

FCC ID TEST REPORT

According to

FCC Part 15 Subpart C, Intentional Radiators

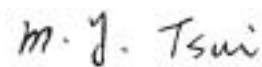
EUT Type	:	IP CAMERA
Transmitter (TX)	:	1) Model No.: HLC-81I/BW 2) FCC ID: UTBHLC-81XW
Applicant Name:	:	HUNT ELECTRONIC CO., LTD.
Address	:	See the General Information for details.

Test Date : JUNE 20, 2007

Issued Date : SEP. 03, 2007

Test Engineer : JASON KUNG

NVLAP Signature :


M. Y. Tsui / Director

The test report shall not be reproduced except in full, without the written approval of the "PEP"

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.

TEL : 886-2-26021042

FAX : 886-2-26021045

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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: IP CAMERA
- b. Transmitter Model: HLC-81I/BW
- c. TX FCC ID: UTBHLC-81XW
- d. TX Channel No. : 1-11
- e. TX Working Freq. : 2.412 –2.462 GHz
- f. TX Modulation : CCK, DSSS
- g. TX Crystal / Osc. : 22.1184MHz, 24.576 MHz, 25 MHz, 27MHz, 30 MHz
- h. TX Port(s) : Video out Port * 1, Audio Output Port * 1,
RJ45 Port * 1, SD Card Slot * 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 – JUNE 14, 2007

3. EUT Description and Test Methods

- (A) The Equipment under test (EUT) is IP CAMERA model HLC-81I/BW. 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.

(A) C810A110.PCB (Main IC circuit board is including LAN)

1. Respective connecting 22pF capacitance in parallels from No. 1, 3, 4 and 6 pins of LAN port to GND.
2. Changing RS14 of circuit board to 33-ohm resistance and connecting a bead in series, which its impedance is 70-ohm.
3. Respective connecting 68pF capacitance in parallels to C5, C7 and C8 of circuit board.
4. Connecting 33pF capacitance to C10 in parallels.
5. Connecting a bead to the RS17 of circuit board in series, which its impedance is 80-ohm.
6. Adding conductive shielding gasket to LAN port of circuit board to touch the iron case.

WL-3002-1A Mini PCI

1. On the 2.4GHz emission circuit, respective connecting 68pF capacitance in the front and rear of a bead in parallels, which its impedance is 120-ohm.

C810Z110.PCB (The circuit board is up the main circuit board)

1. Adding a core on IRIS cable.
2. Connecting 120-ohm bead to No.1 pin of CN3 in series.
3. Respective connecting 22pF capacitance in parallels from No.2 and 3 pin of CN3 to GND.
4. Connecting 0.1uF capacitance in parallels from No. 1 pin of CN1 to GND.
5. Adding a core to the wire circuit, which connects SD Card board.

C810B110.PCB (Board of POWER and Video out)

1. Connecting 0.1uF capacitance in parallels from CN3 to GND.
2. Connecting 0.1uF capacitance in parallels from No.1 of J4 to GND.
3. Connecting 1000pF capacitance in parallels from BNC1 to GND.
4. Connecting 1000pF capacitance in parallels from RCA1 to GND.

C810E110.PCB (SD Card Read Board)

1. Respective connecting 120-ohm bead in series from No. 3 and 6 pins of J1 to GND.
2. Connecting 68pF capacitance to No.5 pin of J1 in parallels.
3. Changing CB1 of circuit board to 0.1uF capacitance.
4. Changing the L1 to 150-ohm bead.

(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

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

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

7. Description Field Strength of Fundamental and Harmonics Test

7.1 Field Strength of Fundamental and Harmonics Test

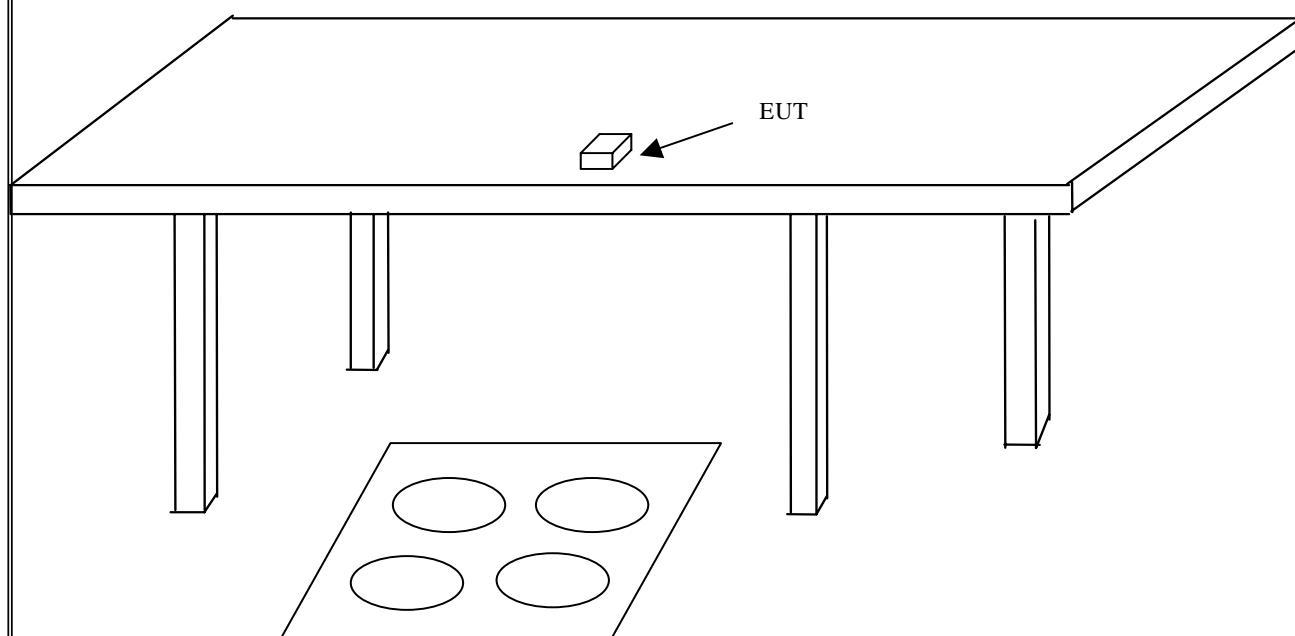
Field Strength of Fundamental and Harmonics Test were made outdoors at 3-meter test range using horn antenna. The test equipment was placed on a wooden bench situated on a 1.5x1 meter area adjacent to the measurement area. Sufficient time for the EUT, support equipment, and test equipment was allowed 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		Harmonics	
	(mV/m)	(dB μ V/m)	(μ V/m)	(dB μ 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

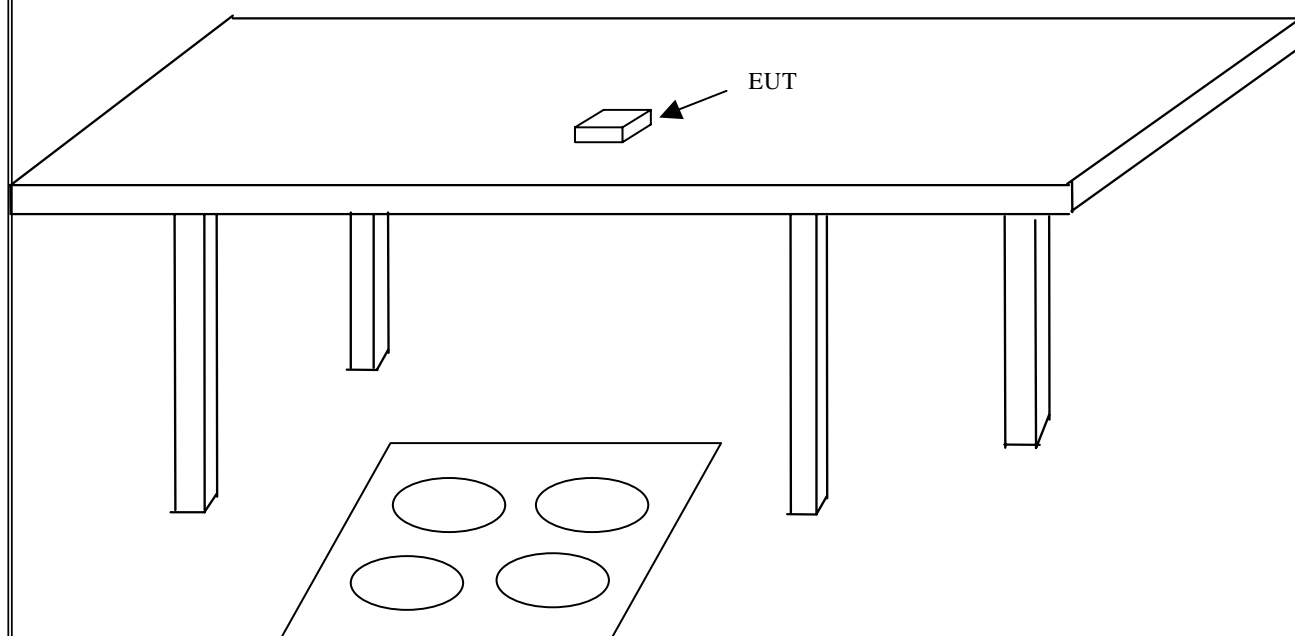
9.1 Radiated Emissions

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

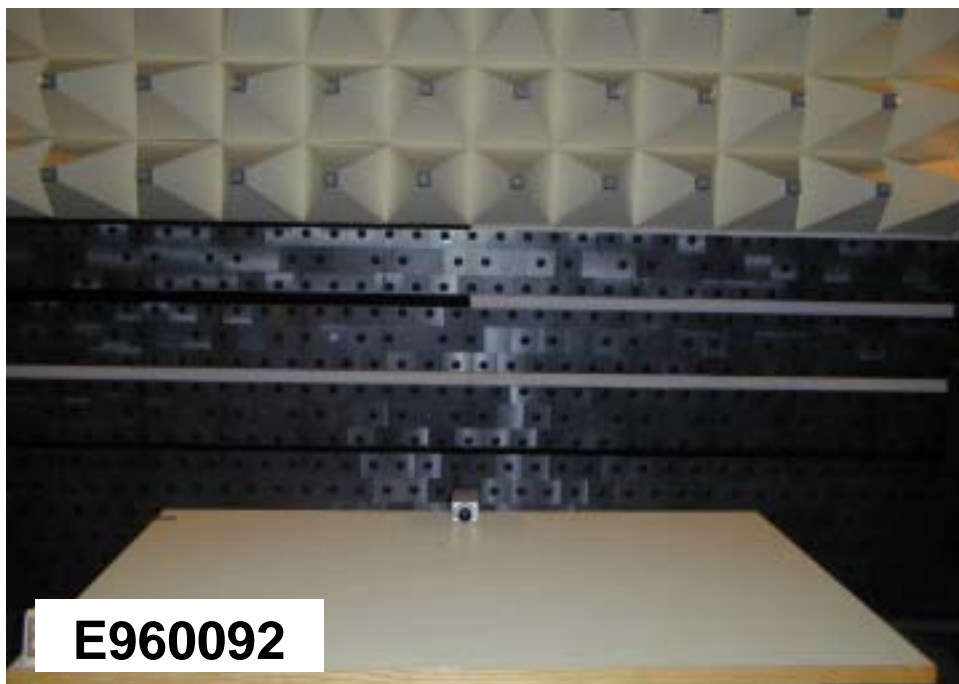
Frequency MHz	Field Strength dB μ V/m or μ V/m	
30 to 88	40	100
88 to 216	43.5	150
216 to 960	46	200
Above 960	56	500

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. : HLC-81I/BW****Temperature : 24° C****Humidity : 55 %****Memo : CH LOW MODE (2.412GHz)****Antenna polarization : HORIZONTAL ; Test distance : 3m ;**

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Detector	Remark
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 (dB)	Limit Line (dBuV/m)	Detector	Remark
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. : HLC-81/BW
Temperature : 24° C **Humidity** : 55 %
Memo : CH MID MODE (2.437GHz)

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

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Detector	Remark
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 (dB)	Limit Line (dBuV/m)	Detector	Remark
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. : HLC-81I/BW**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. : HLC-81I/BW
Frequency range : 150KHz to 30MHz
Detector : Quasi-peak Value
Temperature : 27
Humidity : 43 %

Test Data : # 196 # 19 < LINE >
 # 197 # 20 < NEUTRAL >

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

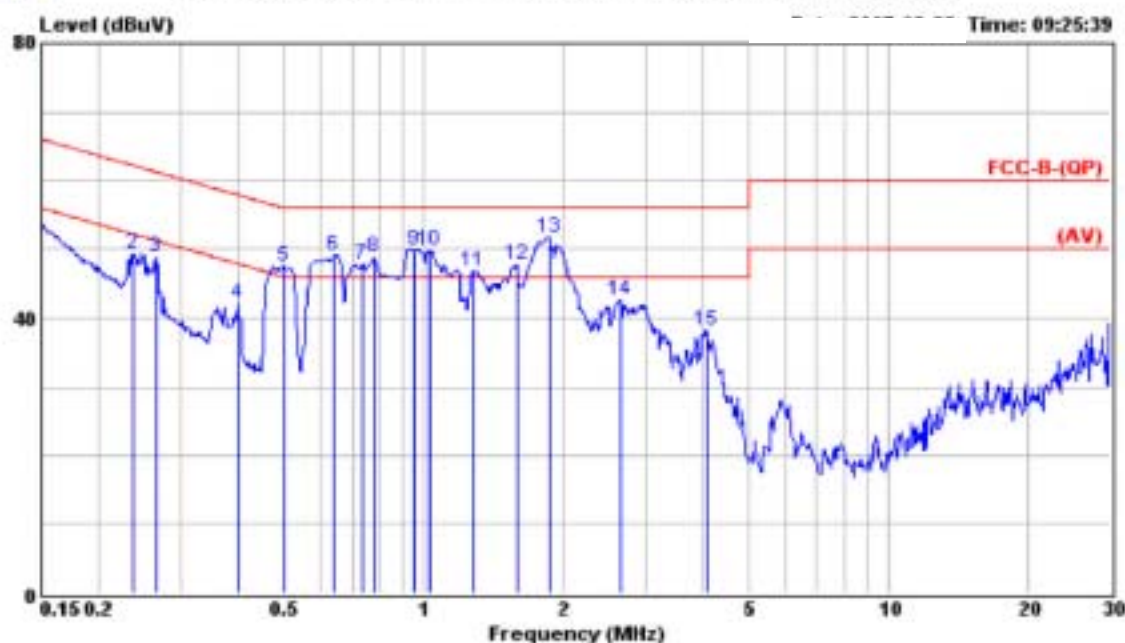


暉鑫科技股份有限公司

PEP Testing Laboratory

Data#: 196

File#: C:\Program Files\3\96年\My Documents\FCC-B(QP).emi



Site : Linko: Conduction No.2 (David)
Condition : FCC-B-(QP) LISN.L(32A) LINE
FORM : E960092

