

EU Declaration of Conformity

(EMC)

Model : 150TFTx23xxx

Kind of Product : TFT monitor 23 inch

Applicant : Suzo International Nederland B.V.

Address : Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland

Manufacturer : Suzo International Nederland B.V.

Address : Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland

**Test Standards : EN 55022 : 2010, CLASS B
EN 55024 : 2010**

We hereby declare,

Electromagnetic Compatibility Directives(2004/108/EC) are fulfilled, as laid out in the guideline set down by the member states of the European Directive. This declaration is valid for all samples that are part of this declaration, which are manufactured according to the production charts appendix.

Date of Issue : Jun 04, 2013

Certificate of conformity / Test report issued by :

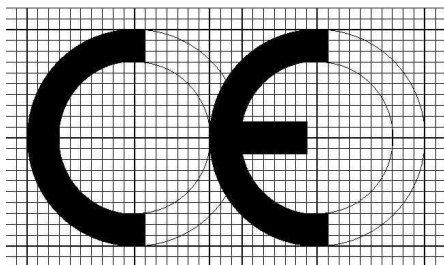
Test Report Number : KR0140-CE-13013

EMC : EMC Labs Co., Ltd.

Technical documentation kept at :

Suzo International Nederland B.V.

Which will be made available upon request.



The CE conformity mark concern standards relevant for the EMC or LVD evaluation.

Signature

/ president

(Name and Signature of Authorized Person)

EMC TEST REPORT

Test Report File No : **KR0140-CE-13013**

Date of Issue : **2013.06.04**

Date of Testing : **2013. 05.23 ~ 2013.05.25**

Model : **150TFTx23xxx**

Kind of Product : **TFT monitor 23 inch**

Applicant : **Suzo International Nederland B.V.**

Address : **Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland**

Manufacture : **Suzo International Nederland B.V.**

Address : **Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland**

Test Standards : **EN 55022 : 2010, CLASS B**
EN 55024 : 2010

Testing Laboratory : **EMC Labs Co., Ltd.**

Test Result : **Complied**

This product complies with the requirements of the EMC Directive 2004/108/EC.

The results in this report apply only to the sample tested.

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Tested by:

Y. J. Park

PARK, YONG-JIN

Approved by:

Choi. Y. S

CHOI, YOUNG-SIK

EMC Labs Co., Ltd.

#426 Shaum-Dong, Icheon-Shi, Gyeonggi-Do, 467-080, Korea

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1. Test Regulation

Emission : EN 55022 : 2010

EN 55022 : 2010

Class B Equipment Class A Equipment

Generic

EN61000-3-2 : 2006 +A2 : 2009

EN61000-3-3 : 2008

Immunity : EN 55024 : 2010

EN 61000-4-2 : 2009

EN 61000-4-3 :2006 +A2:2010

EN 61000-4-4 : 2004 +A1:2010

EN 61000-4-5 : 2006

EN 61000-4-6 : 2009

EN 61000-4-8 : 2010

EN 61000-4-11 : 2004

2. Applicant Information

- ◆ **Applicant** : Suzo International Nederland B.V.
- ◆ **Address** : Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland
- ◆ **Telephone Number:** +31-(0)186-643333
- ◆ **Fax Number** : +31-(0)186-643322
- ◆ **E-mail** : Johan.Somers@suzohapp.nl
- ◆ **Contact Person** : Mr.J.C.W.M. Somers
- ◆ **Manufacture** : Suzo International Nederland B.V.
- ◆ **Address** : Antonie van Leeuwenhoekstraat 9 3261 LT Oud Beijerland Nederland

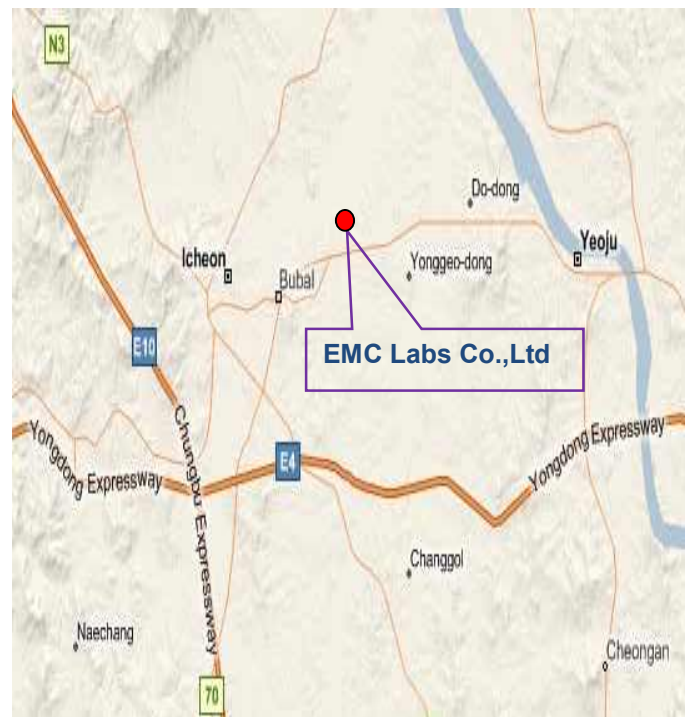
3. Laboratory Information

Address

EMC Labs Co., Ltd.

Laboratory : #426 Shaum-Dong, Icheon-Shi, Gyeonggi-Do, 467-080
Telephone Number : +82-31-637-8895
Facsimile Number : +82-505-116-8895
FCC Filing No. : 88495
FCC CAB : KR0140

SITE MAP



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4. Equipment Under Test

4.1 General Information

- Table-Top
 Floor – Standing
 Table-Top & Floor-Standing (Combination)

4.2 Configuration of the equipment under test

Equipment	Model	Manufacture	Serial No.
PC	DB-P60	SAMSUNG	185K98DP100422E
PRINTER	Laser 2100U	SAMBO	202A1012858
PS/2 KEYBOARD	PCK-200P	IMATION	090616987
SERIAL MOUSE	P801	SAMSUNG	01082759
USB MOUSE	M-UAE96	LG	HC7330J06RN
HEADSET	FS-850	FUSION FNC	-
DC POWER SUPPLY	OPE-305Q	ODA	oda-01-0923-01831

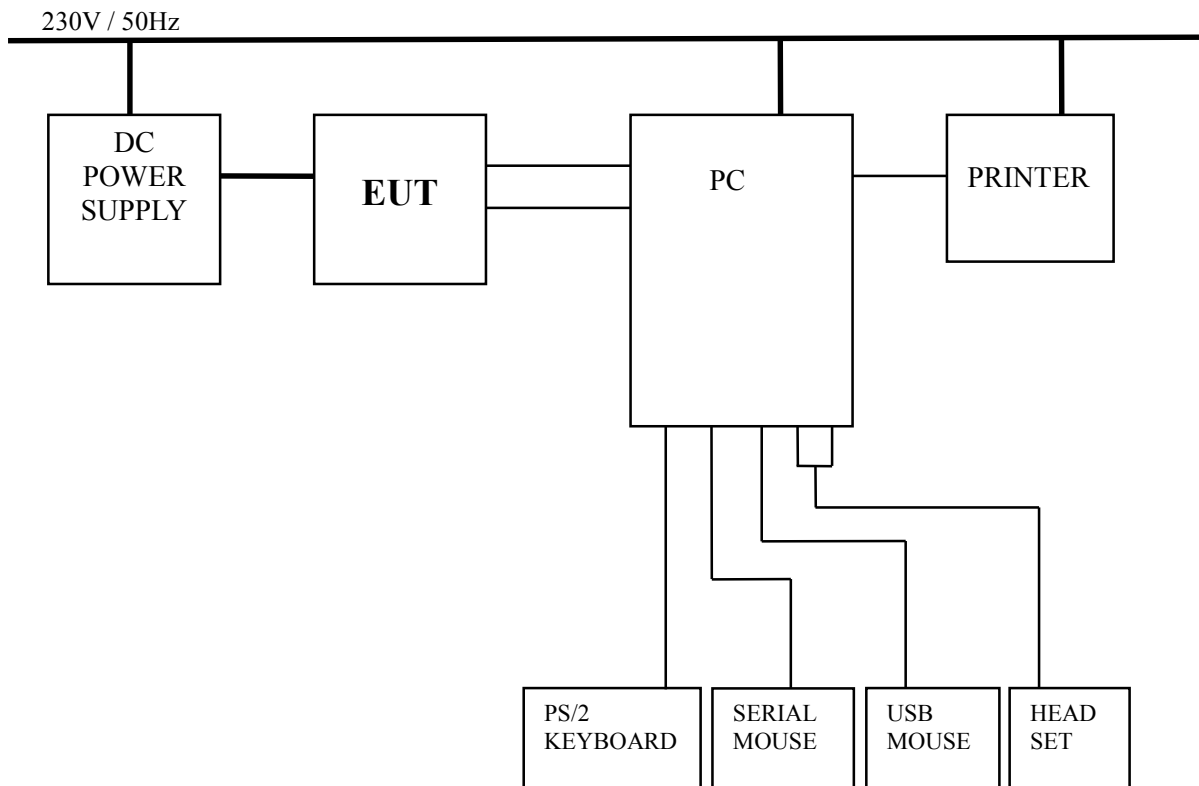
Type	Description	Connection	Spec.	Length(m)
DC Power	12V	DC POWER SUPPLY	Non-Shield	1.0
Signal	VGA	PC	Shield	1.5
	DVI	PC	Shield	1.5

4.3 Operating Conditions

The equipment under test was operated during the measurement under following

Test mode	Normal Operating
1	"H" Pattern scrolling mode (Resolution – 1920x1080, 60Hz) (DVI mode, VGA mode)

4.4 The drawing of general test setup



5. Summary of Test Result

5.1 Summary of EMI emission test result

EN 55022 : 2010

Information technology equipment-Radio disturbance characteristics – Limits and methods of measurement.

