

Report No.: CCT14010032FR

FCC Verification TEST REPORT

for

Product Name: HDMI Product

Model: HDV-944,HDV-914HBT100,HDV-914HBT70,HDV-918A,HDV-918HBT70, HDV-918HBT100,HDS-931,HDS-931A,HDS-931V,HDS-931P,HDS-951, HDS-941A,HDS-941P,HDS-941V,HDM-922A,HDM-942A,HDM-942V,HDM-942E, HDM922E,HDM-988,HDM-944F,HDV-W500,HBT-E100P,HDV-620,HDV-621, HDV-622,HDV-623,HDV-625,HDV-626,HDM-944V,HDM-944H100,HDM-944H70, HDM-944S50,HDM-944D50,HDV-E50S2,HDV-E50S,HDV-E50IR,HDV-E30D, HDV-E50D,HBT-E100,HBT-E70,HBT-E150,HDV-C100,HDV-C100P,HDV-C100IR, HDV-PN100B,HDV-S008,HDV-S007,HDV-S009,HDV-P688,HDV-P600, HDV-P2000,HDV-P312,HDV-912H,HDV-918H,HDV-914H

Trade Mark: N/A

Issued for:

HONGKONG HDCVT TECHNOLOGY CO., LIMITED. FLAT/RM T78, G/F, BANGKOK BANK BLDG, 18 BONHAM STRAND WEST

Issued By:

Prepared By:Shenzhen CCT Technical Services Co., Ltd.Address: 7nd Floor, Hongyuan Building, Baoyuan Road,

Bao'an district, Shenzhen, China 518102

Report Number: CCT14010032FR

Test Date:

January 02~13, 2014

Test Engineer

Reviewed By:

Gomawong Toeliss

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen CCT Technical Services Co., Ltd. This document may be altered or revised by Shenzhen CCT Technical Services Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.



Report No.: CCT14010032FR

TABLE OF CONTENTS

1	TEST RESULT CERTIFICATION	.3
2 EU	T DESCRIPTION	.4
3	TEST METHODOLOGY	.6
3.1.	DECISION OF FINAL TEST MODE	6
3.2.	EUT SYSTEM OPERATION	
4	SETUP OF EQUIPMENT UNDER TEST	
4.1.	DESCRIPTION OF SUPPORT UNITS	
4.2.	CONFIGURATION OF SYSTEM UNDER TEST	7
5	FACILITIES AND ACCREDITATIONS	.8
5.1.	FACILITIES	
5.2.	ACCREDITATIONS	
5.3.	MEASUREMENT UNCERTAINTY	
	NDUCTED EMISSION MEASUREMENT	
	IMITS OF CONDUCTED EMISSION MEASUREMENT	
	EST INSTRUMENTS	
	EST PROCEDURES	
	EST SETUP	
	EST RESULTS	
7	RADIATED EMISSION MEASUREMENT	
7.1.	LIMITS OF RADIATED EMISSION MEASUREMENT	
7.2.	TEST INSTRUMENTS	
7.3.	TEST PROCEDURES	
7.4.	TEST SETUP	
7.5.	TEST RESULTS	
8	PHOTOGRAPHS OF THE TEST CONFIGURATION	-
9	PHOTOGRAPHS OF EUT	21



Report No.: CCT14010032FR

1 TEST RESULT CERTIFICATION					
Product:	HDMI Product				
Model:	HDV-944,HDV-914HBT100,HDV-914HBT70,HDV-918A,HDV-918HBT70,HDV-918HBT100, HDS-931,HDS-931A,HDS-931V,HDS-931P,HDS-951,HDS-941A,HDS-941P,HDS-941V, HDM-922A,HDM-942A,HDM-942V,HDM-942E,HDM922E,HDM-988,HDM-944F,HDV-W500, HBT-E100P,HDV-620,HDV-621,HDV-622,HDV-623,HDV-625,HDV-626,HDM-944V, HDM-944H100,HDM-944H70,HDM-944S50,HDM-944D50,HDV-E50S2,HDV-E50S, HDV-E50IR,HDV-E30D,HDV-E50D,HBT-E100,HBT-E70,HBT-E150,HDV-C100,HDV-C100P, HDV-C100IR,HDV-PN100B,HDV-S008,HDV-S007,HDV-S009,HDV-P688,HDV-P600, HDV-P2000,HDV-P312,HDV-912H,HDV-918H,HDV-914H				
Applicant:	HONGKONG HDCVT TECHNOLOGY CO., LIMITED.				
	FLAT/RM T78, G/F, BANGKOK BANK BLDG, 18 BONHAM STRAND WEST				
Manufactur er:	SHENZHEN HUGVI IEGHNULUGI GU., LIVIIEU.				
	Floor 7, Building 5, Lihe Industrial part, SongBai Rd., Nanshan District , Shenzhen, Guangdong, China 518108				
Tested Date:	January 02~13, 2014				
Test Volta ge:	DUTEX Z NA (SUDDIED DV 303DTOL)				

