EMC - Test Report

Model : ZioCam

Product type	**USB PC CAMERA**	**Serial No.**	**ZC002845**
Applicant	**Digitra Systems Inc.**		
Manufacturer	**Digitra Systems Inc.**		
Address	**8-61, GalWol-Dong, YongSan-Ku, Seoul, Korea**		

Test specification (Standard) : **FCC Part15 Subpart B Class B**

Test Result : **Pass**

Tested by (Test engineer)			*Reviewed by (EMC Manager)*		
2000-08-11	**Young Joon, Park**		**2000-08-11**	**James, Hong**	
Date	Name	Signature	Date	Name	Signature

Definition **Pass**: Test passed, **Fail** : Test failed, ☒ : Applicable, ☐ : Not Applicable, **N/A** : Not Applicable, **-** : Not Applicable

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1. EUT description

Introduction

ZioCam is a USB PC CAMERA.

Identification

Model : ZioCam

Manufacturer : Digitra Systems Inc.

Address : 8-61, GalWol-Dong, YongSan-Ku, Seoul, Korea

Contact person : Dong-Jun Lim

Telephone : +82 - 2 - 778 - 0025 (#37)

Serial No : ZC002845

EUT size : 3.27(W)x2.3(H)x1.48(D)

Peripheral Device Ports

Port name	Description
USB	Connect to PC' s USB Port

Electrical rating

Input : From PC' s USB Port

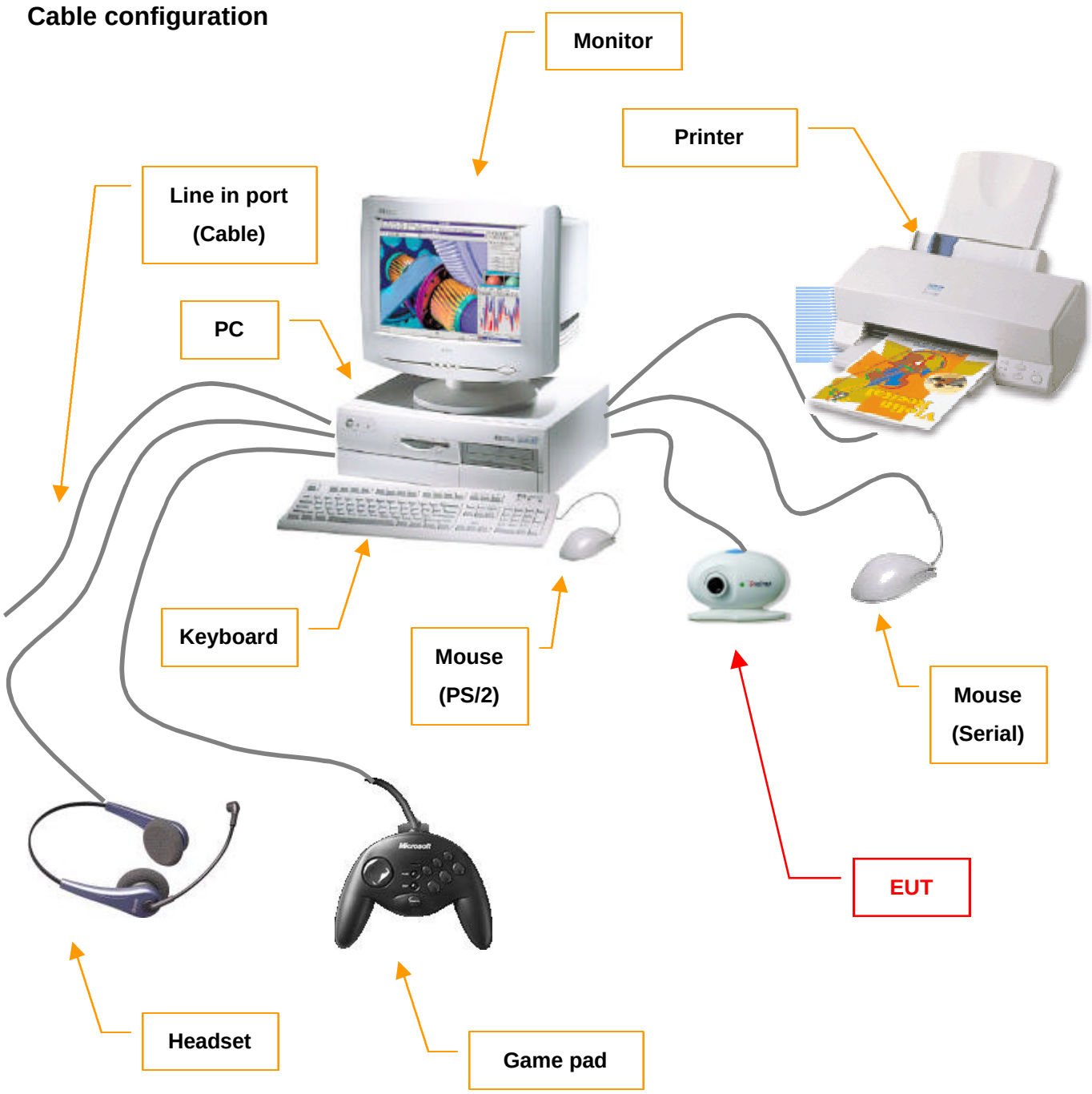
Output : -

2. Test Set-up

Test Mode

Normal operation mode. Display image to monitor screen

Cable configuration



Cable description

	Port name (start / end)	Type	Length (m)	Remark
A	EUT' s USB / PC' s USB	Shielded	1.5	Connected to PC' s USB Port
B	Printer' s Parallel / PC' s Parallel	Shielded (With Ferrite Core)	1.8	Connected to PC' s Parallel port
C	PC' s Serial / Mouse	Shielded	1.6	Connected Serial Mouse
D	PC' s Keyboard / Keyboard	Shielded	1.5	Connected PS/2 Keyboard
E	PC' s Mouse / Mouse	Shielded	1.6	Connected PS/2 Mouse
F	PC' s Sound (Speaker / Mic / Line in) / Headset & Cable	Unshielded	2.0	Connected Headset & Cable
G	PC' s Game Port / Game pad	Unshielded	2.0	Connected Game pad
H	PC' s Video / Monitor	Shielded (With Ferrite Core)	1.8	Connected Monitor

Auxiliary equipment

	Description	Model name	Serial No.	Manufacturer
1	PC	DTPC-17	G1703009	HEWLETT PACKARD
2	Monitor	PG17HS	301661	SAMSUNG
