Compliance Laboratory

FCC PART 15 SUBPART B
Test Report

Applicant:	Shenyang Torch-Bigtide Digital Technology Co.,Ltd.
Address:	No.18-6B,Yaoyang Road,Huishan Economic Development Area,Shenbei New District,Shenyang,China
Product Name:	19″ LCD Monitor
Model Name:	G11S, C14S
Brand Name:	N/A
FCC ID:	W65LCDG11C14S
Date of Issue:	Apr. 06-13, 2012
Issued by:	Most Technology Service Co., Ltd.
Address:	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China
Tel:	86-755-86170306
Fax:	86-755-86170310

TABLE OF CONTENTS

1.VERIFICATION OF CONFORMITY

Equipment under test:	19″ LCD Monitor
Brand Name:	N/A
Model Number:	G11S, C14S
Series Number:	N/A
Remark:	Two models are different in the kind of screen.
FCC ID:	W65LCDG11C14S
Applicant:	Shenyang Torch-Bigtide Digital Technology Co.,Ltd. No.18-6B,Yaoyang Road,Huishan Economic Development Area,Shenbei New District,Shenyang,China
Manufacturer:	Shenyang Torch-Bigtide Digital Technology Co.,Ltd. No.18-6B,Yaoyang Road,Huishan Economic Development Area,Shenbei New District,Shenyang,China
Technical Standards:	FCC Part 15 Subpart B
File Number:	MTE/EAH/D12050525
Date of test:	Apr. 06-13, 2012
Deviation:	None
Condition of Test Sample:	Normal
Test Result:	PASS

The above equipment was tested by Most for compliance with the requirements set forth in FCC Rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

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

Prepared by: _____ (Dona Liu)

Reviewed by: _____ (Elva Wong)

Approved by: _____ (Yvette Zhou)

2. GENERAL INFORMATION

2.1 Product Information

Motherboard BP011AX2140

Chip GM5621

NOTE: Please refer to the photographs of the EUT. For more detailed features description about the EUT, please refer to User's Manual.

2.2. Objective

The objective of the report is to perform tests according to FCC Part 15 Subpart B for the EUT:

NO.	Identity	Document Title
1	FCC PART15 Subpart B	Class B personal computers and peripherals.....

2.3 Test standards And Results

Test items and the results are as bellow:

NO.	Section	Description	Result	Date of test
1	15.107	Conducted	Pass	2012-04-11
2	15.109	Radiated emission	Pass	2012-04-06/ 2012-04-13

2.4 Measurement Uncertainty

No.	Item	Uncertainty
1.	Uncertainty for Conducted Disturbance Test	2.75dB
2.	Uncertainty for Radiated Disturbance Test	3.15dB

2.5 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35 ℃
- Humidity: 30-60%
- Atmospheric pressure: 86-106kPa

3. TEST FACILITY

3.1 Test Facility

Test Site:	Most Technology Service Co., Ltd
Location:	No.5, Nangshan 2nd Rd., North Hi-tech Industrial Park, Shenzhen, Guangdong, China.
Description:	There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test sites and the line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4-2003and CISPR 16 requirements. The FCC Registration Number is 490827
Site Filing:	The site description is on file with the Federal Communications Commission ,7435 Oakland Mills Road, Columbia , MD 21046
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 and CISPR 16 requirements that Meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted emission, One in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna .It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

3.2 General Test Procedures

Test mode:	The following data show only with the worst case setup
Conducted Emissions:	The EUT is placed on the test table, which is 0.8 m above ground plane. According to the requirements Section 13.1.4.1 of ANSI C63.4. Conducted emissions from the EUT measured in the frequency range between 0.15MHz and 30MHz using CISPR Quasi-peak and average detector modes.
Radiated Emissions:	The EUT is placed on a turntable, which is 0.8m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which Varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by Changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum Emissions, exploratory radiated emission measurements were made according to the requirements in section 13.1.4.1 of ANSI C63.4.
Setting :	9KHZ~150KHZ RBW 200HZ VBW1KHZ 150KHZ~30MHZ RBW 9KHZ VBW 30KHZ 30MHZ~1GHZ RBW 120KHZ VBW 300KHZ Above 1GHZ RBW 1MHZ VBW 3MHZ

4. SETUP OF EQUIPMENT UNDER TEST

4.1 Support Equipment

Description	Manufacturer	Model	Serial number
Computer	Dell DOC	DCSM	5P3842X
Mouse	Dell DOC	D PPID	MS111-L
Keyboard	Dell DOC	L100	U01C
USB flash drive	Kingston DOC	DT101 G2	5276930
VGA cable	Lenovo	shield	140cm
DVI cable	Lenovo	shield	140cm

4.2 Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Mar. 06, 2012	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Mar. 06, 2012	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	101202	Mar. 06, 2012	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Mar. 06, 2012	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar. 06, 2012	1 Year
Bilog Antenna	Sunol	JB3	A121206	Mar. 06, 2012	1 Year
Horn Antenna	EMCO	3115	640201028-06	Mar. 06, 2012	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar. 06, 2012	1 Year
Cable	Resenberger	N/A	NO.1	Mar. 06, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar. 06, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar. 06, 2012	1 Year
DC Power Filter	Duoji	DL2X30B	N/A	Mar. 06, 2012	1 Year
Single phase power Line filter	Duoji	FNF 202B30	N/A	Mar. 06, 2012	1 Year
3 phase power line filter	Duoji	FNF 402B30	N/A	Mar. 06, 2012	1 Year
Impedance matching Pad	Rohde&schwarz	SCA-Comp	N/A	Mar. 06, 2012	1 Year
Coaxial switch	Anritsu Corp	MP59B	6200283933	Mar. 06, 2012	1 Year
AC power soure	KIKUSUI	AC40MA	LM003232	Mar. 06, 2012	1 Year
AMN	Rohde&schwarz	ESH3-Z5	100229	Mar. 06, 2012	1 Year
Spectrum analyzer	Agilent	E4408B	MY41440460	Mar. 06, 2012	1 Year
ATV generator	Philips	PM5418 TNS	609114	Mar. 13.2012	1 Year
DTV generator	Teleview	DTA110T	4110576337	Mar. 13.2012	1 Year

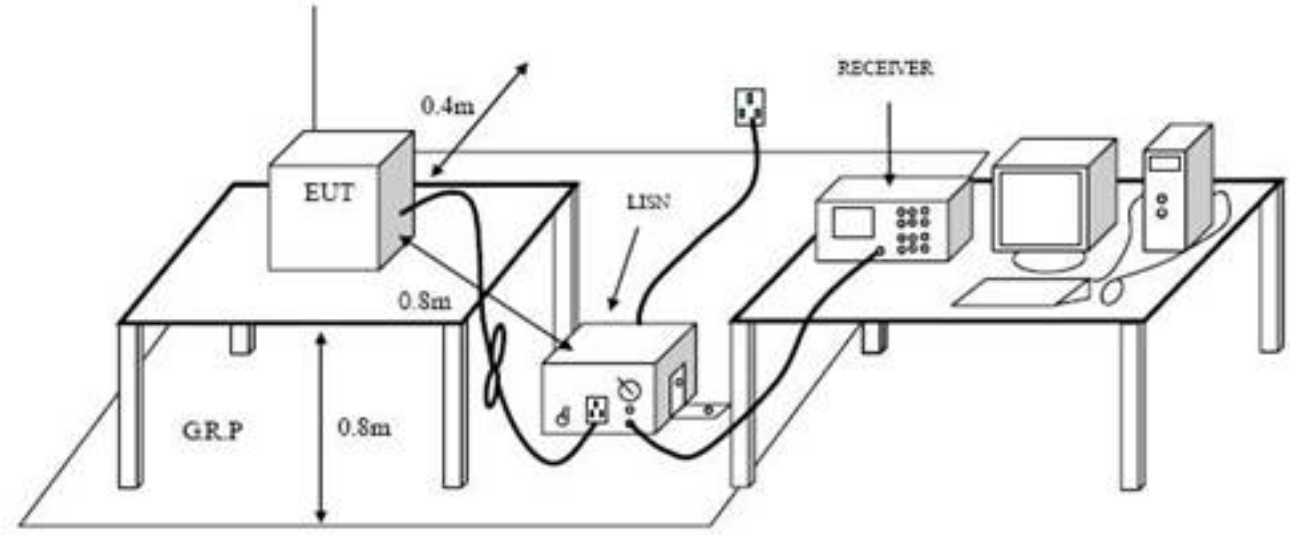
5. TEST REQUIREMENTS

5.1 Limits Of Line Conducted Emission Test

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* the limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.The lower limit shall apply at the transition frequency

