

Application for FCC Certificate
On Behalf of
Cisco Systems (Shanghai) Video Technology Co., Ltd.

Digital Set-Top

Model No.: PDS1100

FCC ID : ZOO-C1130U

Prepared For : Cisco Systems (Shanghai) Video Technology Co., Ltd.
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Date of Test : Jul 07, 2013
Date of Report : Jul 18, 2013

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Cisco Systems (Shanghai) Video Technology Co., Ltd.
Factory : Flextronics Manufacturing (Zhuhai) Company Limited
EUT Description : Digital Set-Top
(A) Model No. : PDS1100
(C) Power Supply : 90-125V~, 50-60Hz, 0.5A
(D) Test Voltage : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2012
AND ANSI C63.4-2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: PDS1100) which was tested in 3m anechoic chamber Jul 07, 2013 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.


This report contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Jul 07, 2013 Date of Report : Jul 18, 2013

Producer : Kathy Wang
KATHY WANG / Supervisor

Review : Dio Yang
DIO YANG / Assistant Manager

 For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Sammy Chen
Authorized Signature EMC SAMMY CHEN / Deputy Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.109(a) Class B	Pass
Output and Spurious conducted level at RF output terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.115(b)	Pass
Incorporate circuitry to automatically prevent emanations	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 AND ANSI C63.4-2003	15.115(d)	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : Digital Set-Top

Type of EUT : Production Pre-product Pro-type

Model No. : PDS1100

High work Frequency : 200MHz

Applicant : Cisco Systems (Shanghai) Video Technology Co., Ltd.
3-4F of Building 6, 1528 Gu Mei Rd.,
Caohejing Hi-tech Park, Shanghai, P.R.C.

Factory : Flextronics Manufacturing (Zhuhai) Company Limited
Xin Qing Science & Industrial Park, Jing'an, Doumen,
Zhuhai, China

Remark:

The EUT is a Digital Set-Top which input/output ports as follows:

- (1) One AC In Port : Connected with AC Power
- (2) One component of AV Out Ports : Connected with TV
- (3) One IR in Port : Connected with Notebook PC
- (5) One Cable In Port : Connected with DTV SG
- (6) One Cable Out Port : Connected with TV

2.2 Peripherals

2.2.1 TV

Manufacturer : Hisense
Model Number : LTDN39K366MH
Certificate : FCC Verification

2.2.2 Notebook PC

Manufacturer : DELL
Model Number : PP38L
Serial Number : 287N68K1
Data Cable : Unshielded, Detachable, 1.8m
Certificate : CE/EMC, CCC, UL, IC

2.2.3 U-Disk

Manufacturer : KINGSTON
Model Number : G2
Serial Number : 1220LZ08AXP8
Certificate : CE/EMC, FCC DoC

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) Apr 29, 2009 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty:	U = 3.42 dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.14 dB (Horizontal)
	U = 4.28 dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 4.18 dB (Horizontal)
	U = 4.26 dB (Vertical)
Radiated Emission Expanded Uncertainty (Above 1GHz):	U = 4.50 dB (Horizontal)
	U = 4.16 dB (Vertical)

3 CONDUCTED EMISSION TEST

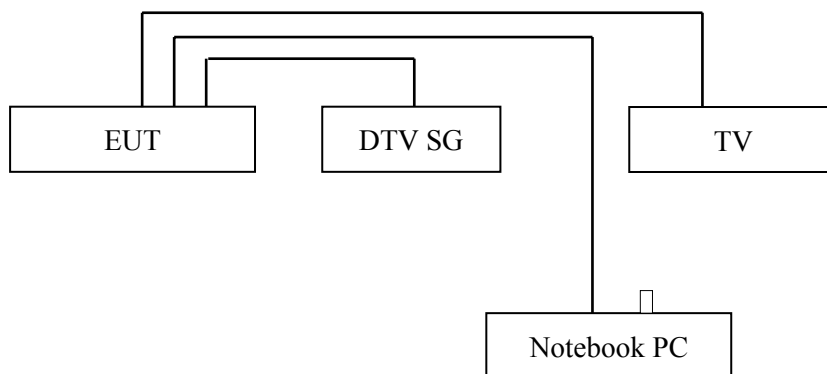
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 20, 2013	Mar 20, 2014
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Feb 25, 2013	Feb 25, 2014
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2013	Mar 20, 2014
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2013	Sep 18, 2013
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2013	Mar 20, 2014
6.	Software	Audix	E3	SET00200 9804M592	--	--
7.	DTV SG	TELEVIEW	TVB597A	--	Apr 01, 2013	Apr 01, 2014