3	Keyboard	SK-2502C	M000351491	HEWLETT PACKARD
4	Mouse (PS/2)	M-S48	LZA84601000	LOGITECH
5	Mouse (USB)	M-BB48	LZE93853176	LOGITECH
6	Mouse (Serial)	M-S48	LZA91153127	SOTEC
7	Printer	Stylus COLOR 460	BWCE143331	EPSON
8	Game pad	Side Winder	03421317	MICROSOFT
9	Headset	Hi-sonic	-	-

Test software

Software name	Manufacturer	Version	Description
-	-	-	-

Measurement Procedures

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.
Final AC power line conducted emissions test was performed shielded room.(location is same as Preliminary test) Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.
Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst-case test mode and cable configuration.

∗ Measurement procedures was In accordance with ANSI C63.4-1992 7.2.3, 7.2.4 and 8.3.1.1, 8.3.1.2

3. Test Result

Test summary

Test	Result	Remark
Emission test (EMI)		
Radiated emission	**Pass**	
Conducted emission	**Pass**	

The tested ZioCam fully meets the Requirements of ANSI C63.4-1992 ,when operated as described in this report.

Representative of Certitek standards laboratory.

Date	Name	Signature
2000-08-11	**Kedin, Lyoum**	Kedin, Lyoum

Radiated emission

Test result: **Pass**

Date of testing : 2000/08/11

Ambient temperature: 28°C, Relative humidity: 52%, Atmospheric pressure: 1004hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
BBA9106	Schwarzbeck	Biconical antenna	41-00210
UHALP9107	Schwarzbeck	Log-periodic antenna	1452
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

Frequency Band 30MHz - 1000MHz

Antenna distance 3m (From the EUT)

Test data sheet

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
98.06	18.6	V	1.0	10.05	1.30	43.5	29.95	13.55
101.95	22.9	H	2.0	10.35	1.50	43.5	34.75	8.75
105.07	20.6	V	3.0	10.50	1.50	43.5	32.60	10.90
155.39	16.3	H	2.0	12.55	2.10	43.5	30.95	12.55
167.99	23.6	V	2.5	12.85	2.10	43.5	38.55	4.95
225.69	22.8	H	2.0	17.10	2.50	46.0	42.40	3.60
240.01	21.5	H	1.0	18.20	2.60	46.0	42.30	3.70
328.06	20.8	V	1.0	15.18	3.50	46.0	39.48	6.52
337.06	23.7	H	1.0	15.14	3.50	46.0	42.33	3.67
433.19	22.6	V	1.0	16.26	4.00	46.0	42.86	3.14

Comment: -

Conducted emission

Test result: **Pass**

Date of testing : 2000/08/11

Ambient temperature: 23°C, Relative humidity: 51%, Atmospheric pressure: 1002hPa(mbar)

Test site type: Shielded room

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

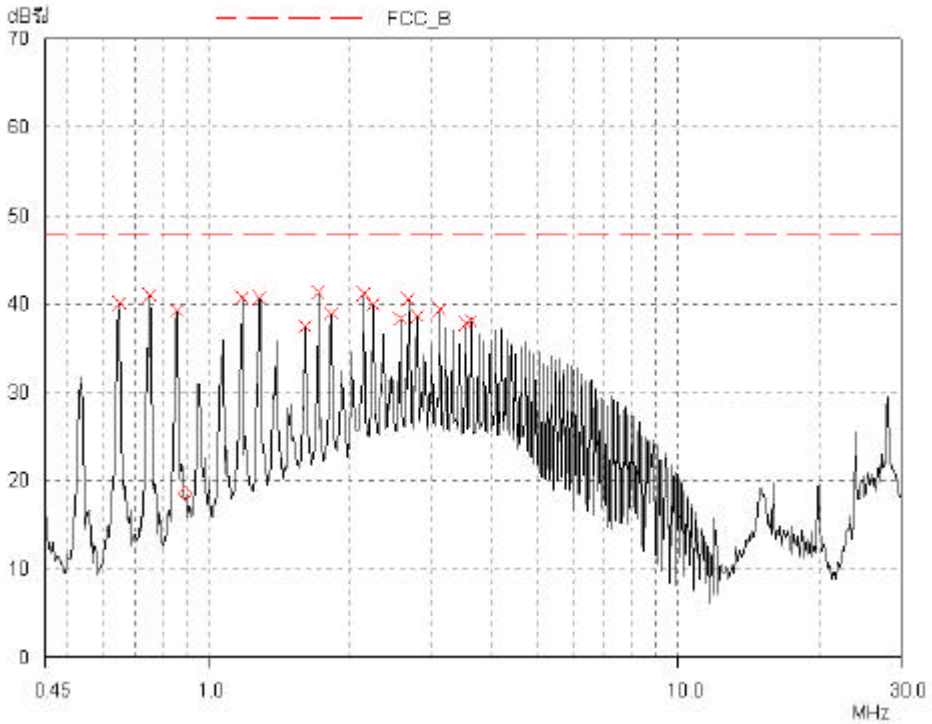
Model name	Manufacturer	Description	Serial No.
3825/2	EMCO	LISN	9206-1971
ESHS30	Rohde Schwarz	Field strength meter	828144/002
-	-	-	-

