TEST REPORT

OF

FCC Part 95

FCC ID : T5TINFINITY-K2

Equipment Under Test	:	Radio Control Transmitter for Toys
Model No.	:	Infinity-K2
Serial No.	:	N/A
Applicant	:	DSK-Tech Inc.
Manufacturer	:	DSK-Tech Inc.
Date of Test(s)	:	2006-11-20 ~2006-12-14
Date of Issue	:	2006-12-18

In the configuration tested, the EUT complied with the standards specified above.

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Tested By: **Date** **2006-12-18**

Feel Jeong

Approved By **Date** **2006-12-18**

Albert Lim

INDEX

TABLE OF CONTENTS Page

1. General Information

1-1. Testing Laboratory

SGS Testing Korea Co., Ltd.
Wireless Div. 2FL, 18-34, Sanbon-dong, Gunpo-Si, Gyeonggi-do, Korea 435-040
www.electrolab.kr.sgs.com
Telephone : +82 +31 428 5700
FAX : +82 +31 427 2371

1-2. Details of Applicant

Applicant : DSK-Tech Inc.

Address : 400-48 Janggi-dong, Gimpo-city, Gyeonggi-do, Korea

Contact Person : Young-Ho Cho
Phone No. : 82-31-996-0841
Fax No. : 82-31-996-0843

1-3 Description of EUT

Kind of Product	Radio Control Transmitter for Toys
Model Name	Infinity-K2
Serial Number	N/A
Power Supply	DC 12 V (or rechargeable battery)
Frequency Range	26.995 MHz, 27.045 MHz, 27.095 MHz, 27.145 MHz, 27.195 MHz, 27.255 MHz
Transmit Power	-5.3 dBm
Modulation Technique	AM
Number of Channels	6 channels
Operating Conditions	-30 ~ 50 ℃
Antenna	Rod Antenna

1-4 Details of modification

-N/A

1-5. Test Equipment List

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Signal Generator	Agilent	E4438C	May 2007
Spectrum Analyzer	R&S	FSP 40	Jan. 2008
DC Power Supply	Agilent	6674A	May 2007
Tem/Hum Chamber	Han-Gil	HGTP-4050	Oct.2007
Preamplifier	Agilent	8447F	Jun.2007
EMI Receiver	R/S	ESHS 10	Aug.2007
LISN	R/S	ENV216	Dec.2006
Ultra Broadband Antenna	R&S	HL562	Sep.2007
Dipole Antenna	Schwarzbeck	VHAP/UHAP	Jun.2007
Turn Table	Deail EMC	DI-1500	N.C.R
Antenna Mast	EMCO	1050	N.C.R
Turn Device	INN-CO	FSM 230-M	N.C.R
Controller	INN-CO	CO 2000	N.C.R
Anechoic Chamber	SY Corporation	L x W x H 9.6 x 6.4 x 6.4	Jun. 2008

1.6 Summary of Test Results

Description of Test	FCC Rule	Result
AC Power Line Conducted Emissions	§15.207	Complied
Output Power Radiated	§ 95.210	Complied
Unwanted Emissions Radiated	§ 95.635	Complied
Occupied Bandwidth	§ 95.633; § 2.1049	Complied
Frequency Stability	§ 95.623	Complied

