	0.00	26.90	33.00	-6.10	V
1.930	97.80	14.00	1.20	8.20	0.00	21.00	33.00	-12.00	H
1.960	103.40	20.40	1.20	8.20	0.00	27.40	33.00	-5.60	V
1.960	98.40	14.50	1.20	8.20	0.00	21.50	33.00	-11.50	H
1.990	102.90	19.90	1.20	8.20	0.00	26.90	33.00	-6.10	V
1.990	98.10	14.20	1.20	8.20	0.00	21.20	33.00	-11.80	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

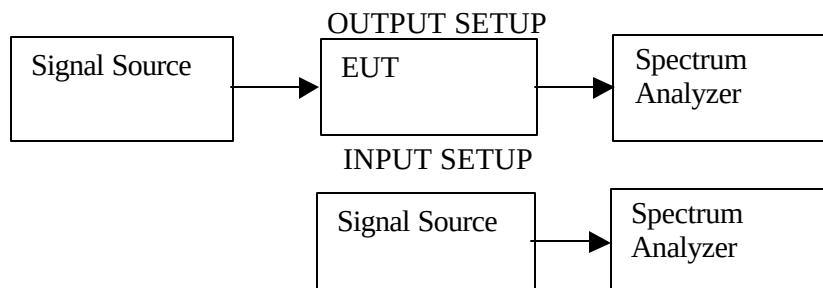
SECTION 2.1049(i)

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.

RESULT

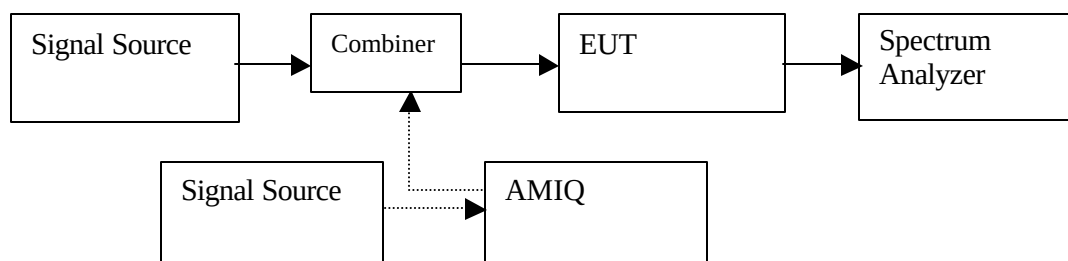
No Non-Complies, Please refer to the plots section 8.6 Measurement Result Plots and see an attachment.

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 $10 \times f_0$ of the fundamental carrier for all frequency block. A display line was placed at -13dBm to show compliance for spurious, harmonics, and intermodulation emissions.
- 3) 24.318(b) and also outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RESULT

No Non-Complies, Please refer to the plots section 8.6 Measurement Result Plots and see an 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

