

PEP Testing Laboratory

12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,

Taipei Hsien, Taiwan, R. O. C.

TEL: 886-2-26922097 FAX: 886-2-26956236

FCC REGISTRATION NO. : 90868

REPORT NO. : E940310

FCC TEST REPORT

According to

FCC Part 15 Class B

EQUIPMENT : Video Switcher

MODEL NO. : SE-500

APPLICANT : DATAVIDEO TECHNOLOGIES CO., LTD.

10F, NO. 176, JIAN-YI RD., CHUNG HO CITY,
TAIPEI HSIEN 235, TAIWAN, R.O.C.

TEST ENGINEER : HADES HUANG

CHECKED BY : JASON KUNG

ISSUED DATE : AUG. 15, 2005

- The test result refers exclusively to the test presented test model / sample.
- Without the written authorization of the test lab., the Test Report may not be copied.

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1. General

1.1 General Information:

APPLICANT : DATAVIDEO TECHNOLOGIES CO., LTD.
10F, NO. 176, JIAN-YI RD., CHUNG HO CITY,
TAIPEI HSIEN 235, TAIWAN, R.O.C.

MANUFACTURER : DATAVIDEO TECHNOLOGIES CO., LTD
10F, NO. 176, JIAN-YI RD., CHUNG HO CITY,
TAIPEI HSIEN 235, TAIWAN, R.O.C.

MEASUREMENT PROCEDURE : CISPR 22

1.2 Place of Measurement

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2. Product Information

- a. **EUT Name:** Video Switcher
- b. **Model No. :** SE-500
- c. **CPU Type :** N/A
- d. **CPU Frequency :** N/A
- e. **Crystal/Oscillator(s) :** 27MHz, 54MHz, 22.1184MHz, 13.5MHz
- f. **Chassis Used :** METAL
- g. **Port/Connector(s) :** BNC Port * 7, S-Video Port * 5, RS232 Port * 1,
D-SUB Port * 1, MIDI Control Port * 1,
MIC Port * 2, Audio Port * 4, Power Jack * 1,
Headphone Jack * 1
- h. **Power Rating :** Adapter ----
Manufacturer : SUNNY
Model No. : SYS1298-1812-W3U
Input : AC 100-240V 50-60Hz 1.0A
Output : DC 12V 1.5A
- i. **Condition of the EUT :** Prototype Sample Engineering Sample
 Production Sample
- j. **Test Item Receipt Date :** AUG, 08, 2005
- k. **Date(s) of performance of test:** AUG, 08, 2005 –AUG, 15, 2005

3. EUT Description and Test Methods

The equipment under test (EUT) is Video Switcher model SE-500. The EUT that contains 7 BNC connectors, 5 S-Video ports, one RS232 port, one D-SUB port, one MIDI control port, two MIC ports, 4 Audio ports and one phone jack serves the function of video editor. SPS adaptor supplies EUT 12 Vdc from ac mains. For more detail specification about the EUT, please refer to the user's manual.

Test method: According to the major function designed, DVD player, TV, microphones and pattern generator were installed on EUT I/O ports. The test was carried out on EUT operational condition and the worst-case test result was recorded and provided in this report.

Conducted emission test:

The system was setup with the EMI diagnostic software running. The power line conducted EMI tests were run on the line and neutral conductors of the power cord and the results were recorded. The effect of varying the position of the interface cables has been investigated to find the worst-case configuration that produces maximum emission.

At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (A) quasi-peak values were under quasi-peak limit but exceeded average limit, or (B) peak values were under quasi-peak limit but exceeded average limit.

Radiated emission test:

The maximum readings were found by varying the height of antenna and then rotating the turntable. Both polarization of antenna, horizontal and vertical, are measured. The effect of varying the position of the interface cables has been investigated to find the configuration that produces maximum emission.

The highest emissions were also analyzed in details by operating the spectrum analyzer in fixed tuned quasi-peak mode to determine the precise amplitude of the emissions.

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4. Modification(s):

N/A

5. Test Software Used

N/A

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6. Support Equipment Used

1.TV Pattern

FCC ID : N/A

Manufacturer : FLUKE

Model Number : PM5418

Power Supply : Switching

Power Cord : Don-Shielded , Detachable,1.8m

Data Cable : N/A

2.TV (TV1)

FCC ID : Declaration of Conformity(DoC)

Manufacturer : SONY

Model Number : PVM-14N6E

Power Supply : Switching

Power Cord : Non-Shielded , Detachable,1.8m

Data Cable : 1 > Shielded , Detachable,1.2m

2 > Back Shell : N/A

3.DVD Player

FCC ID : N/A

Manufacturer : SONY

Model Number : DVP-K370

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7. Conducted Disturbance Test

7.1 Conducted Disturbance Emission Limit

Frequency	Maximum RF Line Voltage dB(uV)	
	Class B	
MHz	QUASI- PEAK	AVERAGE
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

