RECON

WIRELESS BLOCKAGE AND FLOW MONITOR

OPERATOR'S GUIDE

Document revision 3.0

Last revised: October 12, 2017

IntelligentAg

Recon Wireless Blockage and Flow Monitor Operator's Guide

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Record of Revision			
Revision number	**Change description**	**Revision date**	**Inserted by**
1.0	Initial release	5/5/2011	CJW
2.0	Major revision. Changed from describing prototype product to production ready product	10/24/2011	CJW
2.1	Made major revisions to the Configuring the Wireless Blockage Monitor and To manually add components to the Wireless Blockage Monitor sections	3/12/2012	CJW
2.2	Revised to reflect changes made to Wireless Blockage Monitor in Q3 2012 and Q1 2013	3/29/2013	CJW
2.3	Changed name of product from "Wireless Blockage Monitor" to "Wireless Blockage and Flow Monitor."	8/22/2013	CJW
2.4	Added description of toolbar view option and expanded explanation of the low flow alarms.	3/26/2014	CJW
2.5	Copy edit changes. Updated some terms to match WBFM Installation Instructions. Updated screenshots to reflect interface updates. Updated logo. Added troubleshooting section.	11/18/2014	AAL
2.6	Added row view and Section Control information.	3/16/2015	AAL
2.7	Updated screenshots and instructions per new app interface changes.	8/19/2015	AAL
3.0	Updated to reflect the Intelligent Ag Pro app.	10/12/2017	AAL

Related Documentation

Document Number	Document Title
600820-000028	Recon Wireless Blockage and Flow Monitor Quick Reference Guide
600820-000012	Recon Wireless Blockage and Flow Monitor Troubleshooting Guide
600840-000048	Recon Wireless Blockage and Flow Monitor Installation Guide

Glossary

Acronym	Term	Definition
App	Software application	A computer program, especially one designed for a mobile device
BIT	Built-in Test	A mechanism built in to Wireless Blockage and Flow Monitor that allows that equipment to test itself for and alert the user of, any possible problems
ECU	Electronic Control Unit	A component of Wireless Blockage and Flow Monitor that allows for the communication of the flow sensors to the iPad software app via a LAN connection
IAS	Intelligent Agricultural Solutions	The company that manufactures, sells and supports the Wireless Blockage and Flow Monitor
LED	Light-emitting Diode	A semiconductor diode that converts applied voltage to light. In the Wireless Blockage and Flow Monitor, an LED is used to signify the status of the ECU
WBFM	Wireless Blockage and Flow Monitor	The Intelligent Ag system that notifies operators of blockages or low air flow anywhere in their implement
	Work Switch	A component of the implement that signifies when the equipment is enabled (in the ground) or disabled (out of the ground). When the work switch is disabled, the Wireless Blockage and Flow Monitor's audible alarm that alerts the operator to blockage of flow in the equipment's runs will automatically be silenced

1. Introduction

1.1 About the Recon Wireless Blockage and Flow Monitor

Intelligent Ag's Recon Wireless Blockage and Flow Monitor (WBFM) is an acoustic-based monitoring system that quickly and accurately notifies operators of blockages anywhere in their implement. Operators interact with the WBFM via an iPad® app in the tractor cab. Electronic control units (ECUs) communicate with the Intelligent Ag Pro app via a wireless network, which means the WBFM requires less wiring than traditional blockage monitor systems.

1.2 How to use this guide

This operator's guide includes instructions for configuring the WBFM after installation and using the system to monitor for blockages on your implement during planting.

NOTE: For instructions to install the WBFM, see the Recon Wireless Blockage and Flow Monitor Installation Guide (Intelligent Ag document number 600840-000048).

For installation videos, current WBFM documentation and other resources, visit www.intelligentag.com/support. For iPad and software requirements, visit www.intelligentag.com/support/ipad-buying-guide.

1.3 Using an iPad

The Intelligent Ag Pro app interfaces with an iPad. The iPad is a tablet computer with a touch-screen interface, meaning that no external mouse or keyboard is required; simply tap the on-screen buttons to interact with the app.

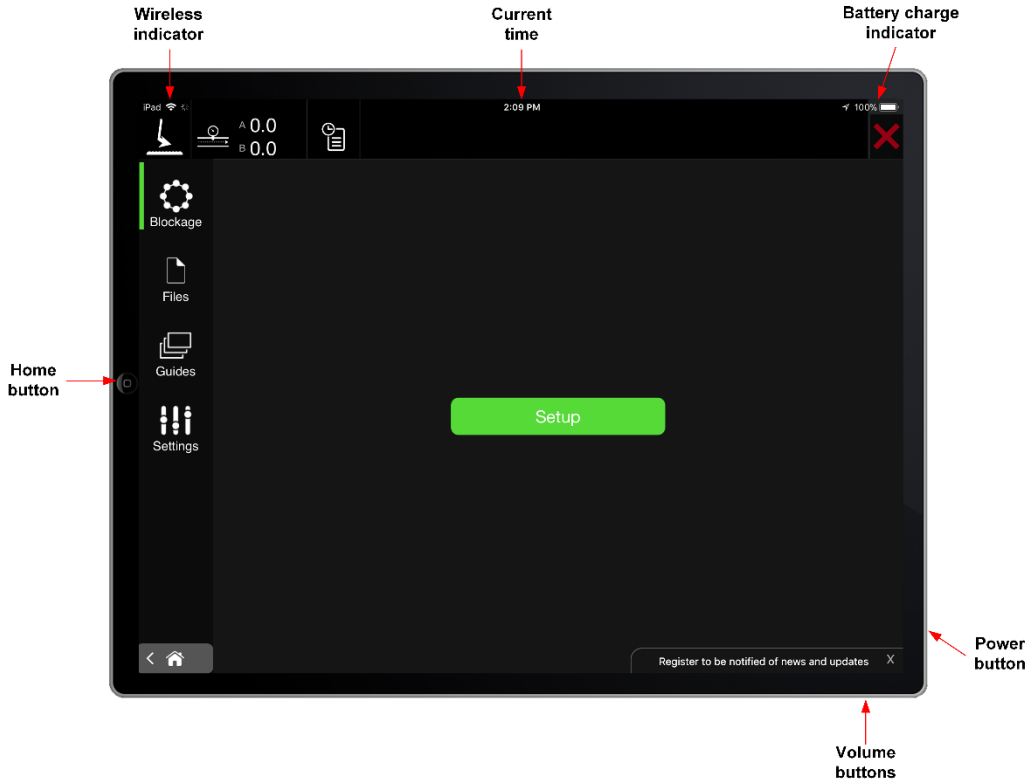

Figure 1: Using the iPad

1.3.1 Powering on/powering off the iPad

To power on the iPad, press and hold the power button for 3 to 5 seconds.

When the iPad is powered on, you can press the power button to turn the screen off and put it in sleep mode. Press the power button again or press the Home button, to exit sleep mode.

To power off the iPad, press and hold the power button for 3 to 5 seconds. Then, slide the icon that appears on the screen.

1.3.2 Opening the Intelligent Ag Pro app

Once you have powered on the iPad, tap the Intelligent Ag Pro icon located on the iPad Home screen to open the Intelligent Ag Pro app. If you haven't downloaded the app yet, search *Intelligent Ag Pro* in the App Store and download it. Refer to the download instructions in the Recon Wireless Blockage and Flow Monitor Installation Guide for more information.

NOTE: Intelligent Ag recommends leaving your iPad connected to the charger the entire time you are using the Intelligent Ag Pro app. If the iPad battery becomes low, Wi-Fi strength will be weakened.

1.3.3 Viewing the iPad Home screen

To return to the iPad's Home screen while the Intelligent Ag Pro app is open, press the iPad's Home button. This will close the Intelligent Ag Pro app screen; however, it will remain open and continue monitoring for blockages and flow variations in the background if you have background notifications enabled.

1.3.4 Restarting the Intelligent Ag Pro app

Tap the red X in the upper right corner to close the app. If you are on a screen without the red X:

1. Double-click the Home button.
2. Swipe until you have located the Intelligent Ag Pro app.
3. Swipe up on the app's preview to close it.
4. Press the Home button to return back to your Home screen.
5. Tap the app to reopen it.

