

FCC CERTIFICATION
On Behalf of
Megatech International Inc.

Radio Control Helicopt
Model No.: MTC9508

FCC ID: P4SMTC9508

Prepared for : Megatech International Inc
Address : 8300 Tonnelle Avenue, North Bergen, NJ 07047, USA

Prepared by : ACCURATE TECHNOLOGY CO. LTD
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Test Report Certification

Applicant : Megatech International Inc.
Manufacturer : Shanghai C.C.Lee Model Co., Ltd.
EUT Description : Radio Control Helicopt
(A) MODEL NO.: MTC9508
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 12V (8×“AA” batteries)

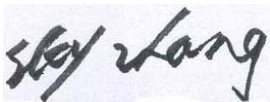
Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.227: 2007

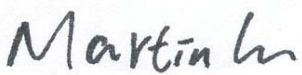
The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.227 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : December 12, 2007

Prepared by : 
(Engineer)

Reviewer : 
(Quality Manager)

Approved & Authorized Signer : 
(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Radio Control Helicopt

Model Number : MTC9508

Power Supply : DC 12V (8×“AA” batteries)

Operation Frequency : 27.145MHz

Modulation Type : FM

Applicant : Megatech International Inc.

Address : 8300 Tonnelles Avenue, North Bergen, NJ 07047, USA

Manufacturer : Shanghai C.C.Lee Model Co., Ltd.

Address : No.1289#, Jiasong Road(M), Huaxin Town, Qianpu District, Shanghai, P.R.China

Date of sample received : December 07, 2007

Date of Test : December 12, 2007

1.2. Description of Test Facility

EMC Lab : Listed by FCC
The Registration Number is 274801

Listed by Industry Canada
The Registration Number is IC4174

Accredited by China National Accreditation Committee for Laboratories
The Certificate Registration Number is L0579

Name of Firm : Shenzhen Academy of Metrology & Quality Inspection

Site Location : Bldg. Metrology & Quality Inspection, Longzhu Road, Nanshan, Shenzhen, Guangdong, P.R. China

1.3. Measurement Uncertainty

Conducted emission expanded uncertainty = 3.5dB, k=2

Radiated emission expanded uncertainty = 4.5dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	03.31.2008
EMI Test Receiver	Rohde&Schwarz	ESI26	838786/013	01.24.2008
Loop Antenna	Schwarzbeck	FMZB1516	113	01.24.2008
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	03.31.2008
Bilog Antenna	Chase	CBL6112B	2591	03.31.2008
Horn Antenna	Rohde&Schwarz	HF906	100013	01.24.2008
Spectrum Analyzer	Anritsu	MS2651B	6200238856	03.31.2008
Pre-Amplifier	Agilent	8447D	2944A10619	03.31.2008

3. RADIATED EMISSION FOR FCC PART 15 SECTION 15.227(B)

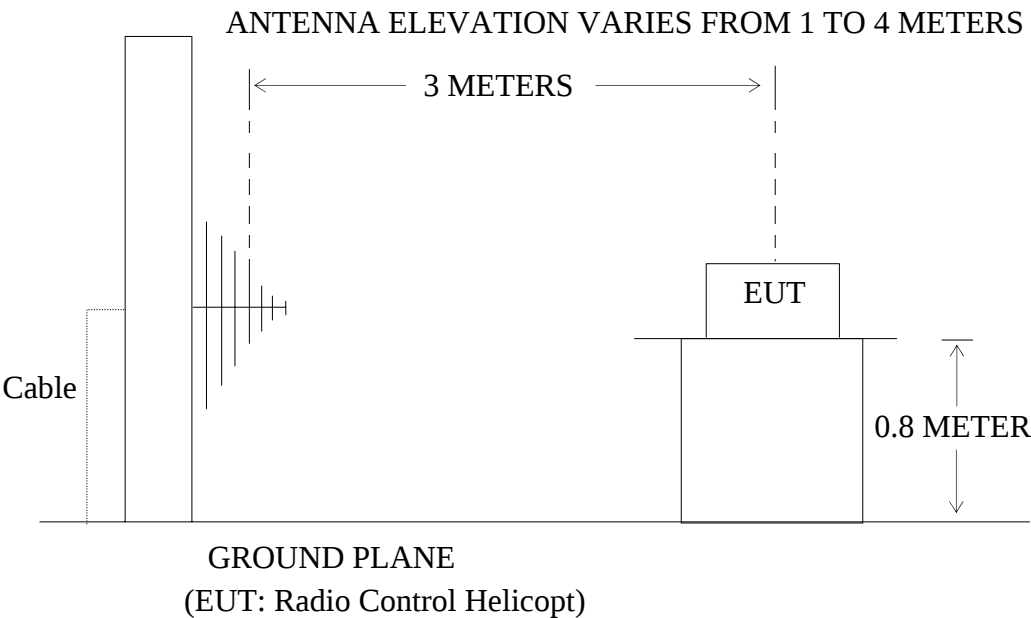
3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



(EUT: Radio Control Helicopt)

3.1.2. Anechoic Chamber Test Setup Diagram



3.2. The Field Strength of Radiation Emission Measurement Limits

3.2.1. The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209

Radiation Emission Measurement Limits According to Section 15.209(a)

Frequency (MHz)	Limit,		The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)	
30 - 88	100	40	
88 - 216	150	43.5	

216 - 960	200	46	frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
Above 960	500	54	

3.3.Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.3.1. Radio Control Helicopt (EUT)

Model Number : MTC9508
 Serial Number : N/A
 Manufacturer : Shanghai C.C.Lee Model Co., Ltd.

3.4.Operating Condition of EUT

3.4.1.Setup the EUT and simulator as shown as Section 3.1.

3.4.2.Turn on the power of all equipment.

3.4.3. Let the EUT work in TX modes(on) measure it.

3.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 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 polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 15 Subpart C on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 120KHz in 30-1000MHz.

The frequency range from 30MHz to 1000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

3.6.The Field Strength of Radiation Emission Measurement Results

PASS.

The frequency range 30MHz to 1000MHz is investigated.

Date of Test:	<u>December 12, 2007</u>	Temperature:	<u>24°C</u>
EUT:	<u>Radio Control Helicopt</u>	Humidity:	<u>48%</u>
Model No.:	<u>MTC9508</u>	Power Supply:	<u>DC 12V (8×“AA” batteries)</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Feng</u>

Polarization	Frequency (MHz)	Reading(dBμV/m) QP	Factor Corr.(dB)	Result(dBμV/m) QP	Limits(dBμV/m) QP	Margin(dBμV/m) QP
Horizontal	135.747	49.6	-21.2	28.4	43.5	15.1
Horizontal	162.890	53.3	-22.6	30.7	43.5	12.8
Horizontal	190.038	56.2	-23.7	32.5	43.5	11.0
Horizontal	271.479	51.2	-20.1	31.1	46.0	14.9
Vertical	86.373	53.0	-23.5	29.5	40.0	10.5
Vertical	135.747	56.6	-21.2	35.4	43.5	8.1
Vertical	162.890	57.6	-22.6	35.0	43.5	8.5
Vertical	190.038	61.4	-23.7	37.7	43.5	5.8
Vertical	271.479	51.5	-20.1	31.4	46.0	14.6

The spectral diagrams in appendix I display the measurement of peak values with corrected factors counted.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$

4. FUNDAMENTAL RADIATED EMISSION FOR FCC PART 15

SECTION 15.227(A)

