HCT CO., LTD.

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EMI CERTIFICATION REPORT

Applicant:
PANTECH CO., LTD.
PANTECH Building, I-2, DMC, Sangam-dong
Mapo-gu, Seoul, 121-792, Korea

Date of Issue: March 10, 2011
Test Report No.: HCTE1103FE09
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **JYCCDMAPTI06**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment (EUT) Type	: US-Cell(BC0) Phone
Trade Name	: PANTECH CO., LTD.
Model Name:	: CDMA PTI06
Port / Connector(s)	: USB Data Port / Headset 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 C63.4-2003. (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.

Report prepared by
: Doo-Hwan Ryu
Test Engineer of EMC Team

Approved by
: Sang-Jun Lee
Manager of EMC Team

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1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **Model: CDMA PTI06, US-Cell(BC0) Phone CDMA 2000 1x with Bluetooth and WLAN** manufactured by **PANTECH CO., LTD.** Its basic purpose is used for communications.

Model	CDMA PTI06
FCC ID	JYCCDMAPTI06
E.U.T Type	US-Cell(BC0) Phone CDMA 2000 1x with Bluetooth and WLAN
TX Frequency	824.70 ㎒ to 848.31 ㎒ (CDMA 835)
RX Frequency	869.70 ㎒ to 893.31 ㎒ (CDMA 835)

1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

Device Type	Manufacturer	Model Number /Serial Number	FCC ID / DoC	Connected to
US-Cell(BC0) Phone CDMA 2000 1x with Bluetooth and WLAN	PANTECH	CDMA PTI06	JYCCDMAPTI06	TA, Notebook PC
Notebook PC	SAMSUNG	NT-R519 *ZLA693AS900033M*	DoC	E.U.T
Notebook PC adaptor	DELTA	SADP-90EH BAD-9019S *BA44-00233A*	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible *3902B008*	-	Notebook PC
SD card (2 GB)	KINGSTON	-	-	E.U.T
USB cable	-	-	-	E.U.T, TA
Headset	-	-	-	E.U.T

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
US-Cell(BC0) Phone CDMA 2000 1X with Bluetooth and WLAN	Headset jack	-	N	(D)1.8
	USB Data	Y	Y	(P, D)0.9
Notebook PC	USB (mouse)	-	Y	(D)1.8

* The marked "(D)" means the data cable and "(P)" means the power cable.

1.5 Noise Suppression Parts on Cable. (I/O cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
US-Cell(BC0) Phone CDMA 2000 1x with Bluetooth and WLAN	Headset jack	N	-	Y	E.U.T end
	USB Data	N	-	Y	Both end
Notebook PC	USB (mouse)	Y	Notebook PC End	Y	Notebook PC End

1.6 Test Methodology

Both Conducted and Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 10 m

1.7 Test Facility

The 10 m semi anechoic chamber used to collect the radiated data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, South Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facilities was submitted to the Commission and accepted dated Sep. 03, 2010 (Registration Number: 90661)

1.8 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

Highest frequency generated or used in the device or on which the device operates or tunes (㎒)	**Upper frequency of measurement range** (㎒)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5^{th} harmonic of the highest frequency or 40 ㎓, whichever is lower

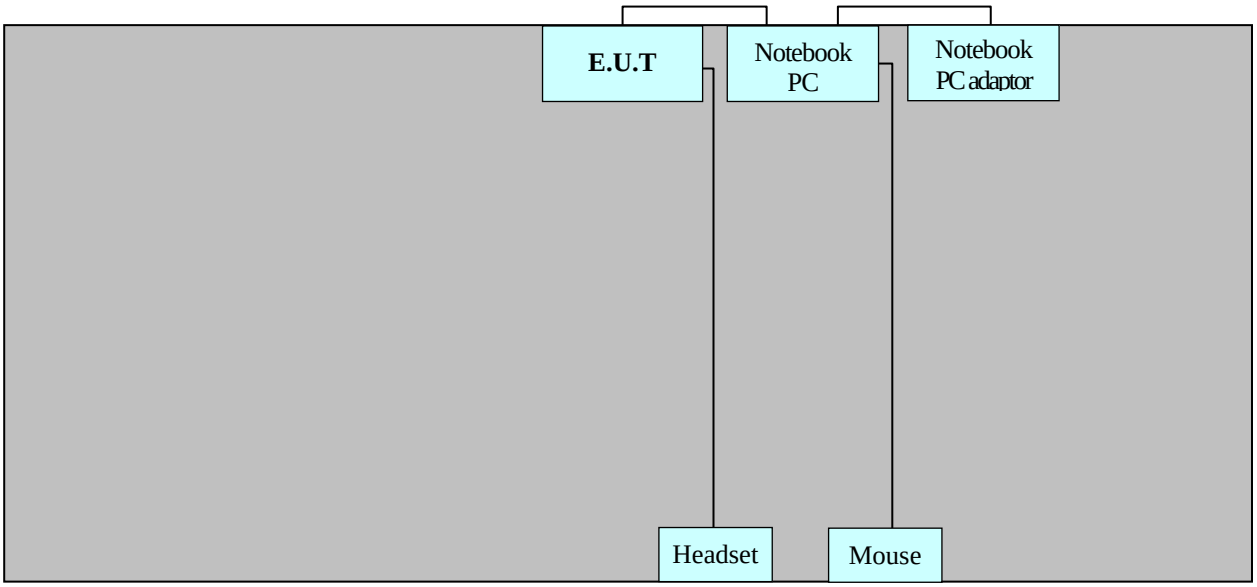
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor and all other peripheral equipment were connected to another LISN. Preliminary power line conducted emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission test : Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 10 m semi anechoic chamber test site.

