

PRODUCT COMPLIANCE DIVISION SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA www.hct.co.kr

HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

TEL: +82 31 639 8518 FAX: +82 31 639 8525



CERTIFICATE OF COMPLIANCE

FCC Part 22 Certification

HYUNDAI CURITEL INC.

FCC ID

APPLICANT

SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA

1

5

FRN: 0006278469

Date of Issue: November 15, 2005 Test Report No.: HCT-SAR05-1107 Test Site: HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO., LTD. FRN: 0005866421

PP4PC-7130 HYUNDAI CURITEL INC.

EUT Type:	Single-Mode CDMA Phone- Prototype
Tx Frequency:	824.70 — 848.31 MHz (CDMA)
Rx Frequency:	869.70 — 893.31 MHz (CDMA)
Max. RF Output Power:	0.347W ERP CDMA (25.4dBm)
Trade Name/Model(s):	HYUNDAI / PC-7130
FCC Classification:	Licensed Portable Transmitter Held to Ear (PCE)
Application Type:	Certification
FCC Rule Part(s):	§22(H), §2
Maximum SAR:	1.37 W/kg CDMA Head SAR / 1.18 W/kg CDMA Body SAR
Antenna Specifications:	Manufacturer: ETHERTRONICS.
	Part number: KR12001 (Length= 40.3 mm)
Emission Designator(s):	1M27F9W

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in $\oint 2.947$.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Hyundai C-Tech Co., Ltd. Certifies that no party to this application has been denied FCC benefits pursuant to section 5301 of the Anti- Drug Abuse Act of 1998, 21 U.S. C. 853(a)

KI SOO Kim

Report prepared by: Ki-Soo Kim

Manager of Product Compliance Team



This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.



Table of Contents

ATTACHMENT A: COVER LETTER(S)	
ATTACHMENT B: ATTESTATION STATEMENT(S)	
ATTACHMENT C: TEST REPORT	
1.1 SCOPE	3
2.1 INTRODUCTION	4
3.1 INSERTS PER §2.1033(d)	5
4.1 DESCRIPTION OF TESTS	6-15
5.1 EFFECTIVE RADIATED POWER OUTPUT	16
7.1 RADIATED MEASUREMENTS	17-19
8.1 FREQUENCY STABILITY	20
9.1 PLOTS OF EMISSIONS	21
10.1 LIST OF TEST EQUIPMENT	22
11.1 SAMPLE CALCULATIONS	23
12.1 CONCLUSION	24
ATTACHMENT D: TEST PLOTS	
ATTACHMENT E: FCC ID LABEL & LOCATION	
ATTACHMENT F: TEST SETUP PHOTOGRAPHS	
ATTACHMENT G: EXTERNAL PHOTOGRAPHS	
ATTACHMENT H: INTERNAL PHOTOGRAPHS	
ATTACHMENT I: BLOCK DIAGRAM (S)	
ATTACHMENT J: CIRCUIT DIAGRAMS & DESCRIPTION	
ATTACHMENT K: PARTS LIST	
ATTACHMENT L: OPERATIONAL DESCRIPTION	
ATTACHMENT M: USER'S MANUAL	
ATTACHMENT N: SAR MEASUREMENT REPORT	
ATTACHMENT O: SAR TEST DATA	
ATTACHMENT P: SAR TEST SETUP PHOTOGRAPHS	
ATTACHMENT Q: DIPOLE VALIDATION	
ATTACHMENT R: PROBE CALIBRATION	
ATTACHMENT S: DIPOLE CALIBRATION	
ATTACHMENT T: EMI TEST REPORT	



MEASUREMENT REPORT

<u>1.1 SCOPE</u>

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

General Information

Company Name:	HYUNDAI CURITEL INC.
Address:	San 136-1, Ami-Ri, Bubal-Eub, Ichon-Si,
	Kyoungki-Do, KOREA 467-701
Attention:	Mr. Hong-Ki Kim
Tel. / Fax :	82- 31- 630- 3296 / 82- 31- 630- 8085
E-Mail :	honggikim@curitel.com
-	
• FCC ID:	PP4PC-7130
Quantity:	Quantity production is planned
• EUT Type:	Single mode CDMA Phone - Prototype
Trade Name:	HYUNDAI
• Model(s):	PC-7130
 Serial Number(s): 	PP4PC-713020051100001
 Emission Designator(s): 	1M27F9W
• Tx Frequency:	824.70 – 848.31 MHz (CDMA)
Rx Frequency:	869.70 – 893.31 MHz (CDMA)
 Application Type: 	Certification
 FCC Classification: 	Licensed Portable Transmitter Held to Ear (PCE)
 FCC Rule Part(s): 	§22(H), §2
 Modulation(s): 	CDMA
Antenna Type:	INTENNA
Max RF. Output Power:	0.347W ERP CDMA (25.4dBm)
 Date(s) of Tests: 	November 3, 2005
Place of Tests:	Hyundai C-Tech. EMC Lab.
	Icheon, Kyounki-Do, KOREA
Report Serial No.:	HCT-SAR05-1107



2.1 INTRODUCTION

EUT DESCRIPTION

The Hyundai Curitel Inc.PC-7130 Single-Mode CDMA phone. Its basic purpose is used for communications. It transmits from CDMA (824.70~848.31) MHz and receives from CDMA (869.70~893.31) MHz. The RF power is rated at CDMA (0.347W).

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.

Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 23, 2003(Registration Number: 90661)



3.1 INSERTS

Function of Active Devices (Confidential)

The Function of active devices are shown in Attachment K.

Block/Circuit Diagrams & Description (Confidential)

The circuit diagrams & description are shown in Attachment J, and the block diagrams are shown in Attachment I.

Operating Instructions

The instruction manual is shown in Attachment M.

Parts List & Tune-Up Procedure (Confidential)

The parts list & tune-up procedure are shown in Attachment L.

Description of Freq. Stabilization Circuit (Confidential)

The description of frequency stabilization circuit is shown in Attachment K.

