Certificate of Conformity

The products

EUT : **Composite Video with Stereo/Digital Audio Matrix Switcher**

Model No. : **CS0XX**

which produced by

SMART HOME ENGINEERING CORP.
10F, No.493, Chung-Cheng Rd., Hsin Tien City, Taipei County, 231, Taiwan

Has been tested by Electronics Testing Center, Taiwan ETC
And was found to comply with the EMC requirements of Directive 2004/108/EC on the basis of

EN 55022:2006/A1:2007(Class B)
EN 55024:1998/A1:2001/A2:2003
EN 61000-3-2:2006/A1:2009/A2:2009
EN 61000-3-3:2008

Will Yauo

Signature
Will Yauo
Manager of EMC Testing Department II
Electronics Testing Center, Taiwan

Report Number : 11-02-RBF-093
Date of Issue: Jun. 17, 2011

Note: 1. The results of the Test Report relate only to the items tested.
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3. Together with the applicant's own documented production control, the applicant (or his European authorized representative) could draw up an EC Declaration of Conformity and affix the CE marking.
4. EC Declaration of Conformity is the responsibility of the manufacturer/ importer.

ELECTRONICS TESTING CENTER, TAIWAN
NO. 34. LIN 5. DINGFU, LINKOU DIST.,
NEW TAIPEI COUNTY, TAIWAN, 24442, R.O.C.

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CE

EMC

TEST REPORT

Responsible Party	: ***SMART HOME ENGINEERING CORP.***
Manufacturer	: ***SMART HOME ENGINEERING CORP.***
Description of Product	: ***Composite Video with Stereo/Digital Audio Matrix Switcher***
Model No.	: ***CS0XX***
Test Report File No.	: ***11-02-RBF-093***
Date Test Item Received	: ***Feb. 19, 2011***
Date Test Campaign Completed	: ***Jun. 10, 2011***
Date of Issue	: ***Jun. 17, 2011***

Test Performed by

ELECTRONICS TESTING CENTER (ETC) , TAIWAN
NO. 34. LIN 5. DINGFU, LINKOU DIST.,
NEW TAIPEI COUNTY, TAIWAN, 24442, R.O.C.
TEL : (02)26023052 FAX : (02)26010910
http:// www.etc.org.tw；e-mail: emc@etc.org.tw

Note : 1. The results of the Test Report relate only to the items tested.
2. The Test Report shall not be reproduced except in full , without the written approval of ETC.

CONTENTS

1 TEST REPORT CERTIFICATION

Client	: SMART HOME ENGINEERING CORP.
Address	: 10F, No.493, Chung-Cheng Rd., Hsin Tien City, Taipei County, 231, Taiwan
Manufacturer	: SMART HOME ENGINEERING CORP.
Address	: 10F, No.493, Chung-Cheng Rd., Hsin Tien City, Taipei County, 231, Taiwan
EUT	: Composite Video with Stereo/Digital Audio Matrix Switcher
Model No.	: CS0XX
Test specifications	:
Emissions	: EN 55022:2006/A1:2007 (Class B) EN 61000-3-2:2006/A1:2009/A2:2009 EN 61000-3-3:2008
Immunity	: IEC61000-4-2:2008 IEC61000-4-3:2006/A1:2007/A2:2010 IEC61000-4-4:2004/A1:2010 IEC61000-4-5:2005 IEC61000-4-6:2008 IEC61000-4-8:2009 IEC61000-4-11:2004
Regulations applied	:
Emissions	: EN 55022:2006/A1:2007 (Class B) EN 61000-3-2:2006/A1:2009/A2:2009 EN 61000-3-3:2008
Immunity	: EN 55024:1998/A1:2001/A2:2003

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to relieve the sellers from their legal and/or contractual obligations. Besides, the “Comment Issues” highlight above is important information for this test report. Responsible must read carefully about the description.

Test Engineer : _____
(Tien-Lu Liao, Engineer)

Check By : _____
(Charles Wang, Supervisor)

Approve & Authorized : _____
Will Yauo, Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:

1. ISO9002 : BSMI, TüV Product Service
2. ISO/IEC 17025 : BSMI, CNLA, DGT, NVLAP, CCIBLAC, UL, Compliance
3. EN45001 : TüV Rheinland, NEMKO, FIMKO, SGS
4. Filing : FCC, Industry Canada, VCCI
5. MRA : Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through CNLA

2 GENERAL INFORMATIONS

2.1 Description of EUT

Composite Video with Stereo/Digital Audio Matrix Switcher

2.2 Related Information of EUT

Size of EUT	:	257mm x 146mm x 40mm
Power Supply	:	I/P:100-240Vac, 50/60Hz, 0.5A O/P:DC 5V, 2A
Highest working Frequency	:	4MHz

* For more detailed features, please refer to *User's Manual*.

2.3 Tested Configuration

The EUT connected with other devices.

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

Device	Manufacture	Model	Description
Composite Video with Stereo/Digital Audio Matrix Switcher *	SMART HOME ENGINEERING CORP.	CS0XX	1.53m Unshielded AV cable*6 1.50m Unshielded AC Adaptor power core
DVD PLAY	SONY	BDP-S350	1.6m Unshielded AC Power Cord
LCD TV	SONY	KDL-20S4000	1.6m Unshielded AC Power Cord

Remark "*" means equipment under test.

2.4 Deviation Record

No deviations were required.

2.5 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	150kHz ~ 30MHz	2.45dB(Mains)
Conducted emission at telecommunication ports	150kHz ~ 30MHz	2.22 dB (Voltage)
		2.88 dB (Current)
Radiated emissions	30MHz ~ 1GHz	3.90 dB (30MHz≦f≦300MHz)
		3.95 dB (300MHz＜f≦1GHz)
	Above 1GHz	4.42 dB (1GHz≦f≦18GHz)

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.6 Description of Test Mode

The EUT is designed with DC power supply from PC, radiated emission evaluation, power from PC had been covered during the pre-test. The worst radiated emission data was found at power from PC and recorded in the applied test report.

The EUT has been pre-tested under following modes, and mode 1~2 are the worst case for final emission test.

Test Mode	Test condition
1	Operation Mode: S Video In
2	Operation Mode: Video In

2.7 Modification Record

No modifications were required. (That is the EUT complied with the requirement as tested.)

3 SUMMARY OF TEST RESULTS

3.1 Emissions

3.1.1 Conducted Emissions

[X] – PASS (Operation Mode -Neutral)
Minimum EMI Margin to the limit: -18.40 dB at 0.2701 MHz
[X] – PASS (Operation Mode -Line)
Minimum EMI Margin to the limit: -18.83 dB at 10.7330 MHz

3.1.2 Conducted Telecommunication ports

Not Applicable

3.1.3 Radiated Emissions

[X] – PASS (Operation Mode -HOR)
Minimum EMI Margin to the limit: -10.20 dB at 761.3000 MHz
[X] – PASS (Operation Mode -VER)
Minimum EMI Margin to the limit: -6.90 dB at 140.9700 MHz

3.1.4 Harmonics Current Emissions

[X] –PASS

The harmonics current values were under the limits of the class A equipment of the EN 61000-3-2.

3.1.5 Voltage Fluctuations and Flicker

[X] –PASS

The voltage fluctuations and flicker values were under the limits of the EN 61000-3-3 requirements.

3.2 Immunity

3.2.1 Immunity Criteria

The results of all of the immunity tests performed on the EUT were evaluated according to the following criteria, and according to the manufacturer's specifications for the EUT:

Performance criterion A : The EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

Performance criterion B : The EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

Performance criterion C: Temporary loss of function was allowed, provided the function was self recoverable or could be restored by the operation of the controls.