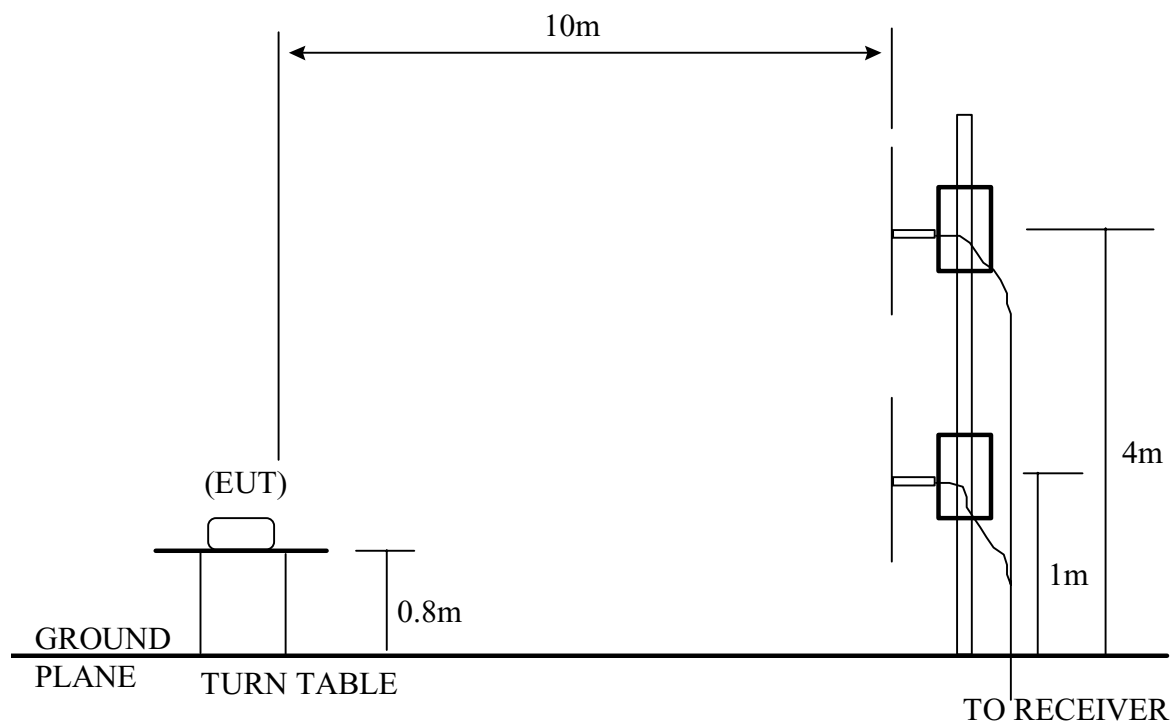
8. Radiated Disturbance Test

8.1 Setup of the Test Facilities

The equipment under test was setup on the non-conductive table in the open field site.

The table was placed on a remote turntable constructed of a wooden material. The top of the table is located 1m above the ground plane. The turntable was rotated to obtain the maximum level of radiated emissions from the system containing the EUT for each emissions level investigated.

8.2 Open Test Site Setup Diagram



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8.3 Radiated Disturbance Emission Limit

Limits for radiated disturbance of Class B ITE at
a measuring distance of 10 m

Frequency MHz	Field Strength dB(μ V/m)
30 to 230	30
230 to 1 000	37

NOTES

- 1 The lower limit shall apply at the transition frequency.
- 2 Additional provisions may be required for cases where interference occurs.

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9. Conducted Test Configuration Photo

< FRONT VIEW >



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10. Conducted Emissions Test Data

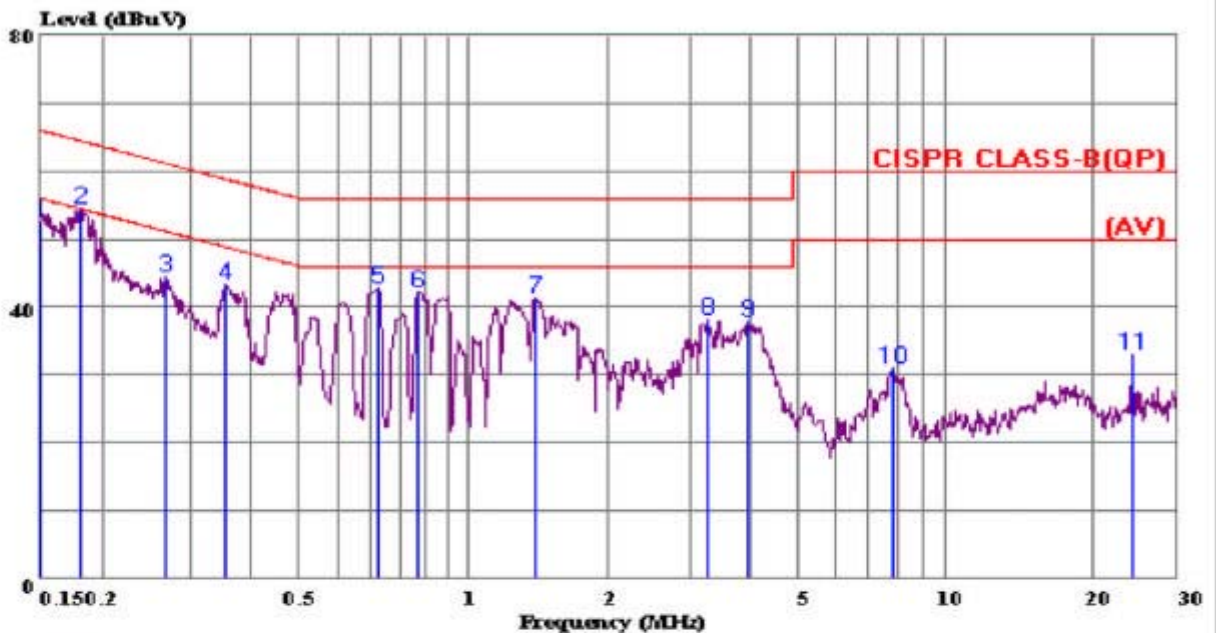
Model No. : SE-500
Frequency range : 150KHz to 30MHz
Detector : Peak Value
Temperature : 24 °C
Humidity : 56 %

