

# RF TEST REPORT

Test item : Mobile Computer  
Model No. : FCC: NAUTIZ X8  
IC: 14248-CDMA  
Order No. : DEMC1407-02977, DEMC1407-02986  
Date of receipt : 2014-07-21  
Test duration : 2014-08-04 ~ 2014-08-11  
Date of issue : 2014-10-21  
Use of report : FCC & IC Original Grant

Applicant : Handheld Group AB  
Kinnegatan 17, 53133 Lidköping Sweden

Test laboratory : DT&C Co., Ltd.  
42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935

Test specification : §22(H), §24(E), RSS-132, RSS-133  
Test environment : See appended test report  
Test result :  Pass  Fail

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full, without the written approval of DT&C Co., Ltd.

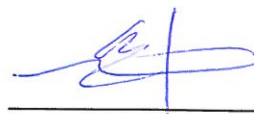
Tested by:



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Engineer  
HyunSu Son

Reviewed by:



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Technical Manager  
HongHee Lee

## Test Report Version

Test Report No.	Date	Description
DRTFCC1410-1318	Oct. 21. 2014	Initial issue

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# 1. GENERAL INFORMATION

**Applicant Name:** Handheld Group AB

**Address:** Kinnegatan 17, 53133 Lidköping Sweden

**FCC & IC ID** : YY3-14248C & 11695A-14248C

**FCC Classification** : Licensed Portable Transmitter Held to Ear (PCE)

**EUT** : Mobile Computer

**Model Name** : FCC: NAUTIZ X8  
 IC: 14248-CDMA

**Add Model Name** : NA

**Supplying power** : DC 3.7V

**Antenna Type** : Internal Antenna  
 - Type: Built-In type

**Tx Frequency** : Cellular band CDMA 1x 824.70 MHz ~ 848.31 MHz  
 Cellular band CDMA 1x EVDO(Rev. A): 824.70 MHz ~ 848.31 MHz  
 PCS band CDMA 1x 1851.25 MHz ~ 1908.75 MHz  
 PCS band CDMA 1x EVDO(Rev. A): 1851.25 MHz ~ 1908.75 MHz

**Rx Frequency** : Cellular band CDMA 1x 869.70 MHz ~ 893.31 MHz  
 Cellular band CDMA 1x EVDO(Rev. A): 869.70 MHz ~ 893.31 MHz  
 PCS band CDMA 1x 1931.25 MHz ~ 1988.75 MHz  
 PCS band CDMA 1x EVDO(Rev. A): 1931.25 MHz ~ 1988.75 MHz

**Max. Conducted Output Power** : Cellular band CDMA 1x 0.254 W (24.05 dBm)  
 Cellular band CDMA 1x EVDO(Rev. A): 0.248 W (23.94 dBm)  
 PCS band CDMA 1x 0.269 W (24.30 dBm)  
 PCS band CDMA 1x EVDO(Rev. A): 0.261 W (24.16 dBm)

**Emission Designator(s)** : Cellular band CDMA 1x 1M37F9W  
 Cellular band CDMA 1x EVDO(Rev. A): 1M32F9W  
 PCS band CDMA 1x 1M38F9W  
 PCS band CDMA 1x EVDO(Rev. A): 1M33F9W

## 2. INTRODUCTION

### 2.1. EUT DESCRIPTION

The Equipment Under Test(EUT) supports a dual band(Cellular/PCS) and 2.4GHz WLAN with Bluetooth.

### 2.2. 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.

### 2.3. TEST FACILITY

The open area test site(OATS) or semi anechoic chamber and conducted measurement facility used to collect the radiated and conducted test data are located at the 683-3, Yubang-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935. The site is constructed in conformance with the requirements.

