

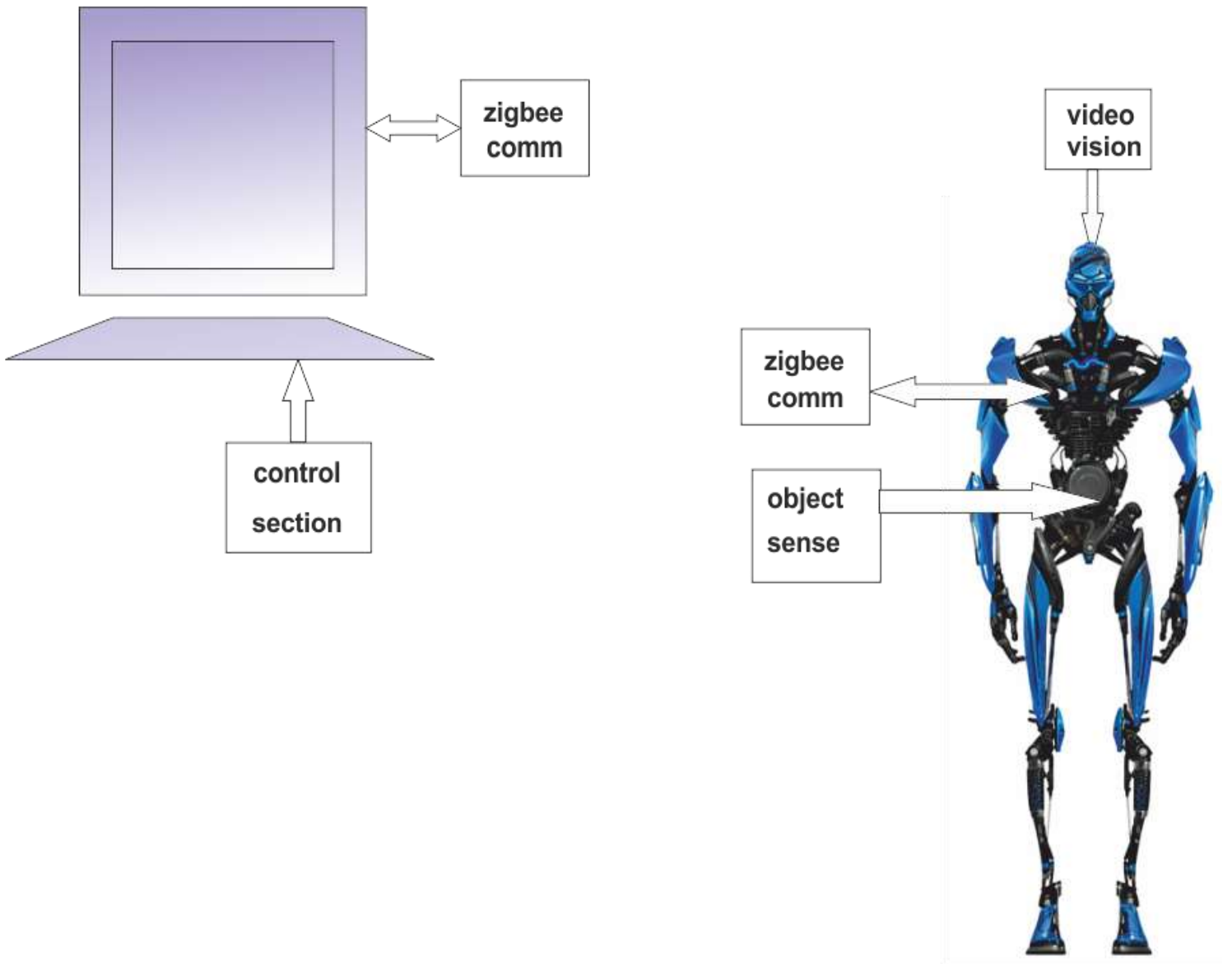
A Surveillance Robot with Hopping Capabilities for Home Security