Test items	Test methods	Result
Conducted Emission (Power Line)	EN55022:2010	Pass
Conducted Emission (Telecommunication Line)	EN55022:2010	Not Applicable
Radiated Emission (Below 1GHz)	EN55022:2010	Pass
Radiated Emission (Above 1GHz)	EN55022:2010	Pass

EN 61000-3-2 : 2006, +A2 : 2009

Limits for harmonic-current emissions (equipment input current up to including 16A per phase)

Test items	Test methods	Result
Harmonics	EN 61000-3-2 : 2006,+A2:2009	Not Applicable

EN 61000-3-3 : 2008

Limitation of voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16A per phase and not subject to conditional connection

Test items	Test methods	Result
Flicker	EN 61000-3-3: 2008	Not Applicable

5.2 Summary of immunity test result

EN 55024 : 2010

Information technology equipment-Immunity characteristics - Limits and methods of measurement.

Test items	Test methods	Result
Electrostatic discharge	EN 61000-4-2:2009	Pass
Electromagnetic field	EN 61000-4-3:2006+A2:2010	Pass
Electric fast transients	EN 61000-4-4:2004 +A1:2010	Pass
Surge	EN 61000-4-5:2006	Not Applicable
Conducted Immunity	EN 61000-4-6:2009	Pass
Magnetic field Immunity	EN 61000-4-8:2010	Not Applicable
Voltage dip/interruption	EN 61000-4-11:2004	Not Applicable

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5.3 Performance criteria

Performance criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance.

If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B: After the test, the equipment shall continue to operate as intended without operator intervention.

No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the apparatus is used as intended.

The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion C: Loss of function is allowed, provided the function is self recoverable or can be restored by the operating of the controls by the user In accordance with the manufacturer's instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

6. Test Results

6.1 Conducted Emission

Environmental Conditions

Temperature	22 °C
Humidity	46 % R.H.
Test Area	Conducted Room
Test date	2013.05.23

6.1.1 Limits of conducted emission measurement

- AC main

Frequency [MHz]	Class A (dB(μ V))		Class B (dB(μ V))	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	79	66	66 ~ 56 *	56 ~ 46*
0.5 ~ 5	73	60	56	46
5 ~ 30	73	60	60	50

*The limit decreases linearly with the logarithm of frequency.

- Telecommunication

Frequency [MHz]	Class B Voltage Limits (dB(μ V))		Current Limits (dB(μ A))	
	Quasi-Peak	Average	Quasi-Peak	Average
0.15 ~ 0.5	84 to 74	74 to 64	40 to 30	30 to 20
0.5 ~ 30	74	64	30	20

* The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz

* The current and voltage disturbance limits are derived for use with an impedance stabilization Network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is $20 \log_{10} 150/I = 44$ dB).

6.1.2 Measurement procedure

Mains

The measurements were performed in a shielded room.

EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane.

The rear of table was located 0.4 m to the vertical conducted plane.

EUT was power through the LISN, which was bonded to the ground plane.

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

All I.O cables are positioned to simulate typical actual usage according to the test standard.

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

6.1.3 Used equipments

Equipment	Model	Serial No.	Makers	Next Cal. Date	Used
Test Receiver	LSA-30	L07126026	LIG Nex1	2014.01.25	<input checked="" type="checkbox"/>
LISN	ESH3-Z6	837950/023	R&S	2014.01.29	<input checked="" type="checkbox"/>
LISN	ESH3-Z6	100329	R&S	2014.01.29	<input checked="" type="checkbox"/>

6.1.4 Measurement uncertainty

Conducted emission measurement : (k=2, 95%)

9kHz-150 kHz : ± 3.263 [dB]

150kHz-30 MHz : ± 2.960 [dB]

6.1.5 Test data

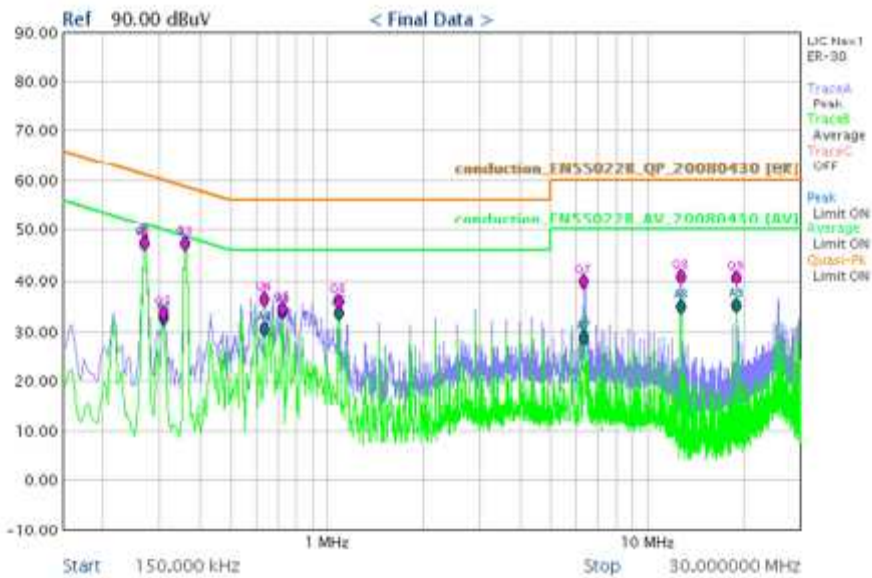
- Note. QP = Quasi-Peak, AV= Average
- Loss = LISN Loss + Cable Loss
- Measurement time : 1 s

6.1.6 Test Result

[HOT line] – DVI MODE

CONDUCTED EMISSION

SCREEN SHOT



FINAL TABLE

[Final Table - Average]

No	Freq (MHz)	Level (dBuV)	Corr (dB)	Limit (dBuV)	Margin (dB)	State	Reference
1	0.270000	47.22	0.32	51.12	3.90	Pass	AV
2	0.309000	32.61	0.27	50.00	17.39	Pass	AV
3	0.363000	47.08	0.20	48.66	1.58	Pass	AV
4	0.638000	30.34	0.27	46.00	15.66	Pass	AV
5	0.725000	33.72	0.27	46.00	12.28	Pass	AV
6	1.088000	33.71	0.20	46.00	12.29	Pass	AV
7	6.350000	28.72	0.25	50.00	21.28	Pass	AV
8	12.730000	34.86	0.46	50.00	15.14	Pass	AV
9	19.070000	35.00	0.45	50.00	15.00	Pass	AV

[Final Table - Quasi-Pk]

No	Freq (MHz)	Level (dBuV)	Corr (dB)	Limit (dBuV)	Margin (dB)	State	Reference
1	0.270000	47.20	0.32	61.12	13.92	Pass	QP
2	0.309000	33.56	0.27	60.00	26.44	Pass	QP
3	0.363000	47.08	0.20	58.66	11.58	Pass	QP
4	0.638000	36.24	0.27	56.00	19.76	Pass	QP
5	0.725000	34.28	0.27	56.00	21.72	Pass	QP
6	1.088000	35.80	0.20	56.00	20.20	Pass	QP
7	6.350000	39.71	0.25	60.00	20.29	Pass	QP
8	12.730000	40.57	0.46	60.00	19.43	Pass	QP
9	19.070000	40.43	0.45	60.00	19.57	Pass	QP

