

FCC CERTIFICATION
On Behalf of
Lifestyle Entertainment Group, Inc.

RF Remote Controller
Model No.: LS2400-RC

FCC ID: TVMRC315TX

Prepared for : Lifestyle Entertainment Group, Inc.
Address : 2918 Cantos De Los Ciervos San Clemente, California
92673 USA

Prepared by : ACCURATE TECHNOLOGY CO. LTD
Address : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.
Science & Industry Park, Nanshan, Shenzhen, Guangdong
P.R. China

Tel: (0755) 26503290
Fax: (0755) 26503396

Report Number : ATE20052288
Date of Test : December 20, 2005
Date of Report : December 23, 2005

TABLE OF CONTENTS

Description	Page
Test Report Certification	
1. GENERAL INFORMATION	4
1.1. Description of Device (EUT).....	4
1.2. Description of Test Facility	4
1.3. Measurement Uncertainty	4
2. MEASURING DEVICE AND TEST EQUIPMENT	5
3. THE FIELD STRENGTH OF RADIATION EMISSION	6
3.1. Block Diagram of Test Setup.....	6
3.2. The Field Strength of Radiation Emission Measurement Limits.....	6
3.3. Configuration of EUT on Measurement	7
3.4. Operating Condition of EUT	7
3.5. Test Procedure	7
3.6. The Field Strength of Radiation Emission Measurement Results	8
4. OCCUPIED BANDWIDTH	10
4.1. Block Diagram of Test Setup.....	10
4.2. The Bandwidth of Emission Limit According To Section 15.231(c)	10
4.3. EUT Configuration on Measurement	11
4.4. Operating Condition of EUT	11
4.5. Test Procedure	11
4.6. Measurement Result	12
5. RELEASE TIME MEASUREMENT.....	13
5.1. Block Diagram of Test Setup.....	13
5.2. Release Time Measurement According To Section 15.231(a)	13
5.3. EUT Configuration on Measurement	14
5.4. Operating Condition of EUT	14
5.5. Test Procedure	14
5.6. Measurement Result	15
APPENDIX I (TEST CURVES) (6pages)	

Test Report Certification

Applicant : Lifestyle Entertainment Group, Inc.
 Manufacturer : Dongguan City Chanping Taixing Hardware Craft Co., Ltd.
 EUT Description : RF Remote Controller
 (A) MODEL NO.: LS2400-RC
 (B) SERIAL NO.: N/A
 (C) POWER SUPPLY: 12V DC ("27A" battery Type)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.231: 2004 & ANSI C63.4: 2003


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 15.231 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 20, 2005

Prepared by : 
 (Engineer)

Reviewer : 
 (Quality Manager)

Approved & Authorized Signer : 
 (Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : RF Remote Controller

Model Number : LS2400-RC

Power Supply : 12V DC ("27A" battery Type)

Applicant : Lifestyle Entertainment Group, Inc.
Address : 2918 Cantos De Los Ciervos San Clemente, California
92673 USA

Manufacturer : Dongguan City Chanping Taixing Hardware Craft Co.,Ltd.

Address : Baihuali Industry District, Chanping Town, Dongguan
City
Guangdong Province, China

Date of sample received : December 17, 2005

Date of Test : December 20, 2005

1.2. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen, May 10, 2004

Accredited by FCC, May 10, 2004
The Certificate Registration Number is 253065

Accredited by Industry Canada, May 18, 2004
The Certificate Registration Number is IC 5077

Name of Firm : ACCURATE TECHNOLOGY CO. LTD
Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.
Science & Industry Park, Nanshan, Shenzhen, Guangdong
P.R. China