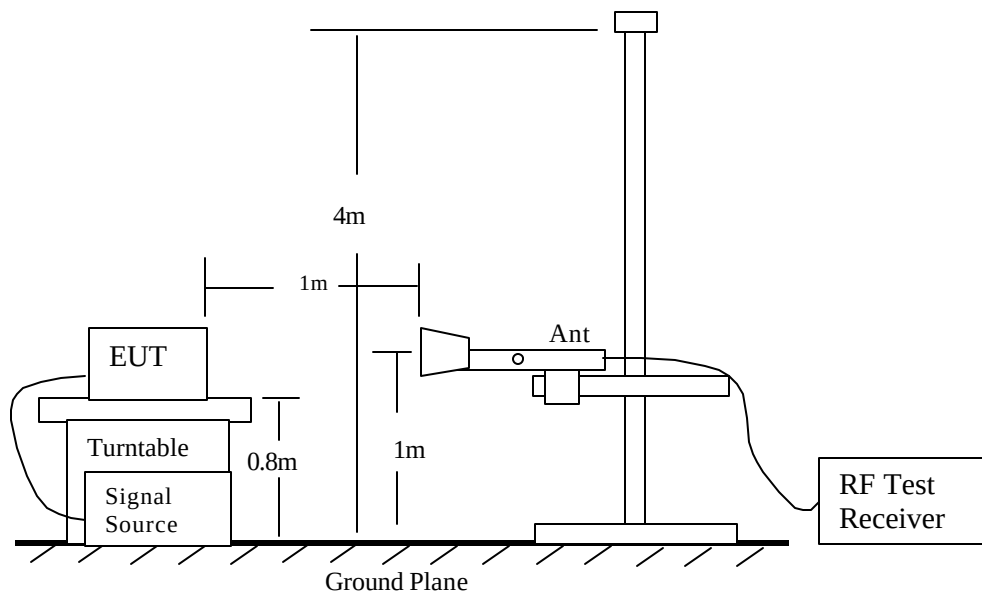


Fig 1: Radiated Emission Measurement

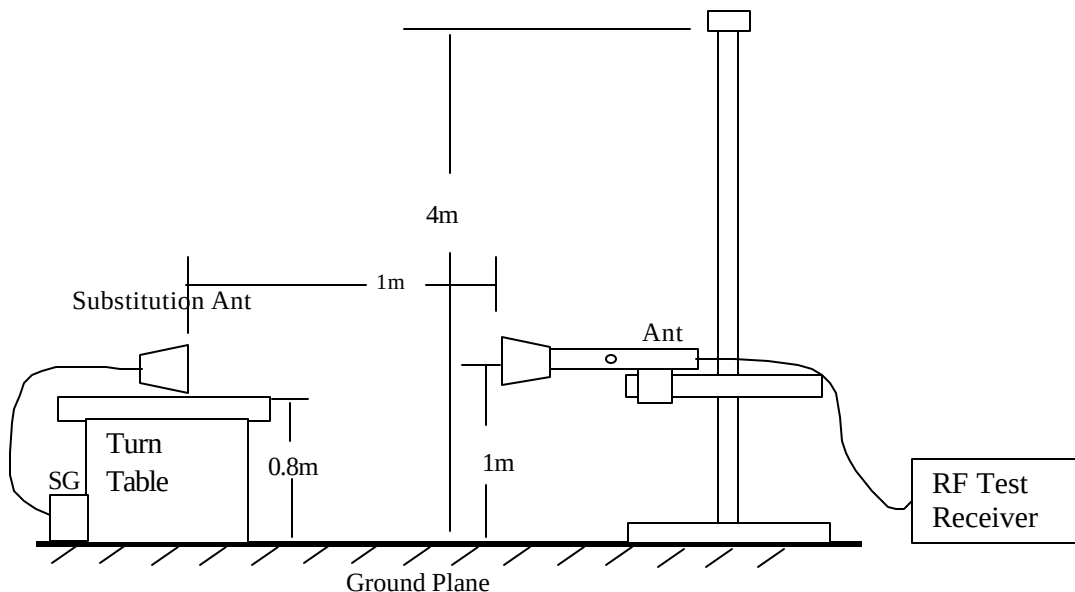


Fig 2: Radiated Emission – Substitution Method set-up

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 then 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

CDMA Modulation:

6/4/02 FCC Measurement									
Compliance Certification Services, Morgan Hill Open Field Site									
Test Engr: Vien Tran Project #: 02U1586-4 Company: LGC Wireless Inc EUT Descrip.: 1900MHz PCS (CDMA Output Power = 16dBm) EUT M/N: InterReach Unison Accel Test Target: FCC 24 Mode Oper: Downlink, Low / Mid / High									
Frequency	SA reading	SG reading	CL	Gain	Gain	EIRP	Limit	Margin	Notes
(GHz)	(dBuV)	(dBm)	(dB)	(dBi)	(dBd)	(dBm)	(dBm)	(dB)	
Spurious Emissions									
Lo Channel:									
3.86	43.40	-65.00	1.66	8.90	0.00	-57.76	-13.00	-44.76	V
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
13.51	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
17.37	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.86	44.50	-64.00	1.66	8.90	0.00	-56.76	-13.00	-43.76	H
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
13.51	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
17.37	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)
Mid Channel									
3.92	44.00	-65.00	1.66	8.90	0.00	-57.76	-13.00	-44.76	V
5.88	47.00	-62.00	2.15	10.30	0.00	-53.85	-13.00	-40.85	V
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.92	45.00	-59.00	1.66	8.90	0.00	-51.76	-13.00	-38.76	H
5.88	46.00	-61.00	2.15	10.30	0.00	-52.85	-13.00	-39.85	H
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
High Channel									
3.98	52.00	-51.00	1.66	8.90	0.00	-43.76	-13.00	-30.76	V
5.94	46.50	-58.00	2.15	10.30	0.00	-49.85	-13.00	-36.85	V
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.98	52.00	-54.00	1.66	8.90	0.00	-46.76	-13.00	-33.76	H
5.94	44.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
Note: Completed scan from 30MHz to 20 GHz.									
EIPR = SG reading - CL + Gain (dBi)									
Margin = EIPR - Limit									
SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205 CL: cable loss (5ft), FLEXCO SG: Signal Generator, HP 83732B, S/N: US34490599 Pre-Amp: Miteq NSP2600 -44, S/N: 646456 TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11 RX Antenna: Bicon, Eston 94455-1, S/N: 1214 Horn, EMCO 3115, S/N: 6717 LP, EMCO 3146, S/N: 3163 Horn, EMCO 3115, S/N: 6739									

12/172002

FCC Measurement

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:

Project #:

Company:

EUT Descrip.:

EUT M/N:

Test Target:

Mode Oper:

Vien Tran

02U1586-4

LGC Wireless Inc

1900MHz PCS (CDMA)

InterReach Unison Accel

FCC 24

Uplink, Low / Mid / High

Frequency	SA reading	SG reading	CL	Gain	Gain	EIRP	Limit	Margin	Notes
(GHz)	(dBuV)	(dBm)	(dB)	(dBi)	(dBd)	(dBm)	(dBm)	(dB)	

Spurious Emissions

Lo Channel:

3.70	45.00	-63.00	1.66	8.90	0.00	-55.76	-13.00	-42.76	V
5.55	44.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
12.95	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
16.65	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.70	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	H
5.55	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
12.95	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
16.65	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)

Mid Channel

3.76	45.00	-63.00	1.66	8.90	0.00	-55.76	-13.00	-42.76	V
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	V
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.76	43.00	-65.00	1.66	8.90	0.00	-57.76	-13.00	-44.76	H
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	H
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)

High Channel

3.82	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	V
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.82	44.00	-68.00	1.66	8.90	0.00	-60.76	-13.00	-47.76	H
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)

Note: Completed scan from 30MHz to 20 GHz.

