



# FCC Test Report

According to

## 47 CFR Part 27

**Equipment** : ZTE C78 CDMA1X Digital Mobile Phone  
**Trade Name** : ZTE  
**Model No.** : ZTE C78  
**FCC ID** : Q78-ZTEC78  
**Uplink Frequency Range** : CDMA2000 AWS : 1711.25 ~ 1753.75 MHz  
**Max. EIRP Power** : CDMA2000 AWS : 0.10 W  
**Emission Designator** : 1M25F9W  
**Applicant** : **ZTE CORPORATION**  
ZTE Plaza, Keji Road South, Hi-Tech Industrial  
Park, Nanshan District, Shenzhen, Guangdong,  
518057, P.R.China

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- The data shown in this test report were carried out on Mar. 25, 2008 at **Sporton International Inc. LAB.**
- Report No.: FG830102-B, Report Version: Rev. 01.
- 

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Manager

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**Appendix A - External Photographs of EUT**

**Appendix B - Internal Photographs of EUT**

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# 1. General Information

## 1.1. Applicant

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.2 Manufacturer

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

## 1.3 Basic Description of Equipment under Test

<b>Equipment</b>		ZTE C78 CDMA1X Digital Mobile Phone
<b>Trade Name</b>		ZTE
<b>Model Name</b>		ZTE C78
<b>FCC ID</b>		Q78-ZTEC78
<b>AC Adapter</b>	<b>Brand Name</b>	ZTE
	<b>Model Name</b>	STC-A22O50U5-C
	<b>Power Rating</b>	I/P:100-240Vac, 50-60Hz; O/P:5.0Vdc, 700mA
	<b>AC Power Cord Type</b>	1.8 meter non-shielded cable without ferrite core
<b>Battery</b>	<b>Brand Name</b>	ZTE
	<b>Model Name</b>	Li3709T42P3h553447
	<b>Rating</b>	3.7Vdc, 900mAh
	<b>Type</b>	Li-ion
<b>Earphone</b>	<b>Brand Name</b>	ZTE
	<b>Model Name</b>	P500
	<b>Signal Line Type</b>	1.2 meter non-shielded cable without ferrite core
<b>USB Cable</b>	<b>Brand Name</b>	ZTE
	<b>Model Name</b>	ZX676.12.3012JA.A
	<b>Signal Line Type</b>	1.2 meter shielded cable without ferrite core

Remark: Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.



### 1.4 Feature of Equipment under Test

<b>DUT Type :</b>	ZTE C78 CDMA1X Digital Mobile Phone
<b>Model Name :</b>	ZTE C78
<b>FCC ID :</b>	Q78-ZTEC78
<b>Tx Frequency :</b>	CDMA2000 Cellular : 824 ~ 849 MHz CDMA2000 AWS : 1710 ~ 1755 MHz CDMA2000 PCS : 1850 ~1910 MHz Bluetooth : 2400 ~ 2483.5 MHz
<b>Rx Frequency :</b>	CDMA2000 Cellular : 869 ~ 894 MHz CDMA2000 AWS : 2110 ~ 2155 MHz CDMA2000 PCS : 1930 ~ 1990 MHz Bluetooth : 2400 ~ 2483.5 MHz
<b>Maximum Output Power :</b>	<b>CDMA2000 Cellular</b> FCH_RC1 : 23.95 dBm FCH_RC3 : 23.87 dBm FCH+SCH_RC3 : 23.83 dBm <b>CDMA2000 AWS</b> FCH_RC1 : 24.40 dBm FCH_RC3 : 24.22 dBm FCH+SCH_RC3 : 24.15 dBm <b>CDMA2000 PCS</b> FCH_RC1 : 24.06 dBm FCH_RC3 : 23.80 dBm FCH+SCH_RC3 : 23.78 dBm
<b>Maximum ERP/EIRP :</b>	CDMA2000 AWS : 0.10 W (20.20 dBm)
<b>Antenna Type :</b>	CDMA2000 : Fixed Internal Bluetooth : Fixed Internal
<b>HW Version</b>	c73B
<b>SW Version</b>	ZTEC78V1.0.0B02
<b>Modulation Type :</b>	CDMA2000 : QPSK Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK
<b>Emission Designator :</b>	1M25F9W
<b>DUT Stage :</b>	Production Unit

### 1.5 Report Date

EUT Received : Mar. 01, 2008

Report Date : Mar. 26, 2008

## 2 Test Configuration of Equipment under Test

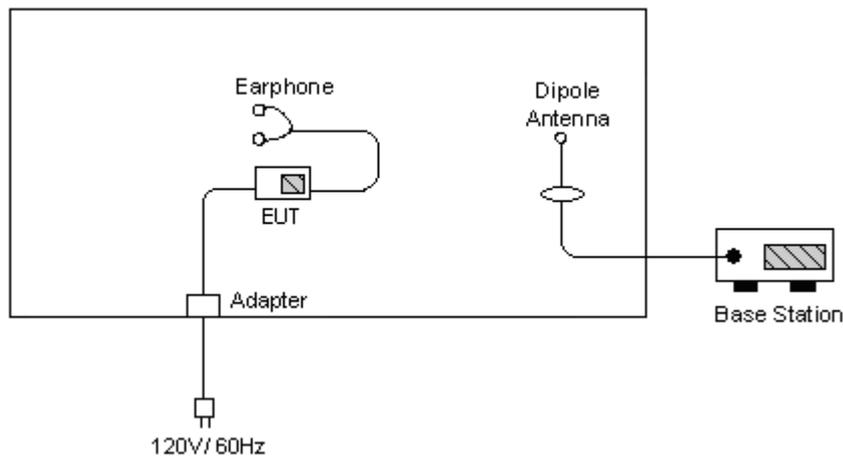
### 2.1 Test Manner

- a. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.
- b. During all testings, EUT is in link mode with base station emulator at maximum power level.
- c. Frequency range investigated: radiated emission 30 MHz to 18000 MHz for CDMA2000 AWS band.

### 2.2 Test Mode

Application	CDMA2000 AWS
Radiated Emission	<input checked="" type="checkbox"/> Mode 1: 1xRTT Link Mode_CH450
Conducted Measurement	<input checked="" type="checkbox"/> Mode 1: 1xRTT Link Mode_CH450

### 2.3 Connection Diagram of Test System



### 2.4 Ancillary Equipmnt List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable / Power Code
1.	Base Station	R&S	CMU200	N/A	Unshielded, 1.8m



### **3. General Information of Test Site**

Test Site Location : No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park,  
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.  
TEL : 886-3-327-3456  
FAX : 886-3-328-4978

Test Site No : 03CH01-KS, TH01-KS

The chamber meets the characteristics of ANSI C63.4-2003. This site is on file with the FCC.

#### **3.1 Test Voltage**

AC 120V / 60Hz

#### **3.2 Test Compliance**

47 CFR Part 27, Part 2

#### **3.3 Frequency Range**

a. Radiation: from 30MHz to 18000MHz for CDMA2000 AWS.

#### **3.4 Test Distance**

The test distance of radiated emission from antenna to EUT is 3 m.



## 4. Test Data and Test Result

### 4.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result	Section
§2.1046	RF Output Power	Passed	4.2
§27.50 (d)(2)	EIRP	Passed	4.3
§2.1049, §27.53 (g)(1)	Occupied Bandwidth & Band Edge Measurement	Passed	4.4
§2.1051, §27.53 (g)	Conducted Emission	Passed	4.5
§2.1053, §27.153 (g)	Field Strength of Spurious Radiation	Passed	4.6
§2.1055, §27.54	Frequency Stability vs. Temperature	Passed	4.7
§2.1055, §27.54	Frequency Stability vs. Voltage	Passed	4.8

## 4.2 RF Output Power

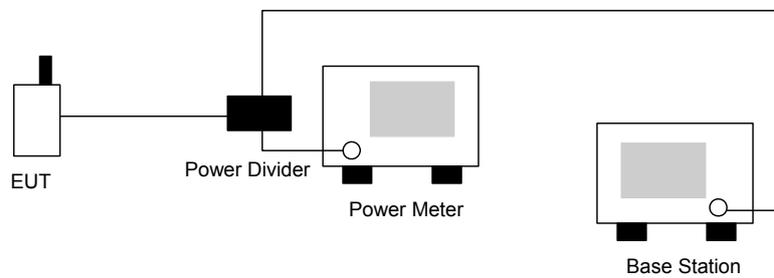
### 4.2.1 Measurement Instruments

As described in chapter 5 of this test report.

### 4.2.2 Test Procedure

- a. The transmitter output was connected to power meter and base station through power divider.
- b. Set EUT maximum power through base station.
- c. Select lowest, middle, and highest channels for each band.

### 4.2.3 Test Setup Layout





4.2.4 Test Result

Bands	Test Mode	Test Status	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
CDMA2000 AWS	1xRTT	FCH_RC1	25	1711.25 (Low)	23.75	0.24
			450	1732.50 (Mid)	24.40	0.28
			875	1753.75 (High)	23.90	0.25
		FCH_RC3	1013	1711.25 (Low)	23.86	0.24
			384	1732.50 (Mid)	24.22	0.26
			777	1753.75 (High)	24.14	0.26
		FCH+SCH_RC3	1013	1711.25 (Low)	24.01	0.25
			384	1732.50 (Mid)	23.98	0.25
			777	1753.75 (High)	24.15	0.26

Note:

1. For AWS band, the worst case adopted as maximum output power 24.40dBm, is at CDMA2000 1xRTT, FCH\_RC1.



### 4.3 EIRP Measurement

Equivalent isotropic radiated power measurements by substitution method according to ANSI/TIA/EIA-603-C.