1.3. Measurement Uncertainty

Conducted Emission Uncertainty = $\pm 2.66\text{dB}$

Radiated Emission Uncertainty = $\pm 4.26\text{dB}$

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	ESI26	838786/013	12.16.2006
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	12.16.2006
Bilog Antenna	Chase	CBL6112B	2591	12.16.2006
Horn Antenna	Rohde&Schwarz	HF906	100013	12.16.2006
Spectrum Analyzer	Anritsu	MS2651B	6200238856	12.16.2006
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	12.16.2006
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100305	12.16.2006
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100310	12.16.2006
Signal Generator	GW	GAG-810	0913317	12.16.2006

3. THE FIELD STRENGTH OF RADIATION EMISSION

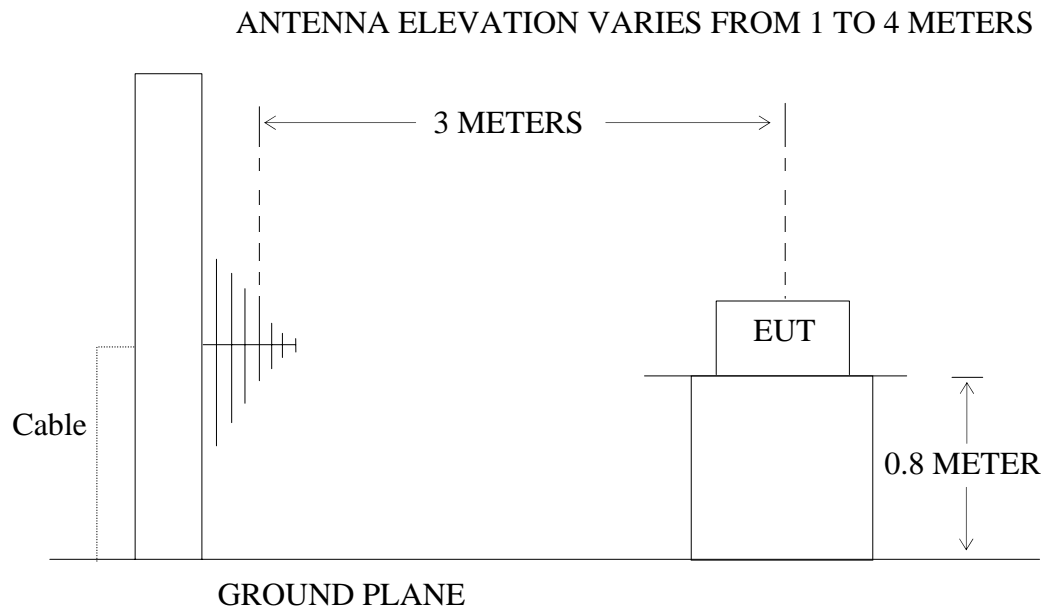
3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



(EUT: RF Remote Controller)

3.1.2. Anechoic Chamber Test Setup Diagram



(EUT: RF Remote Controller)

3.2. The Field Strength of Radiation Emission Measurement Limits

3.2.1 Radiation Emission Measurement Limits According to Section 15.231(b)

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Average] [$\mu\text{V/m}$]	Field Strength of Spurious Emission [Average] [$\mu\text{V/m}$]
40.66-40.70	2250	225
70-130	1250	125
130-174	1250-3750	125-375
174-260	3750	375
260-470	3750-12500	375-1250
Above 470	12500	1250

Where F is the frequency in MHz, The formulas for calculating the maximum permitted fundamental

field strengths are as follows: for the band 130-174MHz, $\mu\text{V/m}$ at 3 meters=56.81818(F)-6136.3636; For the band 260-470MHz, $\mu\text{V/m}$ at 3 meters=41.6667(F)-7083.3333. The maximum permissible unwanted emission level is 20dB below the maximum permitted fundamental level.

3.2.2 Restricted Band Radiation Emission Measurement Limits According to Section 15.205 and Section 15.209

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. RF Remote Controller (EUT)

Model Number	:	LS2400-RC
Serial Number	:	N/A
Manufacturer	:	Dongguan City Chanping Taixing Hardware Craft 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 measuring modes (TX) 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 bi-log 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 EUT location must be manipulated according to ANSI 63.4 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 120KHz in 30-1000MHz, and 1MHz in 1000-4000MHz.