Test Data : # 579 < LINE >
577 < NEUTRAL >

- Note
1. Level = Read Level + Cable Loss + Probe (LISN)
 2. Over Limit = Level – Limit = Margin



Data#: 579 File#: EN55022-B(QP).EMI Date: 2005-08-08 Time: 10:13:50



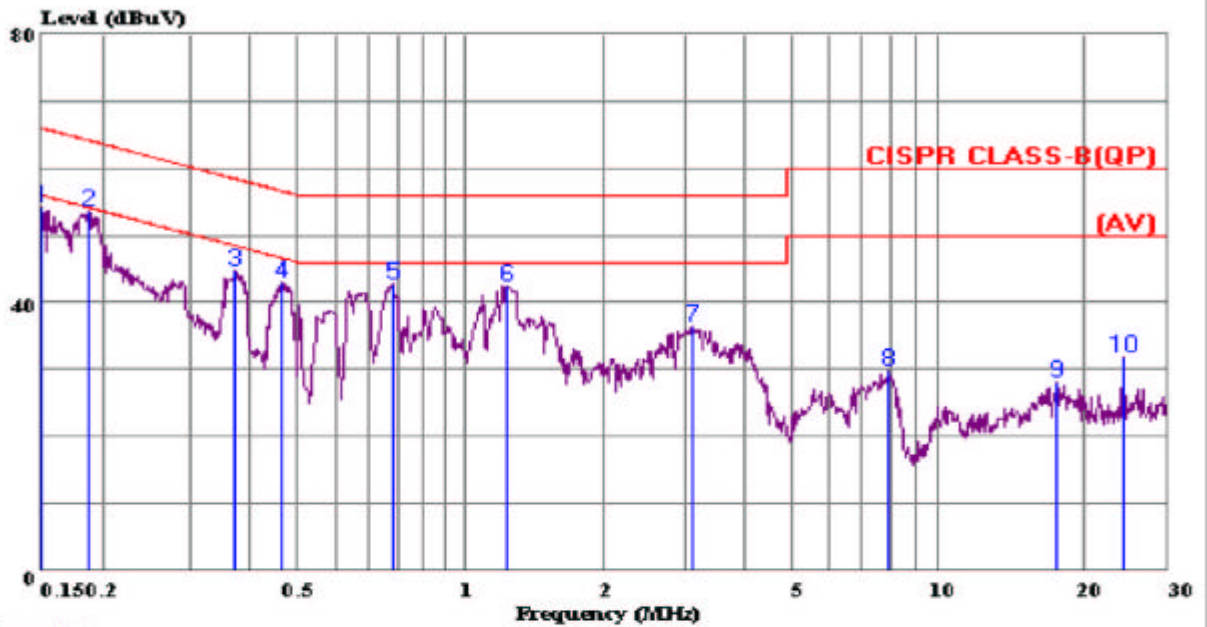
Trace: 578
 Site : Shih-Chi : Conduction No.1(Gene)
 Condition: CISPR CLASS-B(QP) LISN.L(16A) LINE
 eut : E940310
 power : AC 120V 60Hz
 memo : Peak Value
 : Final Test

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	Freq	Level	Over	Limit	Read	Probe	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.150	52.39	-13.61	66.00	52.19	0.10	0.10	Peak
2	0.181	54.43	-10.03	64.46	54.23	0.10	0.10	Peak
3	0.267	44.42	-16.78	61.20	44.15	0.10	0.17	Peak
4	0.354	43.21	-15.66	58.87	43.01	0.10	0.10	Peak
5	0.724	42.75	-13.25	56.00	42.55	0.10	0.10	Peak
6	0.871	42.17	-13.83	56.00	41.90	0.10	0.17	Peak
7	1.503	41.21	-14.79	56.00	40.91	0.10	0.20	Peak
8	3.346	38.13	-17.87	56.00	37.79	0.10	0.24	Peak
9	4.027	37.84	-18.16	56.00	37.44	0.10	0.30	Peak
10	7.977	30.87	-29.13	60.00	30.32	0.25	0.30	Peak
11	24.271	32.96	-27.04	60.00	31.79	0.77	0.40	Peak



Data#: 577 File#: EN55022-B(QP).EMI Date: 2005-08-08 Time: 10:13:14



Trace: 576
 Site : Shih-Chi : Conduction No.1(Gene)
 Condition: CISPR CLASS-B(QP) LISN.N(16A) NEUTRAL
 eut : E940310
 power : AC 120V 60Hz
 memo : Peak Value
 : Final Test