3.2.2 Electrostatic Discharge Immunity
(Mode: S Video In / Video In)

Requirement :Criterion B (or better)

[X] - No Degradation of Function - Satisfies Criterion A

[ ] - Distortion of Function - Satisfies Criterion B

[ ] - Error of Function - Satisfies Criterion C

3.2.3 RF Radiated Fields Immunity
(Mode: S Video In / Video In)

Requirement :Criterion A

[X] - No Degradation of Function - Satisfies Criterion A

[ ] - Distortion of Function - Satisfies Criterion B

[ ] - Error of Function - Satisfies Criterion C

3.2.4 EFT/Burst Immunity
(Mode: S Video In / Video In)

Requirement :Criterion B(or better)

[X] - No Degradation of Function - Satisfies Criterion A
[ ] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

3.2.5 Surge Immunity
(Mode: S Video In / Video In)

Requirement :Criterion B (or better)

[X] - No Degradation of Function - Satisfies Criterion A
[ ] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

3.2.6 RF Common Mode Immunity
(Mode: S Video In / Video In)

Requirement :Criterion A

[X] - No Degradation of Function - Satisfies Criterion A
[ ] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

3.2.7 Power Frequency Magnetic Field Immunity
(Mode: S Video In / Video In)

Requirement :Criterion A

[X] - No Degradation of Function - Satisfies Criterion A
[ ] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

3.2.8 Voltage Interruptions and Voltage Dips Immunity
(Mode: S Video In / Video In)

Requirement :Criterion C (or better)

[ ] - No Degradation of Function - Satisfies Criterion A
[X] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

4 TEST DATA & RELATED INFORMATIONS

4.1 Emissions

4.1.1 Conducted Emissions Test

4.1.1.1 Limit of Conducted Emission Measurement

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	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

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.1.1.2 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2011/02/03	2012/02/02
LISN	EMCO	3625/2	2011/03/01	2012/02/28
LISN	Rohde & Schwarz	ESH2-Z5	2010/08/10	2011/08/09
Current Probe	Rohde & Schwarz	ESH2-Z1	2010/10/27	2011/10/26
ISN	FCC	FCC-TLISN-T2-02	2010/10/08	2011/10/07
ISN	RCC	FCC-TLISN-T4-02	2010/10/08	2011/10/07
ISN	RCC	FCC-TLISN-T8-02	2010/10/08	2011/10/07
EMI Test Receiver	Rohde & Schwarz	ESCI	2011/02/03	2012/02/02

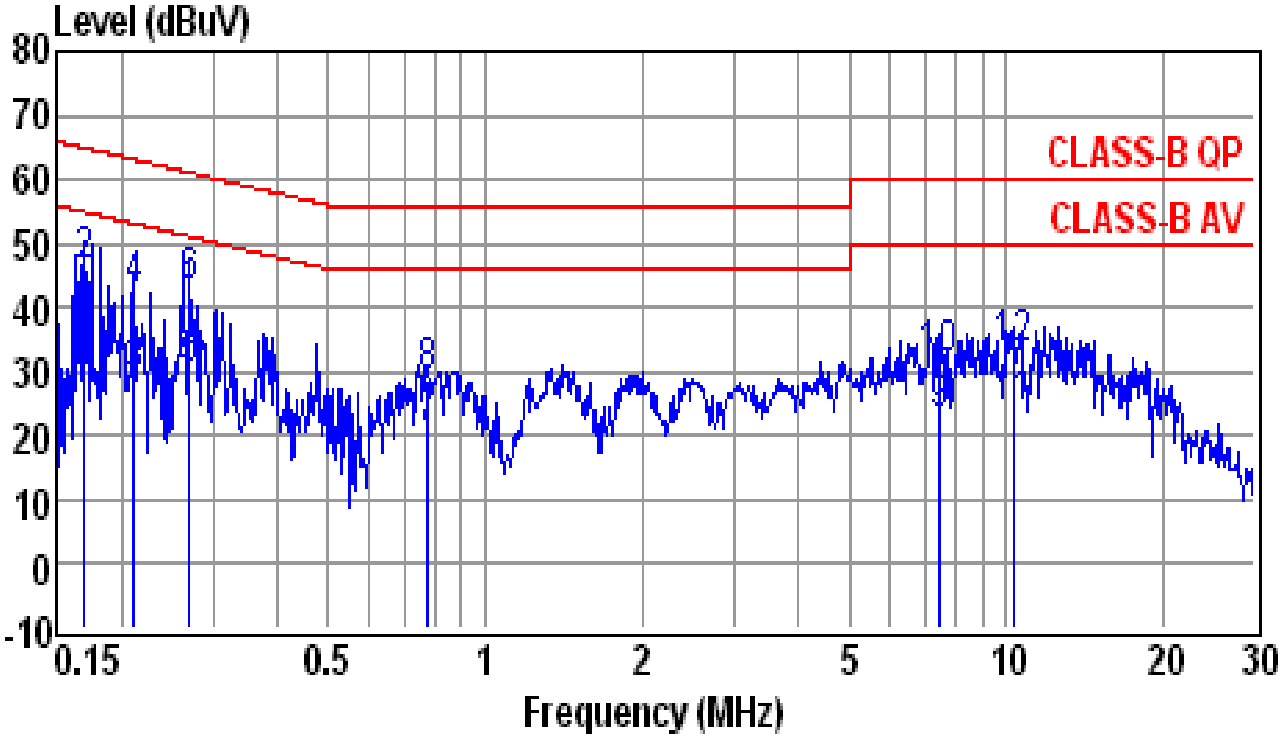
4.1.1.3 Conducted Emissions Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 09, 2011

Test Specification	EN 55022:2006/A1:2007 (Class B)
Climatic Condition	Ambient Temperature: 26 °C Relative Humidity: 55 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

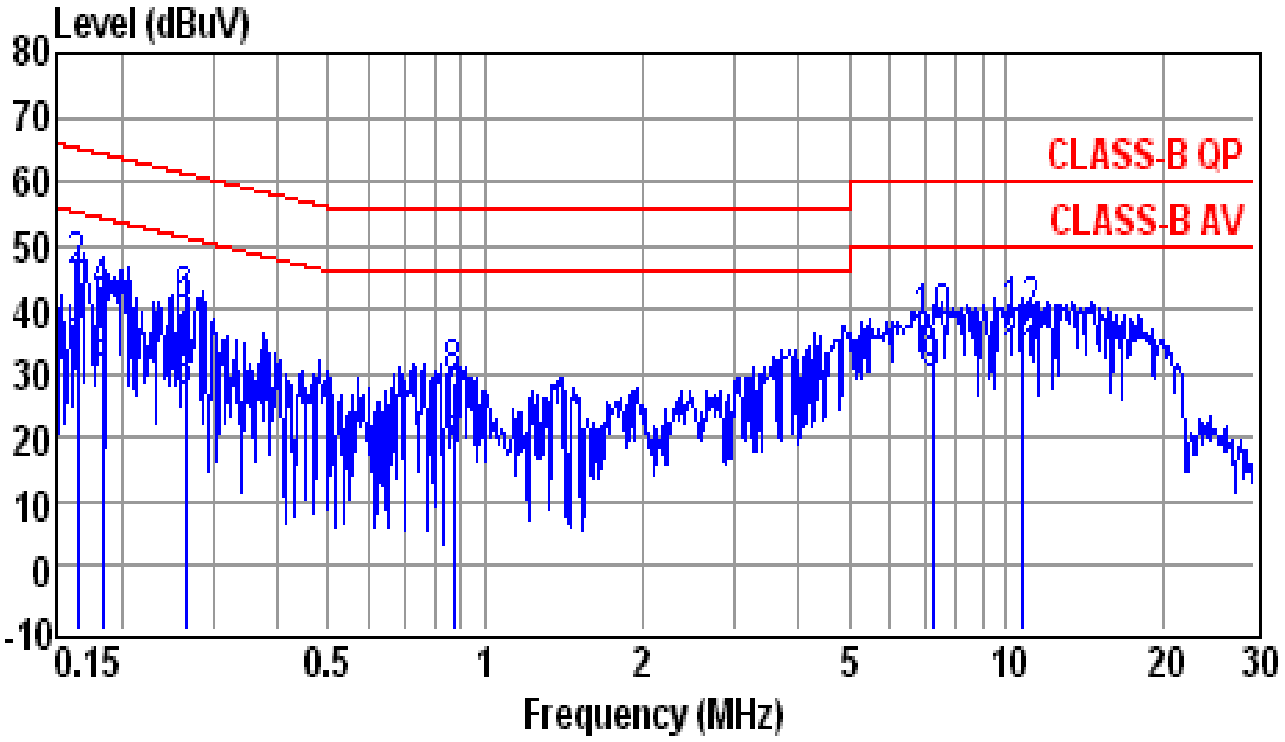


Site	: conducted #1	Date	: 06-09-2011
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 26℃ / 55%	Test Mode	: Operation Mode
EUT	: CS0XX	Power Rating	: 230VAC/50Hz

