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

Digital Set-Top

Model No.: Cisco 3413DVB

Serial No.: E1108987-01/02, E1108987-02/02

FCC ID : ZOO-C3413U

Prepared For : Cisco Systems (Shanghai) Video Technology Co., Ltd.
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Report No. : ACI-F11118
Date of Test : Aug 18 – 22, 2011
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TABLE OF CONTENTS

Page

1 SUMMARY OF STANDARDS AND RESULTS 4
1.1 Description of Standards and Results 4
2 GENERAL INFORMATION 5
2.1 Description of Equipment Under Test 5
2.2 Peripherals 6
2.3 Description of Test Facility 6
2.4 Measurement Uncertainty 6
3 CONDUCTED EMISSION TEST 7
3.1 Test Equipment 7
3.2 Block Diagram of Test Setup 7
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)] 8
3.4 Test Configuration 8
3.5 Operating Condition of EUT 9
3.6 Test Procedures 9
3.7 Test Results 9
4 RADIATED EMISSION TEST 12
4.1 Test Equipment 12
4.2 Block Diagram of Test Setup 12
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)] 13
4.4 Test Configuration 13
4.5 Operating Condition of EUT 14
4.6 Test Procedures 14
4.7 Test Results 14
5 OUTPUT SIGNAL LEVEL MEASUREMENT 17
5.1 Test Equipment 17
5.2 Block Diagram of Test Setup 17
5.3 Output Signal Limit 17
5.4 Test Procedure 18
5.5 Test Results 18
6 OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT 20
6.1 Test Equipment 20
6.2 Block Diagram of Test Setup 20
6.3 Output Signal Limits 20
6.4 Test Procedure 21
6.5 Test Results 21
7 INCORPORATE CIRCUITRY TO AUTOMATICALLY PREVENT EMANATIONS 23
7.1 Block Diagram of Test Setup 23
7.2 Requirements 23
7.3 Test Procedure 24
7.4 Test Results 24
8 DEVIATION TO TEST SPECIFICATIONS 25

TEST REPORT FOR FCC CERTIFICATE

Applicant	:	Cisco Systems (Shanghai) Video Technology Co., Ltd.
Manufacturer #1	:	Hangzhou Jinling Technology Co., Ltd.
Manufacturer #2	:	Hong Fu Jin Precision Industry (Shenzhen) Co., Ltd.
EUT Description	:	Digital Set-Top
		(A) Model No. : Cisco 3413DVB
		(B) Serial No. : E1108987-01/02, E1108987-02/02
		(C) Power Supply : 100-240V~, 50-60Hz, 0.5A
		(D) Test Voltage : 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2010 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: Cisco 3413DVB; S/N: E1108987-01/02, E1108987-02/02) which was tested in 3m anechoic chamber Aug 18 – 19, 2011 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 : Aug 18 – 22, 2011 Date of Report : Aug 23, 2011

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Assistant Manager

AUDIX® 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 2010 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 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 2010 AND ANSI C63.4-2003	15.115(b)	Pass
Incorporate circuitry to automatically prevent emanations	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 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. : Cisco 3413DVB

Serial No. : E1108987-01/02, E1108987-02/02

Note : There are 2 kinds of power boards can be used in the EUT (E1108987-01/02 for power #1, E1108987-02/02 for power #2).
Both of them were performed 15.107 & 15.109 tests, and E1108987-01/02 was chosen to perform 15.115 tests.

Tuner : Manufacturer : NuTune
M/N : FC 3207

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

Manufacturer #1 : Hangzhou Jinling Technology Co., Ltd.
#6 Suite A, East 10-3-2, No.19 Road HETZ,
Hangzhou, China

Manufacturer #2 : Hong Fu Jin Precision Industry (Shenzhen) Co., Ltd.
No.2, 2nd Donghuan Road, 10th Yousong Industrial District,
Longhua Town, Baoan Shenzhen, Guangdong, 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 S/PDIF Port
: Connected with TV
(3) One IR in Port
: Connected with terminator
(5) One Cable In Port
: Connected with DVB-C SG
(6) One TV Out Port
: Connected with TV

2.2 Peripherals

2.2.1 TV

Manufacturer	:	Hisense
Model Number	:	LHD32K20US
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC ID: W9HLCDC0009

2.2.2 DVB-C SG

Manufacturer	:	Scivo
Model Number	:	SPG
Serial Number	:	10311200109040796

2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on 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 = 3.38 dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.58 dB (horizontal)

