Test Report

Product Name : Wireless color Camera

Model No. : TTA-45T

FCC ID.: O6LTTA-45T

Applicant : TRANWO TECHNOLOGY CORP.

Address : 6F., No.49,Guangming 6th Rd.,JubeiCity, Hsinchu ,Taiwan ,R.O.C.

Date of Receipt : Oct. 24, 2002

Date of Test : Jan. 02, 2003

Report No. : 02AH064FI

The Test Results relate only to the samples tested.
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Test Date : Jan. 02, 2003
Report No. : 02AH064FI

QuieTek Corporation
Accredited by NIST (NVLAP)
NVLAP Lab Code: 200347-0

Product Name	: Wireless color Camera
Applicant	: TRANWO TECHNOLOGY CORP.
Address	: 6F., No.49,Guangming 6th Rd.,JubeiCity, Hsinchu ,Taiwan ,R.O.C.
Manufacturer	: TRANWO TECHNOLOGY CORP.
Model No.	: TTA-45T
FCC ID.	: O6LTTA-45T
Rated Voltage	: AC 120V/60Hz
Trade Name	: TRANWO
Measurement Standard	: FCC Part 15 Subpart C Paragraph 15.249
Measurement Procedure	: ANSI C63.4:1992
Test Result	: Complied

NVLAP
NVLAP Lab Code : 200347-0

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	:	Wireless color Camera
Trade Name	:	TRANWO
FCC ID.	:	O6LTTA-45T
Model No.	:	TTA-45T
Frequency Range	:	2434MHz to 2473MHz
Channel Number	:	3
Type of Modulation	:	FM
Antenna type	:	Soldered on PCB
Operator Selection of Operating Frequency	:	Manual Switch
Power Adapter (Mode 1)	:	AHEAD, MW35-0900300 Cable Out: Non-shielded, 1.9m
Power Adapter (Mode 2)	:	HON-KWANG, D9300 Cable Out: Non-shielded, 1.8m.

Frequency of each Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2434 MHz	Channel 2:	2453 MHz	Channel 3:	2473 MHz

Note:

1. This device is a 2.4GHz Wireless color Camera included a 2.4GHz transmitting function.
2. Regards to the frequency band operation, the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
4. This device is a composite device in accordance with part 15 regulations. The function for the receiver was measured and made a test report that the report number is 02AH064F, certified under verification.
5. QuieTek had verified the construction and function in typical operation, then shown in this test report.

   EMI Mode : Mode 1 : AHEAD (MW35-0900300)
   Mode 2 : HON-KWANG (D9300)

   *QTK had check difference adapter just affect Radiation Emission (30MHz~1GHz) and Conduction Emission (15MHz~30MHz), so QTK tests both of them.
   Adapter do not affect RF test (upon 1 GHz), so QTK chooses “Mode 1” to test other items for RF.

1.2. Operation Description

The EUT is wireless outdoor Camera. The operation frequency is from 2.434GHz to 2.473GHz with FM modulation. Three manually selectable channels were built in the EUT. the signal will be transmitted through 2.4 GHz FM RF signal from the soldered on PCB antenna from EUT to receiver. DC 9V shall be provided for EUT operation.

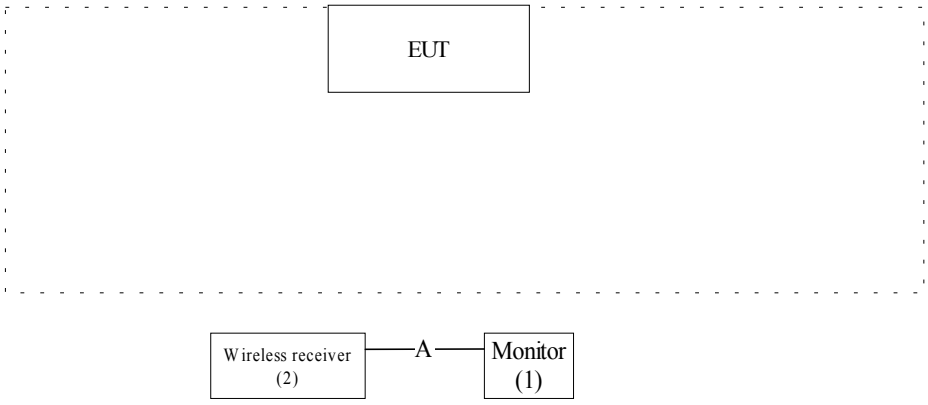
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	Monitor	SONY	PVM-14M2U	2013141	Non-shielded, 1.6m
(2)	Wireless receiver	TRANWO	TTA-13R	N/A	Non-shielded, 3.6m.

Signal Cable Type		Signal cable Description
A.	AV Cable	Non-shielded, 1.5m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1.5.1 Setup the EUT and display as shown on 1.4.

1.5.2 Turn on the power of all equipment.

1.5.3 The EUT will transmit the signal.

1.5.4 Repeat the above procedure 1.5.2 to 1.5.3

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: November 3, 1998 File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2

August 30, 2001 Accreditation on NVLAP
NVLAP Lab Code: 200347-0

NVLAP Lab Code : 200347-0

Site Name: Quietek Corporation

Site Address: No. 75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-592-8858 / FAX : 886-3-592-8859
E-Mail: service@quietek.com

2. Conducted Emission

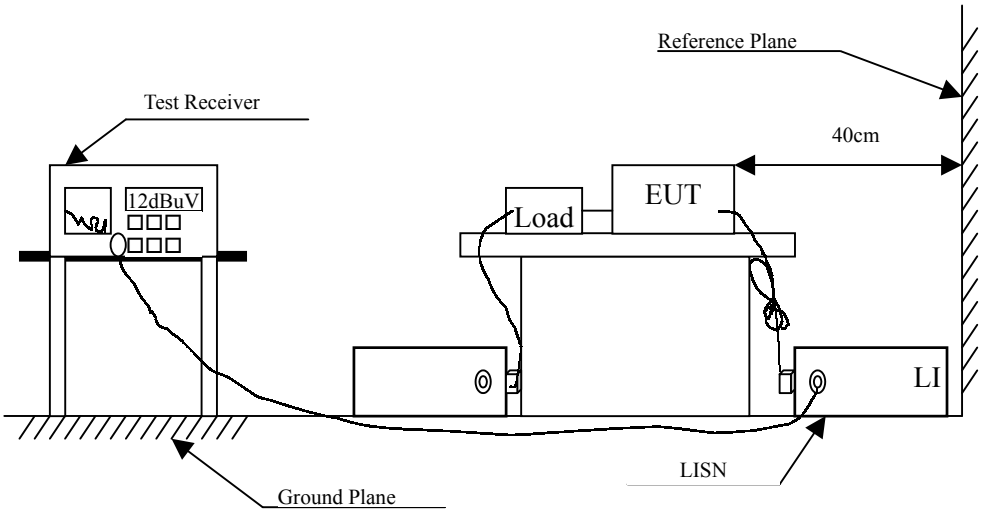
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2002	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2002	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2002	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	N/A	
5	No.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency MHz	Limits	
	uV	dBuV
0.45 - 30	250	48.0

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:1992 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.45MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Result of Conducted Emission

Product : Wireless color Camera
Test Item : Conducted Emission Test
Test Mode : Mode 1 : AHEAD (MW35-0900300)

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
Line 1					
Quasi-Peak:					
0.493	0.06	0.21	23.17	23.45	48.00
*0.536	0.07	0.22	26.53	26.82	48.00
0.602	0.07	0.23	25.03	25.33	48.00
0.637	0.08	0.24	22.34	22.65	48.00
0.739	0.08	0.25	11.30	11.63	48.00
17.735	0.34	0.55	25.55	26.44	48.00
Line 2					
Quasi-Peak:					
0.532	0.07	0.22	28.10	28.39	48.00
*0.563	0.07	0.23	30.01	30.30	48.00
0.665	0.08	0.24	27.13	27.45	48.00
0.708	0.08	0.25	24.16	24.49	48.00
0.739	0.08	0.25	21.43	21.76	48.00
17.735	0.34	0.55	23.66	24.55	48.00

Remarks :

1. All Readings below 1GHz are Quasi-Peak value.
2. " * " means that this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

Product : Wireless color Camera
Test Item : Conducted Emission Test
Test Mode : Mode 2 : HON-KWANG (D9300)

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
Line 1					
Quasi-Peak:					
0.462	0.06	0.21	30.41	30.68	48.00
0.497	0.06	0.21	25.31	25.59	48.00
0.540	0.07	0.22	29.80	30.09	48.00
0.595	0.07	0.23	33.21	33.51	48.00
*0.637	0.08	0.24	34.14	34.45	48.00
17.735	0.34	0.55	26.66	27.55	48.00
Line 2					
Quasi-Peak:					
0.470	0.06	0.21	28.31	28.58	48.00
0.512	0.06	0.22	27.54	27.82	48.00
*0.618	0.07	0.23	34.04	34.35	48.00
0.762	0.09	0.25	29.02	29.36	48.00
0.919	0.10	0.27	21.36	21.73	48.00
17.735	0.34	0.55	24.66	25.55	48.00

Remarks :

1. All Readings below 1GHz are Quasi-Peak value.
2. " * " means that this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