EIPR = SG reading - CL + Gain (dBd)

Margin = EIPR - 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

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

TDMA Modulation:

12/17/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site Test Engr: Vien Tran Project #: 02U1586-4 Company: LGC Wireless Inc EUT Descrip.: 1900MHz PCS (TDMA Output Power = 23dBm) EUT M/N: InterReach Unison Accel Test Target: FCC 24 Mode Oper: Downlink, Low / Mid / High									
Frequency (GHz)	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Spurious Emissions									
Lo Channel:									
3.86	48.00	-55.00	1.66	8.90	0.00	-47.76	-13.00	-34.76	V
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
13.51	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
17.37	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.86	49.00	-57.00	1.66	8.90	0.00	-49.76	-13.00	-36.76	H
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
13.51	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
17.37	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)
Mid Channel									
3.92	56.00	-52.00	1.66	8.90	0.00	-44.76	-13.00	-31.76	V
5.88	83.60	-23.40	2.15	10.30	0.00	-15.25	-13.00	-2.25	V
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.92	60.00	-48.00	1.66	8.90	0.00	-40.76	-13.00	-27.76	H
5.88	76.80	-30.50	2.15	10.30	0.00	-22.35	-13.00	-9.35	H
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
High Channel									
3.98	52.00	-51.00	1.66	8.90	0.00	-43.76	-13.00	-30.76	V
5.94	46.50	-58.00	2.15	10.30	0.00	-49.85	-13.00	-36.85	V
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.98	52.00	-54.00	1.66	8.90	0.00	-46.76	-13.00	-33.76	H
5.94	44.00	-66.00	2.15	10.30	0.00	-57.85	-13.00	-44.85	H
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
Note: Completed scan from 30MHz to 20 GHz.									
EIRP = SG reading - CL + Gain (dBi)									
Margin = EIRP - Limit									
SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205 CL: cable loss (5ft), FLEXCO SG: Signal Generator, HP 83732B, S/N: US34490599 Pre-Amp: Miteq NSP2600 -44, S/N: 646456 TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11 RX Antenna: Bicon, Eston 94455-1, S/N: 1214 Horn, EMCO 3115, S/N: 6717 LP, EMCO 3146, S/N: 3163 Horn, EMCO 3115, S/N: 6739									

12/17/2002 FCC Measurement									
Compliance Certification Services, Morgan Hill Open Field Site									
Test Engr:	Vien Tran								
Project #:	02U1586-4								
Company:	LGC Wireless Inc								
EUT Descrip.:	1900MHz PCS (TDMA)								
EUT M/N:	InterReach Unison Accel								
Test Target:	FCC 24								
Mode Oper:	Uplink, Low / Mid / High								
Frequency	SA reading	SG reading	CL	Gain	Gain	EIRP	Limit	Margin	Notes
(GHz)	(dBuV)	(dBm)	(dB)	(dBi)	(dBd)	(dBm)	(dBm)	(dB)	
Spurious Emissions									
Lo Channel:									
3.70	43.60	-66.00	1.66	8.90	0.00	-58.76	-13.00	-45.76	V
5.55	44.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
12.95	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
16.65	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.70	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	H
5.55	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
12.95	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
16.65	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)
Mid Channel									
3.76	44.00	-68.00	1.66	8.90	0.00	-60.76	-13.00	-47.76	V
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	V
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.76	43.00	-65.00	1.66	8.90	0.00	-57.76	-13.00	-44.76	H
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	H
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
High Channel									
3.82	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	V
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.82	44.00	-68.00	1.66	8.90	0.00	-60.76	-13.00	-47.76	H
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
Note: Completed scan from 30MHz to 20 GHz.									
EIPR = SG reading - CL + Gain (dBd)									
Margin = EIPR - Limit									
SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205 CL: cable loss (5ft), FLEXCO									
SG: Signal Generator, HP 83732B, S/N: US34490599 Pre-Amp: Miteq NSP2600 -44, S/N: 646456									
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 111 RX Antenna: Bicon, Eston 94455-1, S/N: 1214									
Horn, EMCO 3115, S/N: 6717 LP, EMCO 3146, S/N: 3163									
Horn, EMCO 3115, S/N: 6739									

GSM Modulation:

