

# FCC ID TEST REPORT

According to

## FCC Part 15 Subpart C, Intentional Radiators

<b>EUT Type</b>	<b>: VIDEO TRANSCEIVER, WEB SERVER</b>
<b>Transmitter (TX)</b>	<b>: 1) Model No.: HVT-01HTW, HWS-01HDW 2) FCC ID: UTBHVT01HTW</b>
<b>Applicant Name:</b>	<b>: HUNT ELECTRONIC CO., LTD.</b>
<b>Address</b>	<b>: See the General Information for details.</b>

Test Date : JULY 01, 2007      Issued Date : SEP. 04, 2007

Test Engineer : JASON KUNG      NVLAP Signature :

*M. Y. Tsui*

M. Y. Tsui / Director

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- The report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States government.
- This report is applicable only for EUT Model which described in page 4 .
- The testing result in this report are traceable to national or international standard .

## **PEP TESTING LABORATORY**

*NO. 9-6, Huzi, Hubei Village, Linkou Shiang, Taipei Hsien, Taiwan 244, R. O. C.*  
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## 1. General Information

Measurement of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC Part 2 and 15.

**Applicant Name/Address:** HUNT ELECTRONIC CO., LTD.

6F., NO. 57-59, JIUN HSIEN RD., CHI TU DISTRICT,  
KEELUNG 20653, TAIWAN, R. O. C.

**Contact Person:** HANK WU / ENGINEER

**Phone No.:** 886-2-86927999      **Fax No.:** 886-2-86926678

**Manufacturer Name/Address:** HUNT ELECTRONIC CO., LTD.

6F., NO. 57-59, JIUN HSIEN RD., CHI TU DISTRICT,  
KEELUNG 20653, TAIWAN, R. O. C.

◊ Regulation: FCC Part 2 and 15

◊ Limitation: Part 15, Section 15.249, 15.207 and 15.209

◊ Test Procedure: ANSI C63.4-2003

◊ Place of Test: PEP Testing Laboratory

NO. 9-6, Huzi, Hubei Village, Linkou Shiang, Taipei Hsien,  
Taiwan 244, R. O. C.

TEL : 886-2-26021042      FAX : 886-2-26021045

## 2. Product Information

- a. EUT Type: **VIDEO TRANSCEIVER**
- b. Transmitter Model: **HVT-01HTW**
- c. TX FCC ID: **UTBHVT01HTW**
- d. TX Channel No. : **1-11**
- e. TX Working Freq. : **2.412 –2.462 GHz**
- f. TX Modulation : **CCK, DSSS**
- g. TX Crystal / Osc. : **32.768 kHz, 22.1184 MHz, 24.576 MHz, 25 MHz, 27 MHz, 30 MHz**
- h. TX Port(s) : **Video Out Port\* 1, Video In Port \* 1, Audio Out Port \* 1, Audio In Port \* 1, Ethernet Port \* 1, RS232 Port \* 1, Antenna Port \* 1, SD Card Port \* 1 , Power Jack \* 1**
- i. TX Transmitting Power : **Adapter -----**  
**Model Number :** SW12-120E  
**Input :** AC 100-240V 50-60Hz 260mA  
**Output :** DC 12V 1A
- j. Antenna Type: **External antenna**
- k. TX Case : **ABS**
- l. EUT Condition :  Prototype  Engineering  Production
- m. EUT Received Date : **MAY 21, 2007**
- n. Date(s) of performance of test: **MAY 21, 2007 – JULY 05, 2007**

### 3. EUT Description and Test Methods

(A) The Equipment under test (EUT) is VIDEO TRANSCEIVER model HVT-01HTW and WEB SERVER model HWS-01HD. Their difference is that HTV-01HTW can output image, after decoding but HWS-01HDW cannot do it. The EUT serves function of real-time video recording over Internet by wireless or Ethernet network connection. The EUT supports SD card as storage medium for local video recording. The working frequency for wireless connection is 2412-2462MHz. Power adaptor supplies EUT 12Vdc from ac mains. For more detail information about the EUT, please refer to the user's manual.

(B) Test Method: According to the major function designed, the EUT placement on test table was arranged alone to proceed with test. The test was carried out on EUT operational condition of Tx-On mode: continuous transmission state. The worst-case test result of each test mode was recorded and provided in this report.

(C) At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (A) quasi-peak values were under quasi-peak limit but exceeded average limit, or (B) peak values were under quasi-peak limit but exceeded average limit.

## 4. Modification(s):

The applicant has been notified and agrees to incorporate the following modification(s) into all production units, please refer to the attached pages in this report.

1. Scratch the lacquer from iron case of EUT. To make EUT can touch directly between upper iron case and lower iron case.
2. Adding conductive shielding gasket:
  - a. The edge of lower iron case of EUT stick conductive shielding gasket and make sure that it can touch upper iron case.
  - b. Adding conductive shielding gasket on the iron case of LAN port.
3. Adding a core to the adapter. The core is coiling a circle and is close to the EUT. The model of core is KING CORE KCF-65-B.
4. Adding a core to the power cable of DC IN. The model of core is EROCORE FH0900B-2.
5. Adding a core to the internal cable of RS-232 I/O port. The core model is EROCORE FH0900B-2.

The circuit board that has SD port and its countermeasure is below,

6. VCC of J8 connects a 600-ohm bead in series. The model of bead is KING CORE FBM-11-321611-601A30T.

The circuit board that has LAN port and the countermeasure is below,

7. Changing the RS17 of circuit board to 0-ohm resistance.
8. Changing the RS14 of circuit board to 30-ohm bead. The model of bead is KING CORE FBMA-10-160808-300
9. Changing the C9 of circuit board to 33K-ohm resistance.
10. Respective connecting 0.1uF capacitances to the side of No.1, 3, 43 and 49 pins of U5 IC (SDRAM) in parallels.
11. Respective connecting 0.1uF capacitances to the side of No 1, 3, 9 and 14 pins of U2 IC (SDRAM) in parallels.

The circuit board that has Video and Audio and the countermeasures are as follows,

12. Connecting the middle of screw hole of video circuit board to GND.

(B) Mount one suppression core on adaptor power cord.

## 5. Test Software Used

Web browser was used to monitor image recorded from EUT.

