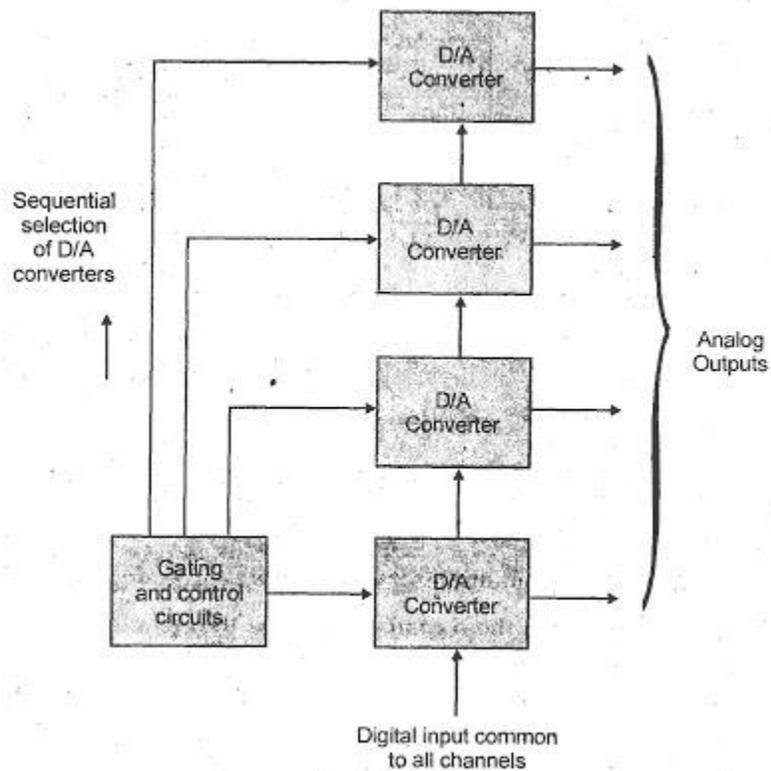


DIGITAL TO ANALOG MULTIPLEXING

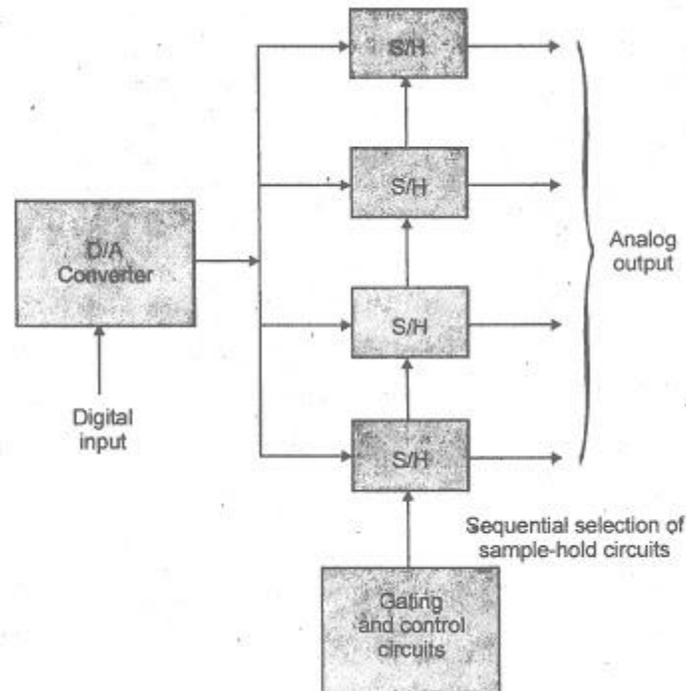
In a data acquisition system, it is often necessary to combine, or multiplex a number of analog signals into a single digital channel or conversely a single digital channel into a number of analog channels: Both digital signals and analog voltage can be multiplexed. So, there are two ways of multiplexing: digital to analog multiplexing and analog to digital multiplexing.

In digital to analog conversion a very common application of multiplexing is found in computer technology, where digital information arriving sequentially from the computer is distributed to a number of analog devices, such as an oscilloscope, a pen recorder, an analog tape recorder and so on. There are two ways to accomplish multiplexing. The first method uses a separate D/A converter for each channel. The second method uses one single D/A converter together with a set of analog multiplexing switches and sample-and hold circuits on each analog channel. Information arriving sequentially from the computer is distributed to a number of analog devices, such as an oscilloscope, a pen recorder, an analog tape recorder and so on. There are two ways to accomplish multiplexing. The first method uses a separate D/A converter for each channel.

The second method uses one single D/A converter together with a set of analog multiplexing switches and sample-and hold circuits on each analog channel



The digital information is applied simultaneously to all channels, and channel selection is made by gating clock pulse to the appropriate output channels. One D/A converter is required per channel, so that the initial cost may be.



Somewhat higher than the second system, but the advantage is that the analog information is available at the DAC output for an indefinite period of time. The second method uses only one D/A converter and is therefore slightly lower in initial cost. The multiple sample-and-hold technique however requires that the signal on the sample-and-hold circuits be renewed at periodic intervals.

Source: <http://mediatoget.blogspot.in/2012/03/digital-to-analog-multiplexing.html>