#### 4.3.1 Measurement Instruments

As described in chapter 5 of this test report.

#### 4.3.2 Test Procedure

- a. The EUT was placed on a table with 1.0 meter height in an fully anechoic chamber.
- b. The EUT was set 1.2 meters from the receiving antenna which was mounted on the antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiated power.
- d. The height of the receiving antenna is also kept at 1.0M height.
- e. Taking the record of maximum EIRP.
- f. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
- g. The conducted power at the terminal of the dipole antenna is measured.
- h. Repeat step 3 to step 5 to get the maximum EIRP of the substitution antenna.
- i.  $EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

$P_s$  (dBm) : Input power to substitution antenna.

$G_s$  (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

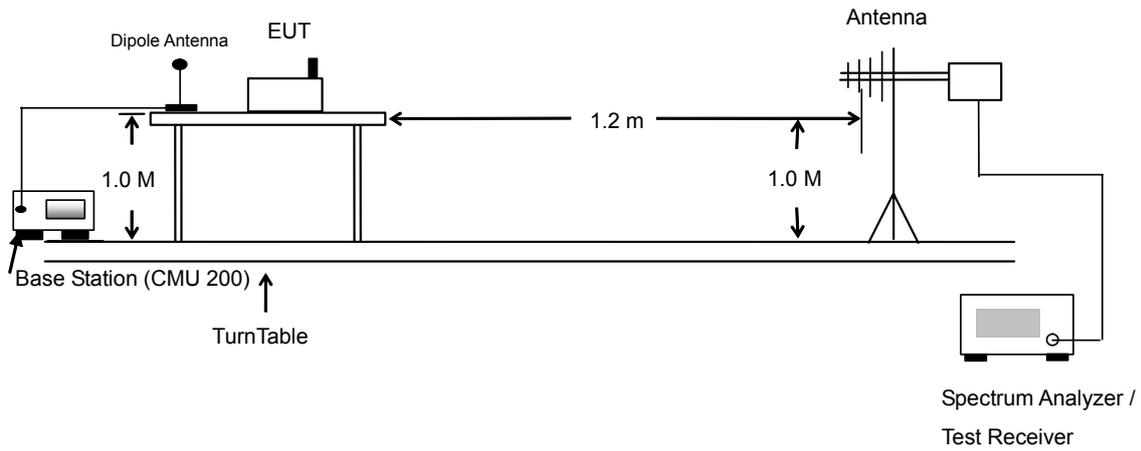
$E_s = R_s + AF$

$AF$  (dB/m) : Receive antenna factor

$R_t$  : The highest received signal in Spectrum Analyzer for EUT.

$R_s$  : The highest received signal in spectrum analyzer for substitution antenna.

4.3.3 Test Setup Layout of EIRP





4.3.4 Test Result

CDMA2000 AWS 1xRTT FCH_RC1 Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1711.25	-28.29	-48.12	0.00	-1.08	18.75	0.07
1732.50	-27.38	-48.28	0.00	-0.93	19.97	0.10
1753.75	-27.64	-48.35	0.00	-0.76	19.95	0.10
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1711.25	-28.37	-47.97	0.00	-1.08	18.52	0.07
1732.50	-27.01	-48.01	0.00	-0.93	20.07	0.10
1753.75	-27.09	-48.05	0.00	-0.76	20.20	0.10

## 4.4 Occupied Bandwidth and Band Edge Measurement

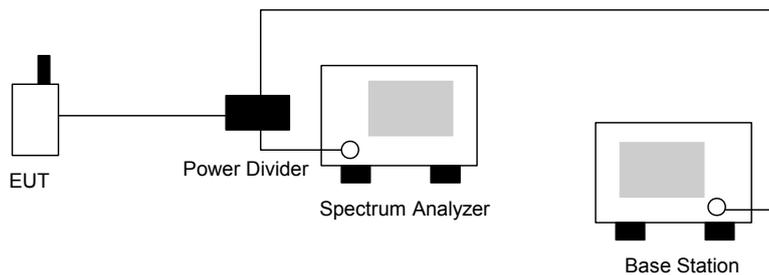
### 4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

### 4.4.2 Test Procedure

- a. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
- b. The 99% occupied bandwidth and 26 dB Bandwidth of middle channel for the highest RF powers were measured.
- c. The bandedge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly  $BW/100$ .
- d. The RBW was replaced 30KHz with 10KHz, due to the spectrum analyzer IF-Filter leading to an exceeding of the limit, a worst case correction factor of  $10 \log (1\% \text{ Occupy Bandwidth} / \text{Measured RBW})$  was used.

### 4.4.3 Test Setup Layout





4.4.4 Test Data

• Mode 1

Bands	Test Mode	Test Status	Channel	Frequency (MHz)	Measurement Value (dBm)	Correction Factor (dB)	Band Edge (dBm)
CDMA2000 AWS	1xRTT	FCH_RC1	25	1711.25 (Low)	-32.42	1.09	-31.33
			875	1753.75 (High)	-33.25	1.09	-32.16
		FCH_RC3	25	1711.25 (Low)	-30.35	1.09	-29.26
			875	1753.75 (High)	-31.16	1.09	-30.07
		FCH+SCH_RC3	25	1711.25 (Low)	-29.85	1.09	-28.76
			875	1753.75 (High)	-31.59	1.09	-30.50

Note:

\*Occupy Bandwidth = 1284.00KHz

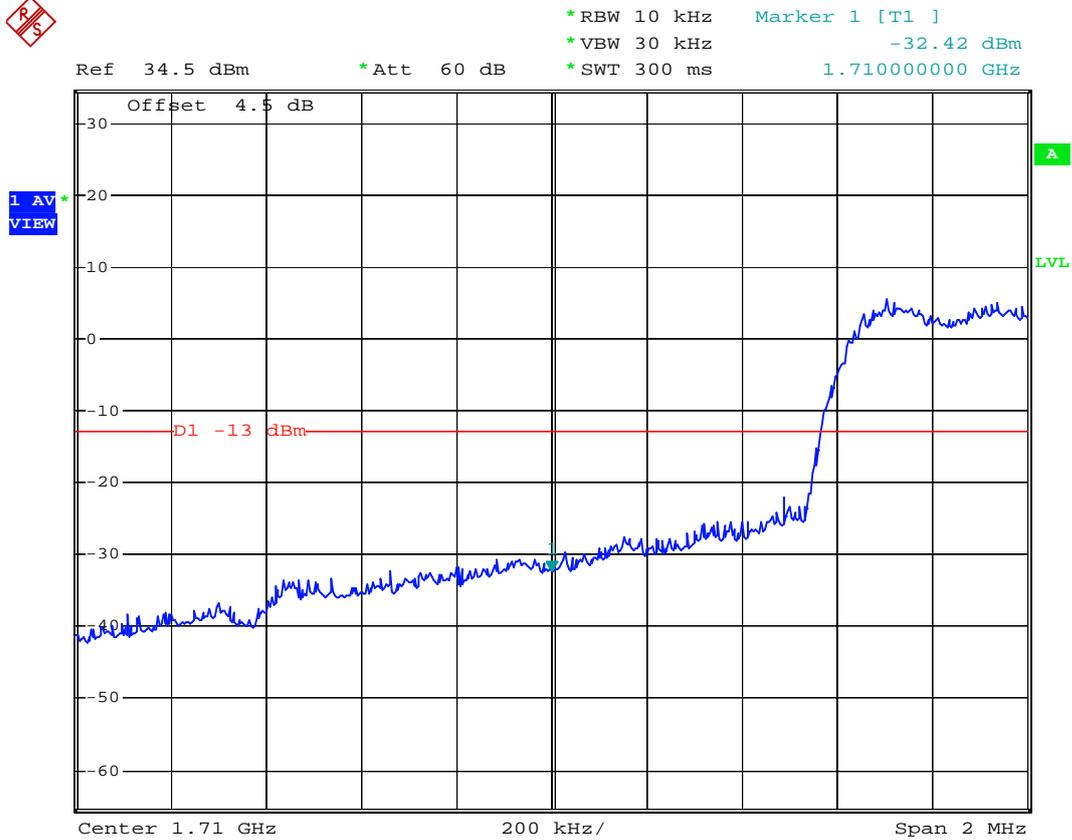
\*Correction Factor =  $10 \cdot \log(1\% \text{ Occupy Bandwidth} / \text{Measurement RBW})$   
 $= 10 \cdot \log[(0.01 \cdot 1284.00\text{KHz}) / 10\text{KHz}]$   
 $= 1.09 \text{ dB}$

\*Band Edge = Measurement Value + Correction Factor



4.4.5 Test Result

- Mode 1
- Test Mode : CDMA2000 AWS Band CH25\_FCH\_RC1 Lower Band Edge for 1xRTT
- Power State : High