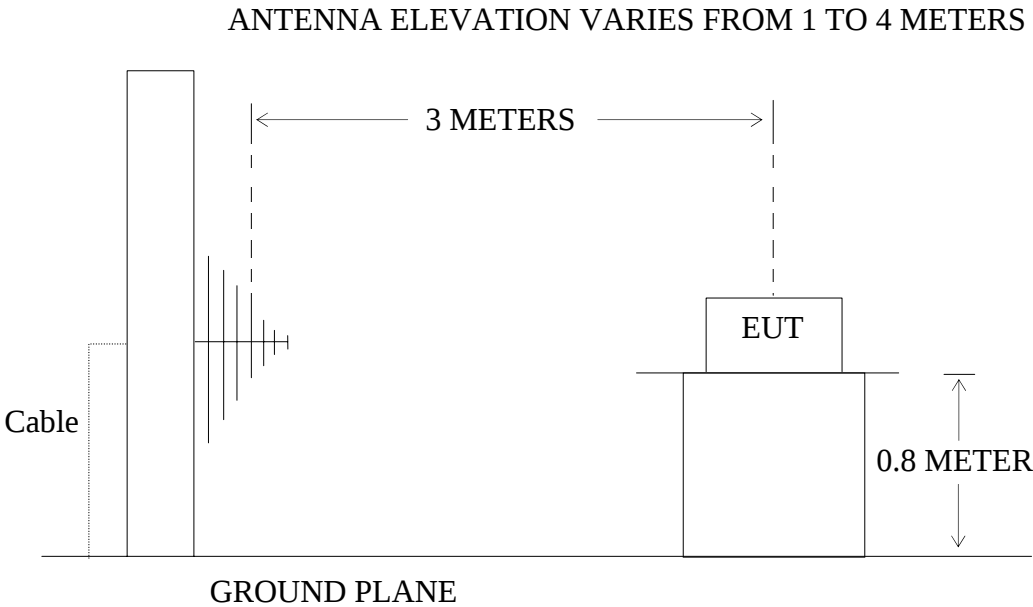
4.1. Block Diagram of Test Setup

4.1.1. Block diagram of connection between the EUT and simulators



(EUT: Radio Control Helicopt)

4.1.2. Anechoic Chamber Test Setup Diagram



(EUT: Radio Control Helicopt)

4.2. The Emission Limit For Section 15.227(a)

4.2.1 The field strength of any emission within this band shall not exceed 10,000microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emission apply.

4.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. Radio Control Helicopt (EUT)

Model Number : MTC9508
Serial Number : N/A
Manufacturer : Shanghai C.C.Lee Model Co., Ltd.

4.4.Operating Condition of EUT

4.4.1.Setup the EUT and simulator as shown as Section 4.1.

4.4.2.Turn on the power of all equipment.

4.4.3.Let the EUT work in TX mode (On) measure it.

4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. Calibrated Loop antenna is used as receiving antenna. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 15 on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 9KHz in 9kHz-30MHz

4.6.The Emission Measurement Result

PASS.

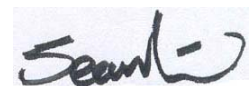
Date of Test:	<u>December 12, 2007</u>	Temperature:	<u>24°C</u>
EUT:	<u>Radio Control Helicopt</u>	Humidity:	<u>48%</u>
Model No.:	<u>MTC9508</u>	Power Supply:	<u>DC 12V (8×“AA” batteries)</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Feng</u>

Fundamental Radiated Emissions

Test conditions		Fundamental Frequency	
		27.145MHz	
T _{nom} (24°C)	Unit	(dBμV/m)/(μ V/m) AV	(dBμV/m)/(μ V/m) PEAK
		73.3/4624	75.7/6095
limit		80/10,000	100/100,000
Note: Measurement was performed with modulated signal with average detector and peak detector.			

The spectral diagrams in appendix 1.

Reviewer :



5. BAND EDGES

5.1.The Requirement

5.1.1. The wanted emission within the band 26.96-27.28MHz.

5.2.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.2.1. Radio Control Helicopt (EUT)

Model Number : MTC9508
Serial Number : N/A
Manufacturer : Shanghai C.C.Lee Model Co., Ltd.

5.3.Operating Condition of EUT

5.3.1.Setup the EUT and simulator as shown as Section 4.1.

5.3.2.Turn on the power of all equipment.

5.3.3.Let the EUT work in TX mode (On) measure it.

5.4.Test Procedure

The transmitter output was fed into the spectrum analyzer and photo was taken. The vertical scale is set to 10dB per division; the horizontal scale is set to 32kHz per division. Star frequency are 26.96MHz, stop frequency are 27.28MHz .
RBW are 3kHz, VBW are 10kHz, Sweep time are 50ms.

5.5.The Measurement Result

The EUT does meet the FCC requirement.