1.3.5 Adjusting the iPad volume

To adjust the iPad volume, press the top or bottom iPad volume button, as shown in Figure 1.

NOTE: If your iPad has a side switch and it is configured to mute the iPad; ensure that the switch is enabled (the iPad is not muted).

1.3.6 Changing the iPad language

1. Tap **Settings** on the iPad Home screen.
2. Tap **General** on the left navigation pane.
3. Tap **Language & Region**.
4. Select the new language.

2. Getting Started

2.1 Connecting the iPad to the wireless network

In order to communicate with the WBFM system, the iPad must be connected to the WBFM's wireless network. An access point mounted in the tractor cab broadcasts the WBFM wireless network. To receive information from the WBFM wireless network, the iPad must be in close range of the access point.

Make sure that your iPad is connected to the WBFM wireless network at the beginning of every planting session. This is especially important if your iPad is connected to another network, such as a home wireless network, between sessions. Tap the **Settings** icon on the iPad Home screen to see what wireless network it is connected to.

To connect the iPad to the WBFM wireless network:

1. Power on the tractor and iPad.
2. Tap the **Settings** icon on the iPad's Home screen.
3. Tap **Wi-Fi** on the left side of the screen.
4. Make sure that Wi-Fi capabilities are enabled.
5. Tap **IASBlockage** or **IASNetwork2** from the "Choose a Network…" list. A checkmark will be displayed to the left of the network name when the iPad is connected to the network.

   NOTE: If the Intelligent Ag network does not appear on the "Choose a Network…" list, wait a few minutes to give the iPad time to search for the network. If the network does not appear after several minutes, verify that the access point has power, which is indicated by green LEDs on the back of the unit. If the network still does not appear, contact your dealer for assistance.

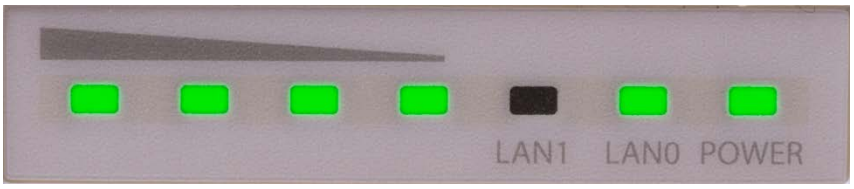

Figure 2: Access point LEDs

   IMPORTANT: Do not reset the access point to its default factory settings. The access point requires special configuration to work with the WBFM. If the access point is reset, it must to be returned to Intelligent Ag to be reconfigured.

2.2 Setting up the Wireless Blockage and Flow Monitor

1. Tap the Intelligent Ag Pro icon on your iPad's Home screen to open the app.
2. Select how you will be connecting to your system: TP-Link access point or Gateway 300. Then, tap the green Setup button on the Blockage screen.

   NOTE: This operator's guide only outlines how to configure a system that connects via TP-Link access point, not a gateway.

3. Tap the icon that corresponds with your sensor type. Tap **Next**.

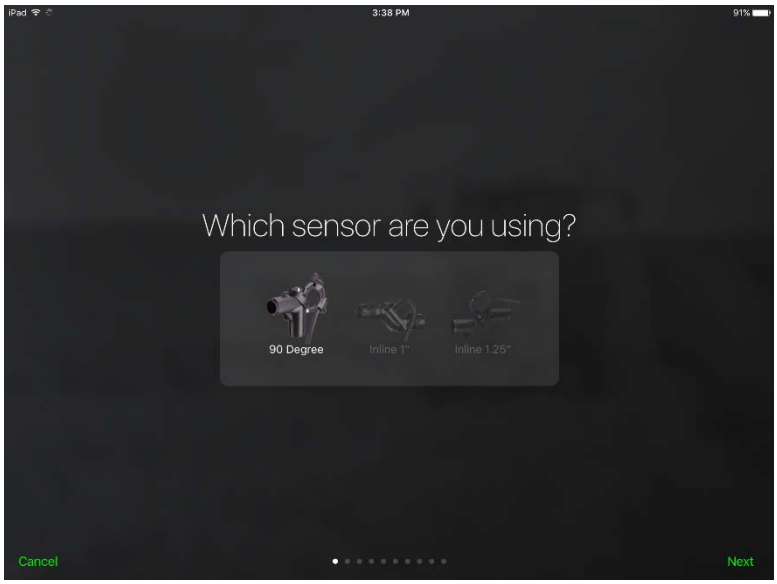

Figure 3: Automatic Configuration – Sensor Information

4. Enter the requested information about your implement, tractor and air cart. Tap **Next**.

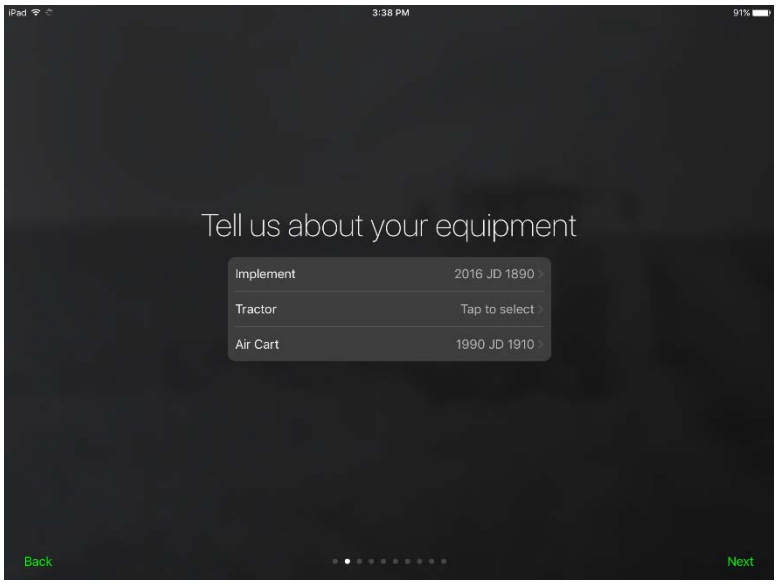

Figure 4: Automatic Configuration – Equipment Information

5. Select your monitoring view type. Tap **Next**.
   - **Manifold view** displays the implement ports and manifolds in a circle. Manifolds using Product A have white lettering and manifolds using Product B have blue lettering.
   - **Row view** displays the implement ports and sections in columns. Manifolds using Product A are displayed on the top half of the screen and manifolds using Product B are displayed on the bottom half of the screen.