Model :
power : AC 120V 60Hz
memo : LAN Mode

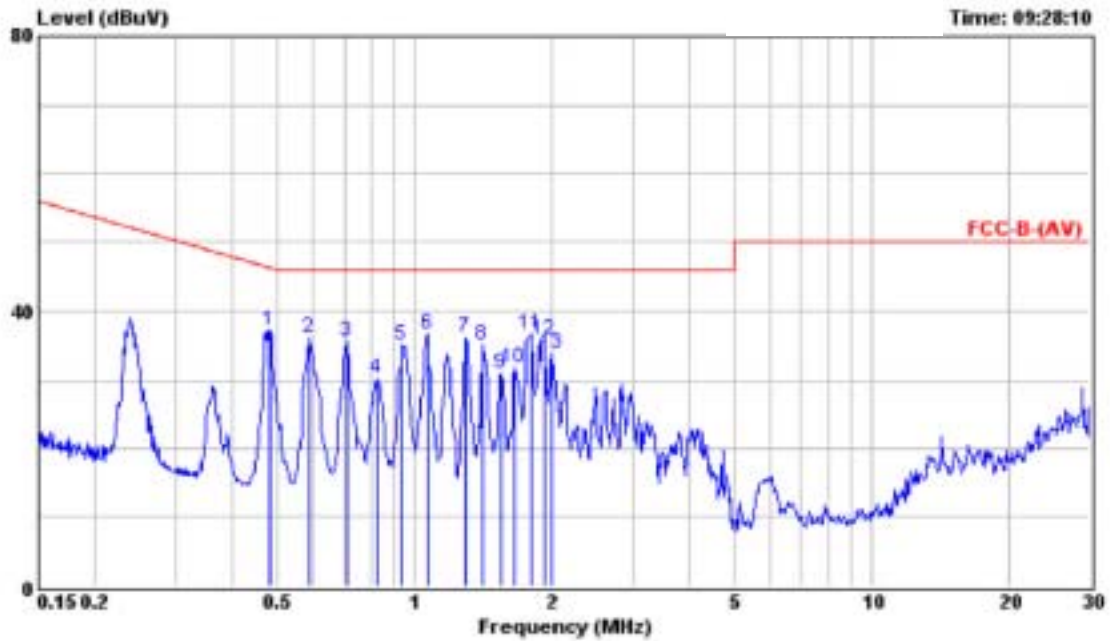
	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	53.86	-12.14	66.00	53.75	0.10	0.01	Peak
2	0.237	49.44	-12.76	62.20	49.24	0.10	0.10	Peak
3	0.264	48.84	-12.46	61.30	48.61	0.10	0.13	Peak
4	0.398	42.07	-15.83	57.90	41.82	0.10	0.15	Peak
5	0.499	47.61	-8.41	56.02	47.34	0.10	0.17	Peak
6	0.641	49.14	-6.86	56.00	48.84	0.10	0.20	Peak
7	0.735	47.83	-8.17	56.00	47.52	0.10	0.21	Peak
8	0.783	48.89	-7.11	56.00	48.58	0.10	0.21	Peak
9	0.953	49.99	-6.01	56.00	49.66	0.10	0.23	Peak
10	1.030	49.76	-6.24	56.00	49.42	0.10	0.24	Peak
11	1.280	46.87	-9.13	56.00	46.47	0.14	0.26	Peak
12	1.590	47.80	-8.20	56.00	47.34	0.17	0.29	Peak
13	1.860	51.72	-4.28	56.00	51.23	0.19	0.30	Peak
14	2.650	42.67	-13.33	56.00	42.12	0.20	0.35	Peak
15	4.050	38.09	-17.91	56.00	37.49	0.20	0.40	Peak



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Data#: 19

File#: C:\Program Files\96年\My Documents\FCC-B(AV).emi



Site : Linko: Conduction No.2 (David)
 Condition : FCC-B(AV) LISN.L(32A) LINE
 eut : E960092
 power : AC 120V 60Hz
 memo : Average Value
 : LAN Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.481	37.25	-9.07	46.32	36.98	0.10	0.17	
2	0.585	36.21	-9.79	46.00	35.91	0.10	0.20	
3	0.712	35.56	-10.44	46.00	35.25	0.10	0.21	
4	0.826	30.19	-15.81	46.00	29.88	0.10	0.21	
5	0.938	34.96	-11.04	46.00	34.63	0.10	0.23	
6	1.070	36.61	-9.39	46.00	36.25	0.11	0.25	
7	1.290	36.11	-9.89	46.00	35.70	0.14	0.27	
8	1.410	35.16	-10.84	46.00	34.74	0.15	0.27	
9	1.540	30.95	-15.05	46.00	30.51	0.16	0.28	
10	1.650	31.69	-14.31	46.00	31.23	0.17	0.29	
11	1.790	36.63	-9.37	46.00	36.15	0.18	0.30	
12	1.920	35.86	-10.14	46.00	35.36	0.19	0.31	
13	1.990	33.78	-12.22	46.00	33.27	0.20	0.31	

