







ISO/IEC17025 Accredited Lab.

Report No: FCC 0703037 File reference No: 2007-03-23

Applicant: Shanghai Nine Eagles Electronic Technology Co., Ltd.

Product: Radio Control Helicopter

Model No: NE R/C 106A

Trademark: Nine Eagles

Test Standards: FCC 47 CFR PART 95 SUBPART C

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4&FCC Part 95 Subpart C, regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung Manager

Dated: Mar 23,2007

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

5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.

Tel (755) 83448688 Fax (755) 83442996

Report No: 0703037 Page 2 of 17

Date: 2007-03-23



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 CNAL. This approval result is accepted by MRA of APLAC.

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

CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 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.: IC5205

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.: 5205.

Page 3 of 17

Report No: 0703037 Date: 2007-03-23



Test Report Conclusion Content

1.0	General Details	4
1.1	Test Lab Details.	4
1.2	Applicant Details.	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration.	4
1.6	Test Uncertainty.	5
1.7	Test By	5
2.0	List of Measurement Equipment	5
3.0	Technical Details	7
3.1	Summary of Test Results.	7
3.2	Test Standards	7
4.0	EUT Modification.	7
5.0	Test Result	8
5.1	E.U.T. Operation.	8
5.2	Test Procedure & Measurement Data.	8
5.2.1	Flied Strength of Fundamental.	8
5.2.2	Flied Strength of Harmonics or other Frequency.	10
5.2.3	Emission Bandwidth	13
5.3	Frequency Stability.	15
5.4	Crystal Access Restrictions.	16
5.5	Antenna of The Transmitter	17
6.0	Photographs-Test Setup	17



1.0 General Details

Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

Address: 5/F,Block 4, Anhua Industrial Zone., No.8 TaiRan Rd. CheGongMiao, FuTian District,

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Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205

For 3m & 10 m OATS

1.2 Applicant Details

Shanghai Nine Eagles Electronic Technology Co., Ltd Applicant: Address: Room 1104, Huaxiang Building, No.80 Moling Road, Shanghai

Telephone: 86-21-52919366 Fax: 86-21-52919361

1.3 Description of EUT

Product: Radio Control Helicopter

Brand Name: Nine Eagles Model Number: NE R/C 106A

Additional Model Name NE R/C 107A, NE R/C 108A, NE R/C 109A, NE R/C 110A, NE R/C

111A

Additional Trade Name N/A

Rating: 12V (8 pcs AA batteries) Operation Frequency Band 72.01MHz-72.99MHz

Number of Channel 50

5K50F1D Type of Emission

Antenna Designation A permanent fixed antenna, which is built-in, designed as an indispensable

part of the EUT.

1.4 Submitted Sample

1 Sample

1.5 Test Duration

2007-03-09to 2007-03-23

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

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Report No: 0703037 Page 5 of 17

1.6 Test Uncertainty

Date: 2007-03-23

Conducted Emissions Uncertainty = ± 3.0 dB

Radiated Emissions Uncertainty = $\pm 4.2 dB$

1.7 Test Engineer

Terry Tang

The sample tested by

Print Name: Terry Tang

2.0	Test Equipments					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date	
Continuous Wave Simulator	EM TEST	CWS 500C	0407-05	2006-12-10	2007-12-09	
Ultra Compact Simulator	EM TEST	UCS 500 M4	0304-42	2006-08-20	2007-08-19	
Harmonic	California Instruments	PACS-1	72305	2006-08-20	2007-08-19	
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2006-12-06	2007-12-05	
Absorbing Clamp	ROHDE&SCHWARZ	MDS-21	100126	2006-12-06	2007-12-05	
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2006-12-06	2007-12-05	
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2006-12-06	2007-12-05	
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2006-12-06	2007-12-05	
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2006-03-31	2007-03-30	
4-WIRE ISN	ROHDE&SCHWARZ	ENY 41	830663/044	2007-02-19	2008-02-18	
GG ENY22 Double 2-Wire ISN	ROHDE&SCHWARZ	ENY22	83066/016	2007-02-19	2008-02-18	
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2007-02-19	2008-02-18	

