

CLASS B CERIFICATION APPLICATION
UNDER PART15, SUBPART C

EUT : Transmitter

MODEL : RL-1T

FCC ID : PGH-YUIANE00897

SRT REPORT # T0H10

PREPARED FOR :

YUI-ANE ELECTRONICS CO., LTD.

NO. 36, LANE 461, WEN PIN ROAD,

TAINAN, TAIWAN, R.O.C.

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

To whom it may concern :

This is to serve as proper written authorization that Spectrum Research and Testing Laboratory, Inc., 15200, Shady Grove Rd., Rockville, MD, 20850, will act as our representative in all matters relating to FCC applications for equipment approval. This includes the signing of all related documents, the transmitting of required fees, and receiving correspondence and notifications from the FCC. All acts performed by Spectrum Research and Testing Laboratory, Inc., especially modifications to our equipment under testing will be carried out on our behalf.

Meantime, the applicant certifies that in the case of an individual applicant (e.g., corporation), no party to the applicant is subject to a denial of federal benefits, that includes FCC denial of federal benefits, that includes FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 862. For a definition of a "party" for these purposes see 47 C.F.R. 1.2002 (b).

If you have any questions regarding our applications for equipment approval, please contact Spectrum Research and Testing Laboratory, Inc. by calling (301) 670-2818.

Respectfully,

Peter S. J. Kao
(Name, Surname)

President
(Position/Title)

DATE : Aug. 11, 2000

Effective Dates :

From Aug. 11, 2000 to Dec. 11, 2000

EMI TESTING REPORT

EUT : Transmitter

MODEL : RL-1T

FCC ID : PGH-YUIANE00897

PREPARED FOR :

YUI-ANE ELECTRONICS CO., LTD.

NO. 36, LANE 461, WEN PIN ROAD,

TAINAN, TAIWAN, R.O.C.

PREPARED BY :

SPECTRUM RESEARCH & TESTING LABORATORY INC.

NO. 101-10, LING 8 , SHAN-TONG LI CHUNG – LI CITY ,
TAOYUAN, TAIWAN , R. O. C.

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1. TEST REPORT CERTIFICATION**APPLICANT** : YUI-ANE ELECTRONICS CO., LTD.**ADDRESS** : NO. 36, LANE 461, WEN PIN ROAD,TAINAN, TAIWAN, R.O.C. **EUT DESCRIPTION** : Transmitter(A) POWER SUPPLY : 12V FROM BATTERY(B) MODEL : RL-1T(C) FCC ID : PGH-YUIANE00897**FINAL TEST DATE** : 09/15/2000**MEASUREMENT PROCEDURE USED :**

* PART 15 SUB PART C OF FCC RULES AND REGULATIONS (47 CFR PART 15)

* ANSI C63.4 - 1992

We hereby certify that :

The measurements contained in this report were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable.

TESTING ENGINEER : Tom Lin DATE 9/15/2000

Tom Lin

SUPERVISOR : Jesse Ho DATE 9/15/2000

Jesse Ho

APPROVED BY : S. J. H. DATE 9/15/2000

Johnson Ho

2. TEST STATEMENT

2 . 1 TEST STATEMENT

1. This letter is to explain the test condition of this project.
The EUT be tested as the following status.
2. The data was shown in this report reflects the worst – case data for the condition as listed above.
Please disregard any other processor (s) speed shown in this user manual.
3. EUT Conditions.

The EUT is a remote controller, and the remote controller can control the car door.

Operating frequency : 304.5MHz.

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released

4. NVLAP logo is to be approved by management (it is according to NVLAP requirement if it need) before use.

2 . 2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS , THE STATEMNT

A . Did have

Any departure from document policies & procedures or from specifications.

Yes _____, No _____ .

If yes , the description as below.

B . The certificate and report shall not be reproduced except in full , without the written approval of SRT laboratory.

C . The report must not be used by the client to claim product endorsement by NVLAP or any agency the government.

D. This product is a prototype product.

E. The effect that the results relate only to the items tested.

3. EUT MODIFICATIONS

The following accessories were added to the EUT during testing :

- (1). B- (near the TR1) added 470 ohm resistance.
- (2). R 1 changed to 560K ohm
- (3). R 5 removed.
- (4). R 6 changed to 1.8 M ohm.

YUI-ANE ELECTRONICS CO., LTD.
NO. 36, LANE 461, WEN PIN ROAD, TAINAN,
TAIWAN, R.O.C.
TEL : 886-06-2984273 FAX : 886-06-2983101

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

To whom it may concern :

This is to serve as proper notice that our company agrees to make
all modifications to FCC ID : PGH-YUIANE00897 as listed in section
3.0 of modification to submitted by Spectrum Research and Testing
Laboratory, Inc.