U = 4.70 dB (vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.84 dB (horizontal)

U = 4.70 dB (vertical)

3 CONDUCTED EMISSION TEST

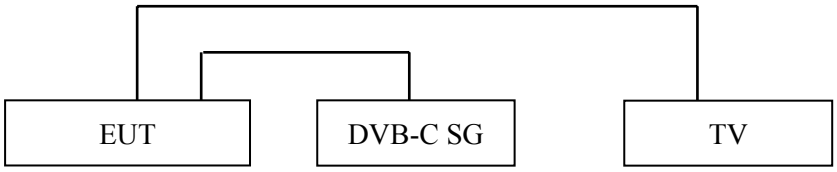
3.1 Test Equipment

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

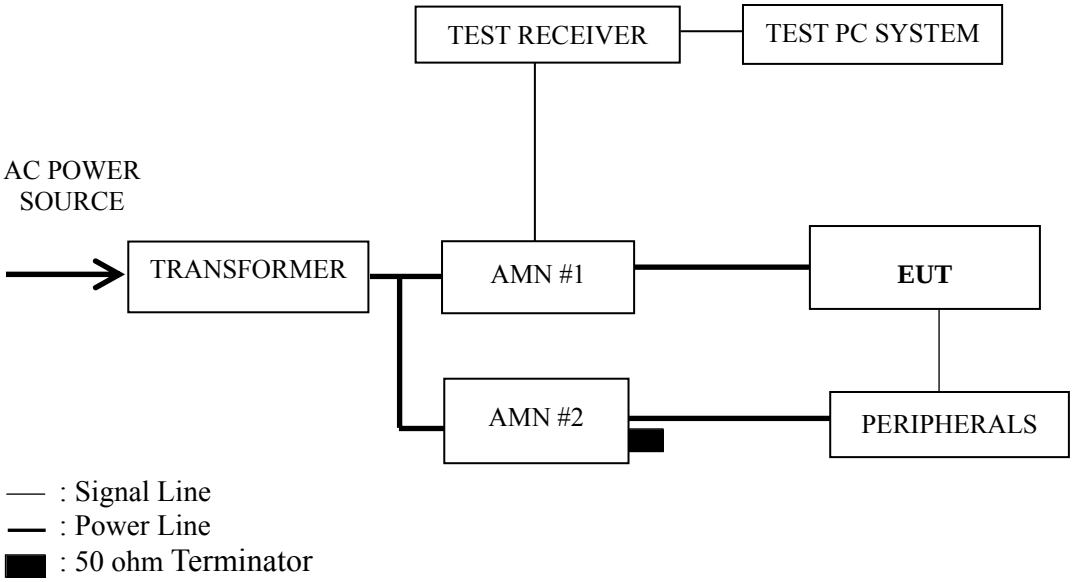
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2011	Sep 18, 2011
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2011	Mar 22, 2012
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



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 (μV)	
	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 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.

Serial Number	Page
E1108987-01/02	P10 – P11
E1108987-02/02	P12 – P13

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 S/N: E1108987-02/02 model. The worst emission is detected at 27.550 MHz (Average Value) with corrected signal level of 44.28 dB (μV) (limit is 50.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	Digital Set-Top	Temperature :	22℃	
Model No.	:	Cisco 3413DVB	Humidity :	48%RH	
Serial No.	:	E1108987-01/02	Date of Test :	Aug 18, 2011	
Test Mode	:	TV mode			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.166	57.38	0.22	57.60	65.14	7.54	QP
	0.219	48.51	0.22	48.73	62.88	14.15	
	0.363	40.43	0.28	40.71	58.65	17.94	
	4.114	31.84	0.54	32.38	56.00	23.62	
	10.750	41.81	0.74	42.55	60.00	17.45	
	27.710	46.77	1.29	48.06	60.00	11.94	
	0.166	39.60	0.22	39.82	55.14	15.32	AV
	0.219	37.63	0.22	37.85	52.88	15.03	
	0.363	30.21	0.28	30.49	48.65	18.16	
	4.114	20.64	0.54	21.18	46.00	24.82	
	10.750	35.01	0.74	35.75	50.00	14.25	
	27.710	39.69	1.29	40.98	50.00	9.02	
Neutral	**0.165**	**58.80**	**0.19**	**58.99**	**65.19**	**6.20**	QP
	0.224	48.59	0.18	48.77	62.66	13.89	
	0.437	38.21	0.24	38.45	57.11	18.66	
	1.878	30.48	0.55	31.03	56.00	24.97	
	10.676	43.69	1.03	44.72	60.00	15.28	
	25.591	42.90	1.33	44.23	60.00	15.77	
	0.165	40.10	0.19	40.29	55.19	14.90	AV
	0.224	37.61	0.18	37.79	52.66	14.87	
	0.437	28.10	0.24	28.34	47.11	18.77	
	1.878	20.10	0.55	20.65	46.00	25.35	
	10.676	32.53	1.03	33.56	50.00	16.44	
	25.591	31.51	1.33	32.84	50.00	17.16	

