HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

Product Compliance Division, EMC Team
SAN 136-1, AMI-RI , BUBAL-EUP, ICHEON-SI, KYOUNKI-DO, 467-701, KOREA
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TEST REPORT

Manufacture;
HARSPER CO., LTD.

546-4. Ami-Ri Bubai-Eub, Ichon-City, Kyoungki-Do Korea

HARSPER FRN : 00007-9131-06

Date of Issue : August 14, 2006

Test Report No.: HCT-F06-0801

Test Site: HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO., LTD.
HCT FRN : 0005-8664-21

FCC ID : **O5XHP-421VTM**

MODEL : **HP-4210VTM**

Rule Part(s):	**Part 15 & 2**
Equipment Class:	**FCC Class B Peripheral Device (JBP)**
Standard(s):	**FCC Class B: 2003**
EUT Type:	**PDP MONITOR**
Max. Resolution(s):	**1280×1024(@60Hz)**
Model(s):	**HP-4210VTM**
Port/Connector(s):	**DVI&D-Sub(PC)Sound,HDMI,RS-232C,Component1,2, Component Sound1,2,VIDEO 1,VIDEO OUTPUT2,VIDEO 2,AV, SPDIF(optical),Phone Jack,S-VIDEO,S-VIEDO/AC Sound Speak Cable, AC Power**
PDP Panel :	**PDP42V72462/LG Electronics Inc.**

This equipment has been shown to be in compliance 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.
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
: Kun-Hyoung Kim
Test engineer of EMC Tech.Part

Approved by
: Sang Jun LEE
Manager of EMC Tech.Part

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MEASUREMENT REPORT

1.1 Scope

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.

Applicant Name:	**HARSPER CO., LTD.**
Address:	**546-4. Ami-Ri, Bubai-Eub, Ichon-City, Kyoungki-Do Korea**

- **FCC ID : O5XHP-421VTM**
- Equipment Class: **FCC Class B Peripheral Device (JBP)**
- EUT Type: **PDP MONITOR**
- Model(s): **HP-4210VTM**
- Max. Resolution: **1280×1024(@60Hz)**
- Input Power: **AC 100 ~ 240V 50/60Hz**
- Rule Part(s): **FCC Part 15 Subpart B**
- Test Procedure(s): **ANSI C63.4 (2003)**
- Dates of Tests: **August 02, 2006**
- Place of Tests: 254-1,MAEKOK-RI,HOBUP-MYUN,ICHON-SI,KYOUNGKI-DO,467-701,KOREA

2.1 INTRODUCTION

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSIC63.4-2001) was used in determining radiated and conducted emissions emanating from **HARSPER CO., LTD. PDP MONITOR FCC ID: O5XHP-421VTM**

The open area test site and conducted measurement facility used to collect the radiateddata 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 C63.4and CISPR Publication 22. Detailed description of test facility was submitted to the Commissionand accepted dated July 23,2003 (Confirmation Number: EA90661)

3.1 PRODUCT INFORMATION

3.2 Equipment Description

Equipment Under Test (EUT) is the HARSPER CO.,LTD. (Model : HP-4210VTM) PDP MONITOR

FCC ID**: O5XHP-421VTM**
Maximum Resolution(s): **1280×1024(@60Hz)**

Dimensions / Weight: **Main Only : 1220mm(W) x 645mm(H) x 87mm(D)/34Kg**
With Stand : 1220mm(W) x 708.4mm(H) x 305mm(D)/41.2Kg
With Wall Mount : 1220mm(W) x 645mm(H) x 122mm(D)/38.5Kg

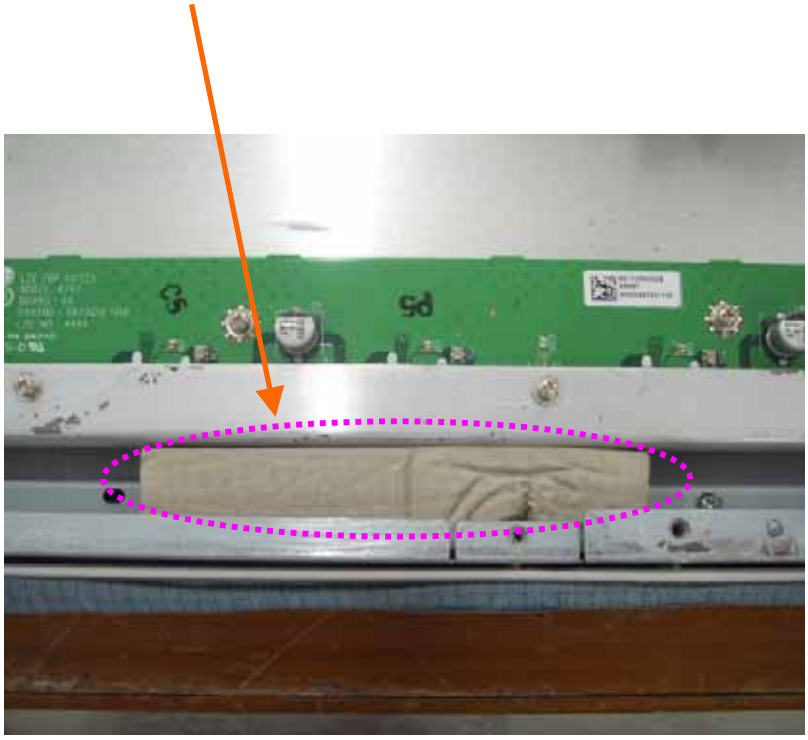
Power Consumption : **AC 100-240V, 50/ 60Hz, 300Watt (Max)**

