



# Bethel Technology

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## *House of wireless & security Solutions*

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### **GPS MASTER CLOCK**

Our wireless synchronized master clock system operates on a very basic concept. The Master clock acquires the time and then transmits it wirelessly to the slave clocks that are in the system. Once the transmitter master clock receives a time update, it then transmits the time to any number of secondary slave digital clocks. The digital clocks need only a 240v ac power outlet.

### **Write up on GPS**

Global Positioning System (GPS) is a radio-navigation system available to the worldwide. A fleet of 24 satellites orbit the earth broadcasting their position coordinates and highly accurate time code, GPS signals. Each satellite is equipped with atomic frequency standards they are widely used for time synchronization, frequency calibration, and navigation.

This system receives signals via satellite and constantly updates the time displayed on the clock. In the event of a power failure a battery takes over which is automatically recharged once power is restored. In the event of longer power failures the clocks will automatically fast advance to the correct time. This system is used widely in public and time critical applications where a reliable maintenance free solution is required.

**GPS means Global Positioning System**, a constellation of satellites. These satellites also broadcast precise time signals of atomic clock. UTC (equivalent to GMT) time signals are received through the GPS Receiver and it is transmitted to GPS unit in the clock.

The GPS driven master clock system corresponds via antenna to the satellites overhead. The master clock then drives each connected slave system clock.

- Receives time from GPS satellites (Accuracy tied to atomic clocks)

### **Bringing precise time to the world.**

Although GPS is well-known for navigation, tracking, and mapping, it's also used to disseminate precise time, time intervals, and frequency. Time is a powerful commodity, and exact time is more powerful still. Knowing that a group of timed events is perfectly synchronized is often very important. GPS makes the job of "synchronizing our watches" easy and reliable.

GPS satellites carry highly accurate atomic clocks. And in order for the system to work, our GPS receivers here on the ground synchronize themselves to these clocks. That means that every GPS receiver is, in essence, an atomic accuracy clock.

### **Slave Digital Clock**

Each clock includes a 433 MHz transceiver. The clocks are configured in the field to receive the data from the master clock and update the accurate time. These clocks can cover large areas indoors (up to 500 meter radius), plus any slave clock can be configured to repeat the signal to extend the range even further. The clocks incorporate frequency hopping / spread spectrum (FH/SS) technology coupled with DES data encryption to be sure no one tampers with time transmissions, and are free from interference.

From the customer's point of view, the best feature is that you will never have to adjust your digital clock again! No buttons to push, no ladders to climb - these clocks, when connected with the GPS antenna, always show accurate time.