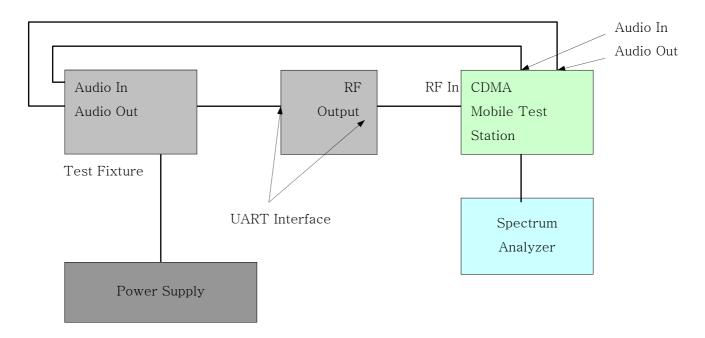
Description for Suppression of Spurious Radiation, for Limiting Modulation, and Harmonic Suppression Circuits (Confidential) The description of suppression stabilization circuits are shown in Attachment K



4.1 DESCRIPTION OF TESTS

4.1 RF Power output.

Test Set-up



UART Interface: The UART Interface has a serial communication link and RF Interface port that can be used to test , debug or upgrade the phone's functions and characteristics.

EUT : Equipment Under Test

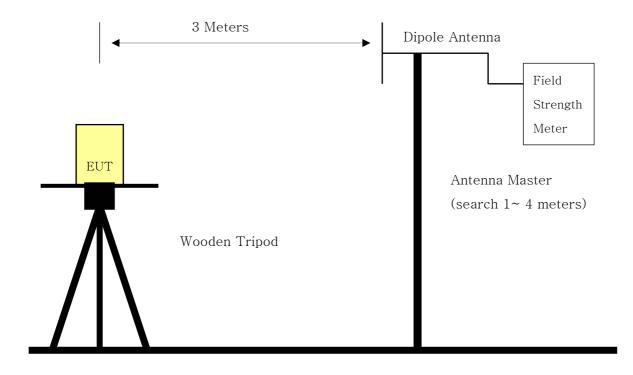
Test Procedure

The power is read at the specturm anlalyzer through the duplex port of CDMA mobile test station. RF power output is measured at the RF output terminal (UART Interface) on the bottom side of the EUT.



4.2 Effective Radiated Power.

Test Set-up



Open Field Test Site

Test Procedure

The measurement facilities used for this test have been documented in previous filings with the commission pursuant to section 2.948.

The open field test site is situated in open field with ground screen whose site attenuation characteristics meet ANSI C63.4 –2003. A mast capable of lifting the receiving antenna from a height of one to four meters is used together with a ratable wooden platform mounted at three from the antenna mast.

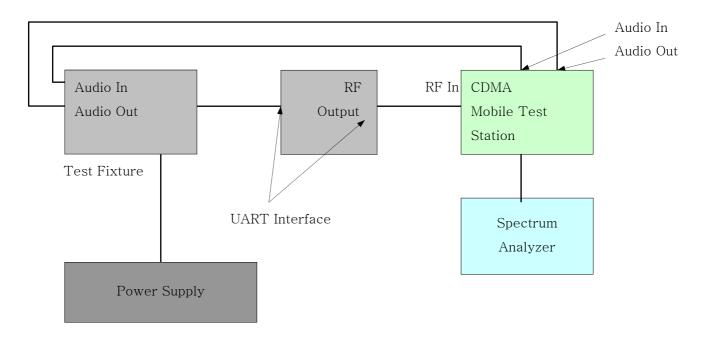
- 1) The EUT mounted on a wooden tripod is 0.8 meter above test site ground level.
- 2) During the test, the turn table is rotated and the antenna height is also varied from 1 to 4 meters until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with $\lambda/2$ dipole antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item(4).
- 6) The signal generator output level is the rating of effective radiated power(ERP).
- The instrument settings used (RBW/ VBW) during ERP/ EIRP output power measurement are as Below;
 - -. Below 1GHz: RBW 3MHz, VBW 3MHz
 - -. Above 1GHz: RBW 3MHz, VBW 3MHz



4.3 Modulation Requirements.

4.3.1 Frequency response of the audio modulation circuit.

Test Set-up



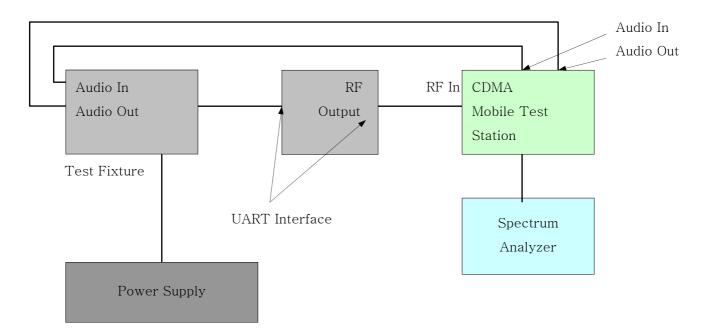
UART Interface: The UART Interface has a serial communication link that can be used to test, debug or upgrade the phone's functions and characteristics.

- 1) Set the frequency deviation \pm 2.9KHz at the audio tone by adjusting the audio generator and record the demod out level at 1KHz.
- 2) Change the frequency of audio generator from 300KHz to 3000Hz and record the demod out level relative to the level at 1KHz.
- 3) Adjust the audio input frequency to 1000KHz and adjust the input level to 20dB greater than that required to produce \pm 8KHz deviation.
- 4) Change the frequency of audio generator from 3000Hz to 30,000Hz and record the demod out level relative to the level at 1KHz.