Page 6 of 17

Report No: 0703037 Date: 2007-03-23



System Controller	CT	SC100	-	-	-
Printer	EPSON	РНОТО ЕХЗ	CFNH234850	2007-02-19	2008-02-18
FM-AM Signal Generator	JUNGJIN	SG-150M	389911177	2007-02-19	2008-02-18
Color TV Pattern Generator	PHILIPS	PM5418	LO621747	2007-02-19	2008-02-18
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-
Oscillator	KENWOOD	AG-203D	3070002	2007-02-19	2008-02-18
Spectrum Analyzer	HAMEG	HM5012	-	-	-
Power Supply	LW	APS1502	-	-	-
5K VA AC Power Source	California Instruments	5001iX	56060	2007-02-19	2008-02-18
CDN	EM TEST	CDN M2/M3	-	2007-02-19	2008-02-18
Attenuation	EM TEST	ATT6/75	-	2007-02-19	2008-02-18
Resistance	EM TEST	R100	-	2007-02-19	2008-02-18
Electromagnetic Injection Clamp	LITTHI	EM101	35708	2007-02-19	2008-02-18
Inductive Components	EM TEST	MC2630	-	2007-02-19	2008-02-18
Antenna	EM TEST	MS100	-	2007-02-19	2008-02-18
Signal Generator	ROHDE&SCHWARZ	SMT03	100029	2007-02-02	2008-02-01
Power Amplifier	AR	150W1000	300999	2007-02-02	2008-02-01
Field probe	Holaday	HI-6005	105152	2007-02-02	2008-02-01
Bilog Antenna	Chase	CBL6111C	2576	2007-02-02	2008-02-01
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2007-02-02	2008-02-01
3m OATS			N/A	2007-02-02	2008-02-01
Temperature Chamber	Sunan Insruments	MZ01	03MD09036	2006-12-24	2007-12-23



3.0 Technical Details

3.1 Summary of test results

Standard	Test Type	Stanadard Paragraph	Result
FCC Part 95: 2002	Flied Strength of Fundamental	Section 95.639	PASS
FCC Part 95: 2002	Flied Strength of Harmornics or other Frequency	Section 95.635	PASS
FCC Part 95: 2002	Emission Bandwidth	Section 95.633	PASS
FCC Part 95: 2002	Frequency Stability	Section 95.623	PASS
FCC Part 95: 2002	Crystal Access Restrictions	Section 95.645	PASS

3.2 Test Standards: FCC Part 95: 2002

Note: The fundamental frequencies as follows:

72.01; 72.03; 72.05; 72.07; 72.09; 72.11; 72.13; 72.15; 72.17; 72.19; 72.21; 72.23; 72.25; 72.27; 72.29; 72.31; 72.33; 72.35; 72.37; 72.39; 72.41; 72.43; 72.45; 72.47; 72.49; 72.51; 72.53; 72.55; 72.57; 72.59; 72.61; 72.63; 72.65; 72.67; 72.69; 72.71; 72.73; 72.75; 72.77; 72.79; 72.81; 72.83; 72.85; 72.87; 72.89; 72.91; 72.93; 72.95; 72.97; 72.99.

Since the same PCBS only use 50 types of crystals, only the 72.510MHz product was completely tested in the whole report

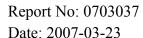
4.0 EUT Modification

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

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5.0 Flied Strength of Fundamental 5.1 E.U.T.Operation

Input voltage: 12V DC (8 x 'AA' Size Rechargeable Batteries).

Operating Environment:

Temperature: 24.0 °C

Humidity: 56 % RH

Atmospheric Pressure: 1012 mbar

EUT Operation: Test in transmitting mode:

5.2 Test Procedure & Measurement Data

5.2.1 Test Procedure & Measurement Data Flied Strength of Fundamental

Test Requirement: FCC Part 95 Section 95.639

Test Method: Based on ANSI C 63.4.

Test Date: Mar 09, 2007-Mar 23, 2007

Measurement Distance: 3m (OATS)

Test instrumentation resolution bandwidth120 kHz (30 MHz - 1000 MHz)

Operation: Receive antenna scan height 1 - 4 m, polarization Vertical/Horizontal

Requirements: The maximum transmitter power for an R/C transmitter, under any condition of modulation, should not exceed a carrier power or peak envelops TP of: For 72-76 MHz operation: the limit is 0.75 W.

Test Procedure:

Test Method: The procedure used was ANSI Standard C63.4-2003.

The technique used to find the output power of the transmitter was the antenna substitution method. The following test procedure was followed:

- 1. The EUT was powered ON and placed on a table in the chamber. The antenna of the transmitter was extended to its maximum length.
- 2. The fundamental frequency (72.510MHz) of the transmitter was maximized on the test

Receiver display by raising and lowering the receive antenna and by rotating the turntable.

After the fundamental emission was maximized, a field strength measurement was made.

3. Steps 1 and 2 were performed with the EUT and the receive antenna in both vertical and

horizontal polarization and performed a pre-test three orthogonal planes.