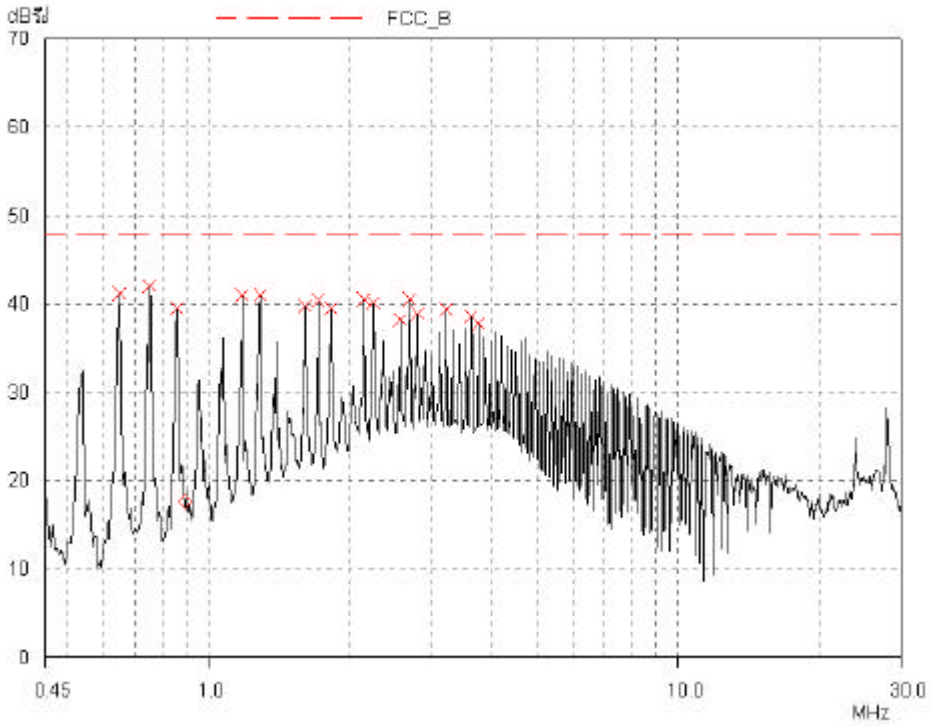
Test data sheet

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.645	0.2	0.1	N	48.00	42.00	42.30	5.70				
0.775	0.2	0.1	H	48.00	41.97	42.27	5.73				
0.860	0.2	0.1	H	48.00	39.90	40.20	7.80				
1.180	0.2	0.1	H	48.00	41.03	41.33	6.67				
1.306	0.2	0.1	N	48.00	42.01	42.31	5.69				
1.610	0.3	0.1	N	48.00	37.76	38.16	9.84				
1.800	0.3	0.1	H	48.00	41.01	41.41	6.59				
1.825	0.3	0.1	N	48.00	39.48	39.88	8.12				
2.145	0.3	0.1	N	48.00	40.50	40.90	7.10				
2.315	0.3	0.1	H	48.00	40.13	40.53	7.47				
2.575	0.2	0.1	N	48.00	40.69	40.99	7.01				
2.685	0.2	0.1	H	48.00	40.56	40.86	7.14				