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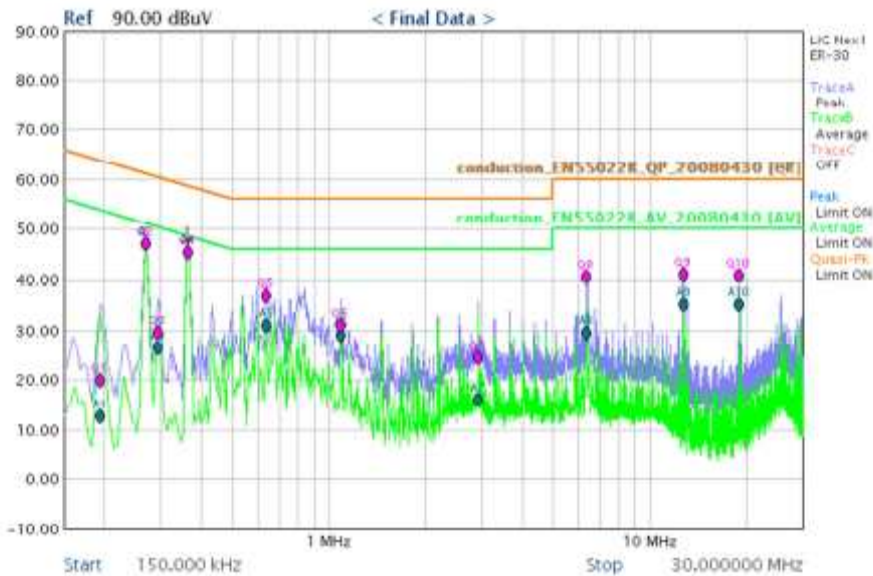
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[NEUTRAL line]

CONDUCTED EMISSION

SCREEN SHOT



FINAL TABLE

[Final Table - Average]

No	Freq (MHz)	Level (dBuV)	Corr (dB)	Limit (dBuV)	Margin (dB)	State	Reference
1	0.195000	12.52	0.36	53.82	41.30	Pass	AV
2	0.270000	46.88	0.29	51.12	4.24	Pass	AV
3	0.294000	26.45	0.27	50.41	23.96	Pass	AV
4	0.366000	45.11	0.28	48.59	3.48	Pass	AV
5	0.638000	30.87	0.26	46.00	15.13	Pass	AV
6	1.094000	29.08	0.17	46.00	16.92	Pass	AV
7	2.915000	15.95	0.25	46.00	30.05	Pass	AV
8	6.350000	29.39	0.31	50.00	20.61	Pass	AV
9	12.730000	35.14	0.43	50.00	14.86	Pass	AV
10	19.070000	35.12	0.43	50.00	14.88	Pass	AV

[Final Table - Quasi-Pk]

No	Freq (MHz)	Level (dBuV)	Corr (dB)	Limit (dBuV)	Margin (dB)	State	Reference
1	0.195000	19.87	0.36	63.82	43.95	Pass	QP
2	0.270000	46.84	0.29	61.12	14.28	Pass	QP
3	0.294000	29.40	0.27	60.41	31.01	Pass	QP
4	0.366000	45.17	0.28	58.59	13.42	Pass	QP
5	0.638000	36.81	0.26	56.00	19.19	Pass	QP
6	1.094000	30.90	0.17	56.00	25.10	Pass	QP
7	2.915000	24.43	0.25	56.00	31.57	Pass	QP
8	6.350000	40.43	0.31	60.00	19.57	Pass	QP
9	12.730000	40.86	0.43	60.00	19.14	Pass	QP
10	19.070000	40.57	0.43	60.00	19.43	Pass	QP

* Comment :

- We've tested by DVI test mode for result, It's the worst case on the EMI test result between VGA and DVI test mode.

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6.2 Radiated emission

Environmental Conditions

Temperature	18 °C - Open Area Test site (10m) 21 °C - 3m Chamber
Humidity	64 % R.H. - Open Area Test site (10m) 40 % R.H. - 3m Chamber
Test Area	Open Area Test site (10m) – Below 1GHz 3m Chamber – Above 1GHz
Test date	2013.05.23

6.2.1 Limits of radiated emission measurement

* Limits below 1 GHz

Frequency	Limit (Quasi-peak)
30 MHz ~ 230 MHz	30 dB(μ N/m)
230 MHz ~ 1000 MHz	37 dB(μ N/m)

* Limits above 1 GHz

Frequency	Average limit	Peak limit
1 000 MHz ~ 3 000 MHz	50 dB(μ N/m)	70 dB(μ N/m)
3 000 MHz ~ 6 000 MHz	54 dB(μ N/m)	74 dB(μ N/m)

* Note

- The lower limit applies at the transition frequency.
- Exclusion bands.

The frequencies on which the transmitter part of the EUT is intended to operate shall be excluded from radiated emission measurements when performed in transmit mode of operation.

There shall be no frequency exclusion band applied to emission measurements of the receiver part of transceivers or the stand alone receiver under test, and/or associated ancillary equipment.

The exclusion band for immunity testing shall be calculated as follows:

- Lower limit of exclusion band = lowest allocated band edge frequency -5 %;
- Upper limit of exclusion band = highest allocated band edge frequency +5 %.

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6.2.2 Measurement procedure

Mains

A pretest was performed at 3m distance in a semi-anechoic chamber for searching correct frequency.

The final test was done at a 10m open area test site with a quasi-peak detector.

EUT was placed on a non-metallic table height of 0.8m above the reference ground plane.

Cables were folded back and forth forming a bundle 0.3m to 0.4m long and were hanged at a 0.4m height to the 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.

6.2.3 Used equipments

* Below 1GHz

Equipment	Model no	Makers	Serial no.	Next cal. date	Used
Test Receiver	ESVS 10	Rohde&Schwarz	846285/004	2014.01.25	<input checked="" type="checkbox"/>
controller	ESDC-CT	EMC Labs	-	-	<input checked="" type="checkbox"/>
Antenna master	ESDC-AM	EMC Labs	-	-	<input checked="" type="checkbox"/>
Turn table	ESDC-TT	EMC Labs	-	-	<input checked="" type="checkbox"/>
Bi-Log ANT	VULB9160	Schwarzbeck	VULB 9160-3260	2013.08.05	<input checked="" type="checkbox"/>

* Above 1GHz

Equipment	Model no	Makers	Serial no.	Next cal. date	Used
Spectrum Analyzer	E4440A	Agilent	MY43362353	2013.12.10	<input checked="" type="checkbox"/>
controller	ACT	AUDIX	060552	-	<input checked="" type="checkbox"/>
Antenna master	-	AUDIX	-	-	<input checked="" type="checkbox"/>
Turn table	-	AUDIX	-	-	<input checked="" type="checkbox"/>
Horn ANT	BBHA9120D	Schwarzbeck	974	2014.01.06	<input checked="" type="checkbox"/>
Amplifier	ASF4-00100800-28-20P-4	SELLEX	1663658	2013.12.10	<input checked="" type="checkbox"/>

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6.2.4 Measurement uncertainty

Radiated Emission measurement : (k=2, 95%)

30-300 MHz ; 3 m: ±3.721 [dB], 10 m: +3.706, -3.707 [dB]

300-1000 MHz ; 3 m: ±3.818 [dB], 10 m: ±3.802 [dB]

6.2.5 Test data

* Receiving Antenna Mode : Horizontal, Vertical

* 10 m OATS

* Note : Reading = Test Receiver meter,

P= Polarization → H = Horizontal, V = Vertical

Result = Field Strength (Antenna factor + Cable factor + Reading)

