Operator's Manual

THE LEGEND

AGTRON
ENTERPRISES • INC

Manual Version 4.1.3/2.1.3
Created October 2021

Congratulations on purchasing your new Agtron Legend Wi-Fi blockage and flow monitoring system! The technology incorporated into The Legend system is composed of over 35 years of research and development, product improvements, and customer feedback. The design, development, and production of your new Legend system was performed by Agtron's in-house team of professional engineers, product specialists, and production experts in our state-of-the-art production facility in Saskatoon, Saskatchewan. We only use high-quality materials in the production of every component as we strive to provide the most reliable products with the longevity expected of a Canadian Made product.

Follow us on these social media platforms to gain access to product training, product updates, news, promotions and more!

Table of Contents

1. Table of Contents…….. 3
2. Important…….4
3. Introduction…….5
4. Warranty……. 6
5. App Setup ……... 8
Seeder setup……... 9
GPS setup……... 9
Tower Wizard…….10
Save Settings…….11
6. Wifi Setup……12
7. App Operation……..14
Seed Rate Mode……15
High/Low Rate Alarms…….16
Blockage Mode…….17
Sensitivity Wizard…….17
Section Aware Mode…….18
Advance Rate Tracking…….19
Alarm Screen…….19
Faulty Sensor…….19
ECU Software Update……...20
8. Screen Legend……...21
Home Screen…….21
Section View Screen…….22
Seeder Setup Screen……..23
Section Setup Screen…….24
GPS Setup Screen……..25
Loop Sensor History Screen……..25
9. Wifi Troubleshooting…….26
10. General Troubleshooting……29
11. Care and Maintenance……31
12. Appendicies……32
14. **Installation Instructions**……...……32
13. Appendices…….39
Appendix A – Legend Basic Parts List…..……39
Appendix B – Legend Advanced Parts List…..……40
Appendix C – Seed Sensor Sensitivity Settings……41
Appendix D – Version Compatibility Chart…..……42
Appendix E – Seedcount log instructions……..43

IMPORTANT

STOP!

Record the serial number of your ECU here for future reference. It is located on a yellow sticker fixed to the ECU itself and will look like this:

Serial # _____

Wi-fi PASSWORD : To connect your ECU to the display/Android Tablet, a Wi-fi password may need to be entered. The Wi-fi password will be in this format: *LEGEND_AP_xxxxxxx* → where the *x*'s will be your ECU serial number. Copy your Wi-fi password below for future reference.

Wi-fi Password : _____

The LEGEND App : All Samsung Android tablets purchased directly from Agtron Enterprises will have the most recent version of The Legend app pre-installed. If you are using your own Android tablet you will need to download THE LEGEND app directly from the Google Play Store. Tap on this icon to open the Google Play Store and search for Agtron Legend, then choose the Legend Basic or Legend SA (for the advanced version). See page 5 to find out what app version to use with your ECU.

Introduction

THE LEGEND

THE LEGEND by Agtron Enterprises is a rate and blockage monitoring system that uses flow-through infrared optical sensors to measure flow rates and detect partial or full blockages in the airstream. Each LEGEND sensor sends flow data to a central Electronic Control Unit (ECU) which communicates wirelessly via its own Wi-Fi signal to an Android tablet mounted inside the tractor. The information from the ECU is displayed on the tablet using an Android App which can be customized according to the users seed type, seeding conditions, preferences and seeding equipment. The information displayed gives users real-time visibility into the performance of their seeding operation.

THE LEGEND BASIC ECU

THE LEGEND BASIC ECU allows users to monitor 2 separate loops of up to 120 seed runs and 120 fertilizer runs for a total of 240 monitored runs. **Use app version 4.1.3 with the Legend Basic ECU.**

THE LEGEND ADVANCED ECU

The LEGEND ADVANCED ECU has all the functions of the Basic ECU with the added the capability of tying into an air-carts section control features, allowing the user peace-of-mind knowing sections are turned on or off when they are supposed to be. **THE LEGEND ADVANCED ECU** still has the capability of monitoring 240 total runs but those runs can be split into 3 separate loops. **Use app version 2.1.3 with the Legend Advanced ECU.**

Warranty

LIMITED WARRANTY

The purchase of all products from Agtron Enterprises, as related to the operation of The Legend WIFI (system), carry with it a Limited Warranty which covers all products from defects in workmanship and/or materials, for a period of 3 years from the date of purchase. All costs related to troubleshooting, removal, installation, labor, and shipping are the responsibility of the customer. The terms and conditions of this Limited Warranty are listed below and offered to the original purchaser only. This Limited Warranty is non-transferrable.

Terms and Conditions

Products that have been modified or altered from their original condition, whether to improve, repair, or change the functionality of the system or not, will void the warranty of that product and all products used in the system, at the discretion of Agtron Enterprises.

Product damage from neglect, accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, power surges, excess supply voltage, incorrect supply voltage, radiation, electrostatic discharges including lightning, other external forces and impacts, are not covered under the Limited Warranty.

Warrantied products must still be owned by the original purchaser at the time of failure, and claim, to be covered under the Limited Warranty.

Warrantied products must have been installed and maintained as per provided installation and maintenance instructions for the Limited Warranty to be valid.

Agtron Enterprises takes no responsibility or accepts any liability for injuries, damages, or losses due to the use, misuse, abuse, or failure of this equipment, or the subsequent consequences of said failure. It is the responsibility of the end-user to understand the operation and functionality of the system.

Agtron Enterprises reserves the right to change the terms and conditions of the Limited warranty at any time.

Agtron Enterprises Limited Warranty Remedy Commitment

Products ruled defective by Agtron Enterprises within the stated warranty period, will be replaced or repaired, subject to meeting all Limited Warranty terms and conditions.

Submitting A Limited Warranty Claim

1. Contact your local Agtron Dealer and advise of the part numbers you wish to make a warranty claim on. You may be asked to provide proof of purchase and that you are the original owner of the purchased products.

2. Your dealer will contact Agtron Enterprises to obtain an RMA (Return Material Authorization) which will include the details for shipping product back to Agtron. All shipping expenses are the responsibility of the customer.

3. Once the product is received by Agtron, it will be tested to determine if warranty applies.

4. If all warranty conditions are met Agtron will replace defective parts and ship back to the user.

5. In some instances, Agtron Enterprises may decide to replace assumed defective parts prior to warranty verification, with either rebuilt or new parts. These parts are deemed “lender” parts. In these instances, Agtron Enterprises will charge the user for the cost of the lender parts with the agreement they will be returned within 30 days. If lender parts are not returned within 30 days, Agtron Enterprises reserves the right to deny refund of the lender parts. Upon verification of warranty status for assumed defective parts, Agtron will replace and ship new or rebuilt parts to the user.

App Setup

Figure 1.0

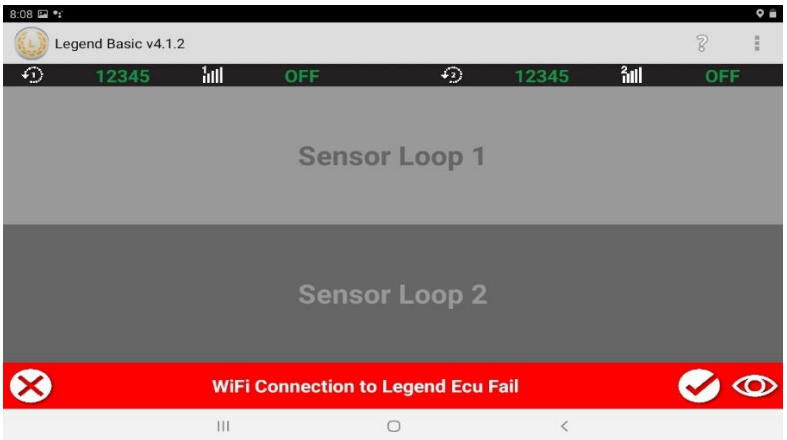


Figure 1.1

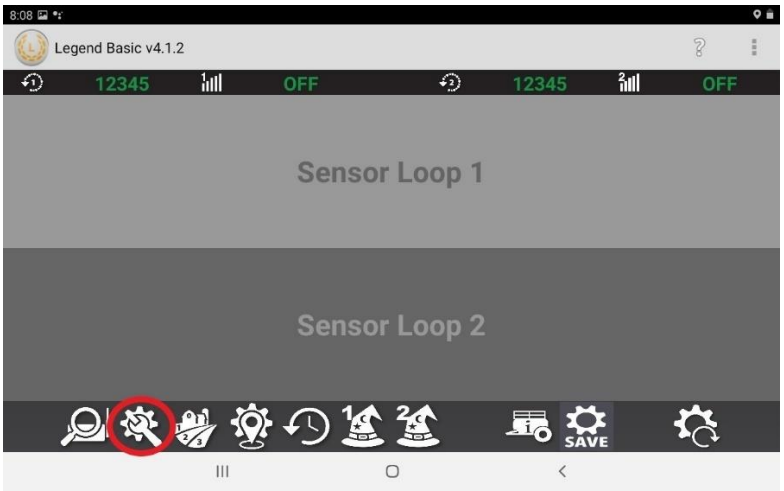


Figure 1.2

Some app features and fields are intended for tech-support purposes only. This operator's manual contains all the information a user needs to operate The Legend blockage and flow monitoring system.

Scan the QR code in Figure 1.0 to view a quick setup video. The video is compatible with app versions 4.1.1, 4.1.2, 4.1.3, 2.1.1, 2.1.2, 2.1.3.

Note: Setup of the Legend Basic, (App 4.1.X) and the Legend Advanced (App 2.1.X) versions are identical. The differences in most screens within the app is the additional loop in the Advanced version. This operator's manual depicts images of the Legend Basic version, except where features are exclusive to the Legend Advanced version.

1. The Legend app must be setup and calibrated using the unique settings and parameters of each user. Upon first startup and/or prior to connecting the app to the Wi-Fi on the Legend ECU, it is normal to see an error message at the bottom of the screen as in figure 1.1. **Tap the checkmark to clear the errors.**

2. Select the icon on the bottom of the screen as in figure 1.2 to enter the seeder setup screen.
3. As in figure 1.3, enter the number of sensors installed on the implement into the "Loop 1 Runs" and "Loop 2 Runs" fields. Tap the < button on the tablet to hide the number pad.
4. If you are using Legend sensor part numbers AGST22E, AGST24E, AGST25E, AGST30E, AGST32E, or AGST50E, ensure the "Loop 1 Type" and "Loop 2 Type" setting is "Optical Single" as in figure 1.3. Most users will use this setting.

App Setup

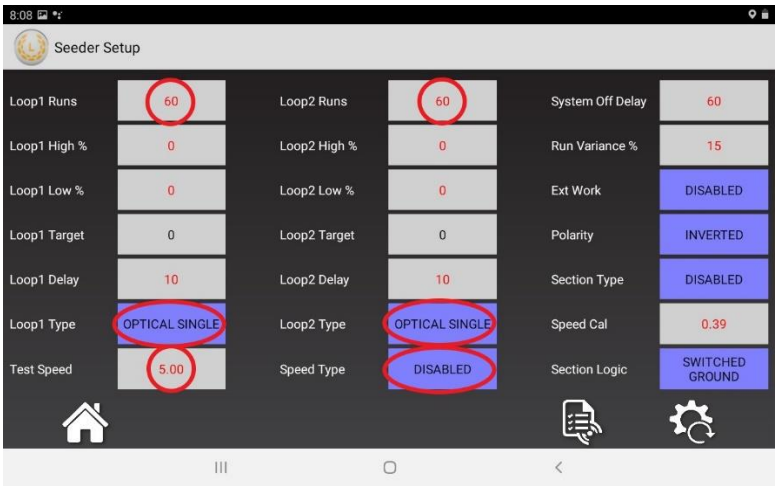


Figure 1.3

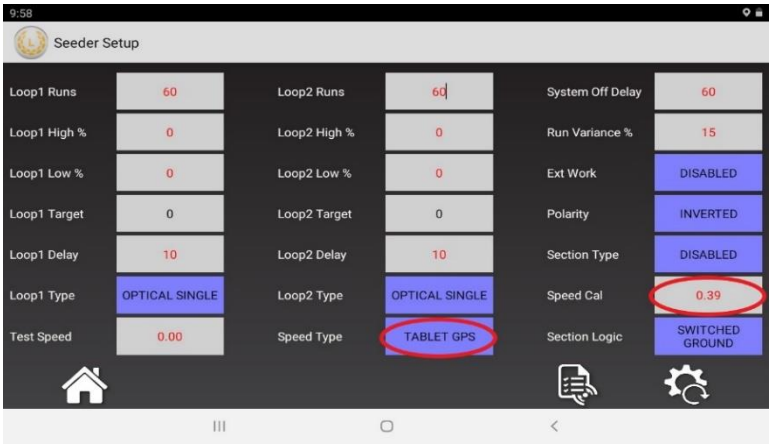


Figure 1.4

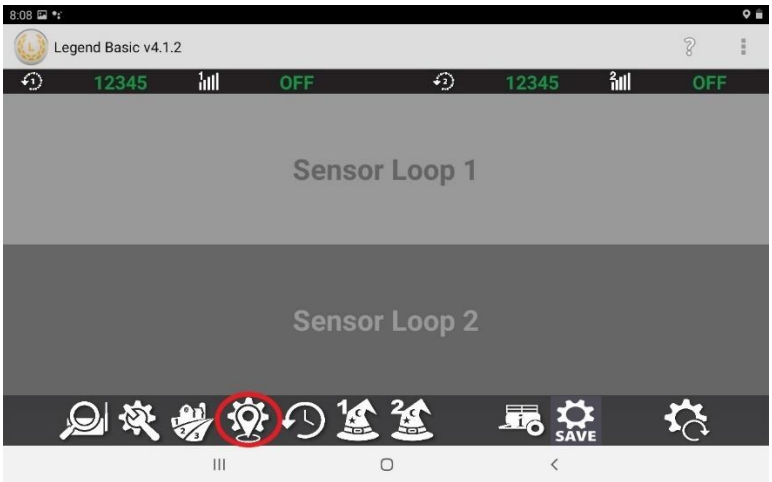


Figure 1.5

5. The Legend app must have a speed input to calculate a seed rate. Your speed input options are GPS, speed sensor, or to manually enter the speed you are travelling while seeding. *If you seed at a relatively constant speed, it is recommended to manually enter the speed you are seeding at.*

6. For manual speed entry: In the "Test speed" field, enter your seeding speed. Ensure the "Speed Type" field shows "Disabled" as in figure 1.3.