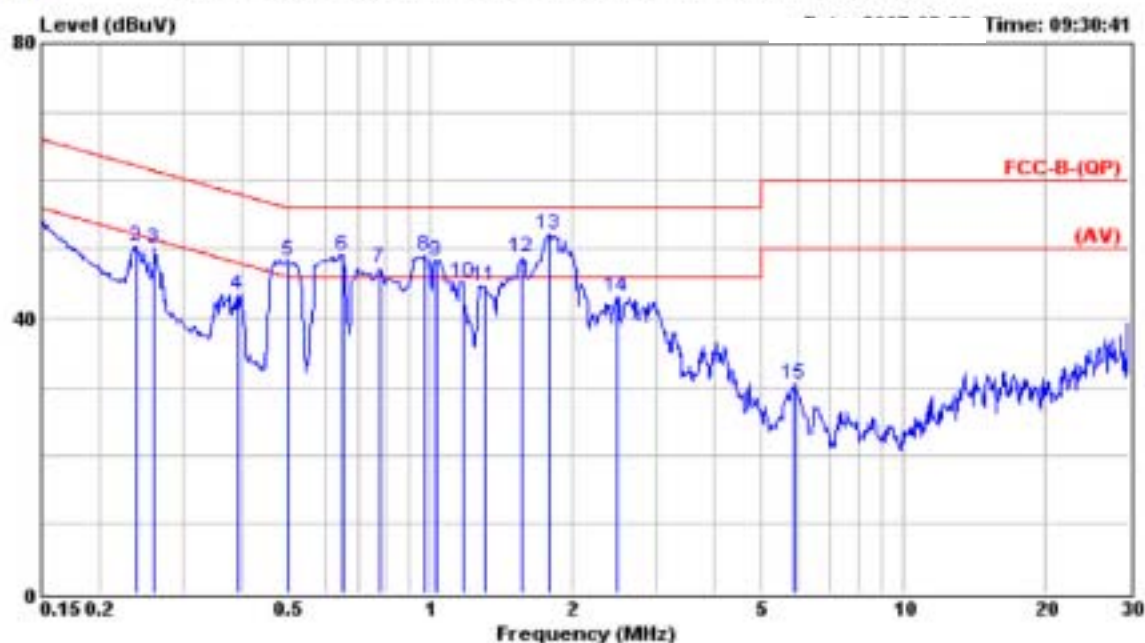


緯鑫科技股份有限公司

PEP Testing Laboratory

Data#: 197

File#: C:\Program Files\96年\My Documents\FCC-B(QP).emi



Site : Linko: Conduction No.2 (David)
Condition : FCC-B-(QP) LISN.N(32A) NEUTRAL
FORM : E960092

Model :
power : AC 120V 60Hz
memo : LAN Mode

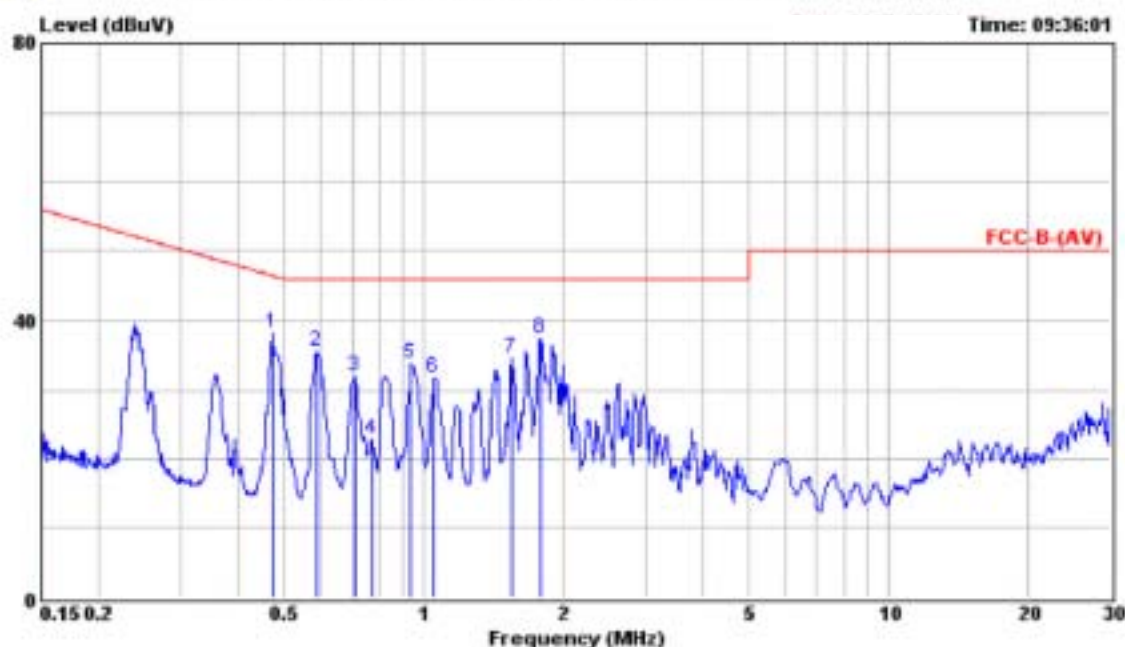
	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	54.12	-11.88	66.00	54.01	0.10	0.01	Peak
2	0.239	50.45	-11.68	62.13	50.24	0.10	0.11	Peak
3	0.260	50.05	-11.38	61.43	49.83	0.10	0.12	Peak
4	0.391	43.34	-14.70	58.04	43.09	0.10	0.15	Peak
5	0.499	48.36	-7.66	56.02	48.09	0.10	0.17	Peak
6	0.654	49.16	-6.84	56.00	48.86	0.10	0.20	Peak
7	0.783	47.19	-8.81	56.00	46.88	0.10	0.21	Peak
8	0.968	49.06	-6.94	56.00	48.72	0.10	0.24	Peak
9	1.030	48.38	-7.62	56.00	48.04	0.10	0.24	Peak
10	1.170	45.26	-10.74	56.00	44.88	0.12	0.26	Peak
11	1.300	44.72	-11.28	56.00	44.31	0.14	0.27	Peak
12	1.560	48.72	-7.28	56.00	48.27	0.16	0.29	Peak
13	1.780	52.14	-3.86	56.00	51.66	0.18	0.30	Peak
14	2.470	43.06	-12.94	56.00	42.52	0.20	0.34	Peak
15	5.900	30.43	-29.57	60.00	29.79	0.20	0.44	Peak



緯鑫科技股份有限公司 PEP Testing Laboratory

Data#: 20

File#: C:\Program Files\le3\96年\My Documents\FCC-B(AV).emi



Site : Linko: Conduction No.2 (David)
 Condition : FCC-B-(AV) LISN.N(32A) NEUTRAL
 out : E960092
 power : AC 120V 60Hz
 memo : Average Value

	Freq	Level	Over	Limit	Read	Probe	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.471	38.10	-8.40	46.50	37.84	0.10	0.16	
2	0.585	35.65	-10.35	46.00	35.35	0.10	0.20	
3	0.712	31.95	-14.05	46.00	31.64	0.10	0.21	
4	0.771	22.86	-23.14	46.00	22.55	0.10	0.21	
5	0.938	33.74	-12.26	46.00	33.41	0.10	0.23	
6	1.050	31.81	-14.19	46.00	31.46	0.11	0.24	
7	1.540	34.43	-11.57	46.00	33.99	0.16	0.28	
8	1.780	37.45	-8.55	46.00	36.97	0.18	0.30	

14. Radiated Emissions Test Setup Photos

< FRONT VIEW >



< REAR VIEW >



15. Radiated Emissions Test Data

Model No.	: HLC-81/BW	Detector	: Quasi-Peak Value
Frequency range	: 30MHz to 1GHz	Humidity	: 55 %
Temperature	: 28° C		

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)
101.780	34.63	- 6.61	41.24	42.83	10.80	0.84	19.84	185.0	4.0
455.830	41.51	-17.69	59.20	41.61	16.45	2.95	19.50	175.0	4.0
483.960	39.52	- 1.72	41.24	39.26	16.58	3.06	19.38	106.0	4.0
663.410	40.10	- 1.14	41.24	35.53	19.75	3.46	18.64	213.0	4.0
774.960	38.24	- 3.00	41.24	30.82	21.20	4.06	17.84	196.0	4.0
903.970	44.51	-14.69	59.20	35.69	22.62	4.45	18.25	123.0	4.0