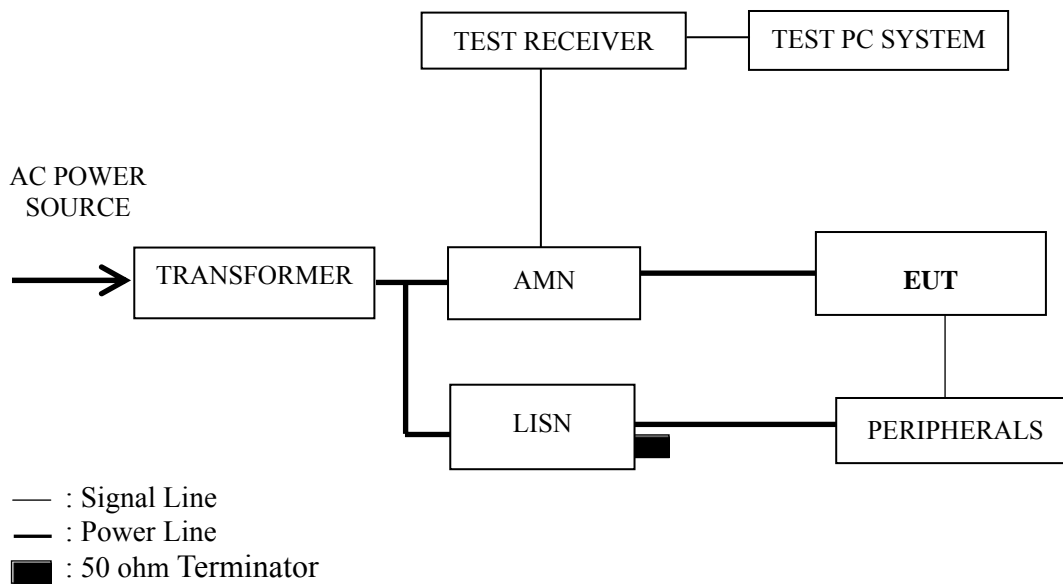
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



□ : U-Disk

3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 The DTV SG provide a 82dBuV digital signal to the EUT during the test.

3.5.4 Set the EUT on the test mode and then test.

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Page
AV Output Mode	P11
TV Output Mode	P12

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is for AV Output Mode. The worst emission is detected at 0.183 MHz (QP Value) with corrected signal level of 54.69 dB (μ V) (limit is 64.35 dB (μ V)), when the Line of the EUT is connected to AMN.

EUT : Digital Set-Top Temperature : 22°C

Model No. : PDS1100 Humidity : 48%RH

Test Mode : AV Mode Date of Test : Jul 09, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.183	54.60	0.09	54.69	64.35	9.66	QP	
	0.395	39.80	-0.04	39.76	57.97	18.21		
	0.685	31.82	0.07	31.89	56.00	24.11		
	2.962	31.28	0.07	31.35	56.00	24.65		
	5.709	33.74	0.18	33.92	60.00	26.08		
	23.950	34.52	-0.26	34.26	60.00	25.74	AV	
	0.183	36.80	0.09	36.89	54.35	17.46		
	0.395	37.40	-0.04	37.36	47.97	10.61		
	0.685	27.80	0.07	27.87	46.00	18.13		
	2.962	21.70	0.07	21.77	46.00	24.23		
5.709	25.60	0.18	25.78	50.00	24.22	AV		
23.950	27.40	-0.26	27.14	50.00	22.86			
Neutral	0.183	53.51	0.15	53.66	64.37		10.71	QP
	0.392	39.20	0.17	39.37	58.01		18.64	
	0.680	31.56	0.10	31.66	56.00		24.34	
	2.363	31.59	0.12	31.71	56.00		24.29	
	5.873	33.82	0.23	34.05	60.00	25.95		
	23.400	33.09	0.99	34.08	60.00	25.92		
	0.183	35.80	0.15	35.95	54.37	18.42	AV	
	0.392	37.57	0.17	37.74	48.01	10.27		
	0.680	25.20	0.10	25.30	46.00	20.70		
	2.363	20.90	0.12	21.02	46.00	24.98		
	5.873	25.20	0.23	25.43	50.00	24.57		
	23.400	25.40	0.99	26.39	50.00	23.61		