The frequency range from 30MHz to 4000MHz is checked.

3.6.The Field Strength of Radiation Emission Measurement Results

PASS.

The frequency range 315MHz to 3150MHz is investigated.

Date of Test:	December 20, 2005	Temperature:	22°C
EUT:	RF Remote Controller	Humidity:	50%
Model No.:	LS2400-RC	Power Supply:	12V DC ("27A" battery Type)
Test Mode:	TX	Test Engineer:	Andy

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
315.075	85.7	90.3	-18.8	66.9	71.5	75.6	95.6	8.7	24.1	Horizontal
630.150	56.8	61.3	-13.9	42.9	47.4	55.6	75.6	12.7	28.2	
945.225	53.7	58.3	-11.6	42.1	46.7	55.6	75.6	13.5	28.9	
1260.300	50.1	54.6	-7.3	42.8	47.3	55.6	75.6	12.8	28.3	
*1575.375	52.6	57.2	-6.2	46.4	51.0	54	74	7.6	23.0	
1890.450	44.4	49.0	-5.3	39.1	43.7	55.6	75.6	16.5	31.9	
*2205.525	47.0	51.5	-4.3	42.7	47.2	54	74	11.3	26.8	
2520.600	45.1	49.7	-3.2	41.9	46.5	55.6	75.6	13.7	29.1	
*2835.675	48.1	52.6	-2.3	45.8	50.3	54	74	8.2	23.7	
3150.750	43.5	48.1	-1.4	42.1	46.7	55.6	75.6	13.5	28.9	
315.075	82.4	86.9	-18.8	63.6	68.1	75.6	95.6	12.0	27.5	Vertical
630.150	55.6	60.2	-13.9	41.7	46.3	55.6	75.6	13.9	29.3	
945.225	52.3	56.8	-11.6	40.7	45.2	55.6	75.6	14.9	30.4	
1260.300	49.8	54.3	-7.3	42.5	47.0	55.6	75.6	13.1	28.6	
*1575.375	51.1	55.7	-6.2	44.9	49.5	54	74	9.1	24.5	
1890.450	43.8	48.4	-5.3	38.5	43.1	55.6	75.6	17.1	32.5	
*2205.525	48.1	52.6	-4.3	43.8	48.3	54	74	10.2	25.7	
2520.600	44.2	48.8	-3.2	41.0	45.6	55.6	75.6	14.6	30.0	
*2835.675	46.0	50.5	-2.3	43.7	48.2	54	74	10.3	25.8	
3150.750	40.2	44.8	-1.4	38.8	43.4	55.6	75.6	16.8	32.2	

Note:

1. *: Denotes restricted band of operation.

Measurements were made using a peak detector and average detector. Any emission Above 1000MHz and falling within the restricted bands of FCC Part 15 Section 15.205 were compliance with the emission limit of FCC Part 15 Section 15.209.

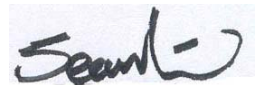
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

3. FCC Limit for Average Measurement = $41.6667(315) - 7083.3333 = 6041.6772 \mu\text{V/m} = 75.6 \text{ dB}\mu\text{V/m}$
4. The spectral diagrams in appendix I display the measurement of peak values.

Reviewer :

A handwritten signature in black ink, appearing to read "Sean", is written over a light blue rectangular background. The signature is stylized with a large initial 'S' and a trailing flourish.

