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**KEU 380-PROJECT 2
*SMARTHOME SYSTEM-INTERCOM***

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ABSTRACT

For this KEU 280 (Project 1), our project is design the Smart Home System. This smart home system gives much more benefit to us. For this big title are divided to ten sub topics which is alarm sensor, automatic cotton for window, heat sensor, infrared motion detector and etc.

In this project, we choose to build a full duplex intercom system that is important to this smart home system. The intercom system can called intercommunication system. This system can be defined as an audio frequency amplifier system that provides two way voice communications between two or more location, which are using high frequency and in the same structure.

In this thesis, we design a full duplex intercom system that is containing two stations. Each station contains a dynamic loudspeaker that also serves as microphone. The amplifier can be at station or each station may have its own amplifier. Connection between stations can be made by wire or carrier signals traveling over electric wiring in the building. It also widely used on ships and large air craft. In other words, an option on many business phone systems which allows us to use an abbreviated dialing sequence to react another telephone connected to the same communication system and it also called duplex intercom.

TABLE OF CONTENT	PAGE
Acknowledgement	i
Abstract	ii
CHAPTER	
1. INTRODUCTION	
1.1 Background	1
1.2 Scope and objective of project	2
1.3 Methodology	3
2. LITERATURE REVIEW	
2.1 Intercom	5
2.1.1 Full Duplex	6
2.1.2 Half Duplex	7
3. CIRCUIT DESIGN AND OPERATION	
3.1 Circuit Design	9
3.2 Block diagram	10
3.3 Schematic diagram	11
3.3.1 Component list and data	12
3.4 Circuit operation	13
3.5 LM386_Low Voltage Audio Power Amplifier	15
3.6 Tina Pro 6 software	17
3.7 PCB Design	19
4. HARDWARE CONTRUCTION	
4.1 Hardware construction procedures	
4.1.1 PCB Making	22
4.1.2 Etching	23
4.1.3 Drilling	24
4.1.4 Components soldering	25

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The circuit for the duplex intercom has a call facility to call someone in other room or places. This circuit uses a microphone as an input and speaker for the output signal. The circuit has a simple operation. Someone can talk together in the same time to the other person in other places without wait until one person finish talking.

This circuit use an audio amplifier as a main component in this circuit. This duplex intercom is different from other conventional simplex system that only allows to the control by the master station with one-way communication. The Electrets microphone and powerful audio amplifier makes this device are very sensitive and produces clear audio output. The circuit is more simple and straightforward with no special component like output transformer, multi terminal switches, or screen wires. This is not only makes maintenance simple but repairing is much easier. With slight modification on the switch, proper positioning the speakers and microphones will turn it into a hand free duplex intercom system. Fitting it's with a telephone handset will convert it's into an indoor telephone system. For this duplex intercom, we just use single 9V DC supplies.