

TECHNICAL CONSULTING LTD



卓時檢測
TIMEWAY TESTING LABORATORY



ISO/IEC17025 Accredited Lab.

Report No: FCC 1003313

File reference No: 2010-05-28

Applicant: Shenzhen A-OK Technology Grand Development Co., LTD

Product: electronic limiter receiver

Brand Name: N/A

Model No: AOK-ACM

Test Standards: FCC Part 15 Subpart B: 2008

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: May 28,2010

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

East 5/Block 4, Anhua Industrial Zone, No.8, Tairan Rd. Chegongmiao, FuTian District, Shenzhen, CHINA.

Tel (755) 83448688 Fax (755) 83442996



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

IC- Registration No.: IC5205A-01

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD
Address: East 5/Block 4, Anhua Industrial Zone, No.8,Tairan Rd. CheGongMiao, FuTian District, Shenzhen, CHINA.
Telephone: (755) 83448688
Fax: (755) 83442996

1.2 Applicant Details

Applicant: Shenzhen A-OK Technology Grand Development Co., LTD
Address: 3rd Fl, 34 Bldg, Chentian Industry District, Xi'xiang Town, Ban'an Zone, Shenzhen City
Telephone: +86-755-27582809
Fax: +86-755-27582185

1.3 Description of EUT

Product: electronic limiter receiver
Manufacturer: Shenzhen A-OK Technology Grand Development Co., LTD
Address: 3rd Fl, 34 Bldg, Chentian Industry District, Xi'xiang Town, Ban'an Zone, Shenzhen City
Brand Name: N/A
Model Number: AOK-ACM
Additional Model Number: N/A
Remark: --
Rating: Input: 120V 60Hz
Operation Frequency: 433.92MHz

1.4 Submitted Sample(s): 2 Samples

1.5 Test Duration: 2010-03-29 to 2010-05-28

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB
Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Terry Tang

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2.0 List of Measurement Equipment

2.1 Conducted Emission Test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESH3	860905/006	RS	2010.5.14	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2010.5.14	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2010.5.14	1Year
LISN	ESH3-Z5	100294	RS	2010.5.14	1Year
LISN	ESH3-Z5	100253	RS	2010.5.14	1Year

2.2 Radiated electromagnetic disturbance test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESVD	100008	RS	2010.5.14	1Year
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Spectrum Analyzer	8595E	3441A00893	HP	2010.5.14	1Year
Amplifier	8447D	2727A05017	HP	2010.5.14	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2010.5.14	1Year

2.3 Auxiliary Equipment

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
Signal Generator	8657B	3208U02589	HP	2010.5.14	1Year

3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

FCC Part 15 Subpart B: 2008

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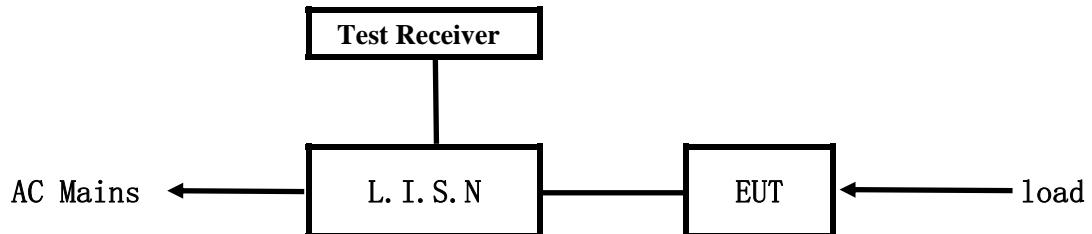
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4.0 Conducted Power line Test

