

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 95 SUBPART C REQUIREMENT**

*OF*

**4 Channel Digital Proportional Remote Control System**

**MODEL No.: Elite 4**

**BRAND NAME: N/A**

**FCC ID: SEU-CENTURYHELI**

**REPORT NO: SZE0407049**

**ISSUE DATE: August 16, 2004**

*Prepared for*

**CENTURY HELICOPTER PRODUCTS  
1740C JUNCTION AVE., SAN JOSE, CA 95112 U.S.A**

*Prepared by*

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**VERIFICATION OF COMPLIANCE**

Applicant:	CENTURY HELICOPTER PRODUCTS 1740C JUNCTION AVE.,SAN JOSE,CA95112 U.S.A
Product Description:	4 Channel Digital Proportional Remote Control System
Brand Name:	N/A
Model Number:	Elite 4
Serial Number:	N/A
File Number:	SZE0407049
Date of Test:	July 23,2004 ~ August 10, 2004

**We hereby certify that:**

The above equipment was tested by COMPLIANCE CERTIFICATION SERVICES (SHENZHEN) INC. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA 603 and the sample tested as described in this report is in compliance with the FCC Rules Part 95 Subpart C.

The test results of this report relate only to the tested sample identified in this report.

*Approved By*

---

**Clinton Kao / Q.A. Manager**  
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**SERVICES (SHENZHEN) INC.**

*Reviewed By*

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**Jimmy**  
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**SERVICES (SHENZHEN) INC.**

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## 1. GENERAL INFORMATION

### 1.1 Product Description

The Century helicopter products, Model: Elite 4 (referred to as the EUT in this report). The EUT is an short range, lower power, wireless Controller designed as an “ Output Device”. It is designed by way of utilizing the FM modulation achieves the system operating.

A major technical descriptions of EUT is described as following:

- A). Frequency Tolerance: 0.329 KHz (0.002%)
- B). Communication Type: None Voice Communication
- C). Modulation: FM
- D). Emission type: F1D
- E). Emission designator: 1K82F1D (2M+2DK, M=550, D=0.329, K=1.1, Necessary Bandwidth =1.82 KHz)
- F). Emission Bandwidth: 4.5 KHz (Limit: 8 KHz)
- G). Maximum Transmitter Power: 26.06 mW (Limit: 750 mW)
- H). Output power Modification: Fixed can't be change
- I ). Unwanted Radiation:
  - 1). At least 41.41 (Limit 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 49.83 (Limit 45 dB) on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 125% of the authorized bandwidth.
  - 3). At least 63.32 (Limit 55 dB) on any frequency removed from the center of the authorized bandwidth by more than 125% up to and including 250% of the authorized bandwidth.
  - 4). At least 54.26 (Limit  $56+10\log_{10}(T)$  dB) on any frequency removed from the center of authorized bandwidth by more than 250%)
- J ). Antenna Designation: Non-User Replaceable (Fixed)
- K). Power Supply: 12 V dc by battery
- L). DC Voltage= 9.8 V and DC Current= 2.7 mA into the final stage for normal operation over the power range
- M). Battery Endpoint: DC 9.8 V
- N). Operating Frequency Range and Channels  
Frequency Range: 72.81~72.87 MHz  
Total 4 channels:

CH 1 ---- 72.81 MHz	CH 2 ---- 72.83 MHz
CH 3 ---- 72.85 MHz	CH 4 ---- 72.87 MHz

## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: SEU-CENTURYHELI filing to comply with the FCC Part 95, Subpart C Rules.

## 1.3 Test Methodology

The radiated emission testing was performed according to the procedures in TIA/EIA 603 and FCC CFR 47 2.1033, 2.1046, 2.1047, 2.1049, 2.1053, 2.1055 and 2.1057

## 1.4 Test Facility

The open area test site used to collect the radiated data is located on the address of COMPLIANCE CERTIFICATION SERVICES (SHENZHEN) INC. No. 6, Jinao industrial park, No.35 Jukeng Road, Dashuikeng Village, Guanlan Town, Baoan District, Shenzhen, China. The Open Area Test Site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2001 and CISPR 22/EN 55022 requirements.

## 1.5 Special Accessories

Not available for this EUT intended for grant.

## 1.6 Equipment Modifications

Not available for this EUT intended for grant.

## 2. System Test Configuration

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the TX frequency was fixed which was for the purpose of the measurements.

### 2.3 GENERAL TECHNICAL REQUIREMENTS

- a). Section 95.207: Authorized operation channels: 72MHz-73MHz
- b). Section 95.623 (c) : Frequency Tolerance less than 0.002%
- c). Section 95.631 (b) : Transmit non-voice emission
- d). Section 95.633 (b) : Emission Bandwidth shall less than 8KHz
- e). Section 95.635: Unwanted radiation

According to Section 95.635(b), the power of each unwanted emission shall be less than Transmitted Power as specified below:

- 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 45 db on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 125% of the authorized bandwidth.
- 3). At least 55 db on any frequency removed from the center of the authorized bandwidth by more than 125% up to and including 250% of the authorized bandwidth.
- 4). At least  $56 + 10 \log_{10}(T)$  db on any frequency removed from the center of the authorized bandwidth by more than 250%.
- f). Section 95.639: Maximum transmitter power less than 0.75W
- g). Section 95.647: Antenna shall be a dedicate type
- h). Section 95.649: Output power can't be change
- i). Section 95.651: Crystal control required

## 2.4 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**

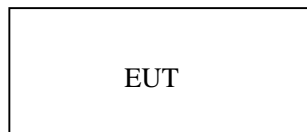




Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	4 Channel Digital Proportional Remote Control System	N/A	ELITE4	SEU-CENTURYHELI	N/A	<b><i>EUT</i></b>

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§ 95.207	Authorized operation channels	Compliant
§ 95.623	Frequency tolerance	Compliant
§ 95.631	Emission type	Compliant
§ 95.633	Emission bandwidth	Compliant
§ 95.635	Unwanted radiation	Compliant
§ 95.639	Maximum transmitter power	Compliant
§ 95.647	Transmitter antenna	Compliant
§ 95.649	Power capability	Compliant
§ 95.651	Crystal control required	Compliant

### 4. DESCRIPTION OF TEST MODES

The EUT (Radio control system) has been tested under normal operating condition. Four channels are chosen for testing.

