



Using a Master Clock with an IP-PoE or Wi-Fi Clock System

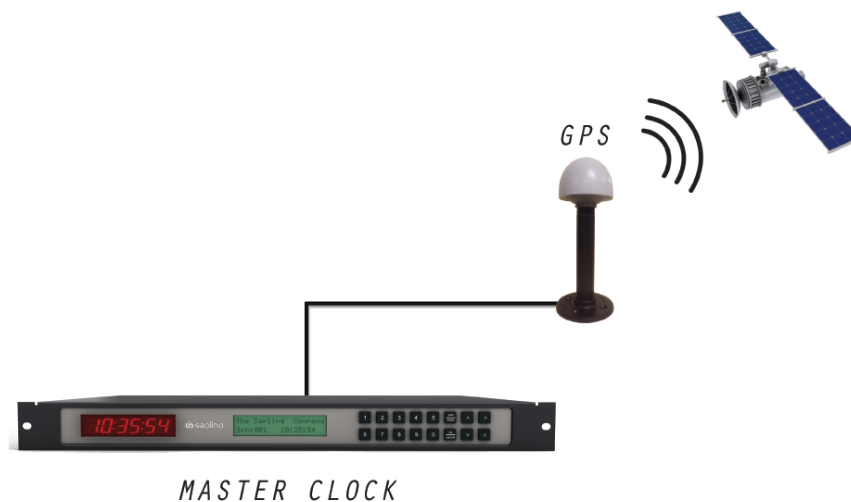
Sapling IP-PoE Clocks and Sapling Wi-Fi Clocks have many advantages and features, including an intuitive built-in web interface in each clock, multiple NTP time sources, self-diagnostic capabilities, and much more. Since both Sapling IP-PoE Clocks and Sapling Wi-Fi Clocks can receive NTP time directly from any NTP time server, the use of a master clock is only optional with the systems. There are certain scenarios, however, where a master clock might be required or beneficial with an IP-PoE or Wi-Fi clock system.

How Sapling IP-PoE and Wi-Fi Clocks Receive Accurate Time

Sapling IP-PoE Clocks connect to a facility's LAN using a standard network cable (CAT 5/6), while Sapling Wi-Fi Clocks utilize a facility's existing Wi-Fi infrastructure. Both systems (IP-PoE and Wi-Fi) come preprogrammed with multiple third party NTP time server IP addresses to receive accurate time data via the internet. In addition, the user has the option of choosing their preferred NTP time server to either an in-house NTP time server or other third-party NTP time servers.

The reason that Sapling's IP-PoE and Wi-Fi Clocks are designed with the option of receiving accurate time from multiple NTP time servers is to ensure redundancy in the event that connection with one of the NTP time servers is lost. In this case, the clocks will automatically attempt to connect to the next stored NTP server address until accurate time is received.

As explained above, since the IP-PoE clocks and the Wi-Fi clocks are capable of receiving accurate time data via the internet, using a master clock is only optional. A master clock is typically needed in the following scenarios.



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Scenarios When a Master Clock Might Be Used With an IP-PoE or Wi-Fi System

1. For facilities without a reliable internet connection or in-house NTP server, Sapling can offer a master clock with the optional GPS receiver. In this case, the master clock will obtain the accurate time from a GPS satellite and relay it to the IP-PoE or Wi-Fi clocks. Additionally, some projects require an additional layer of redundancy of receiving the time data. In this case, the clocks can be set to receive the time data from a master clock with a GPS receiver, while receiving the time data from the internet (from the third-party NTP time servers) is used as a backup time source.
2. Some facilities require an in-house NTP server in order to synchronize and provide time to other IP devices, such as: IP security cameras, IP phones, IP intercoms, or any other device capable of receiving (S)NTP time via LAN. Sapling offers a master clock model that can act as an NTP server to provide all IP devices (including IP-PoE and Wi-Fi clocks) accurate time.
3. Some facilities require a master clock that is capable of controlling other systems via programmable relays. Sapling offers an SMA 3000 Series Master Clock model, which can come with either 4 or 8 programmable relays, that may control a variety of systems by switching them on and off at predetermined times. These systems may include school bell systems, lights, heating/cooling, and many more.



Sapling's IP-PoE and Wi-Fi Clock Systems offer a flexible solution since each clock can receive time from any NTP Server. Both IP-PoE and Wi-Fi clocks are easy to install and do not necessarily require a master clock, making them suitable for projects of all sizes. A master clock is optional with the IP-PoE and Wi-Fi Systems, although it can be useful for redundancy, synchronization of other IP devices, and controlling other systems.

For more information, please contact your dedicated Sapling representative.