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EMI Test Report

On Model Name: Digital Video Camera

Model Number: RC-1(X)(Z)

Trade Name: ROSCOBY

FCCID Number: WMZRC1BCD

Prepared for RiserCam , LLC

According to FCC Part 15 Subpart B : Class B

Test Report #: SHZ-0809-2801-FCCID

Prepared by: Adang Lu

Reviewed by: Ivan Wen

QC Manager: Kevin Yu

Test Report Released by:

Kevin Yu

2008, Oct. 05

Date

List Attached Files

Exhibit Type	File Description	File Name
Test Report	Test Report	WMZRC1BCD _Test report.pdf
Operation Description	Technical Description	WMZRC1BCD _operation description.pdf
External Photos	External Photos	WMZRC1BCD _External Photos
Internal Photos	Internal Photos	WMZRC1BCD _Internal Photos
Block Diagram	Block Diagram	WMZRC1BCD _Block Diagram.pdf
Schematics	Circuit Diagram	WMZRC1BCD _Schematics.pdf
ID Label/Location	Label and Location	WMZRC1BCD _Label & Location.pdf
User Manual	User Manual	WMZRC1BCD _User Manual.pdf
Test setup photos	Test setup photos	WMZRC1BCD _Test Setup Photos

Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room.

Test Site Location: Guangdong Galanz Enterprise Co. Ltd
25 South Ronggui Rd., Shunde, Foshan,
Guangdong, China

Tel : 86-755-23612785

Fax : 86-755-23612537

FCC Registration Number: 580210

CNAS Number : L2244

List of Test Instruments

Equipment	Manufacture	Model	Serial No.	Calibrated Untill
LISN	ETS	4825/2	1161	2009-07-08
LISN	Schaffner	MN2050D	1421	2008/12/14
EMI Receiver	SCHAFFNER	SMR4503	11725	2009-07-08
Biconilog Antenna	ETS	3142C	00042672	2009-08-02
Amplifier	Agilent	83017A	MY39500438	2009-07-11
Shielding Room	ETS	N/A	N/A	2009-05-30
Semi-anechoic Chamber	ETS	N/A	N/A	2009-05-24

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Opinions and Interpretations

This test report relates to the abovementioned equipment under test (EUT). Without the permission of ATC Lab Co., Ltd (Guangdong, China). this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.

Statement of Measurement Uncertainty

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

Administrative Data

Test Sample : Digital Video Camera
Model Number : RC-1(X)(Z)
Model Tested : RC-11000B
Date Tested : 2008, Sep. 22
Applicant : RiserCam , LLC
1005 Bath Street, Suite B, AnnArbor, MI 48103
Telephone : +1 734-786-9926
Fax : +1 734-786-9926
Manufacturer : RiserCam , LLC

EUT Description

RiserCam , LLC model tested RC-1(X)(Z) (referred to as the EUT in this report) is a Digital Video Camera .

Type of Deriver

These models (RC-1(X)(Z)) are similar products, They have the same function PCB, and different from the appearance.

RC-1(X)(Z) model designations:

RC: Denotes the video camera

1: Denotes the housing style

X: Is a three digit number that representing cosmetic or version differences to the housing.

Z: Denotes the color of the unit. This may be a combination of one or two letters.

Test Summary

The Electromagnetic Compatibility requirements on model RC-1000B for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment Under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	Description	Test Results	Test Point	Remark
Part 15.107 ANSI C63.4 2003	Conducted Emission	Passed	AC Input Port	Attachment 1
Part 15.109 ANSI C63.4 2003	Radiated Emission	Passed	Enclosure	Attachment 2

Test Mode Justification

This device complies with Part 15 of the FCC rules. Operations is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Equipment Modification

Any modifications installed previous to testing by RiserCam , LLC will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ATC Lab Co., Ltd (Guangdong, China) test personnel.