## **5. AUTHORIZED OPERATION CHANNELS**

### **5.1 PROVISIONS APPLICABLE**

According to FCC Part 95 Section 95.207, the authorized operation channels for model aircrafts are located on the frequencies from 72.01 to 72.99 with the interval of 20KHz,

### **5.2 COMPLIANCE**

The EUT designed as a model aircraft controller with the operating frequency of 72.81 MHz, 72.83 MHz, 72.85MHz and 72.87 MHz is absolutely in accordance with the requirement above. The EUT dedicatedly operates on either of the four channels individually, operates on any two or more channels at the same time is not available.

## 6. FREQUENCY TOLERANCE

### 6.1 PROVISIONS APPLICABLE

- a). According to FCC Part 2 Section 2.1055(a)(1), the frequency stability shall be measured with variation of ambient temperature from  $-30$  to  $+50$  centigrade.
- b). According to FCC Part 2 Section 2.1055(d)(2), for hand carried battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
- c). According to FCC Part 95 Section 95.623(c), the frequency tolerance must be maintained within 0.002%.

### 6.2 MEASUREMENT PROCEDURE

#### 6.2.1 Frequency stability versus environmental temperature

1. Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
3. Set the temperature of chamber to  $50$  . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a  $10$  decreased per stage until the lowest temperature  $-30$  is measured, record all measured frequencies on each temperature step.

#### 6.2.2 Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within  $15$  to  $25$  . Otherwise, an environment chamber set for a temperature of  $20$  shall be used. Install new battery in the EUT.
2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.
3. For battery operated only device, supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

## 6.3 TEST SETUP BLOCK DIAGRAM(block diagram of configuration)

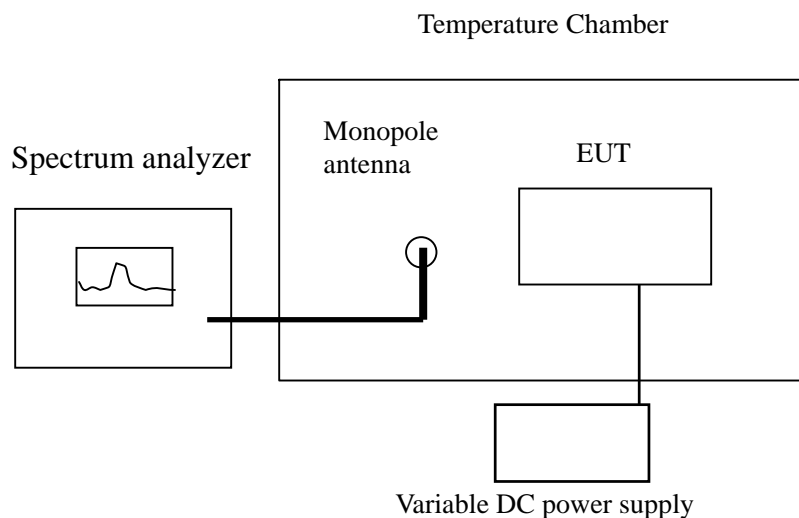


Figure 1

## Test equipment used:

Equipment	Model No.	Serial No.	Cal. Due.
Advantest Spectrum Analyzer	R3132	120901472	06/07/2005
Shihin Temperature Chamber	BM50-CB	908	06/29/2005
DC Power Supply	WYK-605	N/A	05/29/2005
Huber + suhner low loss cable	N/A	N/A	06/07/2005
Monopole Antenna	N/A	N/A	N/A

## 6.4 TEST RESULT

## a. Frequency stability versus input voltage (battery operation end point voltage is 9.8V)

Reference Frequency (MHz)	Frequency Measured at end point voltage	Frequency Deviation (%)	Limit (%)
72.87000	72.87045	0.00031563	0.002

## b. Frequency stability versus ambient temperature

Reference Frequency:72.85025 MHz		Limit: $\pm 0.002\%$	
Environment Temperature ( )	Power Supply	Frequency deviation measured with time Elapse (10 minutes)	
		(MHz)	%
50	New Battery	72.86964	-0.00049403
40	New Battery	72.86988	-0.00016468
30	New Battery	72.87000	0.00000000
20	New Battery	72.87000	0.00000000
10	New Battery	72.87007	0.00009606
0	New Battery	72.87012	0.00016468
-10	New Battery	72.87023	0.00031563
-20	New Battery	72.87039	0.00053520
-30	New Battery	72.87043	0.00059009

## **7. EMISSION TYPE**

### **6.4 PROVISIONS APPLICABLE**

According to FCC Part 95 Section 95.631(b) : An R/C transmitter may transmit any appropriate non-voice emission which meets the emission limitations of § 95.633.

### **6.5 COMPLIANCE**

The EUT is solely used to control model aircraft without transmitting any voice emission and it has been tested to comply with the emission limitation of § 95.633.