4. OCCUPIED BANDWIDTH

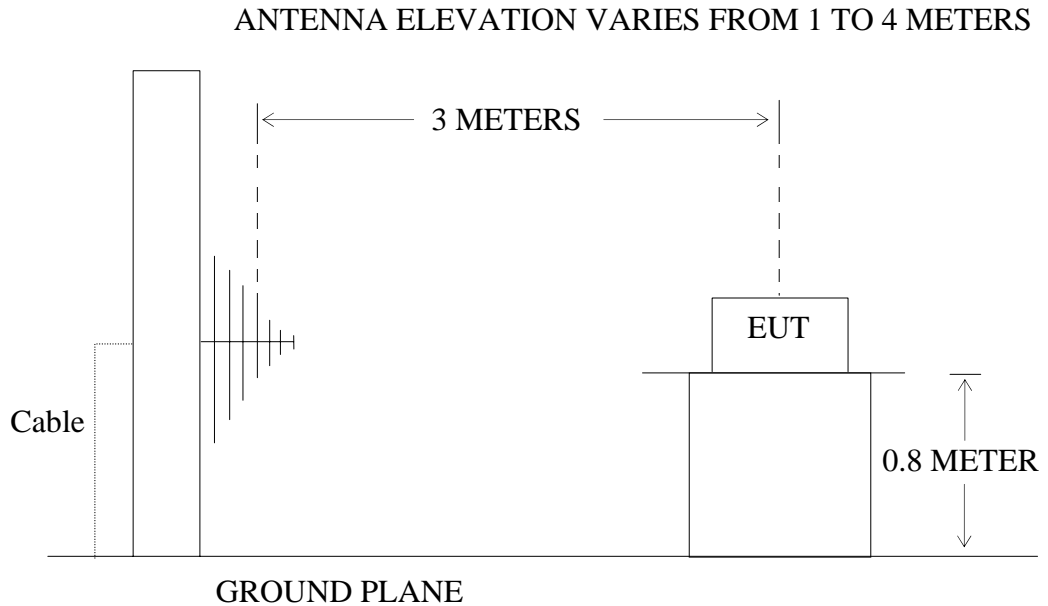
4.1. Block Diagram of Test Setup

4.1.1. Block diagram of connection between the EUT and simulators



(EUT: RF Remote Controller)

4.1.2. Anechoic Chamber Test Setup Diagram



(EUT: RF Remote Controller)

4.2. The Bandwidth of Emission Limit According To Section 15.231(c)

The bandwidth of emission shall be no wider than 0.25% of the center frequency. Therefore, the bandwidth of the emission limit is $315\text{MHz} \times 0.25\% = 787.5\text{KHz}$. Bandwidth is determined at the two points 20 dB down from the top of modulated carrier.

4.3.EUT Configuration on Measurement

The following equipment are installed on the bandwidth of 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.RF Remote Controller (EUT)

Model Number : LS2400-RC
Serial Number : N/A
Manufacturer : Dongguan City Chanping Taixing Hardware Craft 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 measuring mode (TX) measure it.

4.5.Test Procedure

4.5.1. Set SPA Center Frequency = Fundamental frequency, RBW = 10kHz, VBW = 10kHz, Span = 1MHz.

4.5.2. Set SPA Max hold. Mark peak, -20dB

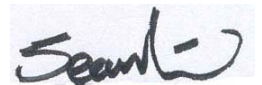
4.6. Measurement Result

The EUT does meet the FCC requirement.

-20dB bandwidth = 86KHz < 787.5KHz.

The spectral diagrams in appendix I.

Reviewer :

A handwritten signature in black ink, appearing to read "Sean", is written over a light blue rectangular background. The signature is stylized with a large, sweeping "S" and a checkmark-like flourish at the end.