EUT Sample Photos – RC-1(X)(Z)



Front View



Back View



Side View



Side View#1



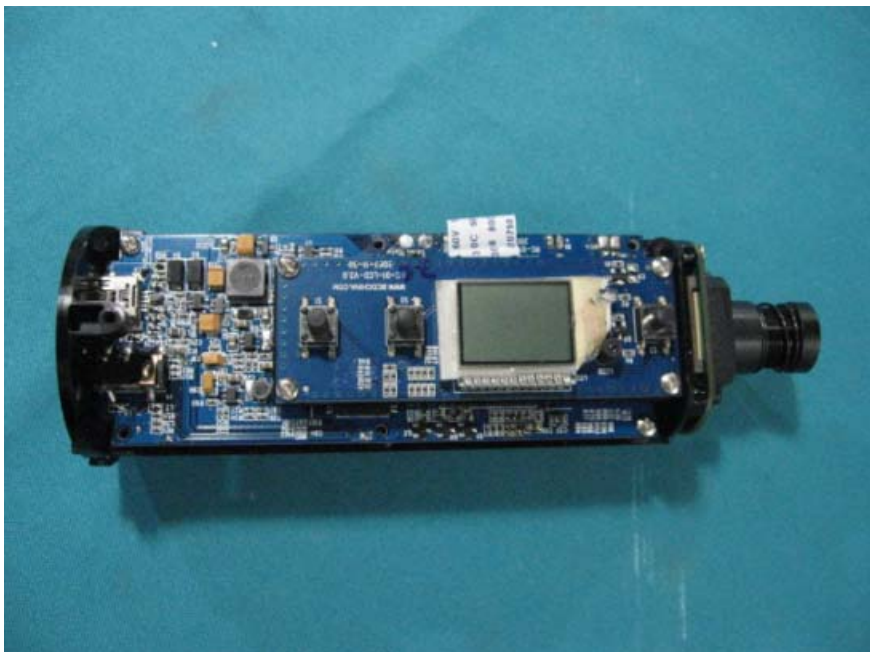
Top Cover



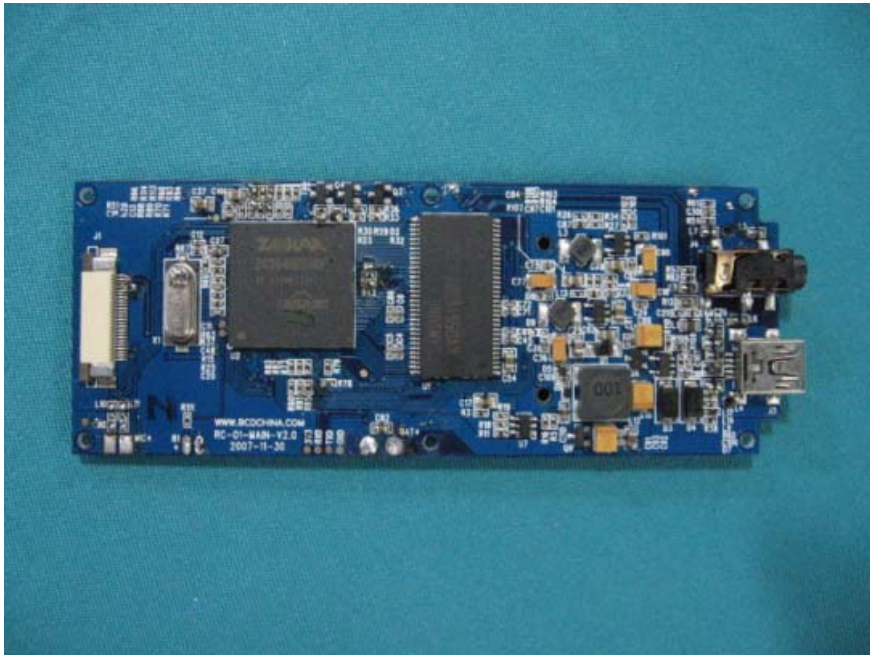
Cable View



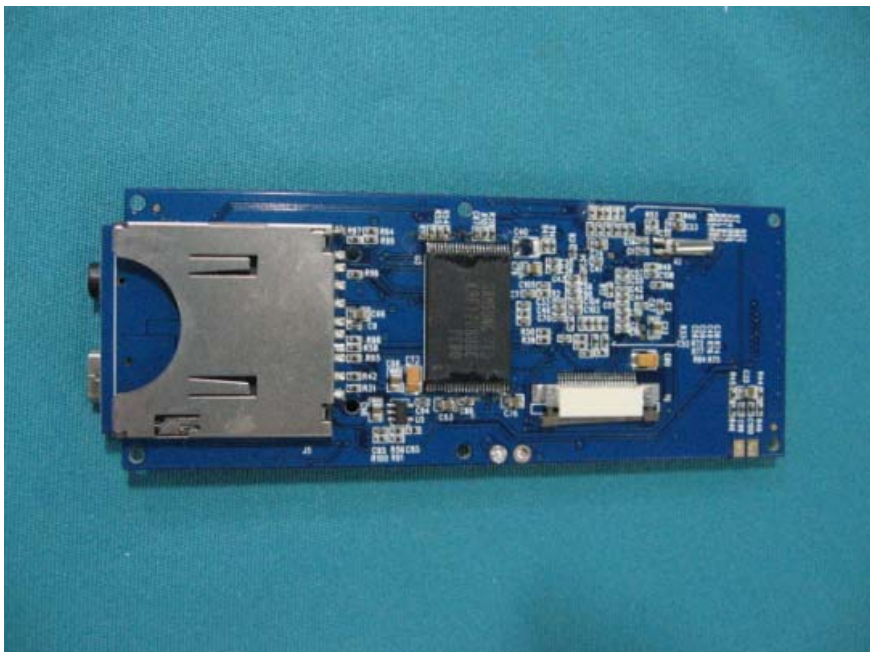
Uncovered View



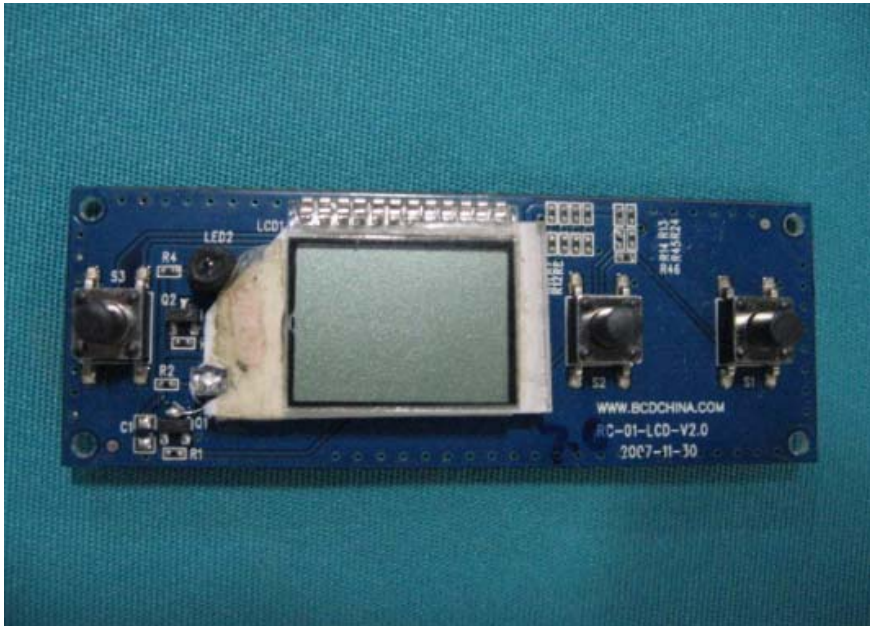
