HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

PRODUCT COMPLIANCE DIVISION
SAN 136-1, AMI-RI , BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA
TEL : +82 31 639 8518 FAX : +82 31 639 8525 www.hctec.co.kr

CERTIFICATION

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

FRN: 0006-2784-69

Date of Issue : June 10, 2003
Test Report No.: HCT-SAR03-0601
Test Site: HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO., LTD.
FRN: 0005-8642- 21

MODEL : **HWP-2150**

FCC Rule Part(s):	Part 15 & 2; ET Docket 95-19
Classification:	FCC Class B
Standard(s):	FCC Part 15 Class B: 2001
Equipment(EUT) Type:	Fixed WLL Telephone (CDMA)
Trade Name/Model(s):	HYUNDAI / HWP-2150
Port/ Connector(s)	DC Input Port

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-1992.(See Test Report if any modifications were made for compliance)

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. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse of 1988,21 U.S.C.853(a).

Ki Soo Kim

Report prepared by : Ki-Soo Kim
Manager of Product Compliance Team

TABLE OF CONTENTS

PAGE

1. GENERAL INFORMATION

1.1 Product Description

The Hyundai Curitel HWP-2150 Fixed WLL Telephone (CDMA).
Its basic purpose is used for communications. It transmits from CDMA(824.70~848.31) and receives from CDMA(869.70~893.31).
The RF conducted power is rated at CDMA(0.316W).

FCC ID	PP4HWP-2150
EUT Type	Fixed WLL Telephone (CDMA)
Model	HWP-2150
TX Frequency	824.70 — 848.31 MHz (CDMA)
RX Frequency	869.70 — 893.31 MHz (CDMA)
FCC Classification	Non-Broadcast Transmitter held to ear (INE)
Max RF. Output Power	0.316W ERP CDMA (25.0dBm)
Modulation	CDMA
Power Voltage	Input AC: 110~220(0.5A) 50/60 Hz / Output DC: 5.5V(1.2A)

1.2 Related Submittal(s) / Grant(s)

ORIGINAL SUBMITTAL ONLY

1.3 Tested System Details

The Model names for all equipment, plus descriptions used in the tested system (including inserted cards) are:

DEVICE TYPE	MANUFACTURER	MODEL NUMBER	FCC ID / DoC	CONNECTED TO
WLL Phone	HYUNDAI CURITEL INC.	HWP-2150	PP4 HWP-2150	Adaptor/ P.C
Adaptor	SANG IL CO., LTD.	SIH-1205R5W	N/A	WLL Phone
P.C	H.P	HP Pavilion 730K	DoC	N/A
MONITOR	CORNEA TECHNOLOGY CO ., Ltd.	CT1502	PL4CT1502	P.C
KEY BOARD	H.P	5181	DoC	P.C
MOUSE	H.P	M-S48a	DoC	P.C
PRINTER	H/P	C4569A	DoC	P.C

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 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 24,2000(Confirmation Number: EA90661)

2.SYSTEM TEST CONFIGURATION

2.1 Cable Description

The marked "(D)" means the Data Cable and "(P)" means the Power Cable.

	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
WLL Phone(EUT)	N	N	1.8(P), 1.8(D)
Adapter	N	N/A	1.8(P)
MONITOR	N	Y	1.8(P), 1.5(D)
PC(HOST)	N	N/A	1.8(P)
KEY BOARD	N/A	Y	1.8(D)
MOUSE	N/A	Y	1.8(D)
PRINTER	N	Y	1.8(P),1.8(D)

2.2 Noise Suppression Parts on Cable.

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
WLL Phone(EUT)	Y	P.C END	Y	P.C END
Adapter	Y	Adapter END	Y	WLL Phone END
MONITOR	Y	BOTH END	Y	BOTH END
PC(HOST)	N	BOTH END	Y	BOTH END
KEY BOARD	N	N/A	Y	P.C END
MOUSE	Y	P.C END	Y	P.C END
PRINTER	N	N/A	Y	BOTH END

2.3 EUT exercise Software

The EUT was tested on the standby during the radiated and conducted emission testing

