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

Re: Request for Certification

Enclosed is an application and exhibits for Certification of a Remote Control Transmitter Model CLK1 that is manufactured by Chamberlain.

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 HBW1579.

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, Regulatory Affairs

LIST OF EXHIBITS
REMOTE TOUCHCODE TRANSMITTER
Model CLK 1

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

**EXPOSITORY STATEMENT
REMOTE TOUCHCODE TRANSMITTER
Model CLK 1**

1. Since the final instruction sheet is not available at this time, a typical draft 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 garage door and gate operator systems manufactured by Chamberlain[®], Genie[®], and Linear[®].
4. The transmitter is equipped with an automatically releasing push-button switch. Transmission is terminated upon release of the push-button.
5. Transmitter Model CLK 1 is factory set to 300, 310, and $390 \pm 0.1\%$ MHz. It is not intended to be readjusted in the field, and specific instructions prohibiting tampering are provided to the user.
6. Test data for Model CLK 1 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

UNIVERSAL TOUCHCODE TRANSMITTER CIRCUIT DESCRIPTION FOR MODEL CLK 1 (schematic: 195D1579)

The Universal Transmitter is a unique combination of circuits which attains compatibility with most garage door openers by means of programmable micro controller with non-volatile memory and three RF Colpitts oscillators.

RF Circuit- Comprises of three RF transmit circuits. Each RF circuit is tuned to a different frequency. Each RF circuit is selected by the programming of U3.

Transmit oscillator one (300MHz) comprises of the following components: C7, C8, C18, C2 and the PCB loop make up the tuned circuit. C18 allows you to tune to 300MHz. C4 provides positive feedback of Q3. R7 R5 and R1 provide DC bias. R27 provides isolation to the other RF stages.

Transmit oscillator two (310MHz) comprises of the following components: C1, C9, C19, C14 and the PCB loop make up the tuned circuit. C19 allows you to tune to 310MHz. C14 provides positive feedback of Q1. R9, R6, and R2 provide DC bias. R28 provides isolation to the other RF stages.

Transmit oscillator three (390MHz) comprises of the following components: C3, C5, C6, C17 and the PCB loop make up the tuned circuit. C17 allows you to tune to 390MHz. C12 provides positive feedback of Q2. R3, R8, and R21 provide DC bias. R26 provides isolation to the other RF stages.

Micro controller- U3 is an 8-bit micro controller, which in addition to program memory and RAM also contains a small amount of EEPROM. This combination allows code that is field programmable and non-volatile to be stored in this location. The micro timing is based on an on-board oscillator with an external 4mhz ceramic resonator. The micro controller provides the code output, the frequency logic, the LED drive, and powers to the latch circuit that keeps the power on for 15 seconds once a key of the keypad is pressed. If a key is held down the latch circuit will stay on for <144sec.

Keypad, Latch, and power supply- The zener diode regulates the micro voltage to +5.1v and allows the voltage to remain in regulation for the useful life of one 9.0v battery source. Q5, Q4, Q6, R16, R17, R20, R21, R18, R19, D16, and C16 make up the latch circuit. When a key is pushed the latch circuit will stay on for 2sec and pin 16 of U3 will go low. The keypad performs programming and transmit select functions (see programming sheet).

1. EXPOSITORY STATEMENT

2. THEORY OF OPERATION

3. SCHEMATIC

4. PHOTOGRAPHS

5. FCC LABEL DRAWING

INSTRUCTIONS

6. OPERATING

7. TEST REPORT