TEST ENGINEER: WENCY YANG

EUT	:	Digital Set-Top	Temperature :	22℃	
Model No.	:	Cisco 3413DVB	Humidity	:	48%RH
Serial No.	:	E1108987-02/02	Date of Test	:	Aug 18, 2011
Test Mode	:	TV mode			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.171	55.59	0.23	55.82	64.89	9.07	QP
	0.235	45.59	0.22	45.81	62.26	16.45	
	0.375	38.50	0.29	38.79	58.39	19.60	
	3.720	40.76	0.53	41.29	56.00	14.71	
	10.750	41.01	0.74	41.75	60.00	18.25	
	27.700	48.09	1.29	49.38	60.00	10.62	
	0.171	39.29	0.23	39.52	54.89	15.37	AV
	0.235	35.63	0.22	35.85	52.26	16.41	
	0.375	28.43	0.29	28.72	48.39	19.67	
	3.720	30.10	0.53	30.63	46.00	15.37	
	10.750	33.01	0.74	33.75	50.00	16.25	
	27.700	41.09	1.29	42.38	50.00	7.62	
Neutral	0.173	54.55	0.19	54.74	64.83	10.09	QP
	0.230	46.08	0.18	46.26	62.44	16.18	
	0.367	39.63	0.21	39.84	58.56	18.72	
	3.720	39.41	0.72	40.13	56.00	15.87	
	10.710	41.98	1.03	43.01	60.00	16.99	
	27.550	48.72	1.29	50.01	60.00	9.99	
	0.173	38.60	0.19	38.79	54.83	16.04	AV
	0.230	35.20	0.18	35.38	52.44	17.06	
	0.367	28.47	0.21	28.68	48.56	19.88	
	3.720	27.94	0.72	28.66	46.00	17.34	
	10.710	37.71	1.03	38.74	50.00	11.26	
	27.550	**42.99**	**1.29**	**44.28**	**50.00**	**5.72**	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

