

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
UNINTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART B REQUIREMENT**

For

LCD MONITOR

Model Number: M7**(see clause 5.2)**

FCC ID: KXYM7XXXX

Trade Name: Greatwall, WESCOM, Packard Bell

Report No.: SZEE080924119706

Issue Date: Oct. 15, 2008

Prepared for

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: CHINA GREATWALL COMPUTER SHENZHEN CO., LTD
Great-Wall Bldg. Science & Industry Park, Shenzhen, China

Manufacturer: China Great-Wall Computer Shenzhen Co., Ltd.
China GreatWall Computer Shenzhen Co., Ltd Shiyuan Branch
Monitor Division
Great-Wall Bldg. Science & Industry Park, Shenzhen, China
GreatWall Computer Industry Park Baoshi East Road, Shiyuan
County, Banan Shenzhen, China

Trade Name: Greatwall, WESCOM, Packard Bell

Technical Data: AC 100-240V 50/60Hz

Sample Description: LCD MONITOR

Model Number: M7****(see clause 5.2)

Serial Number : N/A

Date of Test: Sep. 24, 2008 to Oct. 15, 2008

We hereby certify that:

The above equipment was tested by Centre Testing International (CTI), The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15B.

The test results of this report relate only to the tested sample identified in this report.

Prepared by : Christy Chen
Christy Chen

Reviewed by : Lily Yan
Lily Yan

Approved by : Jim Zhang
Jim Zhang
Manager

Date : Oct. 15, 2008

2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in ANSI C63.4: 2003. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement items	Value
Conducted emission	2.6 dB
Radiated emission	2.9 dB

3. FACILITIES AND ACCREDITATIONS

3.1 TEST FACILITY

All measurement facilities used to collect the measurement data are located at Building C, Hongwei Industrial Zone, Baoan 70 District, Shenzhen, Guangdong, China. The sites are constructed in conformance with the requirements of ANSI C63.4: 2003.

The test site Registration Number is 614926.

3.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at CTI for testing.

The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

Equipment Type	Manufacturer	Model Number	Serial Number	Last Calibration	Calibration Due Date
Spectrum Analyzer	Agilent	E4443A	MY46185649	01/29/2008	01/29/2009
Biconilog Antenna	ETS	3142C	920250	01/30/2008	01/30/2009
Multi device Controller	ETS	2090	00057230	N/A	N/A
Horn Antenna	ETS	3117	57410	01/07/2008	01/27/2009
Receiver	R&S	ESCI	100435	01/28/2008	01/28/2009
Attenuator	EM-Test	ATT6/75	0320837	06/07/2008	06/07/2009

3.3 LABORATORY ACCREDITATIONS AND LISTINGS

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

4. SETUP OF EQUIPMENT UNDER TEST

4.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 SUPPORT EQUIPMENT

Following peripheral devices and interface cables were connected during the measurement:

Type of Peripheral Equipment Used:

Description	Model Name	Serial No.	Manufacturer	FCC ID
PC	LT1563	TS1536K02034100040	IBM	DoC
Keyboard	KB-9963	B28AC0NGANB1WH	Lenovo	DoC
Mouse	Wheel Mouse 3.0 PS/2	B28A0532589PU	Lenovo	DoC
Printer	HP laser jet 1020	HP0589714521JK	HP	DoC
Modem	TM-EC5658V	06327401556	TP-LINK	DoC

Type of Cables Used:

Device from	Device to	Type of Cable	Length (m)	Type of shield
PC	Keyboard	PS/2	2.1	Unshielded
PC	Mouse	PS/2	2.1	Unshielded
PC	Power	INLET	1.8	Unshielded
PC	Printer	Dsub	1.5	Unshielded
PC	Modem	USB	1.8	Shielded
PC	Modem	INTERNET	1.8	Shielded

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. TECHNICAL DETAILS

5.1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

FCC Rules	Description of Test	Results
§15.107(a)	Conducted Emission	Compliant
§15.109(g)	Radiated Emission	Compliant

5.2 GENERAL MODELS INFORMATION

The equipment under tests is Class I 17" LCD monitor with internal power supply unit.

The explanation of the symbol "*" in the model name:

For M7**** models:

The first and second symbol * in type designation can be any alphanumeric character or blank and denote different ornament and/or enclosure. The third and fourth symbol * in type designation can be alphanumeric character or blank and denote different colour of enclosure, client or different sales area.

The test model is M7WEI.

5.3 EUT MODIFICATION

No modification by CENTRE TESTING INTERNATIONAL

6. CONDUCTED EMISSIONS TEST

6.1 LIMIT

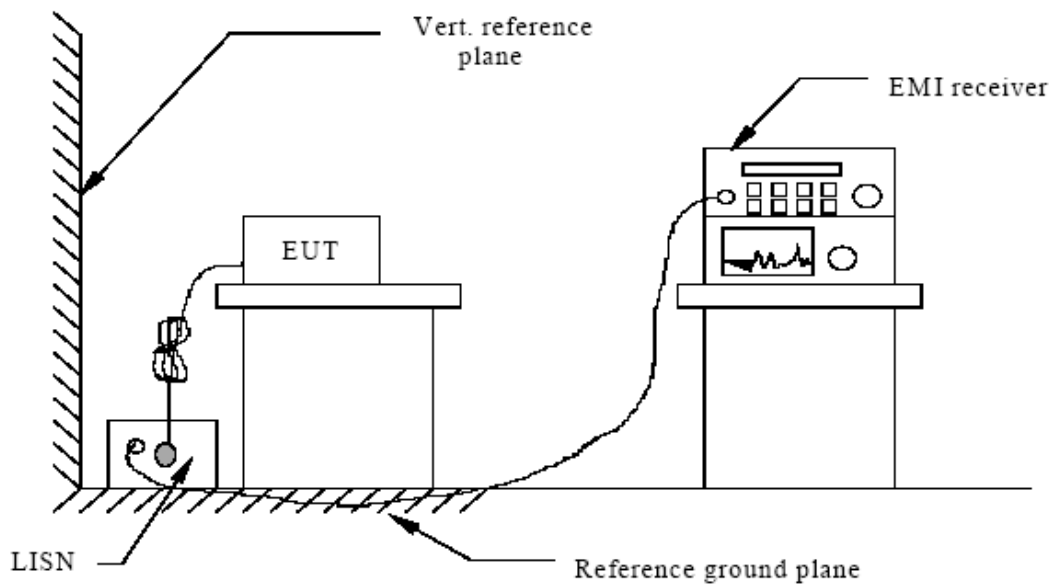
According to section 15.107(a) Conducted Emission Limits is as following:

Frequency range (MHz)	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.5	66 to 56 *	56 to 46 *
0.5 to 5	56	46
5 to 30	60	50

Note:

* Decreases with the logarithm of the frequency.