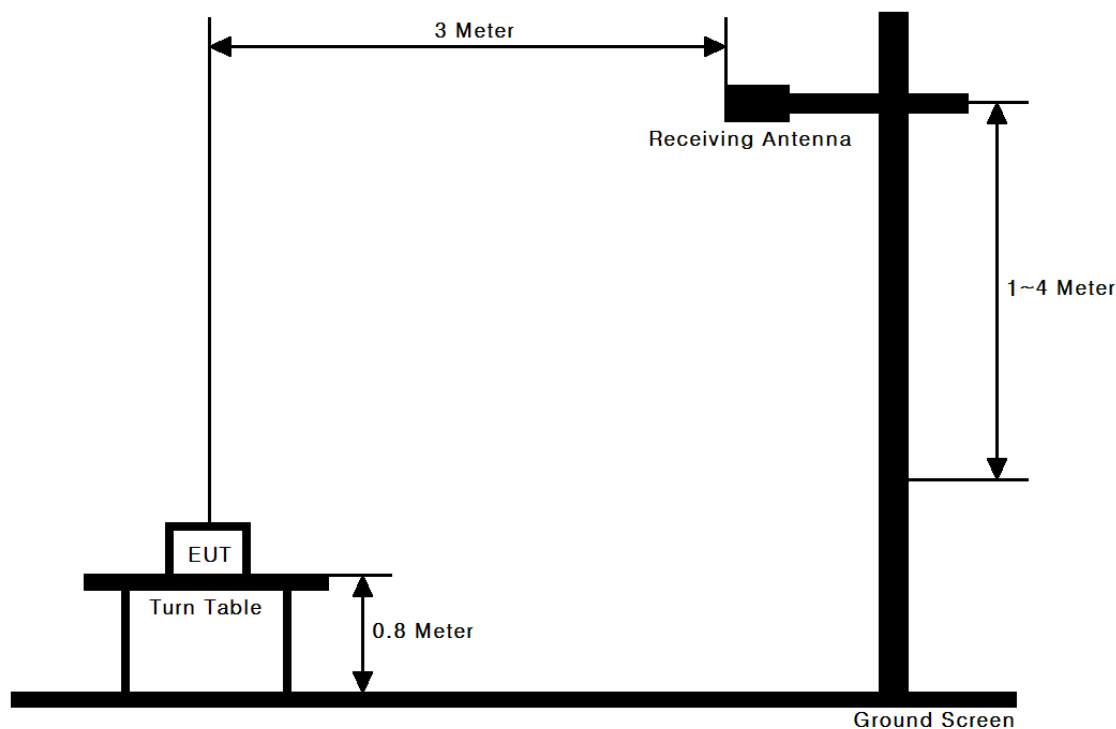
- Semi anechoic chamber registration Number : (FCC) & 5740A-2 (IC)

### 3. DESCRIPTION OF TESTS

#### 3.1 ERP & EIRP

(Effective Radiated Power & Equivalent Isotropic Radiated Power)

##### *Test Set-up*



These measurements were performed at 3&10m test site. The equipment under test is placed on a non-conductive turntable 0.8-meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminal of the substitute antenna is measured. The ERP/EIRP is calculated using the following formula,

ERP/EIRP = The conducted power at the substitute antenna`s terminal + substitute antenna gain

For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

**Test Procedure**

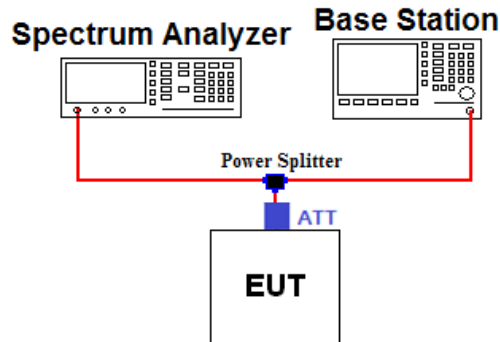
- **ANSI/TIA-603-C-2004 - Section 2.2.17**

- **KDB971168 v02r01- Section 5.2.1**

1. Set span to at least 1.5 times the OBW.
2. Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
3. Set VBW  $\geq 3 \times$  RBW.
4. Set number of points in sweep  $\geq 2 \times$  span / RBW.
5. Sweep time = auto-couple.
6. Detector = RMS (power averaging).
7. If the EUT can be configured to transmit continuously (i.e., burst duty cycle  $\geq 98\%$ ), then set the trigger to free run.
8. If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle  $< 98\%$ ), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep.  
Ensure that the sweep time is less than or equal to the transmission burst duration.
9. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
10. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

## 3.2 PEAK TO AVERAGE RATIO

### Test set-up



### Test Procedure

A peak to average ratio measurement is performed using the following procedure.