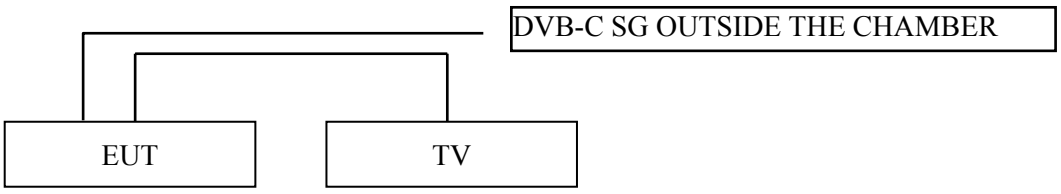
4.1 Test Equipment

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

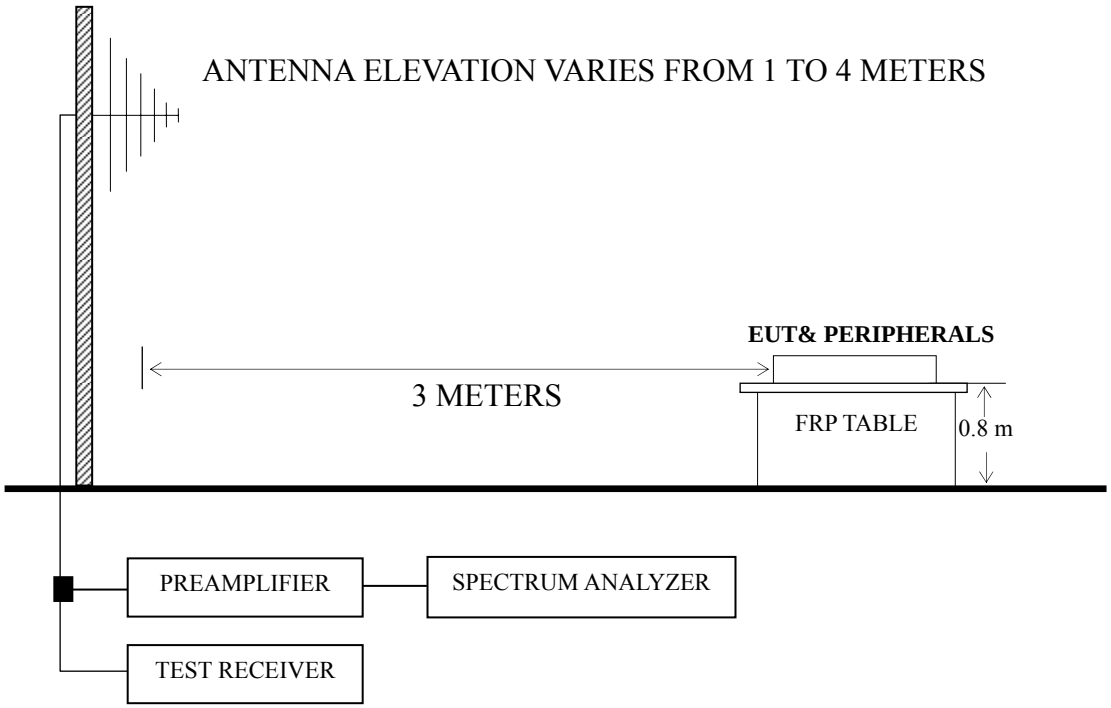
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2011	Sep 18, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2011	Sep 18, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

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

Frequency (MHz)	Distance (m)	Field strength limits	
		(μV/m)	dB (μV/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 (μV/m) = 20 log Emission Level (μV/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.

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) 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 ESVS10 was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz 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.

Serial Number	Page
E1108987-01/02	P15 – P16
E1108987-02/02	P17 – P18

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.

NOTE 2 – All readings are Quasi-Peak values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The worst case is for S/N: E1108987-01/02 model. The worst emission at horizontal polarization was detected at 911.730MHz with corrected signal level of 42.17 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.00 m height and the turntable was at 330°. The worst emission at vertical polarization was detected at 709.970 MHz with corrected signal level of 36.57 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.00 m height and the turntable was at 120°.

EUT	:	Digital Set-Top	Temperature :	22℃
Model No.	:	Cisco 3413DVB	Humidity :	60%RH
Serial No.	:	E1108987-01/02	Date of Test :	Aug 19, 2011
Test Mode	:	TV mode		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	122.150	12.84	10.97	2.04	25.85	43.50	17.65
	299.660	24.69	13.70	2.76	41.15	46.00	4.85
	338.460	20.56	14.78	2.85	38.19	46.00	7.81
	500.450	19.04	17.60	3.27	39.91	46.00	6.09
	709.970	15.93	19.60	3.70	39.23	46.00	6.77
	911.730	**16.78**	**20.36**	**5.03**	**42.17**	**46.00**	**3.83**
Vertical	30.970	7.27	17.78	0.81	25.86	40.00	14.14
	60.070	16.24	9.14	1.19	26.57	40.00	13.43
	163.860	17.31	10.20	2.29	29.80	43.50	13.70
	299.660	18.39	13.70	2.76	34.85	46.00	11.15
	600.360	12.98	18.20	3.47	34.65	46.00	11.35
	709.970	**13.27**	**19.60**	**3.70**	**36.57**	**46.00**	**9.43**

TEST ENGINEER: RAVEN JIN

EUT	:	Digital Set-Top	Temperature :	22℃
Model No.	:	Cisco 3413DVB	Humidity :	60%RH
Serial No.	:	E1108987-02/02	Date of Test :	Aug 19, 2011
Test Mode	:	TV mode		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	108.570	16.37	11.21	1.93	29.51	43.50	13.99
	163.860	17.67	10.20	2.29	30.16	43.50	13.34
	232.730	23.23	11.19	2.55	36.97	46.00	9.03
	299.660	20.95	13.70	2.76	37.41	46.00	8.59
	399.570	**20.30**	**16.30**	**2.99**	**39.59**	**46.00**	**6.41**
	667.290	15.66	19.12	3.62	38.40	46.00	7.60
Vertical	31.940	14.71	17.29	0.82	32.82	40.00	7.18
	123.120	17.78	10.95	2.04	30.77	43.50	12.73
	202.660	24.62	9.90	2.44	36.96	43.50	6.54
	452.920	20.77	17.01	3.13	40.91	46.00	5.09
	668.260	18.63	19.12	3.62	41.37	46.00	4.63
	876.810	**16.80**	**20.36**	**4.75**	**41.91**	**46.00**	**4.09**

