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EMI REPORT (DoC)

PANTECH&CURITEL COMMUNICATIONS, INC.

110-1, ONGJEONG-RI, TONGJIN-EUP, GIMPO-SI,
GYOUNGGI-DO, 415-865, KOREA

Date of Issue: January 25, 2008

Test Report No.: HCT-F08-0115

Test Site: HCT CO., LTD.

HCT FRN: 0005-8664-21

MODEL:

PX-600

Classification/ Standard(s): FCC PART 15 Subpart B / CISPR 22 CLASS B
Equipment (EUT) Type: Dual-Band CDMA/EVDO USB Modem
Trade Name/Model(s): PANTECH&CURITEL COMMUNICATIONS, INC. / PX-600
Port/ Connector(s): DC In 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.

HCT 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).

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1. GENERAL INFORMATION

1.1 Product Description

The PANTECH&CURITEL COMMUNICATIONS, INC. Dual-Band CDMA/EVDO USB Modem/PX-600 Its basic purpose is used for communications. It transmits from CDMA 835 (824.7 MHz – 848.31 MHz), PCS1900 (1851.25 MHz – 1908.75 MHz) and receives from CDMA 835 (869.70 MHz – 893.31 MHz), PCS1900 (1931.25 MHz – 1988.75 MHz).

MODEL	PX-600
EUT Type	Dual-Band CDMA/EVDO USB Modem/ PX-600
TX Frequency	824.70 MHz – 848.31 MHz (CDMA 835) 1851.25 MHz – 1908.75 MHz (PCS 1900)
RX Frequency	869.70 MHz – 893.31 MHz (CDMA 835) 1931.25 MHz – 1988.75 MHz (PCS 1900)
Modulation	CDMA 835/ PCS 1900

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/ PART NUMBER	FCC ID / DoC	CONNECTED TO
Dual-Band CDMA/EVDO USB Modem	PANTECH&CURITEL COMMUNICATIONS, INC.	PX-600	PP4PX-600	Notebook PC
USB Y Cable	GANA	YC150B	-	EUT, Notebook PC
Notebook PC	TOSHIBA	PSMA2K-01D002	-	EUT, TA
Notebook PC Adaptor	DELTA	SADP-65KB B	-	Notebook PC
Mouse	Logitech	M-BT96a	-	Notebook PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Dual-Band CDMA/EVDO USB Modem	USB	Y	Y	0.85 (P, D)
Notebook PC	USB (Mouse)	N/A	Y	1.8(D)

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
Dual-Band CDMA/EVDO USB Modem	USB	N	-	Y	Both End
Notebook PC	USB (Mouse)	N	-	Y	Notebook End