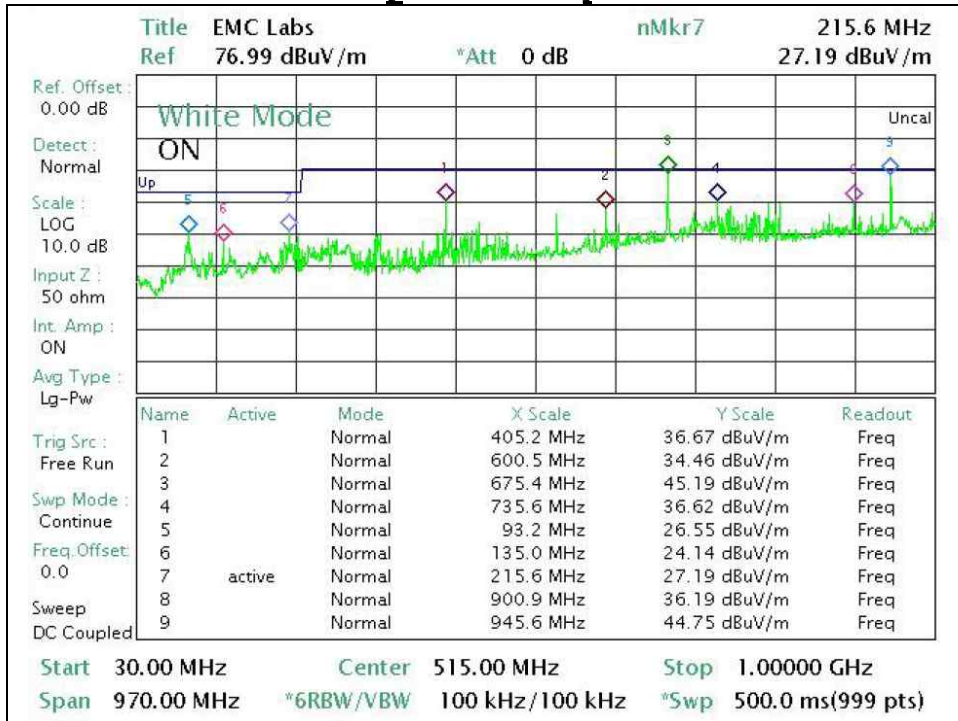
6.2.6 Test Result

[Below 1GHz] - **DVI MODE**

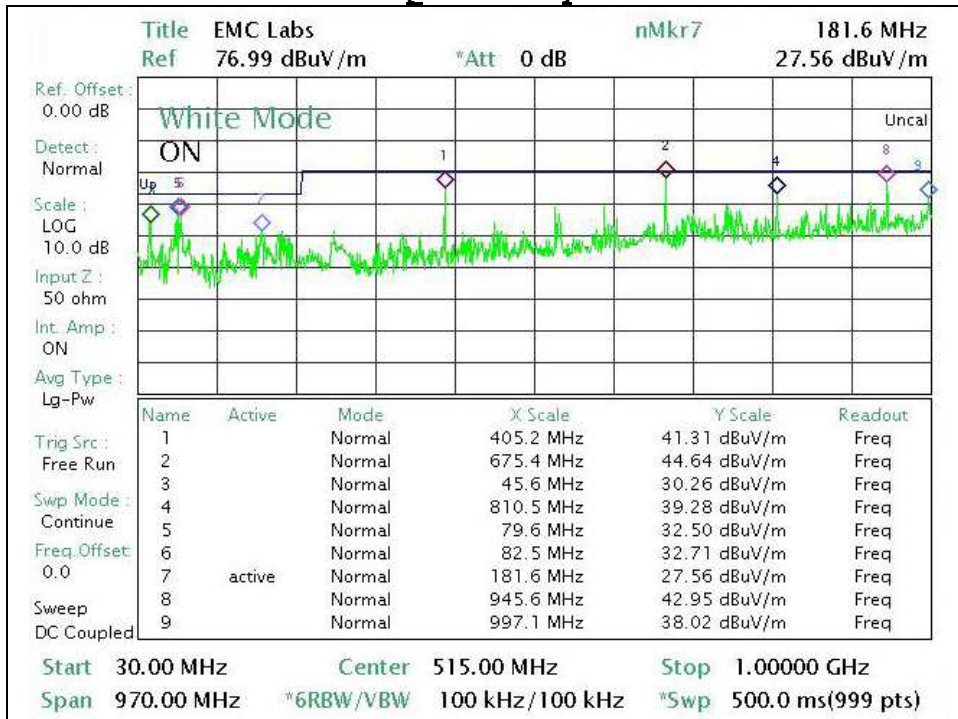
Frequency [MHz]	Reading [dB, μV]	Pol.	Height [m]	angle [°]	Correction		Limits [dB, μV/m]	Result [dB, μV/m]
					Antenna [dB/m]	Cable [dB]		
45.28	8.40	V	1.1	160	11.73	1.30	30	21.43
79.10	12.70	V	1.0	120	8.41	1.79	30	22.90
93.47	6.80	H	4.0	270	8.00	1.93	30	16.73
404.90	10.30	V	1.3	90	15.69	4.62	37	30.61
674.89	6.20	H	2.2	310	21.02	6.19	37	33.41
945.32	1.50	H	1.5	240	24.20	7.56	37	33.26

***3m Chamber Pre-scan Data**

[HORIZONTAL]



[VERTICAL]



* Comment :

- We've tested by DVI test mode for result, It's the worst case on the EMI test result between VGA and DVI test mode.

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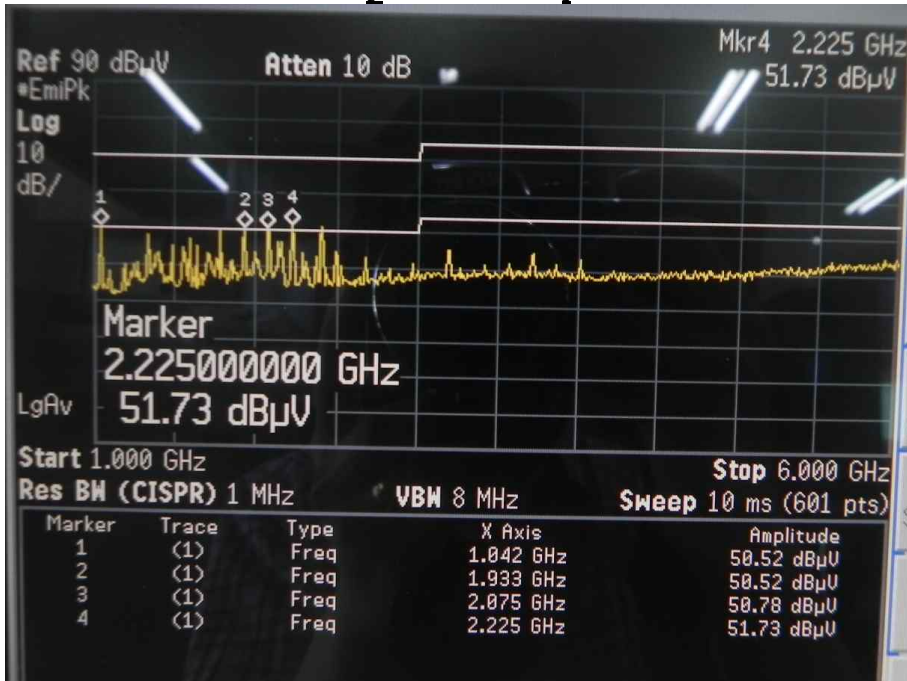
[Above 1GHz] - **DVI MODE**

B

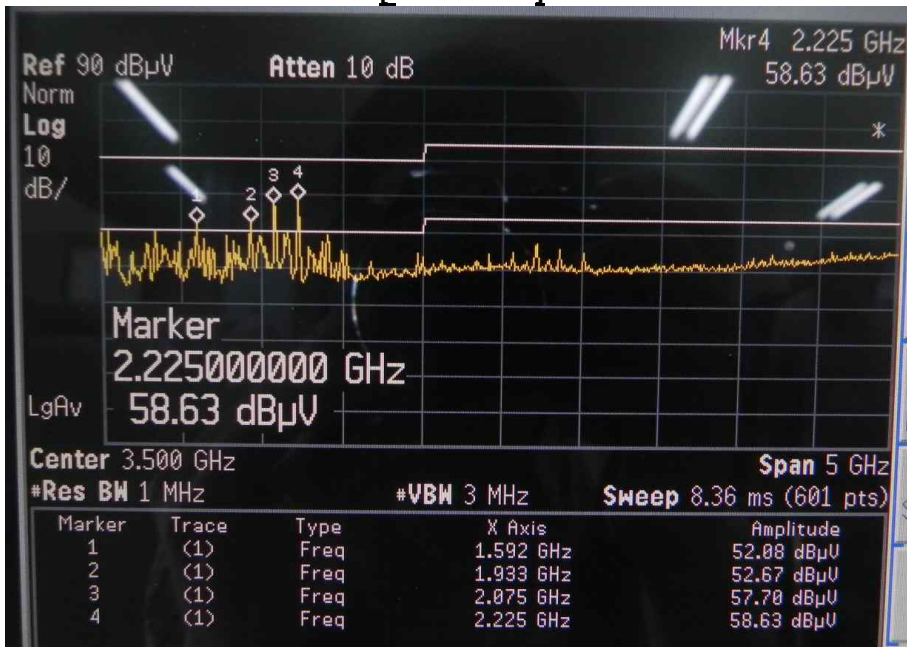
Frequency [MHz]	Total Reading [dB μ V]	Pol.	Limits [dB μ V/m]	Margin [dB μ V/m]	
2079.16	59.49	V	70	10.51	PK
2227.96	59.03	V	70	10.97	
1591.83	52.61	V	70	17.39	
1932.74	52.94	V	70	17.06	
1042.60	50.48	H	70	19.52	
2227.63	51.60	H	70	18.40	
2079.16	46.36	V	50	3.64	AV
2227.96	44.00	V	50	6.00	
1591.83	38.68	V	50	11.32	
1932.74	37.75	V	50	12.25	
1042.60	36.47	H	50	13.53	
2227.63	37.29	H	50	12.71	

***3m Chamber Data (Peak)**

[HORIZONTAL]



[VERTICAL]



* Comment :

- We've tested by DVI test mode for result, It's the worst case on the EMI test result between VGA and DVI test mode.