7. When using GPS as your speed input, tap the "Speed Type" field until it reads "Tablet GPS" as in figure 1.4.

8. When using a speed sensor, the value to enter into the "Speed Cal" field is the circumference of the wheel or shaft.

9. Tap the Home icon

10. Enter the GPS setup screen by tapping on the icon as in figure 1.5.

App Setup

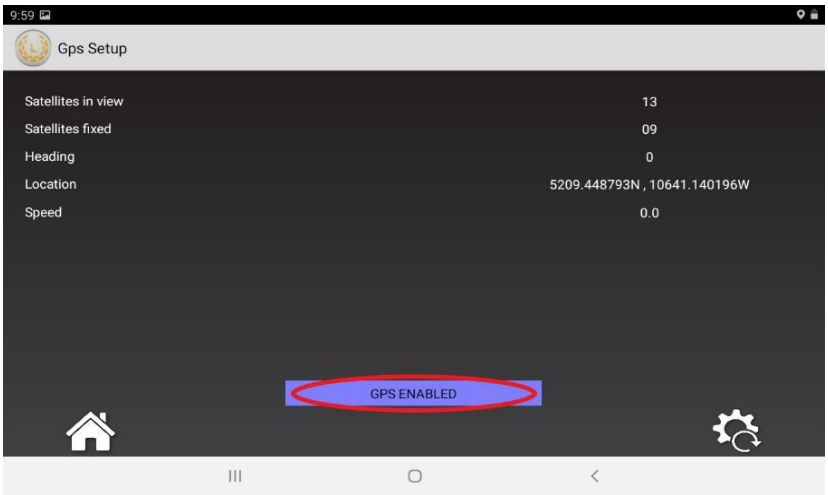


Figure 1.6

11. Ensure the blue box reads “GPS Enabled” if using GPS as your speed input. Tap the blue box to toggle it from disabled to enabled as in figure 1.6.

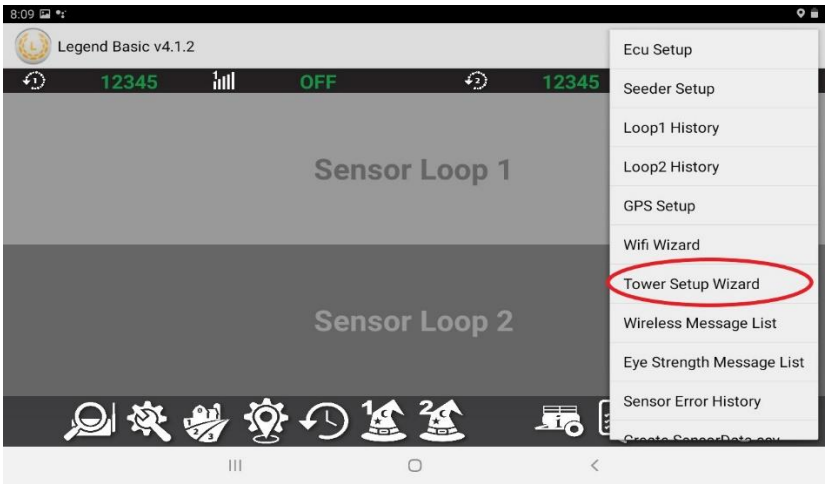


Figure 1.7

13. We will now configure your sections/towers/manifolds for each loop according to how the sensors have been installed on your implement. Tap on the three dots in the top right corner to open the menu, then choose “**Tower Setup Wizard**” as shown in figure 1.7.

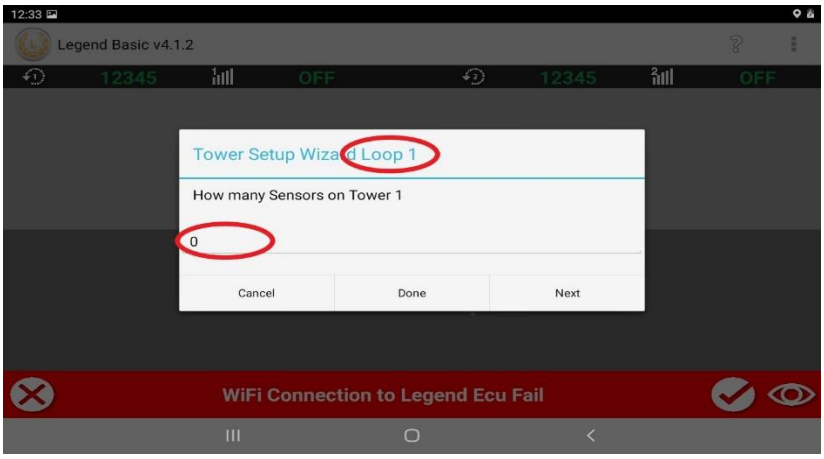


Figure 1.8

14. See figure 1.8. Begin entering the number of sensors on each loop 1 tower, tapping next until all towers have been entered on loop 1. Tap “Done” after the last tower on loop 1. Continue doing the same for loop 2. Tap “Done” when finished.

App Setup

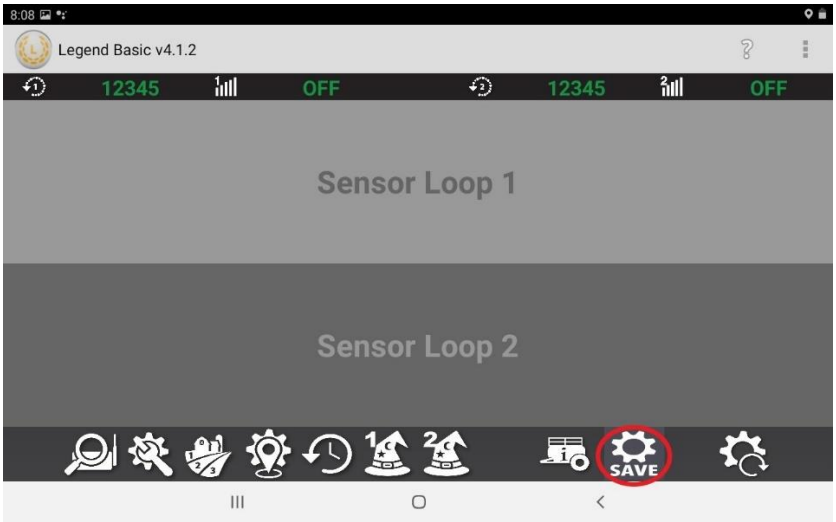


Figure 1.9

15. Now that you have entered all the basic specifications for your seeding setup, it is recommended you save the setting you've entered by tapping the save settings icon as in figure 1.9.

16. Next we will connect the ECU Wi-Fi to the Android tablet.

Wifi Setup and Connection

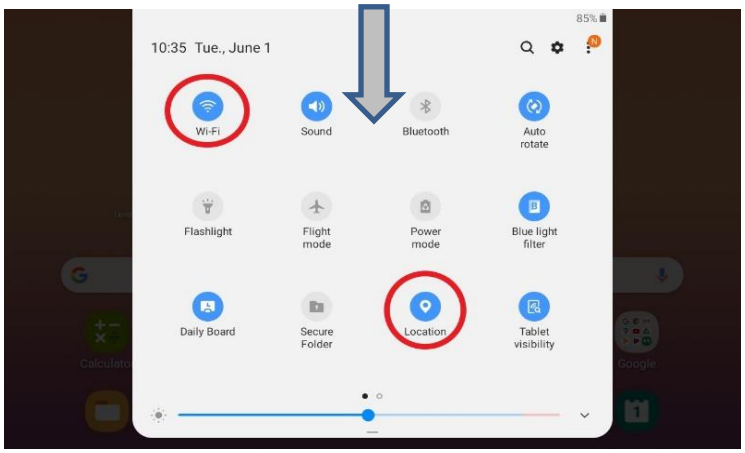


Figure 2.1

1. Swipe down from the top of the tablet to open the tablet quick menu. Swipe down again to expand it as in figure 2.1.

2. Ensure the tablet **Wi-Fi AND Location Services** are turned on and highlighted BLUE as in figure 2.1. Make sure no other Wi-Fi networks are connected to the tablet. **It is recommended to "forget" all other networks where a password has been entered on the tablet.**

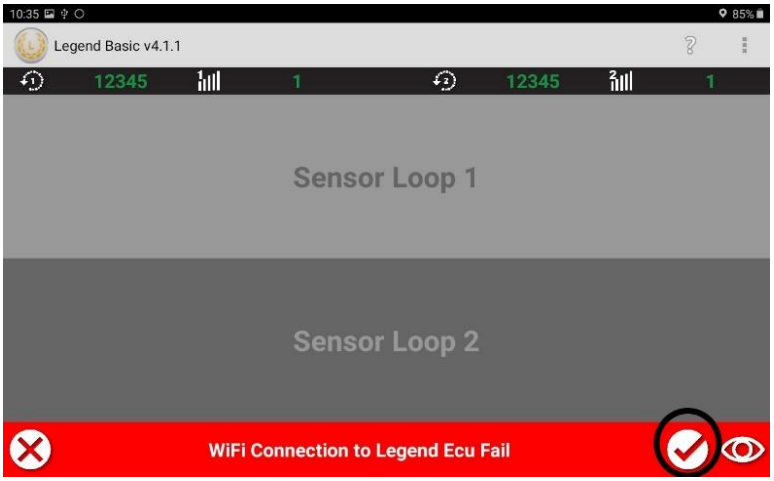


Figure 2.2

3. Swipe up to remove the tablet menu. Open The Legend App on your tablet and tap the checkmark to clear the warning messages as in Fig 1.2. **Ensure the tablet and ECU are within 30ft of each other and the ECU antenna has an unobstructed view to the tablet.**

4. Connect your tablet to the Legend ECU. To view the YouTube video on how to setup and connect the LEGEND ECU Wi-Fi to the tablet, scan the QR code in Fig 1.3 or go to https://www.youtube.com/watch?v=Y1fU19B8goM
Otherwise, continue to step 5 for instructions on how to connect the tablet to the Legend ECU.

Figure 2.3

Wi-Fi Setup and Connection

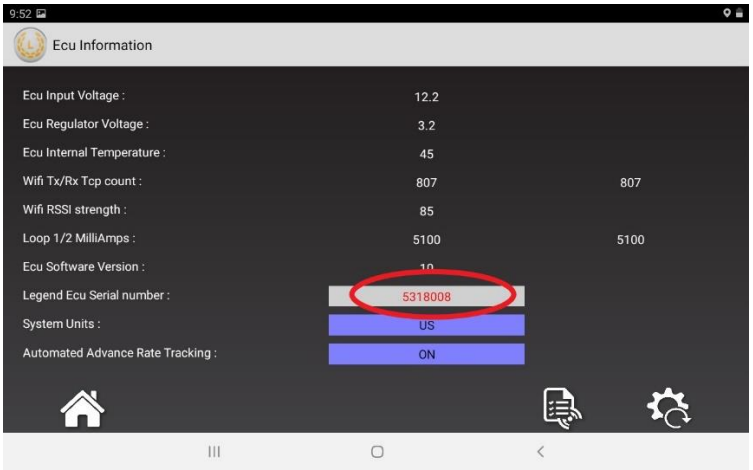


Figure 2.4

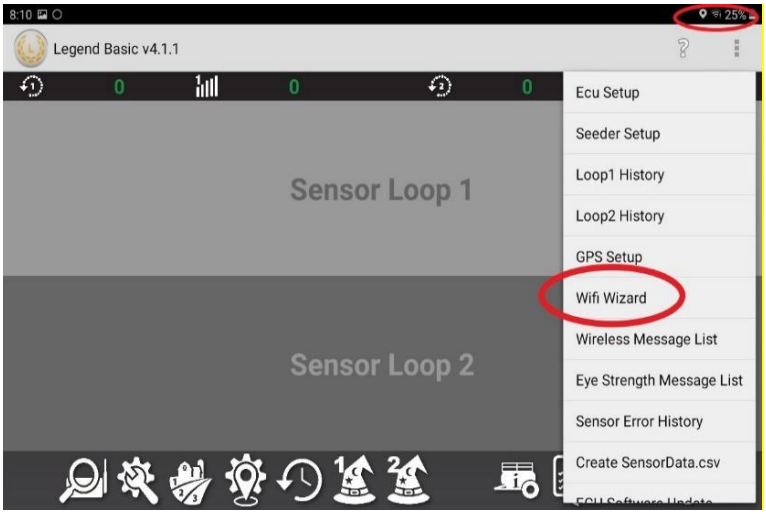


Figure 2.5

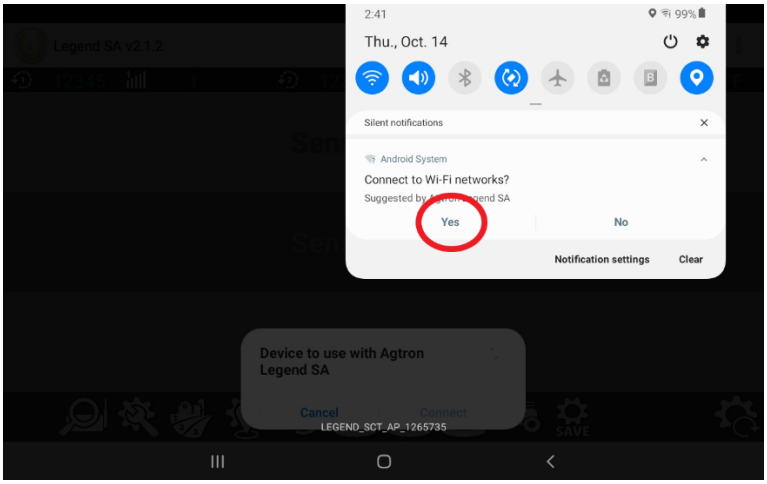


Figure 2.6

5. In the Legend app, tap on the three dots located in the top right corner of the app. Then tap on "**ECU Setup**". Enter the serial number into the field labelled "Legend ECU Serial Number" as in fig 2.4. (**Refer back to page 4 to find your ECU serial number)**

6. Tap the Home button.

7. Tap on the three dots in the top right corner and select "Wi-Fi Wizard as in Fig 2.5.

8. You will be asked if you want to automatically connect to the Legend ECU. Tap "**Yes**"

9. It may take a few minutes for the tablet to connect to the ECU. You will see this symbol in the top right corner of the tablet when the ECU is connected to the tablet, as in Fig 2.5.

If the ECU does not connect within a few minutes, proceed to "troubleshooting ECU WIFI connection" in the troubleshooting section of this manual.

