



FCC EVALUATION REPORT FOR CERTIFICATION

KOREA Standard Technology

Test report No.: KST-FCC-070051

Applicant's Name : Megavision Co., Ltd.
Applicant's Address : 799 Anyang Megavalley, Room 504 Kwangyang-Dong,
Dongan-Gu, Anyang-Shi, GyeongGi-Do, KOREA
Manufacturer's Name : Megavision Co., Ltd.
Manufacturer's Address : 799 Anyang Megavalley, Room 504 Kwangyang-Dong,
Dongan-Gu, Anyang-Shi, GyeongGi-Do, KOREA

EUT's:

FCC ID : QJSMV220HB
Product Name : TFT LCD Monitor
Model Number(s) : MV220HB
Product Options : None
Category : FCC Part 15 subpart B
Class B personal computers and peripherals

Supplementary Information

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by 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.

Test Date : July 13, 2007

Issued Date : July 16, 2007

Tested by:

Jeong, Seok-jin

Approved by:

Lee, Kyung-Jae

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1. Description of E.U.T

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|-------------------------------|--|
| 1) Kind of equipment: | TFT LCD Monitor |
| 2) FCC ID: | QJSMV220HB |
| 3) Model Name: | MV220HB |
| 4) Serial No.: | Proto Type |
| 5) Type of Sample Tested: | Pre-production |
| 6) High Frequency Used: | 14.31818 MHz |
| 7) Adapter: | M/N: LSE9901B1250
S/N: A30704014131
Manufacturer: LISHIN INTERNATIONAL ENTERPRISE CORP
Input: 100 – 240 V, 50/60 Hz
Output: 12 V, 4.16 A |
| 8) Tested Power supply: | 1phase AC120 V, 60 Hz |
| 9) Date of Manufacture: | June, 2007 |
| 10) Manufacture: | Megavision Co., Ltd. |
| 11) Description of Operating: | Scroll "H" Character & play music by "windows media player" |
| 12) Dates of Test: | July 13, 2007 |
| 13) Place of Tests: | KOSTEC Co., Ltd. EMC site |
| 14) Test Report No: | KST-FCC-070051 |

2. Test Facility

The open field test site and conducted measurement facility are used for these testing, where are located following address and drawing. This site was fully described in a report dated November 14, 2002, that was submitted to the FCC.

KOSTEC CO., LTD. (Korea Standard Technology)

Head office & Test Lab ;