3. Radiated Emission

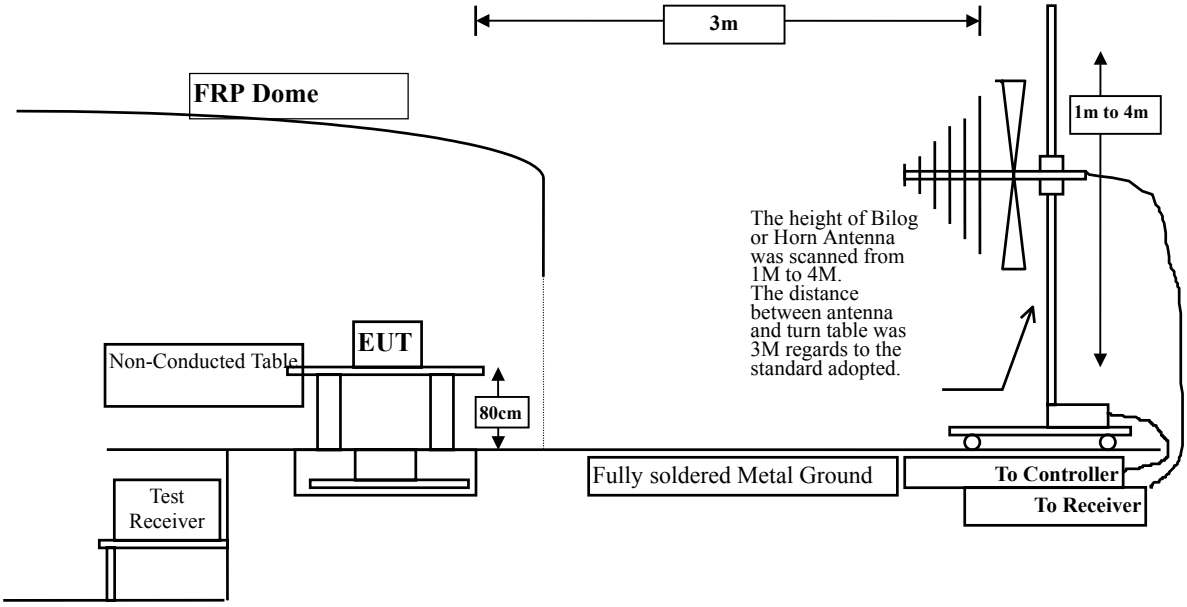
3.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 1	X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2002
	X	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2002
	X	Pre-Amplifier	HP	8447D/3307A01812	May, 2002
	X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2002
	X	Horn Antenna	EM	EM6917 / 103325	May, 2002
Site # 2		Test Receiver	R & S	ESCS 30 / 825442/17	May, 2002
		Spectrum Analyzer	Advantest	R3261C / 71720609	May, 2002
		Pre-Amplifier	HP	8447D/3307A01814	May, 2002
		Bilog Antenna	Chase	CBL6112B / 2455	Sep.,2002
		Horn Antenna	EM	EM6917 / 103325	May, 2002

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. Mark "X" test instruments are used to measure the final test results.

3.2. Test Setup



3.3. Limits

➢ **Fundamental and Harmonics Emission Limits**

FCC Part 15 Subpart B Paragraph 15.249(a) Limits						
Frequency	Field Strength of Fundamental			Field Strength of Harmonics		
MHz	(mV/m @3m)	(dBuV/m @3m)		(uV/m @3m)	(dBuV/m @3m)	
902-928	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)
5725-5875	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

➢ **General Radiated Emission Limits**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart B Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
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.

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:1992 on radiated measurement.
Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 3 meters.
The frequency range from 30MHz to 10th harminics is checked.

3.5. Test Result of Radiated Emission

Product : Wireless color Camera
Test Item : Fundamental Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Normal Operation

Freq.	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m
Peak Detector (Horizontal)							
Channel 1							
2434.125	2.46	29.46	34.95	67.44	64.41	49.59	114.00
Channel 2							
2451.922	2.47	29.52	34.95	67.88	64.92	49.08	114.00
Channel 3							
2472.077	2.49	29.56	34.95	68.06	65.16	48.84	114.00
Peak Detector (Vertical)							
Channel 1							
2432.471	2.46	29.46	34.95	67.17	64.14	49.86	114.00
Channel 2							
2453.025	2.47	29.52	34.95	68.65	65.69	48.31	114.00
Channel 3							
2471.726	2.49	29.56	34.95	68.64	65.74	48.26	114.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless color Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Channel 1

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal							
Peak Detector:							
4866.369	3.78	33.56	34.69	50.81	53.46	20.54	74.00
7298.089	4.89	36.29	34.99	43.18	< 49.37	24.63	74.00
9731.211	5.67	37.45	35.10	44.40	< 52.41	21.59	74.00
Vertical							
Peak Detector:							
4867.021	3.78	33.56	34.69	50.23	52.88	21.12	74.00
7298.840	4.89	36.29	34.99	43.56	< 49.75	24.25	74.00
9730.860	5.67	37.45	35.10	44.38	< 52.39	21.61	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless color Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Channel 2

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal							
Peak Detector:							
4905.724	3.80	33.59	34.69	49.54	52.23	21.77	74.00
7358.724	4.90	36.36	35.01	41.99	< 48.24	25.76	74.00
9811.724	5.70	37.46	35.10	44.23	< 52.28	21.72	74.00
Vertical							
Peak Detector:							
4905.473	3.80	33.59	34.69	50.39	53.08	20.92	74.00
7358.774	4.90	36.36	35.01	42.58	< 48.83	25.17	74.00
9811.874	5.70	37.46	35.10	43.65	< 51.70	22.30	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless color Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Channel 3

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal							
Peak Detector:							
4944.672	3.81	33.64	34.70	50.67	53.42	20.58	74.00
7418.724	4.91	36.41	35.02	43.28	< 49.57	24.43	74.00
9891.874	5.73	37.48	35.10	44.60	< 52.70	21.30	74.00
Vertical							
Peak Detector:							
4945.273	3.81	33.64	34.70	50.29	53.04	20.96	74.00
7418.624	4.91	36.41	35.02	43.36	< 49.65	24.35	74.00
9891.524	5.73	37.48	35.10	43.74	< 51.84	22.16	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 1:AHEAD (MW35-0900300)Channel 1

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
62.810	1.47	6.31	0.00	6.56	14.34	25.66	40.00
*83.253	1.66	10.43	0.00	11.60	23.70	16.30	40.00
113.747	1.95	12.39	0.00	0.40	14.74	28.76	43.50
169.240	2.49	10.58	0.00	2.81	15.88	27.62	43.50
197.747	2.77	10.00	0.00	1.93	14.69	28.81	43.50
381.900	4.17	16.38	0.00	-3.21	17.34	28.66	46.00
Vertical:							
53.200	1.37	7.54	0.00	10.31	19.22	20.78	40.00
71.180	1.54	8.74	0.00	10.68	20.96	19.04	40.00
199.240	2.78	9.68	0.00	7.49	19.95	23.55	43.50
244.125	3.21	12.93	0.00	0.19	16.33	29.67	46.00
*675.250	5.71	19.43	0.00	2.37	27.51	18.49	46.00
987.150	7.33	21.99	0.00	-1.28	28.04	25.96	54.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 1:AHEAD (MW35-0900300)Channel 2

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
83.253	1.66	10.43	0.00	6.65	18.75	21.25	40.00
113.747	1.95	12.39	0.00	1.26	15.60	27.90	43.50
182.345	2.62	9.52	0.00	2.56	14.70	28.80	43.50
266.340	3.43	13.15	0.00	3.51	20.09	25.91	46.00
364.312	4.09	16.12	0.00	2.37	22.57	23.43	46.00
*634.800	5.49	19.38	0.00	1.03	25.90	20.10	46.00
Vertical:							
53.200	1.37	7.54	0.00	1.98	10.89	29.11	40.00
*71.250	1.55	9.13	0.00	11.34	22.02	17.98	40.00
144.310	2.25	10.80	0.00	3.50	16.55	26.95	43.50
206.003	2.84	9.71	0.00	5.30	17.85	25.65	43.50
371.003	4.12	15.57	0.00	3.15	22.84	23.16	46.00
429.003	4.43	16.68	0.00	2.04	23.15	22.85	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 1:AHEAD (MW35-0900300)Channel 3

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
53.450	1.37	6.17	0.00	6.89	14.43	25.57	40.00
*83.259	1.66	10.43	0.00	10.04	22.14	17.86	40.00
113.745	1.95	12.39	0.00	1.20	15.54	27.96	43.50
177.450	2.57	10.01	0.00	2.56	15.14	28.36	43.50
248.420	3.25	12.85	0.00	4.01	20.11	25.89	46.00
305.220	3.78	13.68	0.00	0.78	18.24	27.76	46.00
Vertical:							
32.010	1.17	15.52	0.00	2.00	18.69	21.31	40.00
*53.200	1.37	7.54	0.00	11.03	19.94	20.06	40.00
144.310	2.25	10.80	0.00	5.10	18.15	25.35	43.50
256.290	3.34	13.45	0.00	4.10	20.89	25.11	46.00
319.150	3.85	14.16	0.00	5.00	23.02	22.98	46.00
450.000	4.53	16.58	0.00	1.69	22.80	23.20	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 2:HON-KWANG (D9300)Channel 1

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
114.000	1.96	12.39	0.00	0.30	14.65	28.85	43.50
150.000	2.31	11.96	0.00	-2.17	12.10	31.40	43.50
192.000	2.71	9.62	0.00	0.20	12.53	30.97	43.50
250.000	3.27	12.97	0.00	-1.81	14.43	31.57	46.00
384.075	4.19	16.38	0.00	2.94	23.51	22.49	46.00
500.000	4.79	17.96	0.00	-2.86	19.89	26.11	46.00
*729.850	5.99	20.12	0.00	2.04	28.15	17.85	46.00
Vertical:							
114.000	1.96	11.88	0.00	4.72	18.56	24.94	43.50
150.000	2.31	10.38	0.00	2.85	15.54	27.96	43.50
192.025	2.71	8.24	0.00	3.53	14.48	29.02	43.50
250.000	3.27	13.32	0.00	1.86	18.45	27.55	46.00
336.075	3.94	14.31	0.00	2.89	21.14	24.86	46.00
384.075	4.19	15.71	0.00	0.49	20.39	25.61	46.00
*729.800	5.99	20.14	0.00	4.11	30.24	15.76	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 2:HON-KWANG (D9300)Channel 2

