**Digital Signal Processing Lab**

Lab EEL-325

Lab Journal: 10



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**Experiment No. 14 (Open ended Lab)**

**Title:**

* **Calculate size of any audio compressed signal using MATLAB**

**Software used:**

* MATLAB

**Objectives:**

1. First to read a signal
2. Then compress and display it
3. Find the size of compressed signal

## Task Introduction:

## Signal compression is the use of various techniques to increase the quality or quantity of signal parameters transmitted through a given telecommunications channel. Types of signal compression include: Bandwidth compression. Data compression. Dynamic range compression. Gain compression. Image compression. Lossy compression.

## The size of a signal is a number that shows the ****strength or largeness of that signal****. As we know, a signal’s amplitude varies with respect to time. Because of this variation, we cannot say that its amplitude can be its size.

## Inspect the dimensions in the Model Data Editor, which shows you information in a searchable, sortable table. In the table, the right side of each cell in the Dimensions column shows the true dimensions of the corresponding signal line in the model.

## Task1:

## Code

[x,fs]=audioread('sample3.wav');

N=length(x);

%vlcplayer=audioplayer(x,fs);

%vlcplayer.play;

t=fft(x,N);

X=fftshift(t);

f=-fs/2:fs/N:(fs/2-fs/N);

%figure(1)

Xr=zeros(1,N);

Xr((N/4)+1:(3\*N/4))= X((N/4)+1:(3\*N/4)); %%FORMULA%axes(handles.axes2);

subplot(1,2,1);

plot(f/2,abs(Xr));

title(' compressed signal')

[y,Fs] = audioread('sample3.wav'); % ysamples from audio with Fs sampling frequency in [Hz].

sound(y,Fs);% listen your audio input

N = length(y); % sample lenth

slength = N/Fs; % total time span of audio signal

t = linspace(0, N/Fs, N);

subplot(1,2,2);

plot(t, y); % pplots the audio

title('size of compressed signal')

## Analysis of results:

## 

**Conclusion: Today we learned about how to find size and dimensions of a signal.**

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