Abstract —

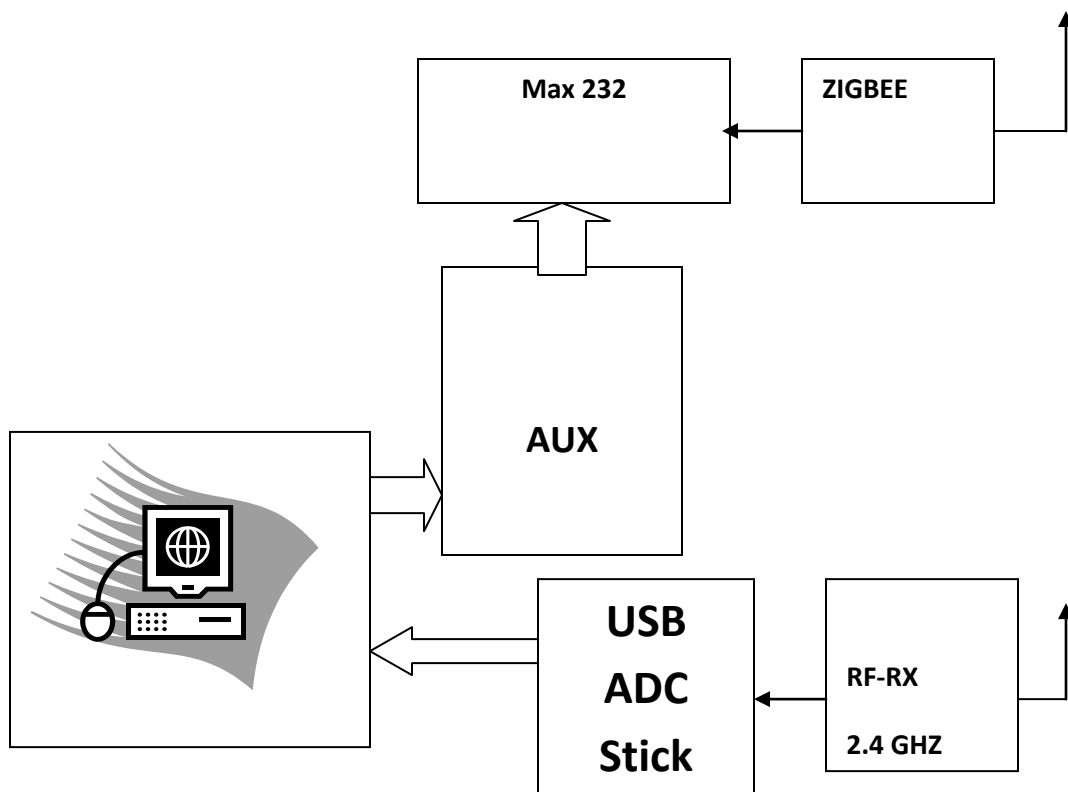
Most traditional home robots have always had problems with stairs, doorsills and other obstacles that humans cross with ease in cluttered indoor environments. This paper presents the development and characterization of a surveillance robot with hopping capabilities for home security. The proposed robot can leap over obstacles. It can also roll freely on flat floors and change its directions by the two-wheeled differential drive system. It adopts the ZigBee protocol for wireless communication and therefore can be added to a ZigBee-based home control network as a mobile video sensor node. Experimental results verify that the prototype robot is a powerful home security device that can patrol in cluttered home environments with ease¹.

From the above IEEE paper is the inspiration for this project which aims at designing control system for a robot such that the human robot is controlled using PC and wireless ZIGBEE communication. In this project the controlling is done depending on the feedback provided by the IR sensor, then the video vision will manipulate which is human there or any being is there, this process is by utilizing the DIP technique the video signals transmitted by the robot will be manipulated by DIP and if any human detection occurs snap image will be stored in server pc.

