AUTOMATIC LOUDNESS BALANCER FOR SURROUND SOUND SPEAKER SYSTEM

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ABSTRACT

This project deals with the designing of equal loudness perception of a listener when surrounded by surround sound system. The loudness of each speaker in the system is controlled inversely proportional to their distance from listener. Sensors, microcontroller and digital volume controller is used to achieve a the desired output.

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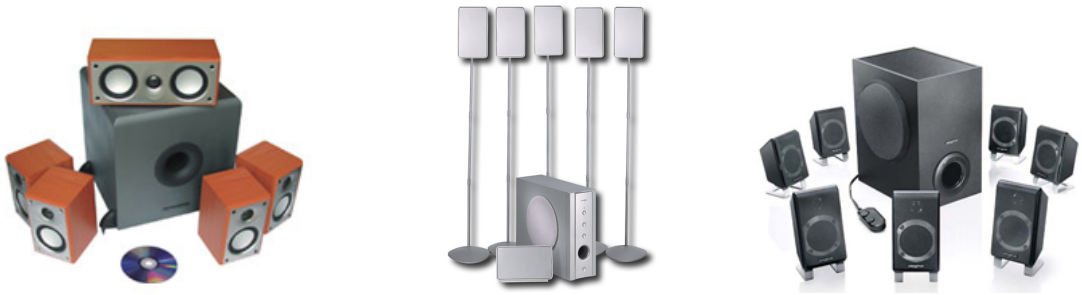
CHAPTER 1

INTRODUCTION

1.1 SURROUND SOUND SYSTEM

Surround sound system is the system that offers realistic perception of sound to the audience by providing the different ambient noise of sound among its speakers. The importance of surround sound is often overlooked when it comes to building and creating home theater systems. Surround sound is named from the fact that the audience literally surrounded with the sound. Surround sound works to imitate the ambient noises that often hear during the course of the day. This is often done for the purpose of art imitating life. By hearing the roll of thunder from every side rather than merely the left or the right, the real beauty of surround sound can be experienced and more realistic effects can be enjoyed.



a) Surround sound 5.1 b) Surround sound 6.1 c) Surround sounds 7.1

Figure 1.1: Examples of Surround sound system

Surround Sound 5.1 indicates a system that uses five speakers and one subwoofer in order to deliver the sounds. This sound is often referred to as Dolby Digital. A new term that has been cropping up more and more often in movie circles is THX. This is known as surround sound 6.1, which involves the use of 6 speakers and a subwoofer. The center speaker in this system should be located in the center behind the listener in order to add yet another layer to the sound. Surround sound 7.1 are including another speaker to the mix in order to create an even more authentic sound. The more speakers in the surround sound system, the more realistic sound will be.