EN 55022: 2006

Measurement and Test Report

For

China Electronics Technology Limited

BuildingM, LiCheng Technology Industrial Zone, GongHe Villge, ShaJing Town,

ShenZhen City, China

Report Concerns: Original Report	**Equipment Type:** HDMI Converter
Model:	HCV0101
Report No.:	STR08108016E-1
Test/Witness Engineer:	Jason
Test Date:	2008-10-08 to 2008-10-10
Issued Date:	2008-10-10
Prepared By:	**SEM.Test Compliance Service Co., Ltd.** 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C.（518101）
Approved & Authorized By:	Jandy So / PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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1.GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	China Electronics Technology Limited
Address of applicant:	BuildingM, LiCheng Technology Industrial Zone, GongHe Village, ShaJing Town, ShenZhen City, China
Manufacturer:	China Electronics Technology Limited
Address of manufacturer:	BuildingM, LiCheng Technology Industrial Zone, GongHe Village, ShaJing Town, ShenZhen City, China

General Description of E.U.T

Items	Description
EUT Description:	HDMI Converter
Trade Name:	/
Model No.:	HCV0101
Adding Mode:	HCD0101, HCC0101, HCO0101
Rated Voltage:	5V
Size:	8.7X6.8X2.5 cm
For more information refer to the circuit diagram form and the user's manual.	

The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of HCV0101 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the China Electronics Technology Limited in accordance with EN55022, Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

The objective of the manufacturer is to demonstrate compliance with EN55022 Class B limits for Information Technology Equipment.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 Test Methodology

All measurements contained in this report were conducted with EN 55022, Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement The equipment under test (EUT) was configured to measure its highest possible emission level.

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test setup was adapted accordingly in reference to the Operating Instructions.

1.5 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components.

1.6 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	T22	LV14893
TCL	TV	L32M61B	L20254

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Power Cable	1.2	Unshielded	With Core
HDMI Cable	1	Shielded	Without Core
Audio Cable	1.2	Unshielded	Without Core
VGA Cable	1.8	Shielded	With Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§5.1 Conducted Emission	Compliant
§6 Radiated Emission	Compliant

3. CONDUCTED EMISSIONS

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 1.5 dB.

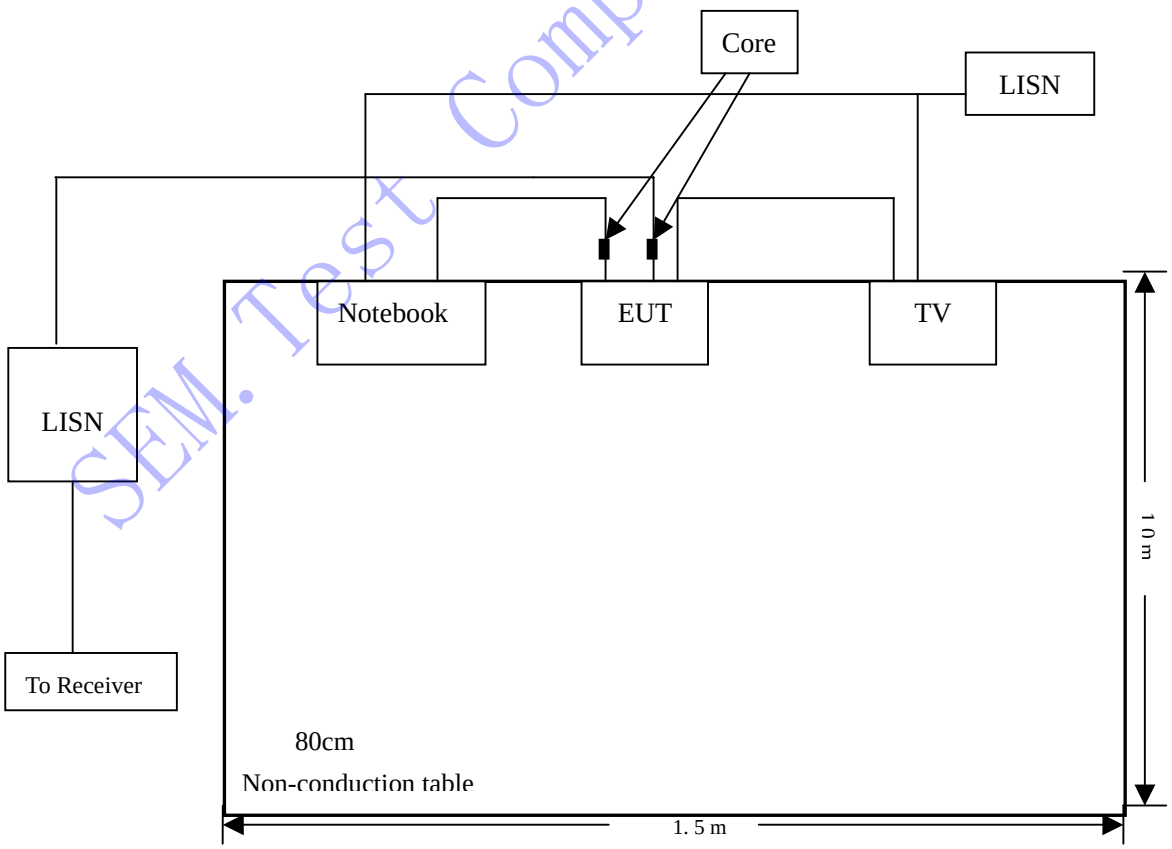
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2008-01-25	2009-01-24
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2008-01-25	2009-01-24
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2008-01-25	2009-01-24