#### ■ CCDF Procedure

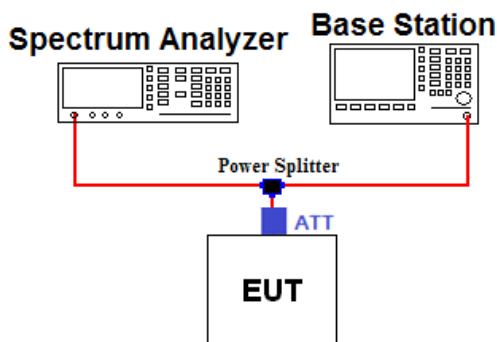
##### - KDB971168 v02r01-Section 5.7.1

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth
2. Set the number of counts to a value that stabilizes the measured CCDF curve
3. Set the measurement interval as follows:
  - 1) For continuous transmissions, set to 1 ms
  - 2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1%



### 3.3 OCCUPIED BANDWIDTH.

#### Test set-up



#### Offset value information

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Note. 1: The offset values from EUT to Spectrum analyzer were measured and used for test.  
 Offset value = Cable A + Splitter +ATT

#### Test Procedure

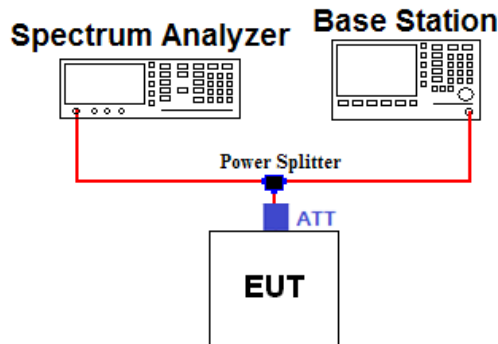
##### - KDB971168 v02r01-Section 4.2

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

1. The signal analyzer`s automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 ~ 5% of the expected OBW
3. VBW ≥ 3 X RBW
4. Detector = Peak
5. Trance mode = Max hold
6. Sweep = Auto couple
7. The trace was allowed to stabilize
8. If necessary, step 2 ~ 7 were repeated after changing the RBW such that it would be within 1 ~ 5% of the 99% occupied bandwidth observed in step 7.

### 3.4 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.

#### Test set-up



#### Offset value information

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Note. 1: The offset value from EUT to Spectrum analyzer was measured and used for test.  
 Offset value = Cable A + Splitter +ATT

#### Test Procedure

##### - KDB971168 v02r01 - Section 6.0

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.

The EUT was setup to maximum output power at its lowest channel. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

1. RBW = 1MHz & VBW ≥ 3MHz
2. Detector = RMS
3. Trace mode = Max hold
4. Sweep time = Auto
5. The trace was allowed to stabilize

The highest, lowest and a middle channel were tested for out of band measurements.

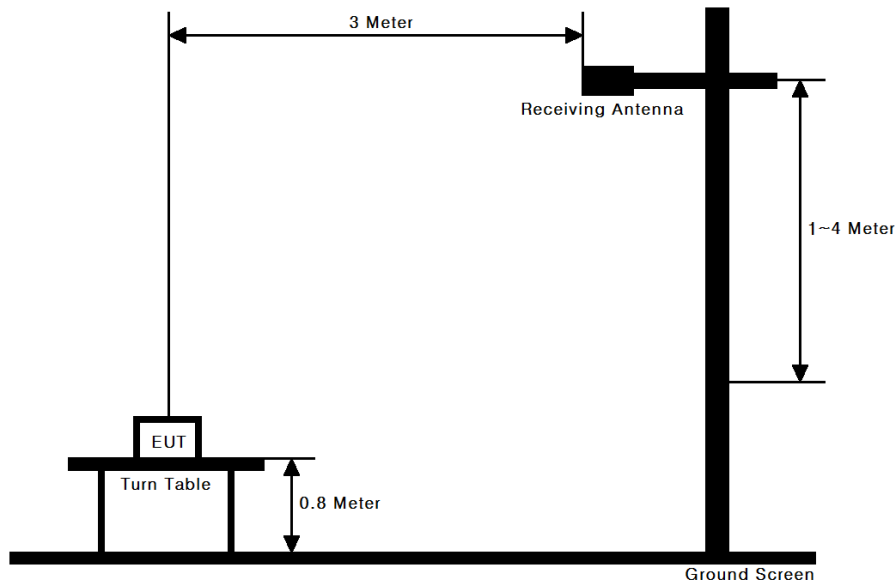
The minimum permissible attenuation level of any spurious emission is  $43 + \log_{10}(P[\text{Watts}])$ , where P is the transmitter power in Watts.