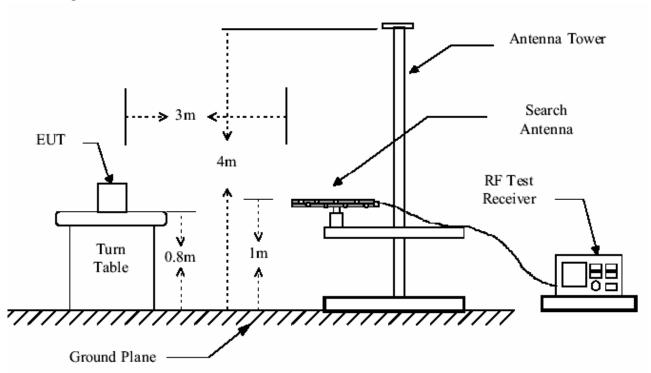
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- 4. The transmitter was then removed and replaced with a substitution antenna.
- 5. A signal at the fundamental frequency (72.510MHz)) was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally and vertically polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test Receiver. The level of the signal generator was adjusted until the measured field strength level in step 2 is obtained for this set of conditions.
- 6. The output power into the substitution antenna was then measured.

Test Configuration:



Test result:

The highest field strength measured at the fundamental frequency (72.510MHz) was $69.18dB\mu V/m$ at a distance of 3 meters.

The transmitter output power found using the antenna substitution method was 0.0516mW. The unit does meet the FCC requirements.

Date: 2007-03-23



5.2.2 Flied Strength of Harmonics or other Frequency

Test Requirement: FCC Part 95 Section 95.635

Test Method: Based on ANSI C 63.4. Test Date: Mar 09, 2007-Mar 23, 2007 Measurement Distance: 3m (OATS)

Frequency ranges 30 MHz – 1GHz for transmitting mode.

Test instrumentation resolution bandwidth

120 kHz (30 MHz - 1000 MHz)

Operation: Receive antenna scan height 1 - 4 m, polarization Vertical/Horizontal

Requirements:

The power of each unwanted emission should be less than the transmitter power (TP) by at

least 56+10Log(TP) on any frequency removed from the center of the authorized bandwidth by more than 250%.

The transmitter complied with the radiated spurious requirement and the following table contains the 7 highest spurious emissions.

Limit: $56 + 10 \log 10$ (P) dB

Test Procedure:

- 1. The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- 2. 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.
- 3. 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.
- 4. The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- 5. The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- 6. The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- 7. The maximum signal level detected by the measuring receiver shall be noted.
- 8. The measurement shall be repeated with the test antenna set to horizontal polarization.
- 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

Page 11 of 17

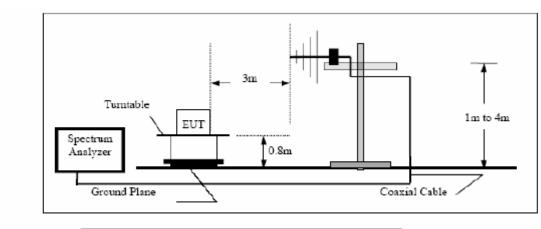
Report No: 0703037 Date: 2007-03-23

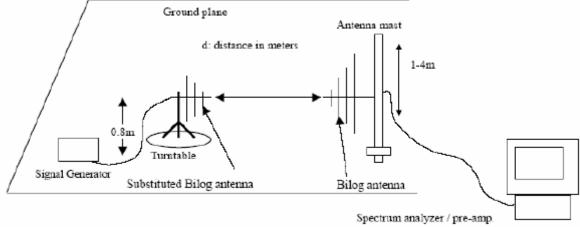


measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

- 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.

Test Configuration:





Page 12 of 17

Report No: 0703037 Date: 2007-03-23



The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier.

The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

The following test results were performed on the EUT:

Quasi-Peak Measurement

Frequency	Emission Level	Horiz /Vert	Limits	Margin
(MHz)	(dBm)		(dBm)	(dB)
87.0111	-41.6	V	-26	-15.6
130.5168	-33.5	V	-26	-7.5
145.0188	-37.3	V	-26	-11.3
159.5207	-41.8	V	-26	-15.8
130.5172	-46.3	Н	-26	-20.3
145.0188	-43.2	Н	-26	-17.2
362.5472	-42.5	Н	-26	-16.5
754.0980	-40.1	Н	-26	-14.1

- 1. Level = Read Level + Antenna Factor + Cable Loss Preamp Factor.
- 2. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.
- 3. Margin= Emission Level-Limit

The unit does meet the FCC requirements.

Report No: 0703037 Page 13 of 17

Date: 2007-03-23



5.2.3 Emission Bandwidth

Test Requirement: FCC Part 95 Section 95.633

Test Method: Based on ANSI C 63.4. Test Date: Mar 09, 2007-Mar 23, 2007

Requirements: 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 8kHz.