Connectivity: **Composite Input/Output: RCA ×4 Port (AV INPUT 1,2,3 / AV OUTPUT 1)**
Component 1, 2 Input: RCA×2 Port (Y, Pb/Cb, Pr/Cr: 480i, 480p, 576i, 576p, 720p, 1080i)
S-video Input: Mini Din 4Pin × 1 Port
PC Input :Mini D-Sub 15pin × 1Port
Input(480p,576p,720p(50/60Hz),1080i(50/60Hz))
DVI Input: Mini D-sub 29Pin ×1Port
Input(480p,576p,720p(50/60Hz),1080i(50/60Hz)),HDCP(Factory Option)
Audio In/Output: RCA × 6Port
Speaker output : Cinch Type × 4Port(Stereo L/R),Head Phone Jack × 1Port
External Control ports : Mini D-Sub 9Pin × 1Port
HDMI Port : HDMI × 1Port

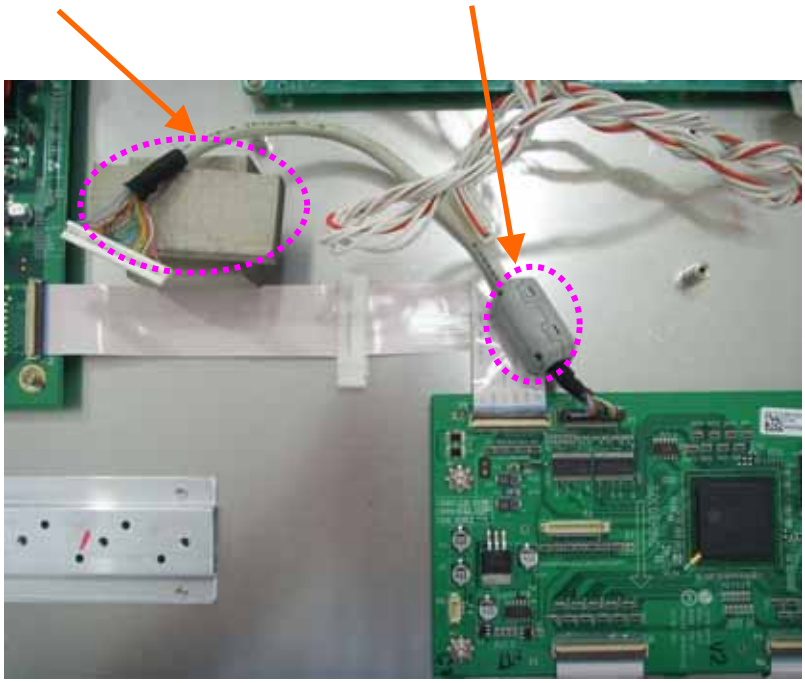
EMI Suppression Devices:

Modifications were made to the device. Please refer to the next page.

1. Attach a gasket



2. Attach a gasket and a Core



4.1 Description of Tests(Conducted & Radiated)

4.2 Powerline Conducted Emission (150kHz- 30MHz)

The power line conducted RFI measurements were performed according to CISPR 22. The EUT was placed on a non-conducting 1.0 by 1.5 meter table which is 0.8 meters in height and 0.40 meters away from the vertical wall of the shielded enclosure. Power to the EUT is provided through a Rohde & Schwarz 50 Ω / 50 uH Line Impedance Stabilization Network (LISN) and the support equipment through a separate Solar 50 Ω / 50 uH Line- Conducted Test Facility LISN. Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME. The spectrum was scanned from 150kHz to 30 MHz. Each maximum EME was measured using an EMI receiver. The detector function of the receiver was set to CISPR quasi- peak and average mode with the bandwidth set to 9 kHz. Each emission was maximized consistent with the typical applications by varying the configuration of the test sample. Interface cables were connected to the available interface ports of the test unit. The effect of varying the position of cables was investigated to find the configuration that produces maximum Diagram emission. Excess cable lengths were bundled at the centre with 30- 40cm. in length. The worst-case configuration is noted in the test report and the photographs are attached. Each EME reported was calibrated using the Rohde & Schwarz SMX signal generator and are listed on Table 1. RFI Conducted FCC Class B