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	Freq	Level	Over	Limit	Read	Probe	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.150	54.15	-11.85	66.00	53.95	0.10	0.10	Peak
2	0.186	53.54	-10.66	64.20	53.34	0.10	0.10	Peak
3	0.373	44.59	-13.84	58.43	44.39	0.10	0.10	Peak
4	0.464	43.01	-13.62	56.63	42.78	0.10	0.13	Peak
5	0.779	42.67	-13.33	56.00	42.47	0.10	0.10	Peak
6	1.338	42.38	-13.62	56.00	42.08	0.10	0.20	Peak
7	3.190	36.46	-19.54	56.00	36.14	0.10	0.22	Peak
8	8.020	29.89	-30.11	60.00	29.34	0.25	0.30	Peak
9	17.755	28.21	-31.79	60.00	27.45	0.46	0.30	Peak
10	24.271	31.70	-28.30	60.00	30.71	0.59	0.40	Peak

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11. Radiated Test Configuration Photos

< FRONT VIEW >



< REAR VIEW >



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12. Radiated Emissions Test Data

Model No. : SE-500
Frequency range : 30MHz to 1GHz **Detector** : Quasi-Peak Value
Frequency range : above 1GHz **Detector** : Quasi-Peak/Average Value
Temperature : 29° C **Humidity** : 58%

Antenna polarization : HORIZONTAL ; **Test distance** : 10m ;

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (° angle)	Antenna High(m)
54.105	21.84	- 8.16	30.00	32.19	10.47	0.58	21.40	341.0	4.0
65.793	22.86	- 7.14	30.00	35.12	8.34	0.82	21.42	270.0	4.0
115.698	24.13	- 5.87	30.00	32.63	11.80	1.18	21.48	55.0	4.0
189.095	27.00	- 3.00	30.00	34.53	11.92	1.85	21.30	186.0	3.5
729.553	28.09	- 8.91	37.00	22.91	20.88	4.50	20.20	166.0	1.5
836.038	29.22	- 7.78	37.00	22.14	22.12	5.00	20.04	275.0	1.5

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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Model No. : SE-500
Frequency range : 30MHz to 1GHz **Detector : Quasi-Peak Value**
Frequency range : above 1GHz **Detector : Quasi-Peak/Average Value**
Temperature : 29° C **Humidity : 58%**

Antenna polarization : VERTICAL ; Test distance : 10m ;

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
112.963	22.22	- 7.78	30.00	30.85	11.66	1.17	21.46	118.0	1.0
116.024	23.33	- 6.67	30.00	31.82	11.81	1.18	21.48	169.0	1.0
133.228	19.36	-10.64	30.00	25.64	13.71	1.41	21.40	24.0	1.0
165.935	20.42	- 9.58	30.00	24.56	15.62	1.64	21.40	225.0	1.5
189.159	23.49	- 6.51	30.00	31.02	11.92	1.85	21.30	79.0	1.5
782.564	31.29	-5.71	37.00	24.94	21.52	4.90	20.07	163.0	3.0

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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13. List of Test Equipment

Test Mode	Instrument	Model No.	Serial No.	Next Cal. Date	Cal. Interval
Conduction (No.1)	R & S Receiver	ESHS10	830223/008	May 21, 2006	1Year
	Rolf Heine LISN	NNB-4/63TL	98008	May 01, 2006	1Year
	R & S LISN	ESH3-Z5	844982/039	Aug. 04, 2006	1Year
	Spectrum Analyzer	R3261A	91720076	June 07, 2006	1Year
	RF Cable	Rg400	N/A	May 11, 2006	1Year
	Schaffner ISN	T411	N/A	June 28, 2006	1Year
Radiation (OP No.1)	R & S Receiver	ESVS30	863342/012	May 21, 2006	1Year
	Schaffner Pre-amplifier	CPA9232	1028	May 19, 2006	1Year
	COM-Power Horn Ant.	AH-118 (1GHz~18GHz)	10095	May 20, 2007	2Year
	Schwarzbeck Precision Dipole Ant	VHAP (30MHz~1GHz)	970 + 971 953 + 954	June 26, 2006	3Year
	R & S Signal Generator	SMY01	841104/037	Apr. 28, 2007	2Year
	RF Cable	No. 1	N/A	May 10, 2006	1Year
	EMCO Antenna	3142B (26MHz~2GHz)	9904-1370	Aug. 22, 2006	1Year

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14. Labelling Requirement

A warning label with the following statement shall be permanently attached and conspicuously located on the equipment :

This device complies with Part 15 of the FCC Rules . Operation is subject to the following two conditions : (1) This device may not cause harmful interference , and (2) this devices must accept any interference received , including interference that may cause undesired operation .

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15. Information to The User

The following FCC statement should be declared in a conspicuous location in the user's manual .

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna .
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Warning : A shielded- type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.

Use only shielded cables to connect I / O devices to this equipment.

