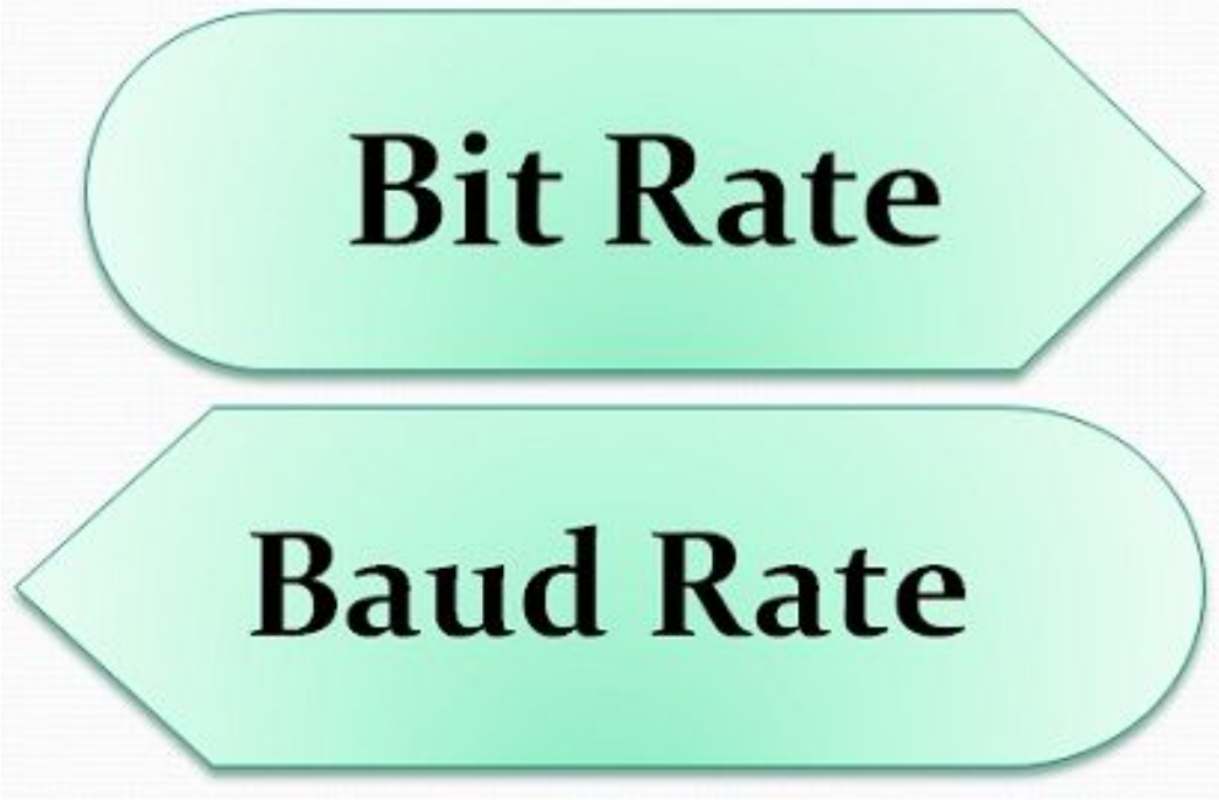
Bit Rate and Baud Rate



Bit rate and **Baud rate**, these two terms are often used in data communication. Bit rate is simply the **number of bits** (i.e., 0's and 1's) transmitted in per unit time. While Baud rate is the **number of signal units** transmitted per unit time that is needed to represent those bits.

What is baud rate?

9600 bits per second

The baud rate is **the rate at which information is transferred in a communication channel**. Baud rate is commonly used when discussing electronics that use serial communication. In the serial port context, "9600 baud" means that the serial port is capable of transferring a maximum of 9600 bits per second.

- Bit rate – the number of binary ‘bits’, 1s or 0s to be transmitted per second
- Baud rate – the number of line ‘symbols’ transmitted per second

Bit rate = baud rate x the number of bit per baud

Example 1

An analog signal carries 4 bits in each signal unit. If 1000 signal units are sent per second, find the baud rate and the bit rate

Solution

Baud rate = 1000 bauds per second (baud/s)
Bit rate = 1000 x 4 = 4000 bps

Example 2

The **bit rate** of a signal is **3000**. If **each signal unit** carries **6 bits**,

what is the **baud rate**?

Solution

Baud rate = 3000 / 6 = 500 baud/s

What is bandwidth?

Bandwidth is measured as the amount of data that can be transferred from one point to another within a network in a specific amount of time. Typically, bandwidth is expressed as a bitrate and measured in bits per second (bps).

The term bandwidth refers to the transmission capacity of a connection and is an important factor when determining the quality and speed of a network or the internet connection.