TEST ENGINEER: WENCY YANG

EUT : Digital Set-Top Temperature : 22°C

Model No. : PDS1100 Humidity : 48%RH

Test Mode : TV Mode Date of Test : Jul 09, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	50.69	0.09	50.78	64.38	13.60	QP
	0.393	39.25	-0.04	39.21	58.00	18.79	
	0.682	31.70	0.07	31.77	56.00	24.23	
	1.282	31.79	0.03	31.82	56.00	24.18	
	5.941	34.75	0.19	34.94	60.00	25.06	
	21.240	33.19	-0.11	33.08	60.00	26.92	
	0.182	32.90	0.09	32.99	54.38	21.39	AV
	0.393	37.30	-0.04	37.26	48.00	10.74	
	0.682	26.40	0.07	26.47	46.00	19.53	
	1.282	21.60	0.03	21.63	46.00	24.37	
	5.941	26.30	0.19	26.49	50.00	23.51	
	21.240	25.70	-0.11	25.59	50.00	24.41	
Neutral	0.183	51.20	0.15	51.35	64.36	13.01	QP
	0.393	39.34	0.17	39.51	57.99	18.48	
	0.681	31.73	0.10	31.83	56.00	24.17	
	1.277	31.59	0.15	31.74	56.00	24.26	
	5.997	35.08	0.24	35.32	60.00	24.68	
	23.640	33.88	1.00	34.88	60.00	25.12	
	0.183	33.20	0.15	33.35	54.36	21.01	AV
	0.393	36.71	0.17	36.88	47.99	11.11	
	0.681	26.90	0.10	27.00	46.00	19.00	
	1.277	22.60	0.15	22.75	46.00	23.25	
	5.997	26.40	0.24	26.64	50.00	23.36	
	23.640	25.71	1.00	26.71	50.00	23.29	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

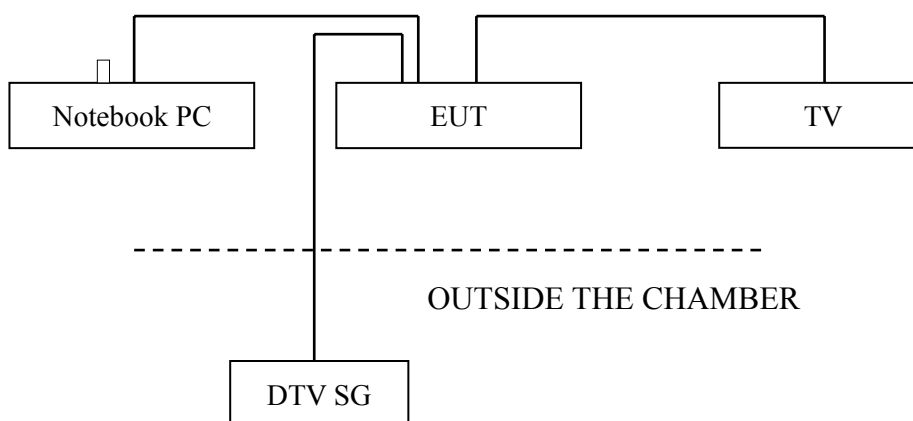
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Sep 11, 2012	Sep 11, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2013	Sep 18, 2013
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2013	Mar 20, 2014
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2013	May 03, 2014
5.	Horn Antenna	EMCO	3115	96074878	May 11, 2013	May 11, 2014
6.	Spectrum	Agilent	E7405A	MY45106600	Dec 17, 2012	Dec 17, 2013
7.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2013	Sep 18, 2013
8.	Software	Audix	E3	SET00200 9912M295-2	--	--
9.	DTV SG	TELEVIEW	TVB597A	--	Apr 01, 2013	Apr 01, 2014