1.6 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.7 Test Facility

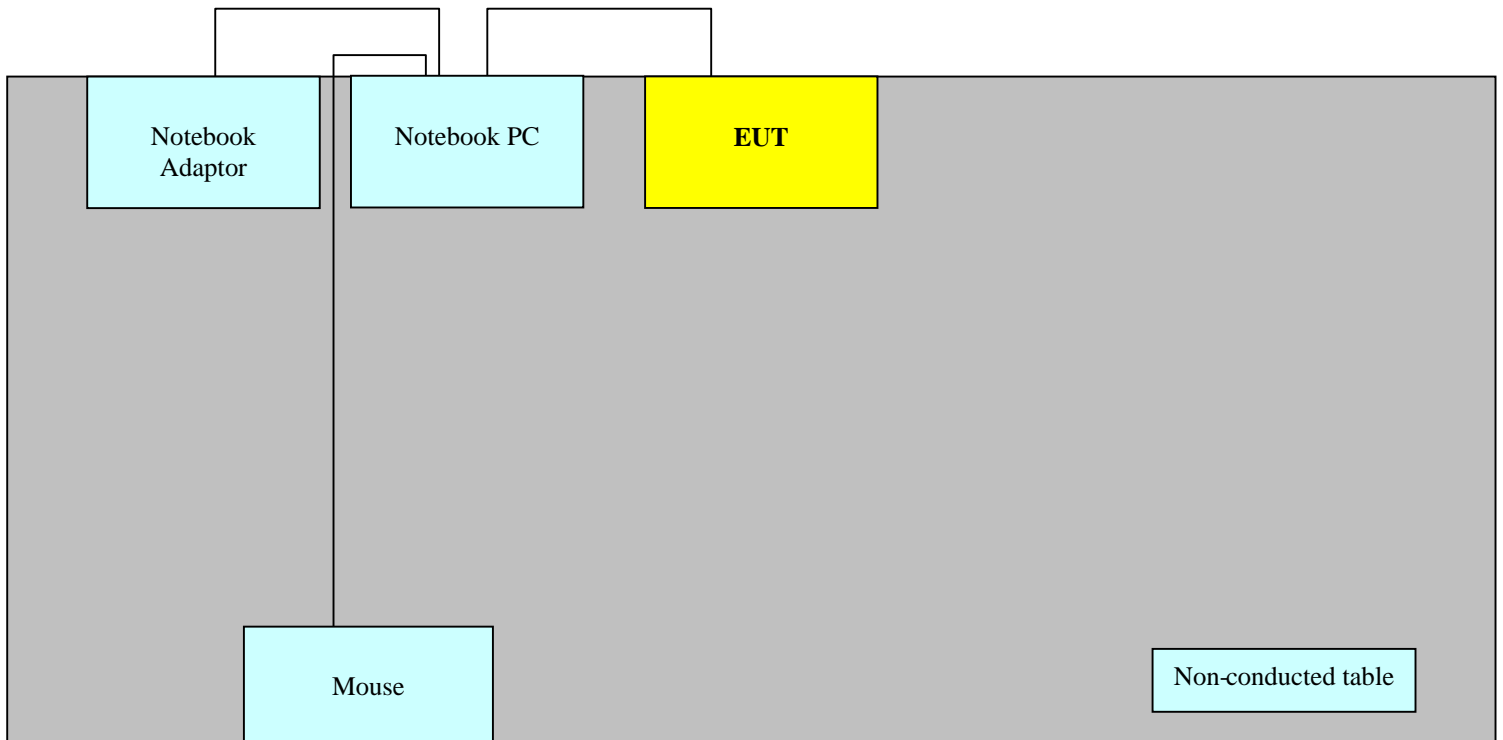
The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 6, 2006(Registration Number: 90661)

2.SYSTEM TEST CONFIGURATION

2.1 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 C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission Test : Preliminary Radiated Emissions 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 3 meter open area test site.



Power Line: 110V AC

[Configuration of Tested System]