4.1 Schematics of the test



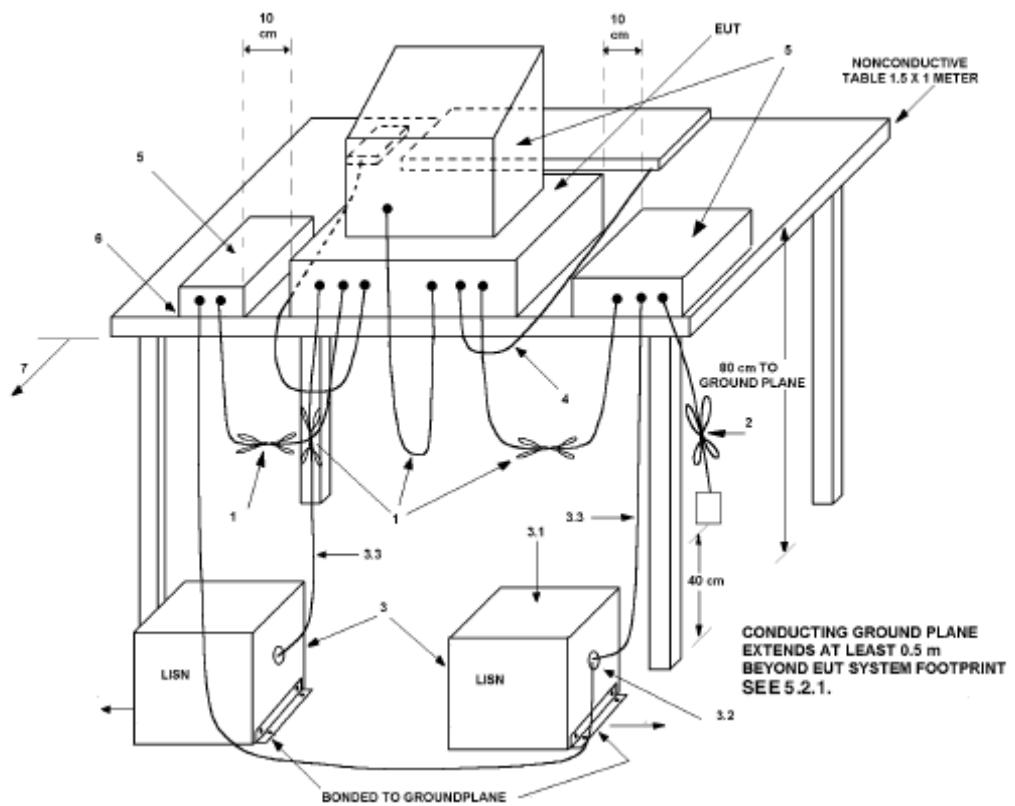
EUT: Equipment Under Test

4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 -2003. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



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4.3 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits dB(μV)		Class B Limits dB(μV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.00	66.00	66.00~56.00*	56.00~46.00*
0.50 ~ 5.00	73.00	60.00	56.00	46.00
5.00 ~ 30.00	73.00	60.00	60.00	50.00

Notes: 1. *decreasing linearly with logarithm of frequency.

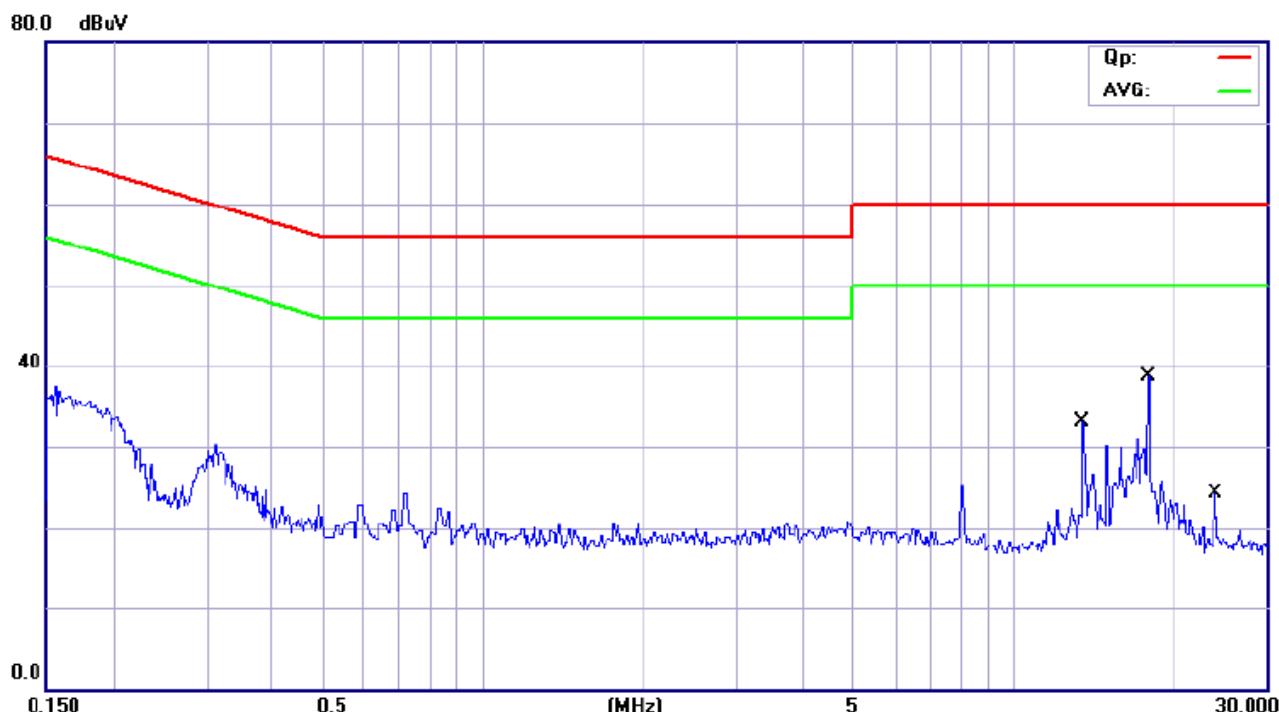
2. The tighter limit shall apply at the transition frequencies

4.4 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All readings are quasi -peak values with a resolution bandwidth of 9 KHz

