

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT**

**OF**

**CGT RC Brewster CA**

**MODEL No.: LC55703CA/LC55703**

**BRAND NAME: N/A**

**FCC ID: BMW-LC55703TX49**

**REPORT NO: ED100826139E**

**ISSUE DATE: August 30, 2010**

*Prepared for*

**LEARNING CURVE BRANDS. INC  
Unit 901-7, Tower One. Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay,  
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*Prepared by*

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## VERIFICATION OF COMPLIANCE

Applicant:	LEARNING CURVE BRANDS. INC Unit 901-7, Tower One. Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, H.K
Product Description:	CGT RC Brewster CA
Brand Name:	N/A
Model Number:	MODEL No.: LC55703 Additional Model : LC55703CA The Model: LC55703CA is the same as the tested Model: LC55703 in hardware and software aspect. The only differences are the trade name and model no. for trading purpose.
File Number:	ED100826139E
Date of Test:	August 25, 2010 to August 30, 2010

### We hereby certify that:

The above equipment was tested by Dongguan EMTEK Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.235.

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

*Approved By*



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*Nicol Lee / Q.A. Manager*  
**DONGGUAN EMTEK CO., LTD.**

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Appendix I (Photos of EUT) (3 Pages)

## 1. GENERAL INFORMATION

### 1.1 Product Description

The LEARNING CURVE BRANDS. INC Model: LC55703 (referred to as the EUT in this report) The EUT is an short range, lower power, CGT RC Brewster CA designed as an " Input Device.

A major technical descriptions of EUT is described as following:

- A). Operation Frequency: 49.860 MHz, one channel.
- C). Antenna Designation: External Antenna
- D). Power Supply: 4.5 Vdc by battery.

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

This submittal(s) (test report) is intended for FCC ID: BMW-LC55703TX49 filing to comply with Section 15.235 of the FCC Part 15, Subpart C Rules. The composite system (receiver) is compliance with Subpart B is authorized under a DoC procedure.

### 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

### 1.4 Special Accessories

Not available for this EUT intended for grant.

### 1.5 Equipment Modifications

Not available for this EUT intended for grant.

## 1.6 Test Facility

### Site Description

EMC Lab. : Accredited by CNAS, 2007.07.27  
The certificate is valid until 2012.07.26  
The Laboratory has been assessed and proved to be in  
compliance with CNAS/CL01:2005  
The Certificate Registration Number is L3150

Accredited by TUV Rheinland Shenzhen 2009.09.16  
The certificate is valid until 2011.03.16  
The Laboratory has been assessed according to the  
requirements ISO/IEC 17025

Accredited by FCC, Nov. 05, 2008  
The Certificate Number is 247565.

Accredited by Industry Canada, May 24, 2008  
The Certificate Registration Number. is 46405-4480

Name of Firm : Dongguan EMTEK Co., Ltd.  
Site Location : No.281, Guantai Road, Nancheng District, Dongguan,  
Guangdong, China.

## 2. System Test Configuration

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions 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 Test Procedure

#### 2.3.1 Conducted Emissions (Not apply in the report)

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2009. Conducted emissions from the EUT measured in the **frequency range between 0.15 MHz and 30MHz** using **CISPR Quasi-Peak and average detector mode**.

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

### 2.4 Limitation

#### (1) Conducted Emission (Not applicable in this report)

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note		
1. The lower limit shall apply at the transition frequencies		
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

(2) **Radiated Emission**

- The field strength of any emission within this band (section 15.235 frequency between 49.82MHz -49.90MHz) shall not exceed 10000 micro volts/meter at 3 meters. (80dBμV at 3m) The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.
- The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209(Intentional Radiators general limit).as below.

Frequency (MHz)	Field strength μV/m	Distance(m)	Field strength at 3m dBμV/m
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

- Remark:
- Emission level in dBuV/m=20 log (uV/m)
  - Measurement was performed at an antenna to the closed point of EUT distance of meters.
  - Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205
  - Emission spurious frequency which appearing within the Restricted Bands specified in provision of §15.205, then the general radiated emission limits in § 15.209 apply.

## 2.5 Configuration of Tested System

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

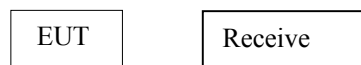


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1	CGT RC Brewster CA	N/A	LC55703	BMW-LC55703TX49	N/A	<b><i>EUT</i></b>

**Note:**

- (1) Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment.



