# FCC CFR47 CERTIFICATION

# PART 22H and 24E

# TEST REPORT

***FOR***

# 800MHZ CELLULAR / 1900MHZ PCS (CDMA/TDMA)

# DUAL BAND IN BUILDING REPEATER

# MODEL: RS-5180

# FCC ID: PX8RS-5180

# REPORT NUMBER: 01U0989-1

# ISSUE DATE: OCTOBER 14, 2001

*Prepared for*

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# 1. TEST RESULT CERTIFICATION

**COMPANY NAME:** COMBA TELECOM SYSTEMS (GUANGZHOU) LTD.
6 JINBI RD, GUANGZHOU ECONOMICS AND TECHNOLOGY DEVELOPMENT DISTRICT
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**CONTACT PERSON:** JEFFERY (JINGHUI) DAI/MARKETING MANAGER

**TELPHONE NO:** 86-20-8222-5788

**EUT DESCRIPTION:** 800MHZ CELLULAR/ 1900MHZ PCS (CDMA/TDMA) DUAL BAND IN BUILDING REPEATER

**MODEM NAME:** RS-5180

**DATE TESTED:** OCTOBER 14, 2001

| | |
|---|---|
| TYPE OF EQUIPMENT | INTENTIONAL RADIATOR |
| EQUIPMENT TYPE | 1850-1910 MHz paired with 1930-1990 MHz (24) , and<br>824 – 849MHz paired with 869 – 894MHz (22) Repeater. |
| MEASUREMENT PROCEDURE | ANSI 63.4 / 1992, TIA/EIA 603 |
| PROCEDURE | CERTIFICATION |
| FCC RULE | CFR 47 PART 22 Subpart H and 24 Subpart E |

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirement set forth in CFR 47, PART 22 Subpart H-Cellular Radiotelephone Service and 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: Released For CCS By:

THU CHAN
SENIOR EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

STEVE CHENG
EMC DEPARTMENT MANAGER
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 AND BRIEF TEST RESULT

## §22.913 & 24.232- POWER LIMIT

22.913(a); Maximum ERP. The effective radiated power (ERP) of base station transmitters and cellular repeater must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(a); Maximum Peak output power for base station transmitters should not exceed 100 Watts EIRP (equivalent isotropically radiated power).

***Spec limit: As specified above.***
***Test result:***

| *Modulation* | *Max Output Power(dBm)* | *Max Output Power(W)* |
|---|---|---|
| ***CDMA 800MHz*** | ***14.70*** | ***0.0295*** |
| ***CDMA1900MHz*** | ***20.92*** | ***0.1236*** |
| ***TDMA1900MHz*** | ***15.77*** | ***0.0378*** |

## TYPE OF EMISSION

(F9W) CDMA 800MHz, (F9W) CDMA 1900MHz, (DXW) TDMA 1900MHz

## §24.235- FREQUENCY STABILITY

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

***Spec limit: As stated above.***
***Test result: This measurement results shows that the EUT complies with the rule.***

## §22.917 & 24.238- EMISSION LIMITS

22.917(e); Out of band emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by:
at leat 43+10log P dB (-13dBm)

22.917(f); Mobile emissions in base frequency range. The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitter operated must be attenuated to a level not to exceed –80dBm at the transmit antenna connector.

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:

CDMA:
0.01 * 1.445 MHz = 14.45 kHz. A RES BW of 30 kHz was used for measuring at the block edges.

TDMA:
0.01 * 33.75KHz = 337.5Hz. A RES BW of 1 kHz was used for measuring at the block edges.

***Spec limit: As stated above.***
***Test result: This measurement results shows that the EUT complies with the rule. Please refer to the plots 4 & 5 (CDMA), and 40 & 41 (TDMA).***

## §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.).***

## §PART 15 RADIATED EMISSION

NOT APPLICABLE. The accompany digital port is designed for using in set up only, not for daily operation and after set up no cable will be attached to this port.

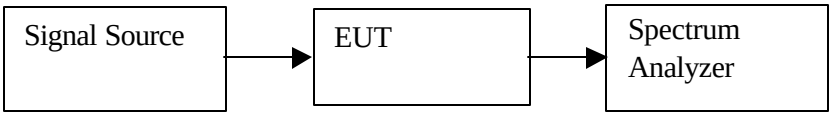
# 8. TEST SETUP, PROCEDURE AND RESULT

## 8.1. SECTION 2.1046: RF POWER OUTPUT

**INSTRUMENTS LIST**

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|---|---|---|---|
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 05/25/02 |
| EMI Receiver | HP | 8593EM | 6/20/02 |

**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:***

| ***Modulation*** | ***Max Output Power(dBm)*** | ***Max Output Power(W)*** |
|---|---|---|
| ***CDMA 800MHz*** | ***14.70*** | ***0.0295*** |
| ***CDMA1900MHz*** | ***20.92*** | ***0.1236*** |
| ***TDMA1900MHz*** | ***15.77*** | ***0.0378*** |

## 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

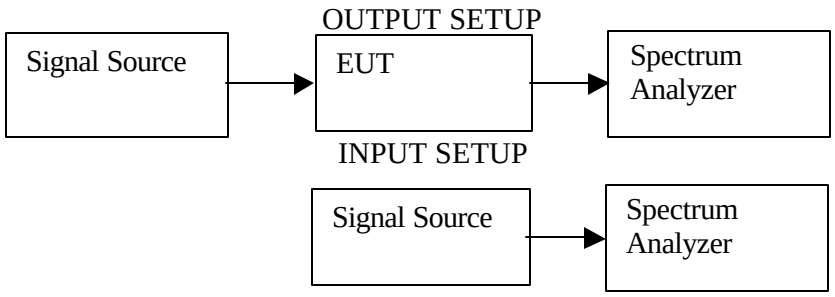
**SECTION 2.1049(i)**

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 | 05/25/02 |
| EMI Receiver | HP | 8593EM | 6/20/02 |

**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**

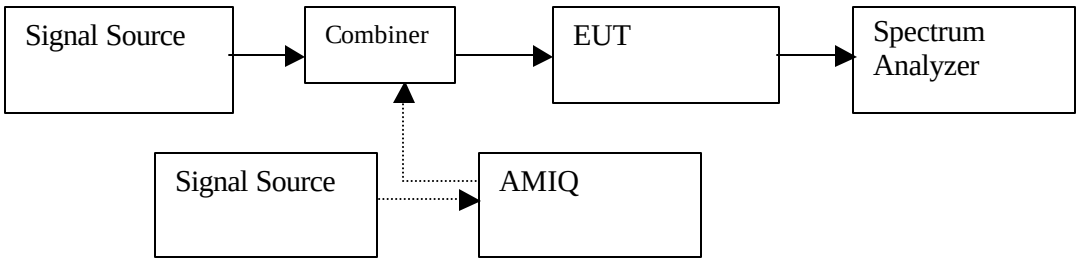
Plots of the input and output are included. Please refer to Section 9.6 plots number 4&5; 9&10; 13&14; 21&22; 26&27; 31&32; 40&41; 45&46; 49&50; 57&58; 62&63; 67&68; 76&77; 81&82; 85&86; 93&94; 98&99; 102&103.

## 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 | 05/25/02 |
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 05/25/02 |
| EMI Receiver | HP | 8593EM | 6/20/02 |
| AMIQ | HP | E4432B-1E5-H9 | 7/28/02 |

**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 10x$fo$ 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.

4) 22.917(f); Mobile emissions in base frequency range. The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitter operated must be attenuated to a level not to exceed –80dBm at the transmit antenna connector.