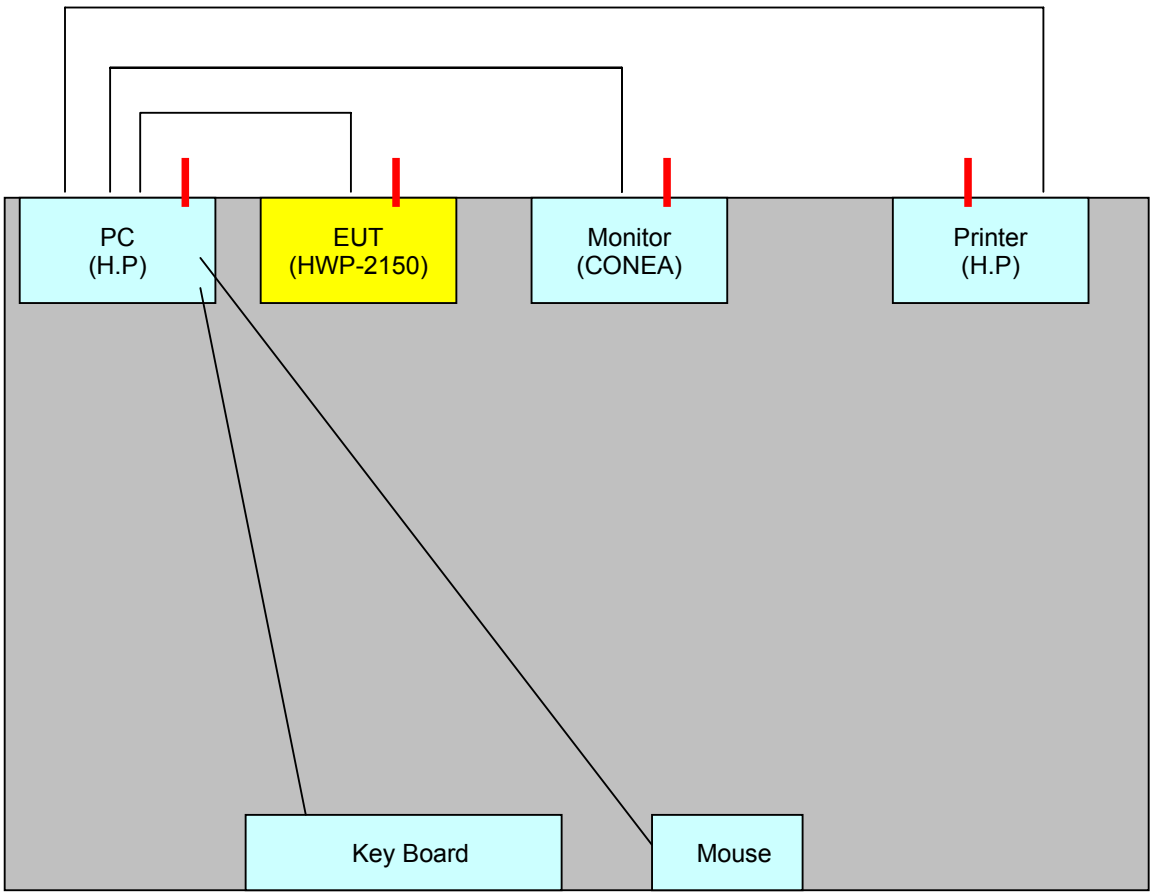
2.4 Equipment Modifications

N/A

2.5 Configuration of Test system

Line Conducted Test : EUT was connected to LISN, all other supporting equipment were connected to another LISN. Preliminary Power line Conducted Emission tests were performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary Radiated Emissions tests were conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse perating condition. Final Radiated Emission tests were conducted at 3 meter open area test site.



[Configuration of Tested System]

3. CONDUCETD AND RADIATED EMISSION TESTS SUMMARY

3.1 Conducted Emissions Tests

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

==========

Humidity Level : 49 % Temperature : 21.8°C
Limit apply to : FCC CFR 47, PART 15, SUBPART B
Type of Tests : CLASS B
Date : June 3, 2003
Result : PASSED BY -18.1 dB
EUT : HWP-2150
Operating Condition : CHARGING BATTERY
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 KHz)

Power Line Conducted Emissions				FCC Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Result	Limit (dBuv)	Margin (dB)
2.225	29.60	NEUTRAL	Quasi-Peak	48	18.3
2.360	29.80	NEUTRAL	Quasi-Peak	48	18.1
2.295	28.00	HOT	Quasi-Peak	48	19.9
2.360	28.30	HOT	Quasi-Peak	48	19.6