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
114.000	1.96	12.39	0.00	0.65	15.00	28.50	43.50
150.000	2.31	11.96	0.00	-1.30	12.97	30.53	43.50
192.000	2.71	9.62	0.00	0.31	12.64	30.86	43.50
250.000	3.27	12.97	0.00	-1.35	14.89	31.11	46.00
384.100	4.19	16.38	0.00	2.03	22.60	23.40	46.00
*729.835	5.99	20.12	0.00	1.58	27.69	18.31	46.00
Vertical:							
114.000	1.96	11.88	0.00	3.57	17.41	26.09	43.50
150.000	2.31	10.38	0.00	2.31	15.00	28.50	43.50
192.023	2.71	8.24	0.00	3.21	14.16	29.34	43.50
250.000	3.27	13.32	0.00	1.69	18.28	27.72	46.00
336.070	3.94	14.31	0.00	2.35	20.60	25.40	46.00
384.080	4.19	15.71	0.00	0.38	20.28	25.72	46.00
*729.810	5.99	20.14	0.00	3.12	29.25	16.75	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : Wireless color Camera
Test Item : General Radiated Emission Data
Test Site : No.1 OATS
Test Mode : Mode 2:HON-KWANG (D9300)Channel 3

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal:							
114.000	1.96	12.39	0.00	0.41	14.76	28.74	43.50
150.000	2.31	11.96	0.00	-1.30	12.97	30.53	43.50
192.000	2.71	9.62	0.00	0.31	12.64	30.86	43.50
250.000	3.27	12.97	0.00	-1.35	14.89	31.11	46.00
384.075	4.19	16.38	0.00	2.68	23.25	22.75	46.00
*729.850	5.99	20.12	0.00	1.68	27.79	18.21	46.00
Vertical:							
114.000	1.96	11.88	0.00	3.25	17.09	26.41	43.50
150.000	2.31	10.38	0.00	2.38	15.07	28.43	43.50
192.000	2.71	8.24	0.00	3.21	14.16	29.34	43.50
250.000	3.27	13.32	0.00	1.35	17.94	28.06	46.00
336.810	3.95	14.34	0.00	1.98	20.27	25.73	46.00
*729.800	5.99	20.14	0.00	3.58	29.71	16.29	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

4. Band Edge

4.1. Test Equipment

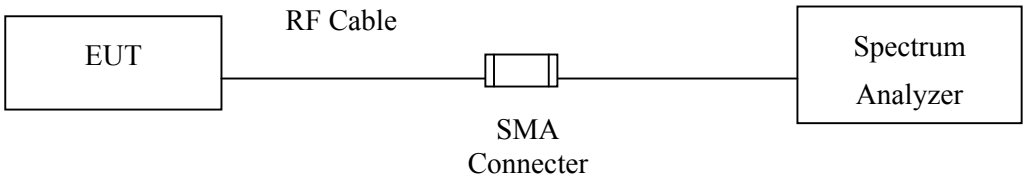
The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Advantest	R3272 / 72421194	May, 2002
X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2002
X	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2002
X	Pre-Amplifier	HP	8447D/3307A01812	May, 2002
X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2002
X	Horn Antenna	EM	EM6917 / 103325	May, 2002

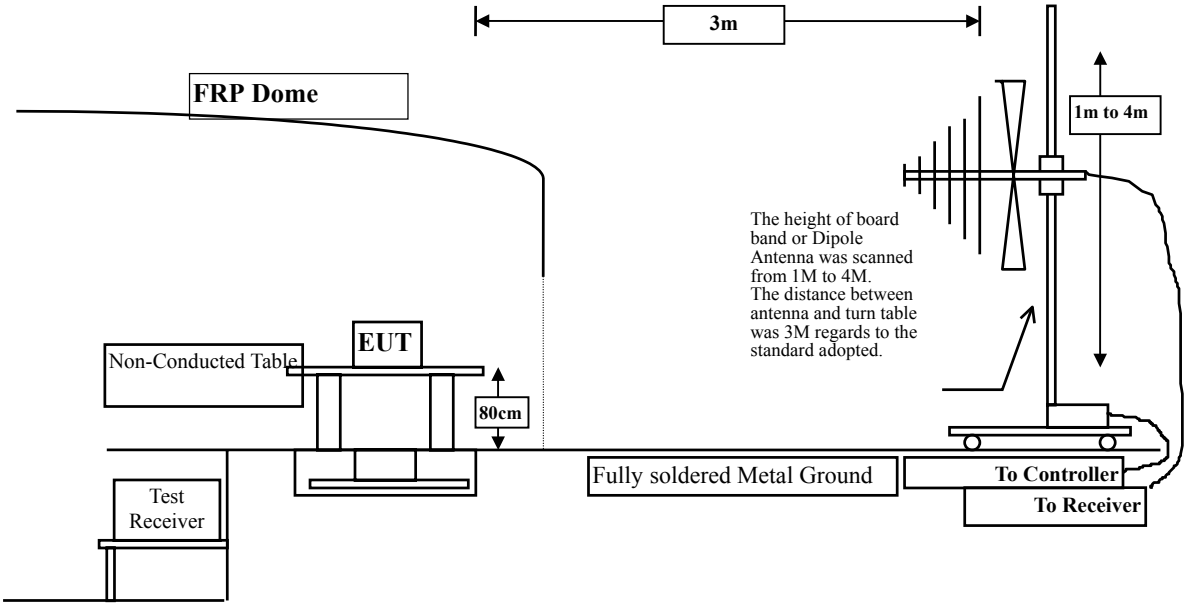
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. Mark "X" test instruments are used to measure the final test results.

4.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



4.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

4.4. Standard Reqirement

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

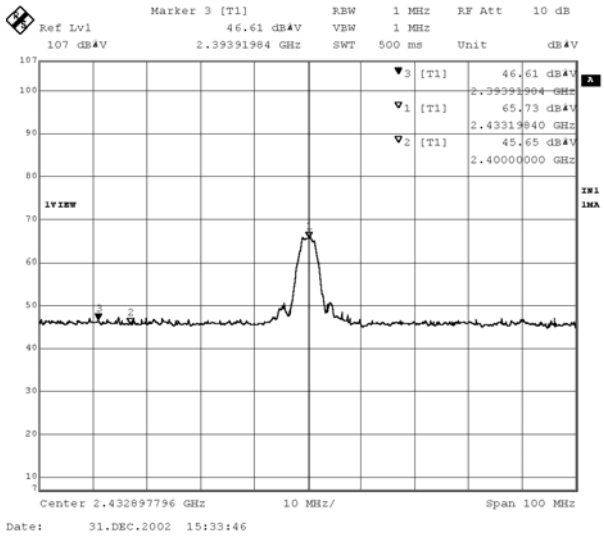
4.5. Test Result of Band Edge

Product : Wireless color Camera
Test Item : Band Edge Data
Test Site : No.1 OATS
Test Mode : Channel 1

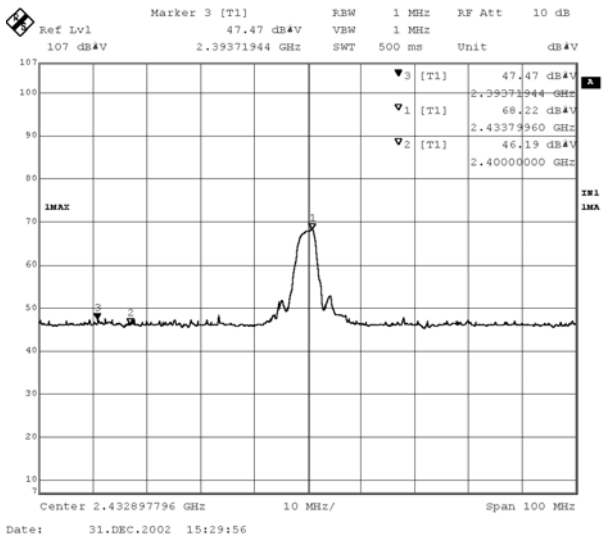
RF Radiated Measurement: (Peak Detector)

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
1(Horizontal)	2393.919	46.61	29.36	2.43	34.94	43.45	74	Pass
1 (Vertical)	2393.719	47.47	29.36	2.43	34.94	44.31	74	Pass

Horizontal



Vertical



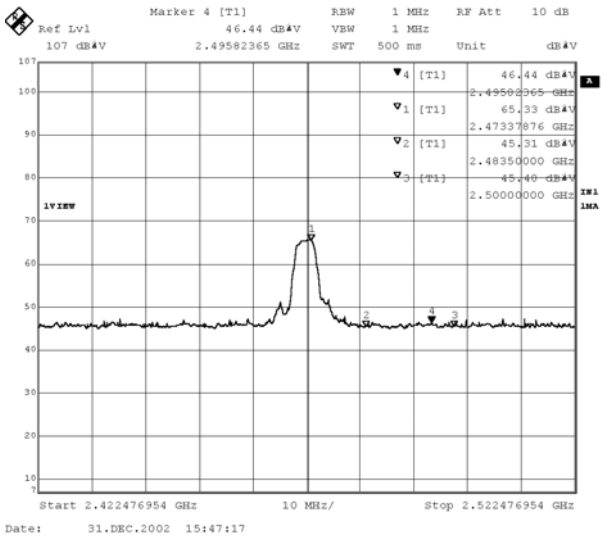
Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Wireless color Camera
Test Item : Band Edge Data
Test Site : No.1 OATS
Test Mode : Channel 3

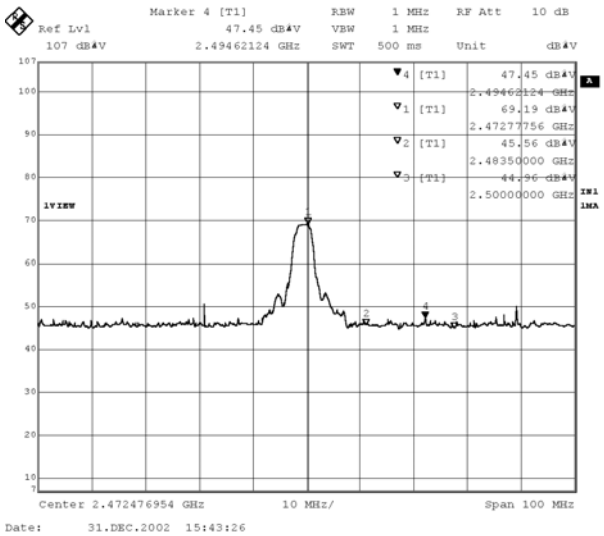
RF Radiated Measurement: (Peak Detector)

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
3(Horizontal)	2495.823	46.44	29.62	2.52	29.62	43.63	74	Pass
3 (Vertical)	2494.621	47.45	29.62	2.52	34.95	44.64	74	Pass

Horizontal



Vertical



Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

5. EMI Reduction Method During Compliance Testing

No modification was made during testing.