10. Certain tablet versions will prompt you to answer the question as in figure 2.6. Check "Yes".

Operation

Figure 3.1

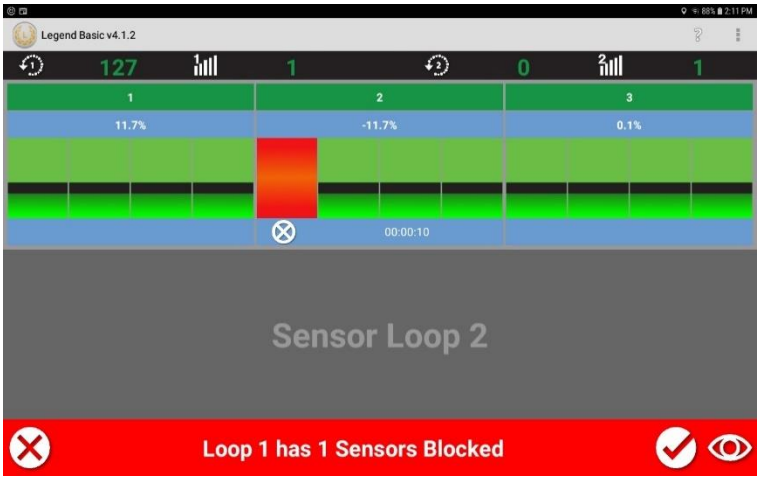


Figure 3.2

There are 3 modes of operation:

- **Seed Rate Mode** – Used when monitoring seed rate AND blockage.
- **Blockage Mode** – Used when monitoring blockage only.
- **Section Aware Mode** – Available when using an air-cart equipped with section control on The Legend Advanced version.

1. The home screen (Figure 3.1 and 3.2) will display the information needed for the user to determine if their seed/fertilizer is being applied as intended. **See page 21 for the Home Screen legend.** Each vertical bar represents an installed Legend sensor, with loop 1 (typically the seed runs) on top and loop 2 (typically the fertilizer runs) on the bottom. The animated, black horizontal bar moves up indicating the flow of product.

2. During normal operation the vertical bars can be green (normal flow) or Red (blocked or partially blocked). When there is a blockage, or a partial blockage, the green bar will turn red and an audible alarm, along with a red notification banner will appear on the screen as in Figure 3.2. Tap the white checkmark to clear the warning banner.

Operation

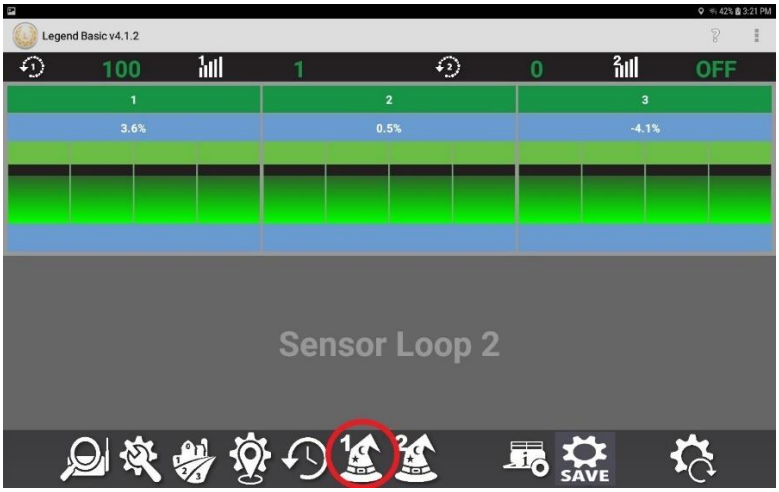


Figure 4.1

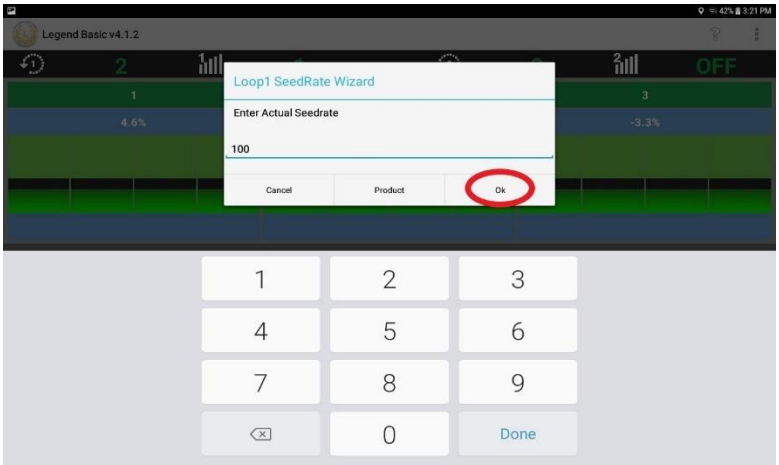


Figure 4.2

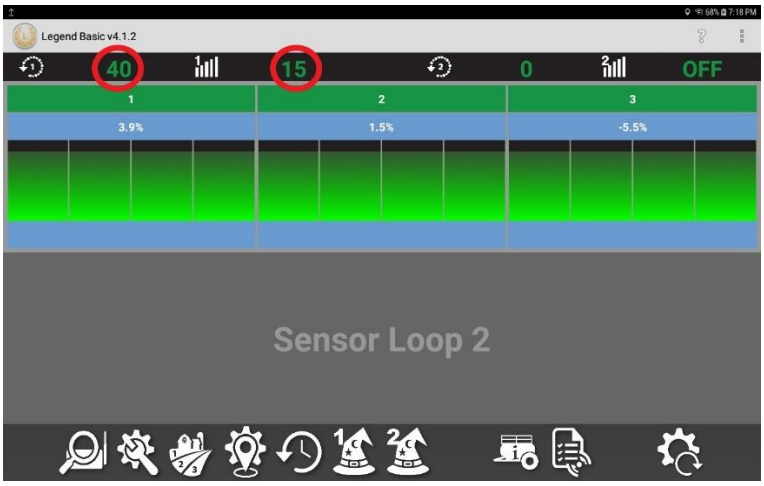


Figure 4.3

Seed Rate Mode

1. Seed rate mode utilizes the **SeedRate Wizard** function to enter your flow data for each loop. This will allow you to set high and low seedrate thresholds in which the high and low-flow alarms will be based on. Before you begin to enter your rate of application the following conditions must be met:

- Product must be flowing through the sensors.
- You must have an active speed source enabled in the seeder setup screen (test speed, GPS, or speed sensor).
- All sensors must be green on the home screen. (If you have a red sensor, adjusting the sensitivity to 1 should turn it green unless it is blocked).

Note: If multiple products are present in a single airstream, the SeedRate Wizard may not work correctly.

Once these conditions have been met, tap the icon as shown in figure 4.1. This opens the SeedRate Wizard for loop 1.

2. Enter your actual seedrate as in figure 4.2 and press ok.

3. You will see the green number in the upper left (#40 circled in red in figure 4.3) change to the value you have entered. This number will change as the sensors see small or large fluctuations in product flow.

4. Proceed to the next section, “blockage mode” on page 17 to find out how to set your blockage sensitivity (#15 circled in red in figure 4.3).

Operation

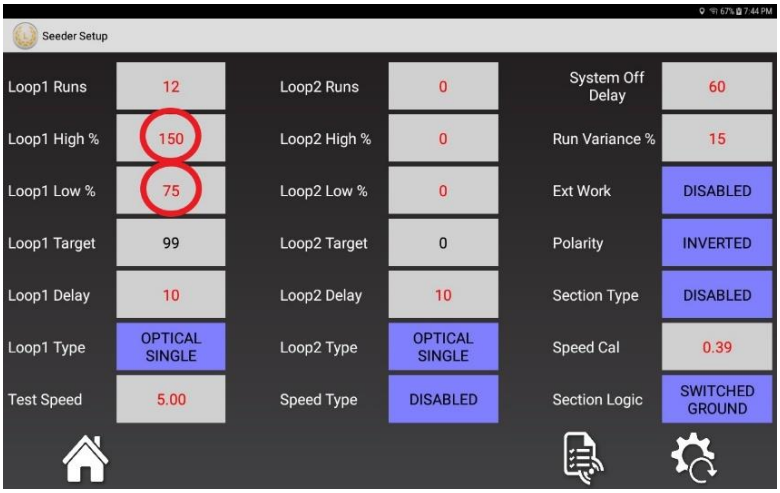


Figure 4.4

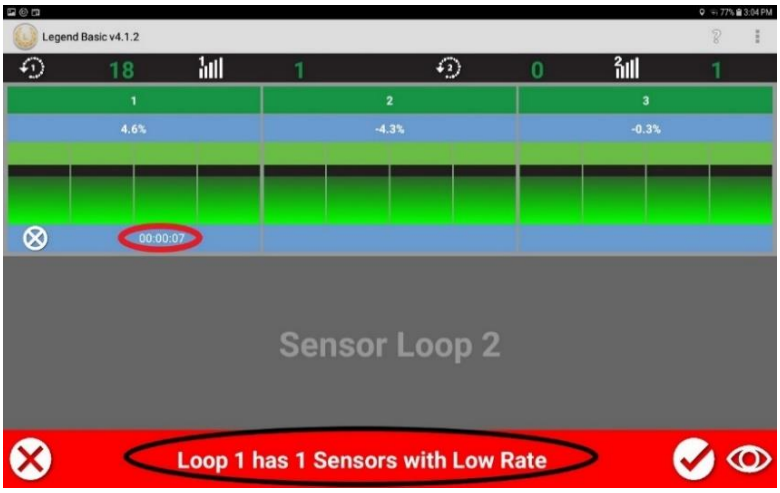


Figure 4.5

5. Enter the seeder setup page to set your high and low % for each loop in your system as in figure 4.4. It may be necessary to adjust your percentages slightly if you are receiving false alarms as all seeding equipment has different flow variances. (See the troubleshooting area on page 31 and the FAQ area in the app for more information on dealing with high and low-rate alarms).

We recommend entering a high and low value of 50%. If you are having problems with these values, see the troubleshooting section on page 30.

6. When the flow rates of your seed and fertilizer runs rise above or drop below the thresholds set in the seeder setup screen, you will see a red banner and hear an audible alarm. A timer will show on all sections with runs that have high or low rates as in figure 4.5.

7. See page 19 for information on the Advance Rate Tracking feature.

Operation

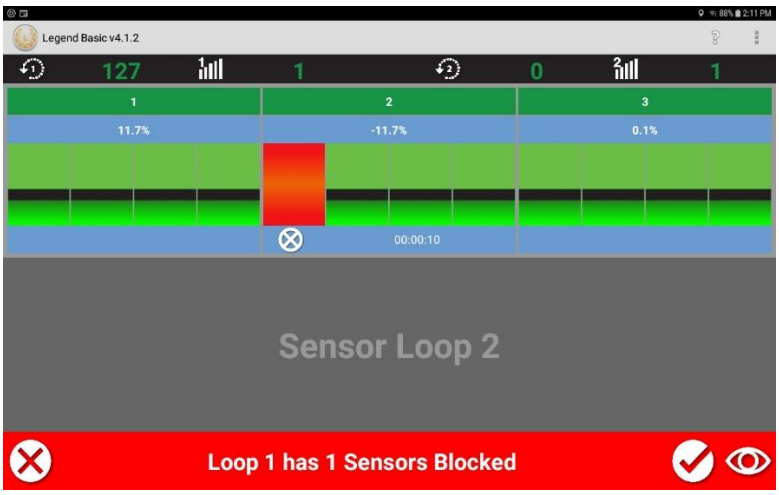


Figure 5.1

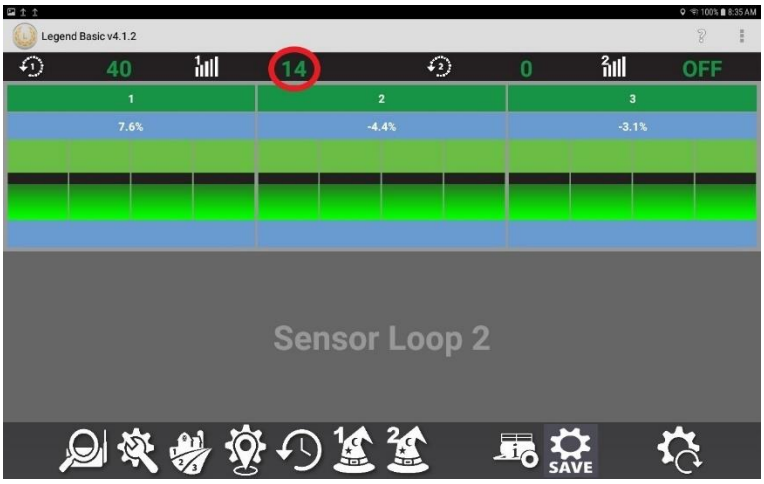


Figure 5.2

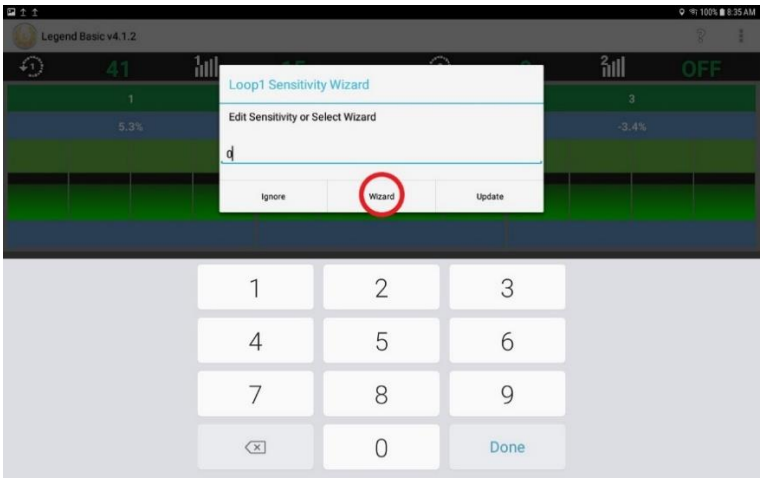


Figure 5.3

Blockage Mode

1. Seed rate mode utilizes the **Sensitivity Wizard** function to set your blockage sensitivity. For each sensitivity setting there is a corresponding number of seeds per second the Legend sensors must see to not alarm the user. When the flow of seed or fertilizer drops below the threshold for a given sensitivity, a warning banner and an audible alarm will notify you of a blockage as in figure 5.1.

2. **Before you run the Sensitivity Wizard the following conditions must be met:**
   - Product must be flowing through the sensors.
   - All sensors must be green on the home screen. (If you have a red sensor, manually adjusting the sensitivity to 1 by tapping on the green sensitivity number as in figure 5.2, should turn it green unless it is blocked).

