# FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Shanghai Nine Eagles Electronic Technology Co.,Ltd

Radio Control

Model Number: NE-TX06203

FCC ID: U45-SRSLT18866

Prepared for : Shanghai Nine Eagles Electronic Technology Co.,Ltd Room 1104, Huaxiang Building, No.80 Moling Road, Shanghai, 200070, China

Prepared By: EST Technology Co., Ltd.

Santun(guantai Road), Houjie Town, Dong Guan City,

GuangDong, China.

Tel: 86-769-83081888-808

Report Number : ESTE-R1209013

Date of Test : Sep.5~Sep.15, 2012

Date of Report : Sep.16, 2012

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#### TEST REPORT CERTIFICATION

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

EUT Description : Radio Control

(A) MODEL NO. : NE-TX06203

: NE-TX0S203; NE-TX0S205; NE-TX0S209; NE-TX0S211; NE-TX0S217; NE-TX0S218; NE-TX0S203; NE-TX0S206

(B) Additional Model NE-TX06202; NE-TX06205; NE-TX06206.

Note: The products are difference in model number and appearance, the PCB boards inside are identical.

(C) SERIAL NO. : N/A

(D) Trade Name : Nine Eagles(D) POWER SUPPLY : DC 12V(E) TEST VOLTAGE : DC 12V

Tested for comply with:

FCC Rules and Regulations Part 15 Subpart C:2011

Test procedure used:

ANSI C63.4:2003

The device described above is tested by EST Technology Co., Ltd. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and EST Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment under test (EUT) is to be technically compliant with the FCC requirements.

Prepared by: Tested by: Approved by:

Ada tong Trementhe

Ada / Assistant Tony.Tang/ Engineer Iceman Hu / Manager

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

### 1. SUMMARY OF STANDARDS AND RESULTS

### 1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION							
Description of Test Item	Standard	Results					
Power Line Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.4-2003	N/A					
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.4-2003	PASS					
Band Edge Compliance Test	FCC Part 15: 15.249 ANSI C63.4-2003	PASS					
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.4-2003	PASS					
Antenna requirement	FCC Part 15: 15.203	PASS					

### 2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Product Name : Radio Control

Model Number : NE-TX06203

FCC ID : U45-SRSLT18866

Operation frequency: 2420MHz~2460MHz

Number of channel : 3

Antenna : Internal antenna, 1.2 dBi gain

Modulation : GFSK

Power Supply : DC 12V

Applicant : Shanghai Nine Eagles Electronic Technology Co.,Ltd

Room 1104, Huaxiang Building, No.80 Moling Road,

Shanghai, 200070, China

Manufacturer : Shanghai Nine Eagles Electronic Technology Co.,Ltd

Room 1104, Huaxiang Building, No.80 Moling Road,

Shanghai, 200070, China

Sample Type : Prototype production

#### 2.2. Test Facilities

EMC Lab : Certificated by CNAL, CHINA

Registration No.: L5288

Date of registration: October 28, 2011

Certificated by FCC, USA Registration No.: 989591

Date of registration: December 07, 2010

Certificated by Industry Canada Registration No.: 46405-9405

Date of registration: December 16, 2010

Certificated by VCCI, Japan

Registration No.: R-3663 & C-4103 Date of registration: July 25, 2011

Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001 Date of registration: January 07, 2011

Certificated by TUV/PS, Shenzhen

Registration No.: SCN1017

Date of registration: January 27, 2011

Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L1-18 Date of registration: April 28, 2011

Certificated by Siemic, Inc. Registration No.: SLCN021

Date of registration: November 8, 2011

Certificated by Nemko, Hong Kong

Registration No.: 175193

Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : San Tun Management Zone, Houjie Town, Dongguan,

Guangdong, China

#### 2.3. Tested Supporting System Details

None

## 2.4. EUT Configuration and operation conditions for test.

EUT

EUT work continues Tx mode and frequency as below:

Channel	Frequency
Low	2420MHz
Middle	2440MHz
High	2460MHz

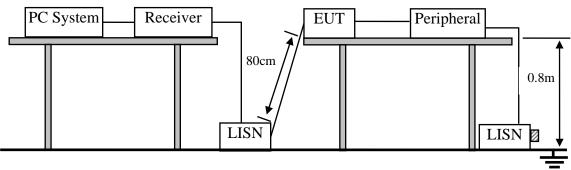
Note: A typical modulation was applied when performance test.

### 3. POWER LINE CONDUCTED EMISSION TEST

### 3.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Nov.05, 11	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Nov.05, 11	1 Year
3.	L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.02, 12	1 Year
4.	Terminator	Hubersuhner	$50\Omega$	No. 1	May.02, 12	1 Year
5.	Terminator	Hubersuhner	50Ω	No. 2	May.02, 12	1 Year
6.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.02, 12	1Year
7.	Coaxial Switch	Anritsu	MP59B	M55367	May.02, 12	1 Year
8.	Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.02, 12	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.02, 12	1 Year

### 3.2.Block Diagram of Test Setup



☑ :50Ω Terminator

### 3.3. Power Line Conducted Emission Test Limits

Frequency range	Limits dB(μV)				
MHz	Quasi-peak Level	Average Level			
	2				
0,15 to 0,5	66~56*	56~46*			
0,5 to 5	56	46			
5 to 30	60	50			

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 3.4. Operating Condition of EUT

- 3.4.1. Setup the EUT and simulator as shown as Section 2.3
- 3.4.2. Turn on the power of all equipment.
- 3.4.3. Let the EUT work in test mode (Tx Mode) and measure it.