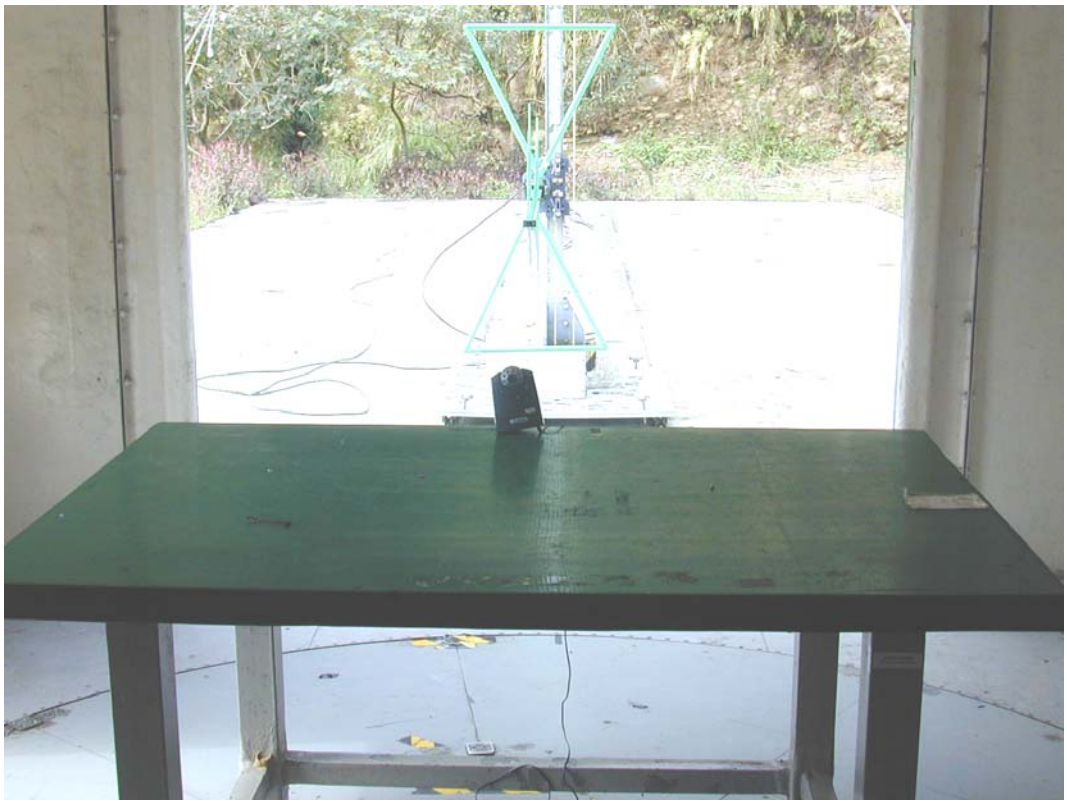
Attachment 1 : EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

Front View of Conducted Test

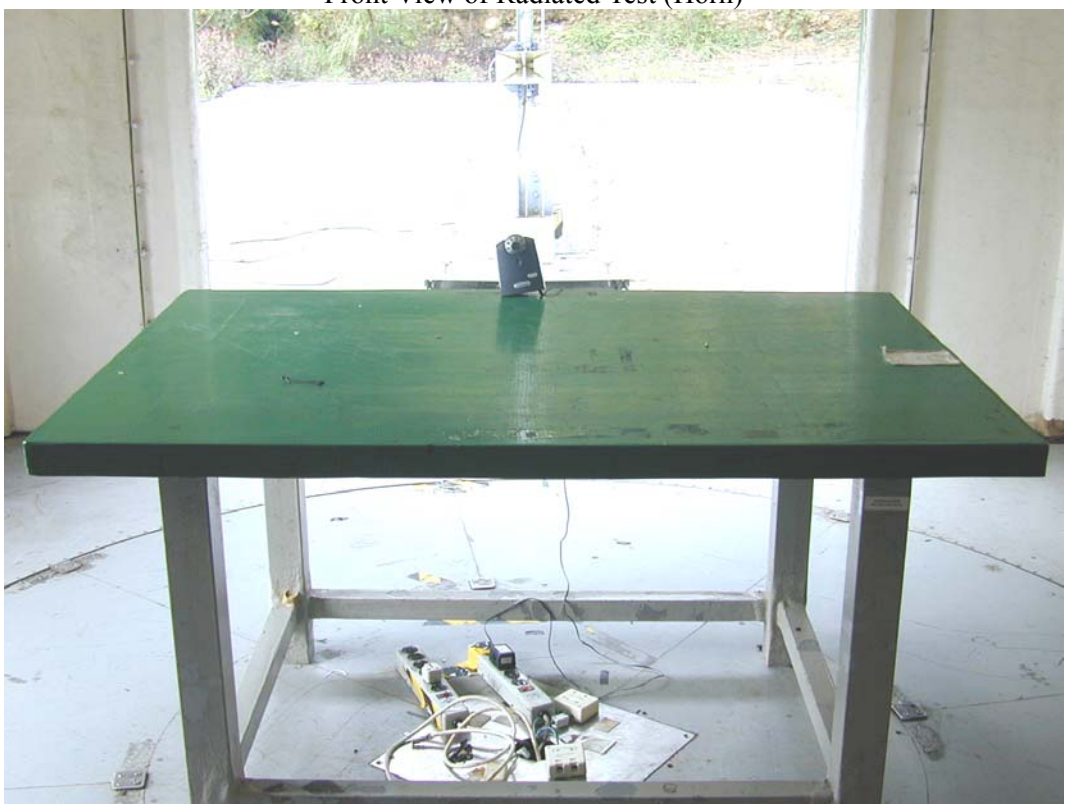
Back View of Conducted Test

Front View of Radiated Test



Back View of Radiated Test

Front View of Radiated Test (Horn)



Attachment 2 : EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

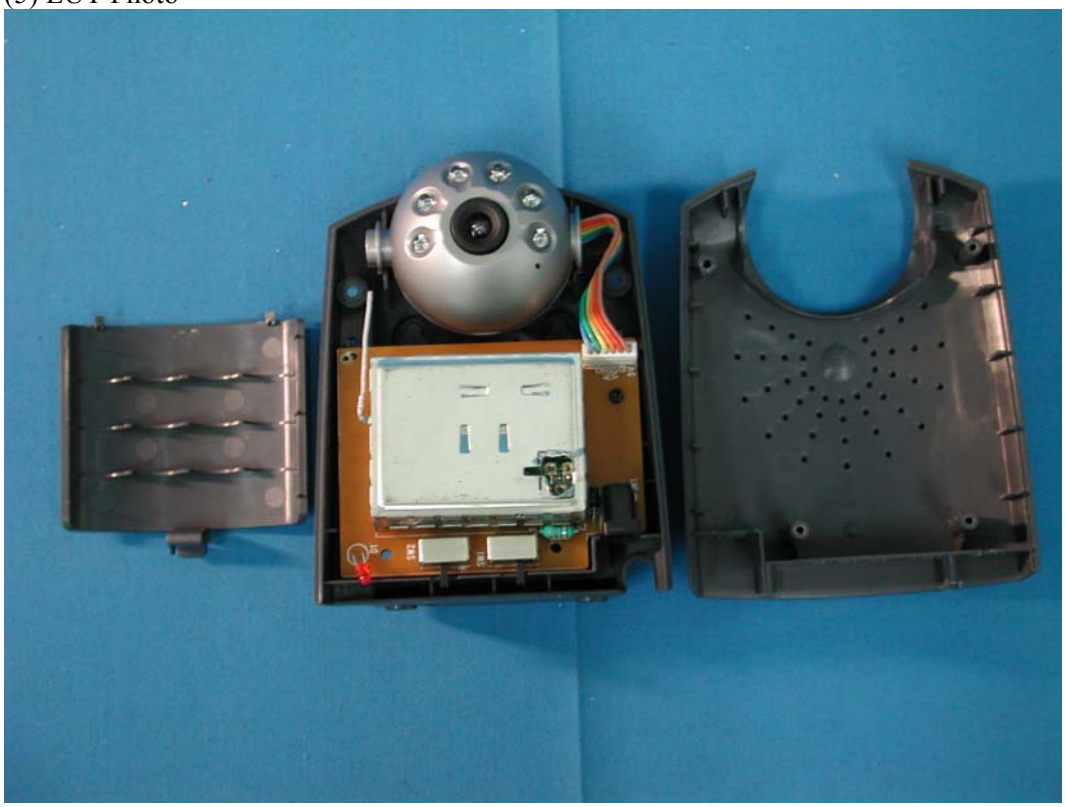
(1) EUT Photo (Adapter : AHEAD, MW35-0900300)