## 8. EMISSION BANDWIDTH

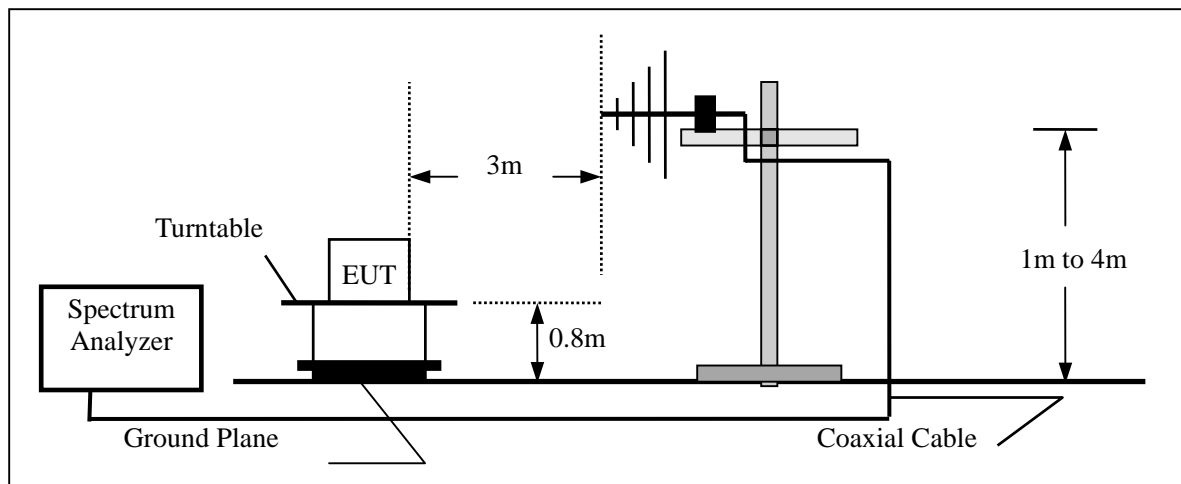
### 8.1 PROVISIONS APPLICABLE

According to FCC Part 95 Section 95.633 (b): The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 KHz.

### 8.2 MEASUREMENT PROCEDURE

- 1). The EUT was placed on a turn table which is 0.8m above ground plane.
- 2). Set EUT as normal operation
- 3). Set SPA Center Frequency = fundamental frequency , RBW,VBW= 1KHz, Span =50KHz.
- 4). Set SPA Max hold. Mark peak, -26dB.

### 8.3 TEST SETUP BLOCK DIAGRAM (Block Diagram of Configuration)



### 8.4 MEASUREMENT EQUIPMENT USED:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ADVANTEST	R3132	120901472	06/08/2004	06/07/2005
EMI Test Receiver	HP	8546A	3448A00232	06/08/2004	06/07/2005
Pre-Amplifier	HP	8447D	2944A07999	06/08/2004	06/07/2005
Bi-log Antenna	EMCO	3142	9910-1436	06/08/2004	05/07/2005

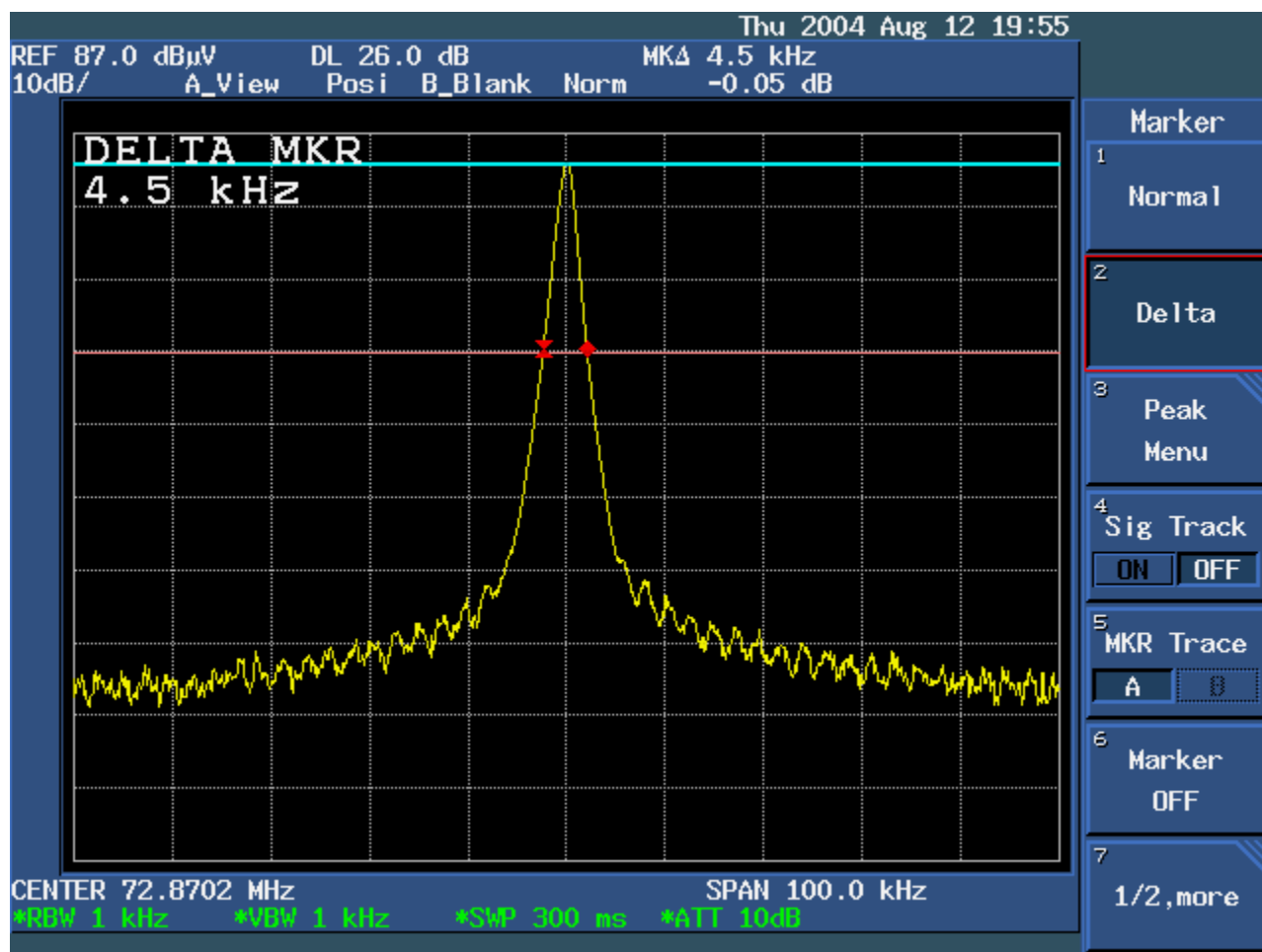
### 8.5 MEASUREMENT RESULT:

26dB bandwidth = 4.5 KHz

Refer to attached data chart.