3. To run the sensitivity wizard, tap the green number as in figure 5.2.

4. Tap "Wizard" as in figure 5.3. The sensitivity will automatically be set based on the seeds per second the sensors are currently seeing.

5. Repeat for the second loop if necessary.

6. Appendix C shows some sensitivity values and the corresponding seeds per second values.

Operation

Figure 5.4

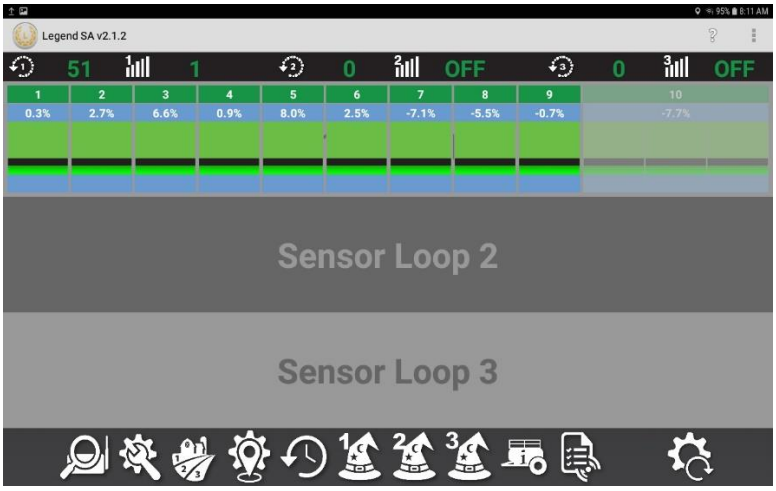


Figure 5.5

Section Aware Mode

Note: Section Aware mode is only compatible with the Legend Advanced ECU. Air Carts capable of section control will need the air cart harness installed, part# AGD1725.

1. Section aware mode will mute blockage alarms when a section on your air-seeder is disabled.

2. When a section is disabled you will see the affected sections shaded over on your home screen as is figure 5.4. When the background colour is red as in figure 5.4, no product flow is being detected by the sensors. When the background colour is green as in section 10 figure 5.5, product flow is being detected by the sensors.

Note: The loop delay setting in the seeder setup screen will affect the lag time from when you see sections shade over as this setting tells the Legend system how long it takes product to flow from meter to the Legend sensor.

Operation

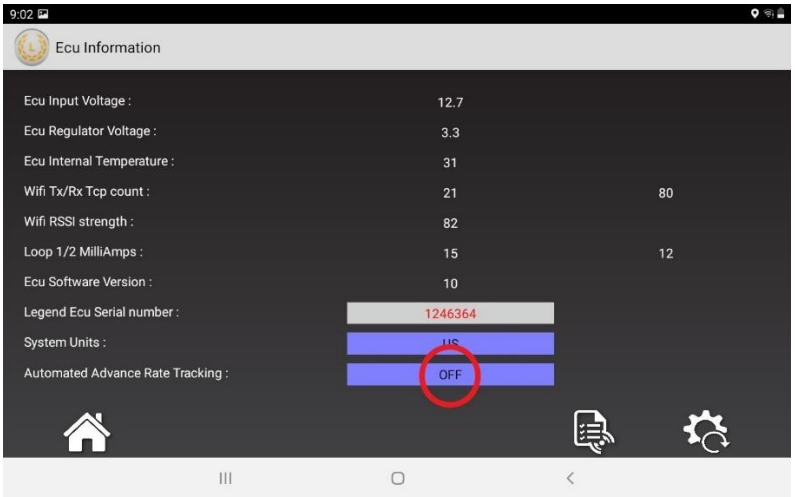


Figure 6.1

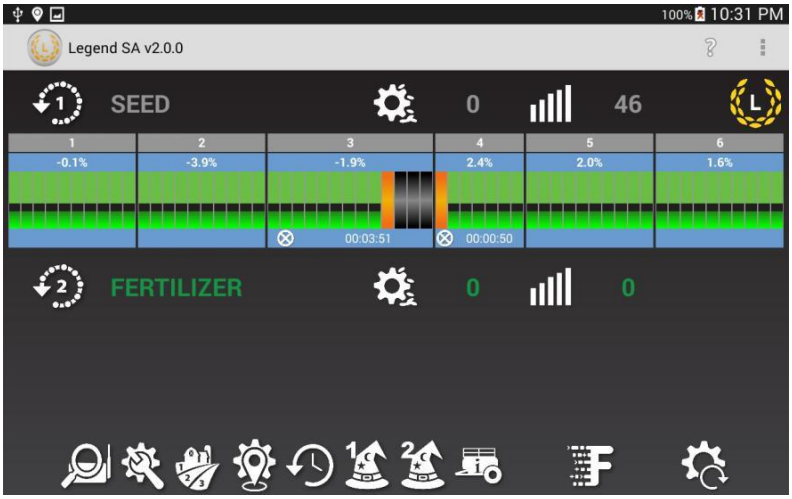


Figure 6.2

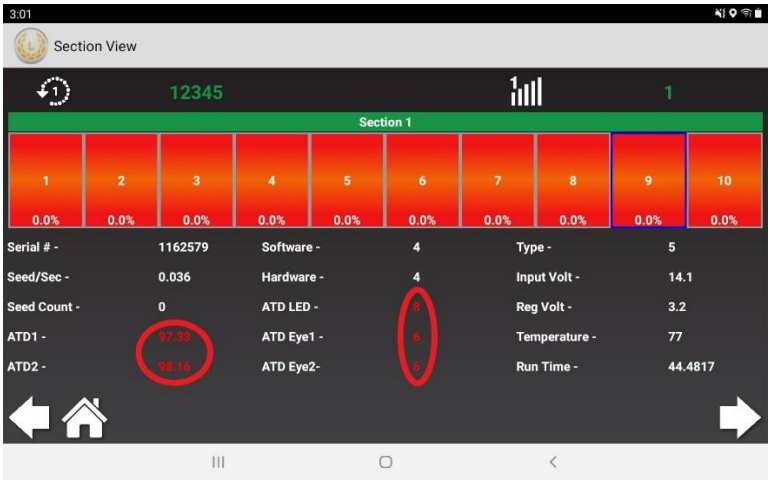


Figure 6.3

Advance Rate Tracking

1. The automated advance rate tracking feature allows for automatic calibration of your seed sensors every 5 minutes. The SeedRate Wizard and Sensitivity Wizard will run automatically with this feature turned on if there are no warning messages.

2. Open the ECU information page and tap the blue bar to toggle Advance Rate Tracking on and off as in figure 6.1.

Alarm Screen

1. Figure 6.2 shows a situation where there are multiple cables disconnected. The 3 sensors in between the orange bars are not receiving power at all and show up as black. Tap on the orange bar to enter the section view screen then find the serial number of the last sensor green sensor. Start examining wiring connections at this sensor.

Faulty Sensor

1. If you suspect a sensor may be faulty, tap the sensor on the home screen to enter the section view screen. Figure 6.3 shows an example of what will be displayed when a sensor is faulty. The numbers circled and shaded red indicate a faulty sensor.

Operation

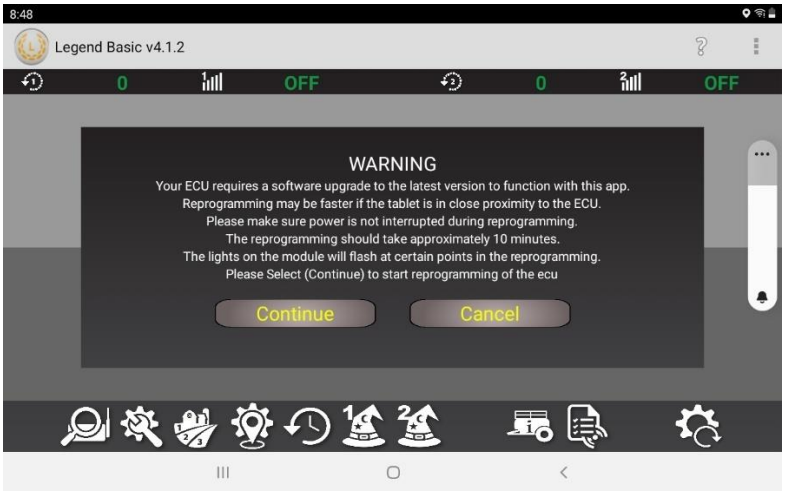
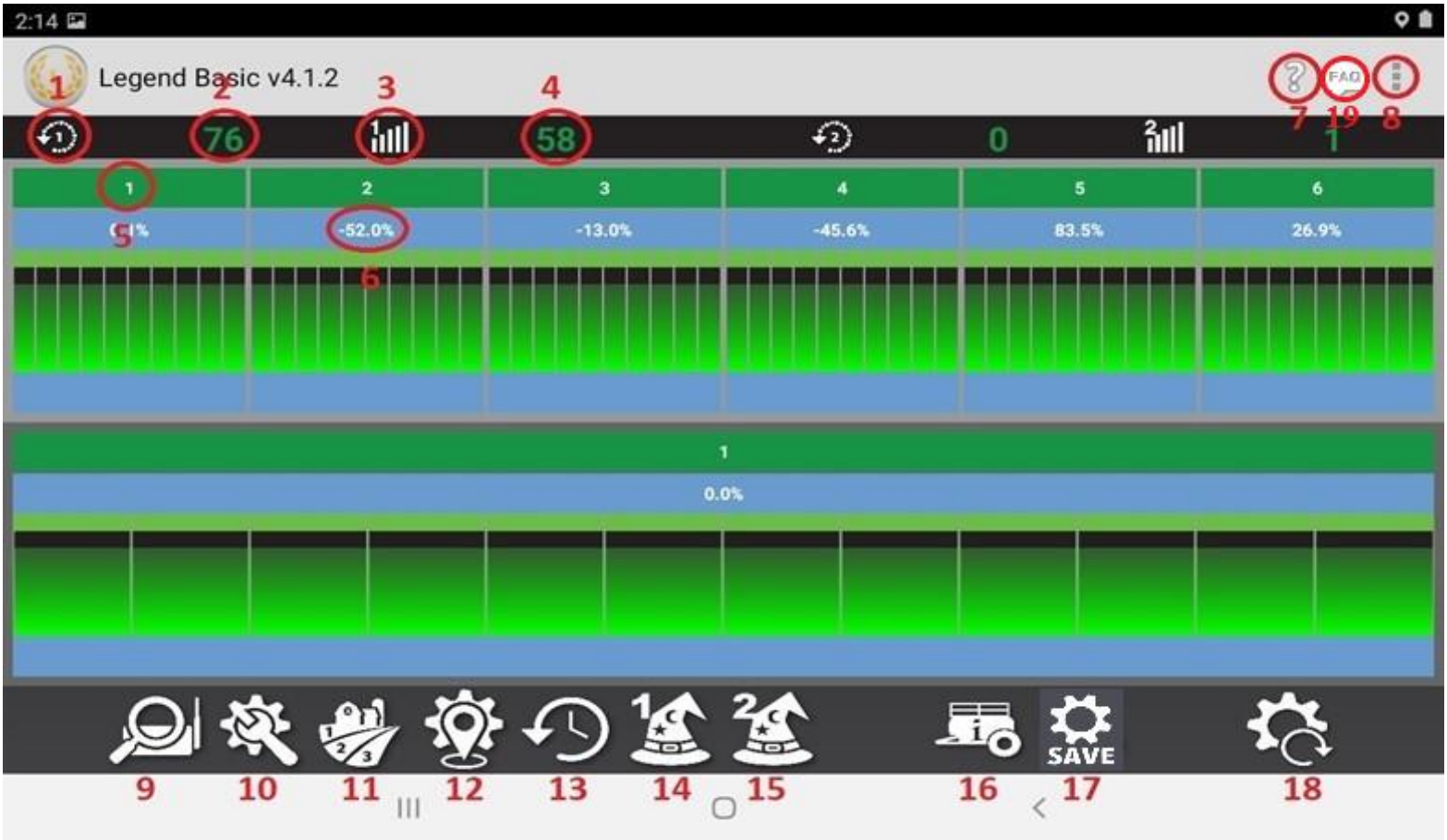


Figure 7.1

ECU Software Update

1. If you are using a Legend App version that is not compatible with the software on your ECU, you will receive a message saying the ECU software needs updating as in figure 7.1. Unless you know for certain your ECU has the necessary bootloader software installed to perform the update, **DO NOT CONTINUE** to update. Call 1-800-667-0640 for assistance.

