



**FCC CFR47 CERTIFICATION  
TEST REPORT PART 90**

***FOR***

**800MHz IDEN IN-BUILDING DISTRIBUTED ANTENNA SYSTEM**

**MODEL: InterReach Unison Accel**

**FCC ID: NOOUNS-IDEN-2**

**REPORT NUMBER: 02U1586-2**

**ISSUE DATE: DECEMBER 02, 2002**

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

*Prepared by*  
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# 1. TEST RESULT CERTIFICATION

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

**EUT DESCRIPTION:** 800MHZ IDEN IN-BUILDING DISTRIBUTED ANTENNA SYSTEM

**MODEM NAME:** INTERREACH UNISON ACCEL

**DATE TESTED:** DECEMBER 02, 2002


|                       |  |
|-----------------------|--|
| TYPE OF EQUIPMENT     | INTENTIONAL RADIATOR                             |
| EQUIPMENT TYPE        | 851 – 869MHz (Downlink)<br>806 – 824MHz (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:

Released For CCS By:



VIEN TRAN  
 EMC ENGINEER  
 COMPLIANCE CERTIFICATION SERVICES



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

D9W 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

|                  | <i>IDEN Modulation</i> | <i>Max Output Power (dBm)</i> | <i>Max Output Power (mW)</i> |
|------------------|------------------------|-------------------------------|------------------------------|
| <u>Downlink:</u> |                        |                               |                              |
|                  | 851.1 MHz              | 14.07                         | 25.52                        |
|                  | 860 MHz                | 14.29                         | 26.85                        |
|                  | 868.9 MHz              | 13.86                         | 24.32                        |
| <u>Uplink:</u>   |                        |                               |                              |
|                  | 806.1 MHz              | -10.20                        | .0955                        |
|                  | 815 MHz                | -9.70                         | .1070                        |
|                  | 823.9 MHz              | -10.40                        | .0912                        |



**RF ERP Measurement:**

**Downlink:**

| Frequency<br>(GHz)                                    | SA reading<br>(dBuV) | SG reading<br>(dBm) | CL<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|---|----------------------|---------------------|------------|---------------|---------------|--------------|----------------|----------------|-------|
| Fundamental Low, Mid, & High Channels (RBW=VBW=1MHz): |                      |                     |            |               |               |              |                |                |       |
| 0.851   | 84.50                | 14.50               | 0.50       | 0.00          | 0.00          | 14.00        |                |                | V     |
| 0.851   | 78.10                | 7.20                | 0.50       | 0.00          | 0.00          | 6.70         |                |                | H     |
| 0.860   | 86.10                | 15.80               | 0.50       | 0.00          | 0.00          | 15.30        |                |                | V     |
| 0.860   | 80.00                | 9.00                | 0.50       | 0.00          | 0.00          | 8.50         |                |                | H     |
| 0.869   | 86.00                | 15.70               | 0.50       | 0.00          | 0.00          | 15.20        |                |                | V     |
| 0.869   | 79.70                | 9.00                | 0.50       | 0.00          | 0.00          | 8.50         |                |                | H     |

**Uplink:**

| Frequency<br>(GHz)                                    | SA reading<br>(dBuV) | SG reading<br>(dBm) | CL<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|---|----------------------|---------------------|------------|---------------|---------------|--------------|----------------|----------------|-------|
| Fundamental Low, Mid, & High Channels (RBW=VBW=1MHz): |                      |                     |            |               |               |              |                |                |       |
| 0.806   | 56.50                | -13.50              | 0.50       | 0.00          | 0.00          | -14.00       |                |                | V     |
| 0.806   | 50.10                | -20.80              | 0.50       | 0.00          | 0.00          | -21.30       |                |                | H     |
| 0.815   | 58.10                | -12.20              | 0.50       | 0.00          | 0.00          | -12.70       |                |                | V     |
| 0.815   | 52.00                | -19.00              | 0.50       | 0.00          | 0.00          | -19.50       |                |                | H     |
| 0.824   | 58.00                | -12.30              | 0.50       | 0.00          | 0.00          | -12.80       |                |                | V     |
| 0.824   | 51.70                | -19.00              | 0.50       | 0.00          | 0.00          | -19.50       |                |                | 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