3.3 Test Procedure

Test is conducting under the description of EN 55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23° C
Relative Humidity:	51%
ATM Pressure:	1012 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the EN55022 Conducted margin for a Class B device, with the *worst* margin reading of:

-13.29 dBµV at **0.55MHz** in the **Neutral** mode**, (Ave)** detector **0.15-30MHz**

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				EN55022 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBµV	QP/Ave/Pk	Line/Neutral	dBµV	dB
0.55	32.70	Ave	Neutral	46	-13.29
0.60	31.58	Ave	Line	46	-14.41
1.14	30.93	Ave	Line	46	-15.06
0.60	39.19	PK	Neutral	56	-16.80
0.54	38.73	PK	Line	56	-17.26
0.99	28.23	Ave	Neutral	46	-17.77
2.32	28.07	Ave	Line	46	-17.92
2.32	28.03	Ave	Neutral	46	-17.96
0.36	30.21	Ave	Neutral	48.67	-18.46
0.97	36.51	PK	Line	56	-19.48
0.97	36.42	PK	Neutral	56	-19.57

Plot of Conducted Emissions Test Data

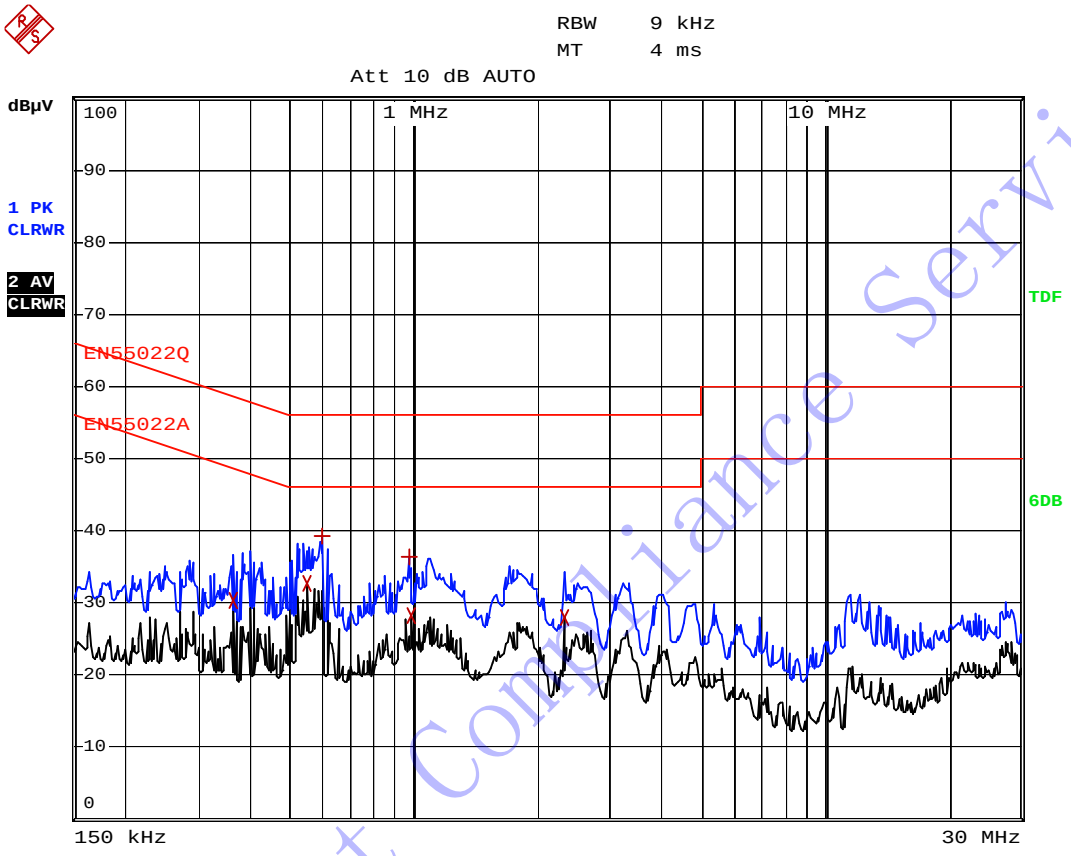
Conducted Disturbance

EUT: HDMI Converter

M/N: HCV0101

Operating Condition: Playing

Test Specification: N



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Plot of Conducted Emissions Test Data