Respectfully,

Peter S. J. Kao
(Name, Surname)

President
(Position/Title)

DATE : Aug. 1, 2000

Effective Dates :

From Aug. 1, 2000 to Dec. 31, 2000

4. RADIATED EMISSION TEST**4.1 TEST EQUIPMENT**

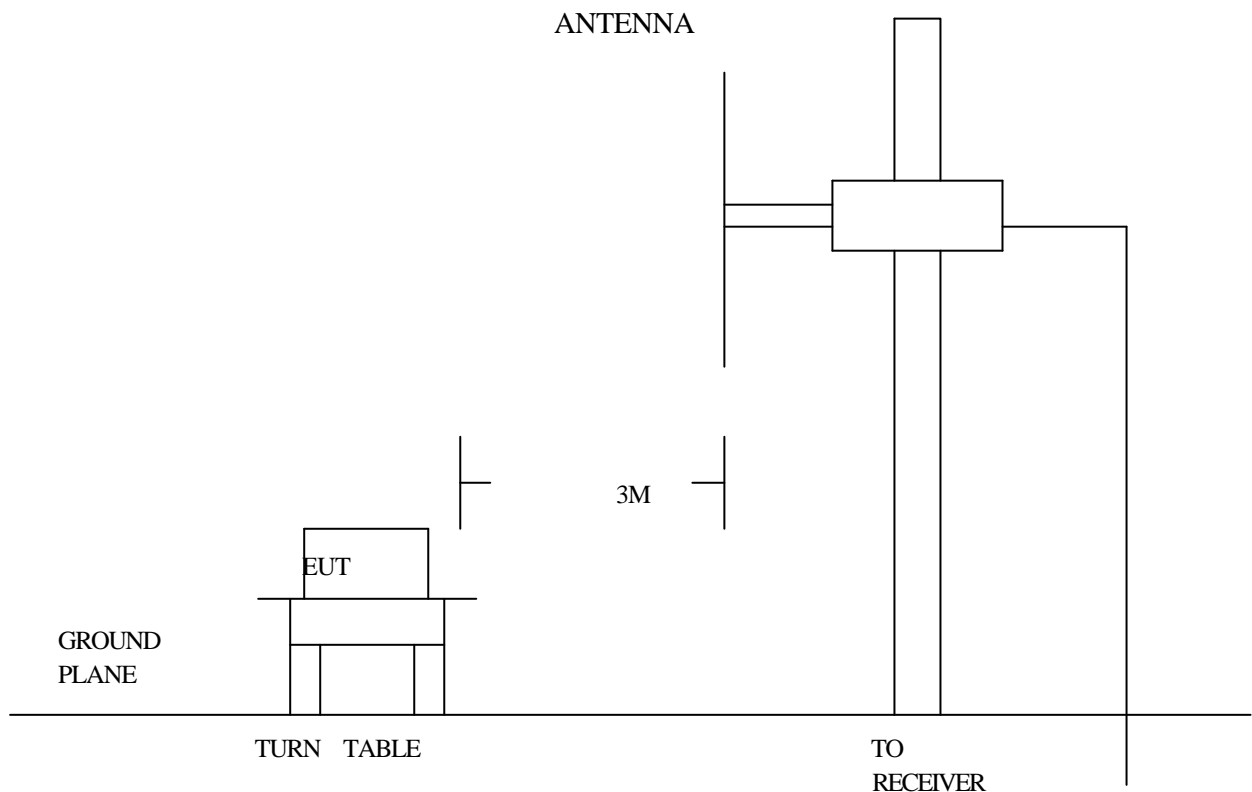
The following test equipments were used during the radiated emission test :

EQUIPMENT / FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL # / SERIAL #	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
TEST RECEIVER	9 KHz TO 2.75 MHz	R & S	ESVS30/ 830245/012	JULY 2000 ETC	1Y	√
TEST RECEIVER	20 MHz TO 1000 MHz	R & S	ESVS30/ 841977/003	MARCH 2000 ETC	1Y	√
SPECTRUM ANALYZER	100 Hz TO 1500 MHz	HP	8568B/ 3019A05294	OCT. 1999 ETC	1Y	
SPECTRUM ANALYZER	9 KHz TO 22 GHz	HP	8593E/ 3322A00670	MARCH 2000 ETC	1Y	√
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	MARCH 2000 ETC	1Y	√
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9003-534	MARCH 2000 SRT	1Y	
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9611-1239	AUG. 2000 SRT	1Y	
BI-LOG ANTENNA	26 MHz TO 2000 MHz	EMCO	3142/ 9701-1124	JAN. 2000 SRT	1Y	√
BI-LOG ANTENNA	26 MHz TO 2000 MHz	EMCO	3142/ 9608-1073	AUG. 2000 SRT	1Y	
BI-LOG ANTENNA	26 MHz TO 1100 MHz	EMCO	3143/ 9509-1152	AUG. 2000 SRT	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A08402	MARCH 2000 ETC	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A06412	JULY 2000 ETC	1Y	
HORN ANT.	1 GHz TO 18GHz	EMCO	3115/ 9602-4681	DEC. 1999 ETC	1Y	√