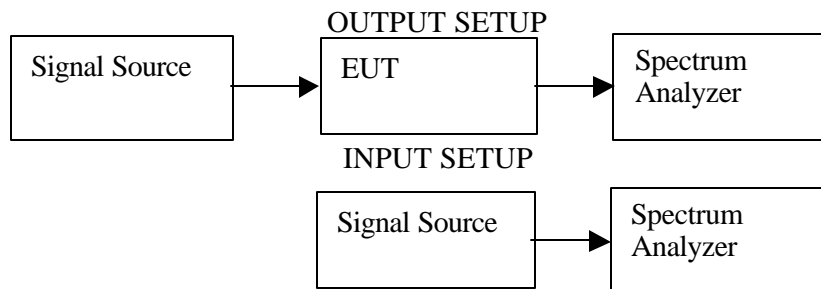
### SECTION 2.1049(i)

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

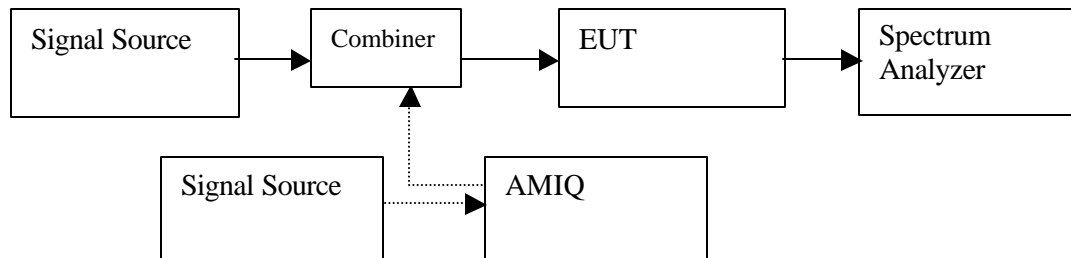
No non-compliance noted, see 8.6 measurement result plots and the attachment.

## 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  $-13\text{dBm}$  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  $-13\text{dBm}$  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            | <input checked="" type="checkbox"/> Peak<br><input type="checkbox"/> Average | <input checked="" type="checkbox"/> 1 MHz<br><input type="checkbox"/> 1 MHz | <input checked="" type="checkbox"/> 1 MHz<br><input type="checkbox"/> 10 Hz |

#### TEST SETUP

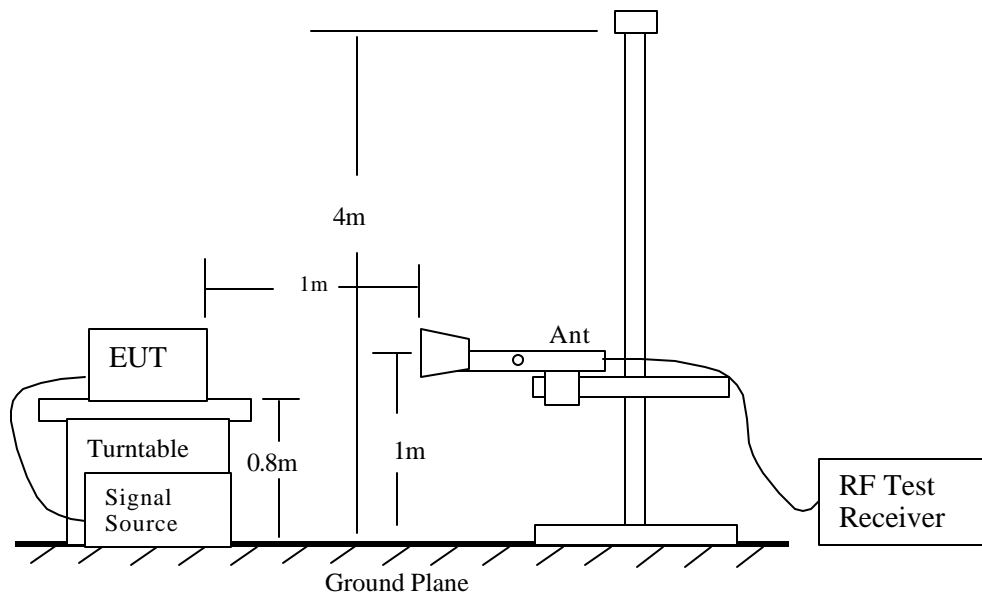


Fig 1: Radiated Emission Measurement

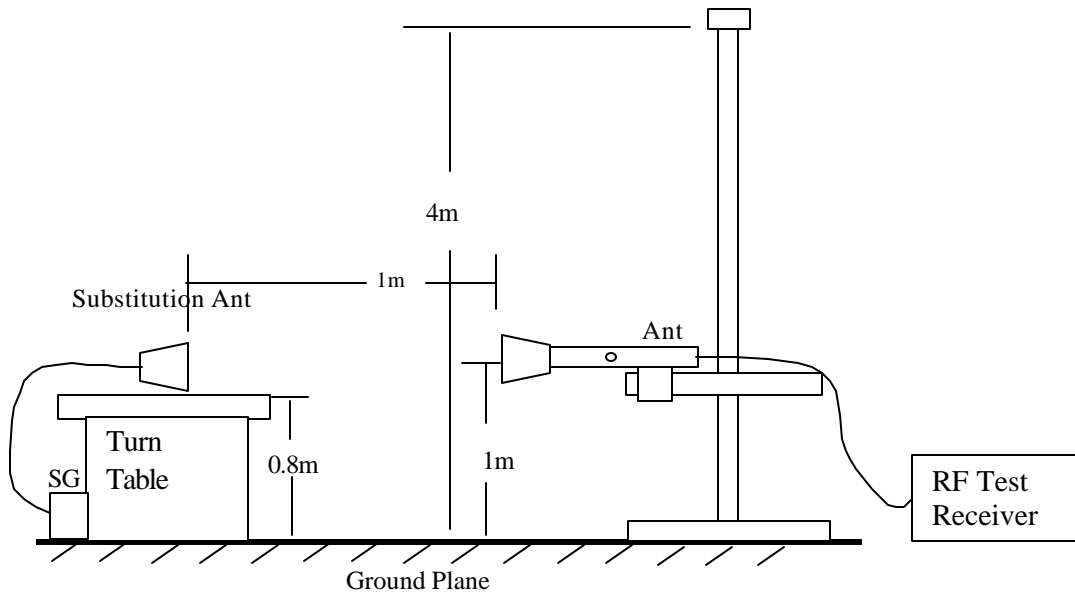


Fig 2: Radiated Emission – Substitution Method set-up

### **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

12/2/02 **FCC Measurement**  
**Compliance Certification Services, Morgan Hill Open Field Site**

**Test Engr:** Vien Tran  
**Project #:** 02U1586-2  
**Company:** LGC Wireless Inc  
**EUT Descrip.:** 800MHz iDEN (Conducted Output Power = 14dBm)  
**EUT M/N:** InterReach Umison Accel  
**Test Target:** FCC 90  
**Mode Oper:** Downlink Low / Mid / High

