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ANALOG SIGNAL’S POSITION OF TELECOMMUNICATION SYSTEM

Annotation: This article illustrate analog signal’s advantages and disadvantages. As well as analog signals consider as unlimited signals.

Key words: analog signal, telecommunication system, time.

An analog signal is a continuous signal that contains time-varying quantities. We live in an analog world. There are an infinite amount of colors to paint an object even if the difference is indiscernible to our eye, there are an infinite number of tones we can hear, and there are an infinite number of smells we can smell. The common theme among all of these analog signals is their infinite possibilities. Real world objects can display data, gather inputs by either analog or digital means. Clocks, multimeters, and joysticks can all take either form. Telecommunications includes technologies such as telephones, radio, television, email, fax, and data transmission from one computer to another in a network. Data is transmitted in the form of signals. Most data acquisition signals can be described as analog, digital or pulse. These signals can be electrical pulses (carried by copper cable or wire), light pulses (carried by fibre-optic cable, made of glass or plastic) or radio waves (transmitted between antennas on the ground, or between satellite dishes on the ground and satellites in orbit around the earth). Fibre-optic cables have many advantages over copper cables – for example, they can carry much more data than copper cables. Radio transmissions can cover a very wide area, and don’t use cables. More and more information is now sent in digital form, so analogue systems are likely to disappear soon. Analogue systems use a continuously varying signal. Sounds
and images in real life are analogue, and must be converted into digital signals before they can be transmitted digitally. Older analogue devices, such as telephones, need an analogue telephone adaptor (ATA) to adapt or convert analogue sound into digital signals. Analogue TV sets need a special adaptor box to convert digital TV signals into analogue pictures. While analog signals typically vary smoothly and continuously over time, digital signals are present at discrete points in time. In most control applications, analog signals range continuously over a specified current or voltage range, such as 4-20 mA dc or 0 to 5 V dc. We will come back to our good news in a few minutes, but first let's define analog and digital signals and then discuss what happens during the conversation. An analog signal is a continuous wave denoted by a sine wave pictured below and may vary in signal strength amplitude or frequency (time). The sine wave's amplitude value can be seen as the higher and lower points of the wave, while the frequency value is measured in the sine wave's physical length from left to right.

Sound is naturally an analog signal. An analog signal is continuous, meaning that there are no breaks or interruptions. One moment flows into the next. If you were to hum a descending note, people hearing you would be able to detect the change in pitch, but not point to specific moments when the pitch jumped from one note to the next. In life many examples of analog signals around us. The sound from a human voice is analog, because sound waves are continuous, as is our own vision, because we see various shapes and colors in a continuous manner due to light waves. Even a typical kitchen clock having its hands moving continuously can be represented as an analog signal.
An analog signal can be used to measure changes in some physical phenomena such as light, sound, pressure, or temperature. For instance, an analog microphone can convert sound waves into an analog signal.

Unlike a digital signal, which has a discrete value at each sampling point, an analog signal has constant fluctuations. The illustration below shows an analog pattern represented as the curve alongside a digital pattern.

Although the microprocessor and digital network technologies have fundamentally reinvented the ways in which today's data acquisition systems handle data, much laboratory and manufacturing information is still communicated the "old" way, via analog electrical signals. And a fundamental understanding of how analog signal transmission works must first begin with a discussion of electrical basics. To understand the ways in which an analog signal is transmitted over a circuit, it is first important to understand the relationships that make analog signal transmission possible. However, when a data acquisition system is transmitting low level analog signals over wires, some signal degradation is unavoidable and will occur due to noise and electrical interference. Noise and signal degradation are two basic problems in analog signal transmission. Noise is defined as any unwanted electrical or magnetic phenomena that corrupt a message signal. Noise can be categorized into two broad categories based on the source-internal noise and external noise. While internal noise is generated by components associated with the signal itself,
external noise results when natural or man-made electrical or magnetic phenomena influence the signal as it is being transmitted.

In today’s world, the fast transmission of information is essential to business, government and society. So telecommunications are an important area of modern technology. We can achieve more successes in telecommunication technology. Much of the information is transmitted internationally. It includes sound, images, documents, and data output from computers and measuring instruments.

Reference:

2. Literature teacher 2001 etc
3. Ziyonet.uz