RESULT

Complies, Please refer to Section 9.6 Measurement Result Plots #6-8; 11-12; 15-17; 23-25; 28-30; 33-36; 42-44; 47-48; 51-53; 59-61; 64-66; 69-72; 78-80; 83-84; 87-89; 95-97; 100-101; 104-106; & 107 - 163

## 8.5. SECTION 2.1053: FIELD STRENGTH OF SPURIOUS RADIATION

**INSTRUMENTS LIST**

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|---|---|---|---|
| Spectrum Analyzer | HP | 8593EM | 06/20/02 |
| Amplifier | MITEQ | NSP2600-44 | 4/12/02 |
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 05/25/02 |
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 05/25/02 |
| Signal Generator | HP | 83732B | 3/21/02 |
| Tx Horn Antenna | EMCO | 3115 | 1/5/02 |
| Rx Horn Antenna | EMCO | 3115 | 9/24/01 |
| 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<br>☐ Average | ☒ 1 MHz<br>☐ 1 MHz | ☒ 1 MHz<br>☐ 10 Hz |

**TEST SETUP**

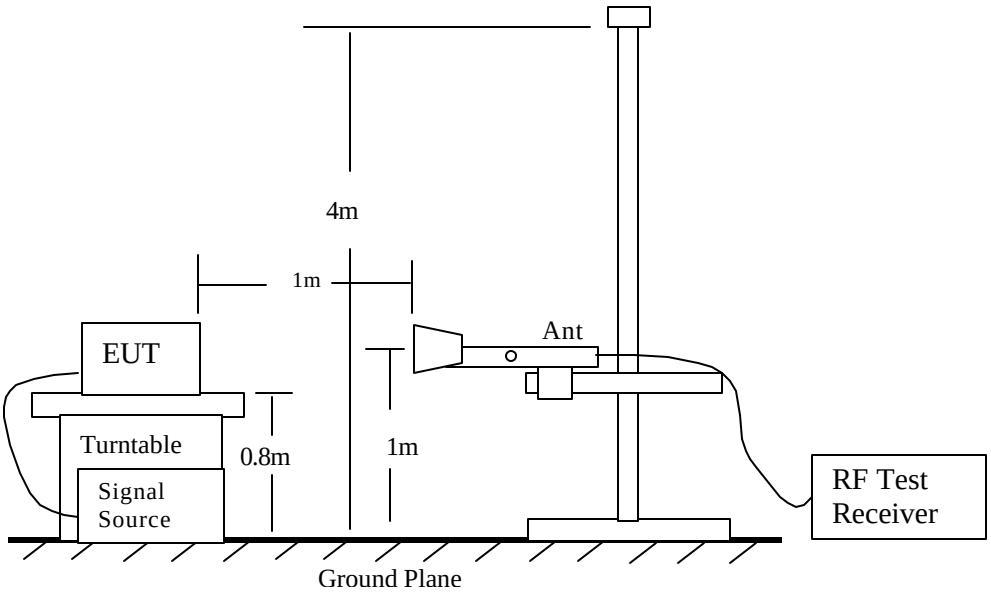



Fig 1: Radiated Emission Measurement

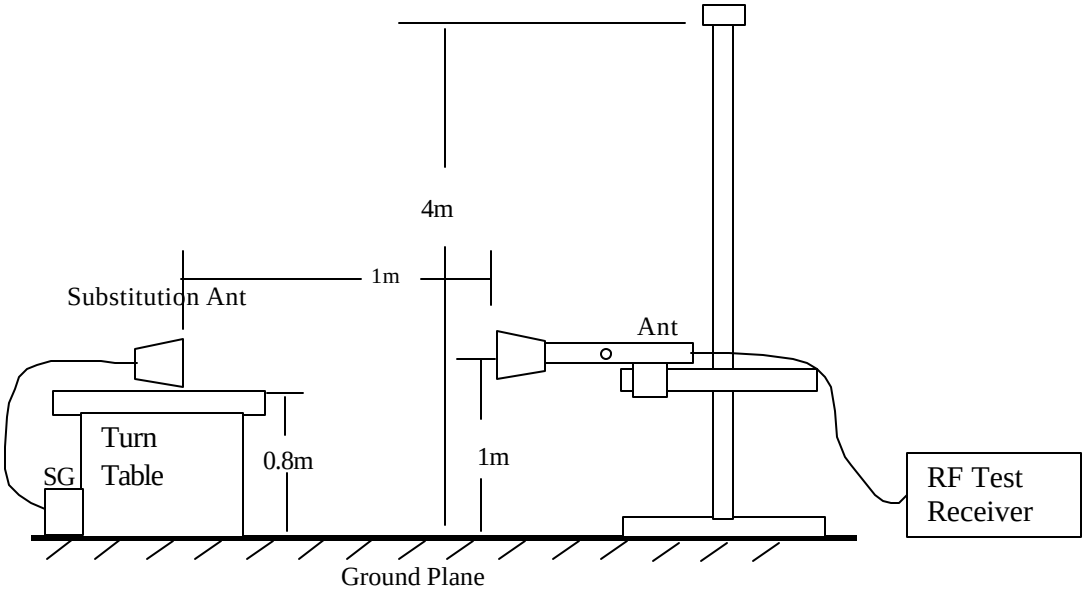



Fig 2: Radiated Emission – Substitution Method set-up

**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

***fo = 1960MHz CDMA Downlink Mid Channel*** 10/8/01

| Frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 3920* | 43 | -90 | 0.55 | 9.6 | 7.45 | -83.1 | -13 | -70.1 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 5885.8* | 43 | -75 | 0.69 | 11 | 8.85 | -66.84 | -13 | -53.84 |
| 7839.87* | 47 | -70 | 0.79 | 11 | 8.85 | -61.94 | -13 | -48.94 |
| 9800* | 45 | -72 | 0.91 | 12.5 | 10.35 | -62.56 | -13 | -49.56 |
| 11759.9* | 47 | -70 | 0.99 | 12.5 | 10.35 | -60.64 | -13 | -47.64 |
| 13720* | 48 | -70 | 1.1 | 11.3 | 9.15 | -61.95 | -13 | -48.95 |

***fo = 1880MHz CDMA Uplink Mid Channel***

| frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 3760* | 40 | -90 | 0.53 | 9.6 | 7.45 | -83.08 | -13 | -70.08 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 7542* | 45 | -71 | 0.78 | 11 | 8.85 | -62.93 | -13 | -49.93 |
| 9400* | 45 | -71 | 0.88 | 12.3 | 10.15 | -61.73 | -13 | -48.73 |
| 11280* | 47 | -70 | 0.97 | 12.7 | 10.55 | -60.42 | -13 | -47.42 |
| 13160* | 49 | -70 | 1.07 | 12.3 | 10.15 | -60.92 | -13 | -47.92 |

**NOTE: * Measured noise floor (worse case vertical)**
**Gain (dBd) =** Gain (dBi) - 2.15 **EPR =** SG reading - CL + Gain (dBd)
**Margin =** EPR - Limit

**SA:** Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
**SG:** Signal Generator, HP 83732B, S/N: US34490599
**CL:** cable loss (5ft), FLEXCO **HPF:** High Pass Filter (MICROLAB, FH-2400H)
**TX Antenna:** EMCO 3115, S/N: 9001-3245 (dBi) **RX Antenna:** EMCO 3115, S/N: 2238
**Pre-Amp:** Miteq NSP2600 -44, S/N: 646456

***fo = 1960MHz TDMA Downlink Mid Channel*** 10/8/01

| Frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 3920* | 45 | -88 | 0.55 | 9.6 | 7.45 | -81.1 | -13 | -68.1 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 5885.8* | 44 | -75 | 0.69 | 11 | 8.85 | -66.84 | -13 | -53.84 |
| 7839.87* | 48 | -69 | 0.79 | 11 | 8.85 | -60.94 | -13 | -47.94 |
| 9800* | 47 | -70 | 0.91 | 12.5 | 10.35 | -60.56 | -13 | -47.56 |
| 11759.9* | 47 | -70 | 0.99 | 12.5 | 10.35 | -60.64 | -13 | -47.64 |
| 13720* | 48 | -70 | 1.1 | 11.3 | 9.15 | -61.95 | -13 | -48.95 |

***fo = 1880MHz TDMA Uplink Mid Channel***

| frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 3760* | 40 | -90 | 0.53 | 9.6 | 7.45 | -83.08 | -13 | -70.08 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 7542* | 47 | -70 | 0.78 | 11 | 8.85 | -61.93 | -13 | -48.93 |
| 9400* | 46 | -70 | 0.88 | 12.3 | 10.15 | -60.73 | -13 | -47.73 |
| 11280* | 47 | -70 | 0.97 | 12.7 | 10.55 | -60.42 | -13 | -47.42 |
| 13160* | 47 | -71 | 1.07 | 12.3 | 10.15 | -61.92 | -13 | -48.92 |

**NOTE: * Measured noise floor (worse case vertical)**
**Gain (dBd) =** Gain (dBi) - 2.15 **EPR =** SG reading - CL + Gain (dBd)
**Margin =** EPR - Limit

**SA:** Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
**SG:** Signal Generator, HP 83732B, S/N: US34490599
**CL:** cable loss (5ft), FLEXCO **HPF:** High Pass Filter (MICROLAB, FH-2400H)
**TX Antenna:** EMCO 3115, S/N: 9001-3245 (dBi) **RX Antenna:** EMCO 3115, S/N: 2238
**Pre-Amp:** Miteq NSP2600 -44, S/N: 646456

***fo = 881.5MHz CDMA Downlink Mid Channel*** 10/8/01

| Frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 1755.76 | 50 | -70 | 0.35 | 9.2 | 7.05 | -63.3 | -13 | -50.3 |
| 2637.26 | 51 | -70 | 0.42 | 10 | 7.85 | -62.57 | -13 | -49.57 |
| 3522.8 | 50 | -70 | 0.5 | 9.6 | 7.45 | -63.05 | -13 | -50.05 |
| 4404.14* | 44 | -75 | 0.59 | 10.8 | 8.65 | -66.94 | -13 | -53.94 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5285.64* | 50 | -69 | 0.65 | 11 | 8.85 | -60.8 | -13 | -47.8 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 6170.76* | 50 | -70 | 0.71 | 11.5 | 9.35 | -61.36 | -13 | -48.36 |
| 7052.26* | 55.6 | -70 | 0.75 | 10.9 | 8.75 | -62 | -13 | -49 |

***fo = 836.5MHz CDMA Uplink Mid Channel***

| frequency (MHz) | SA reading (dBuV) | SG reading (dBm) | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 1673* | 51 | -90 | 0.34 | 9.2 | 7.05 | -83.29 | -13 | -70.29 |
| 2509* | 53 | -90 | 0.41 | 10.1 | 7.95 | -82.46 | -13 | -69.46 |
| 3367.13 | 50 | -70 | 0.48 | 9.6 | 7.45 | -63.03 | -13 | -50.03 |
| 4182.75 | 42 | -75 | 0.57 | 10 | 7.85 | -67.72 | -13 | -54.72 |
| 4777.2 | 62.3 | -49 | 0.61 | 11.2 | 9.05 | -40.56 | -13 | -27.56 |
| 5019.25 | 42 | -51 | 0.63 | 11.2 | 9.05 | -42.58 | -13 | -29.58 |
| 5662 | 61 | -51 | 0.68 | 11 | 8.85 | -42.83 | -13 | -29.83 |
| 5855.5* | 50 | -70 | 0.7 | 11.5 | 9.35 | -61.35 | -13 | -48.35 |
| 6692* | 55.6 | -70 | 0.74 | 12 | 9.85 | -60.89 | -13 | -47.89 |

**NOTE: * Measured noise floor (worse case vertical)**
**Gain (dBd) =** Gain (dBi) - 2.15 **EPR =** SG reading - CL + Gain (dBd)
**Margin =** EPR - Limit

**SA:** Spectrum Analyzer, HP 8593EM, S/N: 3710A00205
**SG:** Signal Generator, HP 83732B, S/N: US34490599
**CL:** cable loss (5ft), FLEXCO **HPF:** High Pass Filter (MICROLAB, FH-2400H)
**TX Antenna:** EMCO 3115, S/N: 9001-3245 (dBi) **RX Antenna:** EMCO 3115, S/N: 2238
**Pre-Amp:** Miteq NSP2600 -44, S/N: 646456

## 8.6. SECTION 2.1055: FREQUENCY STABILITY

**INSTRUMENTS LIST**

| EQUIPMENT | MANUFACTURE | MODEL NO. | CAL. DUE DATE |
|---|---|---|---|
| Signal Generator | Rohde & Schwarz | SMIQ 03 | 05/25/02 |
| EMI Receiver | HP | 8593EM | 6/20/02 |
| Environmental Chamber | Thermotron | SE 600-10-10 | 03/23/02 |

Detector Function Setting of Test Receiver

| Frequency Range (MHz) | Detector Function | Resolution Bandwidth | Video Bandwidth |
|---|---|---|---|
| Above 1000 | Peak | 30 Hz | 30 Hz |

**TEST SETUP**

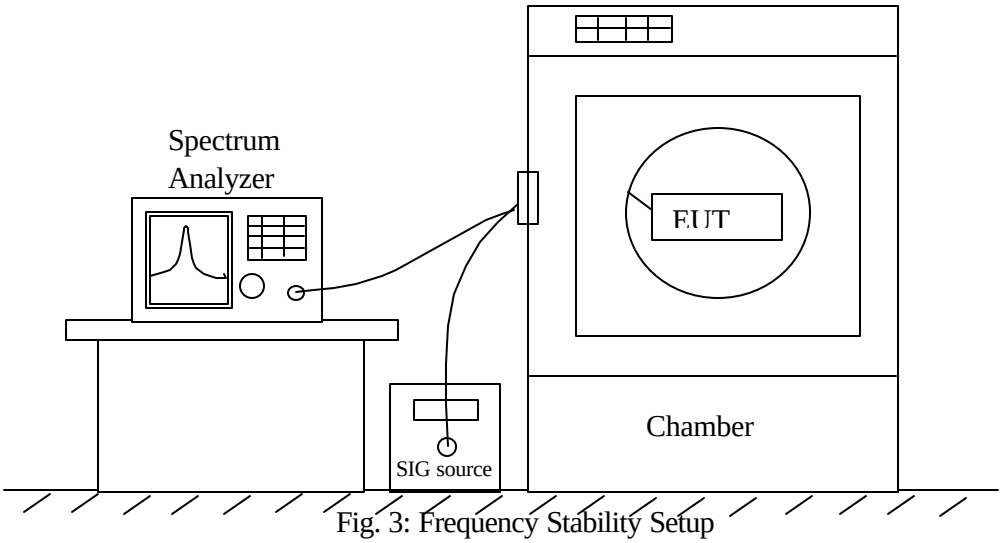



Fig. 3: Frequency Stability Setup

**TEST PROCEDURE**

- **Frequency stability versus environmental temperature**

1). Setup the configuration per figure 6 for frequencies measurement inside the environmental chamber. Set the temperature of the chamber to 25°C. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Turn EUT off and set Chamber temperature to -30°C.
3). Allow sufficient time (approximately 20 to 30 minus after chamber reach the assigned temperature) for EUT to stabilize. Turn on EUT and measure the EUT operating frequency. Turn off EUT after the measurement.
4). Repeat step 3 with a 10°C increased per stage until the highest temperature of +50°C reached, record all measured frequencies on each temperature step.

