





Pin Configuration:-

Sensor - Raspberry Pi

VCC - Pin 1 (3.3V)

GND - Pin 6

SDA - Pin 3

SCL - Pin 5

LM-75 Address Mapping :-

Address	Function
0x00h	Temperature register
0x01h	Configuration register
0x02h	Hysteresis register
0x03h	Overtemperature shutdown threshold register

Kernel Space Driver:-

The driver is meant to be used with the Linux kernel. It creates a simple interface for the host to communicate with the sensor. The sensor and the host use I2C communication protocol to transfer information.

IOCTL system calls have been used for device specific I/O operations. This includes reading the temperature values and other configuration registers as mentioned above.

Commands to be executed for driver insertion into the kernel:

(Note : To be executed from the directory where the make file and kernel are present.)

- make
- sudo insmod temp.ko
(Temp is the name of kernel file)
- sudo chmod 777 /dev/LM75
(LM75 is the name of device file)
chmod - Command used to change the access permission of file

To remove the driver the following command can be executed:

- sudo rmmod temp.ko

User Space Application:-

The user space application has separate functions for different I/O operations that have been implemented using IOCTL in the kernel driver. Depending upon the input received from the user, separate functionality is implemented which has been clearly mentioned through output.

Commands to be executed after driver insertion:-

- ./user : To run the userapp
- Input Value :
 - 1 - Current Temperature
 - 2 - Configuration
 - 3 - Hysteresis Temperature
 - 4 - OverTemperature
 - 5 - Shutdown Mode
 - 6 - Normal Mode