Uncovered View #1



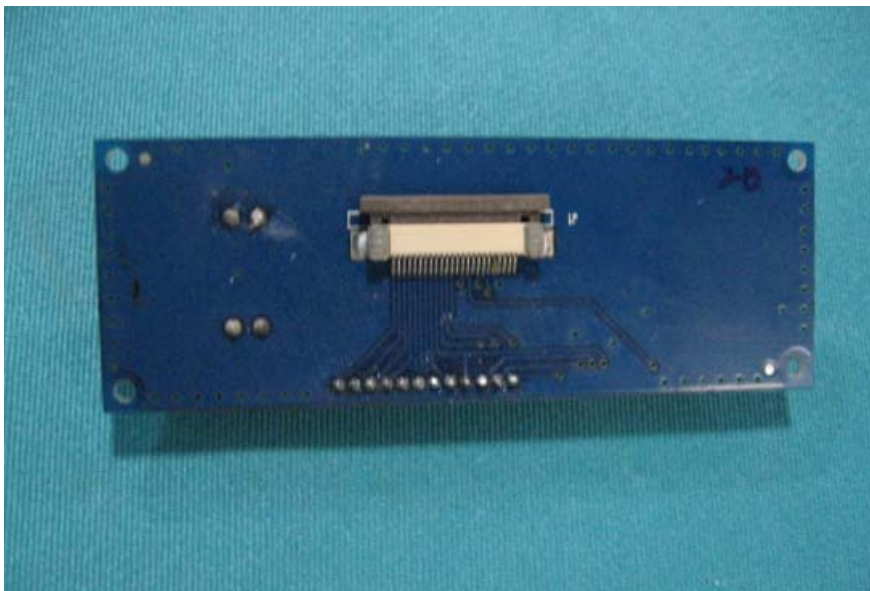
Main board View #1



Main board View #2



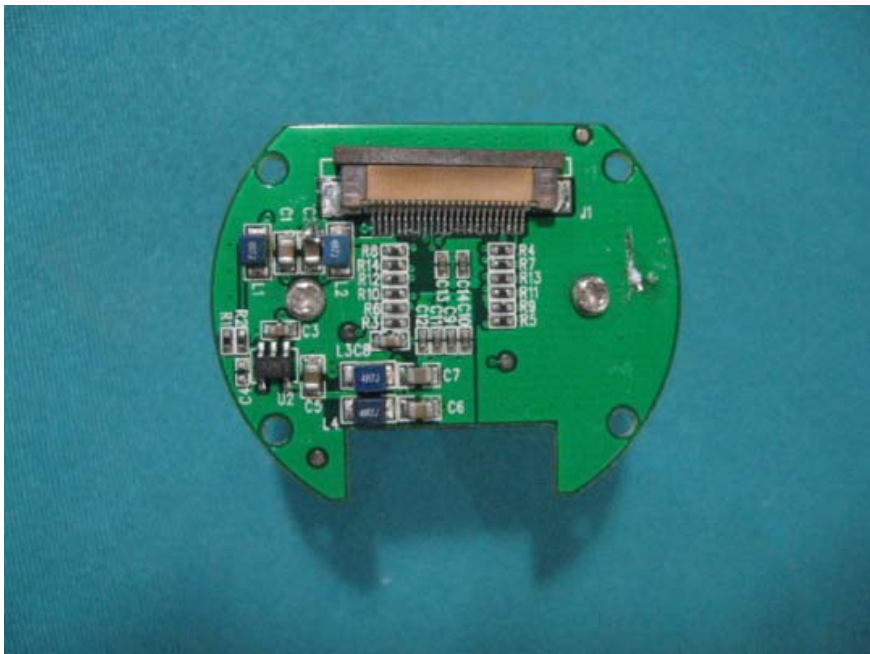
LCD Board View #1



LCD Board View #2



Sensor Board View #1

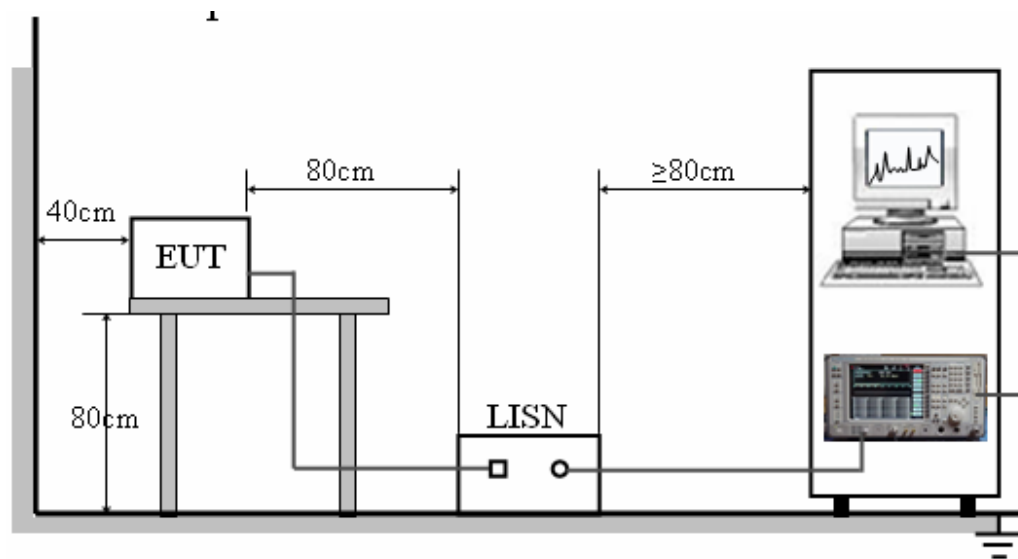


