CHAPTER 1

INTRODUCTION

1.0 Introduction

The infrared wireless communication for computer peripheral has several advantages compare to the conventional wired connected devices. The range of the device depends on the intensity of the infrared on the receiving transistor.

The advantage of using infrared transmission includes wireless connectivity .Secondly it uses light beam to transmit its signal. The main requirements are to ensure the transmission rate of the device emitted from the infrared photodiode is to match the clock sequence controlled by the UART processor. The latter governs the input and output to whatever devices plugged in will be auto detected. The infrared devices have low cost compare to other mode such as Bluetooth and wireless.

However it have some demerit such as transmission rate problem .The rate at which infrared can transmit is range between 34/40 kbps is low compare to other devises .The speed can be increase by building a middle intermediate light enhancer to increase it speed, but the technology is still new and expensive .The future usage of these devices is determined by the possibility on how the bit rate of the infrared can be increased.

1.1 Background Study

This project is about connecting computer peripheral wireless using infrared transmission. signaling. It is accomplished using infrared (IR) LED which emits optical energy, while the IR receiver senses this IR energy incident on it..The receiver pulse is generally distorted. To bring it back in the shape, it requires to be passed through an equalizer. After reshaping, it is treated as binary pulse to carry out decoding.

IR lamps have the best performance when the signaling is in the frequency range 34-40 KHz. There are two methods prevalent for the transmission of the burst pair message using infrared. The first method called RC5 method encryption on the available data into several partial segment and requires decryption when the signal is received by the receiver. While this method is complicated it is not required in our case as no privacy is needed between the computer operator and the computer.

The alternative is using the Pulse width modulation signal (PWM). The signal is envelope by the carrier and is 'directed' toward the receiver. Since the variation of the data is determined by the width of the respective pulse, it is simple and requires no computer programming in between. The receiver need only to determine the width length in order to identify the 1 and 0 for further processing..

1.2 Objectives Of The Project

1. To establish computer communication with its peripherals such as mouse, keyboard and preferably, the printer using IR TX/RX.
2. To increase the efficiency of the system in terms of power received. This will increase in the line of site distance between the transmitter and the receiver.
3. Filter to be used to eliminate the interference with other sources of light.

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1.3 Importance of the project

The completion of the project will high light the possible area of application that may include the communication with PDAs, Blue Tooth and other remotely connected devices and LAN. The successful completion of the project will provide alternatives to communicate with other devices and computers wirelessly. This may increase the efficiency of the office equipment.