4.2 Block Diagram of Test Setup

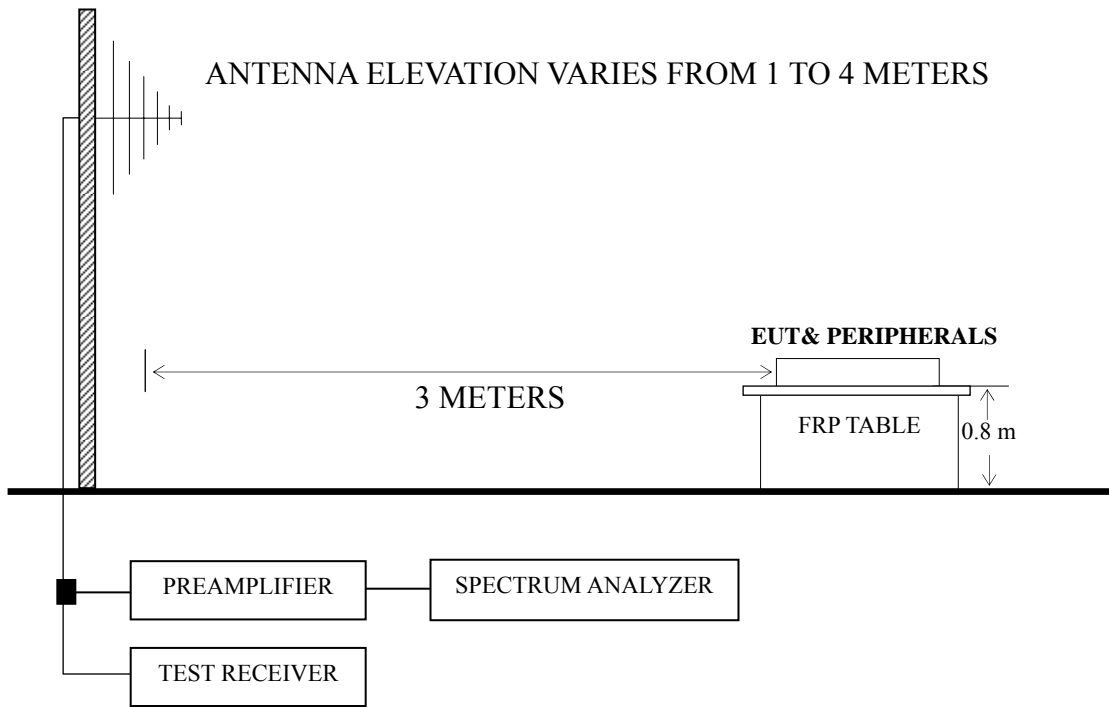
4.2.1 EUT and Peripherals



□ : U-Disk

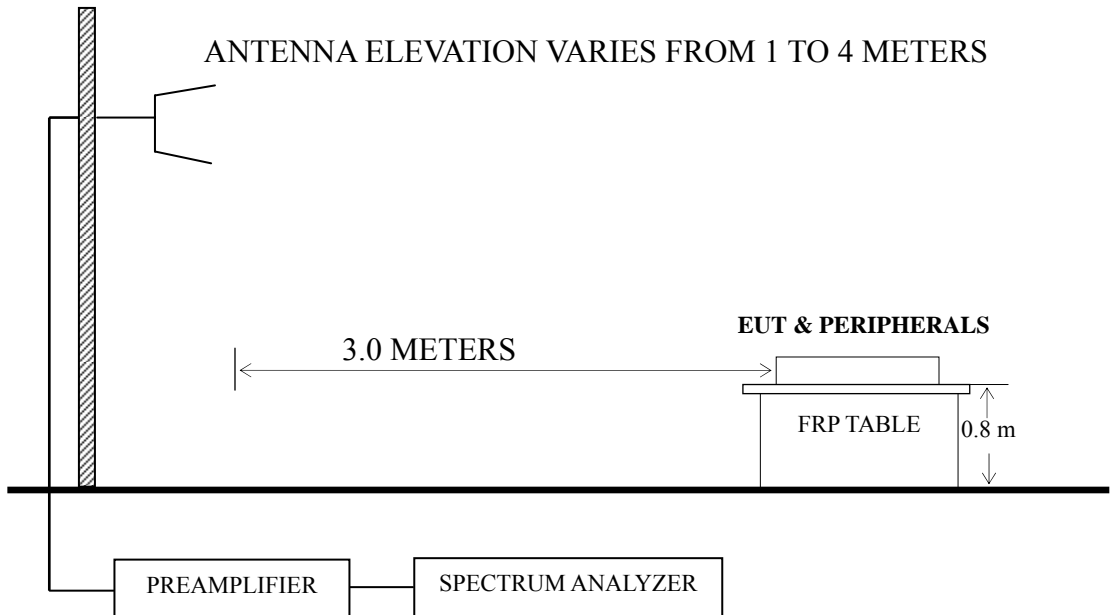
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

4.2.2.2 Above 1GHz



4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V/m}$)	dB ($\mu\text{V/m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 log Emission Level ($\mu\text{V/m}$) NOTE 2 - The tighter limit applies at the band edges. NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz. NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.			

