

Technical Description of Operation

4002 Hand Wand



The 4002 RF Hand Wand is a microcontroller based, battery powered 310MHz On-Off-Keyed transmitter. The hand wand is in sleep mode until a button on the Conductive Rubber Switch (CRS) is pressed. The button press wakes up the micro controller and processes the button press. After decoding, the microcontroller generates the data pattern to on-off key the transmitter circuit. The back light is activated and the microcontroller stays awake for six seconds until another button is pressed or the same button is held pressed.

CRS/Button Matrix:

The CRS has conductive carbon impregnated pads situated above gold plated contacts on the PCB. When the button section of the CRS is pressed, the pad shorts two adjacent conductors. These conductors make up a six column by four row switch matrix. After wake-up, the microcontroller drives the columns and reads the rows to determine which button was pressed.

Battery:

The hand wand uses qty 4 “AAA” type batteries connected in series.

Backlight:

The backlight consists of three LED's to illuminate the translucent CRS. The back light is active when the microcontroller is awake, during data transmission and the six second wake time after button release.