12/17/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site									
Test Engr:		Vien Tran							
Project #:		02U1586-4							
Company:		LGC Wireless Inc							
EUT Descrip.:		1900MHz PCS (GSM Output Power = 26dBm)							
EUT M/N:		InterReach Unison Accel							
Test Target:		FCC 24							
Mode Oper:		Downlink, Low / Mid / High							
Frequency	SA reading	SG reading	CL	Gain	Gain	EIRP	Limit	Margin	Notes
(GHz)	(dBuV)	(dBm)	(dB)	(dBi)	(dBd)	(dBm)	(dBm)	(dB)	
Spurious Emissions									
Lo Channel:									
3.86	52.00	-56.00	1.66	8.90	0.00	-48.76	-13.00	-35.76	V
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
13.51	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
17.37	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.86	49.00	-57.00	1.66	8.90	0.00	-49.76	-13.00	-36.76	H
5.79	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.72	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.65	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.58	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
13.51	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
15.44	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
17.37	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)
Mid Channel									
3.92	51.00	-57.00	1.66	8.90	0.00	-49.76	-13.00	-36.76	V
5.88	75.40	-34.00	2.15	10.30	0.00	-25.85	-13.00	-12.85	V
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.92	50.50	-58.00	1.66	8.90	0.00	-50.76	-13.00	-37.76	H
5.88	62.70	-44.80	2.15	10.30	0.00	-36.65	-13.00	-23.65	H
7.84	44.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.80	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
High Channel									
3.98	52.00	-51.00	1.66	8.90	0.00	-43.76	-13.00	-30.76	V
5.94	46.50	-58.00	2.15	10.30	0.00	-49.85	-13.00	-36.85	V
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.98	52.00	-54.00	1.66	8.90	0.00	-46.76	-13.00	-33.76	H
5.94	66.00	-58.00	2.15	10.30	0.00	-49.85	-13.00	-36.85	H
7.90	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.86	43.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
Note: Completed scan from 30MHz to 20 GHz.									
EIRP = SG reading - CL + Gain (dBi)									
Margin = EIRP - Limit									
SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205					CL: cable loss (5ft), FLEXCO				
SG: Signal Generator, HP 83732B, S/N: US34490599					Pre-Amp: Miteq NSP2600 -44, S/N: 646456				
TX Antenna: Dipole, Compliance Design, Roberts, S/N: 111					RX Antenna: Bicon, Eston 94455-1, S/N: 1214				
Horn, EMCO 3115, S/N: 6717					LP, EMCO 3146, S/N: 3163				
					Horn, EMCO 3115, S/N: 6739				

12/172002

FCC Measurement**Compliance Certification Services, Morgan Hill Open Field Site**

Test Engr: Vien Tran
Project #: 02U1586-4
Company: LGC Wireless Inc
EUT Descrip.: 1900MHz PCS (GSM)
EUT M/N: InterReach Unison Accel
Test Target: FCC 24
Mode Oper: Uplink, Low / Mid / High

Frequency	SA reading	SG reading	CL	Gain	Gain	EIRP	Limit	Margin	Notes
(GHz)	(dBuV)	(dBm)	(dB)	(dBi)	(dBd)	(dBm)	(dBm)	(dB)	
Spurious Emissions									
Lo Channel:									
3.70	43.60	-66.00	1.66	8.90	0.00	-58.76	-13.00	-45.76	V
5.55	44.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	V (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	V (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	V (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	V (Noise Floor)
12.95	48.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	V (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	V (Noise Floor)
16.65	50.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	V (Noise Floor)
3.70	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	H
5.55	43.00	-65.00	2.15	10.30	0.00	-56.85	-13.00	-43.85	H (Noise Floor)
7.40	45.00	-64.00	2.50	10.30	0.00	-56.20	-13.00	-43.20	H (Noise Floor)
9.25	45.00	-63.00	2.84	10.10	0.00	-55.74	-13.00	-42.74	H (Noise Floor)
11.10	45.00	-59.00	3.10	12.00	0.00	-50.10	-13.00	-37.10	H (Noise Floor)
12.95	47.00	-56.00	3.42	11.90	0.00	-47.52	-13.00	-34.52	H (Noise Floor)
14.80	48.00	-53.00	3.79	15.10	0.00	-41.69	-13.00	-28.69	H (Noise Floor)
16.65	49.00	-50.00	4.18	10.00	0.00	-44.18	-13.00	-31.18	H (Noise Floor)
Mid Channel									
3.76	44.00	-68.00	1.66	8.90	0.00	-60.76	-13.00	-47.76	V
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	V
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.76	43.00	-65.00	1.66	8.90	0.00	-57.76	-13.00	-44.76	H
5.64	44.00	-68.00	2.15	10.30	0.00	-59.85	-13.00	-46.85	H
7.52	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.40	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)
High Channel									
3.82	43.00	-67.00	1.66	8.90	0.00	-59.76	-13.00	-46.76	V
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	V (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	V (Noise Floor)
3.82	44.00	-68.00	1.66	8.90	0.00	-60.76	-13.00	-47.76	H
5.73	43.00	-67.00	2.15	10.30	0.00	-58.85	-13.00	-45.85	H
7.64	43.00	-65.00	2.50	10.30	0.00	-57.20	-13.00	-44.20	H (Noise Floor)
9.55	45.00	-64.00	2.84	10.10	0.00	-56.74	-13.00	-43.74	H (Noise Floor)

Note: Completed scan from 30MHz to 20 GHz.

EIRP = SG reading - CL + Gain (dBd)

Margin = EIRP - Limit

SA: Spectrum Analyzer, HP 8593EM, S/N: 3710A00205

CL: cable loss (5ft), FLEXCO

SG: Signal Generator, HP 83732B, S/N: US34490599

Pre-Amp: Miteq NSP2600 -44, S/N: 646456

TX Antenna: Dipole, Compliance Design, Roberts, S/N: 11f
Horn, EMCO 3115, S/N: 6717RX 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, Input Bandwidth, Output Bandwidth, Block Edges, Out-of-Band and Intermodulation. All measurements are in peak detector mode.