#### 3.5. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Powered from PC which mains connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#3). this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

3.6. Conducted Disturbance at Mains Terminals Test Results

N/A

EST

### 4. RADIATED EMISSION TEST

### 4.1.Test Equipment

Frequency rang: 30~1000MHz

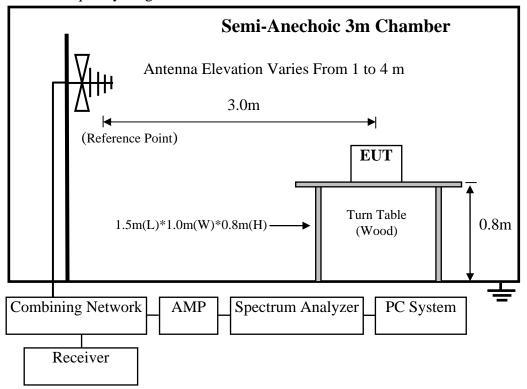
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Spectrum	Agilent	E4407B	MY41440292	May.02, 12	1 Year
2	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.02, 12	1 Year
3	Amplifier	HP	8447D	2648A04738	May.02, 12	1 Year
4	Bilog Antenna	Schaffner	CBL6112D	25237	Mar. 26,12	1 Year
5	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.02, 12	1 Year
6	Coaxial Switch	Anritsu	MP59B	M73989	May.02, 12	1 Year

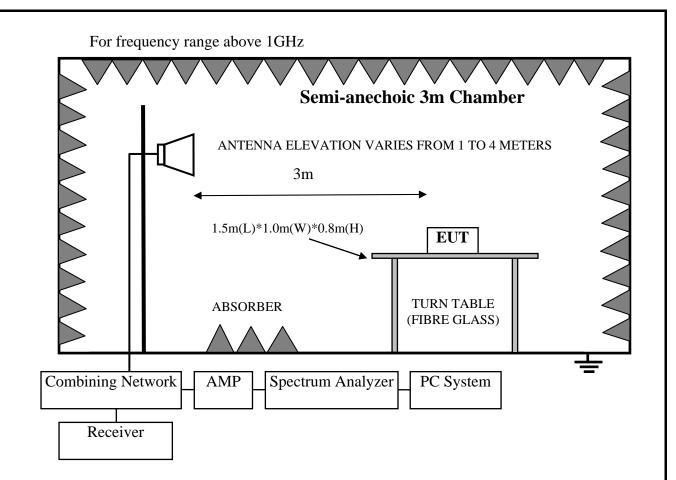
Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4408B	MY44211139	May.02, 12	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	May.02, 12	1.5 Year
3	Horn Antenna	EMCO	3116	00060089	May.02, 12	1.5 Year
4	Amplifier	Agilent	8449B	3008A00863	May.02, 12	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.02, 12	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.02, 12	1 Year

### 4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz





#### 4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

FREQUENCY	DISTANCE	FIELD STREN	NGTHS LIMIT
MHz	Meters	μV/m	$dB(\mu V)/m$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500 54.0	
Above 1000MHz	3	74.0 dB(μV	/)/m (Peak)
		$54.0 \text{ dB}(\mu\text{V})$	/m (Average)
Field Strength of fundamental emissions for 2.4GHz-2.4835GHz	3	114.0 dB(μV)/m (Peak) 94.0 dB(μV)/m (Average	

Remark : (1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$ 

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
- (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

### 4.4. Operating Condition of EUT

- 4.4.1. Setup the EUT and simulator as shown as Section 4.2.
- 4.4.2. Turned on the power of all equipment.
- 4.4.3. Let EUT work in test mode(Tx mode) and test it.

#### 4.5.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission Test.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum Analyzer's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz, and 1MHz RBW, 10Hz VBW for average measurement above 1GHz.

Note: For fundamental emissions, it's bandwidth is about 1.3MHz, so the Spectrum Analyzer's RBW was set at 2MHz and VBW was set at 3MHz for fundamental emissions measure.

#### 4.6. Radiated Emission Test Results

#### PASS.

All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

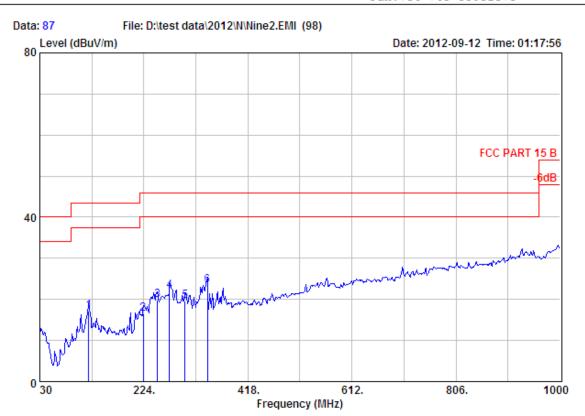
EST Technology Co.,Ltd Report No. ESTE-R1209013

#### Emissions from 30MHz to 1GHz:

## EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

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Site no. : 3m Chamber Data no. : 87

Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control Power : DC 12V

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

	Freq.	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	121.18	11.20	3.38	2.52	17.10	43.50	26.40	QP	
2	223.03	9.37	4.47	2.76	16.60	46.00	29.40	QP	
3	249.22	11.67	4.86	3.25	19.78	46.00	26.22	QP	
4	271.53	12.49	5.02	4.62	22.13	46.00	23.87	QP	
5	300.63	13.03	5.24	1.29	19.56	46.00	26.44	QP	
6	342.34	14.22	5.62	3.62	23.46	46.00	22.54	QP	



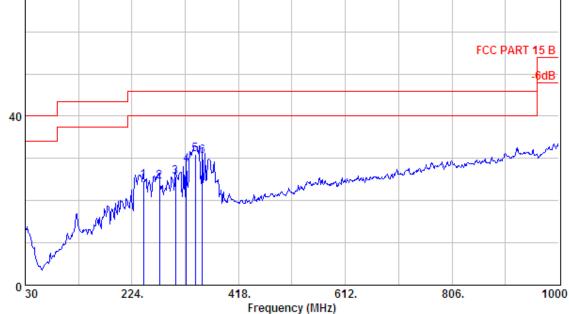
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Data: 88 File: D:\test data\2012\N\Nine2.EMI (98)

Level (dBuV/m) Date: 2012-09-12 Time: 01:23:12

FCC PART 15 B



Site no. : 3m Chamber Data no. : 88

Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

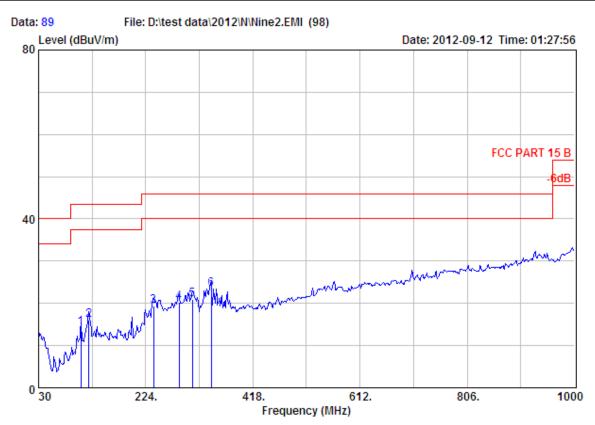
Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	245.34	11.06	4.77	8.85	24.68	46.00	21.32	QP	
2	274.44	12.39	5.05	7.04	24.48	46.00	21.52	QP	
3	303.54	13.08	5.27	7.26	25.61	46.00	20.39	QP	
4	322.94	13.65	5.41	9.49	28.55	46.00	17.45	QP	
5	339.43	14.13	5.58	11.23	30.94	46.00	15.06	QP	
6	352.04	14.47	5.69	10.45	30.61	46.00	15.39	QP	



