

# GREENTRONICS

## RITETRACE

Fully Automated Track & Trace System



**NEW  
PRODUCT**

"We have used the RiteTrace system on our farm for two years. We completed most of the installation and set-up ourselves. Running the system has been easier and simpler than expected. We are confident in the data. The Bin Maps with links back to Field Maps help us understand more about quality differences and support us with traceability recording."

- P&K Vanderzaag Farms, Alliston, Ontario.





**From Harvest...**



**to Unloading...**



**Through the Grading Line...**



**to Precise Locations in Storage.**

# FEATURES:

- Creates a complete detailed data set allowing growers to locate where each load came from and where it is in storage.
- Fulfills many crop traceability requirements.
- Detailed field and bin maps provide transparency and build confidence with buyers and processors.
- Quality characteristics are easily traced from storage to specific areas in the field.
- Data may be used for efficiency analysis and reports.
- Suitable for all types of growers from seed to table stock to processing.
- Modular design to suit all types of small to large operations.
- Clean straightforward design allowing easy self-installation and set-up.
- Available as a stand-alone solution or in combination with a yield monitor system.
- Already own a Greentronics yield monitor? Order the RiteTrace system with an up-to-date Monitor and receive a rebate upon returning the original yield monitor console.





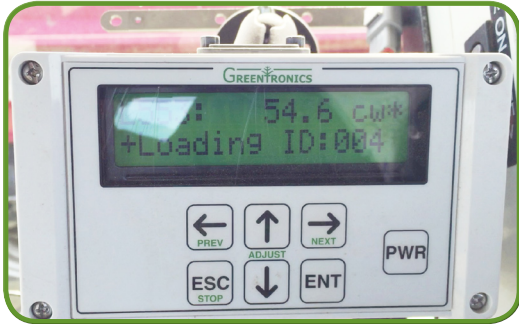
**In the Field:** Harvester Monitor communicates with the truck Transponder via a Scanner on the harvester. Records date and time as well as precise location for each loaded truck.



Truck Transponder



Harvester Scanner

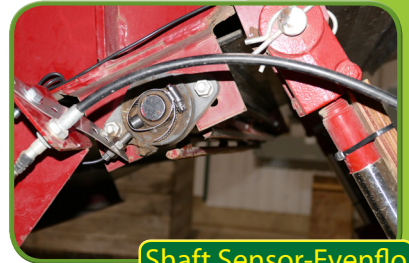


Shaft Sensor-Truck

**At the Storage:** Unloading - grading - conveying. The Receiving Monitor communicates with the truck Transponder via a Scanner mounted on the receiving conveyor. The Monitor records date and time for each load as it moves into storage.



Scanner of Evenflo



Shaft Sensor-Evenflo



Monitor on Evenflo

## In the Field:

A small Transponder on each truck communicates its ID with a Scanner on the harvester. The Scanner transmits truck ID and truck status to the Monitor in the cab. Truck status shows whether the truck is coming back empty or whether it is back to be topped up. Data logging starts as soon as a shaft sensor indicates the boom is running, and includes date and time as well as the location where the truck was loaded.

### Harvester Monitor in the Cab:

- Truck ID & Load Number
- GPS points from start to end for each load
- Date & Time from start to end for each load
- Field ID & Crop Name
- Detects each new truck & starts a new load
- Sets truck status on the Transponder to "Loaded", & stores load information in the Transponder
- Operator can "Flag" loads, which will raise an alarm when the load arrives at receiving

## At Receiving:

Shaft sensors on the truck and receiving conveyor (Evenflo in this case) detect when each conveyor is running. When both start running, the Monitor reads the data from the Transponder and records Truck ID, Load Number, Field ID, and whether the load was flagged. If the Field ID is not in the Monitor's approved list, or if the load was flagged, the Monitor sounds an alarm to indicate the truck should not be unloaded at this station.