2. AC Power Line Conducted Emissions: FCC 15.207

2.1. Limit

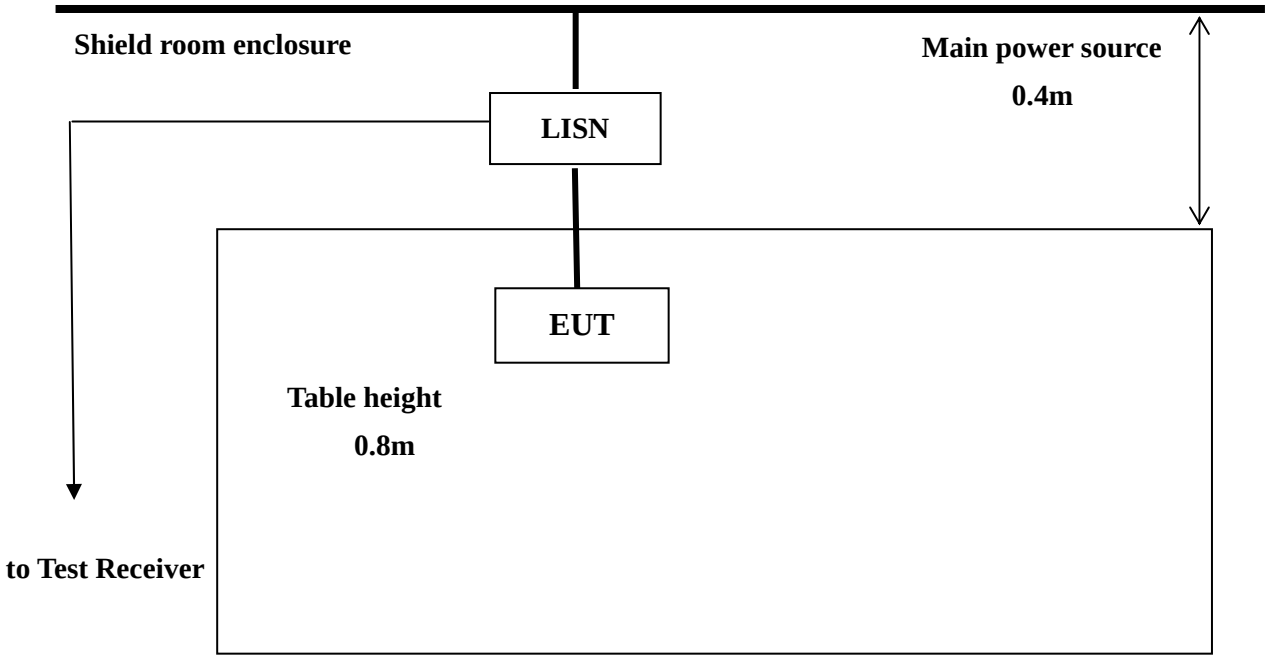
According to §15.207(a) for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network(LISN).
Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted limit (dBμV)	
	Qausi-peak	Average
0.15 – 0.50	66-56*	56-46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

* Decreases with the logarithm of the frequency.

2.2. Test Procedure

The test procedure is performed in a 6.5 m ×3.5 m ×3.5 m (L×W×H) shielded room. The EUT along with its peripherals were placed on a 1.0 m(W)× 1.5m(L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