## 26 db bandwidth test data



## 9. UNWANTED RADIATION

### 9.1 PROVISIONS APPLICABLE

According to Section 95.635(b), the power of each unwanted emission shall be less than Transmitted Power as specified below:

- 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 45 db on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 125% of the authorized bandwidth.
- 3). At least 55 db on any frequency removed from the center of the authorized bandwidth by more than 125% up to and including 250% of the authorized bandwidth.
- 4). At least  $56 + 10 \log_{10} (TP)$  db on any frequency removed from the center of the authorized bandwidth by more than 250%.

### 9.2 MEASUREMENT PROCEDURE

- 1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- 2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- 3). The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- 4). The transmitter shall be switched on; if possible, without the modulation and the measurement 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 the measuring receiver detects a maximum signal level.
- 6). The transmitter shall then be rotated through  $360^\circ$  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 the measuring receiver detects a maximum signal level.
- 8). The maximum signal level detected by the measuring receiver shall be noted.
- 9). The measurement shall be repeated with the test antenna set to horizontal polarization.
- 10). Replace the antenna with a proper Antenna (substitution antenna).
- 11). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- 12). The substitution antenna shall be connected to a calibrated signal generator.

13). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

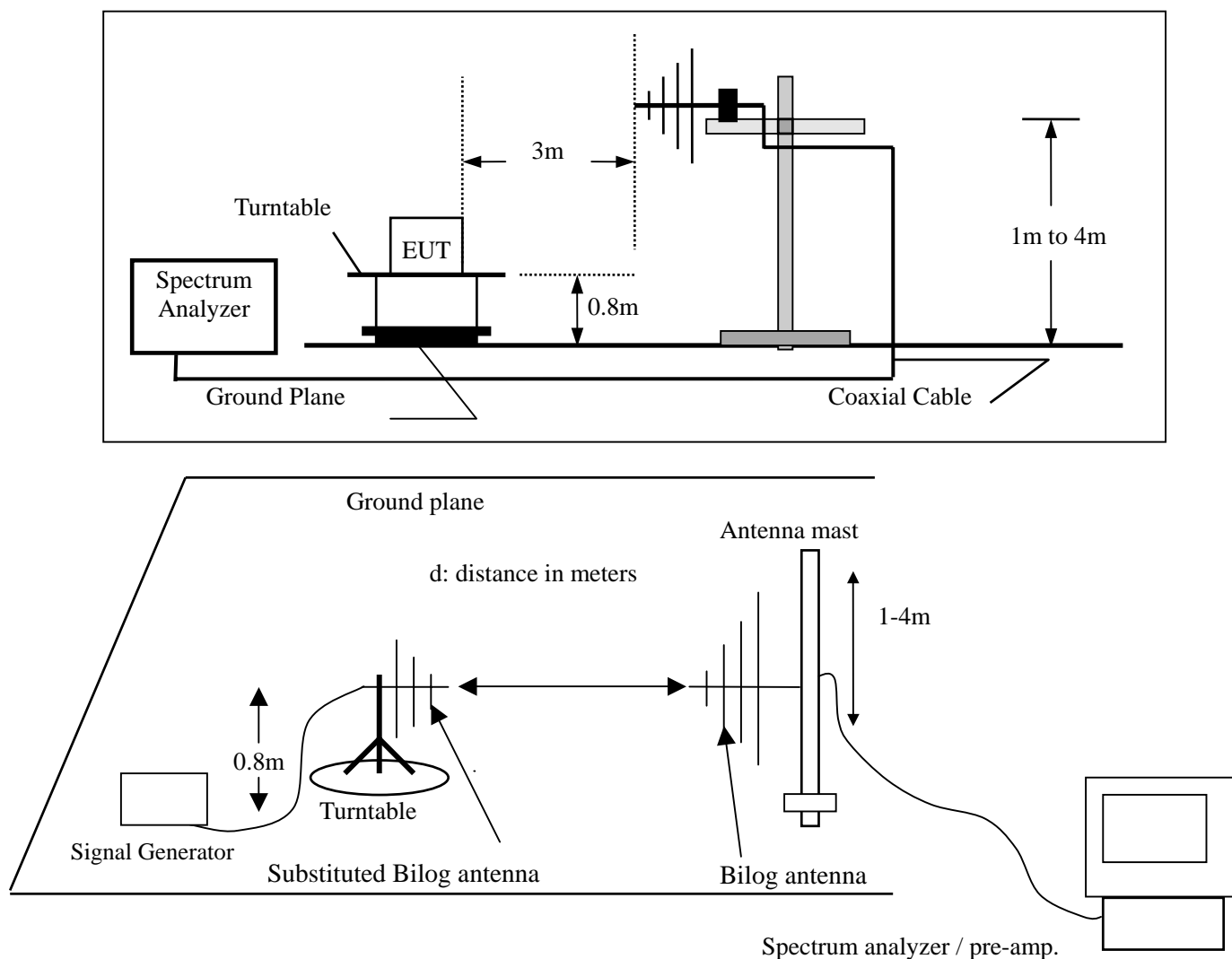
14). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

15). The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

16). 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.

17). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

### 9.3 TEST SETUP BLOCK DIAGRAM (block diagram of configuration)



**9.4 MEASUREMENT EQUIPMENT USED:**

<b>Open Area Test Site</b>					
<b>EQUIPMENT TYPE</b>	<b>MFR</b>	<b>MODEL NO.</b>	<b>SERIAL NO.</b>	<b>LAST CAL.</b>	<b>CAL DUE.</b>
Spectrum Analyzer	ADVANTEST	R3132	N/A	06/08/2004	06/07/2005
EMI Test Receiver	HP	8546A	3448A00232	06/08/2004	06/07/2005
Pre-Amplifier	HP	8447D	2944A07999	06/08/2004	06/07/2005
Bi-Log Antenna	EMCO	3142	9910-1436	06/08/2004	06/07/2005
Bi-Log Antenna	SCHAFFNER	CBL6143	5082	06/08/2004	06/07/2005
CABLE	TIME MICROWAVE	LMR-400	N-TYPE04	06/08/2004	06/07/2005

**9.5 MEASUREMENT RESULTS:**

Calculation: Limit (dBm)= EL-56-10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,, in this application, the TG is 14.16 dBm.

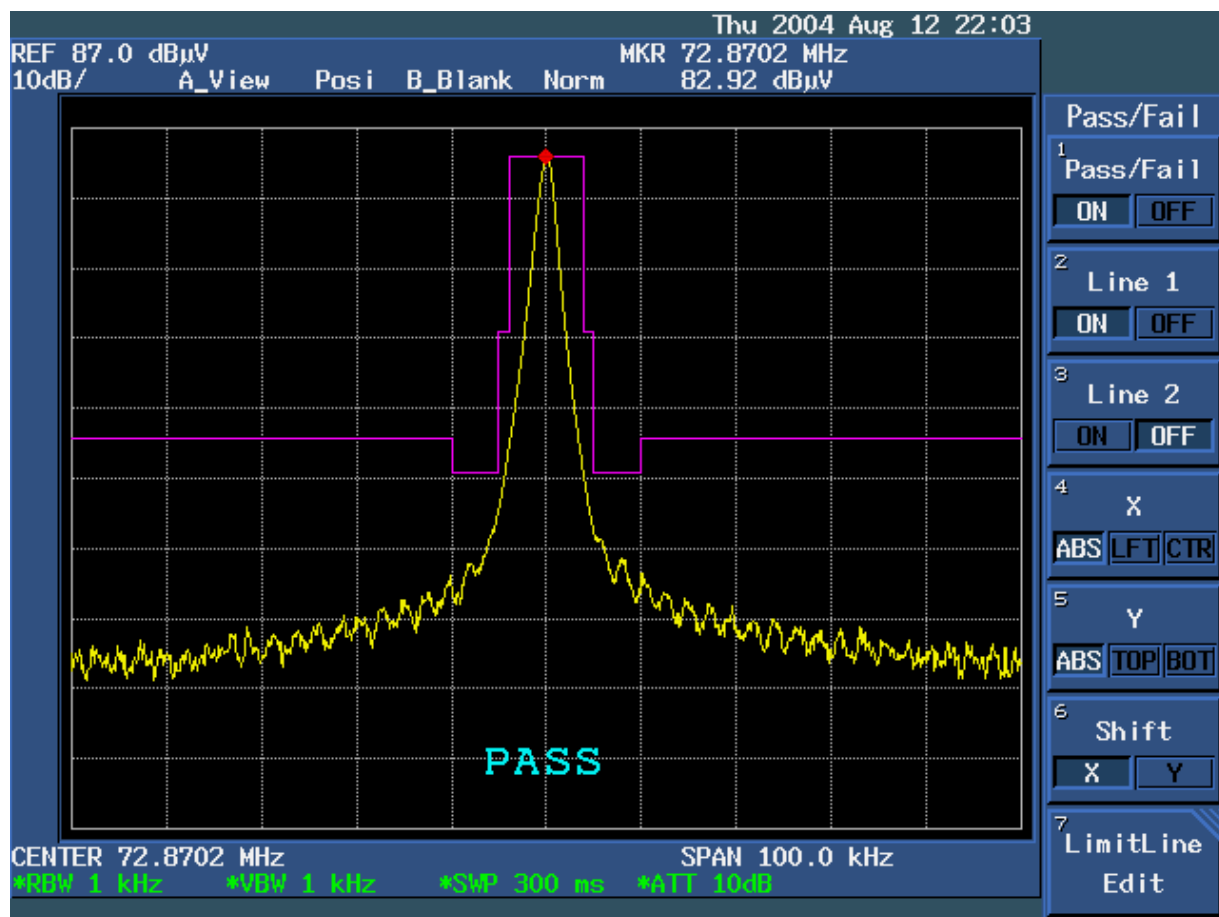
TP is the Output Power express in Watts, in the application the TP is 0.02606 W

$$\text{Limit (dBm)}=14.16-56-10\log_{10}(0.02606) = -26$$

<b>Frequency (MHz)</b>	<b>Reading level (dBuV)</b>	<b>Antenna Polarization</b>	<b>S.G. (dBm)</b>	<b>Cable loss (dB)</b>	<b>Ant.Gain (dB)</b>	<b>Emission level (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>
72.87	80.17	V	15.3	0.64	-0.5	14.16	28.75	-14.59
145.74	37.77	V	-43.2	1.40	5.30	-39.30	-26	-13.30
218.61	36.67	V	-44.5	2.79	6.40	-40.89	-26	-14.89
291.48	21.33	V	-43.8	2.74	6.20	-40.34	-26	-14.34
364.35	26.65	V	-49.6	2.86	6.00	-46.46	-26	-20.46
437.22	19.35	V	-48.1	2.84	6.80	-44.14	-26	-18.14
510.09	17.52	V	-50.3	2.90	6.90	-46.30	-26	-20.30
582.96	16.54	V	-53.4	2.96	6.80	-49.56	-26	-23.56
655.83	16.16	V	-47.7	3.02	6.40	-44.32	-26	-18.32
728.7	18.52	V	-44.3	3.24	6.20	-41.34	-26	-15.34