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Site no. : 3m Chamber Data no. : 89

Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

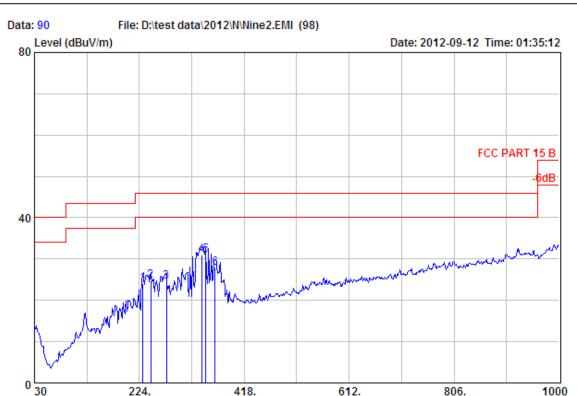
EUT : Radio Control
Power : DC 12V
M/N : NE-TX06203
Test Mode : TX 2440MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	106.63	10.15	3.15	1.00	14.30	43.50	29.20	QP	
2	121.18	11.20	3.38	1.52	16.10	43.50	27.40	QP	
3	238.55	10.11	4.68	4.68	19.47	46.00	26.53	QP	
4	284.14	12.52	5.12	2.66	20.30	46.00	25.70	QP	
5	308.39	13.17	5.30	2.58	21.05	46.00	24.95	QP	
6	342.34	14.22	5.62	3.62	23.46	46.00	22.54	QP	



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Frequency (MHz)

Data no.: 90

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

: FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Radio Control EUT

: DC 12V Power M/N : NE-TX06203 Test Mode : TX 2440MHz

		Ant.	Cable		Emission	ı			
	-			_	Level (dBuV/m)		_		
	(MHZ)	(GB/III)	(GB)	(dbuv)	(GBUV/III)	(dbuv/m)	(ub)	(ав)	
1	230.79	9.49	4.58	10.04	24.11	46.00	21.89	QP	
2	245.34	11.06	4.77	8.85	24.68	46.00	21.32	QP	
3	274.44	12.39	5.05	7.04	24.48	46.00	21.52	QP	
4	339.43	14.13	5.58	11.23	30.94	46.00	15.06	QP	
5	347.19	14.38	5.67	10.99	31.04	46.00	14.96	QP	
6	363.68	14.61	5.72	7.42	27.75	46.00	18.25	QP	

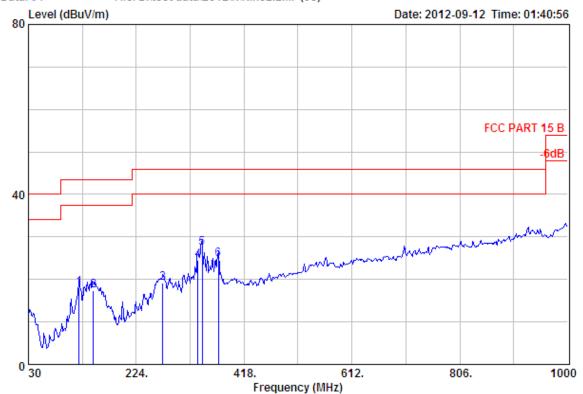


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Data: 91 File: D:\test data\2012\N\Nine2.EMI (98)



Site no. : 3m Chamber Data no. : 91

Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

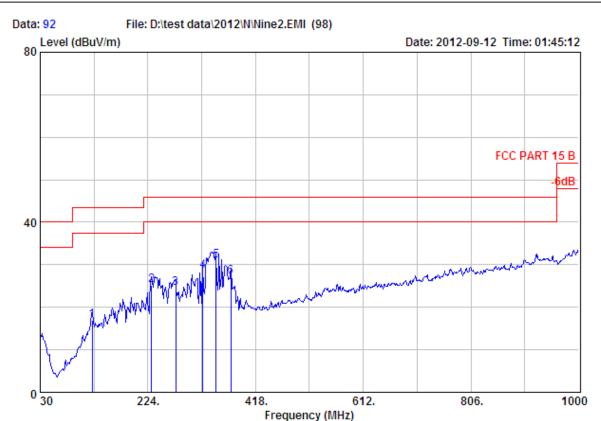
Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	121.18	11.20	3.38	3.52	18.10	43.50	25.40	QP	
2	146.40	11.15	3.74	2.57	17.46	43.50	26.04	QP	
3	271.53	12.49	5.02	1.62	19.13	46.00	26.87	QP	
4	334.58	13.99	5.52	4.98	24.49	46.00	21.51	QP	
5	342.34	14.22	5.62	7.62	27.46	46.00	18.54	QP	
6	371.44	14.89	5.77	3.99	24.65	46.00	21.35	QP	



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Site no. : 3m Chamber Data no. : 92

Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	124.09	11.31	3.42	2.31	17.04	43.50	26.46	QP	
2	230.79	9.49	4.58	11.04	25.11	46.00	20.89	QP	
3	274.44	12.39	5.05	7.04	24.48	46.00	21.52	QP	
4	322.94	13.65	5.41	9.49	28.55	46.00	17.45	QP	
5	347.19	14.38	5.67	10.99	31.04	46.00	14.96	QP	
6	373.38	14.92	5.76	6.60	27.28	46.00	18.72	QP	

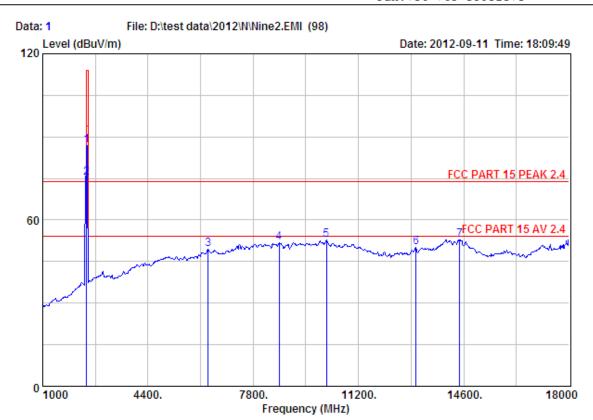


#### Emissions from 1GHz to 18GHz:

## EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

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Site no. : 3m Chamber Data no. : 1

