PHOENIX TESTLAB
Königswinkel 10
32825 Blomberg
Germany
Phone +49 5235 9500-0
Fax +49 5235 9500-10

TEST REPORT

Test Report Reference: 11-110231

Equipment under Test: USB to HDMI Display Adapter

Model Number: U2-D09-V410-xx-xxxxx

Additional Model Number: /

Brand Name: /

Applicant: SUNRICH TECHNOLOGY (H.K.) LTD.

Manufacturer: SUNRICH TECHNOLOGY (H.K.) LTD.

Test Laboratory
(CAB)

accredited by DATech GmbH
in compliance with DIN EN ISO/IEC 17025
under the Reg. No. DGA-PL-105/99-22,

recognized by Bundesnetzagentur
under the Reg.-No. BNetzA-CAB-02/21-104,

CAB Designation Number DE0004,

listed by
FCC 31040/SIT1300F2

Deutscher Akkreditierungs Rat
DAR
DGA-PL-105/99-22

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1 IDENTIFICATION

1.1 APPLICANT

Name:	SUNRICH TECHNOLOGY (H.K.) LTD.
Address:	Room 1301, Eastern Centre, 1065 King`s Road, Quarry Bay
	Hong Kong
Country:	Hong Kong
Name for contact purposes:	Ricky Yeung
Tel:	+852 25561788
Fax:	+852 25059637
e-mail address:	Ricky@sunrichrd.com.hk

1.2 MANUFACTURER

Name:	SUNRICH TECHNOLOGY (H.K.) LTD.
Address:	Room 1301, Eastern Centre, 1065 King`s Road, Quarry Bay
	Hong Kong
Country:	Hong Kong
Name for contact purposes:	Ricky Yeung
Tel:	+852 25561788
Fax:	+852 25059637
e-mail address:	Ricky@sunrichrd.com.hk

1.3 TEST LABORATORY

The Client required to perform the tests in the following Subcontracted Test Laboratory.

The tests were carried out at:

Shenzhen EMTEK Co.,LTD.
Bldg 69, Majialong Industry Zone
Nanshan District, Shenzhen, Guangdong
China
Phone: (0755) 26954280
Fax: (0755) 26954282

Test report checked:	B. Selck		20 January 2011
	Name	Signature	Date

PHOENIX TESTLAB GmbH
Königswinkel 10
32825 Blomberg
Tel. 0 52 35 / 95 00-0
Fax 0 52 35 / 95 00-10

Stamp

1.4 RESERVATION

This test report is only valid in its original form.

Any reproduction of its contents without written permission of the accredited test laboratory PHOENIX TESTLAB GmbH is prohibited.

The test results herein refer only to the tested sample. PHOENIX TESTLAB GmbH is not responsible for any generalisations or conclusions drawn from these test results concerning further samples. Any modification of the tested samples is prohibited and leads to the invalidity of this test report. Each page necessarily contains the PHOENIX TESTLAB Logo and the TEST REPORT REFERENCE.

1.5 NORMATIVE REFERENCES

[1] **ANSI C63.4:2003** American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

[2] **FCC 47 CFR Part 2** General Rules and Regulations
[3] **FCC 47 CFR Part 15** Radio Frequency Devices (Subpart B)

1.6 TEST RESULTS

The requirements of this test document are fulfilled by the equipment under test. The complete test results are presented in the following.

2 ANNEX

The annex is consisting of the test report from the Test Laboratory

- Shenzhen EMTEK Co., LTD -

with the number ES110113055F (issue date 18 January 2011).

The test report consists of 25 pages in total.

TEST REPORT
For

SUNRICH TECHNOLOGY (H.K.) LTD.

USB to HDMI Display Adapter

Model No.: U2-D09-V410-xx-xxxxx

Prepared for	:	SUNRICH TECHNOLOGY (H.K.) LTD.
Address	:	Room 1301, Eastern Centre, 1065 King's Road, Quarry Bay, Hong Kong
Prepared by	:	Shenzhen EMTEK Co., Ltd
Address	:	Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China Tel: (0755) 26954280 Fax: (0755) 26954282

Report Number	:	ES110113055F
Date of Test	:	January 13, 2011 to January 17, 2011
Date of Report	:	January 18, 2011

TABLE OF CONTENT

TEST REPORT DESCRIPTION

Applicant	:	SUNRICH TECHNOLOGY (H.K.) LTD.
Manufacturer	:	SUNRICH TECHNOLOGY (H.K.) LTD.
EUT	:	USB to HDMI Display Adapter
Model No.	:	U2-D09-V410-xx-xxxxx

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B Class B 2009 & FCC / ANSI C63.4-2009

The device described above is tested by SHENZHEN EMTEK CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and SHENZHEN EMTEK CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of SHENZHEN EMTEK CO., LTD.