6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

6.3 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room and connected to the main through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments.

b. The bandwidth of the field strength meter (R&S Test Receiver) was set at 9 kHz in 150 kHz ~ 30MHz and 200Hz in 9 kHz ~150 kHz.

The frequency range from 150 kHz to 30MHz was investigated

c. The disturbance levels and the frequencies of at least six highest disturbances were recorded from each power line which comprises the EUT.

d. about LCD monitor:

- (1) Set the contrast control to maximum and the brightness control to maximum.
- (2) Set the pattern consisting of lines of scrolling H's.

6.4 TEST RESULTS

Limit : FCC conduction emission of class B **Power** : AC 120V/60Hz
EUT : LCD MONITOR **Temperature** : 25.2 °C
M/N : M7WEI **Humidity** : 62%
Mode : VGA

(The chart below shows the highest readings taken from the final data)

Conducted Emission Test Result													
Frequency (MHz)	Reading Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		Result (P/F)	Remarks (L/N)
	Peak	Q.P.	Avg.		Peak	Q.P.	Avg.	Q.P.	Avg.	Q.P.	Avg.		
0.1660	23.83	21.09	6.21	21.73	45.56	42.82	27.94	65.16	57.80	-22.34	-29.86	P	L
0.1900	21.08	14.39	-0.85	22.07	43.15	36.46	21.22	64.05	56.21	-27.59	-34.99	P	L
0.2340	18.03	9.83	-0.93	22.05	40.08	31.88	21.12	62.33	53.75	-30.45	-32.63	P	L
3.0100	23.72	20.92	8.10	20.34	44.06	41.26	28.44	56.00	46.00	-14.74	-17.56	P	L
7.6300	14.44	11.43	4.80	20.43	34.87	31.86	25.23	60.00	50.00	-28.14	-24.77	P	L
23.0660	19.28	11.56	0.04	22.63	41.91	34.19	22.67	60.00	50.00	-25.81	-27.33	P	L
						--							
0.1580	25.07	19.87	14.19	21.62	46.69	41.49	35.81	65.57	58.39	-24.08	-22.58	P	N
0.1700	24.03	16.96	1.88	21.79	45.82	38.75	23.67	64.97	57.52	-26.22	-33.85	P	N
0.1940	21.18	14.46	-1.78	22.13	43.31	36.59	20.35	63.87	55.96	-27.28	-35.61	P	N
2.8740	21.39	19.63	8.70	20.41	41.80	40.09	29.11	56.00	46.00	-15.91	-16.89	P	N
18.2140	16.11	8.11	-1.32	21.05	37.16	29.16	19.73	60.00	50.00	-30.84	-30.27	P	N
23.0420	17.66	10.87	-0.32	22.64	40.30	33.51	22.32	60.00	50.00	-26.49	-27.68	P	N
						--							

Limit : FCC conduction emission of class B **Power** : AC 120V/60Hz
EUT : LCD MONITOR **Temperature** : 25.2 °C
M/N : M7WEI **Humidity** : 62%
Mode : DVI

(The chart below shows the highest readings taken from the final data)