## 1. Summary Of Test Results

FCC Rules	Description Of Test	Result
§ 15.207	Conducted Emission	N/A
§ 15.235	Radiated Emission	Compliant
§ 15.235	Bandwidth Test	Compliant

## 2. Description of test modes

The EUT (CGT RC Brewster CA) has been tested under normal operating condition.

The EUT stay in continuous transmitting mode. The Frequency 49.860MHz are chosen for testing.

### 3. Conducted Emissions Test (Not applicable in this report)

#### 5.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

#### 5.2 Test SET-UP (Block Diagram of Configuration)

#### 5.3 Measurement Equipment Used:

Conducted Emission Test Site # 4					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/29/2010	05/29/2011
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/29/2010	05/29/2011
50ΩCoaxial Switch	Anritsu	MP59B	M20531	05/29/2010	05/29/2011

#### 5.4 Measurement Result: N/A

#### 5.5 Conducted Measurement Photos: N/A

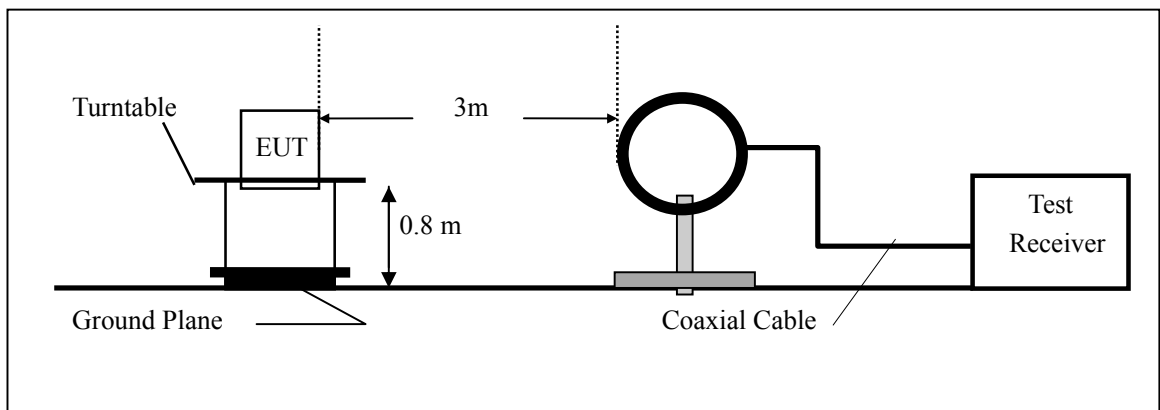
## 6. Radiated Emission Test

### 6.1 Measurement Procedure

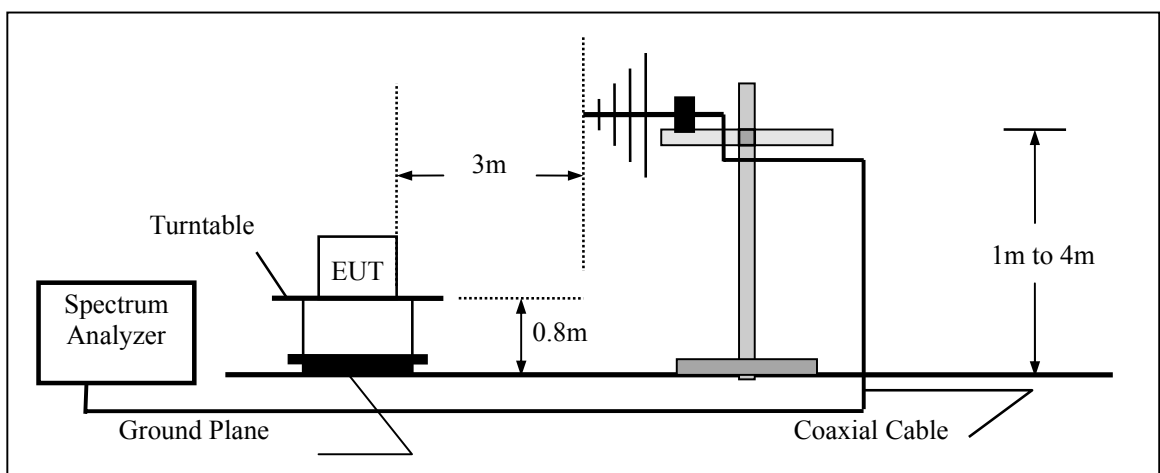
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Above 30MHz