4 . 2 TEST PROCEDURE

- (1).The EUT was tested according to ANSI C63.4 - 1992. The radiated test was performed at SRT lab's open site. this site is on file with the FCC laboratory division, reference 31040/SIT.
- (2).The EUT, peripherals were put on the turntable which table size is 1m x 1.5m, table high 0.8 m. All set up is according to ANSI C63.4-1992.
- (3).The frequency spectrum from 30 MHz to 3.1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
- (4). The antenna high were varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5). The antenna polarization : Vertical polarization and horizontal polarization.

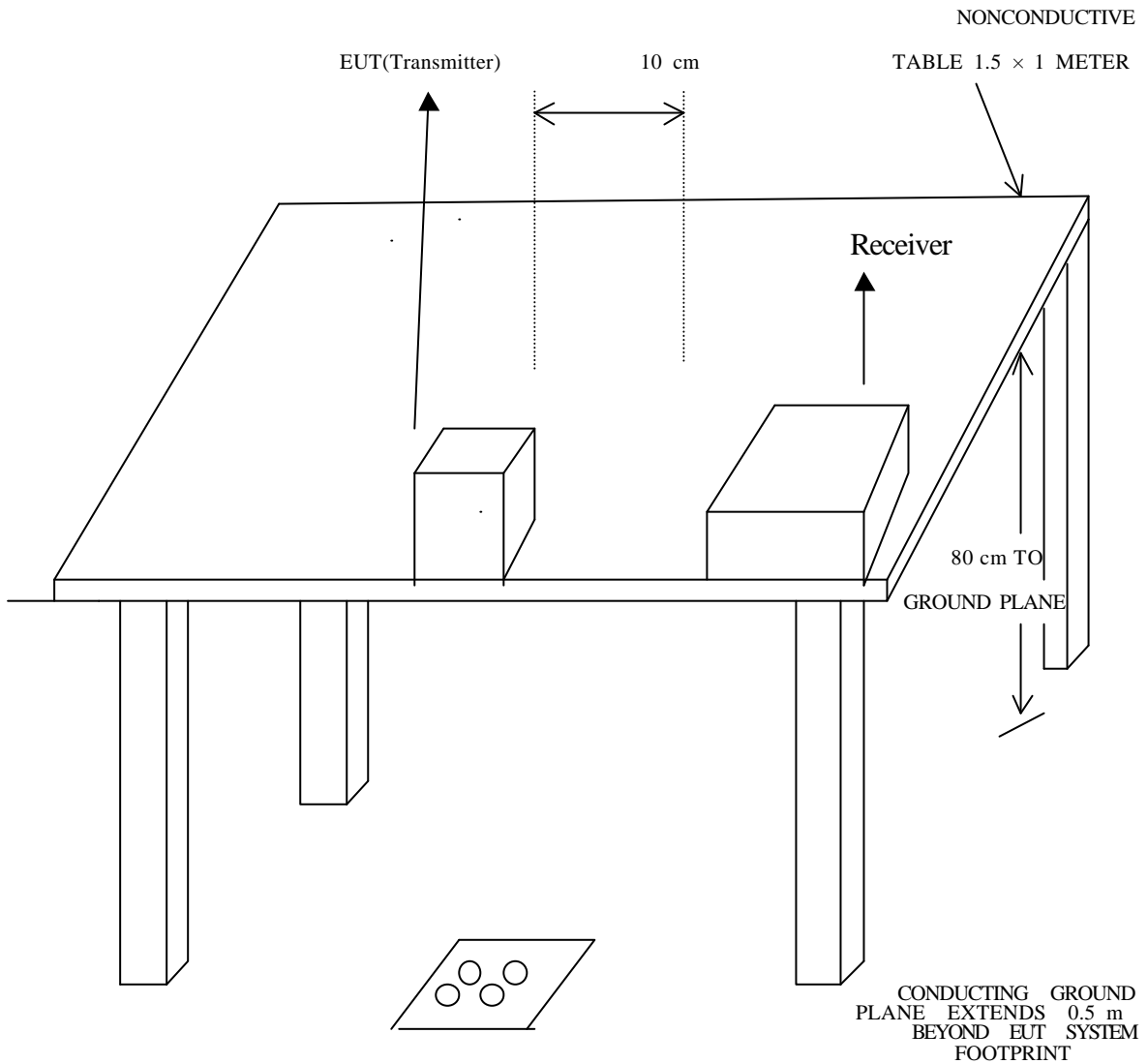
4 . 3 RADIATED TEST SET-UP



4 . 3 RADIATED TEST SET-UP

ANSI C63.4-1992

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE IN THE RANGE OF 30 KHz TO 3.1 GHz



4 . 4 CONFIGURATION OF THE EUT

The EUT was configured according to ANSI C63.4 - 1992. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

DEVICE	MANUFACTURER	MODEL #	FCC ID / DoC
Transmitter	YUI-ANE ELECTRONICS CO., LTD.	RL-1T	PGH-YUIANE00897

B. INTERNAL DEVICES

DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
NONE			

C. PERIPHERALS

DEVICE	MANUFACTURER	MODEL #	FCC ID / DoC	CABLE
RECEIVER	YUI-ANE	RL-1R	DoC	N/A
POWER SUPPLY	LEADER	CPS161A	8110190	1.2m unshielded power cord

- REMARK :

- (1). Cable - S1 : Single point shielding.
 S2 : 360 ° shielding.
 S3 : Double point shielding
- (2). Cables - All 1m or greater in length - bundled according to regulations.

4 . 5 EUT OPERATING CONDITION

Operating condition is according to ANSI C63.4 - 1992.

1. EUT power on.