:180-254, Annyung-dong, Hwasung-shi, Gyeonggi-do, Korea

Telephone Number : 82-31-222-4251

Facsimile Number: 82-31-222-4252

MIC(Ministry of Information and Communication) Number: **KR0041**

FCC Filing Number. : **525762**

VCCI Membership Number : **2005**

VCCI Registration Number : **R-1657 / C-1763**

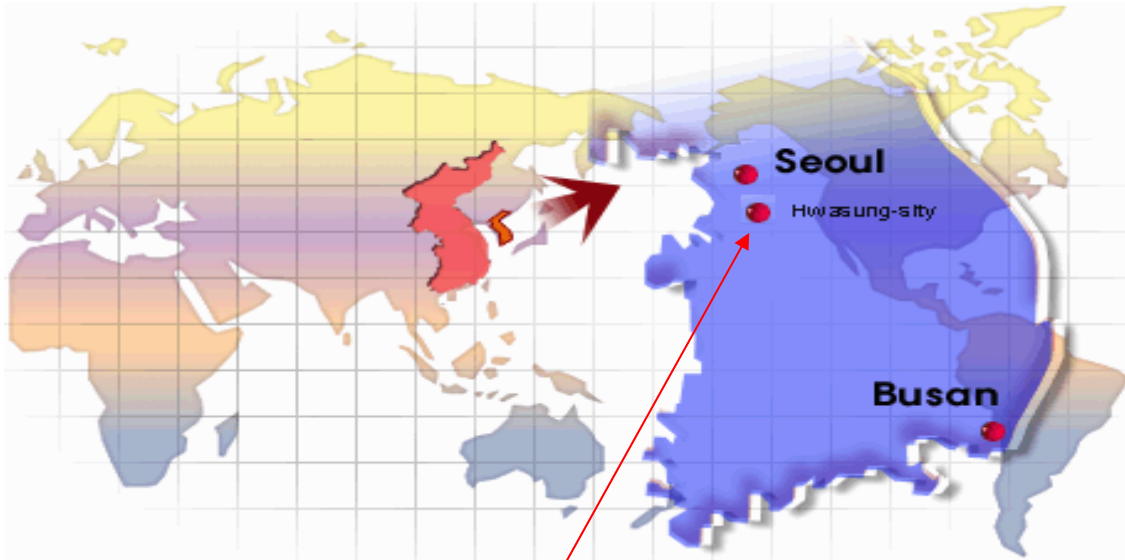
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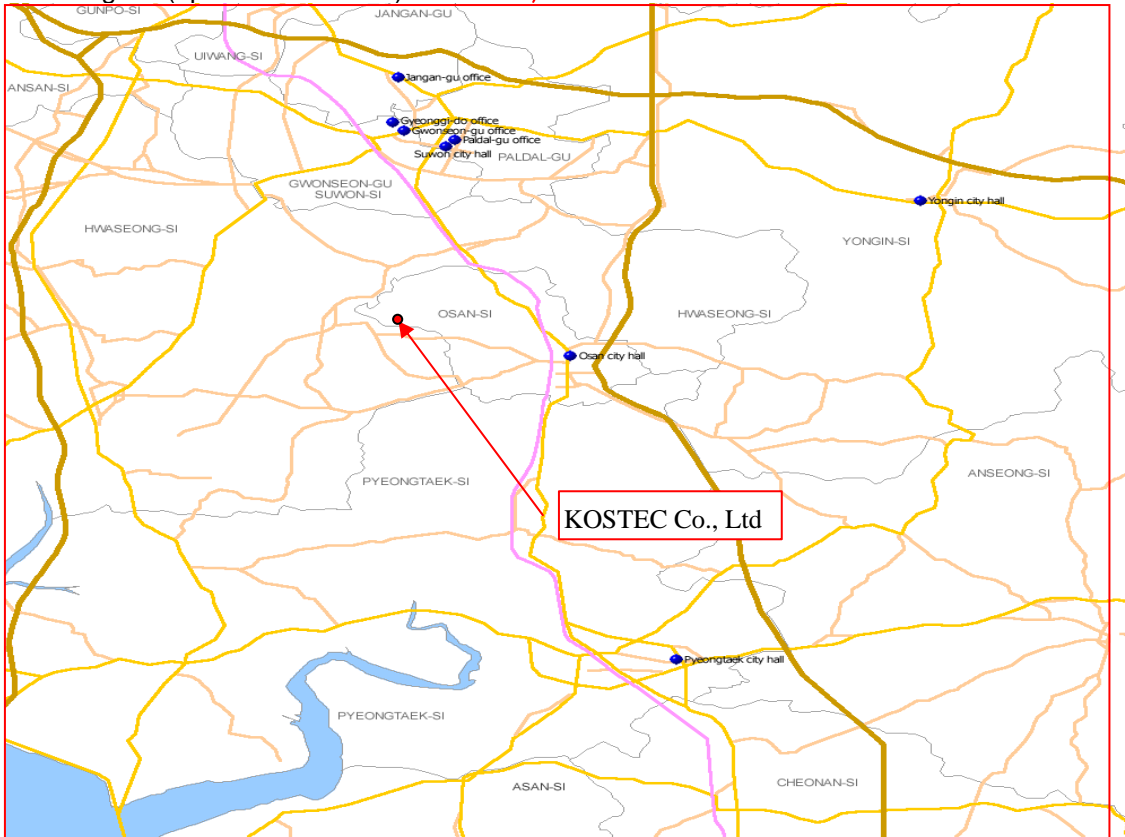
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3. MAP

Korea



Hwasung-shi (open area test site)



4. TEST SYSTEM CONFIGURATION

Operation Environment

Ambient	<u>Temperature</u> (° C)	<u>Humidity</u> (%)	<u>Pressure</u> (kPa)
10 m Open Area site	27	45	100.0
Shielded room:	25	42	100.0

Test site

These testing were performed following locations ;

Shielded room : Conducted Emission

10 m Open Area Site : Radiated Emission

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, Cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, its imperfection, mismatch, and system repeatability.

Based on NIS 80,81, The measurement uncertainty level with a 95 % confidence level were applied.

sample calculation

Conducted emission

The field strength is calculated by adding the LISN factor, cable loss from the measured reading.

The sample calculation is as follows:

$$\begin{aligned}FS &= MR + LF + CL \\MR &= \text{Meter Reading} \\LF &= \text{LISN Factor} \\CL &= \text{Cable Loss}\end{aligned}$$

If MR is 30 dB, LISN Factor 1 dB, CL 1 dB

The result (MR) is

$$30 + 1 + 1 = 32 \text{ dB } \mu V$$

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5. Description of E.U.T.