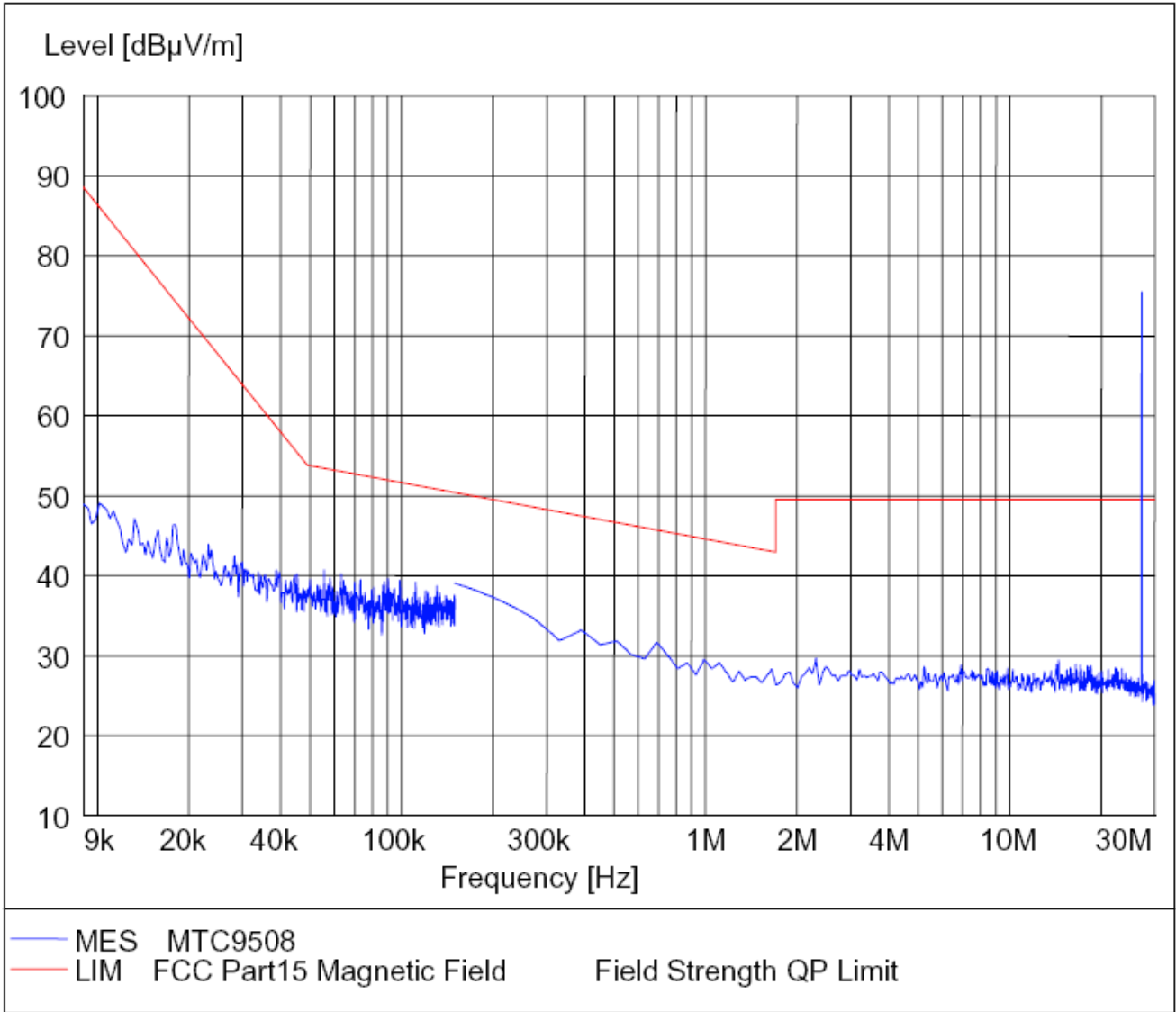
The spectral diagrams in appendix 1.