EMISSION						
Standard Item Result Rema						
FCC CFR Title 47 Part 15	Conducted (Main Port)	PASS	Meet Class B limit			
Subpart B: 2012	Radiated	PASS	Meet Class B limit			

Note: 1. The test result judgment is decided by the limit of measurement standard 2. The information of measurement uncertainty is available upon the customer's request.

Deviation from Applicable Standard	
None	
	Page 3 of 25



Report No.: CCT14010032FR

2 EUT DESCRIPTION

Product	HDMI Product
Brand Name	N/A
Model	HDV-944,HDV-914HBT100,HDV-914HBT70,HDV-918A,HDV-918HBT70,H DV-918HBT100,HDS-931,HDS-931A,HDS-931V,HDS-931P,HDS-951, HDS-941A,HDS-941P,HDS-941V,HDM-922A,HDM-942A,HDM-942V, HDM-942E,HDM922E,HDM-988,HDM-944F,HDV-W500,HBT-E100P, HDV-620,HDV-621,HDV-622,HDV-623,HDV-625,HDV-626,HDM-944V, HDM-944H100,HDM-944H70,HDM-944S50,HDM-944D50,HDV-E50S2, HDV-E50S,HDV-E50IR,HDV-E30D,HDV-E50D,HBT-E100,HBT-E70, HBT-E150,HDV-C100,HDV-C100P,HDV-C100IR,HDV-PN100B,HDV-S008 HDV-S007,HDV-S009,HDV-P688,HDV-P600,HDV-P2000,HDV-P312, HDV-912H,HDV-918H,HDV-914H
Applicant	HONGKONG HDCVT TECHNOLOGY CO., LIMITED.
Housing material	Metal
EUT Type	□Engineering Sample. ⊠ Product Sample, □ Mass Product Sample.
Serial Number	N/A
EUT Power Rating	DC12V 2.0A
DC Line	Unshielded, 1.50m (From adapter)

I/O PORT

I/O PORT TYPES	Q'TY	TESTED WITH
Input DC Jack	1	1
Input HDMI	4	4
Output HDMI	4	4
RS232	1	1

Model difference

No.	Model Number	Tested With	No.	Model Number	Tested With
1	HDV-944	\square	29	HDV-626	
2	HDV-914HBT100		30	HDM-944V	
3	HDV-914HBT70		31	HDM-944H100	

Page 4 of 25



4	HDV-918A		32	HDM-944H70		
5	HDV-918HBT70		33	HDM-944850		
	HDV-918HBT100					
6			34	HDM-944D50		
7	HDS-931		35	HDV-E50S2		
8	HDS-931A		36	HDV-E50S		
9	HDS-931V		37	HDV-E50IR		
10	HDS-931P		38	HDV-E30D		
11	HDS-951		39	HDV-E50D		
12	HDS-941A		40	HBT-E100		
13	HDS-941P		41	HBT-E70		
14	HDS-941V		42	HBT-E150		
15	HDM-922A		43	HDV-C100		
16	HDM-942A		44	HDV-C100P		
17	HDM-942V		45	HDV-C100IR		
18	HDM-942E		46	HDV-PN100B		
19	HDM922E		47	HDV-S008		
20	HDM-988		48	HDV-S007		
21	HDM-944F		49	HDV-S009		
22	HDV-W500		50	HDV-P688		
23	HBT-E100P		51	HDV-P600		
24	HDV-620		52	HDV-P2000		
25	HDV-621		53	HDV-P312		
26	HDV-622		54	HDV-912H		
27	HDV-623		55	HDV-918H		
28	HDV-625		56	HDV-914H		
Note : HDV-944 is tested model, other model are derivative models, The models are Identical in circuit and						
PCB layout, only different on the model names, So the test data of HDV-944 can represent the						
remaining models.						