## 6. Support Equipment Used

<b>Personal Computer (PC4)</b>	<b>CPU</b> : Intel P4 3GHz <b>FCC ID</b> : Declaration of Conformity(DoC) <b>Manufacturer</b> : ACER <b>Model Number</b> : Aspire T650 <b>Power Supply</b> : Switching <b>Power Cord</b> : Non-Shielded, Detachable, 1.8m <b>Data Cable</b> : N/A
<b>Keyboard (KBS1 PS/2)</b>	<b>FCC ID</b> : E5XKB5121WTH0110 <b>Manufacturer</b> : BTC <b>Model Number</b> : 5121W <b>Power Supply</b> : +5Vdc from PS2 of PC <b>Power Cord</b> : N/A <b>Data Cable</b> : 1 > Shielded , Non-detachable,1.6m 2 > Back Shell : Metal
<b>LCD (LCD1 15")</b>	<b>FCC ID</b> : Declaration of Conformity(DoC) <b>Manufacturer</b> : SAMSUNG <b>Model Number</b> : 740B <b>Power Supply</b> : Switching <b>Power Cord</b> : Non-Shielded, Detachable, 1.8m <b>Data Cable</b> : 1 > Shielded , Detachable,1.2m 2 > Back Shell : Metal
<b>Printer (PRN1)</b>	<b>FCC ID</b> : B94C2642X <b>Manufacturer</b> : Hewlett-Packard <b>Model Number</b> : C2642E <b>Power Supply</b> : Linear, 30Vdc O/P <b>Power Cable</b> : Non-Shielded , Detachable,1.8m <b>Data Cable</b> : 1 > Shielded , Detachable,1.2m 2 > Back Shell : Metal
<b>Mouse (MOUS/1 PS/2)</b>	<b>FCC ID</b> : DZL211106 <b>Manufacturer</b> : LOGITECH <b>Model Number</b> : M-S43 <b>Power Supply</b> : +5Vdc from PS2 of PC <b>Power Cord</b> : N/A <b>Data Cable</b> : 1 > Shielded , Non-detachable,1.8m 2 > Back Shell : Metal

<b>Modem (MOD1)</b>	<b>FCC ID :</b> IFAXDM1414 <b>Manufacturer :</b> ACEEX <b>Model Number :</b> 1414 <b>Power Supply :</b> Linear, 9Vac O/P <b>Power Cable :</b> Non-Shielded , Detachable,1.7m <b>Data Cable :</b> 1 > Shielded , Detachable,1m 2 > Back Shell : Metal
<b>TV (TV1)</b>	<b>FCC ID :</b> Declaration of Conformity(DoC) <b>Manufacturer :</b> SONY <b>Model Number :</b> PVM-14N6E <b>Power Supply :</b> Switching <b>Power Cable :</b> Non-Shielded , Detachable,1.8m <b>Data Cable :</b> 1 > Shielded , Detachable,1.2m 2 > Back Shell : N/A
<b>DVD Player</b>	<b>FCC ID :</b> N/A <b>Manufacturer :</b> SONY <b>Model Number :</b> DVP-K370 <b>Power Supply :</b> N/A <b>Power Cord :</b> Non-Shielded, Detachable, 1.8m <b>Data Cable :</b> 1 > Shielded, Detachable, 1.5m 2 > Back Shell : N/A
<b>SD Card</b>	

## 7. Description Field Strength of Fundamental and Harmonics Test

### 7.1 Field Strength of Fundamental and Harmonics Test

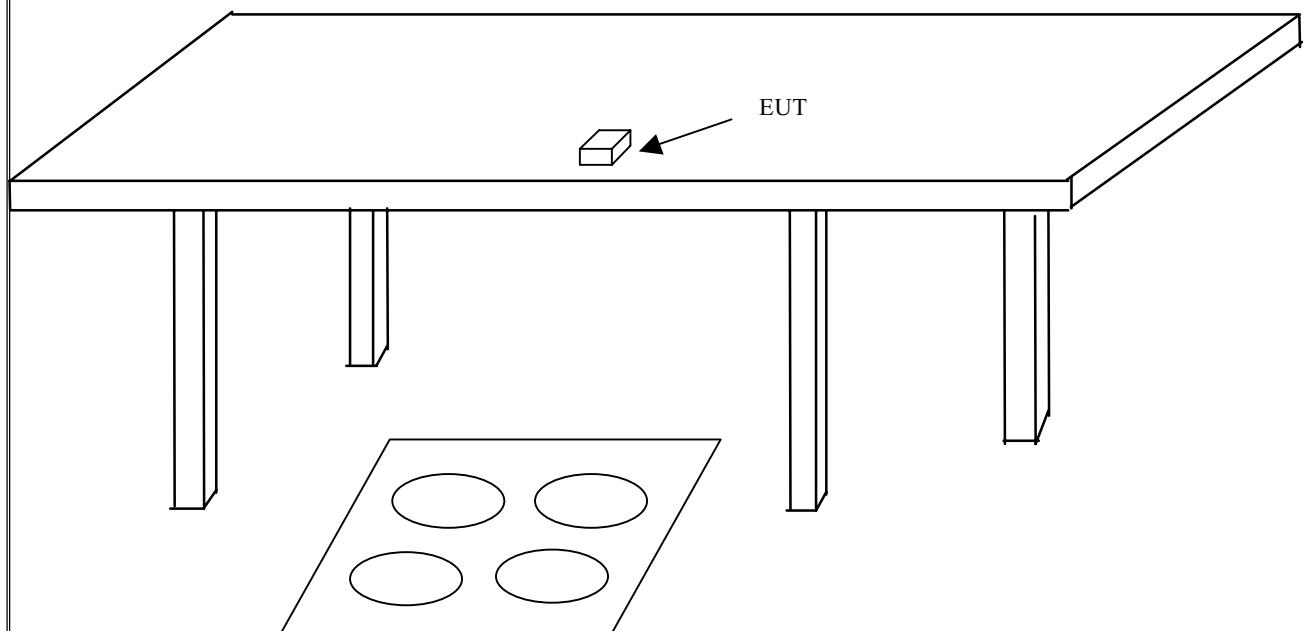
Field Strength of Fundamental and Harmonics Test were made outdoors at 3-meter test range using horn antenna. The test equipment was placed on a wooden bench situated on a 1.5x1 meter area adjacent to the measurement area. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The detector function was set to peak and average value, the bandwidth of the receiver was set to 1000MHz.

The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission.

### 7.2 Field Strength of Fundamental and Harmonics Limits

Fundamental Frequency	Fundamental (mV/m) (dB $\mu$ V/m)		Harmonics ( $\mu$ V/m) (dB $\mu$ V/m)	
902-928MHz	50	94	500	54
2400-2483.5MHz	50	94	500	54
5725-5875MHz	50	94	500	54
24.0-24.25GHz	250	108	2500	68

### **7.3 Test Configuration**



## 8. Description of Conducted Emissions Test

### 8.1 Conducted Emissions

A 1m x1.5m wooden table 80 cm high is placed 40cm away from the vertical wall. Two AMN are bonded to the grounding plane. The EUT is powered from the designated AMN and the support equipment is powered from another designated AMN. Powers to the AMN are filtered by a high-current high insertion loss power line filters. All electrical cables are shielded by braided tinned copper zipper tubing with inner diameter of 1/2". All interconnecting cables more than 1 meter were shortened by non-inductive bundling (serpentine fashion) to a 1-meter length.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the AMN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.

The spectrum was scanned from 150kHz to 30 MHz with 1.5 sec sweep time. The frequency producing the maximum level was re-examined using Quasi-Peak adapter. The detector function was set to CISPR quasi-peak mode. The bandwidth of the receiver was set to 10kHz. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. Each emission was maximized by: switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable; whichever determined the worst-case emission.