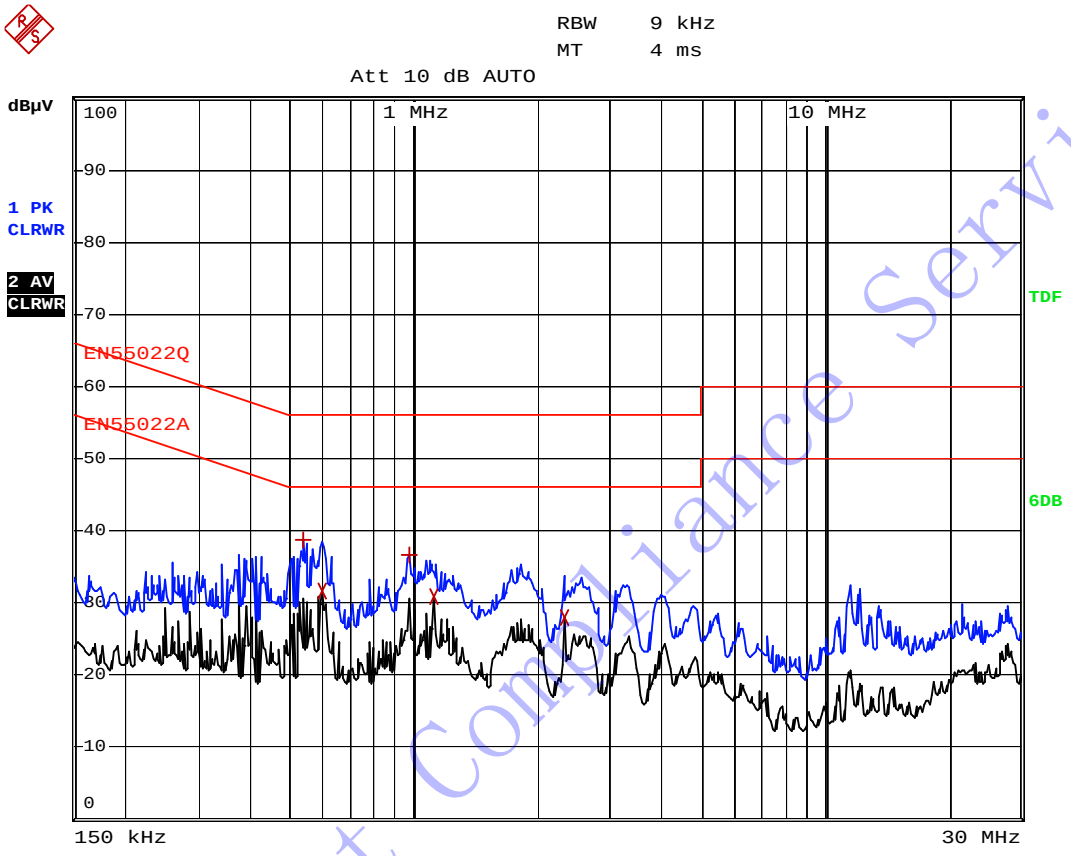
Conducted Disturbance

EUT: HDMI Converter

M/N: HCV0101

Operating Condition: Playing

Test Specification: L



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4. RADIATED EMISSION

4.1 Measurement Uncertainty

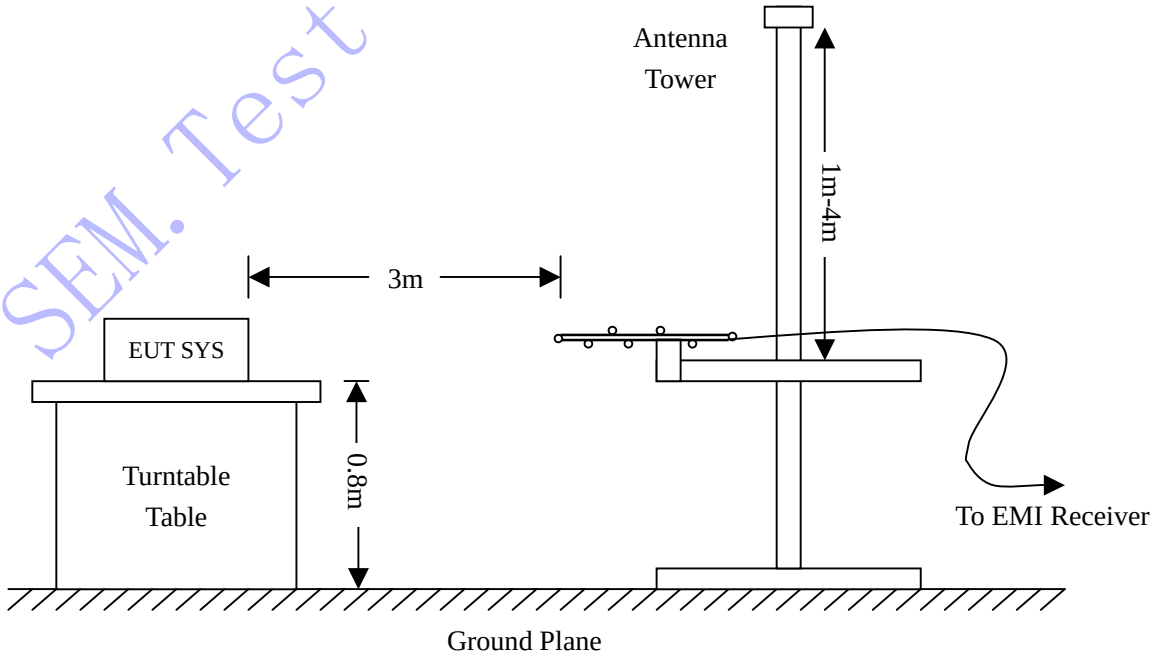
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.0 dB.

4.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-01-25	2009-01-24
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-01-25	2009-01-24

4.3 Test Procedure

Test is conducting under the description of EN 55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.



4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – EN55022 Class B Limit

4.5 Environmental Conditions

Temperature:	20° C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

4.6 Summary of Test Results/Plots

According to the data in this section, the EUT complied with the EN55022 Class B standards, and had the worst margin is:

-1.31 dBμV at **266.8395MHz** in the **Horizontal** polarization, **30 MHz to 1 GHz, 3Meter**