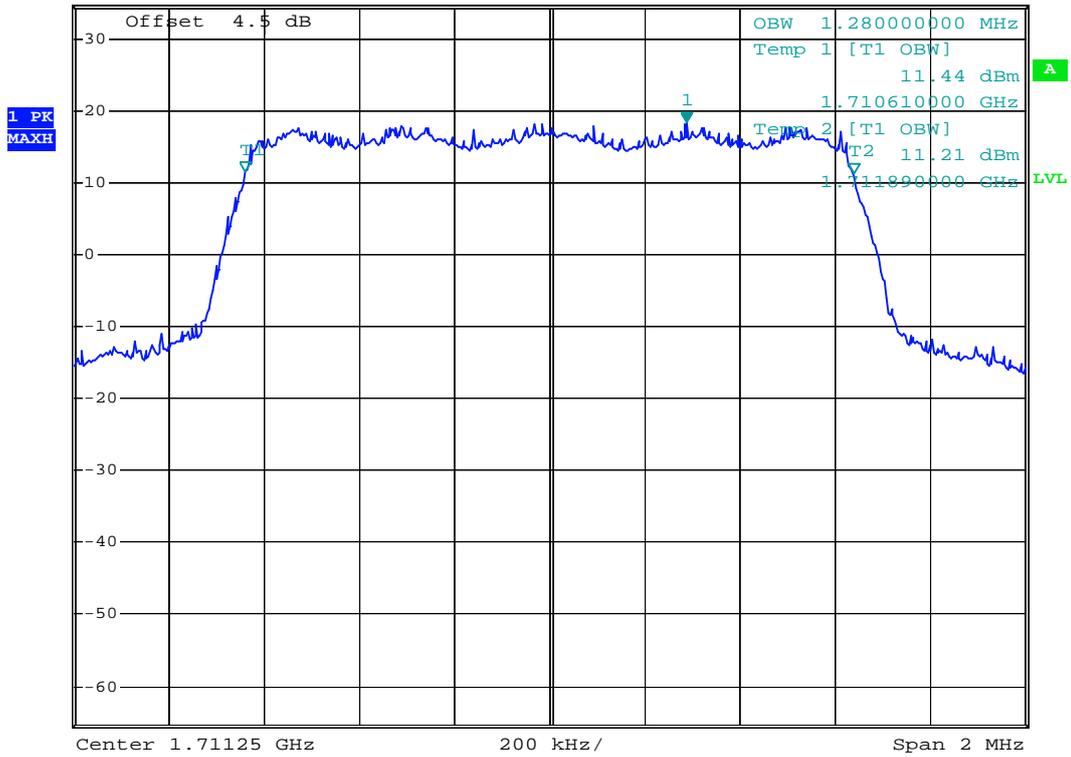
Date: 17.MAR.2008 15:32:33



- Test Mode : CDMA2000 AWS CH25\_FCH\_RC1 99% Occupied Bandwidth for 1xRTT
- Power State : High



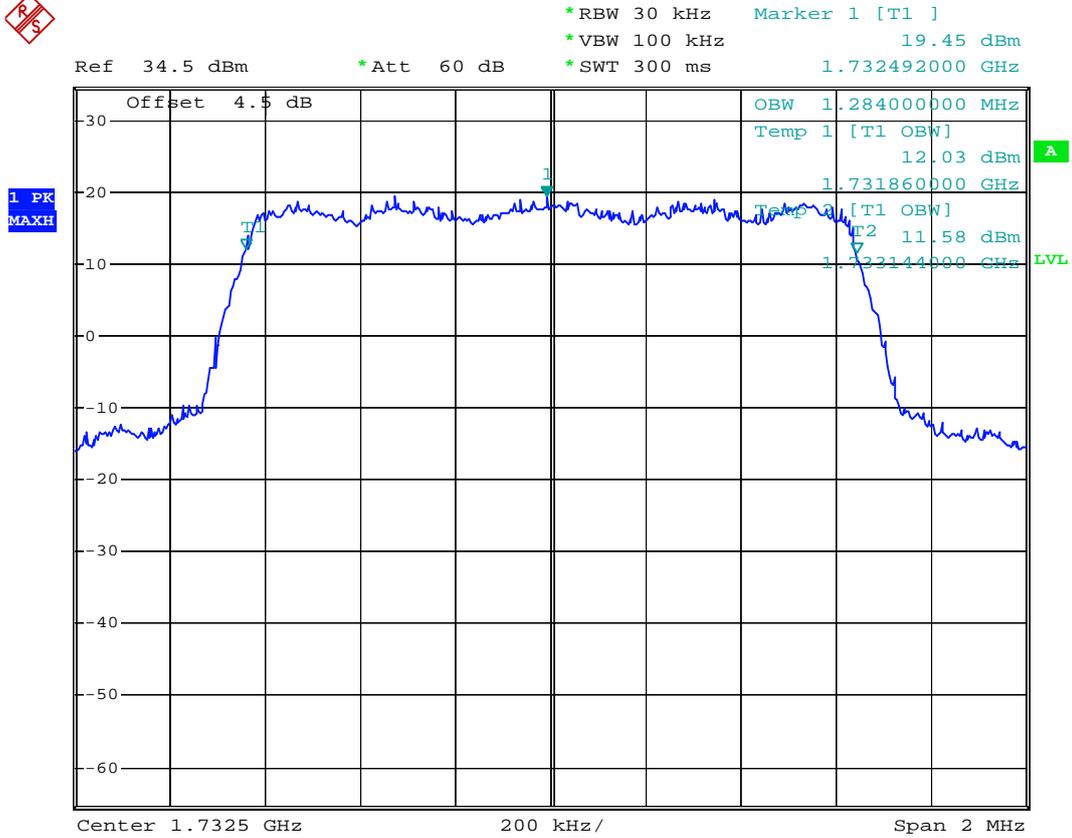
Ref 34.5 dBm      \*Att 60 dB      \*RBW 30 kHz      Marker 1 [T1]      18.31 dBm  
 \*VBW 100 kHz  
 \*SWT 300 ms      1.711538000 GHz



Date: 17.MAR.2008 15:44:19



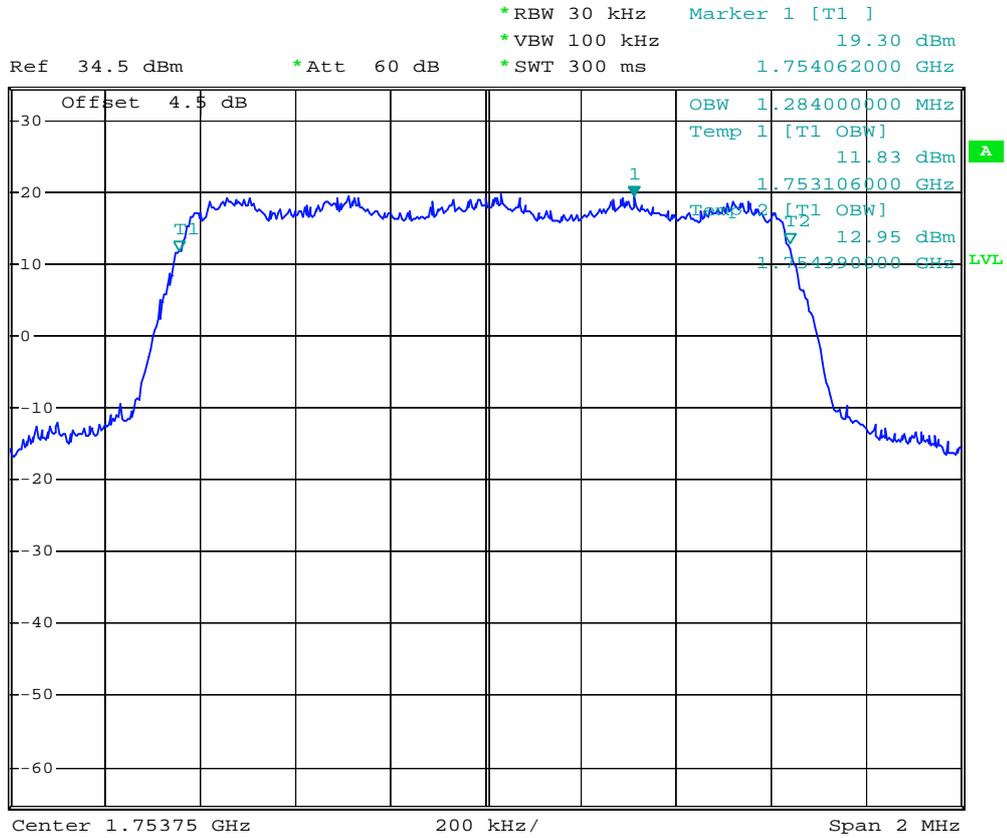
- Test Mode : CDMA2000 AWS CH450\_FCH\_RC1 99% Occupied Bandwidth for 1xRTT
- Power State : High



Date: 17.MAR.2008 15:45:24



- Test Mode : CDMA2000 AWS CH875\_FCH\_RC1 99% Occupied Bandwidth for 1xRTT
- Power State : High



Date: 17.MAR.2008 15:46:20



- Test Mode : CDMA2000 AWS CH25\_FCH\_RC1 26 dB Bandwidth for 1xRTT
- Power State : High