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

	Freq.	Ant. Factor (dB/m)			Reading		Limits (dBuV/m)	_	Remark
1	2420.00	27.60	6.66	34.15	86.78	86.89	114.00	27.11	Peak
2	2420.00	27.60	6.66	34.15	75.09	75.20	94.00	18.80	Average
3	6338.00	33.74	12.19	31.92	35.41	49.42	74.00	24.58	Peak
4	8633.00	37.24	11.45	32.31	35.30	51.68	74.00	22.32	Peak
5	10163.00	38.39	11.50	32.08	34.84	52.65	74.00	21.35	Peak
6	13053.00	39.01	11.44	34.33	33.94	50.06	74.00	23.94	Peak
7	14464.00	41.85	10.93	32.96	33.09	52.91	74.00	21.09	Peak

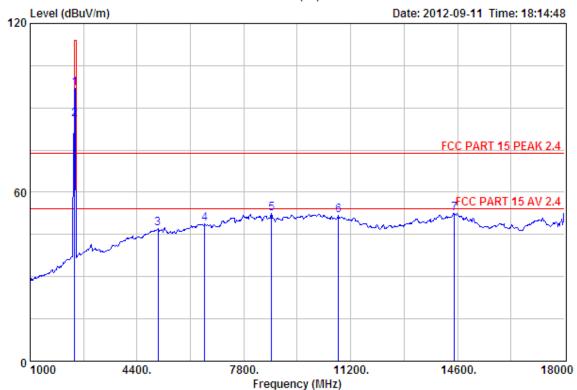
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Data: 2 File: D:\test data\2012\N\Nine2.EMI (98)



Site no. : 3m Chamber Data no. : 2

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

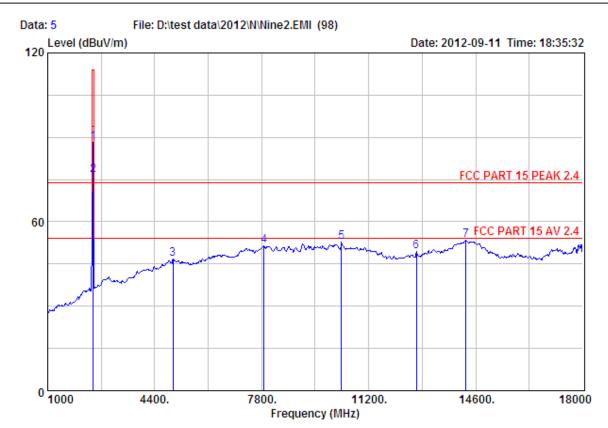
		Ant. Cable Amp Emission							
	Freq.				-		Limits	_	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2420.00	27.60	6.66	34.15	96.92	97.03	114.00	16.97	Peak
2	2420.00	27.60	6.66	34.15	85.69	85.80	94.00	8.20	Average
3	5063.00	31.58	12.51	32.11	35.04	47.02	74.00	26.98	Peak
4	6559.00	34.37	12.15	32.11	34.29	48.70	74.00	25.30	Peak
5	8684.00	37.32	11.45	32.43	36.26	52.60	74.00	21.40	Peak
6	10809.00	39.31	11.30	33.30	34.43	51.74	74.00	22.26	Peak
7	14498.00	41.88	10.93	33.08	32.77	52.50	74.00	21.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 5

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2440MHz

	Ant. Cable Amp Emission								
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2440.00	27.60	6.67	34.12	88.11	88.26	114.00	25.74	Peak
2	2440.00	27.60	6.67	34.12	76.55	76.70	94.00	17.30	Average
3	4978.00	31.52	12.52	31.99	34.76	46.81	74.00	27.19	Peak
4	7868.00	36.74	11.46	31.35	34.71	51.56	74.00	22.44	Peak
5	10333.00	38.68	11.40	32.40	35.10	52.78	74.00	21.22	Peak
6	12713.00	38.82	11.13	34.74	34.22	49.43	74.00	24.57	Peak
7	14294.00	41.71	10.92	33.08	33.77	53.32	74.00	20.68	Peak

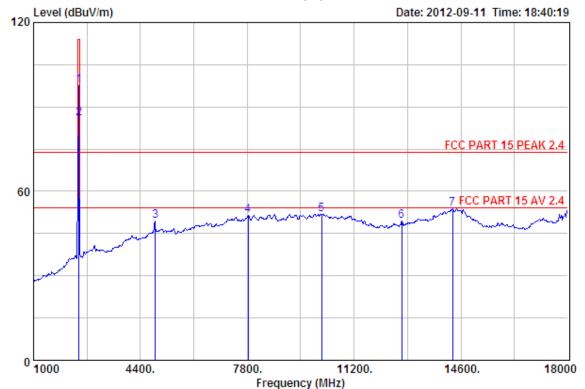
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 6

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2440MHz

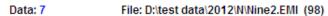
		Ant.	t. Cable Amp Emission						
	Freq. (MHz)		Loss (dB)		_		Limits (dBuV/m)	_	Remark
1	2440.00	27.60	6.67	34.12	97.48	97.63	114.00	16.37	Peak
2	2440.00	27.60	6.67	34.12	85.85	86.00	94.00	8.00	Average
3	4880.00	31.37	12.07	31.90	37.78	49.32	74.00	24.68	Peak
4	7834.00	36.68	11.47	31.40	34.83	51.58	74.00	22.42	Peak
5	10163.00	38.39	11.50	32.08	34.11	51.92	74.00	22.08	Peak
6	12713.00	38.82	11.13	34.74	34.29	49.50	74.00	24.50	Peak
7	14328.00	41.74	10.92	32.98	34.02	53.70	74.00	20.30	Peak

