CHAMBERLAIN

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October 14, 2002

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 CLT1.The original Date of Grant, HBW1D1519, was June 6, 2001.

We have made product improvements that resulted in an increase in output power. The new schematic is part number 195D1662B. Enclosed are the standard attachments along with the report data from Elite Engineering. The transmitter referenced in Test Report No. 31128-03 as Model CK1, is identical to Model CLT1. We would appreciate your prompt attention to the submittal.

Sincerely,
THE CHAMBERLAIN GROUP, INC.

Barbara P. Kelkhoff

Barbara P. Kelkhoff
Manager, Regulatory Affairs

LIST OF EXHIBITS
2 FUNCTION, REMOTE CONTROL TRANSMITTER
MODEL CLT1

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

EXPOSITORY STATEMENT
2 FUNCTION, REMOE CONTROL TRANSMITTER
MODEL CLT1

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 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 CLT 1 is factory set to 300, 310, and 390 ± 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 CLT 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 TRANSMITTER CIRCUIT DESCRIPTION
FOR MODEL CLT 1 (schematic: 195D1662B)

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 colpits 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 U1.

Transmit osc one (300mhz) comprises of the following components: C6, C8 C11, C5 and pcb loop make up the tuned circuit. C8 allows you to tune to 300mhz. C12 provides positive feedback of Q2. R26 R25 and R24 provide DC bias. R32 and R30 provide isolation to the other RF stages.

Transmit osc two (310mhz) comprises of the following components: C13, C16 C17, C7 and PCB loop make up the tuned circuit. C13 allows you to tune to 300mhz. C14 provides positive feedback of Q3. R21 R22 and R23 provide DC bias. R12 and R33 provide isolation to the other RF stages.

Transmit osc three (390mhz) comprises of the following components: C19, C20 C21, C24 and PCB loop make up the tuned circuit. C19 allows you to tune to 300mhz. C14 provides positive feedback of Q5. R27 R28 and R29 provide DC bias. R31 and R35 provide isolation to the other RF stages.

Micro controller- U1 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 once a switch (S3 and S4) is pushed for <2sec.If S3 or S4 is held down the latch circuit will stay on for <144sec.

Switches, 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. Q1, Q2, R8, R13, R9, C2, R18, R10 and D9 make up the latch circuit. When S3 or S4 is pushed the latch circuit will stay on for 2sec than pin 24 of u1 will go low. The pushbutton S3 and S4 perform programming and transmit select function (see programming sheet). S2 provide the selection for what brand transmitter you are programming. S1 is used for certain brands of transmitters witch uses code switches. D1, D2, D3, D4, D5, D6, D7 and D8 allow the micro to scan the switch setting during programming.

3. SCHEMATIC

4. PHOTOGRAPHS

5. FCC LABEL DRAWING

6. OPERATING INSTRUCTIONS

7. TEST REPORTS