. Temperature: 25°C

. Humidity: 53% RH

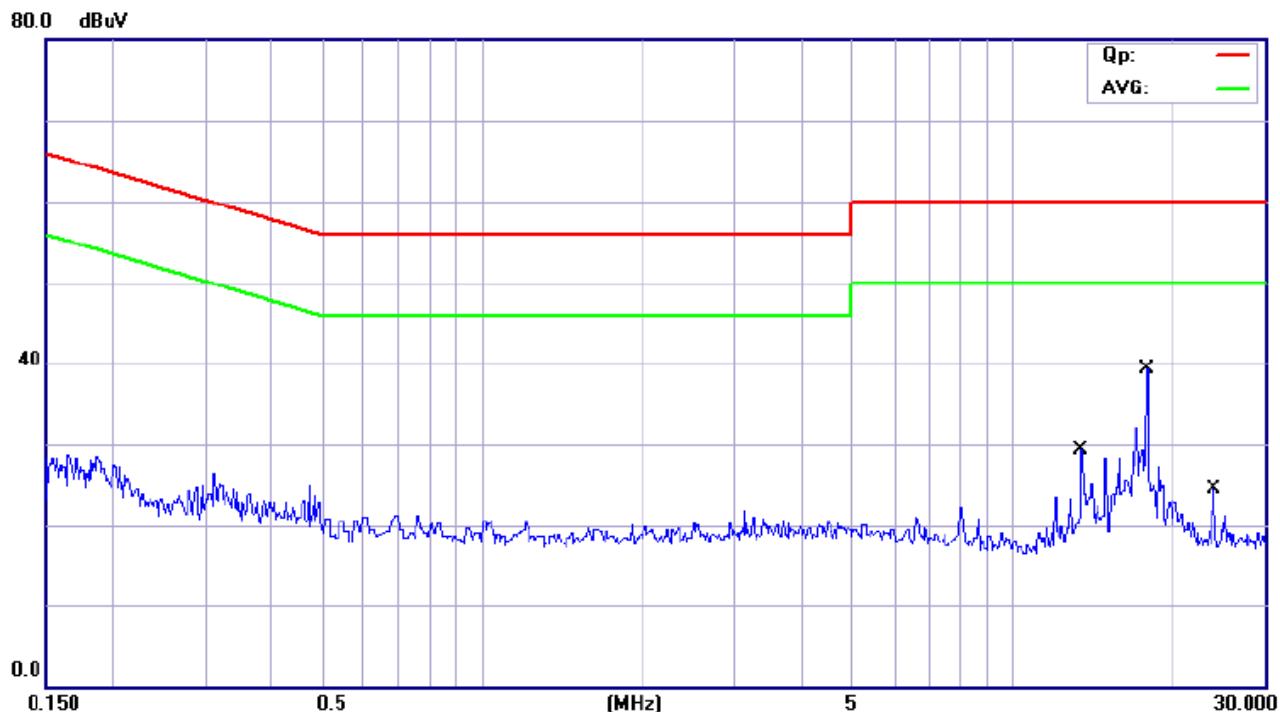


Frequency (MHz)	Emission (dBuV)		LINE/ NEUTRAL	Limit (dBuV)		Margin (dB)	
	QP	AV		QP	AV	QP	AV
	38.66	38.66	L	60.00	50.00	-21.34	-11.34
18.0000	38.66	38.66	L	60.00	50.00	-21.34	-11.34
24.0000	24.35	24.35	L	60.00	50.00	-35.65	-25.65
13.5000	33.08	33.08	L	60.00	50.00	-26.92	-16.92

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FCC							
Frequency (MHz)	Emission (dBuV)		LINE/ NEUTRAL	Limit (dBuV)		Margin (dB)	
	QP	AV		QP	AV	QP	AV
18.0000	39.21	31.95	N	60.00	50.00	-20.79	-18.05
13.5000	29.31	26.77	N	60.00	50.00	-30.69	-23.23
24.0000	24.46	20.89	N	60.00	50.00	-35.54	-29.11

Note: For the emission test, A 433.92 MHz CW signal was injected (radiated) from a nearby signal generator using a rod antenna

The report refers only to the sample tested and does not apply to the bulk.

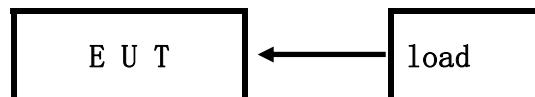
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5.0 Radiated Disturbance Test

