

Types of GPS (Global Positioning System) Radio Signals and types of GPS Receivers

GPS satellites transmit two types of radio signals which are C/A-code and P-code. Coarse Acquisition (C/A code) is the type of signal which is used in consumer units and is known as SPS (Standard Positioning Service). C/A-code is not as accurate as P-code (which is mentioned later on) and is easier for U.S. military forces to jam and spoof, i.e. broadcast false signals to trick the receiver into thinking it is somewhere else when it really is not. The advantage of C/A-code however is that it acquires the satellite signal faster and hence obtaining an initial fix on your position takes less time. Due to this, there is an option for receivers which use P-code to track onto the C/A-code signal first then switch over to the P-code. P-code on the other hand provides highly precise location information and it is difficult to jam or spoof. The U.S. military is the primary user of P-code transmissions and uses an encrypted form of the data so that only special receivers can access the signal. P-code broadcasts are known as the Precise Positioning System (PPS). Now let us switch focus to that of GPS receivers. Some of this information can become pretty technical but hopefully both the novice and more advanced readers can learn and sift through the information to help them. GPS units receive two different types of data which are Almanac and Ephemeris. Almanac data contains the approximate positions of the satellites; the data are continuously being transmitted and are stored in the memory of the GPS receiver. Ephemeris data broadcasts the precise positions of the satellites. To obtain an accurate location fix, the receiver has to know how far away a satellite is. Hence, the GPS receiver calculates the distance to the satellite by of course using signals from the orbiting satellite. A GPS receiver needs data from multiple satellites to obtain or triangulate a position as to where the user of the GPS is located. First there is the issue of location which requires a minimum of three satellite signals. Second is that of position, which needs four satellite signals to determine your position in three dimensions: latitude, longitude and elevation. GPS receivers can generally be separated into five categories which are consumer models, U.S. military/government models, mapping/resource models, survey models and commercial transportation models. With respect to the consumer and commercial transportation models, the site SecureWithGPS provides GPS devices more catered to the consumer and commercial markets. If you think that such devices might suit your needs for fleet management of your vehicles, keeping track of the security of your car when it might be parked or even looking out for your teenage drivers, please visit the site for useful and related information. Finally, we will take a quick look at the accuracy of GPS receivers. One can typically expect a GPS receiver to be accurate within 49 feet or 15 meters. Accuracy depends on receiver location, obstructions that block satellite signals and information received from ground-based beacons to name a few. So rest assured that after spending money to start using this widely used technology the data obtained from the GPS receivers will definitely be accurate enough to provide the user with reliable information.

About the Author

For a reliable GPS (Global Positioning System) for personal or business use, please check out <http://www.securewithgps.com> . At <http://www.securewithgps.com> they provide the latest in GPS tracking, fleet management and near real time location updates.

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