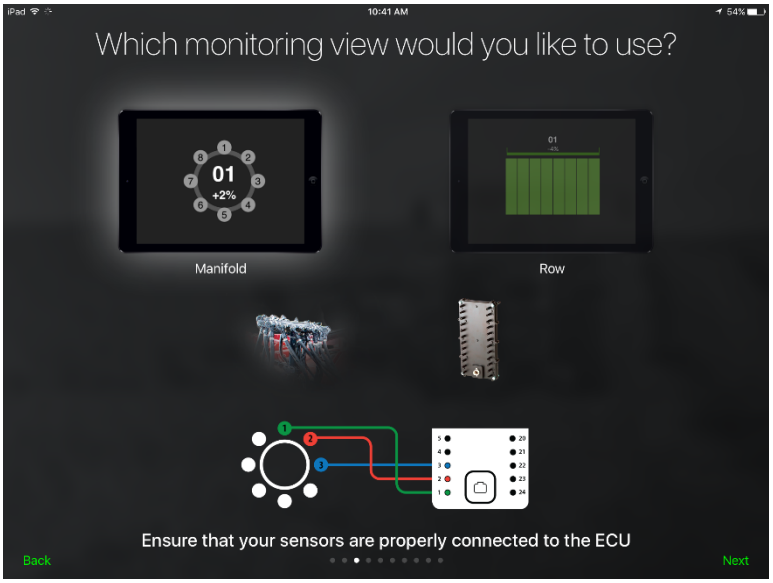

Figure 5: Automatic Configuration – View Options

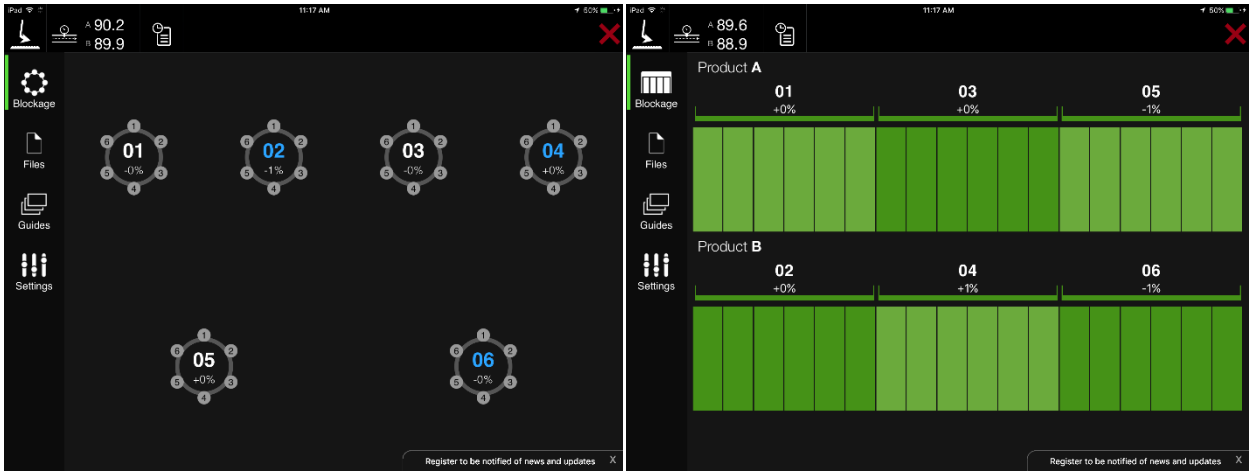

Figure 6: Blockage screen in manifold view (left) and row view (right)

6. Select the number of ECUs on your system. Tap **Next**.

   NOTE: If the ECU search does not find your ECUs, try following the troubleshooting steps in the on-screen help.

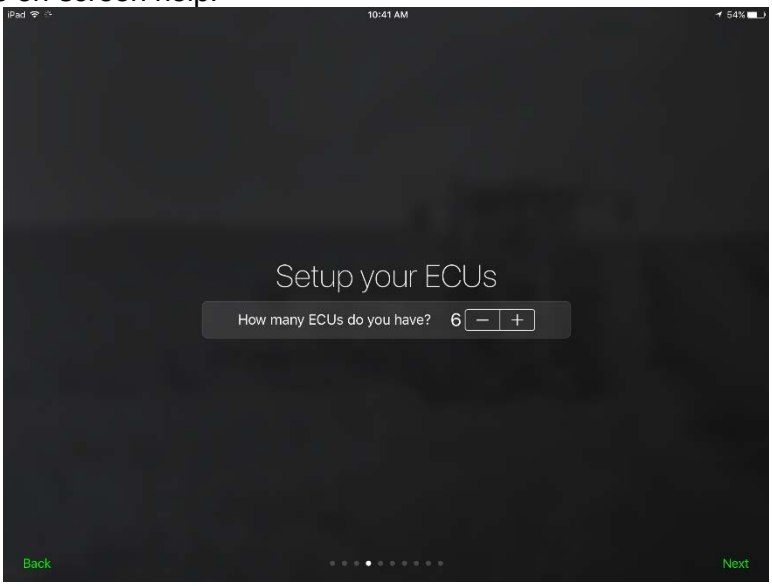

Figure 7: Automatic Configuration – ECU Setup

7. Configure your product and section setup.
   a. Select the number of products you are monitoring.
      - Select **1** if you are only monitoring 1 product or if you have two products flowing through the same air stream (single shoot).
      - Select **2** if you are dual shooting – two products (e.g. seed and fertiliser pellets) simultaneously flowing through the implement via different air streams.

   b. Select how many sections you're monitoring. By default, this is the same as the number of ECUs installed.

      NOTE: The minimum number of sections is half of the number of ECUs and the maximum number of sections is double the number of ECUs.

   c. Tap **Next**.

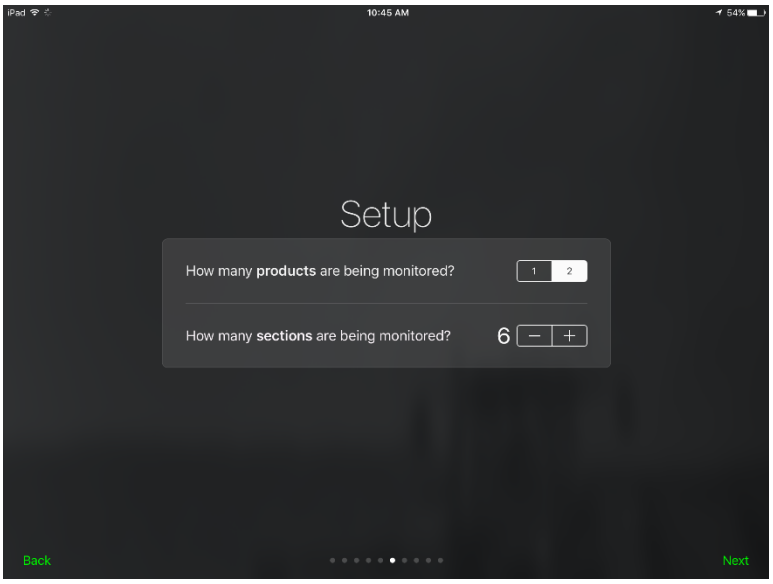

Figure 8: Automatic Configuration – Product and Section Setup

8. Configure each section.

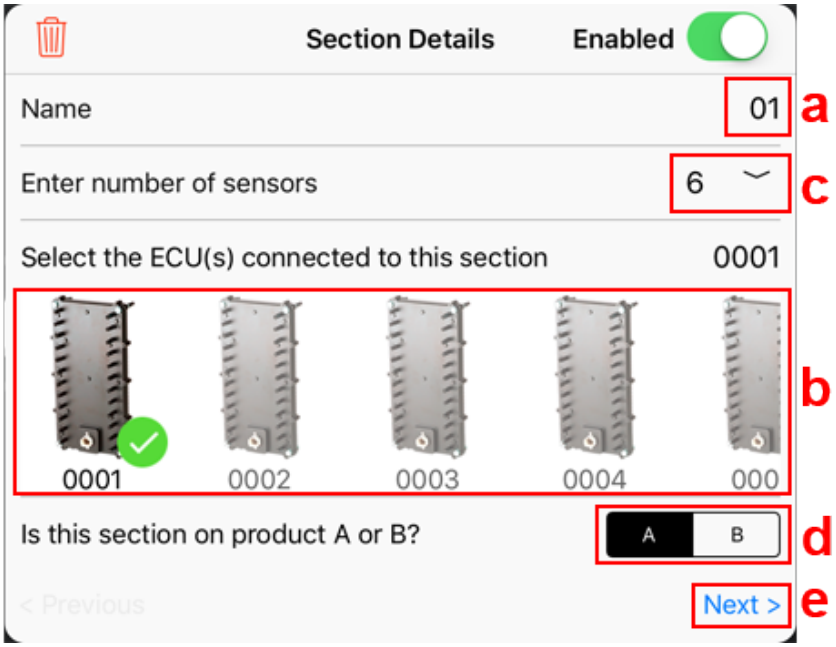

Figure 9: Automatic Configuration – Section Details

a. Tap the manifold number or name to rename the section (optional).

b. Tap the ECU or ECUs that are connected to the section. The ECU serial number is located on the back of the ECU.

   NOTE: If you split a manifold's runs across two ECUs or joined two manifolds on one ECU, refer to the instructions below when assigning ECUs:

   - Splitting: Select the two ECUs that your manifold is connected to.
   - Joining: Select the same ECU for two different manifolds.

c. Select the number of sensors connected to the ECU.

d. If you are running two different products via two different airstreams, decide which product will be product A and which will be product B. Select which product this section is running.

NOTE: Make sure that you assign product types consistently. For example, if Sections 01 and 03 are running seed and Sections 02 and 04 are running fertiliser pellets, you should assign Product A to Sections 01 and 03 and Product B to Sections 02 and 04.

e. Tap the blue **Next** button to continue to the next section.

NOTE: To permanently delete a section, tap the red trash icon in the upper left corner. To temporarily disable a section, toggle the **Enabled** switch in the upper right corner.

f. Tap the green **Next** button in the bottom right corner of the screen when you're done configuring all sections.

