

Reason

Sentinel Adulticiding software relies on a connection to GPS and to the sprayer to record spray data. Most Sentinel users are using various Windows tablets, especially the Juniper Mesa 2 (which has built in GPS and RS-232 serial), but also many other tablet brands including Mobile Demand, Dell, Getac, and Panasonic Toughbook. Every tablet has different settings for GPS and RS-232 serial port connections. Some customers are using 3rd-party USB-serial adapters, which introduces additional software drivers and configuration.

Add one or more cable connections and sprayer controller settings into the mix, and you have quite a list of things to check to be certain that Sentinel Adulticiding is communicating properly so that you can record the information you need.

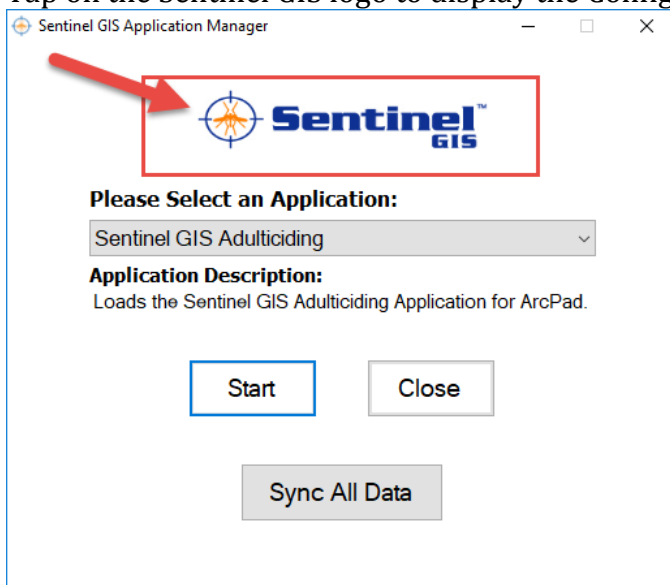
This Support Note will help you know what all you need to check as you get ready for another season of spray activity or as you set the system up for the first time.

Solution

Check Sentinel and Tablet Configuration Settings

Sentinel requires that GPS and Sprayer COM port settings be configured correctly. To check the connection settings that Sentinel uses on the tablet:

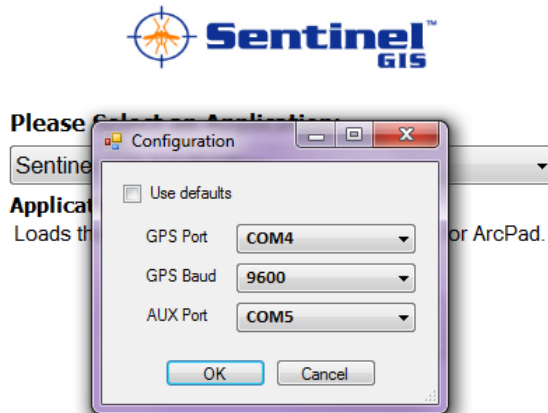
1. Run the Sentinel GIS Application Manager.
2. Tap on the Sentinel GIS logo to display the Configuration window.



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3. Uncheck the box to “Use Defaults” and set the GPS Port and AUX port (this is the serial port that the sprayer plugs into). Press OK. Settings will be saved on the device (in the Windows registry).



Common device settings:

Juniper Mesa 2

GPS: COM4

GPS Baud: 9600

AUX: COM5

Mobile Demand T1550:

GPS: COM4

GPS Baud: 9600

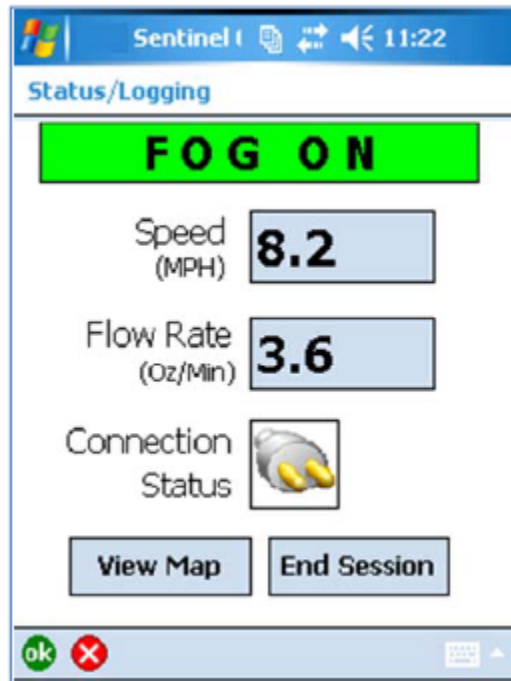
AUX: COM6

If you are unsure what COM port settings your tablet uses for GPS or serial, you can verify this in the Windows Device Manager or with the device manufacturer or reseller support. Also see the Support Note *Using Sentinel GIS on a Consumer Windows Tablet* for more information.

Verify Connection in Sentinel Adulticiding

After you've verified the settings, connect the tablet to the sprayer connection cable, turn on the sprayer controller or spray head (you do not have to be spraying, but the sprayer has to be powered up to output data), start the Sentinel Adulticiding program and log in to a fogging session.

1. If the Activity selected is 'Fogging' the Status/Logging screen displays. The screen shows:



- Fogger Status

FOG ON with green background. Data is being read from the control box, and the pump switch is turned on.

NO FOG with red background. Data is being read from the control box, and the pump switch is turned off.

NO SPRAY with yellow background. Data is being read from the control box, and the current GPS position is less than the specified warning distance away from a no spray zone. This message will alternate red and white, and will be accompanied by a warning sound. The warning distance and sound are configured in the Adulticiding Configuration Utility.



- Current Speed
- Pump Flow Rate
- Connection Status

GOOD. Data is being read from the control box.



BAD. No data is being read from the control box. Check cable connections and control box status.



If the connection settings are correct, but no sprayer connection is made, the following things should be checked.

Check Cables

Serial communication cables are usually purchased with the Sentinel GIS system. Frontier Precision sells cables that are compatible with all supported sprayer brands. If you are using a cable that you did not purchase from us, it may not have the right wiring / pinouts.

Sometimes cables can be damaged by being kinked, pinched, or shut in doors or windows. If you have more than one cable, swap cables to verify whether you have a bad cable.

Contact Frontier Precision to order replacement or spare cables.

If replacing the cable does not fix the issue, then the problem lies elsewhere. If you have more than one tablet, cable, and sprayer, you can switch components around to isolate the problem. We can help you troubleshoot further to determine whether there is a hardware issue with the tablet or not.

Verify Sprayer Compatibility

Sentinel Adulticiding will collect data directly from Clarke SmartFlow, London Fog with LondonFlow, Curtis Dyna-Fog with DynaTrax, and Target / B&G Phoenix with GPS control box (data from Adapco Monitor IV systems can also be imported directly into Sentinel desktop software).

If you are using SmartFlow I, check your SmartFlow firmware. It must be 2XXX or 45XXX to be compatible with Sentinel. If you have older firmware, check with your Clarke representative for options.

London Fog, Curtis Dyna-Fog, and Target / B&G Phoenix sprayers purchased prior to 2011, or purchased without the required options (LondonFlow, DynaTrax, GPS control box) may not be compatible with Sentinel software. Check with your sales representative to discuss options, or contact Frontier Precision at mapping_support@frontierprecision.com or (208) 324-8006 to assist with finding out what is required.

Check Sprayer Controller Configuration

Clarke SmartFlow controllers must be set to GPS speed input in order to function in variable mode. If Sentinel shows connection, but the sprayer never turns on in variable mode when you are driving, chances are SmartFlow is not configured to GPS speed input.

Configuring the speed calibration for GPS speed input varies between SmartFlow I and SmartFlow II. The following are excerpts from the SmartFlow manuals:

1. SmartFlow (original)

Entering Calibration Mode

To place the Smart Flow control in calibration mode:

1. Move the rotary switch to the TARGET RATE position.
2. While holding the +/- (increase/decrease) switch in the + position, push and hold reset button for 2 seconds.
3. When the control has powered up, release the +/- (increase/decrease) switch.

SET is displayed in the upper display window, the CAL indicator is lit in the left display window, and the calibration LED flashes to indicate Calibration mode. Dashes are displayed in the right display window until a calibration factor is selected with the rotary switch.

Exiting Calibration Mode

To exit calibration mode and save changes, press and hold the RESET button for three seconds. Any changes take effect immediately.

To exit calibration mode without saving changes, move the POWER switch to the OFF position.

Set the Speed Calibration Factor to “0”.

Setting the Speed Calibration Factor

To set the Speed Cal factor:

1. Place the control in Calibration mode.
2. Move the rotary switch to the SPEED CAL position.

The calibration distance (Cal Distance) is displayed in the upper display window, and the current Speed Cal factor is displayed in the right display window.

3. Use the +/- (increase/decrease) switch to increase or decrease the Speed Cal factor. The possible range is 0.00 to 655.35 inches, or 0.000 to 65.535 meters.

Note: The Cal Distance total in the upper display window will change to reflect the new Speed Cal factor.

4. Press and hold the RESET button for three seconds to save the change and exit Calibration mode.

2. SmartFlow II

To enter “View and Change” Calibration Mode:

1. Toggle the Spray Switch to OFF.
2. Turn Rotary switch to “Target Rate” position.
3. Press and hold both the CAL and INC key for one second. The word SET is shown in the Data display and the word (AL will be displayed in the Application Rate display and the red Warn LED will flash on/off as a warning that the cal factors can be set (changed). The word SET remains in the Data display until the user releases both the CAL and INC key to prevent accidental increments to a Cal factor. The INC or DEC keys are used to adjust the Calibrate factor and the longer the key is pressed the faster the value will change.

To exit “View and Change” Calibration Mode

1. Press the CAL key for one second with the rotary switch in any position. The Spray switch can be in VARIABLE, CONTINUOUS or OFF. If a Cal change was made the CMC will store the Cal Factors in EEPROM.
2. To exit Calibration Mode without saving any changes, simply turn the Power off.

Set the speed value to GPS.

Curtis Dyna-Fog, London Fogger, and Target / B&G Phoenix sprayers must have the included external GPS puck plugged in to the sprayer. Even though your Sentinel tablet has GPS, the external GPS receiver is required for the variable flow to work on these systems.

Curtis Dyna-Fog DynaTrax also requires a calibration procedure. This is not the same as the sprayer calibration; it is in addition to the sprayer calibration. The procedure is documented in the user documentation; it basically involves setting the sprayer to output 400 mL/min then pressing the "calibrate" button on the pump box.

London Fogger cable connections also include a Y-cable that the GPS and software connection cable plug in to. This Y-cable can wear out due to, well, wear and tear. If you have a spare Y-cable, try switching it out.