- **Frequency stability versus AC input voltage**

1). Setup the configuration per figure 6 and set chamber temperature to 25°C. Use a variable AC power supply to power the EUT and set AC output voltage to EUT nominal input AC voltage. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Slowly reduce the EUT input voltage to specified extreme voltage variation and record the maximum frequency change.

**RESULT**

No non-compliance noted, as shown below because the EUT uses the same OSC in both receiver and transmitter LO circuit. As a result, the frequency does not shift in Frequency Stability Test.

**Frequency stability versus environmental temperature**

| Reference Frequencies: 1930.550 MHz (CDMA), 1930.08175 MHz (TDMA), & 869.545 MHz (CDMA) Low Block Downlink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse |
| | | MHz |
| 50 | Fixed 115 Vac | Same as reference readings above |
| 40 | Fixed 115 Vac | Same as reference readings above |
| 30 | Fixed 115 Vac | Same as reference readings above |
| 20 | Fixed 115 Vac | Same as reference readings above |
| 10 | Fixed 115 Vac | Same as reference readings above |
| 0 | Fixed 115 Vac | Same as reference readings above |
| -10 | Fixed 115 Vac | Same as reference readings above |
| -20 | Fixed 115 Vac | Same as reference readings above |
| -30 | Fixed 115 Vac | Same as reference readings above |

| Reference Frequencies: 1951.440 MHz (CDMA), 1959.91425 MHz (TDMA), & 893.44 MHz (CDMA) Top Block Downlink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse |
| | | MHz |
| 50 | Fixed 115 Vac | Same as reference readings above |
| 40 | Fixed 115 Vac | Same as reference readings above |
| 30 | Fixed 115 Vac | Same as reference readings above |
| 20 | Fixed 115 Vac | Same as reference readings above |
| 10 | Fixed 115 Vac | Same as reference readings above |
| 0 | Fixed 115 Vac | Same as reference readings above |
| -10 | Fixed 115 Vac | Same as reference readings above |
| -20 | Fixed 115 Vac | Same as reference readings above |

| | | |
|---|---|---|
| -30 | Fixed 115 Vac | Same as reference readings above |

| Reference Frequencies: 1850.550 MHz (CDMA), 1850.0815 MHz (TDMA), & 824.54 MHz (CDMA) Low Block Uplink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse |
| | | MHz |
| 50 | Fixed 115 Vac | Same as reference readings above |
| 40 | Fixed 115 Vac | Same as reference readings above |
| 30 | Fixed 115 Vac | Same as reference readings above |
| 20 | Fixed 115 Vac | Same as reference readings above |
| 10 | Fixed 115 Vac | Same as reference readings above |
| 0 | Fixed 115 Vac | Same as reference readings above |
| -10 | Fixed 115 Vac | Same as reference readings above |
| -20 | Fixed 115 Vac | Same as reference readings above |
| -30 | Fixed 115 Vac | Same as reference readings above |

| Reference Frequencies: 1909.440 MHz (CDMA), 1909.91425 MHz (TDMA), & 848.45 MHz (CDMA) Top Block Uplink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse |
| | | MHz |
| 50 | Fixed 115 Vac | Same as reference readings above |
| 40 | Fixed 115 Vac | Same as reference readings above |
| 30 | Fixed 115 Vac | Same as reference readings above |
| 20 | Fixed 115 Vac | Same as reference readings above |
| 10 | Fixed 115 Vac | Same as reference readings above |
| 0 | Fixed 115 Vac | Same as reference readings above |
| -10 | Fixed 115 Vac | Same as reference readings above |
| -20 | Fixed 115 Vac | Same as reference readings above |
| -30 | Fixed 115 Vac | Same as reference readings above |

**Frequency stability versus AC input voltage**

| Reference Frequency: 1930.555 MHz (CDMA), 1930.08188 MHz (TDMA), 869.545 MHz (CDMA)<br>Low Block Downlink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse<br>MHz |
| 24 | 115 | Same as reference readings above |
| 24 | 85 | Same as reference readings above |
| 24 | 132 | Same as reference readings above |

| Reference Frequency: 1959.435 MHz (CDMA), 1959.91413 MHz (TDMA), 893.440 MHz (CDMA)<br>Top Block Downlink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse<br>MHz |
| 24 | 115 | Same as reference readings above |
| 24 | 85 | Same as reference readings above |
| 24 | 132 | Same as reference readings above |

| Reference Frequency: 1850.550 MHz (CDMA), 1850.08150 MHz (TDMA), 824.54 MHz (CDMA)<br>Low Block Uplink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse<br>MHz |
| 24 | 115 | Same as reference readings above |
| 24 | 85 | Same as reference readings above |
| 24 | 132 | Same as reference readings above |

| Reference Frequency: 1909.44 MHz (CDMA), 1909.91425 MHz (TDMA), 848.445 MHz (CDMA)<br>Top Block Uplink; Limit: to stay within the authorized frequency block | | |
|---|---|---|
| Environment Temperature (°C) | Power Supplied (Vac) | Frequency deviation measured with time elapse<br>MHz |
| 24 | 115 | Same as reference readings above |
| 24 | 85 | Same as reference readings above |
| 24 | 132 | Same as reference readings above |

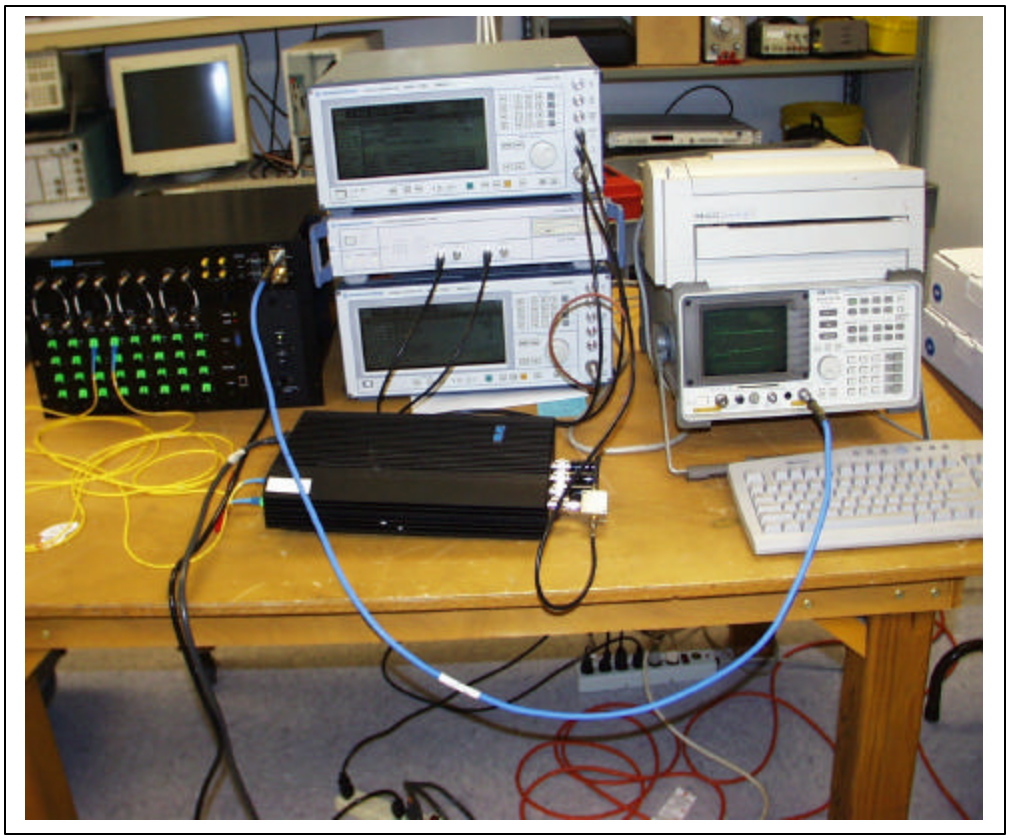
## 8.7. RADIATED EMISSION: part 15.209

NOT APPLICABLE. The accompany digital port is designed for using in set up only, not for daily operation, and after the set up no cable will be attached to this port.