### 8.2 Conducted Emissions Limits

Frequency	Maximum RF Line Voltage dB(uV)				
	Class A		Class B		
MHz	QUASI-PEAK	AVERAGE	QUASI-PEAK	AVERAGE	
0.15 - 0.50	79	66	66-56	56-46	
0.50 - 5.0	73	60	56	46	
5.0 - 30	73	60	60	50	

Remarks : In the above table, the tighter limit applies at the band edges.

## 9. Description of Radiated Emissions Test

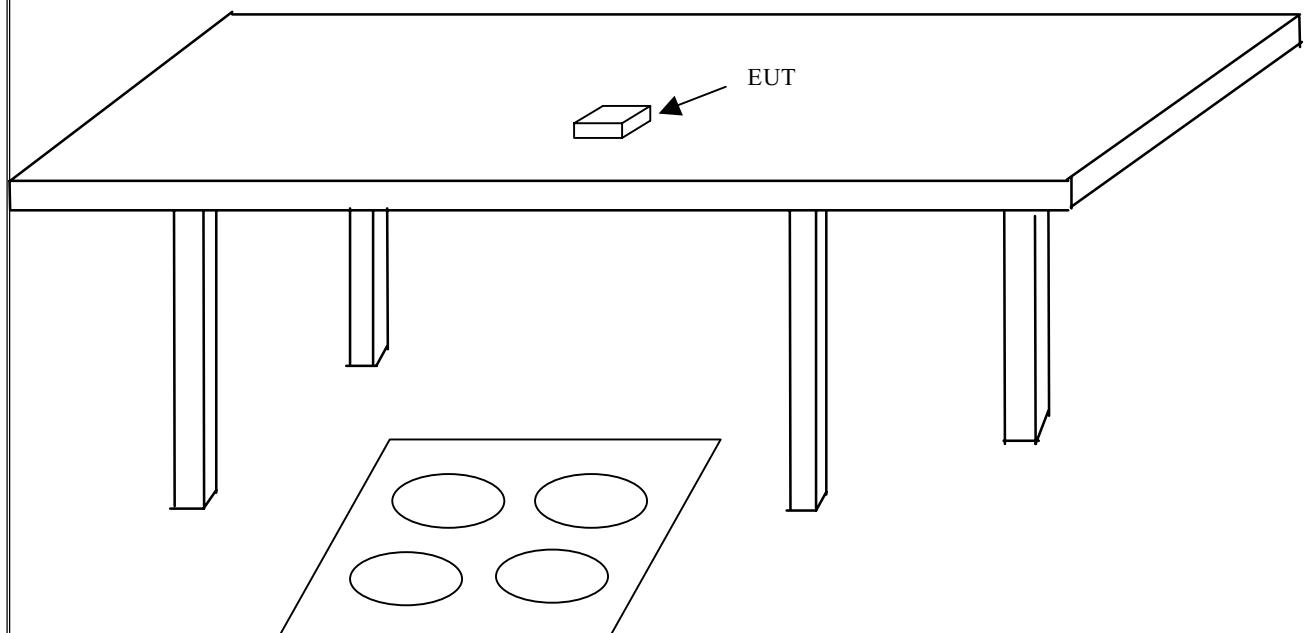
### 9.1 Radiated Emissions

Preliminary measurements were made indoors chamber at 3 meter using broadband antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using logbicon antenna. Above 1GHz, linearly polarized double ridge horn antenna was used.

Final measurements were made outdoors at 3-meter test range using logbicon antenna and horn antenna. The test equipment was placed on a wooden bench situated on a 1.5x1 meter area adjacent to the measurement area. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined and investigated using Quasi-Peak and Average Adapter. 30MHz-1GHz, the detector function was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 120kHz. Above 1GHz, the detector function was set to peak and average value, the bandwidth of the spectrum was set to 1MHz.

The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by: varying mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet , if applicable; and changing the polarity of the antenna, whichever determined the worst-case emission. Photographs of the worst-case emission can be seen in radiated emission test photo.

## **9.2 Test Configuration**



### **9.3 Radiated Emission Limits**

Limits for radiated disturbance of  
Class B ITE or Intentional Radiator  
At a measuring distance of 3 m

Frequency MHz	Field Strength dB $\mu$ V/m or uV/m	
30 to 88	40	100
88 to 216	43.5	150
216 to 960	46	200
Above 960	56	500

**NOTES**

- 1 The lower limit shall apply at the transition frequency.
- 2 Additional provisions may be required for cases where interference occurs.

## 10. Field Strength of Fundamental and Harmonics Test Setup Photos

< FRONT VIEW >



## 11. Field Strength of Fundamental and Harmonics Test Data

**Model No.** : HVT-01HTW

**Temperature** : 24° C      **Humidity** : 55 %

**Memo** : CH LOW MODE (2.412GHz)

**Antenna polarization** : HORIZONTAL ; **Test distance** : 3m ;

Freq. (MHz)	Level (dBuV/m)	Over	Limit	Line (dBuV/m)	Detector	Remark
		Limit	Line			
2411.950	113.49	- 0.51	114	Peak	Fundamental	
2412.350	68.42	-25.58	94	Average	Fundamental	
4824.000	60.14	-13.86	74	Peak	Harmonic	
4824.000	37.48	-16.52	54	Average	Harmonic	
7235.800	46.59	-27.41	74	Peak	Harmonic	
9647.900	42.43	-31.57	74	Peak	Harmonic	
9648.000	---					
12060.000	---					
14472.000	---					
16884.000	---					
19296.000	---					
21708.000	---					
24120.000	---					

**Antenna polarization** : VERTICAL ; **Test distance** : 3m ;

Freq. (MHz)	Level (dBuV/m)	Over	Limit	Line (dBuV/m)	Detector	Remark
		Limit	Line			
2411.750	104.95	- 9.05	114	Peak	Fundamental	
2411.550	67.51	-26.49	94	Average	Fundamental	
4823.800	54.37	-19.63	74	Peak	Harmonic	
4824.900	34.12	-19.88	54	Average	Harmonic	
7236.400	40.61	-33.39	74	Peak	Harmonic	
9647.200	36.73	-37.27	74	Peak	Harmonic	
9648.000	---					
12060.000	---					
14472.000	---					
16884.000	---					
19296.000	---					
21708.000	---					
24120.000	---					

(1) Over Limit = Level-Limit Line

(2) The above measurement of fundamental and harmonics testing data within the harmonics frequency level shown " --- ", it means that its harmonics frequency level is more than 20dB below the limit or its field strength is too small to be detected.