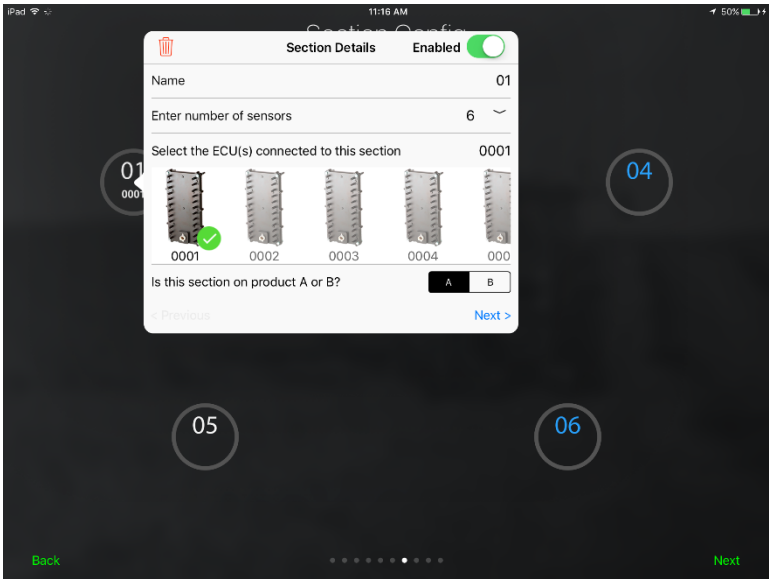

Figure 10: Automatic Configuration – Section Configuration

9. Configure each ECU's ports.

a. Tap each ECU and verify that the run configuration in the app matches how your runs are connected to the ECUs. If the app doesn't match your system setup:

- Drag a run number to the correct port on the ECU diagram.
- Toggle the switch next to a port number to disable or enable a port.
- Tap **Reset** to revert the changes back to the previous configuration.
- Tap **Apply** to save the changes.

NOTE: If you connected your sensors in anticlockwise order instead of in clockwise order, you do not need to rearrange your runs here. Refer to Section 4.7 to change your run direction.

b. Tap **Next**.

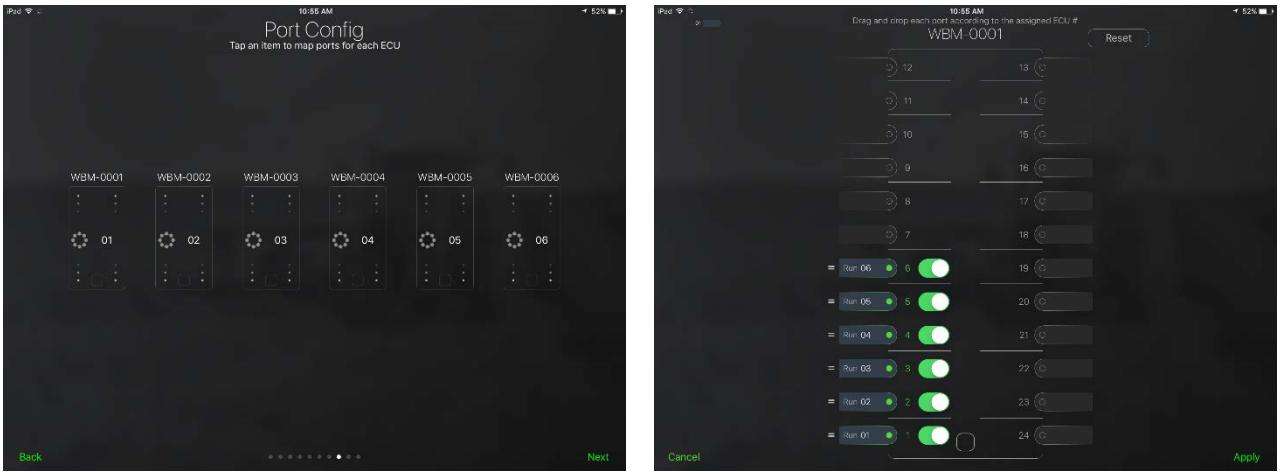

Figure 11: Automatic Configuration – Port Configuration

10. Set up your work switch.
    a. Select if your implement is operating with section control.
    b. Select the serial number of the ECU that has the work switch attached to it.
    c. Select the current mode of your work switch (raised or lowered). This determines the configuration of your work switch. To verify your work switch setup after configuration, refer to Section 2.3.

Figure 12: Automatic Configuration – Work Switch Setup

11. Set up alarms and notifications.
    a. Drag the slider to select a delay before alarms sound.
    b. Drag the slider to select the volume of the alarms.
    c. Enable or disable background notifications. Intelligent Ag recommends enabling background notifications so that the app continues to monitor for blockage and flow issues even when another app is open.

d. Enable or disable an alert when the app becomes disconnected from the Intelligent Ag Wi-Fi network.

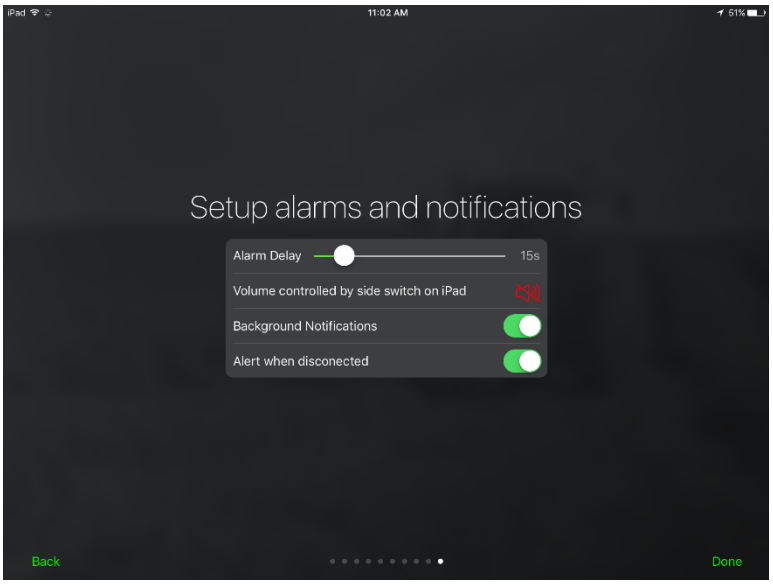

Figure 13: Automatic Configuration – Set Up Alarms and Notifications

2.3 Verifying the work switch installation

Follow the instructions below to verify that the WBFM work switch has been correctly installed and is communicating with the Intelligent Ag Pro app.

1. Determine your work switch method:
   - **Default method:**
     - Whisker switch (900000-000001): the work switch is engaged (the work switch is triggered by the height sensor) when the implement is in the ground. Likewise, the work switch is disengaged (the work switch is not triggered) when the implement is out of the ground.
     - Magnetic work switch (153560-000014): the work switch is engaged (magnet is close to the work switch) when the implement is in the ground. Likewise, the work switch is disengaged (magnet and work switch are apart) when the implement is out of the ground.
   - **Inverted method:**
     - Whisker switch (900000-000001): the work switch is disengaged (the work switch is not triggered) when the implement is in the ground. Likewise, the work switch is engaged (the work switch is triggered by the height sensor) when the implement is out of the ground.
     - Magnetic work switch (153560-000014): the work switch is disengaged (magnet is pulled away from the work switch) when the implement is in the ground. Likewise, the work switch is engaged when the implement is out of the ground.
2. Use the instructions below to verify your work switch setup, based on your work switch method.
   - **Default method:**
     1. Lower the implement and verify that the work switch indicator turns green.
     2. Raise the implement and verify that the work switch indicator turns white.
     3. Lower the implement again and verify that the work switch indicator turns green again.
   - **Inverted method:**
     1. Raise the implement and verify that the work switch indicator turns green.
     2. Lower the implement and verify that the work switch indicator turns white.
     3. Raise the implement again and verify that the work switch indicator turns green again.

   If the work switch indicator is not the correct colour as noted in the instructions above or does not change when you adjust the implement's hydraulic system, contact your dealer for assistance.

2.4 Adding and editing components in the Intelligent Ag Pro app

This section includes instructions for adding and editing manifolds and runs that were not included during the initial configuration of the WBFM.