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16. EUT Photographs

MODEL NO. : SE-500



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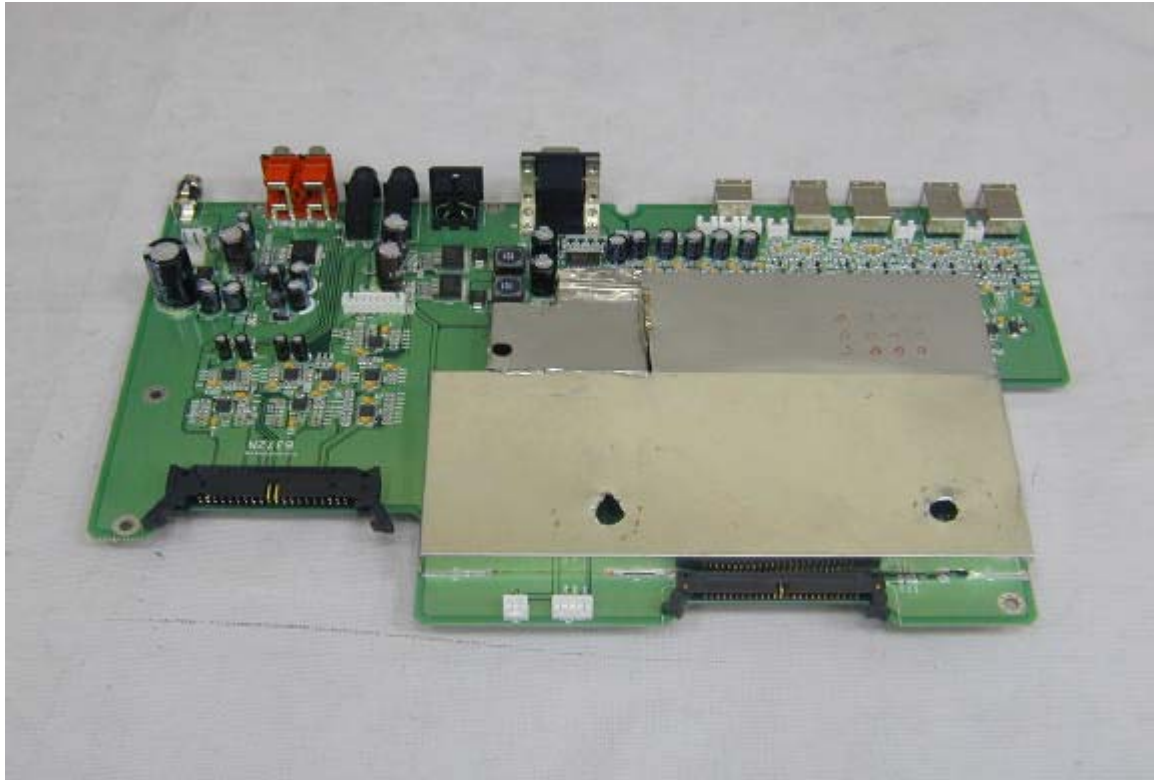