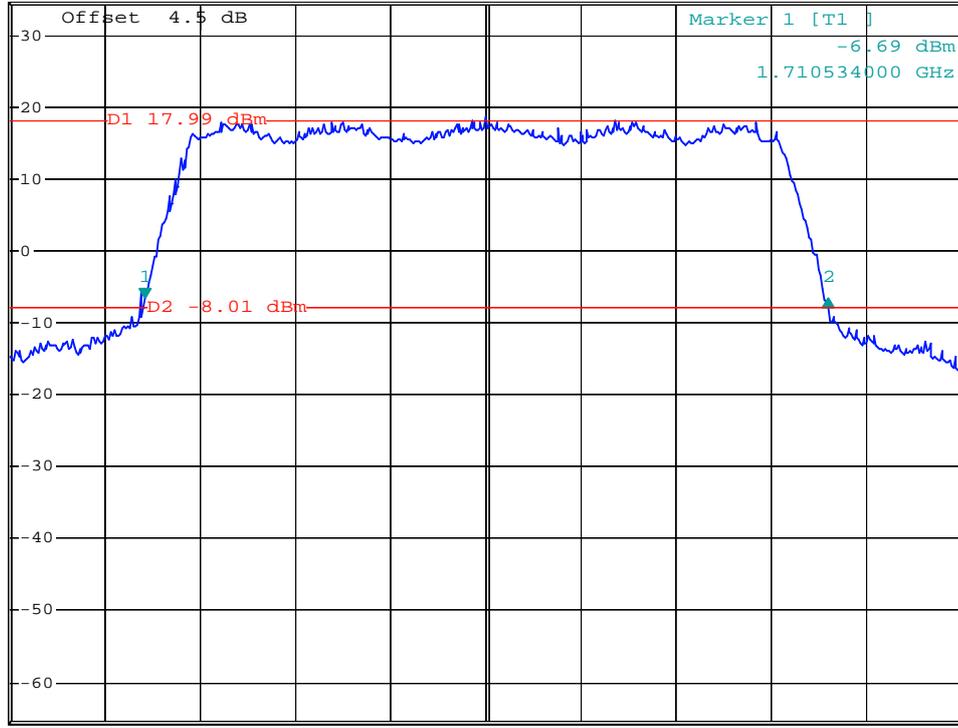


\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 100 kHz    0.05 dB  
 \*SWT 300 ms    1.436000000 MHz

Ref 34.5 dBm

\*Att 60 dB

1 PK  
MAXH



Center 1.71125 GHz

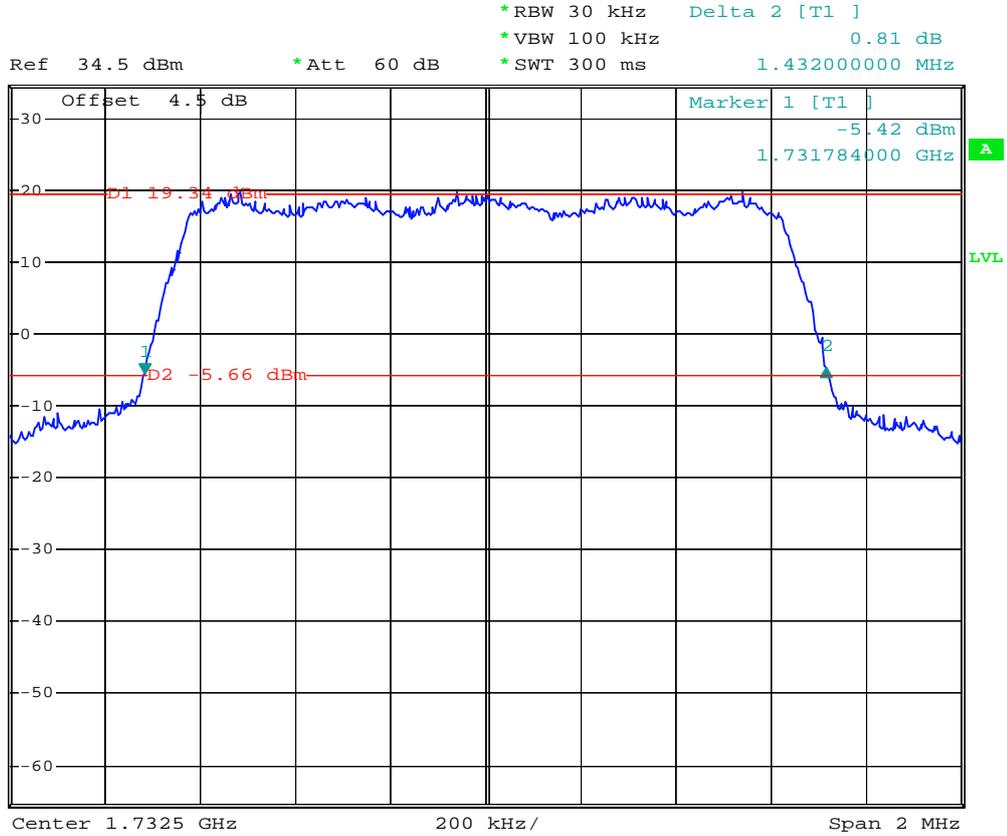
200 kHz/

Span 2 MHz

Date: 17.MAR.2008 15:28:35



- Test Mode : CDMA2000 AWS CH450\_FCH\_RC1 26 dB Bandwidth for 1xRTT
- Power State : High



Date: 17.MAR.2008 15:26:36

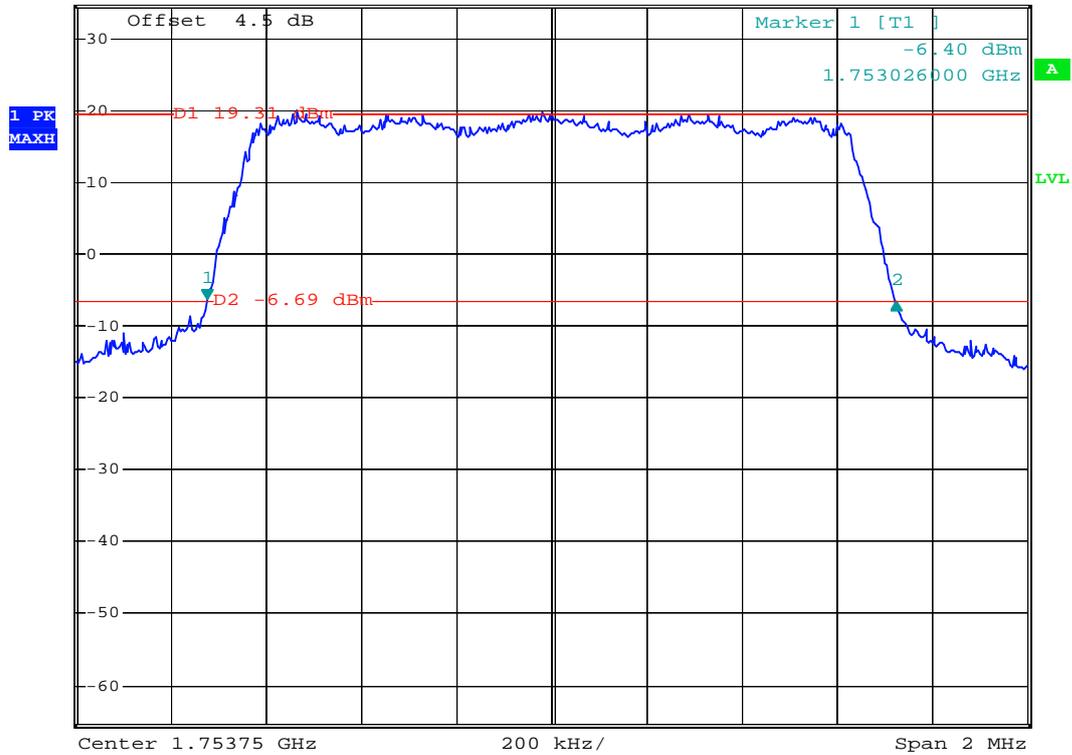


- Test Mode : CDMA2000 AWS CH875\_FCH\_RC1 26 dB Bandwidth for 1xRTT
- Power State : High



\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 100 kHz    -0.18 dB  
 \*SWT 300 ms    1.448000000 MHz

Ref 34.5 dBm    \*Att 60 dB



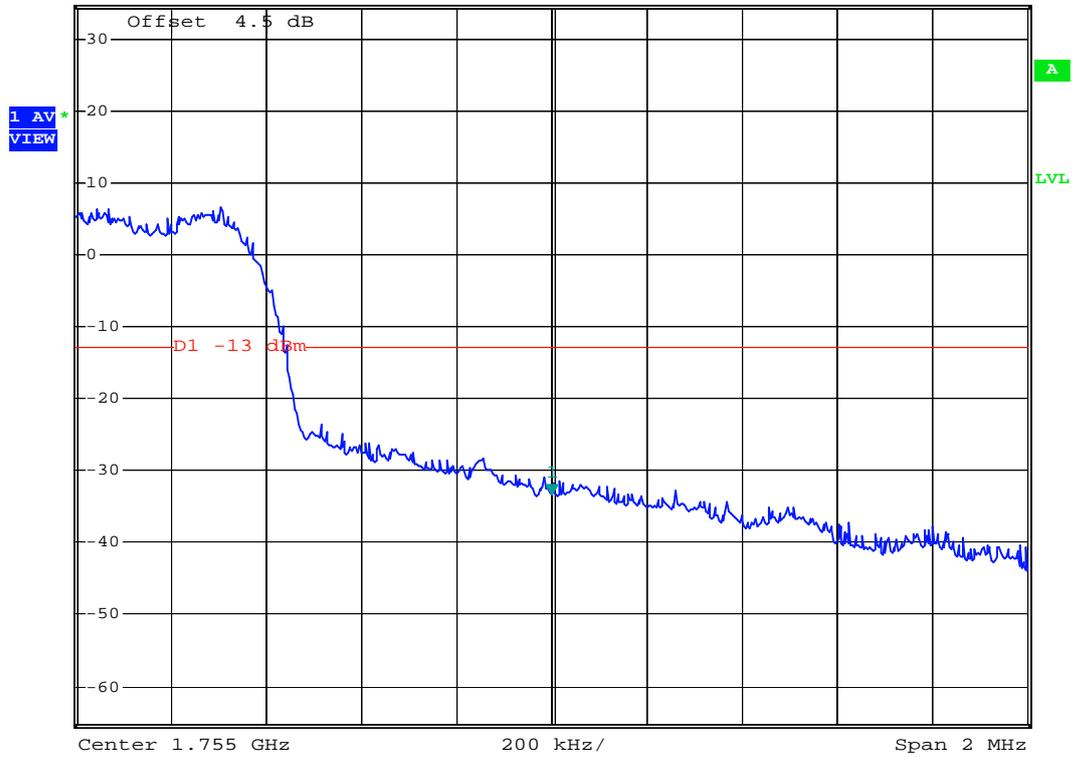
Date: 17.MAR.2008 15:30:55



- Test Mode : CDMA2000 AWS CH875\_ FCH\_RC1 Higher Band Edge for 1xRTT
- Power State : High