2. Continue emission.
3. Operating frequency : 304.5MHz.

4 . 6 RADIATED EMISSION LIMITS

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below :

CLASS B

FREQUENCY (MHz)	DISTANCE (m)	FIELDS STRENGTH (dBmV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
ABOVE 960	3	54.0
FUNDAMENTAL FREQ.	3	75.0
HARMONIC FREQ.	3	55.0

- NOTE** : 1. In the emission tables above, the tighter limit applies at the band edges.
2. Distance refers to the distance between measuring instrument, antenna, and the closest point of any part of the device or system.

4 . 7 RADIATED EMISSION TEST RESULTS

The frequency spectrum from 30 MHz to 3.1 GHz was investigated.
 All readings from 30 MHz to 1 GHz are quasi-peak values
 with a resolution bandwidth of 120 KHz . All readings are above
1 GHz , peak values with a resolution bandwidth of 1 MHz.
 Measurements were made at 3 meters.

Temperature : 28Humidity : 57 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LIMITS (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
304.54	2.3	15.6	53.8	39.3	71.7	57.2	75.0
98.12	1.2	10.6	17.5	20.1	29.3	31.9	43.5
198.10	1.9	12.3	15.8	19.6	30.0	33.8	43.5
608.80	3.3	22.2	11.8	10.9	37.3	36.4	55.0
913.20	4.2	24.6	9.6	8.4	38.4	37.2	55.0

- REMARKS** : (1). *= Measurement does not apply for this frequency.
 (2). Uncertainty in radiated emission measured is <+/-4dB
 (3). Any departure from specification : N/A
 (4). Factor will include cable loss and correction factor.
 (5). Sample calculation
 $20 \log (\text{emission}) \text{ uV/m} = \text{Factor (dB)} + \text{Ant. Factor (dB/m)} + \text{reading (dBuV)}$
 (6). Operating frequency : 304.5MHz