Sensor Board View #2

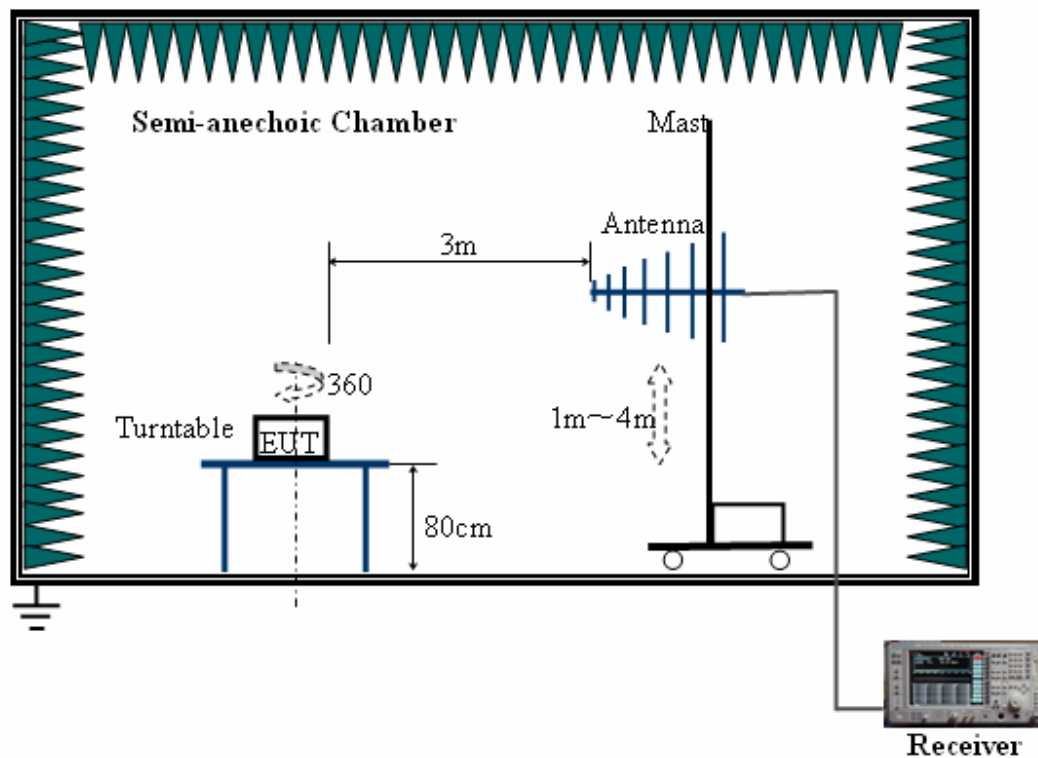
Test System Details

EUT					
Model Number:	RC-1(X)(Z)				
Model Tested:	RC-1000B				
Description:	Digital Video Camera				
Manufacture:	RiserCam , LLC				
Support Equipment					
Description	Model Number	Serial Number	Manufacturer		
Computer	M4300	14592	Lenovo		
Mouse	M-UV55a	LNA41502650	Lenovo		
Monitor	712S+	335449780	AOC		
Earphone	N/A	N/A	Lenovo		
Cable Description					
Description	From	To	Length (Meters)	Shielded (Y/N)	Ferrite (Y/N)
USB Cord#1	EUT	PC	1.2	N	Y
AV Cable	EUT	Monitor	1.2	N	Y