5.1 Schematics of the test

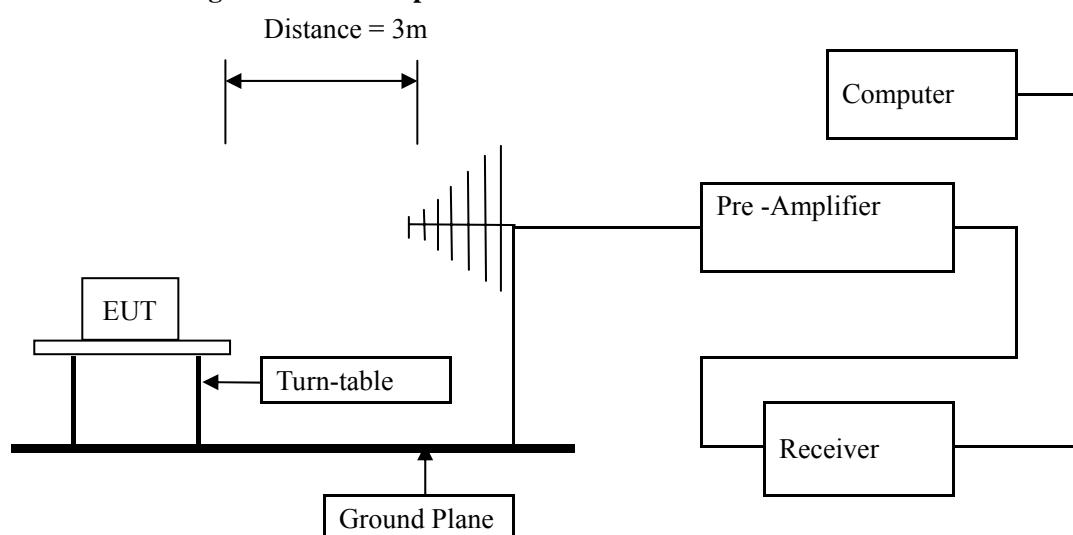


5.2 Test Method and test Procedure:

The EUT was tested according to ANSI C63.4 –2003, The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak 0values with a resolution bandwidth of 120kHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

Test Voltage: 120V~, 60Hz

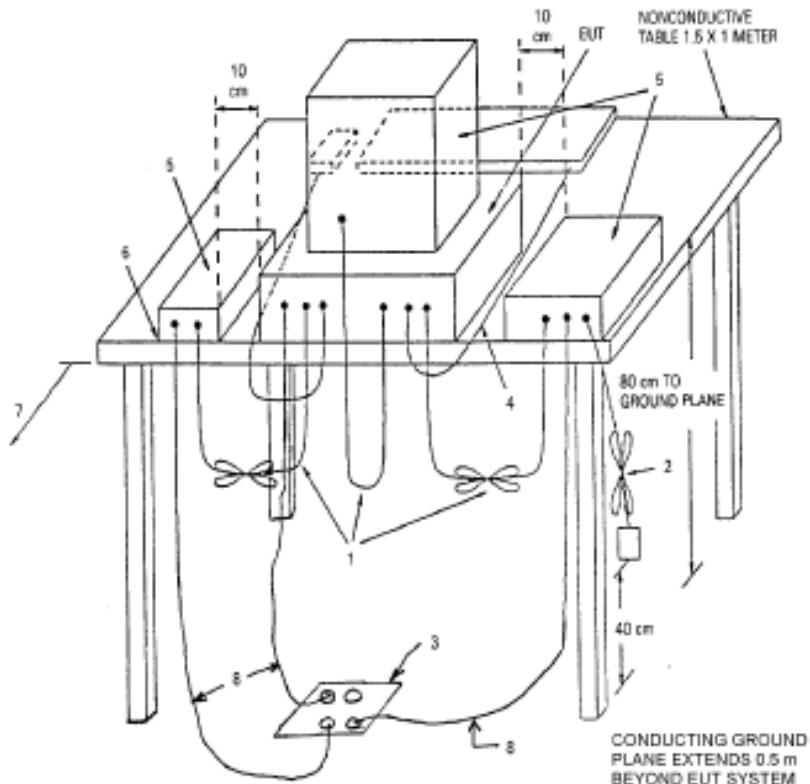
Block diagram of Test setup



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5.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.00
88-216	3	43.50
216-960	3	46.00
Above 960	3	54.00

Note: The lower limit shall apply at the transition frequencies

5.4 Test result

The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120KHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

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A: Radiated Disturbance In Vertical (30MHz---1000MHz)

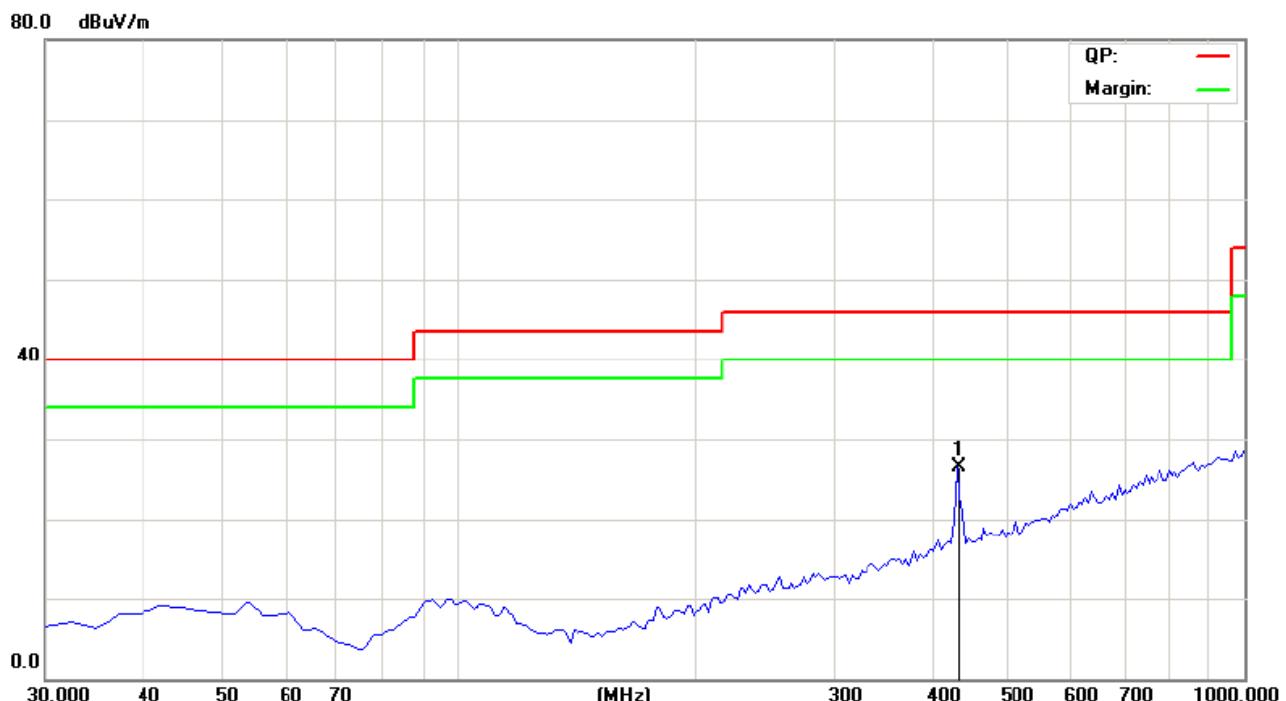
EUT set Condition: Normal operation model