Report No.: CCT14010032FR

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the above additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The following test mode(s) were scanned during the preliminary test:

Pre-Test N	Pre-Test Mode					
Mode	Conducted Emission	Mode 1: Running				
Emission	Radiated Emission	Mode 1: Running				

After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test	Final Test Mode				
Mode	Conducted Emission	Mode 1: Running			
Emission	Radiated Emission	Mode 1: Running			

Then, the EUT configuration and cable configuration of the above highest emission mode was chosen for all final test items.

3.2. EUT SYSTEM OPERATION

- 1. Set up EUT with the relative support equipments.
- 2. Make sure the EUT worked normally during the test.



4 SETUP OF EQUIPMENT UNDER TEST 4.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

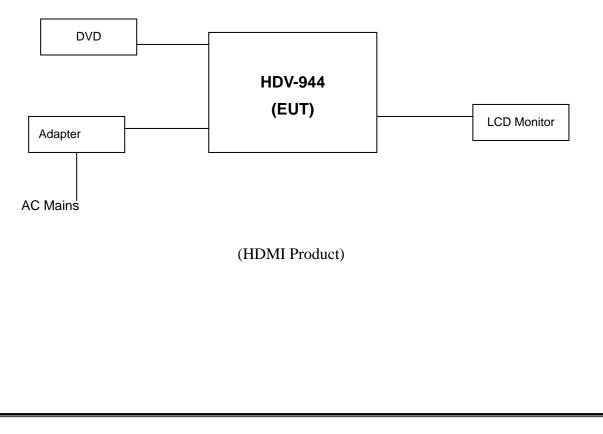
No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	LCD Monitor	AOC T942we	N/A	N/A	AOC	Unshielded 1.0m	N/A
2	DVD	BDP-140 3D	N/A	N/A	pioneer	Unshielded 1.0m	N/A

Note:

1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST





Report No.: CCT14010032FR

5 FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at

7nd Floor, Hongyuan Building, Baoyuan Road, Bao'an district, Shenzhen, China The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

FCC – Registration No.: 222294

EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission .The acceptance letter from the FCC is maintained In our files . Registration 222294

TUV Accredited

EMC Laboratory has been Accredited by TUV Rheinland Shenzhen 2010.9, The laboratory has been assessed according to the requirements ISO/IEC 17025

Copies of granted accreditation certificates are available for downloading from our web site, <u>http://www.ccttest.com</u>

5.3. 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	urement Freque		Uncertainty
Conducted emissions	9kHz~30MHz		+/- 3.59dB
	Horizontal	30MHz ~ 200MHz	+/- 4.77dB
Radiated emissions		200MHz ~1000MHz	+/- 4.93dB
Radiated emissions	Vertical	30MHz ~ 200MHz	+/- 5.04dB
		200MHz ~1000MHz	+/- 4.93dB

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



Report No.: CCT14010032FR

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
FREQUENCI (MHZ)	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	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 0.50 MHz.

(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

6.2. TEST INSTRUMENTS

Conducted Emission Test Site Shielding Room (743)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100005	06/23/2014
LISN	AFJ	LS16	16010222119	06/02/2014
LISN	Meestec	AN3016	04/10040	06/02/2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to International system of unit (SI).

2. N.C.R = No Calibration Request.



Report No.: CCT14010032FR

6.3.TEST PROCEDURES

Procedure of Preliminary Test

- The EUT and Support equipment, if needed, was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The EUT received DC 12V from adaptor ,and adaptor received AC120V/60Hz through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane.
- All support equipment power received from a second LISN.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

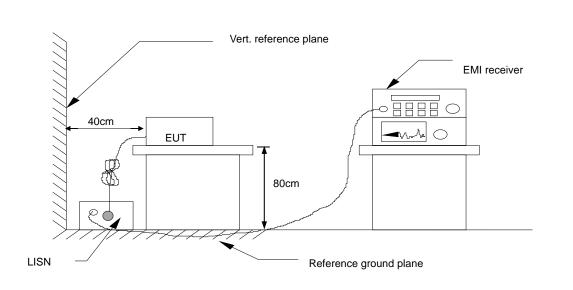
Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.



Report No.: CCT14010032FR

6.4.TEST SETUP



• For the actual test configuration, please refer to the related item - Photographs of the Test Configuration.