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1703	28.04	0.50	28.54	54.94	-26.40	Average
0.1703	45.59	0.50	46.09	64.94	-18.85	QP
0.2117	28.20	0.50	28.70	53.14	-24.44	Average
0.2117	41.93	0.50	42.43	63.14	-20.71	QP
0.2701	29.65	0.50	30.15	51.12	-20.97	Average
0.2701	42.22	0.50	42.72	61.12	-18.40	QP
0.7752	20.28	0.55	20.83	46.00	-25.17	Average
0.7752	28.17	0.55	28.72	56.00	-27.28	QP
7.4460	22.24	0.80	23.04	50.00	-26.96	Average
7.4460	30.69	0.80	31.49	60.00	-28.51	QP
10.2880	23.18	0.86	24.04	50.00	-25.96	Average
10.2880	32.00	0.86	32.86	60.00	-27.14	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss



Site	: conducted #1	Date	: 06-09-2011
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 26℃ / 55%	Test Mode	: Operation Mode
EUT	: CS0XX	Power Rating	: 230V/50Hz

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1650	32.49	0.23	32.72	55.21	-22.49	Average
0.1650	45.31	0.23	45.54	65.21	-19.67	QP
0.1844	30.56	0.24	30.80	54.28	-23.48	Average
0.1844	41.64	0.24	41.88	64.28	-22.40	QP
0.2658	26.37	0.24	26.61	51.25	-24.64	Average
0.2658	39.90	0.24	40.14	61.25	-21.11	QP
0.8710	16.69	0.29	16.98	46.00	-29.02	Average
0.8710	28.63	0.29	28.92	56.00	-27.08	QP
7.2520	29.01	0.58	29.59	50.00	-20.41	Average
7.2520	36.92	0.58	37.50	60.00	-22.50	QP
10.7330	30.49	0.68	31.17	50.00	-18.83	Average
10.7330	37.86	0.68	38.54	60.00	-21.46	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

4.1.1.4 Conducted Emissions Test Setup Photos

4.1.2 Conducted Telecommunication ports Test

4.1.2.1 Conducted Telecommunication ports Test Data

Not Applicable

4.1.3 Radiated Emissions Test

4.1.3.1 Limit of Radiated Emission Measurement.

Frequency (MHz)	Class A (at 10m)	Class B (at 10m)
	Quasi-peak (dBuV/m)	Quasi-peak (dBuV/m)
30-230	40	30
230-1000	47	37

Frequency (MHz)	Class A (at 3m)		Class B (at 3m)	
	Peak (dBuV/m)	Average (dBuV/m)	Peak (dBuV/m)	Average (dBuV/m)
1000-3000	76	56	70	50
3000-6000	80	60	74	54

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Frequency range of radiated measurement

Highest frequency generated or used within the EUT or on which the WUT operates or tunes (MHz)	Upper frequency of measurement rang (MHz)
Below 108	1000
108-500	2000
500-1000	5000
Above 1000	Up to 5 times of the highest frequency to 6 GHz, whichever is less

4.1.3.2 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Test Receiver	Rohde & Schwarz	ESVS30	2011/05/13	2012/05/12
Amplifier	HP	8447D	2011/05/09	2012/05/08
Spectrum	Advantest	R3162	2011/03/03	2012/03/01
Bi-Log Antenna	Schaffner	CBL 6111	2011/05/20	2012/05/19
Test Receiver	Rohde & Schwarz	ESU40	2010/08/05	2011/08/04
Amplifier	HP	8449B	2010/12/29	2011/12/28
Horn Antenna	EMCO	3115	2011/05/10	2012/05/09

4.1.3.3 Radiated Emissions Test Data

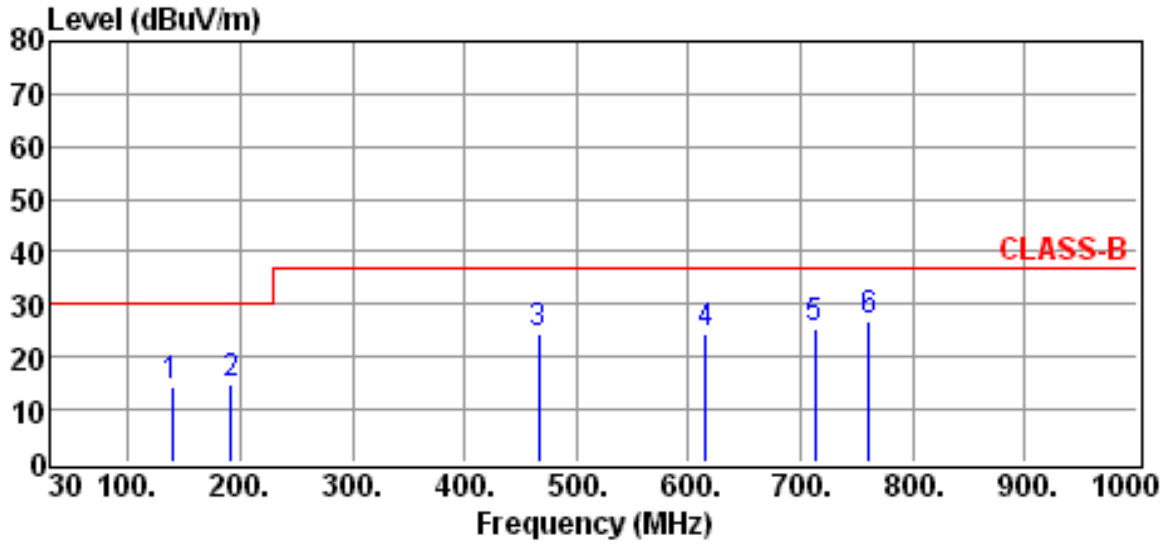
Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 09, 2011

Test Specification	EN 55022:2006/A1:2007 (Class B)
Climatic Condition	Ambient Temperature: 30 °C Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

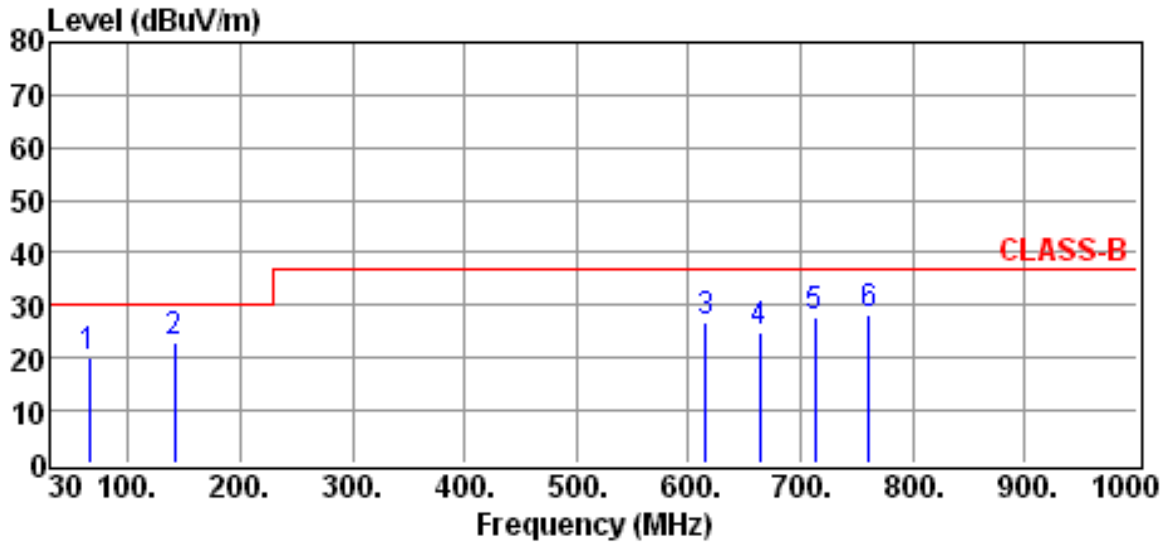


Site	:Open site #2	Date	:2011-06-09
EUT	:	Ant. Pol.	:HORIZONTAL
Model	:CS0XX	Detector	:QP
Power Rating	:230VAC/50Hz	Engineer	:
Limit	:CLASS-B	Temp.	:30 ℃
Memo	:Operation Mode	Humi.	:61 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB
139.6200	0.67	13.63	14.30	30.00	-15.70
191.4600	3.17	11.73	14.90	30.00	-15.10
466.6000	2.41	22.19	24.60	37.00	-12.40
615.0000	-1.08	25.58	24.50	37.00	-12.50
713.0000	-1.95	27.35	25.40	37.00	-11.60
761.3000	-1.99	28.79	26.80	37.00	-10.20