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6.3 Electrostatic Discharge

Environmental Conditions	
Temperature	23 °C
Humidity	49 % R.H.
Atmosphere pressure	101.1 kPa
Test Area	EMC Test Room
Test date	2013.05.24

6.3.1 Measurement procedure

A ground reference plane was located on the floor, and connected to earth via a low impedance connection.

The return cable of the ESD generator was connected to the reference plane. In case of floor standing equipment, EUT was placed on the reference plane on 0.1 m of insulating Support.

In case of table top equipment, EUT was placed on a wooden table 0.8m above the reference grounded floor.

A horizontal coupling plane(HCP) was placed on the table, and Connected to the reference plane via a 470 resistor located in each end (0.5mm insulating support between EUT and HCP).

In both cases a vertical coupling plane(VCP) OF 0.5 X 0.5m was located 10cm from the EUT's sides.

The VCP was connected to the reference plane in the same matter as the HCP.

6.3.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. Date	Used
ESD Tester	PESD1610	H810682	HAEFELY	2013.07.23	<input checked="" type="checkbox"/>
HCP	-	-	-	-	<input checked="" type="checkbox"/>
VCP	-	-	-	-	<input checked="" type="checkbox"/>

6.3.3 Test Data

Test Specification : EN 61000-4-2

Kind of Discharges

- Contact Discharge
- Air Discharge
- HCP / VCP (Indirect Discharge)

Discharge Voltages

- Contact Discharge : $\pm 2 / 4$ kV
- Air Discharge : $\pm 2 / 4 / 8$ kV
- HCP / VCP : $\pm 2 / 4$ kV

Discharge Impedance

- 330 Ω /150pF 2K Ω /330pF

Number Of Discharge

- Number of discharges per point, for each voltage and polarity
: 50 (Interval between discharges : ≥ 1 s)

Test point (Please refer to attached photograph.)

Test Results

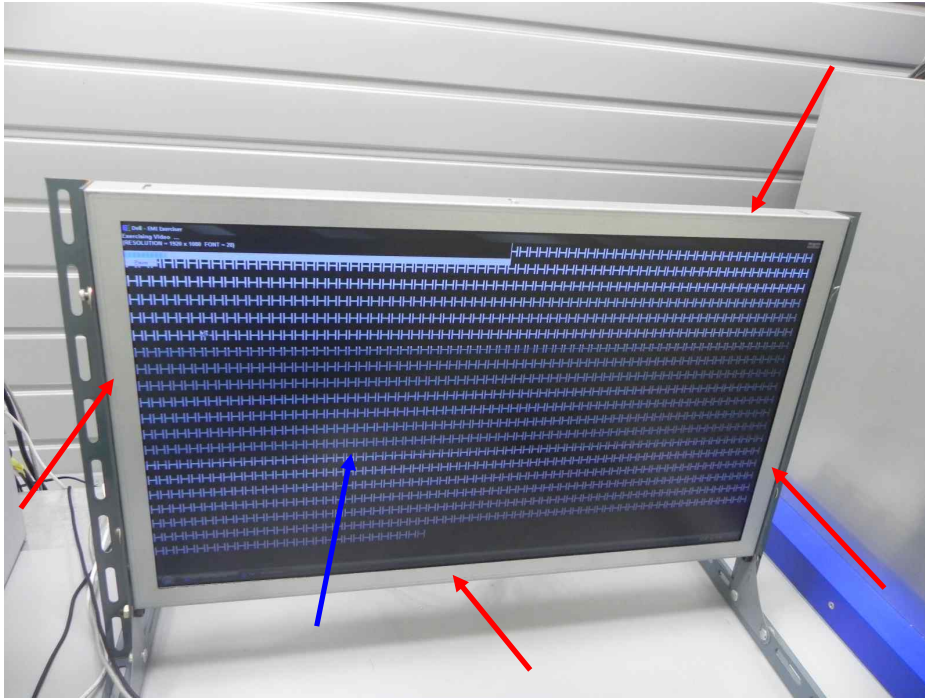
- Complied Not complied

Comment :

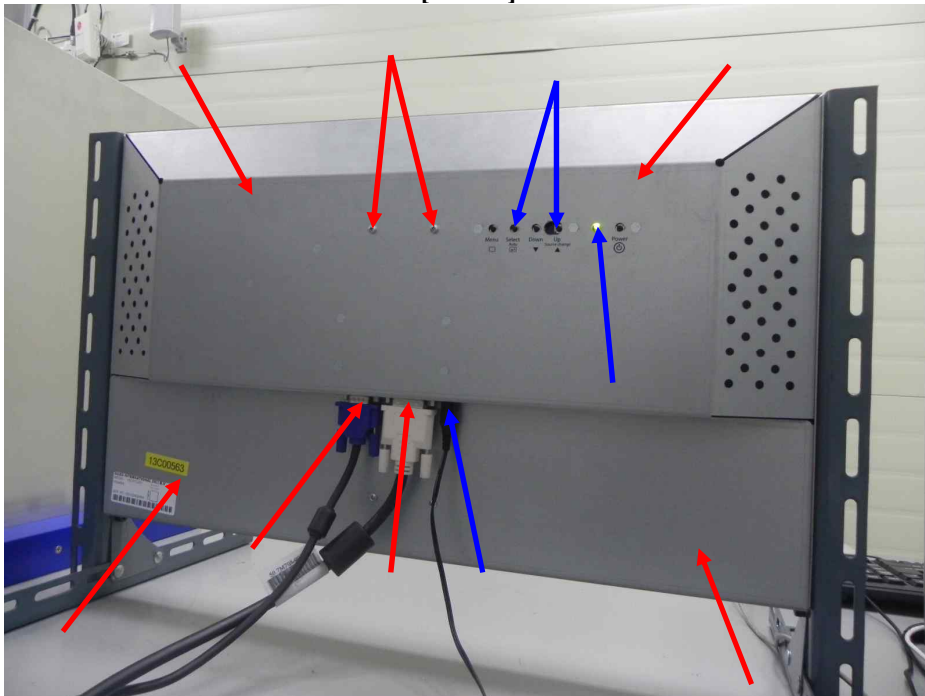
1. There was no change of operation status during above testing.
2. It's the same test result VGA test mode and DVI test mode.

Electrostatic Discharge (Test Point)

Air discharge →
Contact discharge →



[front]



[rear]

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Contact Discharge

Test Point	Polarity	Discharge Levels (kV)	Results (criterion)
HCP	±	2 / 4 (kV)	A
VCP	±	2 / 4 (kV)	A
CASE	±	2 / 4 (kV)	A
SCREW	±	2 / 4 (kV)	A
VGA Port	±	2 / 4 (kV)	A
DVI Port	±	2 / 4 (kV)	A

Air Discharge

Test Point	Polarity	Discharge Levels (kV)	Results (criterion)
LCD	±	2 / 4 / 8 (kV)	A
BUTTON	±	2 / 4 / 8 (kV)	A
LED	±	2 / 4 / 8 (kV)	A
DC IN Port	±	2 / 4 / 8 (kV)	A

6.4 Radio Frequency Electromagnetic Fields

Environmental Conditions

Temperature	23 °C
Humidity	44 % R.H.
Atmosphere pressure	100.9 kPa
Test Area	RS Shield Room
Test date	2013.05.25

6.4.1 Measurement procedure

The test was performed at 3m full anechoic chamber.

For floor standing equipment, the EUT was standing on the floor.

For tabletop equipment, the EUT was located on a wooden table 0.8m above the floor.

The EUT was tested all sides, horizontal and vertical polarization.

The field uniformity was calibrated for 1V/m, 3V/m, 10V/m.

6.4.2 Used equipments

	Equipment	Model no.	Serial no.	Makers	Next Cal. date	Used
EMC Labs	Signal Generator	SME 03	R & S	842059/043	2014.03.27	<input checked="" type="checkbox"/>
	Amplifier	150W1000M2	AR	0331745	-	<input checked="" type="checkbox"/>
	Antenna	3142D	ETS LINDGREN	00102179	-	<input checked="" type="checkbox"/>
	Power Meter	E4419B	AGILENT	MY41291980	2014.05.24	<input checked="" type="checkbox"/>
	Power Head Sensor	E9304A	AGILENT	MY41499030	2014.05.24	<input checked="" type="checkbox"/>
	Power Head Sensor	E9304A	AGILENT	MY41499039	2014.05.24	<input checked="" type="checkbox"/>
	Directional Coupler	DC6180A	AR	0331175	2014.05.24	<input checked="" type="checkbox"/>
	Filed Monitor	FM7004	AR	0330923	-	<input checked="" type="checkbox"/>
	Field Probe	FP7003	AR	311519	2013.07.12	<input checked="" type="checkbox"/>

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6.4.3 Test Data

Test Specification : EN 61000-4-3

Frequency Range

80MHz – 1000MHz 1400 MHz – 2000MHz 2000 MHz – 2700 MHz 80MHz – 2500MHz

Test level

1V/m 3V/m 10V/m

Modulation

AM : 1kHz, 80%

PM :

Frequency step

log 1% step log 3% step log 5% step

Dwell Time

3 s 2 s 1 s

Test point

Front (Horizontal / Vertical)

Rear (Horizontal / Vertical)

Left (Horizontal / Vertical)

Right (Horizontal / Vertical)

Test Results

Complied Not complied

Comment :

1. There was no change of operation status during above testing.
2. It's the same test result VGA test mode and DVI test mode.

