Signal and System Introduction

Analog signals

The analog image processing is applied on analog signals and it processes only two-dimensional signals. Analog signal is time-varying signals so the images formed under analog image processing get varied. It is generally continuous and not broken into tiny components.

The main characteristics of analog signals are frequency, amplitude, and phase. Analog signals recorded sound waves better than digital sound.

Frequency in the analog signal

In a given amount of time, the number of waves that passed through a fixed position is called frequency in the analog system.

Amplitude in the analog signal

It describes the height of a signal that is on the horizontal axis and the amplitude is always equal to the point given on waveform.

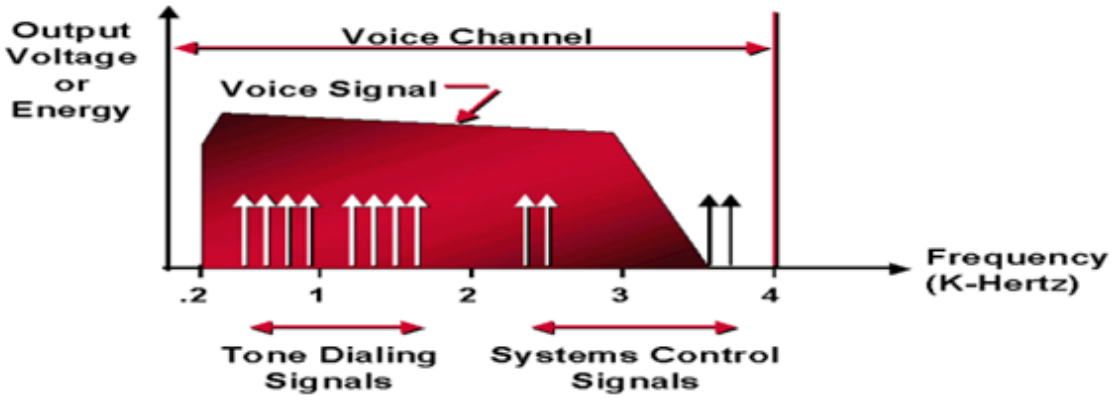
Phase in the analog signal

On same frequency, when wave occurs behind another wave or we can say the position of a point in time (instant) on a waveform cycle.

Human voice

The best example of an analog signal is our voice. Whatever we speak generate sound waves and this sound travel through sound waves.

Human voice shows all the characteristics of analog signals as continuously and smoothly time-varying frequency or amplitude.



(sound wave)

Digital Signals

Digital signals are very easy to analyze and it has time-varying quantities and a discrete point at every sampling point. The digital signals are generated by digital modulation.

Digital signal is less accurate in comparison to analog signal but the best part in it is, it can be easily stored and accessed comfortably.

It is used everywhere today whether it be in computers, digital pens, digital phones etc.

Computer Keyboard

Computer keyboard comes in the category of the input devices. A computer keyboard is used to send control signals to any information appliance i.e. computer.

When you press any key in the keyboard, underneath the keys, there is a grid of circuits which transfers the signals. There is a switch under the keys which is pressed to allow the current to flow through it. If we discussed its working principle, then there is a **metallic plate**, **circuit board**, and **processor**, which are responsible for sending signals to the computer.

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