Note :

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

Model No.	: HLC-81I/BW	Detector	: Quasi-Peak Value
Frequency range	: 30MHz to 1GHz	Humidity	: 55 %
Temperature	: 28° C		

Antenna polarization : VERTICAL ; Test distance : 3m ;

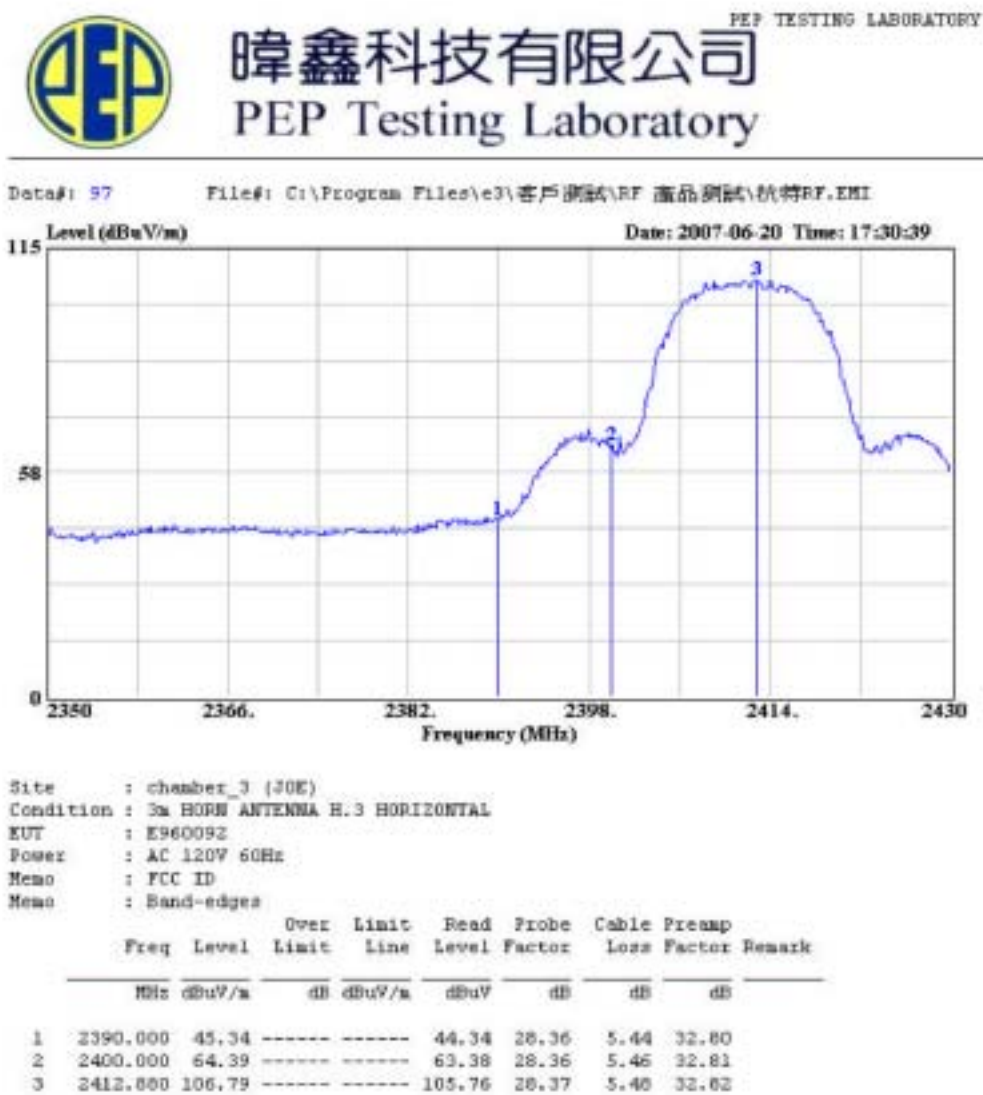
Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
94.990	39.74	- 1.50	41.24	48.40	10.42	0.98	20.06	115.0	1.0
208.480	41.13	- 0.11	41.24	48.72	10.74	1.49	19.82	126.0	1.0
663.410	39.50	- 1.74	41.24	34.93	19.75	3.46	18.64	103.0	1.0
750.710	40.26	- 0.98	41.24	34.36	20.94	4.41	19.45	180.0	1.0
773.990	40.11	- 1.13	41.24	32.75	21.19	4.07	17.90	85.0	1.0
842.860	40.53	- 0.71	41.24	33.12	21.86	4.23	18.68	165.0	1.0

Note :