**Model No.** : HVT-01HTW  
**Temperature** : 24° C      **Humidity** : 55 %  
**Memo** : CH MID MODE (2.437GHz)

**Antenna** polarization : **HORIZONTAL** ;    **Test distance** : **3m** ;

Freq. (MHz)	Level (dBuV/m)	Over	Limit	Detector	Remark
		Limit (dB)	Line (dBuV/m)		
2436.900	112.20	- 1.80	114	Peak	Fundamental
2437.150	66.77	-27.23	94	Average	Fundamental
4873.900	62.02	-13.38	74	Peak	Harmonic
4874.100	40.51	-13.49	54	Average	Harmonic
7310.900	47.64	-26.36	74	Peak	Harmonic
9747.900	46.02	-27.98	74	Peak	Harmonic
9748.000	---				
12185.000	---				
14622.000	---				
17059.000	---				
19496.000	---				
21933.000	---				
24370.000	---				

**Antenna** polarization : **VERTICAL** ;    **Test distance** : **3m** ;

Freq. (MHz)	Level (dBuV/m)	Over	Limit	Detector	Remark
		Limit (dB)	Line (dBuV/m)		
2436.900	105.44	- 8.56	114	Peak	Fundamental
2436.750	65.48	-28.52	94	Average	Fundamental
4873.800	55.64	-18.36	74	Peak	Harmonic
4874.300	36.13	-17.87	54	Average	Harmonic
7310.800	42.52	-11.48	74	Peak	Harmonic
9748.000	41.16	-12.84	74	Peak	Harmonic
9748.000	---				
12185.000	---				
14622.000	---				
17059.000	---				
19496.000	---				
21933.000	---				
24370.000	---				

(1) Over Limit = Level-Limit Line

(2) The above measurement of fundamental and harmonics testing data within the harmonics frequency level shown " --- ", it means that its harmonics frequency level is more than 20dB below the limit or its field strength is too small to be detected.

**Model No.** : HVT-01HTW  
**Temperature** : 24° C      **Humidity** : 55 %  
**Memo** : CH HIGH MODE (2.462GHz)

**Antenna polarization** : HORIZONTAL ; **Test distance** : 3m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Detector	Remark
2461.950	112.69	- 1.31	114	Peak	Fundamental
2461.700	66.61	-27.39	94	Average	Fundamental
4924.000	54.48	-19.52	74	Peak	Harmonic
4923.700	36.77	-17.23	54	Average	Harmonic
7385.900	46.98	-27.02	74	Peak	Harmonic
9847.800	47.02	-26.98	74	Peak	Harmonic
9848.000	---				
12310.000	---				
14772.000	---				
17234.000	---				
19696.000	---				
22158.000	---				
24620.000	---				

**Antenna polarization** : VERTICAL ; **Test distance** : 3m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Detector	Remark
2461.950	106.25	- 7.75	114	Peak	Fundamental
2461.700	67.53	-26.47	94	Average	Fundamental
4924.400	48.80	-25.20	74	Peak	Harmonic
7386.100	40.12	-33.88	74	Peak	Harmonic
9847.900	39.83	-34.17	74	Peak	Harmonic
9848.000	---				
12310.000	---				
14772.000	---				
17234.000	---				
19696.000	---				
22158.000	---				
24620.000	---				

(1) Over Limit = Level-Limit Line

(2) The above measurement of fundamental and harmonics testing data within the harmonics frequency level shown " --- ", it means that its harmonics frequency level is more than 20dB below the limit or its field strength is too small to be detected.

## 12. Conducted Emissions Test Setup Photos

### **FRONT VIEW**



## 13. Conducted Emissions Test Data

**Model No.** : HVT-01HTW  
**Frequency range** : 150KHz to 30MHz  
**Detector** : Quasi-peak Value  
**Temperature** : 27 °C  
**Humidity** : 43 %

**Test Data :** # 47 < LINE >  
# 52 <NEUTRAL>

**Note** 1. Level = Read Level + Cable Loss + Probe (LISN)  
2. Over Limit = Level – Limit = Margin

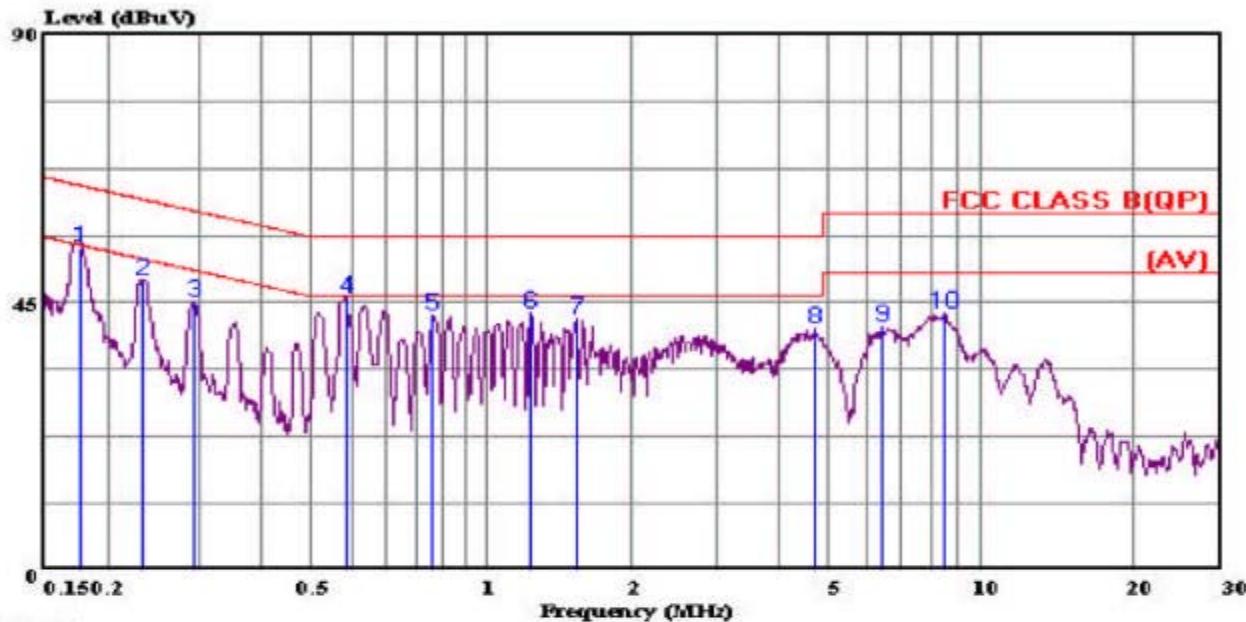


# 暉鑫科技股份有限公司

## PEP Testing Laboratory

Data#: 47 File#: FCC CLASS B(QP).EMI

Date: 2007-06-29 Time: 11:49:03



Page: 1

Freq	Level	Over Limit	Limit Line	Read		Probe Factor	Cable Loss	Remark
				dBuV	dB			
1	0.176	54.16	-10.65	64.81	53.96	0.10	0.10	QP
2	0.234	48.84	-13.46	62.30	48.57	0.10	0.17	
3	0.294	45.11	-15.30	60.41	44.90	0.10	0.11	
4	0.585	45.97	-10.03	56.00	45.75	0.10	0.12	
5	0.857	42.80	-13.20	56.00	42.55	0.10	0.15	
6	1.345	43.10	-12.90	56.00	42.76	0.14	0.20	
7	1.645	42.11	-13.89	56.00	41.74	0.17	0.20	
8	4.822	40.67	-15.33	56.00	40.13	0.24	0.30	
9	6.488	41.04	-18.96	60.00	40.48	0.31	0.25	
10	8.637	43.21	-16.79	60.00	42.54	0.37	0.30	