(2) EUT Photo (Adapter : AHEAD, MW35-0900300)

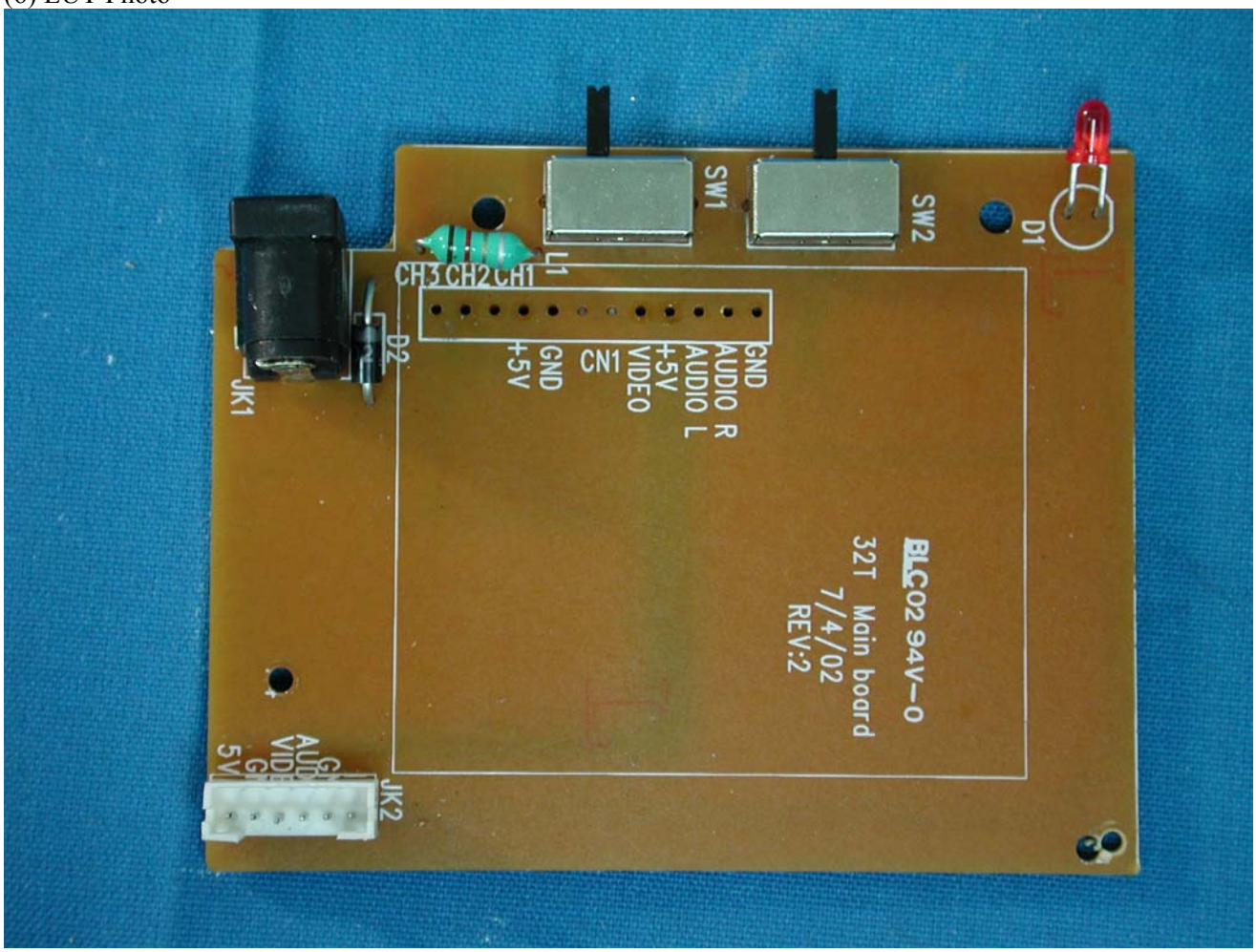
(3) EUT Photo (Adapter : HOK-KWANG, D9300)

(4) EUT Photo (Adapter : HOK-KWANG, D9300)