5. RELEASE TIME MEASUREMENT

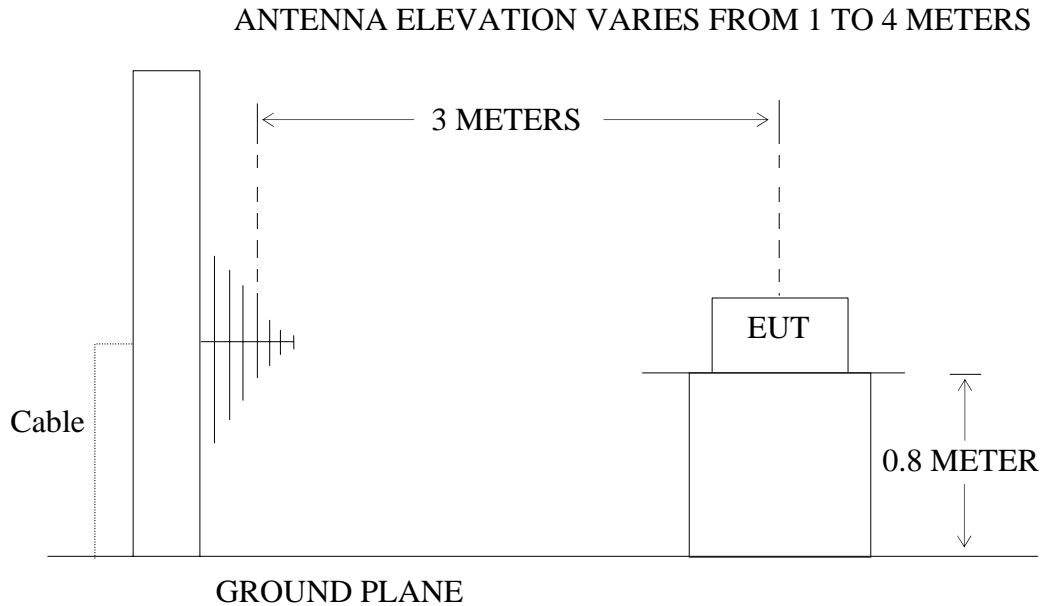
5.1. Block Diagram of Test Setup

5.1.1. Block diagram of connection between the EUT and simulators



(EUT: RF Remote Controller)

5.1.2. Anechoic Chamber Test Setup Diagram



(EUT: RF Remote Controller)

5.2. Release Time Measurement According To Section 15.231(a)

Section 15.231(a) (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

5.3.EUT Configuration on Measurement

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

5.3.1.RF Remote Controller (EUT)

Model Number	:	LS2400-RC
Serial Number	:	N/A
Manufacturer	:	Dongguan City Chanping Taixing Hardware Craft Co., Ltd.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in measuring mode (TX) measure it.

5.5.Test Procedure

5.5.1. Set SPA Center Frequency = Fundamental frequency, RBW = 100kHz, VBW = 100kHz, Span = 0Hz. Sweep time = 5seconds.

5.5.2. Set EUT as normal operation and press Transmitter button for 2.21 seconds.

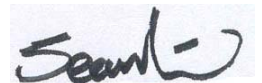
5.5.3. Set SPA View. Delta Mark time.

5.6. Measurement Result

The release time less than 5 seconds.

The spectral diagrams in appendix I.

Reviewer :