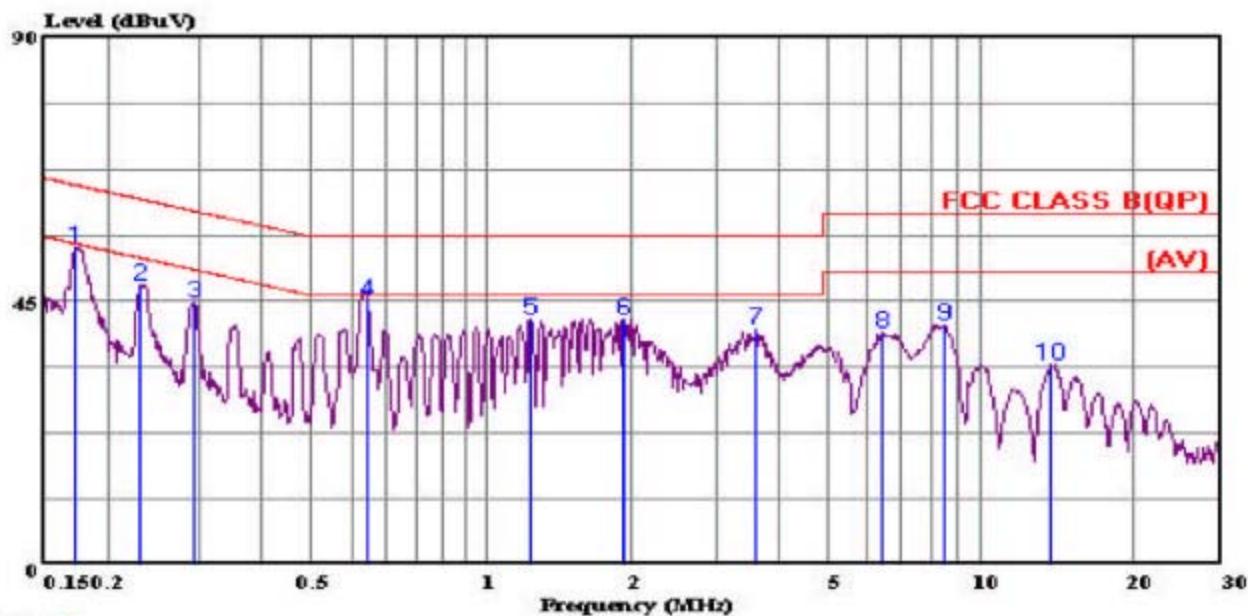


# 暉鑫科技股份有限公司

## PEP Testing Laboratory

Data#: 52 File#: FCC CLASS B(QP).EMI

Date: 2007-06-29 Time: 11:52:47



Trace: 51

Site : Shih-Chi : Conduction No.1  
Condition: FCC CLASS B(QP) LISN.N(16A) 2006 NEUTRAL  
EUT : E960165  
Power : AC 120V 60Hz  
Detect : Peak Value  
Curve : Peak Value Curve  
Mode : N/A  
Memo : Final test

Page: 1

Freq	Level	Over Limit	Limit Line	Read Level		Probe Factor	Cable Loss	Remark
				dBuV	dB			
1	0.172	54.19	-10.67	64.86	53.99	0.10	0.10	
2	0.232	47.78	-14.61	62.39	47.51	0.10	0.17	
3	0.294	44.77	-15.64	60.41	44.56	0.10	0.11	
4	0.643	45.21	-10.79	56.00	45.01	0.10	0.10	QP
5	1.338	41.78	-14.22	56.00	41.48	0.10	0.20	
6	2.044	42.05	-13.95	56.00	41.75	0.10	0.20	
7	3.700	40.18	-15.82	56.00	39.72	0.19	0.27	
8	6.557	39.67	-20.33	60.00	39.16	0.25	0.26	
9	8.592	41.12	-18.88	60.00	40.54	0.28	0.30	
10	13.989	34.22	-25.78	60.00	33.44	0.38	0.40	

## 14. Radiated Emissions Test Setup Photos

< FRONT VIEW >



< REAR VIEW >



## 15. Radiated Emissions Test Data

<b>Model No.</b>	<b>:</b> HVT-01HTW
<b>Frequency range</b>	<b>:</b> 30MHz to 1GHz
<b>Temperature</b>	<b>:</b> 28° C
<b>Detector</b>	<b>:</b> Quasi-Peak Value
<b>Humidity</b>	<b>:</b> 55 %

**Antenna polarization : HORIZONTAL ; Test distance : 3m ;**

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
52.310	32.00	- 8.00	40.00	40.75	10.60	0.81	20.16	105.0	4.0
330.700	39.97	- 6.03	46.00	43.89	13.31	2.23	19.46	105.0	4.0
498.510	37.32	- 8.68	46.00	36.93	16.74	3.25	19.60	166.0	4.0
552.830	38.24	- 7.76	46.00	36.33	17.84	3.33	19.26	200.0	4.0
773.990	40.20	- 5.80	46.00	32.84	21.19	4.07	17.90	116.0	4.0
995.150	48.22	- 5.78	54.00	38.36	23.42	5.04	18.60	128.0	4.0

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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FCC ID: UTBHVT01HTW

REPORT NO. :E960165

<b>Model No.</b>	<b>:</b>	<b>HVT-01HTW</b>
<b>Frequency range</b>	<b>:</b>	<b>30MHz to 1GHz</b>
<b>Temperature</b>	<b>:</b>	<b>28° C</b>
<b>Detector</b>	<b>:</b>	<b>Quasi-Peak Value</b>
<b>Humidity</b>	<b>:</b>	<b>55 %</b>

**Antenna polarization : VERTICAL ; Test distance : 3m ;**

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
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52.310	38.17	- 1.83	40.00	46.92	10.60	0.81	20.16	135.0	1.0
330.700	39.14	- 6.86	46.00	43.06	13.31	2.23	19.46	106.0	1.0
552.830	39.64	- 6.36	46.00	37.73	17.84	3.33	19.26	133.0	1.0
664.380	40.51	- 5.49	46.00	35.92	19.76	3.50	18.67	185.0	1.0
773.990	40.36	- 5.64	46.00	33.00	21.19	4.07	17.90	75.0	1.0
885.540	35.97	-10.03	46.00	27.71	22.27	4.98	18.99	133.0	1.0