Date of Test	:	January 13, 2011 to January 17, 2011
Prepared by	:	June (Engineer)
Reviewer	:	(Quality Manager)
Approved & Authorized Signer	:	(Manager)

1. SUMMARY OF TEST RESULT

Emission		
Description of test item	Standard & Limits	Results
Conducted disturbance at mains terminals	FCC Part15, Subpart B, Class B ANSI C63.4: 2009	Pass
Radiated Disturbance	FCC Part15, Subpart B, Class B ANSI C63.4: 2009	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	USB to HDMI Display Adapter
Model Number	:	U2-D09-V410-xx-xxxxx
Test Voltage	:	AC 120V/60Hz
Applicant	:	SUNRICH TECHNOLOGY (H.K.) LTD.
Address	:	Room 1301, Eastern Centre, 1065 King's Road, Quarry Bay, Hong Kong
Manufacturer	:	SUNRICH TECHNOLOGY (H.K.) LTD.
Address	:	Room 1301, Eastern Centre, 1065 King's Road, Quarry Bay, Hong Kong
Date of receiver	:	January 13, 2011
Date of Test	:	January 13, 2011 to January 17, 2011

2.2.Description of Support Device

PC (For EMI test)	:	Manufacturer: Lenovo M/N: ThinkCentre 8701 S/N: 8701A53L3BC108 CE, FCC: DOC
PC(for EMS)	:	Manufacturer: HP M/N: Vectra VL420 MT S/N: CN15100363 CE, FCC: DOC
Mouse	:	Manufacturer: HP M/N: M-S48a S/N: LZE14823966AW CE, FCC: DOC
Keyboard	:	Manufacturer: HP M/N: SK-2502C S/N: C0111141546 CE, FCC: DOC
TV	:	Manufacturer: JIAYU M/N: TV-1903 S/N: N/A CE , FCC: DOC

2.3. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2010.10.28.
The certificate is valid until 2013.10.29
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006(identical to ISO/IEC17025:2005)
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2010.5.25
The Laboratory has been assessed according to the requirements ISO/IEC 17025.

Accredited by FCC, October 28, 2010
The Certificate Registration Number is 709623.

Accredited by Industry Canada, March 5, 2010
The Certificate Registration Number is 46405-4480.

Name of Firm : SHENZHEN EMTEK CO., LTD

Site Location : Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

2.4. Measurement Uncertainty

Item		Uncertainty	Remark
Conducted Emission Uncertainty	:	2.8dB	--
Radiated Emission Uncertainty	:	3.3dB	3m Chamber

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1.For Power Line Conducted Emission

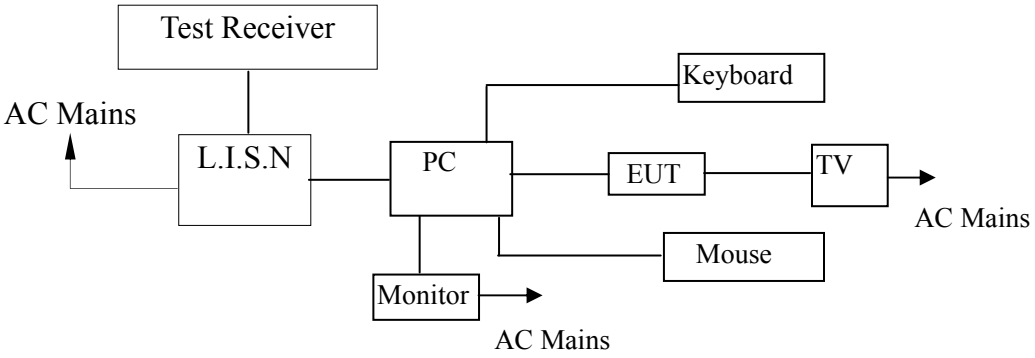
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	May 29, 2010	1 Year
2.	L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	May 29, 2010	1 Year
3.	50ΩCoaxial Switch	Anritsu	MP59B	M20531	N/A	N/A
4.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	May 29, 2010	1 Year
5.	Voltage Probe	Rohde & Schwarz	TK9416	N/A	May 29, 2010	1 Year

3.2.For 3m Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 29, 2010	1 Year
2.	Pre-Amplifier	HP	8447D	2944A07999	May 29, 2010	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	May 29, 2010	1 Year
4.	Loop Antenna	ARA	PLA-1030/B	1029	May 29, 2010	1 Year
5.	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 29, 2010	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 29, 2010	1 Year
7.	Cable	Schwarzbeck	AK9513	ACRX1	May 29, 2010	1 Year
8.	Cable	Rosenberger	N/A	FP2RX2	May 29, 2010	1 Year
9.	Cable	Schwarzbeck	AK9513	CRPX1	May 29, 2010	1 Year
10.	Cable	Schwarzbeck	AK9513	CRRX2	May 29, 2010	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1.Block Diagram of Test Setup



(EUT: USB to HDMI Display Adapter)

4.2.Measuring Standard

FCC Part15, Subpart B, Class B ANSI C63.4: 2009

Power Line Conducted Emission Limits (Class B)

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

4.3.EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet FCC requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

EUT	:	USB to HDMI Display Adapter
Model Number	:	U2-D09-V410-xx-xxxxx
Serial Number	:	N/A

4.4.Operating Condition of EUT

4.4.1.Setup the EUT as shown on Section 4.1.

4.4.2.Turn on the power of all equipments.

4.4.3.Let the EUT work in measuring mode (Connect to PC) and measure it.

4.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the FCC regulations during conducted emission measurement.
The bandwidth of the field strength meter (R&S Test Receiver ESCS30) is set at 9KHz in 150KHz~30MHz and 200Hz in 9KHz~150KHz.
The frequency range from 150kHz to 30MHz is investigated. All the modes have been tested. The scanning curves are attached in Appendix II.

