Precise device synchronization with Wi-Fi®

Individuals and businesses use wireless devices to connect everything everywhere. Wireless connectivity has become vital to immersive entertainment experiences and heightened productivity in business. Home theater, automobile infotainment, manufacturing, and healthcare systems all use multiple wireless devices within their networks. Making sure the actions of these devices remain in sync is key to their performance. If video plays prior to audio during a movie, stereo systems with multiple speakers play out-of-sync, or assembly line devices become unsynchronized and cause bottlenecks on a production line, the user has an inferior experience. Wi-Fi CERTIFIED TimeSync™ from Wi-Fi Alliance® allows devices to synchronize to the same clock, enabling tightly-coupled coordination between devices and high-precision output.

Wi-Fi CERTIFIED TimeSync

Wi-Fi CERTIFIED TimeSync enables sub-microsecond clock synchronization between multiple devices aiding precise device coordination and accurate representation of audio, video, or data at the moment it is meant to be presented. Wi-Fi TimeSync™ supports in-room multichannel audio and video capabilities, and delivers high-performance device synchronization across a user's entire Wi-Fi coverage area. Home entertainment is a key application, but many industrial, automotive, and healthcare applications will benefit from more tightly-coupled coordination between Wi-Fi devices.

Using standards-based technology, Wi-Fi TimeSync serves as a building block for coordinated connectivity among devices from multiple brands within a Wi-Fi network. Wi-Fi TimeSync devices connect and synchronize through an access point or peer-to-peer connectivity with Wi-Fi Direct®. The result is a synchronized, wireless rendering with precision output.

Uses for Wi-Fi TimeSync

Entertainment

Home theater systems: Connect various displays and speakers to provide immersive audio and video experiences, without drift or sync issues.

Sound systems: Couple multiple speakers to produce top-quality surround sound.

Recording systems: Simplify audio and video editing processes by recording content using multiple synchronized microphones or wireless cameras.

Healthcare

Multi-sensor coordination: Provide patients with improved clinical support and response time using networks of tightly coordinated wearable devices.

Industrial

Equipment management: Coordinate actions on a manufacturing assembly line; collect data and perform equipment diagnostics or analysis.

Distributed process control: Mobilize a fleet of tractors with Wi-Fi CERTIFIED™ controllers to enable meticulously sequenced functions in the field.

Precision output: Synchronize motion control sensors to ensure that each controller performs its function to the same clock exactly when it should.

Automotive

Camera systems: Synchronize on-vehicle cameras to assist in safely managing difficult vehicle maneuvers.

Infotainment systems: Experience perfect playback from wireless headphones and rear seat entertainment systems.

Wi-Fi: Technology to trust

Since 2000, Wi-Fi Alliance has been driving the adoption and evolution of Wi-Fi through its Wi-Fi CERTIFIED program. The Wi-Fi CERTIFIED logo designates products with proven interoperability, backward compatibility, and the highest industry-standard protections in place. Wi-Fi CERTIFIED devices can communicate with previous and future generations of Wi-Fi technologies, supporting use cases including seamless network access, multimedia, and device-to-device connectivity.

Wi-Fi technology performance has advanced by more than 100x since its inception, and continues to evolve over time. This constant forward momentum enables makers of home theaters, car infotainment, music streaming services and speakers to deliver enhanced audio visual experiences on an existing Wi-Fi infrastructure.

Wi-Fi CERTIFIED devices give consumers confidence that the product they purchase will deliver a good user experience.

Learn more: www.wi-fi.org/wi-fi-timesync