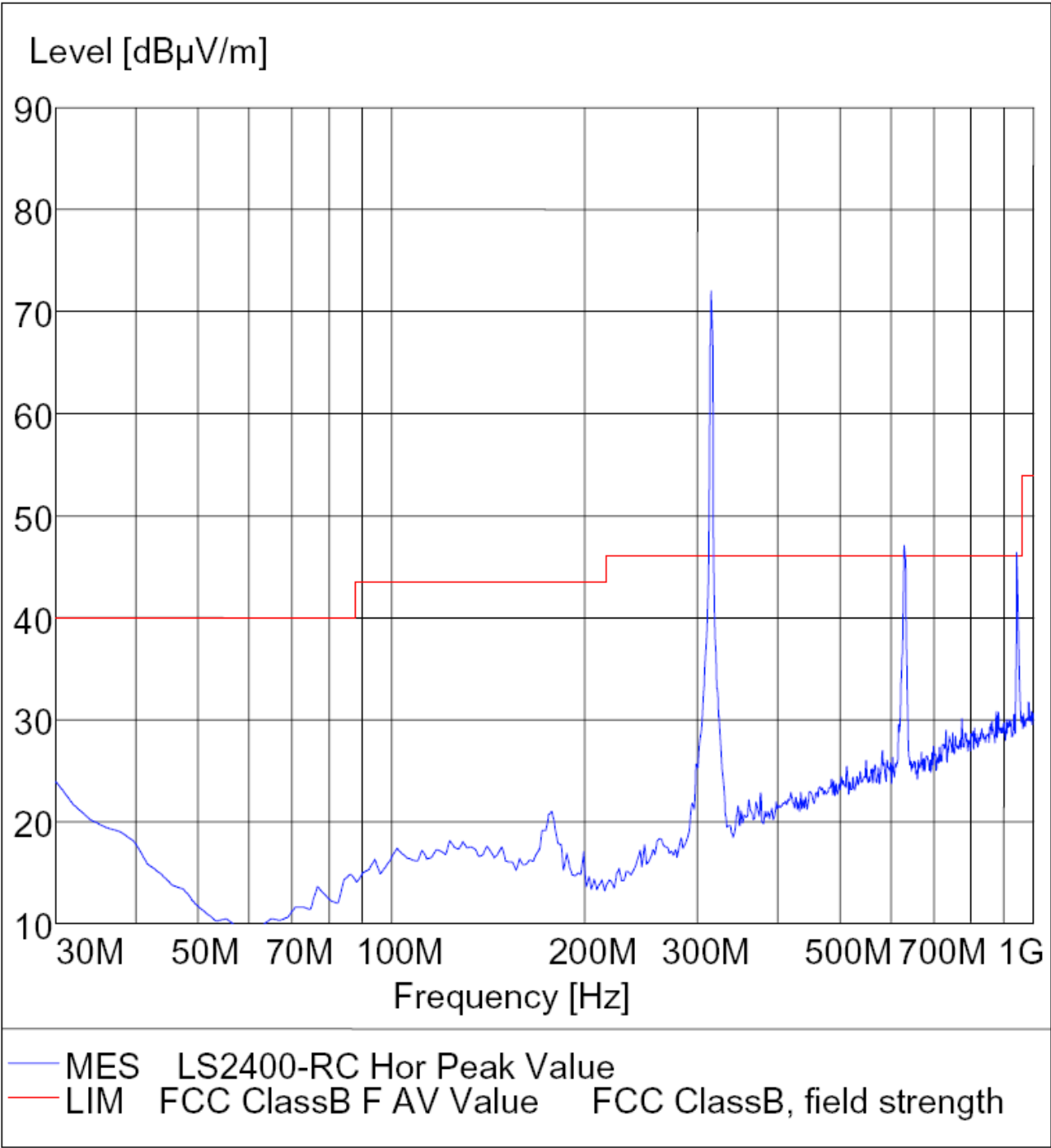
A handwritten signature in black ink, appearing to read "Sean", is placed over a light blue rectangular background. The signature is written in a cursive, stylized font.

APPENDIX I (Test Curves)