4.6.Measuring Results

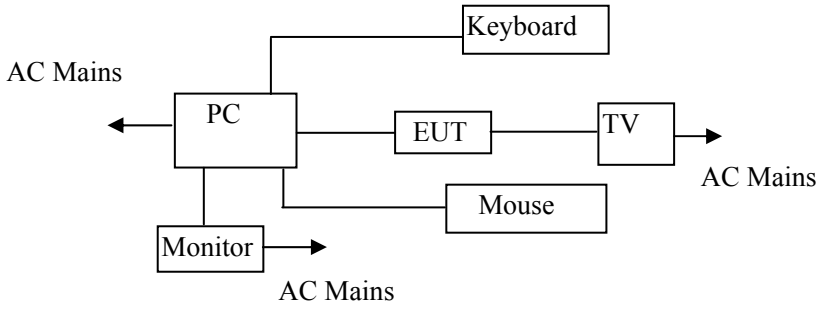
PASS.

Please refer to Appendix I.

5. RADIATED EMISSION MEASUREMENT

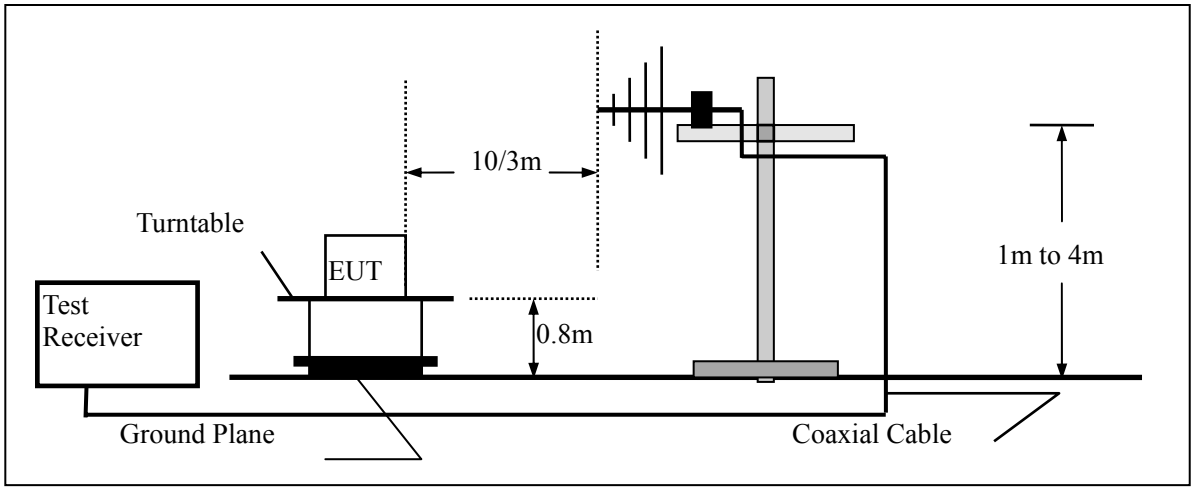
5.1.Block Diagram of Test

5.1.1. Block diagram of connection between the EUT and simulators.



(EUT: USB to HDMI Display Adapter)

5.1.2.Block diagram of test setup (In chamber)



(EUT: USB to HDMI Display Adapter)

5.2.Measuring Standard

FCC Part15, Subpart B, Class B ANSI C63.4: 2009

5.3.Radiated Emission Limits (class B)

Below 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Above 1GHz

FREQUENCY (GHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT	
		Average (dBμV/m)	Peak (dBμV/m)
1~6	3	53.9	73.9

Remark： (1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

5.4.EUT Configuration on Test

The FCC Class B regulations test method must be used to find the maximum emission during radiated emission measurement.

5.5.Operating Condition of EUT

5.5.1.Turn on the power.

5.5.2.After that, let the EUT work in test mode (Connect to PC) and measure it.

5.6.Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters (above 1GHz) and 10 meters (below 1GHz) away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) and horn antenna are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

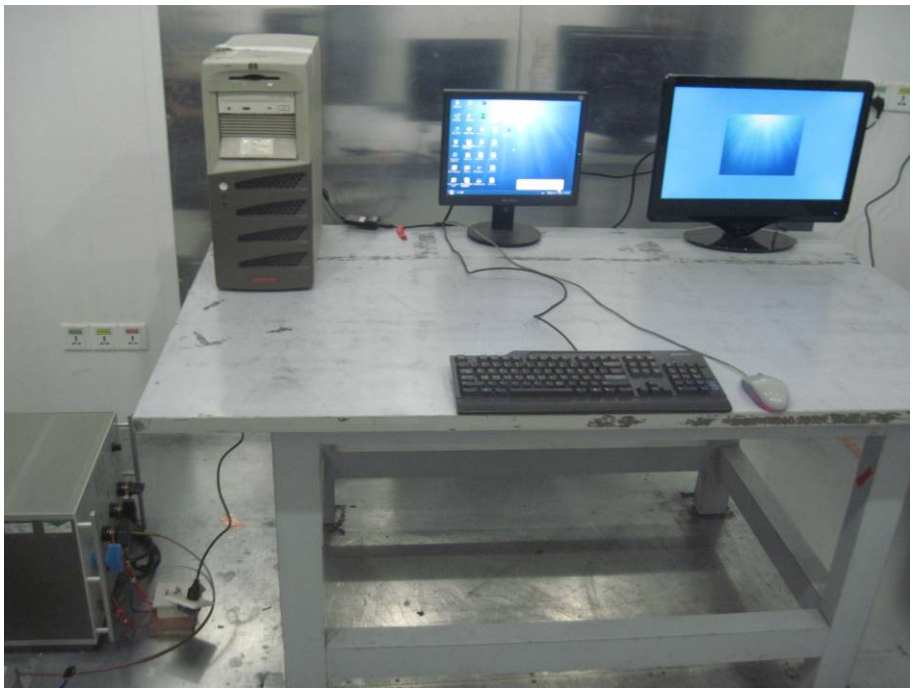
The bandwidth of the Receiver (ESU26) is set at 120kHz.
All the scanning curves are attached in Appendix II.