4.3.2 Modulation levels and response of modulation limiting circuitry.

Test Set-up



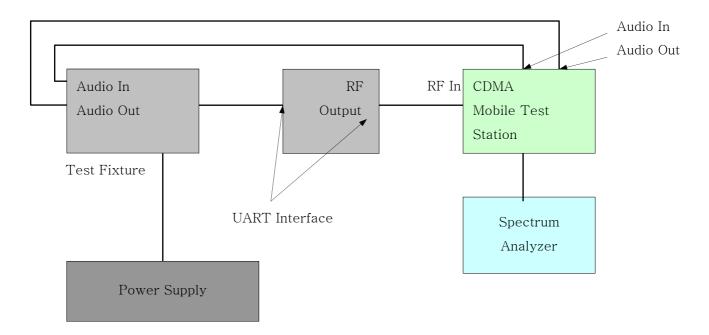
UART Interface: The UART Interface has a serial communication link that can be used to test, debug or upgrade the phone's functions and characteristics.

- 1) Set the frequency deviation \pm 7.2KHz at the audio tone by adjusting the audio generator. This level will be the 0 dB reference.
- 2) Increase the audio level from 0 dB reference to 30 dB in increments of 5 dB and record the frequency deviation.
- 3) This measurement is then repeated at 300Hz, 1000Hz and 3000Hz audio tone.



4.3.3 Levels of modulating signals.

Test Set-up



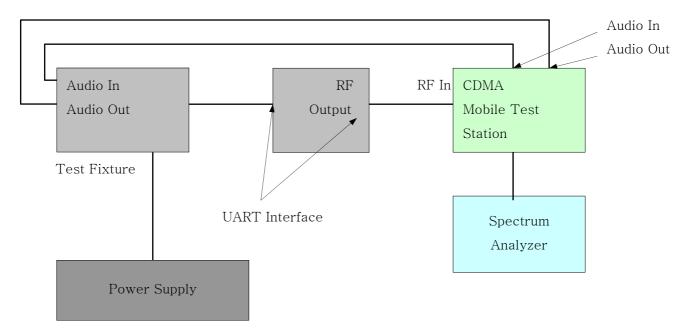
UART Interface: The UART Interface has a serial communication link that can be used to test, debug or upgrade the phone's functions and characteristics.

- 1) Select the supervisory audio tone test mode pursuant to "Tune up procedure" and record the frequency deviation on the modulation anlyzer.
- 2) Select the signalling tone test mode pursuant to "Tune up procedure" and record the frequency deviation on the modulation analyzer.
- 3) Select the TX data test mode pursuant to "Tune up procedure" and record the frequency deviation on the modulation analyzer .



4.3.4 Occupied bandwidth.

Test Set-up



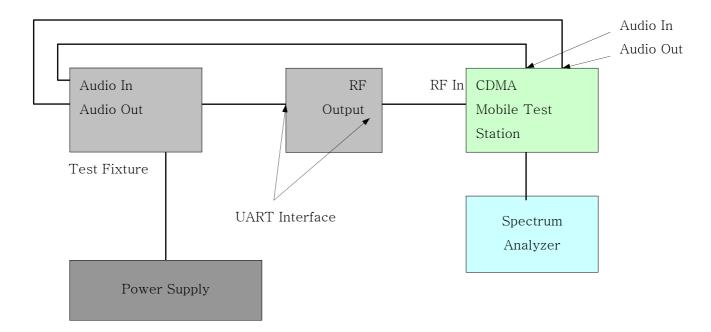
UART Interface: The UART Interface has a serial communication link that can be used to test , debug or upgrade the phone's functions and characteristics.

- 1. F3E radiotelelephony mode.
 - 1) The audio generator is set on the frequency of maximum audio response of the audio modulating circuit and its level adjusted for 50% modulation.
 - 2) Increase the audio level 16 dB greater than that necessary to produre 50 percent modulation and change the audio frequency to 2,500 Hz tone.
 - 3) The occupited bandwidth is drown from the spectrum analyzer display.
- 2. F1D wideband data mode.
 - 1) Select the TX data test mode pursuant to "Tune-up procedure ".
 - 2) The occupied bandwidth is drawn from the spectrum analyzer display.
- 3. F3D supervisory audio tone mode.
 - 1) Select the supervisory tone test mode pursuant to "Tune-up procedure ".
 - 2) The occupied bandwidth is drawn from the spectrum analyzer display.
- 4. F3D signalling tone mode.
 - 1) Select the signalling audio tone test mode pursuant to "Tune-up procedure ".
 - 2) The occupied bandwidth is drawn from the spectrum analyzer display.



4.3.5 Spurious and Harmonic Emissions at Antenna Terminal.

Test Set-up



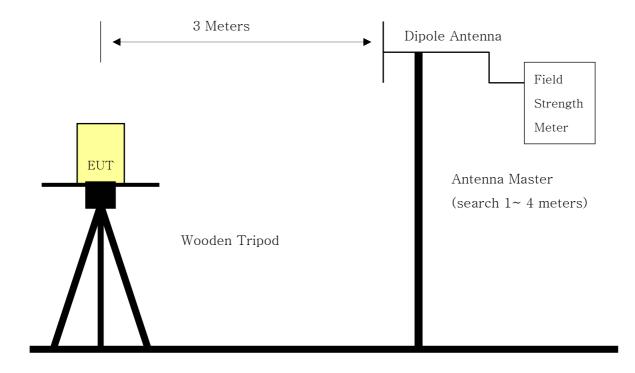
Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to 10 GHz. The transmitter is modulated with a 2500Hz tone at a level of 16dB greater than that required to provided 50% modulation. At the input terminals of the spectrum an analyzer, an isolator (RF circulator with on port terminated with 50 ohms) and an 870 MHz to 890 MHz bandpass filter is connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The rejection of the bandpass filter to signals in the 825 — 845 MHz range is adequate to limit the transmit energy from the test transceiver which appears to a level which will allow the analyzer to measure signals less than —90dBm. Calibration of the test receiver is performed in the 870 — 890 MHz range to insure accuracy to allow variation in the bandpass filter insertion loss to be calibrated.