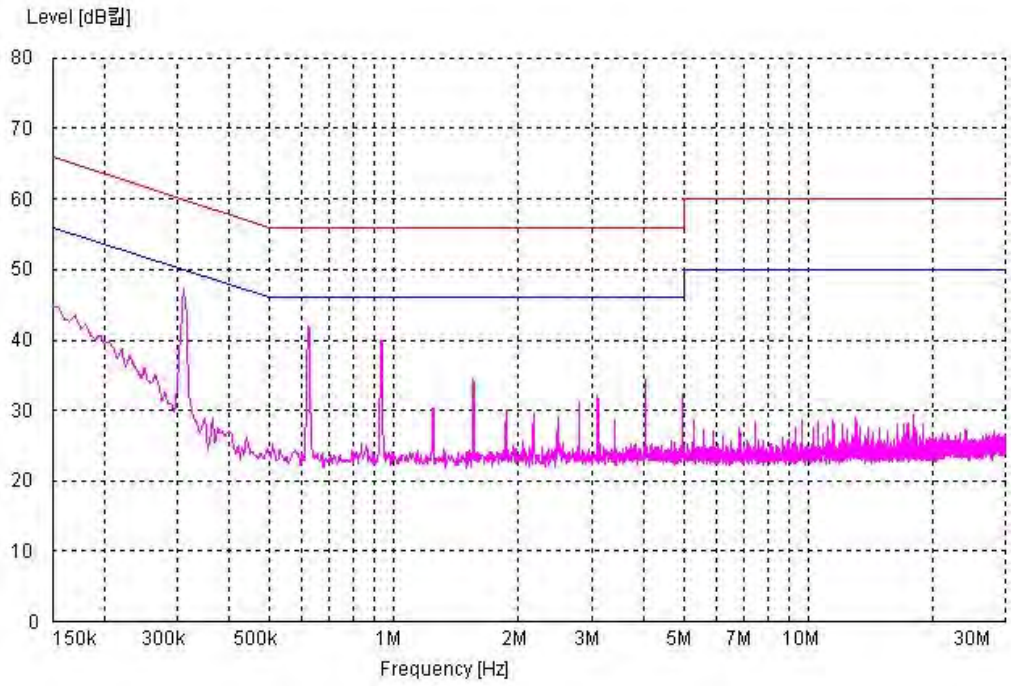


2.3. Test Results

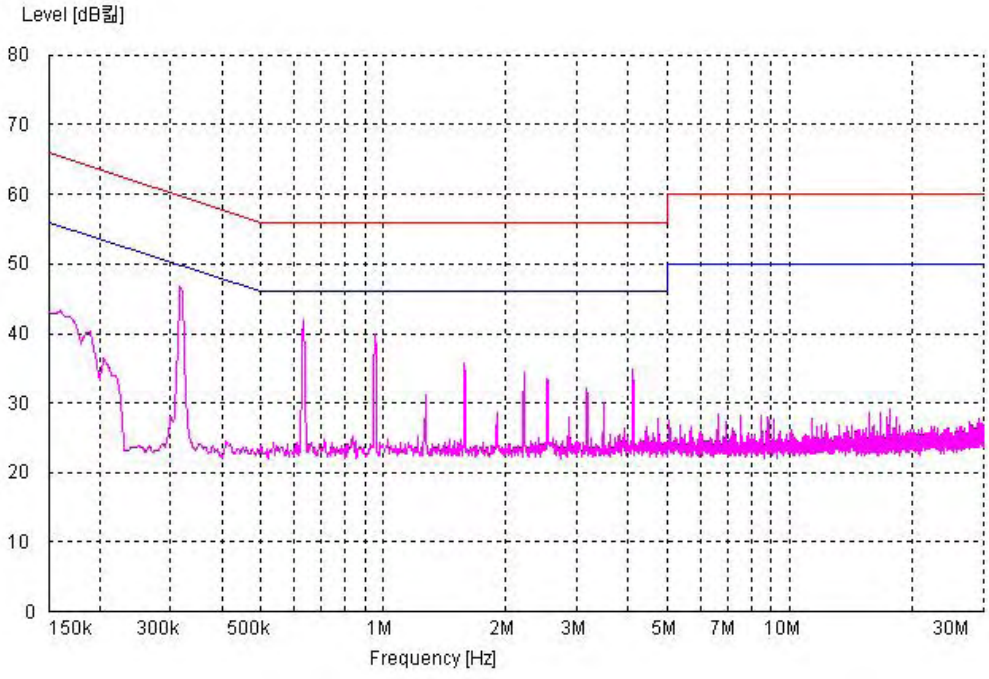
FREQ. (MHz)	LEVEL(dBμV)		LINE	LIMIT(dBμV)		MARGIN(dB)	
	Q-Peak	Average	LINE	Q-Peak	Average	Q-Peak	Average
0.150	34.8	16.0	H	65.5	55.5	30.7	39.5
0.309	46.0	44.5	H	60.0	50.0	14.0	5.5
0.619	41.5	39.9	H	56.0	46.0	14.5	6.1
0.930	39.6	37.6	H	56.0	46.0	16.4	8.4
1.549	34.7	33.1	H	56.0	46.0	21.3	12.9
4.025	32.7	29.2	H	56.0	46.0	23.3	16.8
0.160	37.9	17.3	N	66.0	56.0	28.1	38.7
0.309	46.0	44.5	N	60.0	50.0	14.0	5.5
0.623	41.7	40.3	N	56.0	46.0	14.3	5.7
0.933	39.3	37.3	N	56.0	46.0	16.7	8.7
1.554	33.1	31.8	N	56.0	46.0	22.9	14.2
4.043	31.3	25.7	N	56.0	46.0	24.7	20.3

Please refer to the following plots.