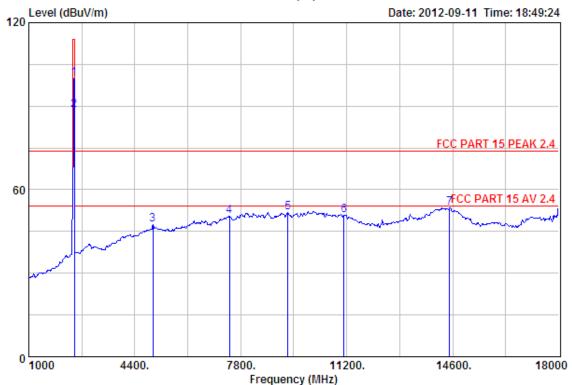
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 7

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

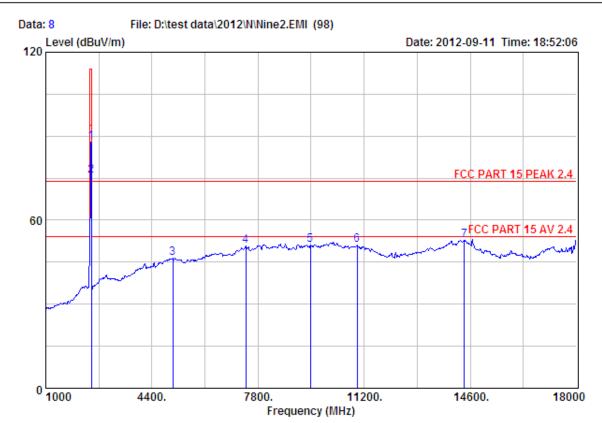
	Ant. Cable Amp Emission						1		
	Freq.				-	•	Limits (dBuV/m)	_	Remark
						(=====			
1	2460.00	27.58	6.69	34.06	99.77	99.98	114.00	14.02	Peak
2	2460.00	27.58	6.69	34.06	88.39	88.60	94.00	5.40	Average
3	4978.00	31.52	12.52	31.99	35.56	47.61	74.00	26.39	Peak
4	7443.00	36.54	11.61	31.93	34.38	50.60	74.00	23.40	Peak
5	9313.00	37.94	11.62	32.15	34.30	51.71	74.00	22.29	Peak
6	11115.00	39.44	11.20	33.87	34.06	50.83	74.00	23.17	Peak
7	14498.00	41.88	10.93	33.08	33.88	53.61	74.00	20.39	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 8

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control
Power : DC 12V
M/N : NE-TX06203
Test Mode : TX 2460MHz

		Freq.		Loss	Factor	Reading		Limits (dBuV/m)	_	Remark
:	1	2460.00	27.58	6.69	34.06	87.68	87.89	114.00	26.11	Peak
- 2	2	2460.00	27.58	6.69	34.06	75.79	76.00	94.00	18.00	Average
;	3	5063.00	31.58	12.51	32.11	34.44	46.42	74.00	27.58	Peak
	4	7409.00	36.58	11.60	31.97	34.57	50.78	74.00	23.22	Peak
į	5	9483.00	38.01	11.70	31.93	33.49	51.27	74.00	22.73	Peak
	6	10979.00	39.50	11.29	33.62	33.87	51.04	74.00	22.96	Peak
	7	14413.00	41.80	10.92	32.78	32.95	52.89	74.00	21.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



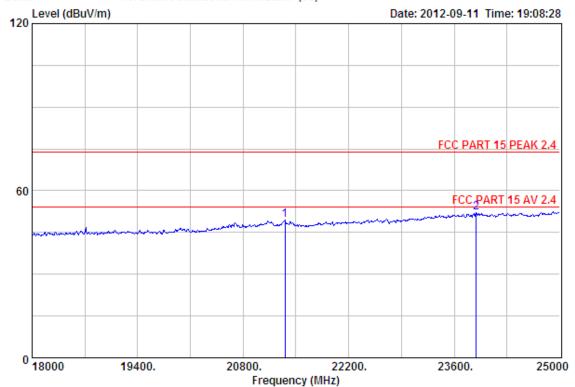
#### Above 18GHz

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Data: 11 File: D:\test data\2012\N\Nine2.EMI (98)



Site no. : 3m Chamber Data no. : 11

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

		Ant.	Cable	Amp					
	-				_		Limits (dBuV/m)	_	Remark
1	21353.00	46.09	20.28	35.49	18.48	49.36	74.00	24.64	Peak
2	23894.00	45.62	21.95	32.90	17.58	52.25	74.00	21.75	Peak

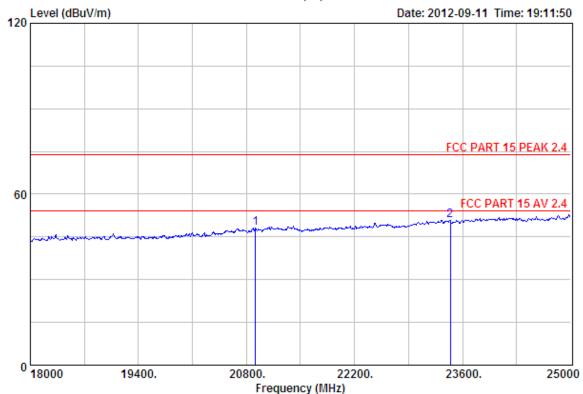
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 12

Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

		Ant.	Cable	Amp		Emission			
	-				_		Limits (dBuV/m)	_	Remark
1	20919.00	46.26	20.09	35.87	17.81	48.29	74.00	25.71	Peak
2	23439.00	45.69	21.54	33.38	17.12	50.97	74.00	23.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

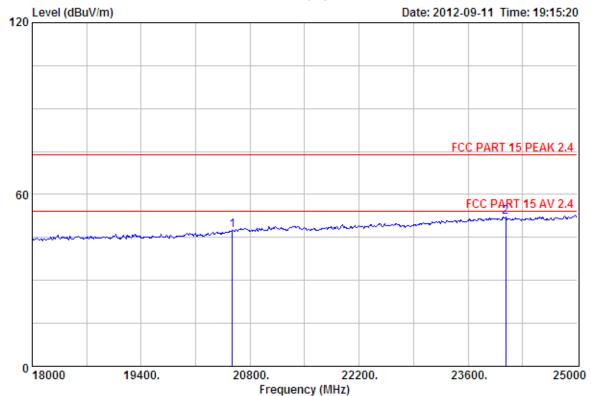


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Site no. : 3m Chamber Data no. : 13

Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2440MHz

I	Ant.	Cable	Amp	Emission

Freq. Factor Loss Factor Reading Level Limits Margin Remark
(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dB)