| Frequency (GHz)    | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes           |
|--------------------|-------------------|------------------|---------|------------|------------|-----------|-------------|-------------|-----------------|
| Spurious Emissions |                   |                  |         |            |            |           |             |             |                 |
| Lo Channel:        |                   |                  |         |            |            |           |             |             |                 |
| 0.118              | 63.80             | -48.50           | 0.30    | 0.00       | 0.00       | -48.80    | -13.00      | -35.80      | V               |
| 1.702              | 46.00             | -60.00           | 1.08    | 8.10       | 5.95       | -55.13    | -13.00      | -42.13      | V               |
| 2.553              | 43.00             | -75.00           | 1.31    | 9.00       | 6.85       | -69.46    | -13.00      | -56.46      | V (Noise Floor) |
| 3.404              | 43.00             | -73.50           | 1.52    | 8.90       | 6.75       | -68.27    | -13.00      | -55.27      | V (Noise Floor) |
| 4.256              | 43.00             | -71.00           | 1.76    | 9.50       | 7.35       | -65.41    | -13.00      | -52.41      | V (Noise Floor) |
| 5.107              | 43.00             | -71.00           | 1.98    | 9.90       | 7.75       | -65.23    | -13.00      | -52.23      | V (Noise Floor) |
| 5.958              | 43.00             | -70.00           | 2.19    | 10.40      | 8.25       | -63.94    | -13.00      | -50.94      | V (Noise Floor) |
| 6.809              | 45.00             | -65.00           | 2.34    | 10.60      | 8.45       | -58.89    | -13.00      | -45.89      | V (Noise Floor) |
| 7.660              | 45.00             | -62.50           | 2.49    | 10.30      | 8.15       | -56.84    | -13.00      | -43.84      | V (Noise Floor) |
| 8.511              | 46.00             | -60.00           | 2.64    | 10.50      | 8.35       | -54.29    | -13.00      | -41.29      | V (Noise Floor) |
| 0.118              | 64.50             | -49.50           | 0.30    | 0.00       | 0.00       | -49.80    | -13.00      | -36.80      | H               |
| 1.702              | 46.00             | -60.00           | 1.10    | 8.10       | 5.95       | -55.15    | -13.00      | -42.15      | H               |
| 2.553              | 43.00             | -75.00           | 1.31    | 9.00       | 6.85       | -69.46    | -13.00      | -56.46      | H (Noise Floor) |
| 3.404              | 43.00             | -73.50           | 1.52    | 8.90       | 6.75       | -68.27    | -13.00      | -55.27      | H (Noise Floor) |
| 4.256              | 43.00             | -71.00           | 1.76    | 9.50       | 7.35       | -65.41    | -13.00      | -52.41      | H (Noise Floor) |
| 5.107              | 43.00             | -71.00           | 1.98    | 9.90       | 7.75       | -65.23    | -13.00      | -52.23      | H (Noise Floor) |
| 5.958              | 43.00             | -70.00           | 2.19    | 10.40      | 8.25       | -63.94    | -13.00      | -50.94      | H (Noise Floor) |
| 6.809              | 45.00             | -65.00           | 2.34    | 10.60      | 8.45       | -58.89    | -13.00      | -45.89      | H (Noise Floor) |
| 7.660              | 45.00             | -62.50           | 2.49    | 10.30      | 8.15       | -56.84    | -13.00      | -43.84      | H (Noise Floor) |
| 8.511              | 46.00             | -60.00           | 2.64    | 10.50      | 8.35       | -54.29    | -13.00      | -41.29      | H (Noise Floor) |
| Mid Channel        |                   |                  |         |            |            |           |             |             |                 |
| 0.118              | 64.00             | -48.50           | 0.30    | 0.00       | 0.00       | -48.80    | -13.00      | -35.80      | V               |
| 1.720              | 46.00             | -60.00           | 1.10    | 8.20       | 6.05       | -55.05    | -13.00      | -42.05      | V               |
| 2.580              | 44.00             | -73.50           | 1.32    | 9.00       | 6.85       | -67.97    | -13.00      | -54.97      | V (Noise Floor) |
| 3.440              | 43.00             | -71.00           | 1.53    | 8.90       | 6.75       | -65.78    | -13.00      | -52.78      | V (Noise Floor) |
| 0.118              | 64.60             | -49.50           | 0.30    | 0.00       | 0.00       | -49.80    | -13.00      | -36.80      | H               |
| 1.720              | 46.00             | -60.00           | 1.10    | 8.20       | 6.05       | -55.05    | -13.00      | -42.05      | H               |
| 2.580              | 44.00             | -73.50           | 1.32    | 9.00       | 6.85       | -67.97    | -13.00      | -54.97      | H (Noise Floor) |
| 3.440              | 43.00             | -71.00           | 1.53    | 8.90       | 6.75       | -65.78    | -13.00      | -52.78      | H (Noise Floor) |
| High Channel       |                   |                  |         |            |            |           |             |             |                 |
| 0.118              | 63.90             | -48.50           | 0.30    | 0.00       | 0.00       | -48.80    | -13.00      | -35.80      | V               |
| 1.738              | 46.00             | -60.00           | 1.10    | 8.20       | 6.05       | -55.05    | -13.00      | -42.05      | V               |
| 2.607              | 44.10             | -72.50           | 1.32    | 9.00       | 6.85       | -66.97    | -13.00      | -53.97      | V (Noise Floor) |
| 3.476              | 45.00             | -69.00           | 1.54    | 8.90       | 6.75       | -63.79    | -13.00      | -50.79      | V (Noise Floor) |
| 0.118              | 64.50             | -49.50           | 0.30    | 0.00       | 0.00       | -49.80    | -13.00      | -36.80      | H               |
| 1.738              | 46.00             | -60.00           | 1.10    | 8.20       | 6.05       | -55.05    | -13.00      | -42.05      | H               |
| 2.607              | 44.10             | -72.50           | 1.32    | 9.00       | 6.85       | -66.97    | -13.00      | -53.97      | H (Noise Floor) |
| 3.476              | 45.00             | -69.00           | 1.54    | 8.90       | 6.75       | -63.79    | -13.00      | -50.79      | H (Noise Floor) |