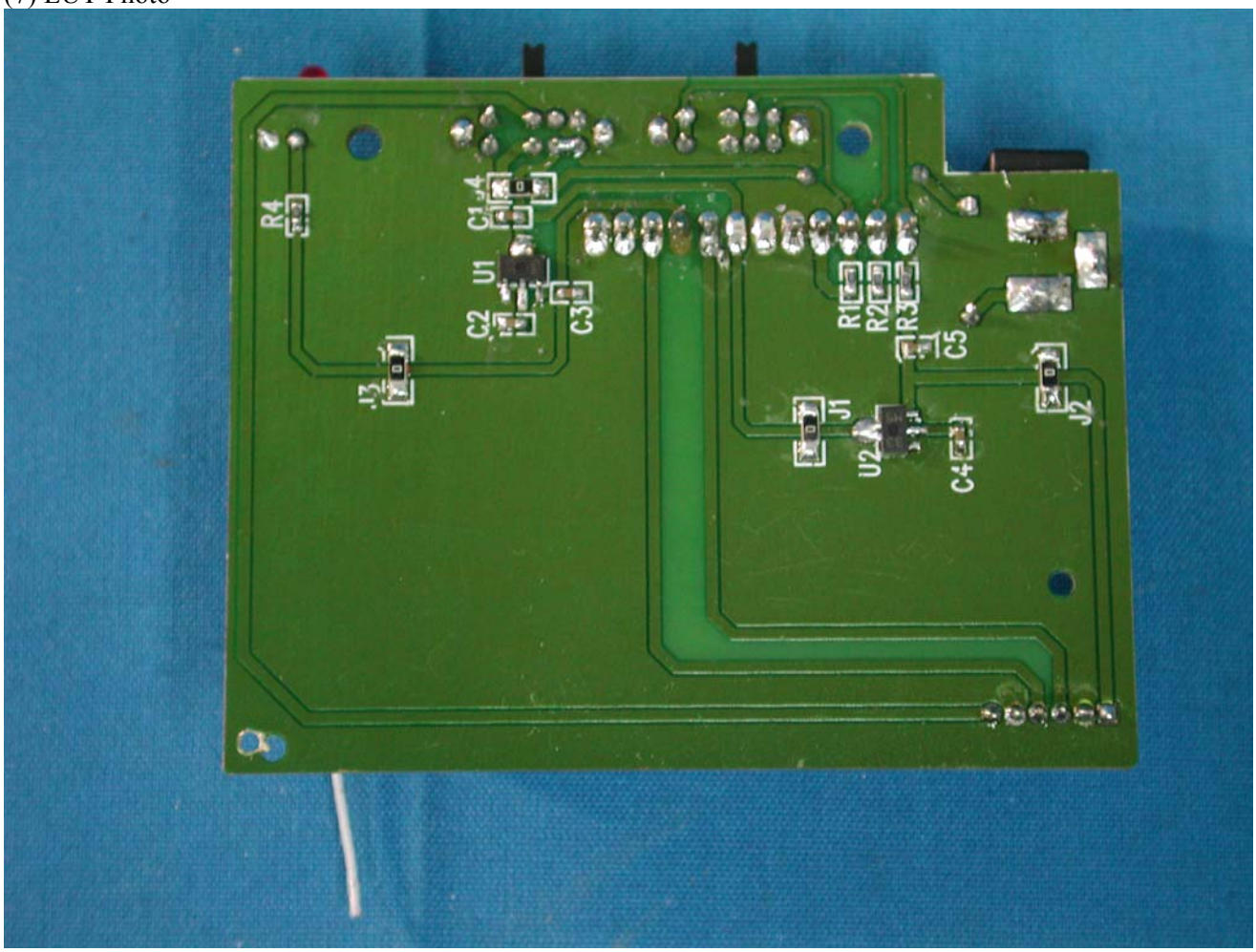
(5) EUT Photo



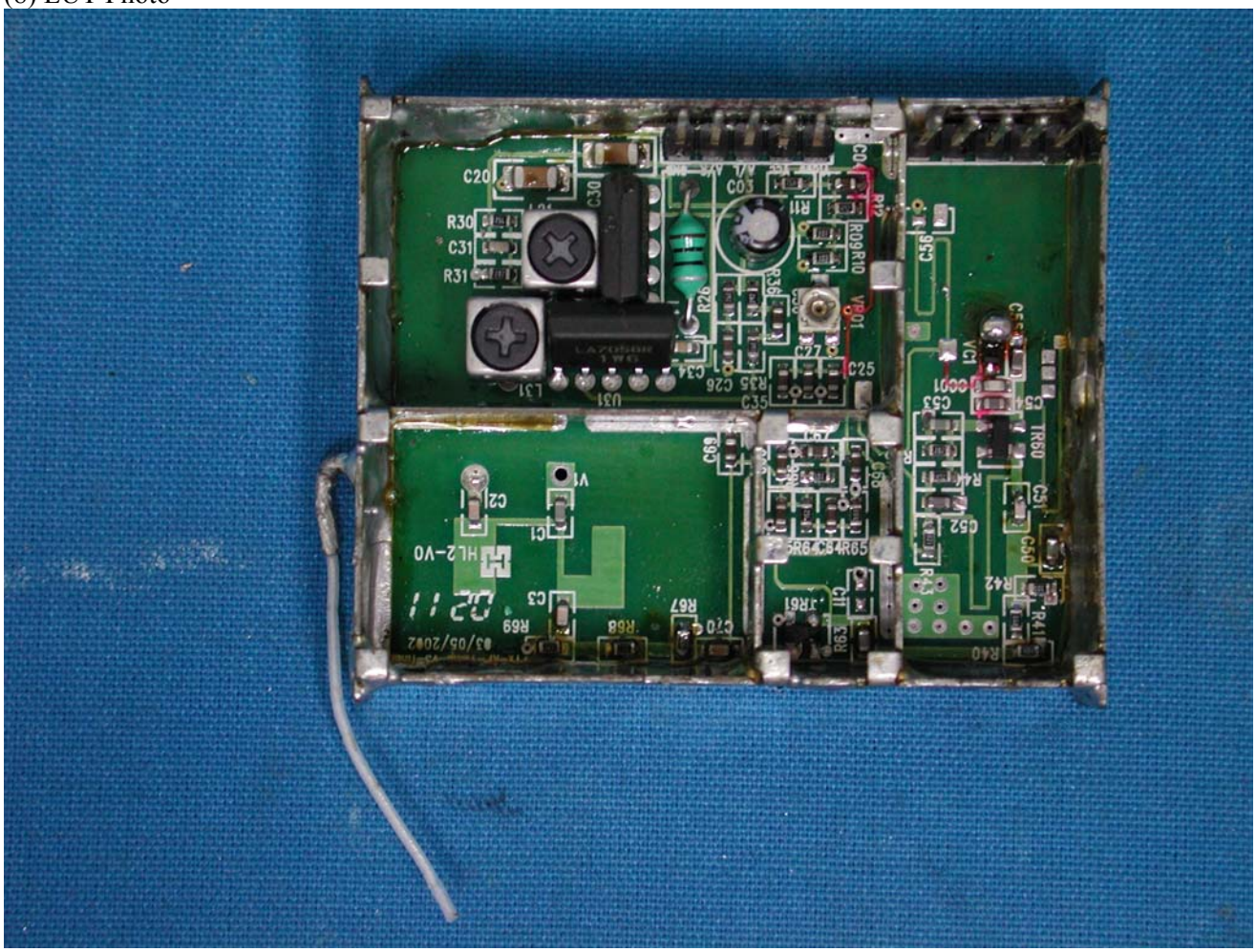
(6) EUT Photo


D1
SW2
SW1
L1
CH3 CH2 CH1
GND
AUDIO R
AUDIO L
+5V
VIDEO
CN1
GND
+5V
D2
JK1
BLC02 94V-0
32T Main board
7/4/02
REV:2
JK2

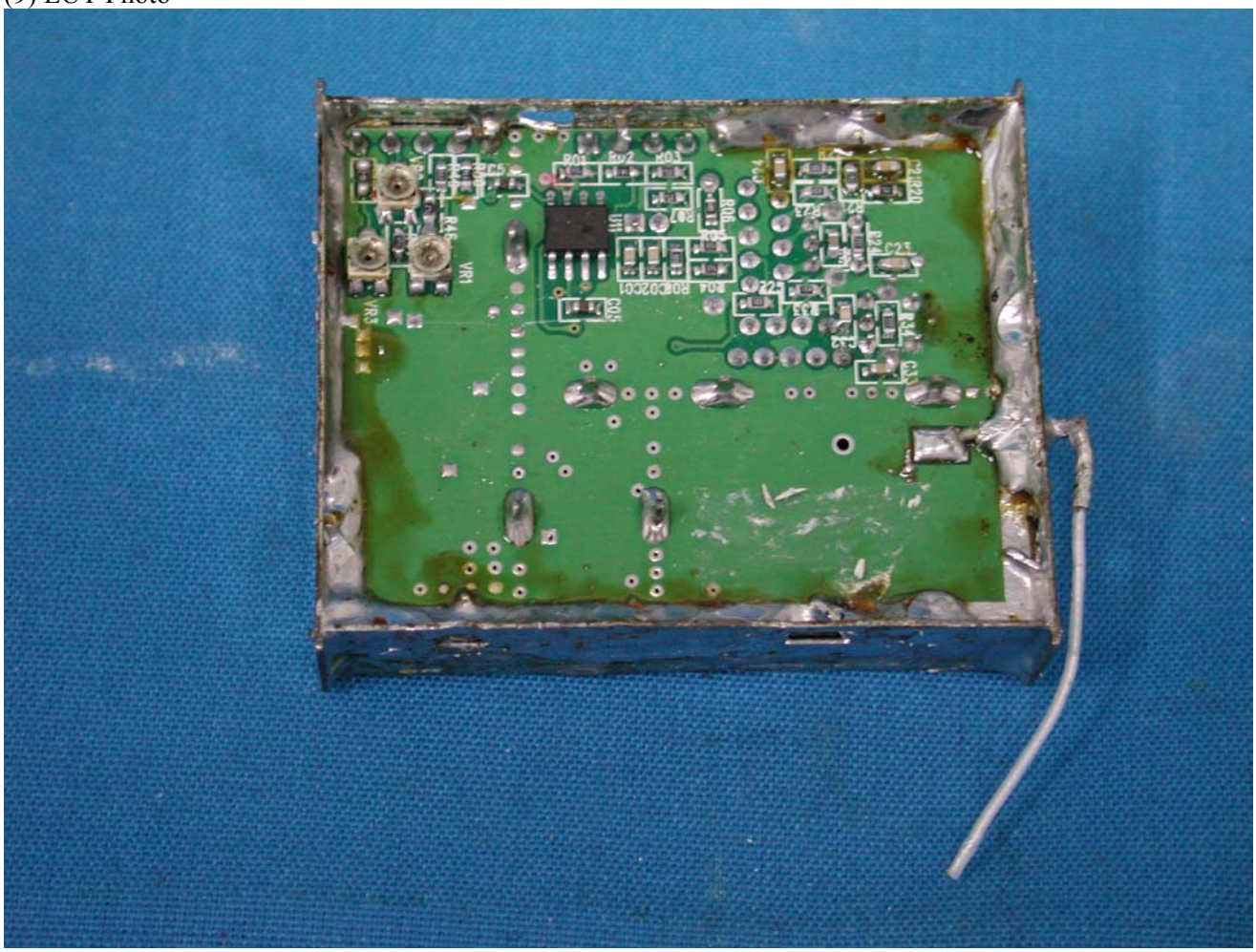
(7) EUT Photo



(8) EUT Photo



(9) EUT Photo