5.7.Measuring Results

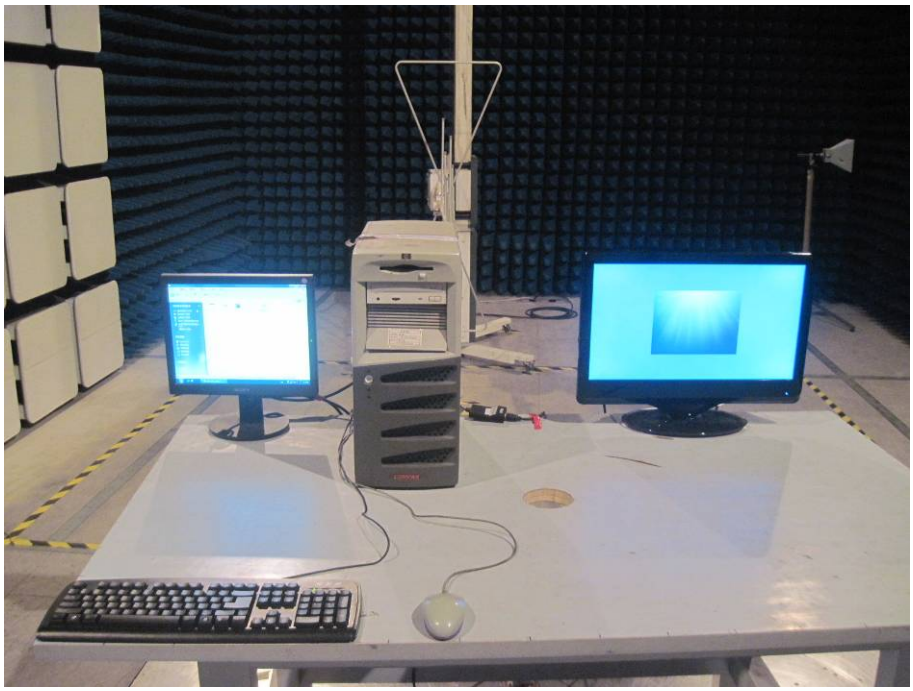
PASS.
The frequency range from 30MHz to 1000MHz is investigated.
Please refer to Appendix II.