The Receiving Monitor resets the Transponder status to "Unloaded". When the truck returns to the harvester, this will prompt the Harvester Monitor to begin a new load.

### RiteTrace Receiving Station Monitor:

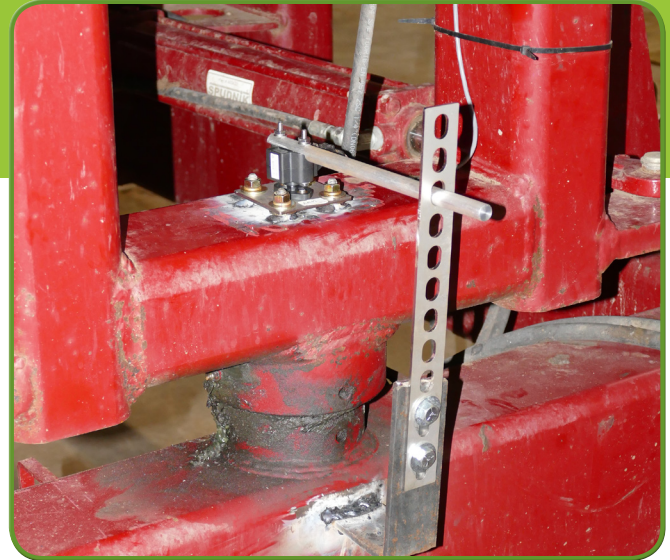
- Scanner on receiving conveyor mounted in line of sight with Transponders on trucks.
- Shaft sensor to indicate conveyor running status
- Monitor with USB flash drive to log data, & display truck ID, bulk box & receiving conveyor status.



**Storing & Piling:** The Bin Piler Position Monitor continually tracks the exact position of the end of the telescoping boom, logging X-Y-Z coordinates with date and time so a detailed bin map can be created from the recorded data.



**The RiteTrace Bin Piler Position Monitor** calculates the precise position of the unloading point from a known start-line by continuously measuring and recording data from five sensors mounted at various points on the piler.



**Potentiometer** with supplied brackets installed at boom pivot point of the piler. Provides precise degrees of rotation as the boom swings from side to side filling the storage bin.



**Accurate tilt sensor** to measure the tilt angle of the piler's boom.



**Shaft sensor** on the left indicates "Piler Running" status. The dual sensor on the right at the telescope drive shaft measures boom extension and retraction.