Level: Class B

Results: PASS

Please refer to following diagram for individual

Picture of the test



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
432.95	26.57	V	46.00

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A1: Radiated Disturbance In Vertical (1000MHz----2000MHz)

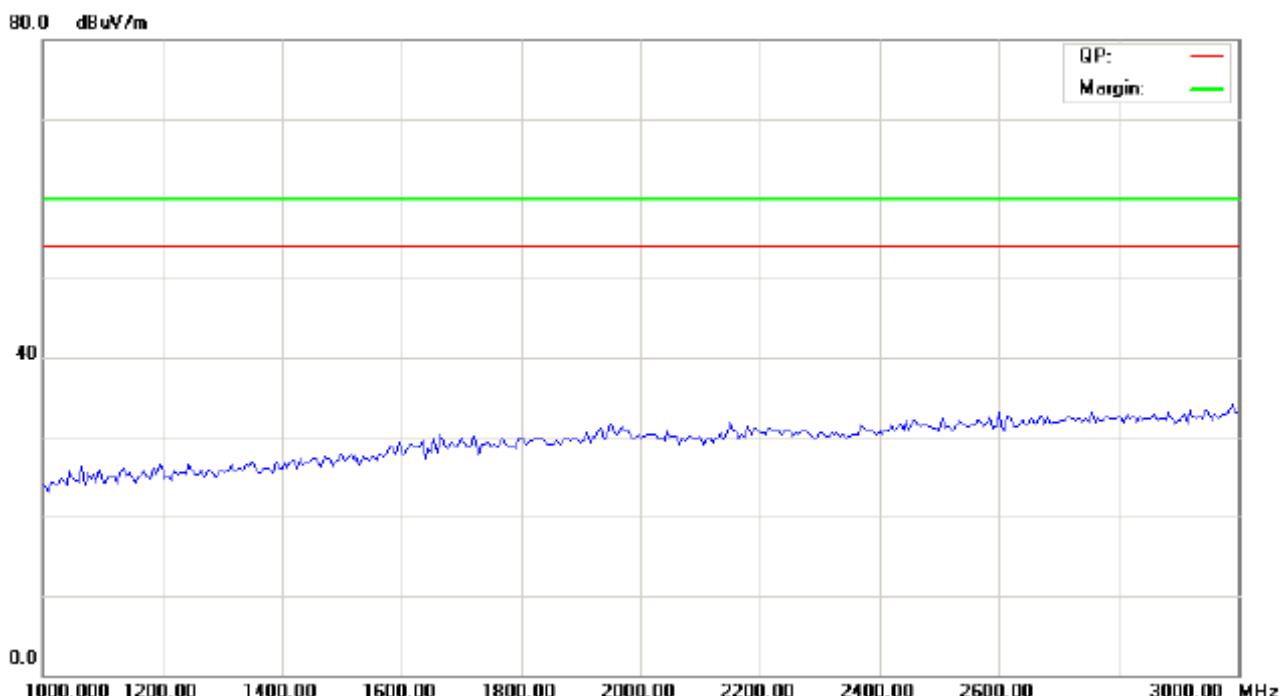
EUT set Condition: Normal operation model

Level: Class B

Results: PASS

Please refer to following diagram for individual

Picture of the test



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
--	--	V	54 (AV) /74 (PK)
--	--	V	54 (AV) /74 (PK)

Note: From 1GHz to 2GHz, the emission level was below 10dB under the Limit at least.