Configuration of Tested System



Conducted Emission Measurement



Radiated Emission Measurement

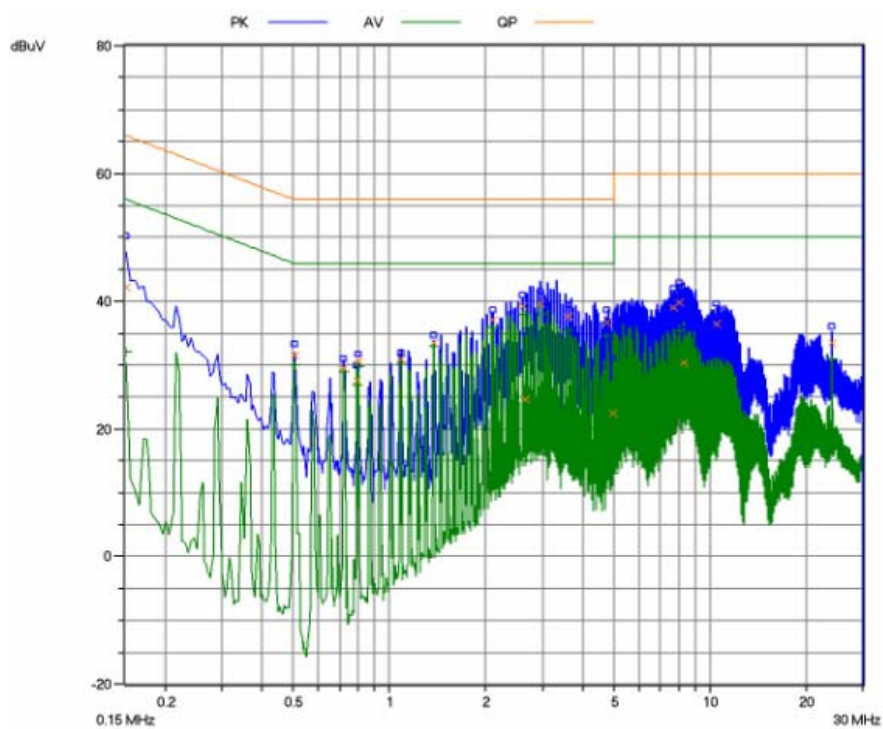
Attachment 1 – Conducted Emission Measurement

CLIENT:	RiserCam , LLC	TEST STANDERD:	FCC Part 15, Class B
MODEL NUMBERS:	RC-1(X)(Z)	PRODUCT:	Digital Video Camera
EUT MODEL:	RC-1000B	EUT DESIGNATION:	PC peripherals
TEMPERATURE:	23°C	HUMIDITY:	47%RH
ATM PRESSURE:	101.0kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Eddy Chen	DATE OF TEST:	2008, Sep. 22
TEST REFERENCE:	ANSI C63.4: 2003, CISPR 16-1:2002		
TEST PROCEDURE:	The EUT was set up according to the guideline of ANSI C63.4: 2003 for conducted emissions. The measurement was using a AMN on each line and an EMI receiver peak scan was made at the frequency measurement range. The six highest significant peaks were then marked, and these signals were then quasi-peaked and averaged. The frequency range investigated was from 150KHz to 30MHz.		
TESTED RANGE:	150kHz to 30MHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions . The test results relate only to the equipment under test provided by client.		
Changes or Modifications:	There were no modifications installed by ATC Lab Co., Ltd (Guangdong,China) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