**Note :**

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

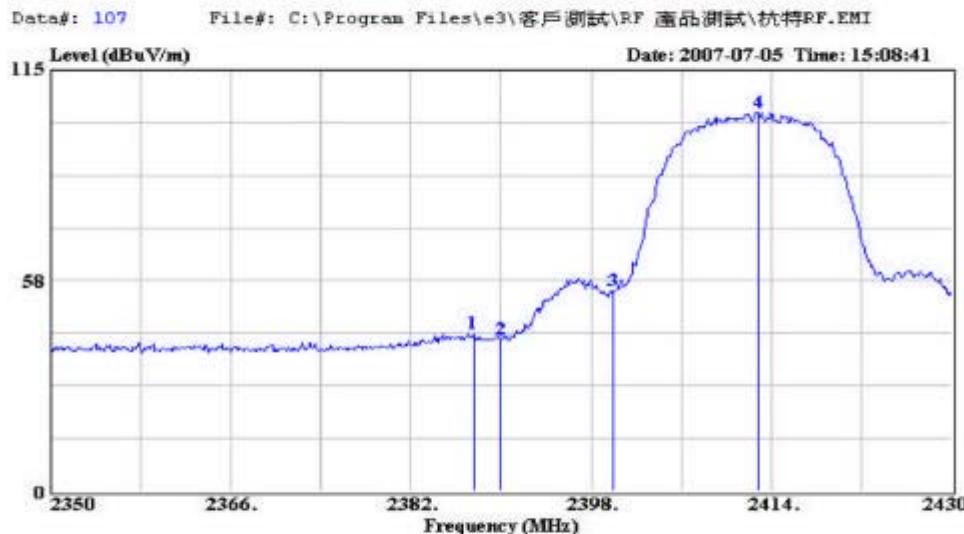
## 16. Band-edges Compliance

Channel : CH LOW

Polarity : Horizontal



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Site : chamber\_3 (J0E)  
Condition : 3m HORN ANTENNA H.3 HORIZONTAL  
EUT : E960165  
Power : AC 120V 60Hz  
Memo : FCC ID  
Memo : Band-edges

Freq	Level	Over Limit		Read Level	Probe Factor	Cable Preamp		Remark
		MHz	dBuV/m	dB	dBuV/m	dB	dB	
1	2387.600	42.94	-----	41.94	28.36	5.44	32.80	
2	2390.000	41.36	-----	40.36	28.36	5.44	32.80	
3	2400.000	54.46	-----	53.45	28.36	5.46	32.81	
4	2412.800	103.48	-----	102.45	28.37	5.48	32.82	

Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

103.48dBuV/m-42.94 dBuV/m =60.54dBuV/m

113.49 dBuV/m-60.54 dBuV/m=52.95 dBuV/m

\*52.95dBuV/m<Average Limit (54dBuV/m)

Channel : CH LOW  
Polarity : Vertical



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Figure 1: RF Spectrum Analysis Plot showing Level (dBuV/m) vs Frequency (MHz). The plot shows a signal with a central peak and several markers (1, 2, 3, 4) indicating specific frequency points. The x-axis ranges from 2350 to 2430 MHz, and the y-axis ranges from 0 to 115 dBuV/m.

Site : chamber\_3 (JOE)  
Condition : 3m HORN ANTENNA V.3 VERTICAL  
EUT : E960155  
Power : AC 120V 60Hz  
Memo : FCC ID  
Memo : Band-edges

Item	Band-edges		Over	Limit	Read	Probe	Cable	Preamp	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
	MHz	dBuV/m		dB	dBuV/m		dB		dB
1	2387.600	41.74	-----	-----	40.74	28.36	5.44	32.80	
2	2390.000	39.92	-----	-----	38.92	28.36	5.44	32.80	
3	2400.000	51.75	-----	-----	50.74	28.36	5.46	32.81	
4	2412.880	97.46	-----	-----	96.43	28.37	5.48	32.82	

Test method : Public Notice DA 00-705

Detect : Peak Value

### Marker-Delta method :

$$97.46 \text{dBuV/m} - 41.74 \text{ dBuV/m} = 55.72 \text{ dBuV/m}$$

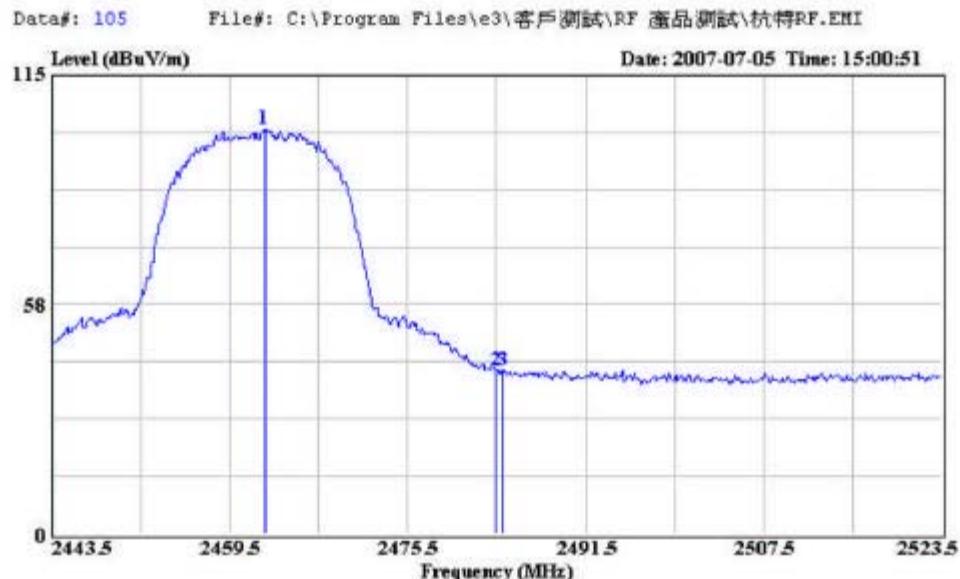
104.95 dB<sub>UV</sub>/m-55.72 dB<sub>UV</sub>/m=49.23 dB<sub>UV</sub>/m

\*49.23dB<sub>UV</sub>/m < Average Limit (54dB<sub>UV</sub>/m)

**Channel : CH HIGH**  
**Polarity : Horizontal**



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Site : chamber\_3 (JOE)  
 Condition : 3m HORN ANTENNA H.3 HORIZONTAL  
 EUT : E960165  
 Power : AC 120V 60Hz  
 Memo : FCC ID  
 Memo : Band-edges

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp
		Line	Limit	Level	Factor	Loss	Factor
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB
1	2462.620	101.38	-----	100.30	28.39	5.56	32.87
2	2483.500	40.79	-----	39.70	28.40	5.59	32.90
3	2484.060	41.12	-----	40.03	28.40	5.59	32.90

Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

101.38dBuV/m-41.12 dBuV/m =60.26dBuV/m

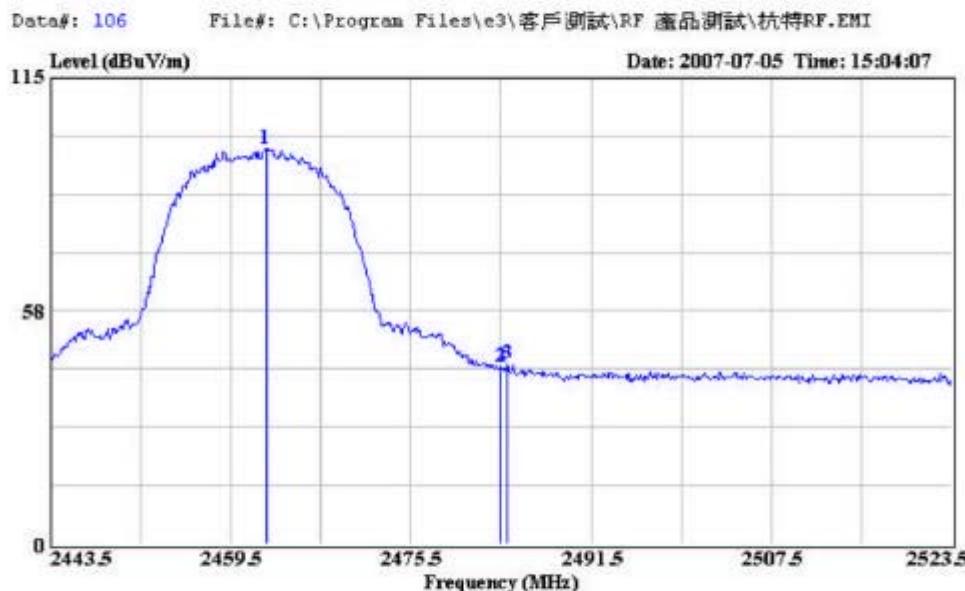
112.69 dBuV/m-60.26 dBuV/m=52.44 dBuV/m

\*52.44dBuV/m<Average Limit (54dBuV/m)