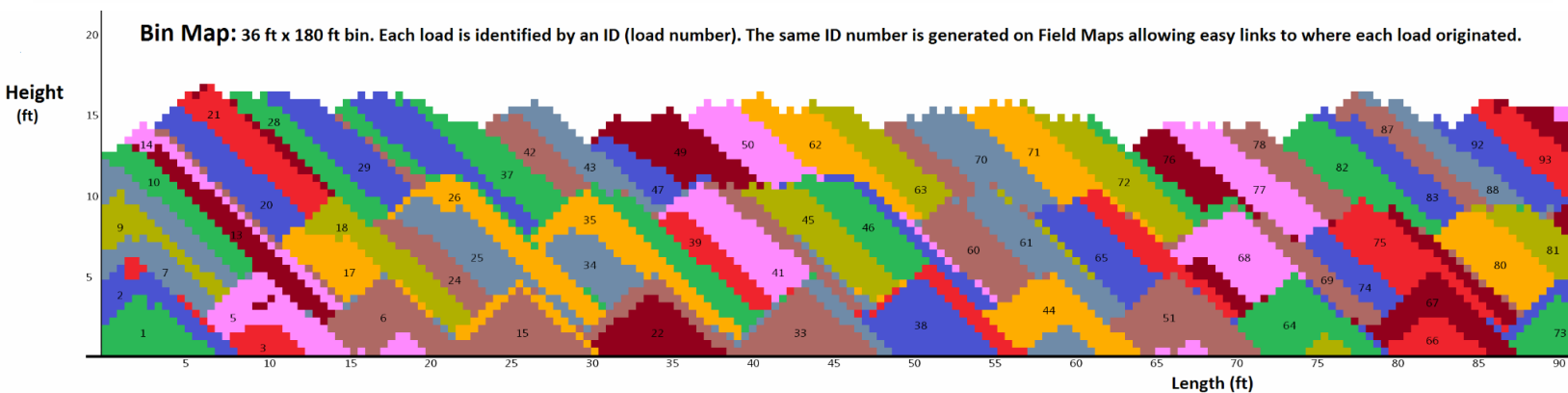
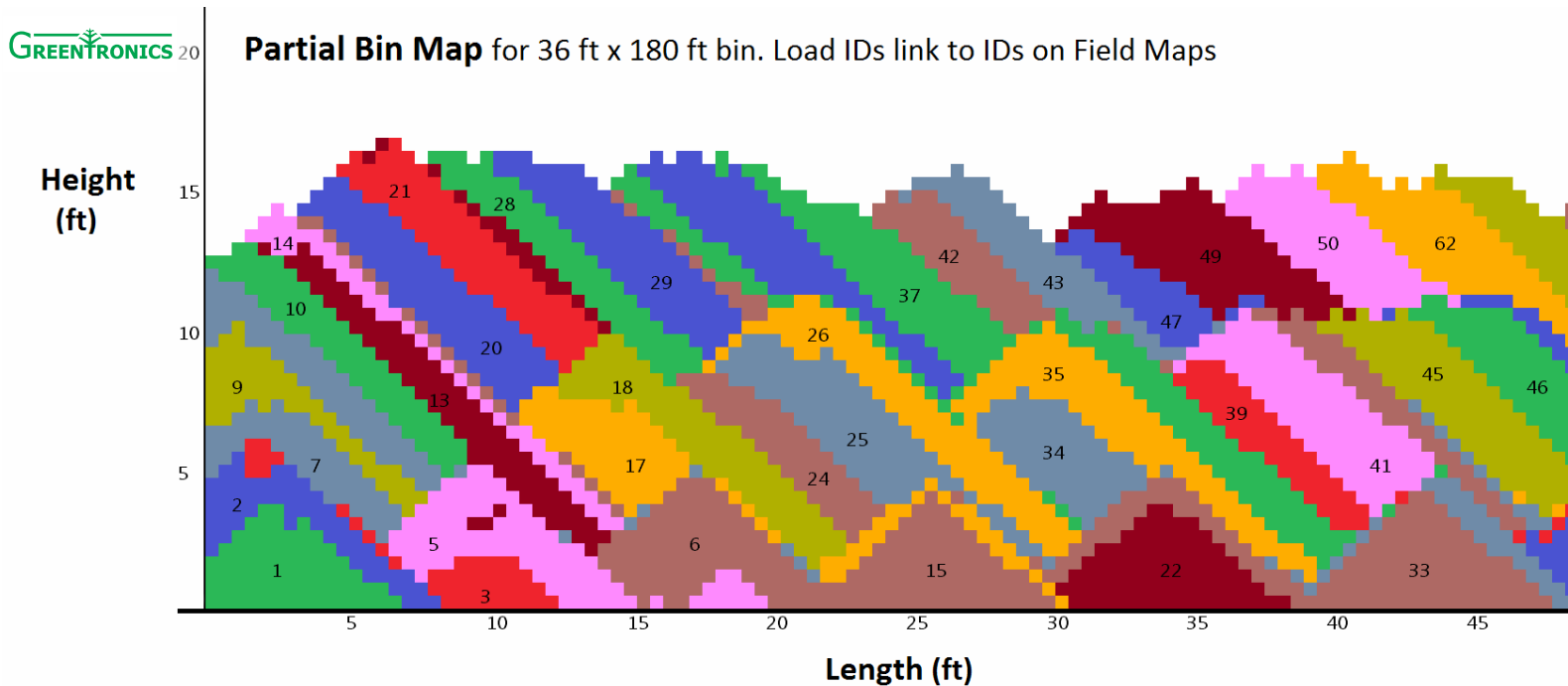
**Dual sensor** at wheel to measure travel distance.