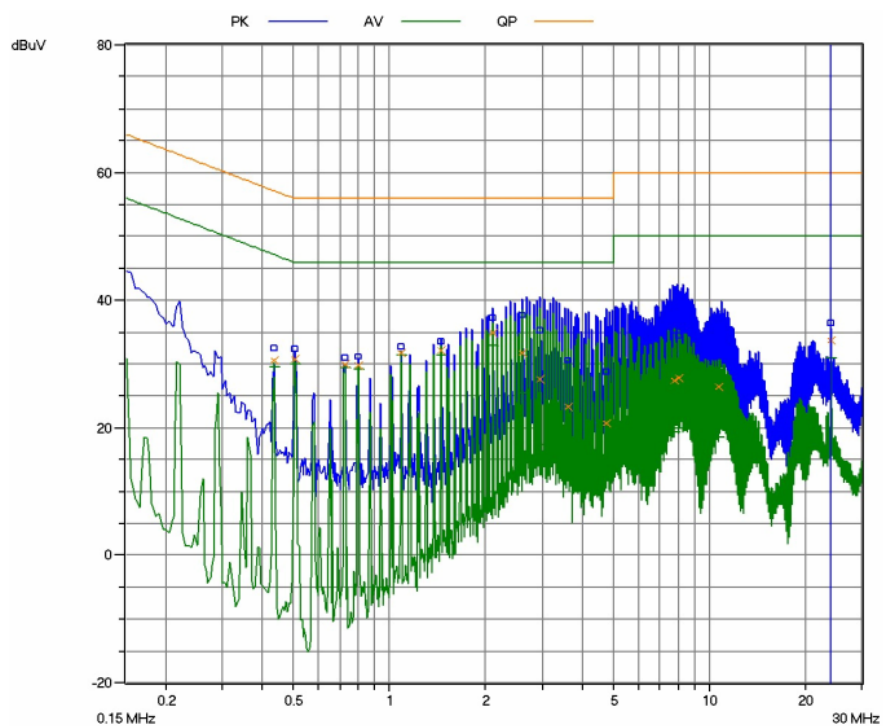
15.107 Conducted limit:

Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit(dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Test Data:

Line	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)
L	0.505	31.5	56.0	-24.5
L	0.720	29.6	56.0	-26.4
L	2.955	39.7	56.0	-26.3
N	0.725	29.8	56.0	-26.2
N	2.095	34.9	56.0	-21.1
N	2.600	31.8	56.0	-24.2

Test Setup Photo :

Attachment 2 – Radiated Emission Measurement

CLIENT:	RiserCam , LLC	TEST STANDERD:	FCC Part 15, Class B
MODEL NUMBERS:	RC-1(X)(Z)	PRODUCT:	Digital Video Camera
EUT MODEL:	RC-1000B	EUT DESIGNATION:	PC peripherals
TEMPERATURE:	23°C	HUMIDITY:	47%RH
ATM PRESSURE:	101.0kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Eddy Chen	DATE OF TEST:	2008, Sep. 22
TEST REFERENCE:	ANSI C63.4: 2003, CISPR 16-1: 2002		
TEST PROCEDURE:	<p>The EUT was set up according to the guidelines of ANSI C63.4: 2003 for radiated emissions.</p> <p>An EMI receiver peak scan was made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination was then performed and the significant peaks marked. These peaks were then quasi-peaked in the frequency range of 30 MHz to 1GHz and Average in the frequency range of 1GHz to 5GHz at an Anechoic chamber.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG</p> <p>Where: FS = Field Strength</p> <p>RA = Receiver Amplitude</p> <p>AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor</p> <p>AG = Amplifier Gain</p>		
TESTED RANGE:	30MHz to 1000MHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	<p>The EUT meets the requirements of test reference for Radiated Emissions</p> <p>The test results relate only to the equipment under test provided by client.</p>		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ATC Lab Co., Ltd (Guangdong,China) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

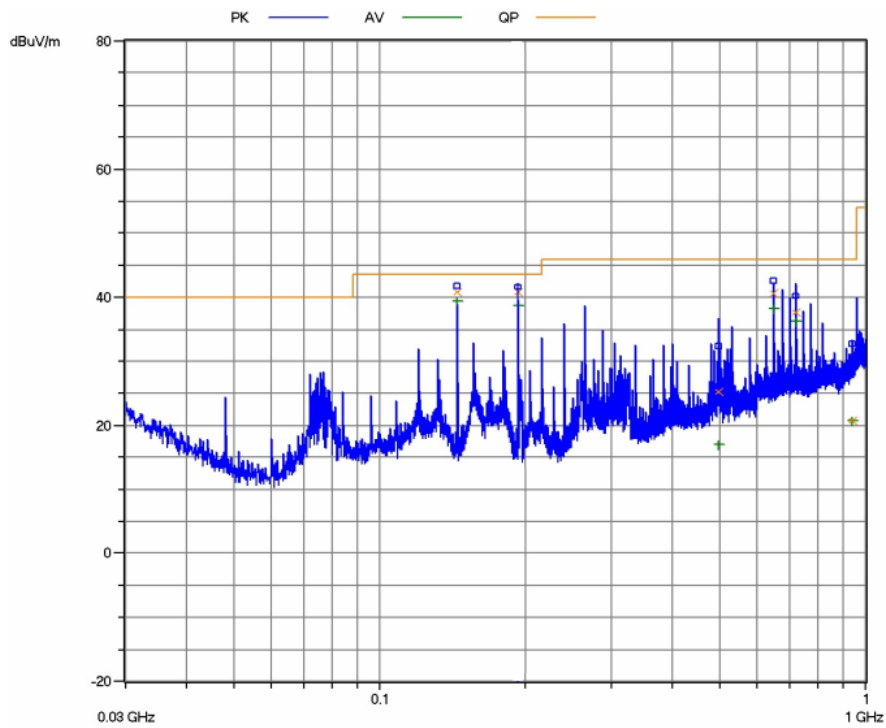
15.109 Limits of Radiated Emission :