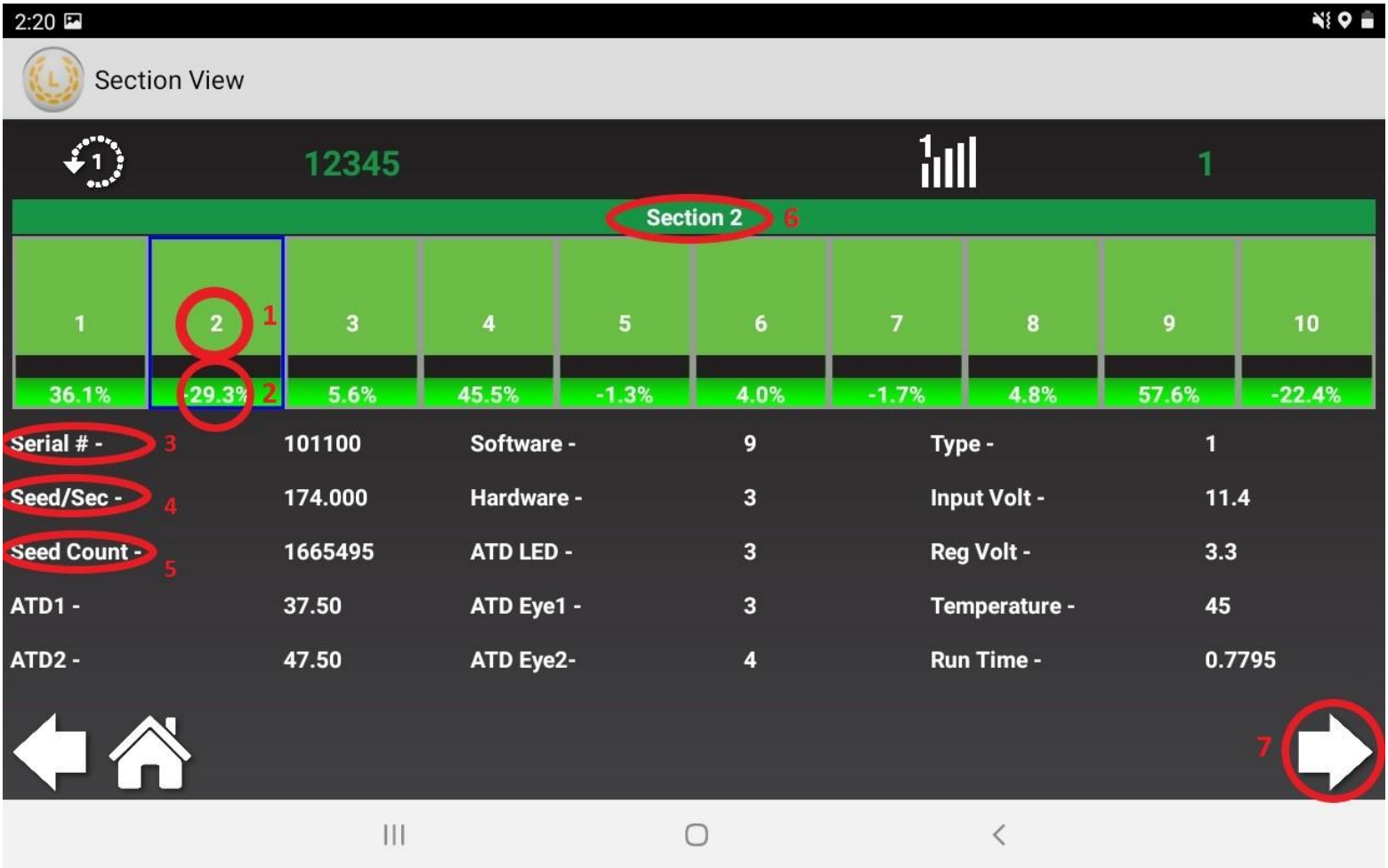
Home Screen



Home Screen Legend

1. Loop 1. Tap to open Loop 1 Seedrate Wizard.
2. Displays Loop 1 Seedrate. Displays a total-flow value if SeedRate Wizard is set at 0.
3. Loop 1 sensitivity icon. Tap to open Loop 1 Sensitivity Wizard.
4. Loop 1 sensitivity. Displays current sensitivity value.
5. Denotes the section/tower/manifold number.
6. Shows the variance in flow between towers.
7. Tap to display the manual.
8. Tap to display App menu.
9. Tap to display ECU information.
10. Tap to display seeder setup.
11. Tap to display section setup.
12. Tap to display GPS setup.
13. Tap to display Loop sensor history.
14. Tap to open SeedRate Wizard for Loop 1.
15. Tap to open SeedRate Wizard for Loop 2.
16. Tap to show Seeder Status (speed, work switch status, aux sensor status)
17. Save your settings.
18. Reset all settings.
19. Tap to open the FAQ section.

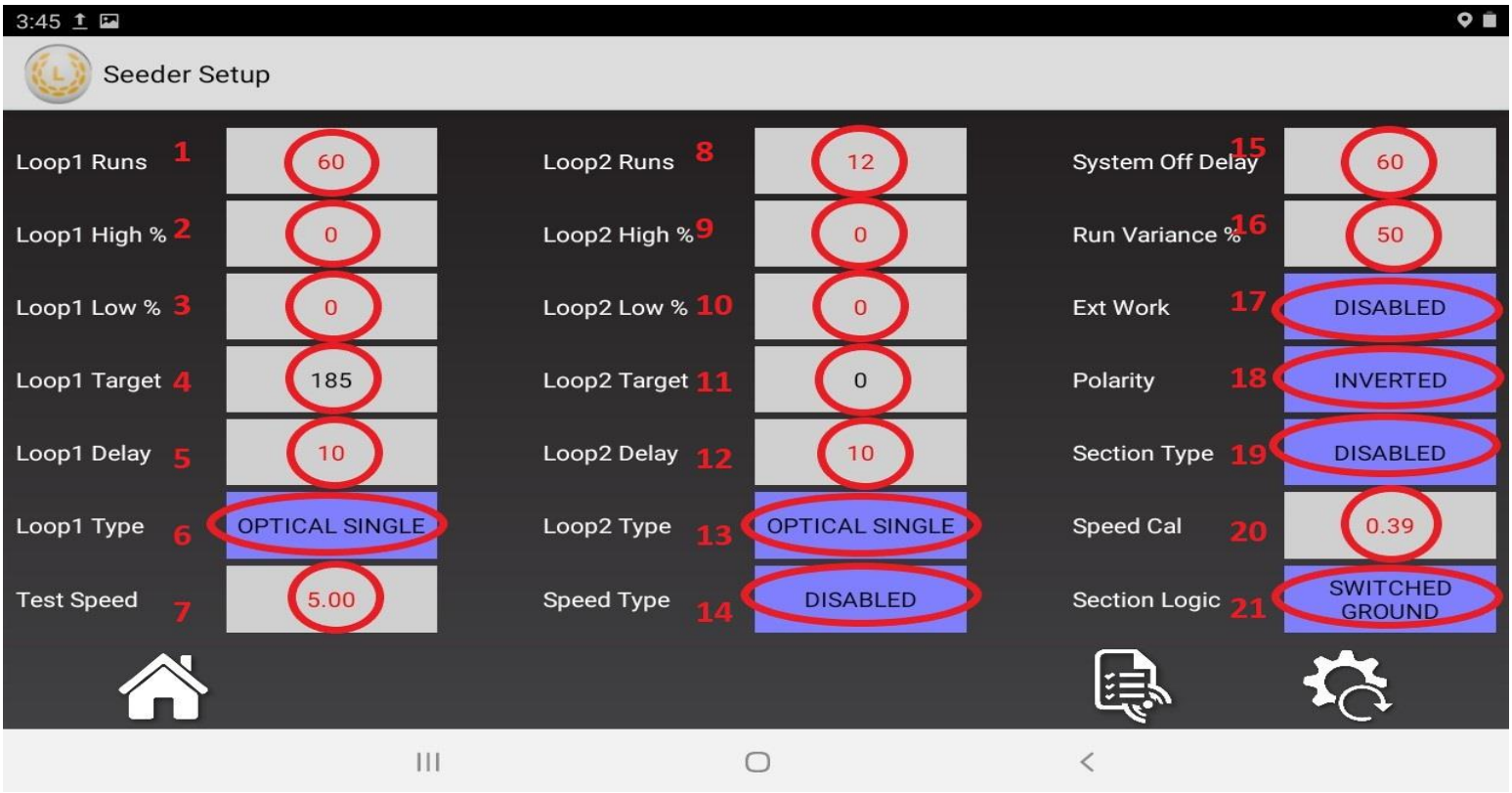
Section View Screen



Section View Screen Legend

1. The sensor number within the displayed section.
2. The difference in flow for the selected sensor in relation to the rest of the sensors in this section/tower.
3. The serial number of the selected sensor, this number is printed on each sensor.
4. The number of seeds per second the sensor is seeing.
5. The total seed count since the sensor began reading seeds
6. Identifies which section you are viewing.
7. Toggle to the next page if more than 10 sensors are installed on the section.

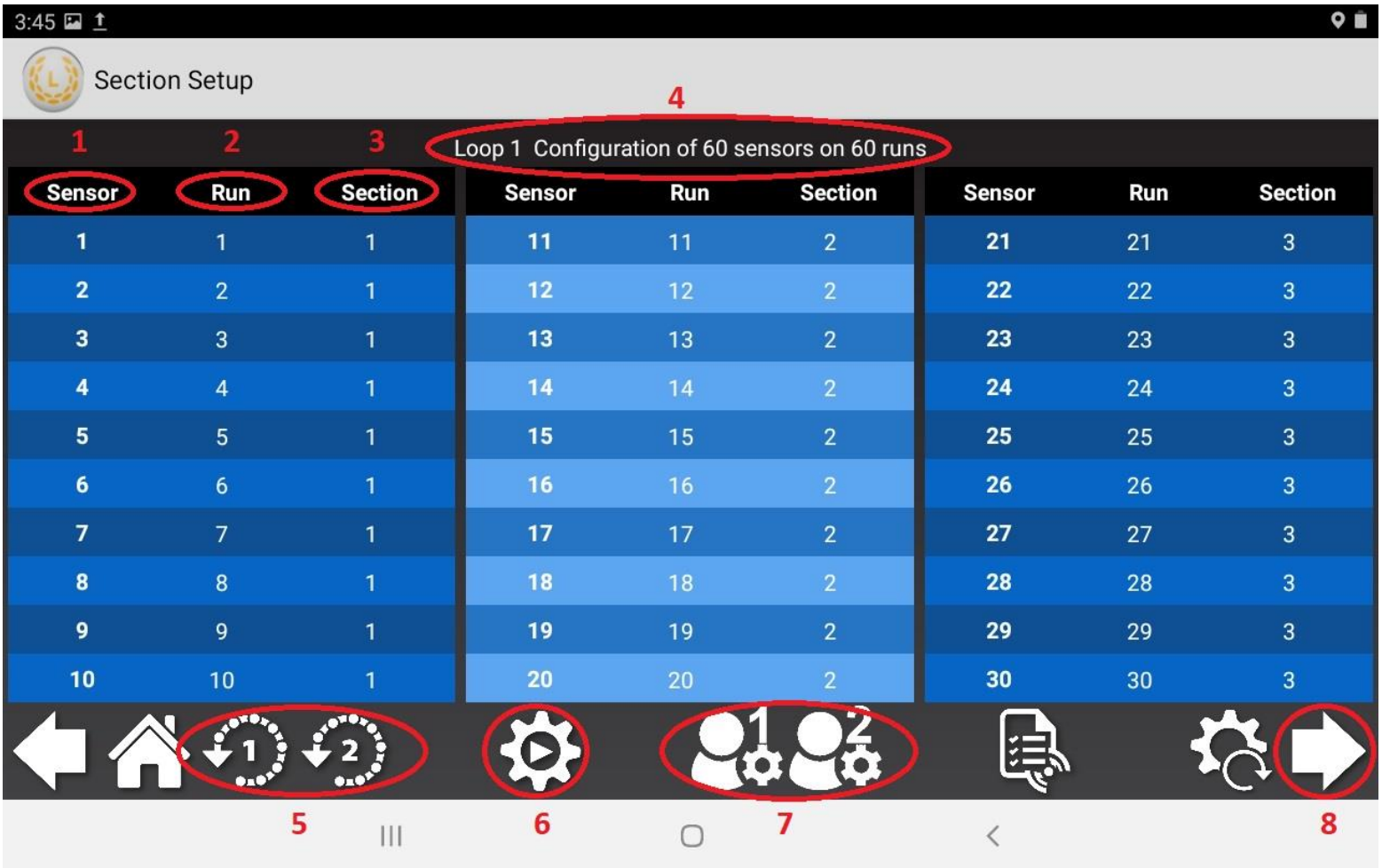
Seeder Setup Screen



Seeder Setup Screen Legend – Legend Basic

1. Quantity of sensors connected on loop 1.
2. Loop 1 high-rate alarm percentage.
3. Loop 1 low-rate alarm percentage.
4. The loop 1 target seedrate based on the lb/acre entered
5. Average time for seed/fert to travel from meter to sensor.
6. Sensor type setting. (Most users will use Optical Single)
7. Seeding speed.
8. Quantity of sensors connected on loop 2.
9. Loop 2 high-rate alarm percentage.
10. Loop 2 low-rate alarm percentage.
11. The loop 2 target seedrate based on the lb/acre entered
12. Average time for seed/fert to travel from meter to sensor.
13. Sensor type setting. (Most users will use Optical Single)
14. Sets how the app calculates speed. (When disabled use test speed)
15. Minutes until the system automatically shut off.
16. Smooths peaks and valleys for difference in flow between towers. 100 = no smoothing. Default = 15.
17. Enable if a work switch is installed.
18. Toggle depending on orientation of installed work switch.
19. For the **Legend Advanced version**, section type must read **Valve Logic** for the section aware feature to operate. Toggles predictive section control on/off. Predictive section control eliminates alarms when entire sections are turned off, such as when turning around when you reach your headlands.
20. When wheel speed sensor is used, the circumference of the wheel. Otherwise, Speed=km →1.00 Speed= mi →0.39.
21. Toggle between switched ground or switched power depending on type of section control on the cart.

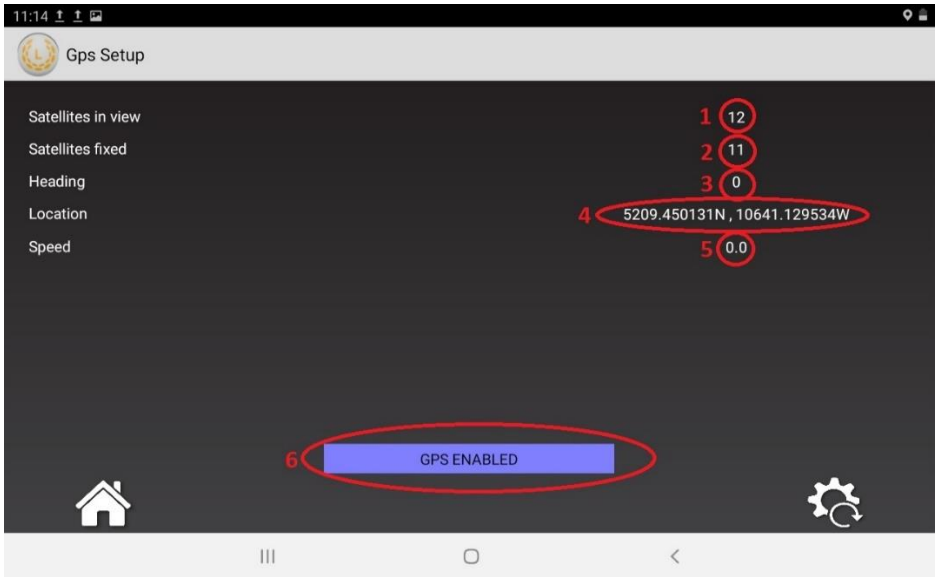
Section Setup Screen



Section Setup Screen Legend

1. The Sensor column displays the sensor number.
2. The Run column displays the run # you want to assign to each sensor. It is recommended this number match the sensor #. A 0 in the run field will turn the sensor off.
3. Section column displays which section/tower/manifold each sensor is installed on.
4. Displays number of recognized sensors on displayed loop as well as the number of sensors entered in the seeder setup screen.
5. Toggle section setup for each installed loop.
6. Reset run and section settings on all loops.
7. Save or recall section setup settings. Profile 1 and profile 2.
8. Advance to the next page of sensors if more than 30 installed on the loop.