TEST ENGINEER: RAVEN JIN

5 OUTPUT SIGNAL LEVEL MEASUREMENT

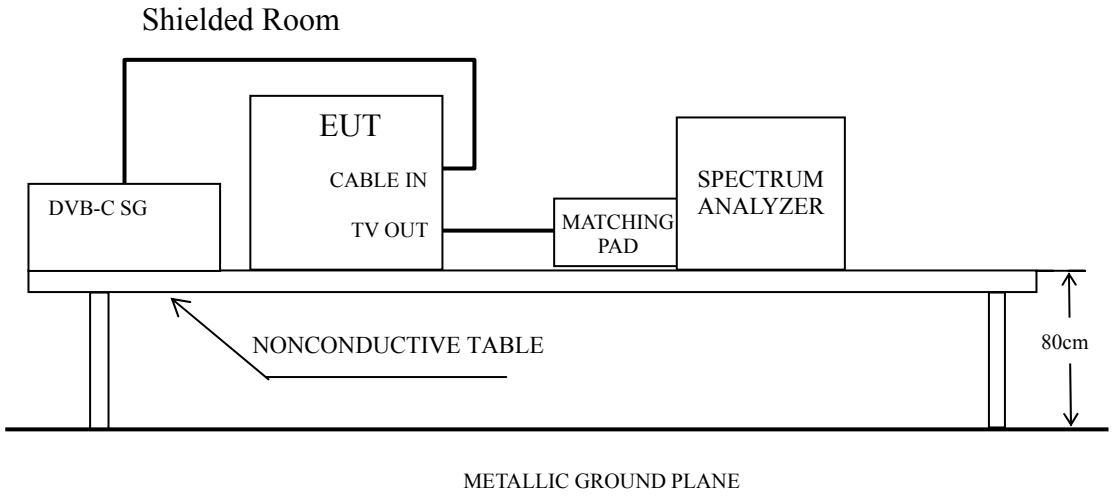
5.1 Test Equipment

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	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
2.	Matching PAD (75Ω - 50Ω)	Anritsu	12N50-75B	1664	NCR	NCR

5.2 Block Diagram of Test Setup

TV mode (DVB-C TV Signal Input)



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 consist of the factor of the impedance matching PAD and the coaxial cable used for the test..
NOTE 2 – Signal Level = Spectrum Analyzer Reading + Correction Factor
NOTE 3 – The worst emission was at Channel #3.
The Minimum margin was 4.49 dB at 61.25 MHz.

EUT	:	Digital Set-Top	Temperature :	26℃	
Model No.	:	Cisco 3413DVB	Humidity :	43%	
Test Mode	:	TV mode	Date of Test :	Aug 22, 2011	

Emission Frequency (MHz)	Correction Factor (dB)	Spectrum Analyzer Reading (dBμV)	Signal Level (dBμV)	Limits (dBμV)	Margin (dB)
Test Channel #3					
61.25	6.5	58.51	65.01	69.5	4.49
65.75	6.5	43.55	50.05	56.5	6.45
Test Channel #4					
67.25	6.5	58.22	64.72	69.5	4.78
71.75	6.5	43.37	49.87	56.5	6.63