Product Description

Manufactured By:	Megavision Co., Ltd.
Address:	799 Anyang Megavalley, Room 504 Kwangyang-Dong, Dongan-Gu, Anyang-Shi, Gyeonggi-Do, KOREA
Model:	MV220HB
Serial Number:	Proto type

Configuration of EUT

Description	Manufacturer	Model/Part #	Serial Number
AD board	Megavision Co., Ltd.	MV220M	None
LCD	None	M220EW01	AU220010GCLY8SA27 2D03RP
Inverter	None	RZ-D1217A	None
OSD	Megavision Co., Ltd.	MV220 OSD	None
Adapter	LISHIN INTERNATIONAL ENTERPRISE CORP	LSE9901B1250	A30704014131

EUT Used cables

Cable Type	Shield	Length (m)	Ferrite	Connector	Connection Point 1	Connection Point 2
DC IN	No	1.2	Yes	Jack	EUT	Adapter
VGA	Yes	1.6	Yes	D-Sub	EUT	PC
Audio IN	No	1.2	No	Jack	EUT	PC
Audio OUT	No	1.2	No	Jack	EUT	Headphone
DVI	Yes	1.6	Yes	-	EUT	-
RCA(COMPONENT)	No	1.5	No	-	EUT	-

Operating conditions

The operating mode/system were as follows in details:

Operating : After setting, Connected from PC to EUT by VGA Cable and Audio IN. And then
EUT was tested in a state of data transmission and continuously 'H' pattern
displayed on the TFT LCD Monitor(EUT).

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7. TEST RESULTS

7.1 Conducted emission

Measurement procedure

Mains

The measurements were performed in a shielded room. EUT was placed on a non-metallic table height of 0.4 m above the reference ground plane. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane.

Each EUT power lead, except ground (safety) lead, were individually connected through a LISN to input power source.

Both lines of power cord, hot and neutral, were measured.

Used equipment

Equipment	Model No.	Serial No.	Manufacturer	Next cal date	Used
Test receiver	ESPI3	100109	R&S	2008.03.03	●
L.I.S.N.	ESH2-Z5	100044	R&S	2008.04.30	●
	ESH3-Z5	100147	R&S	2007.08.11	●

Measurement uncertainty

Conducted Emission measurement : ± 2.4 dB (K=2)

Test Data

< Class B >

FREQ. (MHz)	LEVEL (dB μ V)		LINE Pol	Loss (dB)	LIMIT (dB μ V)		MARGIN (dB μ V)	
	QP	AV			QP	AV	QP	AV
0.190	49.04	38.84	L	0.08	64.04	54.04	14.92	15.12
0.250	44.28	35.56	L	0.29	61.76	51.76	17.19	15.91
0.310	37.88	28.13	N	0.29	59.97	49.97	21.80	21.55
0.934	36.69	34.46	L	0.43	56.00	46.00	18.88	11.11
1.246	36.89	34.69	L	0.44	56.00	46.00	18.67	10.87
1.930	35.43	33.36	L	0.44	56.00	46.00	20.13	12.20
5.166	34.47	29.07	N	0.75	60.00	50.00	24.78	20.18
23.918	41.59	34.46	N	2.08	60.00	50.00	16.33	13.46
26.886	42.18	34.92	N	2.31	60.00	50.00	15.51	12.77

* Level = test receiver reading value

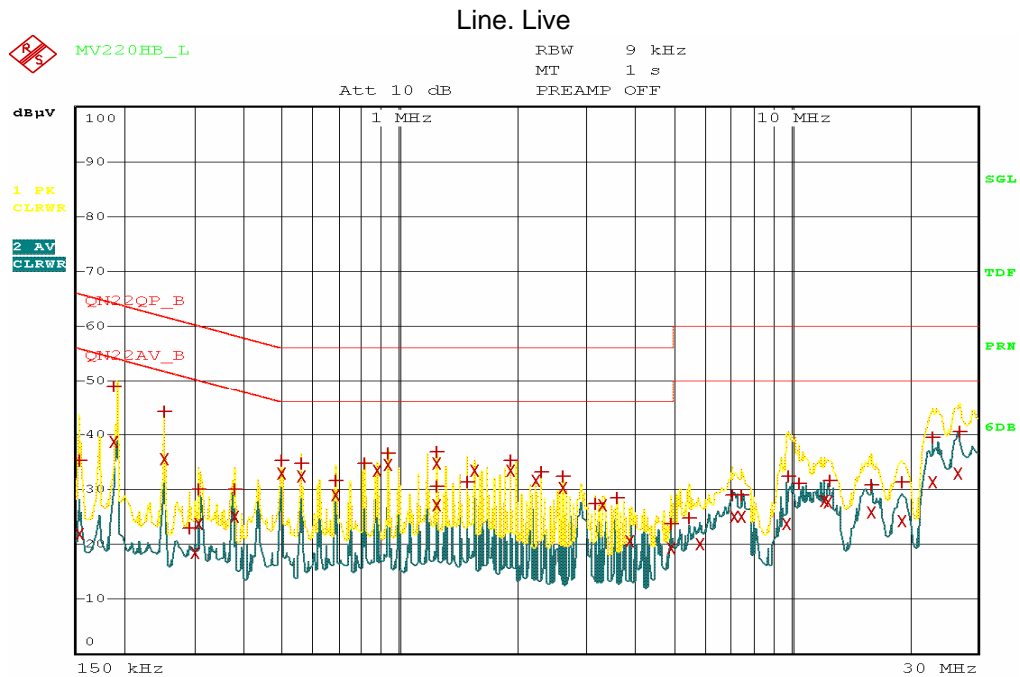
* Loss = LISN insertion Loss + Cable Loss