[Configuration of Tested System]



Non-Conductive Table
Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

During preliminary tests, the following operating mode was investigated:

☒ Data Communication mode

3. 2 Radiated Emission Test

During preliminary tests, the following operating mode was investigated:

☒ Data Communication mode

4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

4.1 Conducted Emission Test

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

Limit apply to	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 ㏈ Bandwidth: 9 ㎑)
Temperature	: 23.5 °C
Humidity level	: 43.4 %
Test date	: March 09, 2011

※ **NOTE:** Refer to page 10 to page 13 for details

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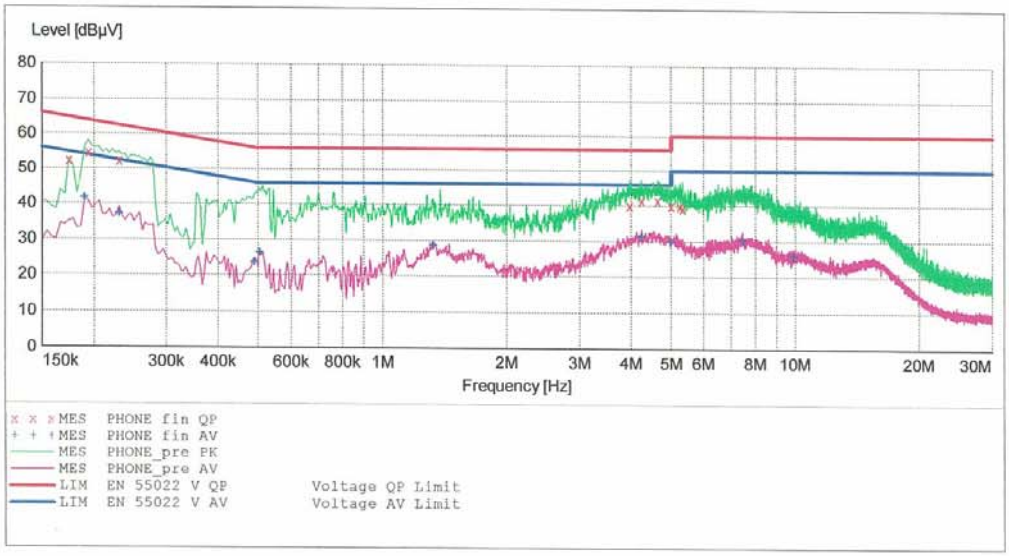
EUT:	CDMA PTI06
Manufacturer:	PANTECH
Operating Condition:	DATA MODE
Test Site:	SHIELD ROOM
Operator:	DH-RYU
Test Specification:	FCC PART 15 CLASS B
Comment:	H

SCAN TABLE: "FCC PART 15 CLASS B"

Short Description: FCC PART 15 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.174010	52.30	10.3	65	12.5	---	---
0.194010	54.50	10.3	64	9.4	---	---
0.230010	52.30	10.3	62	10.2	---	---
3.972000	40.00	10.6	56	16.0	---	---
4.248000	41.50	10.6	56	14.5	---	---
4.652000	41.40	10.7	56	14.6	---	---
5.000000	40.00	10.7	56	16.0	---	---
5.256000	39.80	10.7	60	20.2	---	---
5.328000	39.30	10.8	60	20.7	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

3/9/2011 3:50PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190010	41.60	10.3	54	12.4	---	---
0.230010	37.10	10.3	52	15.3	---	---
0.490010	23.80	10.3	46	22.4	---	---
0.504000	26.40	10.3	46	19.6	---	---
1.328000	28.60	10.4	46	17.4	---	---
4.248000	31.30	10.6	46	14.7	---	---
5.000000	29.80	10.7	46	16.2	---	---
7.448000	30.20	11.0	50	19.8	---	---
9.920000	26.00	11.0	50	24.0	---	---