Frequency (MHz)	Reading level (dBuV)	Antenna Polarization	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
72.87	62.48	H	-5.8	0.64	-0.5	-6.94	28.75	-35.69
145.74	23.42	H	-51.7	1.40	5.30	-47.80	-26	-21.80
218.61	28.08	H	-48.6	2.79	6.40	-44.99	-26	-18.99
291.48	20.72	H	-56.7	2.74	6.20	-53.24	-26	-27.24
364.35	21.44	H	-53.1	2.86	6.00	-49.96	-26	-23.96
437.22	22.57	H	-53.8	2.84	6.80	-49.84	-26	-23.84
510.09	12.79	H	-58.9	2.90	6.90	-54.90	-26	-28.90
582.96	15.15	H	-54.8	2.96	6.80	-50.96	-26	-24.96
655.83	17.93	H	-51.7	3.02	6.40	-48.32	-26	-22.32
728.7	14.41	H	-53.5	3.24	6.20	-50.54	-26	-24.54

## 9.6 EMISSION MASK:



## 10. Maximum transmitter power

### 10.1 PROVISIONS APPLICABLE

According to FCC Part 95 Section 95.639(b), under any condition of modulation, the R/C transmitter operate in the 72-76MHz frequency band shall not exceed a carrier power of 0.75W.

### 10.2 MEASUREMENT PROCEDURE

Notes: The instrument setting used during the measurement procedure is as follow.

HP 8546A:	RW=120KHz, VBW=300KHz, C.F.=fundamental frequency, SPAN 5MHz, A trace MAX HOLD, B trace CLEAR WRIT
ADVANTEST:	RW=100KHz, VBW=100KHz, C.F.=Maximum peak Frequency, SPAN 0,TG ON

- 1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- 2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- 3). The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- 4). The transmitter shall be switched on; if possible, without the modulation and the measurement 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 the measuring receiver detects a maximum signal level.
- 6). The transmitter shall than be 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 the measuring receiver detects a maximum signal level.
- 8). The maximum signal level detected by the measuring receiver shall be noted.
- 9). Replace the antenna with a proper Antenna (substitution antenna).
- 10). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- 11). The substitution antenna shall be connected to a calibrated signal generator.

12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

14). The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

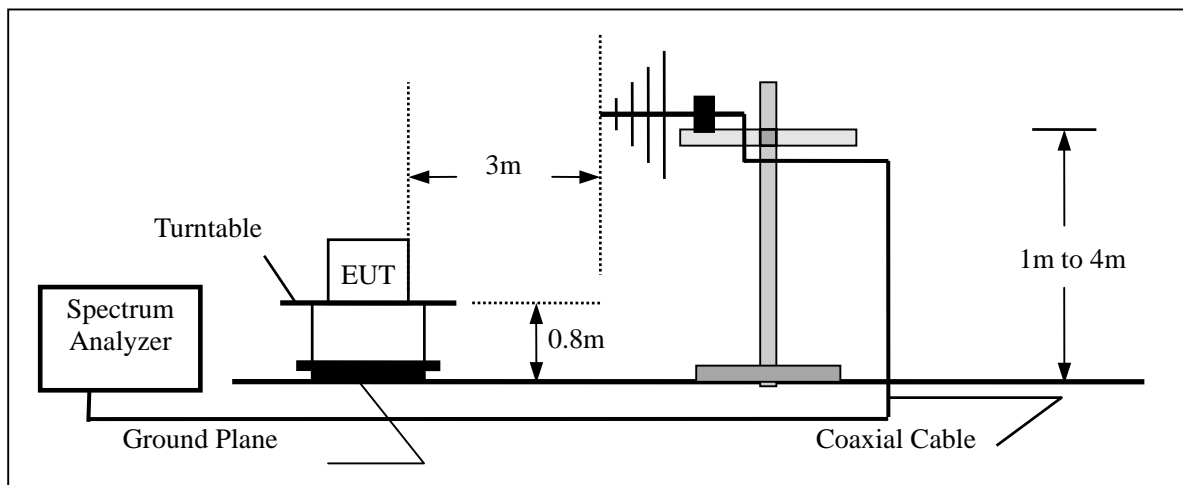
15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

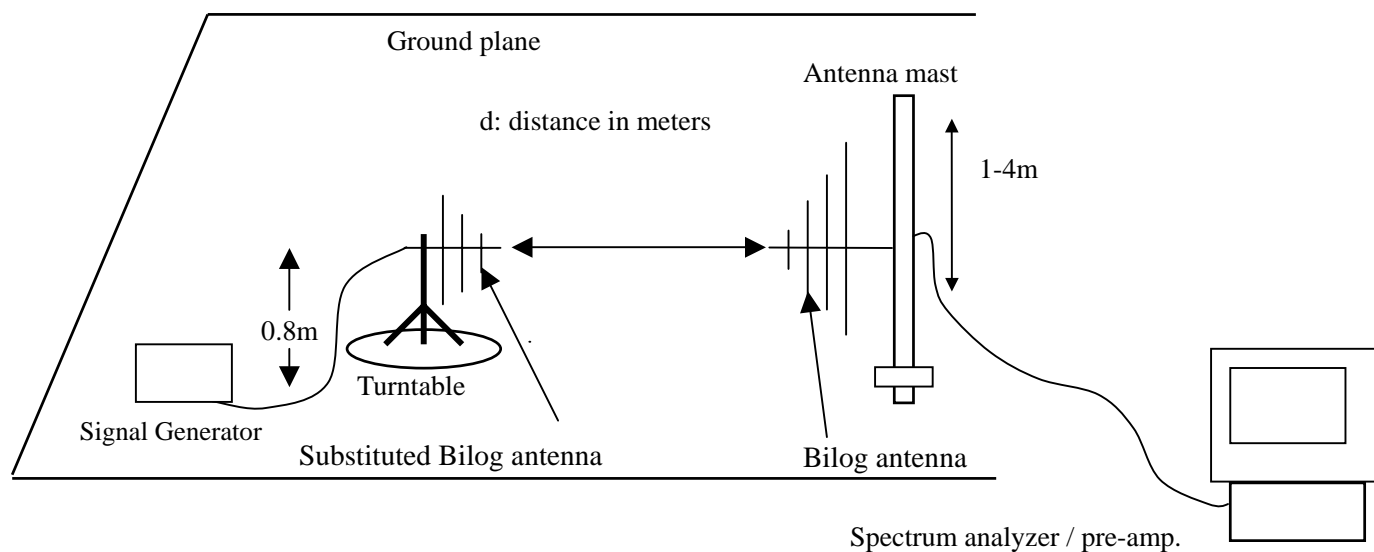
16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