Plot of Radiation Emissions Test Data

Radiated Emission

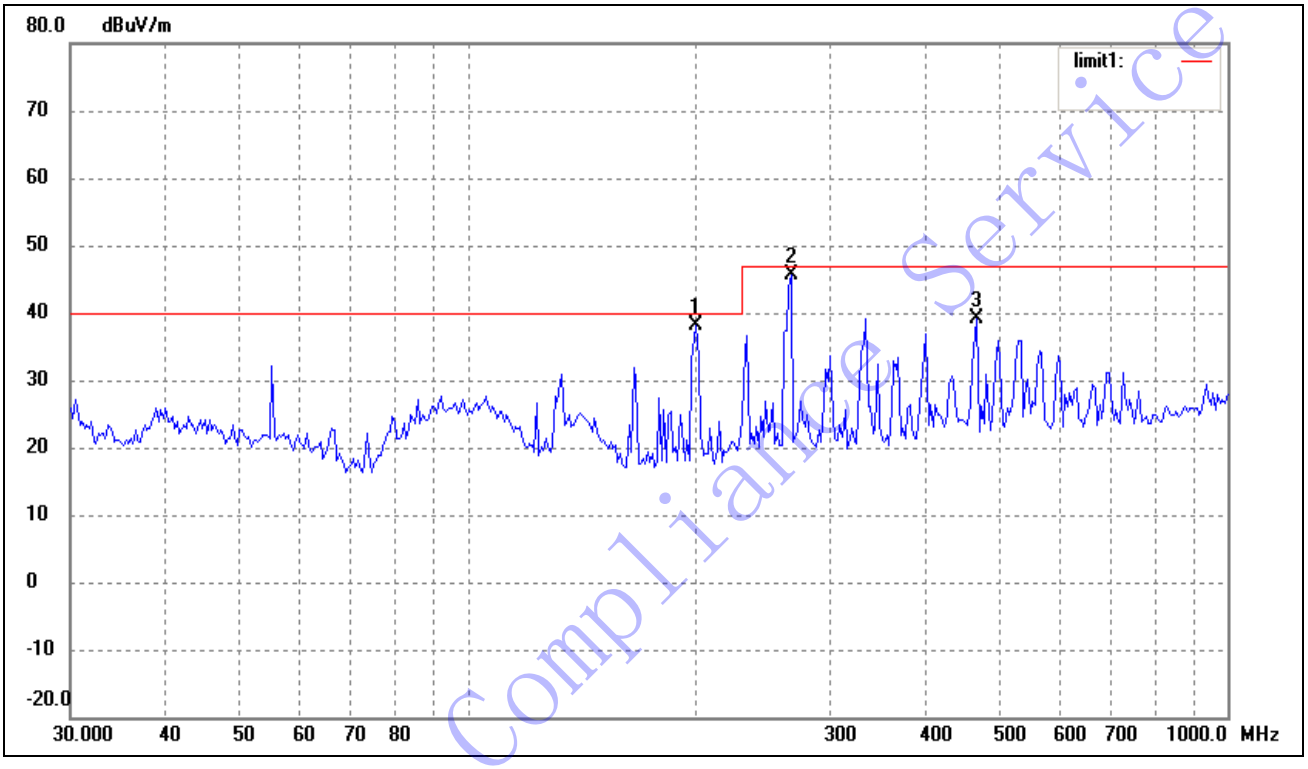
EUT: HDMI Converter

M/N: HCV0101

Operating Condition: Playing

Test Specification: Horizontal & Vertical

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	200.0432	33.15	4.96	38.11	40.00	-1.89	202	100	QP
2	266.8395	39.16	6.53	45.69	47.00	-1.31	221	110	QP
3	468.1650	32.14	6.89	39.03	47.00	-7.97	230	105	peak