Neutral



HOT



3. Output Power Radiated: FCC 95.635

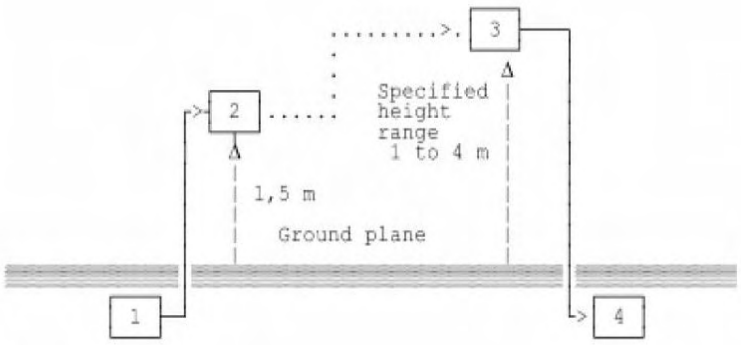
3.1. Limit

The maximum transmitter power for an R/C transmitter, under any condition of modulation, should not exceed a carrier power or peak envelop TP of: 4 Watts in the 26 - 27 MHz frequency band, except of channel frequency 27.255 MHz - 25 Watts on channel frequency 27.255 MHz

3.2. Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position closest to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 10m from EUT to correspond to the frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
5. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
6. The transmitter shall then the rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8. The maximum signal level detected by the measuring receiver shall be noted.
9. The transmitter shall be replaced by a dipole antenna (substitution antenna).
10. The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
11. The substitution antenna shall be connected to a calibrated signal generator.
12. In necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
15. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
17. The measure of the effective radiated power is the large of the two levels recorded, at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.



1) Signal generator;
2) Substitution antenna;
3) Test antenna;
4) Spectrum analyzer or selective voltmeter.

3.3. Test result

Ambient temperature : 23℃ Relative humidity : 51%

Frequency [MHz]	RF Power at signal source [dBm]	Antenna Polarization	Correction Factor [dBm]	Result ERP [dBm]	Spec Limit [dBm]	Margin [dB]
27.0943	12.9	V	-18.2	-5.3	36	41.3

* Remark:

1. Correction factor is included cable loss, coupling factor and attenuator loss.
2. The measurement of radiated power of the fundamental frequency was performed at EMCC labs.
3. Refer to EMCC test report.

4. Unwanted Emissions Radiated: FCC 95.635

4.1. Limit

Calculation of test results: Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements. Calculation of FCC Limit according to §95.635(b), (1), (3), (7) for R/C transmitter. The power of each unwanted emission shall be less than the transmitter power (TP) by: 1) At least 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50 % up to and including 100 % of the authorized bandwidth. 2) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100 % up to and including 250 % of the authorized bandwidth 3) At least 43+10log (TP) dB on any frequency removed from the center of the authorized bandwidth by more than 250 %.

4.2. Test Procedure

1. ERP measurement of unwanted emission use the general substitution method as described at 3.2
2. The EUT is measured in horizontal and vertical position with searching of max. radiation by rotation of turn table and changing of the antenna high 1 m to 4 m over a frequency range from the lowest EUT generated frequency until the 10th harmonic of it.

4.3. Test Results

Ambient temperature : 23℃ Relative humidity : 51%

Frequency [MHz]	RF Power at signal source [dBm]	Antenna Polarization	Correction Factor [dBm]	Result ERP [dBm]	Spec Limit [dBm]	Margin [dB]
54.187	-24.4	V	-10.4	-34.8	-13	21.8
81.283	-37.4	V	-10.2	-47.6	-13	34.6
108.377	-35.1	V	-9.9	-45.0	-13	32.0
135.472	-33.6	V	-10.7	-44.3	-13	31.3
162.566	-36.3	V	-10.2	-46.5	-13	33.5
189.660	-31.3	V	-9.5	-40.8	-13	27.8
216.754	-34.9	V	-9.5	-44.4	-13	31.4
243.849	-46.3	V	-10.7	-57.0	-13	44.0
270.943	-44.8	V	-10.5	-55.3	-13	42.3

* Remark:

1. Correction factor is included cable loss, coupling factor and attenuator loss.

5. Occupied Bandwidth: FCC 95.633, FCC 2.1049

5.1. Limit

An R/C transmitter is allowed to transmit any appropriate non-voice emission, which meets the emission limitations for an R/C transmitter. The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 kHz.