### 10.3 TEST SETUP BLOCK DAIGRAM(setup block diagram of configuration)

#### TEST SETUP:



**SUBSTITUTION METHOD:****10.4 MEASUREMENT EQUIPMENT USED:**

Open Area Test Site					
EQUIPMENT TYPE	MFR	MODEL NO.	SERIAL NO.	LAST CAL.	CAL DUE.
Spectrum Analyzer	ADVANTEST	R3132	N/A	06/08/2004	06/07/2005
EMI Test Receiver	HP	8546A	3448A00232	06/08/2004	06/07/2005
Pre-Amplifier	HP	8447D	2944A07999	06/08/2004	06/07/2005
Bi-Log Antenna	EMCO	3142	9910-1436	06/08/2004	06/07/2005
Bi-Log Antenna	SCHAFFNER	CBL6143	5082	06/08/2004	06/07/2005
CABLE	TIME MICROWAVE	LMR-400	N-TYPE04	06/08/2004	06/07/2005



## 10.5 TEST RESULT

Freq (MHz)	Antenna Polarity	Reading (dBuV)	SGOP (dBm)	Ant. Gain (dB)	Dipole Gain (dBi)	Cable (dB)	Corrected Power		Limit (W)
							(dBm)	(mW)	
72.81	V	80.17	15.3	-0.5	0	0.64	14.16	26.0615355	0.75
72.81	H	62.48	-5.8	-0.5	0	0.64	-6.94	0.202301918	0.75
72.83	V	80.17	15.3	-0.5	0	0.64	14.16	26.0615355	0.75
72.83	H	62.48	-5.8	-0.5	0	0.64	-6.94	0.202301918	0.75
72.85	V	80.17	15.3	-0.5	0	0.64	14.16	26.0615355	0.75
72.85	H	62.48	-5.8	-0.5	0	0.64	-6.94	0.202301918	0.75
72.87	V	80.17	15.3	-0.5	0	0.64	14.16	26.0615355	0.75
72.87	H	62.48	-5.8	-0.5	0	0.64	-6.94	0.202301918	0.75

## **11. TRANSMITTER ANTENNA**

### **11.1 PROVISIONS APPLICABLE**

According to FCC Part 95 Section 95.647, the antenna of each R/C station transmitting in 72-76 MHz band, must be an integral part of the transmitter. The antenna must have no gain and must be vertically polarized.

### **11.2 COMPLIANCE**

The antenna is designed as a fixed, non-user replaceable with no gain and vertically polarized unit integrated to EUT.

## **12. POWER CAPABILITY**

### **12.1 PROVISIONS APPLICABLE**

According to FCC Part 95 Section 95.649, no R/C unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limits specified in § 95.639

### **12.2 COMPLIANCE**

All the components employed by EUT have the power capability less than 0.75W either being assembled or individual. The output power was measured to be 26.06 mW on the four channels (72.81 MHz, 72.83 MHz, 72.85 MHz, 72.87 MHz).

## **13. CRYSTAL CONTROL REQUIRED**

### **13.1 PROVISIONS APPLICABLE**

According to FCC Part 95 Section 95.651, all transmitters used in Personal Radio Services must be crystal controlled, except an R/C station that transmits in 26-27 MHz frequency band.

### **13.2 COMPLIANCE**

The crystal is not accessible to user.