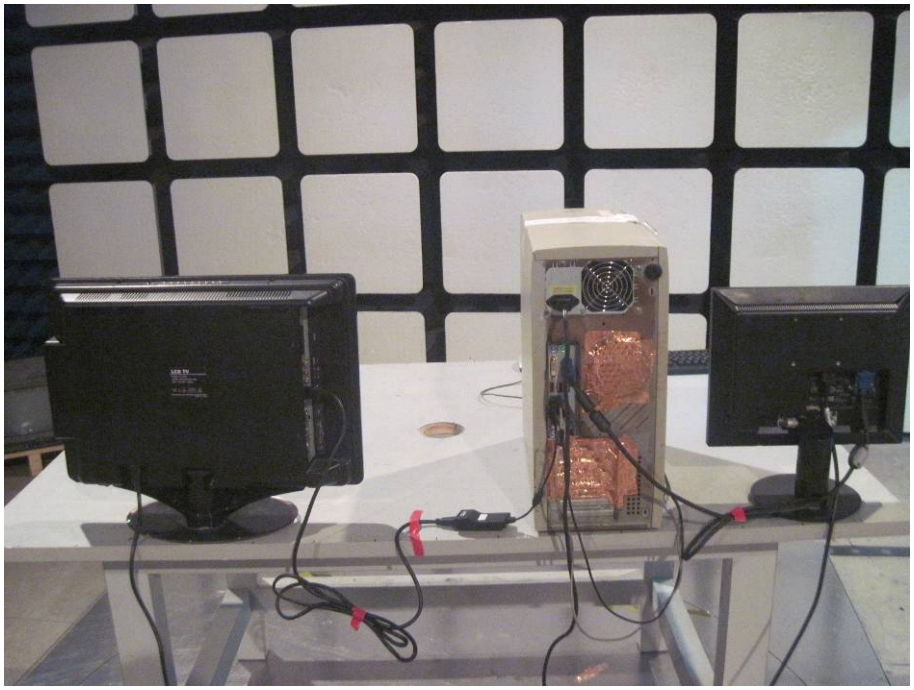
6. PHOTOGRAPH

6.1.Photo of Conducted Emission Measurement

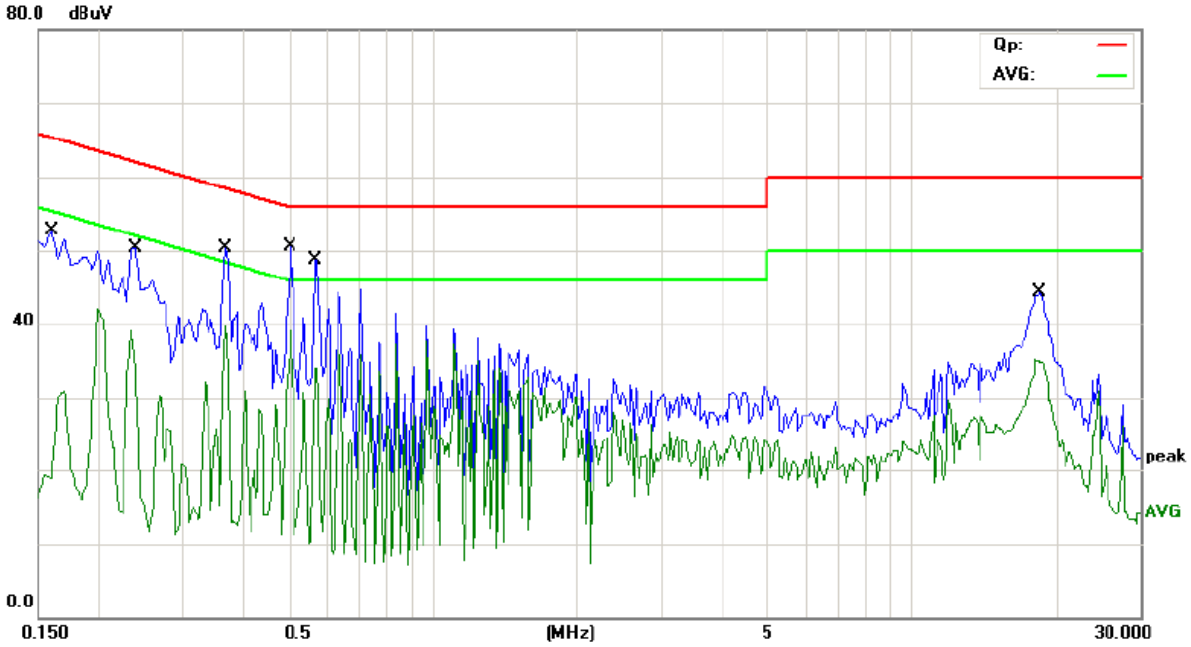


6.2.Photo of Radiation Emission Measurement





APPENDIX I



Site site #1 Phase: N Temperature: 22

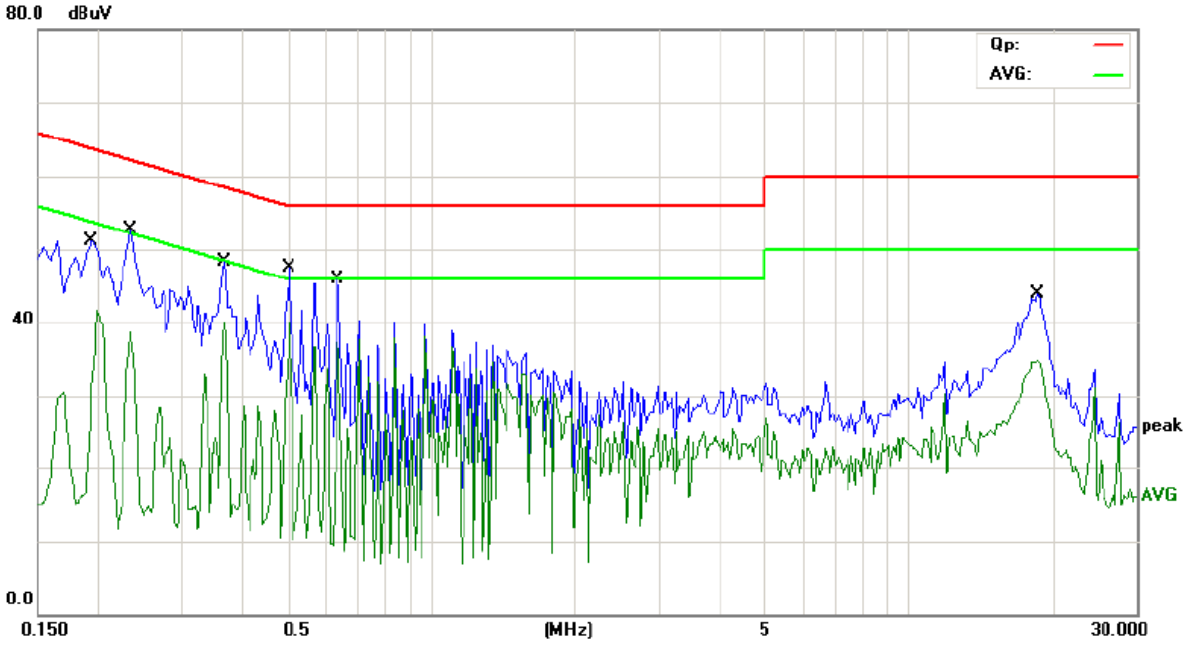
Limit: (CE)FCC PART 15 class B_QP Power: Humidity: 50 %

