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

Re: Request for Class II Permissive Change

Enclosed is an application fee in the amount of \$50 and exhibits for a Class II Permissive Change of Remote Control Transmitter Model 139.53778 that uses circuit board assembly 1D3469. The original Date of Grant, HBW1D3469, was July 18, 1989 with revision granted May 24, 1994.

We are changing vendors for our billion-code IC chip from TI to LSI. The IC is not part of the RF circuits or oscillators - it only drives the oscillators according to the trinary code. The oscillators operate at the same frequency. Enclosed are the standard attachments along with the report data from Elite Engineering. 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 style and is enclosed within a rectangular box defined by a dotted line.

Barbara P. Kelkhoff  
Manager, Regulatory Affairs

**LIST OF EXHIBITS**  
**REMOTE CONTROL TRANSMITTER**  
**MODEL 139.53778**

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

**EXPOSITORY STATEMENT  
REMOE CONTROL TRANSMITTER  
MODEL 139.53778**

1. A marked up typical version of the instruction sheet 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 139.53778 is factory set to  $390 \pm 0.1\%$  MHz. It is not intended to be readjusted in the field, and specific instruction prohibiting tampering is provided to the user.
6. Test data for the Model 139.53778 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, Regulatory Affairs

**THEORY OF OPERATION AND  
CIRCUIT DESCRIPTION  
MODEL 1D3469  
3 FUNCTION, REMOTE CONTROL TRANSMITTER**

(Please refer to enclosed schematic drawing: 182C0538)

The 1D3469 transmitter consists of a low power RF oscillator (Q1 and associated components), a digital encoder (U1 and related components), and on/off switches.

The RF oscillator, Q1, is of the grounded base type. C4, C5, C8, C7, and the copper loop, L5, set the center frequency of the oscillator at 390 MHz. C3, L1, L2 and C6, with the internal capacitance of Q1, establish feedback levels and harmonic suppression. R3, R4 and R5 establish dc operating conditions on Q1 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 functions. The 12V battery circuit is equipped with an automatically releasing (normally off) push-button switches. D3, D4, and D5 supply voltage to Q2 and U1 when SW1, SW2 or SW3 are depressed.

SW1-SW3, and related components R7, R8, R10 and Q2 provide three input functions. The digital signal at U1 (pin 1) is randomly programmed at our factory location. R1, R6, R11 and L4 are used for harmonic bypassing.

### **3. SCHEMATIC**

## **4. PHOTOGRAPHS**

## **5. FCC LABEL DRAWING**

## **6. OPERATING INSTRUCTIONS**



## **7. TEST REPORTS**