

All-in-one AutoSteer

This high-tech system is also easy to use.

Integrinautics, a precision ag company based in California, has already made a name for itself among growers of high-value crops. Now the company is setting its sights eastward on large-scale row-crop farming operators, billing its AutoFarm GPS 5001 AutoSteer System as a full-season precision agriculture tool. Demonstrations and videos at farm shows this past year showcased a system that can be switched from one machine to another in minutes, giving farmers sub-inch autosteer accuracy for planting, tillage, spraying, land leveling and harvest. The GPS 5001 Tractor Guidance System will work on any vehicle — tractor, combine or harvester. The system will accommodate vehicles with hydraulic or electronic steering.

Signal management

AutoFarm uses three GPS receivers on the vehicle and a fourth on a base station. The portable base station gives the system an accuracy of less than one inch without the requirement of a monthly subscription service. The station can communicate with multiple vehicles at the same time.

The vehicle-mounted receiver array monitors the rolling and swaying motion of the tractor at many times a second. The company claims this system is more accurate than inertial (gyro) units that competitive systems sometimes use to compensate for vehicle pitch and yaw on side hills.

The system supports “race-tracking,” allowing the driver to turn around at the end of a row without stopping to make adjustments. It can be adjusted to achieve maximum accuracy with wide implements or during high-speed operations.

Data collection

In addition to steering straight rows, AutoFarm collects precision farming data that can be used in future operations. Planting, tillage, spraying and harvesting trips can follow the same data trail to stay on row months or even years later. An on-board computer, called a tractor “cabbox,” comes loaded with software that can generate field maps, including routes traveled, elevation and yield data. This box can be swapped between machines in a matter of minutes without complex recalibrations.

A removable flash memory card collects data for precision farming, allowing a grower to sync different tractors or download the data to a PC for field mapping and other ag software programs. The AutoFarm GPS receiver can be used with a Raven spray controller or other GPS-based devices.

For farmers who prefer to leave the computer work to someone else, AutoFarm offers a service that will generate field maps from a flash memory card.



Interface

The in-cab touch screen for the AutoFarm system is similar to that on an ATM cash machine, using large, color-coded icons that are easy to see in bright sunlight or dim light conditions. The monitor highlights current row, tractor position and adjacent rows. A “nudge” function lets the operator make minor course adjustments on the go. The interface can be switched from English to Spanish language commands without rebooting.



Leveling

Farmers interested in changing the slope of their land for drainage or irrigation may find the AutoFarm system easier and faster than a laser transit. Whereas dust, terrain or fog can block a laser beam, GPS signals are not affected by such problems.