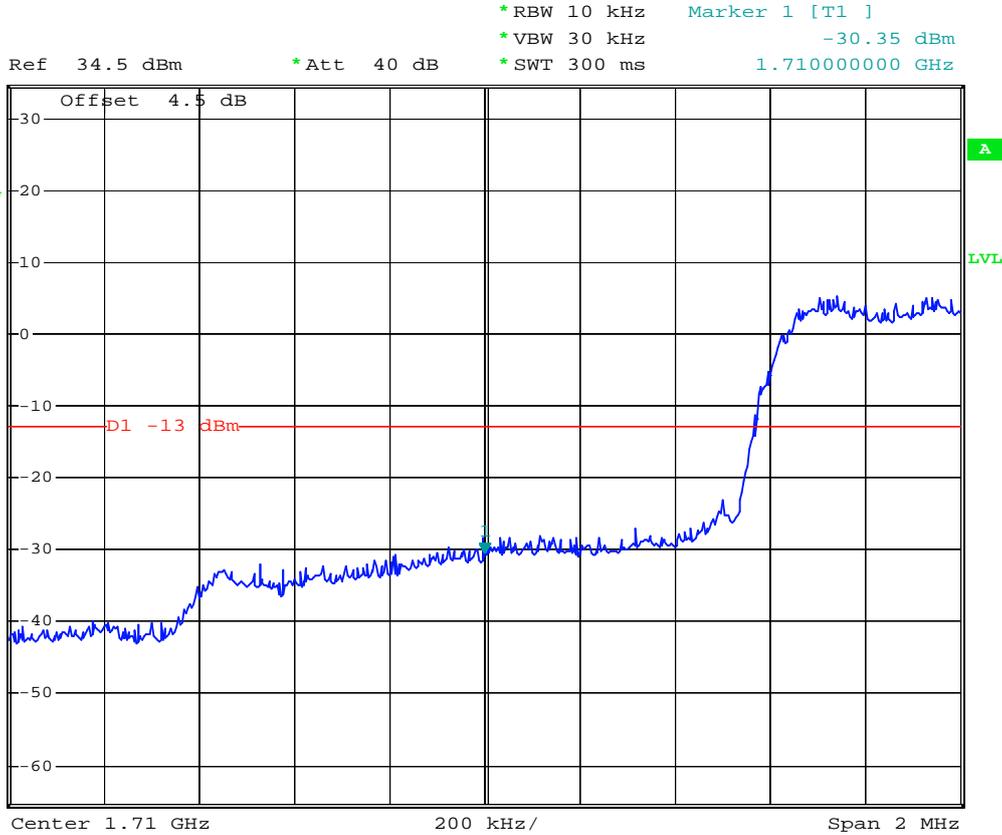
Ref 34.5 dBm      \*Att 60 dB      \*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -33.25 dBm  
\*SWT 300 ms      1.755000000 GHz



Date: 17.MAR.2008 15:33:51



- Test Mode : CDMA2000 Cellular Band CH25\_FCH\_RC3 Lower Band Edge for 1xRTT
- Power State : High



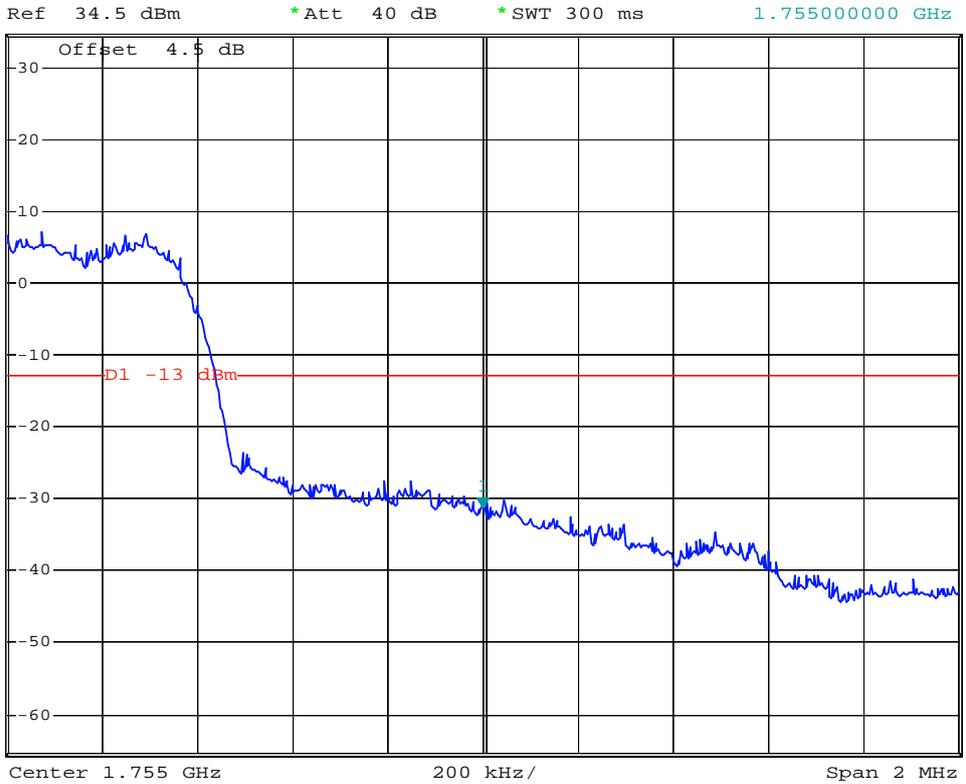
Date: 17.MAR.2008 16:07:33



- Test Mode : CDMA2000 AWS CH875\_FCH\_RC3 Higher Band Edge for 1xRTT
- Power State : High



\*RBW 10 kHz    Marker 1 [T1 ]  
\*VBW 30 kHz    -31.16 dBm  
\*SWT 300 ms    1.755000000 GHz



Date: 17.MAR.2008 16:09:57





## 4.5 Conducted Emission

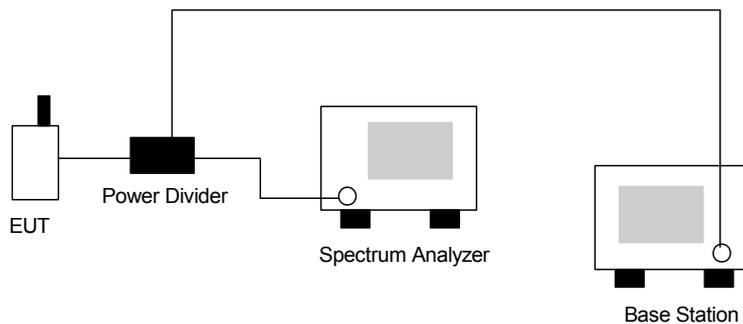
### 4.5.1 Measurement Instruments

As described in chapter 5 of this test report.

### 4.5.2 Test Procedure

- a. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
- b. The middle channel for the highest RF power within the transmitting frequency was measured.
- c. The conducted spurious emission for the whole frequency range was taken.