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B: Radiated Disturbance In Horizontal (30MHz----1000MHz)

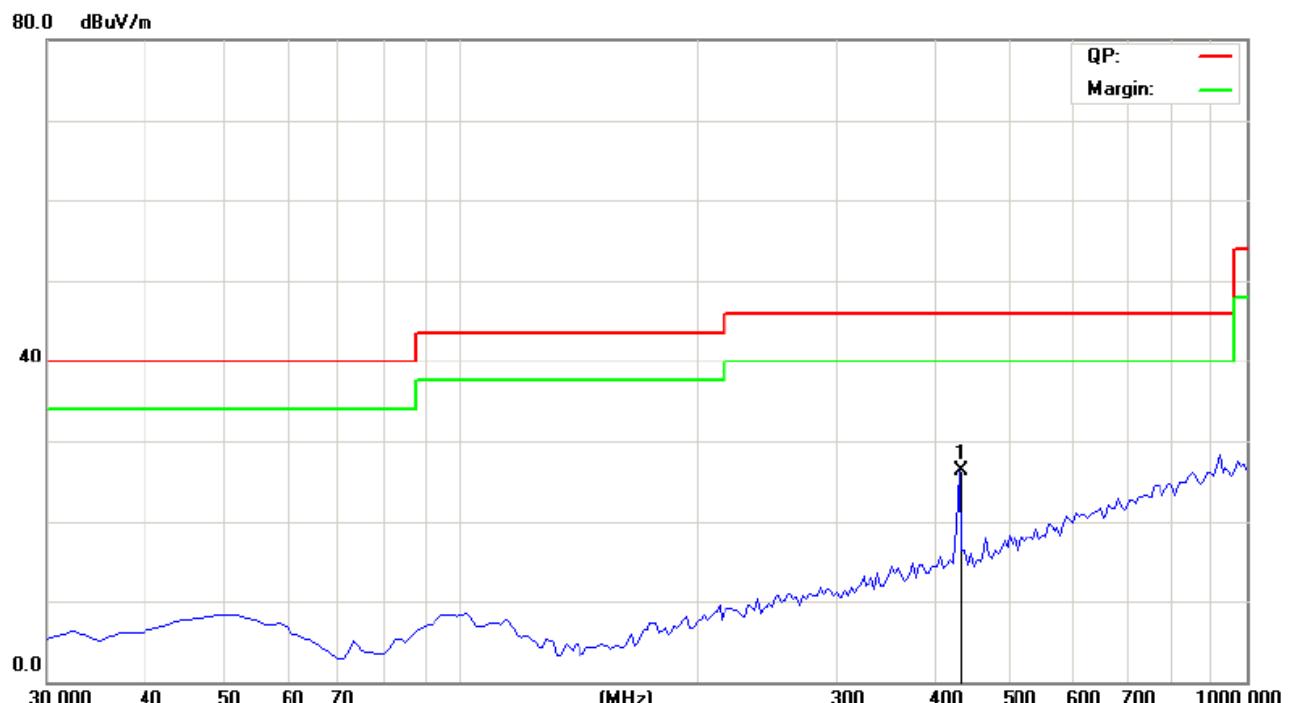
EUT set Condition: Normal operation model

Level: Class B

Results: PASS

Please refer to following diagram for individual

Picture of the test



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
433.05	26.40	H	46.00

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B1: Radiated Disturbance In Horizontal (1000MHz----2000MHz)

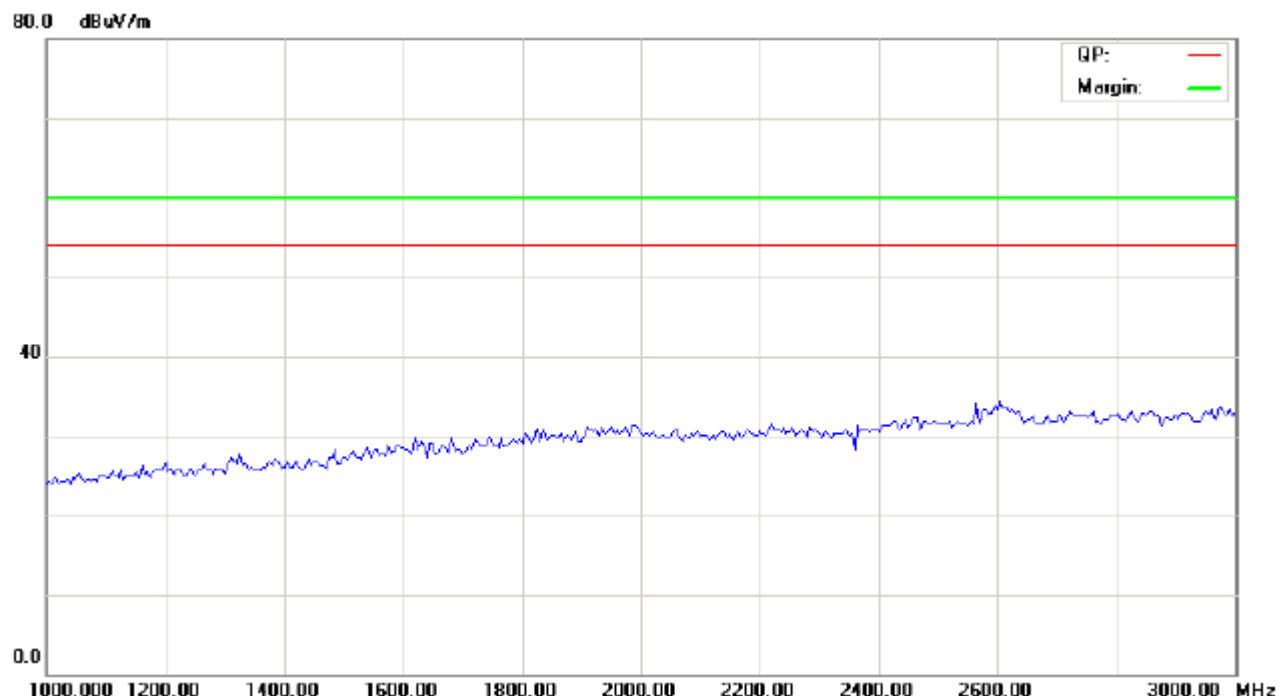
EUT set Condition: Normal operation model