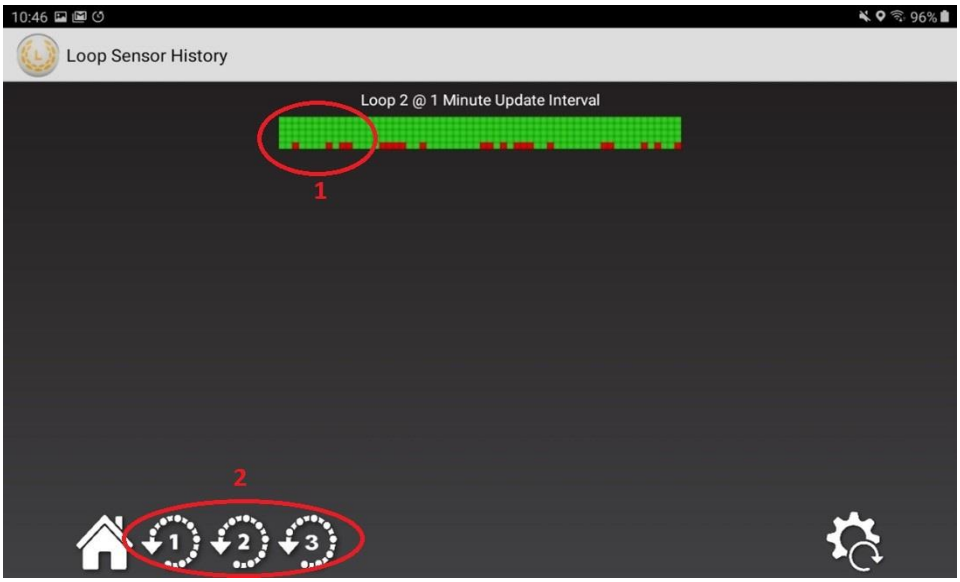
GPS Setup Screen



GPS Setup Screen Legend

1. Number of satellites available to lock on to.
2. Number of satellites locked on to tablet GPS.
3. Displays heading when tablet GPS is on, and the tractor is in motion.
4. Current GPS coordinates.
5. Ground speed when tablet GPS is on.
6. Tap to toggle GPS on or off.

Loop Sensor History Screen



Loop Sensor History Screen Legend

1. Displays a log of the blockage history. Each line of boxes represents 1 minute of operation.
2. Toggle Sensor history for each loop.

Wi-Fi Troubleshooting

- Wi-Fi won't connect.

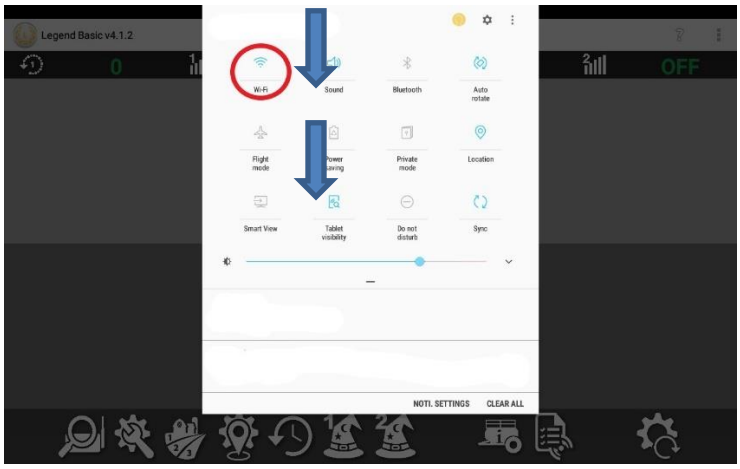
If you have gone through the Wi-Fi setup and connection section of this manual and are still having difficulty connecting the Wi-Fi, follow these steps:

1. Turn off or forget all nearby Wi-Fi networks (including phone hotspots)

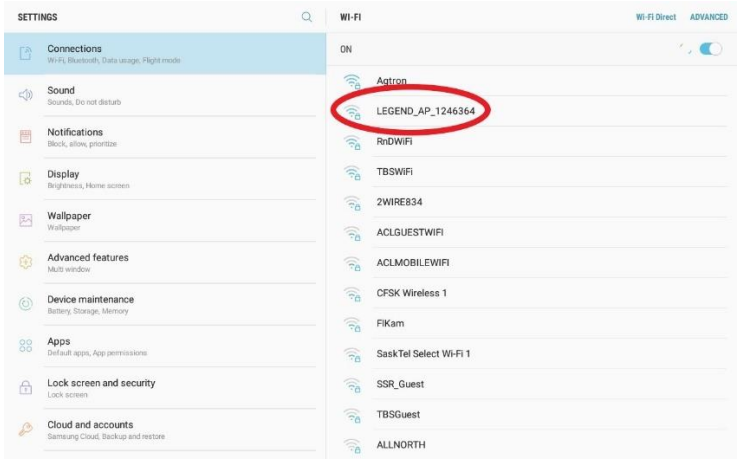
2. Unplug the grey Deutsch connector on the ECU, wait for 20 seconds then plug it back in. Follow the steps in Wi-Fi setup and connection procedures again, **be sure to allow a few minutes for the ECU to connect.**

If the ECU and tablet still will not connect follow these steps:

3. Swipe down with your finger twice from the top of the tablet to open the menu as shown below. Hold your finger on the Wi-Fi symbol until a new screen pops up showing all the available networks. Note: You may only have 1 network available. Proceed to the next step.

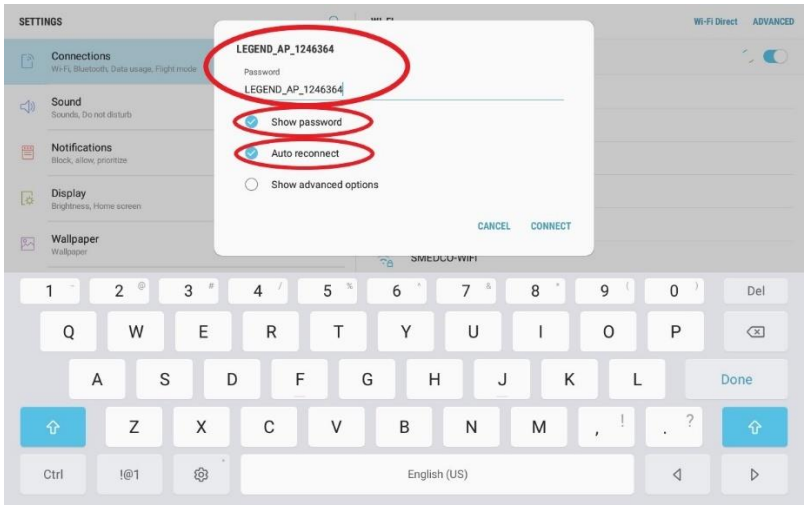


4. The legend network name in the will be in the format LEGEND_AP_XXXXXXX. If it does not show up after a few minutes repeat step 1. If it does show up tap the network name and proceed to the next step.

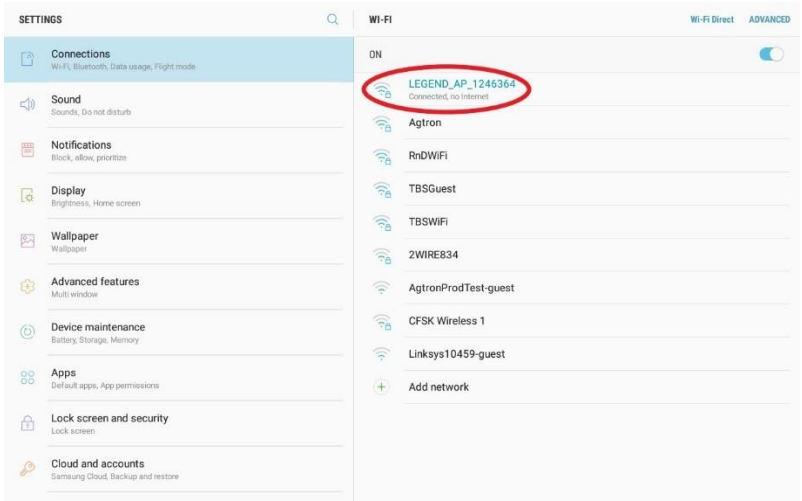


Wi-Fi Troubleshooting

5. Enter the password for the Legend network. Refer to page 4 for your Wi-Fi password. (The password is identical to the network name). Tap show password to make sure there are no typos and ensure auto-reconnect is checked. Note: This screen may look slightly different depending on what Android version your tablet has. Tap connect and proceed to the next step.



6. It may take a few minutes for the ECU to connect. When it says "connected without internet" navigate back to the Legend app. If it still does not connect contact Agtron for tech support toll free at 1-800-667-0640.

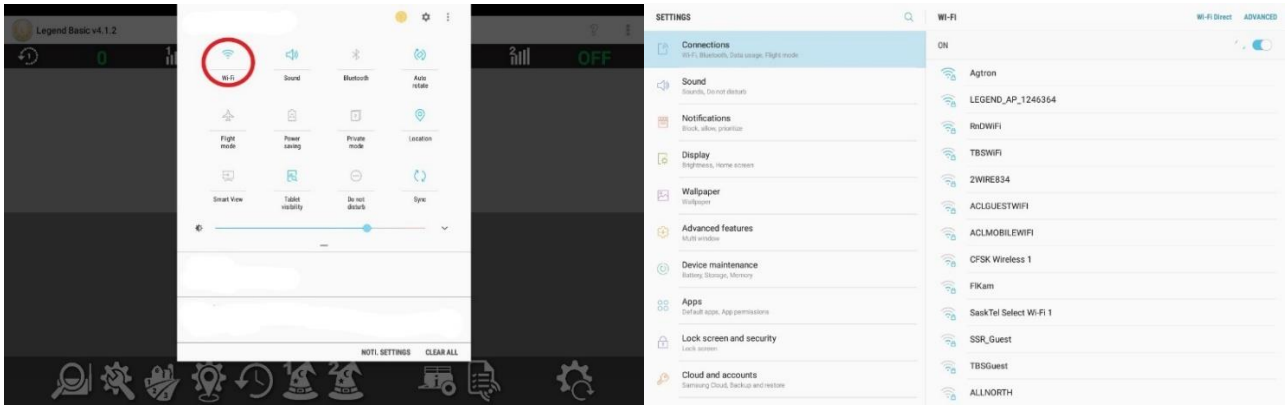


- Wi-Fi keeps cutting in and out.

1. Make sure the antenna is screwed into the ECU.
2. Make sure location services on the tablet itself is enabled.
3. Check to see if the Wi-Fi LED on the ECU is lit.
4. Make sure there are no obstacles between the ECU and the tablet.
5. Ensure battery voltage is in the 12V-16V range.

Wi-Fi Troubleshooting

6. Check that there are no other Wi-Fi networks trying to connect to the tablet. After swiping down to open the tablet menu, hold your finger on the Wi-Fi symbol. The available networks page will open. "Forget" all networks previously connected to the tablet.



General Troubleshooting

Type of Problem	Symptom/Diagnostic Step	Action/Information
No loop information	The loop indicated is turned off. App not connected to ECU.	To turn loop on, increase sensitivity to at least 1. Check to make sure Wi-fi is connected
Communication error	App displays Comm Error 1 both ways	Check all the cables and connections. ...Bypass first and last sensor in the Loop
	If the message is no longer displayed...	...replace first and last sensor.
	If the problem persists... If the message is no longer displayed...	...Bypass Sensor Loop Cables Between the Y-Cable and first and last sensor. ...replace the Sensor Loop Cables between the Y-Cable and first and last sensor.
	If the problem persists...	...replace the Y-Cable.
	If a Loop Comm Error occurs...	Check cables and connections at location shown on Sensor Diagnostic screen.
	If the message is no longer displayed...	...Bypass the sensor # indicated.
	If the problem persists...	...replace the sensor.
	If the message is no longer displayed...	...Bypass the sensor before or after the # indicated.
	If the problem persists...	...replace the sensor
	If the message is no longer displayed...	...Bypass Sensor Loop cable going to the sensor. ...replace Sensor Loop Cable.
No Commuication	Sensor is showing not communicating...	Sensor has been deactivated, activate sensor in the section setup screen or run the Tower Wizard again.

General Troubleshooting

Type of Problem	Symptom/Diagnostic Step	Action/Information
Blocked Sensor	The sensor indicated is blocked.	Clean blockage from indicated run.
	If the indicated run is not blocked...	...verify the Sensitivity is not set too high. First lower the sensitivity to 1, then when all runs are green run the sensitivity wizard. Check inside the distribution towers for any foreign material. This may cause blockages to move from sensor to sensor.
	If it is always the same sensor giving the blocked If blocked message moves with the sensor... Intermittent Blockage Alarms	...trade that sensor with one in another position. ...replace that sensor Check history screen for frequency and adjust sensitivity as needed
Displays ERROR alarms when one loop is disabled, but no alarms when both loops enabled	Typically, this means that loops are all connected but cables are crossed either going to sensor 1 or coming back from the last sensor.	Trace sensor cables from the main wiring harness to the first and last sensor of one loop. Re-connect the cables correctly.
High and Low Rate Alarms	The sensor indicated is constantly showing High or Low-Rate alarms...	Clean Sensor (See FAQ for instructions), check for debris in sensor. ...adjust the Loop 1 high % to a higher percentage and the Loop 1 low % to a lower Note: This will change the high and low rate percentage for every sensor, not just the ones ...trade the sensor with one in another position
	If moves with the sensor...	...replace sensor

Care and Maintenance

Follow the guidelines below to prolong the life of your Legend system components, as well as keeping up to date with the most recent product updates.

1. We recommend inspecting and cleaning your seed sensors after every season. Use of a mild detergent with warm water and a nylon bottle brush or equivalent will ensure the sensor eyes do not become obstructed by debris.
2. The ideal storage location for your Legend blockage system is indoors. When that is not possible, the ECU and tablet should be stored indoors at room temperature.
3. After each seeding season we recommend doing a visual inspection of the cables and connectors, especially around areas where the pivot points of the implement.
4. Inspect all cable ties to ensure none have broken.
5. It is highly recommended to follow us on any of our social media platforms to gain access to important product updates as we are constantly improving and adding features to The Legend system. **We will communicate all app and software upgrades via Twitter, YouTube, Instagram and Facebook.**

Installation

STOP!

Record the serial number of your ECU here **and** on page 4 of the operators manual for future reference. It is located on a yellow sticker fixed to the ECU itself and will look like this:

Serial # _____

The Legend Wi-fi Installation Manual

Scan this QR code to view our installation video:

Or go to:

https://www.youtube.com/watch?v=lCrkTOMHeiE

Questions? Email us at customerservice@agtron.com or contact your local parts dealer.