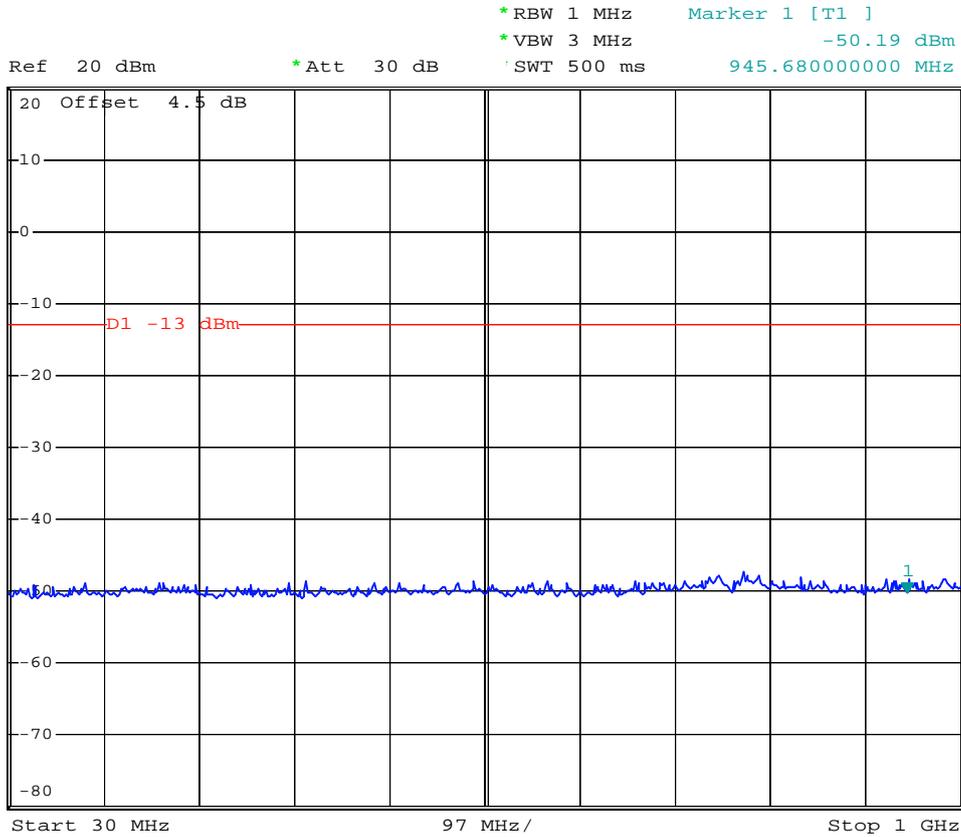
### 4.5.3 Test Setup Layout





4.5.4 Test Result

- Mode 1
- Test Mode : CDMA2000 AWS CH450 for 1xRTT
- Frequency Range : 30M-1G



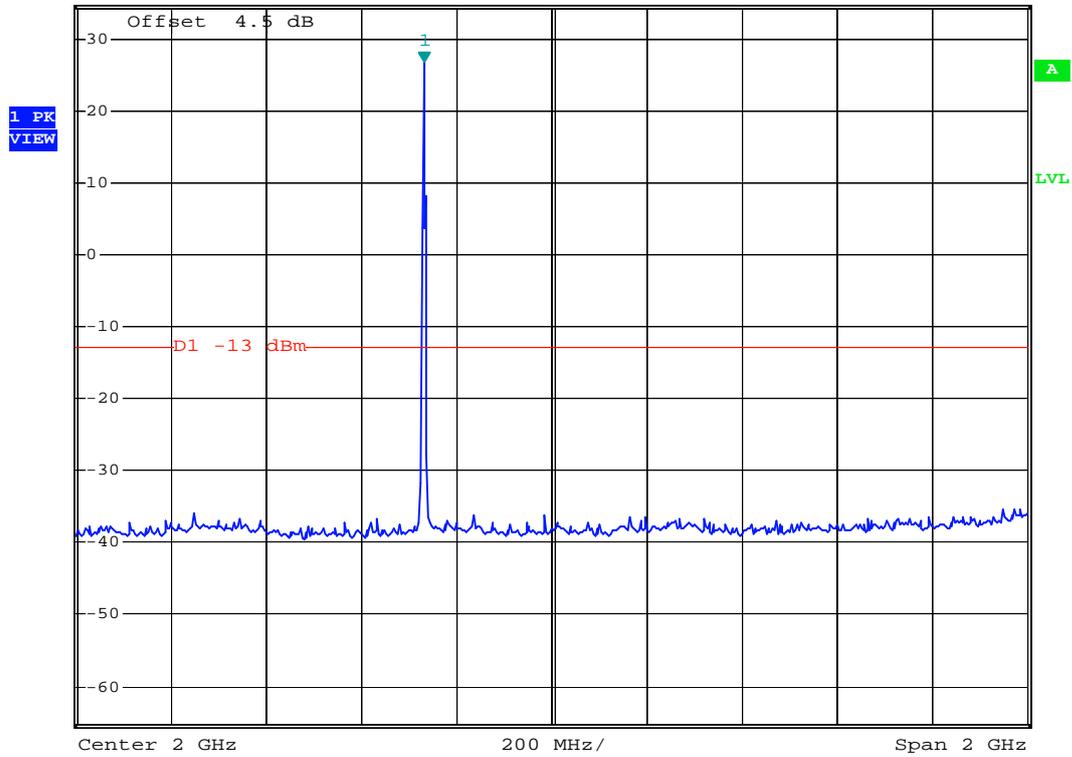
Date: 17.MAR.2008 16:04:32



- Test Mode : CDMA2000 AWS CH450 for 1xRTT
- Frequency Range : 1G-3G



Ref 34.5 dBm      \*Att 40 dB      \*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      26.78 dBm  
\*SWT 500 ms      1.732000000 GHz



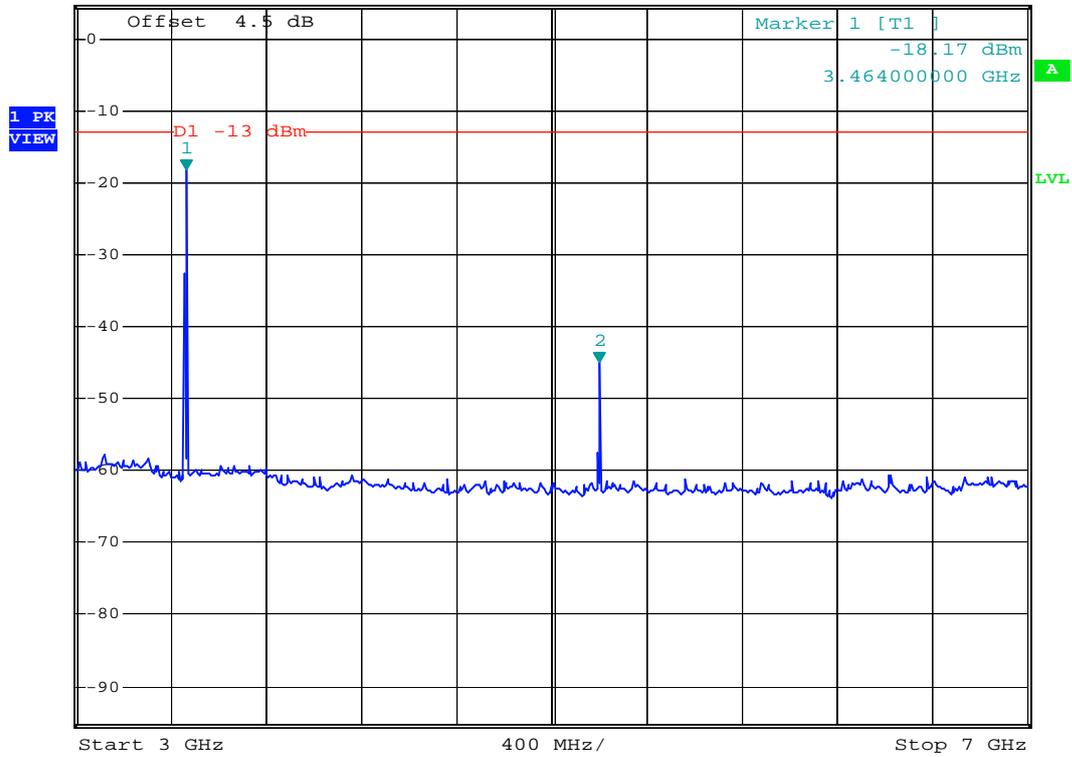
Date: 17.MAR.2008 15:53:13



- Test Mode : CDMA2000 AWS CH450 for 1xRTT
- Frequency Range : 3G-7G



Ref 4.5 dBm      \*Att 10 dB      \*RBW 1 MHz      Marker 2 [T1 ]  
 \*VBW 3 MHz      -44.99 dBm  
 \*SWT 500 ms      5.200000000 GHz