Tom

SIGNED BY TESTING ENGINEER : _____

5. BANDWIDTH

5.1 Limit

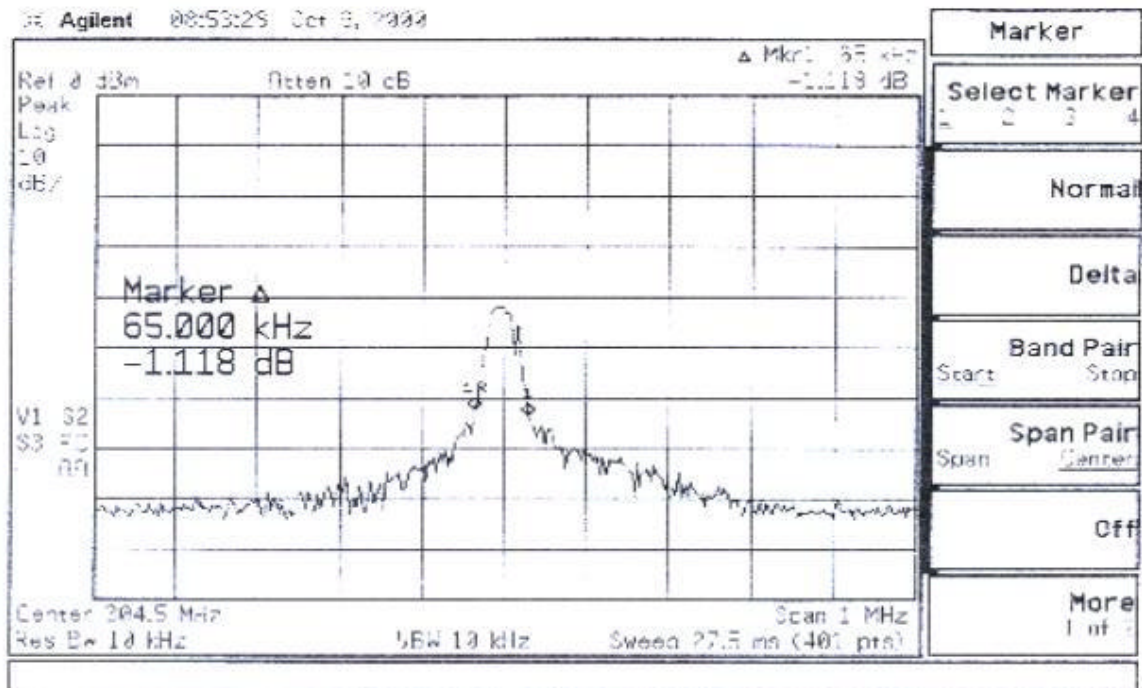
Base channel Remote : Maximun 20dB bandwidth= 760KHz

5.2 Test Result

Please see attached plootter.

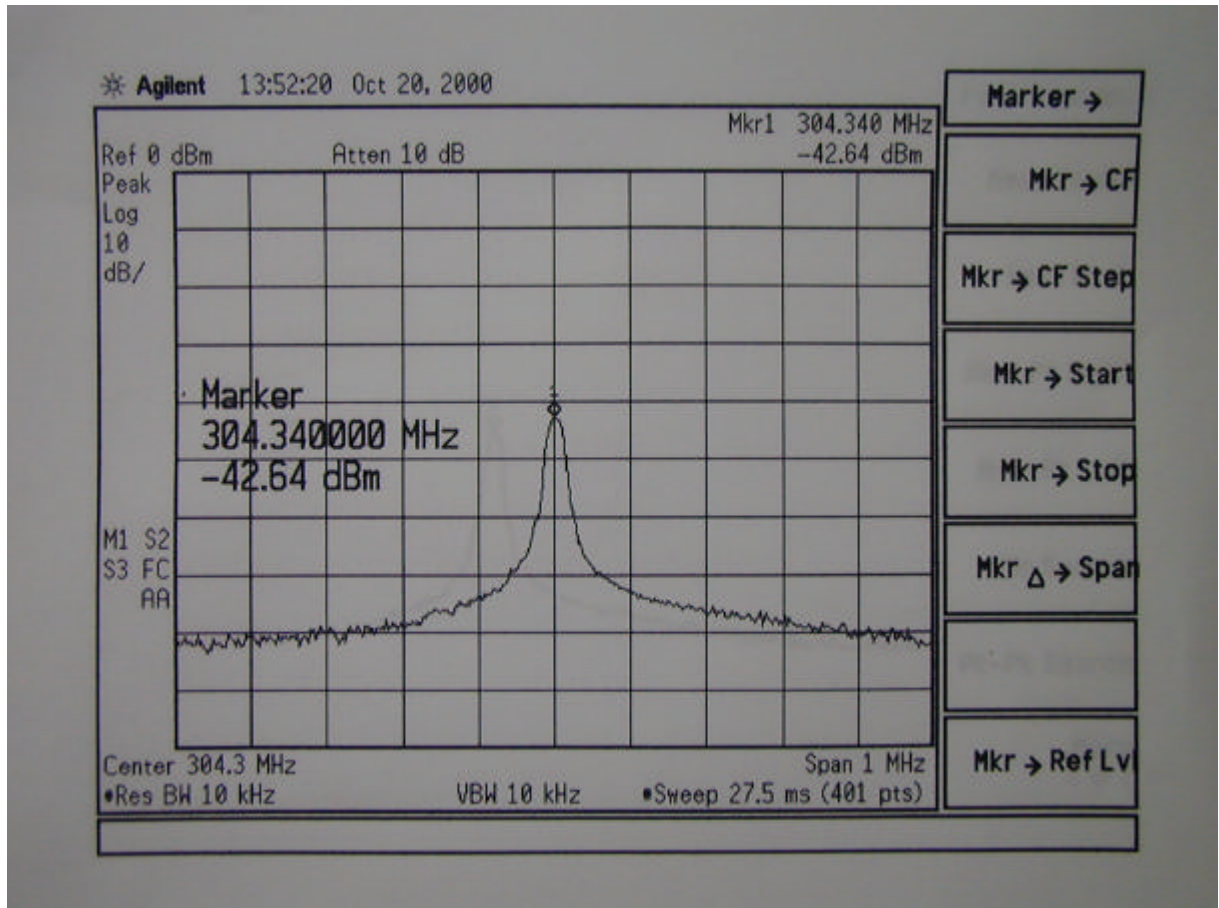
The test result is 6KHz, then it can pass FCC requirement.