Channel : CH HIGH  
 Polarity : Vertical



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Site : chamber\_3 (JOE)  
 Condition : 3m HORN ANTENNA V.3 VERTICAL  
 EUT : E960165  
 Power : AC 120V 60Hz  
 Memo : FCC ID  
 Memo : Band-edges

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB	Remark
1	2462.620	97.47	-----	96.39	28.39	5.56	32.87	
2	2483.500	43.47	-----	42.38	28.40	5.59	32.90	
3	2484.060	44.33	-----	43.24	28.40	5.59	32.90	

Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

97.47dBuV/m-44.33 dBuV/m =53.14dBuV/m

106.25 dBuV/m-53.14 dBuV/m= 53.11 dBuV/m

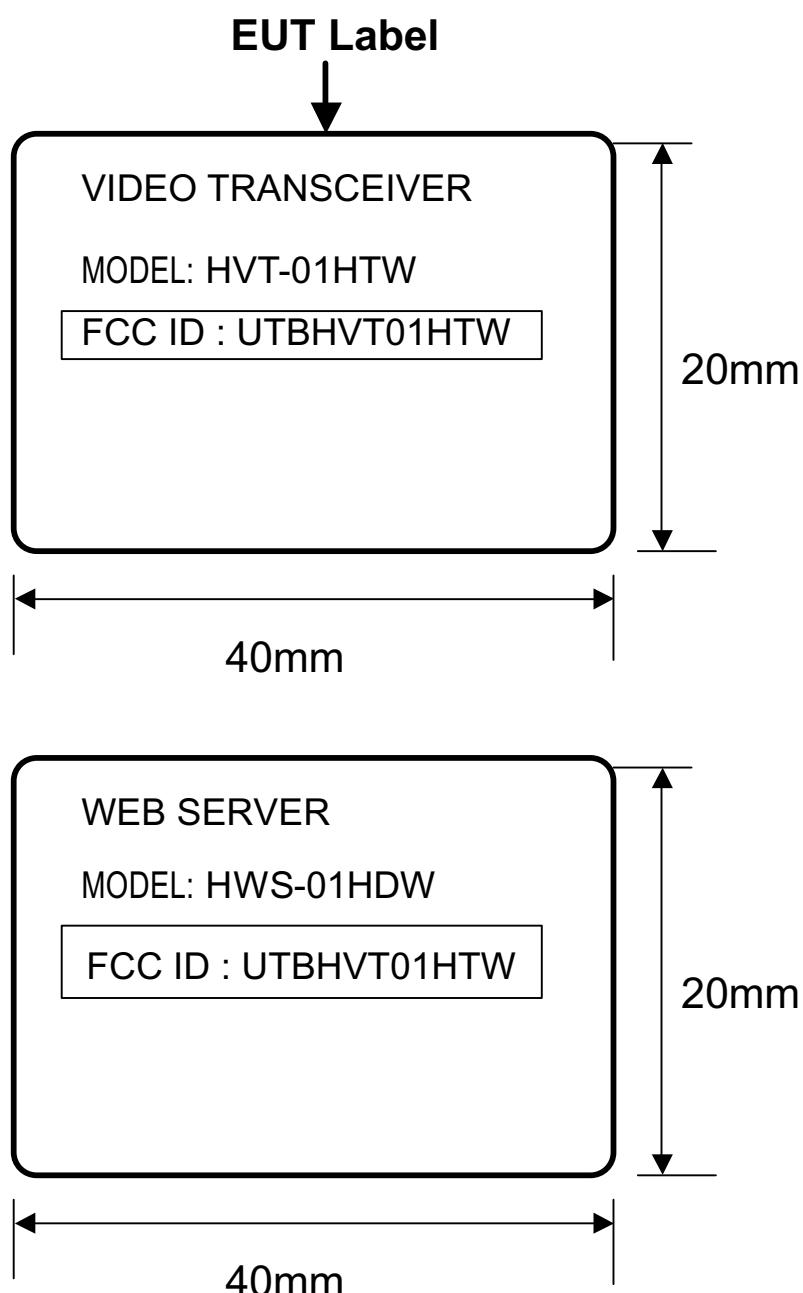
\*53.11dBuV/m<Average Limit (54dBuV/m)

## 17. List of Measured Instruments

Test Site	Instrument	Model No.	S/N	Next Cal. Date	Cal. Interval
Conduction (No.1)	R & S Spectrum	FSP 3	833387/001	Aug. 14, 2007	1Year
	R & S Receiver	ESHS10	830223/008	Sep. 10, 2007	1Year
	R & S 16A LISN(EUT)	ESH3-Z5	100070	Sep. 14, 2007	1Year
	ROLF HEINE 63A LISN(EUT)	NNB-4/63TL	98008	Sep. 20, 2007	1Year
	RF Cable	No.4	N/A	Jan. 02, 2008	1Year
Radiation (OP No.3)	R & S Receiver	ESVS 30	863342/012	Aug. 19, 2008	1Year
	Schaffner Pre-Amp.	CPA-9232	1012	Jan. 02, 2008	1Year
	SCHWARZBECK Antenna	9161	9161-4077	July 22, 2008	1Year
	RF Cable	No.3	N/A	Jan. 02, 2008	1Year
	R & S Signal Generator	SMY02	829846/038	May 01, 2008	2Year
Chamber (No. 3)	R&S Spectrum Analyzer	FSP30	100157	Sep. 03, 2007	1Year
	Schaffner Pre-Amplifier	CPA-9232	1028	Jan. 02, 2008	1Year
	SCHWARZBECK Antenna	VULB9161	4078	July 21, 2008	1Year
	R & S Signal Generator	SMY02	830235/019	May 01, 2008	2Years
	30MHz~1GHz RF Cable	NO.3	N/A	Jan. 02, 2008	1Year
	COM POWER HORN ANTENNA	AH-118	10056	Oct. 01, 2008	2Years
	MITEQ Pre-Amplifier	JS4-00101800-2 8-5A	829013	Sep. 28, 2008	2Years
	1GHz~26.5GHz RF Cable	N/A	N/A	Sep. 28, 2008	2Years
	KSON Humidity Chamber	THS-COH+-150	2019	Mar. 11, 2008	1Year

## 18. FCC ID Label Sample

The sample label shown below shall be permanently affixed at a conspicuous location on the device, instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practicable, only the trade name, model number, and the FCC logo must be displayed on the device per Section §15.19 (b)(2).



