Datakey
The power of memory. Secured.

Reliable Data Transfer for Hi-Tech Farming

Greentronics

Founded in 1994, Greentronics Ltd. designs, manufactures, and sells electronic products specially designed to improve the performance and efficiency of various agriculture equipment. The company is well-known for its yield monitor and conveyor scale products that are designed for the root crop and vegetable industries.
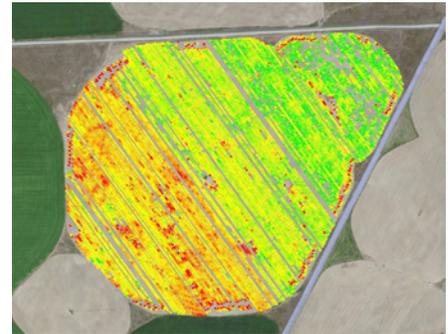
Applications:
Data Transfer

Market:
Agriculture

Challenge

Greentronics' yield monitor product, RiteYield, is used on agricultural harvesting equipment, and measures the second-to-second weight of the crop as it is harvested. This data is combined with GPS position to create a complete yield map. The yield data is also logged for later analysis. The company's original yield monitor product relied on an external third-party device to log crop data, but Greentronics wanted to create a stand-alone solution to log yield data without the need for any other equipment.

"We considered using a standard SD card socket, as well as a standard USB socket," said Bert Menkveld, Senior Design Engineer at Greentronics. "However, an SD card socket is very delicate and is not well suited to the dirty environment in which our equipment operates. A USB socket is also not very rugged, and interfacing to a USB device requires added hardware and complex software."
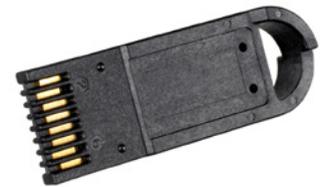
Solution

Greentronics turned to ATEK Access Technologies for its Datakey DFX RUGGEDrive™ memory token and SR4310SP receptacle because it maintains the integrity of the RiteYield monitor's sealed enclosure. The SR4310SP receptacle has an IP65 rating and is mounted to the top face of the enclosure. The DFX RUGGEDrive memory token functions as an SD card, but comes in a form factor that is more rugged and secure than consumer and industrial SD cards. DFX memory tokens utilize solid over-molded construction using tough, synthetic materials that protect its embedded memory from harsh environmental influences, such as dirt, moisture, chemicals, and electrostatic discharge.

The Greentronics RiteYield yield monitor system uses internal memory for data logging and uses the RUGGEDrive token to transfer data from the system to a computer for analysis. A DFX PC adapter is used to read the DFX memory tokens on the computer. When the memory token/adapter pair are plugged into a computer's USB port, the system sees it as a standard removable drive (like a flash drive). Yield data can then be opened on or transferred to the computer.

SR4310SP Panel-Mount Receptacle

DFX RUGGEDrive Memory Token

"The two things that attracted us to the Datakey memory tokens are the rugged design and the ease of communication with the SD memory," said Menkveld.

Impressive Yields

Greentronics has been incorporating RUGGEDrive memory tokens and receptacles into its products since 2013. The company currently has several hundred units operating in the field.

When adding data logging to the RiteYield product, Greentronics did not have to design a hinged door to cover the socket, since the SR4310SP receptacle is sealed. Additionally, software development was reduced because of the straightforward SD interface. This reduced development time by six to eight weeks, saving engineering costs and bringing the RiteYield product to market faster. The RUGGEDrive memory tokens helped Greentronics achieve the new product capability of logging data to removable storage.

"ATEK made it very easy by providing the necessary technical information to connect to the RUGGEDrive socket," said Menkveld. "Thanks to their rugged design, the Datakey memory tokens survive in tractor cabs and farmers' pockets."

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