SPECTRUM RESEARCH & TESTING LAB.

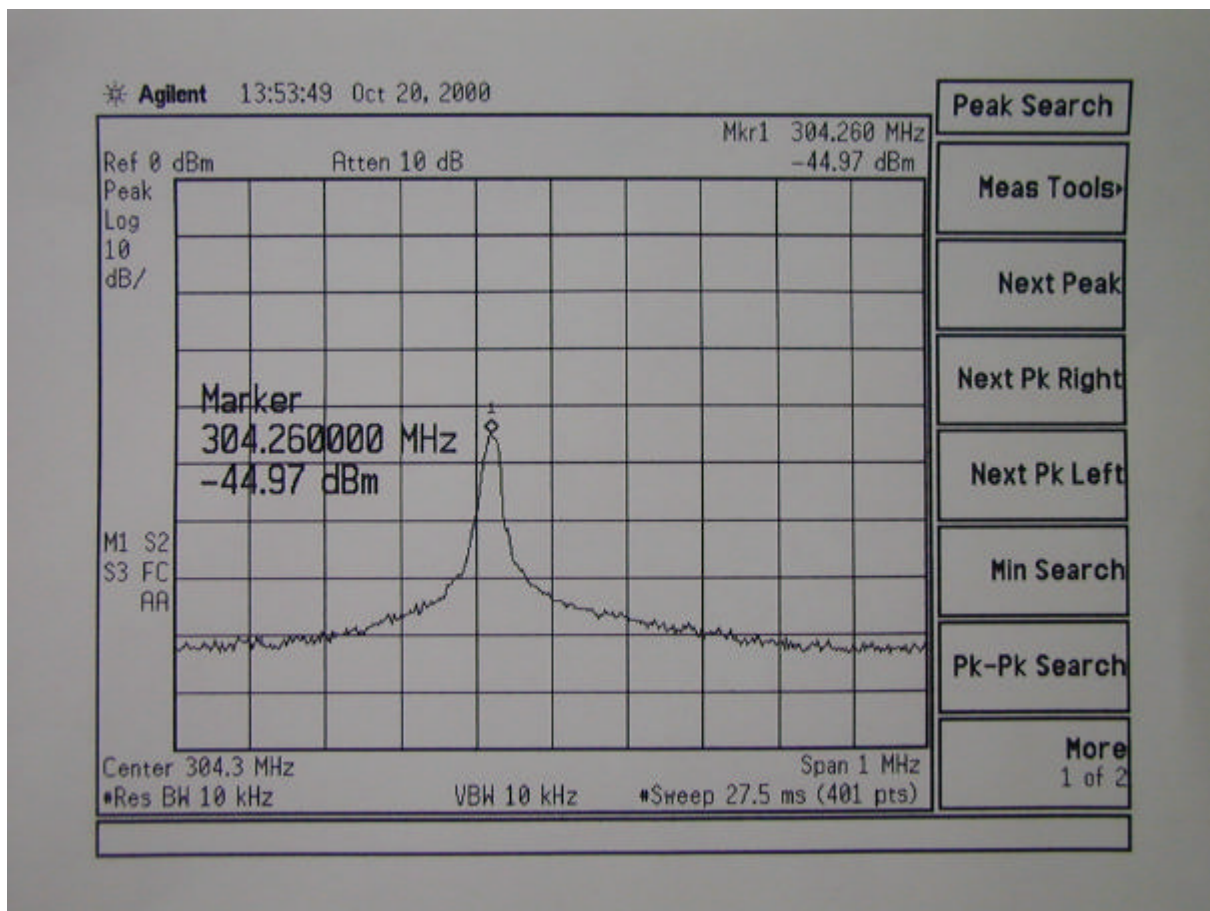
FCC ID : PGH-YUIANE00897REPORT# : T0H10

6. CHANGE THE VOLATGE FROM -15% TO +15% TO CHECK THE FREQUENCY VARIATION