RFI CONDUCTED	**FCC CLASS B Limits dB(uV/m)**	
Freq. Range	**CISPR 22 Quasi-Peak**	**CISPR 22 Average**
150kHz - 0.5MHz	**66-56***	**56-46***
0.5MHz - 5MHz	**56**	**46**
5MHz - 30MHz	**60**	**50**
***Limits decreases linearly with the logarithm of frequency**		

Table 1. FCC CLASS B Conducted Emission Limits

4.3 Description of Tests(Radiated)

Radiated Emissions

Preliminary measurements were made indoors at 3 meter using broadband antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The spectrum was scanned from 30 to 1000 MHz using Tri-log antenna, and above 1 GHz using linearly polarized horn antennas. Final measurements were made outdoors at 10-meter test range using Dipole antennas and EMI receiver. For frequencies above 1 GHz, horn antennas were used. Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition. The EMI receiver detector function was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 120 kHz. The EUT, support equipment, and interconnecting cables were arranged to the configuration that produces the maximum EME emission found during preliminary scan. The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission. Horizontal and vertical antenna polarizations were checked. Each emission was maximized by: varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/ or support equipment, and powering the monitor the computer aux AC outlet, if applicable; and changing the polarity of the antenna, whichever determined the worst-case emission.

ITE Radiated Limits			
Frequency (MHz)	**FCC Limit @ 3m. Quasi-Peak dB[μV/m]**	**FCC Limit @ 10m.* Quasi – Peak dB [μV/m]**	**CISPR Limit @ 10m. Quasi-Peak dB [μV/m]**
30-88	**40.0**	**29.5**	**30.0**
88-216	**43.5**	**33.0**	**30.0**
216-230	**46.0**	**35.6**	**30.0**
230-960	**46.0**	**35.6**	**37.0**
960-1000	**54.0**	**43.5**	**37.0**
> 1000	**54.0**	**43.5**	
*** Limit extrapolated 20 dB/decade**			

Table 2. Radiated Class B limits @ 3-meters

5.1 Support Equipment Used

DEVICE TYPE	MANUFACTURER	MODEL NUMBER	FCC ID / DoC	CONNECTED TO
PDP MONITOR(EUT)	HARSPER CO., LTD.	HP-4210VTM	O5XHP-421VTM	EUT
P.C	DELL	OPTIPLEXGX620	DoC	EUT END
PRINTER	H.P	C4569A	DoC	PC END
KEY BOARD	DELL	SK-8115	DoC	PC END
MOUSE	DELL	MO56U0	DoC	PC END

5.2 Cable Description

		Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
PDP MONITOR (EUT)	Audio In	N/A	Y	1.6(D)
	DVI In	N/A	Y	1.8(D)
	HDMI	N/A	Y	2.8(D)
	D-Sub	N/A	Y	1.6(D)
	Component In1	N/A	Y	1.6(D)
	Component In2	N/A	Y	1.6(D)
	AV Out	N/A	Y	1.6(D)
	AV 1 In	N/A	Y	1.6(D)
	AV 2 In	N/A	Y	1.6(D)
	S-Video In	N/A	Y	1.6(D)
	Speaker port	N/A	Y	0.5(D)
	AC In	N	N/A	1.8(P)
	Serial	N/A	Y	1.8(D)
PC	Parallel	N/A	Y	1.8(D)
	USB	N/A	Y	1.8(D)
	USB	N/A	Y	1.8(D)
	AC In	N	N/A	1.8(P)

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

5.3 Noise Suppression Parts on Cable. (I/O CABLE)

Product Name		Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
PDP MONITOR (EUT)	Audio In	Y	EUT END	Y	BOTH
	DVI In	Y	BOTH	Y	BOTH
	HDMI	N	N/A	Y	BOTH
	D-Sub	Y	BOTH	Y	BOTH
	Component In 1	N	N/A	Y	BOTH
	Component In 2	N	N/A	Y	BOTH
	Audio Out	N	N/A	Y	BOTH
	AV1 In	N	N/A	Y	BOTH
	AV2 In	N	N/A	Y	BOTH
	S-Video In	Y	BOTH	Y	BOTH
	Speaker port	Y	EUT END	Y	EUT END
	AC In	N	N/A	N	BOTH
	Serial	N	N/A	Y	BOTH
PC	Parallel	N	N/A	Y	BOTH
	USB Mouse	N	N/A	Y	BOTH
	USB Key Board	N	N/A	Y	BOTH