1900MHz PCS (GSM) DOWNLINK BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1930
2	Mid Channel Output Power	1960
3	High Channel Output Power	1990
4	Low Channel Input Bandwidth	1930
5	Mid Channel Input Bandwidth	1960
6	High Channel Input Bandwidth	1990
7	Low Channel Output Bandwidth	1930
8	Mid Channel Output Bandwidth	1960
9	High Channel Output Bandwidth	1990
10	Low Channel, Bottom Band Edge	1922
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	25000 to 10000
14	Low Channel, Out-Of-Band #4	10000 to 20000
15	Mid Channel, Out-Of-Band #1	15 to 1000
16	Mid Channel, Out-Of-Band #2	1000 to 2500
17	Mid Channel, Out-Of-Band #3	25000 to 10000
18	Mid Channel, Out-Of-Band #4	10000 to 20000
19	High channel, Upper Band Edge	1999
20	High Channel, Out-Of-Band #1	15 to 1000
21	High Channel, Out-Of-Band #2	1000 to 2500
22	High Channel, Out-Of-Band #3	25000 to 10000
23	High Channel, Out-Of-Band #4	10000 to 20000

1900MHz PCS (GSM) DOWNLINK INTER-MODULATION BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
24	Low channel, Inter-mod, Out of Band #1	15 to 2900
25	Low channel, Inter-mod, Out of Band #2	2900 to 20000
26	Mid channel, Inter-mod, Out of Band #1	15 to 2500
27	Mid channel, Inter-mod, Out of Band #2	2500 to 20000
28	Hi channel, Inter-mod, Out of Band #1	15 to 2500
29	Hi channel, Inter-mod, Out of Band #2	2500 to 20000
30	Low channel, Inter-mod, Zoom-in	Zoom-in
31	Mid channel, Inter-mod, Zoom-in	Zoom-in
32	Hi channel, Inter-mod, Zoom-in	Zoom-in
33	Low channel, Inter-mod, Zoom-out	Zoom-out
34	Mid channel, Inter-mod, Zoom-out	Zoom-out
35	Hi channel, Inter-mod, Zoom-out	Zoom-out

1900MHz PCS (GSM) UPLINK BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1850.3
2	Mid Channel Output Power	1870
3	High Channel Output Power	1909.7
4	Low Channel Input Bandwidth	1850.3
5	Mid Channel Input Bandwidth	1870
6	High Channel Input Bandwidth	1909.7
7	Low Channel Output Bandwidth	1850.3
8	Mid Channel Output Bandwidth	1870
9	High Channel Output Bandwidth	1909.7
10	Low Channel, Bottom Band Edge	1842.3
11	Low Channel, Out-Of-Band #1	15 to 1000
12	Low Channel, Out-Of-Band #2	1000 to 2900
13	Low Channel, Out-Of-Band #3	2900 to 10000
14	Low Channel, Out-Of-Band #4	10000 to 20000
15	Mid Channel, Out-Of-Band #1	15 to 1000
16	Mid Channel, Out-Of-Band #2	1000 to 2500
17	Mid Channel, Out-Of-Band #3	25000 to 10000
18	Mid Channel, Out-Of-Band #4	10000 to 20000
19	High channel, Upper Band Edge	1918.1
20	High Channel, Out-Of-Band #1	15 to 1000
21	High Channel, Out-Of-Band #2	1000 to 2500
22	High Channel, Out-Of-Band #3	25000 to 10000
23	High Channel, Out-Of-Band #4	10000 to 20000

1900MHz PCS (GSM) UPLINK INTER-MODULATION BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
24	Low channel, Inter-mod, Out of Band #1	15 to 2900
25	Low channel, Inter-mod, Out of Band #2	2900 to 20000
26	Mid channel, Inter-mod, Out of Band #1	15 to 2900
27	Mid channel, Inter-mod, Out of Band #2	2900 to 20000
28	Hi channel, Inter-mod, Out of Band #1	15 to 2900
29	Hi channel, Inter-mod, Out of Band #2	2900 to 20000
30	Low channel, Inter-mod, Zoom-in	Zoom-in
31	Mid channel, Inter-mod, Zoom-in	Zoom-in
32	Hi channel, Inter-mod, Zoom-in	Zoom-in
33	Low channel, Inter-mod, Zoom-out	Zoom-out
34	Mid channel, Inter-mod, Zoom-out	Zoom-out
35	Hi channel, Inter-mod, Zoom-out	Zoom-out

1900MHz PCS (CDMA) DOWNLINK BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1931.5
2	Mid Channel Output Power	1960
3	High Channel Output Power	1988.5
4	Low Channel Input Bandwidth	1931.5
5	Mid Channel Input Bandwidth	1960
6	High Channel Input Bandwidth	1988.5
7	Low Channel Output Bandwidth	1931.5
8	Mid Channel Output Bandwidth	1960
9	High Channel Output Bandwidth	1988.5
10	Low Channel, Bottom Band Edge	1911.28
11	Low Channel, Out-Of-Band #1	15 to 2500
12	Low Channel, Out-Of-Band #2	2500 to 20000
13	Mid Channel, Out-Of-Band #1	15 to 2500
14	Mid Channel, Out-Of-Band #2	2500 to 20000
15	High channel, Upper Band Edge	2018
16	High Channel, Out-Of-Band #1	15 to 2500
17	High Channel, Out-Of-Band #2	2500 to 20000