The power of each unwanted emission shall be less than the transmitter power (TP) by:

- (1) At least 25 dB (decibels) 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%.

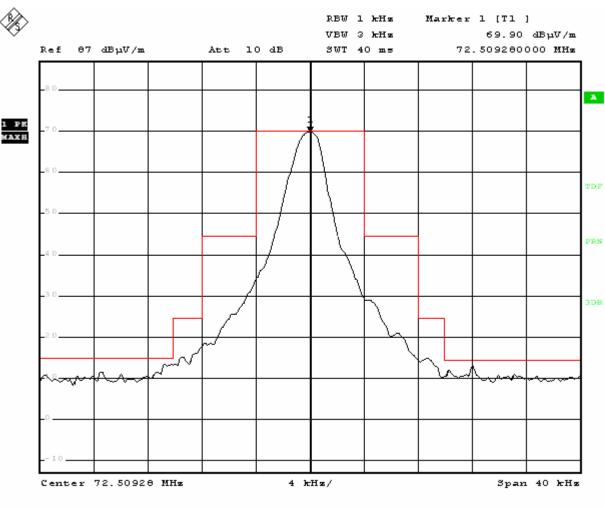
The following plot shows the test results.

The unit does meet the FCC requirements.

Page 14 of 17

Report No: 0703037 Date: 2007-03-23





Date: 19.MAR.2007 18:12:00

The unit does meet the FCC requirements.

 $\begin{array}{lll} \mbox{Calculation:} & \mbox{B}_n = 2M + 2DK \\ \mbox{M=Modulation Frequency:} & \mbox{M=1.25kHz} \\ \mbox{D=Peak frequency deviation:} & \mbox{D=1.5kHz} \\ \end{array}$

K=Overall Numerical Factor: K=1

 $B_n=2*1.25kHz+2*1.5*1kHz=5.5kHz$

Type of Emission: 5K50F1D



5.3 Frequency Stability

Test Requirement: FCC Part 95 Section 95.623

Test Method: Based on ANSI C 63.4. Test Date: Mar 09, 2007-Mar 23, 2007

Requirements: All other R/C transmitters that transmit in the 72-76 MHz frequency band

must be maintained within a frequency tolerance of 0.002% (20ppm).

Test Method:

Frequency measurements were made as follows:

(a) at 10 degree intervals of temperatures between -30°C and +50°C at the manufacturer's rated supply voltage, and

(b) at $\pm 20^{\circ}$ C temperature and $\pm 15\%$ supply voltage variations.

Note, for handheld equipment that is only capable of operating from internal batteries, reduce the primary supply voltage to the battery operating end point. The manufacturer should specify the battery operating endpoint voltage of the equipment.

Test Results:

Frequency Stability vs. Temperature

Assigned	Temperature	Measured	Frequency	Limit
Frequency (MHz)	(℃)	Frequency (MHz)	Deviation (kHz)	(kHz)
	-30	72.50911	-0.89	±1.44
	-20	72.50918	-0.82	±1.44
	-10	72.50921	-0.79	±1.44
	0	72.50924	-0.76	±1.44
72.510	+10	72.50926	-0.74	±1.44
	+20	72.50928	-0.72	±1.44
	+30	72.50933	-0.67	±1.44
	+40	72.50940	-0.60	±1.44
	+50	72.50945	-0.55	±1.44

Frequency Stability vs. Supply Voltage

Nominal Voltage: 9.6VDC Temperature: 20°C

Assigned	Voltage	Measured	Frequency	Limit
Frequency (MHz)	(V)	Frequency (MHz)	Deviation (kHz)	(kHz)
72.510	12	72.50928	-0.72	±1.44
	9.0	72.50924	-0.76	±1.44
	8.3	72.50919	-0.81	±1.44

Note: The applicant declared the endpoint voltage 8.3Vdc

It will give the operation guidance to the customer in the user manual

The unit does meet the FCC requirements.

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Report No: 0703037 Page 16 of 17

Date: 2007-03-23



5.4 Crystal Access Restrictions

The EUT has no control knobs, switches, or other type of adjustments either on the operating front panel or on the exterior of the transmitter enclosure, which when manipulated can result in violation of the rules. The plug in crystal is not accessible to the user.

5.5 Antenna of the Transmitter

Requirement

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

Result:

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

Page 17 of 17

Report No: 0703037 Date: 2007-03-23



6.0 FCC ID Label

FCC ID: U45NE106A

This device complies with part 95 of the FCC rules.

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:



-- End of the report--