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

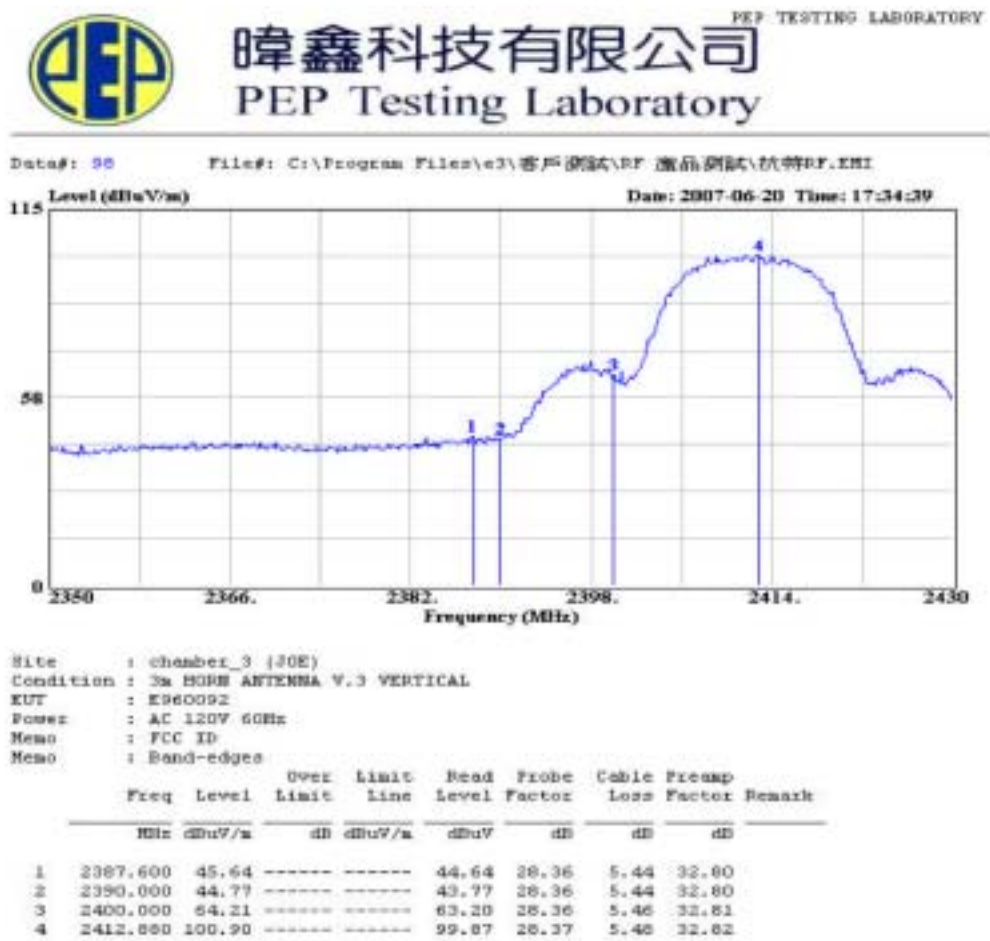
16. Band-edges Compliance

Channel : CH LOW
Polarity : Horizontal



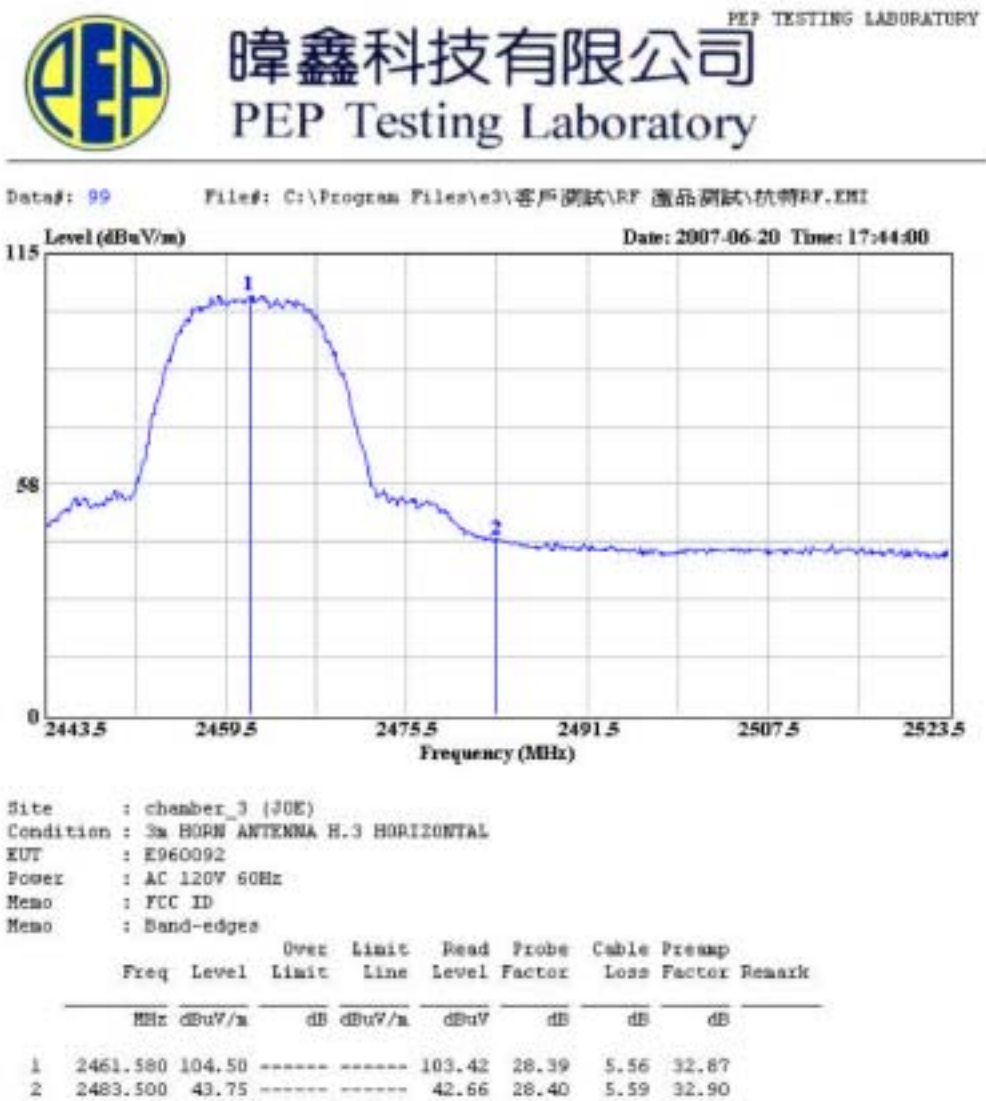
Test method : Public Notice DA 00-705
Detect : Peak Value
Marker-Delta method :
106.79dBuV/m-45.34 dBuV/m =61.45dBuV/m
113.49 dBuV/m-61.45 dBuV/m=52.04 dBuV/m
*52.04dBuV/m<Average Limit (54dBuV/m)

Channel : CH LOW
Polarity : Vertical



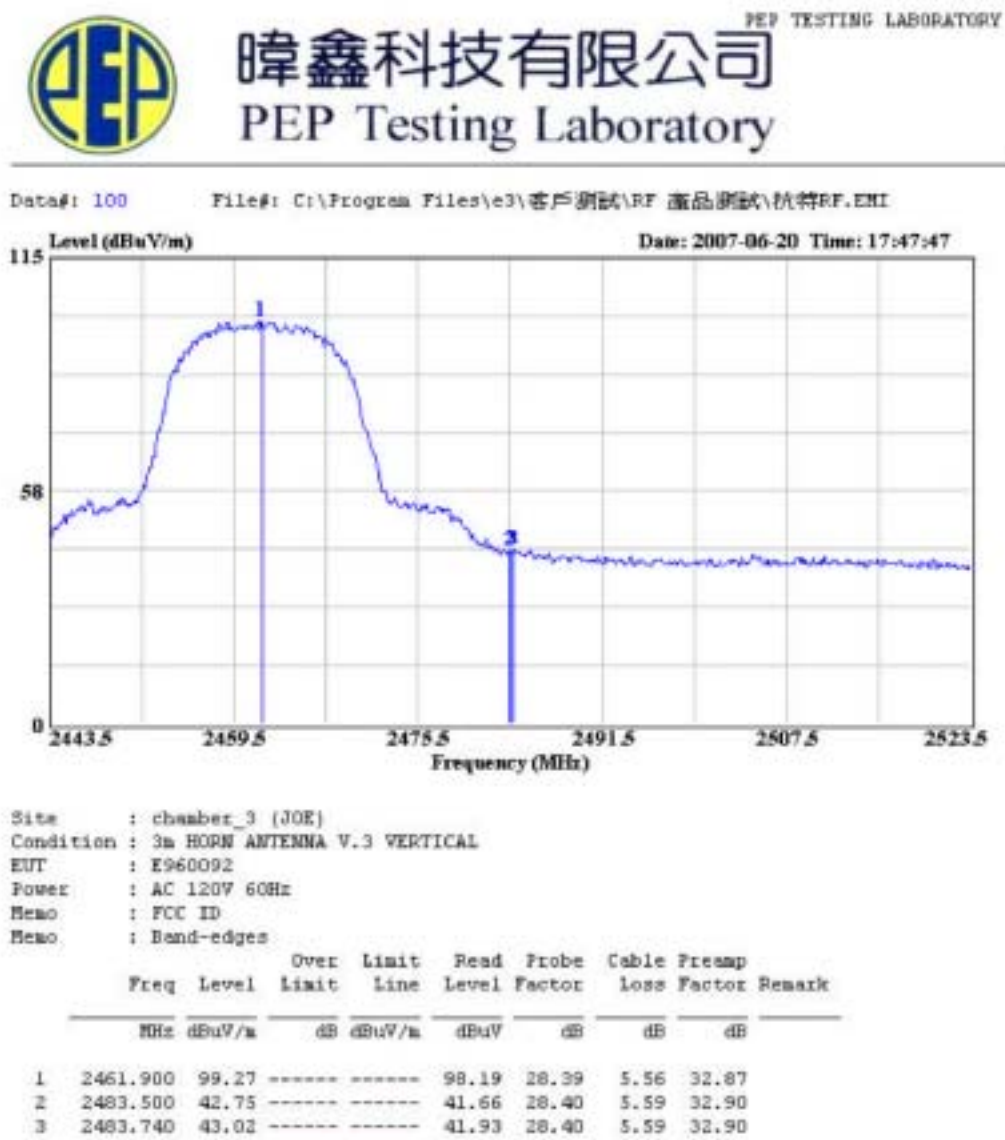
Test method : Public Notice DA 00-705
Detect : Peak Value
Marker-Delta method :
 $100.90\text{dBuV/m} - 45.64\text{ dBuV/m} = 55.26\text{dBuV/m}$
 $104.95\text{ dBuV/m} - 55.26\text{ dBuV/m} = 49.69\text{ dBuV/m}$
* $49.69\text{dBuV/m} < \text{Average Limit (54dBuV/m)}$