TIP: To go through the initial setup again, tap **Settings** on the left navigation pane, Tap **Blockage** on the top navigation pane, then tap **ECU Setup Wizard** at the bottom of the screen.

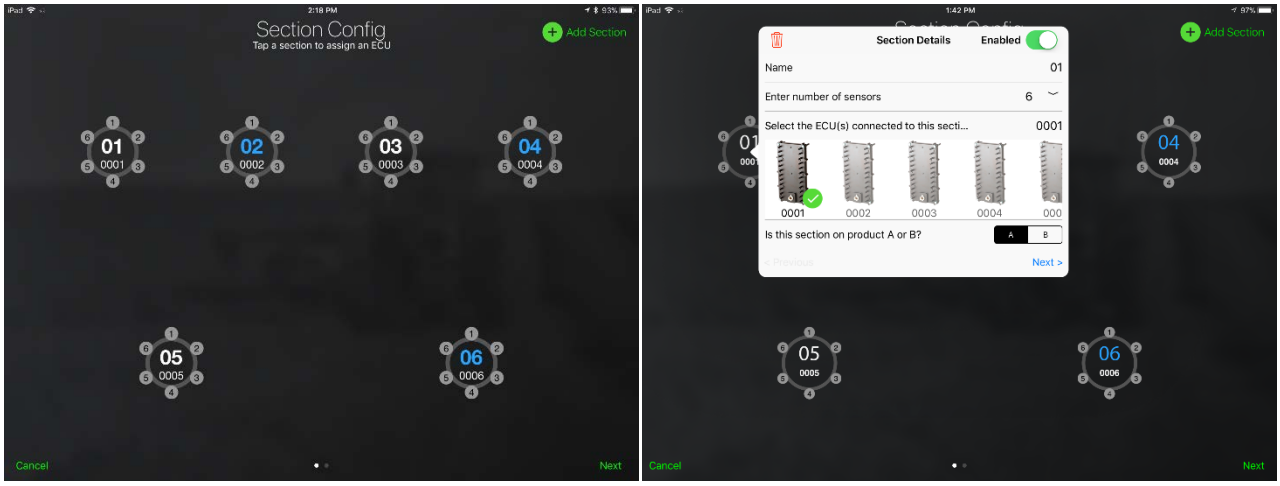

Figure 14: Edit Section Configuration

2.4.1 Editing the section settings

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Tap **Edit ECUs Configuration** at the bottom of the screen.
    - **Delete a section:** Tap the section you want to edit. Then, tap the trash can icon.
    - **Disable a section:** Tap the section you want to edit. Then, toggle the **Enabled** switch.
    - **Add a section:** Tap **Add Section** on the Section Config screen. Tap the new section that appears and configure its settings. Refer to Section 2.2, step 8 for more information about the Section Details page.

2.4.2 Editing the port settings

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Tap **Edit ECUs Configuration** at the bottom of the screen.
    - **Add or remove a port on a manifold:** Tap the section that you want to change the ports on. Change the number next to **Enter number of sensors** to the correct number of ports.
    - **Edit port order:** Tap the green **Next** button in the bottom right corner of the Section Config page. Tap the ECU that you want to edit and drag its runs to reorder the ports. Refer to Section 2.2, step 9 for more information about the Port Config page.
    - **Disable a port:** Tap the green **Next** button in the bottom right corner of the Section Config page. Toggle the switch next to the port number.

2.5 Setting the general system alarms

2.5.1 Setting the alarm delays

To change when the alarm sounds after a blockage is detected by the WBFM, follow the instructions below:

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Drag the **Alarm Delay** slider left or right to adjust the number of seconds between when the WBFM detects a blockage and when the alarm sounds.

2.5.2 Changing the alarm volume

To change the volume of alarms:

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Drag the **Volume** slider left or right to adjust the volume of alarms.

2.5.3 Enabling and disabling background notifications

If enabled, background notifications allow the app to notify you of blockage or flow issues even when you have another app open. Intelligent Ag recommends enabling background notifications.

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Toggle the **Background Notifications** switch.

2.5.4 Setting the Wi-Fi disconnect alarm

If enabled, the Wi-Fi disconnect alarm sounds when the iPad is disconnected from the WBFM Wi-Fi network while the app is in use. Intelligent Ag recommends enabling the Wi-Fi disconnect alarm.

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Toggle the **Alert when disconnected** switch.

2.6 Setting the blockage and flow alarms

You can choose to be notified when you have a blocked run or when the flow rate for a product or manifold goes above or below a range you specify.

2.6.1 Enabling and disabling the blocked run alarm

To enable or disable the blocked run alarm:

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Toggle the **Blocked Run Alarm** switch.

2.6.2 Enabling and disabling the ECU offline alarm

The Intelligent Ag Pro app will continuously check if all of the ECUs installed on the system are communicating properly. If the ECU offline alarm is enabled, an alarm will sound to alert the operator when the Intelligent Ag Pro app has not received data from an ECU for more than ten seconds.

To enable or disable the inactive ECU alarm:

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Toggle the **ECU Offline Alarm** switch.

2.6.3 Setting the section variance alarm

Set section variance alarms to be notified of flow outside of your selected threshold for each section. To enable or disable the section variance alarm:

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Toggle the **Section Variance Alarm** switch.
4. Drag the **Variance Threshold** slider to the percentage difference at which you want to hear an alarm for individual sections.

2.6.4 Setting the mass flow alarm

NOTE: You might want to wait to set this alarm until you are familiar with the normal range for the product's mass averages.

To enable or disable the mass flow alarm:

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Toggle the **Mass Flow Alarm** switch.
4. Set the alarm threshold for each product by adjusting the sliders.
   - Slide the leftmost slider to the minimum acceptable flow rate for the product.
   - Slide the rightmost slider to the maximum acceptable flow rate for the product.

   Flows above or below these ranges will trigger an alarm.

3. Monitoring for blockages

3.1 Viewing the Blockage screen

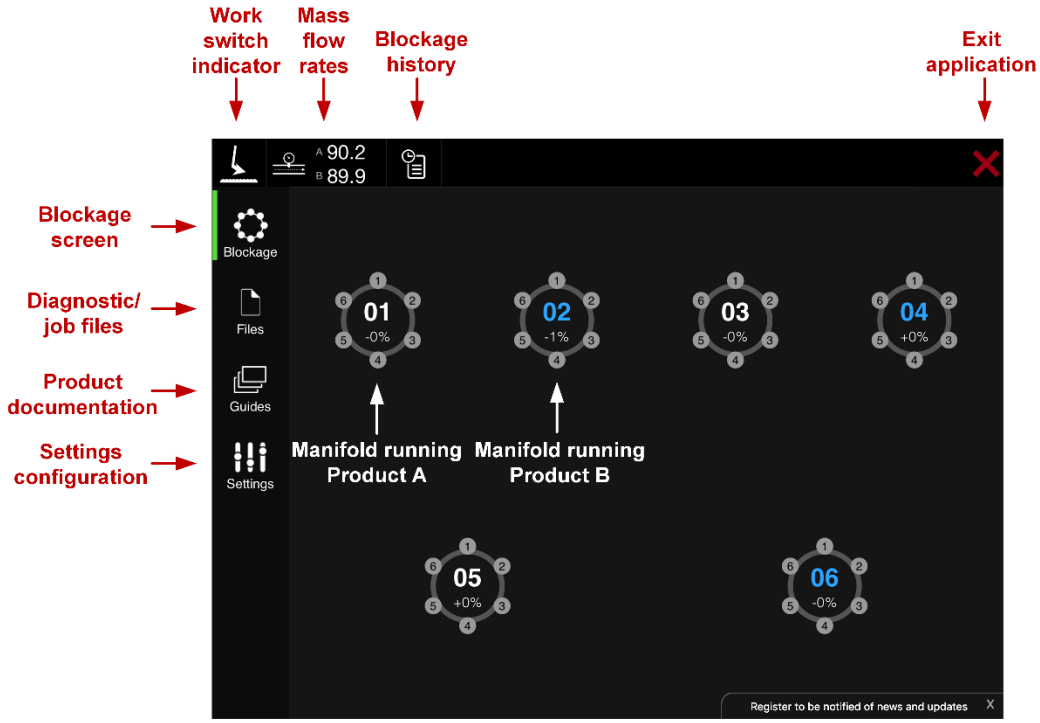

Figure 15: Viewing the Blockage screen

3.2 Troubleshooting a blocked run or manifold

When a blockage is displayed on the Blockage screen of the Intelligent Ag Pro app, an audio alarm will sound (if enabled) and the run that has become blocked will be marked as a red circle with the run number in its centre.