Follow us on these social media platforms to gain access to product training, product updates, news, promotions and more!

Tools Needed

Cordless Drill

5/16" Hex Bit

Tube Cutters

Wire Cutters

Utility Knife

Tape Measure

Installation Checklist

- ☐ **Install the ECU**
- ☐ **Install the battery harness (Wifi Power Harness, 3 Loop Harness, Air Cart harness Advanced Verion Only)**
- ☐ **Install Y cable (s)**
- ☐ **Install Sensors**
- ☐ **Connect sensors and loop extensions**
- ☐ **Install Ram Mount and Tablet**

Figure 2.1

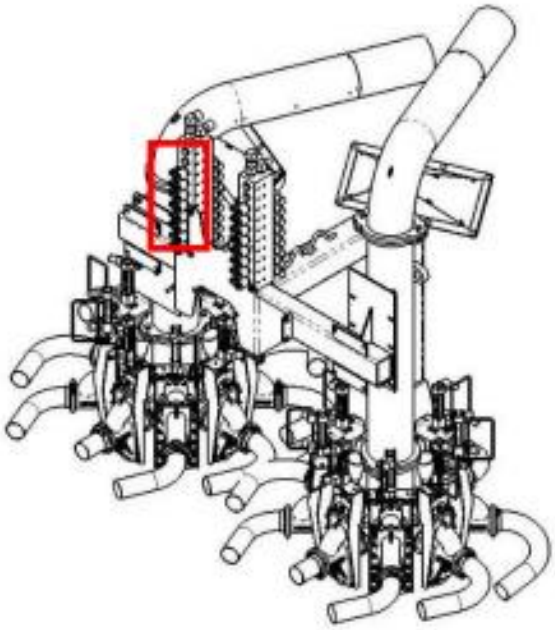


Figure 2.2

1. For **tow-behind** configurations, attach the ECU antenna (Part#050013005) to the ECU, then mount the ECU close to the air seeder hitch point such that the grey power connector can be easily connected and disconnected at the hitch. For **tow-between** configurations, mount the ECU on the air cart such that mounting location allows for clear line-of-sight into the tractor. The ECU can be zip tied or screwed to the mounting location.

Steps 2 and 3 are only for Legend Advanced version.

2. For Legend Advanced ECU's connect the Wi-Fi Power Harness (AGD1733) and 3 loop harness (AGD1741) to the ECU.

3. Connect the Air-cart harness (AGD1725) to the solenoids on the air-cart. An example of the connection location is depicted in figure 2.2. The connection location may look different on your model.

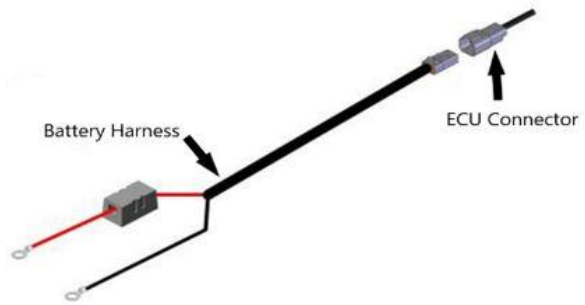


Figure 2.3

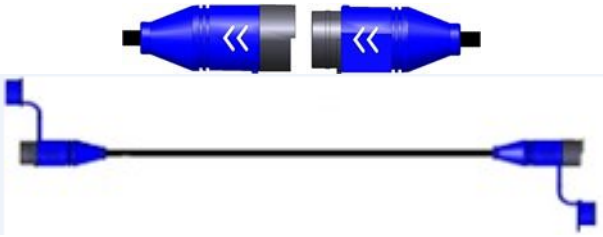


Figure 2.4

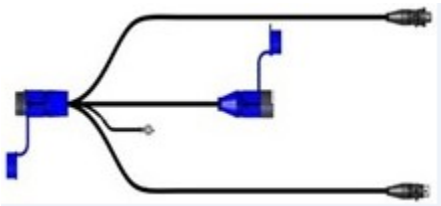


Figure 2.5

Figure 2.6

4. Mount the battery harness (Part# AGD2006 – Fig 2.3) so that the grey connector is at the tractor hitch. Connect the red wire on the battery harness directly to the positive (+) terminal on the battery. If the battery harness is not long enough for your ECU mounting location, use an extension harness (Part# AGD2020). (The extension harness will normally only be needed for tow-between configurations) Connect the black wire on the battery harness directly to the negative (-) terminal on the battery. The grey power connector connects to the grey power connector on the ECU.

5. For **tow-between** setups, the use of a main extension cable is necessary (Part# 9ARTM10, 9ARTM20, or 9ARTM40 – Fig 2.4). Connect the blue connector labelled "loop 1" coming off the ECU, to the main extension cable and mount to the frame using black cable ties (Part#AGCT020). Run the extension cable through to the seeder hitch, this is where your Y-cable (Part# 9ASTY10 or 9ASTY30 - Fig 2.5) will connect to the main extension.

6. Select a mounting location for the Y-cable (Part# 9ASTY10 or 9ASTY30 - Fig 2.5) close to the center of the implement and secure with cable ties.
The black ground wire on the Y-cable should be screwed to the frame when installing more than 60 sensors per loop.

7. Route the Y-cable's male, black sensor loop cable connector towards the left side of the implement. (Left side when standing behind the implement facing the direction of travel). If it does not reach to where the first sensor on the first tower/manifold will be use loop extensions (Part# 9ASTX02, 04, 10, OR 20 – Fig. 2.6)

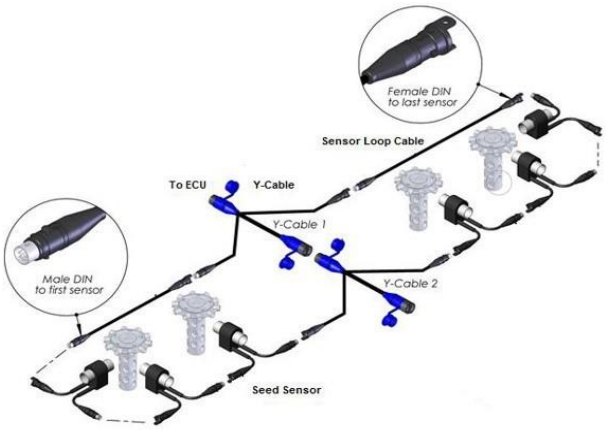


Figure. 2.7

Figure 2.8

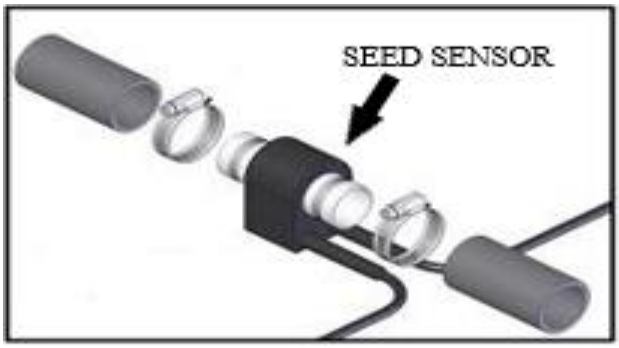


Figure 2.9

8. **For systems with more than 60 sensors per loop**, the use of a second Y-cable is needed to maintain proper voltage throughout the system. The second Y-cable should be installed in the middle of the implement and be connected to the first Y cable on the loop, as in Fig 2.7.

Important: In general, routing all cables alongside hydraulic lines will provide a safe path as to avoid pinch points of the implement.

9. The colored cable ties in Figure 2.8 are used to label and differentiate loop 1 cables vs loop 2 cables. Attach blue cable ties to loop 1 cables and yellow cables ties to loop 2 cables.

Important: For systems with more than one loop, it is recommended to wire 1 loop at a time to avoid the possibility of crossing wires or mislabeling cables.

10. You are now ready to install the Legend seed sensors. Select a mounting location on the hose that is 8”-12” from the top of the tower/distributor/manifold. It is best to install sensors on relatively straight parts of the hose. Using a pair of hose cutters, cut the hose as straight as possible. Note in Figure 2.9, two hose clamps (Part# 9KHC016) are needed to secure each end of the sensor. Slide the hose clamps over the end of the hose and insert the sensors into the cut hose. *Tip: If the sensor sleeves are difficult to fit into the hose you can heat the end of the hose with a heat gun to soften it.* **The sensor decal can face up or down.** Once sensors are completely seated in the hose, tighten the hose clamps to secure. Finish installing all the sensors on desired runs.

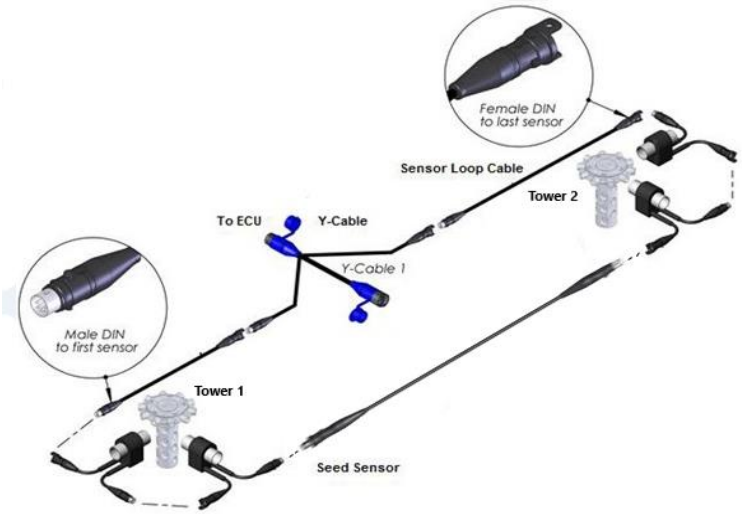


Figure 2.91

11. It is now time to connect the sensors and loop cables. Figure 2.91 depicts a simple 2 tower setup. Starting with tower 1, on the left-hand side of the implement (standing behind facing the implement), connect the male connector coming off the Y-cable to the female connector on the first seed sensor as in Fig 2.91. Continue connecting all sensors to each other on tower 1, leaving the last male connector hanging from the last sensor.

12. Fig 2.91 uses a loop extension (9astx02, 9astx04, 9astx10 or 9astx20) between the last sensor on tower 1 and the first sensor on tower 2. Connect the female end of the loop extension to the hanging male connector of the last sensor on tower/manifold 1. **Some air seeders may not need to use loop extensions if the seed sensors are close enough together that they can connect to each other without extensions.**

13. Continue connecting sensors and loop extensions until all sensors on all towers are connected. The last sensor will have a male connector that connects directly to the female connector coming off the Y-cable on the right side of the implement (Right side when standing behind the implement, facing the direction of travel).

14. Loop 1 installation is now complete. Repeat steps 1-9 for Loop 2 and 3 (**3 Legend Advanced only**).

15. Follow the instruction manual within the ram mount package for assembling the ram mount and install inside the tractor.

Appendicies

Appendix A

LEGEND BASIC PARTS LIST	
Part Number	**Description**
850033001	RAM MOUNT ARM
850033002	RAM MOUNT BASE
850033009	RAM MOUNT CRADLE 8"
AGWL031	SAMSUNG 8" ANDROID TABLET
AGST410	LEGEND BASIC WIFI ECU
50013005	ANTENNA 7"
AGD2020	POWER EXTENSION HARNESS 35'
AGD2006	BATTERY HARNESS 22'
9ASTY30	LEGEND Y CABLE 30'
9ASTY10	LEGEND Y CABLE 10'
9ASTX02	LEGEND LOOP CABLE 2'
9ASTX04	LEGEND LOOP CABLE 4'
9ASTX10	LEGEND LOOP CABLE 10'
9ASTX20	LEGEND LOOP CABLE 20'
9ARTM10	MAIN EXTENSION CABLE 10'
9ARTM20	MAIN EXTENSION CABLE 20'
AGST22E	LEGEND SEED SENSOR 7/8"
AGST24E	LEGEND SEED SENSOR 15/16"
AGST25E	LEGEND SEED SENSOR 1"
AGST30E	LEGEND SEED SENSOR 1-1/4"
AGST32E	LEGEND SEED SENSOR 1-1/2"
AGST38E	LEGEND SEED SENSOR 2”
MNST141	LEGEND BASIC MANUAL
AGCT020	CABLE TIES 100pc - 7.5"
9KHC016	HOSE CLAMPS 10pc

Appendix B

LEGEND SA (ADVANCED) PARTS LIST	
Part Number	**Description**
850033001	RAM MOUNT ARM
850033002	RAM MOUNT BASE
850033009	RAM MOUNT CRADLE 8"
AGWL031	SAMSUNG 8" ANDROID TABLET
AGD1710	LEGEND SA ADVANCED WIFI ECU
50013005	ANTENNA 7"
AGD2006	BATTERY HARNESS 22'
AGD1725	LEGEND AIR CART HARNESS
AGD1741	LEGEND SA 3 LOOP HARNESS
AGD1733	LEGEND SA WIFI POWER HARNESS
AGD2020	POWER EXTENSION HARNESS 35'
AGD1720	SECTION CONTROL TOOLBAR HARNESS
9ASTY30	LEGEND Y CABLE 30'
9ASTY10	LEGEND Y CABLE 10'
9ASTX02	LEGEND LOOP CABLE 2'
9ASTX04	LEGEND LOOP CABLE 4'
9ASTX10	LEGEND LOOP CABLE 10'
9ASTX20	LEGEND LOOP CABLE 20'
9ARTM10	MAIN EXTENSION CABLE 10'
9ARTM20	MAIN EXTENSION CABLE 20'
AGST22E	LEGEND SEED SENSOR 7/8"
AGST24E	LEGEND SEED SENSOR 15/16"
AGST25E	LEGEND SEED SENSOR 1"
AGST30E	LEGEND SEED SENSOR 1-1/4"
AGST32E	LEGEND SEED SENSOR 1-1/2"
AGST38E	LEGEND SEED SENSOR 2”
MND1752	LEGEND SA ADVANCED MANUAL
AGCT020	CABLE TIES 100pc - 7.5"
9KHC016	HOSE CLAMPS 10pc

Appendix C

The table below displays some sensitivity values and their corresponding seeds/second values. In general, low sensitivity values are needed at low application rates and high sensitivity values are needed at high application rates.