Note 1: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter was employed to measure the out of band Emissions.

Note 2: Compliance with the applicable limits is based on the use of measurement instrumentation employing a RBW of 100 KHz or greater for Part 22 and 1 MHz or greater for Part24.

### 3.5 RADIATED SPURIOUS EMISSIONS

#### Test Set-up



#### Test Procedure

- ANSI/TIA-603-C-2004 - Section 2.2.12
- KDB971168 v02r01 - Section 5.8

This measurement was performed at 3-meter test range. The equipment under test is placed on a non-conductive turntable 0.8-meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

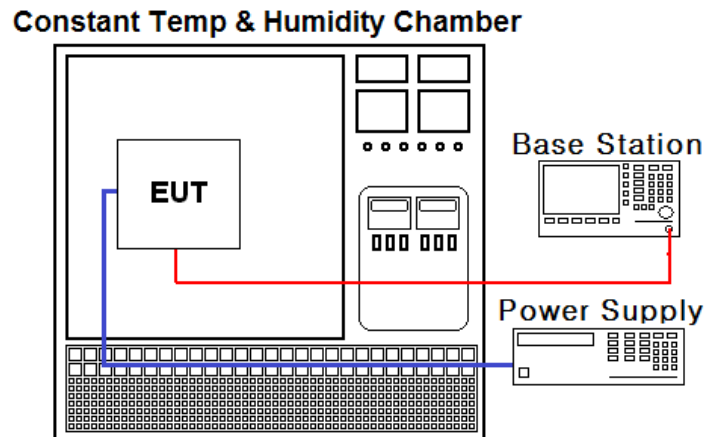
For radiated power measurements below 1GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

For radiated power measurements above 1GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration.

This measurement was performed with the EUT oriented in 3 orthogonal axis.

### 3.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

#### Test Set-up



#### Test Procedure

##### - ANSI/TIA-603-C-2004

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification – For part 24, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For part 22, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency.

#### Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature. (25°C to provide a reference).
2. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

**4. LIST OF TEST EQUIPMENT**

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent	E4440A	13/10/24	14/10/24	US45303051
Dynamic Measurement DC Source	Agilent	66332A	14/02/07	15/02/07	GB37470190
Vector Signal Generator	Rohde Schwarz	SMBV100A	14/01/07	15/01/07	255571
Signal Generator	Rohde Schwarz	SMF100A	14/07/01	15/07/01	102341
Multimeter	HP	34401A	14/02/27	15/02/27	3146A13475
Power Meter	Anritsu	ML2496A / MA2490A	13/10/29	14/10/29	1338004 / 1249303
50W 10dB ATT	SMAJK	SMAJK-50-10	13/10/23	14/10/23	3-50-10
Power Splitter	Anritsu	K241B	13/10/22	14/10/22	1701102
PreAmplifier	Agilent	8449B	14/02/27	15/02/27	3008A00370
Amplifier	HP	8447E	14/01/08	15/01/08	2945A02865
Dipole Antenna	Schwarzbeck	VHA9103	13/10/24	15/10/24	2116
Dipole Antenna	Schwarzbeck	VHA9103	14/04/01	16/04/01	2117
Dipole Antenna	Schwarzbeck	UHA9105	13/10/24	15/10/24	2261
Dipole Antenna	Schwarzbeck	UHA9105	14/04/01	16/04/01	2262
Bilog Antenna	SCHAFFNER	CBL6112B	12/11/06	14/11/06	2737
HORN ANT	ETS	3115	14/02/26	16/02/26	6419
HORN ANT	ETS	3115	13/02/28	15/02/28	00021097
HORN ANT	A.H.Systems	SAS-574	13/03/20	15/03/20	154
HORN ANT	A.H.Systems	SAS-574	13/05/27	15/05/27	155
High-pass filter	Wainwright	WHKX1.0	13/09/12	14/09/12	9
High-Pass Filter	Wainwright	WHNX2.1	13/09/12	14/09/12	1
8960 Series 10 Wireless Comms Test Set	Agilent	E5515C	14/02/28	15/02/28	GB43461134
Universal Radio Communication Tester	Rohde Schwarz	CMU200	14/02/28	15/02/28	106760
Amplifier	EMPOWER	BBS3Q7ELU	13/09/12	14/09/12	1020
Thermo hygrometer	BODYCOM	BJ5478	14/05/13	15/05/13	120612-2

