CHAPTER 7: EXPERIMENTAL OBSERVATIONS

7.1 Circuit Output

Two 9v batteries are connected to the controller band (transmitter). One 9v battery is connected to Arduino Nano and the other battery is connected to charge the Bluetooth module through Arduino Leonardo. Here, in the transmitter the Bluetooth module acts as the master and goes into Data mode. Similarly, the wheelchair which is the receiver is powered ON by a 9v battery. The Bluetooth module here acts as the ‘slave’ and goes into Data mode.

So, both Transmitter i.e the controller band and the Receiver i.e. the wheelchair is now ON but not connected or communicating with each other. After a few seconds, the Master Bluetooth module detects the Slave and now the Transmitter and the Receiver are connected to each other wirelessly.

The Wheelchair is now paired with the controller band on the Subject’s hand but the wheels won’t move until the subject tilts the controller band in any direction. Depending on the inclination of the controller band, the wheelchair will move in 4 different directions:

1. When the controller band is tilted in the forward direction, the slave receives the signal ‘F’ and both the wheels of the wheelchair move in forward direction.
2. When the controller band is tilted in the backward direction, the slave receives the signal ‘B’ and both the wheels of the wheelchair move in the backward direction.
3. When the controller band is tilted left, the slave receives the signal ‘L’ and left wheel moves forward and the right wheel moves backward.
4. When the controller band is tilted right, the slave receives the signal ‘R’ and the right wheel moves forward and the left wheel moves backward.