TEST ENGINEER: RAVEN JIN

6 OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT

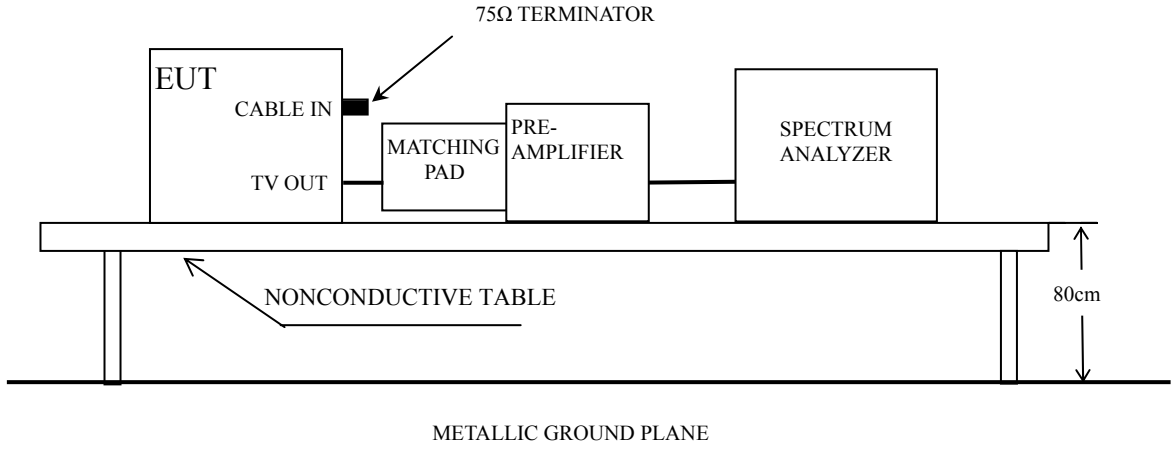
6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A06849	Mar 18, 2011	Sep 18, 2011
3.	Matching PAD (75Ω - 50Ω)	Anritsu	12N50-75B	1664	NCR	NCR

6.2 Block Diagram of Test Setup

TV mode

Shielded Room



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 consist of the factor of the impedance matching PAD, the coaxial cable used for the test and consist of the gain of pre-amplifier.
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
NOTE 4 – The worst emission was at Channel #3.
The Minimum margin was 5.12 dB at 937.20 MHz.

EUT	:	Digital Set-Top	Temperature	:	26℃
Model No.	:	Cisco 3413DVB	Humidity	:	43%
Test Mode	:	TV mode	Date of Test	:	Aug 22, 2011

Emission Frequency (MHz)	Correction Factor (dB)	Spectrum Analyzer Reading (dBμV)	Signal Level (dBμV)	Limits (dBμV)	Margin (dB)
Test Channel #3					
32.79	-23.23	48.44	25.21	39.50	14.29
50.54	-23.12	46.54	23.42	39.50	16.08
54.03	-23.07	48.40	25.33	39.50	14.17
244.40	-22.10	47.93	25.83	39.50	13.67
488.50	-23.19	45.83	22.64	39.50	16.86
937.20	-22.29	56.67	34.38	39.50	5.12
Test Channel #4					
44.74	-23.25	47.34	24.09	39.50	15.41
53.75	-23.07	46.94	23.87	39.50	15.63
59.02	-23.00	45.17	22.17	39.50	17.33
290.65	-22.10	46.46	24.36	39.50	15.14
709.40	-23.01	44.49	21.48	39.50	18.02
937.20	-22.29	56.13	33.84	39.50	5.66

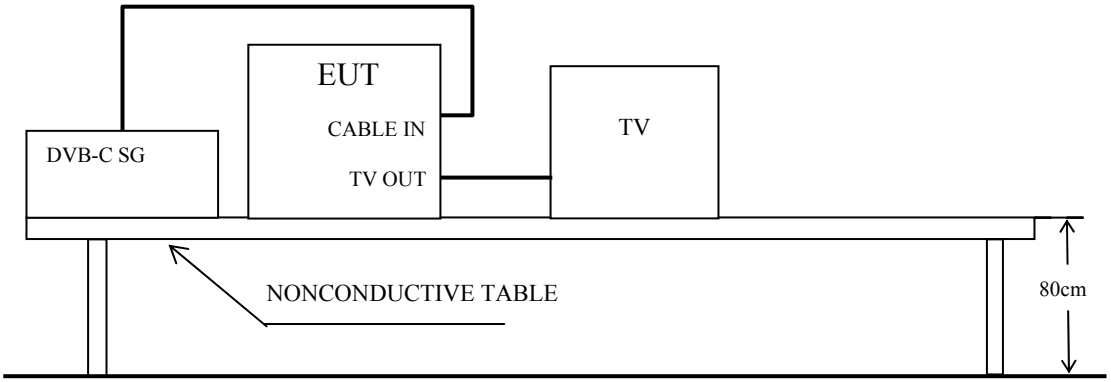
TEST ENGINEER: RAVEN JIN

7 INCORPORATE CIRCUITRY TO AUTOMATICALLY PREVENT EMANATIONS

7.1 Block Diagram of Test Setup

TV mode

Shielded Room



METALLIC GROUND PLANE

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.