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result



Site	:Open site #2	Date	:2011-06-09
EUT	:	Ant. Pol.	:VERTICAL
Model	:CS0XX	Detector	:QP
Power Rating	:230VAC/50Hz	Engineer	:
Limit	:CLASS-B	Temp.	:30 ℃
Memo	:Operation Mode	Humi.	:61 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB
65.3700	11.90	8.20	20.10	30.00	-9.90
140.9700	9.51	13.59	23.10	30.00	-6.90
615.0000	1.42	25.58	27.00	37.00	-10.00
663.3000	-1.47	26.47	25.00	37.00	-12.00
713.0000	0.45	27.35	27.80	37.00	-9.20
761.3000	-0.49	28.79	28.30	37.00	-8.70

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result

(Above 1GHz)

Not Applicable

4.1.3.4 Radiated Emissions Test Setup Photos

4.1.4 Harmonics Current Emissions Test

4.1.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Harmonics-1000	EMC-Partner	Harmonics-1000	2010/12/17	2011/12/16

4.1.4.2 Harmonics Current Emissions Test Data

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	EN 61000-3-2:2006/A1:2009/A2:2009
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

Urms = 229.9V Freq = 49.987 Range: 0.25 A
Irms = 0.025A Ipk = 0.145A cf = 5.725
P = 2.473W S = 5.810VA pf = 0.426
THDi = 91.60% THDu = 0.10% Class A
Test - Time : 3min -100%
Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]	Status	Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]	Status
1	50	0.0108	0.011			21	1050	0.0053	0.0053	0.1071	
2	100	0	0.0006	1.08		22	1100	0	0.0005	0.0836	
3	150	0.0085	0.0086	2.3		23	1150	0	0.0047	0.0978	
4	200	0	0.0006	0.43		24	1200	0	0.0005	0.0767	
5	250	0.0084	0.0085	1.14		25	1250	0	0.0042	0.09	
6	300	0	0.0006	0.3		26	1300	0	0.0005	0.0708	
7	350	0.0082	0.0083	0.77		27	1350	0	0.0037	0.0833	
8	400	0	0.0006	0.23		28	1400	0	0.0005	0.0657	
9	450	0.0079	0.008	0.4		29	1450	0	0.0032	0.0776	
10	500	0	0.0006	0.184		30	1500	0	0.0005	0.0613	
11	550	0.0076	0.0077	0.33		31	1550	0	0.0027	0.0726	
12	600	0	0.0006	0.1533		32	1600	0	0.0004	0.0575	
13	650	0.0072	0.0073	0.21		33	1650	0	0.0022	0.0682	
14	700	0	0.0006	0.1314		34	1700	0	0.0004	0.0541	
15	750	0.0068	0.0068	0.15		35	1750	0	0.0018	0.0643	
16	800	0	0.0006	0.115		36	1800	0	0.0004	0.0511	
17	850	0.0063	0.0063	0.1324		37	1850	0	0.0015	0.0608	
18	900	0	0.0006	0.1022		38	1900	0	0.0004	0.0484	
19	950	0.0058	0.0058	0.1184		39	1950	0	0.0012	0.0577	
20	1000	0	0.0005	0.092		40	2000	0	0.0004	0.046	

2. Operating Conditions of The EUT : Operation Mode(Video In)

Test Date : Jun. 10, 2011

Test Specification	EN 61000-3-2:2006/A1:2009/A2:2009
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

Urms = 229.9V Freq = 49.987 Range: 0.25 A
Irms = 0.026A Ipk = 0.145A cf = 5.611
P = 2.516W S = 5.922VA pf = 0.425
THDi = 91.60% THDu = 0.10% Class A
Test - Time : 3min -100%
Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]	Status	Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]	Status
1	50	0.0109	0.011			21	1050	0.0052	0.0053	0.1071	
2	100	0	0.0006	1.08		22	1100	0	0.0005	0.0836	
3	150	0.0085	0.0086	2.3		23	1150	0	0.0047	0.0978	
4	200	0	0.0006	0.43		24	1200	0	0.0005	0.0767	
5	250	0.0084	0.0085	1.14		25	1250	0	0.0042	0.09	
6	300	0	0.0006	0.3		26	1300	0	0.0005	0.0708	
7	350	0.0082	0.0083	0.77		27	1350	0	0.0037	0.0833	
8	400	0	0.0006	0.23		28	1400	0	0.0005	0.0657	
9	450	0.008	0.008	0.4		29	1450	0	0.0031	0.0776	
10	500	0	0.0006	0.184		30	1500	0	0.0005	0.0613	
11	550	0.0076	0.0077	0.33		31	1550	0	0.0027	0.0726	
12	600	0	0.0006	0.1533		32	1600	0	0.0004	0.0575	
13	650	0.0072	0.0073	0.21		33	1650	0	0.0022	0.0682	
14	700	0	0.0006	0.1314		34	1700	0	0.0004	0.0541	
15	750	0.0068	0.0068	0.15		35	1750	0	0.0018	0.0643	
16	800	0	0.0006	0.115		36	1800	0	0.0004	0.0511	
17	850	0.0063	0.0063	0.1324		37	1850	0	0.0015	0.0608	
18	900	0	0.0005	0.1022		38	1900	0	0.0004	0.0484	
19	950	0.0058	0.0058	0.1184		39	1950	0	0.0012	0.0577	
20	1000	0	0.0005	0.092		40	2000	0	0.0004	0.046	

4.1.4.3 Harmonics Current Emissions Test Setup Photos

4.1.5 Voltage Fluctuations and Flicker Test

4.1.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Harmonics-1000	EMC-Partner	Harmonics-1000	2010/12/17	2011/12/16

4.1.5.2 Voltage Fluctuations and Flicker Test Data

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	EN 61000-3-3:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

	Test Data	**Limit**	**Pass or Fail**
Plt	0.072	0.65	Pass
Pst	0.072	1.00	Pass
dt	0.00 ms	500 ms	Pass
dmax	0.00 %	4.0 %	Pass
dc	0.00 %	3.3 %	Pass

2. Operating Conditions of The EUT : Operation Mode(Video In)

Test Date : Jun. 10, 2011

Test Specification	EN 61000-3-3:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

	Test Data	Limit	Pass or Fail
Plt	0.072	0.65	Pass
Pst	0.072	1.00	Pass
dt	0.00 ms	500 ms	Pass
dmax	0.00 %	4.0 %	Pass
dc	0.00 %	3.3 %	Pass

4.1.5.2 Voltage Fluctuations and Flicker Test Setup Photos

4.2 Immunity

4.2.1 Electrostatic Discharge Immunity Test

4.2.1.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Electrostatic Discharge Simulator	Noiseken	ESS2002	2010/10/08	2011/10/07

4.2.1.2 Electrostatic Discharge Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-2:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 48 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Energy-Storage Capacitor	: 150 pF	Contact Discharge Times	: 25 times/each condition
Discharge Resistor	: 330 Ω	Air Discharge Times	: 10 times/each condition

\ Discharge Mode	**Contact Discharge**								**Air Discharge**							
\ESD Voltage	**2 kV**		**4 kV**		**___ kV**		**___ kV**		**2 kV**		**4 kV**		**8 kV**		**___ kV**	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P_1~P_2, P_7~P_{10}	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P_3~P_6	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
Remote controller P_1~P_{10}	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

Note : "---"means the test could not be carrier out.

" A " means the EUT's function was correct normal performance during the test.

2. Operating Conditions of The EUT : Operation Mode(Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-2:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 48 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Energy-Storage Capacitor	: 150 pF	Contact Discharge Times	: 25 times/each condition
Discharge Resistor	: 330 Ω	Air Discharge Times	: 10 times/each condition

\ Discharge Mode	**Contact Discharge**								**Air Discharge**							
\ESD Voltage	**2 kV**		**4 kV**		**___ kV**		**___ kV**		**2 kV**		**4 kV**		**8 kV**		**___ kV**	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P_1~P_2, P_7~P_{10}	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P_3~P_6	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
Remote controller P_1~P_{10}	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

Note : "---"means the test could not be carrier out.

