Accelerometer based Gesture Controlled Wheelchair

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Abstract

Handicap Wheelchairs are used by the people those who cannot walk due to physiological or physical illness, injury or any disability. Recently development has wide scope in developing smart wheelchairs. This proposed system a hand gesture controlled wheel chair is special kind of wheel chair which works with your hand gesture there are possibility to control the movement of wheel chair at desired direction just with your hand gesture. This system is divided into two main units. Memes Sensor transmitter and wheelchair control receiver. The Memes sensor, The ADXL335 is small thin, low power consumption, complete 3-axis accelerometer with signal conditioned voltage outputs. Which is connected to hand, is a 3-axis accelerometer with digital output (I2C) that provides hand gesture detection, you just need to wear a small transmitting device in your hand which include an acceleration meter this will transmit an appropriate command of 6-bit digital values and gives it to the PIC controller using ZigBee RF Module is a Transreceiver module which provides easy to use RF communication at 2.4 GHz. It can be used to transmit and receive data at 9600 baud rates from any standard CMOS/TTL source. So that
wheel chair it can move into the desired direction they want. The wheelchair control unit is a wireless unit that is developed using other controller.

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Index Terms

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Keywords

Accelerometer, ZigBee, Smart wheelchair