Linnaeus University

Faculty of Technology – Department of Computer Science

1DT301 - Computer Technology
Lab 3

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1. What is baud rate? How does it differ from bit rate? What happens if you mismatch baud rate between two devices?

Baud rate is communicated on the occasions a sign can change on the transmission line every second. The transmission line utilizes just two sign states and makes the baud rate equivalent to the number of bits every subsequent that can be moved. The bit rate can be characterized as the quantity of bit stretches every second. Also, a bit span is alluded to as the time is expected to move one single bit. In less complex words, the bit rate is the number of bits sent in one second, communicated in bits every second (bps). For instance, kilobits every second (Kbps), Megabits every second (Mbps), Gigabits every second (Gbps), and so forth.

Bit Rate can be articulated by the provided equation:

Bit rate = baud rate x the number of bits per signal unit

In opposing Baud rate is voiced in the provided equation:

Baud rate = bit rate / the number of bits per signal unit

The baud rate you select in the product must match the baud pace of the information lumberjack sequential port. In spite of the fact that autobaud is dependable at changing down the baud rate, it experiences difficulty modifying up from 9600 to 115200.

2. What is the difference between synchronous and asynchronous communication?

Microcontrollers can communicate asynchronously and synchronously. With Synchronous communication, there is a wire between two imparting specialists conveying the clock beat so both microcontrollers can convey utilizing a similar heartbeat. With asynchronous communication, there is no wire between the two microcontrollers, so each microcontroller is ignorant concerning the beat rate. Each microcontroller is told, utilizing a baud rate, what speed to execute the communication.

3. Describe how USART initiates communication and sends data.

USART (Universal Synchronous/Asynchronous Receiver/Transmitter) is a central processor that encourages correspondence through a PC's sequential port utilizing the RS-232C convention. Like a UART (Universal Asynchronous Receiver/Transmitter), a USART gives the PC the interface vital for correspondence with modems and other sequential gadgets. Nonetheless, in contrast to a UART, a USART offers the choice of synchronous mode. In program-to-program correspondence, the synchronous mode necessitates that each finish of a trade reacts thus without starting another correspondence. Asynchronous activity implies that a cycle works freely of different cycles. [3]

References

[1] AVR Microcontroller and Embedded Systems by Muhammad Ali Mazidi e4.
[2] "Synchronous vs. Asynchronous". www.engr.iupui.edu. Retrieved 2017-01-26.
[3] Computer Desktop Encyclopedia © 1981-2017 The Computer Language Company Inc.