6.5 Electric Fast Transient/BURST

Environmental Conditions	
Temperature	22°C
Humidity	51 % R.H.
Atmosphere pressure	100.7 kPa
Test Area	EMC Test Room
Test date	2013.05.25

6.5.1 Measurement procedure

A ground reference plane was located on the floor.

EFT generator was connected to reference ground plane via low impedance connection.

For floor standing equipment, EUT was placed on a 0.1 m wooden table.

For tabletop equipment, EUT was placed on a wooden table(0.1m) above the reference plane.

Test generator and coupling/decoupling network was placed on, and bounded to, the ground reference plane.

When using the coupling clamp, the minimum distance between the coupling plates and all other conductive surfaces, except the ground reference plane beneath the coupling clamp, shall be 0.5 m.

6.5.2 Used equipments

Equipment	Model No.	Serial No.	Makers	Next Cal. date	Used
EFT/B Tester	EMCPRO PLUS	0904221	Thermo KeyTek	2014.05.24	<input checked="" type="checkbox"/>
Capacitive coupling clamp	CCL	-	Thermo KeyTek	2014.05.24	<input type="checkbox"/>

6.6 Conducted Immunity

Environmental Conditions

Temperature	23 °C
Humidity	47 % R.H.
Atmosphere pressure	100.8 kPa
Test Area	EMC Test Room
Test date	2013.05.25

6.6.1 Measurement procedure

A ground reference plane was located on the floor.

The EUT was isolated 0.1 m isolating support.

The ground plane was connected to floor reference ground plane via low impedance connection.

This test were Performed using CDN for mains, clamp for signal and injection probe.

6.6.2 Used equipments

Equipment	Model no.	Makers	Serial no.	Next Cal. date	Used
Signal Generator	8656B	HP	3334U13366	2013.10.04	<input checked="" type="checkbox"/>
RF Power Amplifier	M75	Instruments for Industry	N935-0609	-	<input checked="" type="checkbox"/>
Power Meter	E4419B	AGILENT	GB43312904	2013.09.25	<input checked="" type="checkbox"/>
Attenuator (6dB)	58-6-33	WEINSCHEL	PZ356	2013.07.23	<input checked="" type="checkbox"/>
Decoupling Network	F-2031-DCN-23MM	FCC	091221	-	<input type="checkbox"/>
EM Injection Clamp	F-2031-23MM	FCC	091219	2014.05.24	<input type="checkbox"/>
CDN	F-801-M3-16A	FCC	091282	2014.05.24	<input type="checkbox"/>
CDN	F-801-M2-16A	FCC	091770	2014.05.24	<input checked="" type="checkbox"/>
Directional Coupler	DC2600A	AR	0331437	2014.05.24	<input checked="" type="checkbox"/>
Power Head Sensor	E9301A	AGILENT	US39212396	2013.09.25	<input checked="" type="checkbox"/>
Power Head Sensor	E9301A	AGILENT	US39210340	2013.09.25	<input checked="" type="checkbox"/>

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6.6.3 Test Data

Test Specification : EN 61000-4-6

Frequency Range

150 kHz – 80MHz 150 kHz - 230MHz 150 kHz - 500MHz

Location of Coupling (DC cable Length : 0.3m)

Power Signal Lines Telecommunication line

Test level

1V 3V 10V

Modulation

AM : 1kHz, 80%
 PM : 1Hz (0.5 s ON : 0.5 s OFF)

Frequency step

log 1% step log 3% step log 5% step

Dwell Time

3 s 2 s 1 s

Test Results

Complied Not complied

Coupling Point (DC)	Coupling Method	Results (criterion)
POWER	CDN (M2)	A

Coupling Point (Signal)	Coupling Method	Results (criterion)
-	-	-

Comment :

1. There was no change of operation status during above testing.
2. It's the same test result VGA test mode and DVI test mode.

7. Test Photographs

Radiated Emission (Below 1GHz)

[front]



[rear]



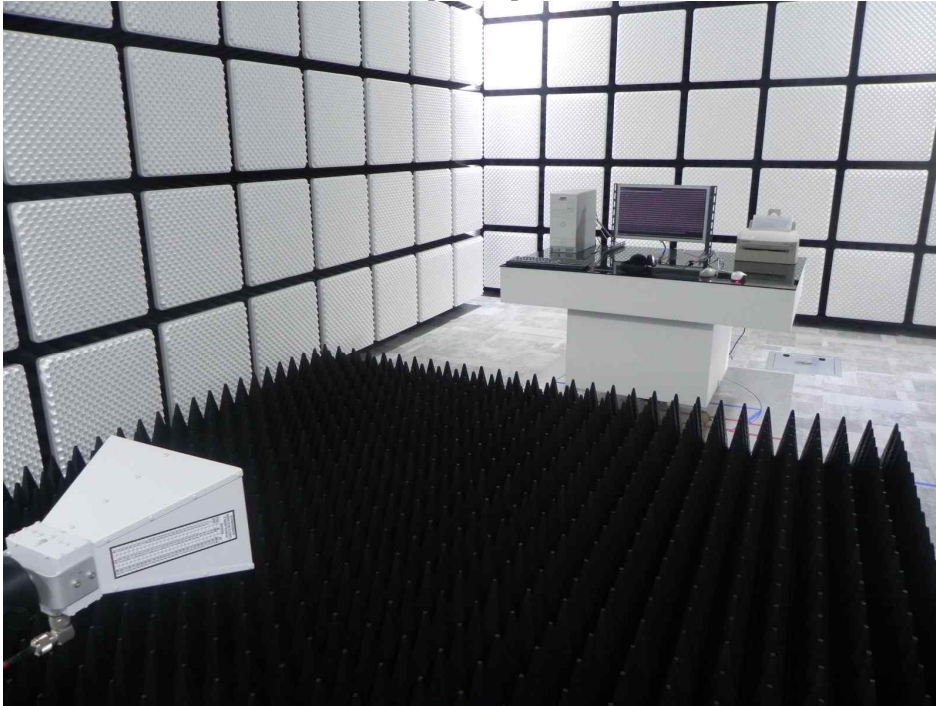
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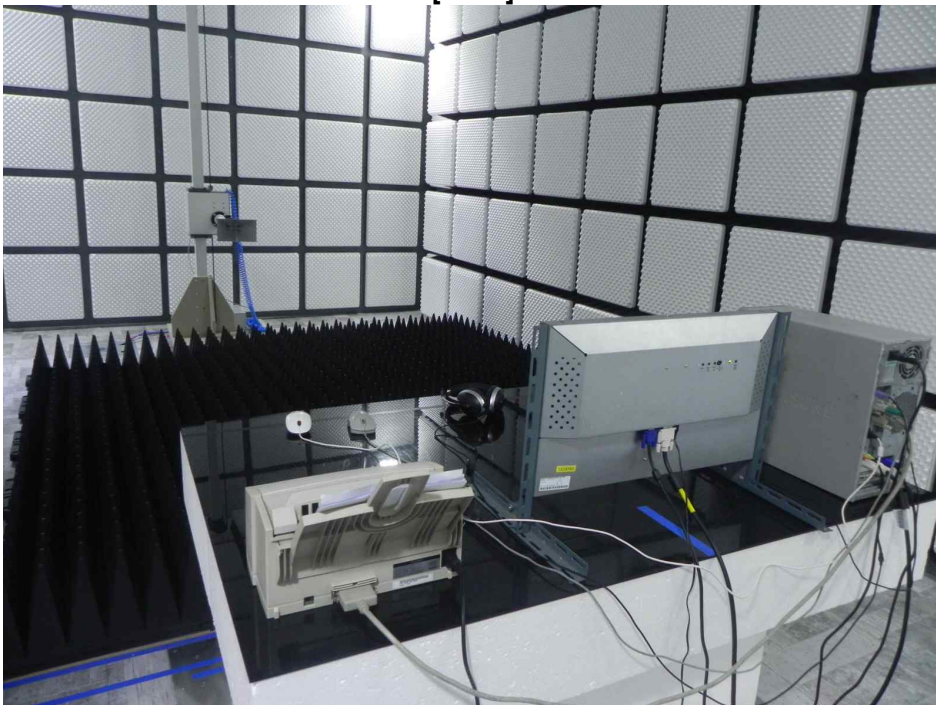
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Radiated Emission (Above 1GHz)