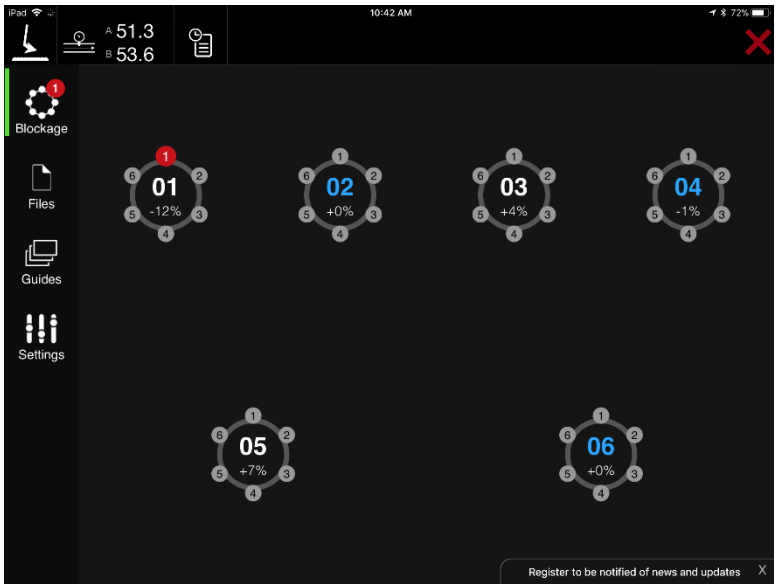

Figure 16: Blockage screen with a blocked run

If you installed and configured your ECUs in alphanumeric order from left to right, Figure 17 shows how your system is displayed in the app. If you haven't already, Intelligent Ag recommends marking the ECU port number connected to the sensor on a location easily visible on each hose. This makes it easier to identify which run is blocked.

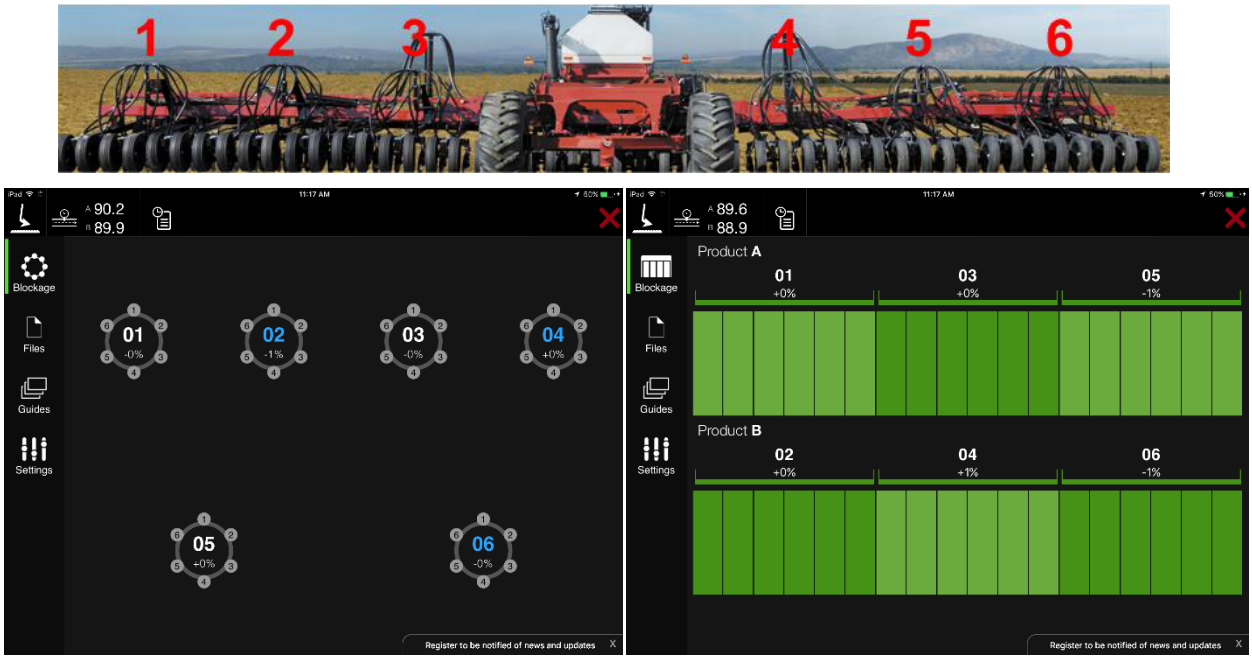

Figure 17: Viewing blockages

Top: Tractor connected to a six manifold implement,
Left: Blockage screen representing that implement in manifold view.
Right: Blockage screen representing that implement in row view.

3.2.1 Silencing the audio alarm when a blockage is detected

When the blocked run alarm is sounding, you can silence it by tapping anywhere on the Blockage screen of the app. This will silence the audio alarm until another blockage is detected.

3.2.2 Viewing the blockage history

You can view all recently detected blockages from the Blockage History list. To view blockage history, tap the history icon on the Blockage screen, as shown in Figure 18. For example, in manifold view, a blockage on Manifold 2, Run 5 will appear as "02 - R5." In row view, a blockage will be displayed with the run number.

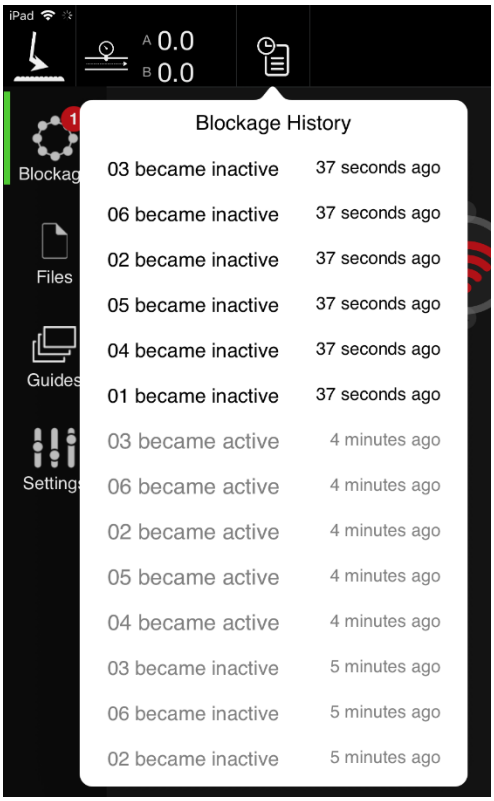

Figure 18: Blockage History screen

3.2.3 Adjusting the flow level settings

If you are applying product at a low application rate, you can adjust your flow settings to prevent the flow alarm from falsely triggering.

To adjust the flow level settings:

1. Tap **Settings** on the left navigation pane.
2. Tap **Blockage** on the top navigation pane.
3. Select the **Normal**, **Low** or **Very Low** flow level setting for all products you are monitoring.
    - **Normal:** Use when applying seed at a rate greater than 7 pounds/acre. Used for most products.
    - **Low:** Use when applying seed at a rate between 5 to 7 pounds/acre. Often used with canola, flax, alfalfa and grass.
    - **Very Low:** Use when applying seed at a rate less than 5 pounds/acre. Often used with canola and sunflowers.

3.2.4 Monitoring with section control

If your implement has a section control system and you have enabled it during Automatic Configuration, the manifolds that are not seeding due to section control will appear dimmed.

NOTE: All sections will appear dimmed if the work switch is disengaged while section control is enabled.