5.2 Block Diagram Of Test Setup



5.3 Preliminary Procedure Of Line Conducted Emission Test

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual.When the EUT is a tabletop system,a wooden table with a height 0.8 meters is used and is placed on the ground plane as per FCC 15(see Test Facility for the dimensions of the ground plane noo-conductive covering to insulate the EUT from the ground plane.
2) Support equipment,if needed,was placed as per FCC Part 15.
3) All I/O Cables were positioned to simulate typical actual usage as per FCC Part 15.
4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization network(LISN)which supplied power source and was grounded to the ground plane.
5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
6) The EUT Test program was started.Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer /Receiver connected to the LISN powering the EUT.The LISN hsa two monitoring points:Line1(Hot side)and Line 2(Neutral Side).Two scans were taken:one with Line 1connected to Analyzer/Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer/Receiver.
7) Analyzer /Receiver scanned form 150kHz to 30MHz for emissions in each of the test modes.8) During the above scans,the emissions were maximized by cable manipulation.

Preliminary Conducted Emission Test			
Frequency Range Investigated		150KHz to 30MHz	
Mode of operation	Details	Phase	Date#
VGA Display	800*600	L/N	
	1024*768	L/N	
	1280*1024	L/N	
DVI Display	800*600	L/N	
	1024*768	L/N	
	1280*1024	L/N	

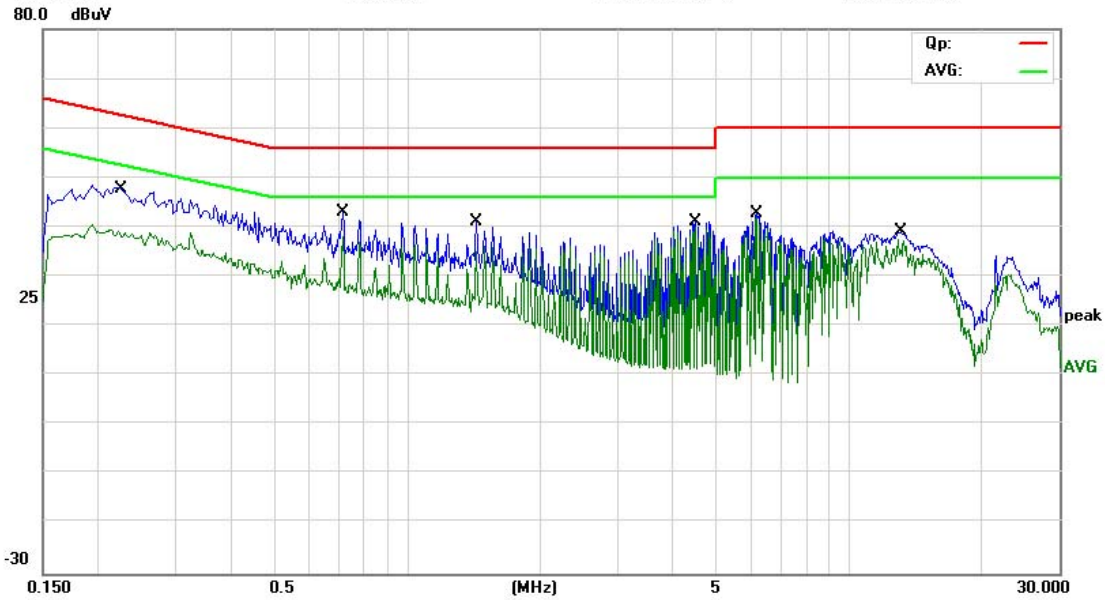
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing

5.4 Test Result Of Line Conducted Emission Test

Compliance Laboratory
Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement

File :C14S Data :#12 Date: 2012-04-11 Time: 15:31:27



Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: 19" LCD Monitor
M/N: C14S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2280	35.41	11.81	47.22	62.52	-15.30	QP	
2	*	0.7180	33.04	10.00	43.04	56.00	-12.96	QP	
3		1.4380	31.47	9.56	41.03	56.00	-14.97	QP	
4		4.5020	29.65	11.50	41.15	56.00	-14.85	QP	
5		6.1980	31.35	11.28	42.63	60.00	-17.37	QP	
6		13.1140	30.18	9.00	39.18	60.00	-20.82	QP	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Sky

Compliance Laboratory
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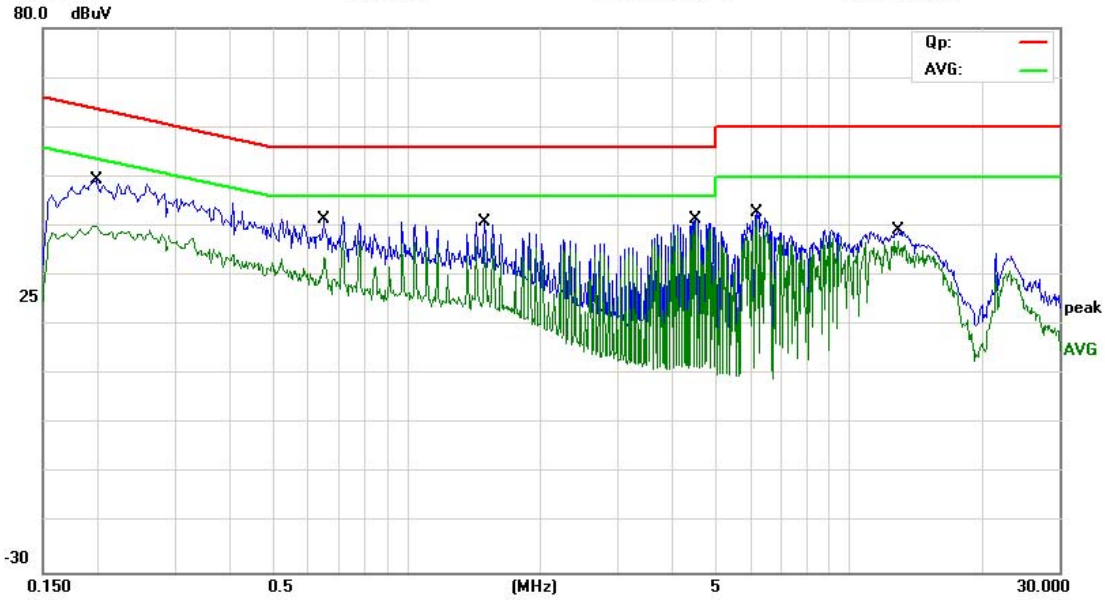
Conducted Emission Measurement

File :C14S Data :#13 Date: 2012-04-11 Time: 15:35:17



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: 19" LCD Monitor
M/N: C14S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1980	37.33	11.88	49.21	63.69	-14.48	QP	
2		0.6500	31.42	10.00	41.42	56.00	-14.58	QP	
3		1.5020	31.23	9.50	40.73	56.00	-15.27	QP	
4		4.5020	29.99	11.50	41.49	56.00	-14.51	QP	
5		6.1980	31.60	11.28	42.88	60.00	-17.12	QP	
6		12.9820	30.20	9.00	39.20	60.00	-20.80	QP	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Sky