Sensitivity	Seeds/second
0	Loop is off
1	1
5	5
10	10
20	20
30	30
40	53
50	96
60	179
70	341
80	657
90	1271
100	2500

Appendix D

Version Compatibility Chart

- Your app version is displayed in the top left corner of your app.
- Your ECU software version is displayed in the ECU setup page.
- Your Android version can be found in the settings of your tablet, usually under *Software Information.*

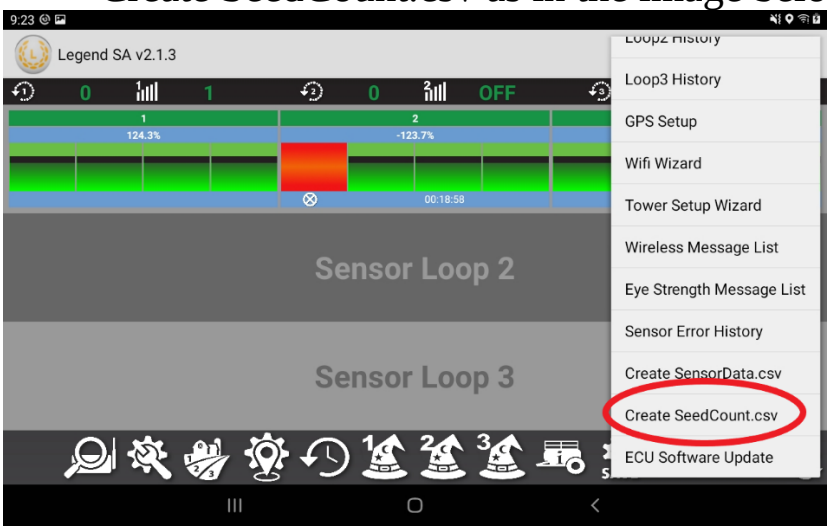
	Agtron Legend Blockage System Compatibility Chart	
App Version	Android Version	ECU Software Version
The Legend Basic		
4.1.3	11	10
	10	10
4.1.2	11	
	10	
	9	
	8	
	7	
4.1.1	10	10
	9	
	8	
	7	
	6	
	5	
	4.4	
4.1.0	**Update to App Version 4.1.1 or Higher**	
4.0.0	9	10
3.1.2	Below 4.4	9
3.1.0	Below 4.4	9
2.3.0	Below 4.4	8
2.2.0	Below 4.4	5
2.1.10	Below 4.4	4
Legend SA Advanced		
2.1.3	11	8
	10	
2.1.2	11	8
	10	
	9	
	8	
	7	
2.1.1	10	8
	9	
	8	
	7	
	6	
	4.4	
2.0.2	9	8
	8	
	7	
	6	
1.5.1	6	7
	5	
1.4.1	5	6
1.3.1	Below 4.4	6

Appendix E

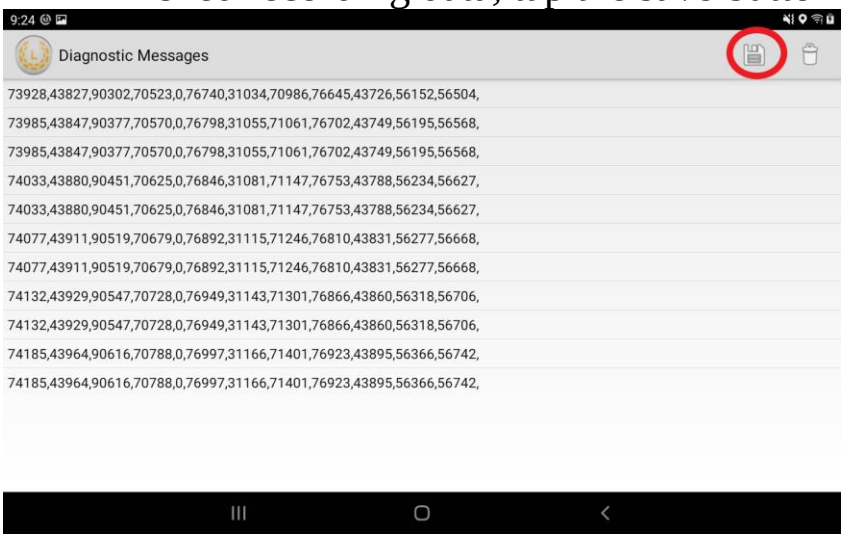
Seedcount Log File

To record the history of seedcounts for each sensor follow the steps below. **Note:** This function is available only in the Advanced app version 4.1.3 or higher and only displays data for Loop 1. You must be seeding to create this log file.

1. Tap the three dots in the top right corner of the app to open the menu, then select Create SeedCount.csv as in the image below.

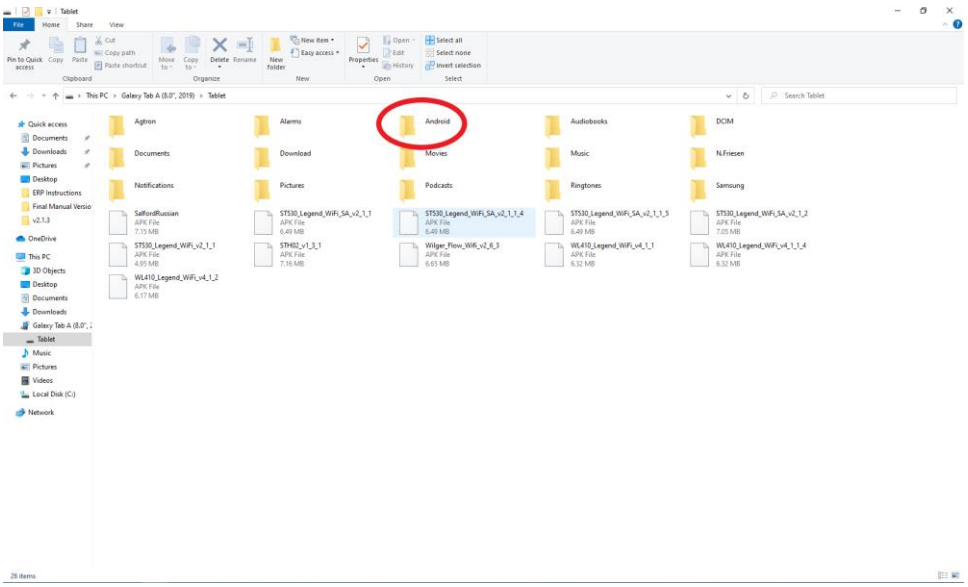


2. The screen below will open, displaying the seedcounts of each sensor. Sensor #1 shows on the left. This screen must remain open for the log to record data. When finished recording data, tap the save button circled in red.

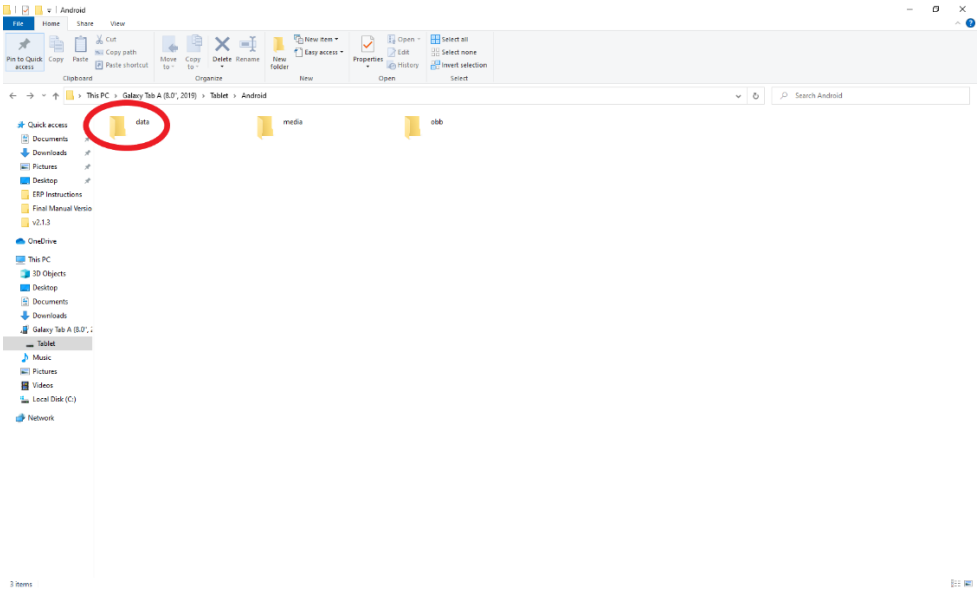


To retrieve the save file for the seedcount logs, follow the steps below.

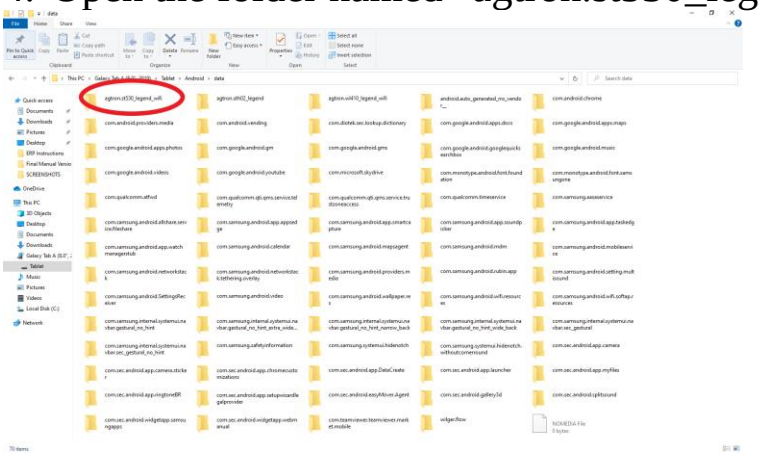
1. Connect the tablet to your computer via the charging port on the tablet. Open Windows explorer then select the tablet.
2. Open the Android folder as in the image below.



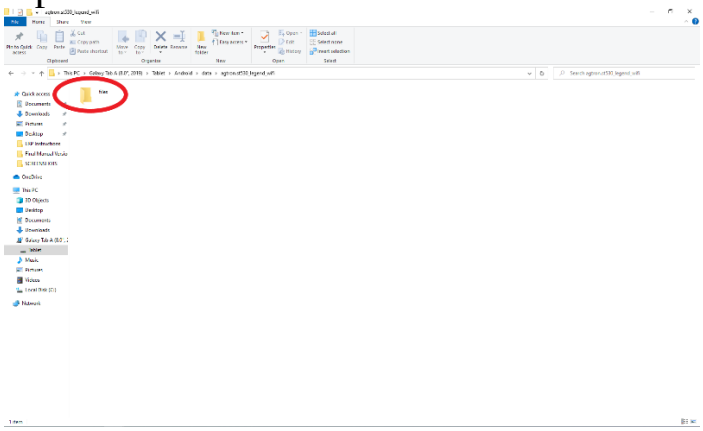
3. Open the data folder as in the image below.



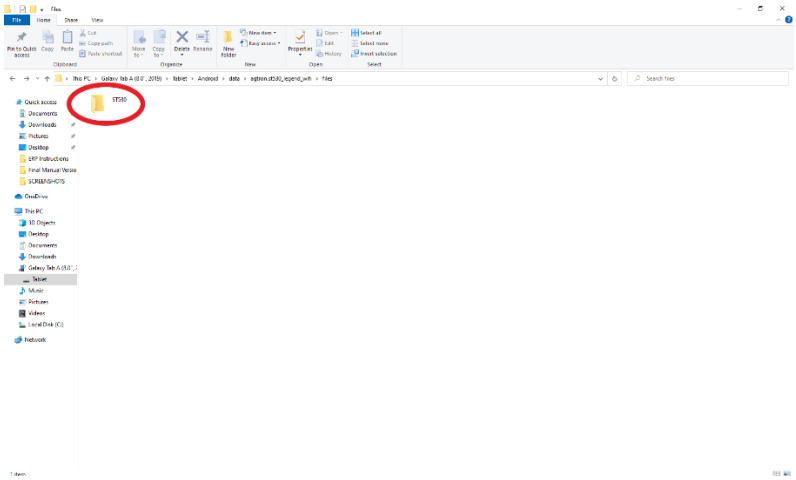
4. Open the folder named “agtron.st530_legend_wifi” as in the image below.



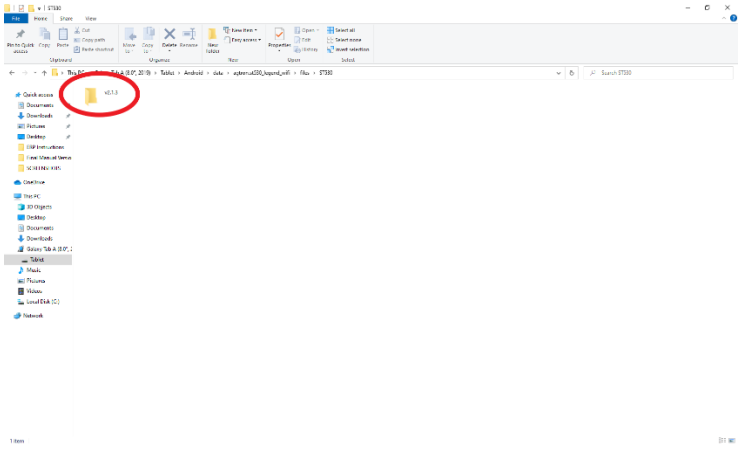
5. Open the folder named “files” as in the image below.



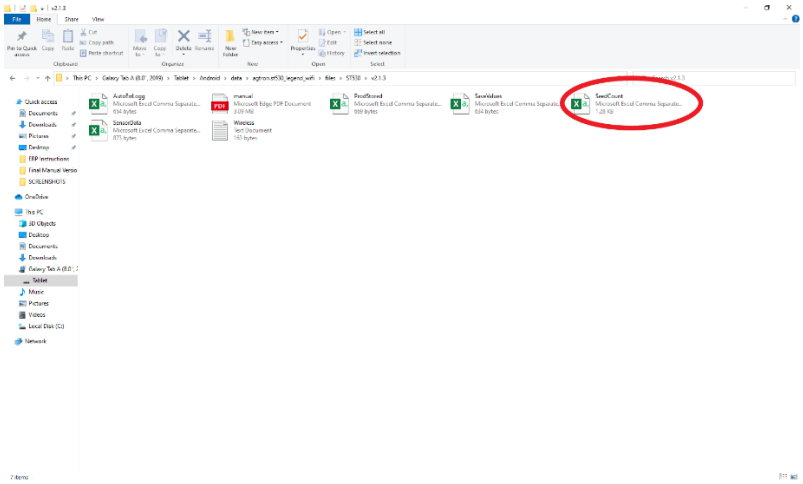
6. Open the folder named “ST503” as in the image below.



7. Open the folder named “v2.1.3” as in the image below.



8. Open the file named “seedcount” as in the image below. Sensor 1 shows in column 1, while each row displays the data recorded each second.



To reset the sensor seed counts set the sensitivity for loop 1 to zero.

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