Precise Positioning, Guidance and Machine Control



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Overview

Hemisphere GPS designs and manufactures innovative, cost-effective GPS (GNSS) and complimentary products for positioning, guidance and machine control applications. For the last 20 years, we have established numerous patents and other intellectual property. Hemisphere GPS is a global company with sales in more than 50 countries.

As a pioneer and leader in precision agriculture, our application-focused designs allow us to offer affordable centimeter-level precision technology integrated with flexible, intelligent machine guidance and control. Our popular Outback Guidance[®] products focus on tractor guidance, automated steering, mapping and precision application of seed or chemicals. Hemisphere GPS leads in the aerial applicator market with new guidance systems and automated flow and gate control. Our machine guidance and control technology solutions improve productivity and job quality in construction and snow grooming. Our innovative GNSS receiver and antenna technology are sold on the board level to OEM integrators and as positioning and navigation components for use in marine, mapping, survey applications and more.

Through AgJunction[®], we provide a flexible, web-based, precision agriculture data management software system for client, farm and field management that leverages wireless communications and cloud computing.

Hemisphere GPS has succeeded by offering the right level of technology for the application. We provide application specific solutions that directly improve performance so that customers immediately realize the benefits and value.

Hemisphere GPS is listed on the Toronto Stock Exchange (TSX) trading under the symbol "HEM" and is one of the TSX Cleantech designated companies.





Above: Hemisphere GPS Corporate Headquarters in Calgary, Alberta. Upper right: Crescent GPS boards off the assembly line.



Our Locations

Hemisphere GPS currently has more than 240 employees and over 500 international distributors. The Company is headquartered in Calgary, Alberta, with major product development, sales and marketing facilities in Winnipeg, Manitoba; Scottsdale, Arizona; Hiawatha, Kansas; State College, Pennsylvania; and Brisbane, Australia.



Through our global network of dealers and distributors we are able to provide local support virtually anywhere in the world.

State College, Pennsylvania AgJunction, Hemisphere GPS' cloud computing division, provides a flexible, web-based, precision agriculture system for client, farm and field management that leverages wireless communications and cloud computing. Brisbane, Australia Brisbane started as Hemisphere GPS' main software engineering facility and has now grown into the Company's Asia-Pacific distribution center. Hiawatha, Kansas Hemisphere GPS' Hiawatha location is the origin of Outback Guidance and continues to be the Company's main center for agriculture products.



Our Business

Hemisphere GPS is divided into Agriculture Products and Precision Products

Agriculture

Under the brand name Outback Guidance, Hemisphere GPS manufactures a variety of products that serve the ground agriculture industry. Outback Guidance systems consist of in-cab navigation, automated steering and boom section control technologies. Outback Guidance enables farmers to dramatically reduce the amount of overlap when spraying, planting and harvesting. Less overlap means lower input costs such as time, fuel, chemical, fertilizer, seed and equipment maintenance.

Hemisphere GPS customizes its technology under its own brands or privately branded to meet the needs of precision agriculture system integrators and Original Equipment Manufacturers (OEM). Hemisphere GPS' agriculture OEM products consist of GNSS receiver boards, antennas, finished positioning, guidance and control components as well as complete precision agriculture systems. Those products are integrated into precision agriculture systems and custom fit for tractors, sprayers, combines and other agriculture equipment.

Similarly, Hemisphere GPS' technology is used in a broad range of aerial guidance applications including row crop spraying, pest control, forestry and fire fighting. Hemisphere GPS is a leader in aerial guidance for agriculture applications and holds more than 75 percent of the global market share. Based on the Satloc[®] brand, Hemisphere GPS delivers sub-meter visual guidance, dry/wet automated rate control, asset tracking, background maps and imagery services.

Hemisphere GPS' AgJunction platform is a flexible, web-based data management software system for client, farm and field management, sold primarily to seed and chemical retailers, agronomists, crop consultants and growers. The system is open and cloud-based to easily capture and share data from many types of precision agriculture controllers on the farm.



Effective use of precision agriculture data can result in lower costs and environmental impact through lower use of pesticides, fertilizer and fuel and provide a higher crop yield per acre, increased profitability and lower the impact on global food costs.

Precision Products

Hemisphere GPS produces a variety of Precision Products used in marine applications, surveying, construction and OEM. Precision Products portfolio includes GNSS-based receivers, compasses, antennas and OEM boards. Hemisphere GPS products are powered by Crescent[®] (single-frequency) and Eclipse[™] (multi-frequency) technology which allows them to be scalable in accuracy from sub-meter positioning to centimeter level precision. Hemisphere GPS Precision Products recently launched the world's smallest GPS receiver board (miniEclipse[™]) and markets the smallest GPS compass (V102[™]).

Hemisphere GPS supplies surveyors with a complete survey solution for GIS, mapping, land surveying and construction applications. The S320[™] is an integrated GNSS survey and mapping device for mobile data collection, providing centimeter-level accuracy in a rugged, all-in-one enclosure.

Earthworks is the construction product line within Precision that includes machine guidance and control technology for construction applications. Earthworks 'bucket and blade' solutions are used or being developed on a variety of construction machinery including excavators, graders, dozers, implement scrapers and other heavy equipment. Through in-cab touch screen terminals, precision sensors and GNSS technology, Earthworks machine guidance products give operators real-time grade indication and awareness in the cab. Earthworks also provides advanced visual route guidance for snow grooming and road building.



Our Technology

Hemisphere GPS' Crescent GPS receivers have established the benchmark for performance, versatility and value. A variety of accuracy and feature options include Differential GPS (DGPS) accuracies of 60 cm to our centimeter-level RTK solutions. Patented GPS features such as e-Dif[®] and COAST[™] are also available. The same performance is available in our patented Crescent Vector[™] products. They operate as a GPS compass; processing GPS data from two antennas to deliver accurate heading that is required for many navigation, machine guidance and control applications.

Eclipse multi-GNSS technology delivers the highest level of performance and versatility. Horizontal accuracies of one centimeter are possible through RTK or post-processed solutions. Eclipse technology provides the ability to track and process a wide range of GNSS signals including current and modernized GPS, GLONASS, SBAS and the future Galileo system signals.

Our GNSS positioning and heading technology is coupled with other sensors to provide machine guidance and control solutions with our Celestia[®] Connecting Technology. Celestia is an advanced software platform patented by Hemisphere GPS that can be applied to a full spectrum of machine control applications. The technology interfaces seamlessly into a range of vehicle steering and control systems, providing unsurpassed reliability and accuracy in the machine control market.

Hemisphere GPS Advantages

Hemisphere GPS' success comes from offering customers simple solutions to complicated applications. With application specific products, our users directly improve their performance and immediately experience a return on investment.

- · Improved quality and productivity
- Reduced operator fatigue
- Improved safety
- Reduced input costs
- Support for new applications

Hemisphere GPS products not only benefit the operator but benefit the environment as well. By improving operator performance, Hemisphere GPS solutions ultimately reduce the amount of resources wasted when completing specific tasks such as:

- Precision Farming (air and ground) More efficient use of land through reductions in resources (fuel, seed, chemical), less soil erosion and decreased soil compaction. This in turn limits chemical runoff into waterways and reduces air/dust pollution caused by excess machine operation.
- Navigation: More accurate navigation means less fuel consumption and reduced pollution in marine and hydrographic applications
- Construction: More effective machine operation reduces fuel consumption, idling hours and pollution



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