**RiteTrace** fulfills many crop traceability requirements automatically by clearly identifying when and where each load was harvested. RiteTrace then creates an accurate time line from the field to the moment of unloading allowing correct sequencing of loads as they enter storage bins. Last, RiteTrace precisely calculates the X-Y-Z coordinates inside the storages for each load allowing growers to view and identify layers and linking these to individual loads all the way back to the field.

**Below: Bin Map with Info Window and Sample Efficiency Report.**

- In this 2D bin map, the small rectangles making up the bin map layers each represent an area of 5.6 inches by 5.6 inches
- Each layer is identified with the Load ID number allowing easy reference to Field Maps.
- A simple “click” on any layer brings up a summary Info Window for the representative load with statistics for date and time, field location, truck ID, and more depending on whether this is integrated with a yield monitor.
- Since each load is precisely tracked with date and time, data files are easily sorted to prepare a variety of reports on traffic patterns and efficiencies.







**Typical Field Map** identifying precise areas where each load was harvested. RiteTrace tags each load with a specific ID as well as with harvest date and time. The ID stays with each load in storage allowing quick linking from an area in the bin back to an area in the field.



**RiteTrace & RiteYield system**, integrated with John Deere 2630 on sweet potato harvester.

**Info Window** X

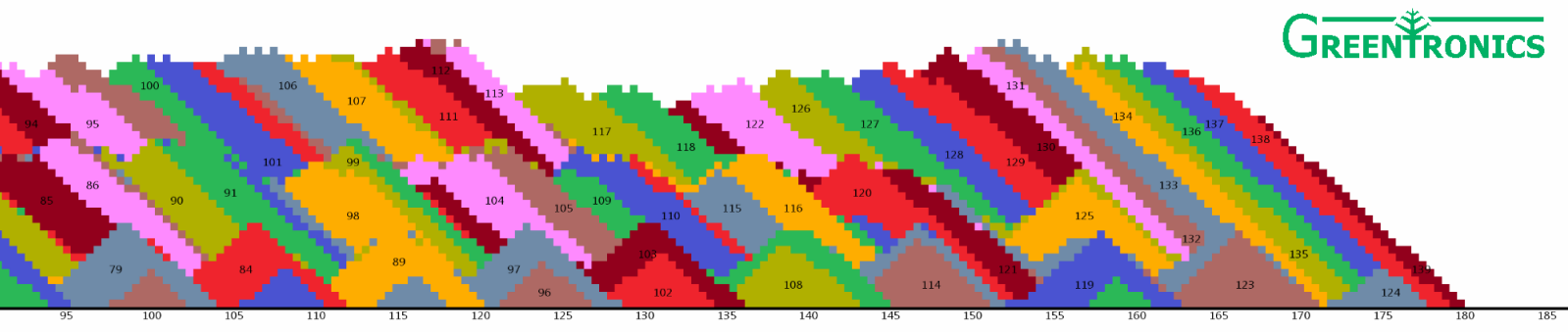
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Load Number	<input type="text" value="29"/>
Field Number	<input type="text" value="1"/>
Start Longitude	<input type="text" value="-79.8274273"/>
Start Latitude	<input type="text" value="44.2484932"/>
End Longitude	<input type="text" value="-79.8316305"/>
End Latitude	<input type="text" value="44.2520562"/>
Field Date/Time	<input type="text" value="2015-09-11-0753"/>
Load Weight	<input type="text" value="361 cwt"/>

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**Sample Efficiency Summary Report by Truck ID**