### 6.3 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2010	05/29/2011
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
Pre-Amplifier	HP	8447D	2944A07999	05/29/2010	05/29/2011
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2010	05/29/2011
Loop Antenna	ARA	PLA-1030/B	1029	05/29/2010	05/29/2011

### 6.4 Measurement Results

#### Fundamental and Harmonics Radiated Emission Data

Operation Mode:	Transmitting Mode	Test Date :	August 27, 2010
Frequency Range:	20M-1GHz	Temperature :	23 °C
Fundamental Frequency:	49.860 MHz	Humidity :	60 %
Test Result:	PASS	Test By:	Andy

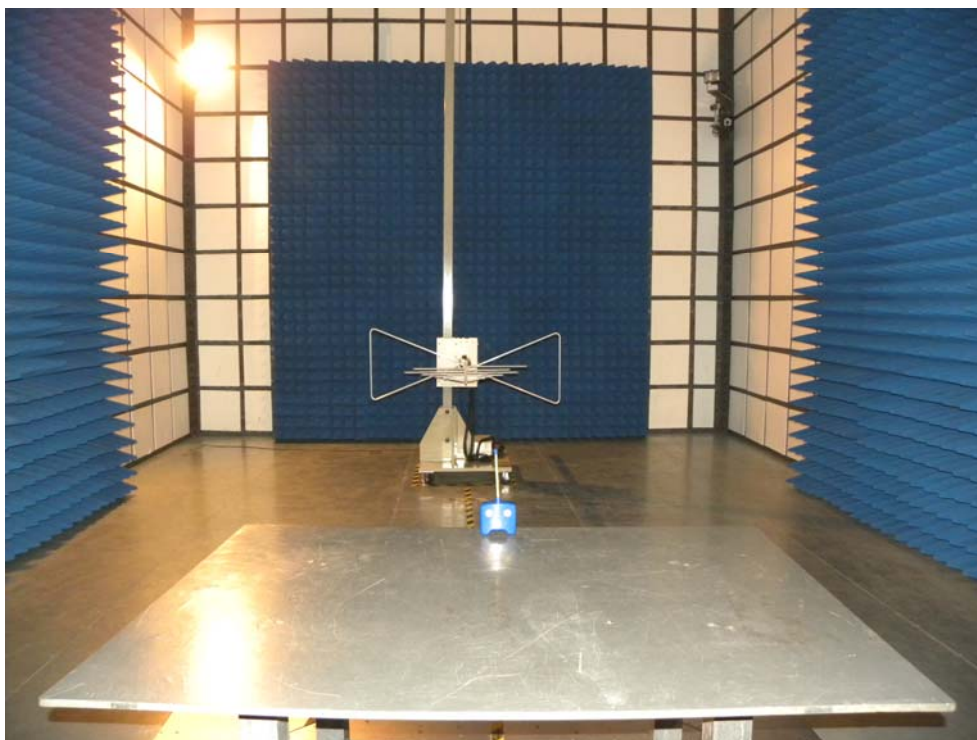
Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
49.860	V	50.32	100.00	-49.68	Peak
49.860	V	42.58	80.00	-37.42	AV
99.720	V	35.48	43.50	-8.02	QP
149.580	V	27.64	43.50	-15.86	QP
199.440	V	30.11	43.50	-13.39	QP
249.300	V	33.05	46.00	-12.95	QP
299.160	V	26.47	46.00	-19.53	QP
349.020	V	33.95	46.00	-12.05	QP
398.880	V	28.41	46.00	-17.59	QP
448.740	V	27.06	46.00	-18.94	QP
498.600	V	31.58	46.00	-14.42	QP
548.460	V	28.49	46.00	-17.51	QP
598.320	V	30.15	46.00	-15.85	QP
648.180	V	33.82	46.00	-12.18	QP
698.040	V	29.07	46.00	-16.93	QP
747.900	V	28.75	46.00	-17.25	QP
797.760	V	25.35	46.00	-20.65	QP
847.620	V	26.43	46.00	-19.57	QP
49.860	H	51.06	100.00	-48.94	Peak