Mode: Connect to PC

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	52.65	0.00	52.65	65.46	-12.81	QP	
2		0.1600	30.97	0.00	30.97	55.46	-24.49	AVG	
3		0.2400	50.23	0.00	50.23	62.10	-11.87	QP	
4		0.2400	39.02	0.00	39.02	52.10	-13.08	AVG	
5		0.3700	50.36	0.00	50.36	58.50	-8.14	QP	
6		0.3700	39.78	0.00	39.78	48.50	-8.72	AVG	
7		0.5050	45.60	0.00	45.60	56.00	-10.40	QP	
8	*	0.5050	39.10	0.00	39.10	46.00	-6.90	AVG	
9		0.5700	44.60	0.00	44.60	56.00	-11.40	QP	
10		0.5700	34.04	0.00	34.04	46.00	-11.96	AVG	
11		18.5750	44.23	0.00	44.23	60.00	-15.77	QP	
12		18.5750	35.23	0.00	35.23	50.00	-14.77	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: jason



Site site #1 Phase: L1 Temperature: 22

Limit: (CE)FCC PART 15 class B_QP Power: Humidity: 50 %

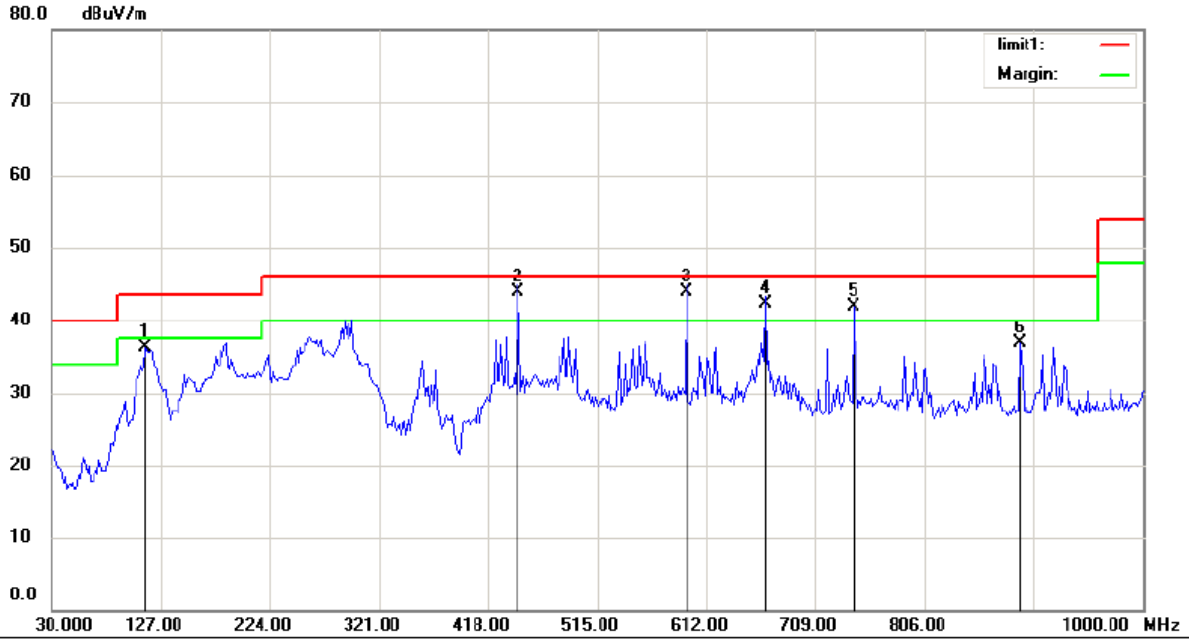
Mode: Connect to PC

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1950	51.13	0.00	51.13	63.82	-12.69	QP	
2		0.1950	41.68	0.00	41.68	53.82	-12.14	AVG	
3		0.2350	52.69	0.00	52.69	62.27	-9.58	QP	
4		0.2350	38.62	0.00	38.62	52.27	-13.65	AVG	
5		0.3700	48.21	0.00	48.21	58.50	-10.29	QP	
6		0.3700	40.08	0.00	40.08	48.50	-8.42	AVG	
7		0.5050	47.59	0.00	47.59	56.00	-8.41	QP	
8	*	0.5050	40.15	0.00	40.15	46.00	-5.85	AVG	
9		0.6400	45.87	0.00	45.87	56.00	-10.13	QP	
10		0.6400	37.31	0.00	37.31	46.00	-8.69	AVG	
11		18.6750	43.94	0.00	43.94	60.00	-16.06	QP	
12		18.6750	34.92	0.00	34.92	50.00	-15.08	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: jason