## 5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	RSS Section(s)	Parameter	Status Note 1
2.1046	RSS-132 (5.4) RSS-133 (4.1)	Conducted Output Power	<b>C</b> <sup>Note 2</sup>
22.913(a) 24.232(c)	RSS-132 (5.4) [SRSP-503(5.1.3)] RSS-133 (6.4) [SRSP-510(5.1.2)]	Effective Radiated Power Equivalent Isotropic Radiated Power	<b>C</b>
2.1049	RSS-Gen (4.6.1)	Occupied Bandwidth	<b>NA</b> <sup>Note 3</sup>
22.917(a) 24.238(a) 2.1051	RSS-132 (5.5) RSS-133 (6.5)	Band Edge Spurious and Harmonic Emissions at Antenna Terminal	<b>NA</b> <sup>Note 3</sup>
24.232(d)	RSS-133 (6.4)	Peak to Average Ratio	<b>NA</b> <sup>Note 3</sup>
22.917(a) 24.238(a) 2.1053	RSS-132 (5.5) RSS-133 (6.5)	Radiated Spurious and Harmonic Emissions	<b>C</b>
22.355 24.235 2.1055	RSS-132 (5.3) RSS-133 (6.3)	Frequency Stability	<b>NA</b> <sup>Note 3</sup>

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable

Note 2: Refer to RF Exposure Report. (Test Report\_SAR)

Note 3: These test items were not performed because this device uses the granted module.  
(FCCID: QIPVVS8)

Please refer to the test report of the granted module.

The module test report number:

- MDE\_CINTE\_1209\_FCC22a\_V1, MDE\_CINTE\_1209\_FCC24a\_V1 (By 7Layers AG)

The sample was tested according to the following specification:

**ANSI/TIA/EIA-603-C-2004 and KDB 971168 D01 v02r01**

## 6. SAMPLE CALCULATION

### A. Emission Designator

#### Cellular CDMA1x

Emission Designator = **1M37F9W**

#### PCS CDMA1x

Emission Designator = **1M38F9W**

#### Cellular CDMA 1x EVDO(Rev. A)

Emission Designator = **1M32F9W**

#### PCS CDMA 1x EVDO(Rev. A)

Emission Designator = **1M33F9W**

## 7. TEST DATA

### 7.1 EFFECTIVE RADIATED POWER

#### - CDMA1x

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Power Supply	Note.
1013	Y	-14.98	V	20.48	1.19	21.67	0.147	DC 3.7 V	-
384	X	-13.33	H	20.67	1.19	21.86	0.153	DC 3.7 V	-
<b>777</b>	<b>X</b>	<b>-12.61</b>	<b>H</b>	<b>21.03</b>	<b>1.19</b>	<b>22.22</b>	<b>0.167</b>	<b>DC 3.7 V</b>	-

#### - CDMA 1x EVDO(Rev. A)

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Power Supply	Note.
1013	Y	-14.64	V	20.82	1.19	22.01	0.159	DC 3.7 V	-
384	X	-13.09	H	20.91	1.19	22.10	0.162	DC 3.7 V	-
<b>777</b>	<b>X</b>	<b>-12.73</b>	<b>H</b>	<b>20.91</b>	<b>1.19</b>	<b>22.10</b>	<b>0.162</b>	<b>DC 3.7 V</b>	-

#### NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5MHz. For AMPS, GSM, and TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz.

A half-wave dipole is substituted in place of the EUT. This dipole antenna is driven by a signal generator and the level of the signal generator is adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

The worst case data is reported.