6.5. TEST RESULTS

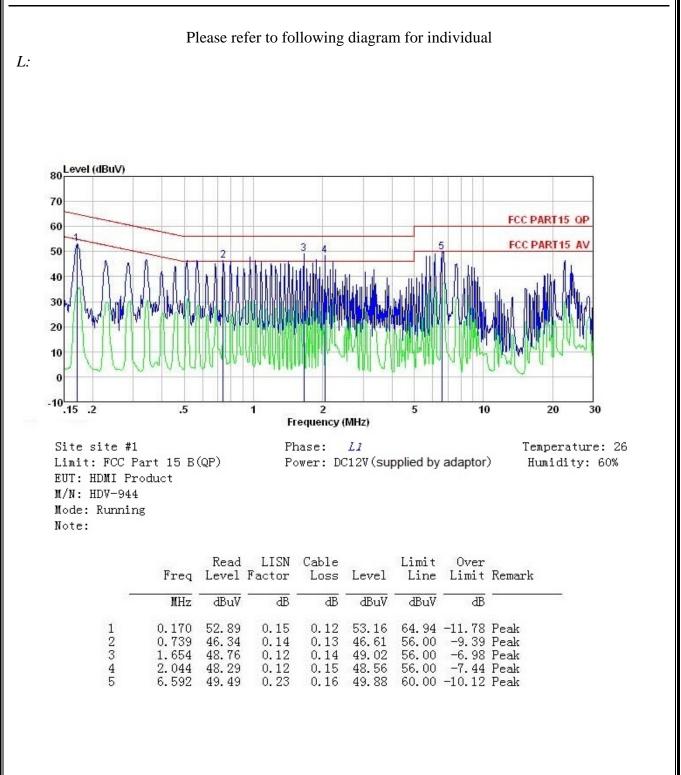
Model No.		6dB Bandwidth	10 KHz
Environmental Conditions	24°C, 51% RH	Test Mode	Running
Detector Function	Peak / Quasi-peak/AV	Test Result	Pass
Test By	Koma Wong		

NOTE: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

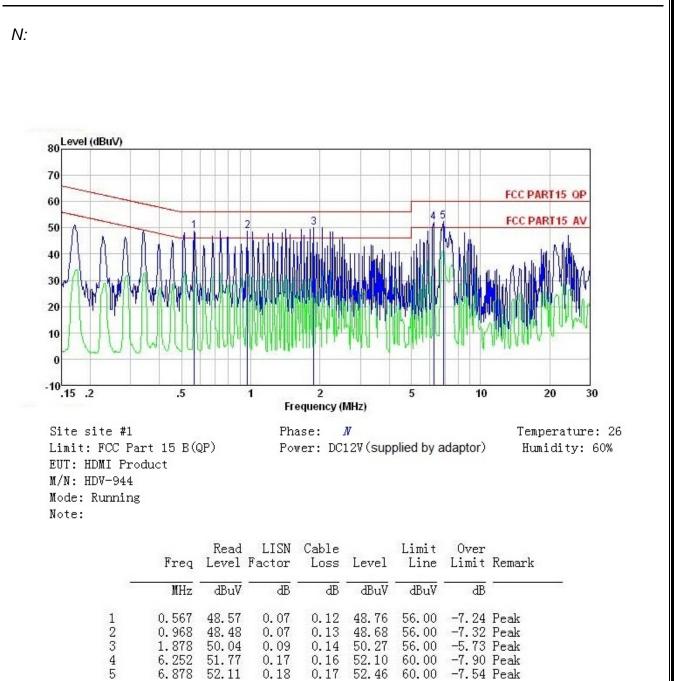
2. "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

Freq. = Emission frequency in MHz Reading level(dBuV) = Receiver reading Corr. Factor (dB) = Antenna factor + Cable loss Level (dBuV) = Reading level(dBuV) + Corr. Factor (dB) Limit (dBuV) = Limit stated in standard Margin (dB) = Level (dBuV) – Limits (dBuV) Q.P.=Quasi-Peak











7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

Maximum permissible level of Radiated Emission measured at 3 meter

FREQUENCY (MHz)	dBuV/m (At 3m)
	Class B
30~88	40.00
88~216	43.50
216~960	46.00
960~1000	54.00

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

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

7.2. TEST INSTRUMENTS

Radiated Emission Test Site 966				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100005	06/23/2014
Pre Amplifier	H.P.	HP8447E	2945A02715	06/15/2014
Bilog Antenna	SUNOL Sciences	JB3	A021907	06/10/2014
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	06/09/2014
System-Controller	CCS	N/A	N/A	N.C.R
Turn Table	CCS	N/A	N/A	N.C.R
Antenna Tower	CCS	N/A	N/A	N.C.R

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to International system of unit (SI).