6.1 CONDUCTED TEST DATA

D-Sub [1280X1024 60 Hz]

HCT

EMC TEST LAB

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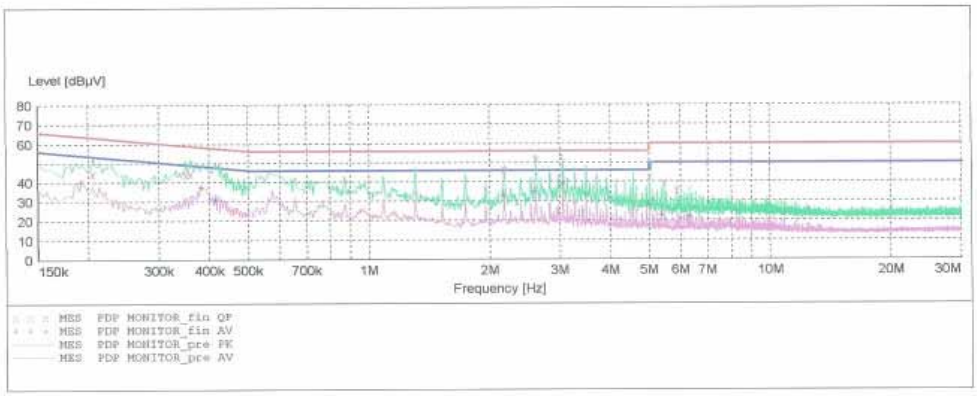
EUT:                    HP-4210VTM
Manufacturer:           HARSPER
Operating Condition:    1280 X 1024 60Hz (DSUB)
Test Site:              SHIELD ROOM
Operator:               KH-KIM
Test Specification:     CISPR 22 CLASS B
Comment:                N
```

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

08/02/2006 3:31PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.205100	44.60	10.1	63	18.8	---	---
0.350100	44.10	10.1	59	14.9	---	---
0.360100	44.20	10.1	59	14.5	---	---
2.175000	46.70	10.3	56	9.3	---	---
2.610000	52.00	10.3	56	4.0	---	---
3.045000	53.20	10.2	56	2.8	---	---
5.000000	42.60	10.3	56	13.4	---	---
5.435000	39.60	10.3	60	20.4	---	---
5.870000	35.50	10.3	60	24.5	---	---

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MEASUREMENT RESULT: "PDP MONITOR_fin AV"

08/02/2006 3:31PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.192600	40.10	10.1	54	13.8	---	---
0.382600	37.30	10.1	48	10.9	---	---
0.415100	30.70	10.1	48	16.8	---	---
2.175000	32.80	10.3	46	13.2	---	---
2.605000	34.70	10.3	46	11.3	---	---
3.045000	39.00	10.2	46	7.0	---	---
5.000000	27.90	10.3	46	18.1	---	---
5.355000	22.70	10.3	50	27.3	---	---
6.305000	22.10	10.3	50	27.9	---	---

HCT

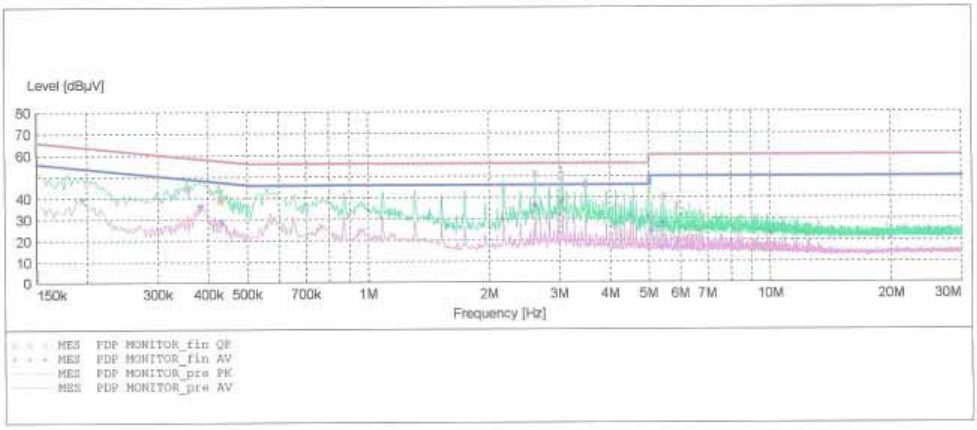
EMC TEST LAB