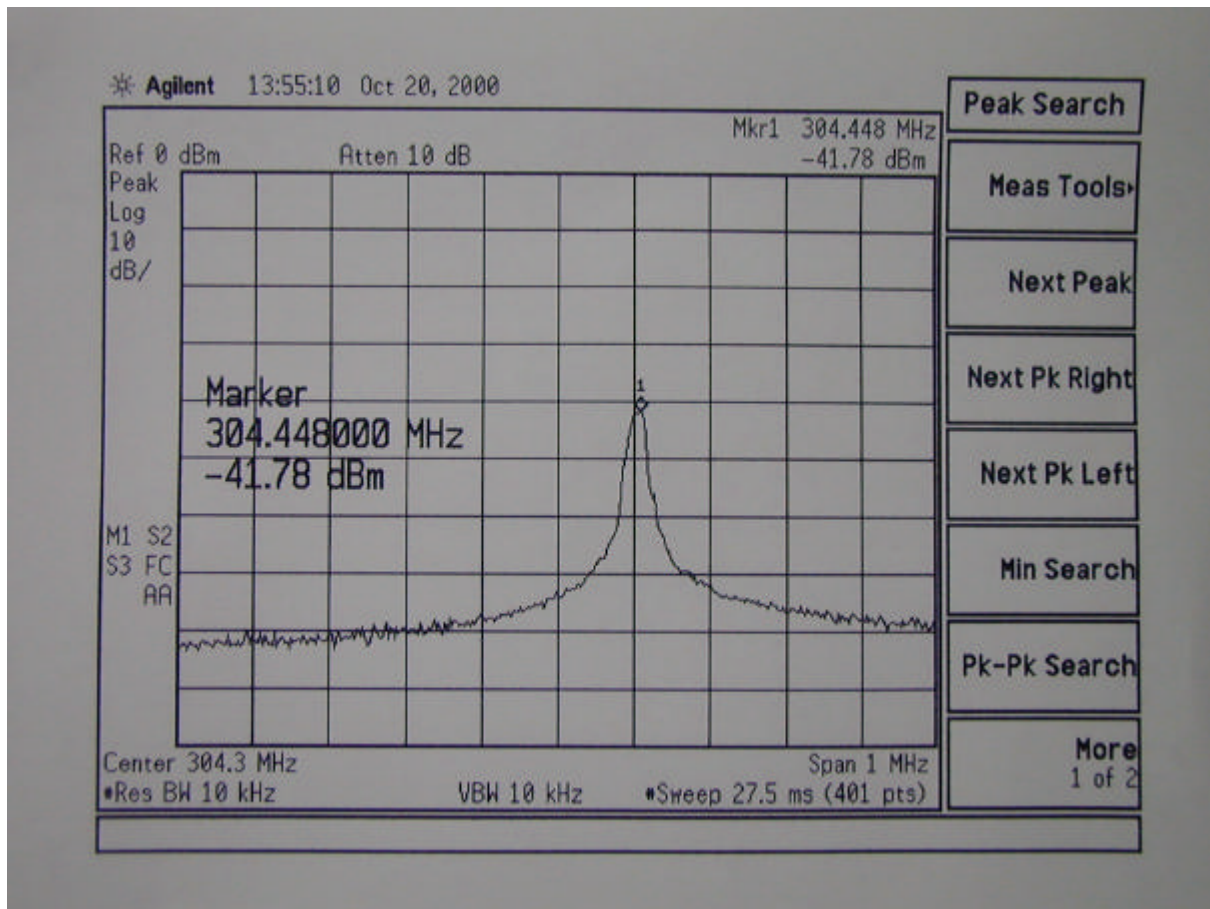
A. WHEN VOLATGE IS 12V



B. WHEN VOLATGE IS 10.2V (change -15%)



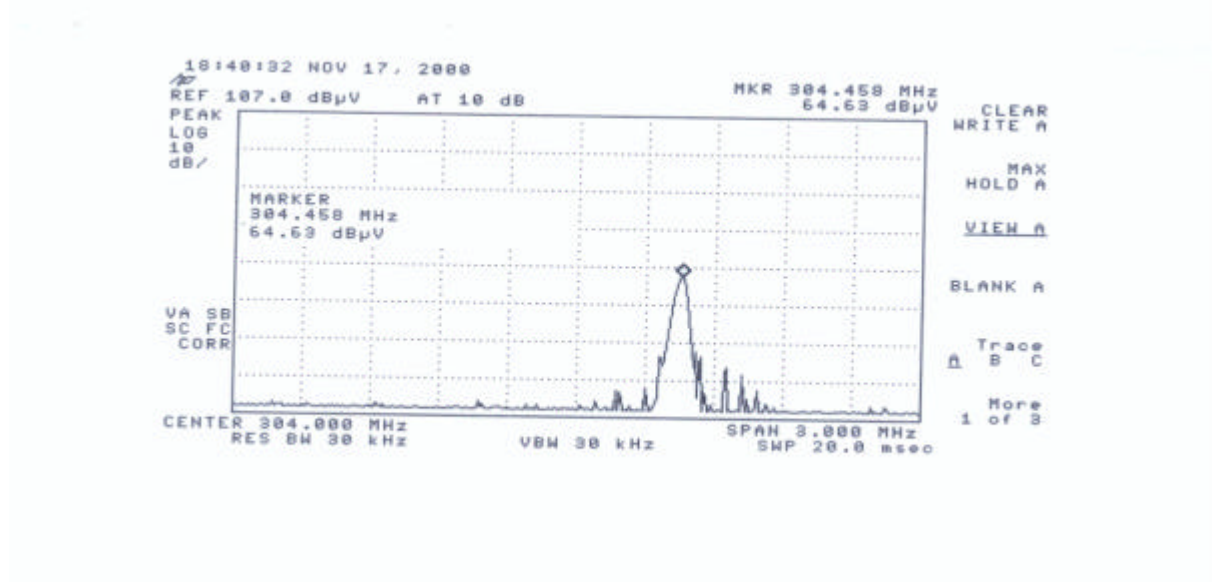
C. WHEN VOLATGE IS 13.8V (change +15%)



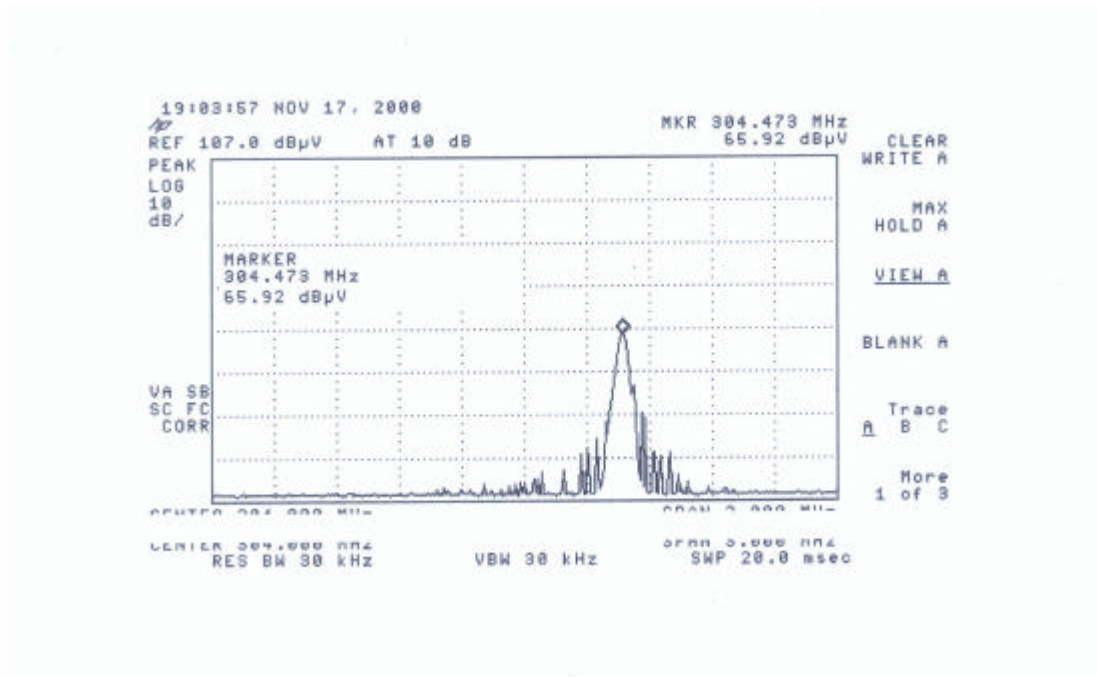
7. THE TEMPERATURE CHANGE TEST

7.1 THE TEMPERATURE CHANGE ARE AT 20 , -20 , AND 50 ,
THE FREQUENCY VARIATION ARE LISTED BELOW.

A. TEMPERATURE IS 20



B. TEMPERATURE IS -20



C. TEMPERATURE IS 50