Line Conducted Emissions Tabulated Data

Keun Ho. Park

Measured by : Keun-Ho Park / Engineer Date : June 3, 2003

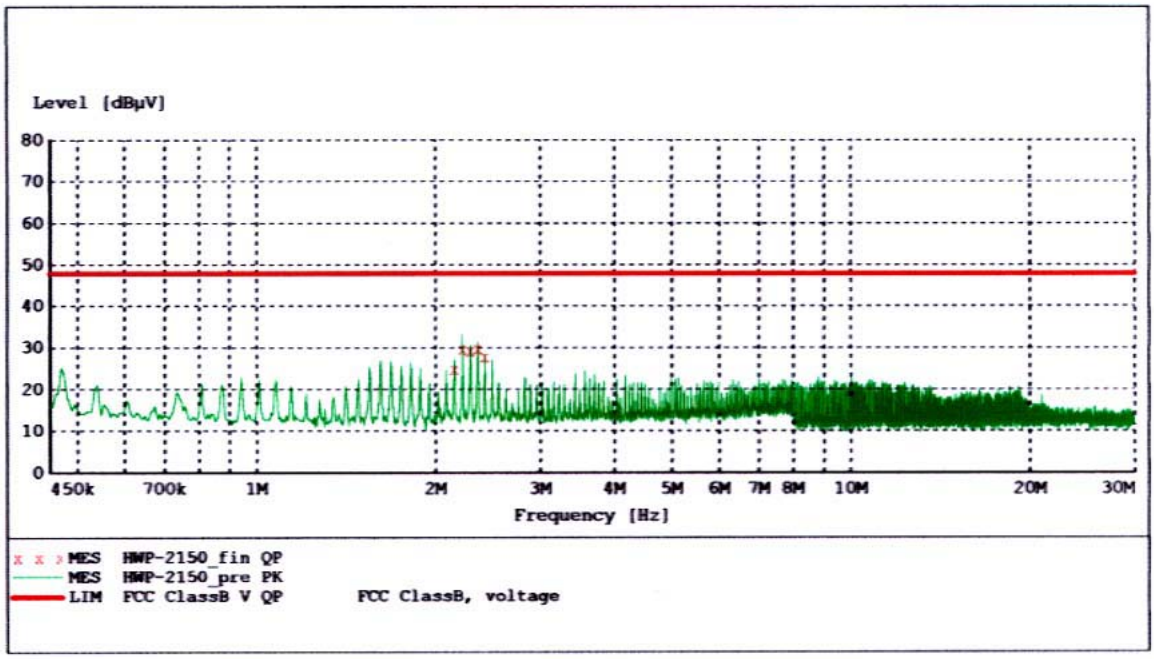
WLL
EMC Testing Laboratory

EUT:	HWP-2150
Manufacturer:	HYUNDAI CURITEL INC.
Operating Condition:	NORMAL
Test Site:	SHIELD ROOM
Operator:	Keun-Ho Park
Test Specification:	FCC CLASS B
Comment:	Neutral
Start of Test:	6/3/03 / 10:25:52AM

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC ClassB Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
450.0 kHz	30.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH2-Z5



MEASUREMENT RESULT: "HWP-2150_fin QP"

6/3/03 10:27AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.155000	24.80	0.3	48	23.1	1	---
2.225000	29.60	0.3	48	18.3	1	---
2.295000	29.20	0.3	48	18.7	1	---
2.360000	29.80	0.3	48	18.1	1	---
2.430000	27.90	0.3	48	20.0	1	---