1900MHz PCS (CDMA) DOWNLINK INTER-MODULATION BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
18	Low channel, Inter-mod, Out of Band #1	15 to 2500
19	Low channel, Inter-mod, Out of Band #2	2500 to 20000
20	Mid channel, Inter-mod, Out of Band #1	15 to 2500
21	Mid channel, Inter-mod, Out of Band #2	2500 to 20000
22	Hi channel, Inter-mod, Out of Band #1	15 to 2500
23	Hi channel, Inter-mod, Out of Band #2	2500 to 20000
24	Low channel, Inter-mod, Zoom-in	Zoom-in
25	Mid channel, Inter-mod, Zoom-in	Zoom-in
26	Hi channel, Inter-mod, Zoom-in	Zoom-in
27	Low channel, Inter-mod, Zoom-out	Zoom-out
28	Mid channel, Inter-mod, Zoom-out	Zoom-out
29	Hi channel, Inter-mod, Zoom-out	Zoom-out

1900MHz PCS (CDMA) UPLINK BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1851.5
2	Mid Channel Output Power	1890
3	High Channel Output Power	1908.5
4	Low Channel Input Bandwidth	1851.5
5	Mid Channel Input Bandwidth	1890
6	High Channel Input Bandwidth	1908.5
7	Low Channel Output Bandwidth	1851.5
8	Mid Channel Output Bandwidth	1890
9	High Channel Output Bandwidth	1908.5
10	Low Channel, Bottom Band Edge	1830.8
11	Low Channel, Out-Of-Band #1	15 to 2500
12	Low Channel, Out-Of-Band #2	2500 to 20000
13	Mid Channel, Out-Of-Band #1	15 to 2500
14	Mid Channel, Out-Of-Band #2	2500 to 20000
15	High channel, Upper Band Edge	1930.5
16	High Channel, Out-Of-Band #1	15 to 2500
17	High Channel, Out-Of-Band #2	2500 to 20000

1900MHz PCS (CDMA) UPLINK INTER-MODULATION BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
18	Low channel, Inter-mod, Out of Band #1	15 to 2500
19	Low channel, Inter-mod, Out of Band #2	2500 to 20000
20	Mid channel, Inter-mod, Out of Band #1	15 to 2500
21	Mid channel, Inter-mod, Out of Band #2	2500 to 20000
22	Hi channel, Inter-mod, Out of Band #1	15 to 2500
23	Hi channel, Inter-mod, Out of Band #2	2500 to 20000
24	Low channel, Inter-mod, Zoom-in	Zoom-in
25	Mid channel, Inter-mod, Zoom-in	Zoom-in
26	Hi channel, Inter-mod, Zoom-in	Zoom-in
27	Low channel, Inter-mod, Zoom-out	Zoom-out
28	Mid channel, Inter-mod, Zoom-out	Zoom-out
29	Hi channel, Inter-mod, Zoom-out	Zoom-out

1900MHz PCS (TDMA) DOWNLINK BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1930.3
2	Mid Channel Output Power	1960
3	High Channel Output Power	1989.7
4	Low Channel Input Bandwidth	1930.3
5	Mid Channel Input Bandwidth	1960
6	High Channel Input Bandwidth	1989.7
7	Low Channel Output Bandwidth	1930.3
8	Mid Channel Output Bandwidth	1960
9	High Channel Output Bandwidth	1989.7
10	Low Channel, Bottom Band Edge	1923.55
11	Low Channel, Out-Of-Band #1	15 to 2500
12	Low Channel, Out-Of-Band #2	2500 to 20000
13	Mid Channel, Out-Of-Band #1	15 to 2500
14	Mid Channel, Out-Of-Band #2	2500 to 20000
15	High channel, Upper Band Edge	2018
16	High Channel, Out-Of-Band #1	15 to 2500
17	High Channel, Out-Of-Band #2	2500 to 20000