[front]



[rear]



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Conducted Emission (Main Power)

[front]



[rear]



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Electrostatic Discharge



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Radio frequency electromagnetic field



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Electric Fast Transient



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Conducted Immunity



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8. E.U.T. Photographs

[Front View]



[Rear View]

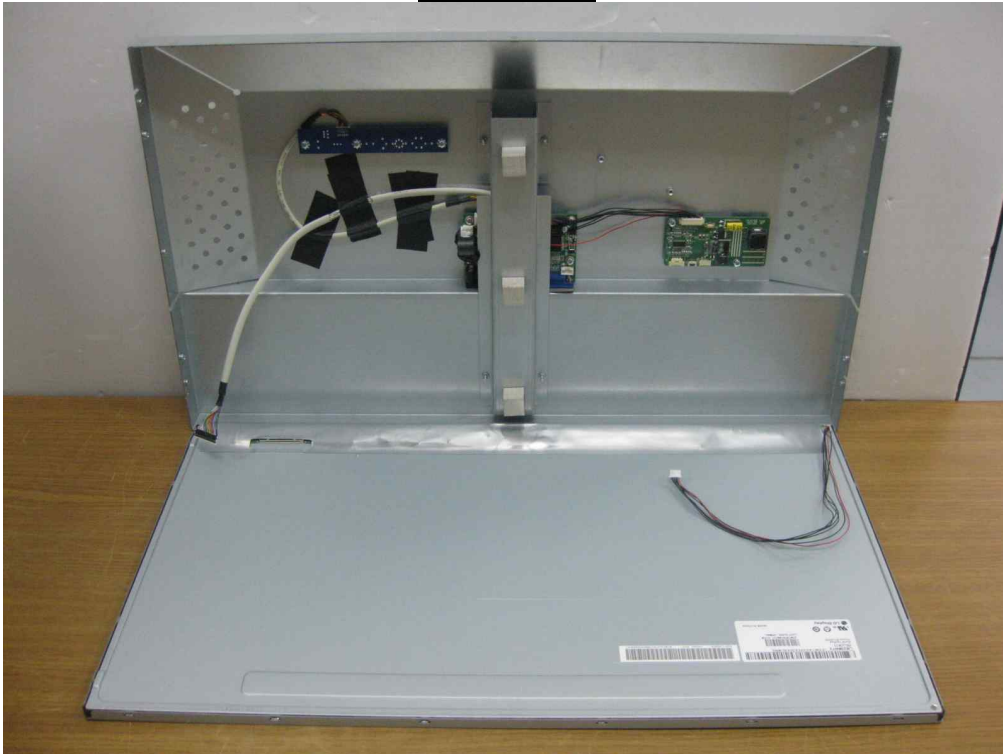


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[Inside View]



[port]

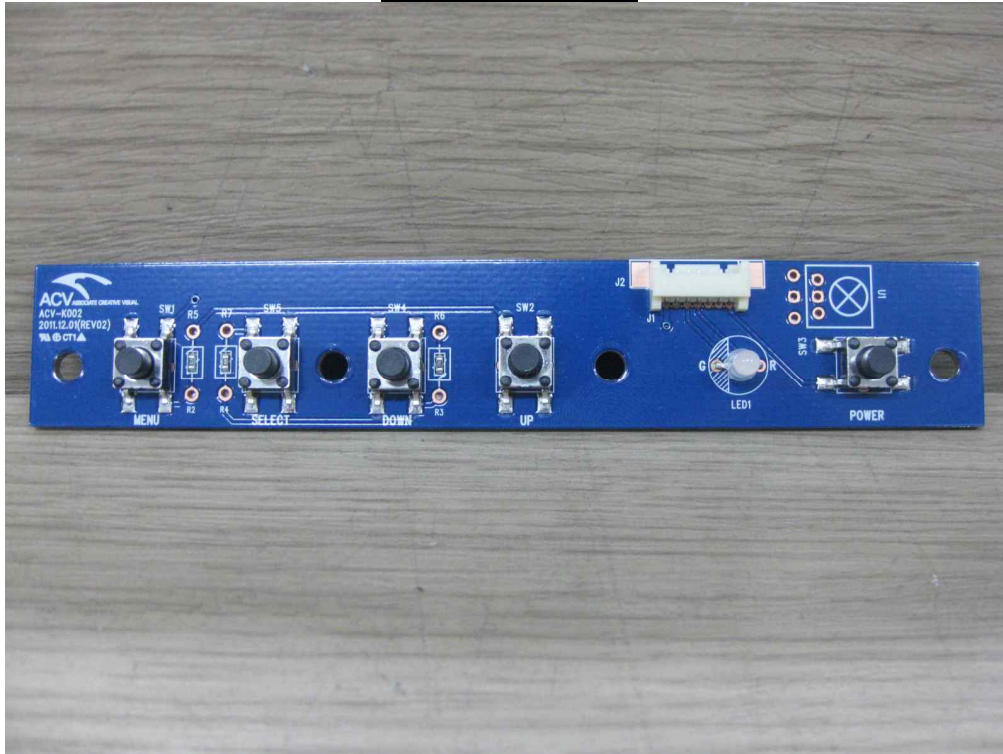


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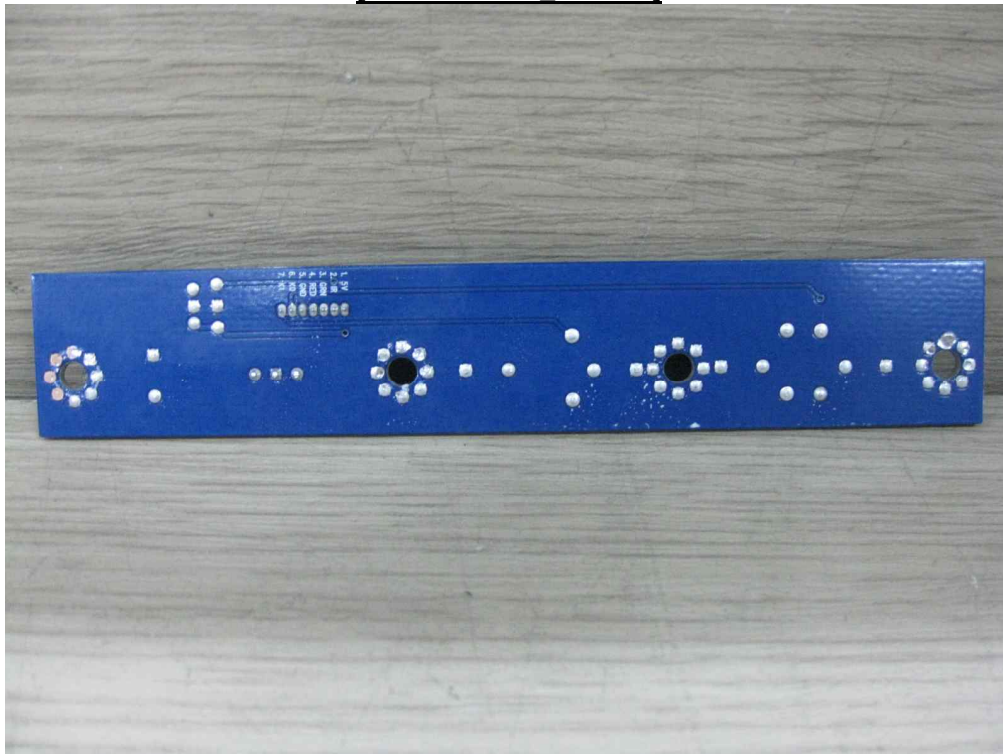
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[Button board top]



[Button board bottom]