Note: Completed scan from 30MHz to 10 GHz.

**ERP** = SG reading - CL + Gain (dBd)  
**Gain (dBd)** = Gain (dBi) - 2.15  
**Margin** = ERP - 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.

| 800 MHz iDEN - DOWNLINK BASE CHANNEL<br>(851 – 869 MHz) |                                |                       |
|---|--------------------------------|-----------------------|
| Plot #  | Description                    | Frequency Range (MHz) |
| 1   | Low Channel, Output Power      | 851.1                 |
| 2   | Mid Channel, Output Power      | 860                   |
| 3   | High Channel, Output Power     | 868.9                 |
| 4   | Low Channel, Input Bandwidth   | 851.1                 |
| 5   | Mid Channel, Input Bandwidth   | 860                   |
| 6   | High Channel, Input Bandwidth  | 868.9                 |
| 7   | Low Channel, Output Bandwidth  | 851.1                 |
| 8   | Mid Channel, Output Bandwidth  | 860                   |
| 9   | High Channel, Output Bandwidth | 868.9                 |
| 10  | Low Channel, Bottom Band Edge  | 842                   |
| 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  | Mid Channel, Out-Of-Band #1    | 15 to 1000            |
| 15  | Mid Channel, Out-Of-Band #2    | 1000 to 2900          |
| 16  | Mid Channel, Out-Of-Band #3    | 2900 to 10000         |
| 17  | High channel, Upper Band Edge  | 877.65                |
| 18  | High Channel, Out-Of-Band #1   | 15 to 1000            |
| 19  | High Channel, Out-Of-Band #2   | 1000 to 2900          |
| 20  | High Channel, Out-Of-Band #3   | 2900 to 10000         |