4.3.6 Field strength of spurious radiation .

Test Set-up



Open Field Test Site

Test Procedure

The measurement facilities used for this test have been documented in previous filings with the commission pursuant to section 2.948.

The open field test site is situated in open field with ground screen whose site attenuation characteristics meet ANSI C63.4 –2003. A mast capable of lifting the receiving antenna from a height of one to four meters is used together with a rotable wooden platform mounted at three from the antenna mast.

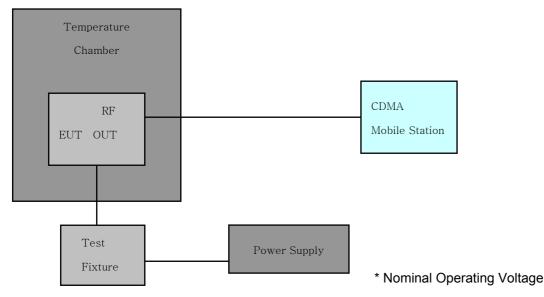
- 1) The unit mounted on a wooden table 1.5m \times 1.0m \times 0.80 $\,$ is 0.8 meter above test site ground level.
- 2) During the emission test, the turntable is rotated and the EUT is manipulated to find the configuration resulting in maximum emission under normal condition of installation and operation.
- 3) The antenna height and polarization are also varied from 1 to 4 meters until the maximum signal is found.
- 4) The spectrum shall be scanned up to the 10th harmonic of the fundamental frequency.
- 5) The instrument settings used (RBW/ VBW) during ERP/ EIRP output power measurement are as belows :
 - -. Below 1GHz : RBW 3MHz, VBW 3MHz
 - -. Above 1GHz : RBW 3MHz, VBW 3MHz



4.3.7 Frequency stability .

4.3.7.1 Frequency stability with variation of ambient temperature.

Test Set-up



Test Procedure

The frequency stability of the transmitter is measured by:

- a.) Temperature: The temperature is varied from -30 °C to +60 °C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% 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 — The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ± 0.0001 (± 1 ppm) of the center frequency.

Time Period and Procedure:

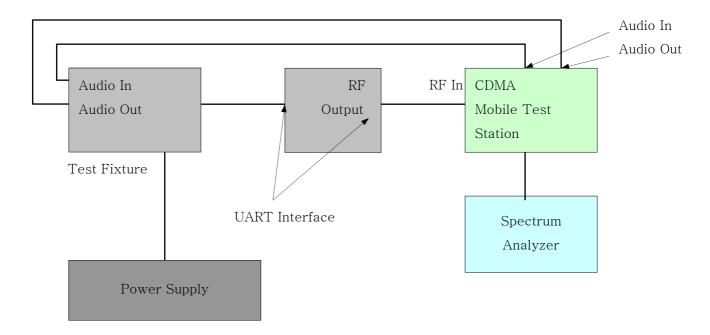
- 1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (25 °C to 27 °C to provide a reference).
- 2. The equipment is subjected to an overnight "soak" at -30 °C without any power applied.
- 3. After the overnight "soak" at 30 °C (usually 14-16 hours), 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 and the individual oscillators is made within a three minute interval after applying power to the transmitter.
- 4. Frequency measurements are made at 10 °C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.
- 5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.
- 6. Frequency were made at 10 intervals starting at 30 °C up to +50 °C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after applying power to the transmitter.
- 7. The artificial load is mounted external to the temperature chamber.

NOTE: The EUT is tested down to the battery endpoint.



4.3.7.2 Frequency stability with variation of primary supply voltage.

Test Set-up



- 1) The primary supply is varied in steps of 5% from 85 to 115% of the nominal supply voltage, or reduce primary supply voltage to the battery operating end point.
- 2) The frequency is recorded each 5% step.

5.1 Test Data

5.2 Effective Radiated Power Output (CDMA)

Radiated measurements at 3 meters

Modulation: CDMA

Freq. Tuned	REF. LEVEL	POL	ERP	ERP	PATTERY
(MHz)	(dBm)	(H/V)	(W)	(dBm)	BATTERY
824.70	-22.1	V	0.321	25.1	Standard
835.89	-22.0	V	0.329	25.2	Standard
848.31	-21.8	V	0.347	25.4	Standard

Note: Standard batteries are the only options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was 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 terminals of the dipole is measured. The ERP is recorded.

6.1 Test Data (Continued)

6.2 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.70 MHz
CHANNEL:	1013 (Low)
MEASURED OUTPUT POWER:	25.4 dBm = 0.347 W
MODULATION SIGNAL:	CDMA (Internal)
DISTANCE:	3 meters
■ LIMIT: 43 + 10 log10 (W) =	38.40 dBc

	LEVEL@	SUBSTITUTE	CORRECT		
Freq.	ANTENNA	ANTENNA	GENERATOR	POL	(dBc)
(MHz)	TERMINALS	GAIN	LEVEL	(H/V)	(ubc)
	(dBm)	(dBd)	(dBm)		
1649.40	-66.0	7.3	-58.7	V	78.8
2474.10	-59.7	8.3	-51.4	V	71.0
3298.80	-59.2	9.7	-49.5	V	68.2

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was 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.

6.1 Test Data (Continued)

6.3 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	835.89 MHz
CHANNEL:	0363 (Mid)
MEASURED OUTPUT POWER:	25.4 dBm = 0.347 W
MODULATION SIGNAL:	CDMA (Internal)
DISTANCE:	3 meters
■ LIMIT: 43 + 10 log10 (W) =	38.40 dBc

	LEVEL@	SUBSTITUTE	CORRECT		
Freq.	ANTENNA	ANTENNA	GENERATOR	POL	(dBc)
(MHz)	TERMINALS	GAIN	LEVEL	(H/V)	(ubc)
	(dBm)	(dBd)	(dBm)		
1671.78	-64.7	7.3	-57.4	V	77.5
2507.67	-60.9	8.3	-52.6	V	72.2
3343.56	-58.4	9.7	-48.7	V	67.4

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was 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.

6.1 Test Data (Continued)

6.4 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.31 MHz
CHANNEL:	0777 (High)
MEASURED OUTPUT POWER:	25.4 dBm = 0.347 W
MODULATION SIGNAL:	CDMA (Internal)
DISTANCE:	3 meters
■ LIMIT: 43 + 10 log10 (W) =	38.40 dBc

	LEVEL@	SUBSTITUTE	CORRECT		
Freq.	ANTENNA	ANTENNA	GENERATOR	POL	(dBc)
(MHz)	TERMINALS	GAIN	LEVEL	(H/V)	(ubc)
	(dBm)	(dBd)	(dBm)		
1696.62	-63.5	7.3	-56.2	V	76.3
2544.93	-63.0	8.3	-54.7	V	74.3
3393.24	-60.1	9.7	-50.4	V	69.1

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was 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.

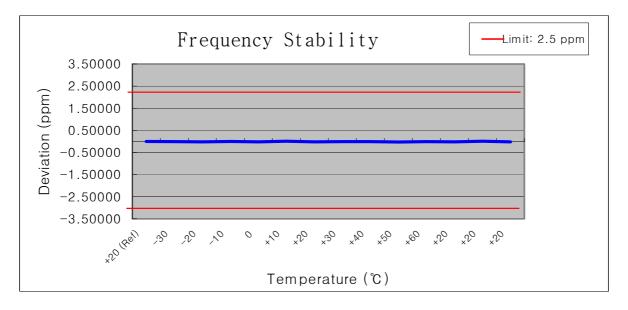


7.1 Test Data

7.2 FREQUENCY STABILITY (CDMA)

OPERATING FREQUENCY:	835,890,032 Hz
CHANNEL:	363
REFERENCE VOLTAGE:	3.7 VDC
DEVIATION LIM IT:	± 0.00025 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Deviation	Deviation
(%)	(VDC)	(°C)	(Hz)	(%)	(ppm)
100		+20 (Ref)	835,890,032	0.000000	0.00000
100		-30	835,890,041	-0.000001	-0.01077
100		-20	835,890,050	-0.000002	-0.02153
100		-10	835,890,029	0.000000	0.00359
100		0	835,890,046	-0.000002	-0.01675
100	3.7	+10	835,890,027	0.000001	0.00598
100		+20	835,890,046	-0.000002	-0.01675
100		+30	835,890,038	-0.000001	-0.00718
100		+40	835,890,041	-0.000001	-0.01077
100		+50	835,890,052	-0.000002	-0.02393
100		+60	835,890,039	-0.000001	-0.00837
85	3.15	+20	835,890,046	-0.000002	-0.01675
115	4.26	+20	835,890,028	0.000000	0.00479
BATT.END POINT	2.83	+20	835,890,048	-0.000002	-0.01914



8.1 PLOT(S) OF EMISSION

(SEE ATTACHMENT D)