Radiated Disturbance

FCC Part 15

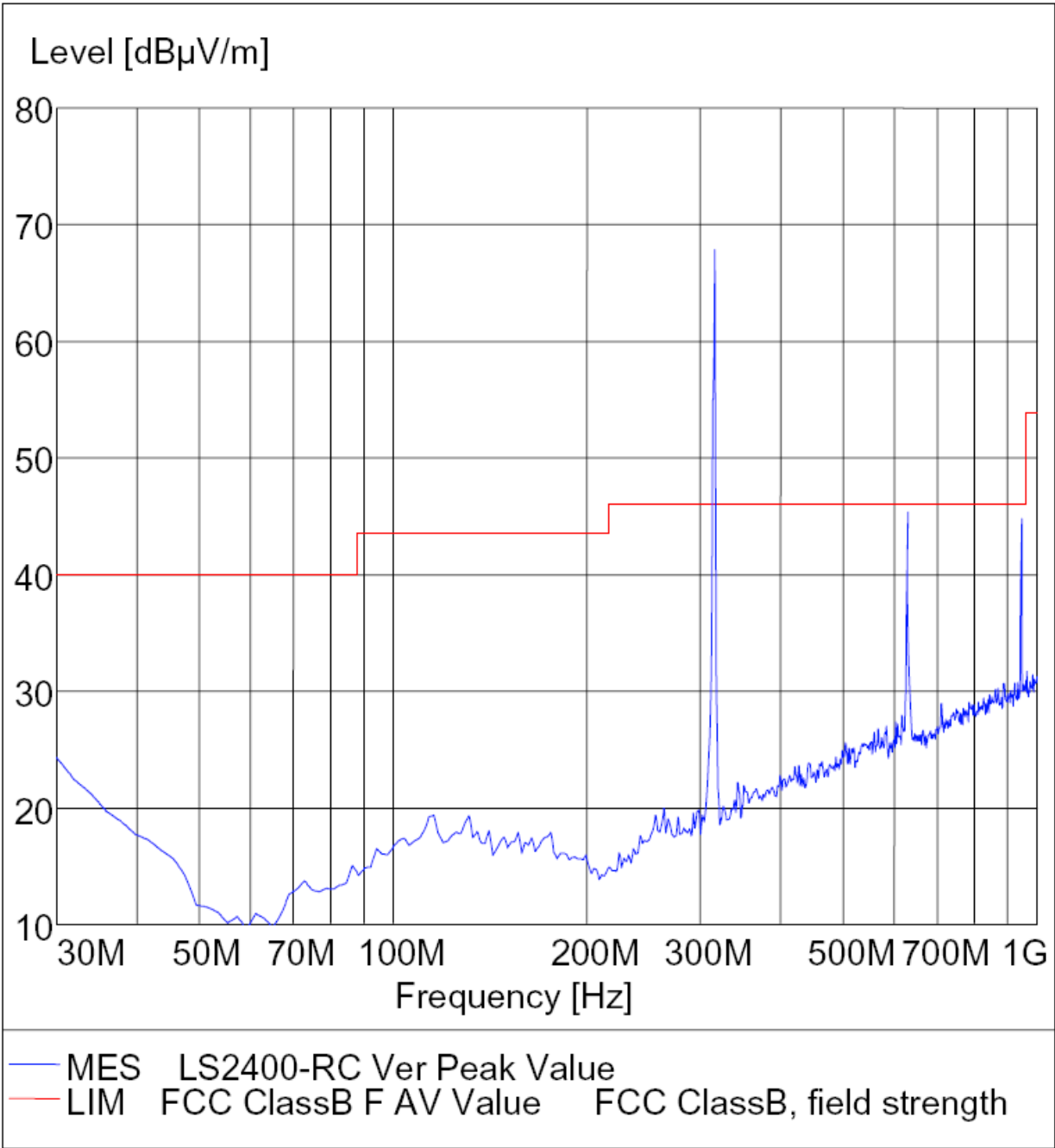
EUT: RF Remote Controller M/N:LS2400-RC
Manufacturer: Lifestyle Entertainment Group, Inc.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Andy
Test Specification: Horizontal
Comment : DC 12V