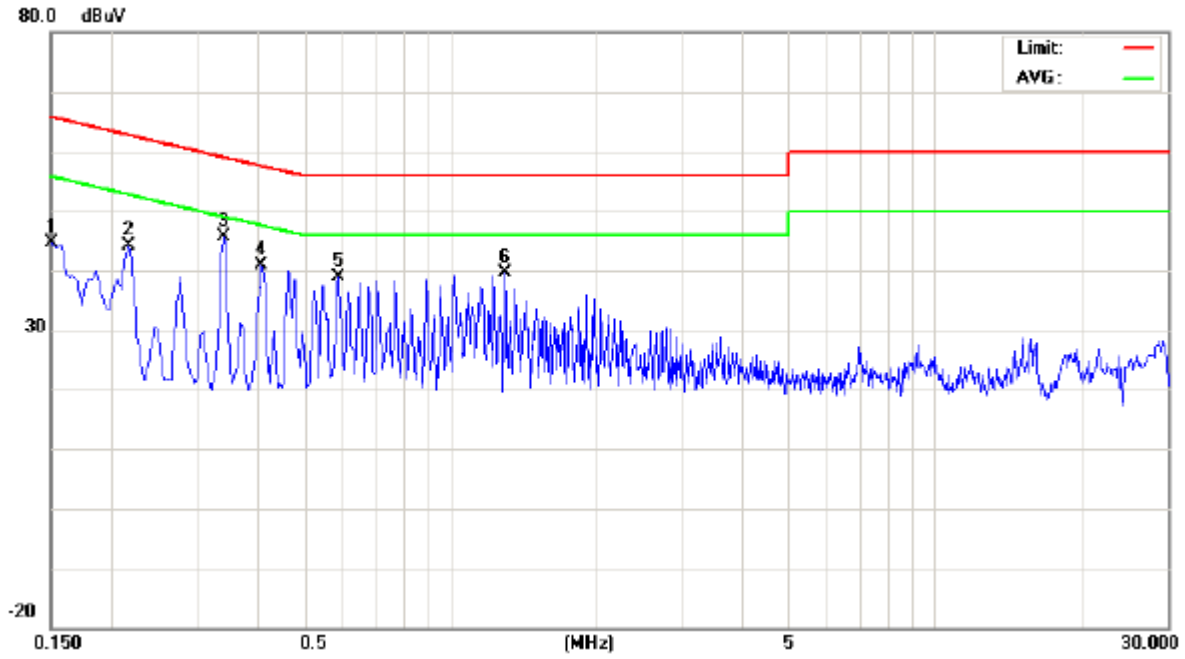
Conducted Emission Test Result													
Frequency (MHz)	Reading Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		Result (P/F)	Remarks (L/N)
	Peak	Q.P.	Avg.		Peak	Q.P.	Avg.	Q.P.	Avg.	Q.P.	Avg.		
0.3420	19.48	17.79	14.62	21.71	41.19	39.50	36.33	59.15	49.15	-19.65	-12.82	P	L
0.4099	16.11	14.21	13.26	21.66	37.77	35.87	34.92	57.65	47.65	-21.78	-12.73	P	L
0.5899	17.73	15.52	13.69	21.53	39.26	37.05	35.22	56.00	46.00	-18.95	-10.78	P	L
0.8980	15.73	14.33	13.01	21.58	37.31	35.91	34.59	56.00	46.00	-20.09	-11.41	P	L
1.0220	19.62	16.57	13.94	21.53	41.15	38.10	35.47	56.00	46.00	-17.90	-10.53	P	L
1.3020	20.21	17.59	14.08	21.36	41.57	34.19	35.44	56.00	46.00	-21.81	-10.56	P	L
						--							
0.1819	26.58	23.31	20.24	21.96	48.54	45.27	42.20	64.39	54.39	-19.12	-12.19	P	N
0.3420	22.16	20.93	17.54	21.71	43.87	42.64	39.25	59.15	49.15	-16.51	-9.90	P	N
0.5299	28.10	24.93	20.05	21.56	49.66	46.49	41.61	56.00	46.00	-9.51	-4.39	P	N
0.7219	20.58	17.42	14.62	21.53	42.11	38.95	36.15	56.00	46.00	-17.05	-9.85	P	N
1.2019	21.27	18.04	14.37	21.42	42.69	39.46	35.79	56.00	46.00	-16.54	-10.21	P	N
6.7218	13.58	10.37	8.55	20.37	40.30	33.51	22.32	60.00	50.00	-26.49	-27.68	P	N
						--							

Notes:

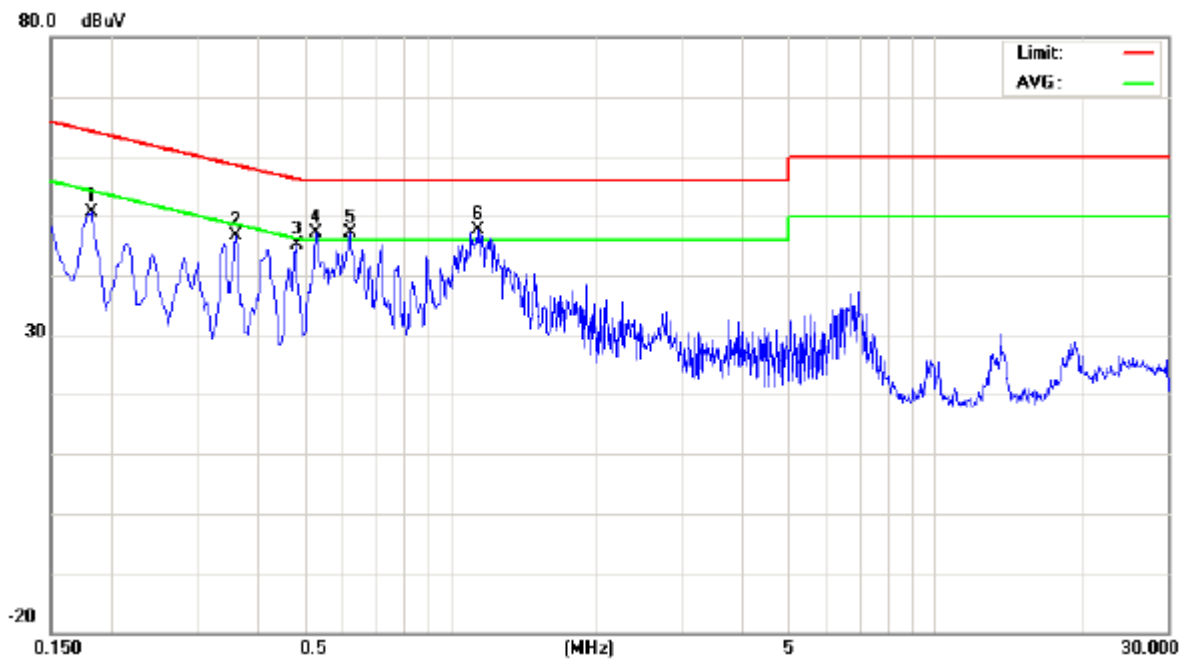
1. Measurement = Reading level + Correct factor
2. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are too low to test.

