



845 Larch Ave.  
Elmhurst, IL 60126  
phone 630.993.6306  
fax 630.530.6140  
email: [barbara.kelkhoff@chamberlaingroup.com](mailto:barbara.kelkhoff@chamberlaingroup.com)

August 20, 1998

Federal Communications Commission  
EQUIPMENT APPROVAL SERVICES  
PO Box 358315  
Pittsburgh, PA 15251-5315

Re: Request for Certification

Enclosed is an application, fee in the amount of \$895, and exhibits for Certification of a Remote Control Transmitter, Model 1A5235.

The final instruction sheet is not available at this time, so I have included a typical instruction sheet indicating the FCC statement and important information.

The FCC ID of this model, upon certification, will be HBW1341.

We would appreciate your prompt attention to the submittal.

Sincerely,  
THE CHAMBERLAIN GROUP, INC.

A handwritten signature in black ink that reads "Barbara P. Kelkhoff". The signature is written in a cursive, flowing style.

Barbara P. Kelkhoff  
Manager, Product Safety

**LIST OF EXHIBITS**  
**3 FUNCTION, REMOTE CONTROL TRANSMITTER**  
**MODEL 1A5235**

1. Expository Statement
2. Theory of Operation
3. Schematic
4. Photographs
5. FCC Label Drawing
6. Operating Instructions
7. Test Report

**EXPOSITORY STATEMENT**  
**3 FUNCTION, REMOTE CONTROL TRANSMITTER**  
**MODEL 1A5235**

1. Since the final instruction sheet is not available at this time, a marked-up typical version has been included. The instructions include statements required to assure compliance with the Commission's Rules; Part 15.
2. Labeling is in accordance with the Commission's labeling requirements, Parts 2 and 15, Section 15.19.
3. This transmitter is intended for use with the certified receivers of our manufacture only.
4. The transmitter is equipped with an automatically releasing push-button switch. Transmission is terminated upon release of the push-button.
5. The 1A5235 is factory set to  $433 \pm 0.1\%$  MHz. It is not intended to be readjusted in the field, and specific instruction prohibiting tampering are provided to the user.
6. Test data for the Model 1A5235 is part of this submission. No emissions were detected in the forbidden bands below 1.0 GHz.

Certified by:

*Barbara P. Kelkhoff*

Barbara P. Kelkhoff  
Manager, Product Safety

**THEORY OF OPERATION AND  
CIRCUIT DESCRIPTION  
MODEL 1A5235  
3 FUNCTION, REMOTE CONTROL TRANSMITTER**

(Please refer to enclosed schematic drawing: 195D1341A)

The 1A5235 transmitter consists of a low power RF oscillator (Q2 and associated components), a digital encoder (U1 and related components), and on/off switches.

The RF oscillator, Q2, is of the grounded base type. C2, C3, C5, C8, and the copper loop, L2, set the center frequency of the oscillator at 433 MHz. C4 and C7, with the internal capacitance of Q2, establish feedback levels and harmonic suppression. R1, R2 and R5 establish dc operating conditions on Q2 and help improve temperature stability.

U1 and related components generate a digital code. This code is used in the companion receiver to identify a particular transmitter or function. The 3V battery circuit is equipped with an automatically releasing (normally off) push-button switches that supply voltage to U1 when SW1, SW2 or SW3 are depressed.

U1 contains a voltage switcher circuit that increases the 3V to 9V . A square wave output is applied to driver Q1 through R4. L1, D1 and C1 boost and filter the voltage to 9V. This is applied to Q2, regulated to 9V by U1, and monitored through pin 5.

SW1-SW3 and U1 provide three input functions. The digital signal is randomly programmed and the code is stored within U1.

# **1. EXPOSITORY STATEMENT**

## **2. THEORY OF OPERATION**

### 3. SCHEMATIC

## **4. PHOTOGRAPHS**



## **5. FCC LABEL DRAWING**

## **6. OPERATING INSTRUCTIONS**

## **7. TEST REPORT**