3. PRELIMINARY TEST

3.1 Conducted Emission Test

During Preliminary Tests, the following operating mode was investigated

Operation Mode	The worst operating condition
Idle (835,1900) Mode	

3. 2 Radiated Emission Test

During Preliminary Test, the Following operation mode was investigated

Operation Mode	The worst operating condition
Idle (835,1900) Mode	

4. CONDUCTED AND RADIATED EMISSION TESTS 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           : CISPR 22 CLASS B
Result                   : PASSED BY – 13.1 dB
Operating Condition      : Idle mode
Detector                  : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)
Temperature               : 2.0 °C
Humidity Level           : 39.0 %
Test Date                 : January 17, 2008
  
```

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	Amplitude (dBUV)	Conductor	Result	Limit (dBUV)	Margin (dB)
4.96	41.2	HOT	Quasi-Peak	56.0	-14.8
4.96	32.9	HOT	Average	46.0	-13.1
4.96	41.4	NEUTRAL	Quasi-Peak	56.0	-14.6
0.2026	40.3	NEUTRAL	Average	54.0	-13.2

Line Conducted Emission Tabulated Data

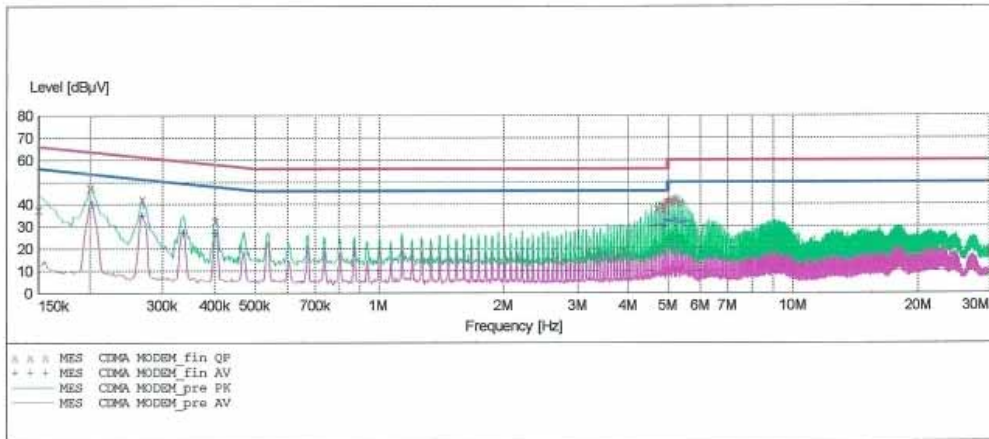
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EMC TEST LAB.

EUT: PX-600
 Manufacturer: PANTECH & CURITEL
 Operating Condition: IDLE MODE
 Test Site: SHIELD ROOM
 Operator: DH. RYU
 Test Specification: CISPR 22 CLASS B
 Comment: H

SCAN TABLE: "CISPR 22 Voltage"

Short Description:		CISPR 22 Voltage					
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer	
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				



MEASUREMENT RESULT: "CDMA MODEM_fin QP"

1/17/2008 5:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	37.70	10.0	66	28.3	---	---
0.200100	47.60	10.0	64	16.0	---	---
0.267600	42.10	10.0	61	19.1	---	---
0.402600	32.80	10.0	58	25.0	---	---
4.692000	38.20	10.6	56	17.8	---	---
4.824000	39.30	10.6	56	16.7	---	---
4.896000	37.50	10.6	56	18.5	---	---
4.960000	41.20	10.6	56	14.8	---	---
5.028000	41.30	10.6	60	18.7	---	---
5.092000	41.60	10.6	60	18.4	---	---
5.228000	42.40	10.7	60	17.6	---	---
5.360000	40.60	10.7	60	19.4	---	---

MEASUREMENT RESULT: "CDMA MODEM_fin AV"

1/17/2008 5:09PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202600	40.00	10.0	54	13.5	---	---
0.267600	35.20	10.0	51	16.0	---	---
0.337600	27.40	10.0	49	21.9	---	---
0.402600	27.40	10.0	48	20.4	---	---
4.692000	30.70	10.6	46	15.3	---	---
4.828000	30.70	10.6	46	15.3	---	---
4.896000	30.10	10.6	46	15.9	---	---
4.960000	32.90	10.6	46	13.1	---	---
5.092000	32.20	10.6	50	17.8	---	---
5.228000	33.40	10.7	50	16.6	---	---
5.364000	32.00	10.7	50	18.0	---	---
5.496000	32.10	10.7	50	17.9	---	---

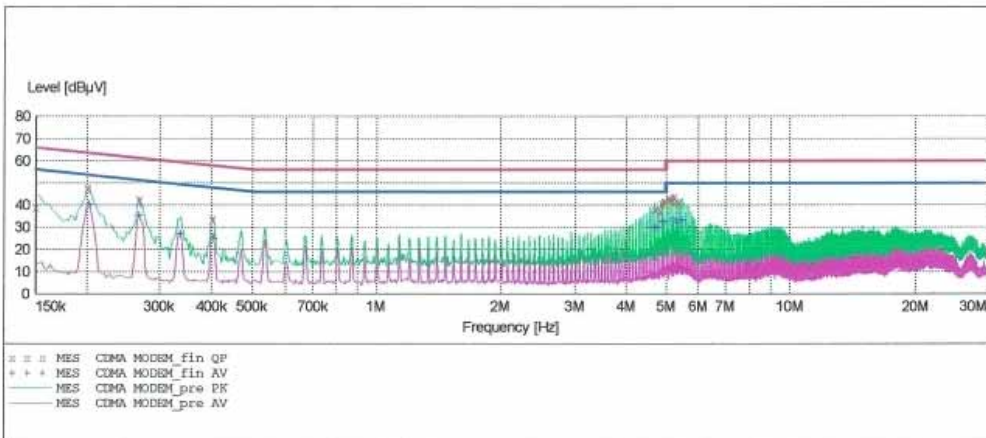
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EMC TEST LAB.

EUT: PX-600
 Manufacturer: PANTECH & CURITEL
 Operating Condition: IDLE MODE
 Test Site: SHIELD ROOM
 Operator: DH. RYU
 Test Specification: CISPR 22 CLASS B
 Comment: N

SCAN TABLE: "CISPR 22 Voltage"

Short Description:		CISPR 22 Voltage					Transducer
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.		
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				



MEASUREMENT RESULT: "CDMA MODEM_fin QP"

1/17/2008 5:05PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150100	39.20	10.0	66	26.8	---	---
0.200100	47.60	10.0	64	16.1	---	---
0.267600	42.50	10.0	61	18.7	---	---
0.402600	33.60	10.0	58	24.2	---	---
4.692000	38.20	10.6	56	17.8	---	---
4.828000	37.30	10.6	56	18.7	---	---
4.892000	40.70	10.6	56	15.3	---	---
4.960000	41.40	10.6	56	14.6	---	---
5.092000	42.60	10.6	60	17.4	---	---
5.160000	42.50	10.6	60	17.5	---	---
5.228000	43.50	10.7	60	16.5	---	---
5.364000	40.90	10.7	60	19.1	---	---

MEASUREMENT RESULT: "CDMA MODEM_fin AV"

1/17/2008 5:05PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.202600	40.30	10.0	54	13.2	---	---
0.267600	35.60	10.0	51	15.6	---	---
0.337600	27.20	10.0	49	22.1	---	---
0.405100	25.30	10.0	48	22.5	---	---
4.692000	30.30	10.6	46	15.7	---	---
4.756000	30.00	10.6	46	16.0	---	---
4.892000	32.60	10.6	46	13.4	---	---
4.960000	32.70	10.6	46	13.3	---	---
5.228000	34.10	10.7	50	15.9	---	---
5.292000	32.50	10.7	50	17.5	---	---
5.428000	33.70	10.7	50	16.3	---	---
5.496000	33.30	10.7	50	16.7	---	---

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
Result                   : PASSED BY – 12.2 dB
Operating Condition     : Idle mode
Detector                 : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Temperature             : 2.0 °C
Humidity Level          : 39.0 %
Test Date                : January 17, 2008
    
```