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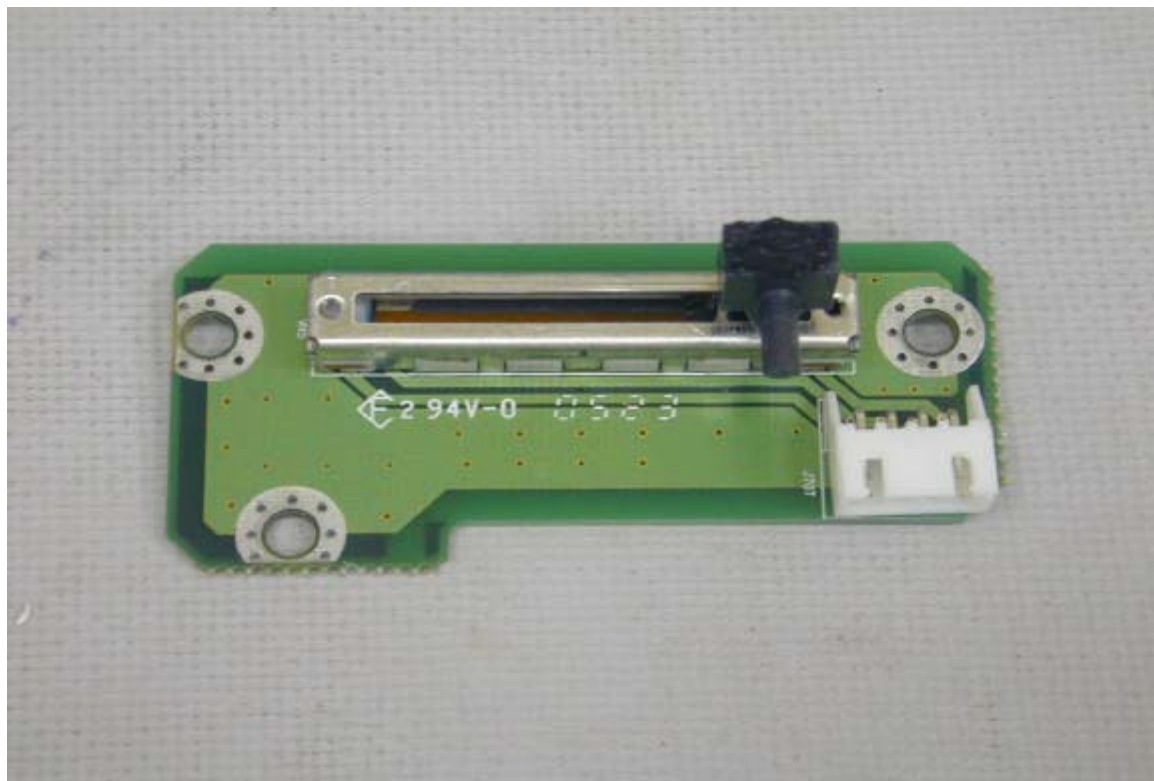
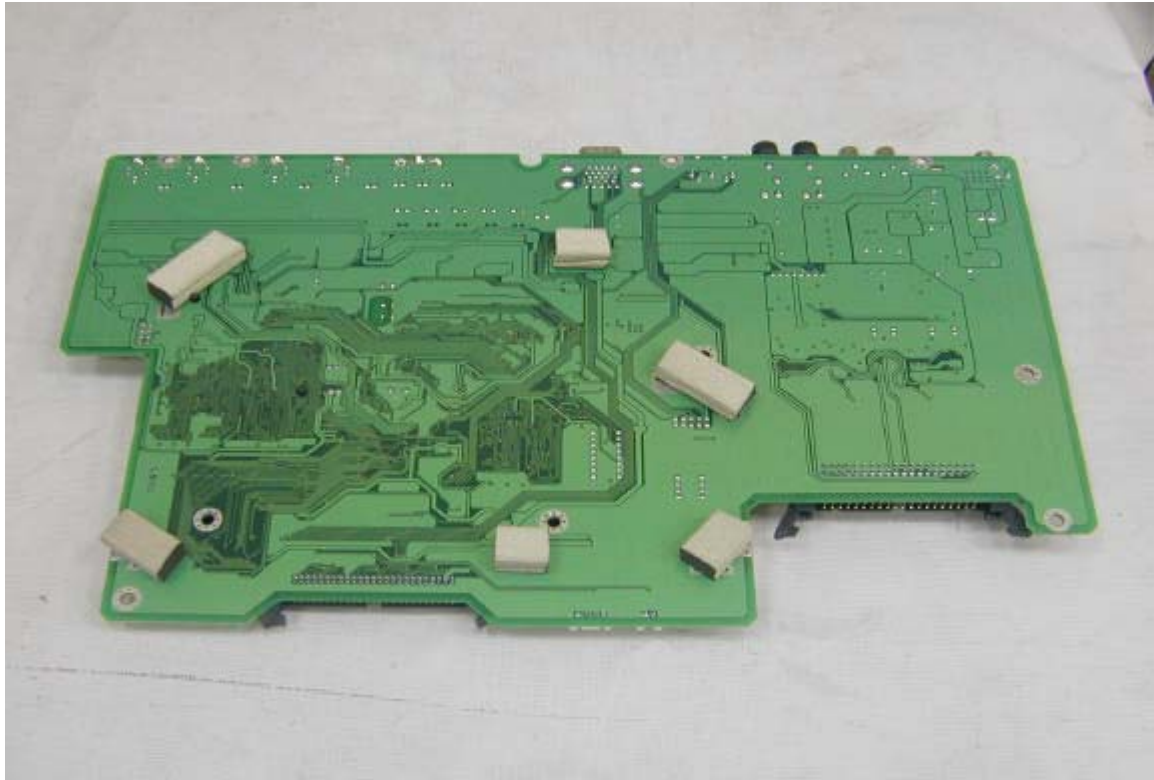
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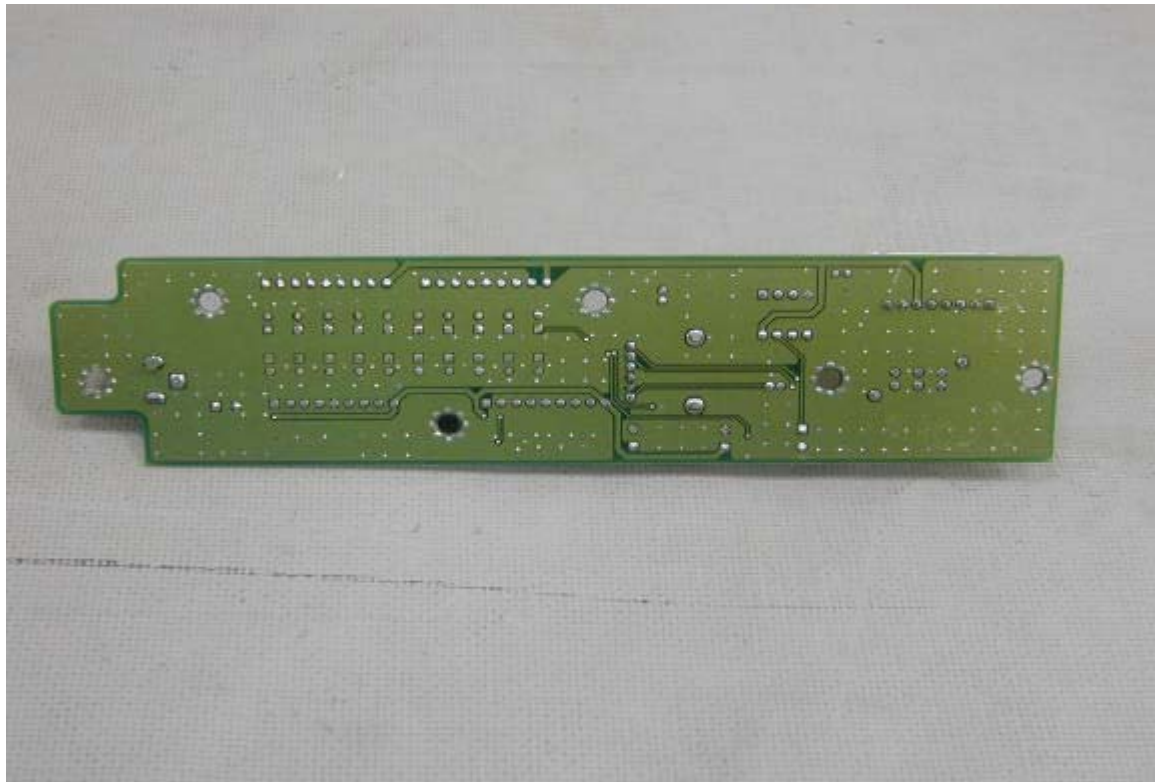