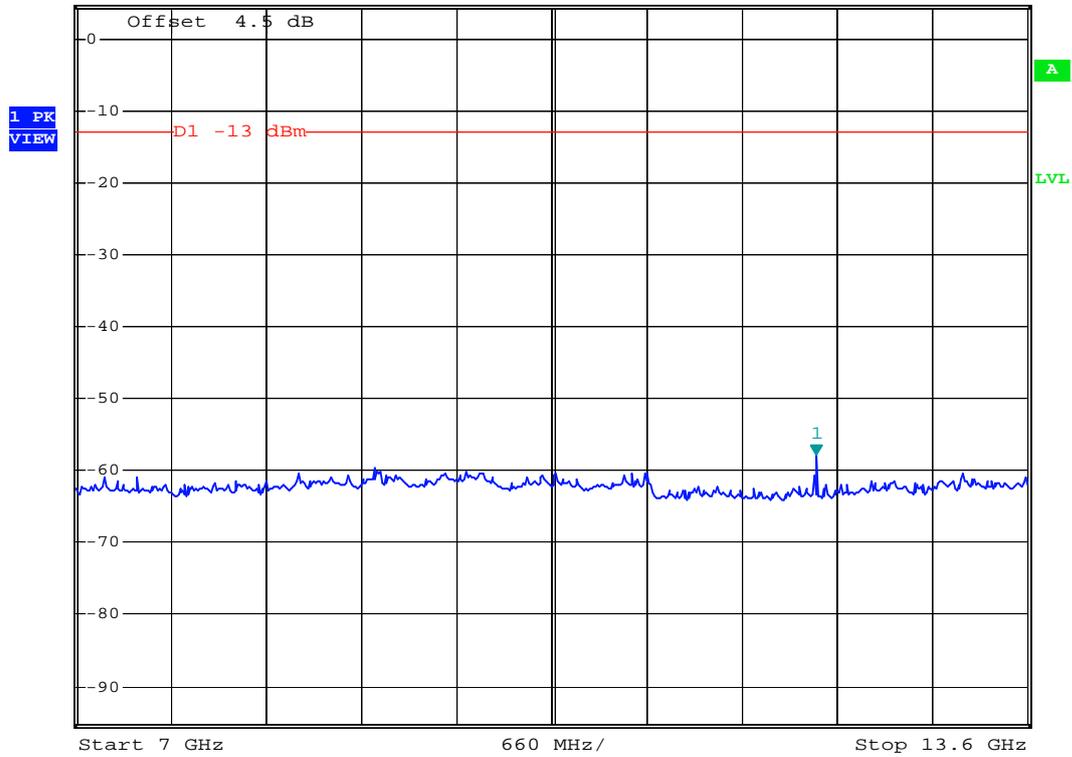
Date: 17.MAR.2008 15:56:44



- Test Mode : CDMA2000 AWS CH450 for 1xRTT
- Frequency Range : 7G-13.6G



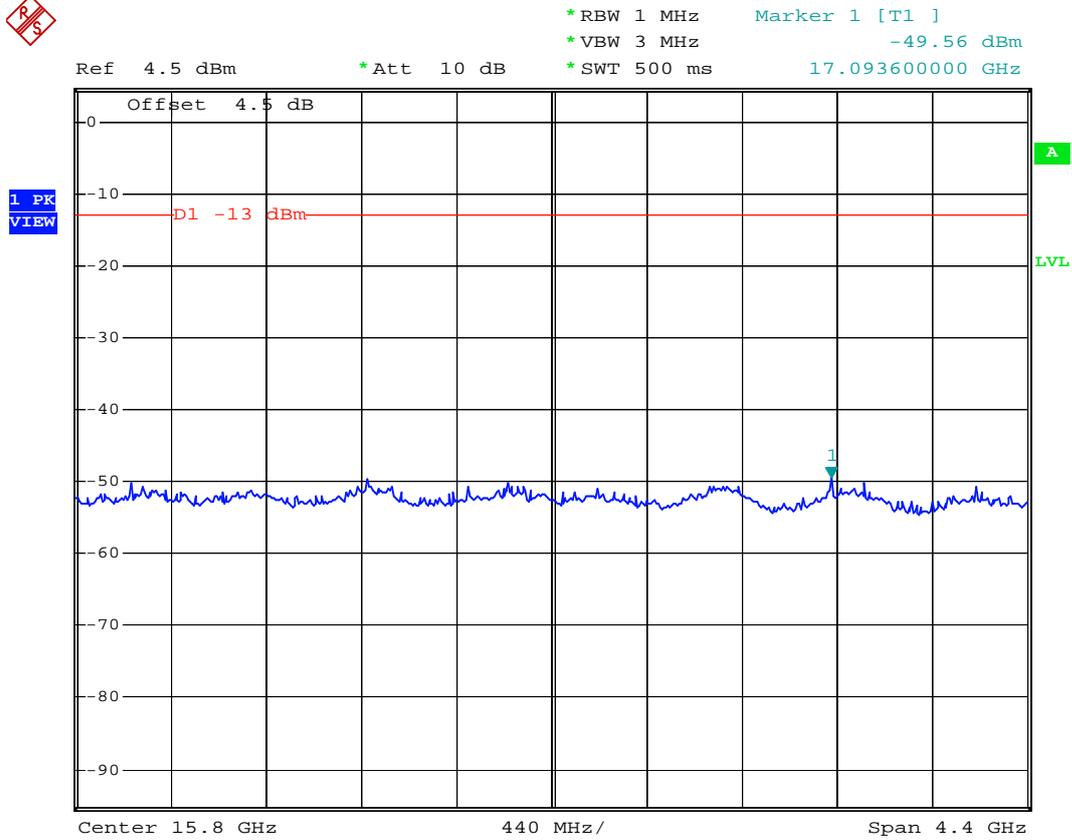
Ref 4.5 dBm      \*Att 10 dB      \*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -57.97 dBm  
\*SWT 500 ms      12.134800000 GHz



Date: 17.MAR.2008 15:59:26



- Test Mode : CDMA2000 AWS CH450 for 1xRTT
- Frequency Range : 13.6G-18G



Date: 17.MAR.2008 16:02:07



## **4.6 Field Strength of Spurious Radiation**

Equivalent isotropic radiated Power Measurements by substitution method according to ANSI/TIA/EIA-603-C.

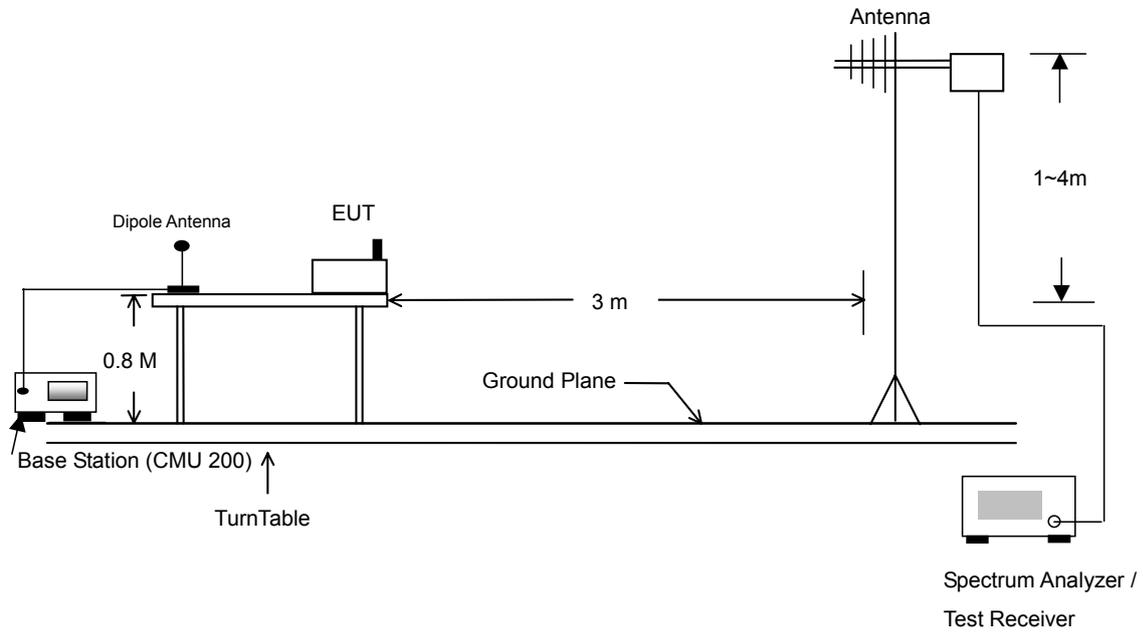
### **4.6.1 Measurement Instruments**

As described in chapter 5 of this test report.

### **4.6.2 Test Procedure**

- a. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
- b. The EUT was set 3 meters from the receiving antenna which was mounted on the antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- d. The height of the receiving antenna is varied between one meter and four meters to reach the maximum spurious emission for both horizontal and vertical polarizations.
- e. Taking the record of maximum spurious emission.
- f. A Horn antenna was substituted in place of the EUT and was driven by a signal generator.
- g. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- h. Taking the recored of output power at antenna port.
- i. Repeat step 7 to step 8 for another polarization.
- j. Emission level (dBm) = output power + substitution Gain.