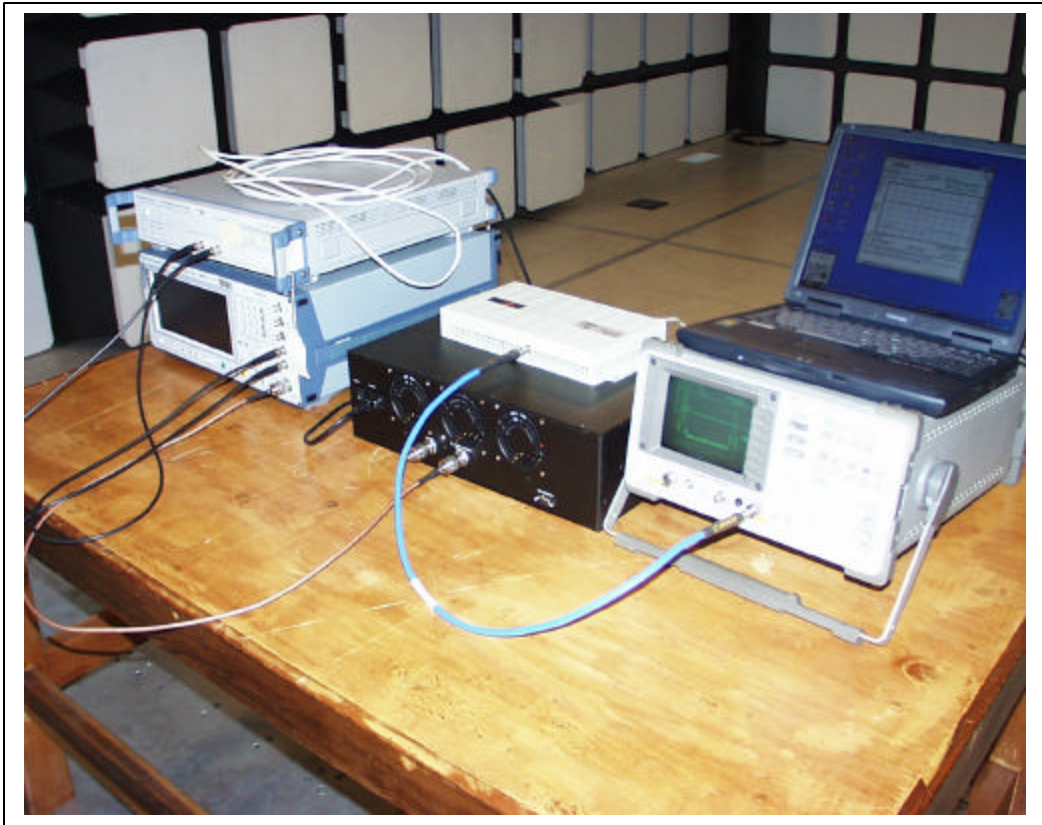
1900MHz PCS (TDMA) DOWNLINK INTER-MODULATION BASE CHANNEL (1930 – 1990 MHz)		
Plot #	Description	Frequency Range (MHz)
18	Low channel, Inter-mod, Out of Band #1	15 to 2500
19	Low channel, Inter-mod, Out of Band #2	2500 to 20000
20	Mid channel, Inter-mod, Out of Band #1	15 to 2500
21	Mid channel, Inter-mod, Out of Band #2	2500 to 20000
22	Hi channel, Inter-mod, Out of Band #1	15 to 2500
23	Hi channel, Inter-mod, Out of Band #2	2500 to 20000
24	Low channel, Inter-mod, Zoom-in	Zoom-in
25	Mid channel, Inter-mod, Zoom-in	Zoom-in
26	Hi channel, Inter-mod, Zoom-in	Zoom-in
27	Low channel, Inter-mod, Zoom-out	Zoom-out
28	Mid channel, Inter-mod, Zoom-out	Zoom-out
29	Hi channel, Inter-mod, Zoom-out	Zoom-out

1900MHz PCS (TDMA) UPLINK BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
1	Low Channel Output Power	1850.3
2	Mid Channel Output Power	1880
3	High Channel Output Power	1909.7
4	Low Channel Input Bandwidth	1850.3
5	Mid Channel Input Bandwidth	1880
6	High Channel Input Bandwidth	1909.7
7	Low Channel Output Bandwidth	1850.3
8	Mid Channel Output Bandwidth	1880
9	High Channel Output Bandwidth	1909.7
10	Low Channel, Bottom Band Edge	1842.7
11	Low Channel, Out-Of-Band #1	15 to 2500
12	Low Channel, Out-Of-Band #2	2500 to 20000
13	Mid Channel, Out-Of-Band #1	15 to 2500
14	Mid Channel, Out-Of-Band #2	2500 to 20000
15	High channel, Upper Band Edge	1918.1
16	High Channel, Out-Of-Band #1	15 to 2500
17	High Channel, Out-Of-Band #2	2500 to 20000