" A " means the EUT's function was correct normal performance during the test.

TEST POINTS


2
4
3
1
4 In 2 Out Component Video Matrix Switcher With Digital Audio


5
10
9
8
7
6

TEST POINTS

4.2.1.3 Electrostatic Discharge Immunity Test Setup Photos

4.2.2 RF Radiated Fields Immunity Test

4.2.2.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Antenna	AR	AT5080	N/A	N/A
signal Generator	Aglient	E4421B	2010/08/03	2011/08/02
Amplifier	Ophir	5172	N/A	N/A
Amplifier	Ophir	5127	N/A	N/A
POWER METER	Booton	4232A	2010/08/06	2011/08/05

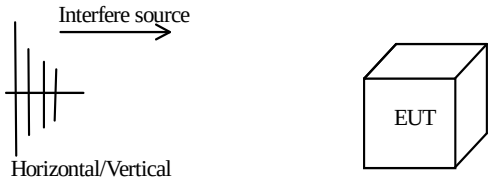
4.2.2.2 RF Radiated Fields Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(D-SUB In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-3:2006/A1:2007/A2:2010
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 55 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



Frequency Range: 80 MHz ~ 1000 MHz	Field Strength: 3 V/m	Modulation (AM 1KHz 80%)
Sweep Rate : ≤ 1.5×10-3 decades/s	Step Size : ≤ 1 % of preceding frequency value	Dwell time : 2.9 s

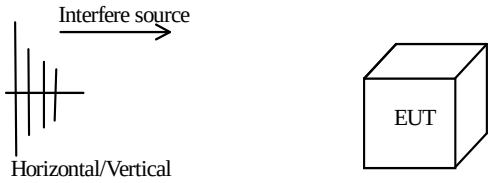
Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A
		rear	A
		left	A
		right	A
80~1000	Vertical	front	A
		rear	A
		left	A
		right	A

Note : " A " means the EUT's function was correct normal performance during the test.

2. Operating Conditions of The EUT : Operation Mode(Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-3:2006/A1:2007/A2:2010
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 55 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



Frequency Range: 80 MHz ~ 1000 MHz	Field Strength: 3 V/m	Modulation (AM 1KHz 80%)
Sweep Rate : ≤ 1.5×10-3 decades/s	Step Size : ≤ 1 % of preceding frequency value	Dwell time : 2.9 s

Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A
		rear	A
		left	A
		right	A
80~1000	Vertical	front	A
		rear	A
		left	A
		right	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.2.3 RF Radiated Fields Immunity Test Setup Photos

4.2.3 EFT/Burst Immunity Test

4.2.3.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2010/08/17	2011/08/16

4.2.3.2 EFT/Burst Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-4:2004/A1:2010
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Pulse : 5 /50ns Burst : 15ms /300ms		Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\		1.0 kV	
\Test Point\Mode\Result\		+	-
Power Line	L	A	A
	N	A	A
	L-N	A	A

Note : " A " means the EUT's function was correct normal performance during the test.

2. Operating Conditions of The EUT : Operation Mode(Video In)

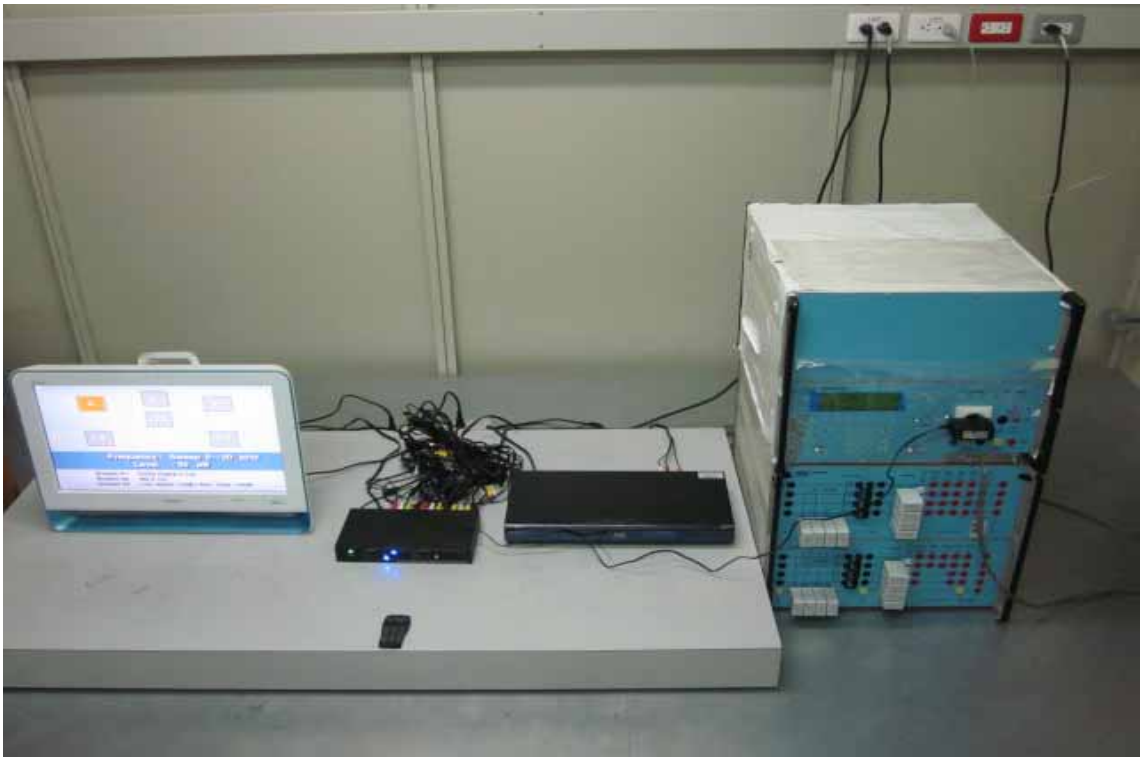
Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-4:2004/A1:2010
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Pulse : 5 /50ns Burst : 15ms /300ms		Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\		1.0 kV	
\Test Point\Mode\Result\		+	-
Power Line	L	A	A
	N	A	A
	L-N	A	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.3.3 EFT/Burst Immunity Test Setup Photos



4.2.4 Surge Immunity Test

4.2.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2010/08/17	2011/08/16

4.2.4.2 Surge Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-5:2005
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)			Repetition rate : 60 sec		Times : 5 time/each condition	
\Phase \Voltage \Mode \Polarity \Result			**0°**	**90°**	**180°**	**270°**
0.5kV	L – N	+	A	A	A	A
		–	A	A	A	A
1.0kV	L – N	+	A	A	A	A
		–	A	A	A	A

Note : " A " means the EUT's function was correct normal performance during the test.