Graphs of Conducted Emission (Mode: VGA) :

L:

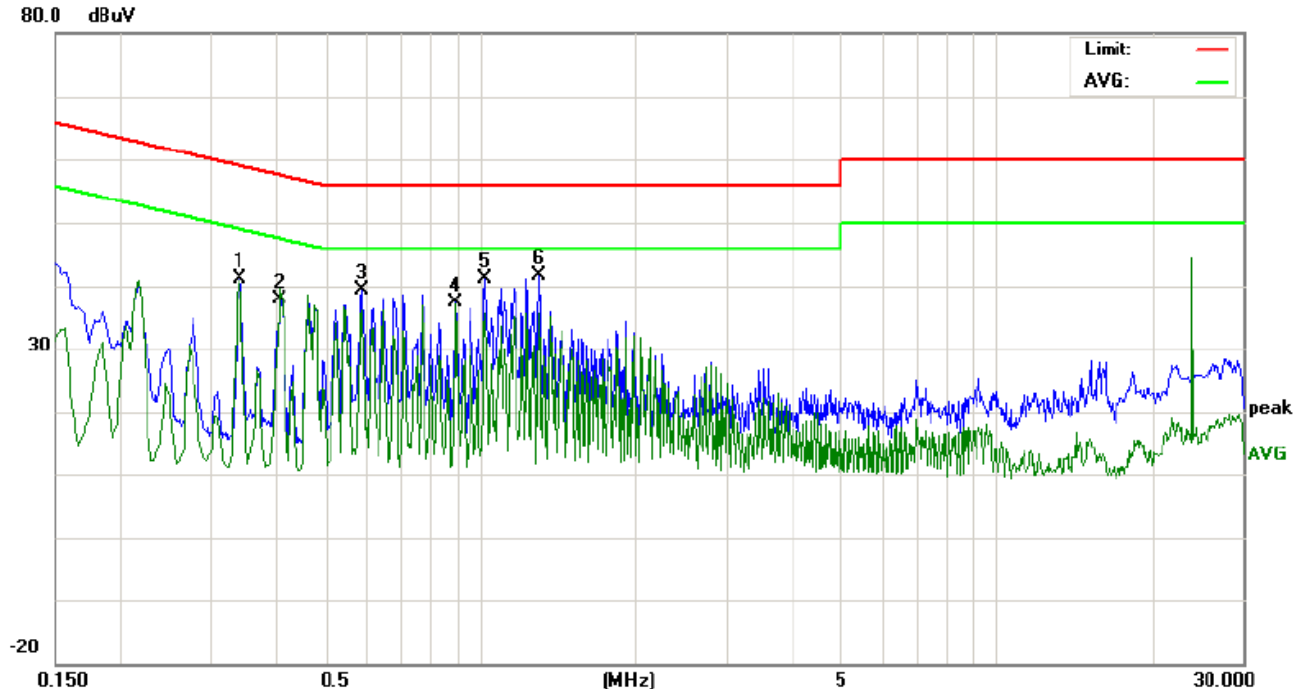


N:

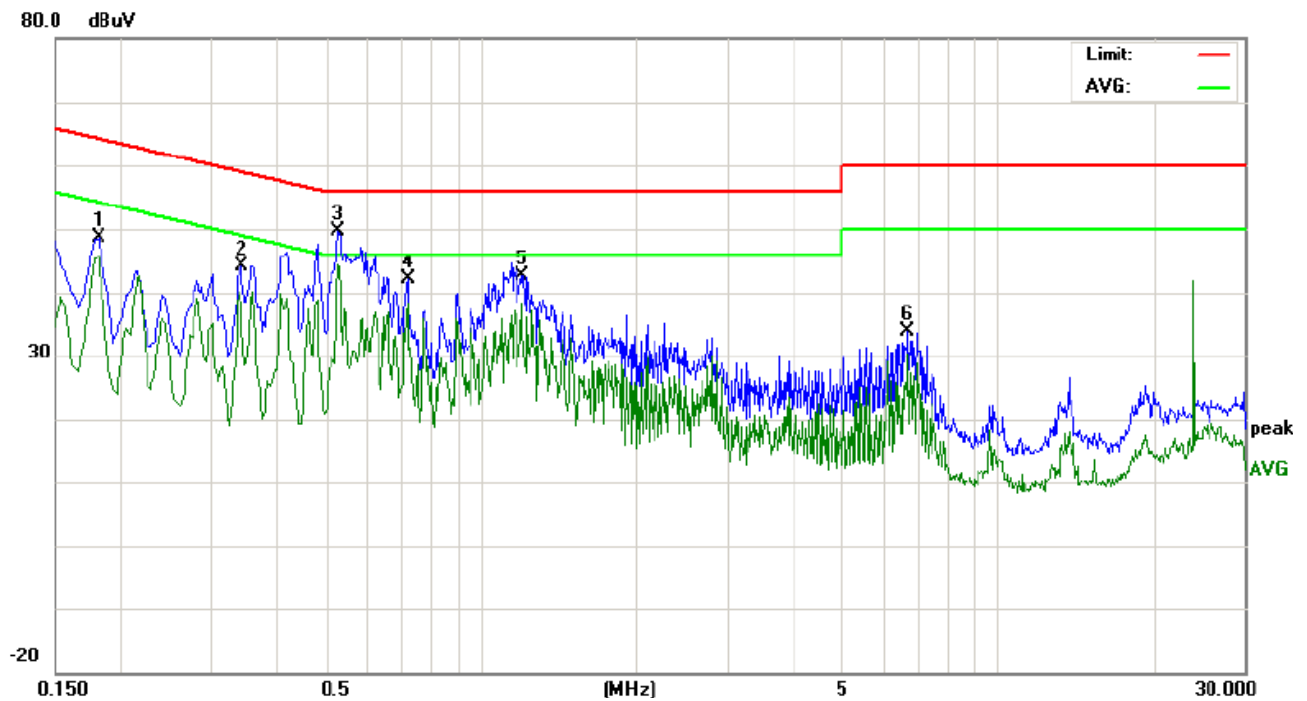


Graphs of Conducted Emission (Mode: DVI) :

L:



N:



7. RADIATED EMISSION TEST

7.1 LIMIT

According to section 15.109(g) Radiated Emission Limits is as following:

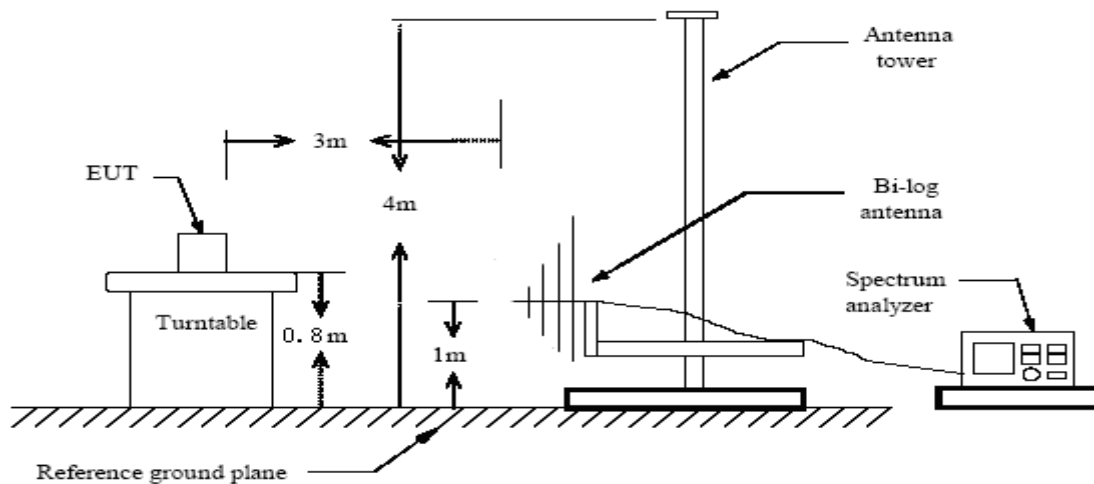
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Distance (m)	Field strength at 3m ($\text{dB}\mu\text{V/m}$)
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

Notes:

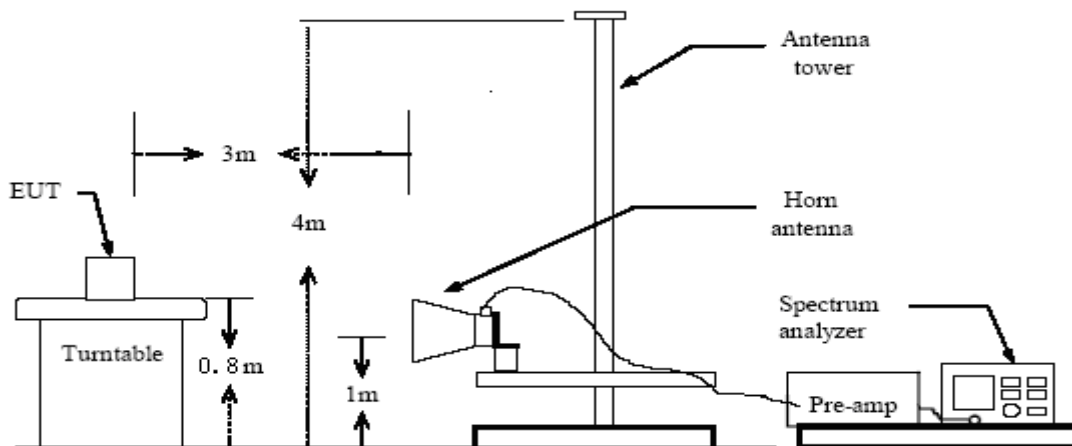
1. Emission level in $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Radiated Below 1GHz



Radiated Above 1 GHz



Limit : FCC Radiation Emission of Class B **Power** : AC 120V/60Hz
EUT : LCD MONITOR **Temperature** : 24.2 °C
M/N : M7WEI **Humidity** : 63%
Mode : DVI

(The chart below shows the highest readings taken from the final data)

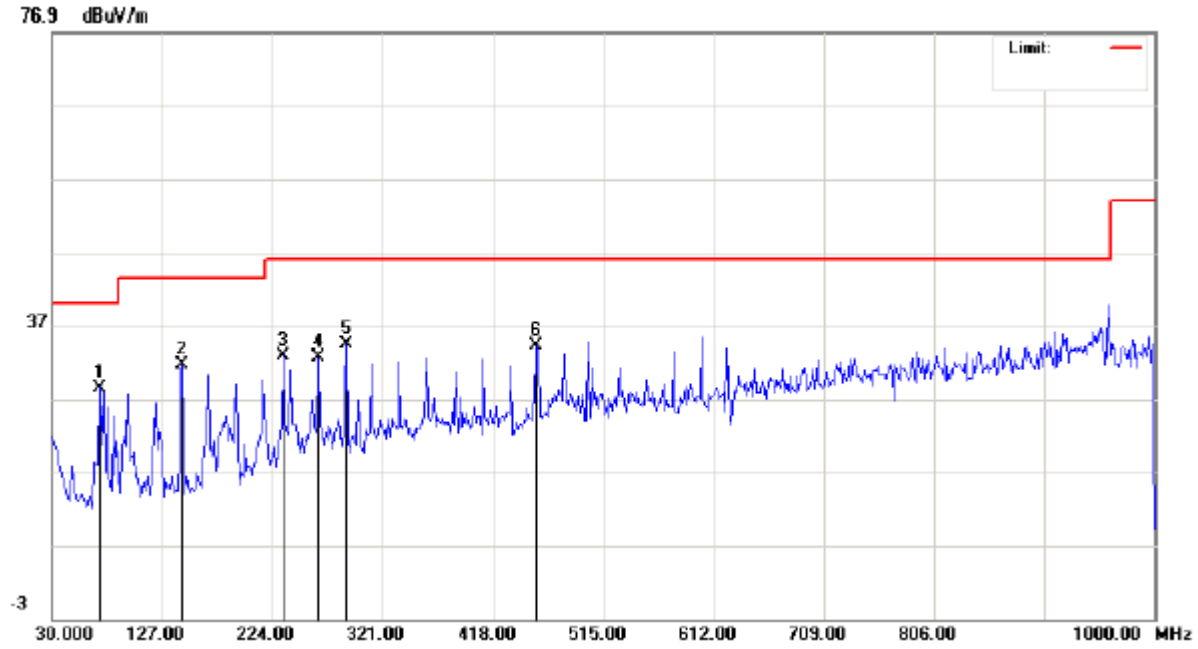
Radiated Emission Test Result													
Frequency (MHz)	Reading Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		Result (P/F)	Remarks (H/V)
	Peak	Q.P.	Avg.		Peak	Q.P.	Avg.	Q.P.	Avg.	Q.P.	Avg.		
215.9166	15.82	--	--	12.72	28.54	--	--	43.50	--	<-10	--	P	H
233.6999	16.85	--	--	13.55	30.40	--	--	46.00	--	<-10	--	P	H
288.6666	17.53	--	--	15.36	32.89	--	--	46.00	--	<-10	--	P	H
455.1832	13.89	12.09	--	19.28	33.17	31.37	--	46.00	--	-14.63	--	P	H
500.4499	14.43	12.37	--	19.96	34.39	32.33	--	46.00	--	-13.67	--	P	H
623.3166	10.02	--	--	23.19	33.21	--	--	46.00	--	<-10	--	P	H
						--							
120.5333	21.90	--	--	9.19	31.09	--	--	43.50	--	<-10	--	P	V
144.7833	21.77	19.46	--	10.09	31.86	29.55	--	43.50	--	-13.95	--	P	V
215.9167	18.54	--	--	12.72	31.26	--	--	43.50	--	<-10	--	P	V
264.4166	17.87	--	--	14.52	32.39	--	--	46.00	--	<-10	--	P	V
503.6833	15.04	13.77	--	20.07	35.11	33.84	--	46.00	--	-12.16	--	P	V
647.5667	13.00	10.28	--	23.31	36.31	33.59	--	46.00	--	-12.41	--	P	V
						--							