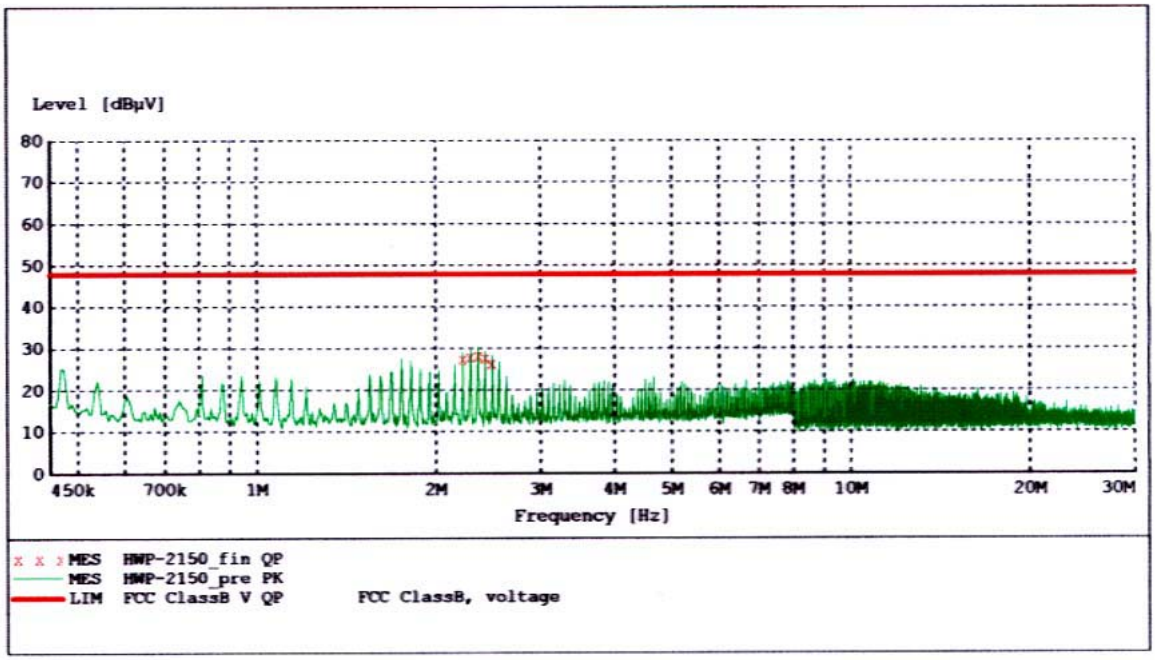
WLL
EMC Testing Laboratory

EUT:	HWP-2150
Manufacturer:	HYUNDAI CURITEL INC.
Operating Condition:	NORMAL
Test Site:	SHIELD ROOM
Operator:	Keun-Ho Park
Test Specification:	FCC CLASS B
Comment:	Hot
Start of Test:	6/3/03 / 10:29:10AM

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC ClassB Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
450.0 kHz	30.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	ESH2-Z5



MEASUREMENT RESULT: "HWP-2150_fin QP"

6/3/03 10:30AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.225000	27.40	0.3	48	20.5	1	---
2.295000	28.00	0.3	48	19.9	1	---
2.360000	28.30	0.3	48	19.6	1	---
2.430000	27.70	0.3	48	20.2	1	---
2.495000	26.40	0.3	48	21.5	1	---

3.2 Radiated Emissions Tests

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

==========

Humidity Level : 46 % Temperature : 22.5°C
Limit apply to : FCC CFR 47, PART 15, SUBPART B
Type of Tests : CLASS B
Date :June 3, 2003
Result : PASSED BY -5.5 dB
EUT : HWP-2150
Operating Condition : Charging Battery
Detector : CISPR Quasi-Peak (6 dB Bandwidth : 120 KHz)

Frequency MHz	Reading dBuV	Ant. Factor dB	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
42.1	17.20	14.22	1.4	V	32.8	40	-7.2
141.6	17.17	14.52	2.6	V	34.3	43.5	-9.2
270.1	15.87	17.97	3.8	V	37.6	46	-8.4
279.8	16.70	18.37	3.8	V	38.9	46	-7.1
289.5	16.48	19.01	3.9	V	39.4	46	-6.6
384.1	19.21	16.79	4.5	V	40.5	46	-5.5
489.5	14.60	18.96	5.0	V	38.6	46	-7.4
136.7	18.45	14.15	2.6	H	35.2	43.5	-8.3
301.6	14.24	16.25	4.0	H	34.5	46	-11.5
347.7	15.79	16.43	4.3	H	36.5	46	-9.5
546.5	10.93	20.14	5.3	H	36.4	46	-9.6
580.4	11.34	20.76	5.5	H	37.6	46	-8.4