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz below 1GHz and The Spectrum Agilent E7405A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 5000MHz was checked for all test modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Page
AV Mode	P17
TV Mode	P18

- NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz)
- NOTE 2 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)
- NOTE 3 – All readings are Quasi-Peak values below or equal to 1GHz, Peak values and Average values above 1GHz.
- NOTE 4 – The emission levels that are 20dB below the official limit are not reported.
- NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.
- NOTE 6 – The worst case is for AV Mode. The worst emission at horizontal polarization was detected at 333.352MHz with corrected signal level of 41.10 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 2.00 m height and the turntable was at 223°. The worst emission at vertical polarization was detected at 333.366 MHz with corrected signal level of 41.30 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 147°.

EUT : Digital Set-Top Temperature : 22°C

Model No. : PDS1100 Humidity : 60%RH

Test Mode : AV Mode Date of Test : Jul 18, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	35.820	6.16	15.35	0.73	22.24	40.00	17.76
	120.210	10.39	12.04	1.48	23.91	43.50	19.59
	166.770	18.51	9.05	1.75	29.31	43.50	14.19
	333.352	24.30	14.20	2.60	41.10	46.00	4.90
	500.450	14.82	18.10	2.98	35.90	46.00	10.10
	834.130	13.95	20.25	3.89	38.09	46.00	7.91
Vertical	30.000	15.39	19.10	0.65	35.14	40.00	4.86
	134.760	24.08	11.00	1.57	36.65	43.50	6.85
	166.770	25.03	9.05	1.75	35.83	43.50	7.67
	333.366	24.50	14.20	2.60	41.30	46.00	4.70
	500.450	15.38	18.10	2.98	36.46	46.00	9.54
	667.290	12.51	19.40	3.44	35.35	46.00	10.65

TEST ENGINEER: NEAL WANG

EUT : Digital Set-Top Temperature : 22°C

Model No. : PDS1100 Humidity : 60%RH

Test Mode : TV Mode Date of Test : Jul 18, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	35.820	5.03	15.35	0.73	--	21.11	40.00	18.89	QP
	120.210	15.99	12.04	1.48	--	29.51	43.50	13.99	
	167.740	18.05	8.80	1.76	--	28.61	43.50	14.89	
	333.610	22.18	14.25	2.60	--	39.03	46.00	6.97	
	416.060	16.89	17.00	2.73	--	36.62	46.00	9.38	
	834.130	15.43	20.25	3.89	--	39.57	46.00	6.43	
	1135.000	48.01	24.58	5.05	36.93	40.71	74.00	33.29	PK
	1340.000	47.38	25.71	5.47	36.63	41.93	74.00	32.07	
	1920.000	46.44	30.43	6.18	35.95	47.10	74.00	26.90	
	2485.000	46.67	28.26	6.47	35.95	45.45	74.00	28.55	
	3425.000	43.95	31.09	8.11	35.72	47.43	74.00	26.57	
	4725.000	43.47	31.07	9.02	35.63	47.93	74.00	26.07	
	1135.000	35.55	24.58	5.05	36.93	28.25	54.00	25.75	AV
	1340.000	35.46	25.71	5.47	36.63	30.01	54.00	23.99	
	1920.000	35.80	30.43	6.18	35.95	36.46	54.00	17.54	
	2485.000	35.46	28.26	6.47	35.95	34.24	54.00	19.76	
	3425.000	32.48	31.09	8.11	35.72	35.96	54.00	18.04	
	4725.000	33.46	31.07	9.02	35.63	37.92	54.00	16.08	

TEST ENGINEER: NEAL WANG

EUT : Digital Set-Top Temperature : 22°C

Model No. : PDS1100 Humidity : 60%RH

Test Mode : TV Mode Date of Test : Jul 18, 2013

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	38.730	16.99	13.01	0.76	--	30.76	40.00	9.24	QP
	120.210	20.37	12.04	1.48	--	33.89	43.50	9.61	
	164.830	20.17	9.30	1.75	--	31.22	43.50	12.28	
	333.610	20.60	14.25	2.60	--	37.45	46.00	8.55	
	667.290	11.50	19.40	3.44	--	34.34	46.00	11.66	
	834.130	13.97	20.25	3.89	--	38.11	46.00	7.89	
	1170.000	50.59	24.76	5.08	36.88	43.55	74.00	30.45	PK
	1635.000	46.59	27.59	5.81	36.20	43.79	74.00	30.21	
	1955.000	48.58	30.68	6.19	35.93	49.52	74.00	24.48	
	2975.000	46.82	29.45	7.07	36.00	47.34	74.00	26.66	
	3945.000	43.21	33.20	8.44	35.42	49.43	74.00	24.57	
	5515.000	43.47	34.08	8.61	35.81	50.35	74.00	23.65	AV
	1170.000	40.47	24.76	5.08	36.88	33.43	54.00	20.57	
	1635.000	35.47	27.59	5.81	36.20	32.67	54.00	21.33	
	1955.000	37.46	30.68	6.19	35.93	38.40	54.00	15.60	
	2975.000	35.79	29.45	7.07	36.00	36.31	54.00	17.69	
3945.000	32.46	33.20	8.44	35.42	38.68	54.00	15.32		
5515.000	32.75	34.08	8.61	35.81	39.63	54.00	14.37		

TEST ENGINEER: NEAL WANG

5 OUTPUT SIGNAL LEVEL MEASUREMENT

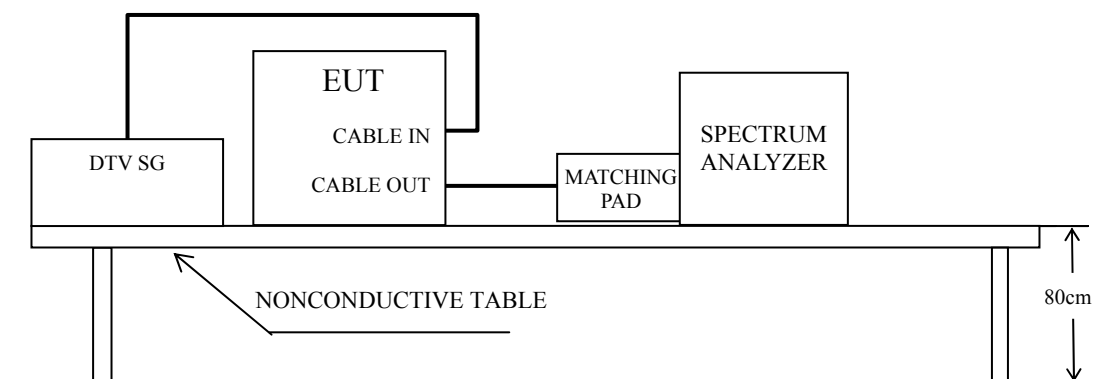
5.1 Test Equipment

The following test equipments are used during the output signal level measurement in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	8591EM	3628A00908	Dec 14, 2012	Dec 14, 2013
2.	Matching PAD (75Ω - 50Ω)	Anritsu	12N50-75B	1664	Mar 18, 2013	Sep 18, 2013
3.	DTV SG	TELEVIEW	TVB597A	--	Apr 01, 2013	Apr 01, 2014

5.2 Block Diagram of Test Setup

TV mode (DTV Signal Input)



Note: The DTV SG provide a 82dBuV digital signal to the EUT during the test.

5.3 Output Signal Limit

FCC Rule Part 15, § 15.115 (b) (1) (ii)

5.4 Test Procedure

- (a) Configure the EUT System in accordance with ANSI C63.4-2003 section 12.2.

see also the block diagram and the photographs of EUT System configuration in this report.

- (b) Unused RF input/output terminals are terminated in the proper impedance.
- (c) Activate the EUT system.
- (d) Set the spectrum analyzer as follows.

Frequency Span	: 1 MHz
Resolution bandwidth	: 100 kHz
Video bandwidth	: 3 MHz
Detector function	: Peak mode

- (e) The RF output terminal is connected to the spectrum analyzer through the matching transformer.
- (f) Then, the RF output signal level is measured under the EUT condition produced the maximum signal level.

5.5 Test Results

<PASS>

NOTE 1 – The correction factor is the factor of the impedance matching PAD used for the test.