Plot of Radiation Emissions Test Data

Radiated Emission

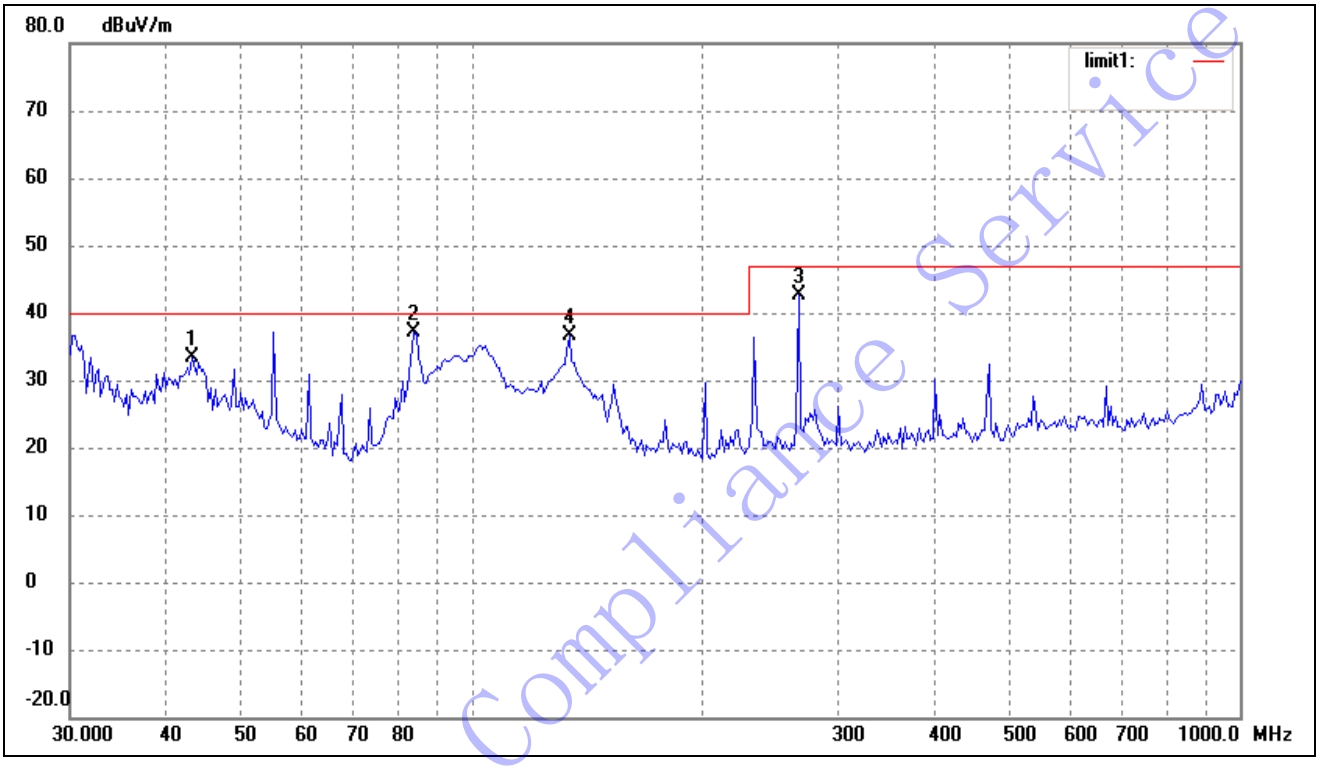
EUT: HDMI Converter

M/N: HCV0101

Operating Condition: Playing

Test Specification: Horizontal & Vertical

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	43.2333	24.42	8.93	33.35	40.00	-6.65	220	115	peak
2	84.2839	31.53	5.67	37.20	40.00	-2.80	212	102	QP
3	266.8395	36.19	6.53	42.72	47.00	-4.28	225	112	QP
4	134.0194	32.36	4.19	36.55	40.00	-3.45	150	125	QP

EXHIBIT 1- PRODUCT LABELING

Proposed CE Label Format

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT.