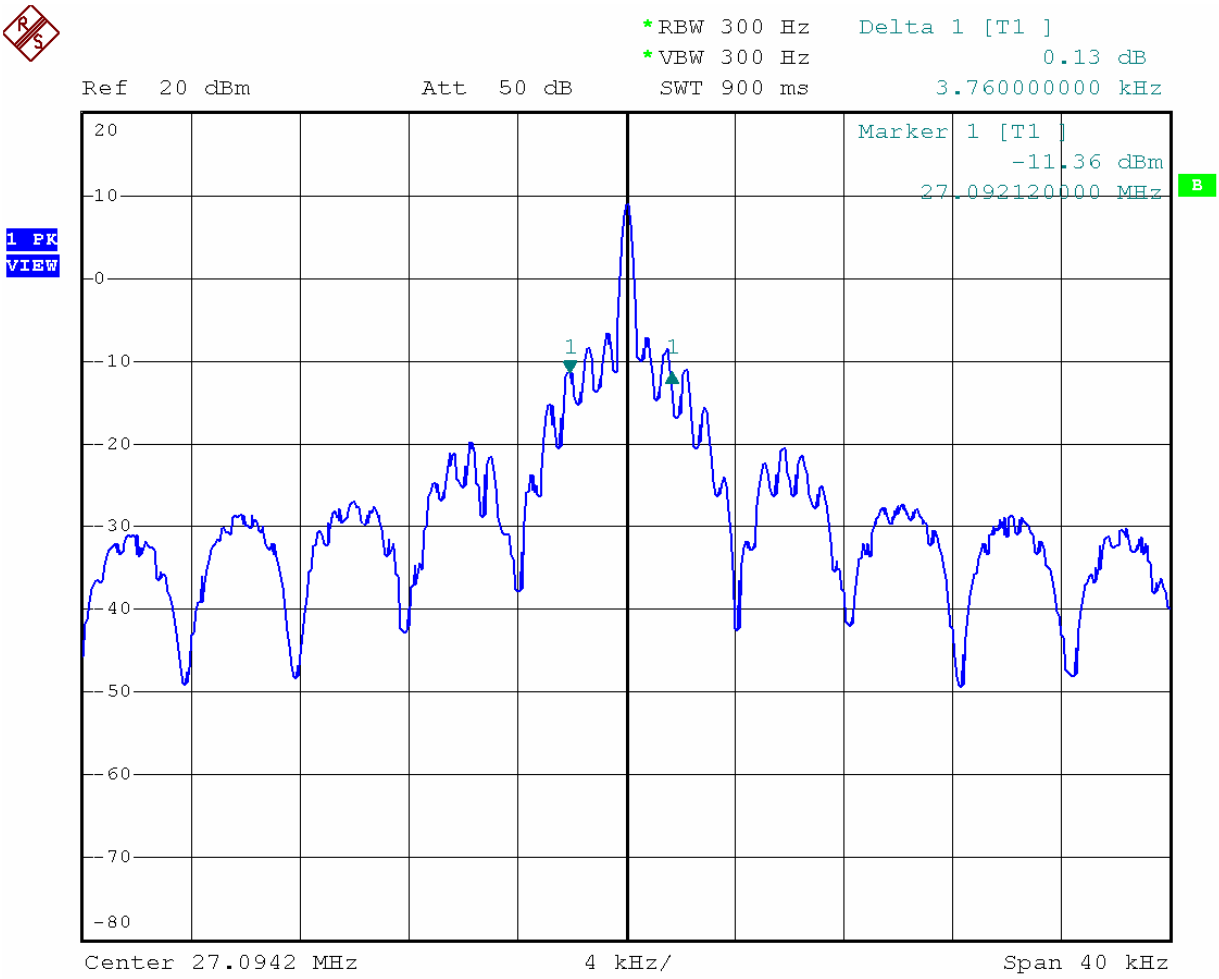
5.2. Test Procedure

1. The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 kHz.
2. It will be determined by 20 dB down to the maximum levels of the modulated carrier using Peak detector function with an instrument resolution bandwidth approximately equal to 1 % of the emission bandwidth of the device under test.