NOTE 2 – Signal Level = Spectrum Analyzer Reading + Correction Factor

EUT : Digital Set-Top Temperature : 26°C

Model No. : PDS1100 Humidity : 53%

Test Mode : TV mode Date of Test : Jul 10, 2013

Emission Frequency (MHz)	Correction Factor (dB)	Spectrum Analyzer Reading (dB μ V)	Signal Level (dB μ V)	Limits (dB μ V)	Margin (dB)
<u>Test Channel #3</u>					
61.25	6.29	62.87	69.16	69.5	0.34
65.75	6.29	47.83	54.12	56.5	2.38
<u>Test Channel #4</u>					
67.25	6.13	62.23	68.36	69.5	1.14
71.75	6.13	47.14	53.27	56.5	2.73

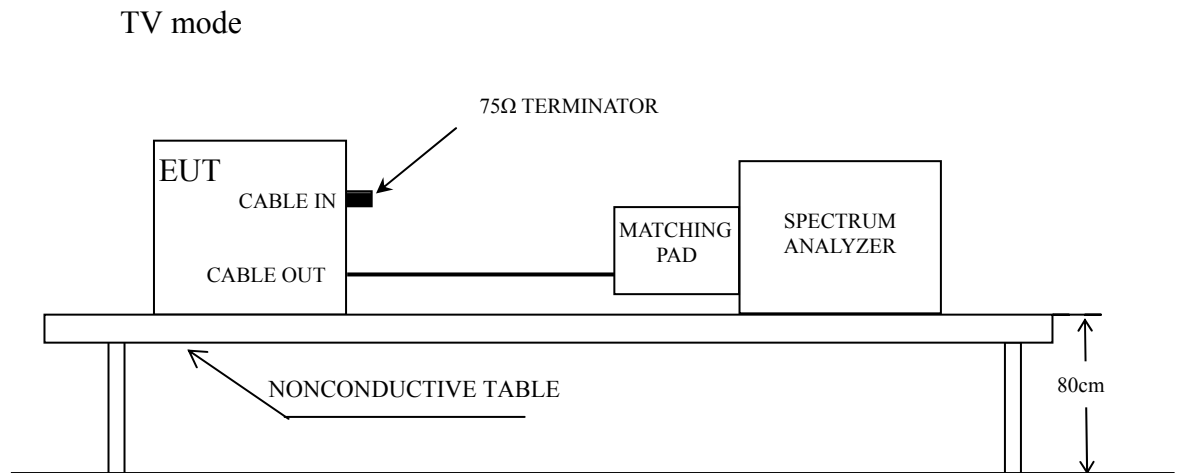
TEST ENGINEER: WENCY YANG

6 OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT

6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	8591EM	3628A00908	Dec 14, 2012	Dec 14, 2013
2.	Matching PAD (75Ω - 50Ω)	Anritsu	12N50-75B	1664	Mar 18, 2013	Sep 18, 2013
3.	75Ω Impedance	--	BNC/ 50Ω	001	Mar 20, 2013	Mar 20, 2014
4.	DTV SG	TELEVIEW	TVB597A	--	Apr 01, 2013	Apr 01, 2014

6.2 Block Diagram of Test Setup



Note: The DTV SG provide a 82dBuV digital signal to the EUT during the test.

6.3 Output Signal Limits

FCC Rule Part 15, § 15.115 (b) (2) (ii)

6.4 Test Procedure

- (a) Configure the EUT System in accordance with ANSI C63.4-2003 section 12.2.

See also the block diagram and the photographs of EUT System configuration in this report.

- (b) Unused RF input/output terminals in the proper impedance.

- (c) Activate the EUT system.

- (d) Set the spectrum analyzer as follows.

Frequency Span : 1 MHz
Resolution bandwidth : 100 kHz
Video bandwidth : 3 MHz
Detector function : Peak mode

- (e) The RF output terminal is connected to the spectrum analyzer through the matching transformer.

- (f) The spectrum was scanned from 30 MHz to more than 4.6 MHz below the visual carrier frequency, and from more than 7.4 MHz above the visual carrier frequency to 1000 MHz, and the three highest emissions are selected under the EUT condition produced the maximum signal level at each frequency range.

- (g) Then, the RF output terminal conducted spurious emission level is measured under the EUT condition produced the maximum signal level.

6.5 Test Results

<PASS>

NOTE 1 – The correction factor is the factor of the impedance matching PAD used for the test.

NOTE 2 – The spectrum was checked in each test mode, and the maximum measured data was reported.