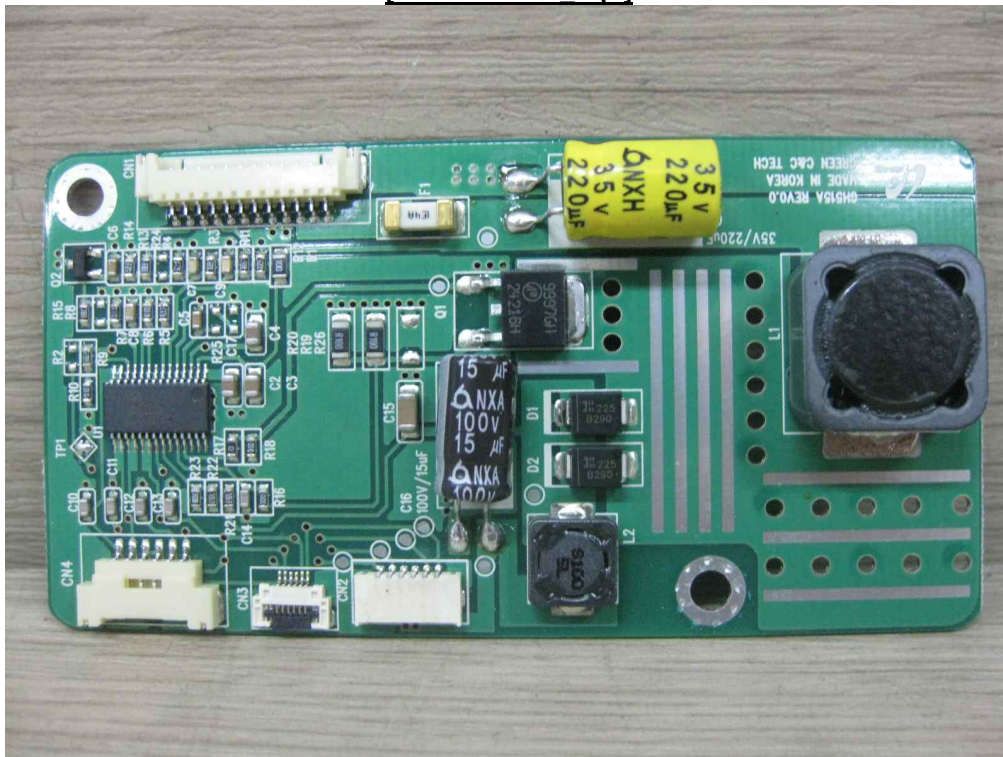


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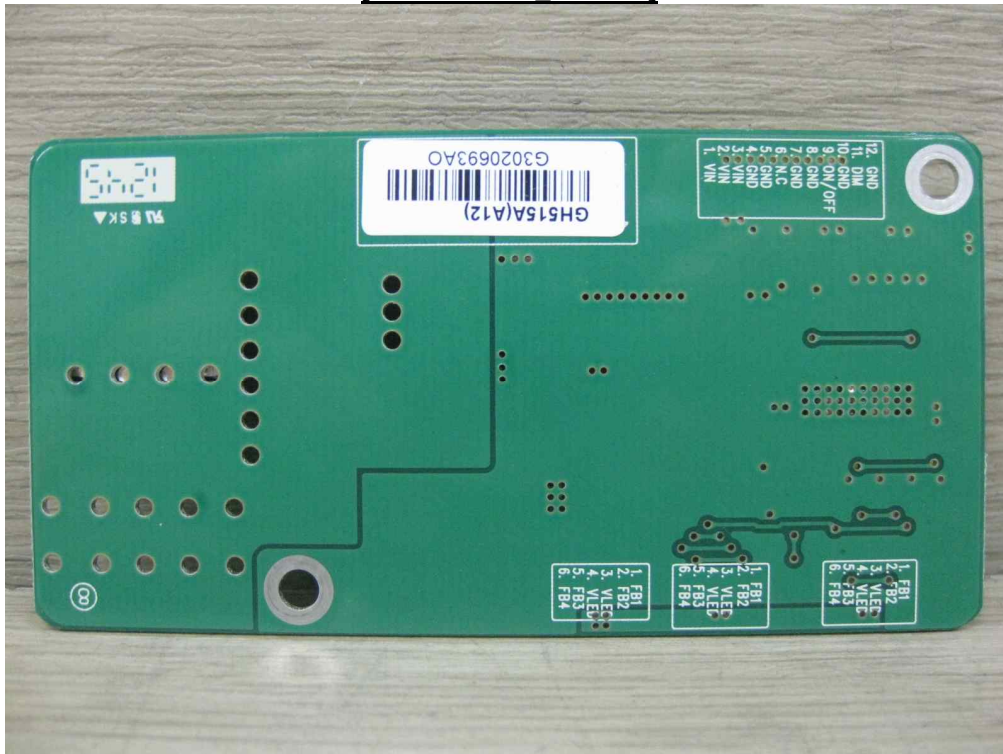
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[Driver board top]



[Driver board bottom]

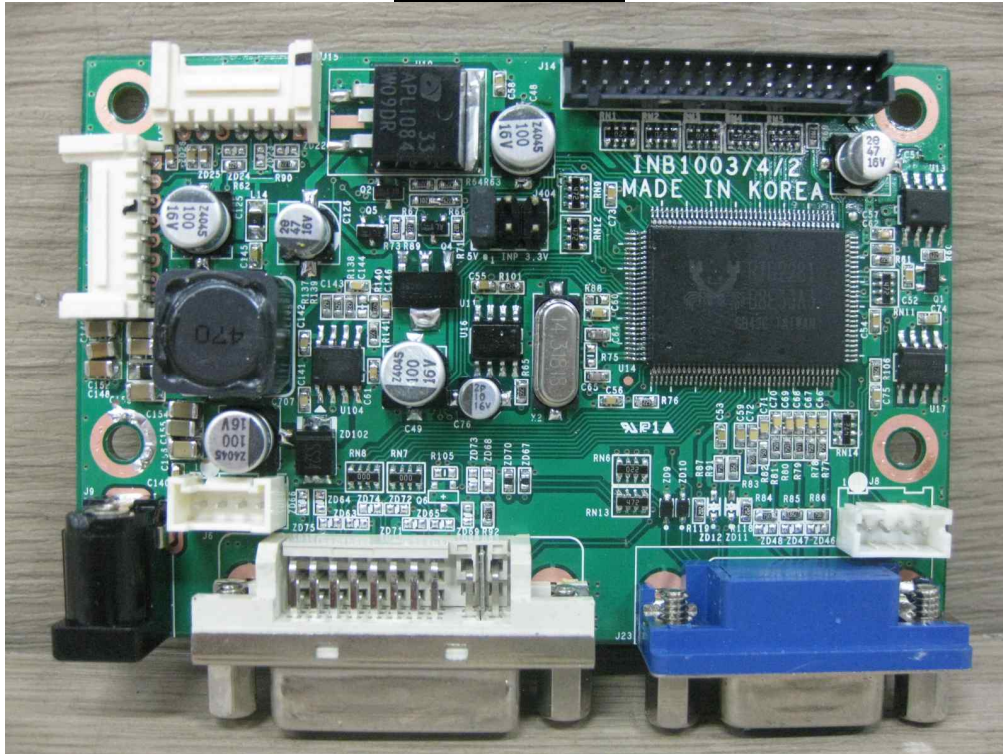


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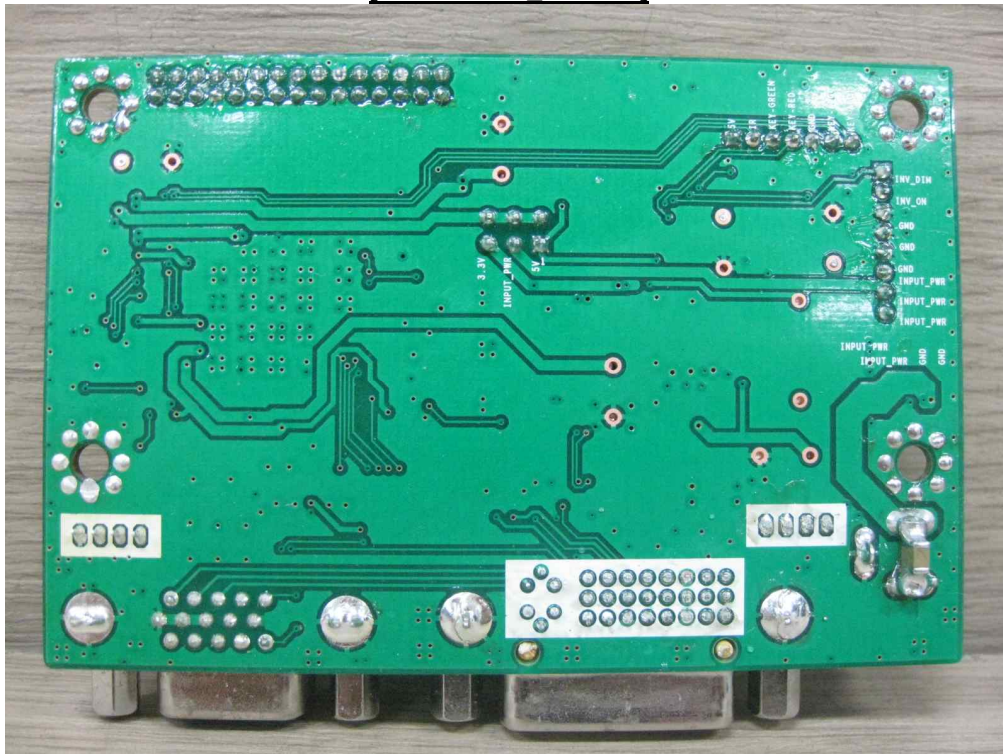
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[Main board top]



[Main board bottom]



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[LCD top]



[LCD bottom]



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[LCD label]



[DVI cable]



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[VGA cable]



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