5.3. Test Result

Ambient temperature : 24 ℃ Relative humidity : 52 %

Occupied Bandwidth (kHz)	Authorized Bandwidth (kHz)
3.76	8.00



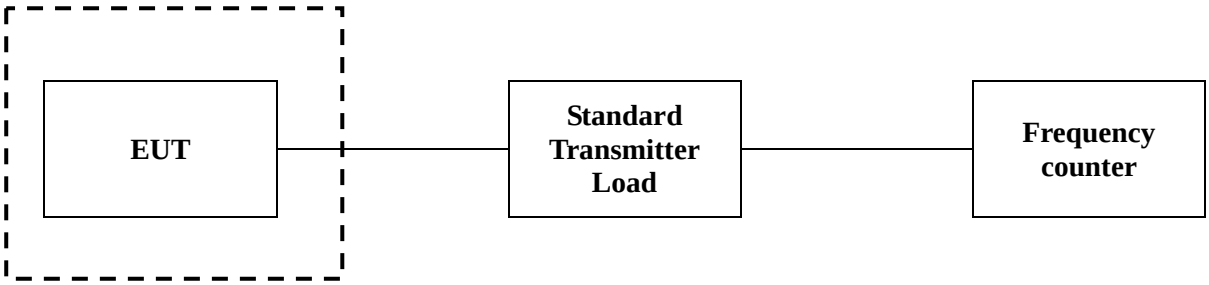
6. Frequency Stability: FCC 95.623

6.1. Limit

Each R/C transmitter that transmits in the 26 - 27 MHz frequency band with a mean TP of 2.5 Watts or less and that is used solely by the operator to turn on and/or off a device at a remote location, other than a device used solely to attract attention, must be maintained within a frequency tolerance of 0.01 % (100 ppm). All other R/C transmitters that transmit in the 26 - 27 MHz frequency band must be maintained within a frequency tolerance of 0.005 % (50 ppm).

6.2. Test Procedure

1. The carrier frequency is the stability of the transmitter to maintain an assigned carrier frequency.
2. The frequency stability is measured with variation of ambient temperature from -30℃to+50℃.