The field strength of radiated emissions at a distance of 3 meters shall not exceed the following values:

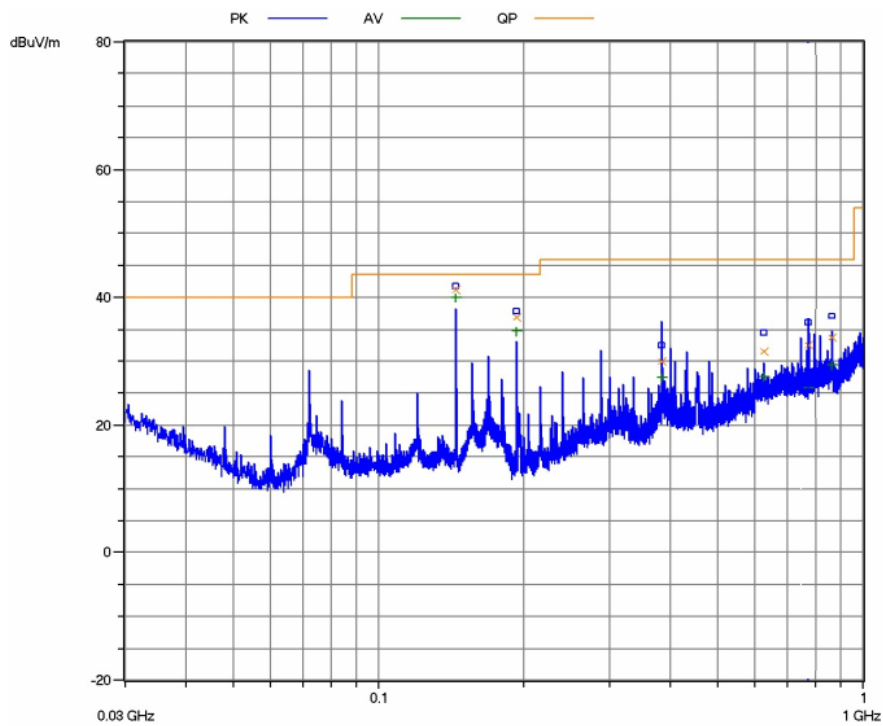
Frequency of Emission (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)
30 - 88	100	40
88 -216	150	43.5
216 - 960	200	46
Above 960	500	54

Note:

1. Field Strength (dB $\mu\text{V/m}$)=20log Field Strength ($\mu\text{V/m}$)
2. In the emission tables above, the tighter limit applies at the band edges.



Radiated Emission-Horizontal



Radiated Emission-Vertical

Test Data :

Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dB μ V/m]	Margin [dB]	3 Meters Limits [dB μ V/m]
144.00	V	41.2	-2.3	43.5
192.02	V	36.9	-6.6	43.5
864.08	V	33.7	-12.3	46.0
144.00	H	40.9	-2.6	43.5
648.08	H	40.7	-5.3	46.0
720.08	H	37.8	-8.2	46.0
<p>1. All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.</p> <p>2. Quasi-peaked in the frequency range of 30 MHz to 1GHz</p>				

Radiated Emission Test Set-up:

