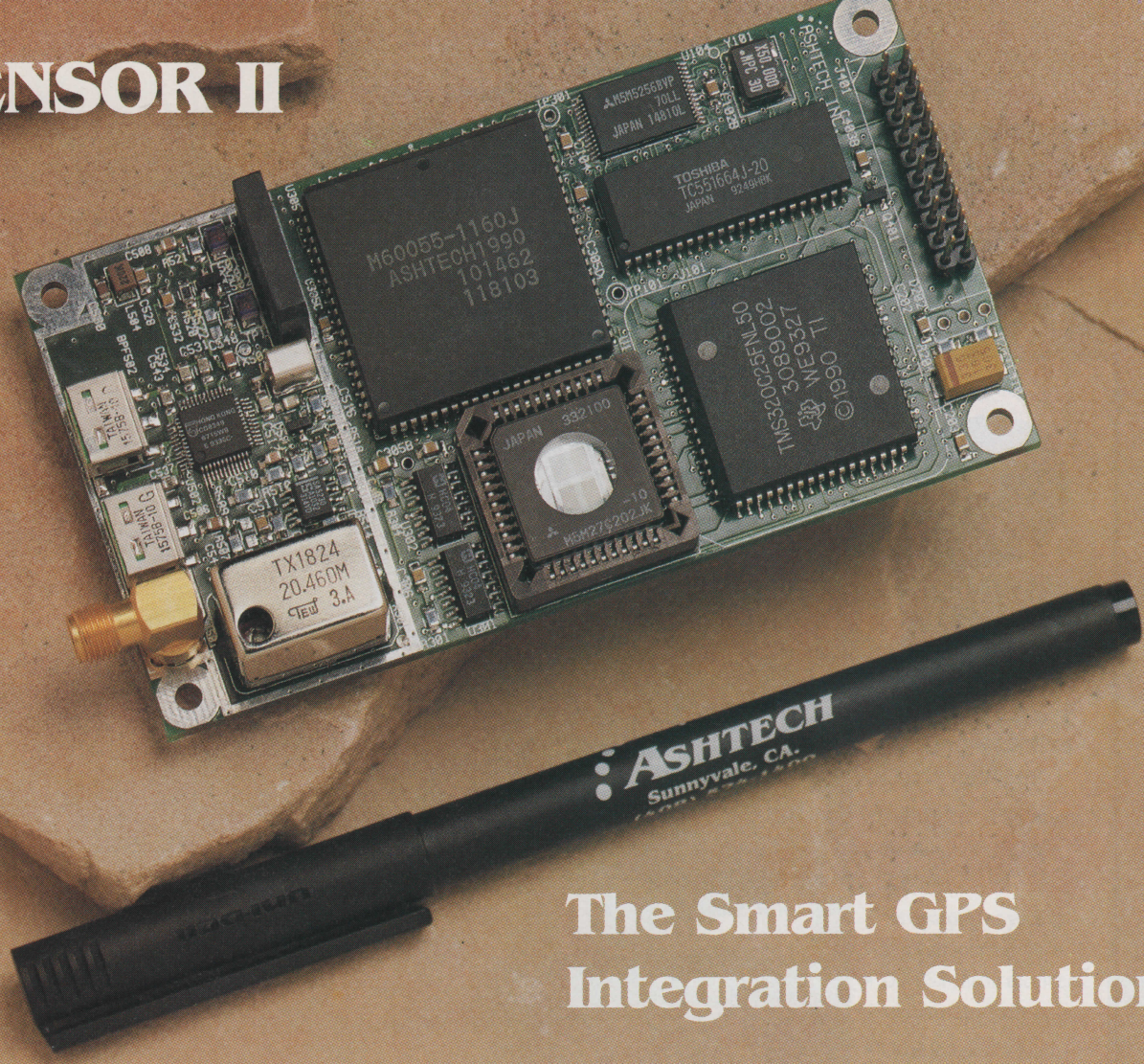
SENSOR II



The Smart GPS Integration Solution

The Ashtech Sensor II has been specifically designed to meet the needs of high-end systems integrators. Up to twelve satellites are tracked in high dynamic airborne operations with a "loss of lock" reacquisition time of less than two (2) seconds. The single board format is ideal for a variety of OEM marine, airborne or land navigation applications. The Sensor II provides three-dimensional position accuracy of 1-3 meters rms (PDOP ≤4) using the Real-Time Differential mode. Independent measurements are determined at once per second. Accurate time tags are provided with just one satellite and no knowledge of position. The Sensor II Receiver Module weighs just two (2) ounces measuring 4.25" x 2.25" x .44" and operates with a DC input of 5 volts with a connection for battery backup of "Keep Alive" memory.

The Sensor II offers the most complete package of standard features including:

- 12 Channel carrier-smoothed C/A code with "All-In-View" operation
- Real-Time Differential - receives RTCM 104 format Type 1, 2, 3, 6, 9, 16
- 1 PPS time pulse
- Raw GPS data outputs (pseudo ranges, integrated Doppler, ephemeris)
- 1 Second update rate
- NMEA 0183 outputs of position, velocity, time, command and satellite information
- Two RS-232 I/O Ports (38,400 Baud) with flow control
- 2 Second reacquisition time after temporary loss of lock

The Ashtech Sensor II GPS Receiver module provides real-time position, speed over ground, course over ground and time measurements using twelve channels of C/A code on the L1 band. Using the carrier phase, the Sensor II smooths all raw ranges for position computation and updates all data every second. The Sensor II is feature-rich, concise and priced to meet the most challenging integration requirements. Call Ashtech Navigation Sales at (800) 229-2400 for more information.

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GPS WORLD

Market Intelligence

The U.S. GPS Industry Council has done another good turn for the community of users, vendors, and developers by producing a market study that gives some shape to the future of GPS business.

Detailed results of the study can be found in the "Notes" section on page 59 of this issue, but its general import is epitomized by the estimate that worldwide GPS receiver sales will be 10 times larger in the year 2000 than in 1994: nearly $8.5 billion. Along with the staggering, even abstract, quantification of GPS sales trends, the study's collective assessment of industry leaders provides qualitative insights into the evolution of the market. Key trends: a 30 percent per year decline in the cost of hardware content and an increased contribution of embedded software, particularly for equipment intended for commercial applications.

It reminded me of a recent conversation with a systems engineer in the railroad industry, who was describing a new differential GPS train-tracking project. Casually he characterized the key design question as, "How much intelligence do you put in the locomotive, how much do you put along the track, how much do you put at the central office?"

A simple hierarchy of human intelligence begins with data and ascends through information and knowledge to wisdom. Mere data generation — for instance, the basic position fix — produces limited benefits and small margins. Increasingly, "added value" in GPS products means "intelligence inside."

Limited-function products with highly structured user interfaces make for inexpensive, accessible consumer items. But the GPS equipment that professionals and commercial end-users take into the field requires intelligence as well as power. A healthy dose of smarts goes in at the factory, but GPS systems also have to let users add their data, their information, their knowledge and expertise to the operation.

Today, U.S. manufacturers have about 75 percent of worldwide market share in GPS equipment. That share will be challenged as the consumer/commercial sales ratio reverses itself over the next few years. Some U.S. companies plan on going head-to-head with offshore producers for the high-volume markets. That's great, because it probably means they've put intelligence into their GPS manufacturing and marketing processes. But, in the future, far more companies will find opportunities — and margins — by putting the intelligence into their GPS products.

Glen Gibbons

ARE YOU LOOKING FOR BETTER THAN ONE METER ACCURACY...

All the reasons you need real-time navigation capabilities will convince you to use the Ashtech Super C/A Sensor™

The Ashtech Super C/A Sensor GPS receiver is a powerful navigation system that offers Real-Time Differential capability and Super C/A Tracking™. There's a long list of features that outperform other receivers and some of them may surprise you.

It Provides Higher Accuracy

As a stand-alone unit, the Super C/A receiver is capable of 25 meters SEP . In Real-Time Differential mode, you can achieve <1 meter accuracy and optionally, using Ashtech's PNAV™ post-processing software, an accuracy of 1 cm is achievable.

It's Efficient

One independent measurement is determined per second. Data from all satellites in view are computed simultaneously. A 1 PPS timing pulse, accurate to 50 ns, can be advanced or delayed for different triggering applications. Real-time data outputs are standard to accommodate a variety of raw pseudorange, ephemeris and position data.

It's Flexible

The Super C/A uses different antenna configurations for unique applications. It supports a telemetry link such as a data radio or a maritime beacon system. Three RS-232 serial ports provide interfacing with external devices using the NMEA 0183 format. Optionally photogrammetry/event input marker information and carrier phase are available and a 4Mb memory board can be added for post-processing applications.

It's Economical

At half the price of comparable receivers, you can't afford not to use the Ashtech Super C/A Sensor. For more information, call us at 1-800-229-2400.

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