49.860	H	41.22	80.00	-38.78	AV
99.720	H	34.91	43.50	-8.59	QP
149.580	H	28.27	43.50	-15.23	QP
199.440	H	29.59	43.50	-13.91	QP
249.300	H	32.40	46.00	-13.60	QP
299.160	H	25.76	46.00	-20.24	QP
349.020	H	32.95	46.00	-13.05	QP
398.880	H	27.92	46.00	-18.08	QP
448.740	H	27.03	46.00	-18.97	QP
498.600	H	35.20	46.00	-10.80	QP
548.460	H	29.38	46.00	-16.62	QP
598.320	H	29.59	46.00	-16.41	QP
648.180	H	32.56	46.00	-13.44	QP
698.040	H	28.68	46.00	-17.32	QP
747.900	H	28.51	46.00	-17.49	QP
797.760	H	25.97	46.00	-20.03	QP
847.620	H	27.05	46.00	-18.95	QP

**No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.235.**

**Note:** (1) Emission Level= Reading Level+Probe Factor +Cable Loss  
(2) The average measurement was not performed when the peak measured data under the limit of average detection.

## 6.5 Radiated Measurement Photos:



## **7. Occupied Bandwidth**

### **7.1 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= 10KHz,VBW= 30KHz
4. Set SPA Max hold. Mark peak.

### **7.2 Test SET-UP (Block Diagram of Configuration)**

Same as 6.2 Radiated Emission Measurement.

### **7.3 Measurement Equipment Used:**

The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical scale is set to 10db per division. The horizontal scale is set to 10KHz per division. Read the down 26db bandwidth of the carrier.

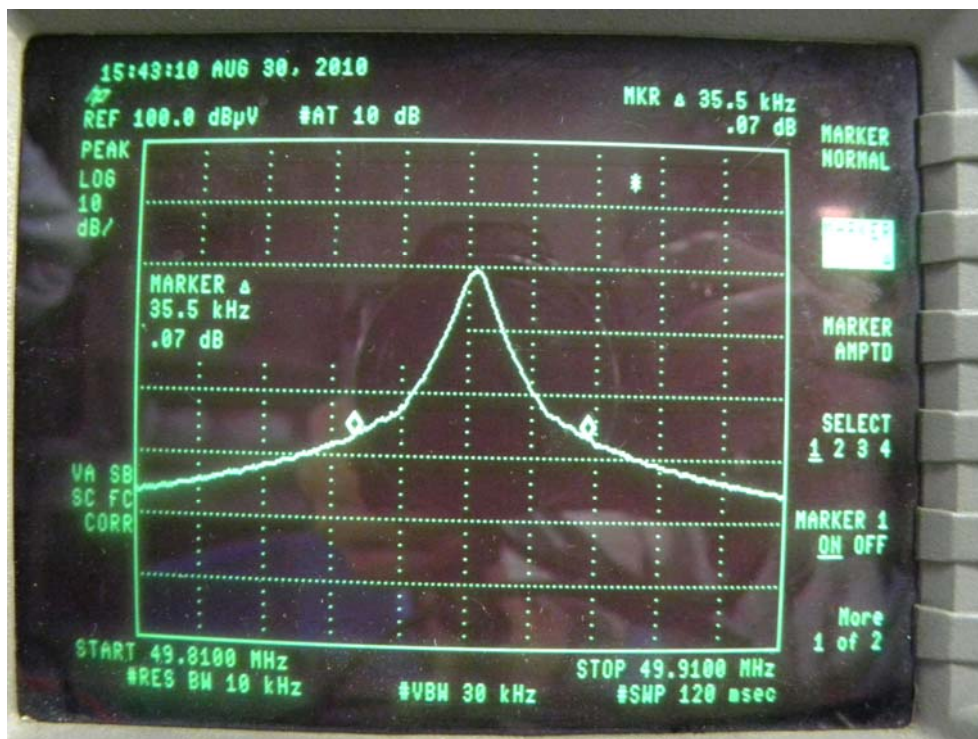
### **7.4 Measurement Requirements:**

The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier

Operation within the band 49.81~49.91Mhz

Refer to attached data chart.

## Band Width Test Data





# APPENDIX I

## (Photos of EUT)

## General Appearance of the EUT