9.1 LIST OF TEST EQUIPMENT

Spectrum Analyzer (20Hz-40GHz) R&S ESI40 Dec. 05 1088.7410 Spectrum Analyzer (100Hz-22.5.GHz) R3273 April 05 US8110152 Signal Generator HP8373ED (100Hz ~ 2.0GHz) July 05 US8710152 Signal Generator MARCONI(10kHz ~ 2.7GHz) Sep. 05 119331 Power Meter(A) HP 438A July 05 2822A05909 Power Sensor(A) HP8481B July 05 318A08777 Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP8481A Oct. 05 2437A00963 Power Sensor(B) HP8481A Oct. 05 3401.02111 Modulation Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401.02111 Modulation Analyzer HP801A June 05 557 Dipole Antenna UHAP June 05 58 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671039 AMF-4D-001180-26-10P(18~26.5GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1201 Horn Antenna BBHA 9120D(1~18GHz) June 05 1201 <	Type / Model	Calib. Date	S/N
Signal Generator HP8373ED (10MHz ~ 20GHz) July 05 US8710152 Signal Generator MARCONI(10kHz ~ 2.7GHz) Sep. 05 119331 Power Meter(A) HP 438A July 05 2822A05909 Power Sensor(A) HP84B1B July 05 318A08777 Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP84B1A Oct. 05 2349A37617 Power Amp A0825-4343-R(800~2.5GHz) +43dB Sep. 05 A00450 Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 3438A05231 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 671009 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671034 Audio Analyzer HP 8903A Feb.05 671314 Audio Analyzer HP 8903A Feb.05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1021 Horn Antenna BBHA 9120D(1~18GHz) June 05 1021 Horn Antenna BBHA 9120D(1~18GHz) June 05 1021 Horn Antenna BBHA 9120D(1~			1088.7410
Signal Generator MARCONI(10kHz ~ 2.7GHz) Sep. 05 119331 Power Meter(A) HP 438A July 05 2822A05909 Power Sensor(A) HP8481B July 05 3318A08777 Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP8481A Oct. 05 2349A37617 Power Sensor(B) HP8481A Oct. 05 3401J02111 Modulation Analyzer HP.8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 3438A05231 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 667624 AMF-4D-001180-26-10P(18~26.5GHz) Feb. 05 671009 AMF-4D-001180-26-10P(26~40GHz) Feb.05 67124 Audio Analyzer HP 8903A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 91701(5~40GHz) Feb.05 1014 CDMA Mobile Station Test Set HP8924C June 05 358.017 CDMA Mobile Station Test Set HP8925 June 05 356040013	Spectrum Analyzer(100Hz~26.5GHz) R3273	April 05	J04821
Power Meter(A) HP 438A July 05 2822A05909 Power Sensor(A) HP8481B July 05 3318A08777 Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP8481A Oct. 05 2349A37617 Power Amp A0825-4343-R(800-2.5GHz) +43dB Sep. 05 A00450 Network Analyzer HP801A June 05 3438A05231 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 671009 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671049 AMF-4D-001180-26-10P(8-40.6GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 3010A08265 Horn Antenna BHA 9120D(1~18GHz) June 05 1099 Horn Antenna BHA 9120D(1~18GHz) June 05 1091 Horn Antenna BHA 9120D(1~18GHz) June 05 335.8017 CDMA Mobile Station T	Signal Generator HP8373ED (10MHz ~ 20GHz)	July 05	US8710152
Power Sensor(A) HP8481B July 05 3318A08777 Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP8481A Oct. 05 2349A37617 Power Amp A0825-4343-R(800~2.5GHz) +43dB Sep. 05 A00450 Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP-8753D (30kHz ~ 3GHz) June 05 557 Dipole Antenna UHAP June 05 671009 AMF-4D-001180-26-10P(18~26.5GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 335.8017 Horn Antenna BBHA 917015~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESH2 June 05 35	Signal Generator MARCONI(10kHz ~ 2.7GHz)	Sep. 05	119331
Power Meter(B) HP 438A Nov. 05 2427A00963 Power Sensor(B) HP8481A Oct. 05 2349A37617 Power Amp A0825-4343-R(800~2.5GHz) 443dB Sep. 05 A00450 Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 557 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 667624 AMF-4D-001180-26-10P(16~26.5GHz) Feb.05 667624 AMF-4D-001180-26-10P(26~40GHz) Feb.05 667624 AMF-4D-001180-26-10P(16~26.5GHz) Feb.05 3001A08285 Horn Antenna BBHA 91202(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 301A08285 HOrn Antenna BBHA 9120D(1~18GHz) June 05 358.017 EMI Test Receiver Rohde & Schwarz ESVA June 05 354.300 CDMA Mobile Station Test Set HP8924C June 05 355.8017 EMI Test Receiver Rohde & Schwarz ESVA Feb.05 356.017 <td>Power Meter(A) HP 438A</td> <td>July 05</td> <td>2822A05909</td>	Power Meter(A) HP 438A	July 05	2822A05909
Power Sensor(B) HP8481A Oct. 05 2349A37617 Power Amp A0825-4343-R(800-2.5GH2) +43dB Sep. 05 A00450 Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 557 Dipole Antenna UHAP June 05 558 AMF-4D-001180-26-10P(0.1~18GHz) Feb. 05 67624 AMF-4D-001180-26-10P(26~40GHz) Feb. 05 671314 Audio Analyzer HP 8903A Feb.05 3001A08285 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1039 CDMA Mobile Station Test Set HP8924C June 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 335.8017 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 354.3000 EMI Test Receiver Rohde & Schwarz ESVS July 05 3509A00155 LISN Rohde & Schwarz ESH2-25 July 05 36040015 LISN Rohde & Schwarz ESH2-	Power Sensor(A) HP8481B	July 05	3318A08777
Power Amp A0825-4343-R(800~2.5GHz) +43dB Sep. 05 A00450 Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 557 Dipole Antenna UHAP June 05 558 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671009 AMF-4D-001180-26-10P(18~26.5GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 671314 Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1-18GHz) June 05 1099 Horn Antenna BBHA 9170120(~118GHz) June 05 1021 CDMA Mobile Station Test Set HP8924C June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESV3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESV3 June 05 364.3000 EMI Test Receiver Rohde & Schwarz ESV3 July 05 359.400155 ILSN EMCO 3825/2 July 05 369.40015 ILSN EMCO 3825/2 July 05 369.40015 ILSN EMCO 3825/2 July	Power Meter(B) HP 438A	Nov. 05	2427A00963
Network Analyzer HP-8753D (30kHz ~ 3GHz) Sep. 05 3401J02111 Modulation Analyzer HP8901A June 05 3438A05231 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 558 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671009 AMF-4D-001180-26-10P(18~26.5GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 671314 Audio Analyzer HP 8903A Feb.05 3001A08285 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) June 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESV3 June 05 345.3000 EMI Test Receiver Rohde & Schwarz ESV3 June 05 3606/013 Spectrum Analyzer HP 8591EM July 05 3609A0155 LISN EMCO 3825/2 July 05 36040151 LISN EMCO 3825/2 July 05	Power Sensor(B) HP8481A	Oct. 05	2349A37617
Modulation Analyzer HP8901A June 05 3438A05231 Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 558 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 671009 AMF-4D-001180-26-10P(26~40GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 354.3000 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 354.3000 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 356.300 EIN Test Receiver Rohde & Schwarz ESVS30 June 05 309.400155 LISN Rohde & Schwarz ESH2-25 July 05 309.400155 LISN Rohde & Schwarz ESH2	Power Amp A0825-4343-R(800~2.5GHz) +43dB	Sep. 05	A00450
Dipole Antenna UHAP June 05 557 Dipole Antenna UHAP June 05 558 AMF-4D-001180-26-10P(0.1~18GHz) Feb.05 667624 AMF-4D-001180-26-10P(26~40GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 356.006/013 Spectrum Analyzer HP 8591EM July 05 3509.00155 LISN Rohde & Schwarz ESH25 July 05 3606.013 Spectrum Analyzer HP 8591EM July 05 9706-1070 LISN Rohde & Schwarz ESH2-Z5 July 05 9601.017 Amplifier Hewlett-Packard 8447E March 05 2605.03141 Biconical Antenna BBA-9106(30~1000MHz) <td>Network Analyzer HP-8753D (30kHz ~ 3GHz)</td> <td>Sep. 05</td> <td>3401J02111</td>	Network Analyzer HP-8753D (30kHz ~ 3GHz)	Sep. 05	3401J02111
Dipole Antenna UHAPJune 05558AMF-4D-001180-26-10P(0.1~18GHz)Feb.05671009AMF-4D-001180-26-10P(26~40GHz)Feb.05671314Audio Analyzer HP 8903AFeb.052433A04322Function Generator HP 8116AFeb.053001A08285Horn Antenna BBHA 9120D(1~18GHz)June 051099Horn Antenna BBHA 9120D(1~18GHz)March 05BBHA9170124CDMA Mobile Station Test Set HP8924CJune 05US39063847PCS Interface HP83236B 1.7~2.0GHzJune 05355.8017EMI Test Receiver Rohde & Schwarz ESH3June 05354.3000EMI Test Receiver Rohde & Schwarz ESV30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A0155LISN Rohde & Schwarz ESH2July 059706-1070LISN Rohde & Schwarz ESH2June 050901Cop-Periodic Antenna BHA-9106(30~1000MHz)June 050901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A45321	Modulation Analyzer HP8901A	June 05	3438A05231
AMF-4D-001180-26-10P(0.1~18GHz)Feb.05671009AMF-4D-001180-26-10P(26~40GHz)Feb.05671314Audio Analyzer HP 8903AFeb.052433A04322Function Generator HP 8116AFeb.053001A08285Horn Antenna BBHA 9120D(1~18GHz)June 051099Horn Antenna BBHA 9120D(1~18GHz)Feb.05BBHA9170124CDMA Mobile Station Test Set HP8924CJune 05US39063847PCS Interface HP83236B 1.7 ~ 2.0GHzJune 05335.8017EMI Test Receiver Rohde & Schwarz ESH3June 05354.3000EMI Test Receiver Rohde & Schwarz ESVPFeb.05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN Rohde & Schwarz ESV2July 059706-1070LISN Rohde & Schwarz ESH2June 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 059091Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A45321	Dipole Antenna UHAP	June 05	557
AMF-4D-001180-26-10P(18-26.5GHz) Feb.05 667624 AMF-4D-001180-26-10P(26-40GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 US39063847 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 354.300 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.300 EMI Test Receiver Rohde & Schwarz ESVP Feb.05 3606/013 Spectrum Analyzer HP 8591EM July 05 3509A00155 LISN EMCO 3825/2 July 05 30040155 LISN Rohde & Schwarz ESH2-Z5 July 05 906101 Amplifier Hewlett-Packard 8447E March 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 91071107 Antenna VULB9160 (25MHz~1800MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMC	Dipole Antenna UHAP	June 05	558
AMF-4D-001180-26-10P(26~40GHz) Feb.05 671314 Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 0530063847 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESVS0 June 05 3509A00155 LISN EMCO 3825/2 July 05 3509A00155 LISN Rohde & Schwarz ESH2-25 July 05 9706-1070 LISN Rohde & Schwarz ESH2-25 July 05 9706.1071 Amplifier Hewlett-Packard 8447E March 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 06901 Log-Periodic Antenna UHALP-9107(300~1000MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241	AMF-4D-001180-26-10P(0.1~18GHz)	Feb.05	671009
Audio Analyzer HP 8903A Feb.05 2433A04322 Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 US39063847 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESV2 Feb. 05 354.3000 EMI Test Receiver Rohde & Schwarz ESV30 June 05 3509A00155 LISN EMCO 3825/2 July 05 3509A00155 LISN Rohde & Schwarz ESH2-25 July 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 9001 Log-Periodic Antenna UHALP-9107(300~1000MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMCO 1060-06 N.A 45321	AMF-4D-001180-26-10P(18~26.5GHz)	Feb.05	667624
Function Generator HP 8116A Feb.05 3001A08285 Horn Antenna BBHA 9120D(1~18GHz) June 05 1099 Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 US39063847 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESVP Feb. 05 354.3000 EMI Test Receiver Rohde & Schwarz ESV30 June 05 3509A00155 LISN EMCO 3825/2 July 05 3509A00155 LISN Rohde & Schwarz ESH2-25 July 05 9706-1071 Amplifier Hewlett-Packard 8447E March 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 06901 Log-Periodic Antenna UHALP-9107(300~1000MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMCO 1060-06 N.A 3241 Turn Table EMCO 1060-06 N.A 45321 <td>AMF-4D-001180-26-10P(26~40GHz)</td> <td>Feb.05</td> <td>671314</td>	AMF-4D-001180-26-10P(26~40GHz)	Feb.05	671314
Horn Antenna BBHA 9120D(1~18GHz)June 051099Horn Antenna BBHA 9120D(1~18GHz)March 051201Horn Antenna BBHA 9170(15~40GHz)Feb.05BBHA9170124CDMA Mobile Station Test Set HP8924CJune 053711J04841PCS Interface HP83236B 1.7 ~ 2.0GHzJune 05335.8017EMI Test Receiver Rohde & Schwarz ESH3June 05354.3000EMI Test Receiver Rohde & Schwarz ESVPFeb. 05354.3000EMI Test Receiver Rohde & Schwarz ESVS30June 053509A00155ISN EMCO 3825/2July 053509A00155LISN Rohde & Schwarz ESH2July 059706-1070LISN Rohde & Schwarz ESH2July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Audio Analyzer HP 8903A	Feb.05	2433A04322
Horn Antenna BBHA 9120D(1~18GHz) March 05 1201 Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 3711J04841 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 335.8017 EMI Test Receiver Rohde & Schwarz ESH3 June 05 354.3000 EMI Test Receiver Rohde & Schwarz ESVP Feb. 05 350400155 LISN EMCO 3825/2 July 05 3509A00155 LISN Rohde & Schwarz ESH2-Z5 July 05 9706-1070 Amplifier Hewlett-Packard 8447E March 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 06901 Log-Periodic Antenna UHALP-9107(300~1000MHz) June 05 91071107 Antenna VULB9160 (25MHz~1800MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMCO 1060-06 N.A 1253A AC Power Source PACIFIC Magnetic Module N.A 45321	Function Generator HP 8116A	Feb.05	3001A08285
Horn Antenna BBHA 9170(15~40GHz) Feb.05 BBHA9170124 CDMA Mobile Station Test Set HP8924C June 05 US39063847 PCS Interface HP83236B 1.7 ~ 2.0GHz June 05 3711J04841 EMI Test Receiver Rohde & Schwarz ESH3 June 05 358.017 EMI Test Receiver Rohde & Schwarz ESVP Feb. 05 354.3000 EMI Test Receiver Rohde & Schwarz ESVS30 June 05 3509A00155 LISN EMCO 3825/2 July 05 3006-1070 LISN Rohde & Schwarz ESH2-25 July 05 9706-1070 Amplifier Hewlett-Packard 8447E March 05 2805A03141 Biconical Antenna BBA-9106(30~1000MHz) June 05 91071107 Antenna VULB9160 (25MHz~1800MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMCO 1060-06 N.A 1253A AC Power Source PACIFIC Magnetic Module N.A 45321	Horn Antenna BBHA 9120D(1~18GHz)	June 05	1099
CDMA Mobile Station Test Set HP8924CJune 05US39063847PCS Interface HP83236B 1.7 ~ 2.0GHzJune 053711J04841EMI Test Receiver Rohde & Schwarz ESH3June 05335.8017EMI Test Receiver Rohde & Schwarz ESVPFeb. 05354.3000EMI Test Receiver Rohde & Schwarz ESVS30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Horn Antenna BBHA 9120D(1~18GHz)	March 05	1201
PCS Interface HP83236B 1.7 ~ 2.0GHzJune 053711J04841EMI Test Receiver Rohde & Schwarz ESH3June 05358.017EMI Test Receiver Rohde & Schwarz ESVPFeb. 05354.3000EMI Test Receiver Rohde & Schwarz ESVS30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 0506901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A45321	Horn Antenna BBHA 9170(15~40GHz)	Feb.05	BBHA9170124
EMI Test Receiver Rohde & Schwarz ESH3June 05335.8017EMI Test Receiver Rohde & Schwarz ESVPFeb. 05354.3000EMI Test Receiver Rohde & Schwarz ESVS30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	CDMA Mobile Station Test Set HP8924C	June 05	US39063847
EMI Test Receiver Rohde & Schwarz ESVPFeb. 05354.3000EMI Test Receiver Rohde & Schwarz ESVS30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	PCS Interface HP83236B 1.7 ~ 2.0GHz	June 05	3711J04841
EMI Test Receiver Rohde & Schwarz ESVS30June 05826006/013Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	EMI Test Receiver Rohde & Schwarz ESH3	June 05	335.8017
Spectrum Analyzer HP 8591EMJuly 053509A00155LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	EMI Test Receiver Rohde & Schwarz ESVP	Feb. 05	354.3000
LISN EMCO 3825/2July 059706-1070LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	EMI Test Receiver Rohde & Schwarz ESVS30	June 05	826006/013
LISN Rohde & Schwarz ESH2-Z5July 059706-1071Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Spectrum Analyzer HP 8591EM	July 05	3509A00155
Amplifier Hewlett-Packard 8447EMarch 052805A03141Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	LISN EMCO 3825/2	July 05	9706-1070
Biconical Antenna BBA-9106(30~1000MHz)June 05D6901Log-Periodic Antenna UHALP-9107(300~1000MHz)June 0591071107Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	LISN Rohde & Schwarz ESH2-Z5	July 05	9706-1071
Log-Periodic Antenna UHALP-9107(300~1000MHz) June 05 91071107 Antenna VULB9160 (25MHz~1800MHz) June 05 91071107 Antenna Position Tower HD240 N.A 3241 Turn Table EMCO 1060-06 N.A 1253A AC Power Source PACIFIC Magnetic Module N.A 45321	Amplifier Hewlett-Packard 8447E	March 05	2805A03141
Antenna VULB9160 (25MHz~1800MHz)June 0591071107Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Biconical Antenna BBA-9106(30~1000MHz)	June 05	D6901
Antenna Position Tower HD240N.A3241Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Log-Periodic Antenna UHALP-9107(300~1000MHz)	June 05	91071107
Turn Table EMCO 1060-06N.A1253AAC Power Source PACIFIC Magnetic ModuleN.A45321	Antenna VULB9160 (25MHz~1800MHz)	June 05	91071107
AC Power Source PACIFIC Magnetic Module N.A 45321	Antenna Position Tower HD240	N.A	3241
	Turn Table EMCO 1060-06	N.A	1253A
AC Power Source PACIFIC 360AMX N.A 22B87	AC Power Source PACIFIC Magnetic Module	N.A	45321
	AC Power Source PACIFIC 360AMX	N.A	22B87