Proposed Label Location on EUT

CE Label Location

EXHIBIT 2 - EUT PHOTOGRAPHS

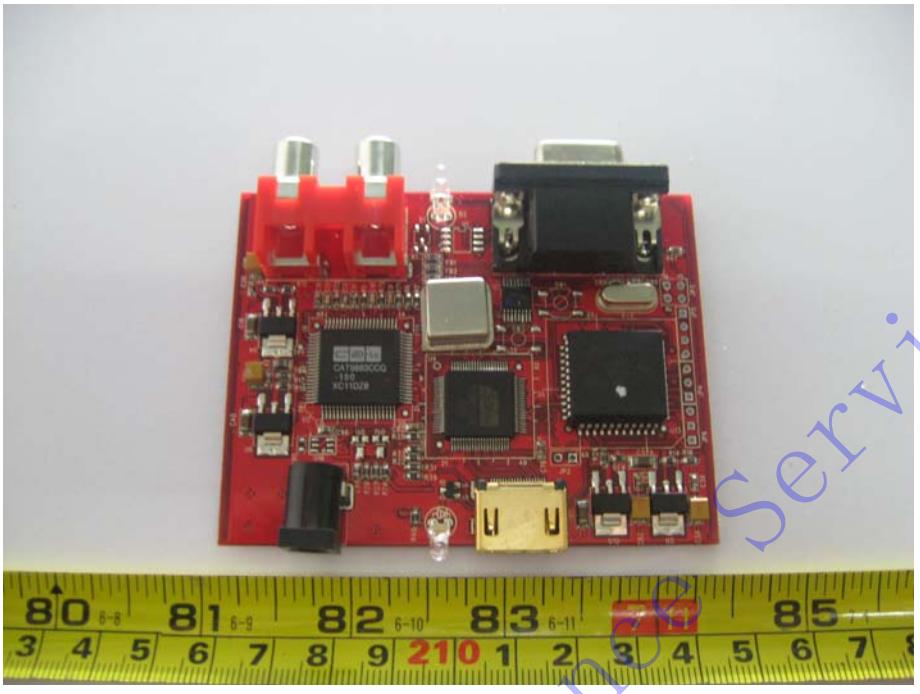
EUT View 1

EUT View 2

EUT View 3

EUT Housing and Board View 1

Solder Board-Component View 1



Solder Board-Component View 2