R01
R02
R03
R04
R05
R06
R07
R08
R09
R10
R11
R12
R13
R14
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R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
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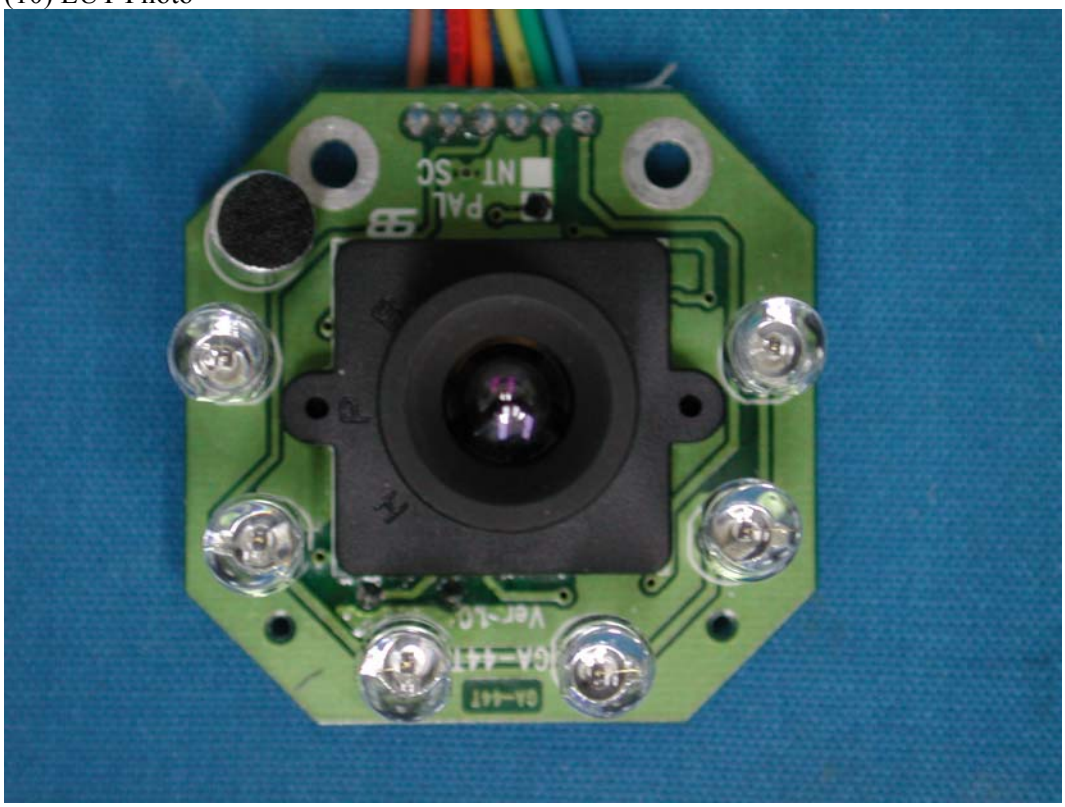
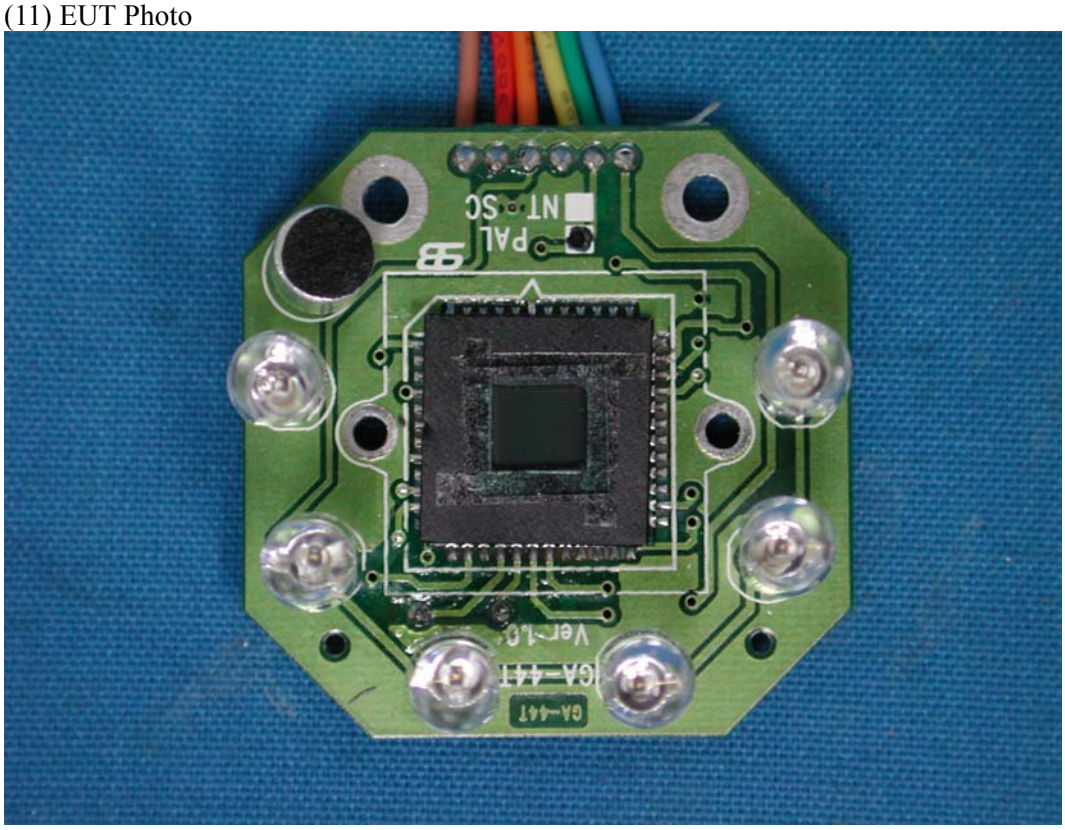
R35
R36
R37
R38
R39
R40
R41