10.1 SAMPLE CALCULATIONS

A. ERP Sample Calculation

Freq. Tuned	LEVEL(1)	POL	ERP	ERP(2)	BATTERY
(MHz)	(dBm)	(H/V)	(W)	(dBm)	DATIENT
824.70	-29.73	Н	0.346	25.393	Standard

1) The EUT mounted on a wooden tripod is 0.8 meter above test site ground level.

2) During the test, the turn table is rotated and the antenna height is also varied from 1 to 4 meters until the maximum signal is found.

- 3) Record the field strength meter's level.(LEVEL)
- 4) Replace the EUT with dipole antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item(3).
- 6) The signal generator output level with cable loss is the rating of effective radiated power(**ERP**).

(Cable loss means the factor between Signal Generator and Transmitting Antenna.)

For more details, please refer to the test set-up procedure.

B. Emission Designator

Emission Designator = 1M27F9W

CDMA BW = 1.27 MHz

F = Frequency Modulation

- 9 = Composite Digital Info
- W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

Emission Designator = 40K0F1D

Necessary Bandwidth:

Necessary Bandwidth (Bn), kHz = 40.0

(Measured at the 99.75% power bandwidth)

Emission Designator = 40K0F8W

Necessary Bandwidth:

Necessary Bandwidth (Bn), kHz = 40.0

(Measured at the 99.75% power bandwidth)



11.1 CONCLUSION

The data collected shows that the Single-Mode CDMA Phone. **FCC ID: PP4PC-7130** complies with all the requirements of Parts 2 and 22 of the FCC rules.