# 9. ATTACHMENT

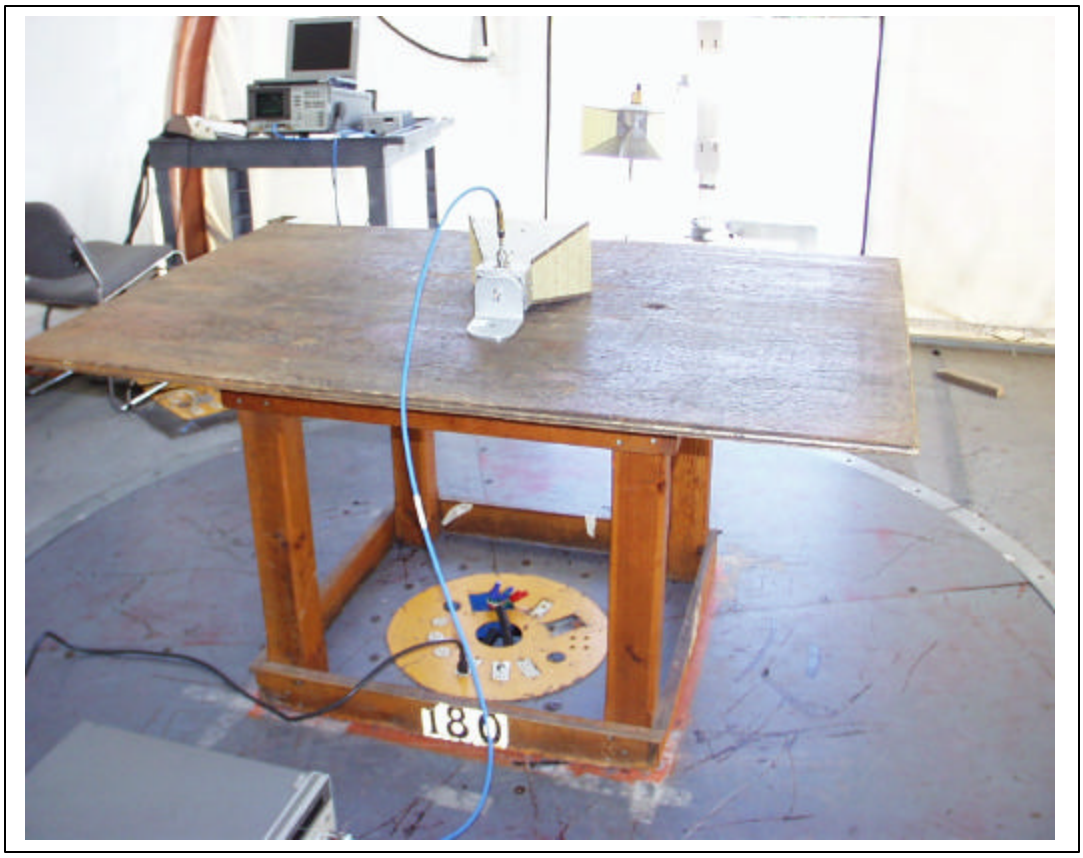
## 9.1. EUT SETUP PHOTOS

**CONDUCTED MEASUREMENT**



**INTERMODULATED MEASUREMENT**

**HARMONIC MEASUREMENT**

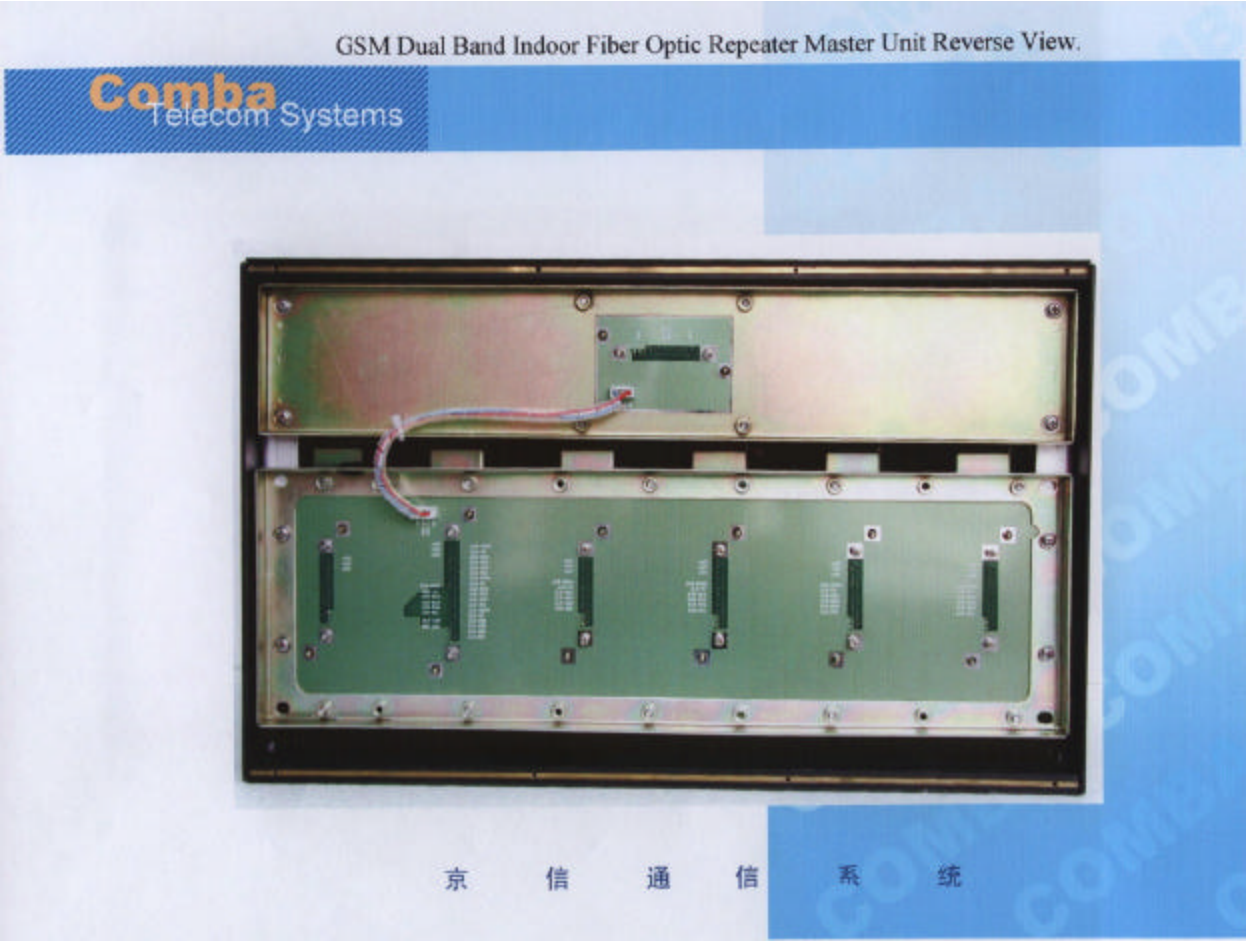


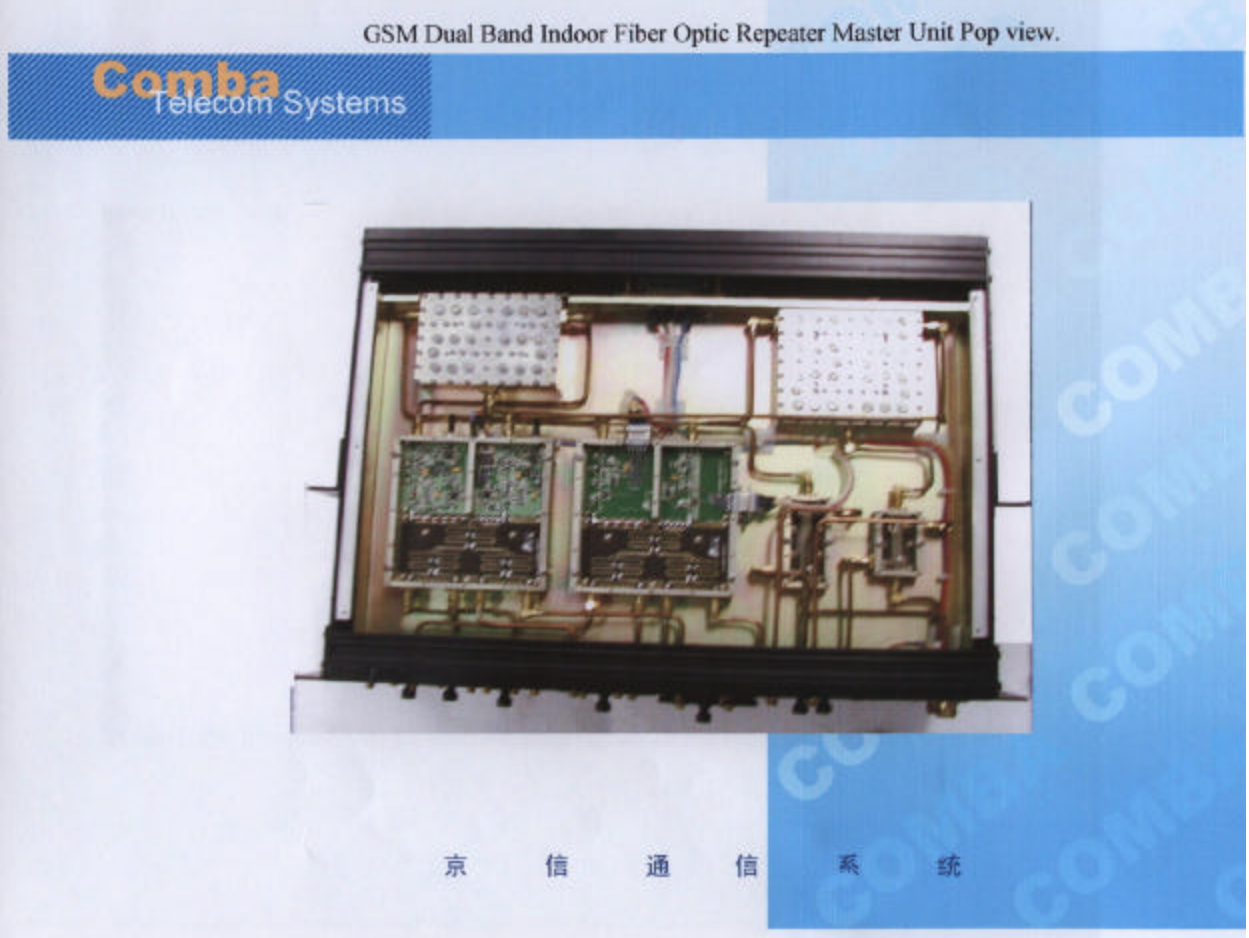
**SUBSTITUTION METHOD**

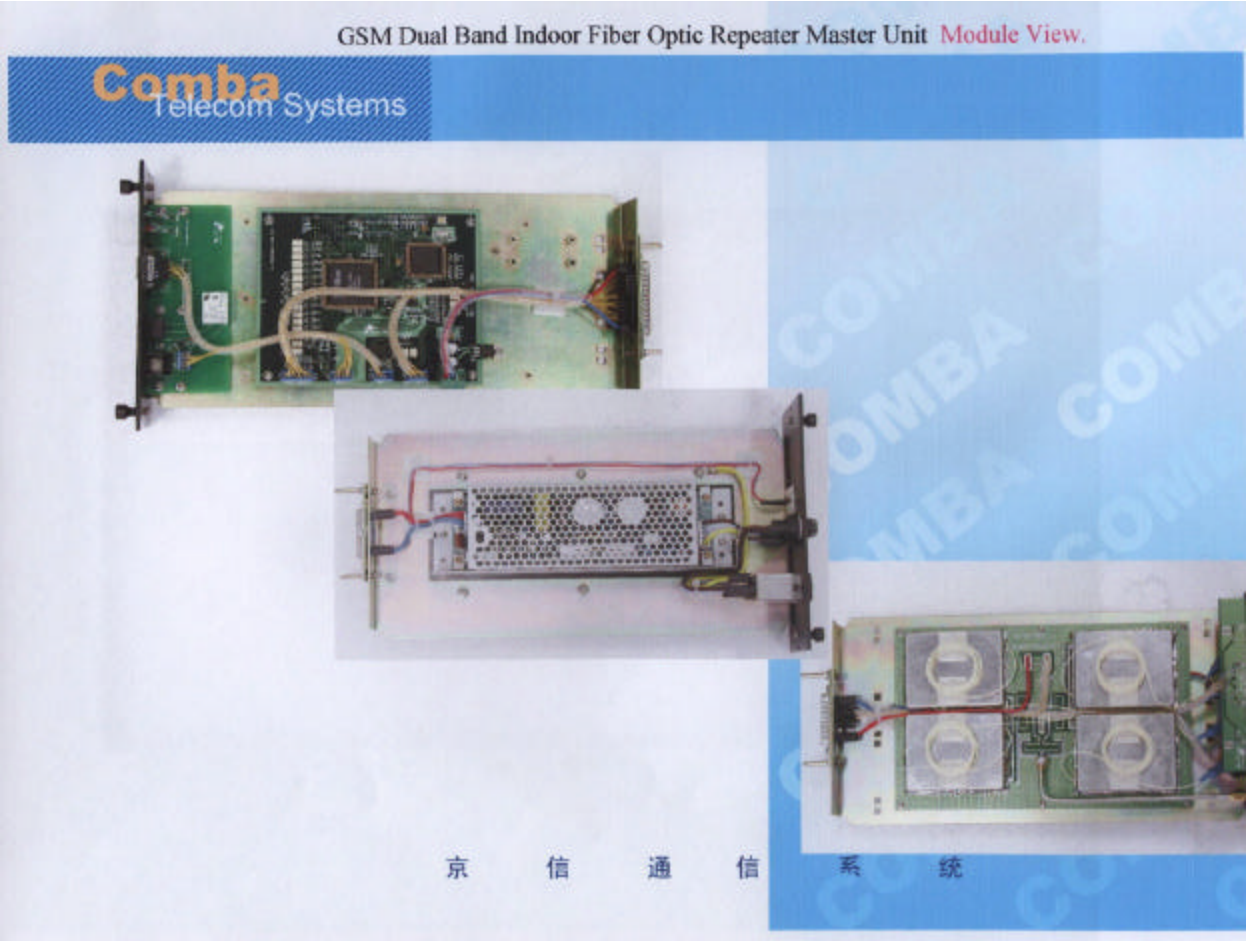
**FREQUENCY VS. TEMPERATURE**

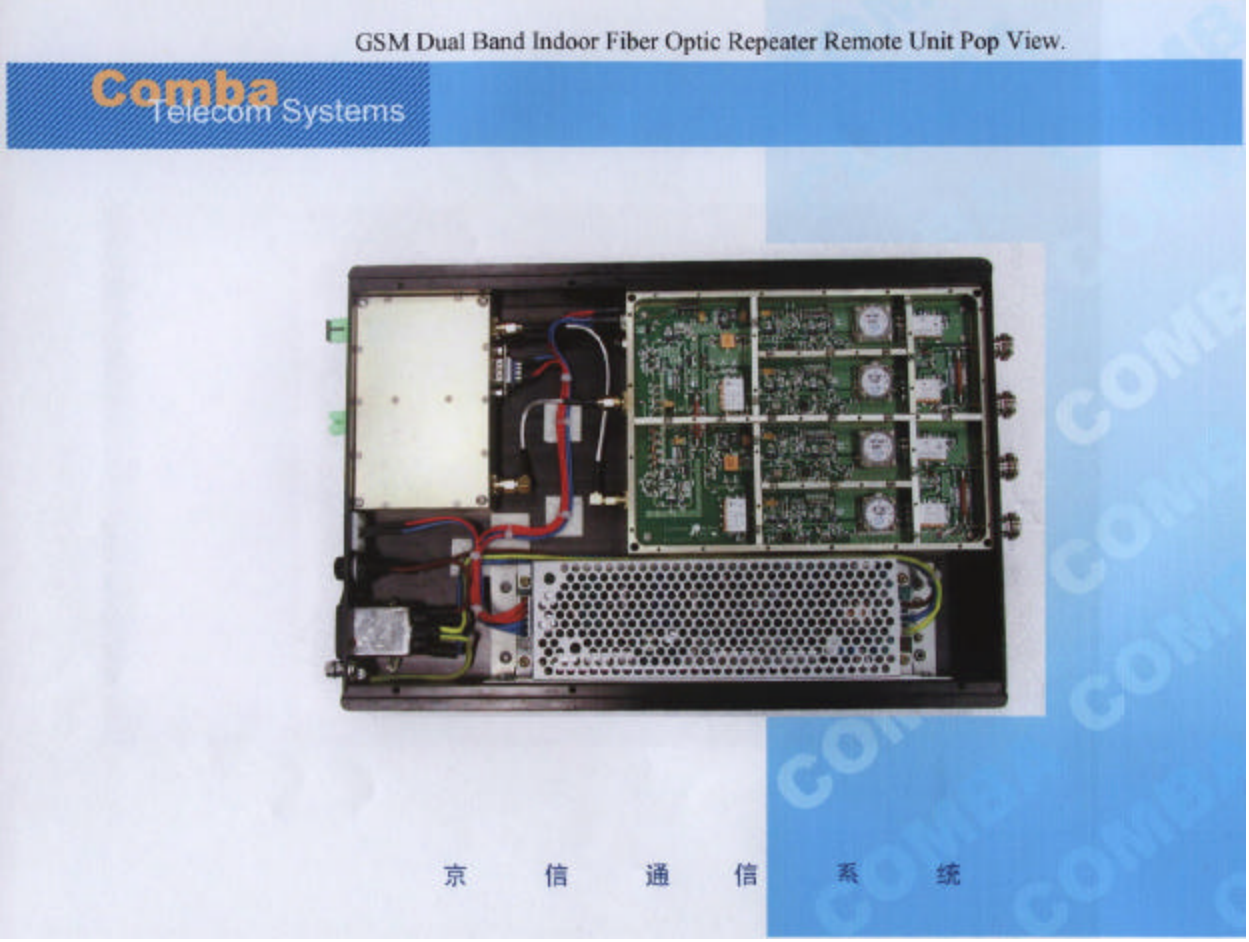
**FREQUENCY VS. VOLTAGE**

## 9.2 EUT PHOTOGRAPHS









## 9.3 INSTALLATION AND SERVICE MANUAL

## 9.4 SCHEMATIC, PART LISTS AND BLOCK DIAGRAM

## 9.5 PROPOSED FCC ID LABEL FORMAT

## 9.6 MEASUREMENT RESULT PLOTS

**RESULT**

The following table indicates the plot number associated with the Input Bandwidth, Output Bandwidth, Block Edges, Intermodulation, Out-of-Band and Low, Mid, High Power Outputs emission, mobile emissions in base frequency plots. All measurements are in peak detector mode.

| 1900MHz CDMA DOWNLINK BLOCK A - F (1930 – 1990MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 1 | Bottom Block Output Power | 1931.25 |
| 2 | Mid Block Output Power | 1960 |
| 3 | Top Block Output Power | 1988.75 |
| 4 | Bottom Block Input Bandwidth | 1931.25 |
| 5 | Bottom Block Output Bandwidth | 1931.25 |
| 6 | Bottom Block Edge | 1927 to 1931.25 |
| 7 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 8 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 9 | Mid Block Input Bandwidth | 1960 |
| 10 | Mid Block Output Bandwidth | 1960 |
| 11 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 12 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 13 | Top Block Input Bandwidth | 1988.75 |
| 14 | Top Block Output Bandwidth | 1988.75 |
| 15 | Top Block Edge | 1988.75 to 2000 |
| 16 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 17 | Top Block Edge Out-Of-Band | 2900 to 20000 |

| 1900MHz CDMA UPLINK BLOCK A-F (1850 – 1910MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 18 | Bottom Block Output Power | 1851.25 |
| 19 | Mid Block Output Power | 1880 |
| 20 | Top Block Output Power | 1908.75 |
| 21 | Bottom Block Input Bandwidth | 1851.25 |
| 22 | Bottom Block Output Bandwidth | 1851.25 |
| 23 | Bottom Block Edge | 1847 to 1851.25 |
| 24 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 25 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 26 | Mid Block Input Bandwidth | 1880 |
| 27 | Mid Block Output Bandwidth | 1880 |
| 28 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 29 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 30 | MId Block Edge Out-Of-Band (Zoom-in 26dBc) | 1840 to 1940 |
| 31 | Top Block Input Bandwidth | 1908.75 |
| 32 | Top Block Output Bandwidth | 1908.75 |
| 33 | Top Block Edge | 1908.75 to 1912.5 |
| 34 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 35 | Top Block Edge Out-Of-Band | 2900 to 20000 |
| 36 | Top Block Edge Out-Of-Band (Zoom-in 26dBc) | 1808.8 to 2008.8 |

| 1900MHz TDMA DOWNLINK BLOCK A - F (1930 – 1990MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 37 | Bottom Block Output Power | 1930.1 |
| 38 | Mid Block Output Power | 1945 |
| 39 | Top Block Output Power | 1959.9 |
| 40 | Bottom Block Input Bandwidth | 1930.1 |

| | | |
|---|---|---|
| 41 | Bottom Block Output Bandwidth | 1930.1 |
| 42 | Bottom Block Edge | 1929.89 TO 1930.1 |
| 43 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 44 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 45 | Mid Block Input Bandwidth | 1945 |
| 46 | Mid Block Output Bandwidth | 1945 |
| 47 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 48 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 49 | Top Block Input Bandwidth | 1959.9 |
| 50 | Top Block Output Bandwidth | 1959.9 |
| 51 | Top Block Edge | 1959.9 to 1960.15 |
| 52 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 53 | Top Block Edge Out-Of-Band | 2900 to 20000 |