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Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement

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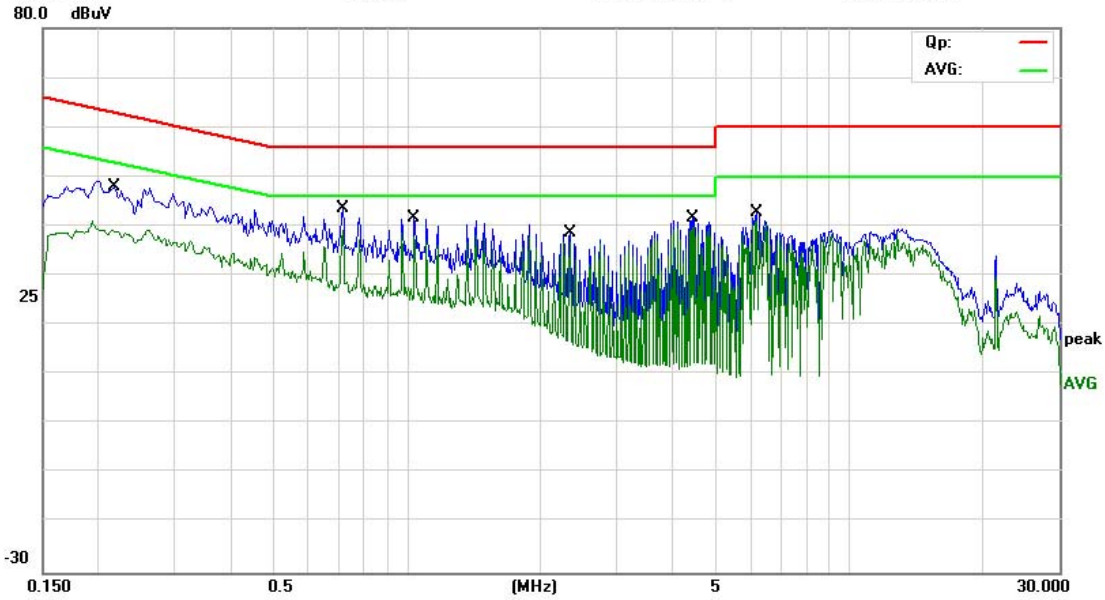

Site site #1 Phase: N Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: 19" LCD Monitor
M/N: G11S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2180	36.22	11.88	48.10	62.89	-14.79	QP	
2	*	0.7180	33.45	10.00	43.45	56.00	-12.55	QP	
3		1.0420	31.70	9.96	41.66	56.00	-14.34	QP	
4		2.3460	29.27	9.35	38.62	56.00	-17.38	QP	
5		4.4340	30.32	11.43	41.75	56.00	-14.25	QP	
6		6.1940	31.43	11.28	42.71	60.00	-17.29	QP	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Sky

Compliance Laboratory
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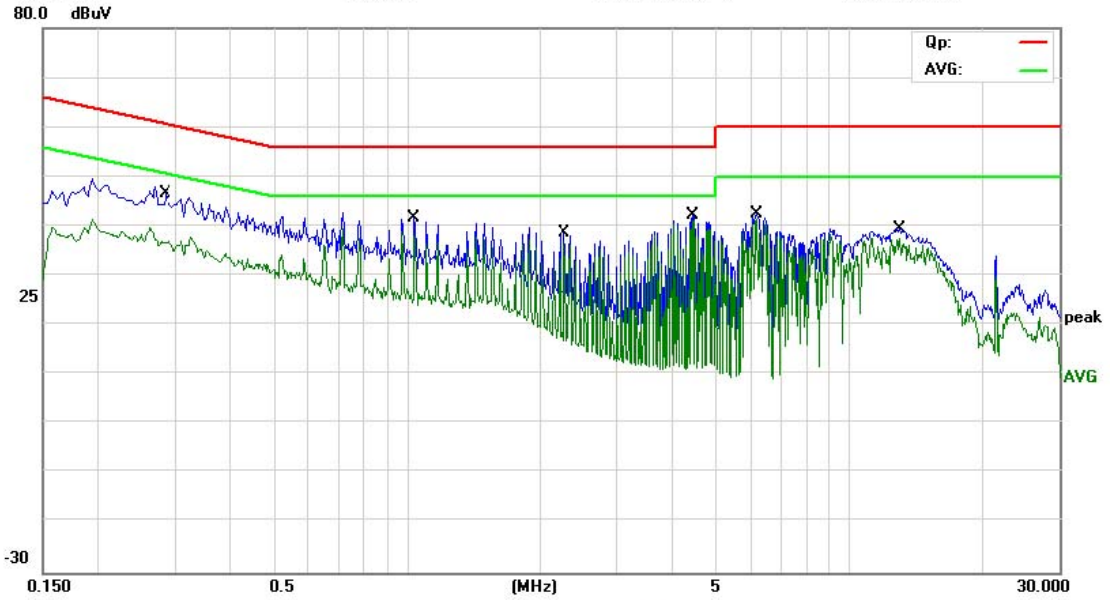
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement

File :G11S Data :#8 Date: 2012-04-11 Time: 15:39:36



Site site #1 Phase: L1 Temperature: 26
Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
EUT: 19" LCD Monitor
M/N: G11S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2860	35.13	11.43	46.56	60.64	-14.08	QP	
2		1.0420	31.77	9.96	41.73	56.00	-14.27	QP	
3		2.2820	29.47	9.28	38.75	56.00	-17.25	QP	
4	*	4.4340	30.74	11.43	42.17	56.00	-13.83	QP	
5		6.1898	31.31	11.29	42.60	60.00	-17.40	QP	
6		13.0380	30.43	9.00	39.43	60.00	-20.57	QP	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Sky

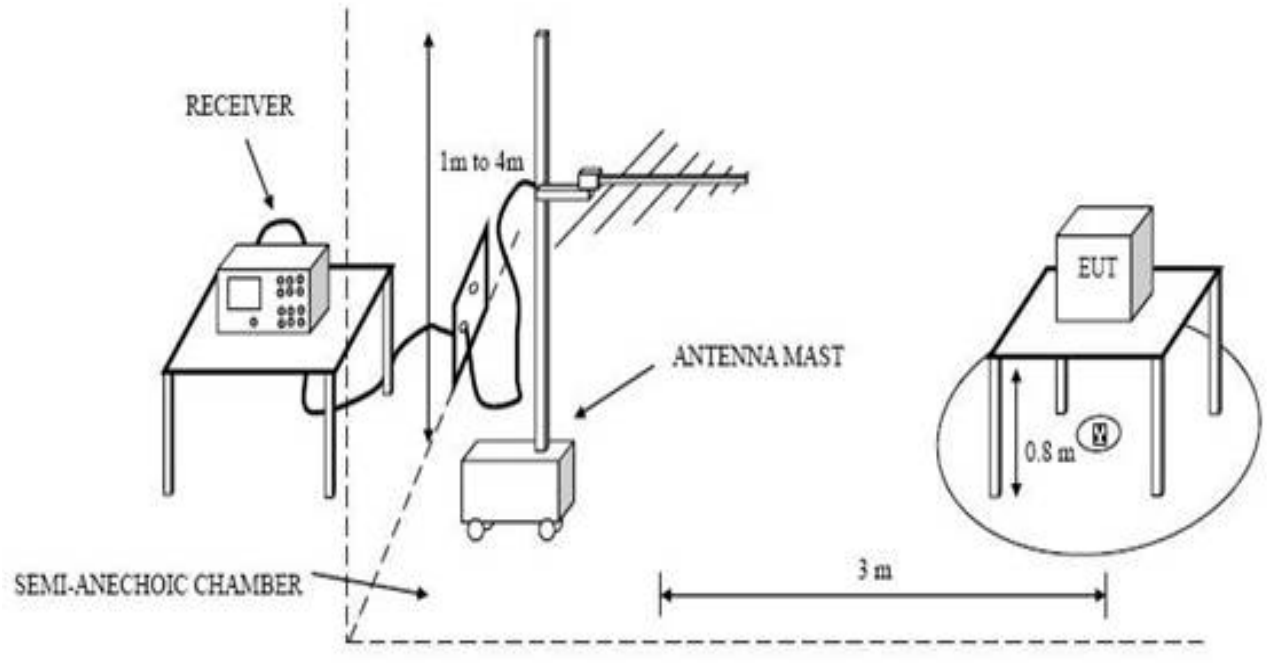
6.TEST RADIATED EMISSION REQUIREMENT

6.1 Limits Of Radiated Disturbances At 3m Distances For Class B

Frequency MHz	Field Strength uV/m	Field Strength dBuV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

Note: Adjust the brightness and contrast to maximum
Emissions attenuated more than 20 dB below the permissible value are not reported.