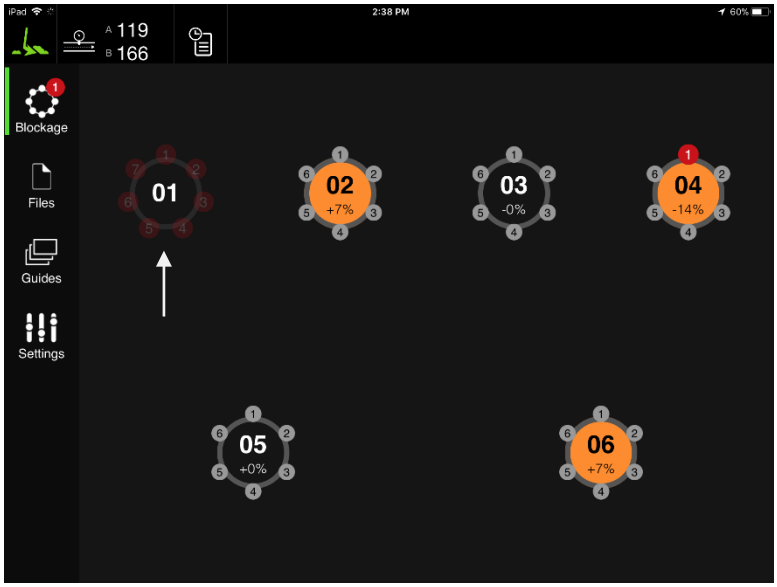

Figure 19: Blockage screen showing a manifold not seeding due to section control

3.3 Monitoring the manifold variance

In addition to alerting operators to blocked runs or manifolds, the WBFM also monitors the variance between all manifolds on the implement.

The variance of a manifold is a percentage of flow in relation to the flow of the other manifolds on the implement.

- **0% variance:** all manifolds have equal flow levels.
- **Positive variance:** manifold has above average flow level.
- **Negative variance:** manifold has below average flow level. May indicate poor product flow or low product levels.

The variance for each manifold appears directly below the manifold's name on the Blockage screen of the Intelligent Ag Pro app. The manifold's variance is given in real time and will continuously update.

Manifolds that are below the variance threshold will change from grey to orange. For more information about the variance threshold, see Section 2.6.3.

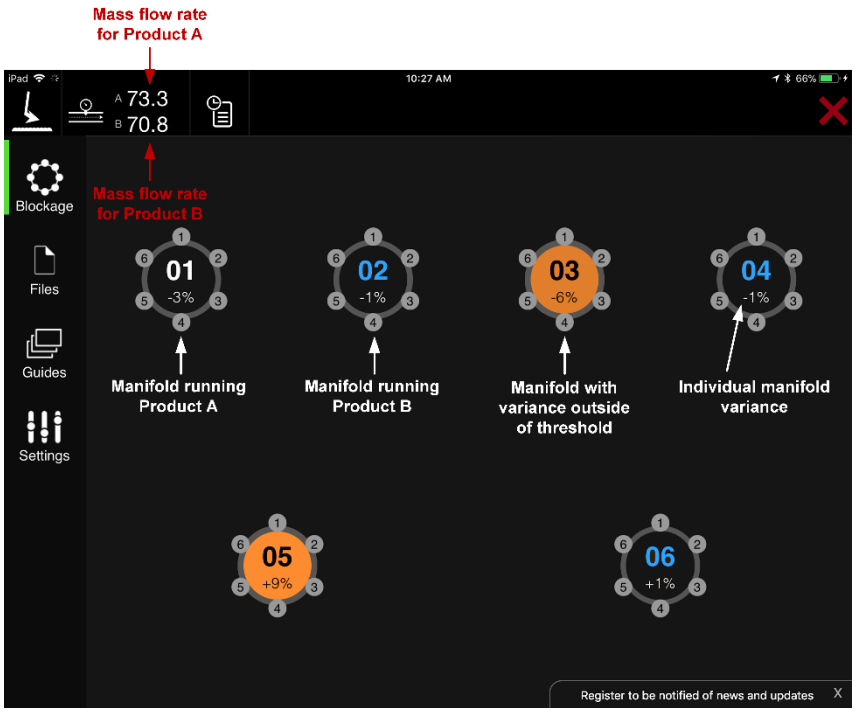

Figure 20: Understanding variance – manifold view

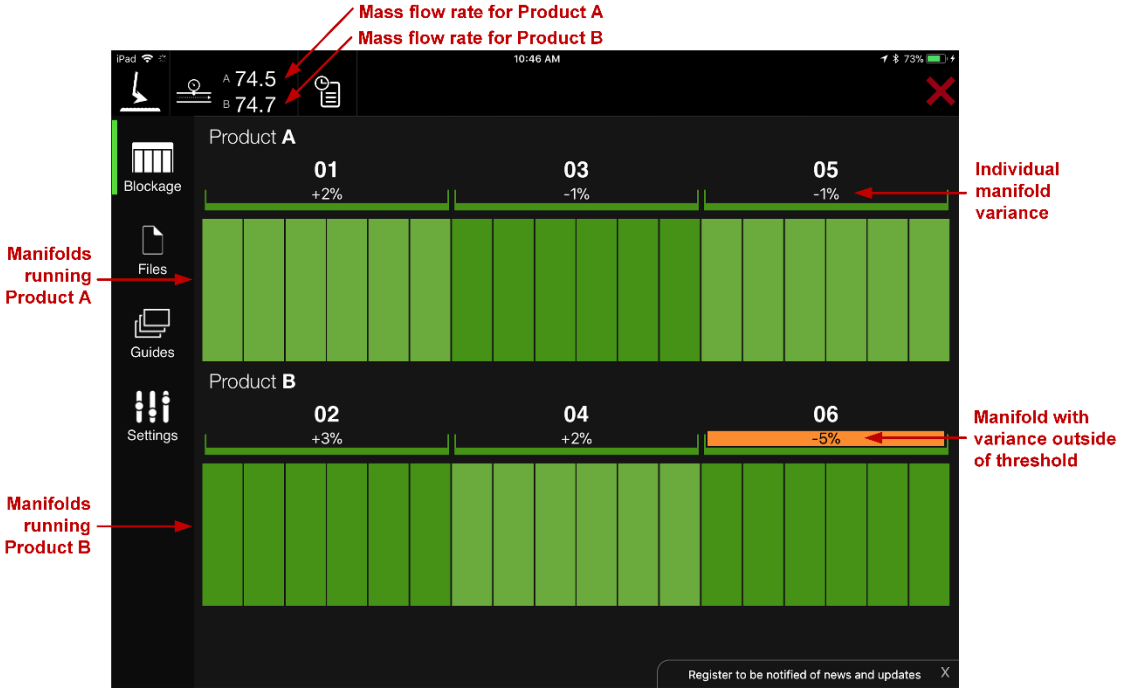

Figure 21: Understanding variance – row view

If you are monitoring more than one product type with the WBFM, variance averages for manifolds are based on the variance of manifolds running the same product type. For example, if you are monitoring the flow of seed and fertiliser pellets that are simultaneously flowing through the implement in separate manifolds, the variance of a manifold running fertiliser pellets

will only be compared to the flow of other manifolds that are also running fertiliser pellets and the variance of a manifold running seed will only be compared to the flow of other manifolds that are also running seed.

NOTE: If two different product types are running through your implement, verify that you have correctly assigned each manifold to a product type. Refer to Section 2.2 for instructions for how to assign product types to manifolds. If you are running two product types simultaneously through your implement via different runs and do not correctly assign them, the variance will be inaccurate and incorrect blockage notices can occur.

3.3.1 Recording the average variance and mass flow rate

The record feature allows you to see the average variance for each manifold on your implement and a total average for all manifolds monitoring a product type over one minute. The four most recent average variance recordings are saved on the Record screen.