2. Operating Conditions of The EUT : Operation Mode(Video In)

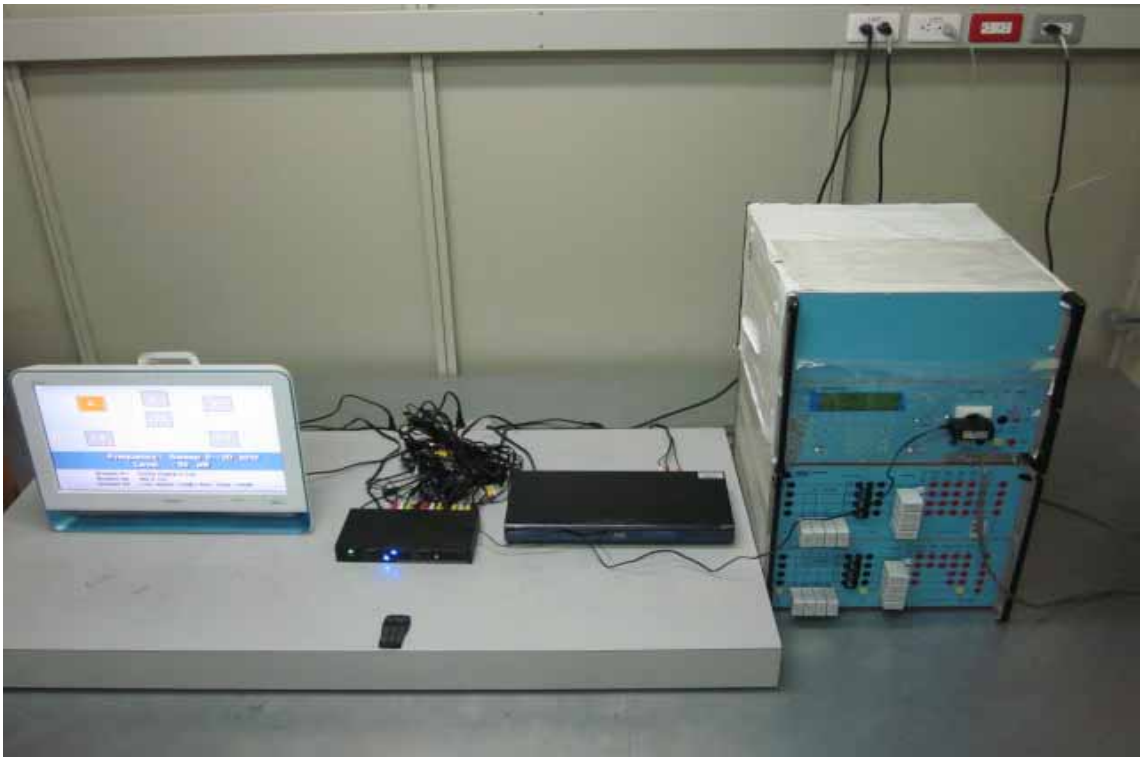
Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-5:2005
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)			Repetition rate : 60 sec		Times : 5 time/each condition	
\Phase \Voltage \Mode \Polarity \Result			**0°**	**90°**	**180°**	**270°**
0.5kV	L – N	+	A	A	A	A
		–	A	A	A	A
1.0kV	L – N	+	A	A	A	A
		–	A	A	A	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.4.3 Surge Immunity Test Setup Photos



4.2.5 RF Common Mode Immunity Test

4.2.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
CS TESTER	FRANKONIA	CIT-10	2010/11/17	2011/11/16
M2+3 CDN-KIT	FRANKONIA	M2+3	2010/10/08	2011/10/07
SCHAFFUER	CS-CLAMP	KEMZ801	2010/11/17	2011/11/16

4.2.5.2 RF Common Mode Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-6:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 55 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Frequency Range ：0.15 MHz ~ 80 MHz		Test Level ：3 Vrms	Modulation (AM 1kHz 80%)
Sweep Rate	：≤ 1.5×10^{-3} decades/s	Step Size ：≤ 1 % of preceding frequency value	Dwell Time ：2.9 s
Frequency Range (MHz)		Tested Line	Test Result
0.15~80		M2	A

Note ： “ A ” means the EUT’s function was correct normal performance during the test.

2. Operating Conditions of The EUT : Operation Mode(Video In)

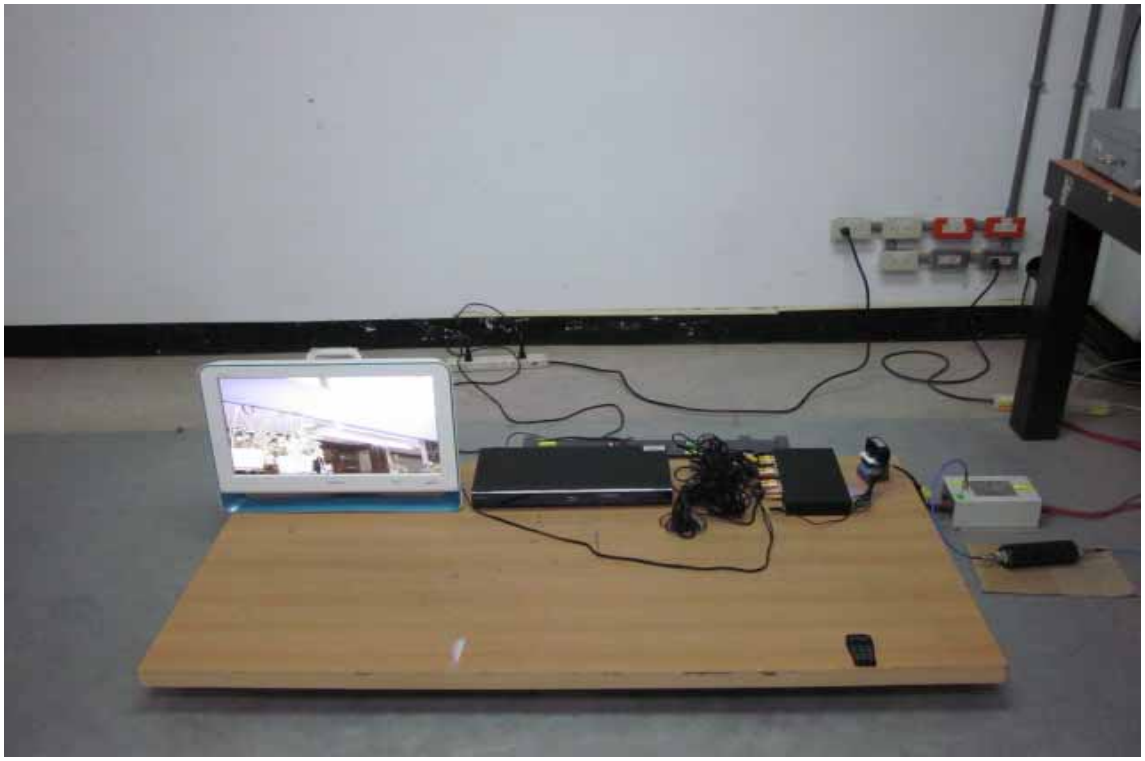
Test Date : Jun. 10, 2011

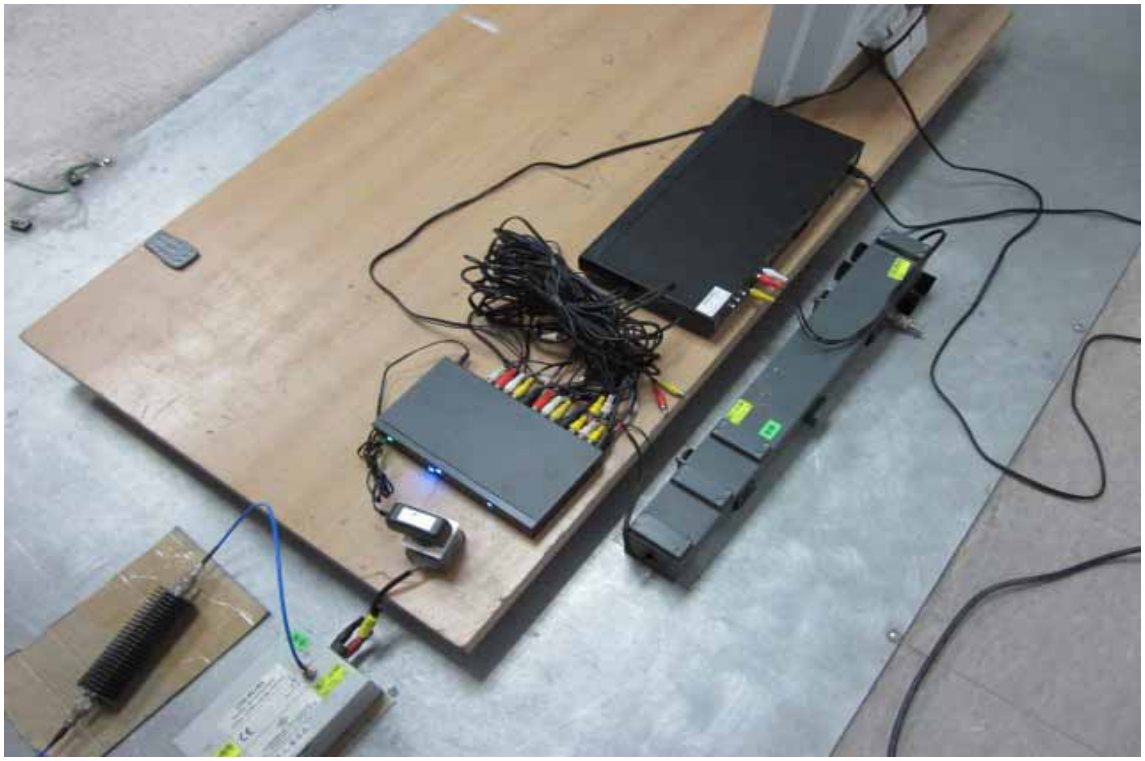
Test Specification	IEC 61000-4-6:2008
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 55 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Frequency Range ：0.15 MHz ~ 80 MHz		Test Level ：3 Vrms	Modulation (AM 1kHz 80%)
Sweep Rate	：≤ 1.5×10^{-3} decades/s	Step Size ：≤ 1 % of preceding frequency value	Dwell Time ：2.9 s
Frequency Range (MHz)		Tested Line	Test Result
0.15~80		M2	A

Note ： “ A ” means the EUT’s function was correct normal performance during the test.

4.2.5.3 RF Common Mode Immunity Test Setup Photos





4.2.6 Power Frequency Magnetic Field Immunity Test

4.2.6.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2010/08/17	2011/08/16
Mfgenerator	EMC-PAPTNER	MF-1000	2011/03/09	2012/03/08

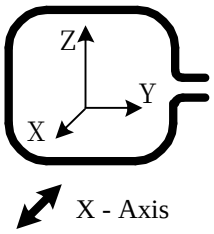
4.2.6.2 Power Frequency Magnetic Field Immunity Test Data

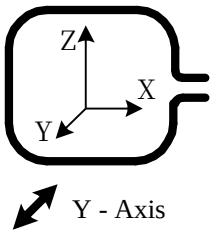
Test data see the next pages.

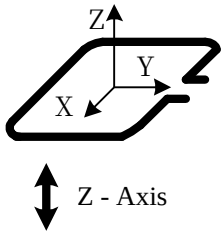
1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC61000-4-8:2009	
Climatic Condition	Ambient Temperature: 28 °C	Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	







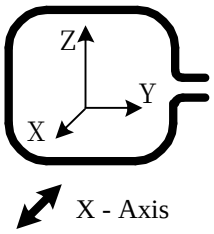
Magnetic field frequency : 50 Hz	Continuous magnetic field strength : 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

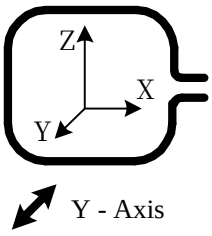
2. Operating Conditions of The EUT : Operation Mode(Video In)

Test Date : Jun. 10, 2011

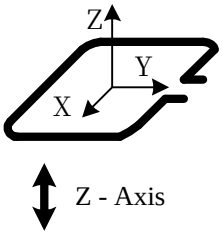
Test Specification	IEC61000-4-8:2009
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



X - Axis



Y - Axis



Z - Axis

Magnetic field frequency : 50 Hz	Continuous magnetic field strength : 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.6.3 Power Frequency Magnetic Field Immunity Test Setup Photos

4.2.7 Voltage Interruptions and Voltage Dips Immunity Test

4.2.7.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2010/08/17	2011/08/16

4.2.7.2 Voltage Interruptions and Voltage Dips Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operation Mode(S Video In)

Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-11:2004
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power: 100 Vac 60 Hz; AC Power: 240 Vac 50 Hz
Test Set-up	Table-top Equipment

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	$0^o/180^o$	B
	>95%	300	10	3	$0^o/180^o$	B
Voltage dips in $\%U_T$	>95%	0.5	10	3	$0^o/180^o$	B
	30%	25	10	3	$0^o/180^o$	A
	30%	30	10	3	$0^o/180^o$	A

Note : " A " means the EUT's function was correct normal performance during the test.
" B" means the EUT's function was temporary loss of function or degradation of performance during the test. After test, the EUT recovers its normal performance, without operator intervention.

2. Operating Conditions of The EUT : Operation Mode(Video In)

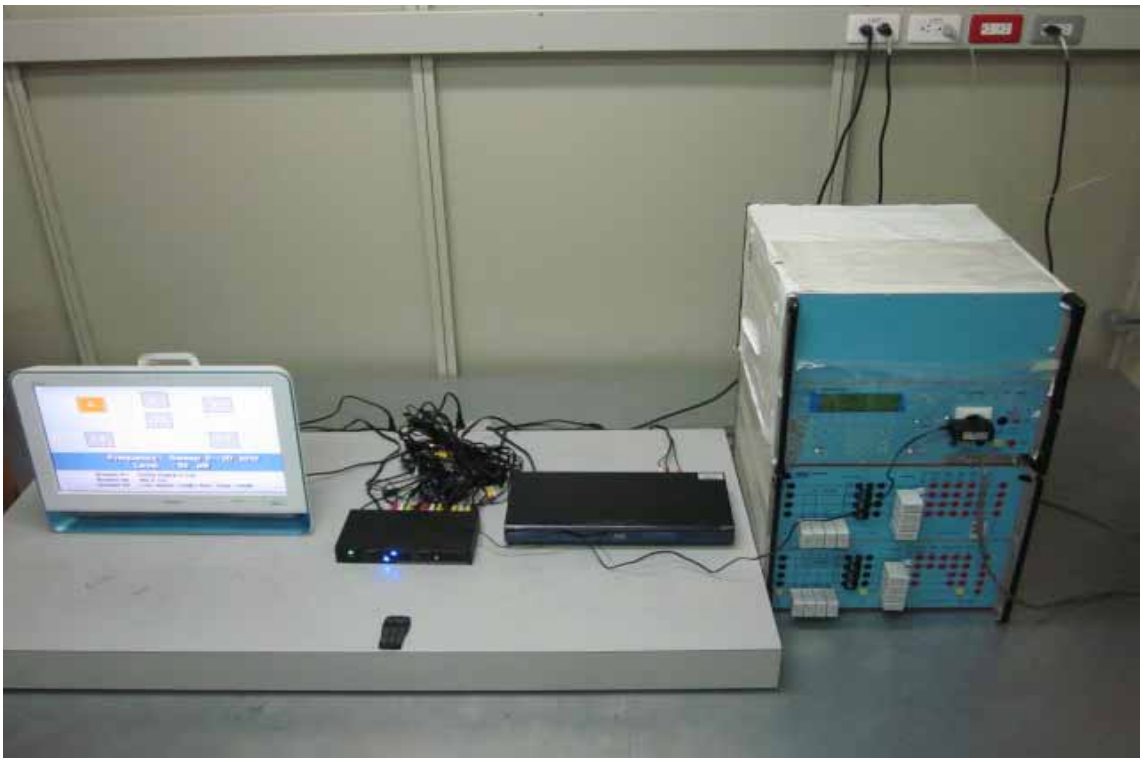
Test Date : Jun. 10, 2011

Test Specification	IEC 61000-4-11:2004
Climatic Condition	Ambient Temperature: 28 °C Relative Humidity: 49 %RH
Power Supply System	AC Power: 100 Vac 60 Hz; AC Power: 240 Vac 50 Hz
Test Set-up	Table-top Equipment

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	$0^o/180^o$	B
	>95%	300	10	3	$0^o/180^o$	B
Voltage dips in $\%U_T$	>95%	0.5	10	3	$0^o/180^o$	B
	30%	25	10	3	$0^o/180^o$	A
	30%	30	10	3	$0^o/180^o$	A

Note : " A " means the EUT's function was correct normal performance during the test.
" B" means the EUT's function was temporary loss of function or degradation of performance during the test. After test, the EUT recovers its normal performance, without operator intervention.