Frequency MHz	Reading dBuV	Ant. Factor dB/m	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
36.2	13.6	12.4	1.4	V	27.4	40.0	-12.6
241.2	12.2	10.9	3.7	V	26.8	46.0	-19.2
480.0	11.8	16.6	5.2	V	33.6	46.0	-12.4
480.0	12.0	16.6	5.2	H	33.8	46.0	-12.2

Radiated Emissions Tabulated Data

*** For measurement over 1 GHz, noise level is more than 10 dB below the limit.

4.3 Test Setup Photos

4.3.1 Conducted Emission



4.3.2 Radiated Emission



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

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$

Radiated emission limits

Frequency of emission	Field strength	
	$\mu\text{V} / \text{m}$	$\text{dB } \mu\text{V} / \text{m}$
30 ~ 88	100	40.0
88 ~ 216	150	43.5
216 ~ 960	200	46.0
Above 960	500	54.0

6. Test Equipment

<u>Type</u>	<u>Manufacture</u>	<u>Model Number</u>	<u>Next CAL Date</u>
EMI Test Receiver	Rohde & Schwarz	ESI40	2008.11.06
EMI Test Receiver	Rohde & Schwarz	ESCI	2008.06.01
LISN	EMCO	703125	2008.02.03
LISN	Rohde & Schwarz	ESH2-Z5	2008.04.20
LISN	Rohde & Schwarz	ESH3-Z5	2008.06.13
LISN	EMCO	3816/2	2008.06.13
Attenuator	Rohde & Schwarz	ESH3-Z2	2008.10.30
TRILOG Antenna	Schwarzbeck	VULB9168	2008.03.19
Communication Antenna	TDK	LPDA-0802	N/A
Antenna Position Tower	HD	240/520/00	N/A
Base Station	Rohde & Schwarz	CMU 200	2008.02.27
Horn Antenna	Schwarzbeck	BBHA 9120D	2008.03.31
RF-Amplifier	MITEQ	AMF-6D-00101800-35.20P.PS	2008.04.25
Bluetooth Base Station	TESCOM	TC-3000A	2009.01.11

7. Conclusion

The data collected shows that the PANTECH&CURITEL COMMUNICATIONS, INC. Dual-Band CDMA/EVDO USB Modem. MODEL: PX-600 Complies with §15.107 and §15.109 of the FCC Rules.