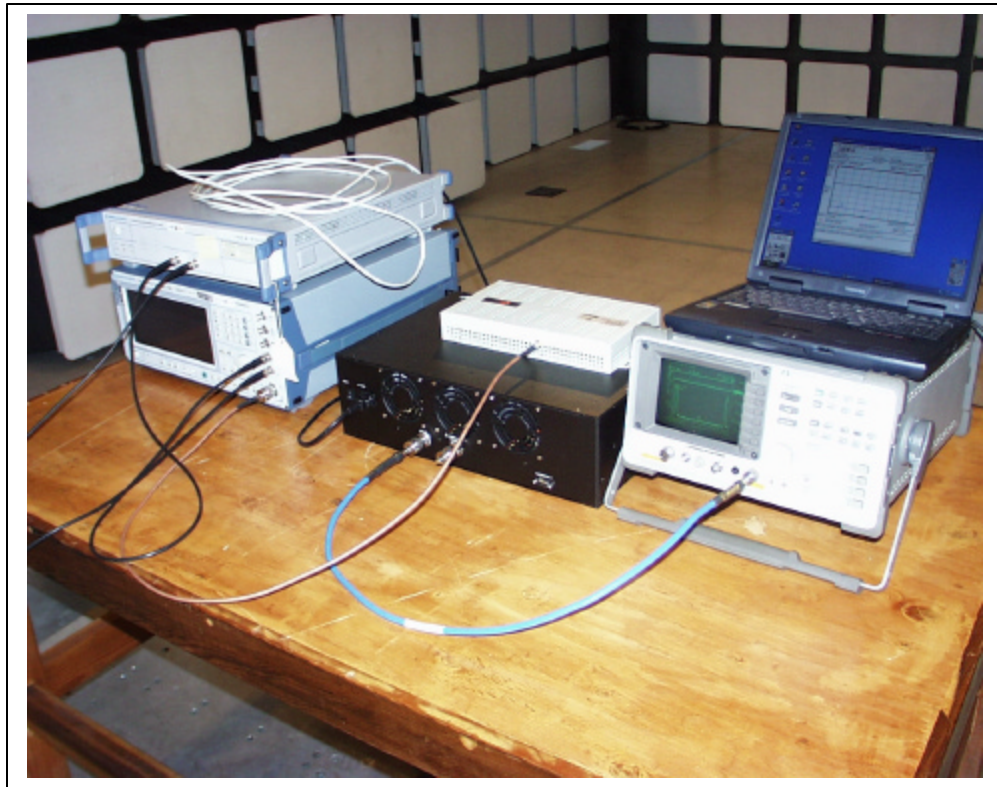
| 800 MHz iDEN - DOWNLINK INTER-MODULATION<br>BASE CHANNEL (851 – 869 MHz) |                                  |                       |
|--|----------------------------------|-----------------------|
| Plot #   | Description                      | Frequency Range (MHz) |
| 21   | Inter-modulation, Zoom-In        | 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 2900          |
| 25   | Inter-modulation, Out-Of-Band #3 | 2900 to 10000         |

| <b>800 MHz iDEN - UPLINK BASE CHANNEL<br/>(806 – 824 MHz)</b> |                                |                              |
|---|--------------------------------|------------------------------|
| <b>Plot #</b>   | <b>Description</b>             | <b>Frequency Range (MHz)</b> |
| 1   | Low Channel, Output Power      | 806.1                        |
| 2   | Mid Channel, Output Power      | 815                          |
| 3   | High Channel, Output Power     | 823.9                        |
| 4   | Low Channel, Input Bandwidth   | 806.1                        |
| 5   | Mid Channel, Input Bandwidth   | 815                          |
| 6   | High Channel, Input Bandwidth  | 823.9                        |
| 7   | Low Channel, Output Bandwidth  | 806.1                        |
| 8   | Mid Channel, Output Bandwidth  | 815                          |
| 9   | High Channel, Output Bandwidth | 823.9                        |
| 10  | Low Channel, Bottom Band Edge  | 797.58                       |
| 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  | 832.06                       |
| 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                |