Date	Time	Field ID	Truck ID	Load ID	Transit time (minutes)
5-Sep-16	8:30	1	5	1	24.00
5-Sep-16	8:54	1	5	4	22.00
5-Sep-16	9:16	1	5	8	19.00
5-Sep-16	9:35	1	5	13	28.00
5-Sep-16	10:03	1	5	17	21.00
5-Sep-16	10:24	1	5	21	17.00
<b>Totals</b>				6	131.00
<b>Average</b>					22





## The Process:

- Install, set-up and calibrate all components.
- Confirm communication between the Scanners and Transponders.
- Confirm Data Logging occurs on the Harvester and Receiving Station Monitors.
- Confirm the Bin Piler Position Monitor is calculating its position correctly and logging position data.
- Harvest, transport, grade, and store your crop as you always do. All data will be logged and stored automatically without requiring intervention.
- At any time, or whenever harvest is completed, copy stored data to the ruggedized USB flash drives on the Harvester, Receiving Station, and Piler.
- Copy these three sets of data files to your office computer.
- Email all three sets to Greentronics. Greentronics will never share any records with anyone without your written permission.
- For a small fee (calculated and charged per harvested load), Greentronics will review your data, and join all three sets into one. We will return this file to you via email complete with a custom Windows-based Bin Viewer Program.
- Install the Bin Viewer program and copy the data set to the same folder on your hard drive.
- Start the program and choose which bin you want to view.
- View the bin map and click on any load to view load statistics and origin.
- Bin maps can be viewed and printed. Saved copies can be emailed.

## RiteTrace - Modular Design:

Components can be obtained to suit specific requirements for small to large operations.

### Rite Trace Receiving Station Monitor includes:

- Scanner on receiving conveyor mounted in line of sight with Transponders on Trucks.
- Shaft sensor to indicate conveyor running status.
- Monitor with USB flash drive to log data, and display truck ID, bulk box and receiving conveyor status.

### RiteTrace Transponders for trucks include:

- One Transponder per truck, to be mounted to left rear side.
- Shaft speed sensor for bulk box drive shaft to detect running status.

### RiteTrace Harvester Monitor includes:

- Scanner to mount on the boom side with line of sight to Transponders on the trucks.
- Shaft sensor for the boom drive shaft to detect when the boom is running.
- Monitor in the cab to display load ID, truck ID, and allow flagging a load.
- Records all of the details for tracing loads back to precise areas in the field.
- Ruggedized USB flash drive to transfer data.

### RiteTrace Piler Position Monitor:

- Five sensors measure each movement of the piler allowing very precise tracking of the unloading point over time.
- As each load passes over the piler, the X-Y-Z coordinates for where the load is deposited are stored and are later used to prepare a bin map clearly indicating to which loads different layers belong.
- Interface box where sensor cables connect to one circuit board.
- Monitor with USB flash drive to display piler running status, for set-up and calibration, and to store data.





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Visit [Greentronics.com](http://Greentronics.com) for dealer locations and contacts  
or call 519-669-4698 email: [info@greentronics.com](mailto:info@greentronics.com)

## RiteTrace Ordering Information

**RTH430 RiteTrace Harvester Monitor** - includes Monitor with ruggedized USB flash drive and RAM mount, Interface Box, boom Shaft Sensor and Scanner. One needed per harvester.

**RTR430 RiteTrace Receiving Station Monitor** - includes Monitor with ruggedized USB flash drive and RAM mount, Interface Box, boom Shaft Sensor and Scanner. One needed per receiving station.

**RTP430 RiteTrace Bin Piler Position Monitor** - includes Monitor with ruggedized USB flash drive and RAM mount, Interface Box, boom Shaft Sensor, Tilt Sensor, Boom Extension Sensor, Boom Swing Sensor and Piler Travel Sensor. One needed per piler.

**RTT430 RiteTrace Truck Transponder** - includes Transponder with mounting bracket and Shaft Sensor. One needed per truck.

**All items above include sufficient wiring to suit most applications,** installation and operator's manuals. GPS receiver not included. Installation not included and to be arranged by purchaser. One year limited warranty and technical support via phone, fax or email.