## 19. Information To The User

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

### Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver .
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected .
- Consult the dealer or an experienced radio / TV technician for help .

## 20. EUT External Photos

PHOTO. 1. EUT FRONT VIEW



PHOTO. 2. EUT REAR VIEW



## 21. EUT Internal Photos

PHOTO. 3. EUT INSIDE VIEW



PHOTO. 4. EUT COMPONENT VIEW



PHOTO. 5. EUT COMPONENT SIDE VIEW



PHOTO. 6. EUT COMPONENT SIDE VIEW



**PHOTO. 7. EUT SOLDERING SIDE VIEW**



**PHOTO. 8. EUT COMPONENT SIDE VIEW**



**PHOTO. 9. EUT SOLDERING SIDE VIEW**



PHOTO. 10. EUT SOLDERING SIDE VIEW

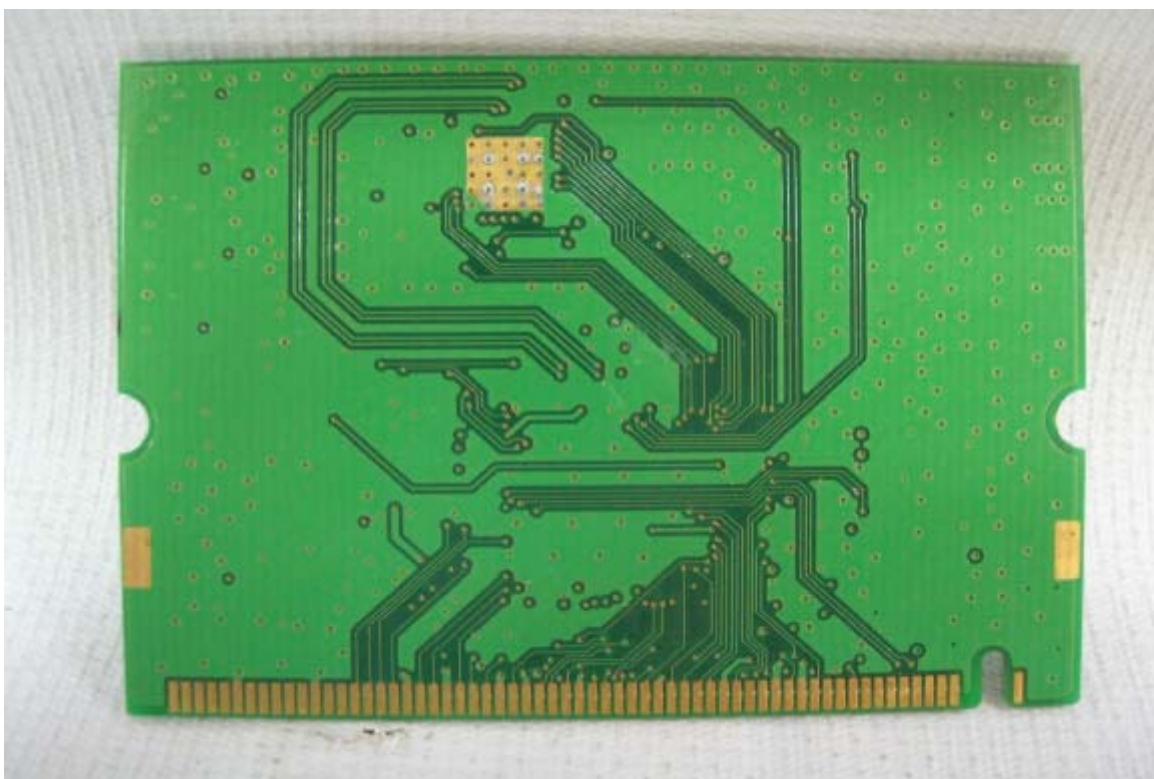


PHOTO. 11 EUT COMPONENT SIDE VIEW

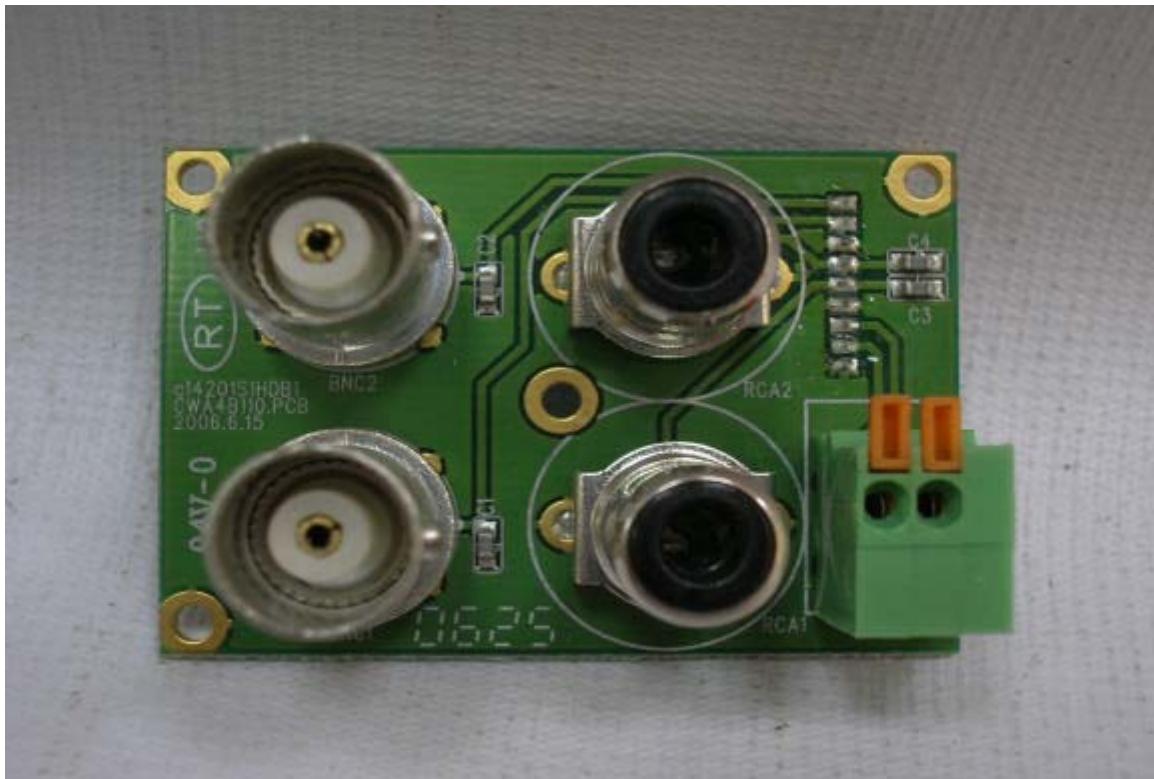


PHOTO. 12 EUT SOLDERING SIDE VIEW

