GPS Based Systems

Expertise

- Wireless component selection
- Antenna selection
- RF board layout design
- Data parsing
- Application development

Application Areas

- Tracking systems
- Location based services
- Navigational applications
- Surveying applications

Overview

Global Positioning System (GPS) is a global navigation satellite system that is being increasingly used for applications like navigation, geological surveying, scientific study, commerce, oceanic administration, fishing industry and recreation.

Aftek's Expertise

Aftek has rich expertise in interfacing GPS receiver modules in a variety of systems and building GPS based solutions. Spectrum of Aftek's end to end services spans from hardware system design and prototype development to building GPS based personal as well as enterprise applications. Aftek's expertise includes:

Wireless Component Selection

- Selection of appropriate chipset or module based on application requirement
- Experience of working with various GPS receivers such as Leadtek, SiRF, Conexant Zodiac series and Altina with serial interface

Antenna Selection

- Selection of suitable external antenna as per application requirement
- Selection of half wave dipole or quarter wave monopole antenna depending on availability of space on the PCB
- Integration of micro strip, chip and strip line antenna as per the application requirement
- Antenna selection depending upon the following factors such as operating frequency, bandwidth, maximum gain, average gain, efficiency, return loss or voltage standing wave ratio (VSWR), polarization, directivity, side and back lobe levels, front to back ratio, radiating patterns, impedance, and power rating of the antenna

RF Board Layout Design

- PCB layout design with impedance matching
- Keeping signal traces as small as possible to avoid RF radiation and interference
- Careful selection of Via location and Via size
- Shielding of signal traces to reduce interference
- Designing of series feed and parallel feed for antennas to match the characteristic impedance of the antenna

Data Parsing

- Handling of binary and NMEA message formats
- Parsing of NMEA standard sentences like GPRMC, GPGGA and GPGSA as well as vendor specific sentences
- Developing high level GPS API libraries for embedded and mobile platforms

About Aftek

Aftek Limited is a full spectrum technology services company from India. Over last 20 years Aftek has gained significant exposure to variety of technologies. Rich technological capabilities, focused investments in Research & Development and industry exposure enables us to reach beyond the basic IT services to design and deliver projects, products and implement end-to-end solutions to customers in variety of industries. Our service spectrum covers key services as   Hardware Development, Firmware Development, Embedded Systems, Application Development, Application Maintenance and Testing Services.

Applications

- Aftek has vast experience of developing variety of GPS based solutions that includes developing application specific embedded devices, applications for mobile phones and handheld devices, enterprise solutions based on GPS data
- Aftek has expertise of developing solutions with integration of GPS and wireless communication technologie
- Some of the examples include:
    - Tracking systems (vehicle tracking, pet tracking etc.) with integration of GSM / GPRS or proprietary RF communication
    - Location based services
    - Navigational applications
    - Surveying applications

Visit us at: www.aftek.com

Email: servicesinfo@aftek.com

Aftek Limited