6.2：Block Of Radiation Interference



6.3 Preliminary Radiated Emission Test

In the frequency range above 30MHz,Bi-log Test Antenna(30MHz to 1GHz)and Horn Test Antenna (above 1GHz)are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

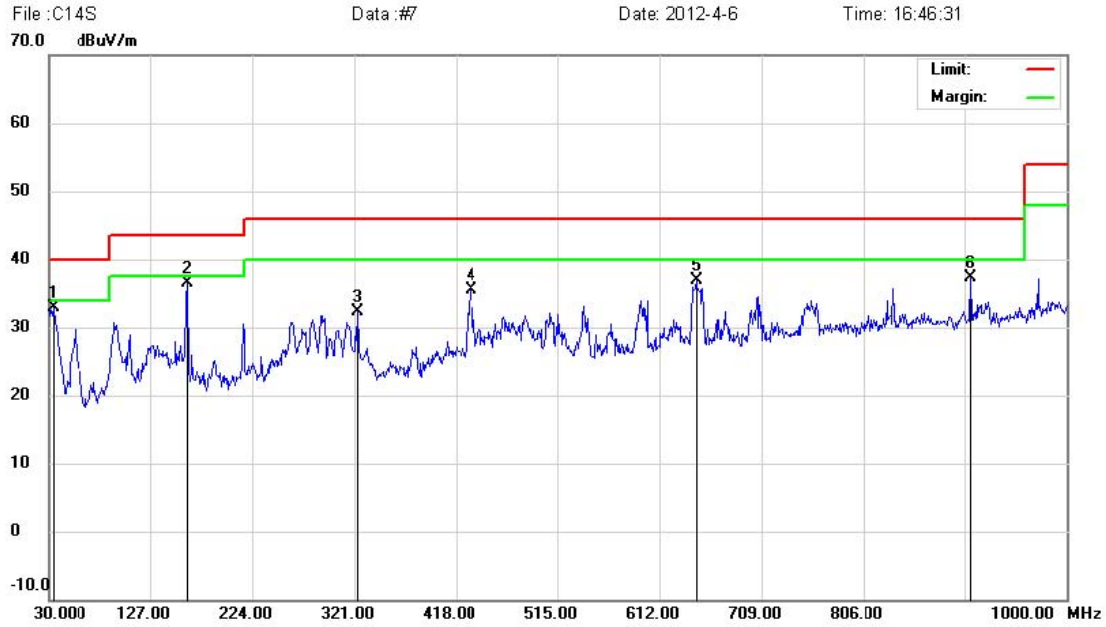
Preliminary Radiated Emission Test			
Frequency Range Investigated		30MHz to 5000MHz	
Mode of operation	Details	Phase	Date#
VGA Display	800*600	H/V	
	1024*768	H/V	
	1280*1024	H/V	
DVI Display	800*600	H/V	
	1024*768	H/V	
	1280*1024	H/V	

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing

6.4 Test Result Of Radiation Emission Test

Compliance Laboratory
Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: 19" LCD Monitor
M/N: C14S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

Polarization: *Vertical*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 61 %

Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.8800	11.06	21.81	32.87	40.00	-7.13	QP			
2	*	161.9200	19.32	17.26	36.58	43.50	-6.92	QP			
3		323.9100	15.34	17.00	32.34	46.00	-13.66	QP			
4		431.5800	15.25	20.32	35.57	46.00	-10.43	QP			
5		646.9200	12.77	24.07	36.84	46.00	-9.16	QP			
6		908.8200	9.72	27.58	37.30	46.00	-8.70	QP			

*:Maximum data x:Over limit l:over margin

Engineer Signature: Sky

Compliance Laboratory
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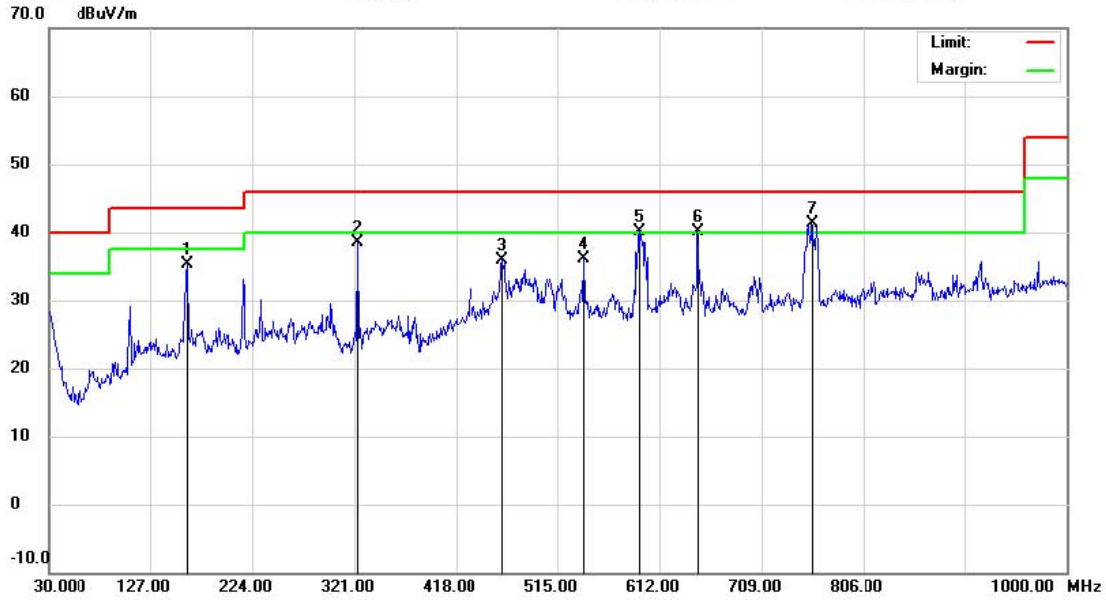
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement

File :C14S Data :#8 Date: 2012-4-6 Time: 16:49:10



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: 19" LCD Monitor
M/N: C14S
Mode: DVI Input
Note: DVI:1280*1024@60Hz

Polarization: *Horizontal*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 61 %
Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		161.9200	18.13	17.26	35.39	43.50	-8.11	QP			
2		323.9100	21.47	17.00	38.47	46.00	-7.53	QP			
3		462.6200	15.26	20.69	35.95	46.00	-10.05	QP			
4		540.2199	13.88	22.20	36.08	46.00	-9.92	QP			
5	!	592.6000	17.19	22.83	40.02	46.00	-5.98	QP			
6	!	647.8900	16.00	24.08	40.08	46.00	-5.92	QP			
7	*	756.5300	15.70	25.67	41.37	46.00	-4.63	QP			