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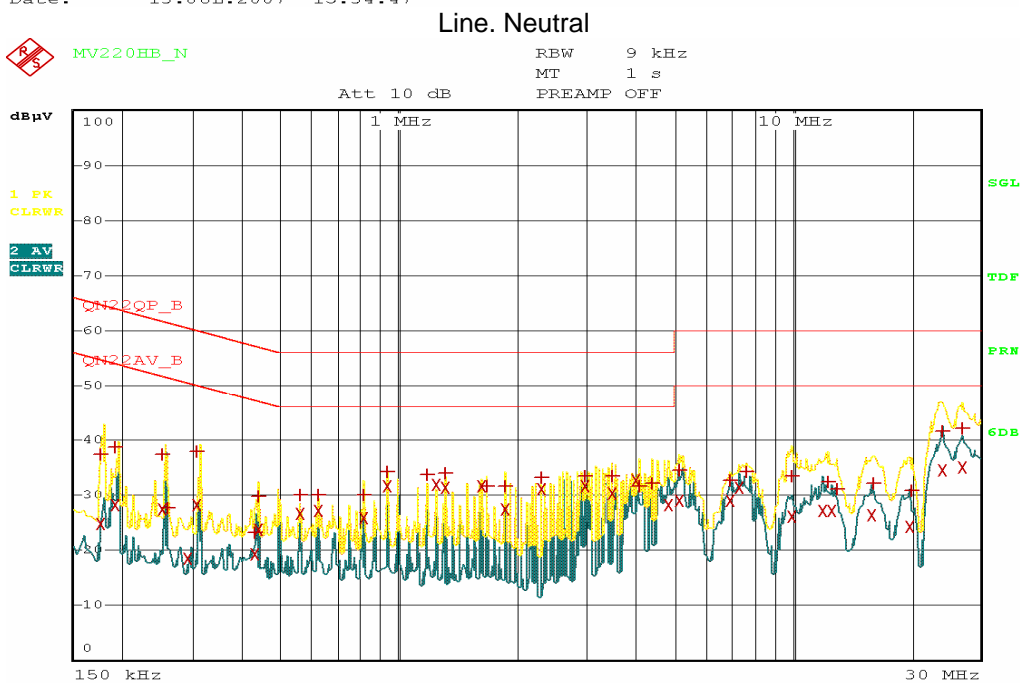
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Conducted emission test graph



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7.2 Radiated Emission

Measurement procedure

A pretest was performed at 3 m distances in a semi-anechoic chamber for searching correct frequency. The final test was done at a 10 m open area test site with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

Used equipment

Equipment	Model No.	Serial No.	Manufacturer	Next cal.	USED
Test receiver	ESCS30	100111	R&S	2008.03.07	●
Ultra broadband antenna	HL562	100075	R&S	2008.03.23	●
Antenna Mast	AT14	None	Daeil EMC	-	●
Turn Table	TT15	None	Daeil EMC	-	●
10 m Open area site	None	None	KOSTEC Lab	-	●
Chamber (3 m)	None	None	FRANCONIA	-	-

Measurement uncertainty

Radiated Emission measurement :

30 ~ 300 MHz + 3.96 dB / -4.04 dB

300 ~ 1000 MHz + 3.04 dB / -3.00 dB

Test Data

<Class B >

Freq (MHz)	Reading (dB μ V)	P (H/V)	H (m)	A (.)	Antenna (dB/m)	Cable Loss (dB)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
66.82	17.29	V	1.60	110	5.25	3.26	25.80	40.0	14.20
132.70	16.10	V	2.20	270	8.50	4.10	28.70	43.5	14.80
143.20	14.44	H	2.50	180	7.83	4.13	26.40	43.5	17.10
191.37	22.46	H	2.40	270	7.20	4.74	34.40	43.5	9.10
235.54	15.65	H	2.20	110	8.90	5.15	29.70	46.0	16.30
250.22	17.50	H	2.20	180	9.40	5.70	32.60	46.0	13.40
353.31	13.60	V	1.80	90	12.39	7.11	33.10	46.0	12.90

Reading = Test receiver reading / P= antenna Polarization / H=antenna Height

A=turn table Angle / Antenna = antenna factor / Cable loss = used cable loss

Result = reading + antenna + loss / Margin = Limit - result

* Receiving Antenna Mode: Horizontal, Vertical / * Test site: 10 m Open area site