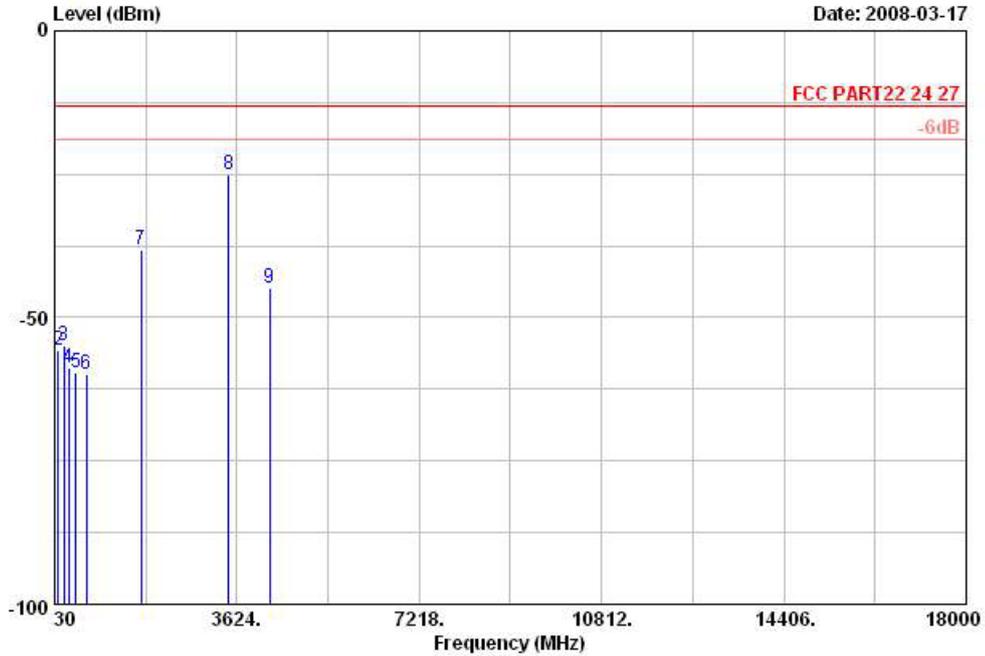
4.6.3 Test Setup Layout





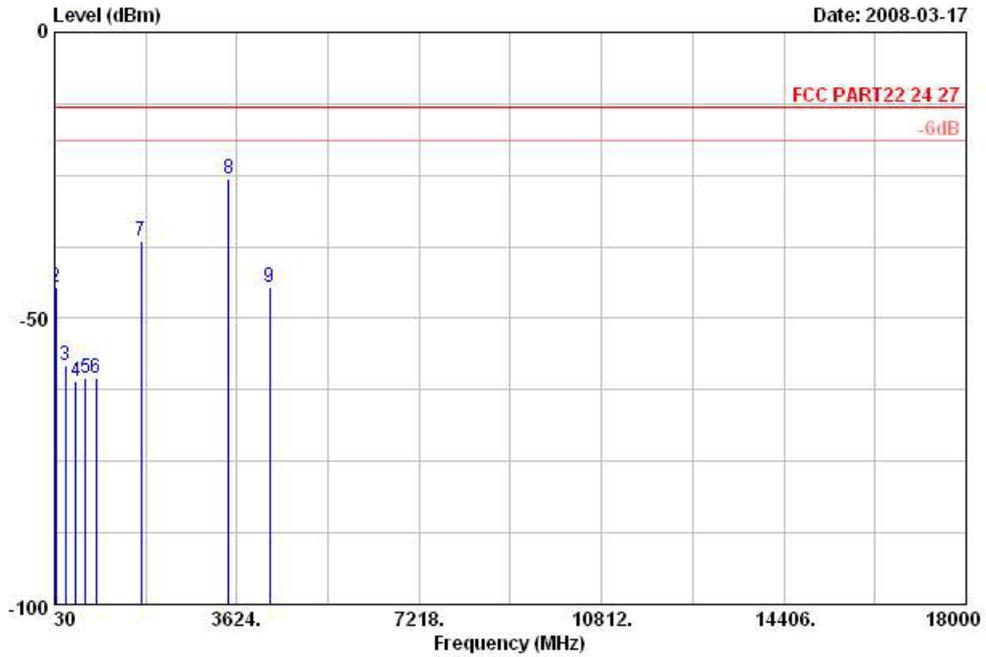
4.6.4 Test Data

4.6.4.1 Mode 1



Site : 03CH01-KS  
 Condition: FCC PART22 24 27 LF EIRP FACTOR-07091  
 EUT : CDMA 2000 Mobile phone  
 Power : 120Vac/60Hz  
 Model : C78  
 Memo : CDMA 1700 Link Ch 450

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
32.16	-34.84	-13	-21.84	-49.16	-16.19	-0.29	-16.79	H	Pass
48.90	-44.48	-13	-31.48	-48.72	-38.87	-0.34	-3.80	H	Pass
250.05	-58.09	-13	-45.09	-64.53	-62.85	-0.74	6.17	H	Pass
451.90	-60.87	-13	-47.87	-73.76	-66.65	-0.98	6.95	H	Pass
645.10	-60.32	-13	-47.32	-73.41	-66.72	-1.05	7.50	H	Pass
840.40	-60.32	-13	-47.32	-73.19	-68.02	-1.24	8.61	H	Pass
3464.00	-25.59	-13	-12.59	-63.01	-39.11	-2.52	13.15	H	Pass
4266.00	-44.64	-13	-31.64	-62.01	-59.59	-2.95	14.15	H	Pass



Site : 03CH01-KS  
 Condition: FCC PART22 24 27 LF EIRP FACTOR-07091  
 EUT : CDMA 2000 Mobile phone  
 Power : 120Vac/60Hz  
 Model : C78  
 Memo : CDMA 1700 Link Ch 450

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
32.70	-52.21	-13	-39.21	-66.35	-34.29	-0.29	-16.06	V	Pass
98.31	-55.83	-13	-42.83	-54.19	-53.90	-0.53	-0.31	V	Pass
218.19	-54.98	-13	-41.98	-57.27	-61.70	-0.72	8.15	V	Pass
307.00	-58.67	-13	-45.67	-61.64	-64.21	-0.82	6.87	V	Pass
451.20	-59.74	-13	-46.74	-72.74	-65.53	-0.98	6.96	V	Pass
650.00	-60.02	-13	-47.02	-73.51	-66.44	-1.05	7.52	V	Pass
3464.00	-25.17	-13	-12.17	-35.86	-35.75	-2.52	10.21	V	Pass
4266.00	-44.81	-13	-31.81	-57.91	-56.88	-2.95	11.27	V	Pass

## 4.7 Frequency Stability (Temperature Variation)

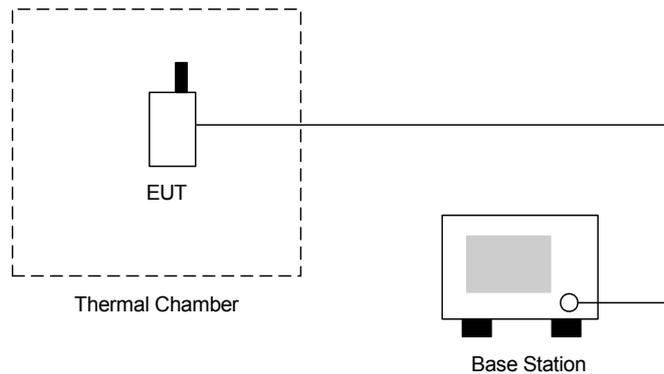
### 4.7.1 Measurement Instrument

As described in chapter 5 of this test report.

### 4.7.2 Test Procedure

- a. The EUT and test equipment were set up as shown on the following section.
- b. With all power removed, the temperature was decreased to  $-30^{\circ}\text{C}$  and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.
- c. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
- d. The temperature tests were performed for the worst case.
- e. Test data was recorded.

### 4.7.3 Test Setup Layout





4.7.4 Test Result

• Test Mode : CDMA2000 AWS 1xRTT

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	N/A	N/A	2.5	Passed
-20	-8	-0.01		
-10	-7	-0.01		
0	5	0.01		
10	6	0.01		
20	7	0.01		
30	10	0.01		
40	15	0.02		
50	37	0.04		

Remark : The EUT can not be turn on at -30°C.

## 4.8 Frequency Stability (Voltage Variation)

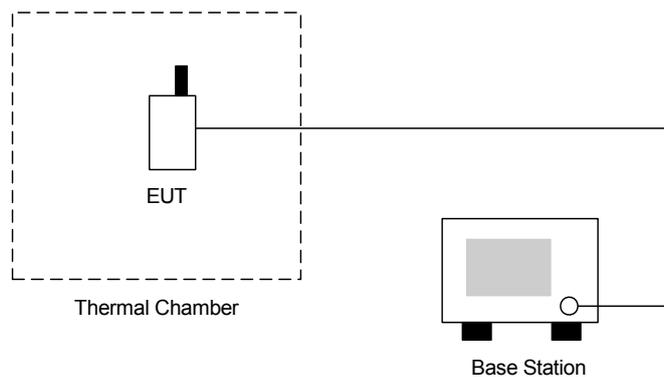
### 4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

### 4.8.2 Test Procedure

- a. The EUT was placed in a temperature chamber at  $25\pm 5^{\circ}\text{C}$  and connected as the following section.
- b. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- c. The variation in frequency was measured for the worst case.

### 4.8.3 Test Setup Layout





4.8.4 Test Result

- Test Mode : CDMA2000 AWS 1xRTT

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	5	0.00	2.5	Passed
BEP	-4	0.00		
4.2	14	0.01		

Remark:

- Normal Voltage=3.7V.
- Battery End Point (BEP)= 3.2 V.



## 5 List of Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9K~40GHz	Mar. 13, 2008	Mar. 12, 2009	Radiation (03CH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9KHz~2.75GHz	Mar. 15, 2008	Mar. 14, 2009	Radiation (03CH01-KS)
Bilog Antenna	Schaffner	CBL6112D	23182	25MHz~2000MHz	May 22, 2007	May 21, 2008	Radiation (03CH01-KS)
Preamplifier	Agilent	8449B	3008A02370	1G~26.5GHz	Jun. 04, 2007	Jun. 03, 2008	Radiation (03CH01-KS)
Preamplifier	Wireless	FPA6592G	60006	30M~2000MHz	Jul. 24, 2007	Jul. 23, 2008	Radiation (03CH01-KS)
High Pass filter (3GHz)	Microwave Circuits	H3G018G	N/A	N/A	N/A	N/A	Radiation (03CH01-KS)
High Pass filter (7GHz)	Microwave Circuits	H07G18G3	N/A	N/A	N/A	N/A	Radiation (03CH01-KS)
High Pass filter	N/A	WHKX1.5/15 G-10SS	23	N/A	N/A	N/A	Radiation (03CH01-KS)
High Pass filter	N/A	WHKX2.2-18 G-10SS	8	N/A	N/A	N/A	Radiation (03CH01-KS)
Band Reject Filter	WI	WRCG2400/2483-2390/2493-35/10SS	14	N/A	N/A	N/A	Radiation (03CH01-KS)
Band Reject Filter	WI	WRCG 1850/1910-1835/1925-40/8SS	15	N/A	N/A	N/A	Radiation (03CH01-KS)
Band Reject Filter	WI	WRCG 824/849-814/859-40/8SS	34	N/A	N/A	N/A	Radiation (03CH01-KS)
Low pass filter (1.2GHz)	N/A	WLKS 1200-8SS	2	N/A	N/A	N/A	Radiation (03CH01-KS)
DRG Horn(Medium)	EMCO	3117	75959	1GHz ~ 18GHz	Aug. 17, 2007	Aug. 16, 2008	Radiation (03CH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Jun. 18, 2007	Jun. 17, 2008	Conduction (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	50MHz~18GHz	Jun. 12, 2007	Jun. 11, 2008	Conduction (TH01-KS)
Thermal	Rten Billion	TTC-B3S	TBN-960502	-40~150C	Jun. 27, 2007	Jun. 26, 2008	Conduction (TH01-KS)
Power Divider	ARRA	A3200-2	N/A	DC~18GHz	Sep. 01, 2007	Aug. 31, 2008	Conduction (TH01-KS)
DC Power Supply	Topward	3306D	N/A	30V6A	N/A	N/A	Conduction (TH01-KS)



## 6 Uncertainty Evaluation

### Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
<b>Combined standard uncertainty Uc(y)</b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)</b>	<b>2.54</b>		

### Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$	$C_i$	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
<b>Combined standard uncertainty Uc(y)</b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)</b>	<b>4.72</b>				

END OF TEST REPORT