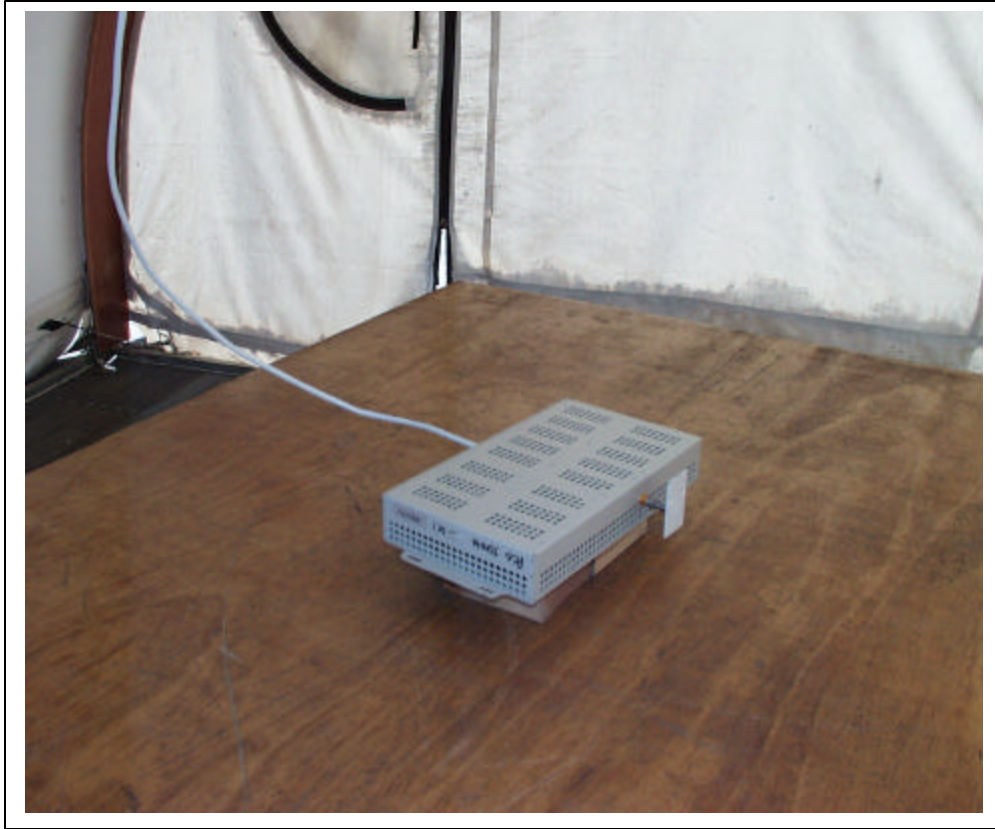
1900MHz PCS (TDMA) UPLINK INTER-MODULATION BASE CHANNEL (1850 - 1910 MHz)		
Plot #	Description	Frequency Range (MHz)
18	Low channel, Inter-mod, Out of Band #1	15 to 2500
19	Low channel, Inter-mod, Out of Band #2	2500 to 20000
20	Mid channel, Inter-mod, Out of Band #1	15 to 2500
21	Mid channel, Inter-mod, Out of Band #2	2500 to 20000
22	Hi channel, Inter-mod, Out of Band #1	15 to 2500
23	Hi channel, Inter-mod, Out of Band #2	2500 to 20000
24	Low channel, Inter-mod, Zoom-in	Zoom-in
25	Mid channel, Inter-mod, Zoom-in	Zoom-in
26	Hi channel, Inter-mod, Zoom-in	Zoom-in
27	Low channel, Inter-mod, Zoom-out	Zoom-out
28	Mid channel, Inter-mod, Zoom-out	Zoom-out
29	Hi channel, Inter-mod, Zoom-out	Zoom-out

9. ATTACHMENT

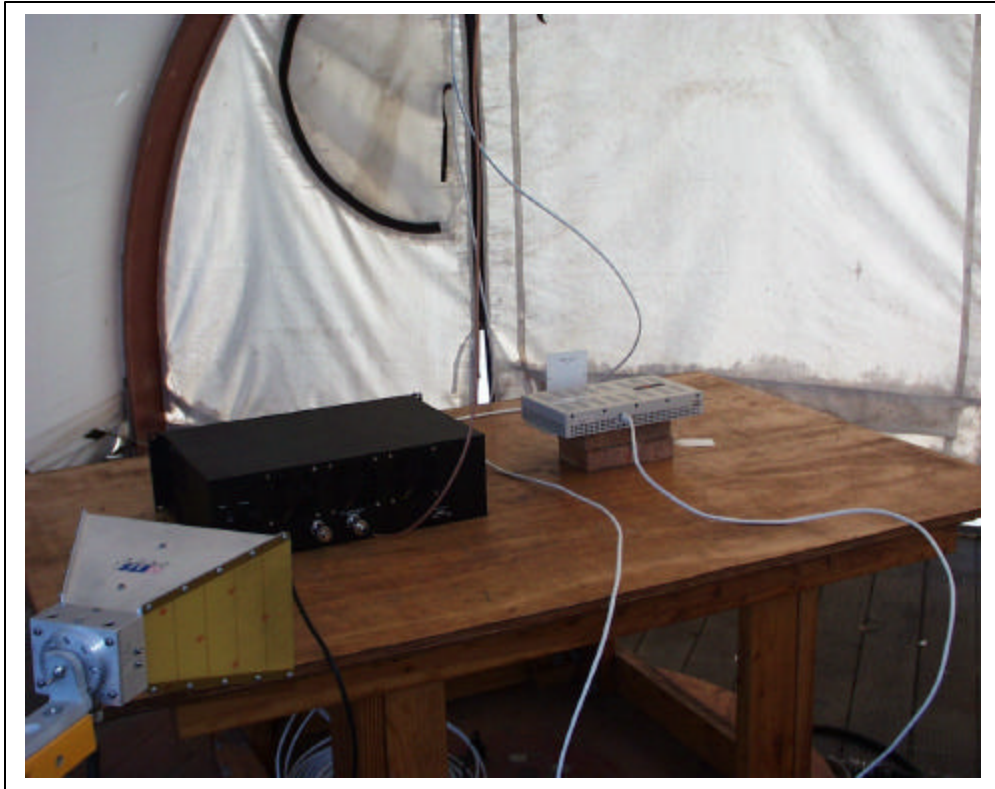
9.1. EUT SETUP PHOTOS



CONDUCTED MEASUREMENT



FUNDAMENTAL MEASUREMENT



HARMONIC & SPURIOUS MEASUREMENT



SUBSTITUTION MEASUREMENTS

END OF REPORT