EUT:	HP-4210VTM
Manufacturer:	HARSPER
Operating Condition:	1280 X 1024 60Hz (DSUB)
Test Site:	SHIELD ROOM
Operator:	KH-KIM
Test Specification:	CISPR 22 CLASS B
Comment:	H

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

08/02/2006 3:28PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.355100	44.60	10.1	59	14.3	---	---
0.425100	39.50	10.1	57	17.8	---	---
0.432600	38.90	10.1	57	18.3	---	---
2.610000	51.40	10.3	56	4.6	---	---
3.045000	53.00	10.2	56	3.0	---	---
3.480000	46.60	10.2	56	9.4	---	---
5.000000	43.80	10.3	56	12.2	---	---
5.435000	40.60	10.3	60	19.4	---	---
5.870000	36.60	10.3	60	23.4	---	---

MEASUREMENT RESULT: "PDP MONITOR_fin AV"

08/02/2006 3:28PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.195100	39.60	10.1	54	14.2	---	---
0.385100	36.00	10.1	48	12.2	---	---
0.432600	28.80	10.1	47	18.4	---	---
2.170000	29.90	10.3	46	16.1	---	---
2.610000	36.40	10.3	46	9.6	---	---
3.045000	38.80	10.2	46	7.2	---	---
5.000000	31.00	10.3	46	15.0	---	---
5.080000	24.20	10.3	50	25.8	---	---
5.435000	28.20	10.3	50	21.8	---	---

DVI [1024X768 60 Hz]

HCT

EMC TEST LAB

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EUT:                  HP-4210VTM
Manufacturer:         HARSPER
Operating Condition:  1024 X 768 60Hz (DVI)
Test Site:            SHIELD ROOM
Operator:             KH-KIM
Test Specification:   CISPR 22 CLASS B
Comment:              N
```
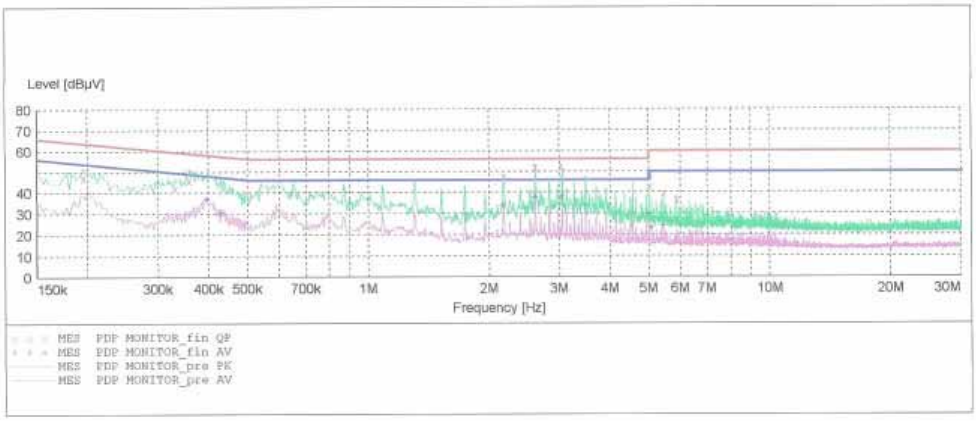