## **APPENDIX 1**

### **PHOTOGRAPHS OF SET UP**

## Radiated Emission Setup Photos



## **APPENDIX 2**

# **PHOTOGRAPHS OF EUT**

***Front View of TX***



***Back View of TX***





***Top View of TX***



***Bottom View of TX***



***Left View of TX***



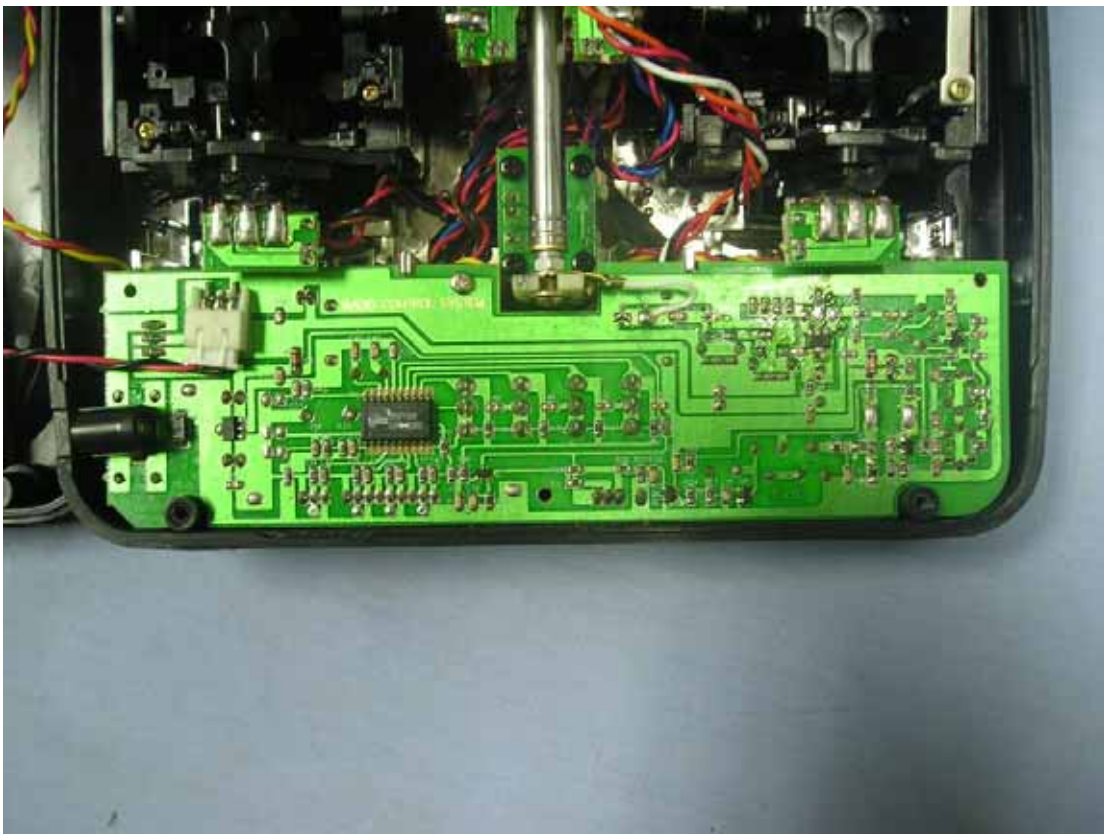
***Right View of TX***



### Internal of TX- Open



### Internal of TX- 1



### Internal of TX- 2



## **APPENDIX 3**

### **TUNE-UP PROCEDURE**

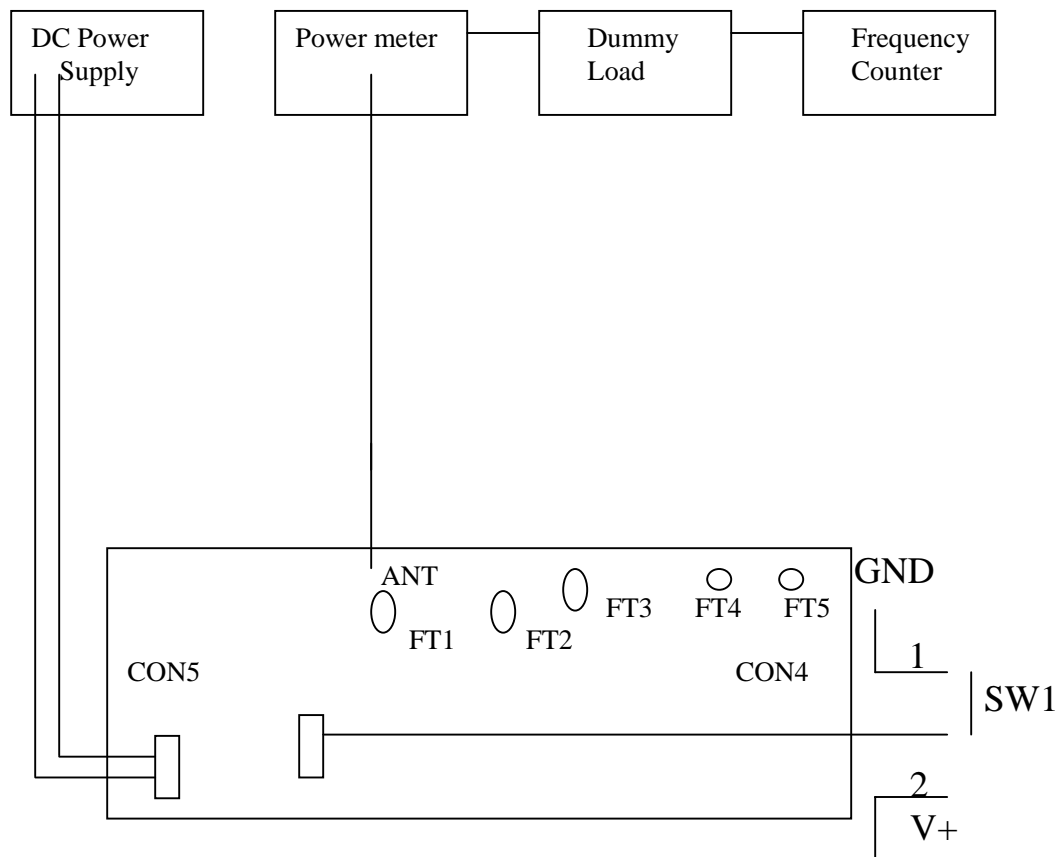
## **ADJUSTMENT PROCEDURES**

### **1. Transmitter Power Adjustment**

- a). Adjust the DC power supply so that 10.3V is obtained at the battery terminals. Confirm that the power meter, dummy load and output tester are prepared.
- b). Turn the power on and plug a XTAL element (72.85MHz) into the crystal socket.
- c). Adjust FT5, FT4, FT3, FT 2 and FT1 in this order so that the power meter reading become maximum.
- d). Repeat procedure c several times. The RF power meter reading should be more than 0.08W when the power is on and at a normal temperature. Then check the current meter reading should be less than 87mA.

### **2. Transmission Deviation Adjustment**

- a). Set up the unit for the transmission mode.
- b). Set the Switch 1 to position "1", then adjust VR1 so that the frequency counter reading is -1.2KHz (72.8488MHz)
- c). Set the Switch 1 to position "2", then adjust VR2 so that the frequency counter reading is +1.2KHz (72.8512MHz)
- d). Repeat procedure b, c, so that the maximum deviation is  $\pm 1.2$  KHz Adjustment setup block diagram

**ADJUSTMENT SETUP BLOCK DIAGRAM**

NOTE: The elements illustrated above are solely for explaining the adjustment procedure.