2. N.C.R = No Calibration Request.



Report No.: CCT14010032FR

7.3. TEST PROCEDURES

Procedure of Preliminary Test

The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.

Support equipment, if needed, was placed as per ANSI C63.4.

All I/O cables were positioned to simulate typical usage as per ANSI C63.4.

Mains cables, telephone lines or other connections to auxiliary equipment located outside the test are shall drape to the floor, be fitted with ferrite clamps or ferrite tubes placed on the floor at the point where the cable reaches the floor and then routed to the place where they leave the turntable. No extension cords shall be used to mains receptacle.

The antenna was placed at 3 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.

The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

The test mode(s) described in Item 3.1 were scanned during the preliminary test:

After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.

The EUT and worse cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

When measuring emissions above 1GHz, the frequencies of maximum emission shall be determined by manually positioning the antenna close to the EUT and by moving the antenna over all sides of the EUT while observing a spectral display. It will be advantageous to have prior knowledge of the frequencies of emissions above 1GHz. If the EUT is a device with dimensions approximately equal to that of the measurement antenna beam width, the measurement antenna shall be aligned with the EUT.



Report No.: CCT14010032FR

Procedure of Final Test

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.

For the measurement above 1GHz, use the cable, EUT arrangement, and mode of operation determined in the exploratory testing to produce the emission that has the highest amplitude relative to the limit.

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the antenna in the "cone of radiation" from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.

The antenna may have to be higher or lower than the EUT, depending on the EUT's size and mounting height, but the antenna should be restricted to a range of height of from 1m to 4m above the ground or reference ground plane.

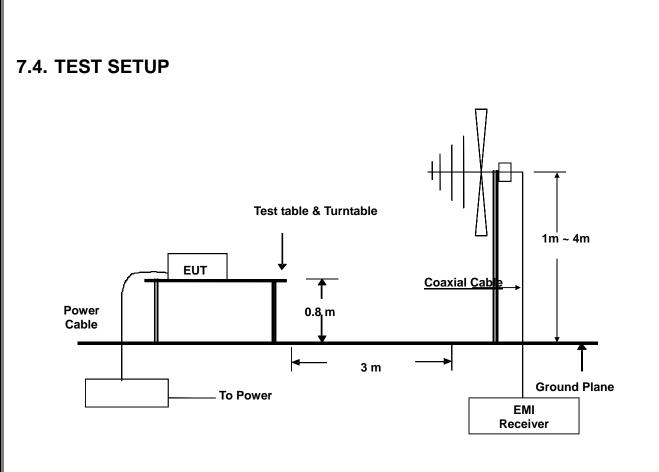
If the transmission line for the measurement antenna restricts its range of height and polarization, the steps needed to ensure the correct measurement of the maximum emissions, shall be described in detail in the report of the measurements.

- using the procedures above to measure with peak detector function, if the result comply with the average limit specified by the appropriate regulation, record the EUT arrangement, mode of operation, and cable positions used for final radiated emission measurement, this can be done with either diagrams or photographs.
- 2) Set the detector function of the measuring instrument to average mode, using the procedures above and remeasure only those emissions that complied with the peak limits but exceeded the average limits.

Recorded at least the six highest emissions.



Report No.: CCT14010032FR



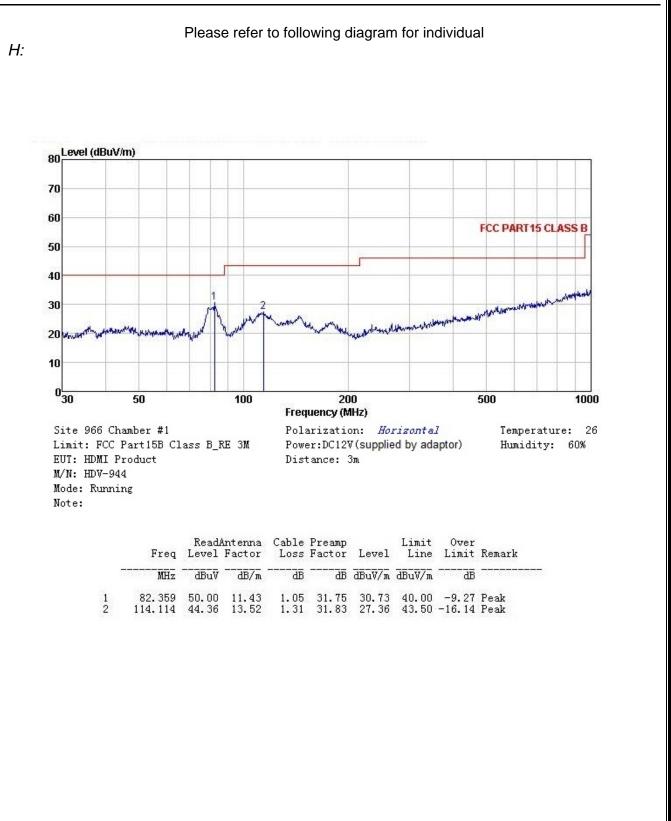
• For the actual test configuration, please refer to the related item – Photographs of the Test Configuration

