# THE BS# 20543-45 TRANSMITTER WIRELESS BED CONTROLLER

The Bed Controller is a system consisting of several parts. The three major components are the hand controller/transmitter, receiver/control box, and motors. The functions controlled by this system are the HEAD position motor, the FOOT position motor, and off-center cam VIBRATOR motors.

## HAND CONTROL BED OPERATION

Operation of the bed is accomplished by using the hand control. To change the HEAD or foot positions, simply press and hold either the UP or DOWN switch until the desired position is reached. To stop at any time, simply release the switch.

The VIBRATOR or MASSAGE motors may be operated with a HIGH, MEDIUM, or LOW switch setting. When the vibrator is activated the motor will run for 30 minutes, then shut off automatically. To stop the MASSAGE motors at any time, simply press the off button.

FLAT will simultaneously reset the HEAD and FOOT sections to the flat position and turn off the massage functions.

## TRANSMITTER OPERATION

The transmitter consists of a 13 button conductive rubber switch pad decoded by the micro-controller using a 4 Mhz clock oscillator. The unit is in a low power sleep mode until a key is pressed. When a key is pressed, the micro-controller responds by sending a digital code representing the key that was pressed and an address of 1 to 500000. This is sent every 131 milliseconds with a total duty cycle of 5.9% to the RF oscillator. The RF circuit is a single transistor SAW oscillator at 310 MHz in CW Mode.

## RECEIVER OPERATION

The receiver/control board contains a tuned cascode RF stage and a single transistor superregenerative LC tank circuit tunable 309 to 319 MHz. For the current transmitters it is tuned to 310 MHz. The signal is recovered through a dual op-amp used as a band pass filter and comparator. The digital signal is then supplied to the micro-controller via a schmidt trigger inverter. If the incoming signal address matches the address setting on the receiver/controller board, the "micro" then decodes the switch press. Appropriate action is taken depending on "programming" resistor settings on the controller board.