Channel : CH HIGH
Polarity : Horizontal



Test method : Public Notice DA 00-705
Detect : Peak Value
Marker-Delta method :
104.50dBuV/m-43.75 dBuV/m =60.75dBuV/m
112.69 dBuV/m-60.75 dBuV/m=51.94 dBuV/m
*51.94dBuV/m<Average Limit (54dBuV/m)

Channel : CH HIGH
Polarity : Vertical



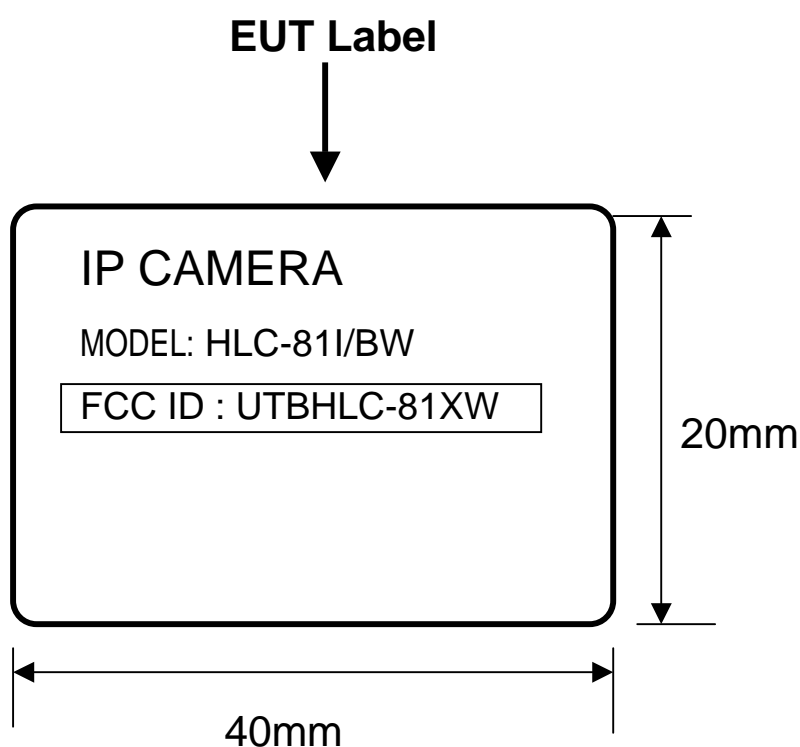
Test method : Public Notice DA 00-705
Detect : Peak Value
Marker-Delta method :
99.27dBuV/m-43.02 dBuV/m =56.25dBuV/m
106.25 dBuV/m-56.25 dBuV/m=50.00 dBuV/m
*50.00dBuV/m<Average Limit (54dBuV/m)

17. List of Measured Instruments

Test Site	Instrument	Model No.	S/N	Next Cal. Date	Cal. Interval
Conduction (No.2)	R & S Spectrum	FSP 3	833387/010	Aug. 21, 2008	1Year
	R & S Receiver	ESHS10	830223/008	Sep. 08, 2008	1Year
	R & S LISN(EUT)	ESH2-Z5	831886/004	Apr. 16, 2008	1Year
	Kyoritsu LISN(2nd)	KNW-242	8-837-7	N/A	N/A
	RF Cable	No.4	N/A	Jan. 02, 2008	1Year
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 COMPONENT SIDE VIEW