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

08/02/2006 3:17PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.195100	47.30	10.1	64	16.5	---	---
0.330100	42.30	10.1	59	17.1	---	---
0.357600	45.90	10.1	59	12.9	---	---
2.175000	47.50	10.3	56	8.5	---	---
2.610000	52.40	10.3	56	3.6	---	---
3.045000	52.20	10.2	56	3.8	---	---
5.000000	42.80	10.3	56	13.2	---	---
5.435000	39.60	10.3	60	20.4	---	---
5.870000	36.70	10.3	60	23.3	---	---

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MEASUREMENT RESULT: "PDP MONITOR_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.200100	40.10	10.1	54	13.5	---	---
0.397600	36.80	10.1	48	11.1	---	---
0.430100	30.40	10.1	47	16.8	---	---
2.175000	33.80	10.3	46	12.2	---	---
2.610000	37.70	10.3	46	8.3	---	---
3.045000	38.20	10.2	46	7.8	---	---
5.000000	29.80	10.3	46	16.2	---	---
5.075000	23.30	10.3	50	26.7	---	---
5.430000	24.20	10.3	50	25.8	---	---

HCT

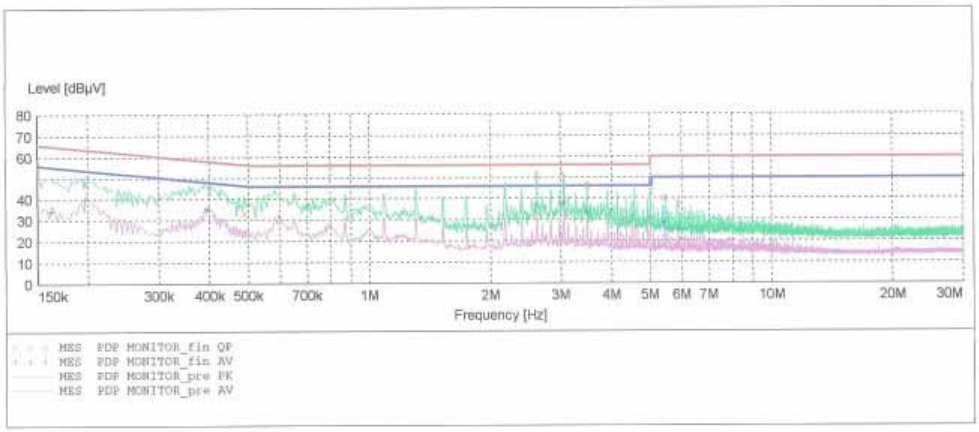
EMC TEST LAB

EUT: HP-4210VTM
Manufacturer: HARSPER
Operating Condition: 1024 X 768 60Hz (DVI)
Test Site: SHIELD ROOM
Operator: KH-KIM
Test Specification: CISPR 22 CLASS B
Comment: H

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.197600	47.80	10.1	64	15.9	---	---
0.400100	43.90	10.1	58	13.9	---	---
0.487600	33.70	10.1	56	22.5	---	---
2.610000	51.80	10.3	56	4.2	---	---
3.045000	52.00	10.2	56	4.0	---	---
3.480000	46.70	10.2	56	9.3	---	---
5.000000	43.70	10.3	56	12.3	---	---
5.435000	40.60	10.3	60	19.4	---	---
5.870000	37.50	10.3	60	22.5	---	---

MEASUREMENT RESULT: "PDP MONITOR_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.162600	34.20	10.1	55	21.1	---	---
0.197600	39.80	10.1	54	13.9	---	---
0.397600	35.20	10.1	48	12.7	---	---
2.610000	37.10	10.3	46	8.9	---	---
3.045000	38.00	10.2	46	8.0	---	---
3.480000	33.30	10.2	46	12.7	---	---
5.000000	30.80	10.3	46	15.2	---	---
5.435000	28.50	10.3	50	21.5	---	---
5.870000	25.10	10.3	50	24.9	---	---

HDMI [1024X768 60 Hz]

HCT

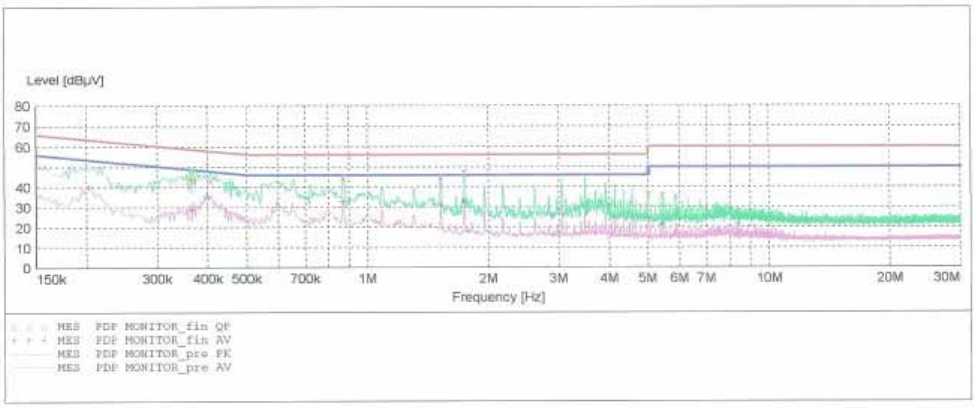
EMC TEST LAB

```
EUT:                    HP-4210VTM
Manufacturer:           HARSPER
Operating Condition:    1024 X 768 60Hz (HDMI)
Test Site:              SHIELD ROOM
Operator:               KH-KIM
Test Specification:     CISPR 22 CLASS B
Comment:                H
```