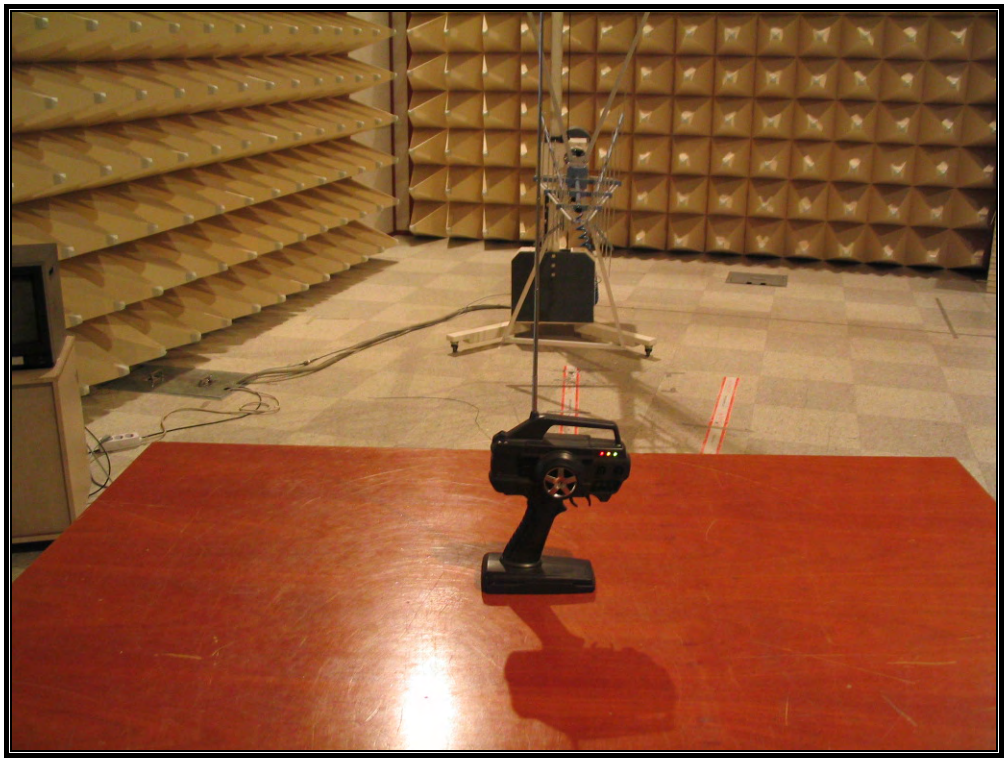


6.3. Test Results

Ambient temperature : 20 ℃ Relative humidity : 53 %

Voltage [%]	Voltage [V]	Temperature [deg C]	Measured Frequency [Hz]	Frequency Error [ppm]
100%	12.0	-30	27094100	-33.216
100%	12.0	-20	27094115	-32.663
100%	12.0	-10	27094135	-31.925
100%	12.0	0	27094150	-31.371
100%	12.0	+10	27094200	-29.526
100%	12.0	+20	27094290	-26.204
100%	12.0	+30	27094315	-25.281
100%	12.0	+40	27094410	-21.775
100%	12.0	+50	27094515	-17.900
115%	13.8	+20	27094650	-12.918
85%	10.2	+20	27094315	-25.281
End Point	5.30	+20	27094150	-31.371

Appendix A-1. Photo of Radiated Spurious Emission Test



Appendix A-2.Photo of AC Power Line Conducted Emission Test

Appendix B Photos of the EUT

● **Front View of EUT**

● **Rear View of EUT**

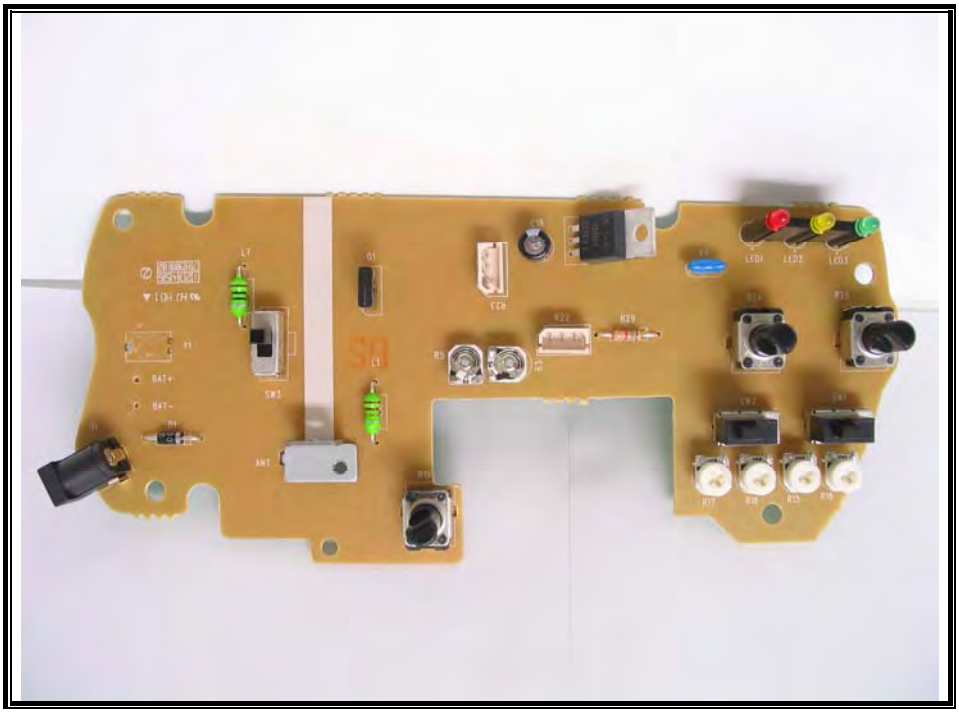
● **Left View of EUT**

● **Right View of EUT**

● **Top View of EUT**

● **Bottom View of EUT**

● **Top of Main-board**



● **Bottom of Main-board**