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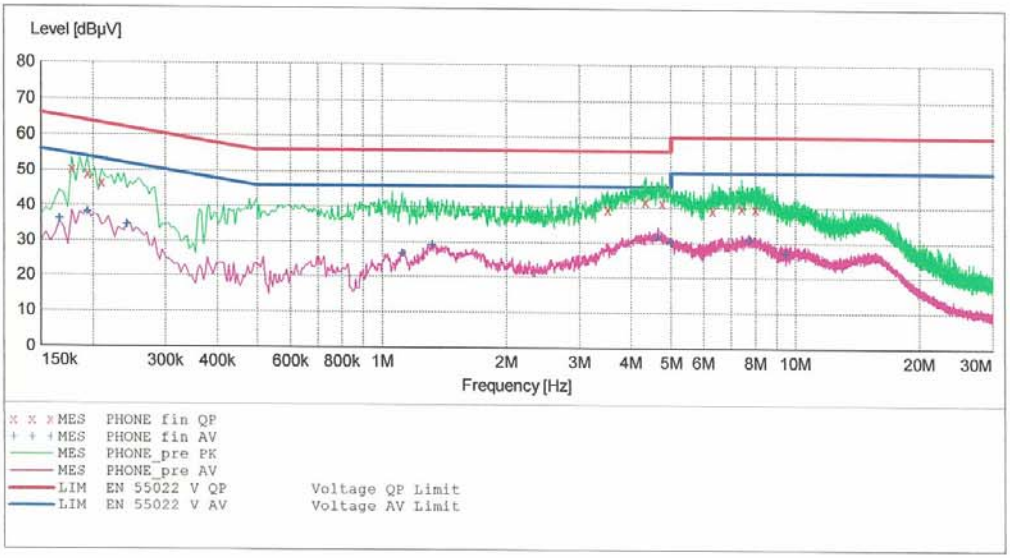
EUT:	CDMA PTI06
Manufacturer:	PANTECH
Operating Condition:	DATA MODE
Test Site:	SHIELD ROOM
Operator:	DH-RYU
Test Specification:	FCC PART 15 CLASS B
Comment:	N

SCAN TABLE: "FCC PART 15 CLASS B"

Short Description: FCC PART 15 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.178010	50.30	10.3	65	14.3	---	---
0.194010	49.00	10.3	64	14.9	---	---
0.210010	46.50	10.3	63	16.7	---	---
3.520000	39.40	10.6	56	16.6	---	---
4.356000	41.80	10.7	56	14.2	---	---
4.764000	41.30	10.7	56	14.7	---	---
6.304000	39.20	10.9	60	20.8	---	---
7.412000	40.10	11.0	60	19.9	---	---
8.032000	39.70	11.0	60	20.3	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.166010	36.10	10.3	55	19.1	---	---
0.194010	38.10	10.3	54	15.8	---	---
0.242010	34.60	10.3	52	17.5	---	---
1.120000	26.60	10.4	46	19.4	---	---
1.324000	29.20	10.4	46	16.8	---	---
4.664000	31.70	10.7	46	14.3	---	---
5.000000	30.20	10.7	46	15.8	---	---
7.776000	31.00	11.0	50	19.0	---	---
9.496000	27.00	11.0	50	23.0	---	---

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4.2 Radiated Emission Test

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

Limit apply to : FCC PART 15 Subpart B Class B
Detector : Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature : 23.1 °C
Humidity level : 43.5 %
Test date : March 03, 2011

Frequency	Reading	Ant. Factor	Cable Loss	Ant. POL	Total	Limit	Margin
MHz	dBμV	dB/m	dB	(H/V)	dBμV/m	dBμV/m	dB
101.5	15.7	9.4	1.3	V	26.4	43.5	17.1
189.4	17.7	10.6	1.8	V	30.1	43.5	13.4
290.3	17.2	12.9	2.2	H	32.3	46.0	13.7
395.4	6.1	15.4	2.6	H	24.1	46.0	21.9
480.0	23.8	17.2	2.9	V	43.9	46.0	2.1
600.0	12.6	19.8	3.2	H	35.6	46.0	10.4

※ **NOTE:**

1. For measurement above 1 GHz, noise level is more than 14 dB below the limit, specified in FCC Part 15.35

5. 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 dBμV is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dBμV/m value is mathematically converted to its corresponding level in μV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission Limits]

Frequency of Emission (㎒)	Field Strength	
	μV/m	dBμV/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

	Type	Manufacturer	Model Number	Serial Number	Next CAL Date
	Conducted Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	100584	2011.05.28
☒	LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
☐	LISN	Rohde & Schwarz	ENV216	3560.6550.02	2011.04.05
☒	Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.52	2011.10.25
	Radiated Emission				
☐	EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2011.10.29
☒	EMI Test Receiver	Rohde & Schwarz	ESU26	100241	2011.09.01
☒	Trilog Antenna	Schwarzbeck	VULB9160	3301	2012.09.13
☒	Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
☒	Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
☒	Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
☐	RF-Amplifier	MITEQ	AMF-6D-0010 1800-35.20P.PS	-	2011.05.20
☐	Base Station	Rohde & Schwarz	CMU 200	1100000802	2012.02.16

7. CONCLUSION

The data collected shows that the **PANTECH. CO., LTD., Model: CDMA PTI06, US-Cell(BC0) Phone CDMA 2000 1x with Bluetooth and WLAN. FCC ID: JYCCDMAPTI06** complies with §15.107 and §15.109 of the FCC rules.