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

08/02/2006 3:08PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.362600	44.40	10.1	59	14.3	---	---
0.367600	43.80	10.1	59	14.8	---	---
0.407600	43.50	10.1	58	14.2	---	---
0.870000	45.30	10.1	56	10.7	---	---
1.520000	45.60	10.2	56	10.4	---	---
1.740000	47.40	10.3	56	8.6	---	---
5.000000	36.60	10.3	56	19.4	---	---
5.435000	35.90	10.3	60	24.1	---	---
5.870000	35.40	10.3	60	24.6	---	---

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MEASUREMENT RESULT: "PDP MONITOR_fin AV"

08/02/2006 3:08PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	40.10	10.1	54	13.4	---	---
0.367600	29.00	10.1	49	19.6	---	---
0.400100	35.50	10.1	48	12.4	---	---
0.870000	32.70	10.1	46	13.3	---	---
1.525000	30.80	10.2	46	15.2	---	---
1.740000	33.00	10.3	46	13.0	---	---
5.000000	24.80	10.3	46	21.2	---	---
5.430000	21.30	10.3	50	28.7	---	---
8.400000	21.60	10.4	50	28.4	---	---

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HCT

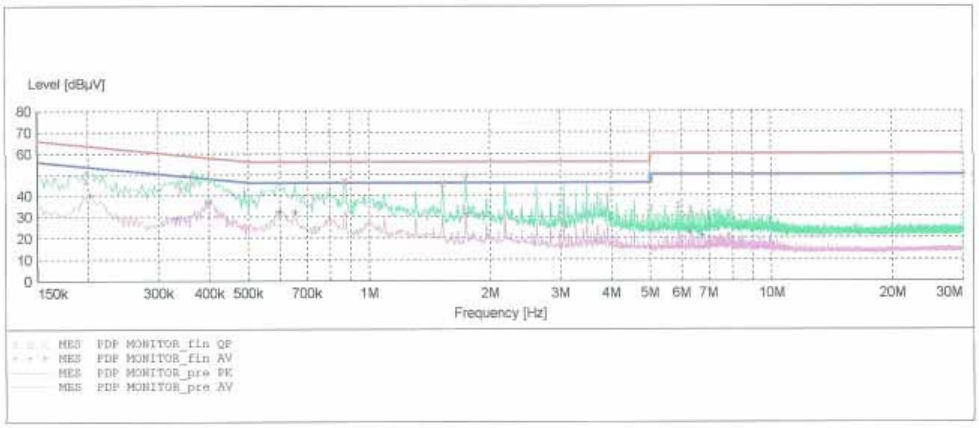
EMC TEST LAB

```
EUT:                    HP-4210VTM
Manufacturer:           HARSPER
Operating Condition:    1024 X 768 60Hz (HDMI)
Test Site:              SHIELD ROOM
Operator:               KH-KIM
Test Specification:     CISPR 22 CLASS B
Comment:                N
```

SCAN TABLE: "CISPR 22 Voltage"

Short Description: CISPR 22 Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PDP MONITOR_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.197600	47.40	10.1	64	16.3	---	---
0.340100	42.90	10.1	59	16.3	---	---
0.365100	46.20	10.1	59	12.4	---	---
0.870000	47.10	10.1	56	8.9	---	---
1.520000	46.10	10.2	56	9.9	---	---
1.740000	48.30	10.3	56	7.7	---	---
5.000000	34.60	10.3	56	21.4	---	---
5.870000	35.60	10.3	60	24.4	---	---
6.305000	33.70	10.3	60	26.3	---	---

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MEASUREMENT RESULT: "PDP MONITOR_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.202600	40.00	10.1	54	13.5	---	---
0.332600	28.80	10.1	49	20.6	---	---
0.400100	37.10	10.1	48	10.7	---	---
0.600000	32.50	10.2	46	13.5	---	---
0.655000	31.80	10.2	46	14.2	---	---
1.735000	31.20	10.2	46	14.8	---	---
5.000000	23.00	10.3	46	23.0	---	---
6.305000	22.40	10.3	50	27.6	---	---
6.740000	20.90	10.3	50	29.1	---	---

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NOTES:

1. **All modes of operation were investigated, and the worst-case emissions are reported.**
2. **The conducted limits are listed on Table 1 (Page 7).**
3. **Line H = Hot Line N = Neutral**

** Measurements using CISPR quasi-peak mode.

7.1 RADIATED TEST DATA

Frequency MHz	Reading dBuV	Ant. Factor dB/m	Cable Loss Db	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
85.6	19.1	8.1	2.1	V	29.3	40.0	10.7
129.1	22.6	11.8	2.6	V	37.0	43.5	6.5
216.0	22.3	9.7	3.3	H	35.3	43.5	8.2
324.0	17.8	13.2	4.1	V	35.1	46.0	10.9
516.1	10.1	17.2	5.2	H	32.5	46.0	13.5
756.0	12.1	21.8	6.3	H	40.2	46.0	5.8

