



Difference between Synchronous and Asynchronous Transmission

Difficulty Level : Basic • Last Updated : 19 Sep, 2022

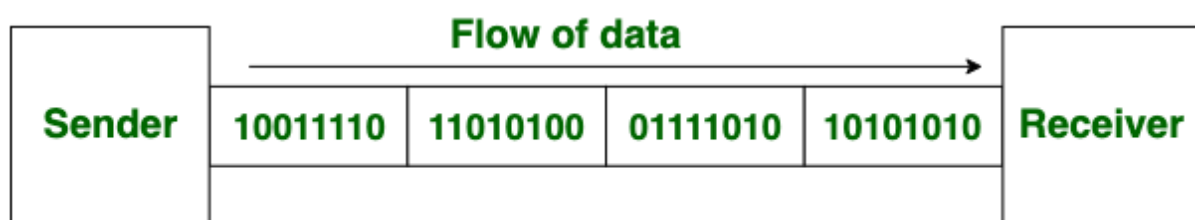
[Read](#)

[Discuss](#)

Synchronous Transmission: In Synchronous Transmission, data is sent in form of blocks or frames. This transmission is the full-duplex type. Between sender and receiver, synchronization is compulsory. In Synchronous transmission, There is no gap present between data. It is more efficient and more reliable than asynchronous transmission to transfer a large amount of data.

Example:

- Chat Rooms
- Telephonic Conversations
- Video Conferencing



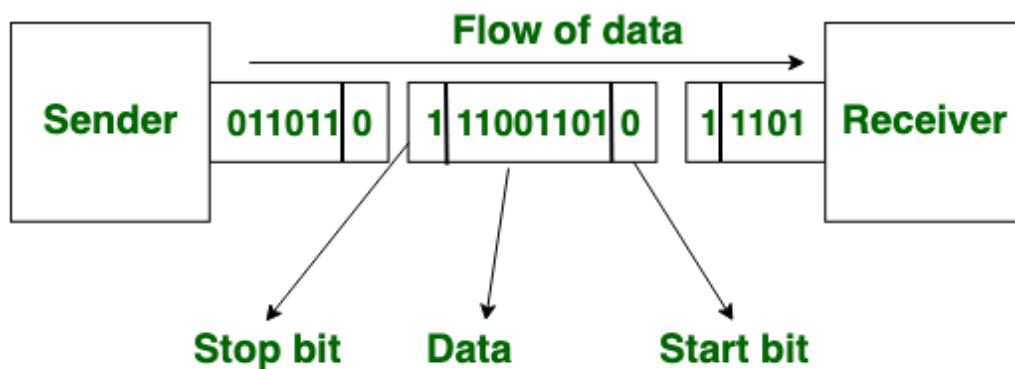
Synchronous Transmission

Asynchronous Transmission: In Asynchronous Transmission, data is sent in form of byte or character. This transmission is the half-duplex type transmission. In this transmission start bits and stop bits are added with data. It does not require synchronization.

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !

- Email
- Forums
- Letters



Asynchronous Transmission

Now, let's see the difference between Synchronous and Asynchronous Transmission:

S. No.	Synchronous Transmission	Asynchronous Transmission
1.	In Synchronous transmission, data is sent in form of blocks or frames.	In Asynchronous transmission, data is sent in form of bytes or characters.
2.	Synchronous transmission is fast.	Asynchronous transmission is slow.
3.	Synchronous transmission is costly.	Asynchronous transmission is

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !

- | | | |
|----|--|--|
| 4. | In Synchronous transmission, the time interval of transmission is constant. | In Asynchronous transmission, the time interval of transmission is not constant, it is random. |
| 5. | In this transmission, users have to wait till the transmission is complete before getting a response back from the server. | Here, users do not have to wait for the completion of transmission in order to get a response from the server. |
| 6. | In Synchronous transmission, there is no gap present between data. | In Asynchronous transmission, there is a gap present between data. |
| 7. | Efficient use of transmission lines is done in synchronous transmission. | While in Asynchronous transmission, the transmission line remains empty during a gap in character transmission. |
| 8. | The start and stop bits are not used in transmitting data. | The start and stop bits are used in transmitting data that imposes extra overhead. |
| 9. | Synchronous transmission needs precisely synchronized clocks for the information of new bytes. | Asynchronous transmission does not need synchronized clocks as parity bit is used in this transmission for information of new bytes. |

Interview Series

Prepare for free
Every Sunday | 7 - 8:30 PM IST



Difference between Serial and Parallel Transmission

RECOMMENDED ARTICLES

Page : [1](#) [2](#) [3](#)

01 Difference between Simplex Transmission Modes and Full Duplex Transmission Modes
11, Jan 21

05 Difference between Synchronous TDM and Asynchronous TDM
18, Jun 20

02 Difference between Half duplex Transmission Modes and Full Duplex Transmission Modes
11, Jan 21

06 Difference between Synchronous TDM and Statistical TDM
16, Jan 21

03 Difference between Simplex Transmission Modes and Half Duplex Transmission Modes
11, Jan 21

07 Difference between Communication and Transmission
20, Oct 21

04 Difference between Synchronous and Asynchronous Sequential Circuits
27, Dec 18

08 Difference between Serial and Parallel Transmission
17, May 19

Article Contributed By :



MKS075

@MKS075

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !

Start Your Coding Journey Now!

[Login](#)[Register](#)[Easy](#)[Normal](#)[Medium](#)[Hard](#)[Expert](#)

Improved By : [ashushrma378](#), [pulkitagarwal03pulkit](#), [annieahujaweb2020](#),
[vertikasharma21112](#)

Article Tags : [Computer Networks](#), [Difference Between](#)

Practice Tags : [Computer Networks](#)

[Improve Article](#)[Report Issue](#)

A-143, 9th Floor, Sovereign Corporate Tower,
Sector-136, Noida, Uttar Pradesh - 201305

feedback@geeksforgeeks.org

Company

[About Us](#)
[Careers](#)
[In Media](#)
[Contact Us](#)
[Privacy Policy](#)
[Copyright Policy](#)

News

[Top News](#)

Learn

[Algorithms](#)
[Data Structures](#)
[SDE Cheat Sheet](#)
[Machine learning](#)
[CS Subjects](#)
[Video Tutorials](#)
[Courses](#)

Languages

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !

Start Your Coding Journey Now!

[Login](#)[Register](#)

Knowledge

SQL

Kotlin

Web Development

Web Tutorials

Django Tutorial

HTML

JavaScript

Bootstrap

ReactJS

NodeJS

Contribute

Write an Article

Improve an Article

Pick Topics to Write

Write Interview Experience

Internships

Video Internship

@geeksforgeeks , Some rights reserved

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !