

Digital GPS: Challenges of GPS Signals in High Noise Areas

In the world of seismology there are situations that we need to use a recording system in the place that there is no access to open sky or in a place with lots of electronic noises of cellphones or satellites. The question is what should to do in this situations to have a clean data from time point of view? Available GPS antenna are usually produce with a length of 5meters in the market. There are very few GPS's that support longer cables. High frequency of GPS waves results the high precision of positioning. Most GPS antenna are an amplifier and because they receive their 3.3V power from the source so can't make remarkable amplify and 5 meter cable limit came from this problem. With a small external noise source the GPS can't act normally and GPS can't lock data very soon and easy. This paper presents a GPS system which digitize the data at the source then transfer to the recording media. This protocol gives high performance cables with lengths more than 30-50 meters and theoretically up to 200 meters.

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