1280 X 1024, 60Hz D-SUB Mode

Frequency MHz	Reading dBuV	Ant. Factor dB/m	Cable Loss Db	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
78.7	9.5	8.6	2.0	H	20.1	40.0	19.9
126.7	17.4	11.5	2.6	V	31.5	43.5	12.0
212.6	22.9	9.6	3.3	V	35.8	43.5	7.7
370.1	13.9	14.2	4.4	H	32.5	46.0	13.5
393.7	16.3	14.7	4.6	V	35.6	46.0	10.4
551.3	9.0	18.1	5.4	V	32.5	46.0	13.5

1024 X 768, 60Hz DVI Mode

Frequency MHz	Reading dBuV	Ant. Factor dB/m	Cable Loss Db	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
49.3	14.3	12.5	1.5	V	28.3	40.0	11.7
85.2	19.9	8.1	2.1	H	30.1	40.0	9.9
129.0	14.5	11.8	2.6	H	28.9	43.5	14.6
393.7	21.5	14.7	4.6	H	40.8	46.0	5.2
409.5	16.9	15.1	4.6	H	36.6	46.0	9.4
516.3	17.4	17.2	5.2	V	39.8	46.0	6.2

1024 X 768, 60Hz HDMI Mode

Radiated Measurements at 3-meters.

NOTES:

1. All modes of operation were investigated, and the worst-case emissions are reported.

2. The radiated limits are listed on Table 2 (Page 8).

** AFCL = Antenna Factor (Roberts dipole) and Cable Loss .

*** Measurements using CISPR quasi-peak mode. Above 1GHz, peak detector function mode is used using a resolution bandwidth of 1MHz and a video bandwidth of 1MHz. The peak level complies with the average limit. Peak mode is used with linearly polarized horn antenna and low-loss microwave cable.

8.1 Sample Calculations

$$dB\,\mu V = \mathbf{20 \log_{10}(\mu V)}$$

$$dB\,\mu V = \mathbf{dBm + 107}$$

8.2 Example 1:

@3.045 MHz

Class B limit	=	56.0 dB μV
Reading	=	53.2 dB μV (calibrated level)
Margin	=	53.2 - 56.0 = -2.8 dB μV
	=	**2.8 dB below limit**

8.3 Example 2:

@ 212.6 MHz

Class B limit	=	43.5 dB μV/m
Reading	=	22.9 dB μV/m (calibrated level)
Antenna Factor + Cable Loss	=	12.9 dB
Total	=	35.8 dB μV/m
Margin	=	35.8 – 43.5 = - 7.7 dB μV/m
	=	**7.7 dB below limit**

9.1 Test Equipment

Type	Manufacture	Model Number	CAL Due Date
EMI Test Receiver	Rohde & Schwarz	ESI40	2006.11.16
EMI Test Receiver	Rohde & Schwarz	ESCI	2006.09.13
LISN	Rohde & Schwarz	ESH2-Z5	2007.04.26
LISN	EMCO	703125	2007.04.26
TRILOG Antenna	Schwarzbeck	VULB 9160	2007.04.17
Antenna Position Tower	HD	MA240	N/A
Turn Table	EMCO	1050	N/A
Power Analyzer	Voltech	PM 3300	2007.03.22
Reference Network Impedance	Voltech	IEC 555	N/A
AC Power Source	PACIFIC	Magnetic Module	N/A
AC Power Source	PACIFIC	360-AMX	2006.11.25
Controller	HD GmbH	HD 100	N/A
SlideBar	HD GmbH	KMS 560	N/A
PULSE LIMITER	Rohde & Schwarz	ESH3-Z2	2006.11.16

10.1 Test Software Used

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a 3-1/2 inch disc, was inserted into drive A and is auto starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is :(1) Display test, (2) RS 232 test (3) Key board test,(4) Printer test,(5) FDD test,(6) HDD test. The complete cycle takes about 20 seconds and is repeated continuously. As the keyboard and mouse are strictly input devices, no data is transmitted to them during test. They are however, continuously scanned for data input activity. The video resolution modes setup and change program was used during the radiated and conducted emission testing.

NOTE: This is a sample of the basic program used during the test. However, during testing, a different software program may be used; whichever determines the worst-case condition. In addition, the program used also depends on the number and type of devices being tested.

11.1 Conclusion

The data collected shows that the **HARSPER CO., LTD. PDP MONITOR FCC ID: O5XHP-421VTM** complies with §15.107 and §15.109 of the FCC Rules.