PHOTO. 11 EUT SOLDERING SIDE VIEW

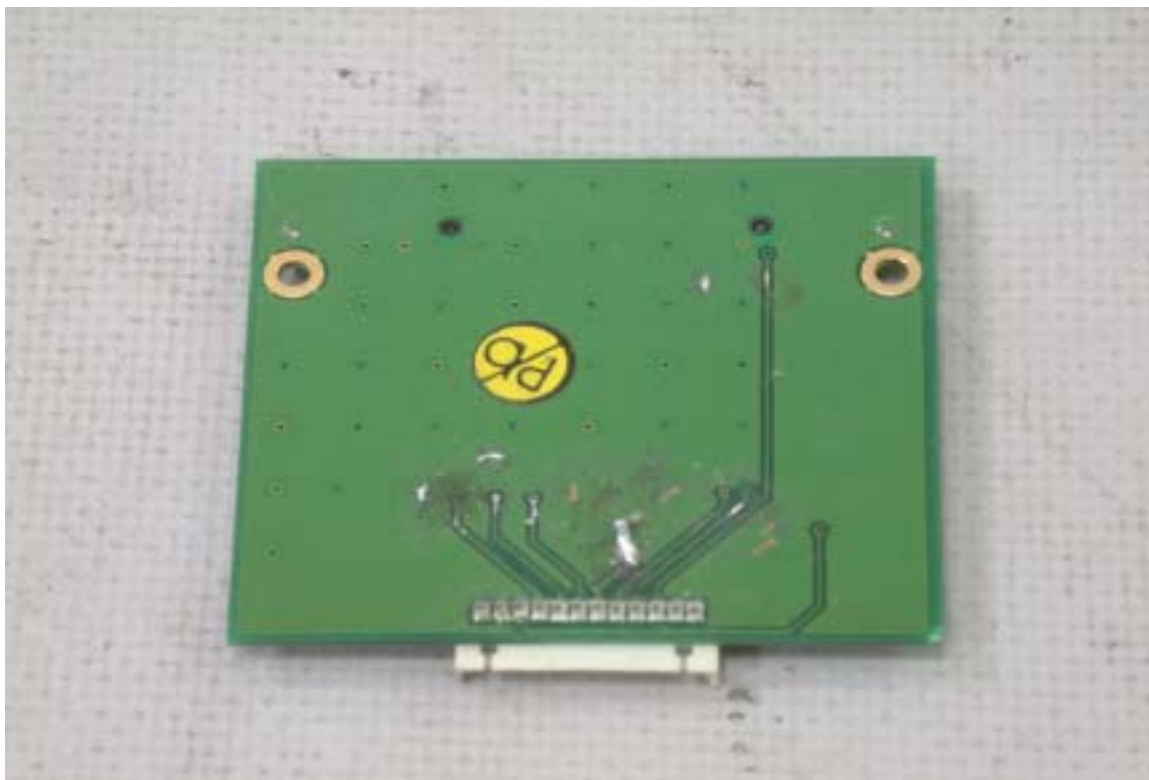


PHOTO. 12 EUT COMPONENT SIDE VIEW

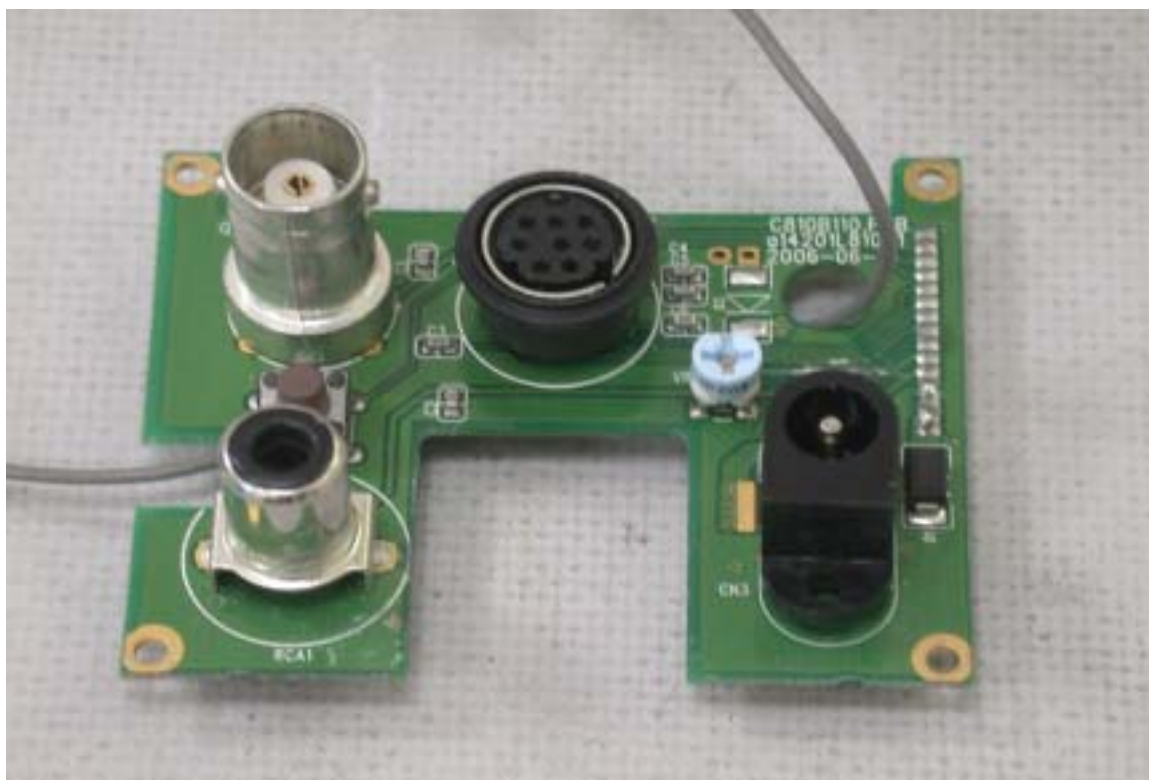


PHOTO. 13 EUT SOLDERING SIDE VIEW

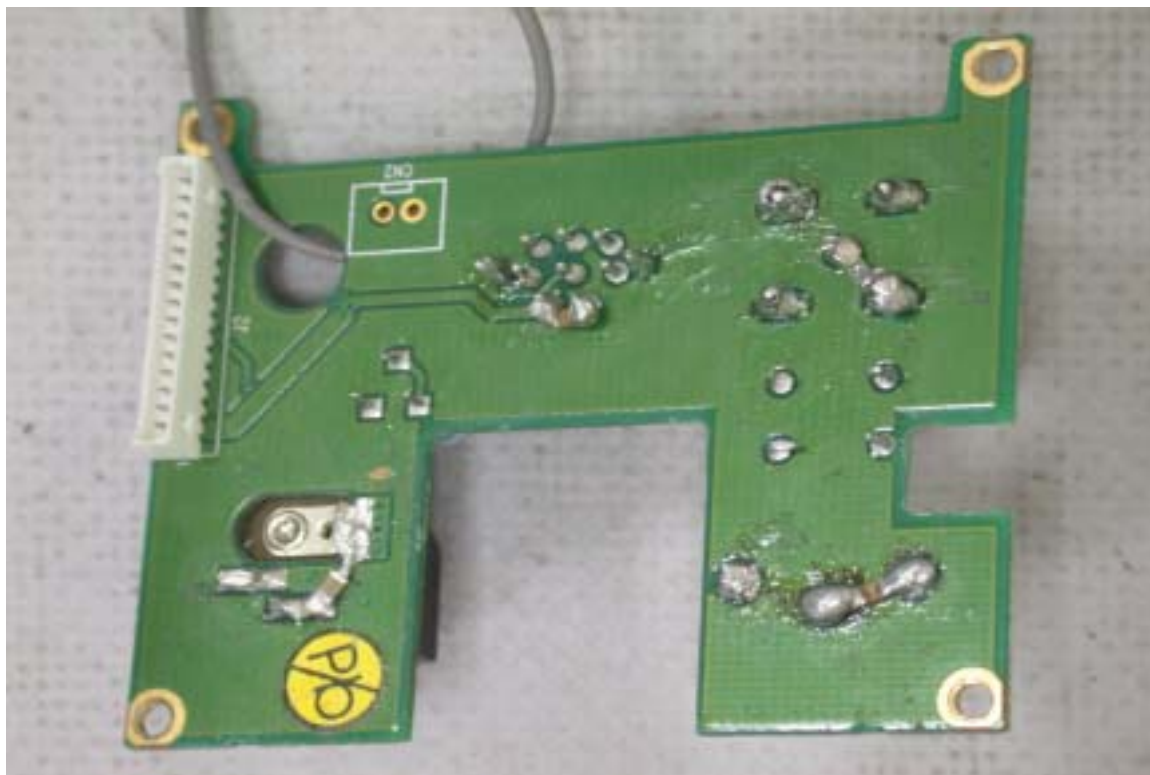


PHOTO. 14 EUT COMPONENT SIDE VIEW



PHOTO. 15 EUT SOLDERING SIDE VIEW



PHOTO. 16 EUT COMPONENT SIDE VIEW



PHOTO. 17 EUT COMPONENT SIDE VIEW



PHOTO. 18 EUT COMPONENT SIDE VIEW



PHOTO. 19 EUT SOLDERING SIDE VIEW