1 20569.00 46.04 19.94 36.18 17.52 47.32 74.00 26.68 Peak 2 24083.00 45.61 22.09 32.92 17.37 52.15 74.00 21.85 Peak

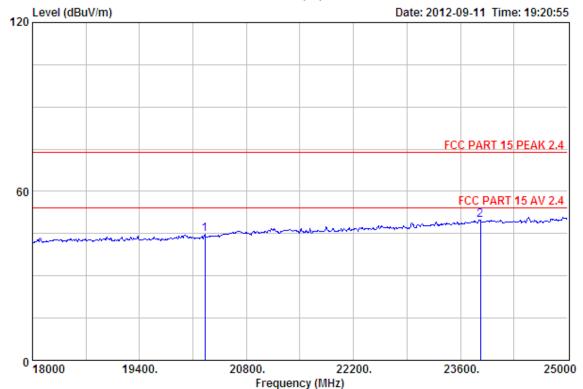
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 14

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2440MHz

	-	Factor	Loss	Factor	Reading	Limits (dBuV/m)	_	Remark
_	20254.00					 		Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

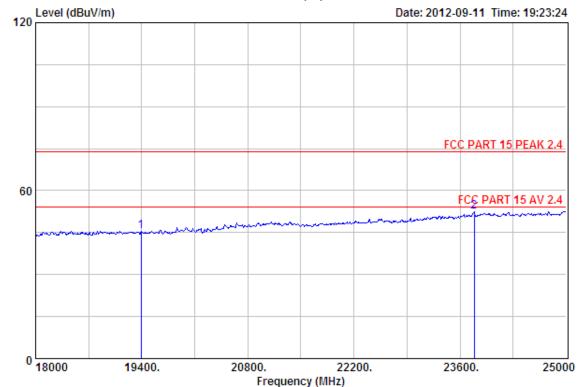


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Data: 15 File: D:\test data\2012\N\Nine2.EMI (98)



Site no. : 3m Chamber Data no. : 15

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

	Ant.	Cable	Amp		Emission				
-				_		Limits (dBuV/m)	_	Remark	
19393.00 23789.00								Peak Peak	•

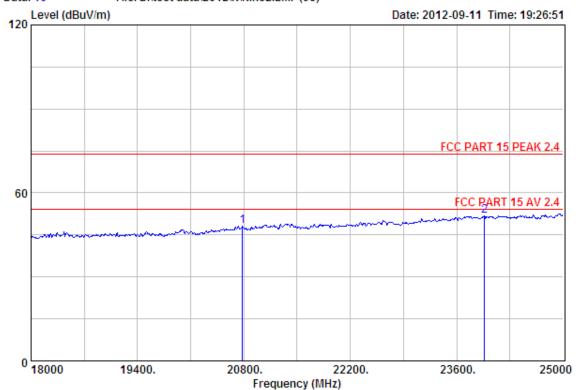
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 16

Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

-	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	_	Remark	
20779.00 23964.00								Peak Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



### 5. 20 DB BANDWIDTH TEST

### 5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4408B	MY44211139	May.02, 12	1 Year

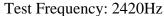
#### 5.2. Limit

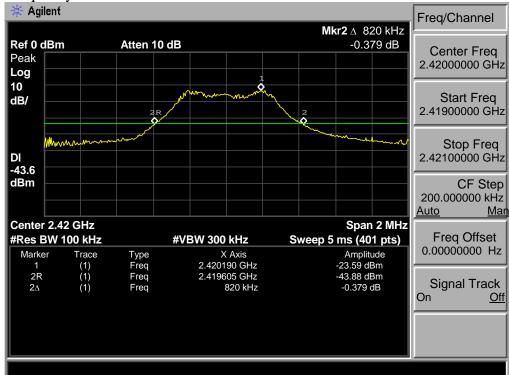
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

#### 5.3. Test Results

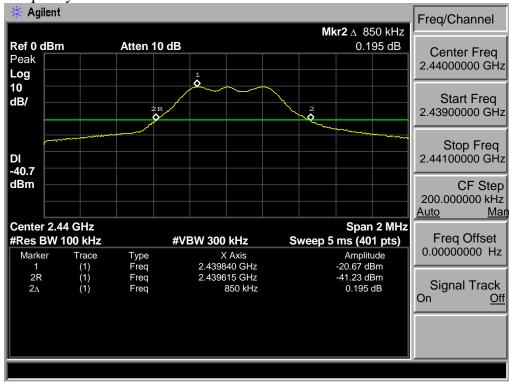
EUT: Radio Control		
M/N: NE-TX06203		
Test date:2012-09-12	Pressure:101.8 kpa	Humidity:54 %
Tested by: Tony.Tang	Test site: RF site	Temperature: 24.1 °C

Frequency	20% bandwidth ( MHz )	Limit (KHz)			
2420	0.820	N/A			
2440	0.850	N/A			
2460	0.850	N/A			
Conclusion: PASS					

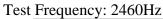


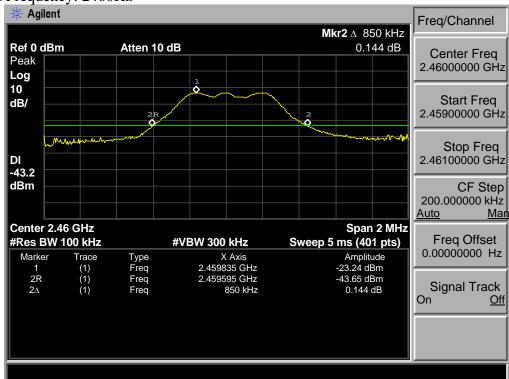


#### Test Frequency: 2440Hz









### 6. BAND EDGE COMPLIANCE TEST

### 6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
	Spectrum Analyzer	Agilent	E4408B	MY44211139	May.02, 12	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	May.02, 12	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.02, 12	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.02, 12	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.02, 12	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.02, 12	1 Year

#### 6.2. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

#### 6.3. Test Produce

- 1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=1MHz; VBW=3MHz, PK detector, Sweep=AUTO
  - (b) Average: RBW=1MHz ;VBW=10Hz, PK detector, Sweep=AUTO

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6.4. Test Results
Pass (The testing data was attached in the next pages.)
Note: If the PK measured levels comply with average limit, then the average level we deemed to comply with average limit.