Notes:

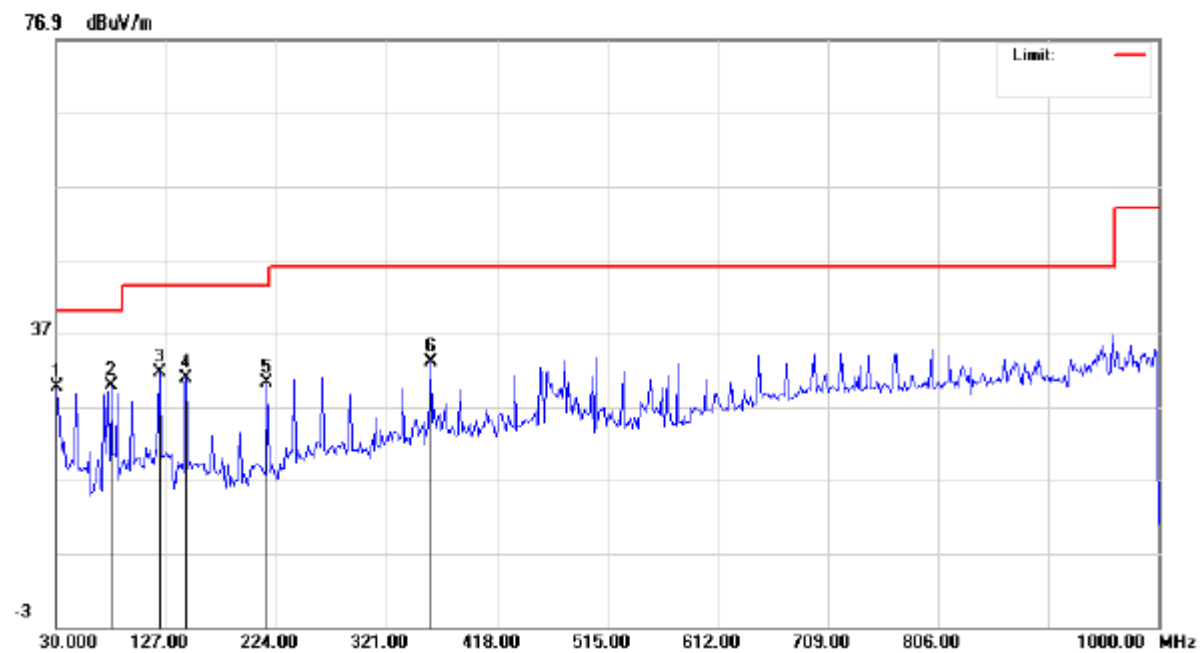
1. Measurement = Reading level + Correct factor
2. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are too low to test.

Graphs of Radiated Emission(Mode: VGA):

H:

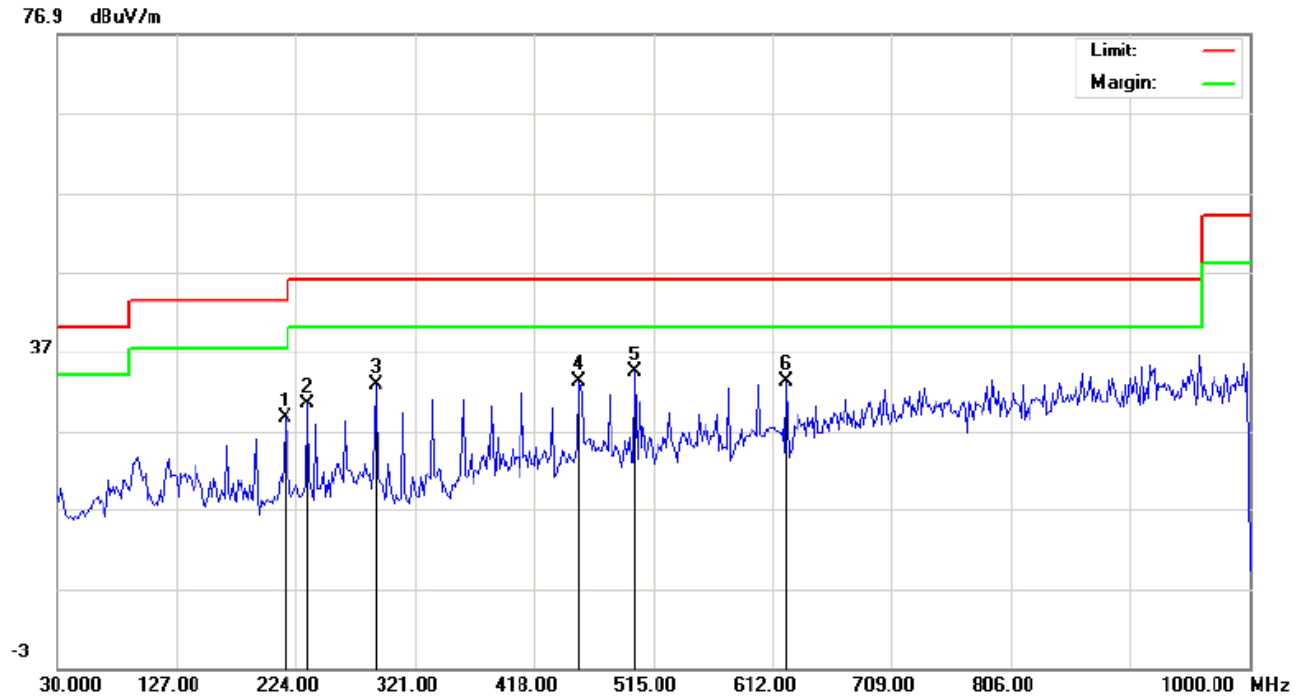


V:

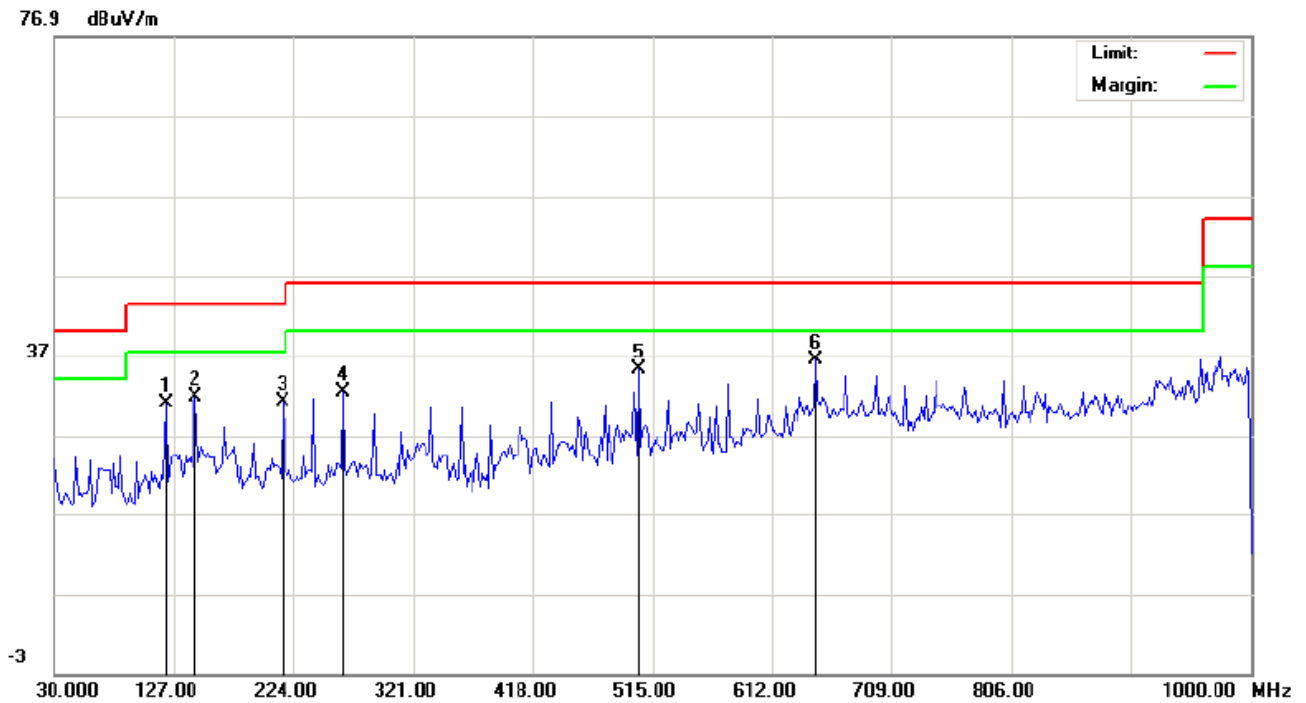


Graphs of Radiated Emission(Mode: DVI):

H:



V:



APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST



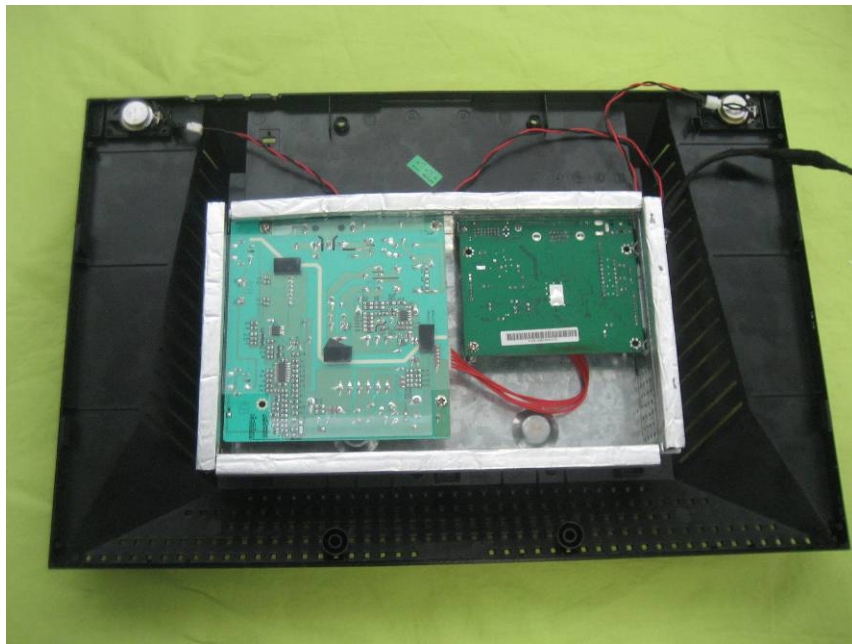
APPENDIX 2 PHOTOGRAPHS OF EUT



View of EUT-1



View of EUT-2



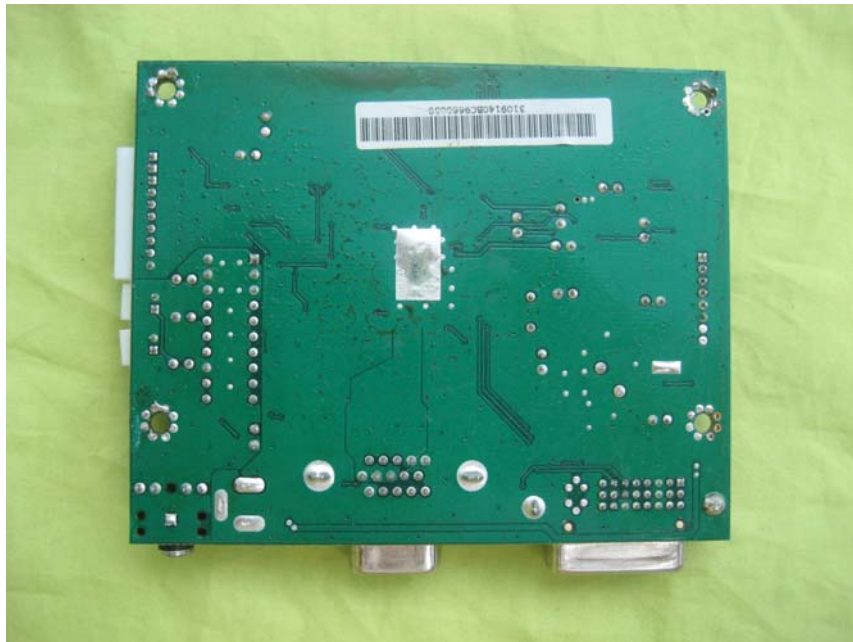
View of inside



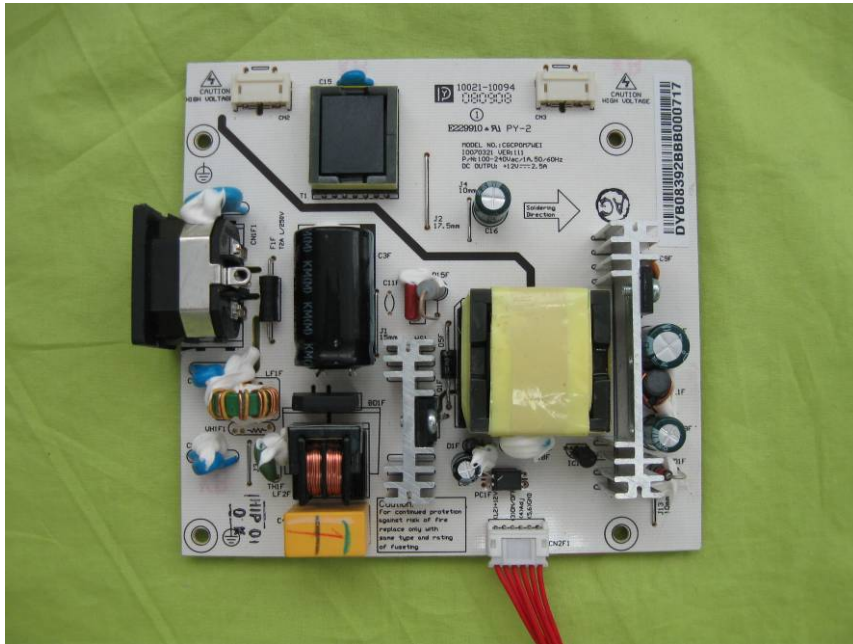
View of inside (monitor)



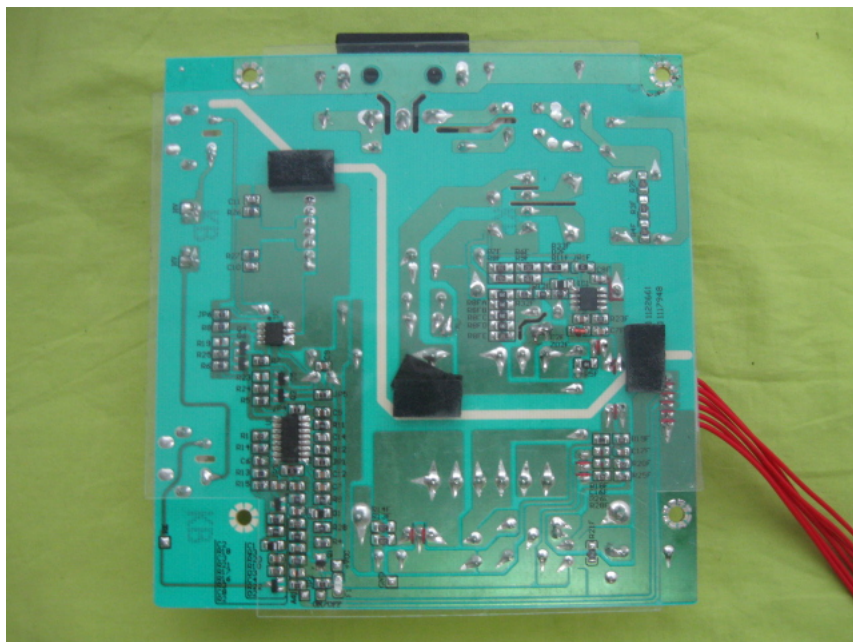
View of inside (MCU)-1



View of inside (MCU)-2



View of mainboard-1



View of mainboard-2

----End of the report----