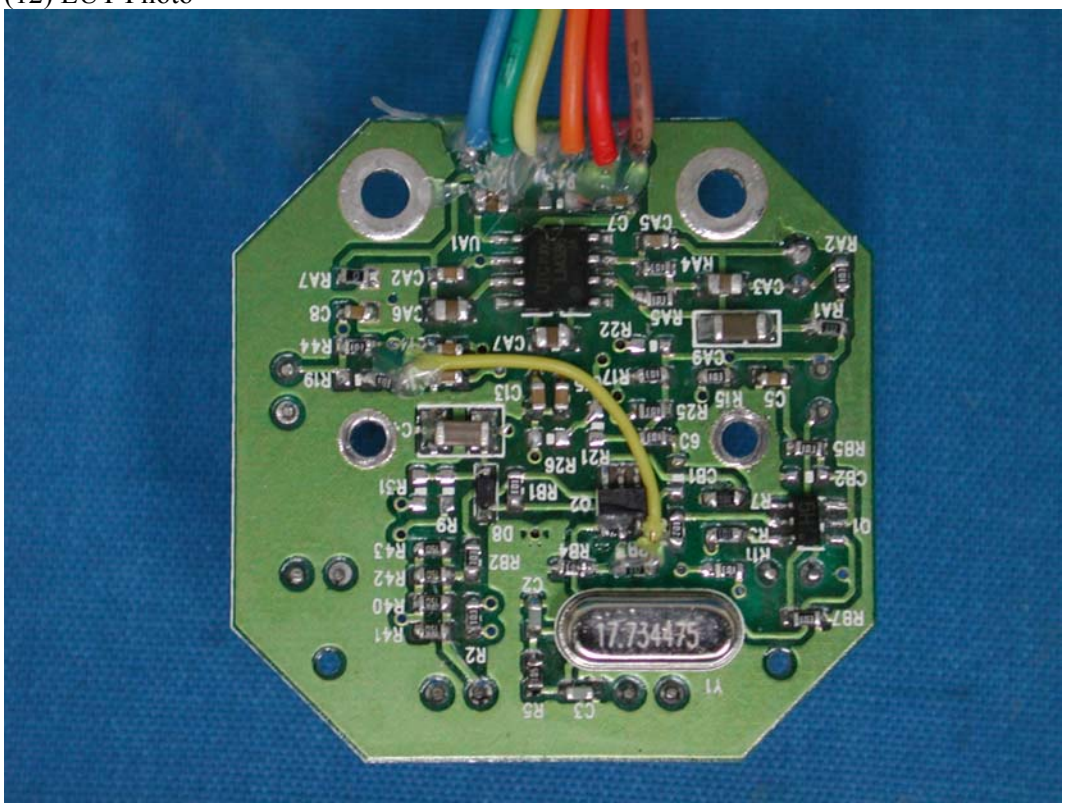
(10) EUT Photo



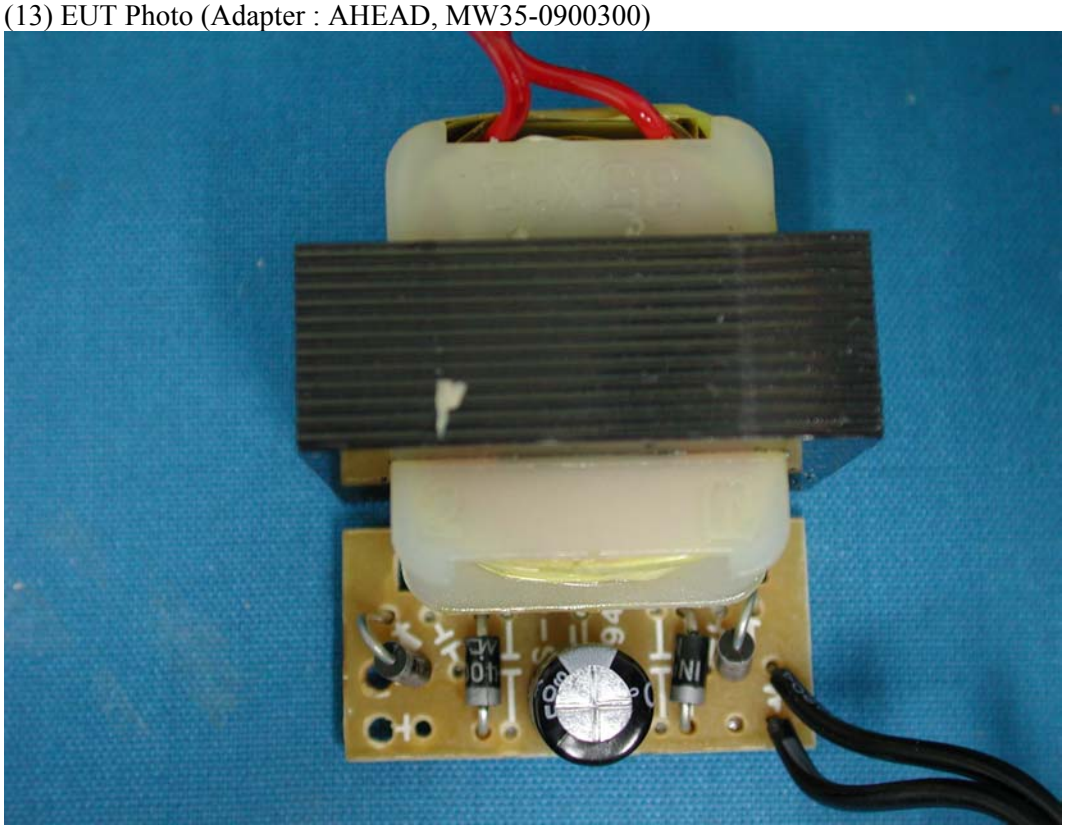
(11) EUT Photo



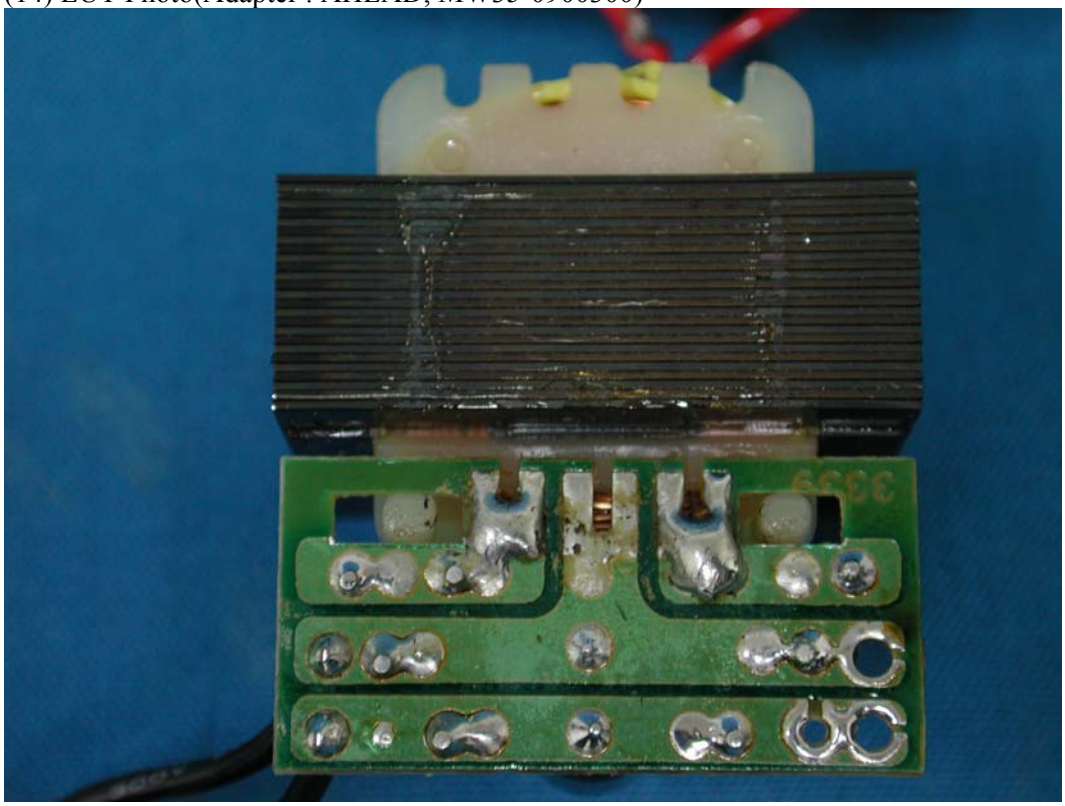
(12) EUT Photo



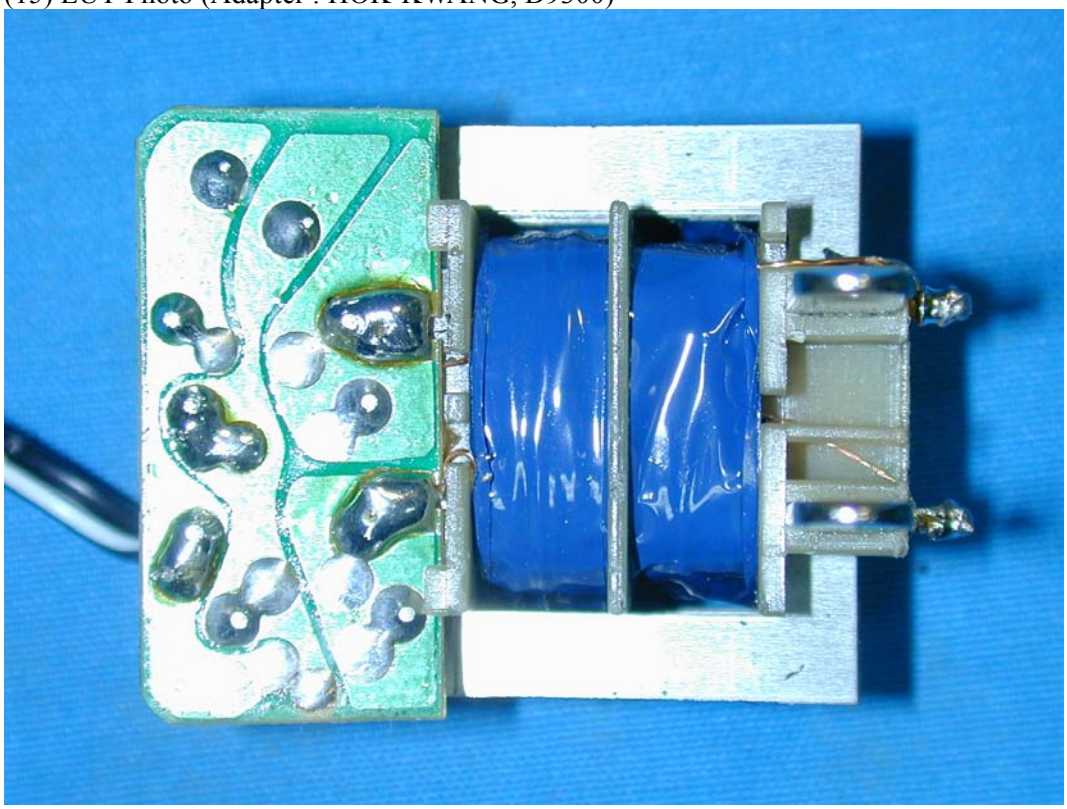
(13) EUT Photo (Adapter : AHEAD, MW35-0900300)



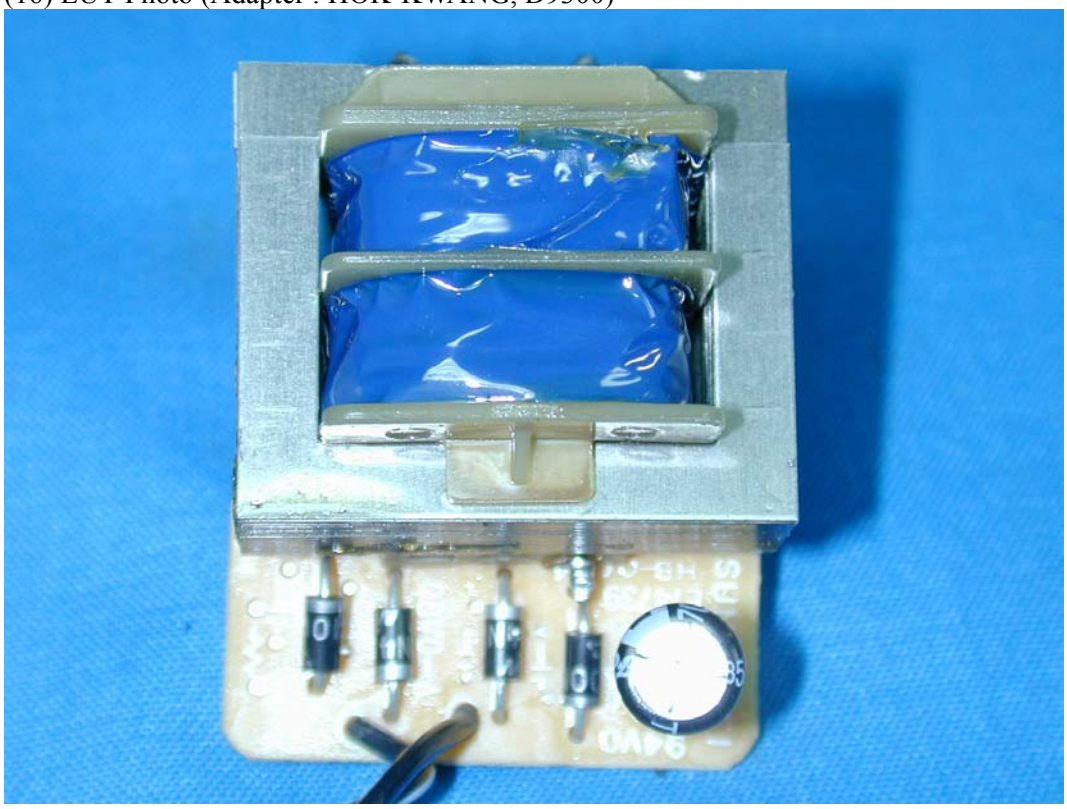
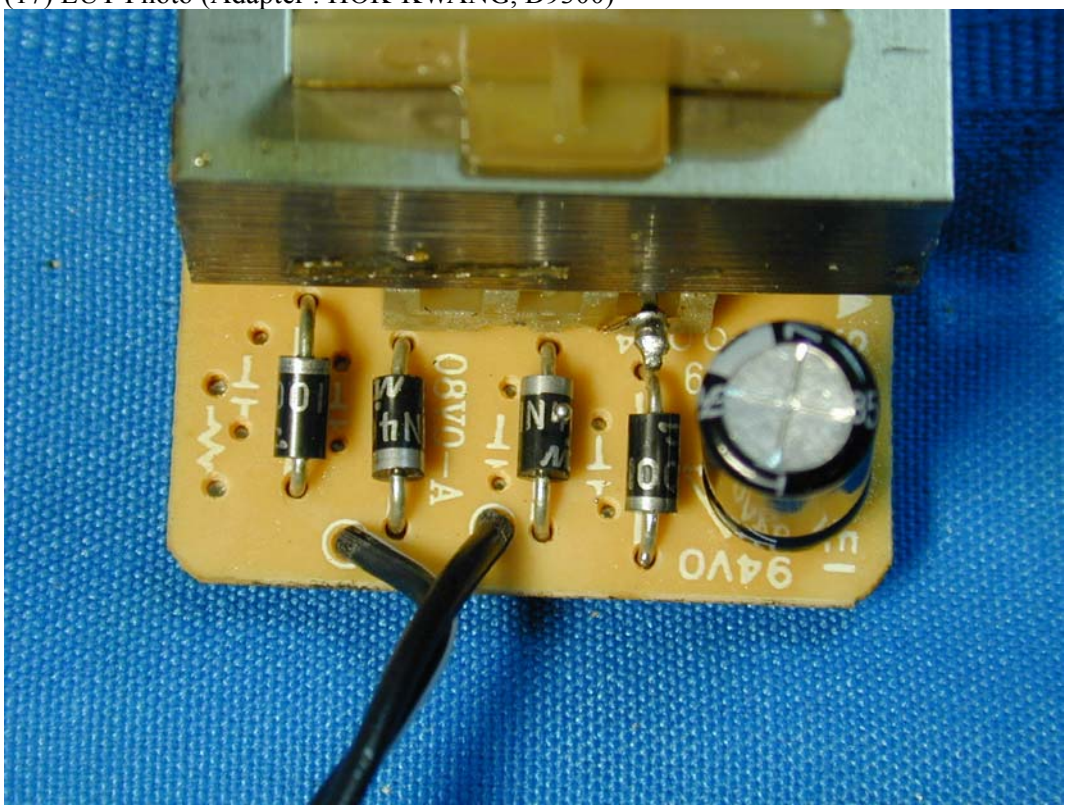
(14) EUT Photo(Adapter : AHEAD, MW35-0900300)



(15) EUT Photo (Adapter : HOK-KWANG, D9300)



(16) EUT Photo (Adapter : HOK-KWANG, D9300)



(17) EUT Photo (Adapter : HOK-KWANG, D9300)