4.2.7.3 Voltage Interruptions and Voltage Dips Immunity Test Setup Photos



CONSTRUCTED PHOTOS of EUT

A) EUT

1. Front View of EUT

2. Side View of EUT

CONSTRUCTED PHOTOS of EUT

3. Side View of EUT

4. Rear View of EUT

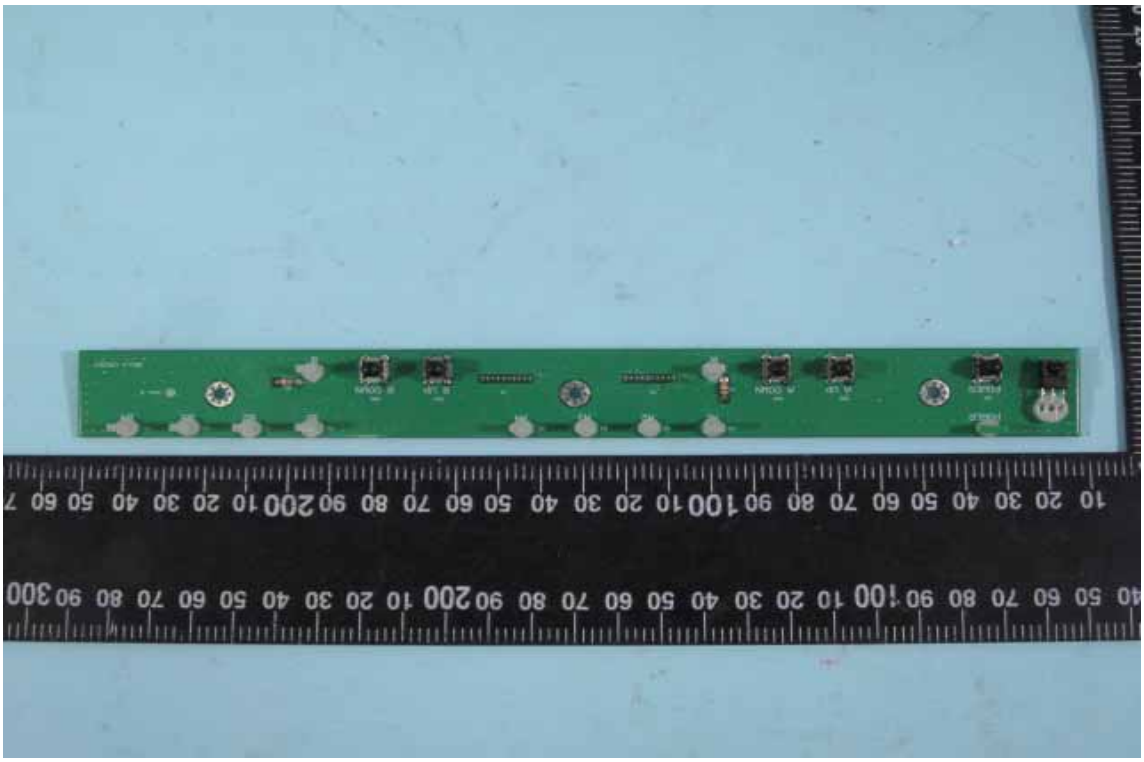
CONSTRUCTED PHOTOS of EUT

5. Internal View of EUT

6. Internal View of EUT

CONSTRUCTED PHOTOS of EUT

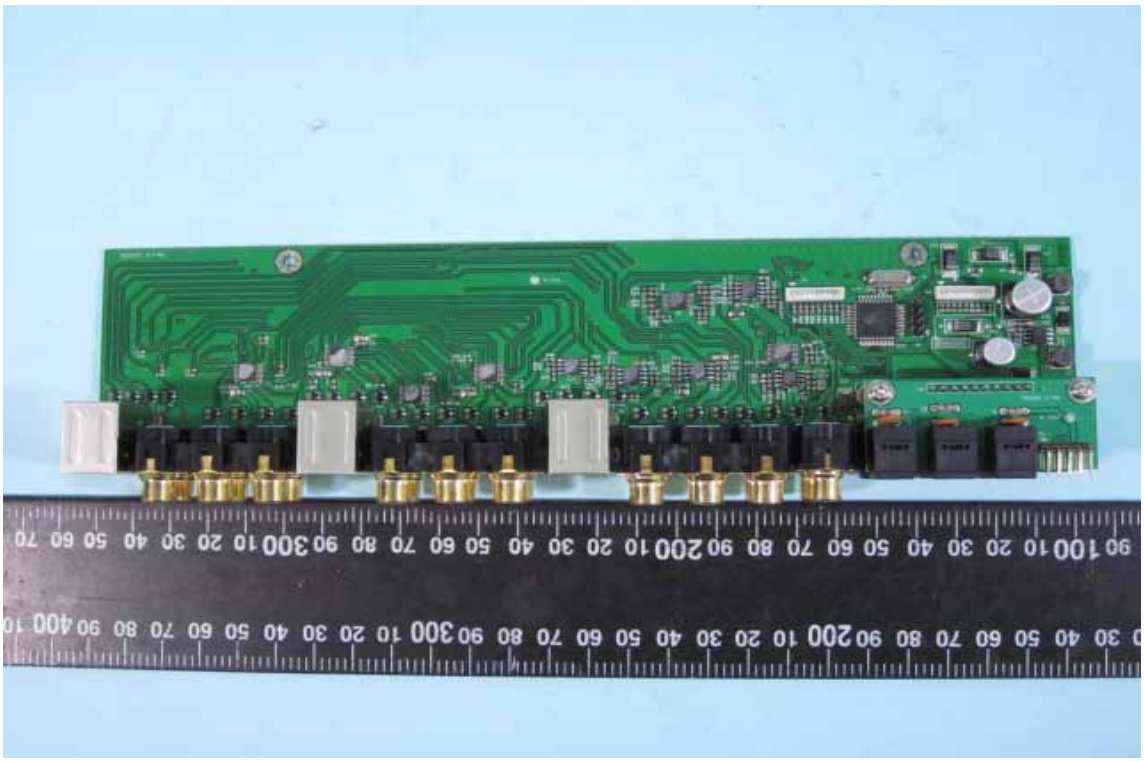
7. Component View of PCB



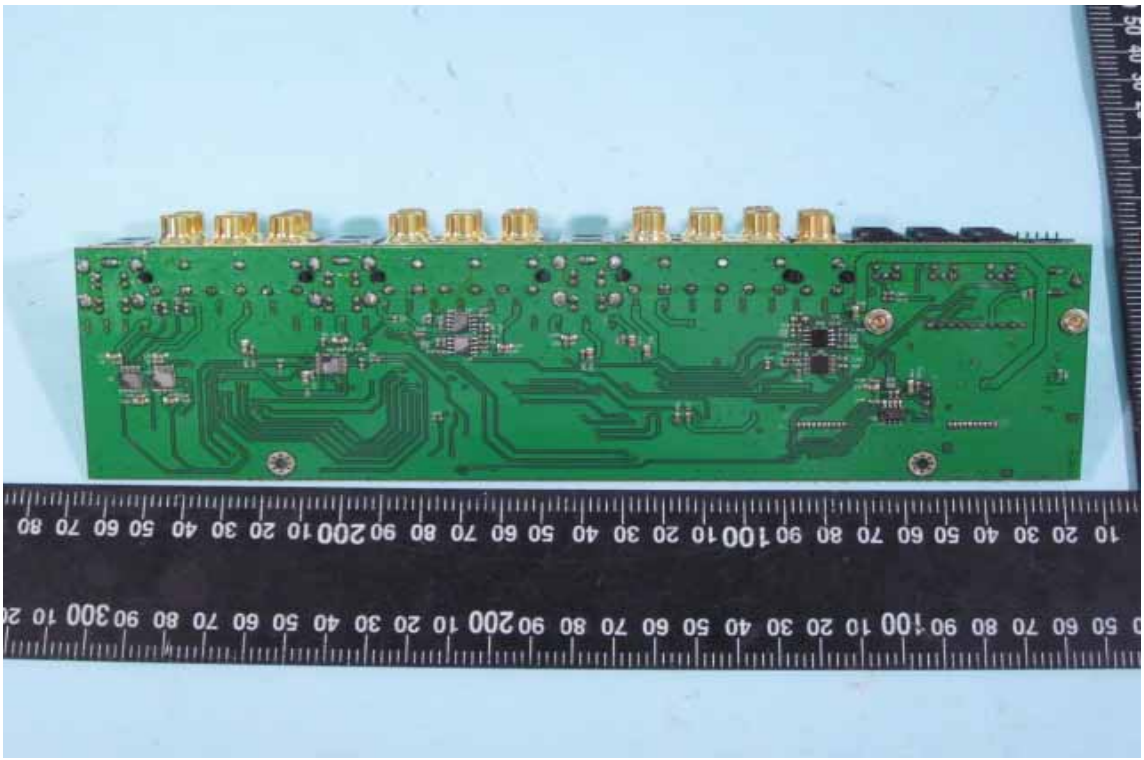
8. Solder View of PCB

CONSTRUCTED PHOTOS of EUT

9. Component View of PCB



10. Solder View of PCB



CONSTRUCTED PHOTOS of EUT

B) Adaptor

1. Front View of Adaptor

2. Front View of Adaptor

CONSTRUCTED PHOTOS of EUT

3. Side View of Adaptor

4. Side View of Adaptor

CONSTRUCTED PHOTOS of EUT

5. Rear View of Adaptor