We will begin this chapter with an introduction, which will provide a framework for the learning that will occur in this chapter.

VIDEO 13.0. INTRODUCTION TO SOUND

C13 0 Introduction YouTube

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DR. RAMESH YERRABALLI: So, Jon, what are we gonna learn today?

DR. JONATHAN VALVANO: Today we're going to build systems that work with sound.

We'll import sound with a microphone, and we

will produce sound with a speaker.

DR. RAMESH YERRABALLI: OK, so you mean we're

going to build systems that look like MP3 players and recorders?

DR. JONATHAN VALVANO: Well, yes, but rather

than deal with the complexities of a format like MP3,

we'll focus on the fundamentals of signal processing

as it applies to sound.

DR. RAMESH YERRABALLI: So we will be looking at concepts like digitization,

the Nyquist Theorem, and maybe apply these concepts to build

a circuit hardware that converts digital information to analog form,

or analog information to digital form?

DR. JONATHAN VALVANO: Yes.

First we'll build a Digital to Analog Converter, or DAC,

and we'll use it to create sound.

DR. RAMESH YERRABALLI: The DAC circuit sounds interesting, but where will

we use it?

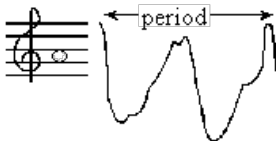
DR. JONATHAN VALVANO: Well, you know me.

If we don't build something that's interesting and useful, it's no fun.

So let's build a DAC system that outputs a hundred Hertz sine wave connected up

to a speaker, and we'll generate a pretty

Help



Sine wave (http://en.wikipedia.org/wiki/File:220_Hz_sine_wave.ogg)

0:00 0:00

5 seconds of a 220 Hz sine wave

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