APPENDIX II



Site site #1 Polarization: *Horizontal* Temperature: 26

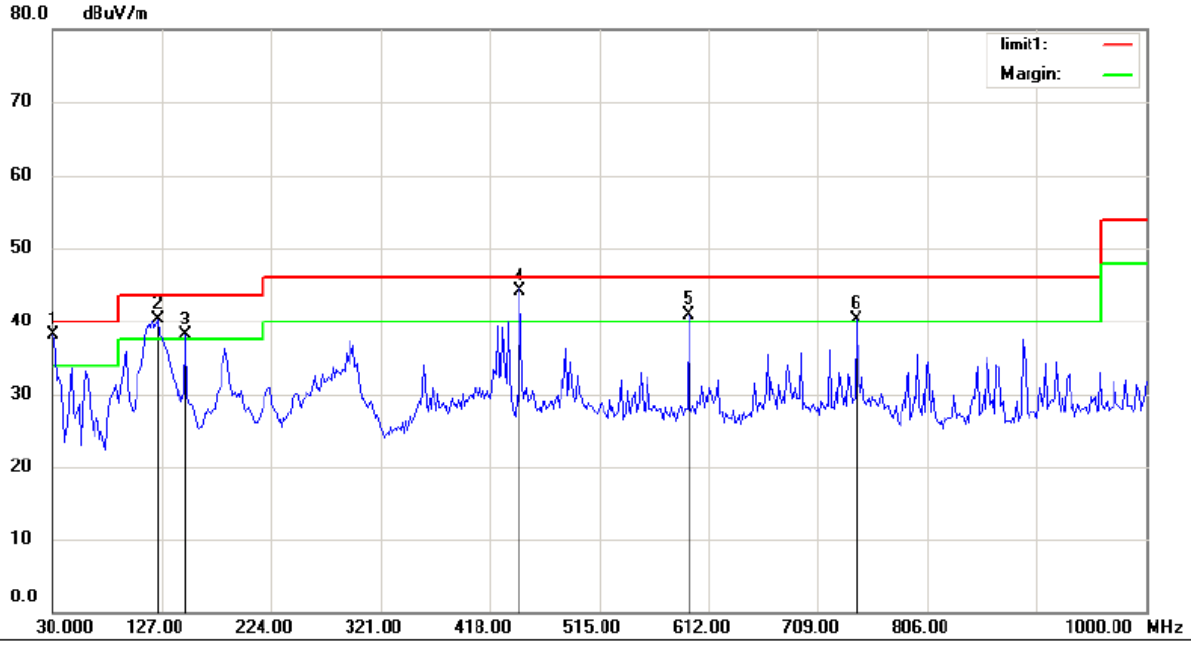
Limit: (RE)FCC PART 15 CLASS B Power: DC Humidity: 50 %

Mode:Connect to PC

Note:

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		113.9423	24.46	11.90	36.36	43.50	-7.14	QP			
2	*	445.0480	25.34	18.64	43.98	46.00	-2.02	QP			
3	!	594.2788	24.10	19.83	43.93	46.00	-2.07	QP			
4	!	664.2307	20.53	21.68	42.21	46.00	-3.79	QP			
5	!	743.5096	19.00	22.96	41.96	46.00	-4.04	QP			
6		891.1858	13.01	23.85	36.86	46.00	-9.14	QP			

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



Site site #1 Polarization: *Vertical* Temperature: 26

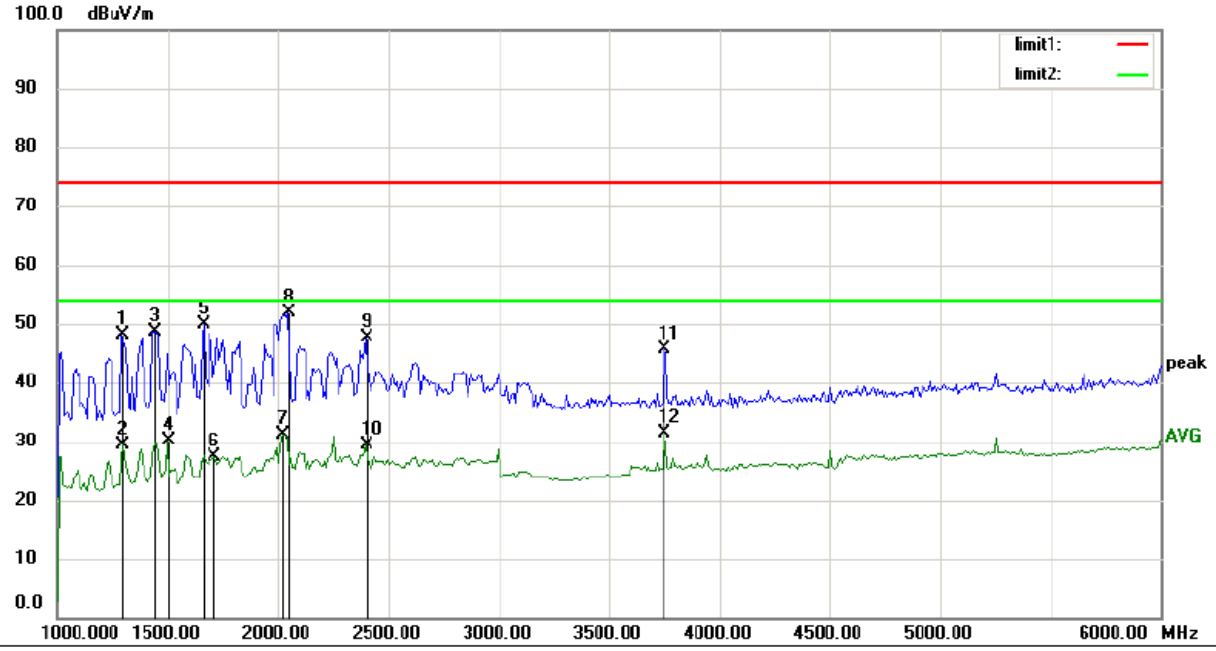
Limit: (RE)FCC PART 15 CLASS B Power: DC Humidity: 50 %

Mode:Connect to PC

Note:

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	!	30.0000	24.15	13.93	38.08	40.00	-1.92	QP			
2	!	123.2692	28.44	11.87	40.31	43.50	-3.19	QP			
3	!	148.1410	29.11	8.99	38.10	43.50	-5.40	QP			
4	*	445.0480	26.01	18.18	44.19	46.00	-1.81	QP			
5	!	594.2788	20.49	20.34	40.83	46.00	-5.17	QP			
6	!	743.5096	17.44	22.90	40.34	46.00	-5.66	QP			

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



Site site #1 Polarization: *Vertical* Temperature: 26

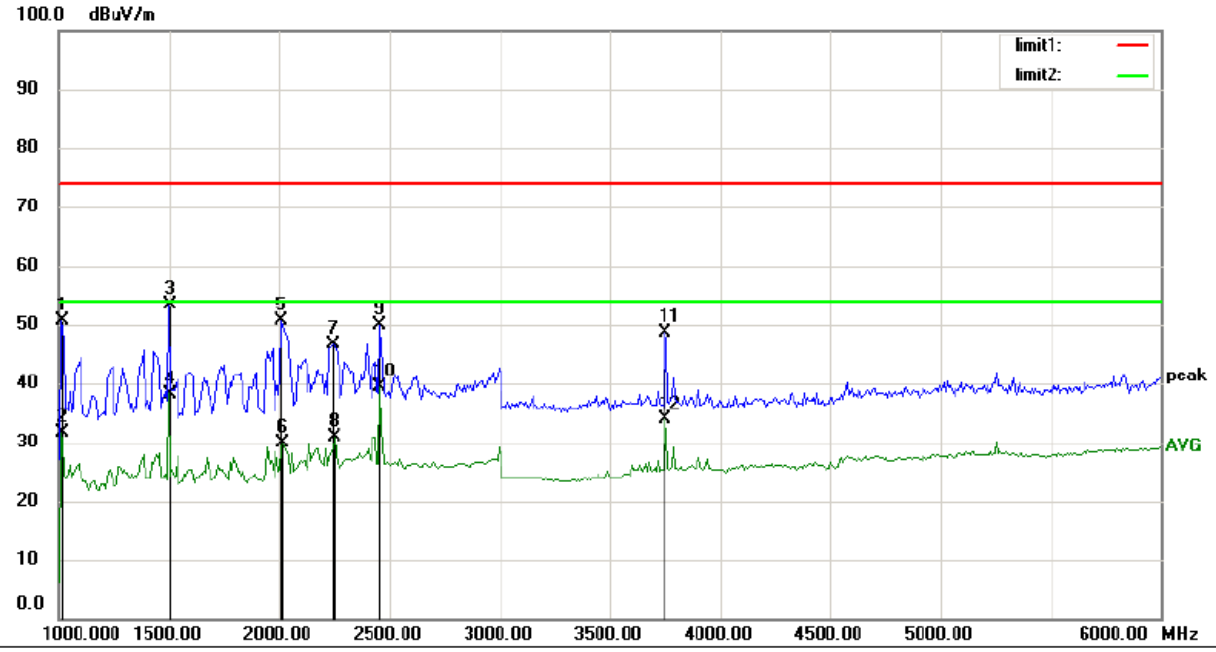
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 60 %

Mode: Connect to PC

Note:

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		1288.462	61.10	-13.09	48.01	73.90	-25.89	peak			
2		1296.474	42.32	-13.03	29.29	53.90	-24.61	AVG			
3		1440.705	61.81	-13.07	48.74	73.90	-25.16	peak			
4		1496.795	43.24	-13.21	30.03	53.90	-23.87	AVG			
5		1665.064	63.24	-13.41	49.83	73.90	-24.07	peak			
6		1713.141	40.94	-13.47	27.47	53.90	-26.43	AVG			
7		2025.641	42.94	-11.93	31.01	53.90	-22.89	AVG			
8	*	2041.667	63.58	-11.72	51.86	73.90	-22.04	peak			
9		2394.231	57.85	-10.26	47.59	73.90	-26.31	peak			
10		2394.231	39.56	-10.26	29.30	53.90	-24.60	AVG			
11		3748.397	57.31	-11.56	45.75	73.90	-28.15	peak			
12		3748.397	42.92	-11.56	31.36	53.90	-22.54	AVG			

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



Site site #1 Polarization: *Horizontal* Temperature: 26

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 60 %

Mode: Connect to PC

Note:

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		1008.013	64.63	-14.01	50.62	73.90	-23.28	peak			
2		1008.013	45.58	-14.01	31.57	53.90	-22.33	AVG			
3		1496.795	66.62	-13.21	53.41	73.90	-20.49	peak			
4		1496.795	51.46	-13.21	38.25	53.90	-15.65	AVG			
5		2009.615	62.67	-12.15	50.52	73.90	-23.38	peak			
6		2017.628	41.90	-12.03	29.87	53.90	-24.03	AVG			
7		2241.987	56.89	-10.16	46.73	73.90	-27.17	peak			
8		2250.000	41.16	-10.16	31.00	53.90	-22.90	AVG			
9		2458.333	60.09	-10.25	49.84	73.90	-24.06	peak			
10	*	2458.333	49.75	-10.25	39.50	53.90	-14.40	AVG			
11		3748.397	60.11	-11.56	48.55	73.90	-25.35	peak			
12		3748.397	45.43	-11.56	33.87	53.90	-20.03	AVG			

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

APPENDIX III
(Photos of EUT)