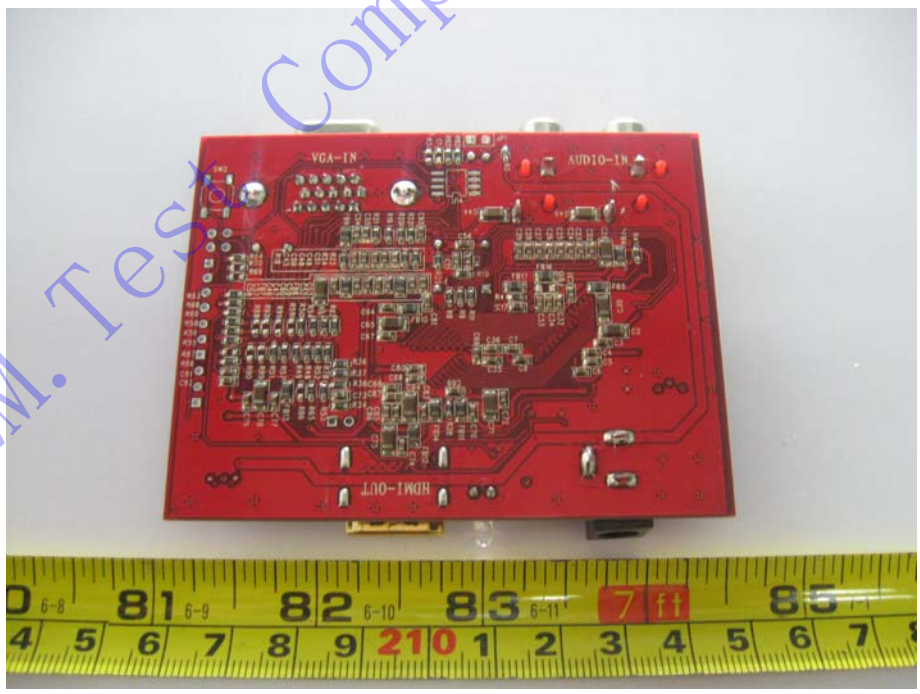


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conduction Emission Front View

Radiation Emission View

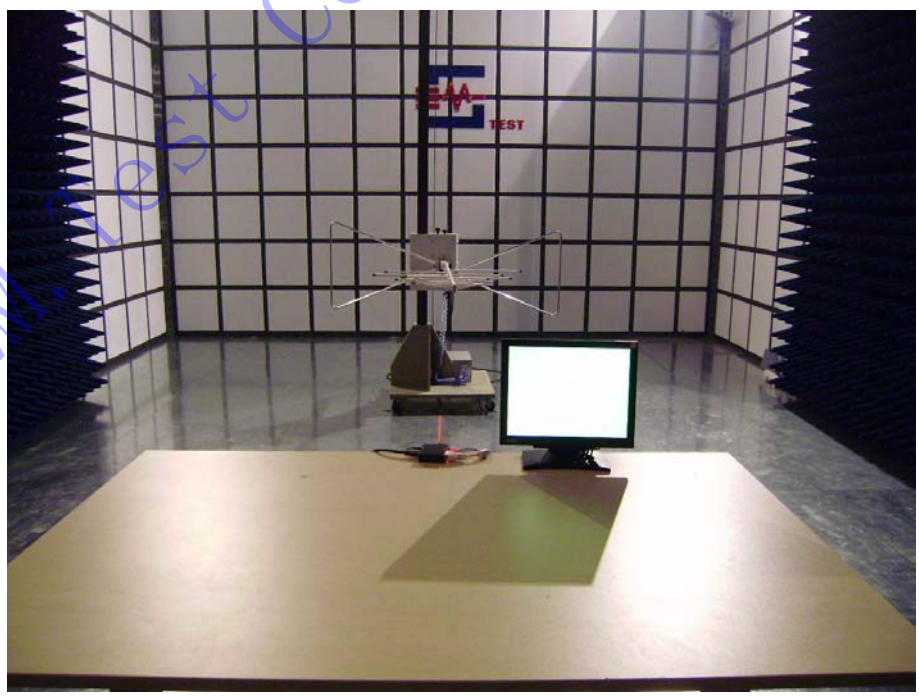


EXHIBIT 4 –SCHEMATICS

EXHIBIT 5 –USERS MANUAL

******END OF REPORT******