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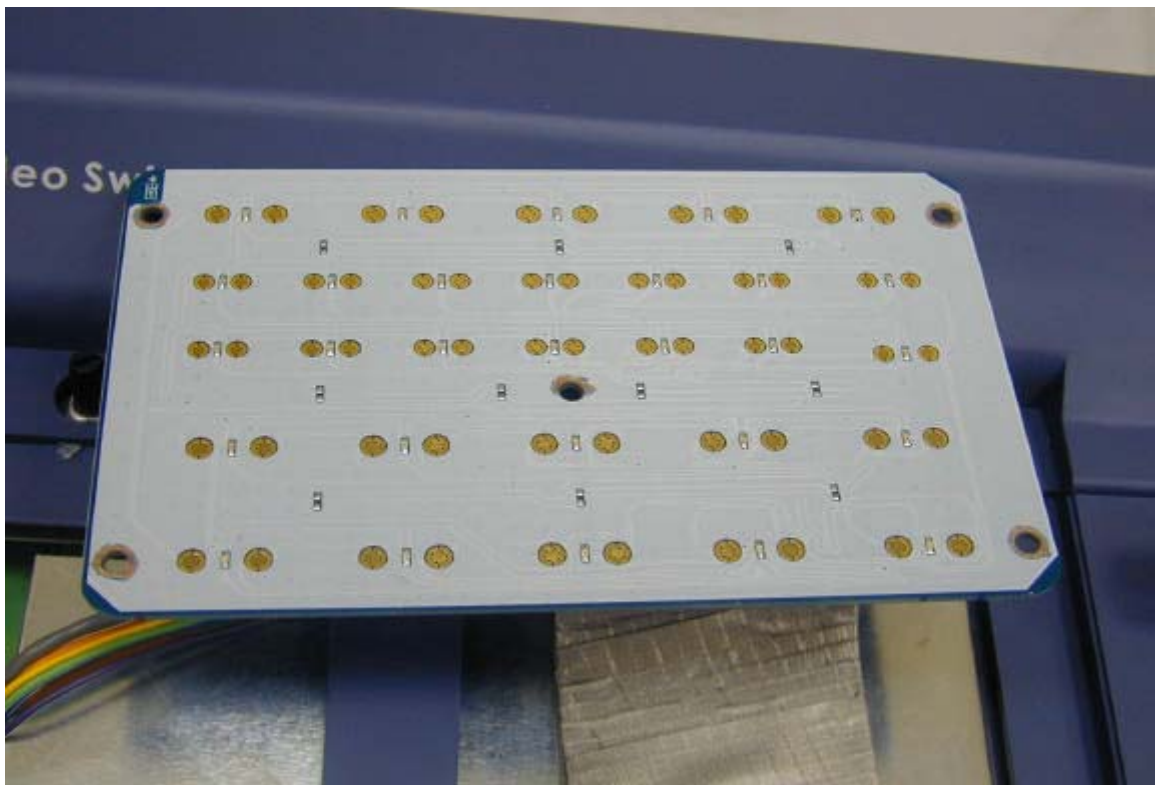
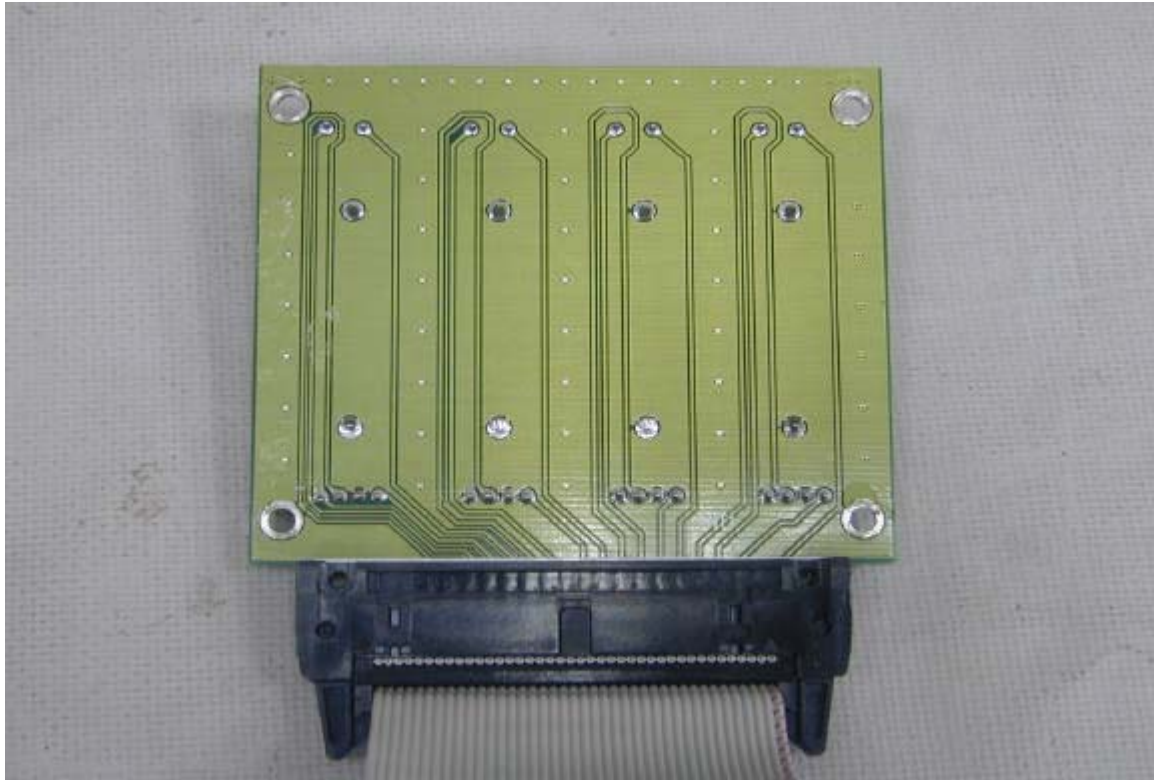
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TEL: 886-2-26922097 FAX: 886-2-26956236

