ABSTRACT

The purpose of this research, namely the Remoteless Control Sony Television (RCSTV) is to replace the conventional use of traditional remote control to operate electrical and electronic devices. Technically the devices will be controlled using hand positioning and colour. Television (TV) will be used as a sample device. Hand movements would trigger a reaction in the TV as if buttons are pressed on the Volume Up, Volume Down, Channel Up, Channel Down whereas colour would determine whether the TV would be turned on or off. Colour green will turning on the TV and red will turn it off. Infrared (IR) sensors were used as a proximity sensor, whereby if the hand swipe by the sensor, it will send an input signal to the microcontroller. Using the comparator and voltage divider rule, the proximity sensors are made to be working well. To tackle the colour issue, and RedGreenBlue(RGB) sensors were made. The red, green and blue light emitting diode(LED) takes turn and emits their respective colour. When colours are shown, light will reflect back, and the light dependent resistor (LDR) will receive the illumination. From the principle that each colour has a different luminosity (brightness), the values of resistance will differ. To differentiate between green and red, testings were done to take the values of voltage of the LDR. Then the microcontroller is programmed so that it can identify the colour from the exact voltage value. Now that the inputs are taken care of, how is the signal sent to the TV? The programmed microcontroller will take in the signal and using the Sony IR Protocol, will convey the message through the IR transmitter. Every command will send different pulses of IR rays to the TV's photocell and the TV will perform whatever the pulse tells it to do. This fulfills the aim and the objective of this research. In a nutshell, the remote control is totally replaceable with a module integrated with sensors and a microcontroller.

Keywords : Remoteless, Proximity Sensor, Infrared, LDR, RGB, Sony IR Protocol