APPENDIX I (Test Curves)

Radiated Disturbance

FCC Part 15

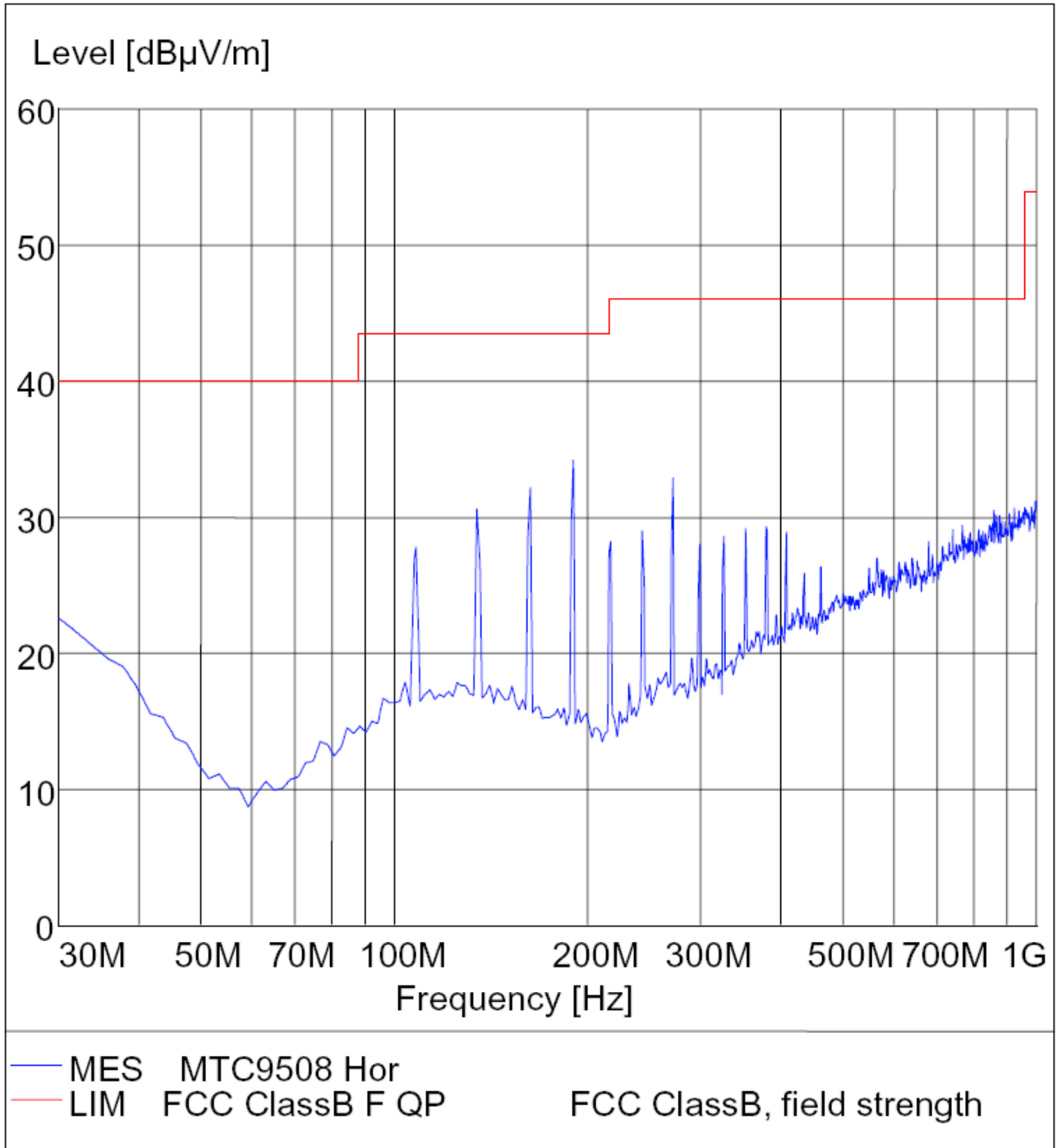
EUT: Radio Control Helicopt M/N: MTC9508
Manufacturer: Shanghai C.C.Lee Model Co., Ltd.
Operating Condition: TX
Test By: Feng
Comment: DC 12V



Radiated Disturbance

FCC Part 15

EUT: Radio Control Helicopt M/N: MTC9508
Manufacturer: Shanghai C.C.Lee Model Co., Ltd.
Operating Condition: TX
Test By: Feng
Test Specification: Horizontal
Comment : DC 12V



Radiated Disturbance

FCC Part 15

EUT: Radio Control Helicopt M/N: MTC9508
Manufacturer: Shanghai C.C.Lee Model Co., Ltd.
Operating Condition: TX
Test By: Feng
Test Specification: Vertical
Comment : DC 12V