Radiated Disturbance

FCC Part 15

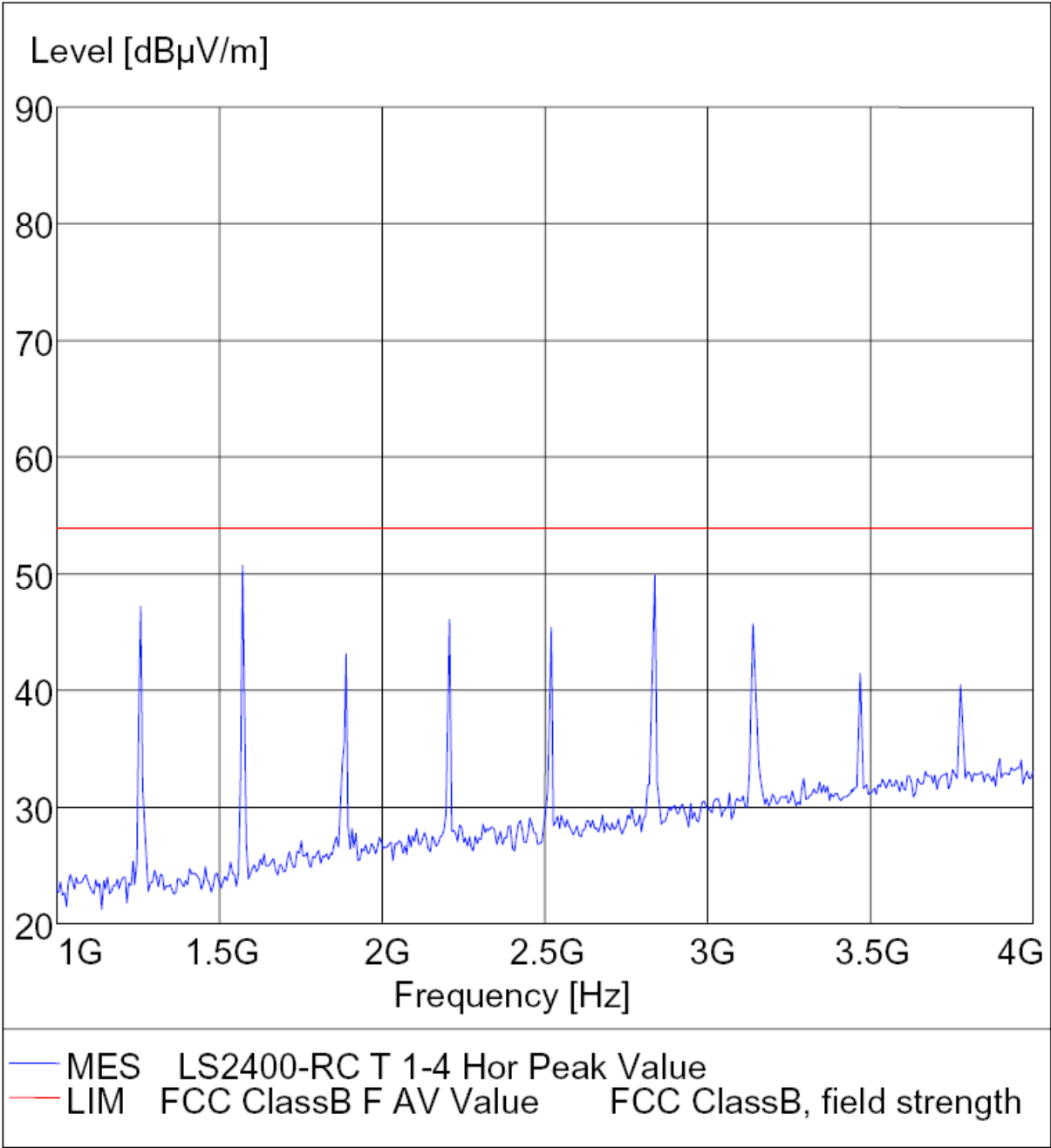
EUT: RF Remote Controller M/N:LS2400-RC
Manufacturer: Lifestyle Entertainment Group,Inc.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Andy
Test Specification: Vertical
Comment : DC 12V



Radiated Disturbance

FCC Part 15

EUT: RF Remote Controller M/N:LS2400-RC
Manufacturer: Lifestyle Entertainment Group, Inc.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Andy
Test Specification: Horizontal
Comment : DC 12V



Radiated Disturbance

FCC Part 15

EUT: RF Remote Controller M/N:LS2400-RC
Manufacturer: Lifestyle Entertainment Group, Inc.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Andy
Test Specification: Vertical
Comment : DC 12V