Level: **Class B**

Results: **PASS**

Please refer to following diagram for individual

Picture of the test



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
--	--	H	54 (AV) /74 (PK)
--	--	H	54 (AV) /74 (PK)

Note: 1. For the emission test, A 433.92 MHz CW signal was injected (radiated) from a nearby signal generator using a rod antenna

2. from 1 GHz to 2 GHz, the emission level was below 10dB under the Limit at least.

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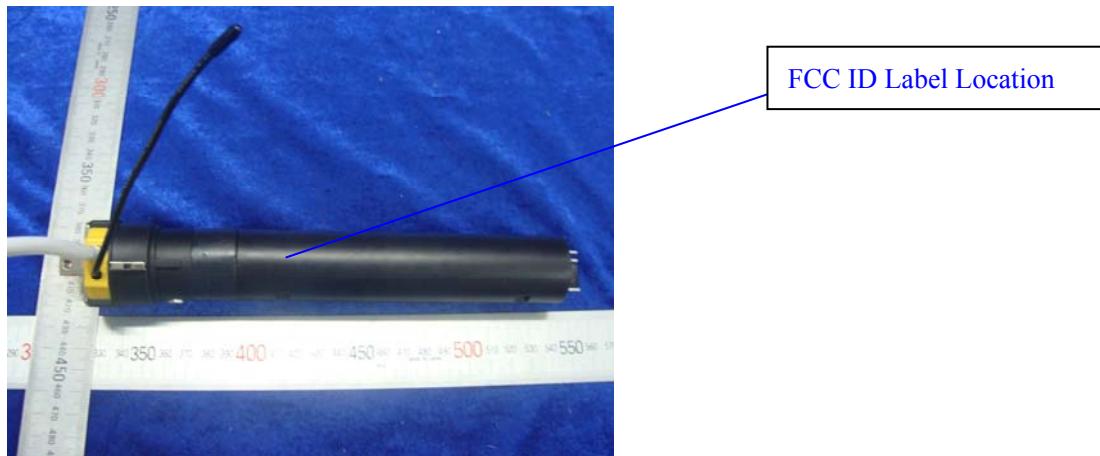
6.0 FCC ID Label

FCC ID: YC5ACM-01EL

This device complies with part 15 of the FCC rules. Operation 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.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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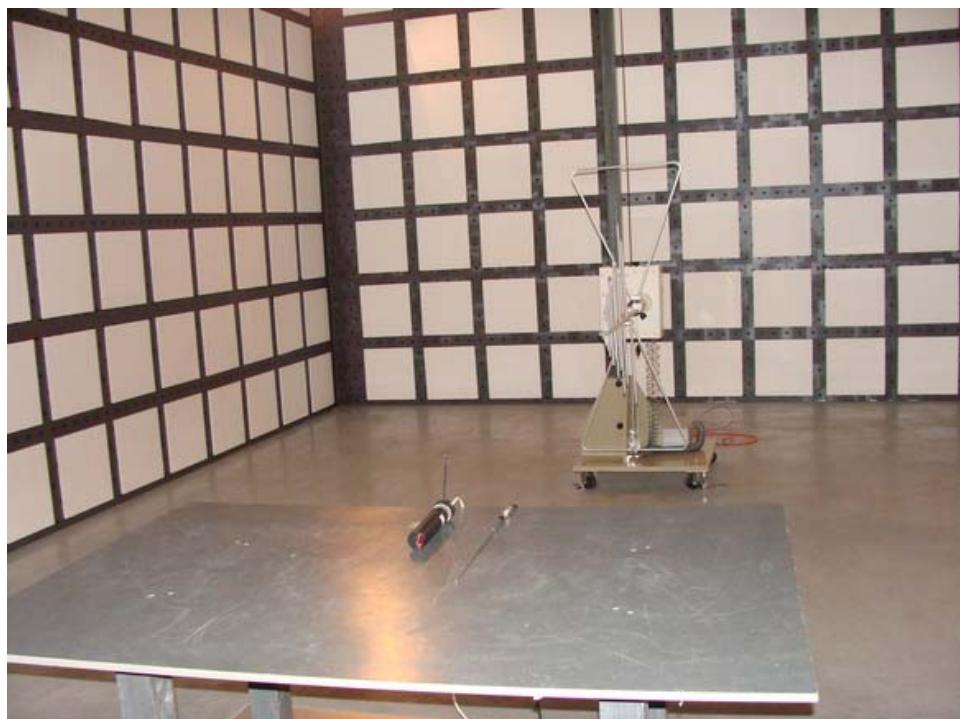