## 7.2 EQUIVALENT ISOTROPIC RADIATED POWER

### - CDMA 1x

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Power Supply	Note.
25	Z	-13.52	V	16.27	8.89	25.16	0.328	DC 3.7 V	-
<b>600</b>	<b>Z</b>	<b>-12.76</b>	<b>V</b>	<b>16.88</b>	<b>8.92</b>	<b>25.80</b>	<b>0.380</b>	<b>DC 3.7 V</b>	-
1175	Z	-15.49	V	16.05	8.95	25.00	0.316	DC 3.7 V	-

### - CDMA 1x EVDO(Rev. A)

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Power Supply	Note.
25	Z	-13.40	V	16.39	8.89	25.28	0.337	DC 3.7 V	-
<b>600</b>	<b>Z</b>	<b>-12.60</b>	<b>V</b>	<b>17.04</b>	<b>8.92</b>	<b>25.96</b>	<b>0.394</b>	<b>DC 3.7 V</b>	-
1175	Z	-15.68	V	15.86	8.95	24.81	0.303	DC 3.7 V	-

#### NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5MHz. For AMPS, GSM, and TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz.

A half-wave dipole is substituted in place of the EUT. This dipole antenna is driven by a signal generator and the level of the signal generator is adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

The worst case data is reported.

### 7.3 RADIATED SPURIOUS EMISSIONS

#### 7.3.1 RADIATED SPURIOUS EMISSIONS- CDMA 1x

Channel (ERP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
1013 (0.147 W)	1649.15	X	H	-52.28	6.50	-45.46	67.45	34.67
	2474.41	Z	H	-50.46	7.54	-42.66	64.59	
	-	-	-	-	-	-	-	
384 (0.153 W)	1673.03	X	H	-51.65	6.53	-44.86	66.98	34.86
	2509.84	Z	H	-51.65	7.57	-43.80	65.94	
	-	-	-	-	-	-	-	
777 (0.167 W)	1696.63	X	H	-49.83	6.56	-43.03	65.49	35.22
	2544.86	Z	H	-50.10	7.59	-42.26	64.73	
	-	-	-	-	-	-	-	

- Limit Calculation=  $43 + 10 \log_{10}(ERP [W])$  [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

**NOTES:**

Effective Radiated Power Output Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

**7.3.2 RADIATED SPURIOUS EMISSIONS - CDMA 1x EVDO(Rev. A)**

Channel (ERP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
1013 (0.159 W)	1648.72	X	H	-52.53	6.50	-45.71	68.04	35.01
	2474.20	Z	H	-50.89	7.54	-43.09	65.36	
	-	-	-	-	-	-	-	
384 (0.162 W)	1673.54	X	H	-51.53	6.53	- 44.86	67.10	35.10
	2510.23	Z	H	-51.79	7.57	- 38.90	66.32	
	-	-	-	-	-	-	-	
777 (0.162 W)	1697.34	X	H	-50.22	6.56	- 45.33	65.76	35.10
	2547.20	Z	H	-50.30	7.59	- 38.22	64.81	
	-	-	-	-	-	-	-	

- Limit Calculation =  $43 + 10 \log_{10}(ERP [W])$  [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

**NOTES:**

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

**7.3.3 RADIATED SPURIOUS EMISSIONS(PCS CDMA)**

Channel (EIRP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
25 (0.328W)	3701.83	Y	H	-41.18	9.78	-32.00	56.56	38.16
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
600 (0.380W)	3760.11	Y	H	-40.45	9.72	-31.35	56.53	38.80
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
1175 (0.316W)	3817.32	Y	H	-40.59	9.66	-31.38	55.93	38.00
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	

- Limit Calculation =  $43 + 10 \log_{10}( \text{EIRP [W]} )$  [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

**NOTES:**

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

**7.3.4 RADIATED SPURIOUS EMISSIONS (PCS CDMA EVDO)**

Channel (EIRP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
25 (0.337 W)	3700.92	Y	H	-41.08	9.78	-31.90	56.58	38.28
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
600 (0.394 W)	3760.43	Y	H	-40.19	9.72	-31.09	56.43	38.96
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
1175 (0.303 W)	3819.94	Y	H	-40.05	9.66	-30.84	55.20	37.81
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	

- Limit Calculation =  $43 + 10 \log_{10}(ERP [W])$  [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

**NOTES:**

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.