FCC REGISTRATION NO. : 90868

REPORT NO. : E940310



PEP Testing Laboratory

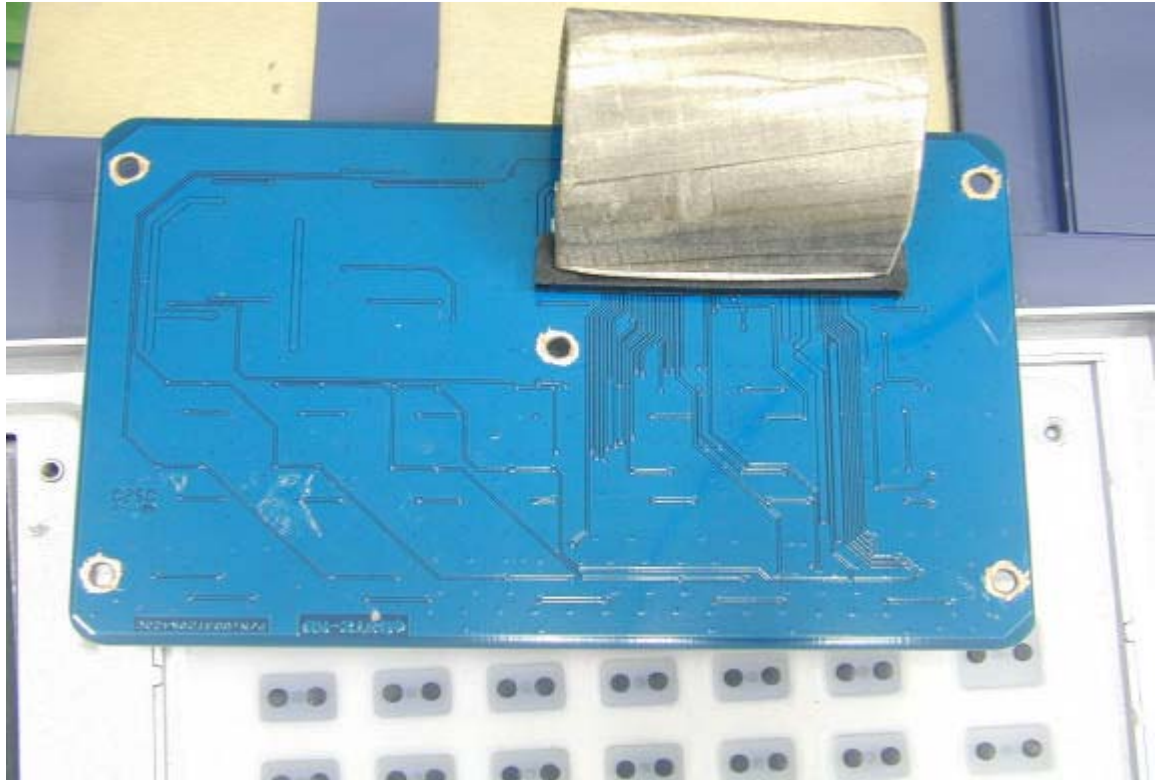
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VERIFICATION

WE HEREBY VERIFY THAT:

The Equipment Under Test (EUT) listed below has completed RFI testing by PEP Testing Laboratory and the interference emissions can pass **FCC Class B** limitations .

The test report shall not be reproduced except in full, without the written approval of the laboratory.

The estimate uncertainty of the test result is about ± 3 dB. The test result is only effect for the sample as below.

APPLICANT : DATAVIDEO TECHNOLOGIES CO., LTD.
EQUIPMENT : Video Switcher
MODEL NO. : SE-500
REPORT NO. : E940310



M. Y. Tsui



M. Y. TSUI / Manager

Date : AUG. 15, 2005