*:Maximum data x:Over limit !:over margin

Engineer Signature: Sky

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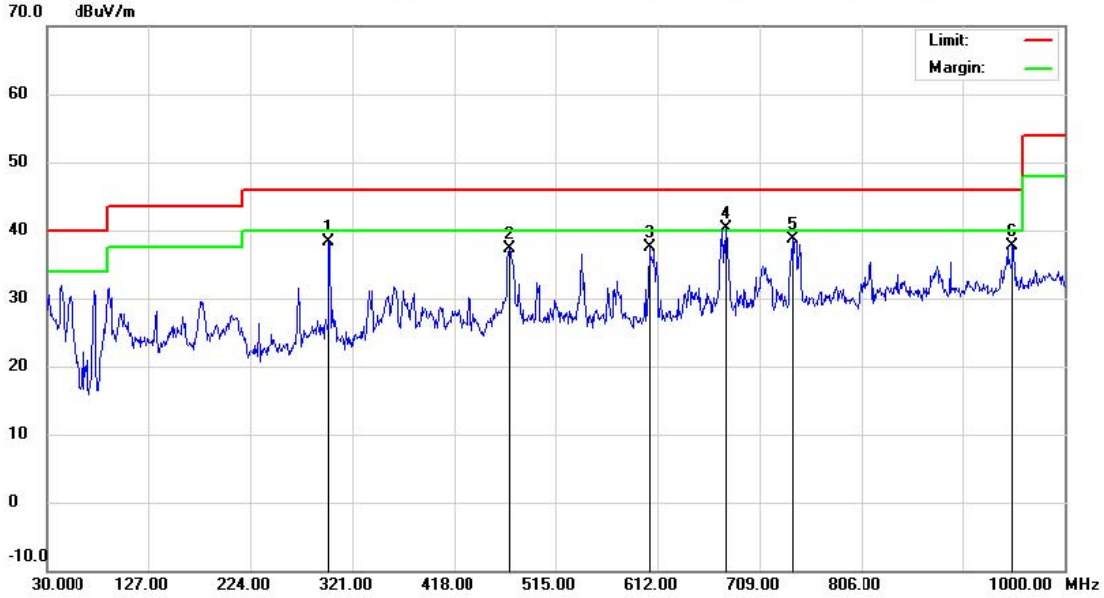
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement

File :G11S Data :#7 Date: 2012-4-13 Time: 18:18:23



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: 19" LCD Monitor
M/N: G11S
Mode: VGA Input
Note: VGA:1280*1024@60Hz

Polarization: *Vertical*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 61 %
Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		298.6900	18.94	19.30	38.24	46.00	-7.76	QP			
2		471.3500	16.01	21.25	37.26	46.00	-8.74	QP			
3		604.2400	14.33	23.17	37.50	46.00	-8.50	QP			
4	*	676.9900	15.79	24.53	40.32	46.00	-5.68	QP			
5		740.0400	13.26	25.50	38.76	46.00	-7.24	QP			
6		950.5300	9.72	27.92	37.64	46.00	-8.36	QP			

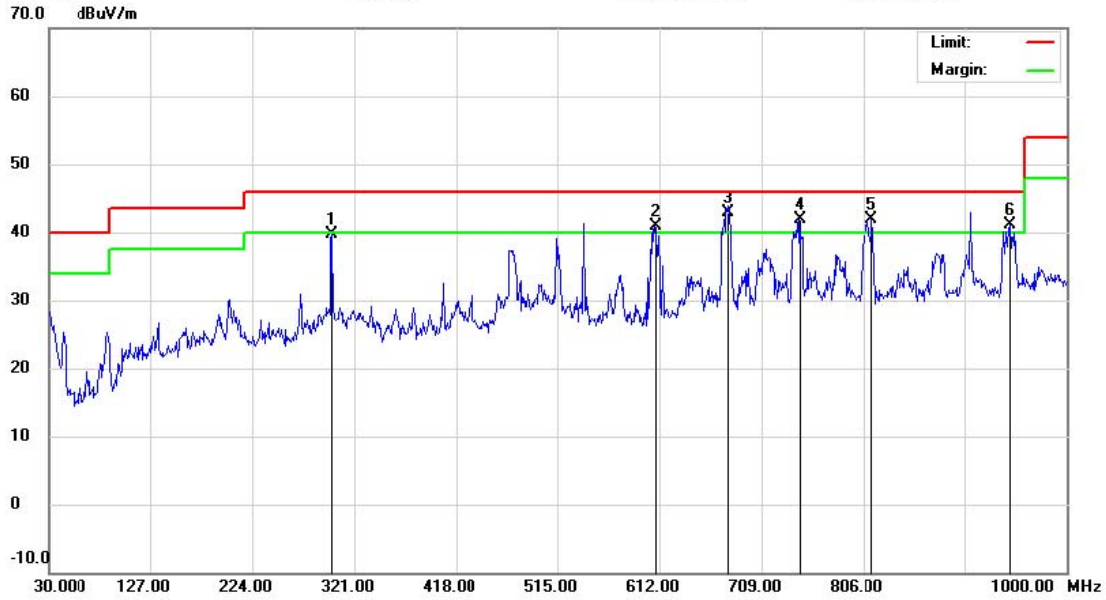
*:Maximum data x:Over limit l:over margin

Engineer Signature: Sky

Compliance Laboratory
Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement

File :G11S Data :#8 Date: 2012-4-13 Time: 18:20:41



Site site MOST 3M
Limit: FCC Part15 B 3M Radiation
EUT: 19" LCD Monitor
M/N: G11S
Mode: VGA Input
Note: VGA:1280*1024@60Hz

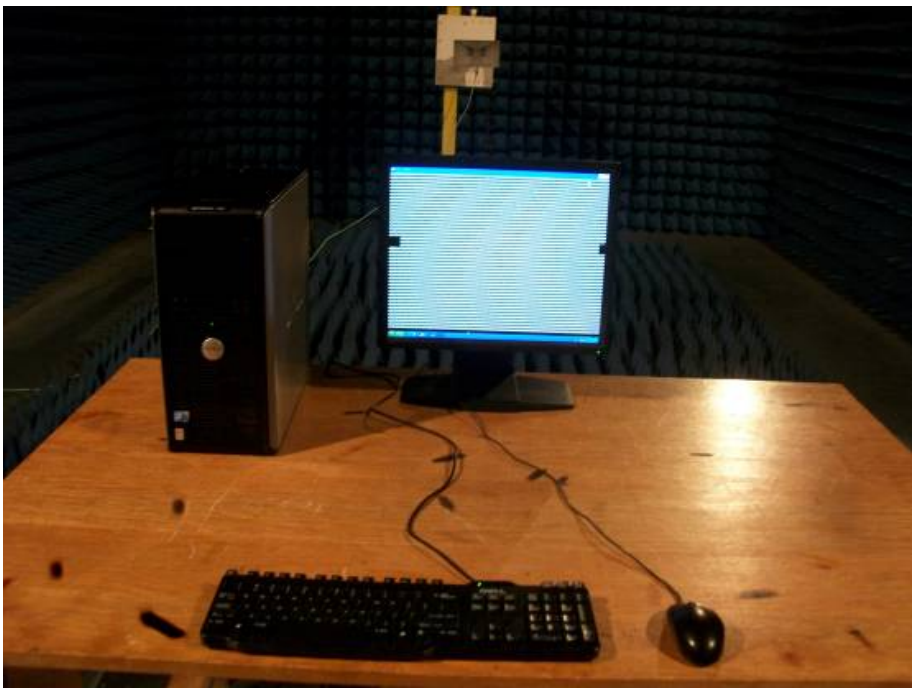
Polarization: *Horizontal*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 61 %
Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		299.6600	20.44	19.30	39.74	46.00	-6.26	QP			
2	!	607.1500	17.77	23.20	40.97	46.00	-5.03	QP			
3	*	676.9900	18.40	24.53	42.93	46.00	-3.07	QP			
4	!	744.8900	16.15	25.79	41.94	46.00	-4.06	QP			
5	!	814.7300	15.80	26.14	41.94	46.00	-4.06	QP			
6	!	946.6500	13.42	27.77	41.19	46.00	-4.81	QP			