7.5. TEST RESULTS

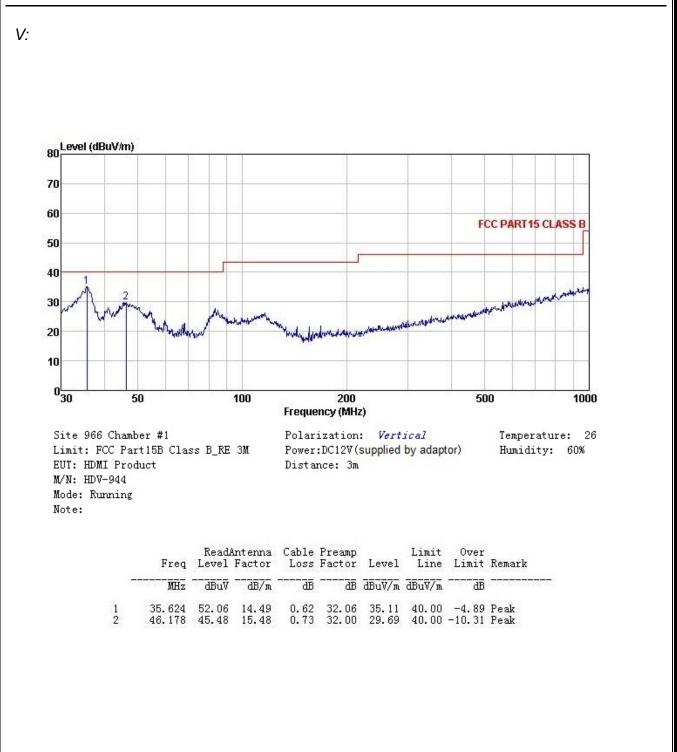
Model No.	HDV-944	Test Mode	Running
Environmental Conditions	12/1°C 51% RH	6dB Bandwidth	120 KHz
Antenna Pole	Vertical / Horizontal	Antenna Distance	3m
Detector Function	Peak / Quasi-peak	Tested by	Koma Wong

Freq. = Emission frequency in MHz Reading level(dBuV) = Receiver reading Corr. Factor (dB) = Antenna factor + Cable loss Measurement (dBuV) = Reading level(dBuV) + Corr. Factor (dB) Limit (dBuV) = Limit stated in standard Margin (dB) = Measurement (dBuV) - Limits (dBuV)











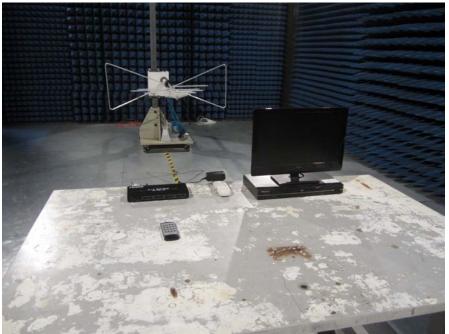
Report No.: CCT14010032FR

8 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST



Page 20 of 25



Report No.: CCT14010032FR

9 PHOTOGRAPHS OF EUT













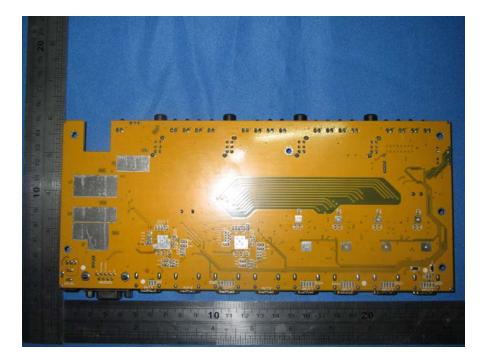






Report No.: CCT14010032FR





Page 24 of 25



Report No.: CCT14010032FR





Page 25 of 25