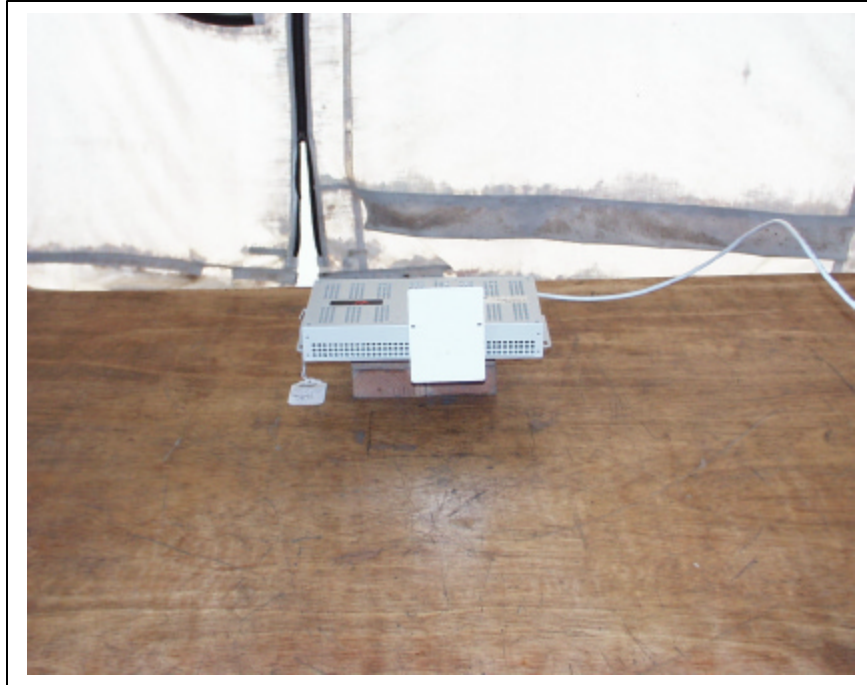
| <b>800 MHz iDEN - UPLINK INTER-MODULATION<br/>BASE CHANNEL (806 – 824 MHz)</b> |                                  |                              |
|--|----------------------------------|------------------------------|
| <b>Plot #</b>  | <b>Description</b>               | <b>Frequency Range (MHz)</b> |
| 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

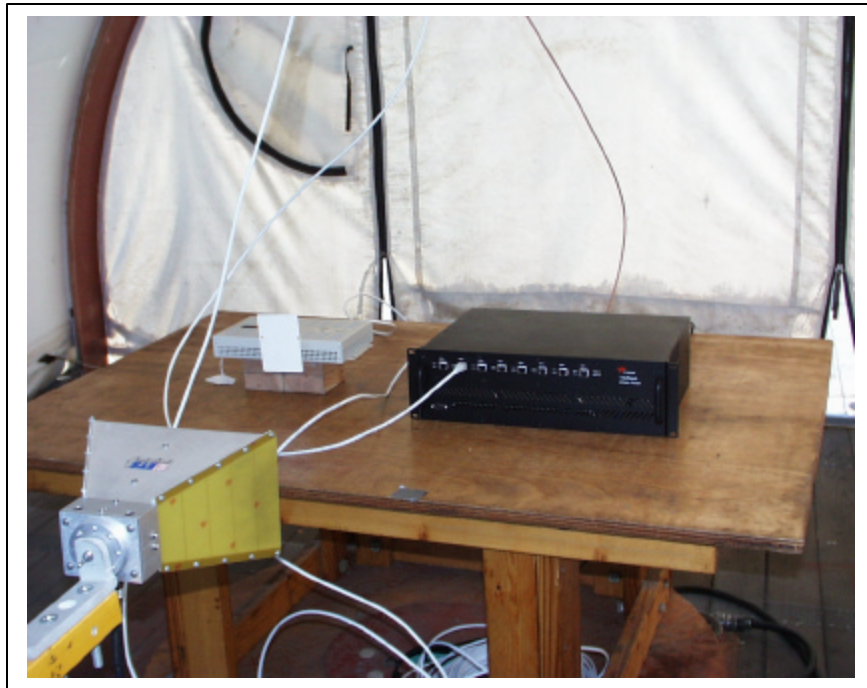
### 9.1. EUT SETUP PHOTOS



### CONDUCTED MEASUREMENT



**FUNDAMENTAL MEASUREMENT**



**HARMONIC & SPURIOUS MEASUREMENTS**



### **SUBSTITUTION MEASUREMENTS**

## 9.2. EUT PHOTOGRAPHS

**END OF REPORT**