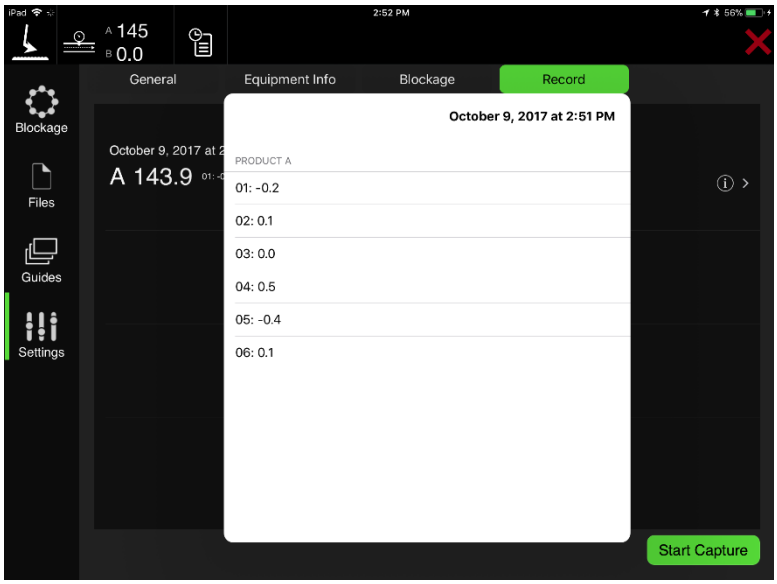

Figure 22: Viewing the manifolds' flow averages

To record the average variance and mass flow rate:

1. Tap **Settings** on the left navigation pane.
2. Tap **Record** on the top navigation pane.
3. Tap **Start Capture**. The flow average capture will run for one minute. During this time, you can navigate to the Blockage screen to continue to monitor for any blockages or low flow rates on your implement. Once the flow average capture is complete, a message will be displayed stating "Capturing of flow data is complete." This message will appear on any screen of the Intelligent Ag Pro app.

Once the flow average rate is captured, a new line will appear on the Record screen. This line gives the date and time the capture took place in addition to the mass flow rate for each product type. Tap the line to view the averages of each individual manifold for that minute.

3.4 Monitoring the mass flow rate

The total flow rate for all manifolds of each product type appears on the top of the Blockage screen in the Intelligent Ag Pro app, as shown in Figure 20 and Figure 21. If the Intelligent Ag Pro app is monitoring only one product type, the flow rate for Product B will not be displayed.

The mass flow rate is arbitrary and does not correspond to a specific unit of measurement. As you become more familiar with the mass flow rate, you will be able to determine what range of mass flow numbers indicates good product flow. Once you have determined this range, you may want to set an alarm based on these parameters. See Section 2.6.3 for more information about this alarm.

The mass flow can fluctuate with changes in product type, application rate, ground speed and fan speed. An abnormal mass flow number could indicate any of the following:

- Open or leaking cart lid
- Product bridging in bin
- Meter roll build-up
- Leaking or blocked primary

3.5 Monitoring the ECU status LED

An LED is located on the front of every ECU, as shown in Figure 23. This LED signifies the status of the ECU. Multiple built-in-tests (BITs) periodically check the status of the ECUs. If a BIT fails, the ECU's LED will change from blinking red to solid red, as described in Table 1.

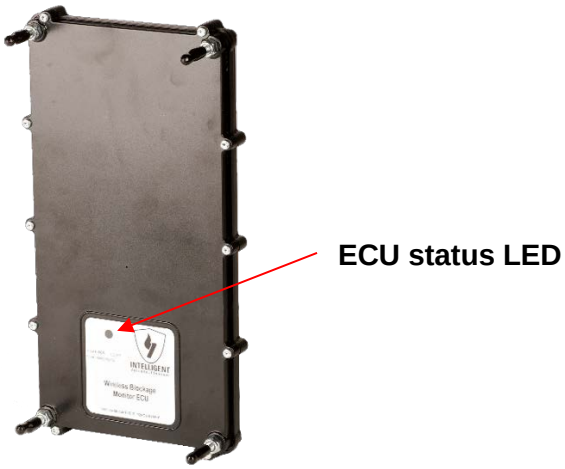

Figure 23: ECU status LED location

LED colour		Status
Blinking red	About one blink every 3 seconds	ECU is in queue for a firmware update
	About one blink per second	ECU is receiving power, no BITs have failed
	Multiple blinks per second	ECU is updating its firmware
Solid red		ECU is receiving power, at least one BIT has failed
Off (black)		ECU is not receiving power

Table 1: ECU LED status

4. Adjusting the settings

This section describes how to change non-alarm settings. For instructions to change alarm settings, see Section 2.6.

4.1 Enabling the diagnostic data

You might be asked to enable diagnostic data when troubleshooting an issue with a support representative. To enable diagnostic data:

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Toggle the **Diagnostic Data** switch. Your files will be located in the **Files** tab on the left side of the screen. To send a file, tap the file name, then tap the send icon in the upper right corner.

4.2 Editing the profile data

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Tap **My Profile** and edit your information.

4.3 Changing the connection mode

The Wireless Blockage and Flow Monitor can be used with either a TP-Link access point or with a Gateway 300. To change your connection mode:

1. Tap **Settings** on the left navigation pane.
2. Tap **General** on the top navigation pane.
3. Next to **Connection Mode**, tap your current connection mode: either **TP-Link** or **Gateway**. Then, select the new connection mode.

4.4 Adding or changing the implement, tractor or air cart type

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Tap the current selection next to **Implement**, **Tractor** or **Air Cart**. Then, update your information.

4.5 Changing the sensor type

The WBFM uses 90 degree, 1" or 1.25" sensors. To change your sensor configuration:

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Tap the current selection next to **Sensor Type**. Then, select the new sensor.

4.6 Changing the manifold view type

There are two ways that manifolds can be displayed in the Intelligent Ag Pro app: manifold view and row view.

- **Manifold view** displays the implement ports and manifolds in a circle. Manifolds using Product A have white lettering and manifolds using Product B have blue lettering.
- **Row view** displays the implement ports and sections in columns. Manifolds using Product A are displayed on the top half of the screen and manifolds using Product B are displayed on the bottom half of the screen.

To change the manifold view type:

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Tap the current selection next to **Visualisation Mode**. Then, select the new view.

4.7 Changing the manifold run direction

In manifold view, the ports are displayed in clockwise order around the manifold by default, as shown in Figure 24. If you installed the sensors in anticlockwise order around the manifold, you can change the way the ports are displayed in the app so that it more closely resembles the physical installation of the WBFM system on your implement.

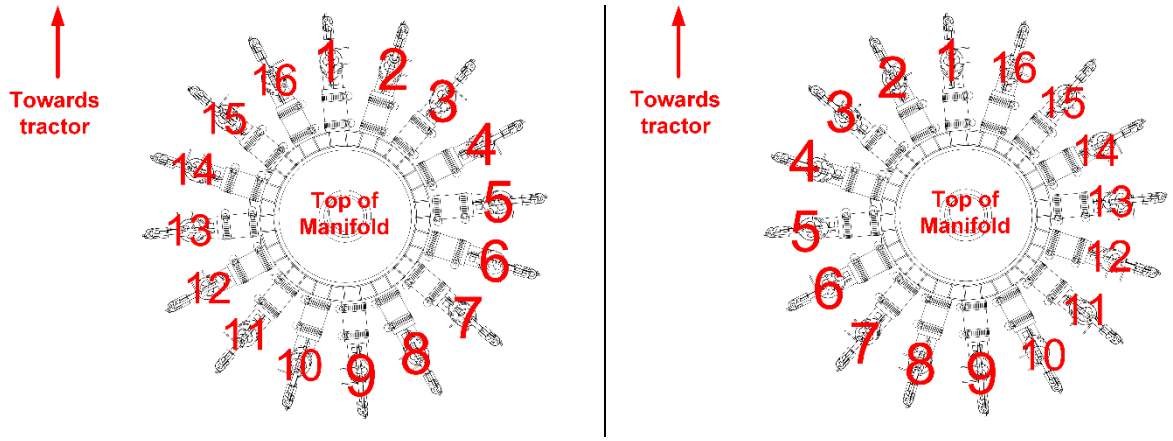

Figure 24: Default order (left); reverse order (right)

To reverse the order the ports are displayed the app:

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Tap the anticlockwise icon next to **Run Direction**.

NOTE: Run direction cannot be changed for row view.

4.8 Enabling or disabling section control

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Toggle the **Section Control** switch.

4.9 Changing the work switch ECU

To change the ECU that is connected to the work switch:

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Tap the ECU serial number next to **Work Switch**. Then, select the new work switch ECU.

4.10 Reconfiguring the work switch method

Implement work switches use either the default or inverted method. Refer to Section 2.3 for more information on these two methods. To change the configuration of the work switch in the Intelligent Ag Pro app:

1. Tap **Settings** on the left navigation pane.
2. Tap **Equipment Info** on the top navigation pane.
3. Toggle the **Work Switch Inverted** switch.

NOTE: If you selected **Raised** for **What mode is the implement currently in?** during initial setup, the work switch will automatically be configured for the inverted method.