| **1900MHz TDMA UPLINK BLOCK A-F (1850 – 1910MHz)** | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 54 | Bottom Block Output Power | 1850.1 |
| 55 | Mid Block Output Power | 1880 |
| 56 | Top Block Output Power | 1909.9 |
| 57 | Bottom Block Input Bandwidth | 1850.1 |
| 58 | Bottom Block Output Bandwidth | 1850.1 |
| 59 | Bottom Block Edge | 1849.9 to 1850.1 |
| 60 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 61 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 62 | Mid Block Input Bandwidth | 1880 |
| 63 | Mid Block Output Bandwidth | 1880 |
| 64 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 65 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 66 | MId Block Edge Out-Of-Band (Zoom-in 26dBc) | 1830 to 1930 |
| 67 | Top Block Input Bandwidth | 1909.9 |
| 68 | Top Block Output Bandwidth | 1909.9 |
| 69 | Top Block Edge | 1909.9 to 1910.1 |
| 70 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 71 | Top Block Edge Out-Of-Band | 2900 to 20000 |
| 72 | Top Block Edge Out-Of-Band (Zoom-in 26dBc) | 1809.2 to 2009.2 |

| **800MHz CDMA DOWNLINK BASE CHANNEL BLOCK A – B (869 – 894MHz)** | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 73 | Bottom Block Output Power | 870.25 |
| 74 | Mid Block Output Power | 881.5 |
| 75 | Top Block Output Power | 892.75 |
| 76 | Bottom Block Input Bandwidth | 870.25 |
| 77 | Bottom Block Output Bandwidth | 870.25 |
| 78 | Bottom Block Edge | 865.25 to 870.25 |
| 79 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 80 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 81 | Mid Block Input Bandwidth | 881.5 |
| 82 | Mid Block Output Bandwidth | 881.5 |

| | | |
|---|---|---|
| 83 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 84 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 85 | Top Block Input Bandwidth | 892.75 |
| 86 | Top Block Output Bandwidth | 892.75 |
| 87 | Top Block Edge | 892.75 to 897.75 |
| 88 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 89 | Top Block Edge Out-Of-Band | 2900 to 20000 |

| 800MHz CDMA UPLINK MOBILE CHANNEL BLOCK A – B (824 – 849MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 90 | Bottom Block Output Power | 825.25 |
| 91 | Mid Block Output Power | 836.5 |
| 92 | Top Block Output Power | 847.75 |
| 93 | Bottom Block Input Bandwidth | 825.25 |
| 94 | Bottom Block Output Bandwidth | 825.25 |
| 95 | Bottom Block Edge | 820.5 to 825.25 |
| 96 | Bottom Block Edge Out-Of-Band | 15 to 2900 |
| 97 | Bottom Block Edge Out-Of-Band | 2900 to 20000 |
| 98 | Mid Block Input Bandwidth | 836.5 |
| 99 | Mid Block Output Bandwidth | 836.5 |
| 100 | Mid Block Edge Out-Of-Band | 15 to 2900 |
| 101 | MId Block Edge Out-Of-Band | 2900 to 20000 |
| 102 | Top Block Input Bandwidth | 847.75 |
| 103 | Top Block Output Bandwidth | 847.75 |
| 104 | Top Block Edge | 847.75 to 852 |
| 105 | Top Block Edge Out-Of-Band | 15 to 2900 |
| 106 | Top Block Edge Out-Of-Band | 2900 to 20000 |

| 1900MHz CDMA DOWNLINK INTERMODULATION BLOCK A - F (1930 – 1990MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 107 | Bottom Block Intermod | 1931.25, 1933.75, 1943.75 (Zoom-in) |
| 108 | Bottom Block Intermod | 1931.25, 1933.75, 1943.75 (Zoom-out) |
| 109 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 110 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 111 | Top Block Intermod | 1931.25, 1941.25, 1943.75 (Zoom-in) |
| 112 | Top Block Intermod | 1931.25, 1941.25, 1943.75 (Zoom-out) |
| 113 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 114 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| 1900MHz CDMA UPLINK INTERMODULATION BLOCK A - F (1850 – 1910MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 115 | Bottom Block Intermod | 1851.25, 1853.75, 1863.75 (Zoom-in) |
| 116 | Bottom Block Intermod | 1851.25, 1853.75, 1863.75 (Zoom-out) |
| 117 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 118 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 119 | Top Block Intermod | 1851.25, 1853.75, 1863.75 (Zoom-in) |

| | | |
|---|---|---|
| 120 | Top Block Intermod | 1851.25, 1853.75, 1863.75 (Zoom-in) |
| 121 | Top Block Intermod | 1851.25, 1861.25, 1863.75 (Zoom-out) |
| 122 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 123 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| 1900MHz TDMA DOWNLINK INTERMODULATION BLOCK A - F (1930 – 1990MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 124 | Bottom Block Intermod | 1930.1, 1932.6, 1989.9 (Zoom-in) |
| 125 | Bottom Block Intermod | 1930.1, 1932.6, 1989.9 (Zoom-out) |
| 126 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 127 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 128 | Top Block Intermod | 1930.1, 1987.4, 1989.9 (Zoom-in) |
| 129 | Top Block Intermod | 1930.1, 1987.4, 1989.9 (Zoom-out) |
| 130 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 131 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| 1900MHz TDMA UPLINK INTERMODULATION BLOCK A - F (1850 – 1910MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 132 | Bottom Block Intermod | 1850.1, 1852.6, 1909.9 (Zoom-in) |
| 133 | Bottom Block Intermod | 1850.1, 1852.6, 1909.9 (Zoom-in) |
| 134 | Bottom Block Intermod | 1850.1, 1852.6, 1909.9 (Zoom-out) |
| 135 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 136 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 137 | Top Block Intermod | 1850.1, 1907.4, 1909.9 (Zoom-in) |
| 138 | Top Block Intermod | 1850.1, 1907.4, 1909.9 (Zoom-in) |
| 139 | Top Block Intermod | 1850.1, 1907.4, 1909.9 (Zoom-out) |
| 140 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 141 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| 800MHz CDMA DOWNLINK INTEMODULATION BASE CHANNEL BLOCK A – B (869 – 894MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 142 | Bottom Block Intermod | 869.1, 871.6, 893.9 (Zoom-in) |
| 143 | Bottom Block Intermod | 869.1, 871.6, 893.9 (Zoom-out) |
| 144 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 145 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 146 | Top Block Intermod | 869.1, 891.4, 893.9 (Zoom-in) |
| 147 | Top Block Intermod | 869.1, 891.4, 893.9 (Zoom-out) |
| 148 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 149 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| 800MHz CDMA UPLINK INTERMODULATION MOBILE CHANNEL BLOCK A – B (824 – 849MHz) | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 150 | Bottom Block Intermod | 824.1, 826.6, 848.9 (Zoom-in) |
| 151 | Bottom Block Intermod | 824.1, 826.6, 848.9 (Zoom-out) |

| | | |
|---|---|---|
| 152 | Bottom Block Intermod Out-Of-Band | 15 to 2900 |
| 153 | Bottom Block Intermod Out-Of-Band | 2900 to 20000 |
| 154 | Top Block Intermod | 824.1, 846.4, 848.9 (Zoom-in) |
| 155 | Top Block Intermod | 824.1, 846.4, 848.9 (Zoom-out) |
| 156 | Top Block Intermod Out-Of-Band | 15 to 2900 |
| 157 | Top Block Intermod Out-Of-Band | 2900 to 20000 |

| **800MHz CDMA UPLINK INTERMODULATION MOBILE CHANNEL BLOCK A – B (824 – 849MHz)** | | |
|---|---|---|
| **Plot #** | **Description** | **Frequency Range (MHz)** |
| 158 | Mobile emissions in base frequency range | 869 – 894 (RF input 830MHz) |
| 159 | Mobile emissions in base frequency range | 869 – 894 (RF input 835MHz) |
| 160 | Mobile emissions in base frequency range | 869 – 894 (RF input 840MHz) |
| 161 | Mobile emissions in base frequency range | 869 – 894 (RF input 845MHz) |
| 162 | Mobile emissions in base frequency range | 869 – 894 (RF input 825MHz) |
| 163 | Mobile emissions in base frequency range | 869 – 894 (RF input 848MHz) |