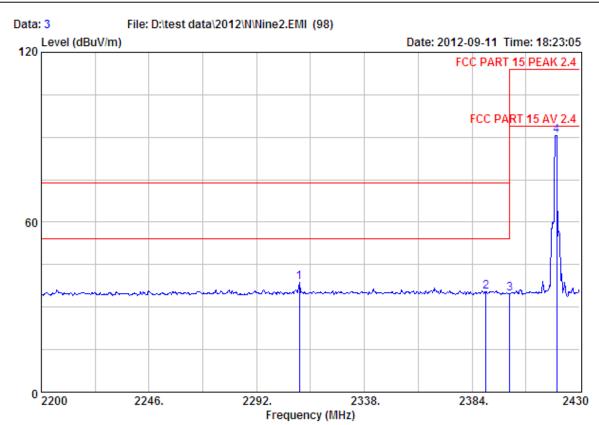
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#### 6.5. Test Data

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Site no. : 3m Chamber Data no. : 3

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

			Ant.	Cable	Amp		Emission			
		Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
-	1	2310.17	27.76	6.53	34.24	38.87	38.92	74.00	35.08	Peak
		2390.00								
	3	2400.00	27.61	6.62	34.18	34.83	34.88	74.00	39.12	Peak
	4	2420.11	27.60	6.66	34.15	90.59	90.70	114.00	23.30	Peak

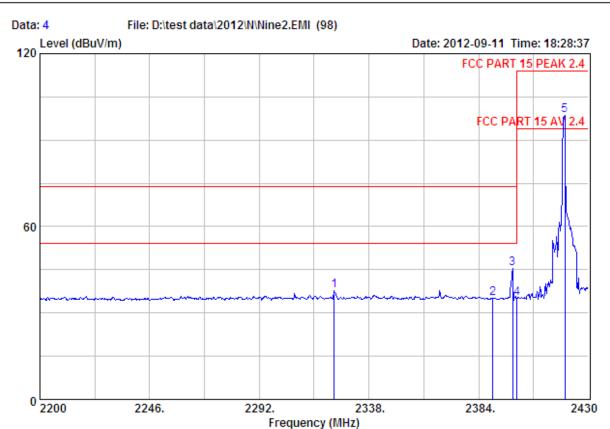
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Data no. : 4

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2420MHz

	-	Factor	Loss	Factor	Reading		Limits (dBuV/m)	_	Remark
1	2323.51	27.73	6.54	34.23	37.73	37.77	74.00	36.23	Peak
2	2390.00	27.64	6.62	34.19	35.05	35.12	74.00	38.88	Peak
3	2398.26	27.61	6.62	34.18	45.56	45.61	74.00	28.39	Peak
4	2400.00	27.61	6.62	34.18	34.90	34.95	74.00	39.05	Peak
5	2420.11	27.60	6.66	34.15	98.54	98.65	114.00	15.35	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

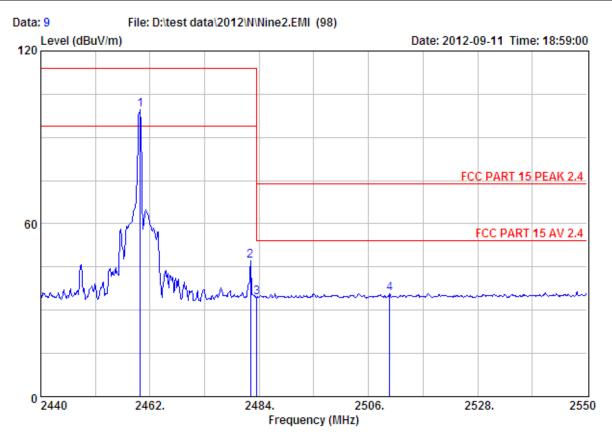
The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 9

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

	-	Factor	Loss	Factor	Reading		Limits (dBuV/m)	_	Remark
2	2460.02 2482.24 2483.50 2510.29	27.58 27.58	6.71 6.71	34.03 34.03	47.00 34.24	47.26 34.50	114.00 74.00	66.74 39.50	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

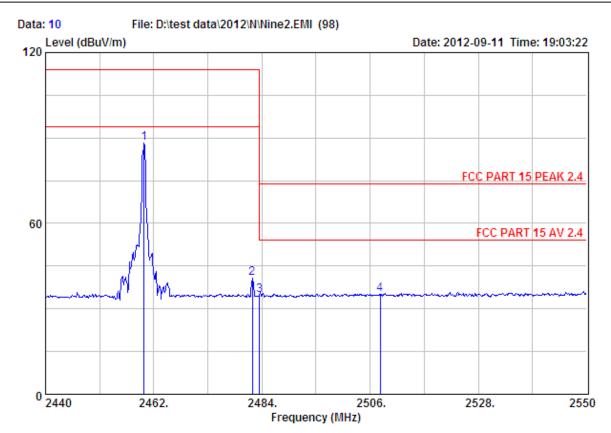
The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 10

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Radio Control

Power : DC 12V M/N : NE-TX06203 Test Mode : TX 2460MHz

-	Ant. Factor (dB/m)	Loss	Factor	Reading		Limits	_	Remark
1 2460.02 2 2482.02 3 2483.50 4 2508.09	27.58 27.58	6.71 6.71	34.03 34.03	40.55 34.53	40.81 34.79	114.00 74.00	73.19 39.21	Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

The emission levels that are 20dB below the official limit are not reported.



#### 7. ANTENNA REQUIREMENTS

Standard requirement: FCC Part15 C Section 15.203

#### **7.1.** 15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by there sponsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

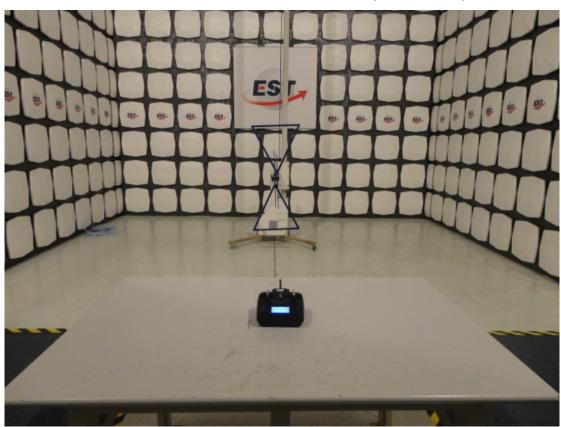
#### **7.2.** E.U.T Antenna:

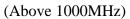
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.2dBi.