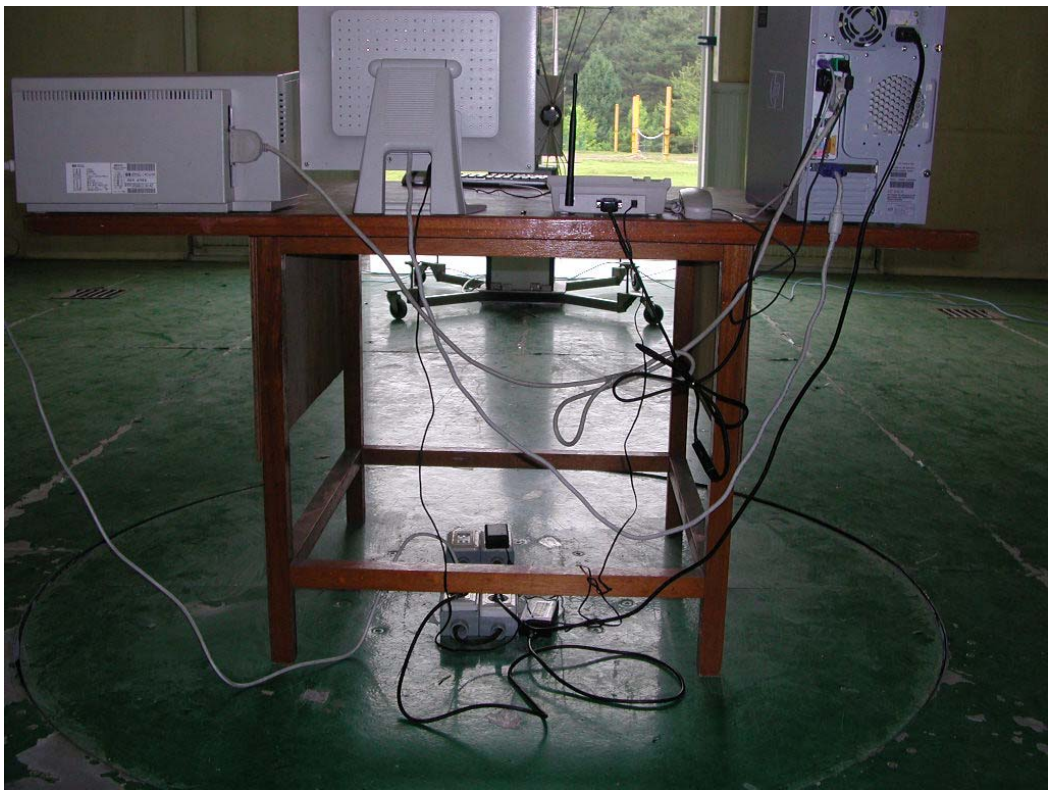
Keun Ho. Park

Measured by : Keun-Ho Park / Engineer Date : June 3, 2003

3.3 Test Setup Photos

3.3.1 Conducted Radiated Emission

3.3.2 Radiated Emission



4.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBuV is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The 30 dBuV/m value was mathematically converted to its corresponding level in uV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBuV/m

Level in uV/m = Common Antilogarithm [(30 dBuV/m)/20] = 31.6 uV/m

5.1 Test Equipment

Type	Manufacture	Model Number	CAL Date
EMI Test Receiver	Rohde & Schwarz	ESH3	2003.02
EMI Test Receiver	Rohde & Schwarz	ESVP	2002.06
EMI Test Receiver	Rohde & Schwarz	ESI40	2003.02
EMI Test Receiver	Rohde & Schwarz	ESVS30	2002.06
LISN	EMCO	3816/2	2002.11
LISN	EMCO	3816/2	2002.08
Amplifier	Hewlett-Packard	8447E	2002.08
Absorbing Clamp	Rohde & Schwarz	MDS-21	2003.04
Dipole Antennas	Rohde & Schwarz	VHAP	2002.07
Dipole Antennas	Rohde & Schwarz	UHAP	2002.07
Biconical Antenna	Rohde & Schwarz	VHA9103	2002.07
Log-Periodic Antenna	Rohde & Schwarz	UHALP9107	2002.07
Antenna Position Tower	EMCO	1051-12	N/A
Turn Table	EMCO	1060-06	N/A
Power Analyzer	Voltech	PM 3300	2003.02
Reference Network	ImpedanceVoltech	IEC 555	N/A
AC Power Source	PACIFIC	Magnetic Module	N/A
AC Power Source	PACIFIC	360AMX	2002.11.25
Controller	HD GmbH	HD 100	N/A
EMI in Motion	HD GmbH	KMS 560	N/A

6.1 Conclusion

The data collected shows that the Hyundai Curitel Inc.. Fixed WLL Telephone (CDMA) **FCC ID: PP4HWP-2150**. complies with §15.107 and §15.109 of the FCC Rules.