*:Maximum data x:Over limit !:over margin

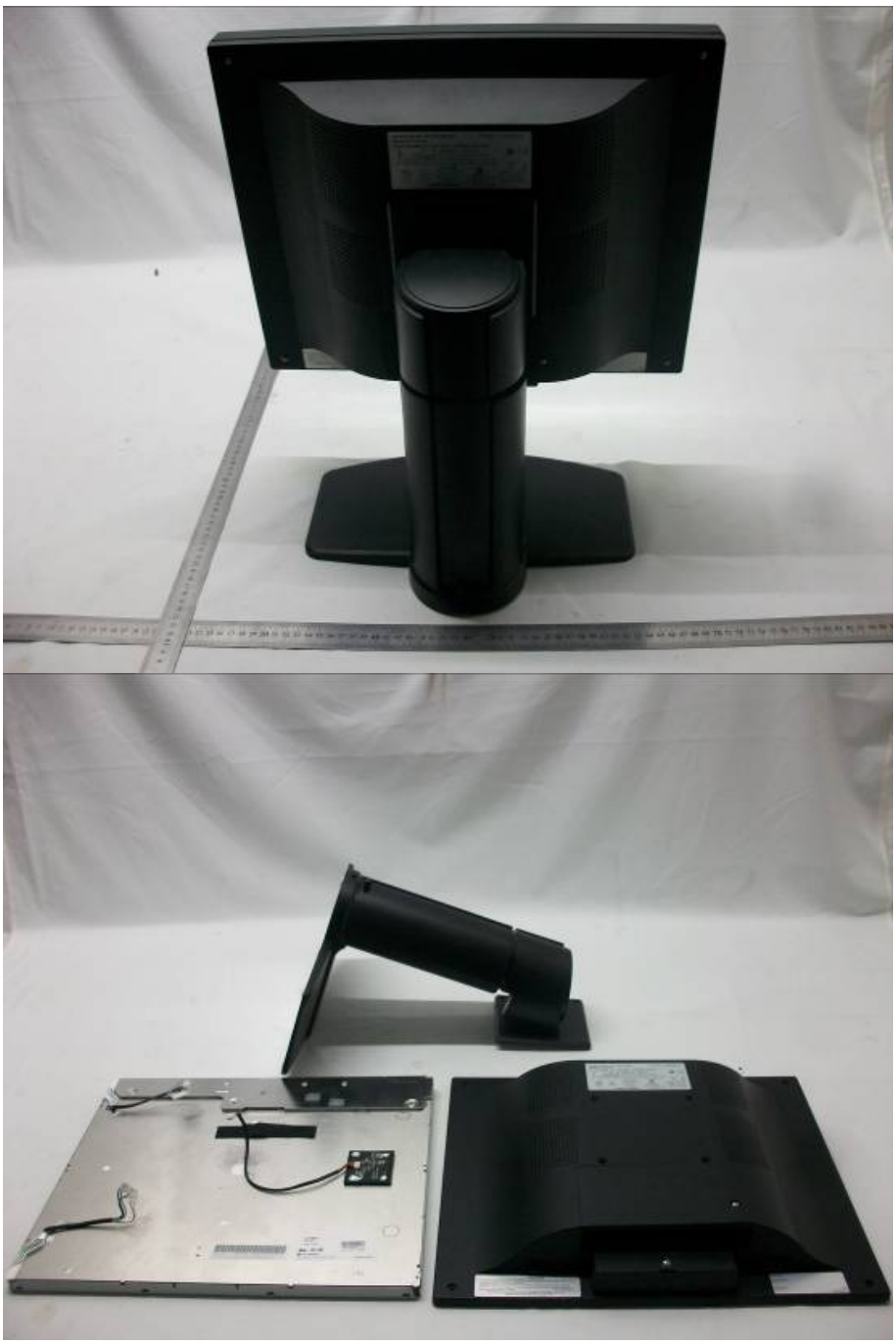
Engineer Signature: Sky

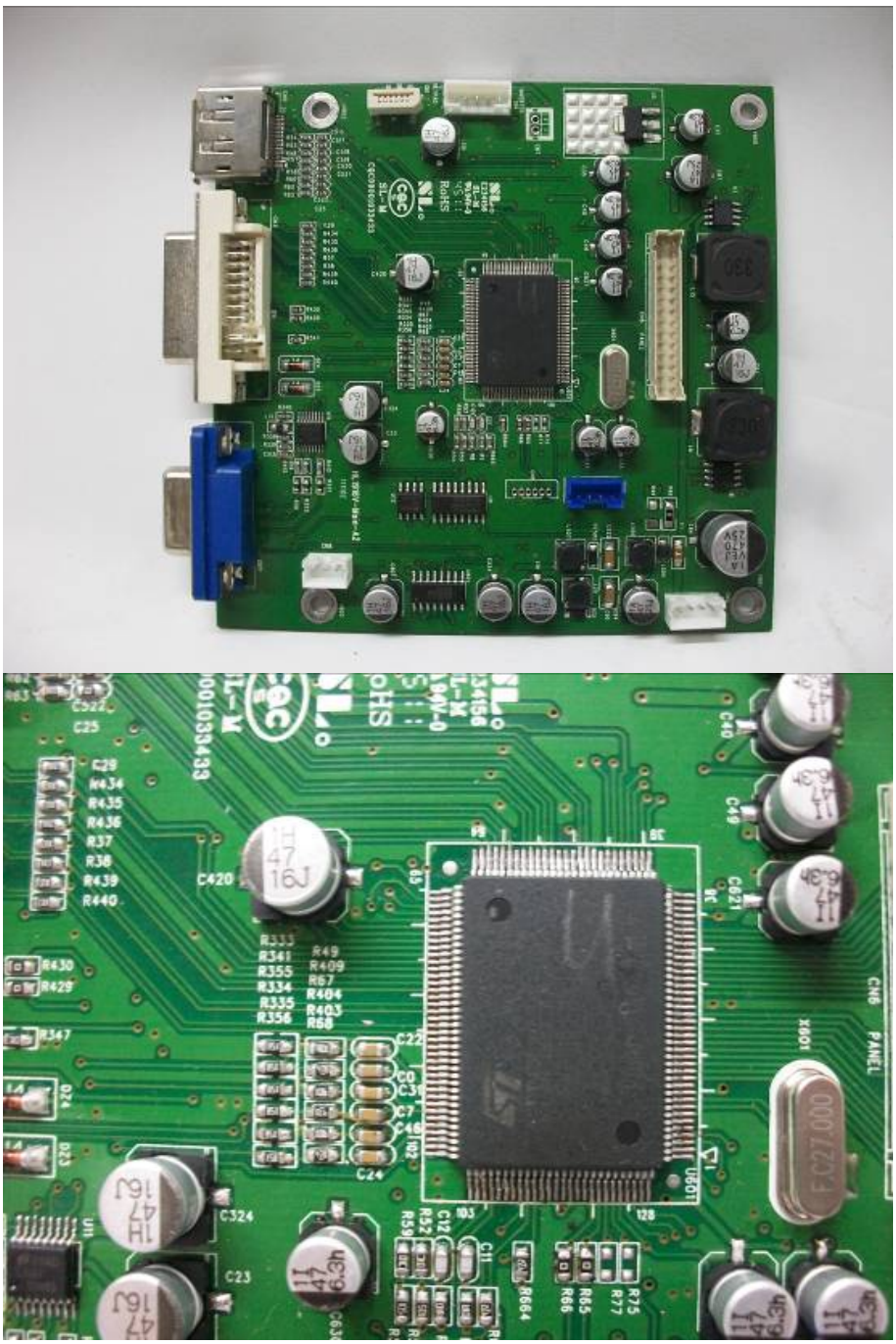