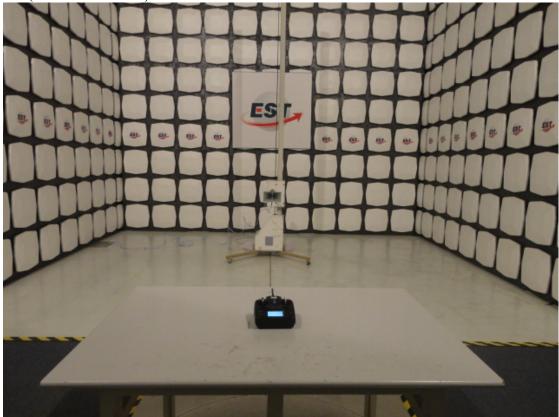
EST Technology Co.,Ltd Report No. ESTE-R1209013

### 8. PHOTOGRAPH OF TEST

8.1.Photos of Radiated Emission Test (30-1000MHz)









### 9. PHOTOGRAPH OF EUT

Figure 1
General Appearance of the EUT



Figure 2
General Appearance of the EUT



Figure 3
General Appearance of the EUT



Figure 4
General Appearance of the EUT



Figure 5
General Appearance of the EUT



Figure 6
General Appearance of the EUT



Figure 7
Component Side of the PCB

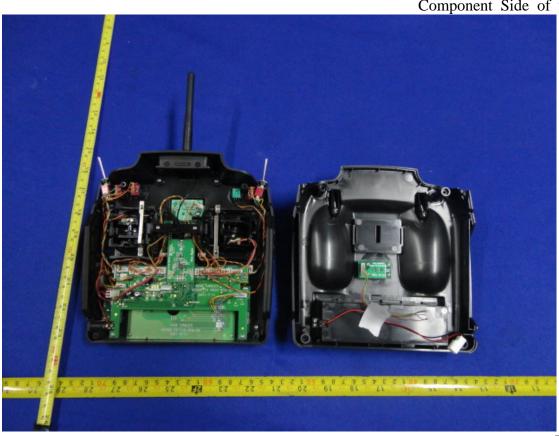


Figure 8
Component Side of the PCB

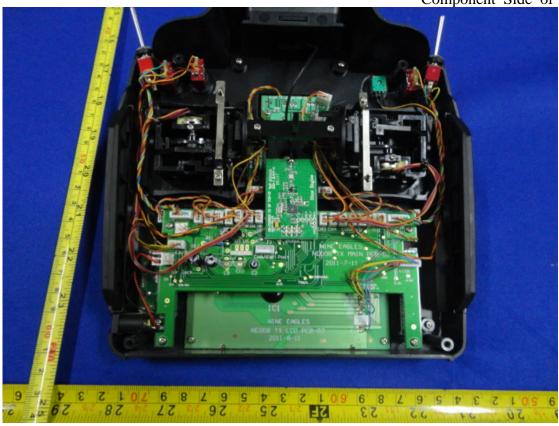


Figure 9
Component Side of the PCB

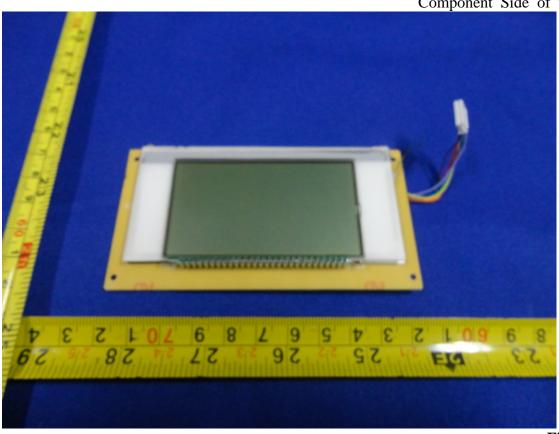


Figure 10 Component Side of the PCB

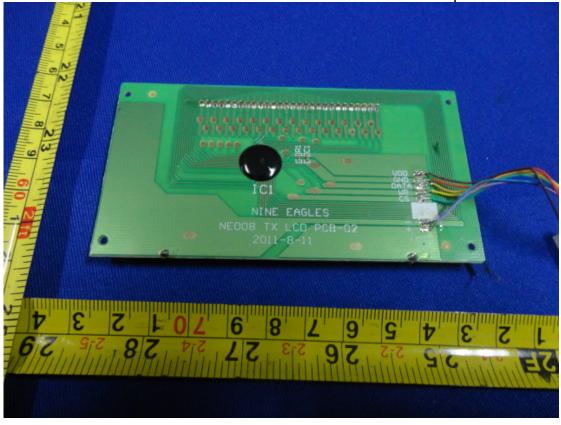


Figure 11 Component Side of the PCB

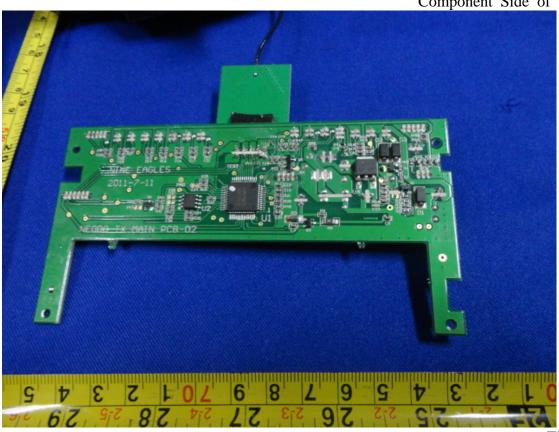


Figure 12 Component Side of the PCB

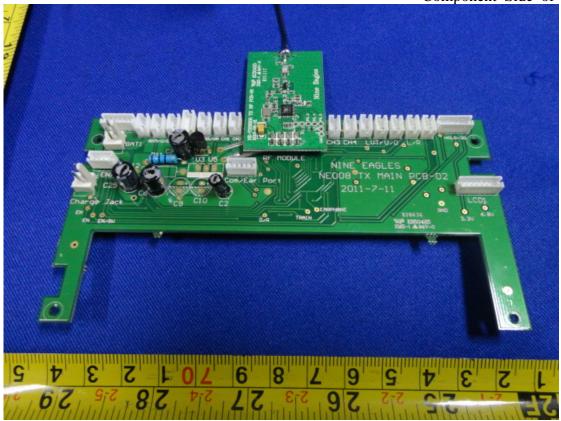


Figure 13
Component Side of the PCB



<End Of Report>