NOTE 3 – Signal Level = Spectrum Analyzer Reading + Correction Factor

EUT : Digital Set-Top Temperature : 26°C

Model No. : PDS1100 Humidity : 53%

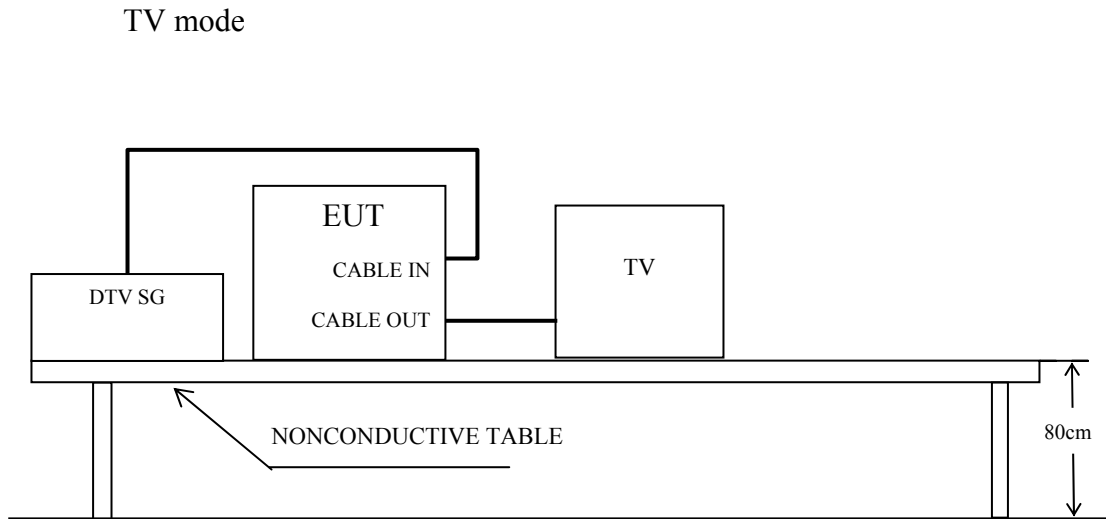
Test Mode : TV mode Date of Test : Jul 10, 2013

Emission Frequency (MHz)	Correction Factor (dB)	Spectrum Analyzer Reading (dB μ V)	Signal Level (dB μ V)	Limits (dB μ V)	Margin (dB)
Test Channel #3					
47.96	6.27	28.95	35.22	39.50	4.28
238.6	6.04	29.74	35.78	39.50	3.72
324.9	6.09	28.90	34.99	39.50	4.51
420.8	6.04	30.28	36.32	39.50	3.18
682.9	6.14	28.29	34.43	39.50	5.07
818.6	6.43	31.05	37.48	39.50	2.02
Test Channel #4					
85.8	5.86	28.61	34.47	39.50	5.03
333.1	6.12	29.75	35.87	39.50	3.63
512.6	6.19	29.33	35.52	39.50	3.98
682.3	6.14	29.77	35.91	39.50	3.59
726.0	6.28	30.37	36.65	39.50	2.85
946.7	6.27	30.02	36.29	39.50	3.21

TEST ENGINEER: WENCY YANG

7 INCORPORATE CIRCUITRY TO AUTOMATICALLY PREVENT EMANATIONS

7.1 Block Diagram of Test Setup



7.2 Requirements

FCC Rule Part 15, § 15.115 (d)

A TV interface device, including a cable system terminal device, shall incorporate circuitry to automatically prevent emanations from the device from exceeding the technical specifications in this part. These circuits shall be adequate to accomplish their functions when the TV interface device is presented, if applicable, with video input signal levels in the range of one to five volts. For devices that contain provisions for an external signal source but do not contain provisions for the input of an external baseband signal, e.g., some cable system terminal devices, compliance with the provisions of this paragraph shall be demonstrated with a radio frequency input signal of 0 to 25 dBmV.

7.3 Test Procedure

- (a) Configure the EUT System as sec. 7.1.
- (b) Activate the EUT system.
- (c) Set the SG to output radio frequency signal levels from 0 to 25 dBmV to the EUT.
- (d) Check the effects of the test.

7.4 Test Results

<PASS>

The EUT meets the requirements of 15.115(d), these circuits could accomplish their function when input a radio frequency input signal levels from 0 to 25 dBmV.

8 DEVIATION TO TEST SPECIFICATIONS

None.