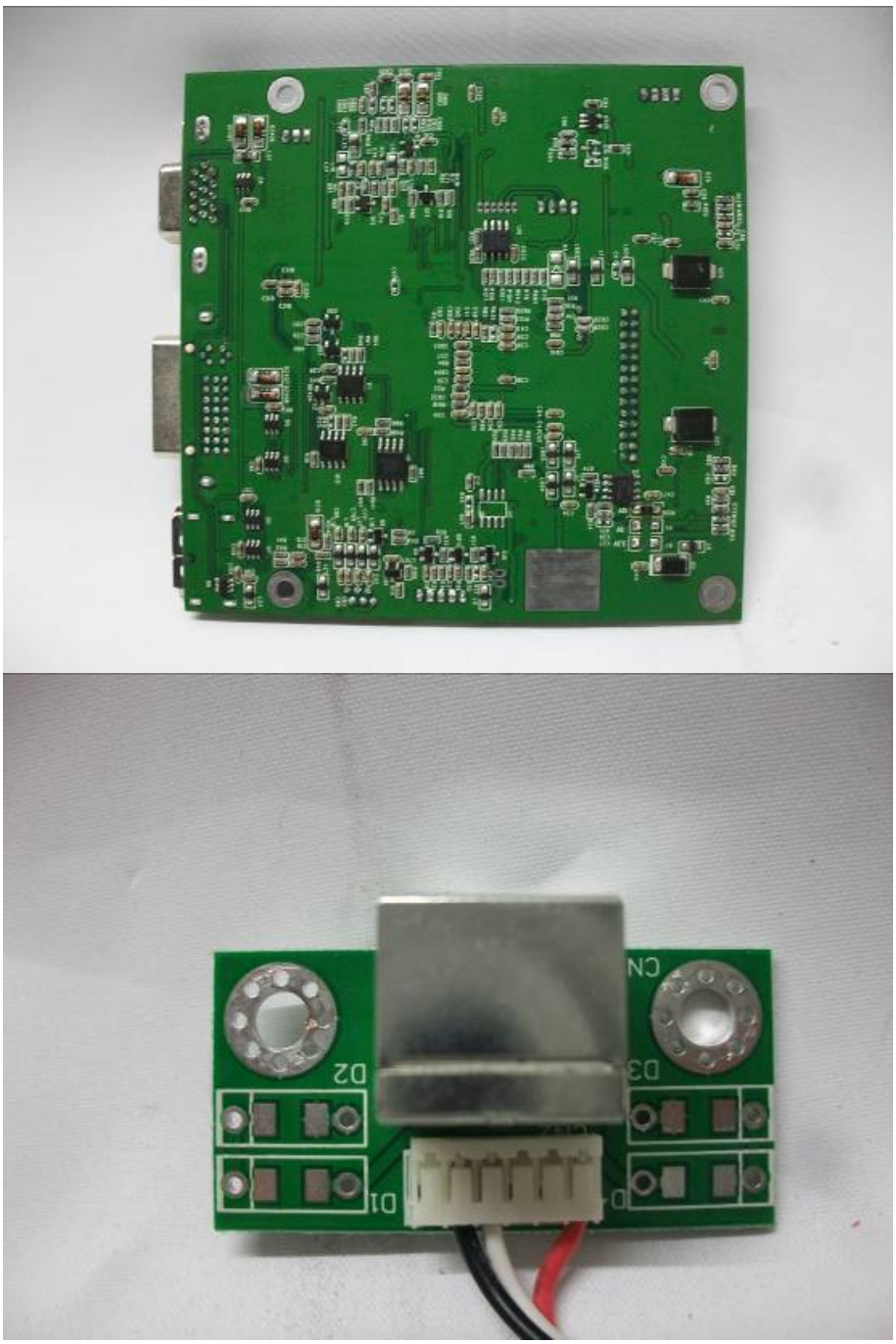
Test photo of radiated emission (1000MHz-5000MHz)

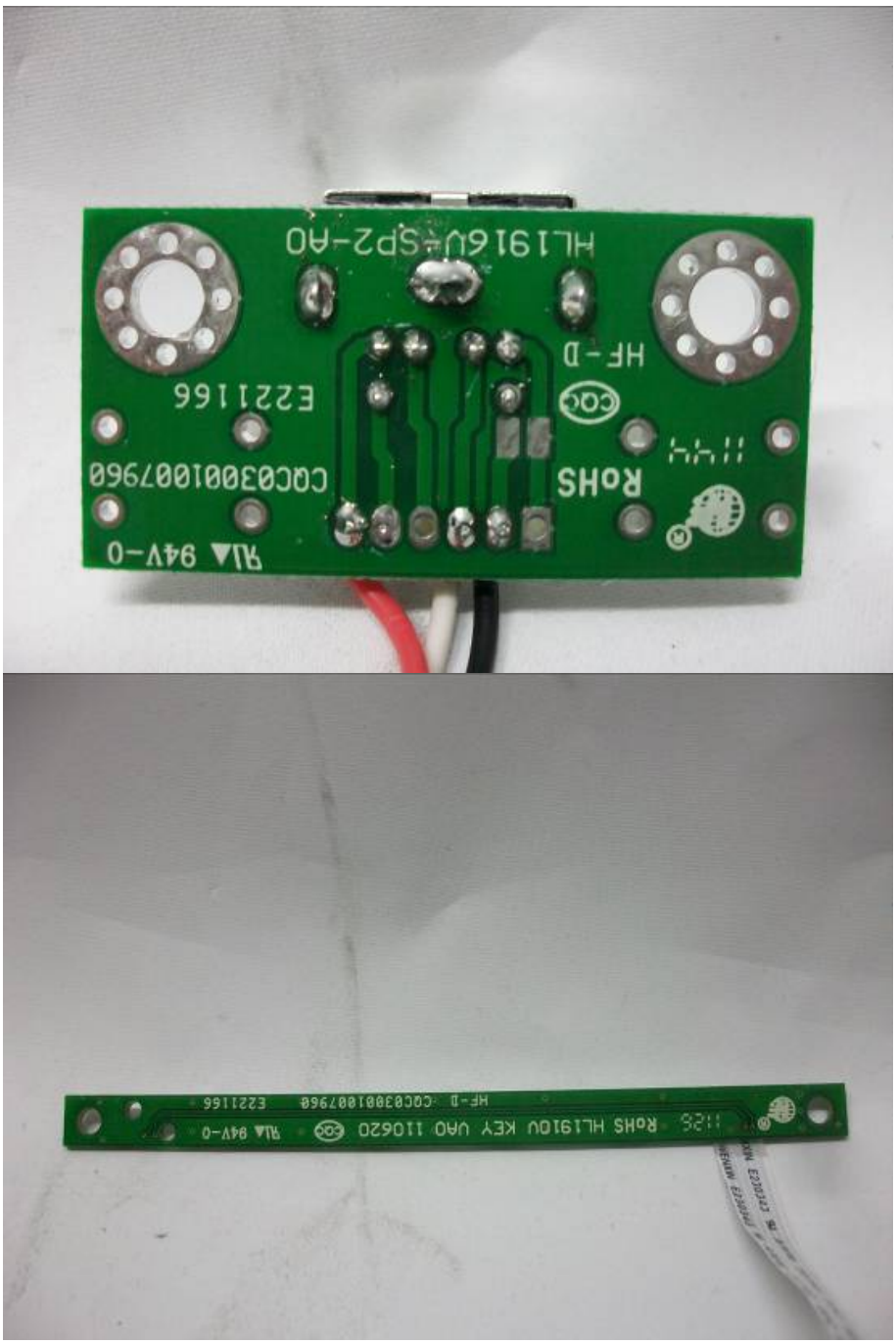
Test photo of radiated emission (30MHz-1000MHz)