Comment: -

Test data graphic



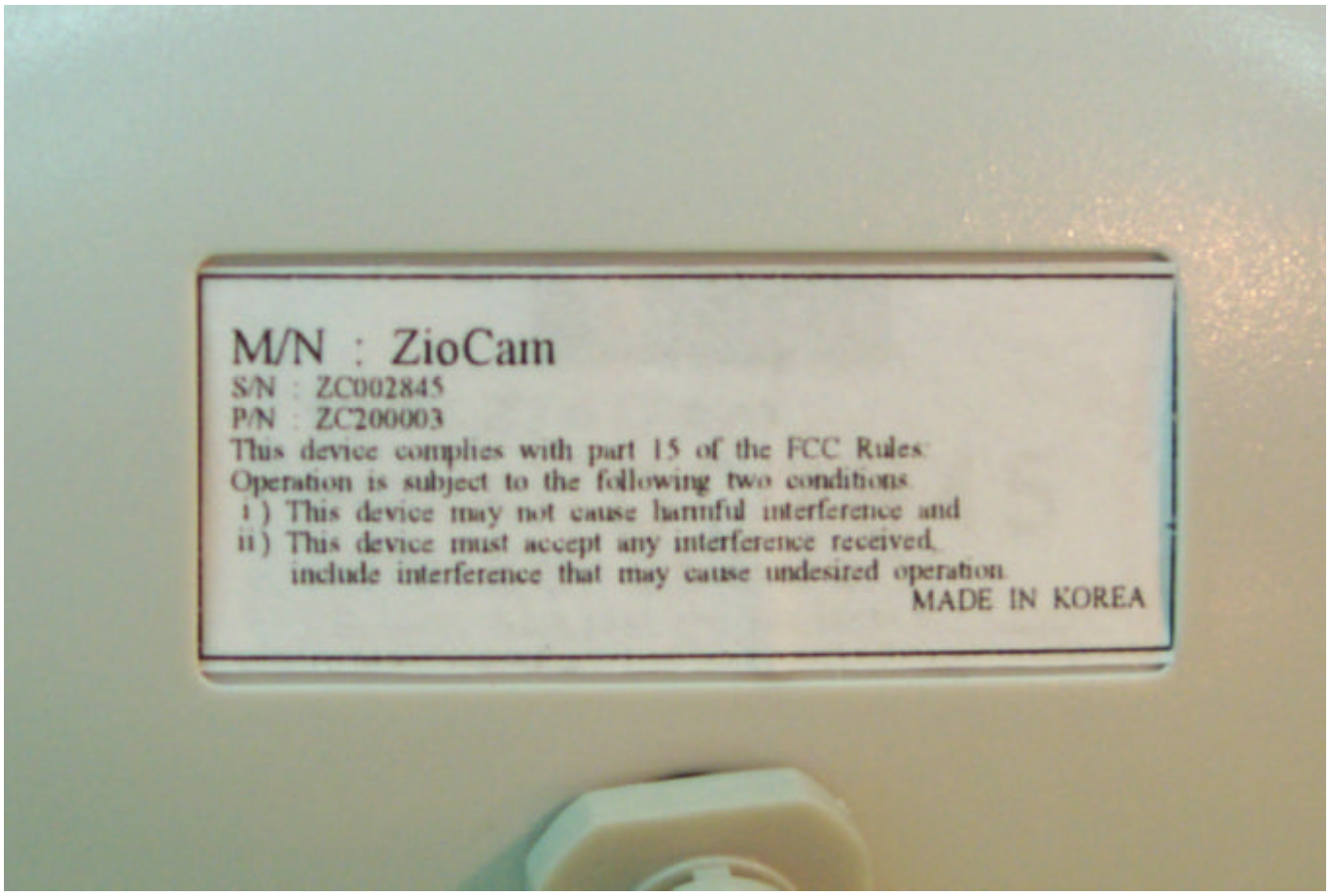


4. Photographs

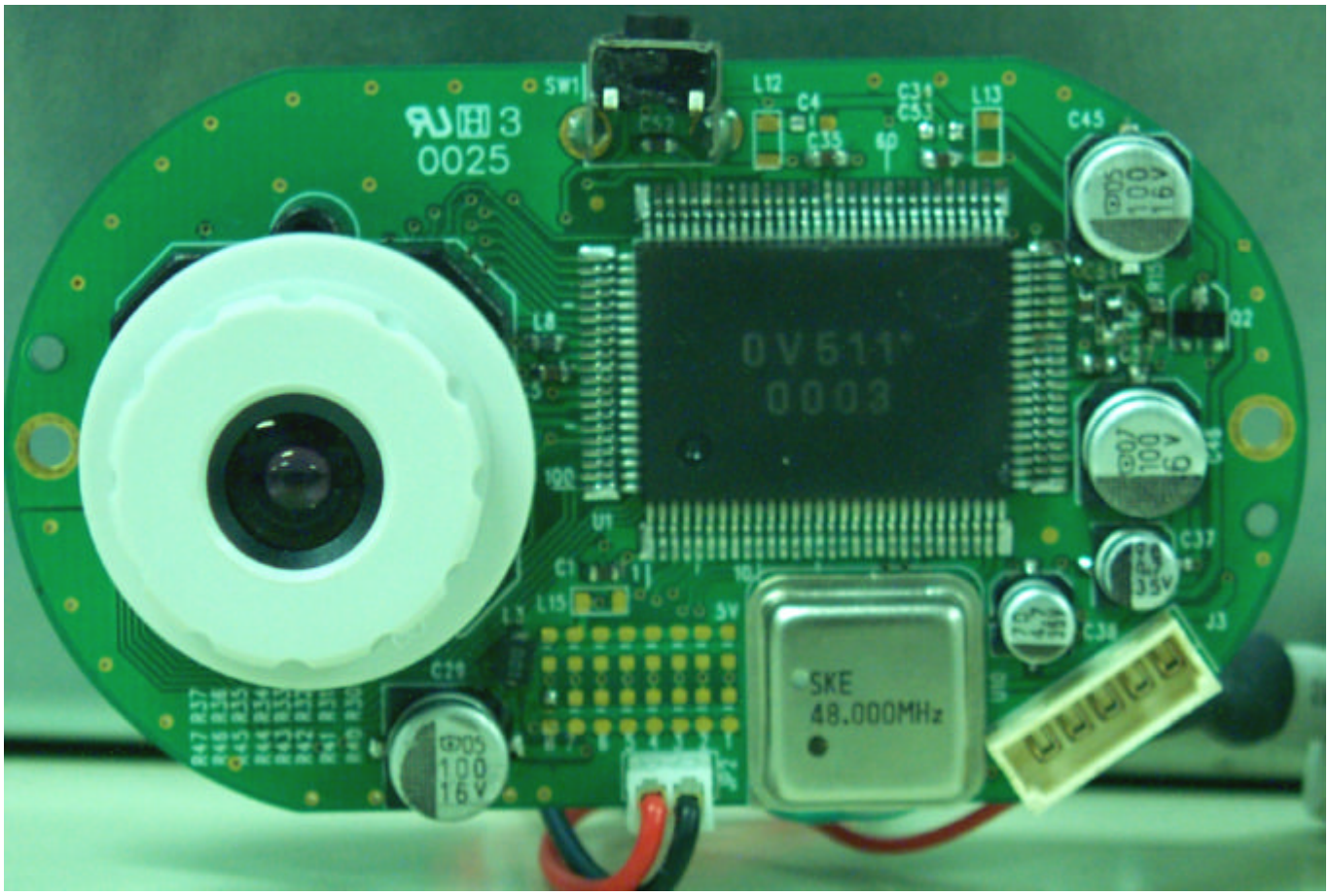
EUT (Front)