Functional Block Diagram

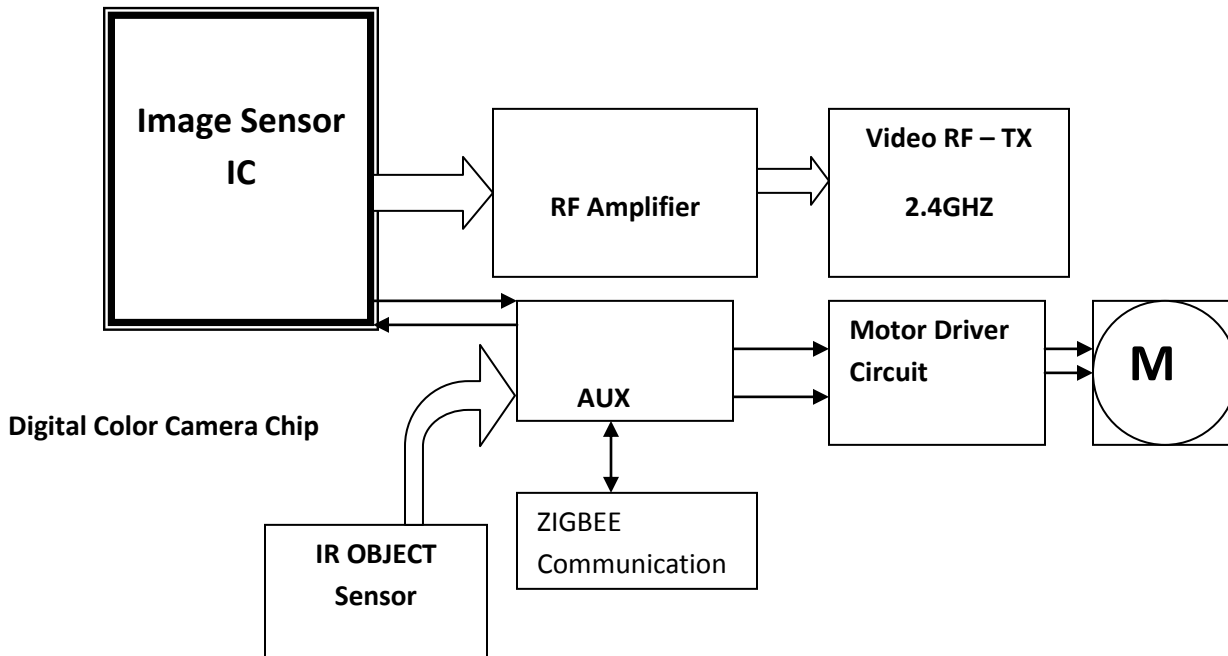


PC Circuit



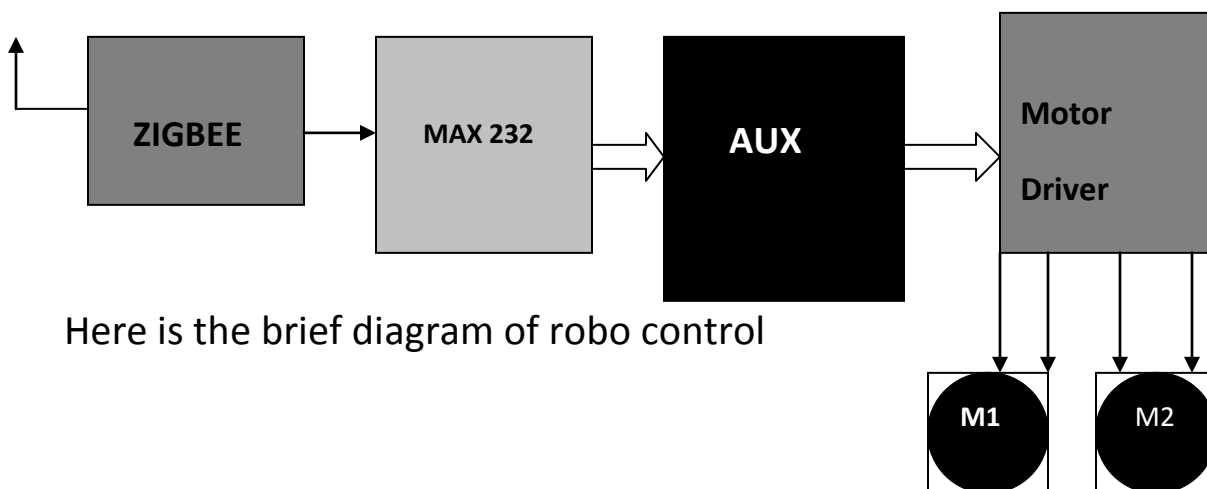
This unit is said to be the server of this project which mainly consist of PC and microcontroller. The robo commands is generated by pc according to the key pressed and the command is send to microcontroller which the command is send to the robo through Zigbee wireless communication, in this unit the video signals from the robo are received and given to the pc through USB stick. Pc will use DIP technology to trace human detection or moving object detection

ROBO UNIT



Here this unit is with the robo which this unit is always in mobile condition. The commands from the pc unit will receive and according to the command the controlling of the robo is done by controlling motors. Not only controlling robo this unit will detect object and give video signals of the detected object will be transmitted to the pc unit.

BREIF ROBO Control Unit



Here is the brief diagram of robo control