Test photo of Conducted emission





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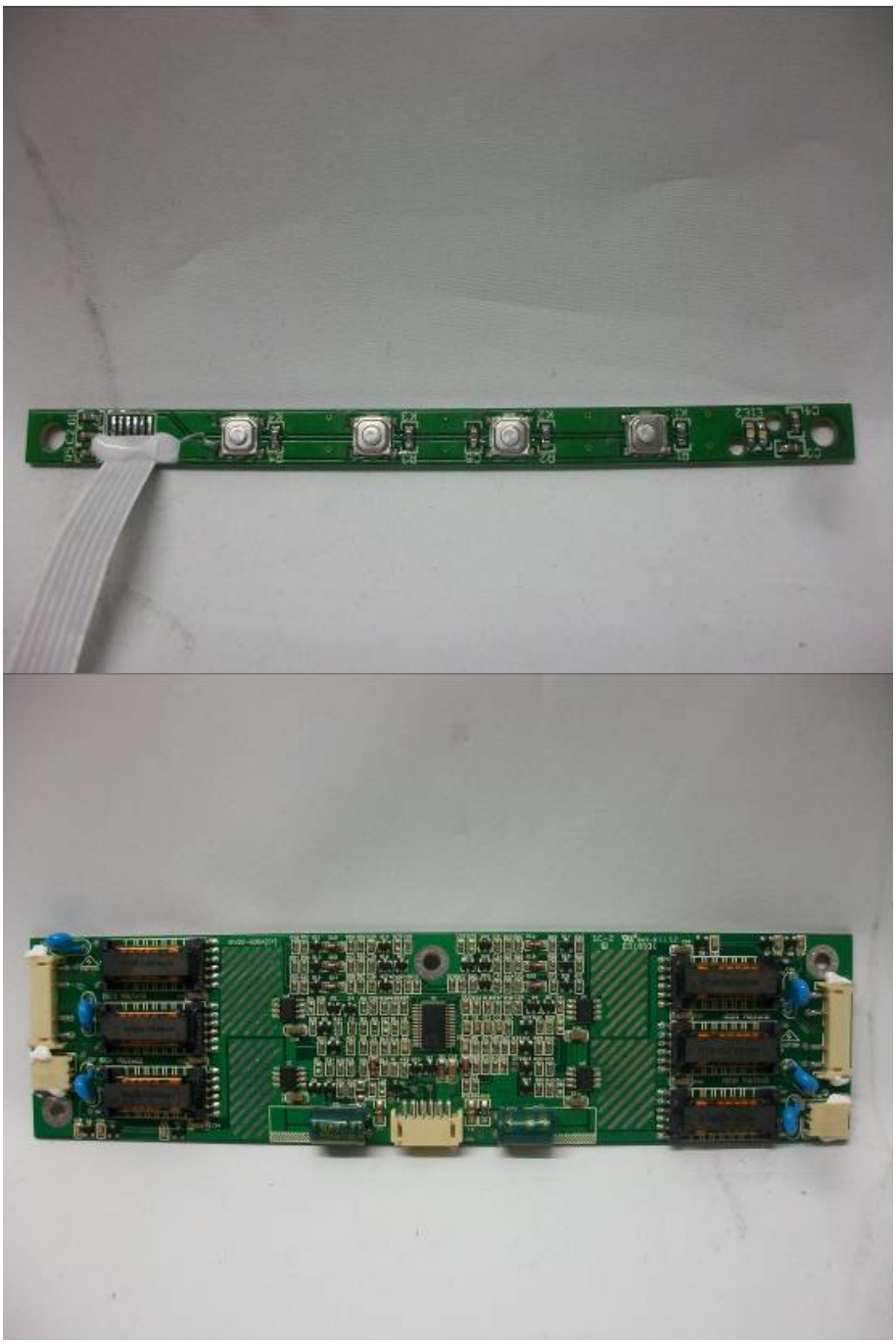
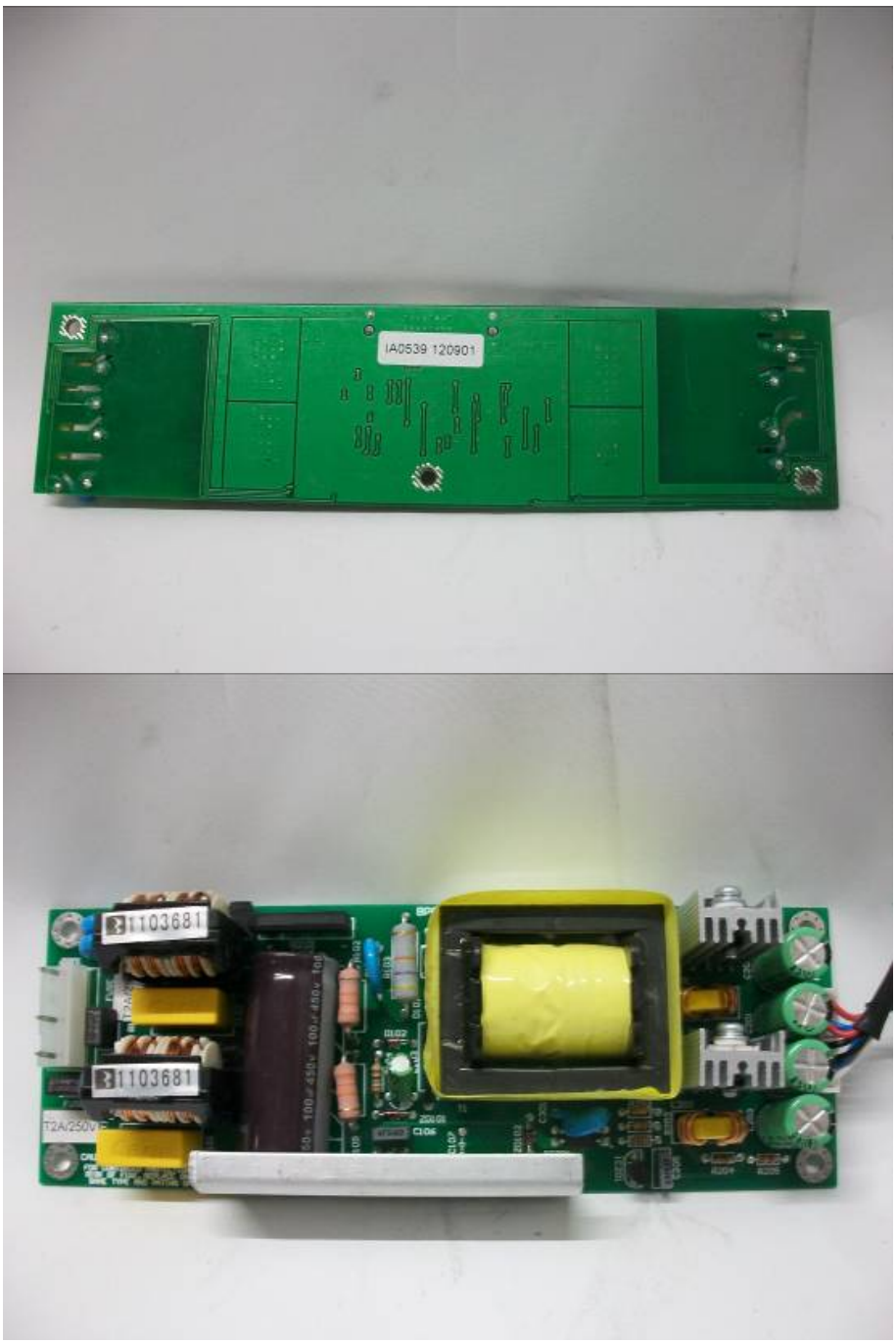
RoHS
CQC03001007960
94V-0




IA0539 120901
1103681
1103681
T2A/250V