EUT (Rear)

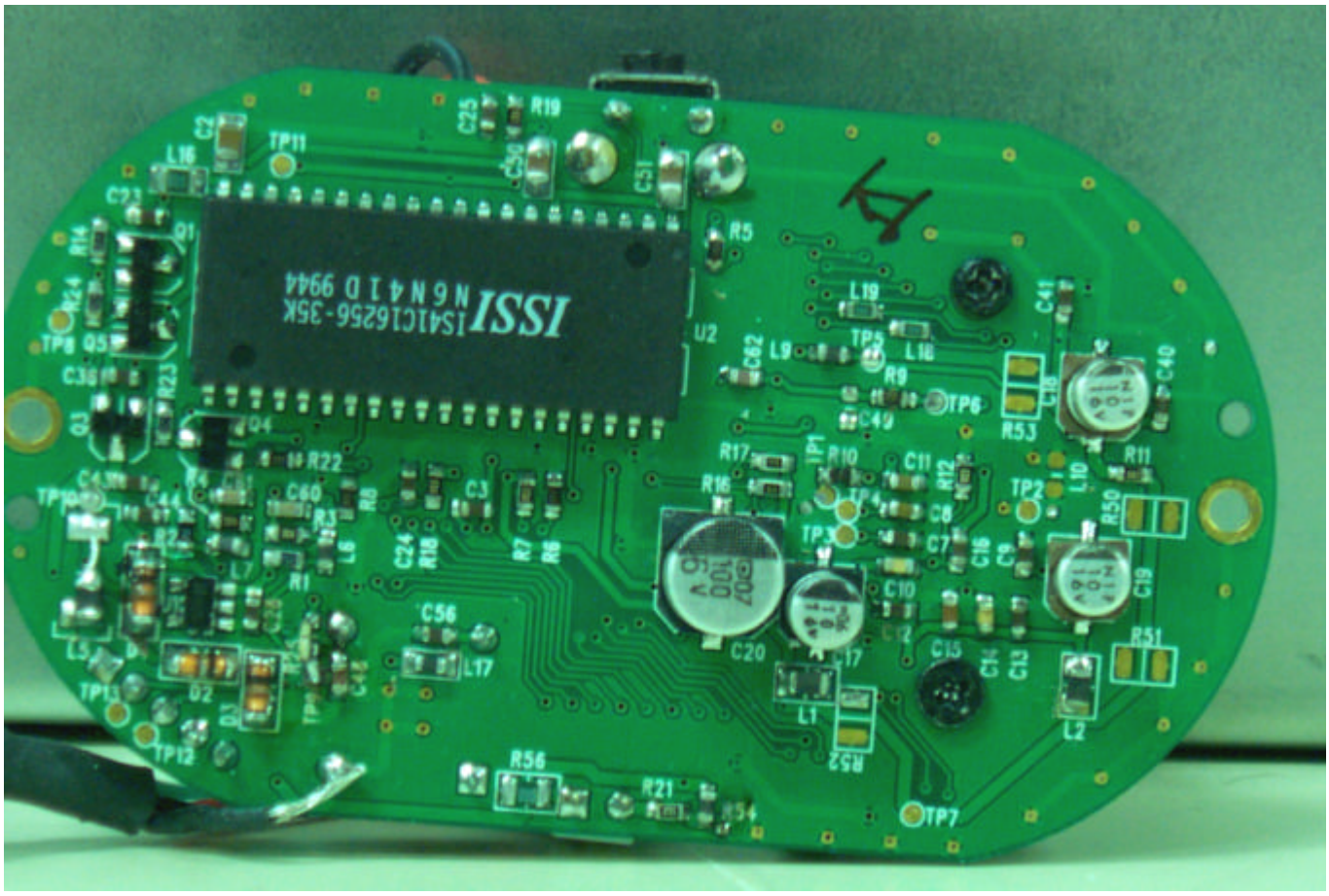
EUT (Label)


M/N : ZioCam
S/N : ZC002845
P/N : ZC200003
This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions.
i) This device may not cause harmful interference and
ii) This device must accept any interference received,
include interference that may cause undesired operation.
MADE IN KOREA

Main Board (Front)



Main Board (Rear)



Radiated emission

Conducted emission