7.0 Photo of testing

7.1 Conducted test View



7.2 Radiated emission test view



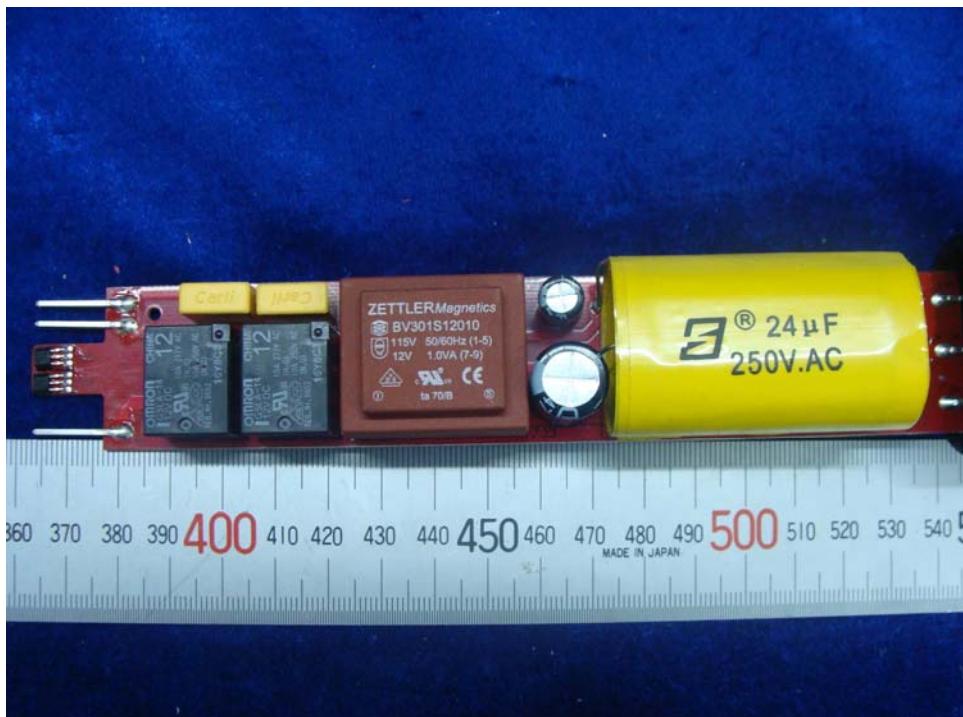
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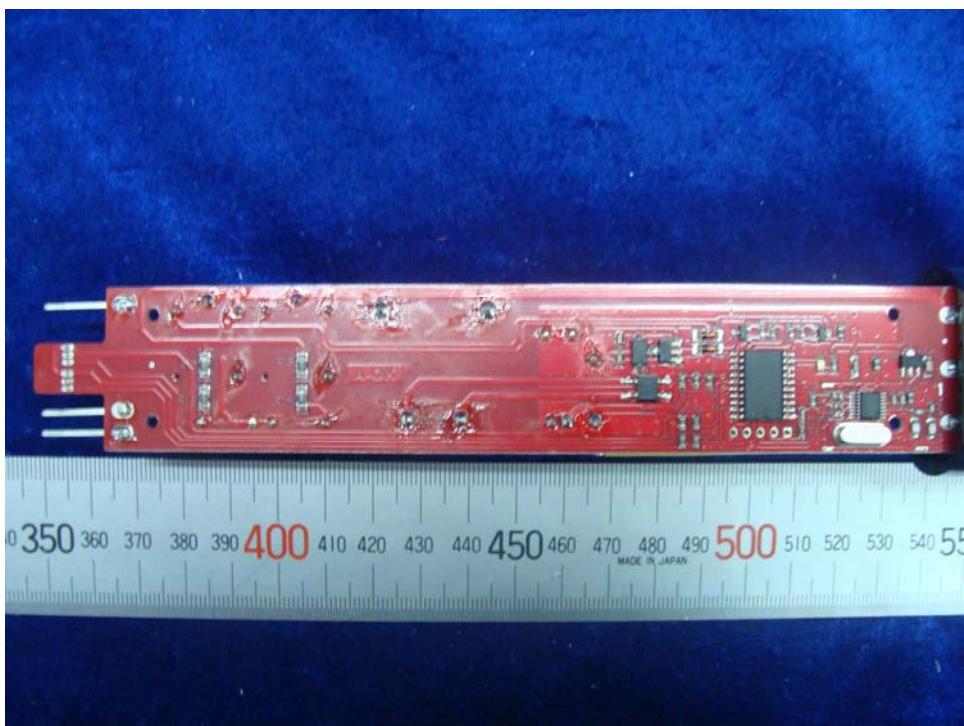
7.3 Photo for the EUT



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-End of the report-

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